



# Catalog 2017





The Wisi Group

**Committed to  
innovation.**



**For over eight decades WISI has been among the worldwide pioneers of receiving and distributing technology.**

As a system provider in the product areas of CATV technology, receiving and distribution technology, mobile communication and high-frequency assemblies we have learned during this period not only to maintain the lead in technological development but to continually implement visions into new quality products.

The converging media, new multi-media choices and broadband services demand intelligent transport routes for their distribution. This is our business. As a developer and technology supplier for the key areas of communication we are committed to innovation, now and in the future.

**Industries variety**

- Electrical installers and specialist retailers
- Wholesalers
- Cable network providers
- Broadcasters
- Platform operators
- Telecommunications service providers
- Energy providers and city carriers
- Hospitality sector
- Planners and architects
- Integrators
- Housing industry

# Table of contents



## Channel processing Tangram



## Channel processing Chameleon

### Base units

<i>GT 01 O 0048</i> .....	20
<i>GT 01 O 0230</i> .....	21
<i>GT 01 W 0048</i> .....	22
<i>GT 01 W 0110</i> .....	23
<i>GT 01 W 0230</i> .....	24

### Module

<i>GT 12 W</i> .....	25
<i>GT 23 W</i> .....	26
<i>GT 24 W</i> .....	28
<i>GT 26</i> .....	30
<i>GT 31 W</i> .....	32
<i>GT 32 W</i> .....	34
<i>GT 33</i> .....	36
<i>GT 37</i> .....	37
<i>GT 41</i> .....	39
<i>GT 42 W</i> .....	38
<i>GT 21 W</i> .....	40
<i>GT 22 C</i> .....	42

### Power supplies

<i>GT 55 W 0048</i> .....	44
<i>GT 55 W 0110</i> .....	44
<i>GT 55 W 0230</i> .....	44

### Software options

<i>GT DOL</i> .....	45
<i>GT M1</i> .....	45
<i>GT M3</i> .....	46
<i>GT MUX</i> .....	46
<i>GT NRED</i> .....	47
<i>GT PSISI</i> .....	47
<i>GT RED</i> .....	48
<i>GT SYMUX</i> .....	48
<i>GT FEC</i> .....	49
<i>GT SCR</i> .....	49
<i>GT T2MIDE</i> .....	50
<i>GT QT2MIPL</i> .....	50
<i>GT DT2MIDE</i> .....	51

### Base units

<i>GN 20 W</i> .....	54
<i>GN 40 W 0230</i> .....	55
<i>GN 50 W 0048</i> .....	55
<i>GN 50 W 0230</i> .....	56
<i>GN 01 W2</i> .....	56

### Module

<i>GNHWUW2</i> .....	58
<i>GNHWENCW</i> .....	60
<i>GNHWTNCW</i> .....	62

### Power supplies

<i>GN 55 W 0230</i> .....	63
<i>GN 55 W 0048</i> .....	63

### Software options

<i>GNASI</i> .....	64
<i>GNCI</i> .....	65
<i>GNCMOD</i> .....	65
<i>GNDASI</i> .....	65
<i>GNDCI</i> .....	66
<i>GNDCMOD</i> .....	66
<i>GNDOL</i> .....	67
<i>GNDSDI</i> .....	67
<i>GNDTMOD</i> .....	68
<i>GNDVMOD</i> .....	68
<i>GNHSDI</i> .....	69
<i>GNM1</i> .....	69
<i>GNM3</i> .....	70
<i>GNOCTFM</i> .....	70
<i>GNQCMOD</i> .....	71
<i>GNSCR</i> .....	71
<i>GNSSDI</i> .....	72
<i>GNSTR</i> .....	72
<i>GNSTREC</i> .....	73
<i>GNSYMUX</i> .....	73
<i>GNSYSMG</i> .....	74
<i>GNTCMOD</i> .....	74
<i>GNTMOD</i> .....	75
<i>GNVMOD</i> .....	75



## Channel processing Compact Headend



## Channel processing Micro Headend

### Base units

<i>OH 40 A</i> .....	78
<i>OH 50 A</i> .....	79
<i>OH 50 R</i> .....	80

### Modulators

<i>OH 38</i> .....	81
--------------------	----

### Channel translator

<i>OH 45</i> .....	82
--------------------	----

### Digital modules

<i>OH 76</i> .....	83
<i>OH 76 F</i> .....	84
<i>OH 77</i> .....	85
<i>OH 77 D</i> .....	86
<i>OH 79 D</i> .....	87
<i>OH 79 2</i> .....	88
<i>OH 79 2D</i> .....	89
<i>OH 84</i> .....	90
<i>OH 85 H</i> .....	91
<i>OH 86 2</i> .....	92
<i>OH 88 H</i> .....	93
<i>OH 89 2</i> .....	94

### Encoder

<i>OH 66</i> .....	95
--------------------	----

### WISI BOX

<i>OH 16 SC</i> .....	96
-----------------------	----

### DVB-T/DVB-C Channel Processing

<i>OM 10 0646</i> .....	100
<i>OM 10 0648</i> .....	101

# Table of contents



## Accessories channel processing

## INCA

### Input splitter

<i>DC 28 0S4T</i> .....	104
<i>DC 28 3S1T</i> .....	104
<i>DC 28 4S0T</i> .....	104

### Output combiner

<i>DM 17 A</i> .....	105
----------------------	-----

### Mounting accessories

<i>ZG 80</i> .....	106
--------------------	-----

### Handsets

<i>OH 41</i> .....	106
--------------------	-----

### INCA 4400

<i>INCA 4410</i> .....	110
<i>INCA 4420</i> .....	111
<i>INCA 4430</i> .....	112

### INCA 5400

<i>INCA 5420 ASE</i> .....	113
<i>INCA 5420 ABR</i> .....	114



## Optical SAT distribution

### Optical feed systems

OL 11 0000 .....	118
OL 12 0000 .....	118
OL 13 0000 .....	119
OL 14 0000 .....	120
OL 15 0000 .....	120
OL 72 0004 .....	123

### Optical splitter

OL 91 0002 .....	124
OL 91 0003 .....	124
OL 91 0004 .....	124
OL 91 0008 .....	125
OL 91 0016 .....	125
OL 91 0032 .....	125

### Optical taps

OL 92 0010 .....	126
OL 92 0020 .....	126
OL 92 0030 .....	126
OL 92 0040 .....	127

### Optical converter

OL 21 0002 .....	128
OL 21 0003 .....	128
OL 22 0002 .....	129
OL 22 0003 .....	129

### Optical cables

OL 95 0001 .....	130
OL 95 1001 .....	131
OL 95 1003 .....	131
OL 95 1005 .....	131
OL 95 1010 .....	132
OL 95 1015 .....	132
OL 95 1020 .....	132
OL 95 1030 .....	133
OL 95 1040 .....	133
OL 95 1050 .....	133
OL 95 1075 .....	134
OL 95 1100 .....	134
OL 95 1150 .....	134
OL 95 1200 .....	135
OL 95 2030 .....	136
OL 95 2040 .....	136
OL 95 2050 .....	137
OL 95 2075 .....	137
OL 95 2100 .....	137

OL 95 2150 .....	138
OL 95 2200 .....	138
OL 95 4300 .....	138

### Optical mounting accessoires

OL 93 0001 .....	139
OL 93 0002 .....	139
OL 94 0005 .....	139
OL 94 0010 .....	139
OL 94 0015 .....	140
OLPS 0230 .....	140
OL 51 0000 .....	141
OL 57 0003 .....	142
OL 55 0000 .....	141
OL 57 0002 .....	142
OL 57 0001 .....	142
OL 82 0002 .....	143
OL 82 0003 .....	143
OL 82 0005 .....	143
OL 82 0010 .....	143

### Optical multiswitch

OL 41 0008 .....	144
OL 41 0016 .....	145
OL 42 0008 .....	146
OL 42 0016 .....	147

# Table of contents



## Optical transmission platform Optopus

### Base units and accessories

LX 50 0230.....	150
LX 50 0048.....	151
LX 52.....	152
LX 55 0230.....	153
LX 55 0048.....	153

### Power supplies

LXPS A065.....	
LXPS A230.....	
LXPS B230.....	
LX 10 P 1000.....	
LX 10 P 2000.....	

### Optical transmitter

LX 11 S 0600.....	154
LX 11 S 0800.....	155
LX 11 S 1000.....	156
LX 11 S 1300.....	157
LX 11 S 1001.....	158
LX 11 S 1002.....	159
LX 11 S 1003.....	160
LX 11 S 1004.....	161
LX 12 S 0300.....	162
LX 12 S 0600.....	163
LX 13 S 0312.....	164
LX 13 S 0334.....	165
LX 15 S 1000.....	166
LX 15 S 2270.....	167
LX 15 S 2TA0.....	168

### Optical receivers

LX 21 S 0100.....	169
LX 22 S 0400.....	170
LX 22 H 0400.....	171
LX 23 L 0431.....	172
LX 23 L 0461.....	173

### Optical amplifiers

LX 30 S 1401.....	174
LX 30 S 1402.....	175
LX 30 S 1701.....	176
LX 30 S 1702.....	177
LX 30 S 1704.....	178
LX 30 S 2101.....	179
LX 30 S 2102.....	180

### Redundancy solutions and RF modules

LX 70.....	181
LX 71.....	181
LX 60 S.....	182

### Passive optics

LP 40 0014.....	183
LP 40.....	183
LD 72 S 5960.....	184
LD 76 S 5555.....	184
LD 77 S 27HH.....	185
LD 74 S 0128.....	185
LD 91 S 0104.....	186

### Optical transmitter 19"

LX 10 K 7001.....	187
LX 10 K 7005.....	188
LX 10 K 7F21.....	189
LX 10 L 8001.....	190
LX 10 L 8005.....	191
LX 10 S 7001.....	192
LX 10 S 7005.....	193
LX 10 S 7V05.....	194
LX 10 S 8J01.....	195
LX 10 S BF21.....	196
LX 10 S BJ01.....	197
LX 10 S BJ03.....	198
LX 10 S BN03.....	199
LX 10 S BQ05.....	200

### Optical amplifiers 19"

LX 35 S 1701.....	201
LX 35 S 1702.....	202
LX 35 S 1704.....	203
LX 35 S 1708.....	204
LX 35 S 1716.....	205
LX 35 S 1732.....	206
LX 35 S 2032.....	207
LX 35 S 2101.....	208
LX 35 S 2102.....	209
LX 35 S 2108.....	210
LX 35 S 2116.....	211
LX 37 W 1724.....	212
LX 37 W 1732.....	213
LX 37 W 2116.....	214
LX 37 S 1764.....	215

### Optical splitter 19"

LP 90 0108.....	216
LP 90 0116.....	216
LP 90 0132.....	216
LP 90 0164.....	216

### Optical receivers 19"

LX 24 S 32CI.....	217
LX 24 S 16CI.....	218
LX 24 S 08CI.....	219
LX 24 S 3261.....	220
LX 24 S 1661.....	221
LX 24 S 0861.....	222
LX 24 S 3200.....	223
LX 24 S 1600.....	224
LX 24 S 0800.....	225
LX 24 L 3200.....	226
LX 24 L 1600.....	227
LX 24 L 0800.....	228





## Optical Network Terminations



## Accessories optical components

### Global Line

LR 43 AS.....	232
LR 63 AS.....	233
LR 40 AS.....	234

### Compact Line

LR 55 AS.....	235
---------------	-----

### Value Line

LR 26 A.....	236
LR 22 2001.....	237
LR 27 2311.....	239
LR 22 6001.....	238
LR 27 6311.....	240
LR 27 2611.....	241
LR 27 6611.....	242

### Mini Line

LR 83 A 1611.....	243
LR 91.....	244
LR 92.....	246
LR 92 A 1311.....	247
LR 92 A 1451.....	248
LR 92 A 1471.....	249
LR 92 A 1491.....	250
LR 92 A 1511.....	251
LR 92 A 1531.....	252
LR 92 A 1571.....	253
LR 92 A 1591.....	254
LR 92 A 1611.....	255
LR 93 L 1611.....	256
LR 93 W 1611.....	257
LR 91 W.....	245
LR 91 W 1550.....	258
LR 95 W 1611.....	259
LR 93 1611.....	260

### Micro Line

LR 10 K LT02.....	261
LR 10 K ST01.....	262
LR 10 K LB02.....	263
LR 10 K LTw2.....	263
LR 10 K LB04.....	262

### Optical nodes accessories

#### Compact Line

LT 40 S.....	266
LT 41 S.....	266
LT 45 S 1470.....	267
LT 45 S 1490.....	267
LT 45 S 1510.....	267
LT 45 S 1530.....	267
LT 45 S 1550.....	268
LT 45 S 1570.....	268
LT 45 S 1590.....	268
LT 45 S 1610.....	268
XC 40.....	269
XE 50 FA.....	269
XE 50 F 0850.....	269
XS 40.....	269

### Optical nodes accessories

#### Value Line

LT 22 3311.....	270
LT 22 3511.....	270
LT 22 3531.....	270
LT 22 3551.....	270
LT 22 3571.....	270
LT 22 3611.....	270

### Optical nodes accessories

#### Micro Line

LRPS 0230.....	271
----------------	-----

# Table of contents



## Terrestrial antennas



## Mechanical accessories

### FM antennas

<i>UA 05</i> .....	274
<i>UE 01</i> .....	274

### UHF antennas

<i>EB 22 0297</i> .....	275
<i>EB 45 LTE</i> .....	275
<i>EB 67 LTE</i> .....	275
<i>EE 06 0297</i> .....	276
<i>EZ 45 LTE</i> .....	276

### VHF-UHF combination antennas

<i>EA 34</i> .....	277
--------------------	-----

### Mast accessories

<i>NB 10</i> .....	280
<i>NC 03</i> .....	280
<i>NC 10</i> .....	281
<i>NC 11</i> .....	281
<i>NC 85 B</i> .....	280
<i>NC 91</i> .....	281
<i>NC 95 A</i> .....	280
<i>NG 60</i> .....	281

### Wall bracket

<i>MN 03</i> .....	282
<i>MN 08</i> .....	283
<i>MN 09</i> .....	283
<i>MN 10</i> .....	283
<i>MN 11</i> .....	283

### Rafter fastener

<i>MN 90 A</i> .....	284
----------------------	-----

### Mast tube

<i>MN 17 B</i> .....	285
<i>MN 60 A 0300</i> .....	285



## Wall-outlet sockets



## Taps/Splitters

### Universal Antenna Sockets

<i>DB 03 A</i> .....	288
<i>DB 05</i> .....	288
<i>DB 07</i> .....	288
<i>DW 49 M</i> .....	311
<i>DW 49 T</i> .....	311
<i>DZ 41</i> .....	310

### Wall socket TERR/BK

<i>DB 10 1006</i> .....	289
-------------------------	-----

### Wall socket SAT

<i>DB 53</i> .....	290
<i>DB 54</i> .....	291
<i>DB 64</i> .....	292
<i>DB 33</i> .....	293

### Multimedia wall outlet sockets, individual

<i>DD 04 M 0650</i> .....	294
---------------------------	-----

### Multimedia wall outlet sockets, loop-through

<i>DD 11 M 0650</i> .....	295
<i>DD 11 0650</i> .....	296
<i>DD 15 HP</i> .....	297
<i>DD 15 M 0650</i> .....	298
<i>DD 15 TD 650</i> .....	299
<i>DD 15 0650</i> .....	300
<i>DD19M0650</i> .....	301
<i>DD 19 0650</i> .....	302
<i>DD 23 M 0650</i> .....	303
<i>DD 23 0650</i> .....	304
<i>DD 12 TD 65A</i> .....	305
<i>DD 15 TD 65A</i> .....	306
<i>DD 17 TD 65A</i> .....	307

### Multimedia wall outlet sockets, terminal socket

<i>DD 09 M 0650</i> .....	308
---------------------------	-----

### Accessories wall socket

<i>DD 99</i> .....	312
<i>DV 23</i> .....	309
<i>DV 27</i> .....	309
<i>DW 41</i> .....	310
<i>DW 42</i> .....	311
<i>DW 44</i> .....	311
<i>DW 45</i> .....	311
<i>DW 45 T</i> .....	311

### Multimedia Push- on Adapter

<i>DD 94</i> .....	313
--------------------	-----

### Plug-on splitter

<i>DM 43 A 0397</i> .....	316
<i>DM 44 A 0397</i> .....	316

### Tap CATV 1 GHz

<i>DM 21 C</i> .....	317
<i>DM 22 C</i> .....	317
<i>DM 24 C</i> .....	317
<i>DM 25 C</i> .....	317
<i>DM 31 C</i> .....	318
<i>DM 32 C</i> .....	318
<i>DM 34 C</i> .....	318
<i>DM 35 C</i> .....	318
<i>DM 36 A 4012</i> .....	319
<i>DM 36 A 4016</i> .....	319
<i>DM 36 A 4020</i> .....	319
<i>DM 36 A 4024</i> .....	319
<i>DM 36 B 4013</i> .....	320
<i>DM 37 B 6013</i> .....	320
<i>DM 38 B 8013</i> .....	320
<i>DM 39 B</i> .....	321

### Tap SAT

<i>DM 51 1010</i> .....	322
<i>DM 51 1015</i> .....	322
<i>DM 51 1020</i> .....	322
<i>DM 52 2010</i> .....	323
<i>DM 52 2015</i> .....	323
<i>DM 52 2020</i> .....	323
<i>DM 54 A 4010</i> .....	324
<i>DM 54 A 4015</i> .....	324
<i>DM 54 A 4020</i> .....	324
<i>DM 54 A 4025</i> .....	324

### Splitter CATV 1 GHz

<i>DM 02 B</i> .....	325
<i>DM 03 B</i> .....	325
<i>DM 04 B</i> .....	325
<i>DM 06 B</i> .....	326
<i>DM 08 B</i> .....	326

### Splitter SAT-ZF

<i>DM 50</i> .....	327
<i>DM 90</i> .....	327

### Splitter SAT

<i>DM 12 A</i> .....	328
<i>DM 13 A</i> .....	328
<i>DM 14 A</i> .....	328
<i>DM 16 B</i> .....	328





## Satellite Receiving Systems

### Parabol offset antennas

OA 13 A.....	386
OA 10.....	386
OA 36 G.....	387
OA 36 H.....	387
OA 36 I.....	387
OA 38 G.....	388
OA 38 H.....	388
OA 38 I.....	388
OA 85 G.....	389
OA 85 H.....	389
OA 85 I.....	389
OA 100 G.....	390
OA 100 H.....	390
OA 100 I.....	390

### Feed systems

OC 01 D.....	391
OC 02 D.....	391
OC 04 D.....	391
OC 06 D.....	391

### Accessories Parabol offset antennas

OF 85 0002.....	392
OF 85 0004.....	392

### Multiswitch, Stand alone, 5 inputs

DG 508.....	393
DG 514.....	393
DY 56 A.....	393
DY 58 A.....	393

### Multiswitch, cascade, 5 inputs

DY 12.....	394
DY 16.....	394

### Multiswitch, cascade, 5 inputs

DY 44 A.....	395
DY 46 A.....	395

### Multiswitch, cascade, 5 inputs

DY 48 A.....	397
DY 54 B.....	398
DY 56 B.....	398

DY 58 B.....	398
--------------	-----

### Multiswitch, 9 inputs

DY 04.....	399
DY 06.....	399
DY 08.....	399
DY 94 A.....	400
DY 96 A.....	400
DY 98 A.....	400

### Multiswitch, cascade, 17 inputs

DY 25.....	401
DY 26.....	401

### Multiswitch, unicable, 5 inputs

DY 64 1800.....	402
DY 64 1810.....	403

### Multiswitch, unicable, 8 inputs

DY 68 1800.....	404
DY 68 1810.....	405

### Accessories Multiswitch

DY 50 A.....	406
DY 90.....	406
DG 55.....	407

### Überspannungsschutz

DL 400.....	408
-------------	-----

### Multiswitch 5 inputs, Stand alone

DRS 0508.....	410
DRS 0512.....	411
DRS 0516.....	412
DRS 0524.....	413
DRS 0532.....	414

### Multiswitch 5 inputs, receiver power

DRR 0508.....	415
DRR 0516.....	415

### Multiswitch 5 inputs, cascade

DRC 0508.....	416
DRC 0512.....	417
DRC 0516.....	418
DRC 0524.....	419
DRC 0532.....	420

### Multiswitch 9 inputs, receiver power

DRR 0908.....	421
---------------	-----

### Multiswitch 9 inputs, cascade

DRC 0908.....	422
DRC 0912.....	423
DRC 0916.....	424
DRC 0924.....	425
DRC 0932.....	426

### Multiswitch 13 inputs, cascade

DRC 1308.....	427
DRC 1312.....	428
DRC 1316.....	429
DRC 1324.....	430
DRC 1332.....	431

### Multiswitch 17 inputs, cascade

DRC 1708.....	432
DRC 1712.....	433
DRC 1716.....	434
DRC 1724.....	435
DRC 1732.....	436

### Amplifiers

DRA 5120.....	437
DRA 9120.....	438

### Taps/Splitters

DRX 5002.....	439
DRX 9002.....	440

### Accessories

DRI 0210.....	441
DRP 1533.....	441

# Table of contents



## Amplifiers

### Multiband amplifier

VS 80 A.....	444
VX 83 B.....	444

### Split band amplifier

VS 93 B.....	445
VS 95.....	446

### In-house distribution amplifier Mini Line

VX 86.....	447
VX 87.....	448
VX 81 0S.....	449
VX 82 0S.....	450
VX 83 0S.....	451
VX 82 2P.....	452

### In-house distribution amplifier Mini Line 4 outputs

VX 67 B.....	453
--------------	-----

### In-house distribution amplifier Midi Line

VX 89 2P.....	454
VX 88 0P.....	455
VX 89 0P.....	456

### In-house distribution amplifier Home Line

VX 43 D 2018.....	457
VX 45 D 3830.....	458
VX 45 E.....	459
VX 45 2P.....	460
VX 46 2P.....	461
VX 47 2P.....	462
VX 45 0P.....	463
VX 1014.....	464
VX 1020.....	465
VX 2015 065.....	466
VX 2015 204.....	467

### In-house distribution amplifier Value Line

VX 16 C 0650.....	468
VX 19 C 0650.....	469
VX 24.....	470
VX 25.....	471
VX 26 H.....	472

VX 29 H.....	473
VX 2022 065.....	474
VX 2022 204.....	475
VX 2030 065.....	476
VX 2030 204.....	477
VX 2035 065.....	478
VX 2035 204.....	479
VX 1027.....	480
VX 1035.....	481

### Accessories Value Line

XP 0000.....	482
XP 0001.....	482
XP 0002.....	482
XP 0003.....	482
XP 0004.....	482
XP 0005.....	482
XP 0006.....	483
XP 0007.....	483
XP 0008.....	483
XP 0009.....	483
XP 0010.....	483
XP 0011.....	483
XP 0012.....	484
XP 0013.....	484
XP 0014.....	484
XP 0015.....	484
XP 0016.....	484
XP 0017.....	484
XP 0018.....	485
XP 0019.....	485
XP 0020.....	485
XP BOX 01.....	485
XPU 020.....	485
VX 27 A.....	485
VX 27 A 1200.....	486
XE 20 B 0650.....	486
XE 29.....	486
XE 54 A.....	486
XM 25 0082.....	486
XM 25 0131.....	486
VX 201 065.....	487
VX 201 204.....	487

VX 55 A.....	491
VX 56 A.....	492
VX 57 A.....	493

### Accessories Compact Line

VX 58 0407.....	494
VX 58 0607.....	494
VX 58 0703.....	494
VX 58 0855.....	494
XE 50 A 0650.....	495
XE 51 A.....	495
XE 52 A.....	495
XE 57.....	495
XM 51 A.....	495
XM 53.....	495
XM 55.....	494
XM 56.....	494
VT 51 A.....	494

### HFC amplifier Compact Line

VX 52 A.....	488
VX 53 A.....	489
VX 54 A.....	490



## Measuring receivers

### DVB-C Analyzer

WA 41 C.....498

# Contents alphabetically

## B

BK 76 0035 .....	368
BK 76 0045 .....	368
BK 96 0030 .....	368
BK 96 0040 .....	368

## D

DC 28 0S4T .....	104
DC 28 3S1T .....	104
DC 28 4S0T .....	104
DM 17 A.....	105
DB 03 A.....	288
DB 05 .....	288
DB 07 .....	288
DB 10 1006 .....	289
DB 53 .....	290
DB 54 .....	291
DB 64 .....	292
DB 33 .....	293
DD 04 M 0650 .....	294
DD 11 M 0650 .....	295
DD 11 0650 .....	296
DD 15 HP.....	297
DD 15 M 0650 .....	298
DD 15 TD 650.....	299
DD 15 0650.....	300
DD19M0650.....	301
DD 19 0650.....	302
DD 23 M 0650.....	303
DD 23 0650.....	304
DD 12 TD 65A .....	305
DD 15 TD 65A .....	306
DD 17 TD 65A .....	307
DD 09 M 0650.....	308
DV 23 .....	309
DV 27 .....	309
DW 41 .....	310
DZ 41 .....	310
DW 42 .....	311
DW 44 .....	311
DW 45 .....	311
DW 45 T.....	311
DW 49 M.....	311
DW 49 T.....	311
DD 99.....	312
DD 94.....	313
DM 43 A 0397.....	316
DM 44 A 0397.....	316
DM 21 C.....	317
DM 22 C.....	317
DM 24 C.....	317
DM 25 C.....	317
DM 31 C.....	318
DM 32 C.....	318
DM 34 C.....	318
DM 35 C.....	318
DM 36 A 4012.....	319
DM 36 A 4016.....	319
DM 36 A 4020.....	319
DM 36 A 4024.....	319

DM 36 B 4013 .....	320
DM 37 B 6013 .....	320
DM 38 B 8013 .....	320
DM 39 B.....	321
DM 51 1010.....	322
DM 51 1015.....	322
DM 51 1020.....	322
DM 52 2010.....	323
DM 52 2015.....	323
DM 52 2020.....	323
DM 54 A 4010.....	324
DM 54 A 4015.....	324
DM 54 A 4020.....	324
DM 54 A 4025.....	324
DM 02 B.....	325
DM 03 B.....	325
DM 04 B.....	325
DM 06 B.....	326
DM 08 B.....	326
DM 50.....	327
DM 90.....	327
DM 12 A.....	328
DM 13 A.....	328
DM 14 A.....	328
DM 16 B.....	328
DL 05.....	332
DL 20 A.....	332
DV 24.....	333
DV 25.....	333
DV 50.....	334
DV 54.....	334
DV 55.....	334
DV 85.....	335
DV 90.....	335
DV 95.....	335
DV 97.....	335
DV 10.....	336
DV 10 N.....	336
DV 14 N.....	337
DV 15.....	338
DV 15 N.....	338
DV 07 0397.....	339
DV 82 0397.....	339
DV 75.....	340
DV 49 A.....	340
DV 52.....	341
DV 53.....	341
DV 45.....	342
DV 46.....	342
DV 46 HQ.....	342
DX 01.....	352
DX 02.....	352
DX 03.....	353
DZ 14.....	354
DZ 15 2130 .....	354
DZ 85.....	355
DS 35 0035 .....	368
DS 35 0050 .....	368
DS 35 0150 .....	368
DS 35 0250 .....	368
DS 26 0301 .....	369
DS 26 0501 .....	369
DS 26 0901 .....	369
DS 30 U 0150.....	370

DS 30 U 0300.....	370
DS 30 U 0900.....	370
DS 32 U 0125.....	371
DS 32 U 0150.....	371
DS 32 U 0300.....	371
DS 32 U 0600.....	371
DS 32 U 0900.....	371
DS 37 U 0150.....	372
DS 37 U 0250.....	372
DS 37 U 0300.....	372
DS 37 U 0500.....	373
DS 37 U 0750.....	373
DS 37 U 1000.....	373
DS 38 U 0150.....	374
DS 38 U 0250.....	374
DS 38 U 0300.....	374
DS 38 U 0500.....	374
DS 39 U 0150.....	375
DS 39 U 0250.....	375
DS 39 U 0300.....	376
DS 39 U 0500.....	376
DS 39 U 1000.....	376
DS 40 U 0150.....	377
DS 40 U 0300.....	377
DS 40 U 0500.....	377
DS 46 U 0150.....	378
DS 46 U 0300.....	378
DS 46 U 0500.....	378
DS 47 U 0150.....	379
DS 47 U 0300.....	379
DS 47 U 0500.....	379
DS 48 U 0150.....	380
DS 48 U 0300.....	380
DS 48 U 0500.....	380
DS 49 U 0150.....	381
DS 49 U 0300.....	381
DS 49 U 0500.....	381
DS 50 U 0150.....	382
DS 50 U 0250.....	382
DS 50 U 0300.....	382
DS 50 U 0500.....	382
DG 508.....	393
DG 514.....	393
DY 12.....	394
DY 16.....	394
DY 44 A.....	395
DY 46 A.....	395
DY 48 A.....	397
DY 54 B.....	398
DY 56 B.....	398
DY 58 B.....	398
DY 04.....	399
DY 06.....	399
DY 08.....	399
DY 94 A.....	400
DY 96 A.....	400
DY 98 A.....	400
DY 25.....	401
DY 26.....	401
DY 64 1800.....	402
DY 64 1810.....	403
DY 68 1800.....	404
DY 68 1810.....	405
DY 50 A.....	406

DY 90.....	406
DG 55.....	407
DL 400.....	408
DRS 0508.....	410
DRS 0512.....	411
DRS 0516.....	412
DRS 0524.....	413
DRS 0532.....	414
DRR 0508.....	415
DRC 0508.....	416
DRC 0512.....	417
DRC 0516.....	418
DRC 0524.....	419
DRC 0532.....	420
DRR 0908.....	421
DRC 0908.....	422
DRC 0912.....	423
DRC 0916.....	424
DRC 0924.....	425
DRC 0932.....	426
DRC 1308.....	427
DRC 1312.....	428
DRC 1316.....	429
DRC 1324.....	430
DRC 1332.....	431
DRC 1708.....	432
DRC 1712.....	433
DRC 1716.....	434
DRC 1724.....	435
DRC 1732.....	436
DRA 5120.....	437
DRA 9120.....	438
DRX 5002.....	439
DRX 9002.....	440
DRJ 0210 .....	441
DRP 1533 .....	441

## E

EB 22 0297.....	275
EB 45 LTE.....	275
EB 67 LTE.....	275
EE 06 0297.....	276
EZ 45 LTE.....	276
EA 34 .....	277

## G

GT 01 O 0048.....	20
GT 01 O 0230.....	21
GT 01 W 0048.....	22
GT 01 W 0110.....	23
GT 01 W 0230.....	24
GT 12 W.....	25
GT 23 W.....	26
GT 24 W.....	28
GT 26.....	30
GT 31 W.....	32
GT 32 W.....	34
GT 33.....	36
GT 42 W.....	38



GT 41	39
GT 21 W	40
GT 22 C	42
GT 55 W 0048	44
GT 55 W 0110	44
GT 55 W 0230	44
GT DOL	45
GT M1	45
GT M3	46
GT MUX	46
GT NRED	47
GT PSISI	47
GT RED	48
GT SYMUX	48
GT FEC	49
GT SCR	49
GT T2MIDE	50
GT QT2MIPL	50
GT DT2MIDE	51
GN 20 W	54
GN 40 W 0230	55
GN 50 W 0048	55
GN 50 W 0230	56
GN 01 W2	56
GNHWUW2	58
GNHWENCW	60
GNHWTNCW	62
GN 55 W 0230	63
GN 55 W 0048	63
GNASI	64
GNCMOD	65
GNDASI	65
GNDCI	66
GNDCMOD	66
GNDOL	67
GNDSDI	67
GNDTMOD	68
GNDVMOD	68
GNHSDI	69
GNM1	69
GNM3	70
GNOCTFM	70
GNQCMOD	71
GNSCR	71
GNSSDI	72
GNSTR	72
GNSTREC	73
GNSYMUX	73
GNSYSMG	74
GNTCMOD	74
GNTMOD	75
GNVMOD	75

INCA 4410	110
INCA 4420	111
INCA 4430	112
INCA 5420 ASE	113
INCA 5420 ABR	114

## L

LXPS A065	
LXPS A230	
LXPS B230	
LX 10 P 1000	
LX 10 P 2000	
LX 50 0230	150
LX 50 0048	151
LX 52	152
LX 55 0230	153
LX 55 0048	153
LX 11 S 0600	154
LX 11 S 0800	155
LX 11 S 1000	156
LX 11 S 1300	157
LX 11 S 1001	158
LX 11 S 1002	159
LX 11 S 1003	160
LX 11 S 1004	161
LX 12 S 0300	162
LX 12 S 0600	163
LX 13 S 0312	164
LX 13 S 0334	165
LX 15 S 1000	166
LX 15 S 2270	167
LX 15 S 2TA0	168
LX 21 S 0100	169
LX 22 S 0400	170
LX 22 H 0400	171
LX 23 L 0431	172
LX 23 L 0461	173
LX 30 S 1401	174
LX 30 S 1402	175
LX 30 S 1701	176
LX 30 S 1702	177
LX 30 S 1704	178
LX 30 S 2101	179
LX 30 S 2102	180
LX 70	181
LX 71	181
LX 60 S	182
LP 40 0014	183
LP 40	183
LD 72 S 5960	184
LD 76 S 5555	184
LD 77 S 27HH	185
LD 74 S 0128	185
LD 91 S 0104	186
LX 10 K 7001	187
LX 10 K 7005	188
LX 10 K 7F21	189
LX 10 L 8001	190
LX 10 L 8005	191
LX 10 S 7001	192
LX 10 S 7005	193
LX 10 S 7V05	194
LX 10 S 8J01	195
LX 10 S BF21	196
LX 10 S BJ01	197
LX 10 S BJ03	198
LX 10 S BN03	199
LX 10 S BQ05	200

LX 35 S 1701	201
LX 35 S 1702	202
LX 35 S 1704	203
LX 35 S 1708	204
LX 35 S 1716	205
LX 35 S 1732	206
LX 35 S 2032	207
LX 35 S 2101	208
LX 35 S 2102	209
LX 35 S 2108	210
LX 35 S 2116	211
LX 37 W 1724	212
LX 37 W 1732	213
LX 37 W 2116	214
LX 37 S 1764	215
LP 90 0108	216
LP 90 0116	216
LP 90 0132	216
LP 90 0164	216
LX 24 S 32CI	217
LX 24 S 16CI	218
LX 24 S 08CI	219
LX 24 S 3261	220
LX 24 S 1661	221
LX 24 S 0861	222
LX 24 S 3200	223
LX 24 S 1600	224
LX 24 S 0800	225
LX 24 L 3200	226
LX 24 L 1600	227
LX 24 L 0800	228
LR 43 AS	232
LR 63 AS	233
LR 40 AS	234
LR 55 AS	235
LR 26 A	236
LR 22 2001	237
LR 22 6001	238
LR 27 2311	239
LR 27 6311	240
LR 27 2611	241
LR 27 6611	242
LR 83 A 1611	243
LR 91	244
LR 91 W	245
LR 92	246
LR 92 A 1311	247
LR 92 A 1451	248
LR 92 A 1471	249
LR 92 A 1491	250
LR 92 A 1511	251
LR 92 A 1531	252
LR 92 A 1571	253
LR 92 A 1591	254
LR 92 A 1611	255
LR 93 L 1611	256
LR 93 W 1611	257
LR 91 W 1550	258
LR 95 W 1611	259
LR 93 1611	260
LR 10 K LT02	261
LR 10 K ST01	262
LR 10 K LB04	262
LR 10 K LB02	263

LR 10 K LTW2	263
LT 40 S	266
LT 41 S	266
LT 45 S 1470	267
LT 45 S 1490	267
LT 45 S 1510	267
LT 45 S 1530	267
LT 45 S 1550	268
LT 45 S 1570	268
LT 45 S 1590	268
LT 45 S 1610	268
LT 22 3311	270
LT 22 3511	270
LT 22 3531	270
LT 22 3551	270
LT 22 3571	270
LT 22 3611	270
LRPS 0230	271

## M

MN 03	282
MN 08	283
MN 09	283
MN 10	283
MN 11	283
MN 90 A	284
MN 17 B	285
MN 60 A 0300	285
MZ 01	355
MK 22	358
MK 33	359
MK 15 0500	360
MK 76 A 0100	361
MK 76 A 0101	361
MK 76 A 0500	361
MK 91 0100	362
MK 91 0250	362
MK 91 0500	362
MK 96 A 0015	363
MK 96 A 0025	363
MK 96 A 0100	364
MK 96 A 0101	364
MK 96 A 0250	364
MK 96 A 0500	364
MK 96 L 0100	365
MK 96 L 0500	365
MK 96 L 0251	365
MK 91 0252	366
MK 96 A 0252	367

## N

NB 10	280
NC 03	280
NC 85 B	280
NC 95 A	280
NC 10	281
NC 11	281
NC 91	281
NG 60	281
NB 02	350

# Contents alphabetically

NB 02 F.....	350
NB 04 F.....	350
NB 05.....	351
NB 09.....	351

## O

OM 10 0646.....	100
OM 10 0648.....	101
OH 41.....	106
OL 11 0000.....	118
OL 12 0000.....	118
OL 13 0000.....	119
OL 14 0000.....	120
OL 15 0000.....	120
OL 72 0004.....	123
OL 91 0002.....	124
OL 91 0003.....	124
OL 91 0004.....	124
OL 91 0008.....	125
OL 91 0016.....	125
OL 91 0032.....	125
OL 92 0010.....	126
OL 92 0020.....	126
OL 92 0030.....	126
OL 92 0040.....	127
OL 21 0002.....	128
OL 21 0003.....	128
OL 22 0002.....	129
OL 22 0003.....	129
OL 95 0001.....	130
OL 95 1001.....	131
OL 95 1003.....	131
OL 95 1005.....	131
OL 95 1010.....	132
OL 95 1015.....	132
OL 95 1020.....	132
OL 95 1030.....	133
OL 95 1040.....	133
OL 95 1050.....	133
OL 95 1075.....	134
OL 95 1100.....	134
OL 95 1150.....	134
OL 95 1200.....	135
OL 95 2030.....	136
OL 95 2040.....	136
OL 95 2050.....	137
OL 95 2075.....	137
OL 95 2100.....	137
OL 95 2150.....	138
OL 95 2200.....	138
OL 95 4300.....	138
OL 93 0001.....	139
OL 93 0002.....	139
OL 94 0005.....	139
OL 94 0010.....	139
OL 94 0015.....	140
OLPS 0230.....	140
OL 51 0000.....	141
OL 55 0000.....	141
OL 57 0003.....	142
OL 57 0002.....	142
OL 57 0001.....	142

OL 82 0002.....	143
OL 82 0003.....	143
OL 82 0005.....	143
OL 82 0010.....	143
OL 41 0008.....	144
OL 41 0016.....	145
OL 42 0008.....	146
OL 42 0016.....	147
OA 13 A.....	386
OA 10.....	386
OA 36 G.....	387
OA 36 H.....	387
OA 36 I.....	387
OA 38 G.....	388
OA 38 H.....	388
OA 38 I.....	388
OA 85 G.....	389
OA 85 H.....	389
OA 85 I.....	389
OA 100 G.....	390
OA 100 H.....	390
OA 100 I.....	390
OC 01 D.....	391
OC 02 D.....	391
OC 04 D.....	391
OC 06 D.....	391
OF 85 0002.....	392
OF 85 0004.....	392
OH 40 A.....	78
OH 50 A.....	79
OH 50 R.....	80
OH 38.....	81
OH 45.....	82
OH 76.....	83
OH 76 F.....	84
OH 77.....	85
OH 77 D.....	86
OH 79 D.....	87
OH 79 2.....	88
OH 79 2D.....	89
OH 84.....	90
OH 85 H.....	91
OH 86 2.....	92
OH 88 H.....	93
OH 89 2.....	94
OH 66.....	95
OH 16 SC.....	96

## U

UA 05.....	274
UE 01.....	274

## V

VS 80 A.....	444
VS 83 B.....	444
VS 93 B.....	445
VS 95.....	446
VX 86.....	447
VX 87.....	448
VX 81 0S.....	449

VX 82 0S.....	450
VX 83 0S.....	451
VX 82 2P.....	452
VX 67 B.....	453
VX 89 2P.....	454
VX 88 0P.....	455
VX 89 0P.....	456
VX 43 D 2018.....	457
VX 45 D 3830.....	458
VX 45 E.....	459
VX 45 2P.....	460
VX 46 2P.....	461
VX 47 2P.....	462
VX 45 0P.....	463
VX 1014.....	464
VX 1020.....	465
VX 2015 065.....	466
VX 2015 204.....	467
VX 16 C 0650.....	468
VX 19 C 0650.....	469
VX 24.....	470
VX 25.....	471
VX 26 H.....	472
VX 29 H.....	473
VX 2022 065.....	474
VX 2022 204.....	475
VX 2030 065.....	476
VX 2030 204.....	477
VX 2035 065.....	478
VX 2035 204.....	479
VX 1027.....	480
VX 1035.....	481
VX 27 A.....	485
VX 27 A 1200.....	486
VX 201 065.....	487
VX 201 204.....	487
VX 52 A.....	488
VX 53 A.....	489
VX 54 A.....	490
VX 55 A.....	491
VX 56 A.....	492
VX 57 A.....	493
VX 58 0407.....	494
VX 58 0607.....	494
VX 58 0703.....	494
VX 58 0855.....	494
VT 51 A.....	494

## W

WA 41 C.....	498
--------------	-----

## X

XC 40.....	269
XE 50 FA.....	269
XE 50 F 0850.....	269
XS 40.....	269
XU 60.....	344
XU 60 0500.....	344
XU 64.....	345
XP 0000.....	482

XP 0001.....	482
XP 0002.....	482
XP 0003.....	482
XP 0004.....	482
XP 0005.....	482
XP 0006.....	483
XP 0007.....	483
XP 0008.....	483
XP 0009.....	483
XP 0010.....	483
XP 0011.....	483
XP 0012.....	484
XP 0013.....	484
XP 0014.....	484
XP 0015.....	484
XP 0016.....	484
XP 0017.....	484
XP 0018.....	485
XP 0019.....	485
XP 0020.....	485
XP BOX 01.....	485
XPU 020.....	485
XE 20 B 0650.....	486
XE 29.....	486
XE 54 A.....	486
XM 25 0082.....	486
XM 25 0131.....	486
XM 55.....	494
XM 56.....	494
XE 50 A 0650.....	495
XE 51 A.....	495
XE 52 A.....	495
XE 57.....	495
XM 51 A.....	495
XM 53.....	495

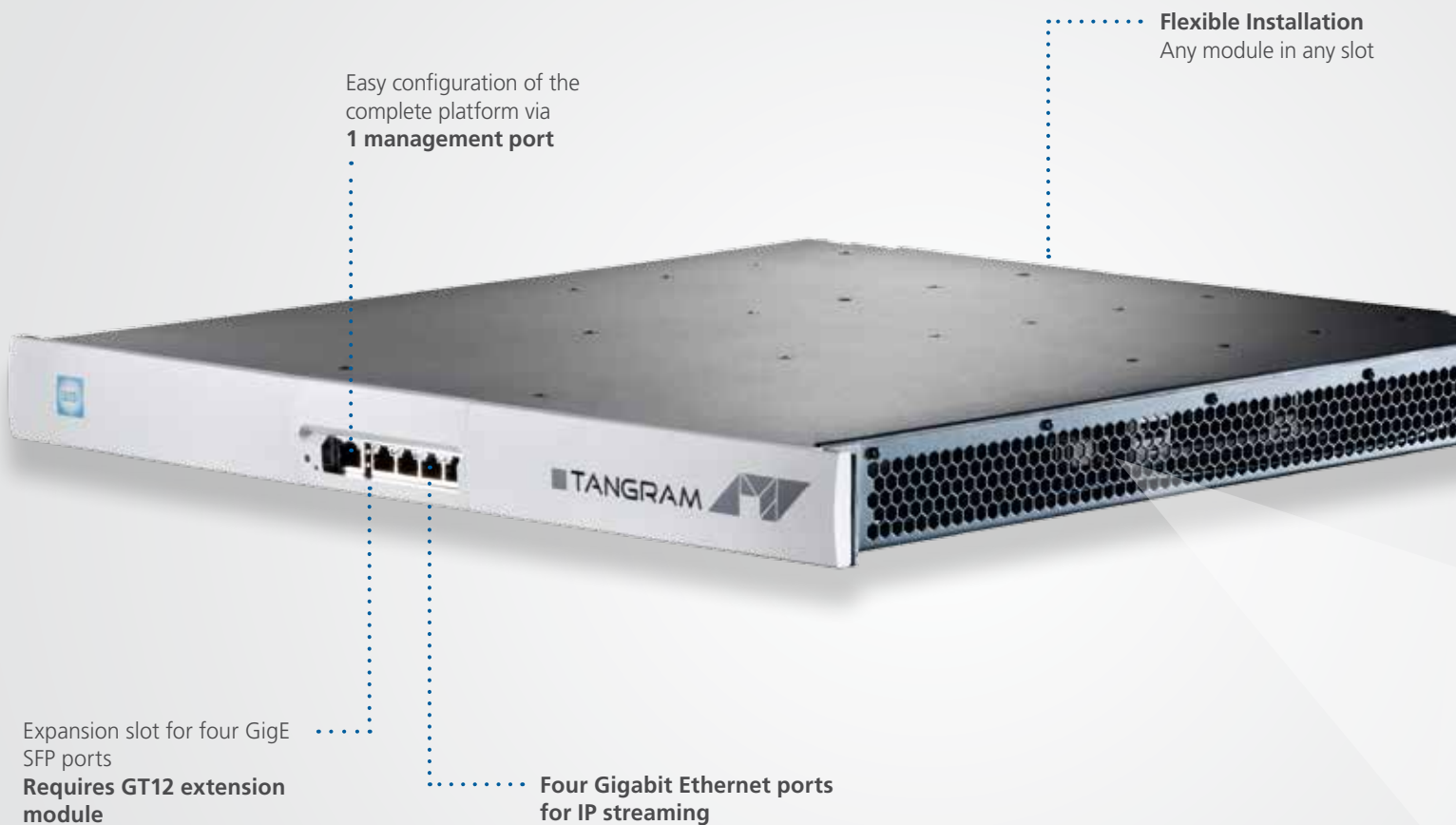
## Z

ZG 80.....	106
ZG 27.....	343
ZG 28.....	343
ZG 35 A.....	343
ZG 01.....	343
ZE 10 0200.....	346
ZE 11 0200.....	346
ZE 12 0200.....	346
ZE 13 C 0200.....	346
ZE 14 0200.....	347
ZE 15 0200.....	347
ZE 16 0200.....	347
ZG 22 0200.....	348
ZK 10 0200.....	348
ZR 10 0200.....	348
ZZ 11.....	349
ZZ 12.....	349



TANGRAM   
HIGH DENSITY VIDEO PLATFORM

# Maximum Performance, Minimum Footprint



Easy configuration of the complete platform via **1 management port**

**Flexible Installation**  
Any module in any slot

Expansion slot for four GigE SFP ports  
**Requires GT12 extension module**

**Four Gigabit Ethernet ports for IP streaming**



# Channel processing Tangram

## Tangram High Density Video Platform

The **TANGRAM platform** is highly customizable and offers advanced DVB stream processing in a small footprint 1 RU chassis concept. The TANGRAM chassis can be equipped with 6+1 modules and comes with an integrated GigE Switch.

The integrated switch operates as a configurable switching unit for audio / video streaming via Gigabit Ethernet and manages the modules for the redundancy mechanism. One port of the GT11 provides the management interface. The six rear loaded modules have different functionalities, and can perform all necessary signal processing functions.

The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT ( Over The Top ) or Web TV.

### WISI Tangram at a glance:

- Excellent cost-performance by highest density and low power consumption
- High level of reliability by full redundancy concept and hot swappable fan bay & PSUs
- Maximum flexibility and simplicity by modular architecture and easy to operate via web GUI
- Great variety for building your future proof TV network. IP, DVB-C, ASI, DVB-T/T2/S/S2, DVB-T2-MI, PAL, NTSC, SECAM, FM, ISDB-T, ATSC



# Base units

## GT 01 O 0048

Tangram basic unit, 48 V DC, without switch and controller



The TANGRAM platform is a highly customizable and offers advanced DVB stream processing in a small footprint 1RU chassis. The TANGRAM chassis GT01O0048 will be delivered with one 48 V DC power supply, with passive module for connecting the streaming interface of the modules and can be equipped with 6 modules on the backside. The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT ( Over The Top ) or Web TV.

### Technical data

Switch/Controller	
Streaming ports	6 pcs. (1 Gbps, 100 Mbps, 10 Mbps)
Control ports	1 pcs. per module (100 Mbps)
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, HTTP, IGMP, SNMPv2
Redundancy	no N+1 module redundancy
Connectors	
Module slots	6 pcs. rear panel
RJ45	6 pcs. (without modules, purely chassis)
Power supply	1 pcs. GT 55 W 0048
Optional redundant power supply unit	1 pcs. GT 55 W 0048
General data	
Power consumption max.	≤ 40 W (Chassis GT 11; fan unit without modules)
Operating voltage DC	48 V DC
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity, non condensing	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 45 x 473 mm (1HE, 19"-Rack)
Packaging volume sales unit	10,3 dm <sup>3</sup>
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	570 x 550 x 100 mm
Packaging volume shipping package	31,35 dm <sup>3</sup>
Gross weight shipping unit	9,3 kg
EAN	4010056730185
Article number	73018

### Characteristics

- Small footprint in 1RU chassis
- Carrier grade chassis with optional redundant power supplies
- Combine GT modules for your application
- Hot swappable fan tray
- Modular architecture

### Scope of delivery

- 1x Tangram basic unit GT01 1RU
- 1x Power supply 48 V DC
- 1x Quick Guide



## GT 01 O 0230

Tangram basic unit, 230 V AC, without switch and controller



The TANGRAM platform is a highly customizable and offers advanced DVB stream processing in a small footprint 1RU chassis. The TANGRAM chassis GT01O0230 will be delivered with one 230 V AC power supply, with passive module for connecting the streaming interface of the modules and can be equipped with 6 modules on the backside. The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT ( Over The Top ) or Web TV.

### Technical data

Switch/Controller	
Streaming ports	6 pcs. (1 Gbps, 100 Mbps, 10 Mbps)
Control ports	1 pcs. per module (100 Mbps)
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, HTTP, IGMP, SNMPv2
Redundancy	no N+1 module redundancy
Connectors	
Module slots	6 pcs. rear panel
RJ45	6 pcs. (without modules, purely chassis)
Power supply	1 pcs. GT 55 W 0230
Optional redundant power supply unit	1 pcs. GT 55 W 0230
General data	
Power consumption max.	≤ 10 W (only chassis without modules)
Operating voltage AC	230 V (50/60 Hz)
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity, non condensing	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 45 x 473 mm
Packaging volume sales unit	10,3 dm <sup>3</sup>
Gross weight sales unit	9.300 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	570 x 550 x 100 mm
Packaging volume shipping package	31,35 dm <sup>3</sup>
Gross weight shipping unit	9,3 kg
EAN	4010056730178
Article number	73017

### Characteristics

- Small footprint in 1RU chassis
- Carrier grade chassis with optional redundant power supplies
- Combine GT modules for your application
- Hot swappable fan tray
- Modular architecture

### Scope of delivery

- 1x Tangram basic unit GT01 1RU
- 1x Power supply 230 V AC
- 1x Cold-device plug, IEC 60320-C14
- 1x Quick Guide

# Base units

## GT 01 W 0048

Tangram basic unit, 48 V DC, with switch and controller



The TANGRAM platform is a very highly customizable and offers advanced DVB stream processing in a small footprint 1RU chassis concept. The TANGRAM chassis can fit up to 6 modules on the backside and 1 module on the front panel. The TANGRAM chassis GT01W0048 comes with one 48 V DC power supply, with an embedded switch on the backplane (GT01W, GT11) and a hot swappable fan tray. The GT01W is a carrier grade chassis and supports a fully redundant concept (1+1, n+1). The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

Technical data	
<b>Switch/Controller</b>	
Streaming ports	4 pcs. (1 Gbps, 100 Mbps, 10 Mbps)
Control ports	1 pcs. (100 Mbps)
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, HTTP, IGMP, SNMPv2, SNMPv3
Redundancy	N+1 module redundancy
<b>Connectors</b>	
Module slots	6+1 pcs. 6 back sides, 1 front
RJ45	5 pcs. (without modules, purely chassis)
Power supply	1 pcs. GT 55 W 0048
Optional redundant power supply unit	1 pcs. GT 55 W 0048
<b>General data</b>	
Power consumption max.	≤ 40 W (Chassis GT 11; fan unit without modules)
Operating voltage DC	48 V DC
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity, non condensing	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 45 x 473 mm (1HE, 19"-Rack)
Packaging volume sales unit	10,3 dm <sup>3</sup>
Gross weight sales unit	8.040 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	570 x 550 x 100 mm
Packaging volume shipping package	31.35 dm <sup>3</sup>
Gross weight shipping unit	8.04 kg
EAN	4010056722357
Article number	72235

### Characteristics

- Fully redundant concept (1+1, n+1)
- Scrambling and remultiplexing
- Small footprint in 1RU chassis
- Carrier grade chassis with optional redundant power supplies
- Combine GT modules for your application
- Hot swappable fan tray
- Modular architecture
- Embedded switch

### Scope of delivery

- 1x Tangram basic unit GT01 1RU
- 1x Power supply 48 V AC
- 1x GT11 Switch Module
- 1x Quick Guide





# GT 01 W 0110

Tangram basic unit, 110 V AC, with switch and controller



The TANGRAM platform is a very highly customizable and offers advanced DVB stream processing in a small footprint 1RU chassis concept. The TANGRAM chassis can fit up to 6 modules on the backside and 1 module on the front panel. The TANGRAM chassis GT01W0110 comes with one 110 V AC power supply, with an embedded switch on the backplane (GT01W, GT11) and a hot swappable fan tray. The GT01W is a carrier grade chassis and supports a fully redundant concept (1+1, n+1). The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

Technical data	
<b>Switch/Controller</b>	
Streaming ports	4 pcs. (1 Gbps, 100 Mbps, 10 Mbps)
Control ports	1 pcs. (100 Mbps)
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, HTTP, IGMP, SNMPv2, SNMPv3
Redundancy	N+1 module redundancy
<b>Connectors</b>	
Module slots	6+1 pcs. 6 back sides, 1 front
RJ45	5 pcs. (without modules, purely chassis)
Power supply	1 pcs. GT 55 W 0110
Optional redundant power supply unit	1 pcs. GT 55 W 0110
<b>General data</b>	
Power consumption max.	≤ 40 W (Chassis GT 11; fan unit without modules)
Operating voltage AC	110 V (50/60 Hz)
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity, non condensing	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety compliance	UL/CSA/CAN 60950-1

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 45 x 473 mm
Packaging volume sales unit	10,3 dm <sup>3</sup>
Gross weight sales unit	kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	570 x 550 x 100 mm
Packaging volume shipping package	31.35 dm <sup>3</sup>
Gross weight shipping unit	8.04 kg
EAN	4010056735975
Article number	73597

### Characteristics

- Fully redundant concept (1+1, n+1)
- Scrambling and remultiplexing
- Small footprint in 1RU chassis
- Carrier grade chassis with optional redundant power supplies
- Combine GT modules for your application
- Hot swappable fan tray
- Modular architecture
- Embedded switch

### Scope of delivery

- 1x Tangram basic unit GT01 1RU
- 1x Power supply 110V AC
- 1x Rubber conenctor, Type B NEMA 5-15, 3-pole
- 1x GT11 Switch Module
- 1x Quick Guide

# Base units

## GT 01 W 0230

Tangram basic unit, 230 V AC, with switch and controller



The TANGRAM platform is a very highly customizable and offers advanced DVB stream processing in a small footprint 1RU chassis concept. The TANGRAM chassis can fit up to 6 modules on the backside and 1 module on the front panel. The TANGRAM chassis GT01W0230 comes with one 230 V AC power supply, with an embedded switch on the backplane (GT01W, GT11) and a hot swappable fan tray. The GT01W is a carrier grade chassis and supports a fully redundant concept (1+1, n+1). The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

Technical data	
<b>Switch/Controller</b>	
Streaming ports	4 pcs. (1 Gbps, 100 Mbps, 10 Mbps)
Control ports	1 pcs. (100 Mbps)
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, HTTP, IGMP, SNMPv2, SNMPv3
Redundancy	N+1 module redundancy
<b>Connectors</b>	
Module slots	6+1 pcs. 6 back sides, 1 front
RJ45	5 pcs. (without modules, purely chassis)
Power supply	1 pcs. GT 55 W 0230
Optional redundant power supply unit	1 pcs. GT 55 W 0230
<b>General data</b>	
Power consumption max.	≤ 40 W (Chassis GT 11; fan unit without modules)
Operating voltage AC	230 V (50/60 Hz)
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity, non condensing	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 45 x 473 mm (1HE, 19"-Rack)
Packaging volume sales unit	10,3 dm <sup>3</sup>
Gross weight sales unit	8,04 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	570 x 550 x 100 mm
Packaging volume shipping package	31.35 dm <sup>3</sup>
Gross weight shipping unit	8.04 kg
EAN	4010056711610
Article number	71161

### Characteristics

- Fully redundant concept (1+1, n+1)
- Scrambling and remultiplexing
- Small footprint in 1RU chassis
- Carrier grade chassis with optional redundant power supplies
- Combine GT modules for your application
- Hot swappable fan tray
- Modular architecture
- Embedded switch

### Scope of delivery

- 1x Tangram basic unit GT01 1RU
- 1x Power supply 230 V AC
- 1x Cold-device plug, IEC 60320-C14
- 1x GT11 Switch Module
- 1x Quick Guide



## GT 12 W

Switch extension board with 4 SFP slots



The GT12 is a module of TANGRAM Family and enables to expand the number of streaming ports up to 8 ports. Furthermore it supports standard SFPs, thus enabling a connection of electrical or optical networks. Typical applications include the connection of optical transport networks with bandwidth upgrades for receiving further transport streams via IP or redundant connections to other switches and routers. TANGRAM is a modular headend architecture with high signal density and a very flexible platform. The TANGRAM modules can be combined individually and you can put them together according to your needs to create a professional video headend system.

### Technical data

#### Connectors

SFP socket	4 pcs.
Standards	INF-8074i, Specification for SFP Transceiver

#### General data

Operating voltage DC	12 V DC
Power consumption	< 0,5 W
Dimensions (width x height x depth)	100 x 220 mm
Operating temperature range	-5°C...+45 °C (ETSI EN 300 019-1-3 Class 3.1) °C
Electro Magnetic Compatibility (EMC)	EN 50083-2

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.360 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170x70x340 mm
Packaging volume shipping package	2,681 dm <sup>3</sup>
Gross weight shipping unit	0,36 kg
EAN	4010056711573
Article number	71157

### Characteristics

- 4x SFP slots for optical or electrical access
- High flexibility for bandwidth extension
- High reliability by port and service redundancy for external connection (main/backup)
- Support of standard SFPs
- Bit rate Port Monitoring

### Scope of delivery

- 1x GT12 module
- 1x Quick Guide

# Module

## GT 23 W

Tangram module IP to 8 or 12x QAM



Technical data	
<b>Streaming-Input</b>	
IP-Inputs	128 pcs.
IP-Standard	ISO/IEC 13818
IP-Input bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Input protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	Yes, with GTFEC License
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
IP-Dejittering	Yes, per default 100ms, individual adjustable
<b>QAM Modulation</b>	
Compliance	DVB-C (EN 300 429), ITU-T J.83 Annex A, B and C
Modulation type	16-, 32-, 64-, 128-, 256-QAM
Symbol rate	4,45...7,00 MS/s
Roll-Off	12%, 13%, 15%, 18%
MER	> 45 dB (typ. 46 dB)
BER	$\leq 1 \cdot 10^{-10}$
Spectrum flatness	$\pm 0,3$ dB
Shoulder attenuation	$\geq 55$ dB
<b>RF parameters</b>	
Output ports	2 pcs.
Channels per port	up to 4 (DVB-C, J.83 Annex A and C), up to 3 (J.83 Annex B)
Output impedance	75 $\Omega$
Output frequency range	45...1002 MHz
Output frequency window	34,2 MHz/port
Output frequency steps	1 kHz
Output frequency stability	$\pm 10$ kHz

Technical data	
Channel bandwidth	6/7/8 MHz
Output level (each RF port)	119 dB $\mu$ V (1 ch), 115 dB $\mu$ V (2 ch), 113 dB $\mu$ V (3 ch), 111 dB $\mu$ V (4 ch)
Output level stability	$\pm 1$ dB
Output return loss	$\geq 14$ dB (45 MHz) -1,5 dB/Octave
Output level steps	0...30 dB (0,5 dB steps)
Spurious (Inside TV-Channels)	> 60 dB
Spurious (outside TV-Channels)	45...450 MHz, typ. 66 dB, 450..1002 MHz, typ. 64 dB
<b>Processing</b>	
Service remultiplexing	Yes, with GTMUX Software option
PID filtering and remapping	Yes
PCR correction and de-jitter	Yes
Advanced PSI/SI regeneration	Yes
NIT generation	Yes, with GTPSISI or GTSYMUX
Encryption	Yes, DVB-CSA
Encryption throughput	Max. 450 Mbps total (DVB-C 8 outputs, J.83 Annex A,C), Max. 300 Mbps total (J.83 Annex B)
Compliance	ETSI EN 300 468
Processing bitrate	Max. 1200 Mbps total
Number of PIDs	Max. 2000 PIDs total
<b>Connectors</b>	
RJ45	1 pcs.
F-socket RF- output	4 pcs. (2x RF-Output, 2x Test-Output -20dB $\pm$ 1dB)
<b>General data</b>	
Power consumption	Max. $\leq 19$ W
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity (non condensing)	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety compliance	UL/CSA/CAN 60950-1
Signalling	Multicolor LEDs (Power on - green, Error - red)



The GT 23 W module is part of the Tangram product portfolio and provides the conversion from IP signals to QAM channels (digital TV programmes). GT 23 W supports a numerous of IP inputs with SPTS VBR/CBR and MPTS CBR, multiplexing and demultiplexing, PSI/SI regeneration, content encryption and can modulate up to 12 QAM channels with different standards (DVB-C/J.83 Annex A, B, C). Tangram is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept (n+1, 1+1).

#### Characteristics

- High quality IP to QAM modulation
- Up to 12 QAM channels on 2 RF outputs
- High density 72 QAM channels in 1 RU
- For measurement / monitoring test ports of the output signal
- DVB CSA Simulcrypt scrambling
- RTP/ IP input streaming with FEC error correction
- DVB/ARIB transport stream processing
- QAM channels individually switchable on/off

#### Scope of delivery

- 1x GT 23 module
- 1x Quick Guide

#### Technical data

Operation Mode	DVB-C 8 outputs J.83 Annex B, J.83 Annex C
Hardware revision	1000
Software version	3.0

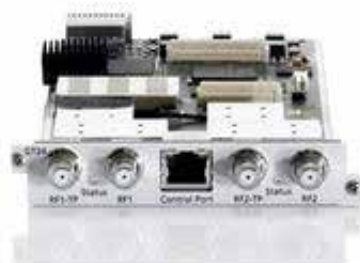
#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100 x 20 x 250 mm
Packaging volume sales unit	0,5 dm <sup>3</sup>
Gross weight sales unit	0,180 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170 x 75 x 340 mm
Packaging volume shipping package	4,3 dm <sup>3</sup>
Gross weight shipping unit	0,340 kg
EAN	4010056711771
Article number	71177

# Module

## GT 24 W

Tangram module IP to 8x COFDM



Technical data	
<b>Interface Gigabit Ethernet</b>	
Data protocol	MPEG over UDP/IP and RTP/IP
Communication protocol	Unicast and multicast IGMP V2 (optional V3)
Syntax	SPTS and MPTS (ISO/IEC 13818)
Maximum data input bitrate using several MPTS signals	>800 Mbps (using multiple MPTS signals)
Maximum MPTS input bitrate	>100 Mbps (per specific MPTS)
Services per MPTS	1024 pcs. (per module)
Number of filter	up to 32 (multicast/unicast filter)
Jitter tolerance	±100 ms
<b>TS Processing</b>	
SPTS/MPTS Multiplexing inc.	SPTS / MPTS Multiplexing inc. supported
PID-Remapping	PID-Remapping
MPTS Pass-Through	Yes
SI-Table handling	Yes
Individual Cycle Times for Outgoing PSI-/SI-Tables	Yes
Max. number of simultaneous E 16	16 pcs.
<b>COFDM Processing</b>	
MER	>40 dB (typ. 42 dB)
SNR	≥45 dB
Roll-Off	35 %
BER	≤1*10 <sup>-10</sup>
I/Q Ampl. Imbalance	≤0,10 %
I/Q Quadratur Error	≤0,10 °
Modulation	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
FFT Mode	2k, 8k switchable
Spectrum flatness	±0,3 dB
Shoulder attenuation	≥54 dB

Technical data	
<b>RF parameters</b>	
Output ports	2 pcs.
Channels per port	up to 4 (2k-mode) or 3 (2k/8k-mode)
Output impedance	75 Ω
Output frequency	45...862 MHz
Output frequency window	34,2 MHz (per port)
Output frequency steps	1 kHz
<b>Modulation COFDM</b>	
Channel bandwidth	5 / 6 / 7 / 8 MHz
Output level (each RF port)	115(1 ch), 111(2 ch), 109(3 ch), 107(4 ch) dBμV
Test port at each output	-20 dB (±1 dB)
Output level stability	±1 dB
Output return loss	≥14 dB (45 MHz -1,5 dB/Okt.)
Output level setting	0...30 dB (0,5 dB steps)
Spurious (Inside TV-Channels)	>60 dB
Spurious (Outside TV-Channels)	45...450 MHz, typ. 66 dB, 450...862 MHz, typ. 64 dB, 862...1006 MHz, typ. 64 dB
<b>Connectors</b>	
RJ45	1 pcs.
F-socket RF- output	4 pcs.
<b>General data</b>	
Power consumption max.	<20,4 W (max.)
Dimensions (width x height x depth)	100 x 200 mm
Operating temperature range	-5°C...+45 °C (ETSI EN 300 019-1-3 Class 3.1)



The GT 24 W module is part of the Tangram product portfolio. The GT 24 W module allows you to add up to 8 channels in COFDM (DVB-T) format per module to your network. Tangram is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept (n+1, 1+1).

#### Characteristics

- High quality IP to COFDM modulation
- Up to 8 COFDM channels on 2 RF outputs
- Outstanding signal parameters by direct digital modulation
- RTP/ IP input streaming with FEC error correction
- High density 48 COFDM channels in 1 RU
- DVB/ARIB transport stream processing
- For measurement / monitoring test ports of the output signal
- DVB CSA Simulcrypt scrambling

#### Scope of delivery

- 1x GT24 module
- 1x Quick Guide

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	34 x 17 x 8 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.430 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170x70x340 mm
Packaging volume shipping package	4,620 dm <sup>3</sup>
Gross weight shipping unit	0,430 kg
EAN	4010056712204
Article number	71220

# Module

## GT 26

Tangram module IP to 4x ISDB-T



Technical data	
<b>Streaming-Input</b>	
IP-Compliance	ISO/IEC 13818
IP-Inputs	32 pcs. MPTS or SPTS
IP-FEC inputs	Yes, with GTFEC License
IP-Input bitrate	Max. 100 Mbps per IPTS, Max. 850 Mbps total
IP-Input protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	VBR and CBR
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
<b>Processing</b>	
Multiplexing	Yes, with GTMUX or GTSYMUX Software option
PID filtering and remapping	Yes
<b>ISDB-T-Output</b>	
Program scheduling	Yes
Output modulation standard	ARIB STD-B31, Layer A
Output spectrum (mode)	Mode1 (2k), Mode2 (2k), Mode3 (8k)
Total carriers	1405, 2809, 5617
Output modulation type	ISDB-T
Output hierarchy	Layer A
Number of segments	13
Output S/N	>45 dB
Output MER	>41 dB typ. 43 dB
Output BER	<1*10 <sup>-10</sup>
Output FEC	1/2, 2/3, 3/4, 5/6, 7/8
Output guard intervall	1/4, 1/8, 1/16, 1/32
Output spectrum flatness	±0,3 dB
Output shoulder attenuation	>54 dB
<b>RF parameters</b>	
Output ports	2 pcs. without Test ports

Technical data	
Channels per port	1 pcs.
Output impedance	75 Ω
Output frequency range	45...862 MHz
Output frequency steps	1 kHz
Output frequency stability	±10 kHz
Channel bandwidth	6 MHz
Output level	115 dBμV
Test port at each output	- 20 dB ±1 dB
Output level stability	±1 dB
Output return loss	>14 dB (45 MHz -1,5 dB/Okt.)
Output level setting range	0...30 dB (0,5 dB steps)
Output level detection	for alarm monitoring and redundancy switching
Spurious (inside TV-Channels)	>60 dB
Spurious (outside TV-Channels)	dB 45...450 MHz typ. 66 dB min. 62 dB, 450...862 MHz typ. 64 dB min. 60 dB,
<b>Connectors</b>	
F-socket RF- output	4 pcs. (2x F-connector, 2x F-connector Test port)
RJ45	1 pcs. (100BaseTX, for local management)
<b>General data</b>	
Power consumption max.	<20,4 W
Operating temperature range	-5°C...+45 °C (ETSI EN 300 019-1-3 Class 3.1)
Electro Magnetic Compatibility (EMC)	EN 50083-2
Max. humidity (non condensing)	95 %
Signalling	Multicolor LEDs (Power on - green, Error - red)





The GT26 module is part of the Tangram product portfolio. The GT26 module allows you to add up to 2 channels in ISDB-T format per module to your network. Tangram is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept (n+1, 1+1).

#### Characteristics

- High quality IP to ISDB-T modulation
- Up to 2 ISDB-T channels on 2 RF outputs
- For measurement / monitoring test ports of the output signal
- Outstanding signal parameters by direct digital modulation
- RTP/ IP input streaming with FEC error correction
- DVB/ARIB transport stream processing
- Output detection for alarming and redundancy switching
- Up to 12 ISDB-T channels in 1 RU

#### Scope of delivery

- 1x GT26 module
- 1x Quick Guide

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100x20x220 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.480 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170x70x340 mm
Packaging volume shipping package	2,681 dm <sup>3</sup>
Gross weight shipping unit	0,460 kg
EAN	4010056737726
Article number	73772

# Module

## GT 31 W

Tangram Frontend DVB-S/S2/C/T/T2/ISDB-T



Technical data	
<b>RF-Inputs DVB-S/S2</b>	
Number of tuner	4 pcs.
Modulation type	DVB-S/S2
Frequency range	950...2150 MHz
Level range	35...90 dBμV, -74...-19 dBm
Symbol rate	1...45 Mbaud (<100 Mbit)
FEC inner DVB-S2	LDPC 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
Return loss	>12 dB
DiSEqC	DiSEqC 1.0
LNB electrical power supply	0.4 A 13/ 18 V max.
<b>RF-Inputs DVB-T/T2</b>	
Number of tuner	4 pcs.
Modulation type	DVB-T/T2
Frequency range	43...862 MHz
Level range	39...79 dBμV, -70...-30 dBm
COFDM-Spectrum DVB-T	2 k and 8 k FFT
Guard Interval	1/32, 1/16, 1/8, 1/4
FEC inner code DVB-T T2	Conv., K=7, G=1/2, 2/3, 3/4, 4/5, 5/6, 7/8
DVB-T2 bandwidth	1.7, 5, 6, 7, 8 MHz (and extended bandwidth)
Return loss	>18 dB @ 47 MHz, >12 dB @ 862 MHz
<b>RF-Inputs DVB-C</b>	
Number of tuner	4 pcs.
Modulation type	DVB-C
Frequency range	43...862 MHz
Level range	49...90 dBμV, -60...-19 dBm (QAM 256)
Symbol rate DVB-C	1...7.2 Mbaud
QAM-Modulationsart	16-, 32-, 64-, 128-, 256-QAM
Return loss	>18 dB @ 47 MHz, >12 dB @ 862 MHz

Technical data	
Compliance	EN300421, EN302307, EN300744, EN302755, EN300429, Nordig unified ver 2.2.1, D-book 7.0
<b>RF-Inputs ISDB-T</b>	
Number of tuner	4 pcs.
Modulation type	ISDB-T
Frequency range	43...862 MHz
Level range	38...90 dBμV, -71...-19 dBm
Compliance	ARIB STD-B31, Layer A
Bandwidth ISDB-T	6/7/8 MHz
<b>Streaming-In-/Output</b>	
IP-Inputs	0 pcs.
IP-Outputs	64 or 128 pcs. (128 with GTSTRX License)
IP-Compliance	ISO/IEC 13818
IP-Input bitrate	-
IP-Output bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Input protocol	-
IP-Output protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	-
IP-TS-Output format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	-
IP-FEC Outputs	32, with GTFEC License
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
<b>Processing</b>	
Service remultiplexing	Yes, with GTMUX Software option
PID filtering and remapping	Yes
PCR correction and de-jitter	Yes
Advanced PSI/SI regeneration	Yes



The GT 31 W module is part of the Tangram product portfolio. The GT 31 W module allows you to add up to 4 DVB- transport streams per module to your network. Tangram is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept.

### Characteristics

- Multi transport stream reception for DVB signals
- Up to 4 DVB-S/S2/C/T/T2/ISDB-T RF inputs
- DVB/ARIB transport stream processing
- RTP/ IP FEC output stream protection
- High density reception of 24 transponders in 1 RU
- Demultiplex MPEG-2/MPEG-4 signals for SPTS transmission
- SPTS and MPTS streaming (CBR or VBR)
- UDP and RTP MPEG transport stream over IP protocol

### Scope of delivery

- 1x GT31 module
- 1x Quick Guide

Technical data	
Encryption	Yes, DVB-CSA, AES, Samsung LYNK
Encryption throughput	Max. 600 Mbps total
Decryption	Yes, BISS (GTBISS)
Decryption throughput	Max. 300 Mbps total
Compliance	ETSI EN 300 468
Processing bitrate	Max. 1200 Mbps total
Number of PIDs	Max. 4000 PIDs total
Connectors	
RJ45	1 pcs.
F connector RF input	4 pcs.
General data	
Power consumption max.	<25 W (max.)
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity (non condensing)	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety compliance	UL/CSA/CAN 60950-1
Signalling	Multicolor LEDs (Power on - green, Error - red)
Operation Mode	-
Hardware revision	1102
Software version	3.0
Tuner	Tuner 067

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100x20x220 mm
Packaging volume sales unit	0,44 dm <sup>3</sup>
Gross weight sales unit	0.360 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170x70x340 mm
Packaging volume shipping package	4,0 dm <sup>3</sup>
Gross weight shipping unit	0,360 kg
EAN	4010056739720
Article number	73972

# Module

## GT 32 W

High-density ASI input/output module



Technical data	
<b>ASI input / output</b>	
ASI-Inputs	4 pcs. (max.)
ASI-Outputs	4 pcs. (max.)
ASI-Impedance	75 Ω
ASI-Frequency range	< 270 MHz
ASI-Return loss	> 17 dB (27-270 MHz)
ASI-Compliance	EN 50083-9:2002
ASI-Packet size Input/Output	188, 204/188 Byte
ASI-PCR restamping	Yes
ASI-Input/Output max. payload bit rate	Typical 200 Mbit/s
<b>Streaming-In-/Output</b>	
IP-Inputs	64 or 128 pcs. (128 with GTSTRX License)
IP-Outputs	64 or 128 pcs. (128 with GTSTRX License)
IP-Standard	ISO/IEC 13818
IP-Input bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Output bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Input protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-Output protocol	UDP/RTP Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	SPTS CBR/VBR, MPTS CBR
IP-TS-Output format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	Yes, with GTFEC License
IP-FEC Outputs	Yes, with GTFEC License
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
<b>Processing</b>	

Technical data	
Service remultiplexing	Yes, with GTMUX Software option
PID filtering and remapping	Yes
PCR correction and de-jitter	Yes
Advanced PSI/SI regeneration	Yes, with GTMUX Software option
Encryption	-
Encryption throughput	-
Decryption	-
Decryption throughput	-
Compliance	ETSI EN 300 468
Processing bitrate	Max. 1200 Mbps total
Number of PIDs	Max. 4000 PIDs total
<b>Connectors</b>	
RJ45	1 pcs.
BNC-socket	4 pcs. Individually configurable for in/out via UI
<b>General data</b>	
Power consumption max.	≤ 10 W
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity (non condensing)	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety compliance	UL/CSA/CAN 60950-1
Signalling	Multicolour LEDs
Operation Mode	-
Hardware revision	1102
Software version	3.0
Tuner	-



The GT 32 W module is part of the TANGRAM product portfolio. The GT32W module allows you to add up to 4 ASI streams input or output per module to your network. TANGRAM is a very high density dhighly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept.

#### Characteristics

- 4x ASI input or output, each BNC port configurable as input or output
- PID remapping and filtering
- RTP/ IP input streaming with FEC error correction
- DVB/ARIB transport stream processing
- Demultiplexing from MPTS to SPTS
- High density 24 ASI in or out in 1 RU
- Supports IP input and output streaming (CBR or VBR)
- Supports 188 byte and 204 byte packet size

#### Scope of delivery

- 1x GT32 module
- 1x Quick Guide

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Packaging volume sales unit	2,68 dm <sup>3</sup>
Gross weight sales unit	0.360 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170x70x340 mm
Packaging volume shipping package	4,0 dm <sup>3</sup>
Gross weight shipping unit	0,360 kg
EAN	4010056730161
Article number	73016

# Module

## GT 33

Tangram 8VSB - ATSC/QAM J.83 B IP Gateway



Technical data	
<b>RF-Inputs ATSC</b>	
Number of tuner	8 pcs.
Modulation type	8VSB
Frequency range	47...862 MHz
Level range	45...90 dB $\mu$ V, -64...-49 dBm
Return loss	>13 dB
<b>RF-Inputs DVB-C</b>	
Number of tuner	8 pcs.
Modulation type	J.83 Annex B
Frequency range	47...862 MHz
Level range	45...90 dB $\mu$ V, 64...-49 dBm
QAM-Modulationsart	64-, 256-QAM
Return loss	>18 dB @ 47 MHz, >12 dB @ 862 MHz
Compliance	EN300421, EN302307, EN300744, EN302755, EN300429, Nordig unified ver 2.2.1, D-book 7.0
<b>Streaming-In-/Output</b>	
IP-Inputs	0 pcs.
IP-Outputs	64 or 128 pcs.
IP-Compliance	ISO/IEC 13818
IP-Input bitrate	-
IP-Output bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Input protocol	-
IP-Output protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	-
IP-TS-Output format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	-
IP-FEC Outputs	32, with GTFEC License
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP

Technical data	
IP-Packet size	188 Byte
IP-PCR restamping	Yes
<b>Processing</b>	
Service remultiplexing	Yes, with GTMUX Software option
PID filtering and remapping	Yes
PCR correction and de-jitter	Yes
Basic PSIP regeneration	-
Encryption	Yes, DVB-CSA, AES, Samsung LYNK
Encryption throughput	Max. 600 Mbps total
Decryption	Yes, BISS (GTBISS)
Decryption throughput	Max. 300 Mbps total
Compliance	ETSI EN 300 468
Processing bitrate	Max. 1200 Mbps total
Number of PIDs	Max. 4000 PIDs total
<b>Connectors</b>	
RJ45	1 pcs.
F connector RF input	4 pcs.
<b>General data</b>	
Power consumption max.	<12 W (max.)
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity, non condensing	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety standards	UL/CSA/CAN 60950-1
Signalling	Multicolor LEDs (Power on - green, Error - red)
Operation Mode	-
Hardware revision	1001
Software version	3.0
Tuner	-



The GT 33 module is part of the TANGRAM product portfolio. The GT 33 module allows you to add up to 8 8VSB - ATSC/QAM J.83 B transport streams with 4 RF connectors per module to your network. TANGRAM is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept.

#### Characteristics

- Multi transport stream reception for ATSC and QAM signals
- 8x 8VSB-ATSC/QAM J.83 B tuners with 4 RF inputs
- RTP/ IP FEC output stream protection
- High density reception 48 transponder in 1 RU
- Demultiplex MPEG-2/MPEG-4 signals for SPTS transmission
- SPTS and MPTS streaming (CBR or VBR)
- UDP and RTP MPEG transport stream over IP protocol

#### Scope of delivery

- 1x GT33 module
- 1x Quick Guide

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100 x 20 x 220 mm
Packaging volume sales unit	0,44 dm <sup>3</sup>
Gross weight sales unit	0.360 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170 x 70 x 340 mm
Packaging volume shipping package	4,0 dm <sup>3</sup>
Gross weight shipping unit	0,360 kg
EAN	4010056746261
Article number	74626

# Module

## GT 42 W

Universal decryption module



The GT 42 module is part of the Tangram product portfolio. The GT 42 W CI module is designed as descrambler to be optionally combined with other Tangram modules. All Common Interfaces can be cascaded to reduce costs by using standard CAMs. Tangram is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept (n+1, 1+1).

Technical data	
<b>Streaming-In-/Output</b>	
IP-Inputs	32 or 64 or 128 pcs. (128 with GTSTRX Software option)
IP-Outputs	64 or 128 pcs. (128 with GTSTRX Software option)
IP-Compliance	ISO/IEC 13818
IP-Input bitrate	Max. 110 Mbit/s per IPTS, Max. 400 Mbit/s total
IP-Output bitrate	max. 100 Mbps per IPTS, max. 400 Mbps total
IP-Input protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-Output protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	SPTS CBR/VBR, MPTS CBR
IP-TS-Output format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	32 or 128 pcs. (with GTFEC Software option)
IP-FEC Outputs	32 pcs. (with GTFEC Software option)
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
IP-Dejittering	Yes, per default 100ms, individual adjustable
<b>Processing</b>	
Service remultiplexing	Yes, with GTMUX Software option
Service remultiplexing before decryption	Yes, with GTMUX Software option
PID filtering and remapping	Yes
PCR correction and de-jitter	Yes
Advanced PSI/SI regeneration	Yes
Encryption	-
Encryption throughput	-
Decryption	Yes, with CAM and Smart Card
Decryption throughput	Depending of the CAM, max. 850 Mbps total
Compliance	ETSI EN 300 468

Technical data	
Processing bitrate	Max. 1200 Mbps total
Number of PIDs	Max. 4000 PIDs total
<b>Connectors</b>	
RJ45	1 pcs.
Common Interface	4 pcs.
<b>General data</b>	
Power consumption max.	max. <10 W
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity (non condensing)	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety compliance	UL/CSA/CAN 60950-1
Signalling	Multicolor LEDs (Power on - green, Error - red)
Operation Mode	-
Hardware revision	1201
Software version	3.0.1
Tuner	- pcs.

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100x20x220 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.380 kg
Shipping unit	1 pcs.
EAN	4010056735388
Article number	73538

### Characteristics

- 4 Common Interface (DVB-CI) slots per module
- CAM watchdog - auto reset on descrambling failures
- Support for all major CA systems and CAMs
- DVB/ARIB transport stream processing
- SPTS and MPTS streaming (CBR or VBR)
- Demultiplex MPEG-2/MPEG-4 signals for SPTS transmission
- High density descrambling 24 CA modules per 1RU chassis
- FEC output support - IP error protection





# GT 41

## IP Processing Module



The GT41 module is part of the TANGRAM product portfolio. GT41 is a universal IP processing module for multiplexing/re-multiplexing MPTS <-> SPTS streams and scrambling of content. TANGRAM is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept.

Technical data	
<b>Streaming-In-/Output</b>	
IP-Inputs	32 or 64 or 128 pcs. (128 with GTSTRX Software option)
IP-Outputs	32 or 64 or 128 pcs. (128 with GTSTRX Software option)
IP-Compliance	ISO/IEC 13818
IP-Input bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Output bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Input protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-Output protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	SPTS CBR/VBR, MPTS CBR
IP-TS-Output format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	32 or 64 or 128 pcs. (with GT-FEC Software option)
IP-FEC Outputs	32 pcs. (with GTFEC Software option)
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
IP-Dejittering	Yes, per default 100ms, individual adjustable
<b>Processing</b>	
Service remultiplexing	Yes, with GTMUX Software option
PID filtering and remapping	Yes
PCR correction and de-jitter	Yes
Advanced PSI/SI regeneration	Yes
Encryption	Yes, DVB-CSA, AES, Samsung LYNK, Pro:Idiom
Encryption throughput	max. 850 Mbps total
Decryption	Yes, BISS
Bulk decryption	-
Decryption throughput	max. 850 Mbps total
Compliance	ETSI EN 300 468

Technical data	
Processing bitrate	Max. 1700 Mbps total
Number of PIDs	Max. 4000 PIDs total
<b>Connectors</b>	
RJ45	1 pcs.
F connector RF input	0 pcs.
<b>General data</b>	
Power consumption max.	<5 W (max.)
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity (non condensing)	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety compliance	UL/CSA/CAN 60950-1
Signalling	Multicolor LEDs (Power on - green, Error - red)
Operation Mode	Scrambling, Descrambling, Pro:Idiom
Hardware revision	1001
Software version	3.0.1
Tuner	- pcs.

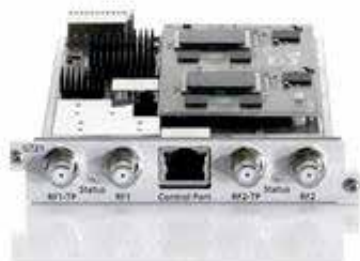
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100 x 20 x 220 mm
Packaging volume sales unit	0,44 dm <sup>3</sup>
Gross weight sales unit	0,320 kg
Shipping unit	1 pcs.
EAN	4010056712303
Article number	71230

- Characteristics**
- MPTS <-> SPTS IP Gateway
  - DVB, AES, Pro:Idiom or Samsung LYNK scrambling for IPTV out
  - DVB/ARIB transport stream processing
  - SPTS/MPTS Streaming and Reception via IP (CBR or VBR)
  - Dedicated Ethernet interface for CAS connection
  - High flexibility scrambling on PID Level

# Module

## GT 21 W

Tangram Modul IP in 6x PAL/SECAM/NTSC



Technical data	
<b>Streaming-Input</b>	
IP-Inputs	32 pcs.
IP-Compliance	ISO/IEC 13818
IP-Input bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Input protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	Yes, with GTFEC License
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
IP-Dejittering	Yes, per default 100ms, individual adjustable
<b>Video processing</b>	
Video decoder	6x MPEG-2 SD (MP@ML) 1,5..15 MBit/s or 6x MPEG-4 SD (MP@ML) Level 4.1 or 3x MPEG-4 HD (MP@HL) Level 4.1
Video downscaling	3x MPEG-4 HD and 3x MPEG-2 SD concurrent (PAL/SECAM) or 2x MPEG-4 HD and 2x MPEG-2 SD concurrent (PAL-M/NTSC)
Video-Format	4:3/16:9/4:3 Zoom
Video Standard	PAL/SECAM/NTSC
Video scaling	Auto, Ignore, Letterbox, Pan and scan, Combined, Forced
Vertical blanking interval	WST Teletext inserting (lines 7-15, 20-21), VPS inserting (line 16) WSS inserting according to aspect ratio
Subtitle	DVB and Teletext (EBU) EN 300 743
Test lines	Line 17, 18, 330, 331
Test carrier wave	Yes

Technical data	
OSD Video	Yes, text or picture PNG (<400 kB)
OSD Radio	Yes, text or picture PNG (<400 kB)
Compliance	ISO 13818-2 (MPEG-2/H.262); ISO 14496-10 (MPEG-4/H.264/AVC)
<b>Video parameters</b>	
Differential gain	<1,5 %
Differential phase	<1,5 °
Group delay time	<50 ns (-0,5...4,43 MHz)
Static nonlinearity	3 %
Video frequency response	±1 dB (10...5 MHz, CCIR 18)
S/N Video, weighted (CCIRec. 567-1)	typ. 64 dB (at 1 channel; at 2/3 channels typ. 62 dB)
2-T Puls K Faktor	K <1,2 %
Test picture	Coulor bars
<b>Audio processing</b>	
Audio decoder	ISO 13818-3 MPEG-1 (L1/L2) MPEG-2 (L1/L2), Dolby (Dolby and the double-D symbol are trademarks of Dolby Laboratories. Manufactured under license from Dolby Laboratories)
Audi Dolby Decoding	Yes, with GTDOL software option (The Dolby audio decoding functionality requires a TANGRAM GT21W HW that is Dolby enabled. You can check this on the Serial number (S/N: 0462xxxxxxxxxxx Dolby is enabled, S/N: 0460xxxxxxxxxxx Dolby is not enabled). Older TANGRAM GT21W HW versions cannot be upgraded to Dolby capability. Please contact WISI Sales for more information)
Audio language	ISO 639
Audio format	Mono/Stereo/Dual NICAM/BTSC/SAP



The GT 21 W module is part of the Tangram product portfolio. The GT 21 W module allows you to add up to 6 services in PAL / SECAM format per module to your network. Tangram is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept (n+1, 1+1).

### Characteristics

- High quality IP to analogue PAL/SECAM/NTSC modulation
- Up to 6 analogue channels on 2 RF outputs
- Outstanding signal parameters by direct digital modulation
- HD to SD downscaling functionality
- MPEG-2 H.262 and MPEG-4 H.264 decoding (SD & HD)
- For measurement / monitoring test ports of the output signal
- Temperature and output level monitoring
- RTP/ IP input streaming with FEC error correction

### Scope of delivery

- 1x GT21 module
- 1x Quick Guide

Technical data	
Audio format switching	Manual / auto
<b>Audio parameters</b>	
S/N Audio	75 % (with color testable)
Standard B/G/D/K/I/N	typ. 64 dB (weighted)
Standard NTSC	typ. 64 dB (weighted)
Standard-L	typ. 48 dB (weighted)
Frequency response	±1 dB (40 Hz...15 kHz)
<b>VSB - AM modulation</b>	
TV standards	B/G, D/K, I, L, M, N
Channel bandwidth	6/7/8 MHz
Output level (each RF port)	117 dBµV (1 ch), 113 dBµV (2 ch), 111 dBµV (3 ch)
Output level stability	±1 dB
Output return loss	≥14 dB (45 MHz) -1,5 dB/Octave
Output level setting	0...30 dB (0,5 dB steps)
Spurious (outside TV-Channels)	45...450 MHz, typ. 66 dB; 450..862 MHz, typ. 64 dB
<b>RF parameters</b>	
Output ports	2 pcs.
Channels per port	up to 3 (PAL-625/SECAM); up to 3 (PAL-M/NTSC); up to 2 (PAL-M/NTSC with BTSC)
Output impedance	75 Ω
Output frequency	45...862 MHz
Output frequency window	34,2 MHz/port
Output frequency steps	1 kHz
Output frequency stability	±10 kHz
<b>Processing</b>	
PCR correction and de-jitter	Yes
Processing bitrate	Max. 1200 Mbps total
Number of PIDs	Max. 2000 PIDs total
<b>Connectors</b>	
RJ45	1 pcs. (for local management)
F-socket RF- output	4 pcs. (2x RF-Output, 2x Test-Output -20dB ± 1dB)
<b>General data</b>	

Technical data	
Power consumption	max. ≤26 W
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity (non condensing)	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2
Safety compliance	UL/CSA/CAN 60950-1
Signalling	Multicolor LEDs (Power on - green, Error - red)
Operation Mode	PAL-625/SECAM, PAL-M/NTSC, PAL-M/NTSC with BTSC
Hardware revision	1001
Software version	3.1

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100 x 20 x 250 mm
Packaging volume sales unit	0,5 dm <sup>3</sup>
Gross weight sales unit	0,33 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170 x 75 x 340 mm
Packaging volume shipping package	4,3dm <sup>3</sup>
Gross weight shipping unit	0,48 kg
EAN	4010056729776
Article number	72977

# Module

## GT 22 C

Tangram module IP to 8x FM



Technical data	
<b>Streaming-Input</b>	
IP-Inputs	32 pcs.
IP-Compliance	ISO/IEC 13818
IP-Input bitrate	Max. 425 Mbit/s per IPTS, Max. 850 Mbit/s total
IP-Input protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	SPTS CBR/VBR, MPTS CBR
IP-FEC inputs	Yes, with GTFEC License
IP-FEC compliance	SMPTE 2022-1, SMPTE 2022-2
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
IP-Dejittering	Yes, per default 100ms, individual adjustable
<b>Audio and RDS processing</b>	
Audio decoder	ISO 13818-3 MPEG-1 (L1/L2); MPEG-2 (L1/L2)
Audio language	ISO 639
Audio format	Mono/Stereo/Joint-Stereo
Audio level range	±6 dB
Audio level step size	1 dB
Pilot tone frequency	19 kHz (±2 kHz)
Pilot tone phase stability	< ±3 °
Pilot tone level	6,75 kHz (±0,75 kHz)
RDS insertion	Yes, UECP SPB490 (dynamic and static)
RDS carrier frequency	57 kHz (±6 Hz)
RDS carrier level	2,5 kHz (±0,25 kHz)
RDS carrier phase stability	< ±10 °
<b>Audio parameters</b>	
38 kHz suppression	≥42 dB
Flatness	≤ ±0,5 dB (40 Hz...15 kHz)
15 kHz low pass filter	>40 dB (>19 kHz)

Technical data	
Total harmonic distortion	<0,2 % (75 kHz dev.)
S/N ratio (unweighted)	>60 dB (75 kHz dev.), (weighted ITU-R BS 468,4) >60 dB (75 kHz dev.)
L/R channel level difference	<1 dB (40 Hz...15 kHz)
L/R phase difference	<10 dB (40 Hz...15 kHz)
L/R separation	>43 dB (300 Hz...4 kHz)
Preemphasis Characteristics	50 μs (±2 μs)
<b>RF parameters</b>	
Output ports	1 pcs. (the second RF port is not in operation)
Channels per port	up to 8
Output impedance	75 Ω
Output frequency	87,5...108 MHz
Output frequency steps	1 kHz
Output level stability	±1 dB
Output level	102 dBμV
Output level setting	0...30 dB (0,5 dB steps)
Output return loss	≥14 dB (45 MHz -1,5 dB/Okt.)
Output spectral purity	>66 dB
Output broadband noise	< -120 dBm/Hz
<b>Processing</b>	
PCR correction and de-jitter	Yes
Processing bitrate	Max. 1200 Mbps total
Number of PIDs	Max. 2000 PIDs total
<b>Connectors</b>	
RJ45	1 pcs. (for local management)
F-socket RF- output	4 pcs. (1x RF-Output, 1x Test-Output -20dB ± 1dB, 2x not in operation)
<b>General data</b>	
Power consumption	max. ≤19 W
Operating temperature range	-5°C...+45°C, 23°F...113°F, (ETSI EN 300 019-1-3 Class 3.1)
Max. humidity (non condensing)	95 %
Electro Magnetic Compatibility (EMC)	EN 50083-2



The GT 22 C module is part of the Tangram product portfolio. The GT 22 C module allows you up to 8 services in FM format to your network. Tangram is a very high density and highly flexible solution for all kinds of networks. The WISI Tangram chassis uses a fully redundant concept (n+1, 1+1).

#### Characteristics

- High quality IP to analogue FM modulation
- Up to 8 FM channels on 1 RF output
- Advanced MPEG decoding
- Outstanding signal parameters by direct digital modulation
- High density 48 FM channels in 1 RU
- RTP/ IP input streaming with FEC error correction
- RDS extraction and insertion
- For measurement / monitoring test ports of the output signal

#### Scope of delivery

- 1x GT22 module
- 1x Quick Guide

Technical data	
Safety compliance	-
Signalling	Multicolor LEDs (Power on - green, Error - red)
Operation Mode	-
Hardware revision	1000
Software version	3.1

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100 x 20 x 250 mm
Packaging volume sales unit	0,5 dm <sup>3</sup>
Gross weight sales unit	0,33 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170 x 75 x 340 mm
Packaging volume shipping package	4,3dm <sup>3</sup>
Gross weight shipping unit	0,42 kg
EAN	4010056729783
Article number	72978

# Power supplies

## GT 55 W 0048

Additional power supply 48 VDC for redundancy



## GT 55 W 0110

Additional power supply 110 VAC for redundancy



## GT 55 W 0230

Additional power supply 230 VAC for redundancy



### Technical data

#### Connectors

Cold-device plug, IEC 60320-C14	0 pcs.	1 pcs.	1 pcs.
DC-connetors	1 pcs.	0 pcs.	0 pcs.
<b>General data</b>			
Primary voltage	-45...-75 V DC	90...145 V AC	180...265 V AC
Frequency range	- Hz	47...63 Hz	47...63 Hz
Secondary voltage	12 V DC	12 V DC	12 V DC
Power consumption	220 W	220 W	220 W
Efficiency	≥90 %	≥90 %	≥90 %
Dimensions (width x height x depth)	100 x 44 x 217 mm	100 x 44 x 217 mm	100 x 44 x 217 mm
Environmental parameters	-20...+55 °C	-20...+55 °C	-20...+55 °C
Protection class	IP30	IP30	IP30

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	280 x 200 x 90 mm	mm	mm
Gross weight sales unit	0.845 kg	kg	1.010 kg
Dimensions (WxHxD) shipping unit	mm	5,6 dm <sup>3</sup>	mm
Packaging volume shipping package	5dm <sup>3</sup>	dm <sup>3</sup>	5,6dm <sup>3</sup>
Gross weight shipping unit	0.845 kg	1.01 kg	1.01 kg
EAN	4010056712655	4010056736439	4010056712341
Article number	71265	73643	71234

# Software options



## GT DOL

Software license for Dolby Digital audio decoding



Technical data	
<b>Dolby decoding</b>	
Number of audio decoders	Up to 6 Dolby audio in to analogue audio out
Supported formats	AC-3 (Dolby Digital)
Packaging data	
Sales unit	1 pcs.
EAN	4010056731755
Article number	73175

The TANGRAM Dolby decoding is enabled by the SW option GTDOL. The Dolby decoding allows reception of Dolby audio sound and decoding to support the different audio output formats for analogue (PAL and SECAM) modulation. The GTDOL software option requires a Dolby enabled TANGRAM HW. The WISI TANGRAM video platform is a high-density TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

## GT M1

Software license for additional 1 year SLA extension



Technical data	
<b>SLA Service License Agreement</b>	
SLA Validity	SLA validity Indicated in the TANGRAM UI, and at <a href="http://www.wisiconnect.tv">www.wisiconnect.tv</a>
Initial SLA period	One year SLA from the date of registration at <a href="http://www.wisiconnect.tv">www.wisiconnect.tv</a>
Initial SLA	SLA one year included in the HW purchase
SLA function	Valid SLA allowing upload of new firmware releases
SLA expiry consequences	Upload of new firmware will be possible until the expiry of the SLA.
Value Proposition of the SLA	Access to the newest software release and the possibility to update the firmware on the GTx Equipment. Access to the update release and the possibility to update the firmware on the GTx Equipment. Access to Knowledge base and technical documentation <a href="http://www.wisiconnect.tv">www.wisiconnect.tv</a>
Packaging data	
Sales unit	1 pcs.
EAN	4010056730697
Article number	73069

The TANGRAM product platform is continuously evolved and developed with new or extended functionalities. To benefit from the development, you can upload new firmware versions in your existing installations. To be allowed to upgrade to a new firmware version, you must have a valid Service License Agreement (SLA). All TANGRAMs get a one year SLA from the date of registration on [www.wisiconnect.tv](http://www.wisiconnect.tv). To extend the SLA, the SW option GTM1 (1 year extension) or GTM3 (3 years extension) is required. The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

# Software options

## GT M3

Software license for additional 3 year SLA extension



## GT MUX

Software license for multiplexing



Technical data	
<b>SLA Service License Agreement</b>	
SLA Validity	SLA validity Indicated in the TANGRAM UI, and at www.wisiconnect.tv
Initial SLA period	One year SLA from the date of registration at www.wisiconnect.tv
Initial SLA	SLA one year included in the HW purchase
SLA function	Valid SLA allowing upload of new firmware releases
SLA expiry indication	Expired SLA indicated in the TANGRAM UI, and at www.wisiconnect.tv. Not allowed to upload firmware with release date prior to SLA expiry date
SLA expiry consequences	No restriction for the current operation or functionality SW options remaining
Value Proposition of the SLA	Upload of new firmware will be possible until the expiry of the SLA.

Packaging data	
Sales unit	1 pcs.
EAN	4010056730703
Article number	73070

The TANGRAM product platform is continuously evolved and developed with new or extended functionalities. To benefit from the development, you can upload new firmware versions in your existing installations. To be allowed to upgrade to a new firmware version, you must have a valid Service License Agreement (SLA). All TANGRAMs get a one year SLA from the date of registration on www.wisiconnect.tv. To extend the SLA, the SW option GTM1 (1 year extension) or GTM3 (3 years extension) is required. The WISI TANGRAM video platform is a high density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

Technical data	
<b>Remultiplexing and PSI / SI</b>	
Service remultiplexing	Yes
PID filtering and PID remapping	Yes
PID/SID auto anti-clash	Yes
PCR correction and de-jitter	Yes
Dynamic PSI/SI processing	Yes
Advanced PSI/SI regeneration	Yes
Supported tables	PAT, CAT, PMT, TSMT, NIT, SDT, EIT, TDT, TOT
DVB compliance	ETSI EN 300 468
Packaging data	
Sales unit	1 pcs.
EAN	4010056734497
Article number	73449

Remultiplexing and PSI / SI handling in the TANGRAM platform and in a system of TANGRAMs are enabled by the software options GTMUX (remultiplexing in a single TANGRAM), GTPSIS (enabling PSI/SI sharing between TANGRAMs), and GTSYMUX (remultiplexing in a system of TANGRAMs).





## GT NRED

Software license for N+1, 1+1 module redundancy



## GT PSISI

Software license for PSI/SI sharing and regeneration



Technical data	
<b>N+1 Redundancy</b>	
Number of Redundancy groups	3
Number of operational units	max. 5 (1 redundancy group with 1 TANGRAM GTx module)
Auto fail-over	Yes
Recovery	Manual recovery
Packaging data	
Sales unit	1 pcs.
EAN	4010056730734
Article number	73073

The N+1 module redundancy for GT01Wx is enabled by the SW option GTNRED. The N+1 redundancy for GT01Wx provides the functionality to set up redundancy group, and assigning TANGRAM modules as a „master“ or „reserve“ or „none“ for a group. The „reserve“ TANGRAM in a redundancy group is kept „offline“ until it needs to be used due to a failure in an operational TANGRAM. The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

Technical data	
<b>Remultiplexing and PSI / SI</b>	
Service remultiplexing	Yes
PID filtering and PID remapping	Yes
PID/SID auto anti-clash	Yes
PCR correction and de-jitter	Yes
Dynamic PSI/SI processing	Yes
Advanced PSI/SI regeneration	Yes
Supported tables	PAT, CAT, PMT, TSDT, NIT, SDT, EIT, TDT, TOT
DVB compliance	ETSI EN 300 468
Packaging data	
Sales unit	1 pcs.
EAN	4010056734503
Article number	73450

Remultiplexing and PSI / SI handling in the TANGRAM platform and in a system of TANGRAMs are enabled by the software options GTMUX (remultiplexing in a single TANGRAM ), GTPSISI (enabling PSI/SI sharing between TANGRAMs), and GTSYMUX (remultiplexing in a system of TANGRAMs).

# Software options

## GT RED

IP input stream redundancy



## GT SYMUX

Software license for multiplexing and PSI/SI sharing



Technical data	
IP input stream redundancy	
Input modes supported	IP Inputs
Number of alternative inputs	One main input and up to 3 alternative inputs
Fail-over triggering	Bit rate = 0
Multicast and UDP source selection	Yes
Source address selection	Yes
Packaging data	
Sales unit	1 pcs.
EAN	4010056730727
Article number	73072

IP input redundancy in the TANGRAM is enabled by the SW options GTRED. The IP input redundancy handles switching between sources carrying identical information, e.g. dual sources for securing operation also for cases where one source fails completely. The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

Technical data	
Remultiplexing and PSI / SI	
Service remultiplexing	Yes
PID filtering and PID remapping	Yes
PID/SID auto anti-clash	Yes
PCR correction and de-jitter	Yes
Dynamic PSI/SI processing	Yes
Advanced PSI/SI regeneration	Yes
Supported tables	PAT, CAT, PMT, TSMT, NIT, SDT, EIT, TDT, TOT
DVB compliance	ETSI EN 300 468
Packaging data	
Sales unit	1 pcs.
EAN	4010056734480
Article number	73448

Remultiplexing and PSI / SI handling in the TANGRAM platform and in a system of TANGRAMs are enabled by the software options GTMUX (remultiplexing in a single TANGRAM ), GTPSISI (enabling PSI/SI sharing between TANGRAMs), and GTSYMUX (remultiplexing in a system of TANGRAMs).



## GT FEC

Software licence for IP streaming with FEC Error correction or protection



Technical data	
<b>FEC Error Correction IP inputs</b>	
Standards	SMPTE 2022-1-2007, ProMPEG CoP#3
Input protocol	RTP/ IP
Matrix size, L	in 1D mode: 1 ... 20 / in 2D mode: 4 ... 20
Matrix size, D	4 ... 20
Matrix size, L*D	≤100
<b>FEC Error Protection IP outputs</b>	
Standards	SMPTE 2022-1-2007, ProMPEG CoP#3
Output protocol	RTP/ IP
Matrix size, L	in 1D mode: 1 ... 20 / in 2D mode: 4 ... 20
Matrix size, D	4 ... 20
Matrix size, L*D	≤100
Packaging data	
Sales unit	1 pcs.
EAN	4010056730710
Article number	73071

The TANGRAM GTFEC SW option provides an advanced error correction and error protection for IP Streams. For IP SPTS or MPTS streaming reception FEC is useful to correct errors in the packets and improving the quality of service. FEC for output streaming with error protection enables TV operators to deliver high-quality error resistant IP streams from the headend. The WISI TANGRAM video platform is a highdensity digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connectedTV and OTT (Over The Top) or Web TV.

## GT SCR

Software license for DVB-Simulcrypt-Scrambling



Technical data	
<b>DVB-CSA / Simulcrypt interface</b>	
Interface	IP
Number of encrypted PIDs	64 PIDs per output
Number of SCG	64 SCGs per output (64 CWGs per output)
Scrambleable outputs	DVB-C (QAM), DVB-T (COFDM)
Supported outputs	ECMG <=> SCG: V2 and V3 / EMMG/PDG <=> MUX: V2 and V3, IPTV
DVB compliance	DVB-Simulcrypt (ETSI TS 103 197)
Packaging data	
Sales unit	1 pcs.
EAN	4010056730741
Article number	73074

Scrambling in the TANGRAM is enabled by the SW options GTSCR (Simulcrypt scrambling). The GTSCR SW option allows you to use the TANGRAM as a scrambler for encryption of the output services by connecting to a Conditional Access Server (CAS) via the IP interface. The WISI TANGRAM video platform is a high-density digital TV headend for contribution of digital TV via IP networks and end-to-end IPTV solutions such as video-on-demand, connected TV and OTT (Over The Top) or Web TV.

# Software options

## GT T2MIDE

T2-MI de-encapsulation



## GT QT2MIPL

T2-MI de-encapsulation



### Technical data

Number of de-encapsulators	1
Number of PLPs	2
DVB-Compliance	T2-MI EN TS 102 733

### Packaging data

Sales unit	1 pcs.
EAN	4010056738248
Article number	73824

The TANGRAM T2-MI de-encapsulation is enabled by the SW options GTT2MIDE (1 de-encapsulator with up to 2 PLPs), GTDT-2MIDE (2 de-encapsulator with up to 4 PLPs) and GTQT2MIPL (4 additional PLPs). Complying with T2- MI EN TS 102 773.

### Technical data

Number of PLPs	4
DVB-Compliance	T2-MI EN TS 102 733

### Packaging data

Sales unit	1 pcs.
EAN	4010056738228
Article number	73822

The TANGRAM T2-MI de-encapsulation is enabled by the SW options GTT2MIDE (1 de-encapsulator with up to 2 PLPs), GTDT-2MIDE (2 de-encapsulator with up to 4 PLPs) and GTQT2MIPL (4 additional PLPs). Complying with T2- MI EN TS 102 773.



## GT DT2MIDE

T2-MI de-encapsulation



Technical data	
Number of de-encapsulators	2
Number of PLPs	4
DVB-Compliance	T2-MI EN TS 102 733

Packaging data	
Sales unit	1 pcs.
EAN	4010056738235
Article number	73823

The TANGRAM T2-MI de-encapsulation is enabled by the SW options GTT2MIDE (1 de-encapsulator with up to 2 PLPs), GTDT-2MIDE (2 de-encapsulator with up to 4 PLPs) and GTQT2MIPL (4 additional PLPs). Complying with T2- MI EN TS 102 773.

**CHAMELEON**   
SOFTWARE-BASED HEADEND PLATFORM

# The unique head end concept

**Low power consumption**  
reduces operating costs

**Pro:Idiom encoding**  
to protect premium content

Reducing system complexity  
by **high density function blocks**



**High scalability**  
from applications in  
hotels to city carriers

**Activation of new functionality**  
by upload via software option

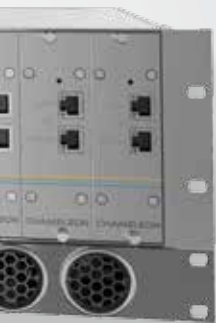


# Channel processing Chameleon

## Software-based headend solution

**WISI Chameleon** is an extremely flexible headend system, with only a single module type. The integrated blocks can change their function according to your needs. They are prepared for all current and future applications and are ideal for both the Transition analogue and digital as well as to feed HFC and IP distribution platforms.

..... Extended  
PSI / SI reprocessing



### WISI Chameleon at a glance:

- One hardware for all applications
- Flexibility through software applications
- Scalability in function and installation size
- Operational stability
- Easy installation, commissioning and operation
- Excellent performance, also suitable for large network operators
- Redundant power supplies ensure the overall availability of the system



# Base units

## GN 20 W

Chameleon base unit, 230 V AC, 19", 1 HE, for 2 modules



### Technical data

Dimensions (width x height x depth)	mm 1 HE, 19"-Rack
Module slots	2 pcs.
Power supplies	2 pcs.
Operating voltage AC	100...240 V (50/60 Hz)
Power supply	V DC
Power consumption	18 W

### Connectors

### General data

### Output

### Switch/Controller

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	3.300 kg
Shipping unit	pcs.
Gross weight shipping unit	3.3 kg
EAN	4010056731021
Article number	73102

### Characteristics

- Integrated power supply system
- Integrated ventilato
- For one or two chameleon-modules
- Power supply of the Chameleon modules via backplane connector
- Mounting set for chameleon module contained in the scope of delivery

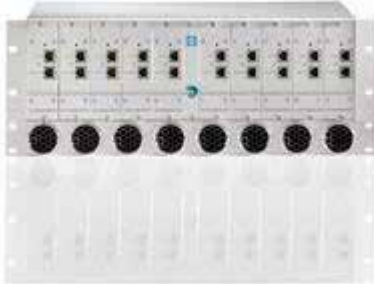
The Chameleon GN 20 is a 19 „1U basic unit for up to two Chameleon modules. The GN 20 has a built-in power supply and fan. The Chameleon GN 20 can be used individually or in conjunction with an existing installation to include additional Chameleon modules.





## GN 40 W 0230

Chameleon base unit, 230 V AC, 19", 4 HE, for 10 modules



## GN 50 W 0048

Chameleon base unit, 48 V DC, 19", 3 HE, for 10 modules, embedded switch



Technical data	
<b>Connectors</b>	
Module slots	10 pcs.
<b>Power supply</b>	
Power supplies	1 pcs.
<b>General data</b>	
Operating voltage AC	180... 265 V (47...63 Hz)
Power consumption	<245 W
Dimensions (width x height x depth)	443 x 176 x 270 mm (4 HE, 19"-rack)
Operating temperature range	-20...+50 °C
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	385 x 135 x 540 mm
Gross weight sales unit	6.460 kg
Packaging volume shipping package	28dm <sup>3</sup>
Gross weight shipping unit	6.46 kg
EAN	4010056712594
Article number	71259

The Chameleon GN 40 W 0230 is a 19" 4HE basic unit for up to 10 Chameleon modules.

Technical data	
<b>Switch/Controller</b>	
Streaming ports	4 pcs. (1 Gbit/s)
Control ports	1 pcs. (1 Gbit/s)
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, Multicast / Unicast
Redundancy	N+1 module redundancy
<b>Connectors</b>	
Module slots	10 pcs.
RJ45	5 pcs.
<b>Power supply</b>	
Power supplies	1 pcs.
Optional redundant power supply unit	1 pcs.
<b>General data</b>	
Operating voltage DC	48 V DC
Power consumption	<245 W
Dimensions (width x height x depth)	443 x 132 x 475 mm (3 HE, 19"-Rack)
Operating temperature range	-20...+50 °C
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	570 x 530 x 170 mm
Gross weight sales unit	12.500 kg
Packaging volume shipping package	51.4 dm <sup>3</sup>
EAN	4010056712679
Article number	71267

The Chameleon GN 50 W 0048 is a 19" 3HE basic unit for up to 10 Chameleon modules. The GN 50 W 0048 has an integrated power supply and ventilation system. The Chameleon GN 50 W 0048 can be used alone or in connection with an existing installation to add additional Chameleon modules. A redundant power supply unit and a IP switch can be integrated.

# Base units

## GN 50 W 0230

Chameleon base unit, 230 V AC, 19", 3 HE, for 10 modules, embedded switch



Technical data	
<b>Switch/Controller</b>	
Streaming ports	4 pcs. (1 Gbit/s)
Control ports	1 pcs. (100 Mbit/s)
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, Multicast / Unicast
Redundancy	N+1 module redundancy
<b>Connectors</b>	
Module slots	10 pcs.
RJ45	5 pcs.
<b>Power supply</b>	
Power supplies	1 pcs.
Optional redundant power supply unit	1 pcs.
<b>General data</b>	
Operating voltage AC	180... 265 V (47...63 Hz)
Power consumption	<245 W
Dimensions (width x height x depth)	443 x 132 x 475 mm (3 HE, 19"- Rack)
Operating temperature range	-20...+50 °C
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	570 x 530 x 170 mm
Gross weight sales unit	12.440 kg
Packaging volume shipping package	51.4 dm <sup>3</sup>
Gross weight shipping unit	12.44 kg
EAN	4010056712617
Article number	71261

The Chameleon GN 50 W 0230 a 19" 3HE basic unit for up to 10 Chameleon modules. The GN 50 W 0230 has an integrated power supply and ventilation system. The Chameleon GN 50 W 0230 can be used alone or in connection with an existing installation to add additional Chameleon modules. A redundant power supply unit and a IP switch can be integrated.

## GN 01 W2

Chameleon base unit, 230 V AC, wall mounting, for 2 modules



Technical data	
<b>Switch/Controller</b>	
Category	Layer 2+
Multicast	IGMP V2 + V3
Protocols	RTP, UDP, HTTP, IGMP, SNMPv2
Redundancy	N+1 module redundancy
<b>Connectors</b>	
Module slots	2 pcs.
F-socket	3 pcs.
Power supply	V DC
Power supplies	2 pcs.
<b>General data</b>	
Operating voltage AC	100...240 V (50/60 Hz)
Power consumption	18 W
Dimensions (width x height x depth)	295 x 216 x 105 mm
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	34 x 30 x 15 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	2.140 kg
Shipping unit	pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	
Gross weight shipping unit	1.975 kg
EAN	4010056729417
Article number	72941

The GN 01W2 is a wall mount for up to two Chameleon modules. Ventilation system and power supply unit are integrated in the (module) rack.



# Module

## GNHWUW2

Chameleon Module



Technical data	
<b>Input DVB-S/S2</b>	
Input frequency range	925...2175 MHz
Input level range	44...84 dB $\mu$ V
Symbol rate	1...45 MS/s (max. 100 Mbit/s)
Spectral inversion	Yes, selectable
DVB-S-Compliance	DVB-S (EN 300 421)
DVB-S2-Compliance	DVB-S2 (EN 302 307)
<b>Input DVB-C/T/T2</b>	
Input frequency range DVB-C/T/ T2	43...1002 MHz
Input level range DVB-T	39...79 dB $\mu$ V (-70...-30 dBm)
Input level range DVB-T2	39...79 dB $\mu$ V (-70...-30 dBm)
Input level range DVB-C	49...79 dB $\mu$ V (-60...-30 dBm)
band width DVB_T	6/7/8 MHz
band width DVB_T2	1.7/5/6/7/8 MHz
band width DVB_C	8 MHz
Symbol rate DVB-C	1...7,2 Mbaud
DVB-T-Compliance	DVB-T (EN 300 744)
DVB-T2-Compliance	DVB-T2 (ETSI EN 302 755)
DVB-C-Compliance	DVB-C (EN 300 429, Appendix A)
<b>Input ISDB-T</b>	
Input frequency range ISDB-T	47...862 MHz
Input level range ISDB-T	38...90 dB $\mu$ V
Bandwidth ISDB-T	6/7/8 MHz
ISDB-T-Compliance	ISDB-T (ARIB STD-B3)
<b>ASI input / output</b>	
Input max. payload bit rate	200 Mbps (typ.)
Output max. payload bit rate	200 Mbps (typ.)
PCR restamping	Yes
Paket size	188 Byte
<b>IPTV In-/ Output</b>	
Input bitrate IP-interface	max. 110 Mbit/s pro IPTS, max. 200 Mbit/s total

Technical data	
Output bitrate IP interface	max. 110 Mbps per IPTS, max. 400 Mbps total
Output protocol	UDP/RTP Multicast/Unicast
IPTV TS Input format	CBR/VBR, max. 20 SPTS/MPTS
IPTV TS Output format	CBR/VBR, max. 20 SPTS/MPTS
<b>DVB-C Modulation</b>	
Number of output channel	4 pcs.
QAM-Modulationsart	16-, 32-, 64-, 128-, 256-QAM
Symbol rate	2.4...13.6 Mbaud
MER	44 dB (typ. for 256-QAM)
Output frequency range	40...860 MHz
Output level 1	105 dB $\mu$ V (51...858 MHz, 1 channel)
Output level 2	102 dB $\mu$ V (51...858 MHz, 2 channel)
Output level 3	99/96 dB $\mu$ V (51...858 MHz, 3 channels/4 channels)
Spurious suppression	>60 dB
<b>SDI / HD-SDI output</b>	
Video-Format	SDI, Audio embedded
Audio format	Mono, Stereo, Joint Stereo
SDI-SD conformity	SMPTE 259M, SMPTE 272M
<b>MPEG Decoder – Audio / Video</b>	
Video decoder	MPEG2 MP@ML, MPEG2 MP@HL, bis zu MPEG4 H.264 AVC, HiP, level 4
Aspect ratio	Letterbox, Pan/Scan, 14:9, WSS
Teletext	Subtitle Teletext or DVB teletext
<b>VSB - AM modulation</b>	
Number of output channel	2 pcs.
Video standard	PAL B/G, D/K, I, SECAM D/K, B/G, L
Group delay pre-correction	B/G general, D/K GOST20532-75, M FCC, not any
Audio format	
Video modulation	VSB AM (negative or positive)



The Chameleon module GN HWUW2 covers nearly all functions for cable TV and SMATV. The module is suitable for the processing of antenna signals via DVB-T/T2, DVB-C, DVB-S/S2, as well as IP and ASI delivered signals. The module possesses 2-CI-interfaces, 2BNC-sockets, 2RJ45, 2 F-sockets and 2 SGMII-sockets. For the special application you only need a special software licence - the hardware does not have to be updated.

Technical data	
Video bandwidth	4,2/5,0/6,0 MHz
audiomodulation	audio FM or AM
Output frequency range	48...855 MHz
Output level	dBµV max. 111 dBµV (1 channel); max. 108 dBµV (2 channels)
S/N Video, weighted (CCIRrec. 567-1)	>65 dB
C/N, broadband	>70 dB (65 dB typical at adjacent channel)
NICAM standard	NICAM 728 (EN 300 163)
Spurious suppression	>60 dBc
FM- modulation radio	
Number of output channel	8 pcs.
audio decoding	MPEG-1 Layer I/II
Audio format	Mono, Stereo, Joint Stereo
Modulation type	FM (Referenz ITU-R BS.450-3)
FM-modulation depth limit	Yes
RDS generator, dynamic / static	Yes (Reference EN50067)
Output frequency range	85...108 MHz (100 kHz step size)
Output level	92 dBµV (max.)
Audio-S/N	dB >60 dB (mono); >55 dB (stereo)
C/N, broadband	65 dB (typ.)
Spurious suppression	dB typ. 60 dBc (FM band 87.5...108 MHz); >50 dBc (outside FM band)
CI and decryption	
Number of CI slots	2 pcs. (accessible from rear)
Bit rate	55/62/72 Mbps
Multichannel decryption	Yes
Service level decryption	Yes
PID level decryption	Yes
Compliance	EN 50221
DVB SCA-Scrambler / Simulcrypt Interface	
DVB-Compliance	DVB-Symulcrypt (ETSI TS 103 197)

Technical data	
Interface	IP
Number of encrypted PIDs	64 PIDs per output
Scramble outputs	DVB-C, J.83AnnexB/C, DVB-T, DTMB, ASI
Connectors	
BNC-socket	2 pcs. (ASI in/out, SDI out)
RJ45	2 pcs. (IPTV in/out, control)
Common Interface	2 pcs.
F-socket RF- output	2 pcs.
SGMII socket	2 pcs. (Data- and management interface for GN 50)
General data	
Operating voltage DC	12 V DC
Power consumption	16 W (typ.)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	290 x 165 x 50 mm
Gross weight sales unit	0.860 kg
Packaging volume shipping package	2.4 dm <sup>3</sup>
Gross weight shipping unit	0.46 kg
EAN	4010056724115
Article number	72411

The Chameleon module GN HWUW2 covers nearly all functions for cable TV and SMATV. The module is suitable for the processing of antenna signals via DVB-T/T2, DVB-C, DVB-S/S2, as well as IP and ASI delivered signals. The module possesses 2-CI-interfaces, 2BNC-sockets, 2RJ45, 2 F-sockets and 2 SGMII-sockets. For the special application you only need a special software licence - the hardware does not have to be updated.

# Module

## GNHWENCW

Chameleon HD/SD encoder with HDMI



Technical data	
<b>SD-SDI input</b>	
Number of ports	2 pcs. (BNC connector)
Video input	SDI, Audio embedded
Audio input	Stereo, joint stereo, dual, mono
Input format SDI	576i50, 480i60
Impedance	75 Ω
Compliance	SMPTE 259M-C-270C, SMPTE 272M
<b>HD-SDI Input</b>	
Number of ports	1 pcs. (BNC port, hard wired to BNC port 1 )
Video input	HD-SDI, Audio imbedded
Audio input	Stereo, joint stereo, dual, mono
Input format HD-SDI	1080i50, 1080i60, 720p50, 720p60
Impedance	75 Ω
Compliance	HD-SDI SMPTE 292M, SMPTE 299M
BNC-socket	1 pcs. (HD-SDI video)
<b>HDMI input</b>	
HDMI number of ports	1 pcs. (HDMI)
Input format HDMI	1080i50, 720p50, 576i50
compliance HDMI	HDMI 1.4a (no scaling)
<b>Analog video input</b>	
Number of ports	2 pcs. (BNC connector)
Input format	CBVS (Composite FBAS-signal) PAL (B/G, D/K, H, I, M, N), NTSC, SECAM
Impedance	75 Ω
Input level	1 V <sub>ss</sub> (± 0,4 V)
Input frequency range	20 Hz ... 5 MHz
Frequency response	≤ ±2 dB (20 Hz...4 MHz)
<b>Analog audio input</b>	
Number of ports	2 pcs. 3,5 mm jack ports (Audio in 1 and Audio in 2)

Technical data	
Input format	Left, Right asymmetrical
Impedance	600 Ω/15 kΩ (switchable)
RF input level	-4 dBm (500 mV <sub>eff</sub> )
Input level range	-18...+18 dB <sub>μ</sub> V
Input frequency range	40 Hz...15 kHz
<b>IP TS Output</b>	
Output bitrate	50 Mbit (max.)
Connector	GN50: SGMII GigE, GN40: RJ45 GigE
Output protocol	UDP/RTP Multicast/Unicast
IPTV TS Output format	CBR/VBR (MPTS or SPTS)
IP TS Output capacity	max. 2 TS
<b>TS Processing</b>	
Multiplexing	ISO 13818-1 (MPEG-2 TS)
PID setting	Automatic
PSI/SI setting	Automatic creation of PAT, PMT, SDT
<b>ASI TS output</b>	
Number of ports	1 pcs. (F connector)
Paket size	188 Byte
Output power	dBm 1 TS (MPTS or SPTS)
<b>MPEG Decoder – Audio / Video</b>	
Video system	ISO/IEC 14496-10 (H.264/AVC) High Profile, level 4.0
Picture size	1080i 50, 720p 50 (MPEG-4 HD), 576i 50 (MPEG-4 SD)
Aspect ratio	16:9 for HD; 4:3 for SD
Bit rate	1...16 Mbps (up to 24 Mbit/s in peaks)
Audio-system	ISO 11173-3 (MPEG-1 L2), Dolby Digital AC3, MPEG-2 AAC (LC(HE))
Number of audio channels	2 per video input
Sampling frequency	48 kHz
Bit rate	384/448 Kbps (max. MPEG1 L2/ AC3, AAC)



The CHAMELEON ENCODER adds the feature of MPEG encoding to the CHAMELEON product line. With the same form factor as the CHAMELEON modules, the CHAMELEON ENCODER can be used in any CHAMELEON base unit. The CHAMELEON ENCODER allows you to add services available in audio/video format, in SDI/HD-SDI format or in HDMI format to your digital network.

### Characteristics

- Encoding of 1 HD-SDI or 1 HDMI signal
- Encodiing of 2 SDI or analogue signals
- Gigabit Ethernet output
- Output: MPEG-4 over UDP/IP or ASI
- Control and management via web UI

Technical data	
Audio modes	Stereo
<b>Connectors</b>	
Display	2 LED (green/red)
SDI/video input	BNC-socket
HDMI input	Type A connector
Analog audio input	3,5 mm jack socket
ASI output connector	F female, 75 Ω
GigE/Control/Power supply (Backplane)	CompactPCI Type C (SGMII)
GigE / Control for GN40	2 x RJ45 GigE, 1 streaming, 1 management
<b>General data</b>	
Operating voltage DC	12 V DC nom. (9...14 VDC)
Power consumption	15 W (typ.)
Dimensions (width x height x depth)	230 x 105 x 40 mm (without connectors)
Weight	0,64 kg approx.
Integrated control	embedded web server
Operating temperature range	+5...+45 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	290 x 165 x 50 mm
Gross weight sales unit	0.745 kg
Packaging volume shipping package	2.4 dm <sup>3</sup>
Gross weight shipping unit	0.745 kg
EAN	4010056734558
Article number	73455

# Module

## GNHWTNCW

Transcoder module



The GNHWTNCW module is part of the CHAMELEON product portfolio. The GNHWTNCW SD/HD transcoder module is able to transcode Video/Audio signals to different MPEG codecs.

Technical data	
<b>Streaming-In-/Output</b>	
IP-Inputs	2 pcs. CBR
IP-Outputs	3 pcs. CBR
IP-Compliance	ISO/IEC 13818
IP-Input bitrate	max. 100 Mbps per IPTS, max. 400 Mbps total
IP-Output bitrate	max. 110 Mbps per IPTS, max. 400 Mbps total
IP-Input protocol	UDP/RTP Multicast, IGMP v2 and v3
IP-Output protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP-TS-Input format	CBR
IP-TS-Output format	CBR
IP-Packet format	MPEG over UDP/IP and RTP/IP
IP-Packet size	188 Byte
IP-PCR restamping	Yes
<b>ASI-In-/Output</b>	
ASI-Inputs	2 pcs.
ASI-Outputs	1 pcs.
ASI-Compliance	EN 50083-9:2002
In-/Output max. payload bitrate	200 Mbit/s
ASI-PCR restamping	Yes
<b>Processing/Transcoding</b>	
Transcoding	Up to 4 HD or SD channels
Supported video formats	MPEG-2 SD, MPEG-2 HD, MPEG2 MP@ML, MPEG2 MP@HL, MPEG-4 AVC SD, MPEG-4 AVC HD, MPEG-4 AVC MP@L4.0, MPEG-4 AVC HP@L4.0
Supported audio formats	MPEG 1 layer II, AAC, max. 2 audio streams per stream
Supported resolutions	1080i, 720p, 576i, 480i
Supported tables	PAT and PMT
PCR correction and de-jitter	Yes
<b>Connectors</b>	
F-socket ASI-output	1 pcs.

Technical data	
BNC-socket ASI-input	2 pcs.
RJ45	0 pcs.
<b>General data</b>	
Power consumption max.	< 15 W
Operating temperature range	-5°C...+45 °C (ETSI EN 300 019-1-3 Class 3.1)
Electro Magnetic Compatibility (EMC)	EN 50083-2
Max. humidity (non condensing)	95 %
Signalling	Multicolor LEDs (Power on - green, Error - red)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	290x165x50 mm
Gross weight sales unit	0,720 kg
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,860 kg
EAN	4010056730949
Article number	73094

### Characteristics

- Transcoding of up to 4 HD or 4 SD channels per module
- Transcoding MPEG-4/AVC <--> MPEG-2
- Supports MPEG-2 H.262 and MPEG-4 H.264
- Supported formats: 1080i, 720p, 576i, 480i
- Inputs options for transcoding: ASI or IP Multicast
- Outputs options for Transcoding: ASI or IP Multicast/Unicast
- High density: Transcodes up to 24 HD or SD channels in 1 RU
- Full decode and re-encode transcoder architecture

### Scope of delivery

- 1x GNHWTNCW module
- 1x Quick Guide





## GN 55 W 0230

Chameleon power supply unit,  
230 V AC



## GN 55 W 0048

Chameleon power supply unit,  
48 V DC



### Technical data

#### Connectors

Cold-device plug, IEC 60320-C14	1 pcs.	1 pcs.
---------------------------------	--------	--------

#### General data

Primary voltage	180...265 V AC	180...265 V AC
Secondary voltage	12 V DC	12 V DC
Power consumption	220 W	220 W
Efficiency	≥90 %	≥90 %
Dimensions (width x height x depth)	100 x 44 x 217 mm	100 x 44 x 217 mm
Environmental parameters	-20...+55 °C	-20...+55 °C
Protection class	IP30	IP30

### Packaging data

Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	278 x 198 x 86 mm	278 x 198 x 86 mm
Gross weight sales unit	1.010 kg	1.010 kg
Packaging volume shipping package	4.8 dm <sup>3</sup>	4.8 dm <sup>3</sup>
Gross weight shipping unit	6.46 kg	6.46 kg
EAN	4010056722241	4010056722258
Article number	72224	72225

# Software options

## GNASI

Software licence for one ASI Interface



Technical data	
Number of ports	pcs. 2 BNC ports, configurable for in/out via UI
Input/Output max. payload bit rate	Typical 200 Mbit/s
PCR restamping	Yes
Packet size Input/Output	188 Byte
Compliance	EN 50083-9:2002, ASI-C

Packaging data	
Sales unit	1 pcs.
EAN	4010056717537
Article number	71753

The CHAMELEON ASI inputs and outputs are enabled by the SW options GNASI (single ASI in/out). Complying to the EN 50083-9:2002, ASI-C, the Chameleon ASI inputs and outputs provides professional interconnection between Chameleon modules as well as interconnection to other Headend equipment.



## GNCMOD

Software licence for one DVB-C output

## GNDASI

Software licence for two ASI interfaces



### Technical data

Symbol rate	2.4-13.6 MS/s
DVB compliance	DVB-C (EN 300 429, Appendix A)
Output frequency	40-860 MHz

### Packaging data

Sales unit	1 pcs.
EAN	4010056717476
Article number	71747

The CHAMELEON DVB-C modulators are enabled by the SW options GNCMOD (single DVB-C out). Complying to the DVB-C EN 300 429 Annex A, the Chameleon QAM modulators gives professional DVB-C outputs for all types and sizes of cable networks.

### Technical data

Number of ports	pcs. 2 BNC ports, configurable for in/out via UI
Input/Output max. payload bit rate	Typical 200 Mbit/s
PCR restamping	Yes
Packet size Input/Output	188 Byte
Compliance	EN 50083-9:2002, ASI-C

### Packaging data

Sales unit	1 pcs.
EAN	4010056722326
Article number	72232

The CHAMELEON ASI inputs and outputs are enabled by the SW options GNDASI (dual ASI in/out). Complying to the EN 50083-9:2002, ASI-C, the Chameleon ASI inputs and outputs provides professional interconnection between Chameleon modules as well as interconnection to other Headend equipment.

# Software options

## GNDICI

Software licence for two CI interfaces



## GNDCMOD

Software licence for two DVB-C outputs



Technical data	
Number of CI slots	2 pcs. (accessible from rear)
Bit rate	55/62/72 Mbps
Multichannel decryption	Yes
Service level decryption	Yes
PID level decryption	Yes
Compliance	EN 50221

Packaging data	
Sales unit	1 pcs.
EAN	4010056717575
Article number	71757

The CHAMELEON decryption via Common Interface are enabled by the SW option GNDICI (dual Common Interface). The CHAMELEON module has two Common Interface slots accessible from the rear of the module. Complying to the EN 50221, and supporting multiservice decryption via professional CAMs the CHAMELEON CI implementation gives professional decryption for all types and sizes of Headends.

Technical data	
Symbol rate	2.4- 13.6 MS/s
DVB compliance	DVB-C (EN 300 429, Appendix A)
Output frequency	40- 860 MHz

Packaging data	
Sales unit	1 pcs.
EAN	4010056717483
Article number	71748

The CHAMELEON DVB-C modulators are enabled by the SW options GNDCMOD (dual DVB-C out). Complying to the DVB-C EN 300 429 Annex A, the Chameleon QAM modulators gives professional DVB-C outputs for all types and sizes of cable networks.



## GNDOL

Software license for enabling the Dolby Digital decoder



## GNDSDI

Software licence for two SD-SDI outputs



Technical data	
Number of audio decodings	Up to 2 Dolby audio into analogue audio out
Supported formats	AC-3 (Dolby Digital)
Packaging data	
Sales unit	1 pcs.
EAN	4010056717643
Article number	71764

The CHAMELEON Dolby decoding for analogue output is enabled by the SW option GNDOL. The Dolby decoding allows reception of Dolby audio sound and decoding to support the different audio output formats for analogue (PAL and SECAM) modulation. The GNDOL SW option requires a Dolby enabled Chameleon HW.

Technical data	
Video output	SDI, Audio embedded
Audio output	Stereo, joint stereo, dual, mono
Bit rate	270 Mbps
Compliance	SMPTE 259M, SMPTE 272M
Connector type	2x BNC (Connectors shared with ASI)

Packaging data	
Sales unit	1 pcs.
EAN	4010056722333
Article number	72233

The CHAMELEON SDI outputs are enabled by the SW option GNDSDI (dual SDI output). Complying to the SMPTE 259M and SMPTE 272M, the Chameleon SDI outputs gives access to broadcast grade video and audio for professional applications in all types and sizes of Headends.

# Software options

## GNDTMOD

Software licence for two DVB-T outputs



Technical data	
COFDM-Mode	2k, 8k switchable
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC	1/2, 2/3, 3/4, 5/6, 7/8
MER	More than 38 dB, typical 40 dB
Modulation	QPSK, 16QAM, 64QAM
Output frequency	40...860 MHz

Packaging data	
Sales unit	1 pcs.
EAN	4010056717506
Article number	71750

The Chameleon DVB-T modulators are enabled by the SW option GNDTMOD (dual DVB-T out). The DVB-T modulator supports both 2k and 8k mode, and all defined settings for modulation, FEC and Guard Interval. Complying to the DVB-T EN 300 744, the Chameleon DVB-T modulator gives professional DVB-T outputs for all types and sizes of cable networks.

## GNDVMOD

Software licence for two analogue TV output



Technical data	
Standards	PAL B/G, D/K, I, SECAM D/K, B/G, L
Output frequency	48...855 MHz
S/N Video, weighted (CCIRrec. 567-1)	> 65 dB
C/N, broadband	Typ. 75 dB (72 dB typical at adjacent channel)

Packaging data	
Sales unit	1 pcs.
EAN	4010056717520
Article number	71752

The Chameleon analogue modulators are enabled by the SW option GNDVMOD (dual analogue RF out). The analogue RF modulators supports PAL and SECAM modulation.



## GNHSDI

Software licence for one HD-SDI output

## GNM1

Software license for additional 1 year SLA extension



### Packaging data

Sales unit	1 pcs.
EAN	4010056717551
Article number	71755

### Packaging data

Sales unit	1 pcs.
EAN	4010056718510
Article number	71851

# Software options

## GNM3

Software license for additional 3 year SLA extension



## GNOCTFM

Software licence for eight FM radio outputs



Packaging data	
Sales unit	1 pcs.
EAN	4010056718527
Article number	71852

The CHAMELEON product platform is continuously evolved and developed with new or extended functionalities. To benefit from the development, you can upload new firmware versions in your existing installations. To be allowed to upgrade to a new firmware version, you must have a valid Service License Agreement (SLA). All Chameleons get a one year SLA from the date of registration. To extend the SLA, you buy the SW option GNM3 (3 years extension).

Technical data	
audio decoding	MPEG-1 Layer I/II
Modulation	FM (Referenz ITU-R BS.450-3)
RDS insertion	Yes (Reference EN50067)
Output frequency	87.5- 108 MHz, 100 kHz step size MHz
S/N	> 60 dB (mono)/ > 55 dB (stereo) dB
C/N, broadband	Typical 65 dB / Typical 60 dBc (FM band 87.5- 108 MHz) dB

Packaging data	
Sales unit	1 pcs.
EAN	4010056717674
Article number	71767

The CHAMELEON FM modulators are enabled by the SW option GNOCTFM (8 FM out). The FM modulators supports mono, stereo and joint stereoooutput, and can handle RDS insertion. Complying to ITU-R BS.450-3, the Chameleon FM modulator gives you high quality FM output for any size of cable network.





## GNQCMOD

Software licence for four DVB-C outputs



## GNSCR

Software licence for multiple DVB simulcrypt scrambler



### Technical data

Symbol rate	2.4- 13.6 MS/s
DVB compliance	DVB-C (EN 300 429, Appendix A)
Output frequency	40-860 MHz

### Packaging data

Sales unit	1 pcs.
EAN	4010056718466
Article number	71846

The CHAMELEON DVB-C modulators are enabled by the SW option GNQCMOD (quadruple DVB-C out). Complying to the DVB-C EN 300 429 Annex A, the Chameleon QAM modulators gives professional DVB-C outputs for all types and sizes of cable networks.

### Technical data

Interface	IP
Number of encrypted PIDs	64 PIDs per output
Number of SCG	64 SCGs per output (64 CWGs per output)
Scramble outputs	DVB-C, DVB-T, ASI, (IP)
Interface protocol version support	ECMG <=> SCG: V2 and V3 / EMMG/PDG <=> MUX: V2 and V3
DVB compliance	DVB-Simulcrypt (ETSI TS 103 197)

### Packaging data

Sales unit	1 pcs.
EAN	4010056717599
Article number	71759

The encryption in Chameleon will be activated with the software option GNSCR (simulcrypt-encryption). The GNSCR software option enables the Chameleon to encrypt the output services. This is done through connection with a CAS server via IP interface.

# Software options

## GNSSDI

Software licence for one SD-SDI output



Technical data	
Video output	SDI, Audio embedded
Audio output	Stereo, joint stereo, dual, mono
Bit rate	270 Mbps
Compliance	SMPTE 259M, SMPTE 272M
Connector type	2x BNC (Connectors shared with ASI)

Packaging data	
Sales unit	1 pcs.
EAN	4010056717544
Article number	71754

The CHAMELEON SDI outputs are enabled by the SW options GNSSDI (single SDI output). Complying to the SMPTE 259M and SMPTE 272M, the Chameleon SDI outputs gives access to broadcast grade video and audio for professional applications in all types and sizes of Headends.

## GNSTR

Software licence for IP streaming interface



Technical data	
Input bitrate	Mbit max. 110 Mbit/s pro IPTS, max. 200 Mbit/s total
Output bitrate	Mbit max. 110 Mbit/s pro IPTS, max. 200 Mbit/s total
Connector type	RJ45 (GigE); SGMII (Backplane for GN50)
Output protocol	UDP/RTP Multicast/Unicast
Input protocol	UDP/RTP Multicast/Unicast
IPTV TS Input format	CBR, 20 TS (MPTS oder SPTS)
IPTV TS Output format	CBR/VBR, max. 20 SPTS/MPTS
Time stamp and de-jitter	Yes

Packaging data	
Sales unit	1 pcs.
EAN	4010056717612
Article number	71761

The CHAMELEON IP streaming inputs and outputs are enabled by the SW options GNSTR (IP streaming in/out) and GNSTREC (IP streaming in/out with FEC in). The IP streaming in/out allows you to use the Chameleon as a streaming device (tuner in to IP out) or as an Edge device (IP in and RF modulated analogue or digital output).



## GNSTREC

Software licence for IP streaming with FEC Error correction or protection

## GNSYMUX

GNSYMUX LICENSE SYSTEM REMUX



Technical data	
Input bitrate	Mbit max. 110 Mbit/s pro IPTS, max. 200 Mbit/s total
Output bitrate	Mbit max. 110 Mbit/s pro IPTS, max. 200 Mbit/s total
Input protocol	UDP/RTP Multicast/Unicast
Output protocol	UDP/RTP Multicast/Unicast
Connector type	RJ45 (GigE); SGMII (Backplane for GN50)
IPTV TS Input format	CBR, 20 TS (MPTS oder SPTS)
IPTV TS Output format	CBR/VBR, max. 20 SPTS/MPTS
Time stamp and de-jitter	Yes
Packaging data	
Sales unit	1 pcs.
EAN	4010056717698
Article number	71769

The CHAMELEON IP streaming inputs and outputs are enabled by the SW option GNSTREC (IP streaming in/out with FEC in). The IP streaming in/out allows you to use the Chameleon as a streaming device (tuner in to IP out) or as an Edge device (IP in and RF modulated analogue or digital output).

Technical data	
Service remultiplexing	Yes
PID filtering and PID remapping	Yes
PID/SID auto anti-clash	Yes
PCR correction and de-jitter	Yes
Dynamic PSI/SI processing	Yes
Advanced PSI/SI regeneration	Yes
Supported tables	PAT, CAT, PMT, TSDT, NIT, SDT, EIT, TDT, TOT, RST, ST
DVB compliance	ETSI EN 300 468
Packaging data	
Sales unit	1 pcs.
EAN	4010056717605
Article number	71760

# Software options

## GNSYSMG

Software licence for system-wide module and transportstream overview



## GNTCMOD

Software licence for three DVB-C outputs



Packaging data	
Sales unit	1 pcs.
EAN	4010056717650
Article number	71765

Packaging data	
Sales unit	1 pcs.
EAN	4010056718459
Article number	71845

The CHAMELEON DVB-C modulators are enabled by the SW option GNTCMOD (triple DVB-C out). Complying to the DVB-C EN 300 429 Annex A, the Chameleon QAM modulators gives professional DVB-C outputs for all types and sizes of cable networks



## GNTMOD

Software licence for one DVB-T output

## GNVMOD

Software licence for one analogue TV output



Technical data	
COFDM-Mode	2 k/8 k
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC	1/2, 2/3, 3/4, 5/6, 7/8
MER	More than 38 dB, typical 40 dB
Modulation	QPSK, 16QAM, 64QAM
Output frequency	40-860 MHz
Packaging data	
Sales unit	1 pcs.
EAN	4010056717490
Article number	71749

The Chameleon DVB-T modulators are enabled by the SW option GNTMOD (single DVB-T out). The DVB-T modulator supports both 2k and 8k mode, and all defined settings for modulation, FEC and Guard Interval. Complying to the DVB-T EN 300 744, the Chameleon DVB-T modulator gives professional DVB-T outputs for all types and sizes of cable networks.

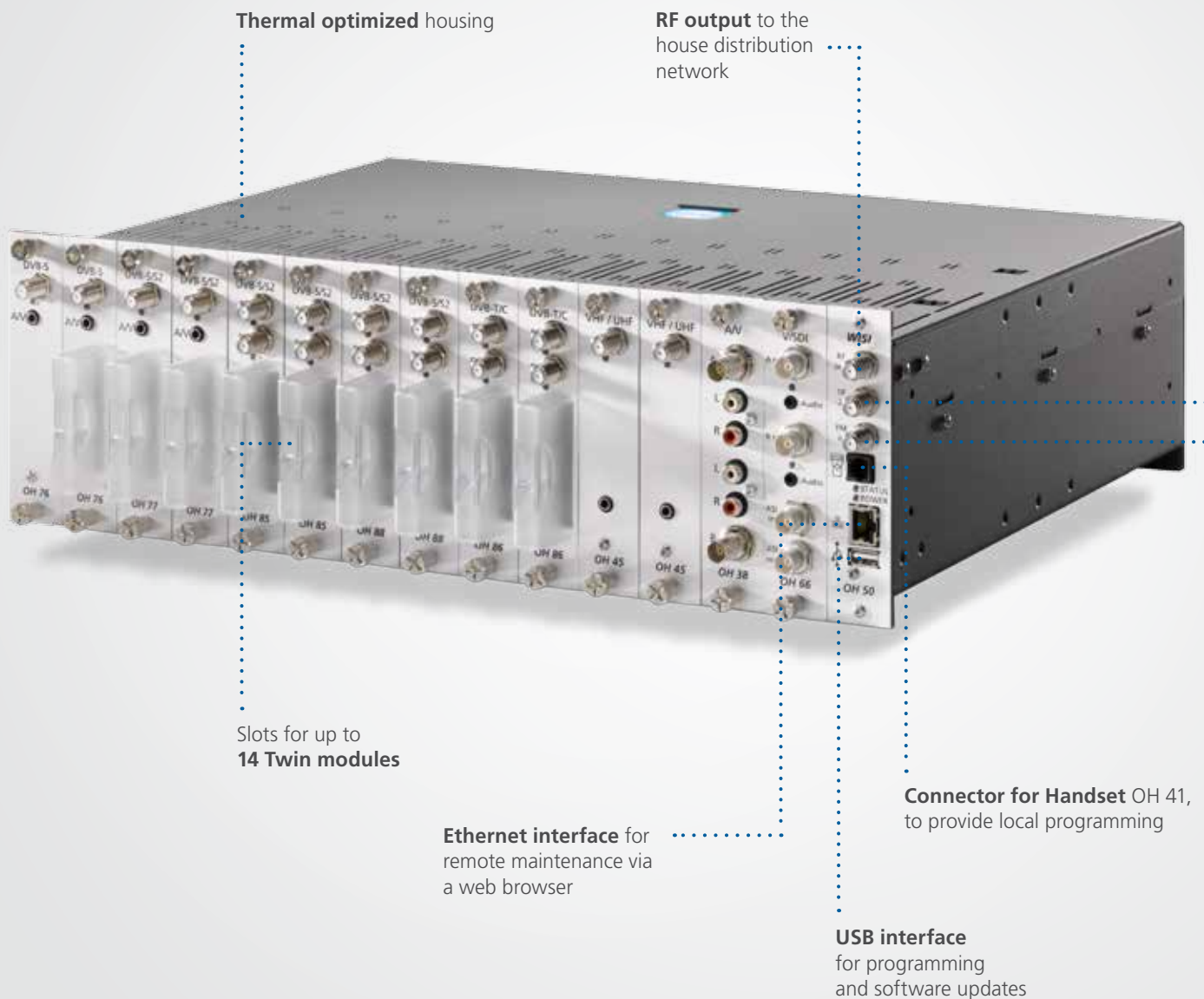
Technical data	
Standards	PAL B/G, D/K, I, SECAM D/K, B/G, L
Output frequency	48...855 MHz
S/N Video, weighted (CCIRrec. 567-1)	> 65 dB
C/N, broadband	Typical 75 dB (72 dB typical at adjacent channel)
Packaging data	
Sales unit	1 pcs.
EAN	4010056717513
Article number	71751

The Chameleon analogue modulators are enabled by the SW option GNVMOD (single analogue RF out). The analogue RF modulators supports PAL and SECAM modulation.

**COMPACT HEADEND**  
FLEXIBLE HARDWARE-BASED HEADEND PLATFORM



# Compact, Powerful and Extremely Flexible



**Thermal optimized housing**

**RF output** to the house distribution network

Slots for up to **14 Twin modules**

**Ethernet interface** for remote maintenance via a web browser

**USB interface** for programming and software updates

**Connector for Handset OH 41**, to provide local programming



# Channel processing Compact Headend

**Communication determines our everyday life, inform us, imparts knowledge and experiences. They help us understanding and solving problems.**

WISI make every effort to provide you with the necessary tools for your communication. With fully committed, highly motivated employees and the latest technology for the communication of today and tomorrow.

Powerful in technology, compact dimensions, modular and extensible, the new **WISI Compact Headend system OH** combines all the advantages of a future-proof and economic headend.

**WISI Compact Headend OH** can be equipped easily with up to 14 modules, offering an optimal, space-saving channel processing up to 14 analog and 28 digital channels in a 3U 19 „rack.

**WISI Compact Headend OH** is equipped with a high-performance power supply. The modules have a low power consumption in order to keep operating costs low. The USB port and the RJ45 connector can be used to perform a software update of the base unit and individual modules and to store their configuration. All functions can also be set remotely via a web browser.

Test point **-20 dB**



Additional **FM input**



**Wall mounting** of the WISI Compact headend OH.

# Base units

## OH 40 A

Compact Headend basic unit, 230 V AC, 3 HE, for 7 modules



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 7 module slots it offers channel processing for 7 analogue or 28 digital channels in one chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

### Technical data

Frequency range TV	47...862 MHz (output combiner/amplifier)
Frequency range FM	87,5...108 MHz (FM-amplifier)
Input level FM	70...100 dB $\mu$ V
Gain FM	25 dB
Attenuator FM	0...30 dB (1 dB-steps)
Output level	110 dB $\mu$ V
Output attenuator	0...15 dB
Output test point	-20 dB

### Connectors

Module slots	7 pcs. (OH-module)
F-socket	3 pcs. (FM-input, output, output measurement socket)
USB	1 pcs. (Software-Update, Konfiguration)
RJ11	1 pcs. (OH 41)
RJ45	1 pcs. (remote monitoring and programming)

### General data

Operating voltage AC	180...265 V
Power consumption	<185 W
LNB supply voltage	12.5 V
LNB electrical power supply	1.2 A
Dimensions (width x height x depth)	276 x 159 x 385 mm
Operating temperature range	-20...+50 °C

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	5.450 kg
Packaging volume shipping package	23.5 dm <sup>3</sup>
Gross weight shipping unit	5.45 kg
EAN	4010056731441
Article number	73144

### Characteristics

- Base unit for analogue and digital channel processing
- Slots for up to 7 modules ( 7 analog bzw. 28 digital channels)
- Wall mounting
- Integrated FM amplifier
- Programable with OH 41 hand-set
- Update via USB-connection (USB memory stick)
- Integrated remote supervision modul OH 51 A (license optional)
- High output power





# OH 50 A

Compact Headend basic unit, 230 V AC, 19", 3 HE, for 14 modules



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

### Technical data

Frequency range TV	47...862 MHz (output combiner/amplifier)
Frequency range FM	87,5...108 MHz (FM-amplifier)
Input level FM	70...100 dBµV
Gain FM	25 dB
Attenuator FM	30 dB (1 dB-steps)
Output level	110 dBµV
Output attenuator	0...15 dB
Output test point	-20 dB
<b>Connectors</b>	
Module slots	14 pcs. (OH-module)
F-socket	3 pcs. (FM-input, output, output measurement socket)
USB	1 pcs. (Software-Update, Konfiguration)
RJ11	1 pcs. (OH 41)
RJ45	1 pcs. (remote monitoring and programming)
<b>General data</b>	
Operating voltage AC	180...265 V (47...63 Hz)
Power consumption	<185 W
LNB supply voltage	12.5 V
LNB electrical power supply	1.2 A
Dimensions (width x height x depth)	443 x 132 x 351 mm (3 HE)
Operating temperature range	-20...+50 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	475 x 475 x 140 mm
Gross weight sales unit	7.500 kg
Packaging volume shipping package	31.5 dm³
Gross weight shipping unit	7.64 kg
EAN	4010056730116
Article number	73011

### Characteristics

- Base unit for analogue and digital channel processing
- Slots for up to 14 modules (14 analog or 56 digital channels)
- 19" rack-mounting or wall mounting
- Integrated FM amplifier
- Simple programming with handset OH 41 (OK 41 A)
- Preprogramming via USB-connection (USB-Stick)
- Integrated remote supervision modul OH 51 A (license optional)
- High output power

# Base units

## OH 50 R

Compact Headend basic unit, 230 V AC (redundantly), 19", 3 HE, for 14 modules



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
Frequency range TV	47...862 MHz (output combiner/amplifier)
Frequency range FM	87,5...108 MHz (FM-amplifier)
Input level FM	70...100 dB $\mu$ V
Gain FM	25 dB
Attenuator FM	30 dB (1 dB-steps)
Output level	110 dB $\mu$ V
Output attenuator	0...15 dB
Output test point	-20 dB
Connectors	
Module slots	14 pcs. (OH-module)
F-socket	3 pcs. (FM-input, output, output measurement socket)
USB	1 pcs. (Software-Update, Konfiguration)
RJ11	1 pcs. (OH 41)
RJ45	1 pcs. (remote monitoring and programming)
General data	
Operating voltage AC	180...265 V (47...63 Hz)
Redundant power supply	1 pcs.
Power consumption	<185 W
LNB supply voltage	12.5 V
LNB electrical power supply	1.2 A
Dimensions (width x height x depth)	443 x 132 x 351 mm (3 HE)
Operating temperature range	-20...+50 °C

Packaging data	
Sales unit	1 pcs.
Packaging volume shipping package	31.5 dm <sup>3</sup>
Gross weight shipping unit	7.64 kg
EAN	4010056740108
Article number	74010

### Characteristics

- Base unit OH for analog und digital channel processing headends with redundand power supply
- Slots for up to 14 modules (14 analog or 56 digital channels)
- included Additional power supply 230 VAC for redundancy
- 19" rack-mounting or wall mounting
- Integrated FM amplifier
- Simple programming with handset OH 41 (OK 41 A)
- Preprogramming via USB-connection (USB-Stick)
- Integrated remote supervision modul OH 51 A (license optional)
- High output power



## OH 38

### Twin A/V-Modulator



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

#### Technical data

Input	
Video input level	1 V (1V <sub>ss</sub> , ±0,4 V)
Video input bandwidth	20 Hz...5 MHz
Audio input impedance	600/10000 Ω
Audio input level	-4 dBm/1 kHz
Audio input level range	-6...+6 dB
Audio input bandwidth	40...15000 Hz
Output	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	±0,030 MHz
Output channel bandwidth	7/8 MHz
Output level	90...105 dBμV
Spurious suppression	>55 dB
TV standards	B/G, D/K, I, L, M
Audio format	Mono/Stereo/Dual
S/N Video	>57 dB
S/N Audio	>50 dB
Amplitude response (O-E)	±1,5 dB
Group delay time	<80 ns
Connectors	
Chinch-socket	4 pcs.
BNC-socket	2 pcs.
General data	
Power consumption	<10 W

#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.590 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.59 kg
EAN	4010056707934
Article number	70793

#### Characteristics

- Modulation of 2 A/V signals into 2 analogue TV channels
- Multi-standard
- Stereo capable vestigial sideband modulator, independently adjustable in 250 kHz steps
- Video / audio interfaces in BNC/RCA
- Output frequency range 45–862 MHz

# Channel translator

## OH 45

Channel converter



Implementation of an analog TV channel in the frequency range 45...762 MHz, high IF selection through SAW-filter. Adjacent channel operating on the input and output.

### Technical data

Input	
Input frequency range	45...862 MHz
Input frequency steps	250 MHz
Channel bandwidth	7/8 MHz
Input level range	50...90 dB $\mu$ V
AGC	>40 dB
Output	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	>0,03 MHz
Output level	95...105 dB $\mu$ V
Spurious suppression	>55 dB
S/N Video	>58 dB
S/N Audio	>50 dB
Amplitude response (O-E)	>1 dB
Group delay time	<80 ns
Connectors	
F-socket	2 pcs.
General data	
Power consumption	>10 W
Operating temperature range	-20...+55 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.420 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.42 kg
EAN	4010056707941
Article number	70794

### Characteristics

- Implementation of an analogue TV channel in the frequency range of 45...862 MHz
- AGC 50...90 dB $\mu$ V
- Deactivation of the AGC for manual amplifier setting
- High IF-selection via two cascaded SAW-filters
- Therefore neighbour channel compatible at in/output



## OH 76

DVB-S– analog-channel processing headends with CI (MPEG-4)



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	47...70 dB $\mu$ V
AFC	$\pm$ 5 MHz
Modulation type	Vestigial sideband
Symbol rate	1...45 MS/s
FEC outer DVB-S	RS-204,188,16
FEC inner DVB-S	Conv. 1/2, 2/3, 3/4, 5/6, 7/8
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	$\pm$ 0,03 MHz
Output channel bandwidth (couplet)	7/8 MHz
Output level	95...105 dB $\mu$ V (1 dB-steps)
Amplitude response (O-E)	$\pm$ 1,5 dB
Spurious suppression	>58 dB
TV standards	B/G, D/K, I, L, M, N
Video Standard	PAL, SECAM, NTSC
Video-Format	4:3/16:9/4:3 Zoom
Video decoder	MPEG 2, MP@ML
audio decoding	MPEG 2 (L1/L2)
S/N	>57 dB
<b>Connectors</b>	
F-socket	2 pcs. (HF in, HF out)
Common Interface	1 pcs.
<b>General data</b>	
Power consumption	<8 W (without CAM)
LNB supply voltage	12 V
LNB electrical power supply	0.65 A
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.590 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.59 kg
EAN	4010056707088
Article number	70708

### Characteristics

- Reception of a DVB-S signal and processing into an analogue TV channel
- MPEG 2 and MPEG 4 compatible
- 1x CI slot for central decryption
- Input frequency range 950–2150 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator

# Digital modules

## OH 76 F

DVB-S – analogue channel processing FTA



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	47...70 dB $\mu$ V
AFC	$\pm$ 5 MHz
Modulation type	Vestigial sideband
Symbol rate	1...45 MS/s
FEC outer DVB-S	RS-204,188,16
FEC inner DVB-S	Conv. 1/2, 2/3, 3/4, 5/6, 7/8
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	$\pm$ 0,03 MHz
Output channel bandwidth (couplet)	7/8 MHz
Output level	95...105 dB $\mu$ V (1 dB-steps)
Amplitude response (O-E)	$\pm$ 1,5 dB
Spurious suppression	>58 dB
TV standards	B/G, D/K, I, L, M, N
Video Standard	PAL, SECAM, NTSC
Video-Format	4:3/16:9/4:3 Zoom
Video decoder	MPEG 2, MP@ML
audio decoding	MPEG 2 (L1/L2)
S/N	>57 dB
<b>Connectors</b>	
F-socket	2 pcs. (HF in, HF out)
Common Interface	1 pcs.
<b>General data</b>	
Power consumption	<8 W (without CAM)
LNB supply voltage	12 V
LNB electrical power supply	0.65 A
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.590 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.59 kg
EAN	4010056715175
Article number	71517

### Characteristics

- Reception of a DVB-S signal and processing into an analogue TV channel
- MPEG 2 and MPEG 4 compatible
- Input frequency range 950–2150 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator



# OH 77

## DVB-S/S2– analog-channel processing headends with CI (MPEG-4)



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	47...70 dBμV
AFC	±10 MHz
Modulation type	QPSK, 8PSK
Symbol rate	1...45 MS/s
FEC outer DVB-S	RS 204,16
FEC inner DVB-S	Conv. 1/2, 2/3, 3/4, 5/6, 7/8
FEC outer DVB-S2	BCH
FEC inner DVB-S2	LDPC 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	±30 MHz
Output channel bandwidth (coupelt)	7/8 MHz
Output level	90...105 dBμV (1 dB-steps)
Amplitude response (O-E)	±1 dB
Spurious suppression	>58 dB
TV standards	B/G, D/K, I, L, M, N
Video Standard	PAL, SECAM, NTSC
Video-Format	4:3/16:9/4:3 Zoom
Video decoder	MPEG 2 MP@ML, MPEG 4 H.264
audio decoding	MPEG 2 (L1/L2)
S/N	>57 dB
<b>Connectors</b>	
F-socket	2 pcs. (HF in, HF out)
Common Interface	1 pcs.
<b>General data</b>	
Power consumption	<10 W (without CAM)
LNB supply voltage	12 V
LNB electrical power supply	0.8 A
Dimensions (width x height x depth)	29,5 x 105 x 253 mm

Technical data	
Operating temperature range	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.590 kg
Packaging volume shipping package	2.675 dm³
Gross weight shipping unit	0.59 kg
EAN	4010056175092
Article number	17509

- Characteristics**
- Reception of a DVB-S/S2-Signal and modulation to an analogue TV-channel
  - MPEG 2 and MPEG 4 compatible
  - 1x CI slot for central decryption
  - NICAM Encoder
  - Input frequency range 950–2150 MHz
  - Output frequency range 45–862 MHz
  - Vestigial sideband modulator

# Digital modules

## OH 77 D

DVB-S/S2– analog-channel processing headends with CI (MPEG-4, Dolby)



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	47...70 dB $\mu$ V
AFC	$\pm$ 10 MHz
Modulation type	QPSK, 8PSK
Symbol rate	1...45 MS/s
FEC outer DVB-S	RS 204,16
FEC inner DVB-S	Conv. 1/2, 2/3, 3/4, 5/6, 7/8
FEC outer DVB-S2	BCH
FEC inner DVB-S2	LDPC 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	$\pm$ 30 MHz
Output channel bandwidth (couplet)	7/8 MHz
Output level	90...105 dB $\mu$ V (1 dB-steps)
Amplitude response (O-E)	$\pm$ 1 dB
Spurious suppression	>58 dB
TV standards	B/G, D/K, I, L, M, N
Video Standard	PAL, SECAM, NTSC
Video-Format	4:3/16:9/4:3 Zoom
Video decoder	MPEG 2 MP@ML, MPEG 4 H.264
audio decoding	MPEG 2 (L1/L2), Dolby (AC3, EAC3)
Video-S/N	>57 dB
Audio-S/N	>50 dB
<b>Connectors</b>	
F-socket	2 pcs. (HF in, HF out)
Common Interface	1 pcs.
<b>General data</b>	
Power consumption	<11 W (without CAM)
LNB supply voltage	12 V
LNB electrical power supply	0.9 A

Technical data	
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.460 kg
Packaging volume shipping package	2.675 dm <sup>3</sup>
Gross weight shipping unit	0.59 kg
EAN	4010056717070
Article number	71707

### Characteristics

- Reception of a DVB-S/S2-Signal and modulation to an analogue TV-channel
- MPEG 2 and MPEG 4 compatible
- Dolby digital decoding
- 1x CI slot for central decryption
- NICAM Encoder
- Input frequency range 950–2150 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator





# OH 79 D

DVB-T/C – analogue channel processing headends with CI (MPEG-4 and Dolby)



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

### Technical data

<b>Input</b>	
Input frequency range	110...878 MHz
Input frequency steps	0.250 MHz
Input level range	47...90 dBµV
Channel bandwidth	7/8 MHz
COFDM-Spectrum DVB-T	2 k/8 k/16 k/32 k FFT
COFDM modulation type	QPSK, 16QAM, 64QAM, 128QAM, 256QAM
COFDM Guard Intervall	1/4, 1/8, 1/16, 1/32
COFDM FEC inner code	Conv. 1/2, 2/3, 3/4, 5/6, 7/8
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	±30 kHz
Output channel bandwidth (couple)	7/8 MHz
Output level	90...105 dBµV (1 dB-steps)
Amplitude response (O-E)	±1,5 dB
Spurious suppression	>58 dB
TV standards	B/G, D/K, I, L, M, N
Video Standard	PAL, SECAM, NTSC
Video-Format	4:3/16:9/4:3 Zoom
Video decoder	MPEG 2 MP@ML, MPEG 4 H.264
audio decoding	MPEG 2 (L1/L2), Dolby (AC3, EAC3)
<b>Connectors</b>	
F-socket	2 pcs.
Common Interface	1 pcs.
<b>General data</b>	
Power consumption	10 W
LNB supply voltage	12 V
LNB electrical power supply	0,85 A
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.460 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.587 kg
EAN	4010056717087
Article number	71708

### Characteristics

- Reception of a DVB-T/C-signal and modulation in an analogue TV-channel
- MPEG 2 and MPEG 4 compatible
- Dolby digital decoding
- 1x CI slot for central decryption
- NICAM Encoder
- Input frequency range 110–878 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator

# Digital modules

## OH 79 2

DVB-T / T2 / C analogue channel processing headends with CI (MPEG-4)



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	47...878 MHz
Input frequency steps	0.001 MHz
Input level range	35...90 dB $\mu$ V
Channel bandwidth	6/7/8 MHz
COFDM-Spectrum DVB-T	2 k/8 k/16 k/32 k FFT
COFDM modulation type	QPSK, 16QAM, 64QAM, 128QAM, 256QAM
COFDM Guard Intervall	1/4, 1/8, 1/16, 1/32, 1/128, 19/128, 19/256
FEC	LDPC/BCH-Code 1/2, 2/3, 3/4, 5/6, 3/5
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	$\pm$ 30 kHz
Output channel bandwidth (couplelt)	7/8 MHz
Output level	90...105 dB $\mu$ V (1 dB-steps)
Amplitude response (O-E)	$\pm$ 1,5 dB
Spurious suppression	>55 dB
TV standards	B/G, D/K, I, L, M, N
Video Standard	PAL, SECAM, NTSC
Video-Format	4:3/16:9/4:3 Zoom
Video decoder	MPEG 2 MP@ML, MPEG 4 H.264
audio decoding	MPEG 2 (L1/L2)
<b>Connectors</b>	
F-socket	2 pcs.
Common Interface	1 pcs.
<b>General data</b>	
Power consumption	10 W
LNB supply voltage	12 V
LNB electrical power supply	0,83 A
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.590 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.587 kg
EAN	4010056724313
Article number	72431

### Characteristics

- Reception of a DVB-T/ T2 / C-signal and modulation in an analogue TV-channel
- MPEG 2 and MPEG 4 compatible
- 1x CI slot for central decryption
- NICAM Encoder
- Input frequency range 110–878 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator



# OH 79 2D

DVB-T / T2 / C analogue channel processing headends with CI (MPEG-4 and Dolby)



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	47...878 MHz
Input frequency steps	1 kHz
Input level range	35...90 dBµV
Channel bandwidth	6/7/8 MHz
COFDM-Spectrum DVB-T	2 k/8 k/16 k/32 k FFT
COFDM modulation type	QPSK, 16QAM, 64QAM, 128QAM, 256QAM
COFDM Guard Intervall	1/4, 1/8, 1/16, 1/32, 1/128, 19/128, 19/256
FEC	LDPC/BCH-Code 1/2, 2/3, 3/4, 5/6, 3/5
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	±30 kHz
Output channel bandwidth (couple)	7/8 MHz
Output level	90...105 dBµV (1 dB-steps)
Amplitude response (O-E)	±1,5 dB
Spurious suppression	>55 dB
TV standards	B/G, D/K, I, L, M, N
Video Standard	PAL, SECAM, NTSC
Video-Format	4:3/16:9/4:3 Zoom
Video decoder	MPEG 2 MP@ML, MPEG 4 H.264
audio decoding	MPEG 2 (L1/L2), Dolby (AC3, EAC3)
<b>Connectors</b>	
F-socket	2 pcs.
Common Interface	1 pcs.
<b>General data</b>	
Power consumption	10 W
LNB supply voltage	12 V
LNB electrical power supply	0,83 A
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.590 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.587 kg
EAN	4010056730215
Article number	73021

### Characteristics

- Reception of a DVB-T/ T2 / C-signal and modulation in an analogue TV-channel
- MPEG 2 and MPEG 4 compatible
- Dolby digital decoding
- 1x CI slot for central decryption
- NICAM Encoder
- Input frequency range 110–878 MHz
- Output frequency range 45–862 MHz
- Vestigial sideband modulator

# Digital modules

## OH 84

4ch DVB-S/S2 QAM transmodulator



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Return loss IN	>8 dB
Isolation internal multiswitch	>30 dB
Input level range	47...90 dB $\mu$ V
AFC	$\pm$ 10 MHz
Modulation	QPSK (EN300421), QPSK 8PSK (EN302307)16APSK, 32APSK
Symbol rate	QPSK: 1...53 MS/s; 8PSK: 1...45 MS/s; 16APSK: 1...35 MS/s; 32APSK: 1...28 MS/s
Spectral inversion	normal or inverted
FEC outer DVB-S	RS 204-16
FEC inner DVB-S	1/2, 2/3, 3/5, 5/6, 7/8
FEC outer DVB-S2	BCH
FEC inner DVB-S2	(1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 (QPSK) /5, 2/3, 3/4, 5/6, 8/9, 9/10 (8PSK))
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Frequency stability	$\pm$ 30 kHz
Output channel bandwidth (couplet)	4 x 8 MHz
Output level	88...103 dB $\mu$ V
Amplitude response (O-E)	1 dB
Modulation type	32-, 64-, 128-, 256-QAM
Symbol rate	4,48...7,20 MS/s
Spurious suppression	>50 dB (at QAM 256)
SNR	$\geq$ 45 dB
MER	$\geq$ 40 dB
Bit stuffing	Yes
SI-Table handling	Yes
PID filtering	Yes
LCN	Yes
NIT generation	Yes

Technical data	
<b>Connectors</b>	
F-socket	5 pcs.
<b>General data</b>	
Power consumption	<10 W
LNB supply voltage	14...18 V (22 kHz), DiSEqC 1.0
LNB electrical power supply	0.5 A
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Gross weight sales unit	0.587 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.587 kg
EAN	4010056735470
Article number	73547

### Description

- Reception of 4 DVB-S/S2 signals and transmodulation into 4 DVB-C channels
- Input frequency range 950–2150 MHz
- Output frequency range 47...862 MHz
- Integrated distribution matrix
- DiSEqC 1.0
- PID filtering
- NIT and LCN generation
- MPEG2 and MPEG4 compatible



# OH 85 H

## Twin DVB-S/S2 – QAM transmodulator with CI



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	47...70 dB $\mu$ V
AFC	$\pm$ 10 MHz
Modulation	QPSK, 8PSK
Symbol rate	QPSK: 1...53 MS/s; 8PSK: 1...45 MS/s; 16APSK: 1...35 MS/s; 32APSK: 1...28 MS/s
Spectral inversion	normal or inverted
FEC outer DVB-S	RS 204, 188, 16
FEC inner DVB-S	Conv. 1/2, 2/3, 3/4, 5/6, 7/8
FEC outer DVB-S2	BCH
FEC inner DVB-S2	LDPC 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	500 kHz
Frequency stability	$\pm$ 30 kHz
Output channel bandwidth (couplet)	2 x 8 MHz
Output level	85...103 dB $\mu$ V
Amplitude response (O-E)	1 dB
Modulation type	16-, 32-, 64-, 128-, 256- QAM
Symbol rate	3.45...6.9 MS/s
Spurious suppression	>50 dB
SNR	$\geq$ 45 dB
MER	$\geq$ 40 dB
Bit stuffing	Yes
PCR correction	Yes
PID filtering	Yes
LCN	Yes
NIT generation	Yes
<b>Connectors</b>	
F-socket	3 pcs.
Common Interface	2 pcs.

Technical data	
<b>General data</b>	
Power consumption	<10 W
LNB supply voltage	14/18 V (22 kHz), DiSEqC 1.0
LNB electrical power supply	0.5 A (without CAM)
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.587 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.587 kg
EAN	4010056740429
Article number	74042

### Characteristics

- Reception of two DVB-S/S2-signals and transmodulation into two DVB-C channels
- 2x CI slots for central decryption
- Input frequency range 950–2150 MHz
- Output frequency range 47...862 MHz
- MPEG 2 and MPEG 4 compatible
- PID filtering
- NIT and LCN generation

# Digital modules

## OH 86 2

Twin DVB-C/-T/-T2 - QAM transmodulator with CI



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	45...878 MHz
Input frequency steps	1 kHz
Channel bandwidth	6/7/8 MHz
channel bandwidth DVB-T2	1,7 / 5 / 6 / 7 / 8 MHz
Input level range	47...90 dB $\mu$ V
FEC DVB-C	Conv., RS 188, 204
QAM-Modulationsart	QPSK, 16QAM, 64QAM, 128QAM, 256QAM
QAM Symbolrate	1...7,2 Mbaud
FEC DVB-T	Conv., K=7, G=1/2, 2/3, 3/4, 4/5, 5/6, 7/8
Modulation schema DVB-T	QPSK, 16-, 64-QAM
Guard Intervall DVB-T	1/4, 1/8, 1/16, 1/32
FFT DVB-T	2k, 8k switchable
FEC DVB-T2	LDPC/BCH-Code 1/2, 2/3, 3/4, 4/5, 5/6, 3/5
Modulation scheme DVB-T2	QPSK, 16QAM, 64QAM, 256QAM
Guard Intervall DVB-T2	1/4, 1/8, 1/16, 1/32, 1/128, 19/128, 19/256
FFT DVB-T2	1k, 2k, 4k, 8k, 16k, 32k
<b>Output</b>	
Output frequency range	45...870 MHz (channel A)
Output frequency steps	1000 kHz
Frequency stability	$\pm$ 30 kHz
Output channel bandwidth (couplelt)	2 x 8 MHz
Output level	85...103 dB $\mu$ V (Depending on QAM-symbol rate)
Amplitude response (O-E)	$\pm$ 1 dB
Spurious suppression	$\geq$ 50 dB
S/N	$\geq$ 45 dB
MER	$\geq$ 40 dB
Modulation	16-, 32-, 64-, 128-, 256-QAM
Symbol rate	3,45...6,9 MS/s
Spectral inversion	normal or inverted

Technical data	
FEC outer DVB-S	RS-204,188,16
Bit stuffing	Yes
PCR correction	Yes
PID filtering and remapping	Yes
<b>Connectors</b>	
F-socket	3 pcs.
Common Interface	2 pcs.
<b>General data</b>	
Power consumption	<10 W
Supply voltage DVB-T antenna	12 V DC (830 mA)
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	3,5 x 1,8 x 0.8 mm
Gross weight sales unit	0.494 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.59 kg
EAN	4010056730390
Article number	73039

### Characteristics

- Reception of two DVB-T / T2 / C signals and transmodulation into two QAM-TV channels (coupled)
- 2x CI slots for central decryption
- MPEG 2 and MPEG 4 compatible
- PID filtering
- NIT and LCN generation



# OH 88 H

## Twin DVB-S/S2 – COFDM transmodulator with CI



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	47...70 dBμV
AFC	±10 MHz
Modulation type	QPSK, 8PSK
Symbol rate	QPSK: 1...53 MS/s; 8PSK: 1...45 MS/s; 16APSK: 1...35 MS/s; 32APSK: 1...28 MS/s
FEC outer DVB-S	BCH
FEC inner DVB-S	Conv. 1/2, 2/3, 3/4, 5/6, 7/8
FEC outer DVB-S2	BCH
FEC inner DVB-S2	LDPC 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
<b>Output</b>	
Output frequency range	47...862 MHz
Output frequency steps	500 kHz
Frequency stability	±30 kHz
Output channel bandwidth (couplet)	2 x 7/8 MHz
Output level	95...105 dBμV
Amplitude response (O-E)	±1 dB
Spurious suppression	>50 dB
S/N	>41 dB
MER	>37 dB
Modulation	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
FFT modus	2 k/8 k
Bit stuffing	Yes
PCR correction	Yes
PID filtering and remapping	Yes
<b>Connectors</b>	
F-socket	3 pcs.
Common Interface	2 pcs.
<b>General data</b>	

Technical data	
Power consumption	<10 W
LNB supply voltage	14/18 V (22 kHz), DiSEqC 1.0
LNB electrical power supply	0.5 A (without CAM)
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 170 x 70 mm
Gross weight sales unit	0.500 kg
Packaging volume shipping package	4.04 dm³
Gross weight shipping unit	0.59 kg
EAN	4010056740436
Article number	74043

### Characteristics

- Reception of two DVB-S/S2 signals and transmodulation into two COFDM-TV channels
- 2x CI slots for central decryption
- MPEG 2 and MPEG 4 compatible
- PID filtering
- NIT and LCN generation

# Digital modules

## OH 89 2

Twin DVB-C/-T/-T2 - COFDM transmodulation with CI



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Input</b>	
Input frequency range	45...862 MHz
Input frequency steps	1 kHz
Channel bandwidth	6/7/8 MHz
channel bandwidth DVB-T2	1,7 / 5 / 6 / 7 / 8 MHz
Input level range	47...90 dB $\mu$ V
FEC DVB-C	Conv., RS 188, 204
QAM-Modulationsart	QPSK, 16QAM, 64QAM, 128QAM, 256QAM
QAM Symbolrate	1...7,2 Mbaud
FEC DVB-T	Conv., K=7, G=1/2, 2/3, 3/4, 4/5, 5/6, 7/8
Modulation schema DVB-T	QPSK, 16-, 64-QAM
Guard Intervall DVB-T	1/4, 1/8, 1/16, 1/32
FFT DVB-T	2k, 8k switchable
FEC DVB-T2	LDPC/BCH-Code 1/2, 2/3, 3/4, 4/5, 5/6, 3/5
Modulation scheme DVB-T2	QPSK, 16QAM, 64QAM, 256QAM
Guard Intervall DVB-T2	1/4, 1/8, 1/16, 1/32, 1/128, 19/128, 19/256
FFT DVB-T2	1k, 2k, 4k, 8k, 16k, 32k
<b>Output</b>	
Output frequency range	45...862 MHz (channel A)
Output frequency steps	250 kHz
Frequency stability	$\pm$ 30 kHz
Output channel bandwidth (couplel)	2 x 7/8 MHz
Output level	82...97 dB $\mu$ V (Depending on QAM-symbol rate)
Amplitude response (O-E)	$\pm$ 1 dB
Spurious suppression	$\geq$ 50 dB
S/N	$\geq$ 41 dB
MER	$\geq$ 37 dB
Modulation	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32

Technical data	
FFT Mode	2k, 8k switchable
Bit stuffing	Yes
PCR correction	Yes
PID filtering	Yes
<b>Connectors</b>	
F-socket	3 pcs.
Common Interface	2 pcs.
<b>General data</b>	
Power consumption	<10 W
Supply voltage DVB-T antenna	12 V DC (830 mA)
Dimensions (width x height x depth)	29,5 x 105 x 253 mm
Operating temperature range	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	3,5 x 1,8 x 0,8 mm
Gross weight sales unit	0.494 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.59 kg
EAN	4010056730406
Article number	73040

### Characteristics

- Reception of two DVB-T / T2 / C signals and transmodulation into two COFDM-TV channels (coupled)
- 2x CI slots for central decryption
- MPEG 2 and MPEG 4 compatible
- PID filtering
- NIT and LCN generation





## OH 66

Twin AV encoder



Powerful technology, compact dimensions, modular and flexibly expandable; the WISI COMPACT HEADEND System OH combines all the advantages of an innovative and affordable headend. WISI Compact Headend OH is easy to configure. With up to 14 module slots it offers channel processing for 14 analogue or 28 digital channels in a 3 HU 19" rack chassis. WISI Compact Headend OH operates on a high efficiency power supply, with low consumption modules in order to make a minimum ecological impact and a low operational cost. The USB connection and the RJ45 interface can be used to execute software updates for the basic unit as well as for the modules. Furthermore, all functions can be furnished from a distance per web browser.

Technical data	
<b>Video input</b>	
Input signal	Composite CVBS-signal und SDI
Impedance	75 Ω
RF input level	1 dBm
Frequency range	0,00020...5 MHz
Encoding-Standard	MPEG 2 ISO/IEC 13818-2, MP@ML (4:2:2)
Bit rate	1...12 Mbps (0,1 Mbit-steps)
Picture size	720/576 Pixel
Teletext	Extraction from video signal
aspect ratio	4:3, 16:9 (automatic detection)
PID	automatic/manuell
PSI/SI	Autom. Generation
NIT with LCN	Optional with CS77
<b>Audio input</b>	
Sampling frequency	32/44, 1/48 kHz
Bit rate	192 Kbps (up to)
Audio format	Stereo, joint stereo, dual, mono
<b>Output</b>	
Frequency range	47...862 MHz
QAM/COFDM Modulation	Selectable
Modulation	16-, 32-, 64-, 128-, 256-QAM
Output frequency steps	250 kHz
Output channel bandwidth	8 MHz
Output level	88...103 dBμV
MER	≥ 40 dB
Symbol rate	2...8 MS/s
Bit stuffing	Yes
COFDM-Mode	Selectable
Modulation	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
FFT modus	2 k/8 k
<b>Connectors</b>	
3,5 mm jack socket	2 pcs.
BNC-socket	4 pcs.

Technical data	
<b>General data</b>	
Operating temperature range	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	325 x 150 x 55 mm
Gross weight sales unit	0.500 kg
Packaging volume shipping package	2.681 dm <sup>3</sup>
Gross weight shipping unit	0.5 kg
EAN	4010056722036
Article number	72203

### Characteristics

- Analog video input
- Digital SDI input
- QAM- or COFDM\*-modulation
- PSI/SI generation
- ASI input and output

# WISI BOX

## OH 16 SC

16 ch DVB-S/S2 - QAM transmodulator



The compact headend OH 16 SC is easy to install and offers a lot of interesting features. By using a multi switch with 5, 9, 13 or 17 inputs in front of the headend and the DiSEqC functionality, ensures that transponders of up to four different satellite positions can be received, transmodulated and distributed. Network integration is possible via DHCP that supports remote maintenance and programming via the web browser without any additional software. The headend set-up is user-friendly, it generates automatically an IP address for the connected PC and by entering „OH16“ or the programmed IP address the operator has access to the headend. LCN, NIT generating, PID filtering and an integrated FM combiner complete the range of functions.

Technical data	
<b>Input</b>	
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Return loss IN	>8 dB
Isolation internal multiswitch	>30 dB
Input level range	47...90 dB $\mu$ V
AFC	$\pm$ 10 MHz
Modulation	QPSK (EN300421), QPSK 8PSK (EN302307)16APSK, 32APSK
Symbol rate DVB-S	1...53 Mbaud
Symbol rate DVB-S2	1...45 MSps 8PSK, 1...35 MSps 16APSK, 1...28 MSps 32APSK
Spectral inversion	Automatic
FEC outer DVB-S	RS 204-16
FEC inner DVB-S	1/2, 2/3, 3/5, 5/6, 7/8
FEC outer DVB-S2	BCH
FEC inner DVB-S2	(1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 (QPSK) /5, 2/3, 3/4, 5/6, 8/9, 9/10 (8PSK))
<b>Output</b>	
Output frequency range	45...862 MHz
Output frequency steps	250 kHz
Output channel bandwidth (couple)	4x (4 x 8 MHz)
Output level	100...115 dB $\mu$ V
Amplitude response (O-E)	1 dB
Modulation type	32-, 64-, 128-, 256-QAM
Symbol rate	4,48...7,00 MS/s
Spurious suppression	>50 dB (at QAM 256)
MER	$\geq$ 40 dB
Bit stuffing	Yes
SI-Table handling	Yes
PID filtering	Yes
LCN	Yes
NIT generation	Yes
<b>Connectors</b>	
F-socket	20 pcs.

Technical data	
Output test point	-20 dB
USB	1 pcs.
RJ11	1 pcs.
RJ45	1 pcs.
<b>General data</b>	
Power consumption	<70 W
LNB supply voltage	14...18 V DiSEqC 1.0 / 22KHz
LNB electrical power supply	0.5 A each slot / max. 1A
Dimensions (width x height x depth)	483 x 44 x 259 mm
Operating temperature range	-20...+45 °C
Operating voltage	180...265 V AC (47...63 Hz)
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056739669
Article number	73966

### Description

- Reception of 16 DVB-S/S2 signals and transmodulation into 16 DVB-C channels
- DiSEqC 1.0
- Input frequency range 950–2150 MHz
- Output frequency range 47...862 MHz
- Integrated distribution matrix
- Programming and remote access via web browser
- PID filtering
- NIT and LCN generation
- Integrated FM amplifier
- 19" rack - or wall installation



WISI Micro Headend:

# Innovative compact headend





# Micro Headend

## Transmodulator for DVB-C and DVB-T (with 4x CI slots)

The **OM micro headend** meets the high standards of signal processing especially for hospitals, hotels, hostels and retirement homes. With 4 CI-Slots, the multiplex function and static assignment of output-Pids it is perfectly made for the central decryption of pay-tv services and multiplexing of programs from several DVB-S/S2 transponders. The headend is managed through an Ethernet-connection which is simplified by the integrated DHCP-Server. Configurations can be transmitted to the headend via Bluetooth.

### WISI Micro Headends at a glance:

- Transmodulator of DVB-S/S2 transponders to DVB-C or DVB-T channels
- The integrated 4 in 6 switch matrix reduces the installation effort and DiSEqC 1.0 is increasing the flexibility by controlling up to 4 satellites
- 4 CI slots for central decryption
- LCN / NIT processing
- Multiplex functionality at the input and output
- USB - interface to feed in any video content
- Programming via web interface
- Integrated DHCP server enables an automatic connection to a PC
- Smartphone and tablet access via Bluetooth

# DVB-T/DVB-C Channel Processing

## OM 10 0646

Transmodulator 6x DVB-S/S2 – 6x COFDM + 4 CI



The OM 10 0646 is a micro headend which can transmodulate 6 DVB-S/S2 transponders into 6 DVB-T (COFDM) packages. As it comes with 4 CI slots, it is perfectly suited for the central decryption of pay-tv services. There is also the possibility to create a multiplex before the CI slots allowing the user to combine services from different transponders but to decrypt them by only one smartcard, hereby guaranteeing the efficient usage of professional CAMs. Additionally the OM 10 supports the deletion of unwanted services from a transponder and enables the reduction of output channels by using the output multiplex functionality. External video content can be fed in over USB as a transport stream.

Technical data	
<b>Input</b>	
Impedance	75 Ω
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	50...90 dBμV
Modulation DVB-S	QPSK
Symbol rate DVB-S	1...53 MSps
Modulation DVB-S2	QPSK, 8PSK (EN 302 307), 16APSK, 32 APSK
Symbol rate DVB-S2	1...53 MSps (QPSK); 1...45 MSps (8PSK); 1...35 MSps (16APSK); 1...28 MSps (32APSK)
<b>CI Processing</b>	
Number of PCMCIA slots	4
<b>TS Processing</b>	
TS stuffing	Yes
SI-Table handling	Yes
NIT handling	Yes
PID remapping	Yes
<b>COFDM Processing</b>	
Constellations	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/8, 1/16, 1/32
FFT Mode	2k, 8k
MER	>40 dB
<b>Output</b>	
Impedance	75 Ω
Output frequency range	110...862 MHz
Output frequency steps	1 MHz
Output level	85...100 dBμV
Number of Channels	6 pcs.
Channel allocation	adjacent (1 x 6)
Return loss	≥14 dB (45 MHz), 1,5 dB/Octave but >10 dB
Output attenuation	0...15 dB (1 dB step)
<b>Connectors</b>	

Technical data	
F-socket	5 pcs. (4x Input, 1x Output)
RJ45	1 pcs.
USB	1 pcs.
Power	DC connector
<b>General data</b>	
Supply voltage	110...240 V (50/60 Hz)
Dimensions (width x height x depth)	272 x 196 x 75 mm
Power consumption	Typ. <40 W (Max. 50 W with 4 LNBs)
Operating temperature range	5...45 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 285 x 175 mm
Gross weight sales unit	2,6 kg
Shipping unit	1 pcs.
EAN	4010056746162
Article number	74616

### Characteristics

- Transmodulator of 6 DVB-S/S2 transponders to 6 DVB-T packages
- The integrated 4 in 6 switch matrix reduces the installation effort and DiSEqC 1.0 is increasing the flexibility by controlling up to 4 satellites
- 4 CI slots for central decryption
- PID remapping allows setting of static service PIDs at the output. It is no longer necessary for the TVset to make a scan if there is any transponder modification at the input (Q1 / 17)
- LCN / NIT processing
- Multiplex functionality at the input and output
- USB - interface to feed in any video content (Q1 / 17)
- Programming via web interface
- Integrated DHCP server enables an automatic connection to a PC
- Smartphone and tablet access via Bluetooth



# OM 10 0648

## Transmodulator 6x DVB-S/S2 - 8x QAM/COFDM + 4 CI



The OM 10 0648 is a micro headend which can transmodulate 6 DVB-S/S2 transponders into 8 DVB-C (QAM) or 8 DVB-T (COFDM) channels. As it comes with 4 CI slots, it is perfectly suited for the central decryption of pay-tv services. There is also the possibility to create a multiplex before the CI slots allowing the user to combine services from different transponders but to decrypt them by only one smartcard, hereby guaranteeing the efficient usage of professional CAMs. Additionally the OM 10 supports the deletion of unwanted services from a transponder and enables the reduction of output channels by using the output multiplex functionality. External video content can be fed in over USB as a transport stream.

Technical data	
<b>Input</b>	
Impedance	75 Ω
Input frequency range	950...2150 MHz
Input frequency steps	1 MHz
Input level range	50...90 dBμV
Modulation DVB-S	QPSK
Symbol rate DVB-S	1...53 MSps
Modulation DVB-S2	QPSK, 8PSK (EN 302 307), 16APSK, 32 APSK
Symbol rate DVB-S2	1...53 MSps (QPSK); 1...45 MSps (8PSK); 1...35 MSps (16APSK); 1...28 MSps (32APSK)
<b>CI Processing</b>	
Number of PCMCIA slots	4
<b>TS Processing</b>	
TS stuffing	Yes
SI-Table handling	Yes
NIT handling	Yes
PID remapping	Yes
<b>QAM Processing</b>	
Constellations	64-, 256- QAM
Symbol rate	4,45...7,20 MSymb/s
MER	>40 dB
<b>COFDM Processing</b>	
Constellations	QPSK, 16-, 64-QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/8, 1/16, 1/32
FFT Mode	2k, 8k
MER	>40 dB
<b>Output</b>	
Impedance	75 Ω
Output frequency range	110...862 MHz (COFDM); 50...862 MHz (QAM)
Output frequency steps	1 MHz
Output level	90...105 dBμV
Number of Channels	8 pcs.
Channel allocation	adjacent (2 blocks per 4 channels)

Technical data	
Return loss	≥14 dB (45 MHz), 1,5 dB/Octave but >10 dB
Output attenuation	0...15 dB (1 dB step)
<b>Connectors</b>	
F-socket	5 pcs. (4x Input, 1x Output)
RJ45	1 pcs.
USB	1 pcs.
Power	DC connector
<b>General data</b>	
Supply voltage	110...240 V (50/60 Hz)
Dimensions (width x height x depth)	272 x 196 x 75 mm
Power consumption	Typ. <40 W (Max. 50 W with 4 LNBs)
Operating temperature range	5...45 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 285 x 175 mm
Gross weight sales unit	2,6 kg
Shipping unit	1 pcs.

### Characteristics

- Transmodulator of 6 DVB-S/S2 transponders to 8 DVB-C or DVB-T channels
- The integrated 4 in 6 switch matrix reduces the installation effort and DiSEqC 1.0 is increasing the flexibility by controlling up to 4 satellites
- 4 CI slots for central decryption
- PID remapping allows setting of static service PIDs at the output. It is no longer necessary for the TVset to make a scan if there is any transponder modification at the input (Q1 / 17)
- LCN / NIT processing
- Multiplex functionality at the input and output
- USB - interface to feed in any video content (Q1 / 17)
- Programming via web interface
- Integrated DHCP server enables an automatic connection to a PC
- Smartphone and tablet access via Bluetooth

WISI Accessories channel processing:

# The perfect match to our channel processing units







# Accessories channel processing

With the accessories for channel processing systems WISI offers the perfect complement to organize cabling in 19" cabinets and the comfortable configuring of the systems via a hand-held unit.

## WISI Accessories channel processing at a glance:

- Compact design
- Versatile applicable
- Simple clear installation
- High quality connections



# Input splitter

## DC 28 0S4T

Input splitter



## DC 28 3S1T

Input splitter



## DC 28 4S0T

Input splitter



### Technical data

#### Input

Numer SAT	- pcs.	21 pcs.	28 pcs.
Number TERR	28 pcs.	7 pcs.	- pcs.
Frequency range SAT	- MHz	920...2150 MHz	920...2150 MHz
Frequency range TERR	45...862 MHz	45...862 MHz	- MHz

#### Output

Output return loss	>15 dB	>12/>15 dB (SAT/TERR)	>12 dB
Through loss	<13 dB (±1 dB)	<14/<13 dB (SAT: ±2,5 dB/TERR: ±1 dB)	<14 dB (±2,5 dB)
Isolation	>25 dB	>23/>25 dB (SAT/TERR)	>23 dB

#### Connectors

F-socket	32 pcs.	32 pcs.	32 pcs.
----------	---------	---------	---------

#### General data

Power passing	- V DC	<21 V DC (only SAT)	<21 V DC
Power passing	- A	<1,5 A (only SAT)	<1,5 A
Dimensions (width x height x depth)	483 x 44 x 51 mm	483 x 44 x 51 mm	483 x 44 x 51 mm
Operating temperature range	-20...+55 °C	-20...+55 °C	-20...+55 °C

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.
Gross weight sales unit	1.700 kg	1.700 kg	1.700 kg
Packaging volume shipping package	2.2 dm <sup>3</sup>	2.2 dm <sup>3</sup>	2.2 dm <sup>3</sup>
Gross weight shipping unit	1.7 kg	1.7 kg	1.7 kg
EAN	4010056712532	4010056712556	4010056712518
Article number	71253	71255	71251

# Output combiner



## DM 17 A

Passive headend combiner



Technical data	
Frequency range	5...1000 MHz
Input impedance	75 $\Omega$
Input return loss	>18 dB typ., min. 14 dB
Number of taps	12
Output impedance	75 $\Omega$
Output return loss	>18 dB typ., min 13 dB
Tap loss IN-Out	1...12 < 18 dB ( $\pm$ 1,5 dB)
Amplitude response (O-E)	<1,5 dB
Isolation Out-Out	>40 dB typ., min. 36 dB
Test Port	-20 dB
RF-screening	>110 dB
Power passing	V DC none
General data	
Dimensions (width x height x depth)	483 x 44 x 124 mm
Temperature range	-20...+55 $^{\circ}$ C
Connectors	
Output	1x F-connector
Input	12x F-connector
Test	1x F-connector
Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	1.360 kg
EAN	4010056731960
Article number	73196

A DM 17 A is a passive headend combiner. Because of its compact construction it is possible to install it in a cabinet. The frequency range is 5...1000 MHz and it has a low insertion loss. The input and output impedance amounts to 75 Ohm. A test connection in F-technology is available on the front for easy monitoring.

# Handsets

## ZG 80

Mounting set for input splitter DC 28 to basic unit OH 50



Technical data	
<b>General data</b>	
Dimensions (width x height x depth)	80 x 37 x 20 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	100 x 60 x 35 mm
Gross weight sales unit	0.140 kg
Gross weight shipping unit	0.14 kg
EAN	4010056719401
Article number	71940

The ZG 80 is a mounting kit to attach the input splitter DC 28 on the basic unit OH 50.

# Handsets

## OH 41

Handset



Technical data	
<b>Display</b>	
Kind of display	LCD Dot Matrix
<b>control panel</b>	
buttons	4 pcs.
<b>Connectors</b>	
RJ11	1 pcs.
<b>General data</b>	
Power supply	5 V DC
Dimensions (width x height x depth)	130 x 76 x 23 mm
length of connection cable	1.2 m (max.)
Operating temperature range	0...+50 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	165 x 115 x 50 mm
Gross weight sales unit	0.150 kg
Packaging volume shipping package	0.948
Gross weight shipping unit	0.15 kg
EAN	4010056707439
Article number	70743

Handset for programming of COMPACT HEADEND module with data storage



WISI INCA:

# Powering the Multiscreen Video Revolution



# INCA

## Inca Intelligent Video Delivery Platform

**Inca's** Intelligent Video Delivery is an affordable, reliable, and feature-rich software architecture built into every Inca product characterized by its intelligence and deep visibility into each step of the processing chain.

Every time video enters or exits an Inca product, you see video thumbnails of all signals, stream downloads, payload analysis, and alarms. And in a single-click you can download sample videos for offline analysis. All the information you need is right there at your fingertips, in real-time, in a graphically-rich, web-based interface that's powerful yet very user-friendly.

### WISI INCA at a glance:

- Modular platform for Intelligent Video Delivery
- Multi-screen live streaming and packaging 4 CI slots for central decryption
- Sophisticated visual monitoring
- Modular Flexibility



# INCA 4400

## INCA 4410

Single-card modular chassis



Technical data	
<b>Expansion Module Bays</b>	
Hardware Transcoding - Linear	Up to 12x HD, 30x SD sources
Hardware Transcoding - ABR	Up to 24x Profiles
8VSB / QAM Receivers	up to 4
ASI-Inputs	up to 6
<b>VidiOS™ Transport Stream processing</b>	
Input and Output	MPEG-2 SPTS/MPTS Transport Stream input, SPTS Output HD & SD, MPEG-2 & MPEG 4 AVC Input and Output Payload Multicast / Unicast UDP IP
Output Streams	48
Transcoded Outputs	up to 30
Direct/Probe Outputs	10 (Optional 48 (4410, 4420, 4430) or 96 (4420,4430))
PID and Program Filter and Remap	Yes
Jitter correction	Yes
Strip Null Padding	Yes
Multiplex Modes	Constant, Variable, Peak
TS Mux Rate VBR <--> CBR Conversion	Yes
<b>Management functionality</b>	
VidiOS™ Web Based User Interface	Yes
Inca All Seeing Eye Probe Capability	Included
SNMP Trap Forwarding	Yes
<b>Network Interfaces</b>	
Management	1000 Base-T
Video	5x 1000 Base-T
NIC Redundancy	Yes (LACP, Active Failover, Round Robin)
<b>General data</b>	
Power supply	Single
Supply voltage	100...240 V AC (50/60 Hz)
Power consumption	typ. <75 W
Montage	19", 2 or 4 Post Rack, 1 RU

Technical data	
Dimensions (width x height x depth)	431 x 44 x 305 mm (19" x 1,75" x 12")
Rack Rail Depth	N/A
Weight	4 kg (8.8 lb)
Operating temperature range	0...40 °C
EMC Standards	FCC Part 15 Class A
Safety standards	CSA/UL 60950-1

Packaging data	
Sales unit	1 pcs.
EAN	4010056744335
Article number	74433

The extremely flexible WISI platform Inca 4400 for linear & multibitrate transcoding allows network operators to optimize transport streams, manage bandwidth efficiently and monitor their TV and video offers. It supports all operators that wish to extend their offers towards multiscreen applications. They can optimize the formats, resolution and bitrate of large numbers of live satellite, IP and off-air digital sources for delivery to set-top-boxes or multiscreen end devices. Options include modular platforms with up to three bays that can transcode, transrate or downscale up to 36 HD or 90 SD programs to MPEG-4, in just one rack unit of space, with integrated grooming and monitoring of all streams. New are features such as service fail over and high density (up to 128 Audio PIDS) multilingual audio transcode for both ABR and linear applications. WISI now has built VidiOS into every INCA product. VidiOS™ supports the intelligent monitoring and visualization of transport streams at each step of the flow. It also monitors streams that are generated by other equipment. In addition VidiOS supports extensive statistical analysis and provides the operator with an instant overview if a transport stream is available in his network.

### Characteristics

- VIDIOS™ stream analysis
- MPEG-4 & MPEG-2 Sources & Outputs
- GigE, 8VSB, QAM, ASI Inputs
- High density linear transcoding
- Multi-Profile ABR
- Adaptive Bitrate Support



# INCA 4420

Dual-card modular chassis with redundant power supply



Technical data	
<b>Expansion Module Bays</b>	
Hardware Transcoding - Linear	Up to 24x HD, 60x SD sources
Hardware Transcoding - ABR	Up to 48x Profiles
8VSB / QAM Receivers	up to 8
ASI-Inputs	up to 12
<b>VidiOS™ Transport Stream processing</b>	
Input and Output	MPEG-2 SPTS/MPTS Transport Stream input, SPTS Output HD & SD, MPEG-2 & MPEG 4 AVC Input and Output Payload Multicast / Unicast UDP IP
Output Streams	96
Transcoded Outputs	up to 60
Direct/Probe Outputs	10 (Optional 48 (4410, 4420, 4430) or 96 (4420,4430))
PID and Program Filter and Remap	Yes
Jitter correction	Yes
Strip Null Padding	Yes
Multiplex Modes	Constant, Variable, Peak
TS Mux Rate VBR <--> CBR Conversion	Yes
<b>Management functionality</b>	
VidiOS™ Web Based User Interface	Yes
Inca All Seeing Eye Probe Capability	Included
SNMP Trap Forwarding	Yes
<b>Network Interfaces</b>	
Management	1000 Base-T
Video	7x 1000 Base-T
NIC Redundancy	Yes (LACP, Active Failover, Round Robin)
<b>General data</b>	
Power supply	Dual Redundant Hot Swap
Supply voltage	100...240 V (50/60 Hz)
Power consumption	typ. <120 W
Montage	19", 4 Post Rack, 1 RU, Slide Rails Included

Technical data	
Dimensions (width x height x depth)	431 x 44 x 468 mm (19" x 1,75" x 18,4")
Rack Rail Depth	558..927 mm 22"~36.5"
Weight	7 kg (15,4 lb)
Operating temperature range	0...40 °C
EMC Standards	FCC Part 15 Class A
Safety compliance	CSA/UL 60950-1
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056743598
Article number	74359

The extremely flexible WISI platform Inca 4400 for linear & multibitrate transcoding allows network operators to optimize transport streams, manage bandwidth efficiently and monitor their TV and video offers. It supports all operators that wish to extend their offers towards multiscreen applications. They can optimize the formats, resolution and bitrate of large numbers of live satellite, IP and off-air digital sources for delivery to set-top-boxes or multiscreen end devices. Options include modular platforms with up to three bays that can transcode, transrate or downscale up to 36 HD or 90 SD programs to MPEG-4, in just one rack unit of space, with integrated grooming and monitoring of all streams. New are features such as service fail over and high density (up to 128 Audio PIDS) multilingual audio transcode for both ABR and linear applications. WISI now has built VidiOS into every INCA product. VidiOS™ supports the intelligent monitoring and visualization of transport streams at each step of the flow. It also monitors streams that are generated by other equipment. In addition VidiOS supports extensive statistical analysis and provides the operator with an instant overview if a transport stream is available in his network.

### Characteristics

- VIDIOS™ stream analysis
- MPEG-4 & MPEG-2 Sources & Outputs
- GigE, 8VSB, QAM, ASI Inputs
- High density linear transcoding
- Multi-Profile ABR
- Adaptive Bitrate Support

# INCA 4400

## INCA 4430

Triple-card modular chassis with redundant power supply



Technical data	
<b>Expansion Module Bays</b>	
Hardware Transcoding - Linear	Up to 36x HD, 90x SD sources
Hardware Transcoding - ABR	Up to 72x Profiles
8VSB / QAM Receivers	up to 12
ASI-Inputs	up to 18
<b>VidiOS™ Transport Stream processing</b>	
Input and Output	MPEG-2 SPTS/MPTS Transport Stream input, SPTS Output HD & SD, MPEG-2 & MPEG 4 AVC Input and Output Payload Multicast / Unicast UDP IP
Output Streams	128
Transcoded Outputs	up to 90
Direct/Probe Outputs	10 (Optional 48 (4410, 4420, 4430) or 96 (4420,4430))
PID and Program Filter and Remap	Yes
Jitter correction	Yes
Strip Null Padding	Yes
Multiplex Modes	Constant, Variable, Peak
TS Mux Rate VBR <--> CBR Conversion	Yes
<b>Management functionality</b>	
VidiOS™ Web Based User Interface	Yes
Inca All Seeing Eye Probe Capability	Included
SNMP Trap Forwarding	Yes
<b>Network Interfaces</b>	
Management	1000 Base-T
Video	8x 1000 Base-T standard, 2x 10 Gig SFP + optional
NIC Redundancy	Yes (LACP, Active Failover, Round Robin)
<b>General data</b>	
Power supply	Dual Redundant Hot Swap
Supply voltage	100...240 V (50/60 Hz)
Power consumption	typ. <250 W

Technical data	
Montage	19", 4 Post Rack, 1 RU, Slide Rails Included
Dimensions (width x height x depth)	438 x 44 x 580 mm (19" x 1,75" x 22,8"), (Optional rear brackets available for mounting unit in shallower racks)
Rack Rail Depth	620...805 mm 24.4"...31.8"
Weight	16 kg (35,3 lb)
Operating temperature range	0...40 °C
EMC Standards	FCC Part 15 Class A
Safety compliance	CSA/UL 60950-1

The extremely flexible WISI platform Inca 4400 for linear & multibitrate transcoding allows network operators to optimize transport streams, manage bandwidth efficiently and monitor their TV and video offers. It supports all operators that wish to extend their offers towards multiscreen applications. They can optimize the formats, resolution and bitrate of large numbers of live satellite, IP and off-air digital sources for delivery to set-top-boxes or multiscreen end devices. Options include modular platforms with up to three bays that can transcode, transrate or downscale up to 36 HD or 90 SD programs to MPEG-4, in just one rack unit of space, with integrated grooming and monitoring of all streams. New are features such as service fail over and high density (up to 128 Audio PIDS) multilingual audio transcode for both ABR and linear applications. WISI now has built VidiOS into every INCA product. VidiOS™ supports the intelligent monitoring and visualization of transport streams at each step of the flow. It also monitors streams that are generated by other equipment. In addition VidiOS supports extensive statistical analysis and provides the operator with an instant overview if a transport stream is available in his network.

### Characteristics

- VIDIOS™ stream analysis
- MPEG-4 & MPEG-2 Sources & Outputs
- GigE, 8VSB, QAM, ASI Inputs
- High density linear transcoding
- Multi-Profile ABR
- Adaptive Bitrate Support

# INCA 5400

## INCA 5420 ASE

All Seeing Eye



WISI addresses with its key monitoring solution "All Seeing Eye" cable network operators, City Carriers and Telcos. A major new feature of the "All Seeing Eye" is the new Email alert feature, providing real time email alerts about video impairments to operations staff. The platform facilitates the management and monitoring of all TV channels with video and audio content offered in one network. The SD, HD, MPEG-2 and MPEG-4 Audio/Video streams will be displayed with video thumbnail mosaics on readily-available flat-panel TVs or wall mounted displays. The platform provides detailed stream statistics, including PID and payload details, warnings and errors. By this the technical support team can see all channels in one go and trace impairments through the network with easy click-through to remote system management interfaces.

Technical data	
<b>VidiOS™ intelligent transport stream monitoring</b>	
Input	IP from Remote Probe Management Network Interfaces
Display Modes	Web Based Interactive User Interface; Full Screen Passive Mosaic Wall Mounted Display
Stream Analysis	MPEG-2 Transport Stream Structure and Display; Thumbnail Images; Transport, Program and Individual PID Bit Rates; Transport Stream Peak and Average Bit Rates; Multiplex, Program and Individual PID Error Detection
Display	
Mosaic Features	Mosaic of Remote Video Stream Thumbnail Images with Stream Statistics; Visual Remote Alarm Highlighting; Click Through to Single Frame Capture and Download; Click to Download 10 Second Stream Sample for Offline Analysis; Click Through from Thumbnail to Remote System Management Interface
Remote Alarm Rollup	Remote Probe Transport Stream Alarms in one Place; Click Through from Alarm to Remote System Management Interface; Rapid Configuration via Automatic Detection of VidiOS Streams; Drag and Drop Mosaic Builder; Multiple Channel Groups
Management functionality	
User interfaces	Powerful VidiOS™ Web Based User Interface; Rapid Configuration via Automatic Detection of VidiOS Streams; Drag and Drop Mosaic Builder; Multiple Channel Groups
Network Interfaces	
Management	1000 Base-T

Technical data	
Secondary network	7x 1000 Base-T
General data	
Power supply	Dual Redundant Hot Swap
Supply voltage	100...240 V AC (50/60 Hz)
Power consumption	typ. <120 W
Montage	19", 4 Post Rack, 1 RU, Slide Rails Included
Dimensions (width x height x depth)	431 x 44 x 468 mm (19" x 1,75" x 18,4")
Weight	7 kg (15,4 lb)
Operating temperature range	0...40 °C
EMC	FCC Part 15 Class A
Packaging data	
Sales unit	1 pcs.
EAN	4010056744502
Article number	74450

### Characteristics

- MONITOR IP MULTICAST VIDEO
- THUMBNAIL MOSAIC
- LOCAL AND REMOTE MONITORING
- VIDIOS™ INTELLIGENCE
- CENTRALIZED MANAGEMENT

# INCA 5400

## INCA 5420 ABR

Package & Origin server



The WISI Inca Multiscreen Package & Origin 5420 is a carrier-grade live streaming packager and origin server for high value Internet video services. It segments and packages multiple streams into the most popular adaptive bitrate protocols. The platform supports HTTP Dynamic Streaming (HDS), HTTP Live Streaming (HLS) and Dynamic Adaptive Streaming over HTTP (DASH) and comes with an ABR Packager and Origin Server. New at IBC, the WISI Inca 5420 is the first product to be enhanced by software from WISI's Katamaran multiscreen & OTT solution, more than tripling the 5420's performance from previous benchmarks.

Technical data	
<b>VidiOS™ intelligent transport stream monitoring</b>	
Source Streams	MPEG-2 SPTS Transport Stream on any Video Interface; HD & SD MPEG-4 AVC (H.264) Video Payload; AAC (LC or HE) Audio Payload; Multiple Frame-Aligned Adaptive Bitrate streams per Program; Multicast/Unicast UDP IP
Analysis	MPEG-2 Transport Stream View; Thumbnail Images; Transport, Program and Individual PID Bit Rates; Transport Stream Peak and Average Bit Rates; Multiplex, Program and Individual PID Error Detection
<b>Multi-Screen Delivery</b>	
Playlist	Drag and Drop Playlist Builder; Downloadable Playlist and Stream URLs
Delivery	Playlist and Segmentation for delivery to; Over-the-top Set-top Boxes, TVs, Smartphones,
Protocols	HLS - HTTP Live Streaming; MPEG-DASH; Microsoft® Smooth Streaming; Adobe® Flash RTMP and HDS; MPEG-TS
DRM	Optional DRM Encryption using 3rd party key servers
<b>Management</b>	
User interfaces	Powerful VidiOS™ Web Based User Interface SNMP Trap Forwarding, LCD Panel
Stream Monitoring	Inca All Seeing Eye Probe Capability Included
<b>Network Interfaces</b>	
Management	1000 Base-T
Secondary network	Up to 7x 1000 Base-T for Video; Stream Up to 900 Mbps per GigE Interface; Optional 2x 10 Gb SFP+

Technical data	
<b>General data</b>	
Power supply	Dual Redundant Hot Swap
Supply voltage	100...240 V AC (50/60 Hz)
Power consumption	typ. <120 W
Montage	19", 4 Post Rack, 1 RU, Slide Rails Included
Dimensions (width x height x depth)	431 x 44 x 468 mm (19" x 1,75" x 18,4")
Weight	7 kg (15,4 lb)
Operating temperature range	0...40 °C
EMC Standards	FCC Part 15 Class A
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056744519
Article number	74451

### Characteristics

- Multi-screen packager
- Multi-screen origin server
- Adaptive bitrate (ABR) streaming
- HLS, MPEG-DASH
- Adobe® RTP
- Microsoft® smooth streaming



WISI Optical SAT distribution:  
**Unlimited distribution  
through optical fiber**





# Optical SAT distribution

**Our new OL series is nothing short of a revolution in both SAT reception and conventional distribution technology.**

**The optical transmission of satellite, terrestrial, and radio signals is especially compelling...**

- in projects where the digital signals are centrally received for the distribution to an almost unlimited number of subscribers.
- in extensive structures where signal strength and quality must not be compromised.
- due to efficient and cost-oriented fitting. Optical cables can be installed faster and more space-saving as well as being more cost-efficient than a similar installation with coaxial cables.

## WISI Optical SAT distribution at a glance:

- Galvanic isolation of wings / buildings
- Low interference liability
- Future-proof
- Virtually interference-free distribution without loss
- Efficient and clean installation
- Constantly high signal integrity
- Utmost flexibility
- Low-Smoke-Zero-Halogen-compliant (LSZH)
- Reception of all transponders from one satellite
- A single reception system for hundreds of subscribers
- Aesthetic appearance of buildings with only one central receiving aerial
- A single optical cable replaces several coaxial cables
- Considerable cost reduction compared to alternative solutions (channel processing)

# Optical feed systems

## OL 11 0000

Optical LNB, for up to 32 optical endpoints



Technical data	
Input frequency	10,7...12,75 GHz
Frequency range	vertical: 0,95...3,0 GHz (stacked), horizontal: 3,4...5,45 GHz (stacked)
Optical output	
Wavelength	1310 nm
Output power	+7 dBm
Noise figure	typ. 0,5 dB
Gain	max. 72 dB, min. 62 dB
Image rejection	min. 40 dB
Local oscillator stability	max. $\pm 2$ MHz (Temp. drift -40°C to +60°C)
General data	
Optical connector	FC/PC
DC connector	Female F-Type
Supply voltage	12 V DC
Current consumption	<450 mA
Ambient temperature	-30...+60 °C
Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.705 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	180 x 120 x 80 mm
Gross weight shipping unit	0.855 kg
EAN	4010056743376
Article number	74337

LNB with direct optical output. +7 dBm output power for supply of up to 32 optical endpoints. Power supply included.

## OL 12 0000

Optical LNB, for up to 64 optical endpoints



Technical data	
Input frequency	10,7...12,75 GHz
Frequency range	vertical: 0,95...3,0 GHz (stacked), horizontal: 3,4...5,45 GHz (stacked)
Optical output	
Wavelength	1310 nm
Output power	+10 dBm
Noise figure	typ. 0,5 dB
Gain	max. 72 dB, min. 62 dB
Image rejection	min. 40 dB
Local oscillator stability	max. $\pm 2$ MHz (Temp. drift -40°C to +60°C)
General data	
Optical connector	FC/PC
DC connector	Female F-Type
Supply voltage	12 V DC
Current consumption	<450 mA
Ambient temperature	-30...+60 °C
Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.59 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	180 x 120 x 80 mm
Gross weight shipping unit	0.74 kg
EAN	4010056743383
Article number	74338

LNB with direct optical output. +10 dBm output power for supply of up to 64 optical endpoints. Power supply included.





## OL 13 0000

### Optical Distribution Kit



Kit for the distribution of one satellite, DVB-T/T2, DAB and FM into an optical output signal. Kit contains: full band LNB with N-connector, electrical/optical converter, N-patch cable(2m), power supply and installation kit for assembling at antenna pipe.

#### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	2.19 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	300 x 280 x 120 mm
Gross weight shipping unit	2.34 kg
EAN	4010056743758
Article number	74375

#### Characteristics

- Kit contains the wholeband LNB, interconnection cable and electrical/optical converter.
- For combining with terrestrial signals
- The SAT-signal of the feed system OL 15 0000 will be converted to an optical signal by the electrical/optical converter OL 14 0000
- Parallel distribution of DVB-T/T2, DAB and FM
- Electrical/optical converter OL 14 000 has 2 outputs, each with +7dBm power

# Optical feed systems

## OL 14 0000

Electical/optical converter



## OL 15 0000

Wholeband LNB



Technical data	
<b>Input</b>	
Frequency range SAT	950...5450 MHz
Impedance	50 Ω
Return loss	9 dB
Frequency range DVB-T	470...862 MHz
Frequency range DAB	174...240 MHz
Frequency range FM	88...108 MHz
Impedance	75 Ω
Return loss	10 dB
Level range	67...97 dBμV
Connector SAT	N
Connector DVB-T, DAB, FM	F
<b>Output</b>	
Wavelength	1310 nm
Optical power	2x +7 dBm
Connector	FC/PC
<b>General data</b>	
Supply voltage	20 V DC
Current consumption	<500 mA, incl. LNB
Operating temperature range	-10...+50 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	140 x 145 x 30 mm
Gross weight sales unit	0.99 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 190 x 60 mm
Gross weight shipping unit	1.14 kg
EAN	4010056743390
Article number	74339

Electric/optical converter for distribution of one satellite, DVB-T/ T2, DAB and FM into an optical output signal. Power supply and antenna pipe installation kit included.

Technical data	
Input frequency	10,7...12,75 GHz
Output frequency	950...5450 MHz
Noise figure	typ. 0,7 dB
Return loss	≥ 9 dB
Impedance	50 Ω
Supply voltage	5,2 V DC
Operating temperature range	-30...+60 °C
Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	1.94 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	180 x 110 x 75 mm
Gross weight shipping unit	2.09 kg
EAN	4010056743406
Article number	74340

Wholeband LNB with N-connector for installation with OL 14 0000.



## OL 13 0000

### Optical Distribution Kit



Kit for the distribution of one satellite, DVB-T/T2, DAB and FM into an optical output signal. Kit contains: full band LNB with N-connector, electrical/optical converter, N-patch cable(2m), power supply and installation kit for assembling at antenna pipe.

#### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	2.19 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	300 x 280 x 120 mm
Gross weight shipping unit	2.34 kg
EAN	4010056743758
Article number	74375

#### Characteristics

- Kit contains the wholeband LNB, interconnection cable and electrical/optical converter.
- For combining with terrestrial signals
- The SAT-signal of the feed system OL 15 0000 will be converted to an optical signal by the electrical/optical converter OL 14 0000
- Parallel distribution of DVB-T/T2, DAB and FM
- Electrical/optical converter OL 14 000 has 2 outputs, each with +7dBm power

# Optical feed systems

## OL 14 0000

Electical/optical converter



## OL 15 0000

Wholeband LNB



### Technical data

Input	
Frequency range SAT	950...5450 MHz
Impedance	50 Ω
Return loss	9 dB
Frequency range DVB-T	470...862 MHz
Frequency range DAB	174...240 MHz
Frequency range FM	88...108 MHz
Impedance	75 Ω
Return loss	10 dB
Level range	67...97 dBμV
Connector SAT	N
Connector DVB-T, DAB, FM	F
Output	
Wavelength	1310 nm
Optical power	2x +7 dBm
Connector	FC/PC
General data	
Supply voltage	20 V DC
Current consumption	<500 mA, incl. LNB
Operating temperature range	-10...+50 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	140 x 145 x 30 mm
Gross weight sales unit	0.99 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 190 x 60 mm
Gross weight shipping unit	1.14 kg
EAN	4010056743390
Article number	74339

Electric/optical converter for distribution of one satellite, DVB-T/ T2, DAB and FM into an optical output signal. Power supply and antenna pipe installation kit included.

### Technical data

Input frequency	10,7...12,75 GHz
Output frequency	950...5450 MHz
Noise figure	typ. 0,7 dB
Return loss	≥ 9 dB
Impedance	50 Ω
Supply voltage	5,2 V DC
Operating temperature range	-30...+60 °C

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	1.94 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	180 x 110 x 75 mm
Gross weight shipping unit	2.09 kg
EAN	4010056743406
Article number	74340

Wholeband LNB with N-connector for installation with OL 14 0000.

# Optical splitter



## OL 72 0004

Active 4-way N-splitter



Technical data	
Frequency range	950...5450 MHz
Insertion loss	0 dB
Impedance	50 $\Omega$
Return loss	9 dB
Noise figure	22 dB
Isolation between any two outputs	20 dB
Supply voltage	6,2 V DC
Current consumption	< 230 mA
Operating temperature range	-30...+65 °C
Connector	N

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	66 x 162 x 32 mm
Gross weight sales unit	1.18 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	190 x 110 x 40 mm
Gross weight shipping unit	1.28 kg
EAN	4010056743765
Article number	74376

Active 4-way splitter for the usage after wholeband LNB OL 15 0000. Subsequently installation of up to 4 electrical/optical converters OL 14 0000 possible. N-connectors. Power supply by OL 14 0000.

# Optical splitter

## OL 91 0002

Optical 2-way splitter



## OL 91 0003

Optical 3-way splitter



## OL 91 0004

Optical 4-way splitter



### Technical data

Number of outputs	02
Wavelength	1310/1550 nm
Insertion loss	3,6 dB
Connector	FC/PC
Operating temperature range	-40...+75 °C
Dimensions (width x height x depth)	114 x 157 x 20 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.21 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 150 x 40 mm
Gross weight shipping unit	0.28 kg
EAN	4010056743840
Article number	74384

### Characteristics

- FC/PC connectors
- FBT - Technology (Fused Biconical Tapered)
- Dual Window splitter 1310 / 1550 nm
- Max. input power: 25 dBm

### Technical data

Number of outputs	03
Wavelength	1310/1550 nm
Insertion loss	5,6 dB
Connector	FC/PC
Operating temperature range	-40...+75 °C
Dimensions (width x height x depth)	114 x 157 x 20 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.24 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	210 x 150 x 40 mm
Gross weight shipping unit	0.29 kg
EAN	4010056743857
Article number	74385

### Characteristics

- FC/PC connectors
- FBT - Technology (Fused Biconical Tapered)
- Dual Window splitter 1310 / 1550 nm
- Max. input power: 25 dBm

### Technical data

Number of outputs	04
Wavelength	1260...1650 nm
Insertion loss	7 dB
Connector	FC/PC
Operating temperature range	-40...+75 °C
Dimensions (width x height x depth)	114 x 157 x 20 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.24 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 150 x 40 mm
Gross weight shipping unit	0.3 kg
EAN	4010056743864
Article number	74386

### Characteristics

- FC/PC connectors
- PLC - Technology (Planar Lightwave Circuit)
- Wide range splitter 1260...1650 nm
- Max. input power: 23 dBm



## OL 91 0008

Optical 8-way splitter



## OL 91 0016

Optical 16-way splitter



## OL 91 0032

Optical 32-way splitter



### Technical data

Number of outputs	08
Wavelength	1260...1650 nm
Insertion loss	10,2 dB
Connector	FC/PC
Operating temperature range	-40...+75 °C
Dimensions (width x height x depth)	114 x 157 x 20 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.22 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 150 x 40 mm
Gross weight shipping unit	0.3 kg
EAN	4010056743871
Article number	74387

### Characteristics

- FC/PC connectors
- PLC - Technology (Planar Lightwave Circuit)
- Wide range splitter 1260...1650 nm
- Max. input power: 23 dBm

### Technical data

Number of outputs	16
Wavelength	1260...1650 nm
Insertion loss	13,6 dB
Connector	FC/PC
Operating temperature range	-40...+75 °C
Dimensions (width x height x depth)	175 x 163 x 50 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.7 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	230 x 220 x 70 mm
Gross weight shipping unit	0.8 kg
EAN	4010056743888
Article number	74388

### Characteristics

- FC/PC connectors
- PLC - Technology (Planar Lightwave Circuit)
- Wide range splitter 1260...1650 nm
- Max. input power: 23 dBm

### Technical data

Number of outputs	32
Wavelength	1260...1650 nm
Insertion loss	16,8 dB
Connector	FC/PC
Operating temperature range	-40...+75 °C
Dimensions (width x height x depth)	175 x 163 x 50 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.7 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	230 x 220 x 70 mm
Gross weight shipping unit	0.8 kg
EAN	4010056743895
Article number	74389

### Characteristics

- FC/PC connectors
- PLC - Technology (Planar Lightwave Circuit)
- Wide range splitter 1260...1650 nm
- Max. input power: 23 dBm

# Optical taps

## OL 92 0010

Optical 90/10 splitter



## OL 92 0020

Optical 80/20 splitter



## OL 92 0030

Optical 70/30 splitter



Technical data	
Wavelength	1260...1650 nm
Coupling ratio	90/10
Insertion loss output 1	0,9 dB
Insertion loss output 2	10,6 dB
Operating temperature range	-40...+75 °C
Connector	FC/PC
Dimensions (width x height x depth)	114 x 157 x 20 mm

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.23 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	200 x 150 x 40 mm
Gross weight shipping unit	0.28 kg
EAN	4010056743901
Article number	74390

### Characteristics

- FC/PC connectors
- FBT - Technology (Fused Biconical Tapered)
- Wide range splitter 1260...1650 nm
- Max. input power: 25 dBm

Technical data	
Wavelength	1260...1650 nm
Coupling ratio	80/20
Insertion loss output 1	1,5 dB
Insertion loss output 2	7,6 dB
Operating temperature range	-40...+75 °C
Connector	FC/PC
Dimensions (width x height x depth)	114 x 157 x 20 mm

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.24 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 150 x 40 mm
Gross weight shipping unit	0.3 kg
EAN	4010056743918
Article number	74391

### Characteristics

- FC/PC connectors
- FBT - Technology (Fused Biconical Tapered)
- Wide range splitter 1260...1650 nm
- Max. input power: 25 dBm

Technical data	
Wavelength	1260...1650 nm
Coupling ratio	70/30
Insertion loss output 1	2,1 dB
Insertion loss output 2	5,8 dB
Operating temperature range	-40...+75 °C
Connector	FC/PC
Dimensions (width x height x depth)	114 x 157 x 20 mm

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.24 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 150 x 40 mm
Gross weight shipping unit	0.3 kg
EAN	4010056743925
Article number	74392

### Characteristics

- FC/PC connectors
- FBT - Technology (Fused Biconical Tapered)
- Wide range splitter 1260...1650 nm
- Max. input power: 25 dBm





## OL 92 0040

Optical 60/40 splitter



### Technical data

Wavelength	1260...1650 nm
Coupling ratio	60/40
Insertion loss output 1	2,6 dB
Insertion loss output 2	4,4 dB
Operating temperature range	-40...+75 °C
Connector	FC/PC
Dimensions (width x height x depth)	114 x 157 x 20 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.22 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 150 x 40 mm
Gross weight shipping unit	0.3 kg
EAN	4010056743932
Article number	74393

### Characteristics

- FC/PC connectors
- FBT - Technology (Fused Biconical Tapered)
- Wide range splitter 1260...1650 nm
- Max. input power: 25 dBm

# Optical converter

## OL 21 0002

Optical quad converter II



Technical data	
Input frequency SAT	0,95...5,45 GHz (stacked)
Return loss	10 dB
Wavelength	1100...1650 nm
Input power	-15...0 dBm
Output frequency	4 x SAT + TERR.
Output level	70 dB $\mu$ V
Control signal	11...14,5 V (vertical)
Control signal	15,5...19 V (horizontal)
Control signal	0/22 kHz (Low / High Band)
Input frequency TERR	88...108/ 174...240/ 470...862 MHz
General data	
Connector input	FC/PC
Output	4 participants outputs
Supply voltage	Receiver, ext. power supply 10...20 V DC (optional)
Current consumption	220 mA @ 10V
Output impedance	75 $\Omega$
Ambient temperature	0...40 °C
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	109 x 136 x 50 mm
Gross weight sales unit	1.105 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	160 x 120 x 60 mm
Gross weight shipping unit	1.155 kg
EAN	4010056743437
Article number	74343

Quad converter for the conversion of the optical input signal into 4 independent subscriber outputs. Converted will be all inserted signals ((DVB-S/S2, DVB-T/T2, DAB and FM). Power supply by the connected stb.or TV sets with integrated satellite receiver or the optional power supply OLPS 0230.

## OL 21 0003

Optical quad converter III



Technical data	
Input frequency SAT	0,95...5,45 GHz (stacked)
Return loss	10 dB
Wavelength	1100...1650 nm
Input power	-15...0 dBm
Output frequency	4 x SAT + TERR.
Output level	70 dB $\mu$ V
Control signal	11...14,5 V (vertical)
Control signal	15,5...19 V (horizontal)
Control signal	0/22 kHz (Low / High Band)
Input frequency TERR	88...108/ 174...240/ 470...790 MHz
General data	
Connector input	FC/PC
Output	4 participants outputs
Supply voltage	Receiver, ext. power supply 10...20 V DC (optional)
Current consumption	225 mA @ 10V Output 1/2, 225 mA @ 10V Output 3/4
Output impedance	75 $\Omega$
Ambient temperature	-15...+55 °C
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	128,7 x 116,5 x 27 mm
Gross weight sales unit	0.32 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	145 x 120 x 30 mm
Gross weight shipping unit	0.38 kg
EAN	4010056743802
Article number	74380

Quad converter for the conversion of the optical input signal into 4 independent subscriber outputs. Converted will be all inserted signals (DVB-S/S2, DVB-T/T2, DAB and FM). Re-design in compact form factor and simplified installation. Power supply by the connected stb or TV sets with integrated satellite receiver or the optional power supply OLPS 0230.



## OL 22 0002

Optical quatro converter II



## OL 22 0003

Optical quatro converter III



### Technical data

Input frequency SAT	0,95...5,45 GHz (stacked)
Return loss	10 dB
Wavelength	1100...1650 nm
Input power	-15...0 dBm
Output frequency	1xHH, 1xVH, 1xHL, 1xVL, 1xTERR
Output level	75 dB $\mu$ V
Input frequency TERR	88...108/ 174...240/ 470...862 MHz

### General data

Connector input	FC/PC
Output	Multiswitch
Supply voltage	Multiswitch, ext. power supply 10...20 V DC
Current consumption	210 mA @ 10V
Output impedance	75 $\Omega$
Ambient temperature	0...40 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	109 x 136 x 50 mm
Gross weight sales unit	0.905 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	160 x 120 x 60 mm
Gross weight shipping unit	1.155 kg
EAN	4010056743444
Article number	74344

Quatro converter for the conversion of the optical input signal into the separate IF-polarizations: SAT(HH, VH, HL, VL) and terrestrial. Suitable for multiswitch installations or the use in front of headends. Power supply by the subsequently connected devices or optional 20 V DC power supply (OLPS 0230)

### Technical data

Input frequency SAT	0,95...5,45 GHz (stacked)
Return loss	10 dB
Wavelength	1100...1650 nm
Input power	-15...0 dBm
Output frequency	1xHH, 1xVH, 1xHL, 1xVL, 1xTERR
Output level	80 dB $\mu$ V
Control signal	11...14,5 V (vertical)
Control signal	15,5...19 V (horizontal)
Control signal	0/22 kHz (Low / High Band)
Input frequency TERR	88...108/ 174...240/ 470...790 MHz

### General data

Connector input	FC/PC
Output	Multiswitch
Supply voltage	Multiswitch, ext. power supply 10...20 V DC
Current consumption	400 mA @ 10V
Output impedance	75 $\Omega$
Ambient temperature	-15...+55 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	120,8 x 80,1 x 26,3 mm
Shipping unit	1 pcs.
Gross weight shipping unit	kg
EAN	4010056743819
Article number	74381

Quatro-way back converter for the change of the optical input signal in several HF-areas: SAT (HH,VH,HL,VL) and terrestrial. Application for multiswitch systems or headends. Power supply via multiswitch or via the optional AC adapter OLPS 0230. Redesign in a compact construction for easy mounting.

# Optical cables

## OL 95 0001

Optical connection cable, FC/  
PC pigtail, 1 m



### Technical data

<b>Buffered fiber</b>	
Fiber type	G657A2
Outer diameter	0,9 mm
Material	LSZH-Compound
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/ km @ 1310 nm

### General data

Installation	Indoor
Length	1 m
Bending radius	≥ 30 mm

### Connectors

### Packaging data

Sales unit	1 m
Dimensions (WxHxD) sales unit	mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.015 kg
Shipping unit	1 m
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	dm <sup>3</sup>
Gross weight ship- ping unit	0.02 kg
EAN	4010056746315
Article number	74631

### Characteristics

- Low-Smoke-Zero-Halogen-compliant (LSZH)
- Galvanic isolation
- No interferences by electro-magnetic fields
- One-way FC/PC connector



## OL 95 1001

Optical cable term. 1 m

## OL 95 1003

Optical cable term. 3 m

## OL 95 1005

Optical cable term. 5 m



### Technical data

#### Buffered fiber

Fiber type	G657A	G657A	G657A
Outer diameter	0,9 mm	0,9 mm	0,9 mm
Material	PVC	PVC	PVC
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm

#### SS tube

Material	SUS304	SUS304	SUS304
Outer diameter	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm

#### Aramid yarn

Type	1000dtex	1000dtex	1000dtex
------	----------	----------	----------

#### Sheath

Material	LSZH-Compound	LSZH-Compound	LSZH-Compound
Outer diameter	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm

#### General data

Installation	Indoor	Indoor	Indoor
Length	1 m	3 m	5 m
Bending radius	≥ 30 mm	≥ 30 mm	≥ 30 mm

#### Connectors

FC/PC	2 pcs.	2 pcs.	2 pcs.
-------	--------	--------	--------

### Packaging data

Sales unit	1 m	3 m	5 m
Gross weight sales unit	0.032 kg	0.055 kg	0.078 kg
Shipping unit	1 m	3 m	5 m
Gross weight shipping unit	0.032 kg	0.06 kg	0.078 kg
EAN	4010056744021	4010056744038	4010056744045
Article number	74402	74403	74404

# Optical cables

## OL 95 1010

Optical cable term. 10 m



## OL 95 1015

Optical cable term. 15 m



## OL 95 1020

Optical cable term. 20 m



Technical data			
<b>Buffered fiber</b>			
Fiber type	G657A	G657A	G657A
Outer diameter	0,9 mm	0,9 mm	0,9 mm
Material	PVC	PVC	PVC
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm
<b>SS tube</b>			
Material	SUS304	SUS304	SUS304
Outer diameter	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
<b>Aramid yarn</b>			
Type	1000dtex	1000dtex	1000dtex
<b>Sheath</b>			
Material	LSZH-Compound	LSZH-Compound	LSZH-Compound
Outer diameter	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm
<b>General data</b>			
Installation	Indoor	Indoor	Indoor
Length	10 m	15 m	20 m
Bending radius	≥ 30 mm	≥ 30 mm	≥ 30 mm
<b>Connectors</b>			
FC/PC	2 pcs.	2 pcs.	2 pcs.
<b>Packaging data</b>			
Sales unit	10 m	15 m	20 m
Gross weight sales unit	0.14 kg	0.195 kg	0.32 kg
Shipping unit	10 m	15 m	20 m
Gross weight shipping unit	0.14 kg	0.2 kg	0.32 kg
EAN	4010056744052	4010056745172	4010056744069
Article number	74405	74517	74406



## OL 95 1030

Optical cable term. 30 m



## OL 95 1040

Optical cable term. 40 m



## OL 95 1050

Optical cable term. 50 m



### Technical data

#### Buffered fiber

Fiber type	G657A	G657A	G657A
Outer diameter	0,9 mm	0,9 mm	0,9 mm
Material	PVC	PVC	PVC
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm

#### SS tube

Material	SUS304	SUS304	SUS304
Outer diameter	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm

#### Aramid yarn

Type	1000dtex	1000dtex	1000dtex
------	----------	----------	----------

#### Sheath

Material	LSZH-Compound	LSZH-Compound	LSZH-Compound
Outer diameter	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm

#### General data

Installation	Indoor	Indoor	Indoor
Length	30 m	40 m	50 m
Bending radius	≥ 30 mm	≥ 30 mm	≥ 30 mm

#### Connectors

FC/PC	2 pcs.	2 pcs.	2 pcs.
-------	--------	--------	--------

### Packaging data

Sales unit	30 m	40 m	50 m
Gross weight sales unit	0.37 kg	0.495 kg	0.2 kg
Shipping unit	30 m	40 m	50 m
Gross weight shipping unit	0.38 kg	0.5 kg	1.66 kg
EAN	4010056744076	4010056744083	4010056744090
Article number	74407	74408	74409

# Optical cables

## OL 95 1075

Optical cable term. 75 m



## OL 95 1100

Optical cable term. 100 m



## OL 95 1150

Optical cable term. 150 m



Technical data			
<b>Buffered fiber</b>			
Fiber type	G657A	G657A	G657A
Outer diameter	0,9 mm	0,9 mm	0,9 mm
Material	PVC	PVC	PVC
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm
<b>SS tube</b>			
Material	SUS304	SUS304	SUS304
Outer diameter	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
<b>Aramid yarn</b>			
Type	1000dtex	1000dtex	1000dtex
<b>Sheath</b>			
Material	LSZH-Compound	LSZH-Compound	LSZH-Compound
Outer diameter	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm	2,9 mm ± 0,05 mm
<b>General data</b>			
Installation	Indoor	Indoor	Indoor
Length	75 m	100 m	150 m
Bending radius	≥ 30 mm	≥ 30 mm	≥ 30 mm
<b>Connectors</b>			
FC/PC	2 pcs.	2 pcs.	2 pcs.
<b>Packaging data</b>			
Sales unit	75 m	100 m	150 m
Gross weight sales unit	0.84 kg	1.12 kg	1.68 kg
Shipping unit	75 m	100 m	150 m
Gross weight shipping unit	2.02 kg	2.3 kg	2.86 kg
EAN	4010056744106	4010056744113	4010056745189
Article number	74410	74411	74418





## OL 95 1200

Optical cable term. 200 m



Technical data	
<b>Buffered fiber</b>	
Fiber type	G657A
Outer diameter	0,9 mm
Material	PVC
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm
<b>SS tube</b>	
Material	SUS304
Outer diameter	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm
<b>Aramid yarn</b>	
Type	1000dtex
<b>Sheath</b>	
Material	LSZH-Compound
Outer diameter	2,9 mm ± 0,05 mm
<b>General data</b>	
Installation	Indoor
Length	200 m
Bending radius	≥ 30 mm
<b>Connectors</b>	
FC/PC	2 pcs.
<b>Packaging data</b>	
Sales unit	200 m
Gross weight sales unit	2.24 kg
Shipping unit	200 m
Gross weight shipping unit	3.42 kg
EAN	4010056744120
Article number	74412

Pre-terminated single-mode fiber optic cables for indoor installations, 1 fiber, FC/PC connector at both sides, length 200 m.

# Optical cables

## OL 95 2030

Optical twin cable term. 30 m

## OL 95 2040

Optical twin cable term. 40 m



Technical data		
<b>Buffered fiber</b>		
Fiber type	G657A	G657A
Outer diameter	0,9 mm	0,9 mm
Material	LSZH-Compound	LSZH-Compound
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm
<b>SS tube</b>		
Material	SUS304	SUS304
Outer diameter	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
<b>Aramid yarn</b>		
Type	1000dtex	1000dtex
<b>General data</b>		
Installation	Outdoor	Outdoor
Length	30 m	40 m
Bending radius	≥ 30 mm	≥ 30 mm
Cable weight	45 kg/km	45 kg/km
<b>Connectors</b>		
FC/PC	4 pcs.	4 pcs.
<b>Packaging data</b>		
Sales unit	30 m	40 m
Gross weight sales unit	0.92 kg	0.72 kg
Shipping unit	30 m	40 m
Gross weight shipping unit	1.92 kg	2.12 kg
EAN	4010056745196	4010056745202
Article number	74519	74520



## OL 95 2050

optical twin cable term.  
50 m

## OL 95 2075

Optical twin cable term.  
75 m

## OL 95 2100

Optical twin cable term.  
100 m



Technical data			
<b>Buffered fiber</b>			
Fiber type	G657A	G657A	G657A
Outer diameter	0,9 mm	0,9 mm	0,9 mm
Material	LSZH-Compound	LSZH-Compound	LSZH-Compound
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm
<b>SS tube</b>			
Material	SUS304	SUS304	SUS304
Outer diameter	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
<b>Aramid yarn</b>			
Type	1000dtex	1000dtex	1000dtex
<b>General data</b>			
Installation	Outdoor	Outdoor	Outdoor
Length	50 m	75 m	100 m
Bending radius	≥ 30 mm	≥ 30 mm	≥ 30 mm
Cable weight	45 kg/km	45 kg/km	45 kg/km
<b>Connectors</b>			
FC/PC	4 pcs.	4 pcs.	4 pcs.
<b>Packaging data</b>			
Sales unit	50 m	75 m	100 m
Gross weight sales unit	1.52 kg	2.24 kg	2.325 kg
Shipping unit	50 m	75 m	100 m
Gross weight shipping unit	2.52 kg	4.05 kg	4.325 kg
EAN	4010056744137	4010056744144	4010056744151
Article number	74413	74414	74415

# Optical cables

## OL 95 2150

Optical twin cable term.  
150 m

## OL 95 2200

Optical twin cable term.  
200 m

## OL 95 4300

Optical quad cable  
term. 300 m



Technical data			
<b>Buffered fiber</b>			
Fiber type	G657A	G657A	G657A
Outer diameter	0,9 mm	0,9 mm	0,9 mm
Material	LSZH-Compound	LSZH-Compound	LSZH-Compound
Typical attenuation	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm	<0,25 dB/km @ 1550 nm; <0,4 dB/km @ 1310 nm
<b>SS tube</b>			
Material	SUS304	SUS304	SUS304
Outer diameter	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm	1,65 mm ± 0,05 mm
Width	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm	0,85 mm ± 0,05 mm
Thickness	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
Clearance	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm	0,25 mm ± 0,02 mm
<b>Aramid yarn</b>			
Type	1000dtex	1000dtex	1000dtex
<b>General data</b>			
Installation	Outdoor	Outdoor	Outdoor
Length	150 m	200 m	300 m
Bending radius	≥ 30 mm	≥ 30 mm	≥ 30 mm
Cable weight	45 kg/km	45 kg/km	45 kg/km
<b>Connectors</b>			
FC/PC	4 pcs.	4 pcs.	4 pcs.
<b>Packaging data</b>			
Sales unit	150 m	200 m	300 m
Gross weight sales unit	5.1 kg	6.85 kg	0.54 kg
Shipping unit	150 m	200 m	300 m
Gross weight shipping unit	5.6 kg	7.1 kg	1.94 kg
EAN	4010056744168	4010056744175	4010056744182
Article number	74416	74417	74418

# Optical mounting accessoires



## OL 93 0001

FC/PC adapter



### Technical data

Connector	FC/PC
-----------	-------

### Packaging data

Sales unit	1 pcs.
------------	--------

FC/PC adapter for the combining of two pre-terminated optical cables.

## OL 93 0002

FC/PC adapter



### Technical data

Connector	FC/PC to SC/PC
-----------	----------------

### Packaging data

Sales unit	1 pcs.
------------	--------

FC to SC adapter, to connect fiber optic cables with FC connector and SC connector.

## OL 94 0005

Optical attenuator 5 dB



### Technical data

Loss	5 dB
Connector	FC/PC

### Packaging data

Sales unit	1 pcs.
------------	--------

Optical 5 dB pad, FC/PC plug for direct mounting on optical rear converter or distributors of the OL-series

## OL 94 0010

Optical attenuator 10 dB



### Technical data

Loss	10 dB
Connector	FC/PC

### Packaging data

Sales unit	1 pcs.
------------	--------

Optical 10 dB pad, FC/PC plug for direct mounting on optical rear converter or distributor of the OL-series.

# Optical mounting accessoires

## OL 94 0015

Optical attenuator 15 dB



### Technical data

Loss	15 dB
Connector	FC/PC

### Packaging data

Sales unit	1 pcs.
------------	--------

Optical 15 dB pad, FC/PC plug for direct mounting on optical rear converter or distributor of the OL-series.

## OLPS 0230

Power supply 20V/1.2A



### Technical data

Operating voltage	230 V AC (50/60 Hz)
Output voltage	20 V DC
Output current	1,2 A (Short circuit proof)

### Packaging data

Sales unit	1 pcs.
------------	--------

Optional power supply for optical converter OL 21 xxxx and OL 22 xxxx.



## OL 51 0000

Optical test transmitter



## OL 55 0000

Optical measurement device



Technical data	
<b>Output</b>	
Wavelength	1310/1550 nm
Output power	typ. -7 dBm
Modulation	CW / 270 Hz, 1 KHz, 2 KHz
Fibre Type	singlemode, multimode
Connector	FC/PC, SC/PC
Supply voltage	3x 1,5 V AA, 9 V power supply
Battery life time	45 h
Operating temperature range	-10...+60 °C
Dimensions (width x height x depth)	190 x 100 x 50 mm
Weight	0,37 kg

Packaging data	
Sales unit	1 pcs.

Test transmitter for measurements in the optical distribution network. Perfect for testing the passive components before the installation.

Technical data	
<b>Input</b>	
Wavelength	800...1700 nm
Measurement range	-50...+30 dBm
Fibre Type	singlemode, multimode
Connector	FC/PC, SC/PC
Supply voltage	3x 1,5 V AA, 9 V power supply
Battery life time	140 h
Operating temperature range	-10...+60 °C
Dimensions (width x height x depth)	190 x 100 x 50 mm
Weight	0,37 kg

Packaging data	
Sales unit	1 pcs.

Optical measurement device for testing the optical power. Perfect for system documentation or troubleshooting. As signal source will be used the optical test transmitter OL 51 0000 or the optical LNB (OL 11 000 / OL 12 0000).

# Optical mounting accessoires

## OL 57 0002

Cleaning cassette



## OL 57 0003

Replacement tape for OL 57 0002



## OL 57 0001

Cleaning pen for FC and PC connectors



Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.16 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	120 x 70 x 25 mm
Gross weight shipping unit	0.18 kg
EAN	4010056744007
Article number	74400

### Characteristics

- Cleaning connector surface of optical cables
- Cleaning section relockable
- 500 cleaning cycles
- Cleaning tape exchangeable

Packaging data	
Sales unit	1 pcs.

### Characteristics

- Cleaning reel - refill pack for OL 57 002
- 500 cleaning cycles

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.025 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	150 x 30 x 30 mm
Gross weight shipping unit	0.034 kg
EAN	4010056743994
Article number	74399

### Characteristics

- Cleaning connector surface of optical cables and sockets
- 2,5 mm diameter, suitable for FC and SC connectors
- 800 cleaning cycles





## OL 82 0002

N-interconnection  
cable 2 m



## OL 82 0003

N-interconnection  
cable 3 m



## OL 82 0005

N-interconnection  
cable 5 m



## OL 82 0010

N-interconnection  
cable 10 m



### Technical data

Connector	N	N	N	N
Length	2 m	3 m	5 m	10 m
Impedance	50 $\Omega$	50 $\Omega$	50 $\Omega$	50 $\Omega$
Diameter	10 mm	10 mm	10 mm	10 mm

### Packaging data

Sales unit	2 m	3 m	5 m	10 m
Gross weight sales unit	0.42 kg	0.48 kg	0.64 kg	1.01 kg
Shipping unit	2 m	3 m	5 m	10 m
Gross weight shipping unit	0.46 kg	0.52 kg	0.68 kg	1.05 kg
EAN	4010056743420	4010056743772	4010056743789	4010056743796
Article number	74342	74377	74378	74379

# Optical multiswitch

## OL 41 0008

Fiber Switch + PSU, 8 outputs



Basic-multiswitch with an optical input, for 8 subscriber.  
Conversion of one satellite. Power supply in delivery included.

Technical data	
<b>Technical specifications</b>	
Frequency range	950...2150 MHz
Impedance	75 Ω
Return loss	10 dB
Output level	80 dBμV Depending on the signal level of the satellites
Signal to noise ratio @ max. amplification	5 dB
SAT decoupling	35 dB
<b>DVB-T, DAB &amp; FM (electric)</b>	
Frequency range DVB-T	470...790 MHz
Frequency range DAB	174...240 MHz
Frequency range FM	88...108 MHz
Impedance	75 Ω
Return loss	10 dB
Output level for DVB-T	70 dBμV For 6 multiplexes
Signal to noise ratio @ max. amplification	5 dB
Terrestrial decoupling	30 dB
<b>DVB-T, DAB, FM &amp; SAT (Optic)</b>	
Wavelength	1100...1650 nm
Input level	-14...-3 dBm
<b>DC specifications</b>	
Input voltage	11...20 V DC
DiSEqC	1.0
<b>Connectors</b>	
Input	FC/PC connector
Outputs	F-socket
Power supply	2,1 mm connector
Operating temperature range	-20...+50 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	227 x 138 x 67,5 mm
Gross weight sales unit	1.4 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	305 x 205 x 75 mm
Gross weight shipping unit	1.7 kg
EAN	4010056745790
Article number	74579

### Characteristics

- Multi switch with optical input
- Upgradeable to 2, 3 or 4 satellite + TV / Radio
- All units operate with only one power supply
- Space-saving design
- 8 participants outputs



## OL 41 0016

Fiber Switch + PSU, 16 outputs



Basic-multiswitch with an optical input, for 16 subscriber.  
Conversion of one satellite. Power supply in delivery included.

Technical data	
<b>Technical specifications</b>	
Frequency range	950...2150 MHz
Impedance	75 $\Omega$
Return loss	10 dB
Output level	80 dB $\mu$ V Depending on the signal level of the satellites
Signal to noise ratio @ max. amplification	5 dB
SAT decoupling	35 dB
<b>DVB-T, DAB &amp; FM (electric)</b>	
Frequency range DVB-T	470...790 MHz
Frequency range DAB	174...240 MHz
Frequency range FM	88...108 MHz
Impedance	75 $\Omega$
Return loss	10 dB
Output level for DVB-T	70 dB $\mu$ V For 6 multiplexes
Signal to noise ratio @ max. amplification	5 dB
Terrestrial decoupling	30 dB
<b>DVB-T, DAB, FM &amp; SAT (Optic)</b>	
Wavelength	1100...1650 nm
Input level	-14...-3 dBm
<b>DC specifications</b>	
Input voltage	11...20 V DC
DiSEqC	1.0
<b>Connectors</b>	
Input	FC/PC connector
Outputs	F-socket
Power supply	2,1 mm connector
Operating temperature range	-20...+50 $^{\circ}$ C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	227 x 138 x 67,5 mm
Gross weight sales unit	1.54 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	305 x 205 x 75 mm
Gross weight shipping unit	1.84 kg
EAN	4010056745806
Article number	74580

### Characteristics

- Multi switch with optical input
- Upgradeable to 2, 3 or 4 satellite + TV / Radio
- All units operate with only one power supply
- Space-saving design
- 16 participants outputs

# Optical multiswitch

## OL 42 0008

Fiber Switch + 1 SAT, 8 outputs



Extension-multiswitch with an optical input, for 8 subscriber.  
Conversion of one satellite. Power supply by the connected basic switch OL 41 0008.

Technical data	
<b>Technical specifications</b>	
Frequency range	950...2150 MHz
Impedance	75 $\Omega$
Return loss	10 dB
Output level	80 dB $\mu$ V Depending on the signal level of the satellites
Signal to noise ratio @ max. amplification	5 dB
SAT decoupling	35 dB
<b>DVB-T, DAB &amp; FM (electric)</b>	
Frequency range DVB-T	470...790 MHz
Frequency range DAB	174...240 MHz
Frequency range FM	88...108 MHz
Impedance	75 $\Omega$
Return loss	10 dB
Output level for DVB-T	70 dB $\mu$ V For 6 multiplexes
Signal to noise ratio @ max. amplification	5 dB
Terrestrial decoupling	30 dB
<b>DVB-T, DAB, FM &amp; SAT (Optic)</b>	
Wavelength	1100...1650 nm
Input level	-14...-3 dBm
<b>DC specifications</b>	
Input voltage	11...20 V DC
DiSEqC	1.0
<b>Connectors</b>	
Input	FC/PC connector
Outputs	F-socket
Power supply	2,1 mm connector
Operating temperature range	-20...+50 $^{\circ}$ C

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.9 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	260 x 115 x 65 mm
Gross weight shipping unit	1.1 kg
EAN	4010056745813
Article number	74581

### Characteristics

- Multi switch with optical input
- Upgradeable to 2, 3 or 4 satellite + TV / Radio
- All units operate with only one power supply
- Space-saving design



## OL 42 0016

Fiber Switch + 1 SAT, 16 outputs



Extension-multiswitch with an optical input, for 16 subscriber.  
Conversion of one satellite. Power supply by the connected basic switch OL 41 0016.

Technical data	
<b>Technical specifications</b>	
Frequency range	950...2150 MHz
Impedance	75 Ω
Return loss	10 dB
Output level	80 dBμV Depending on the signal level of the satellites
Signal to noise ratio @ max. amplification	5 dB
SAT decoupling	35 dB
<b>DVB-T, DAB &amp; FM (electric)</b>	
Frequency range DVB-T	470...790 MHz
Frequency range DAB	174...240 MHz
Frequency range FM	88...108 MHz
Impedance	75 Ω
Return loss	10 dB
Output level for DVB-T	70 dBμV For 6 multiplexes
Signal to noise ratio @ max. amplification	5 dB
Terrestrial decoupling	30 dB
<b>DVB-T, DAB, FM &amp; SAT (Optic)</b>	
Wavelength	1100...1650 nm
Input level	-14...-3 dBm
<b>DC specifications</b>	
Input voltage	11...20 V DC
DiSEqC	1.0
<b>Connectors</b>	
Input	FC/PC connector
Outputs	F-socket
Power supply	2,1 mm connector
Operating temperature range	-20...+50 °C

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.9 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	260 x 115 x 65 mm
Gross weight shipping unit	1.1 kg
EAN	4010056745820
Article number	74582

### Characteristics

- Multi switch with optical input
- Upgradeable to 2, 3 or 4 satellite + TV / Radio
- All units operate with only one power supply
- Space-saving design

**OPTOPUS**  
HIGH DENSITY OPTICAL PLATFORM

# Optical platform for HFC and FTTx

Redundant AC  
and DC  
power supply

Interfaces for  
monitoring  
external devices

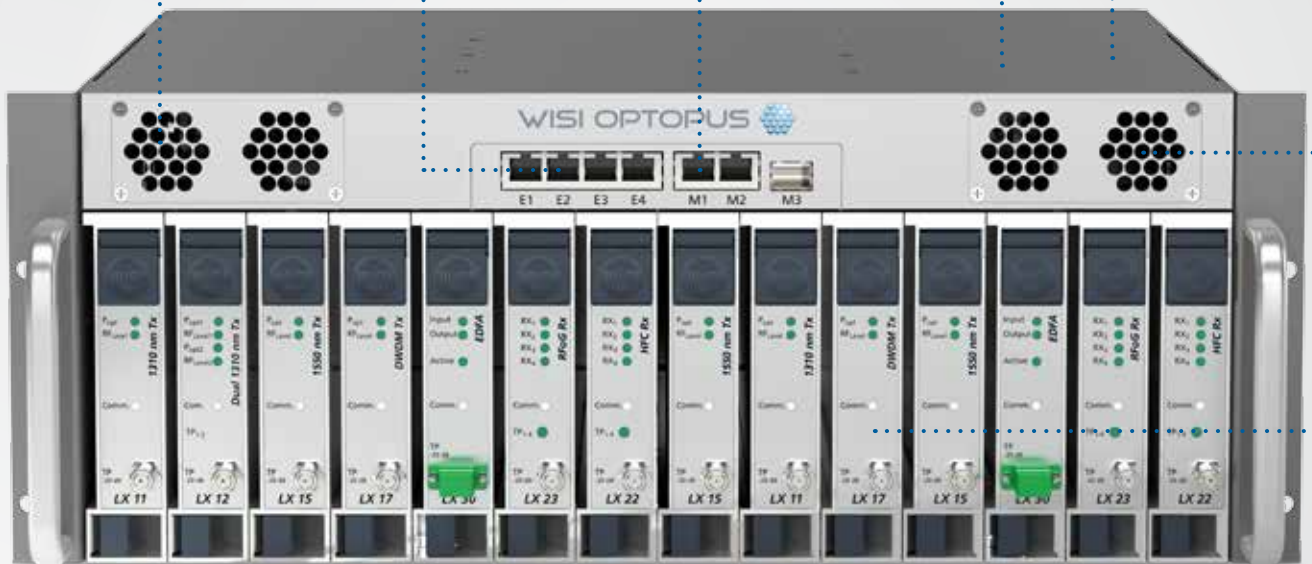
Interfaces for  
network  
management

Rear pluggable  
passive optical  
modules

Replaceable  
fan

1 RU

3 RU



14 slots for active and passive modules



# Optical transmission platform

**The transmission system Optopus from WISI is a flexible platform with a very high port density for all applications of optical transmission in broadband networks. The system can be used in all network types such as HFC, RF over Glass (RFoG), RF Overlay and FTTx.**

**Optopus** is developed to meet the high demands of today's transmission networks. Features such as redundant power supplies, replaceable during operation ventilation units and an advanced network management meet all requirements of a professional network operator.

**The Optopus platform** offers maximum flexibility for the realization of the desired application. Plug-in modules for a variety of functions can be combined.

With the 14 slots in the 3 + 1 height units (HU) large chassis, it is possible, for example, to install up to 28 optical transmitters, 56 return path receivers or even a mix of them. In the upper part of the chassis there are redundant power supplies, the ventilation unit and the interfaces for network management. Through its cost efficiency and signal parameters, Optopus is the desired system of each network operator.

**Redundant AC and DC power supply**

**Hot-swap:**  
Easy replacement of modules for a minimum system downtime

## WISI Optopus at a glance:

- Fully modular concept for any application
- Reduced maintenance due to module replacement during operation
- „Backplates“ reduce time of installation and maintenance
- Extended module lifetimes with dust-free fanless cooling module
- Easy installation and operation with user-friendly software
- Integrated WDM filter in modules saves space, money and time
- Redundant power supplies ensure high overall system functionality and stability

# Base units and accessories

## LX 50 0230

Optopus Basic Unit for 14 Modules, 230 V AC



LX 50 0230 is a basic unit for the optical transmission platform Optopus, providing 14 module slots in 4 height units, with a supply voltage of 230 AC.

### Technical data

#### Network Interfaces

Management Ports RJ45	2 pcs. (Ethernet 10/100 Base-T)
Management Ports SFP	2 pcs. (Ethernet 1000 Base-X)
Local Management Ports RJ45	1 pcs. (Ethernet 10/100 Base-T)
Management Protocols	IPv4, SNMP v1/v2c/v3, DHCP, HTTP, SFTP, SNTP, SSH
Extension Ports RJ45	2 pcs. (Ethernet 10/100 Base-T)

#### Power supply

Cold-device plug, IEC 60320-C14	2 pcs. (rear)
Power supply slots	2 pcs. (for LX 55 0230, front)
Nominal Input Voltage AC	230 V AC (with LX 55 0230)
Power consumption max.	240 W (Base Unit alone: max. 25 W)

#### General data

Module slots	14 pcs. (active Modules on front, passive on rear panel)
Dimensions (width x height x depth)	48 x 178 x 330 mm (19", 4 RU)
Operating temperature range	-5 ... +45 °C (ETSI EN 300 019-1-3 Class 3.1)
Storage temperature	-20 ... +75 °C
Enclosure Classification	IP20
Electro Magnetic Compatibility (EMC)	EN 50082-1, EN 50082-2, EN 50083-2, EN 55022 Class B

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	560 x 435 x 215 mm
Gross weight sales unit	12.580 kg
Packaging volume shipping package	52.4 dm <sup>3</sup>
Gross weight shipping unit	12.58 kg
EAN	4010056716912
Customs tariff number	85176100

### Characteristics

- Tool less hot-swap modules, power supply units and fans
- Mechanical backplate for optical and electrical connectors enables module exchange without recabeling.
- Local and remote management
- Fully redundant power supply concept

### Scope of delivery

- Base unit
- 1 x Power Supply Unit LX 55 0230





## LX 50 0048

Optopus Basic Unit for 14 Modules, 48 V DC



LX 50 0048 is a basic unit of the optical transmission platform Optopus, providing 14 module slots in a 4 RU chassis, powered from a 48 V DC mains supply.

### Technical data

#### Network Interfaces

Management Ports RJ45	2 pcs. (Ethernet 10/100 Base-T)
Management Ports SFP	2 pcs. (Ethernet 1000 Base-X)
Local Management Ports RJ45	1 pcs. (Ethernet 10/100 Base-T)
Management Protocols	IPv4, SNMP v1/v2c/v3, DHCP, HTTP, SFTP, SNTP, SSH
Extension Ports RJ45	2 pcs. (Ethernet 10/100 Base-T)

#### Power supply

Two-Pin Connector	2 pcs. (rear)
Power supply slots	2 pcs. (for LX 55 0048, front)
Nominal Input Voltage DC	48 V DC (with LX 55 0048)
Power consumption max.	240 W (Base Unit alone: max. 25 W)

#### General data

Module slots	14 pcs.
Dimensions (width x height x depth)	48 x 178 x 330 mm (4 HE, 19" - rack)
Operating temperature range	-5 ... +45 °C
Storage temperature	-20 ... +75 °C
Enclosure Classification	IP20
Electro Magnetic Compatibility (EMC)	EN 50082-1, EN 50082-2, EN 50083-2, EN 55022 Class B

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	560 x 435 x 215 mm
Gross weight sales unit	12.500 kg
Packaging volume shipping package	52.4 dm <sup>3</sup>
Gross weight shipping unit	12.5 kg
EAN	4010056729424
Customs tariff number	85176100

### Characteristics

- Tool less hot-swap modules, power supply units and fans
- Mechanical backplate for optical and electrical connectors enables module exchange without recabeling.
- Local and remote management
- Fully redundant power supply concept

### Scope of delivery

- Base unit
- 1 x Power Supply Unit LX 55 0048

# Base units and accessories

## LX 52

### Optopus Basic Unit for 2 Modules



LX 52 is a base unit of the optical platform Optopus with 2 slots in a single rack unit chassis.

Technical data	
<b>Network Interfaces</b>	
Management Ports RJ45	4 pcs. (Ethernet 10/100 Base-T)
Management Protocols	IPv4, SNMP v1/v2c/v3, DHCP, HTTP, SFTP, SNTp, SSH
<b>Power supply</b>	
Power supply slots	2 pcs. (for LXPS 0230 / 0048)
Nominal Input Voltage AC	230 V AC (with LXPS 0230)
Nominal Input Voltage DC	48 V DC (with LXPS 0048)
Power consumption	< 75 W (Base Unit alone: max. 6 W)
<b>General data</b>	
Module slots	2 pcs. (active Modules on front, passive on rear panel)
Dimensions (width x height x depth)	485 x 43 x 330 mm (19", 1HE)
Operating temperature range	-5 ... +45 °C (ETSI EN 300 019-1-3 Class 3.1)
Storage temperature	-20 ... +75 °C
Enclosure Classification	IP20
Electro Magnetic Compatibility (EMC)	EN 50082-1, EN 50082-2, EN 50083-2, EN 55022 Class B
<b>Packaging data</b>	
Sales unit	1 pcs.
Gross weight sales unit	5.240 kg
Packaging volume shipping package	28,7 dm <sup>3</sup>
Gross weight shipping unit	5,84 kg
EAN	4010056739072
Article number	73907

#### Characteristics

- Tool less hot-swap modules, power supply units and fans
- Fully redundant power supply concept
- Local and remote management

#### Scope of delivery

- Base unit
- in addition, the power supply LXPS 0048 or LXPS 0230 is necessary



## LX 55 0230

Power supply unit for LX 50 0230, 230 V AC



## LX 55 0048

Power supply unit for LX 50 0048, 48 V DC



### Technical data

#### Connectors

Cold-device plug, IEC 60320-C14	1 pcs.	1 pcs.
---------------------------------	--------	--------

#### General data

Primary voltage	180...265 V AC (47 ... 63 Hz)	-45...-75 V DC
Secondary voltage	12 V DC	12 V DC
Power consumption	< 245 W	245 W
Efficiency	≥90 %	≥90 %
Dimensions (width x height x depth)	100 x 42 x 217 mm	100 x 42 x 217 mm
Environmental parameters	-20...+55 °C	-20...+55 °C
Protection class	IP30	IP30

### Packaging data

Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	278 x 198 x 86 mm	278 x 198 x 86 mm
Packaging volume shipping package	4.8 dm <sup>3</sup>	4.8 dm <sup>3</sup>
EAN	4010056722265	4010056722272
Article number	72226	72227

# Optical transmitter

## LX 11 S 0600

1310 nm transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated 1310nm fullband transmitter for HFC networks. The Optopus is a highly flexible and dense platform for all kinds of analog optical networks. The system is designed for any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1310 nm ( $\pm 10$ nm)
Optical output power	6 dBm (4 mW)
Frequency range	10...1006 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	< -155 dB/Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)

### Connectors

F-socket	1 pcs.
----------	--------

### General data

Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
Packaging volume shipping package	2.8 278 x 198 x 86
Gross weight shipping unit	1.705 kg
EAN	4010056722975
Article number	72297

### Characteristics

- Optical HFC transmitter for use in WISL Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression



# LX 11 S 0800

1310 nm transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated 1310nm fullband transmitter for HFC networks. The Optopus is a highly flexible and dense platform for all kinds of analog optical networks. The system is designed for any network such as HFC, RF over Glass or RF Overlay in FTTH applications.

## Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1310 nm ( $\pm 10$ nm)
Optical output power	8 dBm (6 mW)
Frequency range	10...1006 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	< -155 dB/Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)
Connectors	
F-socket	1 pcs.
General data	
Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

## Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
Packaging volume shipping package	2.8 278 x 198 x 86
Gross weight shipping unit	1.705 kg
EAN	4010056722982
Article number	72298

## Characteristics

- Optical HFC transmitter for use in WISL Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression

# Optical transmitter

## LX 11 S 1000

1310 nm transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated 1310nm fullband transmitter for HFC networks. The Optopus is a highly flexible and dense platform for all kinds of analog optical networks. The system is designed for any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1310 nm ( $\pm 10$ nm)
Optical output power	10 dBm (10 mW)
Frequency range	10...1006 MHz
Optical return loss	$>40$ dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	$< -155$ dB/Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)

### Connectors

F-socket	1 pcs.
----------	--------

### General data

Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
Packaging volume shipping package	3.35 dm <sup>3</sup>
Gross weight shipping unit	1.705 kg
EAN	4010056719456
Article number	71945

### Characteristics

- Optical HFC transmitter for use in WISI Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression



## LX 11 S 1300

1310 nm transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated 1310nm fullband transmitter for HFC networks. The Optopus is a highly flexible and dense platform for all kinds of analog optical networks. The system is designed for any network such as HFC, RF over Glass or RF Overlay in FTTH applications.

### Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1310 nm ( $\pm 10$ nm)
Optical output power	13 dBm (20 mW)
Frequency range	10...1006 MHz
Optical return loss	$>40$ dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	$< -155$ dB/Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)
Connectors	
F-socket	1 pcs.
General data	
Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.705 kg
EAN	4010056723194
Article number	72319

### Characteristics

- Optical HFC transmitter for use in WISL Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression

# Optical transmitter

## LX 11 S 1001

O-Band Transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated fullband transmitter with one O-Band wavelength for use in HFC network cluster splitting applications. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1330.46 nm ( $\pm 0,05$ nm)
Optical output power	10 dBm (10 mW)
Frequency range	10...1006 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	< -155 dB $\sqrt$ /Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)
Connectors	
F-socket	1 pcs.
General data	
Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
EAN	4010056722920
Article number	72292

- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression
- O-Band wavelength

### Characteristics

- Optical HFC transmitter for use in WISI Chassis LX 50





## LX 11 S 1002

### O-Band Transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated fullband transmitter with one O-Band wavelength for use in HFC network cluster splitting applications. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

#### Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1327.25 nm ( $\pm 0,05$ nm)
Optical output power	10 dBm (10 mW)
Frequency range	10...1006 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	< -155 dB/Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)

#### Connectors

F-socket	1 pcs.
----------	--------

#### General data

Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
EAN	4010056722937
Article number	72293

#### Characteristics

- Optical HFC transmitter for use in WISL Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression
- O-Band wavelength

# Optical transmitter

## LX 11 S 1003

O-Band Transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated fullband transmitter with one O-Band wavelength for use in HFC network cluster splitting applications. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

#### Downstream

Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1329.22 nm ( $\pm 0,05$ nm)
Optical output power	10 dBm (10 mW)
Frequency range	10...1006 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	< -155 dB $\sqrt$ /Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)

#### Connectors

F-socket	1 pcs.
----------	--------

#### General data

Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
EAN	4010056722944
Article number	72294

- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression
- O-Band wavelength

### Characteristics

- Optical HFC transmitter for use in WISI Chassis LX 50



# LX 11 S 1004

## O-Band Transmitter



The LX 11 is part of the Optopus product portfolio. LX 11 is a direct modulated fullband transmitter with one O-Band wavelength for use in HFC network cluster splitting applications. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1325.78 nm ( $\pm 0,05$ nm)
Optical output power	10 dBm (10 mW)
Frequency range	10...1006 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	< -155 dB/Hz
CSO	$\geq 63$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)
Connectors	
F-socket	1 pcs.
General data	
Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.850 kg
EAN	4010056722951
Article number	72295

### Characteristics

- Optical HFC transmitter for use in WISL Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- Fullband transmitter 10...1006 MHz
- SBS suppression
- O-Band wavelength

# Optical transmitter

## LX 12 S 0300

Dual 1310 nm Transmitter



The LX 12 is part of the Optopus product portfolio. LX 12 is a dual direct modulated fullband transmitter with 2x 1310 nm for use in HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

#### Downstream

Laser type	Uncooled isolated DFB laser
Wavelength transmitter 1	1310 nm ( $\pm 10$ nm)
Optical output power	3 dBm (2 mW)
Frequency range	10...1218 MHz
Optical return loss	$>40$ dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,75$ dB
Relative Intensity Noise 1	$< -150$ dB/Hz
CSO	$\geq 60$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)

#### Connectors

F-socket	1 pcs.
----------	--------

#### General data

Power consumption	$\leq 12$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.895 kg
Packaging volume shipping package	3.35 dm <sup>3</sup>
Gross weight shipping unit	1.75 kg
EAN	4010056740405
Article number	74040

### Characteristics

- Dual optical HFC transmitter for use in WISI Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Fullband transmitter 10...1218 MHz
- Adjustable Narrowcast-Input



# LX 12 S 0600

## Dual 1310 nm Transmitter



The LX 12 is part of the Optopus product portfolio. LX 12 is a dual direct modulated fullband transmitter with 2x 1310 nm for use in HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

Downstream	
Laser type	Uncooled isolated DFB laser
Wavelength transmitter 1	1310 nm ( $\pm 10$ nm)
Optical output power	6 dBm (4 mW)
Frequency range	10...1218 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,75$ dB
Relative Intensity Noise 1	< -150 dB $\sqrt$ /Hz
CSO	$\geq 60$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Input measurement socket	-20 dB (BC-Input level)
Connectors	
F-socket	1 pcs.
General data	
Power consumption	$\leq 12$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.885 kg
Shipping unit	pcs.
Packaging volume shipping package	2.8
Gross weight shipping unit	1.74 kg
EAN	4010056743055
Article number	74305

### Characteristics

- Dual optical HFC transmitter for use in WISI Chassis LX 50
- Adjustable OMI
- Automatic level control (ALC)
- Fullband transmitter 10...1218 MHz
- Adjustable Narrowcast-Input

# Optical transmitter

## LX 13 S 0312

### CWDM Up Stream Transmitter



The LX 13 is part of the Optopus product portfolio. LX 13 is a dual CWDM upstream transmitter with two adjacent CWDM wavelengths for use in return path applications in HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTH applications.

#### Technical data

Downstream	
Laser type	Uncooled isolated DFB laser
Wavelength transmitter 1	1471/1491 nm
Optical output power	2x 3 dBm (2 mW)
Frequency range	5...500 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (Low-Level-Input)
Input level Narrowcast	88 dB $\mu$ V (High-Level-Input)
Level control narrowcast	$\pm$ 2 dB (adjustable)
Inputs AGC	$\pm$ 5 dB
Decoupling NC/BC input	$\geq$ 50 dB
Electrical reflection loss	$\geq$ 20 dB
Ripple	$\leq \pm$ 0,75 dB
Relative Intensity Noise 1	< -145 dB/Hz
Input measurement socket	-20/-30 dB (Low-Level-/High-Level-Input)
OMI setting range	3...10 %
Dynamic range by 40 dB NPR	$\geq$ 10 dB
Connectors	
F-socket	1 pcs.
General data	
Power consumption	$\leq$ 10,5 W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.895 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.75 kg
EAN	4010056724566
Article number	72456

#### Characteristics

- High Density Dual CWDM-Transmitter
- Two CWDM transmitter in one module
- Highest performance with dual-stage isolator
- Adjustable OMI



# LX 13 S 0334

## CWDM Up Stream Transmitter



The LX 13 is part of the Optopus product portfolio. LX 13 is a dual CWDM upstream transmitter with two adjacent CWDM wavelengths for use in return path applications in HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

Downstream	
Laser type	Uncooled isolated DFB laser
Wavelength transmitter 1	1511/1531 nm
Optical output power	2x 3 dBm (2 mW)
Frequency range	5...500 MHz
Optical return loss	>40 dB
Input level broadcast	78 dBμV (Low-Level-Input)
Input level Narrowcast	88 dBμV (High-Level-Input)
Level control narrowcast	±2 dB (adjustable)
Inputs AGC	±5 dB
Decoupling NC/BC input	≥50 dB
Electrical reflection loss	≥20 dB
Ripple	≤ ±0,75 dB
Relative Intensity Noise 1	< -145 dB/Hz
Input measurement socket	-20/-30 dB (Low-Level-/High-Level-Input)
OMI setting range	3...10 %
Dynamic range by 40 dB NPR	≥10 dB
Connectors	
F-socket	1 pcs.
General data	
Power consumption	≤10,5 W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.895 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.75 kg
EAN	4010056724573
Article number	72457

### Short description

- CWDM Up Stream Transmitter
- High Density Dual CWDM-Transmitter
- Two CWDM transmitter in one module
- Highest performance with dual-stage isolator
- Adjustable OMI

# Optical transmitter

## LX 15 S 1000

1550 nm BC-transmitter



The LX 15 is part of the Optopus product portfolio. LX 15 is a direct modulated fullband transmitter with 1550 nm for use in RF Overlay and RFOG networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTH applications.

### Technical data

Downstream	
Laser type	Temperature stabilized DFB laser
Wavelength transmitter 1	1555 nm ( $\pm 10$ nm)
Optical output power	10 dBm (10 mW)
Frequency range	10...1006 MHz
Optical return loss	>40 dB
Input level broadcast	78 dB $\mu$ V (PAL-Level)
Input level Narrowcast	84 dB $\mu$ V (QAM-Level, 4 dB back off)
Level control narrowcast	$\pm 2$ dB (adjustable)
Inputs AGC	$\pm 5$ dB
Decoupling NC/BC input	$\geq 50$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB /oct., min. 17 dB)
Ripple	$\leq \pm 0,5$ dB
Relative Intensity Noise 1	< -155 dB $\sqrt$ /Hz
SBS suppression	16 dBm
CSO	$\geq 60$ dBc (42 channels CENELEC)
CTB	$\geq 65$ dBc (42 channels CENELEC)
Transmission length	25 km
Input measurement socket	-20 dB (BC-Input level)

### Connectors

F-socket	1 pcs.
----------	--------

### General data

Power consumption	$\leq 7$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.834 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.7 kg
EAN	4010056719470
Article number	71947

### Characteristics

- Optical transmitter for use in WISI Chassis LX50
- Adjustable OMI
- Automatic level control (ALC)
- Electronic predistortion
- SBS suppression
- Dispersion compensation





# LX 15 S 2270

## Full Spectrum Transmitter



The WISI OPTOPUS LX 15 S 2000 Transmitter series is part of WISI's CCAP migration solution. It is ideal for cost-effective transmission of full-spectrum 1.2 GHz channel loads over fiber. Its applications include DOCSIS 3.1 HFC and RFoG as well as RF overlay in PON networks.

Technical data	
<b>RF signal path</b>	
Frequency range	47...1218 MHz
Nominal level BC-input	78 dB $\mu$ V (per PAL ch.)
Nominal level NC-input	82 dB $\mu$ V (per QAM ch., 6 dB backoff to PAL)
Level control NC	-2...+2 dB
Level control composite RF	-5...+5 dB (ALC switchable)
Slope control	-2...+2 dB
Frequency response	-0,5...+0,5 dB
<b>Optoelectronic properties</b>	
Laser type	Temperature stabilized DFB laser
Wavelength	1555,75 nm
Optical output power	> +5 dBm
Transmission length	0...65 km
SBS suppression	up to 12 dBm
Relative intensity noise	< -155 dB $\sqrt$ /Hz
<b>Signal quality, mixed load (30 ch. PAL + 60 ch. QAM256)</b>	
Carrier-to-noise-ratio (CNR)	>51 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Composite second order (CSO)	>64 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Composite triple beat (CTB)	>64 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Modulation error rate (MER)	>44 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Bit error rate (BER)	<1e-9 (Transmission over 40 km fiber, Rx input power 0 dBm)
<b>Signal quality, all-QAM loading (120 ch. QAM256 258...1218 MHz)</b>	
Modulation error rate (MER)	>41 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Bit error rate (BER)	<1e-9 (Transmission over 40 km fiber, Rx input power 0 dBm)
<b>Signal interfaces</b>	
RF return loss	>20 dB

Technical data	
Decoupling NC/BC input	>50 dB
Input test port	-20 dB (relative to BC input)
Output test port	75 dB $\mu$ V (at 5% OMI)
Optical return loss	>40 dB
<b>Connectors</b>	
F-socket rear	2 pcs. (BC input, NC input)
F-socket front	1 pcs. (Test port: composite input / driver output switchable)
SC-APC connectors	1 pcs. (opt. output)
<b>General data</b>	
Dimensions (width x height x depth)	30 x 133 x 320 mm (Optopus module)
Power consumption max.	<9 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019-1-3 class 3.2)
Enclosure Classification	IP30
Laser safety	EN 60825-2 hazard level 1M
EMC	EN 50082-1, EN 50082-2, EN 50083-2, EN 55022 class B

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Packaging volume sales unit	5,28 dm <sup>3</sup>
Gross weight sales unit	1,745 kg
EAN	4010056745165
Article number	74516

### Characteristics

- Broad frequency range for DOCSIS 3.1
- Wide transmission reach for capacity utilization of centralized headend sites
- Cost-efficient solution for broadcast and full-spectrum transmission of downstream signals
- Tunable wavelength (optional) enables flexible assignment in DWDM systems

# Optical transmitter

## LX 15 S 2TA0

Full Spectrum Transmitter



The WISI OPTOPUS LX 15 S 2000 Transmitter series is part of WISI's CCAP migration solution. It is ideal for cost-effective transmission of full-spectrum 1.2 GHz channel loads over fiber. Its applications include DOCSIS 3.1 HFC and RFoG as well as RF overlay in PON networks.

Technical data	
<b>RF signal path</b>	
Frequency range	47...1218 MHz
Nominal level BC-input	78 dB $\mu$ V (per PAL ch.)
Nominal level NC-input	82 dB $\mu$ V (per QAM ch., 6 dB backoff to PAL)
Level control NC	-2...+2 dB
Level control composite RF	-5...+5 dB (ALC switchable)
Slope control	-2...+2 dB
Frequency response	-0,5...+0,5 dB
<b>Optoelectronic properties</b>	
Laser type	Temperature stabilized DFB laser
Wavelength	1538...1563 nm (100 GHz DWDM, ITU ch. 18 ... 49, tunability option)
Optical output power	> +5 dBm
Transmission length	0...65 km
SBS suppression	up to 12 dBm
Relative intensity noise	< -155 dB/Hz
<b>Signal quality, mixed load (30 ch. PAL + 60 ch. QAM256)</b>	
Carrier-to-noise-ratio (CNR)	>51 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Composite second order (CSO)	>64 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Composite triple beat (CTB)	>64 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Modulation error rate (MER)	>44 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Bit error rate (BER)	<1e-9 (Transmission over 40 km fiber, Rx input power 0 dBm)
<b>Signal quality, all-QAM loading (120 ch. QAM256 258...1218 MHz)</b>	
Modulation error rate (MER)	>41 dB (Transmission over 40 km fiber, Rx input power 0 dBm)
Bit error rate (BER)	<1e-9 (Transmission over 40 km fiber, Rx input power 0 dBm)
<b>Signal interfaces</b>	
RF return loss	>20 dB

Technical data	
Decoupling NC/BC input	>50 dB
Input test port	-20 dB (relative to BC input)
Output test port	75 dB $\mu$ V (at 5% OMI)
Optical return loss	>40 dB
<b>Connectors</b>	
F-socket rear	2 pcs. (BC input, NC input)
F-socket front	1 pcs. (Test port: composite input / driver output switchable)
SC-APC connectors	1 pcs. (opt. output)
<b>General data</b>	
Dimensions (width x height x depth)	30 x 133 x 320 mm (Optopus module)
Power consumption max.	<9 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019-1-3 class 3.2)
Enclosure Classification	IP30
Laser safety	EN 60825-2 hazard level 1M
EMC	EN 50082-1, EN 50082-2, EN 50083-2, EN 55022 class B

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Packaging volume sales unit	5,28 dm <sup>3</sup>
Gross weight sales unit	1,745 kg
EAN	4010056743062
Article number	74306

### Characteristics

- Broad frequency range for DOCSIS 3.1
- Wide transmission reach for capacity utilization of centralized headend sites
- Cost-efficient solution for broadcast and full-spectrum transmission of downstream signals
- Tunable wavelength (optional) enables flexible assignment in DWDM systems



# LX 21 S 0100

## Single DS Receiver



The LX 21 is part of the Optopus product portfolio. LX 21 is an optical receiver for downstream applications with a wide input range. The Optopus is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTH applications.

### Technical data

Downstream	
Wavelength	1280...1630 nm
Optical return loss	>40 dB
Impedance	75 Ω
Return loss output	≥18 dB (-1,5 dB/Okt.)min. 14 dB
Frequency range	47...1006 MHz
Opt. input level for controlled electrical output level	-7...+3 dBm
Max. controlled output level	90 dBμV (ALC on, 4% OMI)
Attenuator range	0...15 dB (0,5 dB steps)
Equalizer range	0...10 dB (0,5 dB steps)
Amplitude response (O-E)	≤ ±0,5 dB
Equivalent noise input	≤4,5 pA/√Hz
Output level	90 dBμV (CENELEC 42 Ch. (CSO/CTB ≥ 70 dB), flat)
Test point	-20 dB
Connectors	
Fiber type	Single Mode 9/125 μm
Optical connector	SC/APC connectors
RF connectors	F
General data	
Supply voltage	12 V DC
Power consumption	6,5 W
EMC	EN50083-2
Operating temperature range	-5...+45 °C (EN300 019-1-3 Class 3.2)
Dimensions (width x height x depth)	30 x 133 x 320 mm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Packaging volume sales unit	5,28 dm <sup>3</sup>
Gross weight sales unit	1,845 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
EAN	4010056719487
Customs tariff number	85176100

### Characteristics

- Optical receiver for use in WISI Chassis LX50
- Automatic level control (ALC)

# Optical receivers

## LX 22 S 0400

Quattro US HFC Receiver



The LX 22 is part of the Optopus product portfolio. LX 22 is a quattro upstream receiver for use in HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

### Technical data

Optical receiver 19"	4 pcs.
Optical input level	-17...+0 dBm
Optical input attenuator	0...40 dB (1 dB-steps, only adjustable when ALC is off)
Receiving wavelength	1280...1630 nm
Thermal receiver noise	$\leq 2$ pA $\sqrt{\text{Hz}}$
Optical return loss	>45 dB
Electrical reflection loss	$\geq 20$ dB (-1 dB/oct.)
Frequency range	5...200 MHz
Ripple	$\leq \pm 0,75$ dB
Electrical output power	90 dB $\mu$ V (max. controlled level, 5% OMI, ALC on)
Output attenuator	0...15 dB (1 dB-steps)
Output test point	-20 dB
<b>Connectors</b>	
SC/APC connectors	1 pcs.
F-socket	1 pcs.
<b>General data</b>	
Power consumption	$\leq 12$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.845 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.7 kg
EAN	4010056719494
Customs tariff number	85176100

### Characteristics

- Optical quattro upstream receiver for use in WISI Chassis LX50
- 4 independent upstream channels per unit or ne combined output
- 4 RF output ports at rear
- Optical automatic level control (ALC) for constant RF-Level
- Redundancy switching option with LX71



## LX 22 H 0400

### Quattro Upstream HFC/RFoG Ultra Low Noise Receiver



The LX 22 is part of the Optopus product portfolio. LX 22 is a quattro upstream receiver for use in HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

#### Technical data

Optical Receiver LX Optical Receiver LX	4 pcs.
Optical input level	-28...-10 dBm
Optical input attenuator	0...40 dB (1 dB-steps, only adjustable when ALC is off)
Receiving wavelength	1280...1630 nm
Thermal receiver noise	$\leq 1$ pA $\sqrt{\text{Hz}}$
Optical return loss	>45 dB
Electrical reflection loss	$\geq 20$ dB (-1 dB/oct.)
Frequency range	5...204 MHz
Ripple	$\leq \pm 0,75$ dB
Electrical output power	75 dB $\mu$ V (max. controlled level, 5% OMI, ALC on)
Output attenuator	0...15 dB (1 dB-steps)
Output test point	-20 dB
<b>Connectors</b>	
SC/APC connectors	1 pcs.
F-socket	1 pcs.
<b>General data</b>	
Power consumption	$\leq 12$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.845 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.7 kg
EAN	4010056736446
Customs tariff number	85176100

#### Characteristics

- Optical quattro ultra low noise upstream receiver for use in WISL Chassis LX50
- 4 independent upstream channels per unit or one combined output
- 4 RF output ports at rear
- Optical automatic level control (ALC) for constant RF-Level
- Redundancy switching option with LX71

# Optical receivers

## LX 23 L 0431

Quattro Upstream RFoG Receiver



The LX 23 is part of the Optopus product portfolio. LX 23 is a quattro upstream receiver for use in RFoG networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

Technical data	
Optical receiver 19"	4 pcs.
Optical input level	-28...-10 dBm
Receiving wavelength	1310 nm
Wavelength network interface	1270...1565 nm
Wavelength RFoG receiver	1270...1350 nm
Wavelength broadcast interface	1530...1565 nm
Thermal receiver noise	$\leq 1$ pA $\sqrt{\text{Hz}}$
Optical return loss	$\geq 45$ dB
Decoupling network-connection RFoG receiver	$\geq 40$ dB
Decoupling network-connection broadcast connection	$\geq 15$ dB
Directional attenuation	$\geq 60$ dB
Insertion loss broadcast network connection	$\leq 0,8$ dB
Insertion loss network connection RFoG receiver	$\leq 1,0$ dB
Electrical reflection loss	$\geq 20$ dB (-1 dB/oct.)
Frequency range	5...100 MHz
Ripple	$\leq \pm 0,75$ dB
Electrical output power	90 dB $\mu$ V (15% OMI @ -28 dBm)
Output attenuator	0...40 dB (1 dB-steps)
Output test point	-20 dB
Connectors	
LC/APC connector	1 pcs.
F-socket	5 pcs.
General data	
Power consumption	$\leq 12$ W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	400 x 200 x 35 mm
Gross weight sales unit	1.900 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.76 kg
EAN	4010056722654
Customs tariff number	85176100

### Characteristics

- Optical quattro upstream receiver for use in WISI Chassis LX 50
- 4 independent upstream channels per unit or one combined output
- 4 RF output ports at rear
- Integrated RFoG-Filter (1310 nm)
- IDS noise suppression (Squelch)



# LX 23 L 0461

## Quattro Upstream RFoG Receiver



The LX 23 is part of the Optopus product portfolio. LX 23 is a quattro upstream receiver for use in RFoG networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTX applications.

Technical data	
Optical receiver 19"	4 pcs.
Optical input level	-28...-10 dBm
Receiving wavelength	1610 nm
Wavelength network interface	1260...1620 nm
Wavelength RFoG receiver	1600...1620 nm
Wavelength broadcast interface	1260...1590 nm
Thermal receiver noise	≤1,0 pA/√Hz
Optical return loss	≥45 dB
Decoupling network-connection RFoG receiver	≥40 dB
Decoupling network-connection broadcast connection	≥15 dB
Directional attenuation	≥60 dB
Insertion loss broadcast network connection	≤0,8 dB
Insertion loss network connection RFoG receiver	≤1,0 dB
Electrical reflection loss	≥20 dB (-1 dB/oct.)
Frequency range	5...100 MHz
Ripple	≤ ±0,75 dB
Electrical output power	90 dBμV (15% OMI @ -28 dBm)
Output attenuator	0...40 dB (1 dB-steps)
Output test point	-20 dB
Connectors	
LC/APC connector	1 pcs.
F-socket	5 pcs.
General data	
Power consumption	≤12 W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.895 kg
Packaging volume shipping package	3.35 dm <sup>3</sup>
Gross weight shipping unit	1.75 kg
EAN	4010056719500
Customs tariff number	85176100

### Characteristics

- Optical quattro upstream receiver for use in WISI Chassis LX 50
- 4 independent upstream channels per unit or one combined output
- 4 RF output ports at rear
- Integrated RFoG-Filter (1610 nm)
- IDS noise suppression (Squelch)

# Optical amplifiers

## LX 30 S 1401

Optical Amplifier



The LX 30 is part of the Optopus product portfolio. LX 30 is an optical amplifier based on EDFA technology for use in FTTx and HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

### Technical data

Amplifier inputs	1 pcs.
Optical input power	-2...+10 dBm
Amplifier outputs	1 pcs.
Optical output power	1x 14,0 dBm
Output level tolerance	±0,5 dB (Variation of output power over polarization, wavelength range and temperature range)
Output level variation	±0,5 dB
Wavelength	1530...1565 nm
Setting range amplifier	5 dB (0,1 dB-steps)
Noise figure	≤5,5 dB (at 0 dBm input power, nominal output power and signal wave length 1550 nm)
Return loss	≥45 dB (input - output)
Isolation	≥40 dB (output - input)
Optical test point output	-2.5 dB (in relation to EDFA-output power)

### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

### General data

Power consumption	typ. 5 W (max. 10 W)
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.945 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.8 kg
EAN	4010056723934
Article number	72393

### Characteristics

- Optical amplifier for use in WISI Chassis LX 50
- Amplification of optical signals in the C-band
- Up to four output ports with adjustable output power
- Optical test port for the output signal
- Wide input power range enables application as booster- or inline-amplifier
- Low electrical power consumption





# LX 30 S 1402

## Optical Amplifier



The LX 30 is part of the Optopus product portfolio. LX 30 is an optical amplifier based on EDFA technology for use in FTTx and HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

### Technical data

Amplifier inputs	1 pcs.
Optical input power	-2...+10 dBm
Amplifier outputs	2 pcs.
Optical output power	2x 14,0 dBm
Output level tolerance	±0,5 dB (Variation of output power over polarization, wavelength range and temperature range)
Output level variation	±0,5 dB
Wavelength	1530...1565 nm
Setting range amplifier	5 dB (0,1 dB-steps)
Noise figure	≤5,5 dB (at 0 dBm input power, nominal output power and signal wave length 1550 nm)
Return loss	≥45 dB (input - output)
Isolation	≥40 dB (output - input)
Optical test point output	-2.5 dB (in relation to EDFA-output power)

### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

### General data

Power consumption	typ. 6 W (max. 12 W)
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.895 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.75 kg
EAN	4010056722661
Article number	72266

### Characteristics

- Optical amplifier for use in WISI Chassis LX 50
- Amplification of optical signals in the C-band
- Up to four output ports with adjustable output power
- Optical test port for the output signal
- Wide input power range enables application as booster- or inline-amplifier
- Low electrical power consumption

# Optical amplifiers

## LX 30 S 1701

### Optical Amplifier



The LX 30 is part of the Optopus product portfolio. LX 30 is an optical amplifier based on EDFA technology for use in FTTx and HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

#### Technical data

Amplifier inputs	1 pcs.
Optical input power	-2...+10 dBm
Amplifier outputs	1 pcs.
Optical output power	1x 17,5 dBm
Output level tolerance	±0,5 dB (Variation of output power over polarization, wavelength range and temperature range)
Output level variation	±0,5 dB
Wavelength	1530...1565 nm
Setting range amplifier	5 dB (0,1 dB-steps)
Noise figure	≤5,5 dB (at 0 dBm input power, nominal output power and signal wave length 1550 nm)
Return loss	≥45 dB (input - output)
Isolation	≥40 dB (output - input)
Optical test point output	-2.5 dB (in relation to EDFA-output power)

#### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

#### General data

Power consumption	typ. 6 W (max. 12 W)
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.945 kg
Packaging volume shipping package	3.3 dm <sup>3</sup>
Gross weight shipping unit	1.8 kg
EAN	4010056723941
Article number	72394

#### Characteristics

- Optical amplifier for use in WISI Chassis LX 50
- Amplification of optical signals in the C-band
- Up to four output ports with adjustable output power
- Optical test port for the output signal
- Wide input power range enables application as booster- or inline-amplifier
- Low electrical power consumption



## LX 30 S 1702

### Optical Amplifier



The LX 30 is part of the Optopus product portfolio. LX 30 is an optical amplifier based on EDFA technology for use in FTTx and HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

#### Technical data

Amplifier inputs	1 pcs.
Optical input power	-2...+10 dBm
Amplifier outputs	2 pcs.
Optical output power	2x 17,5 dBm
Output level tolerance	±0,5 dB (Variation of output power over polarization, wavelength range and temperature range)
Output level variation	±0,5 dB
Wavelength	1530...1565 nm
Setting range amplifier	5 dB (0,1 dB-steps)
Noise figure	≤5,5 dB (at 0 dBm input power, nominal output power and signal wave length 1550 nm)
Return loss	≥45 dB (input - output)
Isolation	≥40 dB (output - input)
Optical test point output	-2.5 dB (in relation to EDFA-output power)

#### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

#### General data

Power consumption	max. 16 W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.945 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.8 kg
EAN	4010056723958
Article number	72395

#### Characteristics

- Optical amplifier for use in WISI Chassis LX 50
- Amplification of optical signals in the C-band
- Up to four output ports with adjustable output power
- Optical test port for the output signal
- Wide input power range enables application as booster- or inline-amplifier
- Low electrical power consumption

# Optical amplifiers

## LX 30 S 1704

Optical Amplifier



The LX 30 is part of the Optopus product portfolio. LX 30 is an optical amplifier based on EDFA technology for use in FTTx and HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

### Technical data

Amplifier inputs	1 pcs.
Optical input power	-2...+10 dBm
Amplifier outputs	4 pcs.
Optical output power	4x 17,5 dBm
Output level tolerance	±0,5 dB (Variation of output power over polarization, wavelength range and temperature range)
Output level variation	±0,5 dB
Wavelength	1530...1565 nm
Setting range amplifier	5 dB (0,1 dB-steps)
Noise figure	≤5,5 dB (at 0 dBm input power, nominal output power and signal wave length 1550 nm)
Return loss	≥45 dB (input - output)
Isolation	≥40 dB (output - input)
Optical test point output	-2.5 dB (in relation to EDFA-output power)

### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

### General data

Power consumption	typ. 11 W (max. 22 W)
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.895 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.75 kg
EAN	4010056719517
Article number	71951

### Characteristics

- Optical amplifier for use in WISI Chassis LX 50
- Amplification of optical signals in the C-band
- Up to four output ports with adjustable output power
- Optical test port for the output signal
- Wide input power range enables application as booster- or inline-amplifier
- Low electrical power consumption



# LX 30 S 2101

## Optical Amplifier



The LX 30 is part of the Optopus product portfolio. LX 30 is an optical amplifier based on EDFA technology for use in FTTx and HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

### Technical data

Amplifier inputs	1 pcs.
Optical input power	-2...+10 dBm
Amplifier outputs	1 pcs.
Optical output power	1x 21,0 dBm
Output level tolerance	±0,5 dB (Variation of output power over polarization, wavelength range and temperature range)
Output level variation	±0,5 dB
Wavelength	1530...1565 nm
Setting range amplifier	5 dB (0,1 dB-steps)
Noise figure	≤5,5 dB (at 0 dBm input power, nominal output power and signal wave length 1550 nm)
Return loss	≥45 dB (input - output)
Isolation	≥40 dB (output - input)
Optical test point output	-2.5 dB (in relation to EDFA-output power)

### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

### General data

Power consumption	max. 22 W
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.745 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.6 kg
EAN	4010056723965
Article number	72396

### Characteristics

- Optical amplifier for use in WISI Chassis LX 50
- Amplification of optical signals in the C-band
- Up to four output ports with adjustable output power
- Optical test port for the output signal
- Wide input power range enables application as booster- or inline-amplifier
- Low electrical power consumption

# Optical amplifiers

## LX 30 S 2102

Optical Amplifier



The LX 30 is part of the Optopus product portfolio. LX 30 is an optical amplifier based on EDFA technology for use in FTTx and HFC networks. The Optopus platform is a highly flexible and high density platform for all kinds of analog optical networks. The system is used in any network such as HFC, RF over Glass or RF Overlay in FTTx applications.

### Technical data

Amplifier inputs	1 pcs.
Optical input power	-2...+10 dBm
Amplifier outputs	2 pcs.
Optical output power	2x 21,0 dBm
Output level tolerance	±0,5 dB (Variation of output power over polarization, wavelength range and temperature range)
Output level variation	±0,5 dB
Wavelength	1530...1565 nm
Setting range amplifier	5 dB (0,1 dB-steps)
Noise figure	≤5,5 dB (at 0 dBm input power, nominal output power and signal wave length 1550 nm)
Return loss	≥45 dB (input - output)
Isolation	≥40 dB (output - input)
Optical test point output	-2.5 dB (in relation to EDFA-output power)

### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

### General data

Power consumption	typ. 11 W (max. 22 W)
Dimensions (width x height x depth)	30 x 133 x 320 mm
Environmental parameters	-5...+45 °C (ETSI EN 300 019-1-3 Class 3.1)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	440 x 200 x 60 mm
Gross weight sales unit	1.895 kg
Packaging volume shipping package	2.8 dm <sup>3</sup>
Gross weight shipping unit	1.75 kg
EAN	4010056722678
Article number	72267

### Characteristics

- Optical amplifier for use in WISI Chassis LX 50
- Amplification of optical signals in the C-band
- Up to four output ports with adjustable output power
- Optical test port for the output signal
- Wide input power range enables application as booster- or inline-amplifier
- Low electrical power consumption



## LX 70

Wideband amplifier 5 ...1006 MHz



## LX 71

RF-redundancy switch



### Technical data

Frequency range	5...1006 MHz
Impedance	75 Ω
Return loss	10...85 MHz > 18 dB, 85...1006 MHz > 18 dB (-1 dB/oct., min 14 dB)
gain BC in	5...25 dB (± 0,5 dB), (0,5 dB step)
Back off NC in to BC in	-6...-21 dB (1 dB-steps)
Noise figure	≤ 6 dB (5...600 MHz) ; ≤ 9 dB (600...1006 MHz)
equalizer	0...6 dB (0,5 dB steps)
distortion products for CENELEC 42 Ch. @ 105 dBμV flat	CSO ≥ 70 dB, CTB ≥ 70 dB
distortion products for CENELEC 42 Ch. @ 108 dBμV 6dB slope	CSO ≥ 70 dB, CTB ≥ 70 dB
RF test point output (Coupler)	-20 dB (±0,5 dB)

### Management functionality

Gain	5...25 dB
equalizer	0...6 dB
NC input attenuator	0...15 dB
Alarms:	RF output level

### General data

RF connectors	F
Supply voltage	12 V
Power consumption	≤ 10 W
EMC	EN50083-2
Operating temperature range	-5...+45 °C (EN300 01 9-1-3 Class 3.2)
Dimensions (width x height x depth)	30 x 133 x 320 mm

### Packaging data

Sales unit	1 pcs.
------------	--------

Hedend Amplifier

### Technical data

Frequency range	5...1006 MHz
Electrical reflection loss	5 - 85 MHz ≥ 18 dB, 85 - 1006 MHz ≥ 18 dB (-1 dB/ oct)
Insertion loss	< 2 dB
<b>General data</b>	
RF connectors	F
Impedance	75 Ω
Supply voltage	12 V over RF port (8V...14V)
Power consumption	≤ 0,2 W
EMC	EN50083-2
operating temperature	-5...+45 °C (EN300 01 9-1-3 Class 3.2)

### Packaging data

Sales unit	1 pcs.
EAN	4010056722494
Article number	72249

Redundancy Switch

# Redundancy solutions and RF modules

## LX 60 S

Optical redundancy switch



Technical data	
Wavelength	1260...1620 nm
Optical power range	-35...+21 dB
Optical insertion loss	typ. 1 dB (max. 1,5 dB)
Optical crosstalk isolation	min. 60 dB
Optical return loss	min. 45 dB
Polarisation depend loss	max. 0,15 dB
Optical switch time	10 ms max.
Optical switch repeatability	± 0,05 dB
General data	
Optical input ports	2
Optical output port	1
Dimensions (width x height x depth)	30 x 133 x 320 mm (single-slot module for LX 50)
Optical connectors	SC/APC connectors
Supply voltage	12 V DC
Power consumption max.	1,3 W max. 1,6
Ambient temperature	-5...+45 °C (EN300 019-1-3 Class 3.2)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) shipping unit	440 x 200 x 60 mm
Packaging volume shipping package	5,280 dm <sup>3</sup>
Gross weight shipping unit	1,9 kg
EAN	4010056731014
Article number	73101

The LX 60 S is an optical redundancy switch for Octopus LX 50. The LX 60 S has a large usable optical power range and low electrical power consumption.





## LP 40 0014

19" holder



## LP 40

19" holder



### Technical data

Dimensions (width x height x depth)	482 x 132 x 80 mm
-------------------------------------	-------------------

### Packaging data

Sales unit	pcs.
EAN	4010056735357
Article number	73535

LP 40 is a 19" holder for the LD series

### Characteristics

- For up to 14 LD modules

### Technical data

Dimensions (width x height x depth)	482,6 x 32 x 95 mm
-------------------------------------	--------------------

### Packaging data

Sales unit	pcs.
EAN	4010056716516
Article number	71651

LP 40 is a 19" holder for the LD series

### Characteristics

- For up to 4 LD modules

# Passive optics

## LD 72 S 5960

Combined module of two optical WDM Filter



Technical data	
Wavelength range	1260...1590 nm, 1600...1630 nm
Return loss	≥45 dB
Insertion loss	1260...1590 nm ≤0,8 dB; 1600...1630 nm ≤1 dB
Isolation	≥60 dB (1260...1590 nm <-> 1600...1630 nm)
Isolation COM -> 1600...1630 nm @ 1260...1590 nm	≥40 dB
Isolation COM -> 1260...1590 nm @ 1600...1630 nm	≥15 dB
Polarisation dependent attenuation	≤0,2 dB
Optical power handling	≤300 mW
General data	
Technology	TFF
Dimensions (width x height x depth)	28 x 110 x 200,5 mm (WISI LD – Modul)
Plug connection	SC/APC connectors
Ambient temperature	-25...+55 °C (ETSI EN 300 019-3-1 Class 3.3)

Packaging data	
Sales unit	1 pcs.
EAN	4010056730048
Article number	73004

Combined module of two optical WDM Filter (1260...1590 / 1600...1630 nm) to use in WISI - Chassis LX 50 and LP 40.

## LD 76 S 5555

Multiplexer with express port



Technical data	
Wavelength range	Express Port 1260...1620 nm; CWDM 1551 nm (±6,5 nm)
Return loss	≥45 dB
Insertion loss	Express Port ≤1,2 dB; CWDM ≤1,0 dB
Isolation	≥50 dB
Isolation COM -> CWDM @ adjacent CWDM channel	≥30 dB
Isolation COM -> CWDM @ non – adjacent CWDM channel	≥45 dB
Isolation COM -> EXP @ CWDM 1551 nm	≥30 dB
Passband ripple	≤0,5 dB
Polarisation dependent attenuation	≤0,2 dB
Optical power handling	≤300 mW
General data	
Technology	TFF
Dimensions (width x height x depth)	28 x 110 x 200,5 mm (WISI LD – Modul)
Plug connection	SC/APC connectors
Ambient temperature	-25...+55 °C (ETSI EN 300 019-3-1 Class 3.3)

Packaging data	
Sales unit	1 pcs.
EAN	4010056729745
Article number	72974

Dual optical high isolation CWDM (1551 nm) Add/Drop Multiplexer with express port (1260 nm...1620 nm) to use in WISI Chassis LX 50 and LP 40.



## LD 77 S 27HH

Multiplexer with express port



Technical data	
Wavelength range	Express Port 1460...1620 nm; DWDM 1555,75 nm ( $\pm 0,25$ nm)
Return loss	$\geq 45$ dB
Insertion loss	Express Port $\leq 1,2$ dB; DWDM $\leq 1,0$ dB
Isolation	$\geq 50$ dB
Isolation COM -> CWDM @ adjacent DWDM channel	$\geq 30$ dB
Isolation COM -> CWDM @ non - adjacent DWDM channel	$\geq 45$ dB
Isolation COM -> EXP @ 1555,75 nm ( $\pm 0,25$ nm)	$\geq 30$ dB
Passband ripple	$\leq 0,5$ dB
Polarisation dependent attenu- ation	$\leq 0,1$ dB
Optical power handling	$\leq 300$ mW
General data	
Dimensions (width x height x depth)	28 x 110 x 200,5 mm (WISI LD - Modul)
Plug connection	SC/APC connectors
Ambient temperature	-25...+55 °C (ETSI EN 300 019-3- 1 Class 3.3)

Packaging data	
Sales unit	1 pcs.
EAN	4010056733926
Article number	73392

Dual optical DWDM (Channel 27) Add/Drop Multiplexer with express port (1460...1620 nm) to use in WISI Chassis LX 50 and LP 40.

## LD 74 S 0128

Optical 4 channel CWDM Multiplexer/Demultiplexer



Technical data	
Wavelength range	Express Port 1260...1620 nm; CWDM: 1451 nm ( $\pm 6,5$ nm), 1471 nm ( $\pm 6,5$ nm), 1491 nm ( $\pm 6,5$ nm), 1611 nm ( $\pm 6,5$ nm)
Return loss	$\geq 45$ dB
Insertion loss	Express Port $\leq 1,2$ dB; CWDM $\leq 1,2$ dB
Isolation	$\geq 55$ dB
Isolation COM -> EXP @ CWDM	$\geq 15$ dB
Isolation COM -> CWDM @ adjacent CWDM channel	$\geq 30$ dB
Isolation COM -> CWDM @ non - adjacent CWDM channel	$\geq 45$ dB
Passband ripple	$\leq 0,5$ dB
Polarisation dependent attenu- ation	$\leq 0,15$ dB
Optical power handling	$\leq 300$ mW
General data	
Dimensions (width x height x depth)	28 x 110 x 200,5 mm (WISI LD - Modul)
Plug connection	SC/APC connectors
Ambient temperature	-5...+55 °C (ETSI EN 300 019-3-1 Class 3.3)

Packaging data	
Sales unit	1 pcs.
EAN	4010056734374
Article number	73437

Optical 4 channel CWDM Multiplexer/Demultiplexer (1451 / 1471 / 1491 / 1611 nm) with expressport (1260...1620 nm) to use in WISI Chassis LX 50 and LP 40.

# Passive optics

## LD 91 S 0104

Optical 1x4 PLC splitter



Optical 1x4 PLC splitter to use in WISI Chassis LX 50 and LP 40.

### Technical data

Wavelength	1260 nm
Return loss	$\geq 55$ dB
Insertion loss	$\leq 7.2$ dB
Isolation	$\geq 55$ dB
Uniformity	$\leq 0,6$ dB
Polarisation dependent attenuation	$\leq 0,2$ dB
Optical power handling	$\leq 300$ mW

### General data

Technology	PLC - Technology (Planar Light-wave Circuit)
Dimensions (width x height x depth)	28 x 110 x 200,5 mm (WISI LD – Modul)
Plug connection	SC/APC connectors
Ambient temperature	-25...+55 °C (ETSI EN 300 019-3-1 Class 3.3)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	kg
Shipping unit	pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	
Gross weight shipping unit	kg
EAN	4010056722456
Article number	72245



# LX 10 K 7001

## Optical Transmitter



Technical data	
Wavelength	1555 nm ( $\pm$ 1 nm)
Specified link length	40 km (in combination with additional EDFA)
Optical output power	2x +7 dBm
SBS suppression	$\geq$ 21,0 dBm
Carrier-to-noise-ratio (CNR)	$\geq$ 48,6 dB
Signal performance (37 analog, 50 digital) CSO/CTB	$\geq$ 70,0 dBc
Input level	78 / 87 dB $\mu$ V (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	$\pm$ 0.50 dB (47... 550 MHz), $\pm$ 0.75 dB (47... 1006 MHz)
CATV electrical return loss	$\geq$ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB ( $\pm$ 1 dB)
General data	
Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, AC secondary
Power consumption max.	$\leq$ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 21 dBm, Link: 40 km, Received Power: -5,6 dBm
Packaging data	
Sales unit	1 pcs.
EAN	4010056723729
Article number	72372

The K-type series transmitters are intended for use in FTtx and RFoG architecture designs requiring high quality transmission over varying transmission lengths and EDFA output powers. These transmitters successfully support very high optical launch powers while controlling the detrimental effects of Stimulated Brillouin Scattering (SBS), group velocity dispersion (GVD), and self phase modulation (SPM). The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary pre-distortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP

# Optical transmitter 19"

## LX 10 K 7005

Optical Transmitter



Technical data	
Wavelength	1555 nm ( $\pm$ 1 nm)
Specified link length	40 km (in combination with additional EDFA)
Optical output power	2x +7 dBm
SBS suppression	$\geq$ 21,0 dBm
Carrier-to-noise-ratio (CNR)	$\geq$ 48,6 dB
Signal performance (37 analog, 50 digital) CSO/CTB	$\geq$ 70,0 dBc
Input level	78 / 87 dB $\mu$ V (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	$\pm$ 0.50 dB (47... 550 MHz), $\pm$ 0.75 dB (47... 1006 MHz)
CATV electrical return loss	$\geq$ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB ( $\pm$ 1 dB)
General data	
Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, no secondary
Power consumption max.	$\leq$ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 21 dBm, Link: 40 km, Received Power: -5,6 dBm
Packaging data	
Sales unit	1 pcs.
EAN	4010056729325
Article number	72932

The K-type series transmitters are intended for use in FTTx and RFoG architecture designs requiring high quality transmission over varying transmission lengths and EDFA output powers. These transmitters successfully support very high optical launch powers while controlling the detrimental effects of Stimulated Brillouin Scattering (SBS), group velocity dispersion (GVD), and self phase modulation (SPM). The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary pre-distortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP



# LX 10 K 7F21

## Optical Transmitter



### Technical data

Wavelength	ITU ch. 23
Specified link length	40 km (in combination with additional EDFA)
Optical output power	2x +7 dBm
SBS suppression	≥ 21,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 48,6 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)

### General data

Optical connectors	Rear: E2000/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, AC secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 21 dBm, Link: 40 km, Received Power: -5,6 dBm

### Packaging data

Sales unit	1 pcs.
EAN	4010056717094
Article number	71709

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP

# Optical transmitter 19"

## LX 10 L 8001

Optical Transmitter, CATV + SAT



Technical data	
Wavelength	1555 nm ( $\pm$ 1 nm)
Specified link length	25 km (in combination with additional EDFA)
Optical output power	2x +8 dBm
SBS suppression	$\geq$ 14,0 dBm
Carrier-to-noise-ratio (CNR)	$\geq$ 51,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	$\geq$ 70,0 dBc
Input level	78 / 87 dB $\mu$ V (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	$\pm$ 0.50 dB (47... 550 MHz), $\pm$ 0.75 dB (47... 1006 MHz)
CATV electrical return loss	$\geq$ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB ( $\pm$ 1 dB)
SAT-IF frequency range	950...2800 MHz
SAT-IF flatness	$\pm$ 2 dB
SAT-IF electrical return loss	$\geq$ 10 dB (950...2800 MHz)
SAT-IF test point	7 $\pm$ 62.5 dB $\mu$ V/Ch @ 1 % OMI/Ch
General data	
Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, AC secondary
Power consumption max.	$\leq$ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 15 dBm, Link: 25 km, Received Power: 0 dBm

Packaging data	
Sales unit	1 pcs.
EAN	4010056723743
Article number	72374

The L-type series are designed as a high performance solution for applications where the simultaneous transport of CATV and SAT-IF FM signals is required. The SAT-IF signals can be applied anywhere in the 950 to 2800 MHz band. The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary predistortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP





# LX 10 L 8005

Optical Transmitter, CATV + SAT



Technical data	
Wavelength	1555 nm ( $\pm$ 1 nm)
Specified link length	25 km (in combination with additional EDFA)
Optical output power	2x +8 dBm
SBS suppression	$\geq$ 14,0 dBm
Carrier-to-noise-ratio (CNR)	$\geq$ 51,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	$\geq$ 70,0 dBc
Input level	78 / 87 dB $\mu$ V (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	$\pm$ 0.50 dB (47... 550 MHz), $\pm$ 0.75 dB (47... 1006 MHz)
CATV electrical return loss	$\geq$ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB ( $\pm$ 1 dB)
SAT-IF frequency range	950...2800 MHz
SAT-IF flatness	$\pm$ 2 dB
SAT-IF electrical return loss	$\geq$ 10 dB (950...2800 MHz)
SAT-IF test point	7 $\pm$ 62.5 dB $\mu$ V/Ch @ 1 % OMI/Ch
General data	
Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, no secondary
Power consumption max.	$\leq$ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 15 dBm, Link: 25 km, Received Power: 0 dBm

Packaging data	
Sales unit	1 pcs.
EAN	4010056729349
Article number	72934

## Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP

# Optical transmitter 19"

## LX 10 S 7001

High Performance Optical Transmitter



### Technical data

Wavelength	1555 nm ( $\pm$ 1 nm)
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +7 dBm
SBS suppression	$\geq$ 16,0 dBm
Carrier-to-noise-ratio (CNR)	$\geq$ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	$\geq$ 70,0 dBc
Input level	78 / 87 dB $\mu$ V (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	$\pm$ 0.50 dB (47... 550 MHz), $\pm$ 0.75 dB (47... 1006 MHz)
CATV electrical return loss	$\geq$ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB ( $\pm$ 1 dB)

### General data

Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, AC secondary
Power consumption max.	$\leq$ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm

### Packaging data

Sales unit	1 pcs.
EAN	4010056723736
Article number	72373

The S-type series transmitters are designed to be the most versatile model within the WISI LX10 series family. They can easily be configured to meet most of HFC network solutions requiring link lengths in the range of 50 to 70 kilometers with one EDFA as well as links utilizing multiple EDFA's. The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary predistortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP



# LX 10 S 7005

High Performance Optical Transmitter



## Technical data

Wavelength	1555 nm ( $\pm$ 1 nm)
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +7 dBm
SBS suppression	$\geq$ 16,0 dBm
Carrier-to-noise-ratio (CNR)	$\geq$ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	$\geq$ 70,0 dBc
Input level	78 / 87 dB $\mu$ V (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	$\pm$ 0.50 dB (47... 550 MHz), $\pm$ 0.75 dB (47... 1006 MHz)
CATV electrical return loss	$\geq$ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB ( $\pm$ 1 dB)

## General data

Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, no secondary
Power consumption max.	$\leq$ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm

## Packaging data

Sales unit	1 pcs.
EAN	4010056729332
Article number	72933

## Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP

# Optical transmitter 19"

## LX 10 S 7V05

High Performance Optical Transmitter



### Technical data

Wavelength	ITU ch. 39
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +7 dBm
SBS suppression	≥ 16,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)

### General data

Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, no secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm

### Packaging data

Sales unit	1 pcs.
EAN	4010056734589
Article number	73458

The S-type series transmitters are designed to be the most versatile model within the WISI LX10 series family. They can easily be configured to meet most of HFC network solutions requiring link lengths in the range of 50 to 70 kilometers with one EDFA as well as links utilizing multiple EDFA's. The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary predistortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP



# LX 10 S 8J01

## High Performance Optical Transmitter



### Technical data

Wavelength	ITU ch. 27
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +8 dBm
SBS suppression	≥ 16,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)

### General data

Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, AC secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm

### Packaging data

Sales unit	1 pcs.
EAN	4010056733704
Article number	73370

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP

# Optical transmitter 19"

## LX 10 S BF21

High Performance Optical Transmitter



Technical data	
Wavelength	ITU ch. 23
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +10 dBm
SBS suppression	≥ 16,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)
General data	
Optical connectors	Rear: E2000/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, AC secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm
Packaging data	
Sales unit	1 pcs.
EAN	4010056717742
Article number	71774

The S-type series transmitters are designed to be the most versatile model within the WISI LX10 series family. They can easily be configured to meet most of HFC network solutions requiring link lengths in the range of 50 to 70 kilometers with one EDFA as well as links utilizing multiple EDFA's. The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary predistortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP



## LX 10 S BJ01

High Performance Optical Transmitter



### Technical data

Wavelength	ITU ch. 27
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +10 dBm
SBS suppression	≥ 16,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)

### General data

Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, AC secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm

### Packaging data

Sales unit	1 pcs.
EAN	4010056729592
Article number	72959

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP

# Optical transmitter 19"

## LX 10 S BJ03

High Performance Optical Transmitter



Technical data	
Wavelength	ITU ch. 27
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +10 dBm
SBS suppression	≥ 16,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)
General data	
Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	48 V DC, DC primary, DC secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm
Packaging data	
Sales unit	1 pcs.
EAN	4010056729752
Article number	72975

The S-type series transmitters are designed to be the most versatile model within the WISI LX10 series family. They can easily be configured to meet most of HFC network solutions requiring link lengths in the range of 50 to 70 kilometers with one EDFA as well as links utilizing multiple EDFAs. The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary predistortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP





## LX 10 S BN03

High Performance Optical Transmitter



### Technical data

Wavelength	ITU ch. 31
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +10 dBm
SBS suppression	≥ 16,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)

### General data

Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	48 V DC, DC primary, DC secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm

### Packaging data

Sales unit	1 pcs.
EAN	4010056730468
Article number	73046

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP

# Optical transmitter 19"

## LX 10 S BQ05

High Performance Optical Transmitter



### Technical data

Wavelength	ITU ch. 34
Specified link length	max. 100 km (in combination with additional EDFA)
Optical output power	2x +10 dBm
SBS suppression	≥ 16,0 dBm
Carrier-to-noise-ratio (CNR)	≥ 53,0 dB
Signal performance (37 analog, 50 digital) CSO/CTB	≥ 70,0 dBc
Input level	78 / 87 dBμV (PAL-Level/SAT-IF)
Front panel RF gain/OMI adjustment range	+2/-4 dB (from nominal setting)
CATV frequency range	47...1006 MHz
CATV flatness	± 0.50 dB (47... 550 MHz), ± 0.75 dB (47... 1006 MHz)
CATV electrical return loss	≥ 16 dB (47...1006 MHz)
CATV RF test point	-20 dB (±1 dB)

### General data

Optical connectors	Rear: SC/APC
EMC	EN50083-2
Safety standards	IEC 60950-1; IEC 60728-11; Laser IEC 60825-2
Operating temperature range	0...50 °C (ETSI EN 300 019-1-3 Class 3.2)
Supply voltage	230 V AC, AC primary, no secondary
Power consumption max.	≤ 65 W
Dimensions (width x height x depth)	483 x 45 x 381 mm
CNR test configuration	EDFA: 16 dBm, Link: 65 km, Received Power: 0 dBm

### Packaging data

Sales unit	1 pcs.
EAN	4010056731151
Article number	73115

The S-type series transmitters are designed to be the most versatile model within the WISI LX10 series family. They can easily be configured to meet most of HFC network solutions requiring link lengths in the range of 50 to 70 kilometers with one EDFA as well as links utilizing multiple EDFA's. The WISI LX10 series product line is a family of state-of-the-art high performance 1550 nm externally modulated CATV fiber optic transmitters optimized for varying network applications. Packaged in a convenient 1RU housing, this line of optical transmitters couples high optical output powers, up to 11.0 dBm, with low optical linewidth resulting in unmatched performance. The optical modulator, combined with proprietary predistortion circuitry, provides superior CTB and CSO performance with SBS suppression levels of greater than 20 dBm. Advanced features such as built in field adjustable SBS control and electronic dispersion compensation allows these transmitters to be quickly optimized in the field for any link or application without the need to procure specifically tuned transmitters. This affords the system designer a level of flexibility previously unknown in the CATV market place.

### Characteristics

- Dual optical outputs
- Field adjustable SBS suppression
- External modulated transmitter
- Redundant & hot swappable power supplies
- Management via web interface and SNMP



## LX 35 S 1701

An optical amplifier, output power 17 dBm, 1 output



LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.

### Technical data

Wavelength	1530...1565 nm
Input power	0...+10 dBm
Output power	1 x 17 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	$<$ 0,8 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	$<$ 30 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056738976
Article number	73897

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical amplifiers 19"

## LX 35 S 1702

An optical amplifier, output power 17.0 dBm, 2 outputs

LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.



Technical data	
Wavelength	1530...1565 nm
Input power	0...+10 dBm
Output power	2 x 17 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 0,8 dB
Optical test port	-20 dB $\pm$ 1 dB
General data	
Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 30 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)
Accessories	
Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
Gross weight shipping unit	kg
EAN	4010056731502
Article number	73150

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans



## LX 35 S 1704

An optical amplifier, output power 17 dBm, 14 outputs

LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.



### Technical data

Wavelength	1530...1565 nm
Input power	0...+10 dBm
Output power	4 x 17 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 0,8 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 30 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
Gross weight shipping unit	kg
EAN	4010056730802
Article number	73080

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical amplifiers 19"

## LX 35 S 1708

An optical amplifier, output power 17 dBm, 8 outputs

LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.



### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	8 x 17 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 0,8 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 75 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056739232
Article number	73923

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans



## LX 35 S 1716

An optical amplifier, output power 17 dBm, 16 outputs

LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.



### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	16 x 17 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 1 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 75 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056738983
Article number	73898

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical amplifiers 19"

## LX 35 S 1732

An optical amplifier, output power 17.0 dBm, 32 outputs



LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.

### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	32 x 17 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	$<$ 1,3 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	$<$ 75 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056738945
Article number	73894

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans





## LX 35 S 2032

An optical amplifier, output power 20.0 dBm, 32 outputs

LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.



### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	32 x 20 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	$<$ 1,3 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	$<$ 75 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056738969
Article number	73896

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical amplifiers 19"

## LX 35 S 2101

An optical amplifier, output power 21.0 dBm, 1 output



LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.

### Technical data

Wavelength	1530...1565 nm
Input power	0...+10 dBm
Output power	1 x 21 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 0,8 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 30 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056738990
Article number	73899

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans



## LX 35 S 2102

An optical amplifier output power 21.0 dBm, 2 outputs



LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.

### Technical data

Wavelength	1530...1565 nm
Input power	0...+10 dBm
Output power	2 x 21 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 0,8 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 30 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056731533
Article number	73153

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical amplifiers 19"

## LX 35 S 2108

An optical amplifier, output power 21.0 dBm, 8 outputs



LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.

### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	8 x 21 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 0,8 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 75 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056738211
Article number	73821

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans



## LX 35 S 2116

An optical amplifier, output power 21.0 dBm, 16 outputs

LX 35 xxxx is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs.



### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	16 x 21 dBm $\pm$ 0.5 dB (average of all output ports, excluding connectors)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq$ 5,5 dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq$ 40 dB
Isolation output -> input	$\geq$ 40 dB
max. Port uniformity	< 1 dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 44 x 455 mm (19", 1RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Maximum variation of optical power per every plug process	SC $\pm$ 0,25 dB
Supply voltage	110/230 V AC or 48 V DC
Power consumption max.	< 75 W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 44 x 455 mm (19", 1RU)
EAN	4010056738921
Article number	73892

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical amplifiers 19"

## LX 37 W 1724

High Power YEDFA, output power 17.0 dBm, 24 outputs



LX 37 is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs. The W-Type with integrated WDM filters for PON networks is specifically developed for RF Overlay networks.

### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	24 x 17 dB dBm ( $\pm 0,5$ dB)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq 5,5$ dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq 40$ dB
Isolation output -> input	$\geq 40$ dB
max. Port uniformity	$< 1,3$ dB
Optical test port	-20 dB $\pm$ 1 dB

### PON-WDM

PON wavelengths	1260...1360 nm & 1480...1500 nm
Insertion loss	$< 1$ dB
Isolation CATV->PON	50 dB @ 1545...1565 nm
Isolation COM -> PON	15 dB @ 1545...1565 nm

### General data

Dimensions (width x height x depth)	483 x 89 x 455 mm (19", 2RU)
Optical connectors	SC/APC connectors
Laser Class	1 M
Supply voltage	110/230 V AC or 48 V DC
Power consumption	$\leq 75$ W W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 89 x 455 mm
EAN	4010056725136
Article number	72513

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans



# LX 37 W 1732

High Power YEDFA, output power 17.0 dBm, 32 outputs



LX 37 is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs. The W-Type with integrated WDM filters for PON networks is specifically developed for RF Overlay networks.

Technical data	
Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	32 x 17 dBm ( $\pm 0,5$ dB)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq 5,5$ dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq 40$ dB
Isolation output -> input	$\geq 40$ dB
max. Port uniformity	$< 1,3$ dB
Optical test port	-20 dB $\pm$ 1 dB
PON-WDM	
PON wavelengths	1260...1360 nm & 1480...1500 nm
Insertion loss	$< 1$ dB
Isolation CATV->PON	50 dB @ 1545...1565 nm
Isolation COM -> PON	15 dB @ 1545...1565 nm
General data	
Dimensions (width x height x depth)	483 x 89 x 455 mm (19", 2RU)
Optical connectors	SC/APC connectors
Laser Class	1 M
Supply voltage	110/230 V AC or 48 V DC
Power consumption	$\leq 75$ W W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)
Accessories	
Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 89 x 455 mm
EAN	4010056732219
Article number	73221

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical amplifiers 19"

## LX 37 W 2116

High Power YEDFA, output power 21 dBm, 16 outputs



LX 37 is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs. The W-Type with integrated WDM filters for PON networks is specifically developed for RF Overlay networks.

### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	16 x 21 dBm ( $\pm 0,5$ dB)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq 5,5$ dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq 40$ dB
Isolation output -> input	$\geq 40$ dB
max. Port uniformity	$< 1$ dB
Optical test port	-20 dB $\pm 1$ dB

### PON-WDM

PON wavelengths	1260...1360 nm & 1480...1500 nm
Insertion loss	$< 1$ dB
Isolation CATV->PON	50 dB @ 1545...1565 nm
Isolation COM -> PON	15 dB @ 1545...1565 nm

### General data

Dimensions (width x height x depth)	483 x 89 x 455 mm (19", 2RU)
Optical connectors	SC/APC connectors
Laser Class	1 M
Supply voltage	110/230 V AC or 48 V DC
Power consumption	$\leq 75$ W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 89 x 455 mm
EAN	4010056738952
Article number	73895

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans





## LX 37 S 1764

High Power YEDFA, output power 17.0 dBm, 64 outputs



LX 37 is an optical amplifier based on YEDFA technology for use in HFC and FTTx networks. The system is available with different output power and various numbers of outputs. The W-Type with integrated WDM filters for PON networks is specifically developed for RF Overlay networks.

### Technical data

Wavelength	1545...1565 nm
Input power	0...+10 dBm
Output power	64 x 17 dBm ( $\pm 0,5$ dB)
Gain control range	3 dB (with constant noise figure)
noise figure	$\leq 5,5$ dB (Noise figure @ 0 dBm input, nominal output power and signal wavelength 1550 nm)
Return loss input / output	$\geq 40$ dB
Isolation output -> input	$\geq 40$ dB
max. Port uniformity	$< 1,5$ dB
Optical test port	-20 dB $\pm$ 1 dB

### General data

Dimensions (width x height x depth)	483 x 89 x 455 mm (19", 2RU)
Optical connectors	SC/APC connectors
Laser Class	1M
Supply voltage	110/230 V AC or 48 V DC
Power consumption	$\leq 75$ W
Operating temperature range	-5...+45 °C (ETSI EN 300 019 -1-3 Class 3.2)

### Accessories

Power supply	LXPS 0230, LXPS 0048 (not included in the delivery)
--------------	---

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	483 x 89 x 455 mm (19", 2RU)
EAN	4010056738938
Article number	73893

### Characteristics

- Very high optical power with 38 dBm internally
- Stand-alone operation or integrated with WISI Optopus
- Management via SNMP, HTTP or custom options
- Carrier grade functions with hot pluggable and redundant power and fans

# Optical splitter 19"

## LP 90 0108

Optical PLC splitter, 8-way



## LP 90 0116

Optical PLC splitter, 16-way



## LP 90 0132

Optical PLC splitter, 32-way



## LP 90 0164

Optical PLC splitter, 64-way



Technical data				
<b>Outputs</b>	8 pcs.	16 pcs.	32 pcs.	64 pcs.
Wavelength	1260...1650 nm	1260 ... 1650 nm	1260 ... 1650 nm	1260 ... 1650 nm
Insertion loss	≤ 10,5 dB	≤ 13,8 dB	≤ 17 dB	≤ 21 dB
Output level variation	≤ 1,2 dB	≤ 1,2 dB	≤ 1,2 dB	≤ 1,2 dB
Isolation	≥ 55 dB	≥ 55 dB	≥ 55 dB	≥ 55 dB
Return loss	≥ 55 dB	≥ 55 dB	≥ 55 dB	≥ 55 dB
Polarisation dependent attenuation	≤ 0,3 dB	≤ 0,3 dB	≤ 0,3 dB	≤ 0,3 dB
Allowed optical input level	≤ 25 dBm (max.)	≤ 25 dBm (max.)	≤ 25 dBm (max.)	≤ 25 dBm (max.)
<b>Connectors</b>				
SC/APC connectors	9 pcs. (1x input, 8x output)	17 pcs. (1x input, 16x output)	33 pcs. (1x input, 32x output)	65 pcs. (1x input, 64x output)
<b>General data</b>				
Dimensions (width x height x depth)	483 x 201 x 42,5 mm (19", 1HE)	483 x 201 x 42,5 mm (19", 1HE)	483 x 201 x 42,5 mm (19", 1HE)	483 x 201 x 42,5 mm (19", 1HE)
Operating temperature range	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
<b>Packaging data</b>				
Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	520 x 310 x 100 mm	53 x 31 x 10 mm	53 x 31 x 10 mm	520 x 310 x 100 mm
Gross weight sales unit	1.670 kg	1.700 kg	1.900 kg	2.030 kg
Packaging volume shipping package	16.12 dm <sup>3</sup>	16.2 dm <sup>3</sup>	16,2 dm <sup>3</sup>	16.12 dm <sup>3</sup>
Gross weight shipping unit	1.67 kg	1.7 kg	3.14 kg	2.03 kg
EAN	4010056723026	4010056721800	4010056712761	4010056715991
Article number	72302	72180	71276	90138090



# LX 24 S 32CI

Multidiode Receiver for RFoG Networks, Single fiber version



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dBμV (OMI=15%/ch)
Frequency response	≤ ±0,5 dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/√Hz
<b>Integrated upstream transmitter</b>	
Laser type	Uncooled isolated DFB laser
Wavelength	1610 nm
Output power	3 dBm
RIN	< -145 dBHz-1
OMI setting range	3...8 % (75 dBμV measured @ TP), (step 1 %)
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x SC/APC
Test point	1x F
Node	32x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (pluggable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm

Technical data	
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm
<b>Packaging data</b>	
Sales unit	1 pcs.

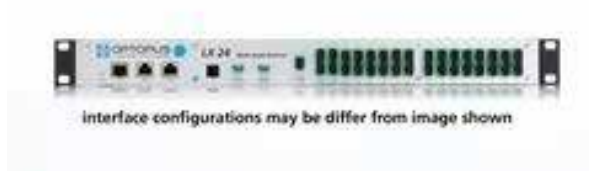
A cost-efficient solution for upgrading existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTx deployments.

- Characteristics**
- Single fiber version
  - Multidiode receiver for RFoG networks
  - Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
  - Remote optical input power reading and switch off functionality per port via SNMP und WEB
  - Integrated CWDM Upstream transmitter
  - Electrical upstream test port
  - Local or remote powered version available

# Optical receivers 19"

## LX 24 S 16CI

Multidiode Receiver for RFoG Networks, Single fiber version



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dBμV (OMI=15%/ch)
Frequency response	≤ ±0,5 dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/√Hz
<b>Integrated upstream transmitter</b>	
Laser type	Uncooled isolated DFB laser
Wavelength	1610 nm
Output power	3 dBm
RIN	< -145 dBHz-1
OMI setting range	3...8 % (75 dBμV measured @ TP), (step 1 %)
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x SC/APC
Test point	1x F
Node	16x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (pluggable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	

Technical data	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm
<b>Packaging data</b>	
Sales unit	1 pcs.

A cost-efficient solution for upgrading existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTx deployments.

### Characteristics

- Single fiber version
- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available



# LX 24 S 08CI

Multidiode Receiver for RFoG Networks, Single fiber version



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dBμV (OMI=15%/ch)
Frequency response	≤ ±0,5 dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/√Hz
<b>Integrated upstream transmitter</b>	
Laser type	Uncooled isolated DFB laser
Wavelength	1610 nm
Output power	3 dBm
RIN	< -145 dBHz-1
OMI setting range	3...8 % (75 dBμV measured @ TP), (step 1 %)
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x SC/APC
Test point	1x F
Node	8x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (pluggable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	

Technical data	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm
Packaging data	
Sales unit	1pcs.

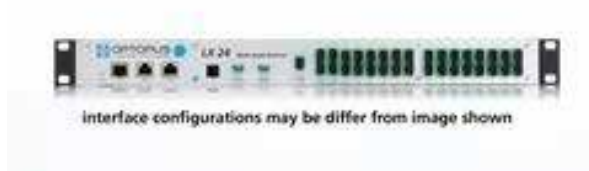
A cost-efficient solution for upgrading existing network infrastructures to the level of FTTH (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTH deployments.

- Characteristics**
- Single fiber version
  - Multidiode receiver for RFoG networks
  - Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
  - Remote optical input power reading and switch off functionality per port via SNMP und WEB
  - Integrated CWDM Upstream transmitter
  - Electrical upstream test port
  - Local or remote powered version available

# Optical receivers 19"

## LX 24 S 3261

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt$ Hz
<b>Integrated upstream transmitter</b>	
Laser type	Uncooled isolated DFB laser
Wavelength	1610 nm
Output power	3 dBm
RIN	< -145 dBHz <sup>-1</sup>
OMI setting range	3...8 % (75 dB $\mu$ V measured @ TP), (step 1 %)
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x SC/APC
Test point	1x F
Node	32x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (pluggable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	

Technical data	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056746018
Article number	74601

A cost-efficient solution for upgrading existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTx deployments.

### Characteristics

- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available



# LX 24 S 1661

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt$ Hz
<b>Integrated upstream transmitter</b>	
Laser type	Uncooled isolated DFB laser
Wavelength	1610 nm
Output power	3 dBm
RIN	< -145 dBHz-1
OMI setting range	3...8 % (75 dB $\mu$ V measured @ TP), (step 1 %)
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x SC/APC
Test point	1x F
Node	16x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (pluggable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2

Technical data	
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm
<b>Packaging data</b>	
Sales unit	1 pcs.

- Characteristics**
- Multidiode receiver for RFoG networks
  - Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
  - Remote optical input power reading and switch off functionality per port via SNMP und WEB
  - Integrated CWDM Upstream transmitter
  - Electrical upstream test port
  - Local or remote powered version available

# Optical receivers 19"

## LX 24 S 0861

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt$ Hz
<b>Integrated upstream transmitter</b>	
Laser type	Uncooled isolated DFB laser
Wavelength	1610 nm
Output power	3 dBm
RIN	< -145 dBHz <sup>-1</sup>
OMI setting range	3...8 % (75 dB $\mu$ V measured @ TP), (step 1 %)
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x SC/APC
Test point	1x F
Node	8x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (pluggable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm

Technical data	
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm
<b>Packaging data</b>	
Sales unit	1 pcs.

A cost-efficient solution for upgrading existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTx deployments.

### Characteristics

- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available





# LX 24 S 3200

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt$ Hz
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x F
Test point	1x F
Node	32x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (plug-gable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm

Packaging data	
Sales unit	1 pcs.
EAN	4010056743024
Article number	74302

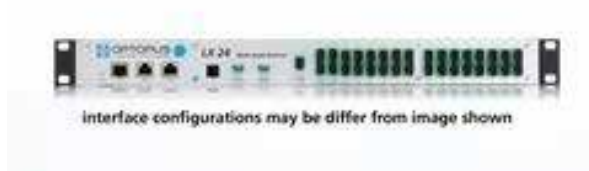
### Characteristics

- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available

# Optical receivers 19"

## LX 24 S 1600

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt$ Hz
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x F
Test point	1x F
Node	16x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (plug-gable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm

Packaging data	
Sales unit	1 pcs.
EAN	4010056745998
Article number	74599

A cost-efficient solution for upgrading existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTH deployments.

### Characteristics

- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available



# LX 24 S 0800

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt$ Hz
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x SC/APC
Upstream	1x F
Test point	1x F
Node	8x SC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (plug-gable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm

Packaging data	
Sales unit	1 pcs.
EAN	4010056745981
Article number	74598

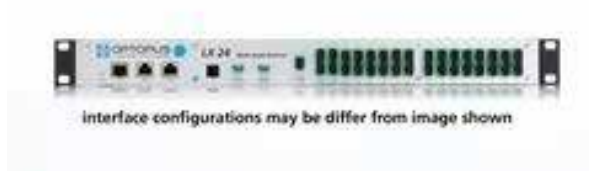
### Characteristics

- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available

# Optical receivers 19"

## LX 24 L 3200

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt{\text{Hz}}$
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x LC/APC
Upstream	1x F
Test point	1x F
Node	32x LC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (plug-gable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm

Packaging data	
Sales unit	1 pcs.
EAN	4010056746698
Article number	74669

A cost-efficient solution for upgrading existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTH deployments.

### Characteristics

- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available



# LX 24 L 1600

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA/ $\sqrt$ Hz
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x LC/APC
Upstream	1x F
Test point	1x F
Node	16x LC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (plug-gable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm

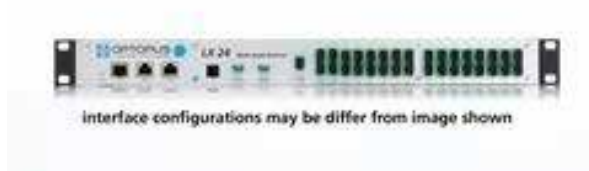
Packaging data	
Sales unit	1 pcs.

- Characteristics**
- Multidiode receiver for RFoG networks
  - Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
  - Remote optical input power reading and switch off functionality per port via SNMP und WEB
  - Integrated CWDM Upstream transmitter
  - Electrical upstream test port
  - Local or remote powered version available

# Optical receivers 19"

## LX 24 L 0800

Multidiode Receiver for RFoG Networks



Technical data	
<b>Upstream Receiver</b>	
Optical input power	+5...-3 dBm
Receiving wavelength	1260...1630 nm
Frequency range	5(15)...204 MHz
Output level	70...85 dB $\mu$ V (OMI=15%/ch)
Frequency response	$\leq \pm 0,5$ dB
Output attenuator	0...40 dB (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Return loss	> 20 dB ((-1 dB/Okt) min. 16 dB)
Equivalent input noise	max. 7 pA $\sqrt$ /Hz
<b>General optical parameters</b>	
Optical return loss	> 45 dB
Insertion loss DS (COM-> Out FN)	typ. 18 dB
Insertion loss US (Out FN-> PD_US)	< 8 dB
Isolation COM -> PD_US	> 60 dB
opt. output level @output port	typ. -1 dBm
<b>Connectors</b>	
Downstream	1x LC/APC
Upstream	1x F
Test point	1x F
Node	8x LC/APC
<b>General data</b>	
Supply voltage	230 V AC / 27...65 V AC (plug-gable PSU)
Power consumption max.	< 11 W
Ambient temperature	-20...+55 °C
EMC	EN50083-2
Dimensions (width x height x depth)	425 x 43 x 250 mm
<b>Monitoring</b>	
Attenuator range	0...40 (0,5 dB steps)
Slope control	0...8 dB (0,5 dB steps)
Port 1-32 Upstream	On/Off
Port 1-32 Upstream opt. receiving power	dBm

Packaging data	
Sales unit	1 pcs.

A cost-efficient solution for upgrading existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home) is RF over Glass (RFoG). It is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. Due to Optical Beat Interference (OBI), many providers experienced difficulties during the ramp up of new RFoG networks and delayed their large scale rollout of new networks. WISI can help you to overcome these issues with the newly developed OBI FREE solution LX 24 as part of the optical OPTOPUS platform. Dedicated upstream receivers for each RFoG node allow the LX 24 to eliminate Optical Beat Interference (OBI) completely. That's why the LX 24 enables network providers to heal existing OBI-infected RFoG networks without any need to swap existing end user equipment. The solution will work with any upstream wavelength and laser mode. OPTOPUS and its OBI-free RFoG technology offer network providers a complete future-proof concept, while opening the doors for new FTTx deployments.

### Characteristics

- Multidiode receiver for RFoG networks
- Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- Remote optical input power reading and switch off functionality per port via SNMP und WEB
- Integrated CWDM Upstream transmitter
- Electrical upstream test port
- Local or remote powered version available



WISI Optical network terminations for  
HFC, RFoG and FTTx:

# Always suitable

**Fiber Nodes**  
for all applications



**Integrated WDM filter  
and fiber management**  
save space and simplify  
installation

**Designs for every  
requirement, from  
mast installation to  
the living room**





# Optical network terminations

## Optical network terminations for all transmission networks

For the termination of the optical transmission networks WISI provides a variety of products. Whether cable network, Fiber-to-the-Building or Fiber-to-the-home, for every application we offer the right device.

## Fiber Nodes for all HFC network sizes and network topologies

For the development and expansion of cable networks, we have a number of different products, based on the latest technology. Our Fiber Nodes are characterized by their high performance, low power consumption and a flexible structure that allows use in various applications.

## Network terminations with switched return path for RF over Glass

RF over Glass is the ideal FTTx technology for cable operators by the use of a common transmission formats from the HFC environment as PAL, DVB and DOCSIS. The WISI Fiber Nodes for RF over Glass are specially optimized for fast switching pulses of the return path laser and an extremely high performance of the upstream transmission.

## Optical receiver for FTTx

We offer different nodes for fiber-to-the-home and fiber-to-the-Building applications that are used to feed analog and digital TV programs into an existing coaxial infrastructure in a building. Depending on the building size and transmission technology there are different optical transmitters available for the network operators.

..... **Control and adjustment**

on site and remotely

### WISI Optical network terminations at a glance:

- Fiber Nodes for each stage of fiber network development - whether up to the curb, until the last amplifier, to the basement or into the flat.
- Solutions for Hybrid Fiber-Coax, RF over Glass and RF overlay
- Low power consumption for economic operation - whether local or remote powered
- Future-proof migration solutions for DOCSIS 3.1

# Global Line

## LR 43 AS

Redundant optical node, local feed



Redundant configured node with 3 active outputs. Level and slope adjustment divided for every output. Pluggable optical transmitter and receiver module. All advanced settings by OH 41 handset or NMS using an HMS transponder.

Technical data	
<b>Downstream</b>	
Optical input level for controlled output level	-5...+3 dBm
Wavelength	1290...1600 nm
Frequency range downstream	47...1006 MHz (depending on duplexers)
Outputs	3 pcs.
Output level 1	102 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output level 2	114 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output level 3	114 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 25 dB (0,1 dB-steps)
Equalizer downstream	0 ... 15 dB (0,1 dB-steps)
Frequency response (O-E) 47...862 MHz	$\leq \pm 0,75$ dB
Frequency response (O-E) 862...1006 MHz	$\leq \pm 1,00$ dB
Noise current density	< 5 pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
	(with upstream transmitter module LT 4x)
Optical output power	+3 dBm (depending on the upstream transmitter module)
Wavelength upstream	1310 ... 1610 nm (depending on the upstream transmitter module)
Frequency range upstream	10 ... 85 MHz (depending on duplexers)
Frequency response upstream	$\pm 0,5$ dB
Nominal input level	75 dB $\mu$ V
OMI setting range	3 ... 10 %
Return channel test point Input	-20 dB $\mu$ V ( $\pm 0,5$ )
Ingress Control Switch (ICS)	0 / 8 / > 45 dB
<b>Connectors</b>	
PG11	4 pcs.

Technical data	
Return loss	> 20 dB
SC/APC connectors	1 pcs. (Downstream input. Optional: Redundancy input, upstream outputs via LT 4x)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 45 W (typ. incl. US-transmitter module), 53 W (max.)
Remote power	< 8 A
Electro Magnetic Compatibility (EMC)	EN 50083-2
Dimensions (width x height x depth)	288 x 125 x 302 mm
Operating temperature range	-20 ... +55 °C
Protection class	IP66
Lightning protection	2(6) kV

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 320 x 140 mm
Gross weight sales unit	6.500 kg
Shipping unit	1 pcs.
EAN	4010056704865
Article number	70486

### Characteristics

- Redundant configurable Node with three active outputs
- Level and Slope adjustment separately for each output
- Pluggable optical transmitter and receiver modules
- All settings with handset OH 41 or NMS with HMS-transponder
- Electronic RP configuration for redundancy and cluster splitting
- One ICS-switch for every input
- Electronic upstream configuration
- Integrated fiber management
- Automated level setting control (ALC) via optical input power or pilot controlled VX 58



# LR 63 AS

Redundant optical node, remote feed



Redundant optical node, remote powered, three active outputs. Level and slope adjustment divided for every output. Pluggable optical transmitter and receiver module. All adjustments by OH 41 handset or NMS using an HMS transponder. Electronic configuration of return path redundancy or cluster division. Automatic level control (ALC) via power or aviator regulated VX 58

Technical data	
<b>Downstream</b>	
Optical input level for controlled output level	-5...+3 dBm
Wavelength	1290...1600 nm
Frequency range downstream	47...1006 MHz (depending on duplexers)
Outputs	3 pcs.
Output level 1	102 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output level 2	114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output level 3	114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 25 dB (0,1 dB-steps)
Equalizer downstream	0 ... 15 dB (0,1 dB-steps)
Frequency response (O-E) 47...862 MHz	≤ ±0,75 dB
Frequency response (O-E) 862...1006 MHz	≤ ±1,00 dB
Noise current density	< 5 pA/√Hz
Output test point	-20 dB
<b>Upstream</b>	
	(with upstream transmitter module LT 4x)
Optical output power	+3 dBm (depending on the upstream transmitter module)
Wavelength upstream	1310 ... 1610 nm (depending on the upstream transmitter module)
Frequency range upstream	10 ... 85 MHz (depending on duplexers)
Frequency response upstream	± 0,5 dB
Nominal input level	75 dBμV
OMI setting range	3 ... 10 %
Return channel test point Input	-20 dBμV (±0,5)
Ingress Control Switch (ICS)	0 / 8 / > 45 dB
<b>Connectors</b>	
PG11	4 pcs.

Technical data	
Return loss	> 20 dB
SC/APC connectors	1 pcs. (Downstream input. Optional: Redundancy input, upstream outputs via LT 4x)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	27 ... 65 V
Power consumption	< 45 W (typ. incl. US-transmitter module), 53 W (max.)
Remote power	< 8 A
Electro Magnetic Compatibility (EMC)	EN 50083-2
Dimensions (width x height x depth)	288 x 125 x 302 mm
Operating temperature range	-20 ... +55 °C
Protection class	IP66
Lightning protection	2(6) kV

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	345 x 315 x 140 mm
Gross weight sales unit	6.500 kg
Shipping unit	1 pcs.
EAN	4010056704896
Article number	70489

### Characteristics

- Redundant configurable Node with three active outputs
- Level and Slope adjustment separately for each output
- Pluggable optical transmitter and receiver modules
- All settings with handset OH 41 or NMS with HMS-transponder
- Electronic RP configuration for redundancy and cluster splitting
- One ICS-switch for every input
- Electronic upstream configuration
- Integrated fiber management
- Automated level setting control (ALC) via optical input power or pilot controlled VX 58

# Global Line

## LR 40 AS

Accessories optical node



Wavelength 1290-1600nm, frequency range 10-862 MHz. Optical connection SC/APC, E2000 on request.

### Technical data

Wavelength upstream	1290...1600 nm
Frequency range upstream	47...1006 MHz
Input return loss	≥18 dB (-1,5 dB/Oct.)

### Connectors

SC/APC connectors	1 pcs.
-------------------	--------

### General data

Optical return loss	>40 dB
Power consumption	<2 W

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	170 x 91 x 55 mm
Gross weight sales unit	0.200 kg
EAN	4010056704834
Article number	70483



## LR 55 AS

Optical node, remote feed



Optical node, remote powered, integrated fibre management. Return path transmitter, diplex filter, distributor pluggable. All adjustments local with OH 41 handset or remote-controlled via NMS with HMS transponder module VT 51 A. Automatic level control (ALC) via optical input power.

Technical data	
<b>Downstream</b>	
Wavelength	1290...1610 nm
Optical input level for controlled output level	-7...+3 dBm
Frequency range downstream	47/85...1006 MHz
Output level ALC	112 dB $\mu$ V (ALC on, OMI 5 %)
Attenuator downstream	0...15 dB
Equalizer downstream	0...15 dB
RF output level, sloped	113 dB $\mu$ V (CENELEC 42 channels, 9 dB slope, CSO/CTB >60 dB)
RF output level, flat	110 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Noise current density	$\leq 5$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
	(with upstream transmitter module LT 4x)
Optical output power	+3 dBm (depending on the upstream transmitter module)
Wavelength upstream	1310 ... 1610 nm (depending on the upstream transmitter module)
Frequency range upstream	10 ... 85 MHz (depending on diplexers)
Nominal input level	75 dB $\mu$ V
Ingress Control Switch (ICS)	0 / 8 / > 45 dB
<b>Connectors</b>	
PG11	2 pcs. (Downstream outputs)
Input return loss	$\geq 18$ dB
SC/APC connectors	1 pcs. (Downstream input. Optional: Upstream output via LT 4x)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	27 ... 65 V
Power consumption	25 W (incl. LT 4x and VT 51. Receiver only: 22 W)
Remote power	< 8 A

Technical data	
Dimensions (width x height x depth)	257 x 215 x 100,3 mm
Operating temperature range	-20...+55 °C
Storage temperature	-25...+75 °C
Protection class	IP66
Electro Magnetic Compatibility (EMC)	EN 50083-2
Lightning protection	2(6) kV
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 283 x 160 mm
Gross weight sales unit	3.500 kg
Shipping unit	1 pcs.
EAN	4010056705350
Article number	70535

### Characteristics

- Modular optical node
- Integrated fiber management
- Return path transmitter, diplexer, splitter pluggable
- All settings accessible locally with handset OH 41 or remotely via NMS with HMS transponder module VT 51 A
- Optical ALC

# Value Line

## LR 26 A

Optical receiver, local feed



Optical receiver, locally powered. Automatic level control (opt. ALC) for a constant output level. Microprocessor-controlled function. All settings via handset OH 41.

### Technical data

Downstream	
Wavelength	1290...1600 nm
Optical input level for controlled output level	-7...+3 dBm
Frequency range downstream	47...862 MHz
Inputs	1 pcs.
Noise current density	$\leq 5,5 \text{ pA}/\sqrt{\text{Hz}}$
Attenuator downstream	0...15 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Output level ALC	112 dB $\mu$ V (ALC on, OMI 5 %)
Output test point	-20 dB
Output level	111 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Connectors	
PG11	1 pcs.
Output return loss	$\geq 18 \text{ dB}$ (-1,5 dB/Oct.)
SC/APC connectors	1 pcs. (fiber: single mode 9/125 $\mu$ m)
General data	
Optical return loss	>40 dB
Operating voltage AC	180...265 V
Power consumption	<18 W
Electro Magnetic Compatibility (EMC)	Class A, EN 50083-2
Dimensions (width x height x depth)	232 x 145 x 86 mm
Operating temperature range	-20...+55 °C
Storage temperature	-25...+75 °C
Protection class	IP24

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	280 x 175 x 88 mm
Gross weight sales unit	1.800 kg
Packaging volume shipping package	4.6 dm <sup>3</sup>
Gross weight shipping unit	1.8 kg
EAN	4010056105754
Article number	10575

### Characteristics

- Automated level regulation (opt. ALC) for constant output level
- Microprocessor controlled functions
- All setting with handset OH 41



## LR 22 2001

Fiber nodes, locally powered



Locally powered compact HFC node for outdoor deployment, DOCSIS 3.1 compliant. Modular concept enables flexible migration. Optical ALC. Control via bluetooth or OH41 handset.e.

Technical data	
<b>Downstream</b>	
Optical input power	-8...+2 dBm
Wavelength	1260...1610 nm
Frequency range	47...1218 MHz (depending on diplexer)
Noise current density	< 4,5 pA $\sqrt$ /Hz
Attenuator downstream	0...20 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Output level	117 dB $\mu$ V (CENELEC 42, CSO/CTB >60dB, 1 output, 6dB slope)
Output level	110 dB $\mu$ V (30 PAL + 80 QAM CHs from 258 ... 1.2 GHz with 5 dB slope)
Output level	114 dB $\mu$ V (CENELEC42, CSO&CTB >60 dB, 1 output)
Test point	-20 dB
RF return loss	> 18 dB (-1 dB/oct., min. 14 dB)
Optical return loss	> 40 dB
<b>Upstream</b>	
<b>with LT 22 xxxx</b>	
Optical output power	+3 dBm
Wavelength	1270...1610 nm (CWDM grid, corresponding to order code)
Frequency range	5...204 MHz (depending on diplexer)
RF input level	70...80 dB $\mu$ V
Attenuator range	3%...10% (OMI attenuation)
Test point	75 dB $\mu$ V (for 5% OMI per channel)
Ingress Control Switch (ICS)	0/-6/-45 dB
RF return loss	> 18 dB
Optical return loss	> 40 dB
<b>Interfaces</b>	
SC/APC connectors	2 pcs. (Downstream input & upstream output separated)
PG 11 connectors	4 pcs. (2x RF input/output)
<b>User interfaces</b>	
Status LED downstream	Optical input power
Status LED upstream	Laser activity

Technical data	
Management ports RJ11	1 pcs. (for handset OH 41)
Remotely controlled parameters via FSK	DS on/off, US on/off, ICS 0/-6/-45 (with optional Rx module)
Bluetooth version	4.0 / LE
Bluetooth profiles	GATT
Bluetooth transmit power	$\leq$ 0 dBm
Bluetooth frequency	2,4 GHz
Bluetooth app compatibility	Android 4.3 or higher
<b>General data</b>	
Supply voltage	180...264 V AC
Power consumption max.	16 W
Dimensions (width x height x depth)	232 x 145 x 86 mm
Electro Magnetic Compatibility (EMC)	EN 50083-2
Protection class	IP 66
Ambient temperature	-20...+55 $^{\circ}$ C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	310 x 180 x 90 mm
Packaging volume sales unit	5,1 dm $^3$
Gross weight sales unit	1,695 kg
EAN	4010056739058
Article number	73905

### Characteristics

- High RF output level of 117 dB $\mu$ V for coaxial distribution of FTTC or FTTB signals
- DOCSIS-3.1-compliant frequency range: Downstream up to 1.2 GHz, Upstream up to 200 MHz
- Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- Pluggable output splitters / taps for flexible configuration of the two RF outputs
- Device control via bluetooth app or via handset OH 41
- Optional: Remote control compliant to IEC 60728-14 via FSK receiver module
- Compact housing for outdoor deployment (IP66)
- Optical ALC for regulated output levels

# LAYOUT\_ATTRIBUTE5\_VALUE1

## LR 22 6001

Fiber Node, remote-fed



Remote powered compact HFC node for outdoor deployment, DOCSIS 3.1 compliant. Modular concept enables flexible migration. Optical ALC. Control via bluetooth or OH41 handset.

Technical data	
<b>Downstream</b>	
Optical input power	-8...+2 dBm
Wavelength	1260...1610 nm
Frequency range	47...1218 MHz (depending on diplexer)
Noise current density	< 4,5 pA $\sqrt$ /Hz
Attenuator downstream	0...20 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Output level	117 dB $\mu$ V (CENELEC 42, CSO/CTB >60dB, 1 output, 6dB slope)
Output level	110 dB $\mu$ V (30 PAL + 80 QAM CHs from 258 ... 1.2 GHz with 5 dB slope)
Output level	114 dB $\mu$ V (CENELEC42, CSO&CTB >60 dB, 1 output)
Test point	-20 dB
RF return loss	> 18 dB (-1 dB/oct., min. 14 dB)
Optical return loss	> 40 dB
<b>Upstream</b>	
<b>with LT 22 xxxx</b>	
Optical output power	+3 dBm
Wavelength	1270...1610 nm (CWDM grid, corresponding to order code)
Frequency range	5...204 MHz (depending on diplexer)
RF input level	70...80 dB $\mu$ V
Attenuator range	3%...10% (OMI attenuation)
Test point	75 dB $\mu$ V (for 5% OMI per channel)
Ingress Control Switch (ICS)	0/-6/-45 dB
RF return loss	> 18 dB
Optical return loss	> 40 dB
<b>Interfaces</b>	
SC/APC connectors	2 pcs. (Downstream input & upstream output separated)
PG 11 connectors	4 pcs. (2x RF input/output)
<b>User interfaces</b>	
Status LED downstream	Optical input power
Status LED upstream	Laser activity

Technical data	
Management ports RJ11	1 pcs. (for handset OH 41)
Remotely controlled parameters via FSK	DS on/off, US on/off, ICS 0/-6/-45 (with optional Rx module)
Bluetooth version	4.0 / LE
Bluetooth profiles	GATT
Bluetooth transmit power	$\leq$ 0 dBm
Bluetooth frequency	2,4 GHz
Bluetooth app compatibility	Android 4.3 or higher
<b>General data</b>	
Supply voltage	27...65 V AC
Power consumption max.	16 W
Dimensions (width x height x depth)	232 x 145 x 86 mm
Electro Magnetic Compatibility (EMC)	EN 50083-2
Protection class	IP 66
Ambient temperature	-20...+55 $^{\circ}$ C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	310 x 180 x 90 mm
Packaging volume sales unit	5,1 dm $^3$
Gross weight sales unit	1,695 kg
EAN	4010056739065
Article number	73906

### Characteristics

- High RF output level of 117 dB $\mu$ V for coaxial distribution of FTTC or FTTB signals
- DOCSIS-3.1-compliant frequency range: Downstream up to 1.2 GHz, Upstream up to 200 MHz
- Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- Pluggable output splitters / taps for flexible configuration of the two RF outputs
- Device control via bluetooth app or via handset OH 41
- Optional: Remote control compliant to IEC 60728-14 via FSK receiver module
- Compact housing for outdoor deployment (IP66)
- Optical ALC for regulated output levels





# LR 27 2311

Fiber nodes, locally powered



Locally powered compact FRoG node for outdoor deployment, DOCSIS 3.1 compliant. Burst mode (RfOG) or continuous wave (HFC) possible. Modular concept enables flexible migration. Optical ALC. Control via bluetooth or OH41 handset.

Technical data	
<b>Downstream</b>	
Optical input power	-8...+2 dBm
Wavelength	1543,5...1556,5 nm
Frequency range	85...1218 MHz (depending on diplexer)
Noise current density	< 4,5 pA $\sqrt$ /Hz
Attenuator downstream	0...20 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Output level	117 dB $\mu$ V (CENELEC 42, CSO/CTB >60dB, 1 output, 6dB slope)
Output level	110 dB $\mu$ V (30 PAL + 80 QAM CHs from 258 ... 1.2 GHz with 5 dB slope)
Output level	114 dB $\mu$ V (CENELEC42, CSO&CTB >60 dB, 1 output)
Test point	-20 dB
RF return loss	> 18 dB (-1 dB/oct., min. 14 dB)
Optical return loss	> 40 dB
<b>Upstream</b>	
Optical output power	+3 dBm
Wavelength	1310 nm
Frequency range	5...204 MHz (depending on diplexer)
RF input level	70...100 dB $\mu$ V
Attenuator range	0...30 dB (Input Attenuation)
Test point	70 dB $\mu$ V (for 15% OMI per channel)
Ingress Control Switch (ICS)	0/-6/-45 dB
RF return loss	> 18 dB
Optical return loss	> 40 dB
<b>Interfaces</b>	
SC/APC connectors	1 pcs. (Downstream input & upstream output)
PG 11 connectors	4 pcs. (2x RF input/output)
<b>User interfaces</b>	
Status LED downstream	Optical input power
Status LED upstream	Laser activity
Management ports RJ11	1 pcs. (for handset OH 41)

Technical data	
Remotely controlled parameters via FSK	DS on/off, US on/off, ICS 0/-6/-45 (with optional Rx module)
Bluetooth version	4.0 / LE
Bluetooth profiles	GATT
Bluetooth transmit power	≤ 0 dBm
Bluetooth frequency	2,4 GHz
Bluetooth app compatibility	Android 4.3 or higher
<b>General data</b>	
Supply voltage	180...264 V AC
Power consumption max.	16 W
Dimensions (width x height x depth)	232 x 145 x 86 mm
Electro Magnetic Compatibility (EMC)	EN 50083-2
Protection class	IP 66
Ambient temperature	-20...+55 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	310 x 180 x 90 mm
Packaging volume sales unit	5,1 dm <sup>3</sup>
Gross weight sales unit	1,695 kg
EAN	4010056742423
Article number	74242

### Characteristics

- High RF output level of 117 dB $\mu$ V for coaxial distribution of FTTC or FTTB signals
- DOCSIS-3.1-compliant frequency range: Downstream up to 1.2 GHz, Upstream up to 200 MHz
- Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- Pluggable output splitters / taps for flexible configuration of the two RF outputs
- Device control via bluetooth app or via handset OH 41
- Optional: Remote control compliant to IEC 60728-14 via FSK receiver module
- Compact housing for outdoor deployment (IP66)
- Optical ALC for regulated output levels

# Value Line

## LR 27 6311

Fiber Node, remote-fed



Remote powered compact FRoG node for outdoor deployment, DOCSIS 3.1 compliant. Burst mode (RfOG) or continuous wave (HFC) possible. Modular concept enables flexible migration. Optical ALC. Control via bluetooth or OH41 handset.

Technical data	
<b>Downstream</b>	
Optical input power	-8...+2 dBm
Wavelength	1543,5...1556,5 nm
Frequency range	85...1218 MHz (depending on diplexer)
Noise current density	< 4,5 pA $\sqrt$ /Hz
Attenuator downstream	0...20 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Output level	117 dB $\mu$ V (CENELEC 42, CSO/CTB >60dB, 1 output, 6dB slope)
Output level	110 dB $\mu$ V (30 PAL + 80 QAM CHs from 258 ... 1.2 GHz with 5 dB slope)
Output level	114 dB $\mu$ V (CENELEC42, CSO&CTB >60 dB, 1 output)
Test point	-20 dB
RF return loss	> 18 dB (-1 dB/oct., min. 14 dB)
Optical return loss	> 40 dB
<b>Upstream</b>	
Optical output power	+3 dBm
Wavelength	1310 nm
Frequency range	5...204 MHz (depending on diplexer)
RF input level	70...100 dB $\mu$ V
Attenuator range	0...30 dB (Input Attenuation)
Test point	70 dB $\mu$ V (for 15% OMI per channel)
Ingress Control Switch (ICS)	0/-6/-45 dB
RF return loss	> 18 dB
Optical return loss	> 40 dB
<b>Interfaces</b>	
SC/APC connectors	1 pcs. (Downstream input & upstream output)
PG 11 connectors	4 pcs. (2x RF input/output)
<b>User interfaces</b>	
Status LED downstream	Optical input power
Status LED upstream	Laser activity
Management ports RJ11	1 pcs. (for handset OH 41)

Technical data	
Remotely controlled parameters via FSK	DS on/off, US on/off, ICS 0/-6/-45 (with optional Rx module)
Bluetooth version	4.0 / LE
Bluetooth profiles	GATT
Bluetooth transmit power	≤ 0 dBm
Bluetooth frequency	2,4 GHz
Bluetooth app compatibility	Android 4.3 or higher
<b>General data</b>	
Supply voltage	27...65 V AC
Power consumption max.	16 W
Dimensions (width x height x depth)	232 x 145 x 86 mm
Electro Magnetic Compatibility (EMC)	EN 50083-2
Protection class	IP 66
Ambient temperature	-20...+55 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	310 x 180 x 90 mm
Packaging volume sales unit	5,1 dm <sup>3</sup>
Gross weight sales unit	1,695 kg
EAN	4010056742430
Article number	74243

### Characteristics

- High RF output level of 117 dB $\mu$ V for coaxial distribution of FTTC or FTTB signals
- DOCSIS-3.1-compliant frequency range: Downstream up to 1.2 GHz, Upstream up to 200 MHz
- Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- Pluggable output splitters / taps for flexible configuration of the two RF outputs
- Device control via bluetooth app or via handset OH 41
- Optional: Remote control compliant to IEC 60728-14 via FSK receiver module
- Compact housing for outdoor deployment (IP66)
- Optical ALC for regulated output levels



## LR 27 2611

Fiber nodes, locally powered



Locally powered compact FRoG node for outdoor deployment, DOCSIS 3.1 compliant. Burst mode (RfOG) or continuous wave (HFC) possible. Modular concept enables flexible migration. Optical ALC. Control via bluetooth or OH41 handset.

Technical data	
<b>Downstream</b>	
Optical input power	-8...+2 dBm
Wavelength	1543,5...1556,5 nm
Frequency range	85...1218 MHz (depending on diplexer)
Noise current density	< 4,5 pA $\sqrt$ /Hz
Attenuator downstream	0...20 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Output level	117 dB $\mu$ V (CENELEC 42, CSO/CTB >60dB, 1 output, 6dB slope)
Output level	110 dB $\mu$ V (30 PAL + 80 QAM CHs from 258 ... 1.2 GHz with 5 dB slope)
Output level	114 dB $\mu$ V (CENELEC42, CSO&CTB >60 dB, 1 output)
Test point	-20 dB
RF return loss	> 18 dB (-1 dB/oct., min. 14 dB)
Optical return loss	> 40 dB
<b>Upstream</b>	
Optical output power	+3 dBm
Wavelength	1610 nm
Frequency range	5...204 MHz (depending on diplexer)
RF input level	70...100 dB $\mu$ V
Attenuator range	0...30 dB (Input Attenuation)
Test point	70 dB $\mu$ V (for 15% OMI per channel)
Ingress Control Switch (ICS)	0/-6/-45 dB
RF return loss	> 18 dB
Optical return loss	> 40 dB
<b>Interfaces</b>	
SC/APC connectors	1 pcs. (Downstream input & upstream output)
PG 11 connectors	4 pcs. (2x RF input/output)
<b>User interfaces</b>	
Status LED downstream	Optical input power
Status LED upstream	Laser activity
Management ports RJ11	1 pcs. (for handset OH 41)

Technical data	
Remotely controlled parameters via FSK	DS on/off, US on/off, ICS 0/-6/-45 (with optional Rx module)
Bluetooth version	4.0 / LE
Bluetooth profiles	GATT
Bluetooth transmit power	$\leq$ 0 dBm
Bluetooth frequency	2,4 GHz
Bluetooth app compatibility	Android 4.3 or higher
<b>General data</b>	
Supply voltage	180...264 V AC
Power consumption max.	16 W
Dimensions (width x height x depth)	232 x 145 x 86 mm
Electro Magnetic Compatibility (EMC)	EN 50083-2
Protection class	IP 66
Ambient temperature	-20...+55 $^{\circ}$ C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	310 x 180 x 90 mm
Packaging volume sales unit	5,1 dm $^3$
Gross weight sales unit	1,695 kg
EAN	4010056742706
Article number	74270

### Characteristics

- High RF output level of 117 dB $\mu$ V for coaxial distribution of FTTC or FTTB signals
- DOCSIS-3.1-compliant frequency range: Downstream up to 1.2 GHz, Upstream up to 200 MHz
- Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- Pluggable output splitters / taps for flexible configuration of the two RF outputs
- Device control via bluetooth app or via handset OH 41
- Optional: Remote control compliant to IEC 60728-14 via FSK receiver module
- Compact housing for outdoor deployment (IP66)
- Optical ALC for regulated output levels

# Value Line

## LR 27 6611

Fiber Node, remote-fed



Remote powered compact FRoG node for outdoor deployment, DOCSIS 3.1 compliant. Burst mode (RfOG) or continuous wave (HFC) possible. Modular concept enables flexible migration. Optical ALC. Control via bluetooth or OH41 handset.

Technical data	
<b>Downstream</b>	
Optical input power	-8...+2 dBm
Wavelength	1543,5...1556,5 nm
Frequency range	85...1218 MHz (depending on diplexer)
Noise current density	< 4,5 pA $\sqrt$ /Hz
Attenuator downstream	0...20 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Output level	117 dB $\mu$ V (CENELEC 42, CSO/CTB >60dB, 1 output, 6dB slope)
Output level	110 dB $\mu$ V (30 PAL + 80 QAM CHs from 258 ... 1.2 GHz with 5 dB slope)
Output level	114 dB $\mu$ V (CENELEC42, CSO&CTB >60 dB, 1 output)
Test point	-20 dB
RF return loss	> 18 dB (-1 dB/oct., min. 14 dB)
Optical return loss	> 40 dB
<b>Upstream</b>	
Optical output power	+3 dBm
Wavelength	1610 nm
Frequency range	5...204 MHz (depending on diplexer)
RF input level	70...100 dB $\mu$ V
Attenuator range	0...30 dB (Input Attenuation)
Test point	70 dB $\mu$ V (for 15% OMI per channel)
Ingress Control Switch (ICS)	0/-6/-45 dB
RF return loss	> 18 dB
Optical return loss	> 40 dB
<b>Interfaces</b>	
SC/APC connectors	1 pcs. (Downstream input & upstream output)
PG 11 connectors	4 pcs. (2x RF input/output)
<b>User interfaces</b>	
Status LED downstream	Optical input power
Status LED upstream	Laser activity
Management ports RJ11	1 pcs. (for handset OH 41)

Technical data	
Remotely controlled parameters via FSK	DS on/off, US on/off, ICS 0/-6/-45 (with optional Rx module)
Bluetooth version	4.0 / LE
Bluetooth profiles	GATT
Bluetooth transmit power	$\leq$ 0 dBm
Bluetooth frequency	2,4 GHz
Bluetooth app compatibility	Android 4.3 or higher
<b>General data</b>	
Supply voltage	27...65 V AC
Power consumption max.	16 W
Dimensions (width x height x depth)	232 x 145 x 86 mm
Electro Magnetic Compatibility (EMC)	EN 50083-2
Protection class	IP 66
Ambient temperature	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	310 x 180 x 90 mm
Packaging volume sales unit	5,1 dm <sup>3</sup>
Gross weight sales unit	1,695 kg
EAN	4010056742713
Article number	74271

### Characteristics

- High RF output level of 117 dB $\mu$ V for coaxial distribution of FTTC or FTTB signals
- DOCSIS-3.1-compliant frequency range: Downstream up to 1.2 GHz, Upstream up to 200 MHz
- Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- Pluggable output splitters / taps for flexible configuration of the two RF outputs
- Device control via bluetooth app or via handset OH 41
- Optional: Remote control compliant to IEC 60728-14 via FSK receiver module
- Compact housing for outdoor deployment (IP66)
- Optical ALC for regulated output levels



## LR 83 A 1611

RFoG Node, upstream 1610 nm, Low Output Power



The Flr 22 is an extremely low-noise optical receiver. It converts optical signals into electrical signals or return path, and converts electrical signals into optical signals. Because of its high output level, it is particularly well suited for direct house distribution. Through the LED and the DC, it can display a measurement point in the range of -6 to +3dBm. The return path transmission is ensured through the 1610 nm Fabry-Perot laser. The output levels are stable due to automatic level control in the receive path. Its compact design enables installation in small spaces, and the built-in measuring socket ensures control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1540...1563 nm
Optical input level	-6 ... +3 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	96 dB $\mu$ V (4 dB slope)
RF output level, flat	80 dB $\mu$ V
Intermodulation ratio for output 1/ CSO, CTB	$\geq 61 / 65$ dB (at 3,3% OMI, -6 dBm opt. input power, with 36 PAL and 60 QAM256 channels)
Frequency response (O-E) 862...1006 MHz	$\leq \pm 1$ dB
Noise current density	4 pA/ $\sqrt{\text{Hz}}$ (typ.)
<b>Upstream</b>	
Optical output power	+3 dBm
Wavelength upstream	1610 nm (DFB-Laser)
Frequency range upstream	15 ... 65 MHz
Frequency response upstream	$\leq \pm 1$ dB
attenuator upstream input	0...30 dB (2 dB-steps)
Nominal input level	70...100 dB $\mu$ V
Input return loss	$\geq 18$ dB
Return channel test point Input	70 dB $\mu$ V @ 15 % OMI
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Return loss	$\geq 16$ dB
SC/APC connectors	1 pcs. (optical in-/output)
Optical return loss	>40 dB
<b>General data</b>	
Operating voltage AC	230 V (50/60 Hz)
Power consumption	$\leq 6$ W
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-10 ... +50 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 170 x 50 mm
Gross weight sales unit	0.660 kg
Packaging volume shipping package	1.5 dm <sup>3</sup>
Gross weight shipping unit	0.694 kg
EAN	4010056725877
Article number	72587

### Characteristics

- Compact node for RFoG-systems
- DFB laser at 1610 nm for upstream transmission with high signal quality
- According to SCTE ISP SP 910
- Extremely low-noise receiver
- Optical ALC for automatic control of downstream output level
- Return path test port

# Mini Line

## LR 91

An optical receiver for FttB / FttH



The LR 91 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for direct house distribution. The measurement point can be displayed through the LED and the DC, in the range of -8 to +1 dBm. Its compact design requires a minimum amount of space, and the built-in measuring socket allows control of the signals.

### Technical data

Wavelength	1260 ... 1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	47 ... 1006 MHz
RF output level, sloped	100 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB (infinitely variable)
Frequency response	-1 ... +1 dB
Noise current density	4 pA/ $\sqrt$ Hz (max.)
Output test point	-20 dB

### Connectors

SC/APC connectors	1 pcs. (fiber: single mode 9/125 $\mu$ m)
F-socket	2 pcs. (RF-Output, test point)
Impedance	75 $\Omega$
Return loss	> 16 dB

### General data

Operating voltage AC	230 V (50/60 Hz)
Power consumption	$\leq$ 6 W
Operating temperature range	-20 ... +50 $^{\circ}$ C
Dimensions (width x height x depth)	163 x 90 x 50 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.658 kg
Packaging volume shipping package	2.4 dm <sup>3</sup>
Gross weight shipping unit	0.772 kg
EAN	4010056732929
Article number	72341

### Characteristics

- compact receiver for CATV-distribution networks and RF-Overlay
- high output level to 100 dB $\mu$ V
- frequency range to 1 GHz
- 0-20 dB input attenuator
- LED and DC test point for monitoring of optical input power
- RF test port for the output signal
- Low-noise transimpedance amplifier



## LR 91 W

Compact node for CATV downstream reception and RF Overlay



The LR 91 W is a compact receiver for CATV distribution networks and RF overlay. The integrated WDM filter makes it possible to decouple the xPON wavelengths in addition to the CATV. It has a high output level up to 100 dB $\mu$ V in the frequency range up to 1 GHz.

### Technical data

Downstream	
Wavelength CATV	1551 nm ( $\pm 6,5$ nm)
Optical input power	-8...+1 dBm
LED monitoring optical input level	red: low/high, green: OK
Frequency range	47...1006 MHz
RF output level, sloped	100 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0...20 dB (infinitely variable)
Frequency response	$\pm 1$ dB
Equivalent noise input	max. 4 pA $\sqrt$ /Hz
Output test point	-20 dB
PON-WDM	
PON wavelengths	1260 ... 1537,5 nm & 1564,5 ... 1620 nm
Insertion loss	<1 dB
Isolation COM -> RF downstream	>45 dB (@ 1310 nm & 1610 nm)
Isolation COM -> PON	>15 dB (@ 1551 $\pm$ 6.5 nm)
Isolation PON -> RF-Downstream	>60 dB
Connectors	
Optical connector PON Port	SC/APC connectors
Optical connector	SC/APC connectors
RF connectors	F female, 75 $\Omega$
General data	
Fiber type	Single mode fiber 9/125 $\mu$ m
RF return loss	min. 16 dB
Supply voltage	230 V AC
Power consumption	6 W
Ambient temperature	-20...+50 $^{\circ}$ C
Dimensions (width x height x depth)	163 x 90 x 50 mm

### Packaging data

Sales unit	1 pcs.
EAN	4010056723422
Article number	72342

### Characteristics

- compact receiver for CATV-distribution networks and RF-Overlay
- Extremely low noise optical receiver
- High RF output level, switchable: 80 dB $\mu$ V (flat) or 100 dB $\mu$ V (6 dB slope) for 4% OMI
- Manual adjustment of optical level compensation for maximum flexibility
- Test port for RF output signal
- Monitoring LED and DC test port for optical input power
- High-Isolation PON pass-through port for CATV overlay in single-fiber FttX networks

# LAYOUT\_ATTRIBUTE5\_VALUE1

## LR 92

HFC MicroNode, upstream 1310 nm



The LR 92 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for direct house distribution. The measurement point can be displayed through the LED and the DC, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1310 nm Fabry-Perot laser. Its compact design requires a minimum amount of space, and the built-in measuring socket allows control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Fabry-Perot
Wavelength upstream	1310 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.658 kg
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056732936
Article number	73293

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- Cost efficient Fabry-Perot laser at 1310 nm for upstream transmission
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power





## LR 92 A 1311

HFC MicroNode, upstream DFB 1310 nm



The LR 92 A 1311 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for direct house distribution. The measurement point can be displayed through the LED and the DC, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1310 nm Fabry-Perot laser. The output level is stable due to automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

### Technical data

Downstream	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
Upstream	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1310 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
Connectors	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
General data	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

### Packaging data

Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056732943
Article number	73294

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power

# LAYOUT\_ATTRIBUTE5\_VALUE1

## LR 92 A 1451

HFC MicroNode, upstream DFB 1450 nm



The LR 92 A 1451 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1450 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1450 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056737955
Article number	73795

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power



## LR 92 A 1471

HFC MicroNode, upstream DFB 1470 nm



The LR 92 A 1471 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1470 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

### Technical data

Downstream	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
Upstream	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1470 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
Connectors	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
General data	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

### Packaging data

Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056737962
Article number	73796

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power

# LAYOUT\_ATTRIBUTE5\_VALUE1

## LR 92 A 1491

HFC MicroNode, upstream DFB 1490 nm



The LR 92 A 1491 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1490 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1490 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056737979
Article number	73797

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power



# LR 92 A 1511

HFC MicroNode, upstream DFB 1510 nm



The LR 92 A 1511 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1510 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dBµV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dBµV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	≤ 4 pA/√Hz
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1510 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dBµV (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dBµV (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm³
Gross weight shipping unit	0,78 kg
EAN	4010056737986
Article number	73798

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power

# LAYOUT\_ATTRIBUTE5\_VALUE1

## LR 92 A 1531

HFC MicroNode, upstream DFB 1530 nm



The LR 92 A 1531 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1530 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1530 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056737993
Article number	73799

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power



# LR 92 A 1571

HFC MicroNode, upstream DFB 1570 nm



The LR 92 A 1571 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1570 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dBµV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dBµV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	≤ 4 pA/√Hz
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1570 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dBµV (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dBµV (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm³
Gross weight shipping unit	0,78 kg
EAN	4010056738006
Article number	73800

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power

# LAYOUT\_ATTRIBUTE5\_VALUE1

## LR 92 A 1591

HFC MicroNode, upstream DFB 1590 nm



The LR 92 A 1591 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1590 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1590 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056738013
Article number	73801

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power





## LR 92 A 1611

HFC MicroNode, upstream DFB 1610 nm



The LR 92 A 1611 is an extremely low-noise optical receiver. Because of the high output level it is particularly well suited for the direct house distribution. It can be displayed through the LED and the DC measurement point, in the range of -8 to +1 dBm. The return path transmission is ensured through the 1610 nm DFB-laser. Multiple return path wavelengths on the same fibre are useable via CWDM. The output level is stable due to the automatic level control in the receive path. Its compact design requires a minimum amount of space, and the built-in measuring socket allows for control of the signals.

Technical data	
<b>Downstream</b>	
Wavelength	1260...1610 nm
Optical input level	-8 ... +1 dBm
Frequency range downstream	85 ... 1006 MHz
RF output level, sloped	98 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0 ... 20 dB
Noise current density	$\leq 4$ pA/ $\sqrt{\text{Hz}}$
Output test point	-20 dB
<b>Upstream</b>	
Laser type	Distributed Feedback (DFB)
Wavelength upstream	1610 nm
Optical output power	+3 dBm
Frequency range upstream	5 ... 65 MHz
Input level range	70 ... 100 dB $\mu$ V (for 5% OMI)
Attenuator upstream	0 ... 30 dB
Input measurement socket	70 dB $\mu$ V (for 5% OMI)
<b>Connectors</b>	
F-socket	2 pcs. (RF in-/output, test port)
Input return loss	18 dB (-1,5 dB/Oct.)
SC/APC connectors	2 pcs. (Downstream input, upstream output)
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Operating temperature range	-20...+50 °C
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Shipping unit	1 pcs.
Packaging volume shipping package	2,4 dm <sup>3</sup>
Gross weight shipping unit	0,78 kg
EAN	4010056738020
Article number	73802

### Characteristics

- Compact HFC fiber node for FttB and FttH networks
- DFB laser for the return-transmission with high signal quality
- Several upstream wavelengths on one common fiber by using CWDM
- High output level enables direct in-house distribution
- Extremely low receiver noise for good reception quality at low input levels
- Manual adjustment of optical level compensation for maximum flexibility
- LED and DC test point for monitoring of optical input power

# LAYOUT\_ATTRIBUTE5\_VALUE1

## LR 93 L 1611

RFoG Node, upstream 1610 nm, Low Output Power



- Image similar -

### Technical data

Downstream	
Wavelength	1540 ... 1560 nm
Optical input level	+2 ... -6 dBm
Frequency range downstream	85 ... 1218 MHz (depending on diplexers)
Output level CENELEC 42 Ch	80 dB $\mu$ V (CSO >60 dBc / CTB >65 dBc; flat)
Frequency Response (O-E) 85...1218 MHz	$\pm$ 1 dB
Noise current density	max. 4 pA/ $\sqrt$ Hz
DS Testpoint	-20 dB
Upstream	
Optical output power	3 dBm
Wavelength	1610 nm
Frequency range upstream	15 ... 204 MHz (depending on diplexers)
Frequency response upstream	$\pm$ 1 dB
attenuator upstream input	0 ... 30 dB (in 2 dB steps)
Nominal input level	70...100 dB $\mu$ V
Upstream test point	70 dB $\mu$ V (15% OMI)
Connectors	
F-socket	2 pcs.
Return loss	18 dB (-1 dB/Octave, min. 14 dB)
SC/APC connectors	1 pcs.
Optical return loss	> 40 dB
General data	
Operating voltage AC	230 V
Power consumption	< 6 W
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-10... +50 °C
IP-Compliance	IP 20

### Packaging data

Sales unit	1 pcs.
EAN	4010056723347
Article number	72334

The LR93 1xx1 is a DOCSIS 3.1-compliant RFoG transceiver for use as building entry point. For an easy migration towards DOCSIS 3.2, the diplex filters are pluggable. They are available for return path frequency bands from 65 MHz, 85 MHz and 204 MHz. The optical input power is monitored and independently adjusts the electrical output level through an ALC to provide a constant RF output level. The node has an output power of 80 dB $\mu$ V flat and 97 dB $\mu$ V at 5 dB slope. A LED displays whether the optical input power is within the target range (green) or outside that range (red). The return path transmitter operates in „Burst Mode“. The optical transmitter is activated only when data is sent. In the remaining time, the transmission power remains at minimum level, therefore several transmitters can be connected to the same receiver without noise accumulation. The activity of the transmitter is displayed via an LED. The device is available in the CWDM wavelengths 1270 nm, 1290 nm, 1530 nm ... 1570 nm, ..., 1610nm. The electrical input level should be in the range of 70-100 dB microvolts. The integrated attenuators can compensate different distribution attenuations within buildings. To operate the return path transmitter most efficiently, the RF level at the test point should be at 70 dB $\mu$ V.

### Characteristics

- Compact node for RFoG-systems
- DFB laser at 1610 nm for upstream transmission with high signal quality
- According to SCTE ISP SP 910
- Extremely low-noise receiver
- Optical ALC for automatic control of downstream output level
- Optimized Burst-Switching to comply with DOCSIS 3.1
- Pluggable RF diplexers enable step-by-step migration towards DOCSIS 3.1



# LR 93 W 1611

RFoG Node, upstream 1610 nm



- Image similar -

Technical data	
<b>Downstream</b>	
Wavelength	1540 ... 1560 nm
Optical input level	+2 ... -6 dBm
Frequency range downstream	85 ... 1218 MHz (depending on diplexers)
Output level CENELEC 42 Ch	80 dBμV (CSO >60 dBc / CTB >65 dBc; flat)
Output level CENELEC 42 Ch	97 dBμV (CSO >60 dBc / CTB >65 dBc; 5 dB slope)
Frequency Response (O-E) 85...1218 MHz	± 1 dB
Noise current density	max. 4 pA/√Hz
DS Testpoint	-20 dB
<b>Upstream</b>	
Optical output power	3 dBm
Wavelength	1610 nm
Frequency range upstream	15 ... 204 MHz (depending on diplexers)
Frequency response upstream	± 1 dB
attenuator upstream input	0 ... 30 dB (in 2 dB steps)
Nominal input level	70...100 dBμV
Upstream test point	70 dBμV (15% OMI)
<b>Connectors</b>	
F-socket	2 pcs.
Return loss	18 dB (-1 dB/Octave, min. 14 dB)
SC/APC connectors	1 pcs.
Optical return loss	> 40 dB
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	< 6 W
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-10... +50 °C
IP-Compliance	IP 20

Packaging data	
Sales unit	1 pcs.
EAN	4010056723392
Article number	72339

The LR93 1xx1 is a DOCSIS 3.1-compliant RFoG transceiver for use as building entry point. For an easy migration towards DOCSIS 3.2, the diplex filters are pluggable. They are available for return path frequency bands from 65 MHz, 85 MHz and 204 MHz. The optical Input power is monitored and independently adjusts the electrical output level through an ALC to provide a constant RF output level. The node has an output power of 80 dBμV flat and 97 dBμV at 5 dB slope. A LED displays whether the optical input power is within the target range (green) or outside that range (red). The return path transmitter operates in „Burst Mode“. The optical transmitter is activated only when data is sent. In the remaining time, the transmission power remains at minimum level, therefore several transmitters can be connected to the same receiver without noise accumulation. The activity of the transmitter is displayed via an LED. The device is available in the CWDM wavelengths 1270 nm, 1290 nm, 1530 nm ... 1570 nm, ..., 1610nm. The electrical input level should be in the range of 70-100 dB microvolts. The integrated attenuators can compensate different distribution attenuations within buildings. To operate the return path transmitter most efficiently, the RF level at the test point should be at 70 dBμV.

### Characteristics

- Compact node for RFoG-systems
- DFB laser at 1610 nm for upstream transmission with high signal quality
- According to SCTE ISP SP 910
- Extremely low-noise receiver
- Optical ALC for automatic control of downstream output level
- Optimized Burst-Switching to comply with DOCSIS 3.1
- Pluggable RF diplexers enable step-by-step migration towards DOCSIS 3.1

# Mini Line

## LR 91 W 1550

Compact node for CATV downstream reception and RF Overlay



The LR91 W 1550 is a compact receiver for CATV distribution networks and RF overlay. The integrated, very narrow-band, WDM filter allows the out-coupling of the xPON wavelengths, which are additionally connected to the CATV. It has a high output level up to 100 dB $\mu$ V in the frequency range up to 1 GHz.

### Technical data

Downstream	
Wavelength CATV	1551 nm ( $\pm 6,5$ nm)
Optical input power	-8...+1 dBm
LED monitoring optical input level	red: low/high, green: OK
Frequency range	47...1006 MHz
RF output level, sloped	100 dB $\mu$ V (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
RF output level, flat	80 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Attenuator downstream	0...20 dB (infinitely variable)
Frequency response	$\pm 1$ dB
Equivalent noise input	max. 4 pA $\sqrt$ /Hz
Output test point	-20 dB
PON-WDM	
PON wavelengths	1260 ... 1537,5 nm & 1564,5 ... 1620 nm
Insertion loss	<1 dB
Isolation COM -> RF downstream	>45 dB (@ 1310 nm & 1610 nm)
Isolation COM -> PON	>25 dB (@ 1551 $\pm$ 6.5 nm)
Isolation PON -> RF-Downstream	>60 dB
Connectors	
Optical connector PON Port	SC/APC connectors
Optical connector	SC/APC connectors
RF connectors	F female, 75 $\Omega$
General data	
Fiber type	Single mode fiber 9/125 $\mu$ m
RF return loss	min. 16 dB
Supply voltage	230 V AC
Power consumption	6 W
Ambient temperature	-20...+50 $^{\circ}$ C
Dimensions (width x height x depth)	163 x 90 x 50 mm

### Packaging data

Sales unit	1 pcs.
EAN	4010056734916
Article number	73491

### Short description

- Compact node for CATV downstream reception and RF Overlay
- Extremely low noise optical receiver
- High RF output level, switchable: 80 dB $\mu$ V (flat) or 100 dB $\mu$ V (6 dB slope) for 4% OMI
- Manual adjustment of optical level compensation for maximum flexibility
- Test port for RF output signal
- Monitoring LED and DC test port for optical input power
- High-Isolation PON pass-through port for CATV overlay in single-fiber FttX networks



## LR 95 W 1611

Compact Node for single fiber HFC applications



The LR 95 series of fiber nodes is optimized for HFC applications. They are operated in CW (continuous wave) mode.

Technical data	
<b>Downstream</b>	
Wavelength	1540...1560 nm
Output level	80 dB $\mu$ V flat / 97dB $\mu$ V with 5 dB Slope
Optical input power	-6...+2 dBm
Frequency range	85...1218 MHz (depending on diplexer)
Return loss	$\geq$ 18 dB (-1dB/Octave, min. 14 dB)
RF output level CENELEC 42 Ch.	(CSO > 60 dBc / CTB > 65 dBc; flat)
RF output level CENELEC 42 Ch.	(CSO > 60 dBc / CTB > 65 dBc; 5 dB slope)
Frequency Response (O-E)	$\pm$ 0,75 dB
Equivalent input noise density	<4 pA $\sqrt$ /Hz
Test point	-20 dB
<b>Upstream</b>	
Optical output power	3 dBm
Wavelength	1610 nm
Frequency range	12...204 MHz (depending on diplexer)
Return loss	$\geq$ 18 dB (-1dB/Octave, min. 14 dB)
Frequency Response (O-E)	$\pm$ 0,75 dB
Attenuator range	0...30 (2 dB-steps)
RF input level	70...100 dB $\mu$ V
Upstream test point	70 dB $\mu$ V (OMI 5%)
<b>Connectors</b>	
SC/APC connectors	1 pcs. (Downstream input & upstream output)
F-connectors	2 pcs. (RF in-/output, test port)
<b>General data</b>	
Supply voltage	230 V AC ( $\pm$ 10 %)
Power consumption	<6 W
Dimensions (width x height x depth)	163 x 90 x 47 mm
Drilling dimensios	148 mm

Technical data	
Ambient temperature	-10...+50 °C
Protection class	IP 20
EMC	EN 50083-2
Impedance	75 $\Omega$
<b>Monitoring</b>	
Optical RX Level LED colour	red: < -6 dBm / > +2 dBm; green: -6 dBm ...+2 dBm
TX activity LED	static: laser on
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056749378
Article number	74937

### Characteristics

- High RF output level of 97 dB $\mu$ V for coaxial distribution of FTTB signals
- DOCSIS-3.1-compliant frequency range: Downstream up to 1218 MHz, Upstream up to 204 MHz
- Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- Compact housing for indoor deployment (IP20)
- Optical ALC for regulated output levels

# Mini Line

## LR 93 1611

RFoG Node, upstream 1610 nm



- Image similar -

Technical data	
<b>Downstream</b>	
Wavelength	1540...1560 nm
Output level	80 dB $\mu$ V flat / 97dB $\mu$ V with 5 dB Slope
Optical input power	-6...+2 dBm
Frequency range	85...1218 MHz (depending on diplexer)
Return loss	$\geq 18$ dB (-1dB/Octave, min. 14 dB)
RF output level CENELEC 42 Ch.	(CSO > 60 dBc / CTB > 65 dBc; flat)
RF output level CENELEC 42 Ch.	(CSO > 60 dBc / CTB > 65 dBc; 5 dB slope)
Frequency Response (O-E)	$\pm 0,75$ dB
Equivalent input noise density	<4 pA/ $\sqrt{\text{Hz}}$
Test point	-20 dB
<b>Upstream</b>	
Optical output power	3 dBm
Wavelength	1610 nm
Frequency range	12...204 MHz (depending on diplexer)
Return loss	$\geq 18$ dB (-1dB/Octave, min. 14 dB)
Frequency Response (O-E)	$\pm 0,75$ dB
Attenuator range	0...30 (2 dB-steps)
RF input level	70...100 dB $\mu$ V
Upstream test point	70 dB $\mu$ V (OMI 5%)
<b>Connectors</b>	
SC/APC connectors	1 pcs. (Downstream input & upstream output)
F-connectors	2 pcs. (RF in-/output, test port)
<b>General data</b>	
Supply voltage	230 V AC ( $\pm 10$ %)
Power consumption	<6 W
Dimensions (width x height x depth)	163 x 90 x 47 mm
Drilling dimensios	148 mm
Ambient temperature	-10...+50 °C
Protection class	IP 20
EMC	EN 50083-2

Technical data	
Impedance	75 $\Omega$
<b>Monitoring</b>	
Optical RX Level LED colour	red: < -6 dBm / > +3 dBm; green: -6 dBm ...+3 dBm
TX activity LED	off: laser off; static: laser permanently on; flashing green: traffic detected
<b>Packaging data</b>	
Sales unit	1 pcs.

The LR93 1xx1 is a DOCSIS 3.1-compliant RFoG transceiver for use as building entry point. For an easy migration towards DOCSIS 3.2, the diplex filters are pluggable. They are available for return path frequency bands from 65 MHz, 85 MHz and 204 MHz. The optical input power is monitored and independently adjusts the electrical output level through an ALC to provide a constant RF output level. The node has an output power of 80 dB $\mu$ V flat and 97 dB $\mu$ V at 5 dB slope. A LED displays whether the optical input power is within the target range (green) or outside that range (red). The return path transmitter operates in „Burst Mode“. The optical transmitter is activated only when data is sent. In the remaining time, the transmission power remains at minimum level, therefore several transmitters can be connected to the same receiver without noise accumulation. The activity of the transmitter is displayed via an LED. The device is available in the CWDM wavelengths 1270 nm, 1290 nm, 1530 nm ... 1570 nm, ..., 1610nm. The electrical input level should be in the range of 70-100 dB microvolts. The integrated attenuators can compensate different distribution attenuations within buildings. To operate the return path transmitter most efficiently, the RF level at the test point should be at 70 dB $\mu$ V.

### Characteristics

- Compact node for RFoG-systems
- DFB laser at 1610 nm for upstream transmission with high signal quality
- According to SCTE ISP SP 910
- Extremely low-noise receiver
- Optical ALC for automatic control of downstream output level
- Optimized Burst-Switching to comply with DOCSIS 3.1
- Pluggable RF diplexers enable step-by-step migration towards DOCSIS 3.1



## LR 10 K LT02

FTTH network termination with optical receiver



Technical data	
Wavelength	1260 ... 1630 nm
Optical input level	-7 ... +1 dBm
Frequency range downstream	47 ... 2400 MHz
RF outputs	2 pcs.
Output Level Low	75 dB $\mu$ V (ALC, PAL channel at 4% OMI)
Output Level High	80 dB $\mu$ V (ALC, PAL channel at 4% OMI)
CSO	> 60 dBc (CENELEC 42 ch.)
CTB	> 60 dBc (CENELEC 42 ch.)
Frequency response	-2 ... +2 dB
Noise current density	< 6 pA/ $\sqrt$ Hz
Connectors	
Splice tray	For crimped and heat-shrunked splice protectors
Fiber type	Single-mode Fiber
F-socket	2 pcs. (2x RF-Output, each with DC Input)
Impedance	75 $\Omega$
Return loss	> 16 dB
LC/APC connector	2 pcs.
Optical return loss	> 40 dB
General data	
Operating voltage DC	9 ... 20 V DC
Power consumption	< 3 W
Operating temperature range	+5... +40 °C (ETSI EN 300 019-1-3 Class 3.1)
Dimensions (width x height x depth)	88 x 88 x 38 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	kg
Shipping unit	pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	
Gross weight shipping unit	kg
EAN	4010056746285
Article number	74628

The LR 10 FTTH platform provides an independent solution for fiber termination and receiving several optical signals like RF Overlay reception of CATV and satellite TV signals as well as return-channel capable HFC applications or Ethernet media converters. The base plate for easy wall mounting offers enough space for up to four fibers either with pluggable or spliced connectors. The range of extension modules starts from pure CATV / SAT-TV reception, incl. two RF outputs and ALC (Automatic Level Control) via return-channel capable HFC fiber nodes as well as media converters for Point-to-Point Ethernet applications. In conjunction with a deliberately designed flat cover, the LR 10 platform is an ultra-compact, living room compatible and totally unobtrusive system for easy fiber termination with expansion options. Whereby the modular extension towards active components could also take place later (migration) what in turn represents an economic advantage, as opposed to all-in-one solutions.

### Characteristics

- Modular platform for easy migration with extension modules
- Wall-mounted FTTH network termination
- Optical receiver for distribution of CATV and SAT
- Automatic output level control (ALC)
- DC powered via RF output
- LED for displaying optical input power
- LC/AP Ports

# Micro Line

## LR 10 K LB04

FTTH network termination with 4 LC/APC connectors



## LR 10 K ST01

FTTH network termination with optical receiver



### Technical data

Connectors	
Splice tray	For crimped and heat-shrunked splice protectors
Fiber type	Single-mode Fiber
LC/APC connector	4 pcs.
General data	
Dimensions (width x height x depth)	88 x 88 x 21 mm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	kg
Shipping unit	pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	
Gross weight shipping unit	kg
EAN	4010056749361
Article number	74936

### Technical data

Wavelength	1260...1630 nm
Optical input level	-7...+1 dBm
Frequency range downstream	47...2400 MHz
RF outputs	2 pcs.
Output Level Low	75 dB $\mu$ V (ALC, PAL channel at 4% OMI)
Output Level High	80 dB $\mu$ V (ALC, PAL channel at 4% OMI)
CSO	>60 dBc (CENELEC 42 ch.)
CTB	>60 dBc (CENELEC 42 ch.)
Frequency response	-2...+2 dB
Noise current density	<6 pA/ $\sqrt$ Hz
Connectors	
Splice tray	For crimped and heat-shrunked splice protectors
Fiber type	Single-mode Fiber
F-socket	2 pcs. (2x RF-Output, each with DC Input)
Impedance	75 $\Omega$
Return loss	>16 dB
SC/APC connectors	1 pcs.
Optical return loss	>40 dB
General data	
Operating voltage DC	9...20 V DC
Power consumption	<3 W
Operating temperature range	+5...+40 °C (ETSI EN 300 019-1-3 Class 3.1)
Dimensions (width x height x depth)	88 x 88 x 38 mm





## LR 10 K LB02

FTTH network termination with 2 LC/APC connectors



## LR 10 K LTW2

FTTH network termination with optical receiver and WDM filter



### Technical data

Connectors	
Splice tray	For crimped and heat-shrunked splice protectors
Fiber type	Single-mode Fiber
LC/APC connector	2 pcs.
General data	
Dimensions (width x height x depth)	88 x 88 x 21 mm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	kg
Shipping unit	pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	
Gross weight shipping unit	kg
EAN	4010056746056
Article number	74605

### Technical data

Wavelength	1540...1630 nm
Optical input level	-7 ... +1 dBm
Frequency range downstream	47 ... 2400 MHz
RF outputs	2 pcs.
Output Level Low	75 dBμV (ALC, PAL channel at 4% OMI)
Output Level High	80 dBμV (ALC, PAL channel at 4% OMI)
CSO	> 60 dBc (CENELEC 42 ch.)
CTB	> 60 dBc (CENELEC 42 ch.)
Frequency response	-2 ... +2 dB
Noise current density	< 6 pA/√Hz
PON wavelengths	1260...1360 & 1480...1500 nm
PON insertion loss	< 1 dB
Isolation COM -> PON	> 35 dB
Isolation COM -> RF downstream	> 15 dB (1540...1630 nm)
Isolation PON -> RF-Downstream	50 dB

### Connectors

Splice tray	For crimped and heat-shrunked splice protectors
Fiber type	Single-mode Fiber
F-socket	2 pcs. (2x RF-Output, each with DC Input)
Impedance	75 Ω
Return loss	> 16 dB
LC/APC connector	2 pcs.
Optical return loss	> 40 dB

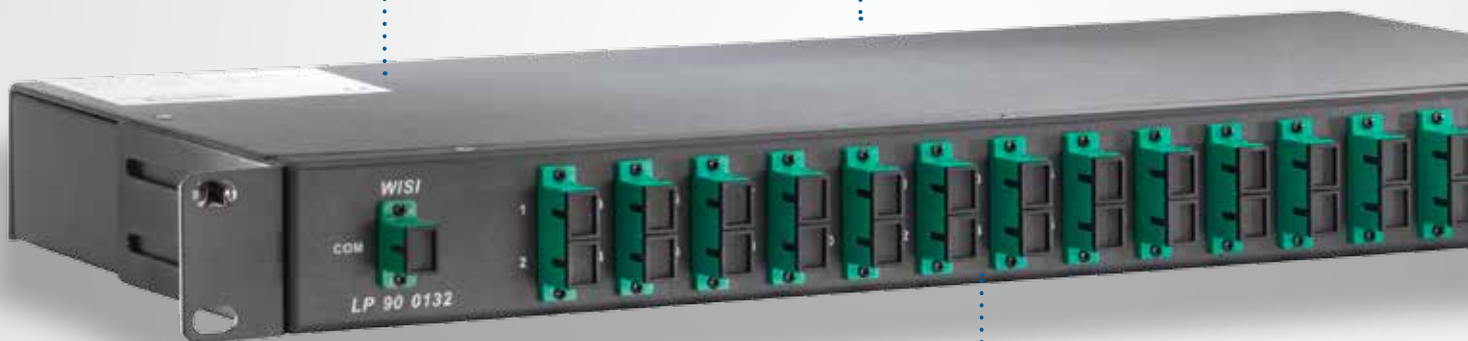
### General data

Operating voltage DC	9 ... 20 V DC
Power consumption	< 3 W
Operating temperature range	+5... +40 °C (ETSI EN 300 019-1-3 Class 3.1)
Dimensions (width x height x depth)	88 x 88 x 38 mm

WISI Optical Components:  
**We bring light into  
the darkness**

**Seamless integration**  
in Optopus installations

**Special solutions for  
typical applications**  
in HFC, RFoG and  
RF-Overlay networks



**Matched to the high demands  
on the signal quality**  
in modern CATV networks



# Accessories optical components

**The use of high-quality optical components allows a nearly lossless signal transmission.**

The components are the first choice and the perfect addition to the other optical systems of WISI. These combination of the optical components from WISI form an optimal and reliable solution for your distribution networks.

## WISI Accessories optical components at a glance:

- DWDM and CWDM multiplexer and channel filter
- Special components for broadcast/narrowcast reunification
- Balanced and unbalanced splitter tap
- Variable optical attenuators
- Optical connection cable, connectors and adapters
- Components for fiber management etc.



The Optopus chassis LX 50 is prepared for rear use of passive optical modules.



Optopus LD modules can also be installed in the space-saving mounting frame LP 40.

# Optical nodes accessories Compact Line

## LT 40 S

Optical transmitter module,  
1310 nm



## LT 41 S

Optical transmitter module,  
1310 nm, DFB laser



Technical data		
Laser type	Fabry-Perot	Dual stage isolated DFB laser
Optical output power	+3 dBm	+3 dBm
Wavelength	1310 nm ( $\pm$ 40 nm)	1310 nm ( $\pm$ 10 nm)
Frequency range	10 ... 85 MHz	10 ... 85 MHz
Relative intensity noise	< -135 dB $\sqrt$ /Hz	< -145 dB $\sqrt$ /Hz
Nominal input level	75 dB $\mu$ V	75 dB $\mu$ V
Reference pilot	6.5 MHz	6.5 MHz
Input measurement socket	75 dB $\mu$ V (for 5% OMI)	75 dB $\mu$ V (for 5% OMI)
Connectors		
SC/APC connectors	1 pcs. (Return path-output)	1 pcs. (Return path-output)
F-socket	1 pcs. (Test port)	1 pcs. (Test port)
General data		
Operating temperature range	-20 ... +55 °C	-20 ... +55 °C
Storage temperature	-25 ... +75 °C	-25 ... +75 °C
Packaging data		
Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	197 x 230 x 75 mm	197 x 230 x 75 mm
Gross weight sales unit	0.366 kg	0.365 kg
Packaging volume shipping package	3.4dm <sup>3</sup>	3.4dm <sup>3</sup>
Gross weight shipping unit	0.366 kg	0.365 kg
EAN	4010056162849	4010056162856
Article number	16284	16285



## LT 45 S 1470    LT 45 S 1490    LT 45 S 1510    LT 45 S 1530

Optical transmitter module, 1470 nm CWDM

Optical transmitter module, 1490 nm CWDM

Optical transmitter module, 1510 nm CWDM

Optical transmitter module, 1530 nm CWDM



Technical data				
Laser type	Dual stage isolated DFB laser	Dual stage isolated DFB laser	Dual stage isolated DFB laser	Dual stage isolated DFB laser
Optical output power	+3 dBm	+3 dBm	+3 dBm	+3 dBm
Wavelength	1470 nm (± 2 nm)	1490 nm (± 2 nm)	1510 nm (± 2 nm)	1530 nm (± 2 nm)
Frequency range	10 ... 85 MHz	10 ... 85 MHz	10 ... 85 MHz	10 ... 85 MHz
Relative intensity noise	< -145 dB $\sqrt$ /Hz	< -145 dB $\sqrt$ /Hz	< -145 dB $\sqrt$ /Hz	< -145 dB $\sqrt$ /Hz
Nominal input level	75 dB $\mu$ V	75 dB $\mu$ V	75 dB $\mu$ V	75 dB $\mu$ V
Reference pilot	6.2 MHz	6.4 MHz	6,6 MHz	6,8 MHz
Input measurement socket	75 dB $\mu$ V (for 5% OMI)	75 dB $\mu$ V (for 5% OMI)	75 dB $\mu$ V (for 5% OMI)	75 dB $\mu$ V (for 5% OMI)
Connectors				
SC/APC connectors	1 pcs. (Return path-output)	1 pcs. (Return path-output)	1 pcs. (Return path-output)	1 pcs. (Return path-output)
F-socket	1 pcs. (Test port)	1 pcs. (Test port)	1 pcs. (Test port)	1 pcs. (Test port)
General data				
Operating temperature range	-20 ... +55 °C	-20 ... +55 °C	-20 ... +55 °C	-20 ... +55 °C
Storage temperature	-25 ... +75 °C	-25 ... +75 °C	-25 ... +75 °C	-25 ... +75 °C
Packaging data				
Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	197 x 230 x 75 mm	197 x 230 x 75 mm	197 x 230 x 75 mm	197 x 230 x 75 mm
Gross weight sales unit	0.233 kg	0.233 kg	0.233 kg	0.233 kg
Packaging volume shipping package	3.4dm <sup>3</sup>	3.4dm <sup>3</sup>	3.4dm <sup>3</sup>	3.4dm <sup>3</sup>
Gross weight shipping unit	0.233 kg	0.233 kg	0.233 kg	0.233 kg
EAN	4010056170448	4010056170455	4010056162863	4010056162870
Article number	17044	17045	16286	16287

# Optical nodes accessories Compact Line

## LT 45 S 1550 LT 45 S 1570 LT 45 S 1590 LT 45 S 1610

Optical transmitter module, 1550 nm CWDM

Optical transmitter module, 1570 nm CWDM

Optical transmitter module, 1590 nm CWDM

Optical transmitter module, 1610 nm CWDM



Technical data				
Laser type	Dual stage isolated DFB laser	Dual stage isolated DFB laser	Dual stage isolated DFB laser	Dual stage isolated DFB laser
Optical output power	+3 dBm	+3 dBm	+3 dBm	+3 dBm
Wavelength	1550 nm ( $\pm 2$ nm)	1570 nm ( $\pm 2$ nm)	1590 nm ( $\pm 2$ nm)	1610 nm ( $\pm 2$ nm)
Frequency range	10 ... 85 MHz	10 ... 85 MHz	10 ... 85 MHz	10 ... 85 MHz
Relative intensity noise	< -145 dB $\sqrt$ /Hz	< -145 dB $\sqrt$ /Hz	< -145 dB $\sqrt$ /Hz	< -145 dB $\sqrt$ /Hz
Nominal input level	75 dB $\mu$ V	75 dB $\mu$ V	75 dB $\mu$ V	75 dB $\mu$ V
Reference pilot	7,0 MHz	7,2 MHz	7,4 MHz	7,6 MHz
Input measurement socket	75 dB $\mu$ V (for 5% OMI)	75 dB $\mu$ V (for 5% OMI)	75 dB $\mu$ V (for 5% OMI)	75 dB $\mu$ V (for 5% OMI)
Connectors				
SC/APC connectors	1 pcs. (Return path-output)	1 pcs. (Return path-output)	1 pcs. (Return path-output)	1 pcs. (Return path-output)
F-socket	1 pcs. (Test port)	1 pcs. (Test port)	1 pcs. (Test port)	1 pcs. (Test port)
General data				
Operating temperature range	-20 ... +55 °C	-20 ... +55 °C	-20 ... +55 °C	-20 ... +55 °C
Storage temperature	-25 ... +75 °C	-25 ... +75 °C	-25 ... +75 °C	-25 ... +75 °C
Packaging data				
Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	197 x 230 x 75 mm	197 x 230 x 75 mm	197 x 230 x 75 mm	197 x 230 x 75 mm
Gross weight sales unit	0.233 kg	0.233 kg	0.233 kg	0.233 kg
Packaging volume shipping package	3.4dm <sup>3</sup>	3.4dm <sup>3</sup>	3.4dm <sup>3</sup>	3.4dm <sup>3</sup>
Gross weight shipping unit	0.233 kg	0.233 kg	0.233 kg	0.233 kg
EAN	4010056162887	4010056162894	4010056170462	4010056170479
Article number	16288	16289	17046	17047



## XC 40

Plug-in module for configuration of an LT 4x transmitter module in LR 43 / LR 63



## XE 50 FA

Diplexer 65/85 MHz



### Packaging data

Sales unit	1 pcs.
EAN	4010056141011
Article number	14101

Configuration module for commissioning a LT-4x-transmission module in LR 43 / LR 63.

### Packaging data

Sales unit	1 pcs.
EAN	4010056706760
Article number	70676

Diplex filter for use in amplifiers of the product range COMPACT-LINE.

## XE 50 F 0850

Diplexer 85/108 MHz



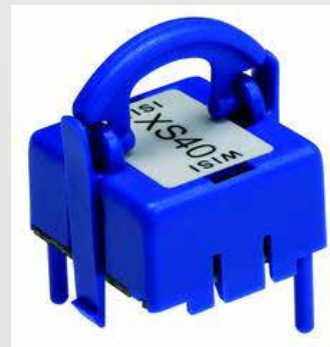
### Packaging data

Sales unit	1 pcs.
EAN	4010056733247
Article number	73324

Diplex filter for use in amplifiers of the product range COMPACT-LINE.

## XS 40

Redundancy switch for LR43 S/63 S



### Packaging data

Sales unit	1 pcs.
EAN	4010056141028
Article number	14102

This is a redundancy switch for use in LR 43 S/63 S as a plug-in module.

# Optical nodes accessories Value Line

## LT 22 3311

Reverse-transmitter module 1310 nm

## LT 22 3511

Reverse-transmitter module 1510 nm

## LT 22 3531

Reverse-transmitter module 1530 nm



### Technical data

#### Upstream

	1310 nm	1510 nm	1530 nm
Wavelength	1310 nm	1510 nm	1530 nm
Optical output power	+3 dBm	+3 dBm	+3 dBm
Frequency range	5...204 MHz (depending on diplexer)	5...204 MHz (depending on diplexer)	5...204 MHz (depending on diplexer)
RF input level	70...80 dBμV	70...80 dBμV	70...80 dBμV
Attenuator range	3%...10% (OMI attenuation)	3%...10% (OMI attenuation)	3%...10% (OMI attenuation)
Test point	75 dBμV (for 5% OMI per channel)	75 dBμV (for 5% OMI per channel)	75 dBμV (for 5% OMI per channel)
Ingress Control Switch (ICS)	0 / -6 / -45 dB	0 / -6 / -45 dB	0 / -6 / -45 dB
RF return loss	> 18 dB	> 18 dB	> 18 dB
Optical return loss	> 40 dB	> 40 dB	> 40 dB

### Packaging data

	1310 nm	1510 nm	1530 nm
Sales unit	1 pcs.	1 pcs.	1 pcs.

## LT 22 3551

Reverse-transmitter module 1550 nm

## LT 22 3571

Reverse-transmitter module 1570 nm

## LT 22 3611

Reverse-transmitter module 1610 nm

### Technical data

#### Upstream

	1550 nm	1570 nm	1610 nm
Wavelength	1550 nm	1570 nm	1610 nm
Optical output power	+3 dBm	+3 dBm	+3 dBm
Frequency range	5...204 MHz (depending on diplexer)	5...204 MHz (depending on diplexer)	5...204 MHz (depending on diplexer)
RF input level	70...80 dBμV	70...80 dBμV	70...80 dBμV
Attenuator range	3%...10% (OMI attenuation)	3%...10% (OMI attenuation)	3%...10% (OMI attenuation)
Test point	75 dBμV (for 5% OMI per channel)	75 dBμV (for 5% OMI per channel)	75 dBμV (for 5% OMI per channel)
Ingress Control Switch (ICS)	0 / -6 / -45 dB	0 / -6 / -45 dB	0 / -6 / -45 dB
RF return loss	> 18 dB	> 18 dB	> 18 dB
Optical return loss	> 40 dB	> 40 dB	> 40 dB

### Packaging data

	1550 nm	1570 nm	1610 nm
Sales unit	1 pcs.	1 pcs.	1 pcs.



## LRPS 0230

Plug-in power supply for LR 10



### Technical data

Input voltage	230 V AC (50/60 Hz)
Power consumption	<4,5 W
Output voltage	12 V DC ( $\pm 0,4$ V)
Max. load current	0,25 A
Max. output power	3 W
Operating temperature range	0...+40 °C
Storage temperature	-25...+70 °C
Max. humidity, non condensing	90 %
Protection class	II
Protection class system EN 60529 (DIN 40050)	IP 41
Electrical safety standard	EN 60065, EN 60950
EMC	EN 50083-2
Dimensions (width x height x depth)	60 x 24 x 41 mm

### Packaging data

Sales unit	1 pcs.
EAN	4010056743512
Article number	74493

The LRPS 0230 is a Plug-in power supply for LR 10.

### Characteristics

- Securely screwed-in f connector
- Wide range input voltage

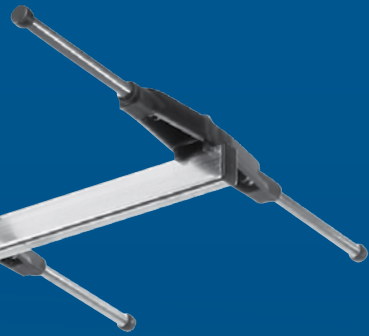
WISI Terrestrial antennas:

# Regional on reception





# Terrestrial antennas



**The terrestrial antennas of WISI** offers the best possible reception of regional broadcasting stations for TV and radio. So you're always up to date for Information about your region. The robust and weatherproof finish enables a stable TV and radio supply for many years.

## WISI Terrestrial antennas at a glance:

- For optimum reception
- With LTE filter
- Easy installation

# FM antennas

## UA 05

FM directional antenna



## UE 01

FM cross dipole antenna



Technical data		
channels	FM (directional antenna)	FM (crossed dipole antenna)
Elements	3 pcs.	2 pcs.
gain	5 dB (max.)	-3 dB (max.)
Forward/backward ratio	12 dB	0 dB
Aperture angle horizontal	70 °	360 °
Wind load horizontal	63.8 N	22.1 N
Connectors		
F-socket	1 pcs.	1 pcs.
General data		
Length	860 mm	- mm
Mast clamp diameter	34...60 mm	34...60 mm
Packaging data		
Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	285 x 1185 x 175 mm	148 x 728 x 57 mm
Gross weight sales unit	1.380 kg	0.900 kg
Shipping unit	5 pcs.	pcs.
Packaging volume shipping package	12.24dm <sup>3</sup>	6.14dm <sup>3</sup>
Gross weight shipping unit	1.38 kg	0.9 kg
EAN	4010056725181	4010056725198
Article number	72518	72519



## EB 22 0297

UHF antenna channels  
21...69



## EB 45 LTE

UHF antenna, channels  
21...60, with LTE filter,  
28 elements



## EB 67 LTE

UHF antenna, channels  
21...60, with LTE filter,  
41 elements

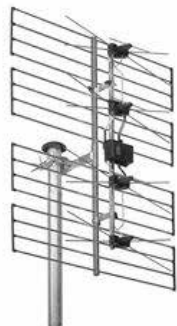


Technical data			
channels	21...69 (UHF)	21...60 (UHF, with LTE filter)	21...60 (UHF, with LTE filter)
Frequency range UHF	470...862 MHz	470...790 MHz	470...790 MHz
Polarization	horizontal/vertikal	Horizontal	Horizontal
Elements	16 pcs.	28 pcs.	41 pcs.
gain	11 dB (max.)	13 dB (max.)	15.5 dB
Forward/backward ratio	>20 dB	>20 dB	>26 dB
Aperture angle horizontal	49 °	40 °	29 °
Aperture angle vertikal	59 °	48 °	34 °
Wind load horizontal	46 N	32 N	34 N
Wind load vertical	61 N	43 N	62 N
Connectors			
F-socket	1 pcs.	1 pcs.	1 pcs.
General data			
Length	443 mm	1040 mm	1960 mm
Packaging data			
Sales unit	1 pcs. (PE-bag)	1 pcs. (PE-bag)	1 pcs.
Dimensions (WxHxD) sales unit	405 x 835 x 395 mm	1210 x 100 x 382 mm	1100 x 140 x 384 mm
Gross weight sales unit	1.500 kg	1.680 kg	2.500 kg
Packaging volume shipping package	26.71dm <sup>3</sup>	46.25dm <sup>3</sup>	59.7dm <sup>3</sup>
Gross weight shipping unit	1.5 kg	1.68 kg	2.5 kg
EAN	4010056725112	4010056725204	4010056725211
Article number	72511	72520	72521

# UHF antennas

## EE 06 0297

UHF aerial channels 21...69



Technical data	
channels	21...69 (UHF)
Frequency range UHF	470...862 MHz
Polarization	horizontal/vertikal
gain	14.5 dB (max.)
Forward/backward ratio	>25 dB
Aperture angle horizontal	46 °
Aperture angle vertikal	27 °
Wind load horizontal	107 N
Wind load vertical	107 N
Connectors	
F-socket	1 pcs.
General data	
Dimensions (width x height x depth)	645 x 830 x 260 mm
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	670 x 835 x 105 mm
Gross weight sales unit	2.000 kg
Packaging volume shipping package	58.74dm <sup>3</sup>
Gross weight shipping unit	2 kg
EAN	4010056725167
Article number	72516

## EZ 45 LTE

UHF antenna, channels 21...60, with LTE filter, 41 elements



Technical data	
channels	21...60 (UHF, with LTE filter)
Frequency range UHF	470...790 MHz
Polarization	horizontal/vertikal
Elements	38 pcs.
gain	15 dB
Forward/backward ratio	>28 dB
Aperture angle horizontal	35 °
Aperture angle vertikal	42 °
Wind load horizontal	76 N
Wind load vertical	114 N
Connectors	
F-socket	1 pcs.
General data	
Length	1140 mm
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	700 x 125 x 400 mm
Gross weight sales unit	1.800 kg
Packaging volume shipping package	35dm <sup>3</sup>
Gross weight shipping unit	1.8 kg
EAN	4010056725228
Article number	72522

Polarisation: horizontal or vertical, adjustable angle.

# VHF-UHF combination antennas



## EA 34

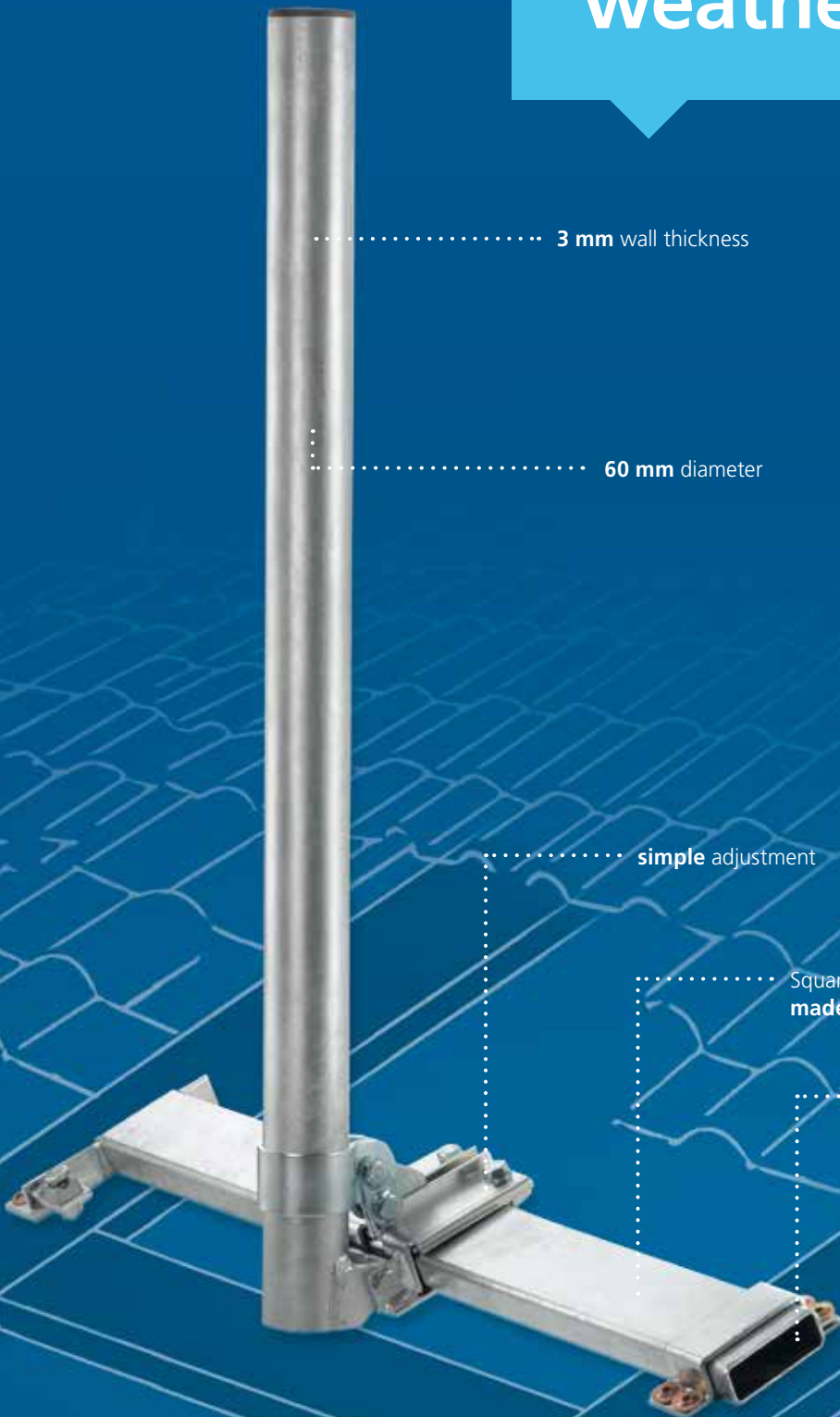
VHF-UHF combination antenna



The antenna EA34 is a combination antenna. The reception areas are VHF III and UHF. The polarization is horizontal and the inclination adjustable.

Technical data	
channels	E 5...12, L 05...10/21...69 (VHF III/UHF)
Frequency range VHF	174...230 MHz
Frequency range UHF	470...862 MHz
Polarization	horizontal/vertikal
Elements	6/36 pcs. (VHF III/UHF)
gain	6,5/12,5 dB (VHF III/UHF)
Forward/backward ratio	>20 dB
Aperture angle horizontal	65/35 ° (VHF III/UHF)
Aperture angle vertikal	92/40 ° (VHF III/UHF)
Wind load horizontal	111.5 N
Wind load vertikal	77 N
Connectors	
F-socket	1 pcs.
General data	
Length	1285 mm
Packaging data	
Sales unit	1 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	435 x 1185 x 125 mm
Gross weight sales unit	2.750 kg
Packaging volume shipping package	65dm <sup>3</sup>
Gross weight shipping unit	2.4 kg
EAN	4010056725105
Article number	72510

WISI Mechanical accessories:  
**Steadfast in any weather**



..... **3 mm** wall thickness

..... **60 mm** diameter

..... **simple** adjustment

..... Square telescopic tube  
**made of steel**

..... mounting with  
**building industry authorization**





# Mechanical accessories

**WISI offers** a complete range of solutions for the installation of satellite receiving systems. This ranges from simple sealing tape to highly stable and weather-resistant roof rafter support. So there is a suitable solution for every application.

## WISI Mechanical accessories at a glance:

- Suitable for larger antenna diameter
- Suitable for all tiled roofs
- Easy handling
- Especially suitable for roofs with thermal insulation



# Mast accessories

## NC 95 A

Pole casing



### Technical data

Material	plastic
For mast with Ø	44...48 mm

### Packaging data

Sales unit	1 pcs.
------------	--------

Neoprene tightening sleeve for roof penetration for mast MN 17 and masts of 48 mm dia.

## NB 10

Mast foot



### Technical data

Material	Galvanized steel
Wall thickness	3 mm
Hole distance	76 mm
Hole diameter	9 mm
Dimensions (width x height x depth)	96 x 60 x 66 mm
For mast with Ø	60 mm (until)

### Packaging data

Sales unit	1 pcs.
------------	--------

With earthing screw, mast foot for ground anchorage of antenna masts up to 60 mm Ø, 2 x hexagon head wood screws, 8x35mm

## NC 03

Mast cap



### Technical data

Material	weather-proof plastic
For mast with Ø	37...48 mm

### Packaging data

Sales unit	1 pcs.
------------	--------

Mast cap for rain-proof sealing of of masts, for ca. 37 - 48 mm diameter, weather-proff plastic

## NC 85 B

Roof hood



### Technical data

Material	Die cast threading
Wall thickness	0.3 mm
Dimensions (width x height x depth)	385 x 150 x 420 mm
For mast with Ø	60 mm

### Packaging data

Sales unit	1 pcs.
EAN	4010056161163
Article number	16116

Roof hood, soft zinc, for mast diameters up to 60 mm



## NC 11

Mast clamp till 50 mm



## NC 10

Mast clamp till 45 mm



### Technical data

Material	Steel
Hole diameter	9 mm
For mast with Ø	46...50 mm

### Packaging data

Sales unit	1 pcs.
EAN	4010056108472
Article number	10847

For fastening in straight or sloped position. With grounding terminal and 2 wood-screws 8 x 50 mm.

### Technical data

Material	Steel
Hole diameter	9 mm
For mast with Ø	42...45 mm

### Packaging data

Sales unit	1 pcs.
EAN	4010056113254
Article number	11325

For fastening in straight or sloped position. With grounding terminal and 2 wood-screws 8 x 50 mm.

## NG 60

Mast fitting kit, 60 mm



## NC 91

Sealing strip



### Packaging data

Sales unit	1 pcs.
EAN	4010056177416
Article number	17741

### Technical data

Material	Tightening tape. Not to be used when temperature below 5°C.
For mast with Ø	80 mm (until)

### Packaging data

Sales unit	1 pcs.
------------	--------

Sealing strip, soft elastic silicon, (processing temperature not below +5°C). For all mast up to 60 / 80 mm Ø.

# Wall bracket

## MN 03

Wall bracket



### Technical data

Material	Steel hot galvanized, Top or bottom installation
Wall distance	220 mm
Hole distance	355 mm
Hole diameter	11 mm
For mast with Ø	80 mm (until)
bracket distance	300...400 mm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	381 x 88 x 376 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	3.200 kg
Shipping unit	5 pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	12.61
Gross weight shipping unit	3.2 kg
EAN	4010056171193
Article number	17119

For mounting of parabolic reflectors. Suitable for every house wall, 2 mounting brackets.



## MN 08

Wall bracket

## MN 09

Wall bracket

## MN 10

Wall bracket

## MN 11

Wall bracket



### Technical data

Material	Aluminium	Aluminium	Aluminium	Aluminium
Mast diameter	50 mm	50 mm	50 mm	50 mm
Mast length	345 mm	345 mm	345 mm	345 mm
Wall thickness	2.5 mm	2.5 mm	2.5 mm	2.5 mm
Wall distance	200 mm	500 mm	400 mm	300 mm
Hole distance	125 mm	125 mm	125 mm	125 mm
Hole diameter	10 mm	10 mm	10 mm	10 mm
Base plate	175 x 175 mm	175 x 175 mm	175 x 175 mm	175 x 175 mm

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	117 x 80 x 57 mm	117 x 80 x 57 mm	420 x 380 x 175 mm	410 x 300 x 150 mm
Gross weight sales unit	0.900 kg	1.100 kg	0.900 kg	0.800 kg
Shipping unit	5 pcs.	5 pcs.	5 pcs.	5 pcs.
Gross weight shipping unit	0.9 kg	1.1 kg	0.9 kg	0.8 kg
EAN	4010056177386	4010056199791	4010056100568	4010056100896
Article number	17738	19979	10056	10089

# Rafter fastener

## MN 90 A

Rafter fastener



The MN 90 A is a rafter fastener. With its high bending moment from min 1100 Nm in all directions, it is the most stable holder on the market. A 100 cm antenna is possible. The mast tube's diameter is 60 mm and is suitable for a roof pitch of 25° to 56°. Thanks to 8 fixing elements with a certification for construction industry, there is no wobble at larger distances between the rafters (up to 800 mm). Thanks to a precise and stable orientation, powerful bidirectional Internet is guaranteed via satellite. The wall thickness is 3 mm and the height 90 mm.

### Technical data

Material	Tubes: galvanized steel; clamp: diecast aluminum
Mast diameter	60 mm
Mast length	900 mm
Wall thickness	3 mm
Roof bar spacing	800 mm (max.)
Roof pitch	24...56 °
Bending force	1100 Nm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	1000 x 230 x 80 mm
Gross weight sales unit	12.000 kg
Packaging volume shipping package	18.4dm <sup>3</sup>
Gross weight shipping unit	11,4 kg
EAN	4010056730413
Article number	73041

### Characteristics

- Bending moment of min 1100Nm in all directions. Currently the strongest holder on the market. A 100 cm antenna is possible.
- mast tube with Ø 60 mm
- wall thickness 3 mm and a high from 90 cm
- 8x fastening element with construction approval
- for rafter spacing to 800 mm
- for roof pitch from 25-56°
- Precise and strong positioning for bi-directional and powerful Internet reception via satellite (e.g. for the systems Filiago, skyDSL, sat\_speed).
- no wobbling with bigger rafter distances
- Rafter and between rafter solution.

### Scope of delivery

- mast 90 cm
- mast clamping
- telescopic tube
- 4 screws 10 x 100 mm, SW 17
- 8 TORX- flat head screw 8x 120 mm
- installation instructions



## MN 17 B

Telescopic mast



## MN 60 A 0300

Mast tube



### Technical data

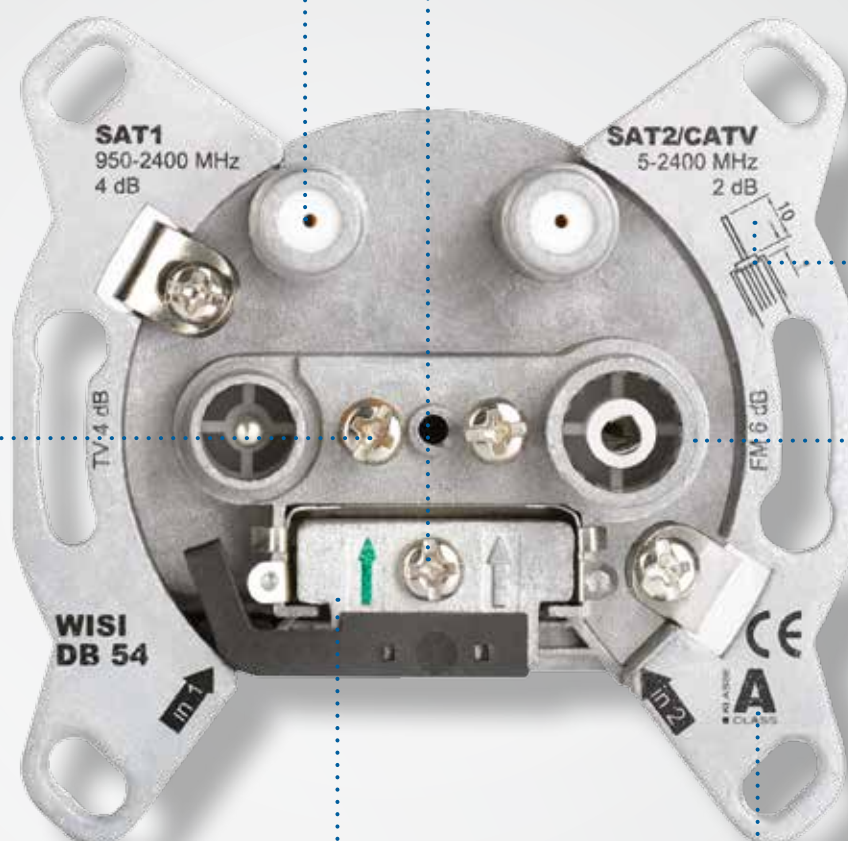
Material	Steel hot galvanized, guide groove	Steel hot galvanized, EN ISO 1461
Mast diameter	48 mm	60 mm
Mast length	2000 mm	3000 mm
Wall thickness	2 mm	2 mm
Bending force	1650 Nm (max.)	1100 Nm
Weight	4,8 kg	8,55 kg

### Packaging data

Sales unit	1 pcs.	1 pcs.
Gross weight sales unit	4.800 kg	8,55 kg
Gross weight shipping unit	4.8 kg	10 kg
EAN	4010056170882	4010056731267
Article number	17088	73126

# WISI Wall-outlet sockets: Quick and safe to install

**Broadband connection**  
for CATV (modem) or 2nd  
satellite signal



**Isolated inner conductor contact**, no link between clamping screw and inner conductor

**Sprung hinged ground bracket** with copper contact spring sheet

**Fulfill Class A**





# Wall-outlet sockets

High **cable retention**  
by lamellar technology

High  
screening factor

Contact spring cage for  
optimal **earthing contact**

**WISI cables, plugs and sockets** are perfectly matched, so that they achieve a consistently high screening factor. They are quick and easy to mount, have excellent performance and are manufactured in the proven and well known WISI quality.

**The WISI wall-outlet sockets** offer the right solution for each of reception. In addition, the WISI wall-outlet sockets are certified for use by many cable network operators. Their high screening factor and thus avoiding external radiation ensures always the best picture quality for you.

## WISI Wall-outlet sockets at a glance:

- For satellite and cable TV reception
- Compact design
- Ideal for old buildings and renovation
- Easy handling and installation

Our wall-outlet sockets have the following seal of quality:



# Universal Antenna Sockets

## DB 03 A

Universal antenna sockets,  
2-hole stub sockets 4 dB



KLASSE  
A  
CLASS

## DB 05

Universal antenna sockets,  
2-hole loop-through sockets 10 dB



KLASSE  
A  
CLASS

## DB 07

Universal antenna sockets,  
2-hole loop-through sockets 14 dB



KLASSE  
A  
CLASS

Technical data	
<b>Inputs</b>	
Frequency range	5...2400 MHz
<b>Outputs</b>	
Frequency range TV	5...862 MHz
Frequency range FM	87,5...108 MHz
Frequency range SAT	950...2150 MHz
Insertion loss TV	4.5 dB
Insertion loss FM	4.5 dB
Insertion loss SAT	5 dB
Decoupling 5-40 MHz	>20 dB (from 15 MHz)

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22 dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056152956
Article number	15295

Technical data	
<b>Inputs</b>	
Frequency range	5...2400 MHz
<b>Outputs</b>	
Frequency range IEC female	5...2400 MHz
Frequency range IEC male	5...2400 MHz
Insertion loss IEC female	10 dB (±1 dB)
Insertion loss IEC male	10 dB (±1 dB)
Through loss	2,5...3,5 dB
Decoupling OUT 1 - OUT 2	≥ 30 dB (5...2400 MHz)
Return loss subscriber	≥ 14 dB

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	70 x 70 x 22 mm
Packaging volume sales unit	1,08 dm <sup>3</sup>
Gross weight sales unit	0,095 kg
Shipping unit	10 pcs.
Dimensions (WxHxD) shipping unit	212 x 148 x 78 mm
Packaging volume shipping package	2.45 dm <sup>3</sup>
Gross weight shipping unit	0.115 kg
EAN	4010056199623
Article number	19962

Technical data	
<b>Inputs</b>	
Frequency range	5...2400 MHz
<b>Outputs</b>	
Frequency range TV	5...862 MHz
Frequency range FM	87,5...108 MHz
Frequency range SAT	950...2150 MHz
Insertion loss TV	14 dB
Insertion loss FM	14 dB
Insertion loss SAT	15 dB
Through loss	1 dB

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.116 kg
Shipping unit	100 pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	2.45 dm <sup>3</sup>
Gross weight shipping unit	8.9 kg
EAN	4010056199630
Article number	19963

# Wall socket TERR/BK



## DB 10 1006

TERR/BK antenna socket, 2-hole stub socket 5...1006 MHz



KLASSE  
**A**  
CLASS

The DB 10 1006 is a TER terminating outlet with filter. It has a small connection loss at TV as FM 0.5 / 1.5 dB. The housing has a very high stability and ensures high shielding (class A). Thanks to a flat design its space-saving architecture and IEC socket / plug, a secure connection is ensured.

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	5...68/32...1006 MHz
Frequency range FM	87,5...108 MHz
Insertion loss TV	0.5 dB
Insertion loss FM	1.5 dB
Decoupling TV-FM	≥20 dB
Return loss TV	Cat C
Return loss Input	Cat B
Return loss FM	Cat C
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,8...1,3 mm
IEC socket	1 pcs.
IEC-plug	1 pcs.
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm
Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056723262
Article number	72326

# Wall socket SAT

## DB 53

SAT antenna sockets, 3-hole stub sockets



The DB 53 is a 3 hole trick box for separate connections for radio, TV receivers, and additional SAT receivers. At the SAT connection, a DC bypass is integrated, which allows for the transmission of all needed switching voltage. The housing offers high stability and ensures high shielding properties (class A). Thanks to the flat design it is space-saving, and with the IEC-socket/plug, F-socket, a safe connection is guaranteed.

### Technical data

Inputs	
Frequency range	47...2150 MHz
Outputs	
Frequency range TV	47...68/174...862 MHz
Frequency range FM	87,5...108 MHz
Frequency range SAT	950...2150 MHz
Insertion loss TV	<2 dB
Insertion loss FM	1.5 dB
Insertion loss SAT	<2 dB
Decoupling TV-SAT	≥15 dB (typ. 25 dB)
Return loss TV	≥14 dB (≤ -1,5 dB per octave starting 40 MHz, ≥10 dB)
Return loss Input	≥4 dB
Return loss FM	≥10 dB
Return loss SAT	≥10 dB
Power passing	24 V DC (remote power 500 mA)
Connectors	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,8...1,3 mm
F-socket	1 pcs.
IEC socket	1 pcs.
IEC-plug	1 pcs.
General data	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

### Packaging data

Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.120 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.12 kg
EAN	4010056131913
Article number	13191

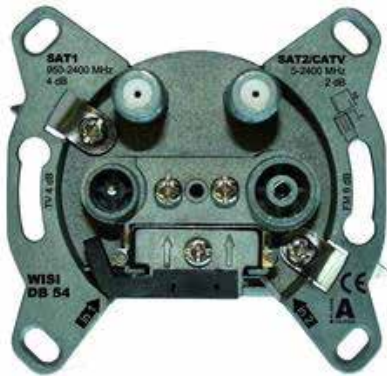
### Characteristics

- 3-hole stub sockets
- High screening efficiency according to Class A



## DB 54

SAT antenna socket, twin SAT 4-hole terminal socket



KLASSE  
**A**  
CLASS

The DB 54 is a special 4 hole trick box for TWIN receivers, which enables 2 lines to operate independently. The SAT 2 input is suitable for CATV as well. In both SAT connections, a DC bypass is integrated to enable the transmission of the required switching voltage. The housing offers high stability and ensures high shielding properties (class A). Thanks to the flat design it is space-saving, and with the IEC-socket/plug, 2x F-socket, a safe connection is guaranteed.

### Technical data

Inputs	
Frequency range	5...2400 MHz
Outputs	
Frequency range TV	5...862 MHz
Frequency range FM	87,5...108 MHz
Frequency range SAT 1	950...2400 MHz
Frequency range SAT 2	5...2400 MHz
Insertion loss TV	4.5 dB ( $\pm 1$ )
Insertion loss FM	5.5 dB ( $\pm 1$ )
Insertion loss SAT 1	3...4 dB
Insertion loss SAT 2	1...2 dB
Decoupling TV-FM	$\geq 50/\geq 20/\geq 40$ dB (5...65 MHz/87,5...108 MHz/150...862 MHz)
Decoupling SAT 1 - TV	$\geq 50/\geq 30/\geq 20$ dB (5...65 MHz/80...862 MHz/950...2400 MHz)
Decoupling SAT 1 - FM	$\geq 50/\geq 40/\geq 30$ dB (5...65 MHz/85...2150 MHz/2150...2400 MHz)
Decoupling SAT 1 - SAT 2	$\geq 30/\geq 25$ dB (5...2150 MHz/2150...2400 MHz)
Return loss TV	$\geq 14$ dB ( $\leq -1,5$ dB per octave starting 40 MHz, $\geq 10$ dB)
Return loss Input	$\geq 4$ dB ( $\leq -1,5$ dB per octave starting 40 MHz, $\geq 10$ dB)
Return loss FM	$\geq 10$ dB
Return loss SAT	$\geq 10$ dB
Return loss SAT 2	$\geq 14$ dB ( $\leq -1,5$ dB per octave, starting 40 MHz, $\geq 10$ dB)
Power passing	24 V DC (remote power 800 mA)
Connectors	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,8...1,3 mm
F-socket	2 pcs.
IEC socket	1 pcs.
IEC-plug	1 pcs.

### Technical data

General data	
Screening factor	85 dB (class A, EN 50083-2)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

### Packaging data

Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	215 x 150 x 80 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.24dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056721473
Article number	72147

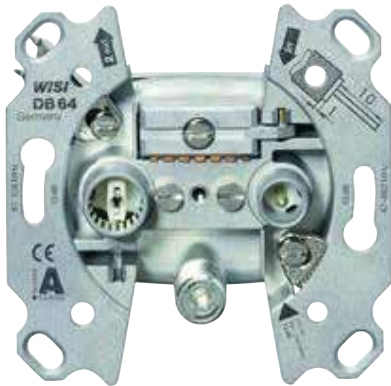
### Characteristics

- 2 SAT outputs for optimal signal feed of a twin receiver
- SAT output 2, also suitable for CATV
- High decoupling via directional coupler
- DC-bypass via both SAT outputs

# Wall socket SAT

## DB 64

3-hole Unicable antenna box



The DB 64 is a 3-hole Unicable loop-through sockets for satellite receiving equipment to separately connect radio, TV receivers and additional SAT receivers. Inside the SAT connection a DC bypass is integrated which allows the passage of the required switching voltages. The housing has a very high stability despite a very flat construction. By F and IEC sockets and IEC connector, a faster and more reliable connection is ensured. If the DB 64 used as

### Technical data

Inputs	
Frequency range	47...2150 MHz
Outputs	
Frequency range TV	47...68/120 ...862 MHz
Frequency range FM	87...108 MHz
Frequency range SAT	950...2150 MHz
Insertion loss TV	12 dB
Insertion loss FM	12 dB
Insertion loss SAT	12.5 dB
Through loss	1...2 dB
Stopband attenuation	≥40 dB
Decoupling SAT-TV	≥18 dB (typ. 30 dB)
Decoupling SAT-FM	≥40 dB
Subscriber isolation VHF-UHF	≥42 dB
Subscriber decoupling SAT	≥32 dB
Return loss TV	Cat D
Return loss Input	Cat B
Return loss FM	Cat D
Return loss SAT	Cat D
Power passing	24 V DC
Feeding voltage	400 V AC
Connectors	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,8...1,3 mm
F-socket	1 pcs.
IEC socket	1 pcs.
IEC-plug	1 pcs.
General data	
Screening factor	85 dB (class A, EN 50083-2)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

### Packaging data

Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	215 x 150 x 80 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.24dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056113346
Article number	11334

### Characteristics

- Special socket for Unicable solutions
- High decoupling via directional coupler
- DC bypass on F-connector and the trunk



## DB 33

Antenna sockets, 2-hole stub sockets



The DB 33 is a 2-hole wall outlet for TV and SAT. In SAT connecting a DC bypass is integrated which allows the passage of the required switching voltages. The housing has a very high stability and ensures high shielding properties (Class A). Thanks to a flat and space saving construction and through the IEC socket / plug, a secure connection is ensured.



Technical data	
<b>Inputs</b>	
Frequency range	47...2150 MHz
<b>Outputs</b>	
Frequency range TV	47...862 MHz
Frequency range SAT	950...2150 MHz
Insertion loss TV	≤1,5/<4,0 dB
Insertion loss FM	2.5 dB
Insertion loss SAT	<2,5/≤1,5 dB
Decoupling IN-SAT 47-862 MHz	≥20 dB
Decoupling IN-TV 950-2150 MHz	≥20 dB
Decoupling TV-SAT	≥20 dB
Return loss TV	Cat C
Return loss Input	Cat B
Return loss SAT	Cat C
Power passing	24 V DC (remote power 500 mA)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,8...1,3 mm
IEC socket	1 pcs.
IEC-plug	1 pcs.
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm
Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.24dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056105471
Article number	10547

# Multimedia wall outlet sockets, individual

## DD 04 M 0650

Broadband modem sockets, stub sockets, F



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
trapping loss TV	≥40 dB (5...65 MHz)
trapping loss FM	≥40 dB (5...65 MHz)
Insertion loss TV	4 dB
Insertion loss FM	8 dB
Insertion loss DATA	8 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥35 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥40 dB (85...1006 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
F-socket	1 pcs. EN60169-24
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB Class A, EN 50083-2
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056145668
Article number	14566

### Characteristics

- Vodafone KDG certified





## DD 11 M 0650

Broadband modem sockets, loop-through sockets (DATA: F-female)



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	3..4 dB
trapping loss TV	≥40 dB (5...65 MHz)
trapping loss FM	≥40 dB (5...65 MHz)
Insertion loss TV	10 dB
Insertion loss FM	11 dB
Insertion loss DATA	10 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥45 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥45 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...1006 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...1006 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
F-socket	1 pcs. EN60169-24
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB Class A, EN 50083-2
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	215 x 150 x 80 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056145675
Article number	14567

### Characteristics

- Vodafone KDG certified

# Multimedia wall outlet sockets, loop-through

## DD 11 0650

Broadband modem sockets, loop-through sockets (DATA: WICLIC-female)



TV connection with IEC technology. Multimedia with WICLIC-connector for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	3..4 dB
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	10 dB
Insertion loss FM	11 dB
Insertion loss DATA	10 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥45 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥45 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...1006 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...1006 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
WICLIC female	01
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.105 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056108755
Article number	10875

### Characteristics

- Unitymedia certified



## DD 15 HP

Broadband modem sockets, Data loop through socket with highpass filter



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories



Technical data	
<b>Inputs</b>	
Frequency range	5...862 MHz
<b>Outputs</b>	
Frequency range TV	85...862 MHz
Frequency range FM	87...862 MHz
Frequency range DATA	5...862 MHz
Frequency range loop through	85...862 MHz
Insertion loss TV	14 dB
Insertion loss FM	14 dB
Insertion loss DATA	14 dB
Through loss	1,5...2,5 dB
Isolation DATA - TV	≥40 dB
Isolation DATA - FM	≥40 dB
Isolation DATA-DATA	74 dB (typ.)
Decoupling TV-FM	≥22 dB
Return loss IN	Cat B
Return loss OUT	Cat B
Return loss ALL	Cat C
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,8...1,3 mm
F-socket	1 pcs.
IEC socket	1 pcs.
IEC-plug	1 pcs.
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.24dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056193638
Article number	19363

# Multimedia wall outlet sockets, loop-through

## DD 15 M 0650

Broadband modem sockets, loop-through sockets (DATA: F-female)



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	1,2...1,75 dB
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	14 dB
Insertion loss FM	15 dB
Insertion loss DATA	14 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥50 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥50 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...65 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...65 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
F-socket	1 pcs. EN60169-24
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056145682
Article number	14568

### Characteristics

- Vodafone KDG certified



## DD 15 TD 650

TWIN broadband modem socket, loop-through socket



Loop-through connection socket with TV out, radio out and 2 modem connections for multimedia applications. Same tap loss for TV out, radio out and both DATA connections. Capacitive separation of the inner connector at all connections. Compliant with UM TS 405 (December 2010). Shielding class A ( $\geq 85$  dB).

### Technical data

Inputs	
Frequency range	5...1006 MHz
Outputs	
Frequency range TV	109...1006 MHz
Frequency range FM	87,5...108 MHz
Frequency range DATA	5...1006 MHz
Frequency range loop through	5...1006 MHz
Insertion loss TV	$\geq 52/\leq 15$ dB (5...65 MHz/109...1006 MHz)
Insertion loss FM	$\geq 52/\leq 15$ dB (5...65 MHz/87,5...108 MHz)
Insertion loss DATA	$\leq 15$ dB (5...1006 MHz)
Through loss	$\leq 2,5/\leq 2,8$ dB (5...862 MHz/862...1006 MHz)
Isolation DATA - TV	$\geq 60/\geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA - FM	$\geq 60/\geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA-DATA	$\geq 35$ dB (5...1006 MHz, $\leq 1,5$ dB/ Okt. ab 40 MHz)
Connectors	
Outer conductor clamp	2,3...5,4 mm (input and output)
Inner conductor clamp	0,4...1,15 mm (input and output)
F-socket	2 pcs. (DATA 1/2)
IEC socket	1 pcs. (radio)
IEC-plug	1 pcs. (TV)
General data	
Screening factor	$\geq 85$ dB (class A)

### Packaging data

Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.096 kg
Shipping unit	100 pcs.
Packaging volume shipping package	2.45dm <sup>3</sup>
EAN	4010056719135
Article number	71913

### Characteristics

- Same tap loss for TV out, radio out and both DATA connections
- Capacitive separation of the inner connector at all interfaces
- Compliant with UM TS 405 (December 2010)
- Screening class A ( $\geq 85$  dB)

# Multimedia wall outlet sockets, loop-through

## DD 15 0650

Broadband modem sockets, loop-through sockets (DATA: WICLIC-female)



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	1,2...1,75 dB
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	14 dB
Insertion loss FM	15 dB
Insertion loss DATA	14 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥50 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥50 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...65 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...65 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
WICLIC female	01
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.105 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056108762
Article number	10876

### Characteristics

- Unitymedia certified



# DD19M0650

Multimedia wall outlet sockets, loop-through socket



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	1,2...1,4 dB
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	19 dB
Insertion loss FM	19 dB
Insertion loss DATA	19 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥50 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥50 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...65 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...65 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
F-socket	1 pcs. EN60169-24
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056145699
Article number	14569

### Characteristics

- Vodafone KDG certified

# Multimedia wall outlet sockets, loop-through

## DD 19 0650

Broadband modem sockets, loop-through sockets



TV connection with IEC technology. Multimedia with WICLIC-connector for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	1,2...1,4 dB
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	19 dB
Insertion loss FM	19 dB
Insertion loss DATA	19 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥50 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥50 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...65 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...65 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
WICLIC female	01
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.105 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056108779
Article number	10877

### Characteristics

- Unitymedia certified





## DD 23 M 0650

Multimedia wall outlet sockets, loop-through DD23



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	1,2...1,4 dB
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	23 dB
Insertion loss FM	24 dB
Insertion loss DATA	23 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥50 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥50 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...65 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...65 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
F-socket	1 pcs. EN60169-24
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.120 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056145705
Article number	14570

### Characteristics

- Vodafone KDG certified

# Multimedia wall outlet sockets, loop-through

## DD 23 0650

Broadband modem sockets, loop-through sockets



TV connection with IEC technology. Multimedia with WICLIC-connector for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
Through loss	1,2...1,4 dB
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	23 dB
Insertion loss FM	24 dB
Insertion loss DATA	23 dB
Isolation DATA - TV	≥70 dB (5...65 MHz)
Isolation DATA - TV	≥50 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥50 dB (85...1006 MHz)
Decoupling DATA - OUT	≥30 dB (5...65 MHz)
Decoupling FM, TV - OUT	≥30 dB (5...65 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
WICLIC female	01
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Gross weight sales unit	0.105 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056113704
Article number	11370

### Characteristics

- Unitymedia certified



## DD 12 TD 65A

TWIN broadband modem socket, loop-through socket



KLASSE  
**A**  
CLASS

4 output loop-through connection socket with TV out, radio out and 2 modem connections for multimedia applications. Same tap loss for TV out, radio out and both DATA connections. Capacitive separation of the inner connector at all ports. Shielding class A ( $\geq 85$  dB). Unitymedia certified according UM TS 40.

### Technical data

Inputs	
Frequency range	5...1006 MHz
Outputs	
Frequency range TV	109...1006 MHz
Frequency range FM	87,5...108 MHz
Frequency range DATA	5...1006 MHz
Frequency range loop through	5...1006 MHz
Insertion loss TV	$\geq 52/\leq 12$ dB (5...65 MHz/109...1006 MHz)
Insertion loss FM	$\geq 52/\leq 12$ dB (5...65 MHz/87,5...108 MHz)
Insertion loss DATA	$\leq 12$ dB (5...1006 MHz)
Through loss	$\leq 4,0/\leq 4,5$ dB (5...862 MHz/862...1006 MHz)
Isolation DATA - TV	$\geq 60/\geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA - FM	$\geq 60/\geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA-DATA	$\geq 35$ dB (5...1006 MHz, $\leq 1,5$ dB/Okt. ab 40 MHz)
Connectors	
Outer conductor clamp	2,3...5,4 mm (input and output)
Inner conductor clamp	0,4...1,15 mm (input and output)
F-socket	2 pcs. (DATA 1/2)
IEC socket	1 pcs. (radio)
IEC-plug	1 pcs. (TV)
General data	
Screening factor	$\geq 85$ dB (class A)

### Packaging data

Sales unit	1 pcs.
EAN	4010056734459
Article number	73445

### Characteristics

- Same tap loss for TV out, radio out and both DATA connections
- Frequency range of 5...1006 MHz
- Capacitive separation of the inner connector at all interfaces
- Unitymedia certified according UM TS 405
- Screening class A ( $\geq 85$  dB)

# Multimedia wall outlet sockets, loop-through

## DD 15 TD 65A

TWIN broadband modem socket, loop-through socket



4 output loop-through connection socket with TV out, radio out and 2 modem connections for multimedia applications. Same tap loss for TV out, radio out and both DATA connections. Capacitive separation of the inner connector at all ports. Shielding class A ( $\geq 85$  dB). Unitymedia certified according UM TS 40.

### Technical data

Inputs	
Frequency range	5...1006 MHz
Outputs	
Frequency range TV	109...1006 MHz
Frequency range FM	87,5...108 MHz
Frequency range DATA	5...1006 MHz
Frequency range loop through	5...1006 MHz
Insertion loss TV	$\geq 52/\leq 15$ dB (5...65 MHz/109...1006 MHz)
Insertion loss FM	$\geq 52/\leq 15$ dB (5...65 MHz/87,5...108 MHz)
Insertion loss DATA	$\leq 15$ dB (5...1006 MHz)
Through loss	$\leq 2,5/\leq 2,8$ dB (5...862 MHz/862...1006 MHz)
Isolation DATA - TV	$\geq 60/\geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA - FM	$\geq 60/\geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA-DATA	$\geq 35$ dB (5...1006 MHz, $\leq 1,5$ dB/Okt. ab 40 MHz)
Connectors	
Outer conductor clamp	2,3...5,4 mm (input and output)
Inner conductor clamp	0,4...1,15 mm (input and output)
F-socket	2 pcs. (DATA 1/2)
IEC socket	1 pcs. (radio)
IEC-plug	1 pcs. (TV)
General data	
Screening factor	$\geq 85$ dB (class A)

### Packaging data

Sales unit	pcs.
EAN	4010056734473
Article number	73447

### Characteristics

- Same tap loss for TV out, radio out and both DATA connections
- Frequency range of 5...1006 MHz
- Capacitive separation of the inner connector at all interfaces
- Unitymedia certified according UM TS 405
- Screening class A ( $\geq 85$  dB)



# DD 17 TD 65A

TWIN broadband modem socket, loop-through socket



4 output loop-through connection socket with TV out, radio out and 2 modem connections for multimedia applications. Same tap loss for TV out, radio out and both DATA connections. Capacitive separation of the inner connector at all ports. Shielding class A ( $\geq 85$  dB). Unitymedia certified according UM TS 40.

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	109...1006 MHz
Frequency range FM	87,5...108 MHz
Frequency range DATA	5...1006 MHz
Frequency range loop through	5...1006 MHz
Insertion loss TV	$\geq 52 / \leq 17$ dB (5...65 MHz/109...1006 MHz)
Insertion loss FM	$\geq 52 / \leq 17$ dB (5...65 MHz/87,5...108 MHz)
Insertion loss DATA	$\leq 17$ dB (5...1006 MHz)
Through loss	$\leq 1,8$ dB
Isolation DATA - TV	$\geq 60 / \geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA - FM	$\geq 60 / \geq 30$ dB (5...65 MHz/65...1006 MHz)
Isolation DATA-DATA	$\geq 35$ dB (5...1006 MHz, $\leq 1,5$ dB/ Okt. ab 40 MHz)
<b>Connectors</b>	
Outer conductor clamp	2,3...5,4 mm (input and output)
Inner conductor clamp	0,4...1,15 mm (input and output)
F-socket	2 pcs. (DATA 1/2)
IEC socket	1 pcs. (radio)
IEC-plug	1 pcs. (TV)
<b>General data</b>	
Screening factor	$\geq 85$ dB (class A)
Packaging data	
Sales unit	10 pcs.
EAN	4010056743314
Article number	74331

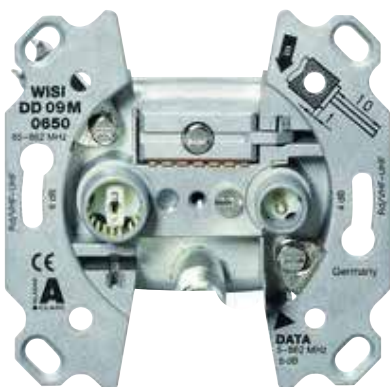
### Characteristics

- Same tap loss for TV out, radio out and both DATA connections
- Frequency range of 5...1006 MHz
- Capacitive separation of the inner connector at all interfaces
- Unitymedia certified according UM TS 405
- Screening class A ( $\geq 85$  dB)

# Multimedia wall outlet sockets, terminal socket

## DD 09 M 0650

Multimedia wall outlet sockets, terminal socket



TV connection with IEC technology. Multimedia with F-connector or WICLIC for cable modem. HF output high-pass filtered. Cover plate and connector cable see accessories

Technical data	
<b>Inputs</b>	
Frequency range	5...1006 MHz
<b>Outputs</b>	
Frequency range TV	85...1006 MHz
Frequency range FM	87...1006 MHz
Frequency range DATA	5...1006 MHz
trapping loss TV	≥40 dB 5...65 MHz
trapping loss FM	≥40 dB 5...65 MHz
Insertion loss TV	9 dB
Insertion loss FM	10 dB
Insertion loss DATA	9 dB
Isolation DATA - TV	≥60 dB (5...65 MHz)
Isolation DATA - TV	≥35 dB (85...1006 MHz)
Isolation DATA - FM	≥70 dB (5...65 MHz)
Isolation DATA - FM	≥45 dB (85...1006 MHz)
Return loss IN, OUT	≥18 dB (-1.5 dB/okt.)
Return loss TV	≥14 dB (-1.5 dB/okt.)
Return loss FM	≥14 dB (-1.5 dB/okt.)
Return loss DATA	≥18 dB (-1.5 dB/okt.)
Intermodulation ratio	> 120 dB $\mu$ V (EN60728-4)
<b>Connectors</b>	
Outer conductor clamp	7.5 mm
Inner conductor clamp	0,6...1,3 mm
F-socket	1 pcs. EN60169-24
IEC socket	1 pcs. EN60169-2
IEC-plug	1 pcs. EN60169-2
<b>General data</b>	
Screening factor	>85 dB (class A)
Dimensions (width x height x depth)	70 x 70 x 22 mm
Installation depth	35 mm

Packaging data	
Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	212 x 148 x 78 mm
Gross weight sales unit	0.110 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.22dm <sup>3</sup>
Gross weight shipping unit	0.11 kg
EAN	4010056183882
Article number	18388

### Characteristics

- Vodafone KDG certified

# Accessories Wall socket



## DV 27

Terminating resistor 75  $\Omega$ , with DC-separation



Technical data	
Type	75 $\Omega$ termination for loop sockets
Type of mounting	clamped
construction style	straight
Material	nickel plated brass
Dimensions (width x height x depth)	$\varnothing$ 5 x 22 mm
DC separation	Yes

Packaging data	
Sales unit	10 pcs. (PE-bag)
Gross weight sales unit	0.001 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.005dm <sup>3</sup>
Gross weight shipping unit	0.001 kg
EAN	4010056106393
Article number	10639

The DV 27 is a clamp on 75 Ohm terminating resistor for mounting on antenna doses (DB 64 UNICABLE). Because of the DC-division it is suitable for multiswitch cascades with power feeding.

## DV 23

Terminating resistor 75  $\Omega$



Technical data	
Type	75 $\Omega$ termination for loop sockets
Type of mounting	clamped
construction style	straight
Material	nickel plated brass
Dimensions (width x height x depth)	$\varnothing$ 5 x 21 mm
DC separation	No

Packaging data	
Sales unit	10 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	195 x 85 x 65 mm
Gross weight sales unit	0.002 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.009dm <sup>3</sup>
Gross weight shipping unit	0.002 kg
EAN	4010056104238
Article number	10423

The DV 23 is an attachable terminating resistor of 75 Ohm for the installation of antenna doses.

# Accessories Wall socket

## DZ 41

Screwdriver for DW 41



## DW 41

Blocking socket for multimedia boxes



### Packaging data

Sales unit	10 pcs.
Gross weight sales unit	0.020 kg
EAN	4010056710767
Article number	71076

The DZ 41 is suitable as a screwdriver for the patented DW 41.

### Technical data

#### General data

Quantity of holes	2 pcs.
-------------------	--------

### Packaging data

Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	5 x 2 x 1 mm
EAN	4010056707866
Article number	70786

TV and radio plug of the antenna socket is blocked, multimedia functions (telephony and internet) still usable; bolting unlockable only with special equipment DZ 41; no manipulation possible; easy and quick mounting; Scope of delivery: blocking socket, screw and cover





## DW 42

Central cover plate, 2-hole, 75 x 75 mm



Technical data	
General data	
Quantity of holes	2 pcs.
Dimensions (width x height x depth)	75 x 75 mm
Packaging data	
Sales unit	10 pcs.

## DW 44

Central cover plate, 2-hole, 85 x 85 mm



Technical data	
General data	
Quantity of holes	2 pcs.
Dimensions (width x height x depth)	85 x 85 mm
Packaging data	
Sales unit	10 pcs.

## DW 45

Central cover plate, 3-hole, 75 x 75 mm



Technical data	
General data	
Quantity of holes	3 pcs.
Dimensions (width x height x depth)	75 x 75 mm
Packaging data	
Sales unit	10 pcs.

## DW 45 T

Central cover plate, 4-hole, 75 x 75 mm



Technical data	
General data	
Quantity of holes	4 pcs.
Dimensions (width x height x depth)	75 x 75 mm
Packaging data	
Sales unit	10 pcs.

## DW 49 T

Central cover plate, 4-hole, 85 x 85 mm



Technical data	
General data	
Quantity of holes	4 pcs.
Dimensions (width x height x depth)	85 x 85 mm
Packaging data	
Sales unit	10 pcs.

## DW 49 M

Central cover plate, 3-hole, 85 x 85 mm



Technical data	
General data	
Quantity of holes	3 pcs.
Dimensions (width x height x depth)	85 x 85 mm
Packaging data	
Sales unit	10 pcs.

# Accessories Wall socket

## DD 99

Mounting frame



### Technical data

#### General data

Dimensions (width x height x depth)	75 x 75 x 35 mm
-------------------------------------	-----------------

#### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	91 x 190 x 91 mm
Gross weight sales unit	0.039 kg
Packaging volume shipping package	38dm <sup>3</sup>
Gross weight shipping unit	3.3 kg
EAN	4010056144883
Article number	14488

The DD 99 is a surface mounting frame. This is certified for KDG and Unitymedia.



# DD 94

## Push- on Adapter



The DD 94 push-on adapter enables the expansion of common two-way wall outlets with two further WICLIC data connectors. By pushing it onto the regular wall outlet and fixing it with the screw in the center, you get two multimedia outputs in addition to those of the TV and radio. The upgrade to return path-capable networks also calls for particular requirements of the intermodulation suppression. The DD 94 suits this upgrade thanks to its very high intermodulation ratio according to DIN EN 60728-4. In addition, the white bronze plated housing reaches a very high screening efficiency of CLASS A+. Because of its frequency range of up to 2 GHz, the DD 94 push-on adapter is prepared for future frequency expansions.

Technical data	
<b>Frequency range</b>	
TV in > TV out	85...2000 MHz
TV in > Data 1	5...2000 MHz
Radio in > Radio out	85...2000 MHz
Radio in > Data 2	5...2000 MHz
<b>Insertion loss</b>	
TV in > TV out 85...1218 MHz	4,5...5,2 dB
TV in > TV out 1218...2000 MHz	5,2...7,0 dB
TV in > Data 1 5...1218 MHz	3,9...4,6 dB
TV in > Data 1 1218...2000 MHz	4,6...6,0 dB
Radio in > Radio out 85...1218 MHz	4,5...5,2 dB
Radio in > Radio out 1218...2000 MHz	5,2...7,0 dB
Radio in > Data 2 5...1218 MHz	3,9...4,6 dB
Radio in > Data 2 1218...2000 MHz	4,6...6,0 dB
<b>Isolation</b>	
Data 1 <> TV out 5...65 MHz	≥ 40 dB
Data 1 <> TV out 85...1218 MHz	≥ 25 dB
Data 1 <> TV out 1218...2000 MHz	15...25 dB
Data 1 <> Radio out 5...2000 MHz	≥ 70 dB
Data 2 <> Radio out 5...65 MHz	≥ 40 dB
Data 2 <> Radio out 85...1218 MHz	≥ 25 dB
Data 2 <> Radio out 1218...2000 MHz	15...25 dB
Data 2 <> TV out 5...2000 MHz	≥ 70 dB
Data 1 <> Data 2 5...2000 MHz	≥ 70 dB
<b>Return loss</b>	
Impedance	75 Ω
TV in, Radio in, Data 1 & 2 12...1218 MHz	≤ 16 dB
TV in, Radio in, Data 1 & 2 1218...2000 MHz	≤ 16 dB
TV out, Radio out 470...1218 MHz	≤ 14 dB

Technical data	
TV out, Radio out 1218...2000 MHz	10...14 dB
<b>Intermodulation</b>	
Data	≥ 115 dBμV according to DIN EN 60728-4, Carrier 1: 60 MHz, Carrier 2: 65 MHz
<b>Connectors</b>	
TV in	IEC female (IEC 61169-2)
Radio in	IEC male (IEC 61169-2)
Data 1	WICLIC female
Data 2	WICLIC female
TV out	IEC male (IEC 61169-2)
Radio out	IEC female (IEC 61169-2)
<b>General data</b>	
Screening factor	Class A+, to EN 50083-2
Dimensions (width x height x depth)	60 x 45 x 20 mm (without connectors)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	60 x 45 x 20 mm (without connectors)
Gross weight sales unit	2,73 kg
Shipping unit	25 pcs.
Dimensions (WxHxD) shipping unit	470 x 160 x 130 mm
Gross weight shipping unit	2,7 kg
EAN	4010056744267
Article number	74426

### Characteristics

- Easy installation Push- on Adaptor
- Upgrade a 2-way wall outlet with 2 data connections (WICLIC)
- Capacitive separation of the inner connector at all interfaces
- Very high screening Class A +
- White bronze plating die-cast housing
- Very high port isolation and return loss
- Central fixing screw

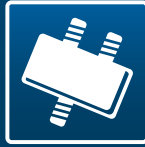
WISI Taps/Splitters:

# Signal distribution on the highest level

Energy saving  
by standby function



highly shielded  
die-cast housing



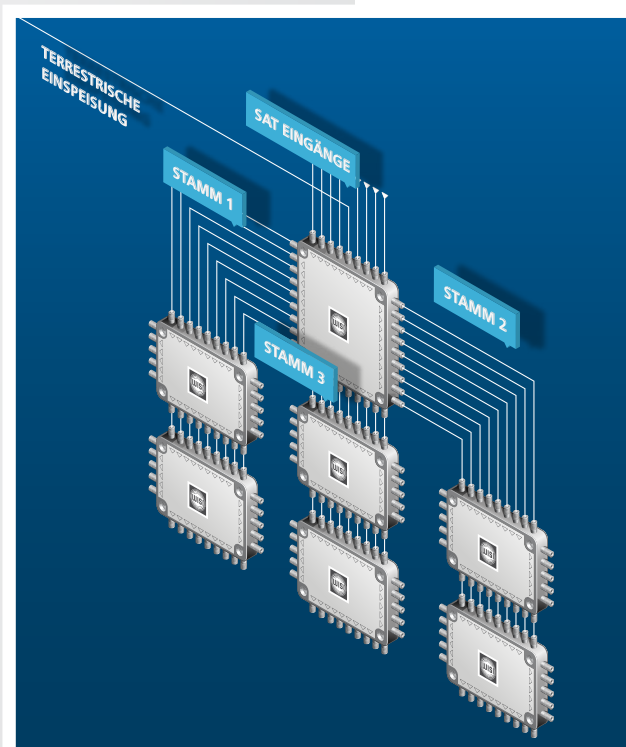
# Taps/Splitters

If you want to design complex and extensive distribution networks, then WISI offers a wide range of splitters and taps that you can implement this easily.

The **splitters and taps** are available for different applications such as distribution of SAT signals in large building complexes or the distribution of cable television signals for your local cable service provider. The highest value is on a lossless transport of the signals and of course on the prevention of foreign inclusions radiation placed by other signal sources (such as DECT phones).

..... Fixed sockets

..... Grounding clamp



## Grounding and potential compensation!

According to EN 50083-1 the satellite antenna system have to suit security requirements such as e.g. grounding and potential compensation.

# Plug-on splitter

## DM 43 A 0397

Plug-on splitter



## DM 44 A 0397

Plug-on splitter



Technical data	
Frequency range	47...2050 MHz
Distribution loss	3,5...4,5 dB
Isolation	19...15 dB (typ.)
Return loss	18 dB
Connectors	
IEC	3 pcs. (2x plug, 1x socket)
General data	
Screening factor	>75/>70 dB (47...450 MHz/450...2050 MHz)
DC Bypass IN/OUT 1A/30V	Yes

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	160 x 220 x 100 mm
Gross weight sales unit	0.046 kg
Shipping unit	10 pcs.
Packaging volume shipping package	0.17 dm <sup>3</sup>
Gross weight shipping unit	0.046 kg
EAN	4010056194987
Article number	19498

The two-way splitter DM43A 0397 is a splitter with IEC-technology for the frequency range 47...2050 MHz.

Technical data	
Frequency range	47...2050 MHz
Distribution loss	3,5...4,5 dB
Isolation	19...15 dB (typ.)
Return loss	18 dB
Connectors	
IEC	3 pcs. (1x plug, 2x socket)
General data	
Screening factor	>75/>70 dB (47...450 MHz/450...2050 MHz)
DC Bypass IN/OUT 1A/30V	Yes

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	160 x 220 x 100 mm
Gross weight shipping unit	0.041 kg
Shipping unit	10 pcs.
Packaging volume shipping package	0.17dm <sup>3</sup>
Gross weight sales unit	0.041 kg
EAN	4010056194994
Article number	19499

# Tap CATV 1 GHz



## DM 21 C

One-way tap, 8 dB



KLASSE  
A  
CLASS

## DM 22 C

One-way tap, 12 dB



KLASSE  
A  
CLASS

## DM 24 C

One-way tap, 16 dB



KLASSE  
A  
CLASS

## DM 25 C

One-way tap, 20 dB



KLASSE  
A  
CLASS

Technical data				
Frequency range	5...1000 MHz	5...1000 MHz	5...1000 MHz	5...1000 MHz
Through loss	1,5...2,0 dB	1 dB	0.8 dB	0.8 dB
TAP loss	8 dB	12 dB	16 dB	20 dB
Directional attenuation	30/25 dB (5...470/470...1000 MHz)	35/26 dB (5...470/470...1000 MHz)	40/28 dB (5...470/470...1000 MHz)	45/32 dB (5...470/470...1000 MHz)
Return loss	18...22 dB	18...22 dB	18...22 dB	18...22 dB
Connectors				
F-socket	3 pcs. (1x input, 1x run through, 1x branch)	3 pcs. (1x input, 1x run through, 1x branch)	3 pcs. (1x input, 1x run through, 1x branch)	3 pcs. (1x input, 1x run through, 1x branch)
General data				
Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	No	No	No	No
Dimensions (width x height x depth)	55 x 50 x 28 mm	55 x 50 x 28 mm	55 x 50 x 28 mm	55 x 50 x 28 mm
Packaging data				
Sales unit	10 pcs.	10 pcs.	10 pcs.	10 pcs.
Dimensions (WxHxD) sales unit	370 x 320 x 200 mm	370 x 320 x 200 mm	370 x 320 x 200 mm	370 x 320 x 200 mm
Gross weight sales unit	0.046 kg	0.046 kg	0.060 kg	0.046 kg
Shipping unit	100 pcs.	100 pcs.	100 pcs.	100 pcs.
Packaging volume shipping package	0.24dm <sup>3</sup>	0.24dm <sup>3</sup>	0.24dm <sup>3</sup>	0.24dm <sup>3</sup>
Gross weight shipping unit	0.046 kg	0.046 kg	0.06 kg	0.046 kg
EAN	4010056702991	4010056703004	4010056703011	4010056703028
Article number	70299	70300	70301	70302

# Tap CATV 1 GHz

## DM 31 C

Two-way tap, 10 dB



KLASSE  
**A**  
CLASS

## DM 32 C

Two-way tap, 12 dB



KLASSE  
**A**  
CLASS

## DM 34 C

Two-way tap, 16 dB



KLASSE  
**A**  
CLASS

## DM 35 C

Two-way tap, 20 dB



KLASSE  
**A**  
CLASS

### Technical data

Frequency range	5...1000 MHz	5...1000 MHz	5...1000 MHz	5...1000 MHz
Through loss	2,5...3,2 dB	1,6...2,0 dB	0,8...1,2 dB	0,5...1,0 dB
TAP loss	10 dB	12 dB	16 dB	20 dB
Directional attenuation	≥28/≥23 dB (5...470/470...1000 MHz)	≥30/≥25 dB (5...470/470...1000 MHz)	≥35/≥28 dB (5...470/470...1000 MHz)	≥45/≥32 dB (5...470/470...1000 MHz)
Isolation	≥30 dB	≥34 dB	≥34 dB	≥34 dB
Return loss	18...22 dB	18...22 dB	18...22 dB	18...22 dB

### Connectors

F-socket	4 pcs. (1x input, 1x run through, 2x branch)	4 pcs. (1x input, 1x run through, 2x branch)	4 pcs. (1x input, 1x run through, 2x branch)	4 pcs. (1x input, 1x run through, 2x branch)
----------	--	--	--	--

### General data

Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	No	No	No	No
Dimensions (width x height x depth)	78 x 50 x 27 mm	78 x 50 x 27 mm	78 x 50 x 27 mm	78 x 50 x 27 mm

### Packaging data

Sales unit	10 pcs.	10 pcs.	10 pcs.	10 pcs.
Dimensions (WxHxD) sales unit	370 x 320 x 200 mm	370 x 320 x 200 mm	370 x 320 x 170 mm	370 x 320 x 200 mm
Gross weight sales unit	0.065 kg	0.060 kg	0.062 kg	0.060 kg
Shipping unit	100 pcs.	100 pcs.	100 pcs.	100 pcs.
Gross weight shipping unit	0.065 kg	0.06 kg	0.062 kg	0.06 kg
EAN	4010056703035	4010056703042	4010056703059	4010056703066
Article number	70303	70304	70305	70306





## DM 36 A 4012

Four-way tap, 12  
dB



## DM 36 A 4016

Four-way tap, 16  
dB



## DM 36 A 4020

Four-way tap, 20  
dB



## DM 36 A 4024

Four-way tap, 24  
dB



### Technical data

Frequency range	5...1006 MHz	5...1006 MHz	5...1006 MHz	5...1006 MHz
Through loss	3,5 dB ( $\pm 0,5$ dB)	2 +/- 0.5 dB	1 +/- 0.2 dB	0.8 +/- 0.2 dB
TAP loss	12 dB ( $\pm 1,0$ dB)	16 +/- 0.5 dB	20 +/- 1.0 dB	24 +/- 0.5 dB
Directional attenuation	> 33 / > 30 dB (5...470/470...1000 MHz)	> 34 / > 30 dB (5...470/470...1000 MHz)	> 40 / > 33 dB (5...470/470...1000 MHz)	> 40 / > 33 dB (5...470/470...1000 MHz)
Isolation	> 30 / > 28 dB (5...470/470...1000 MHz)	> 32 / > 28 dB (5...470/470...1000 MHz)	> 32 / > 28 dB (5...470/470...1000 MHz)	> 33 / > 28 dB (5...470/470...1000 MHz)
Return loss	> 18 dB	> 18 dB	> 22 dB	> 23 dB

### Connectors

F-socket	6 pcs. (1x input, 1x run through, 4x branch)	6 pcs. (1x input, 1x run through, 4x branch)	6 pcs. (1x input, 1x run through, 4x branch)	6 pcs. (1x input, 1x run through, 4x branch)
----------	--	--	--	--

### General data

Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
Dimensions (width x height x depth)	78 x 58 x 28 mm	78 x 58 x 28 mm	78 x 58 x 28 mm	78 x 58 x 28 mm

### Packaging data

Sales unit	10 pcs.	10 pcs.	10 pcs.	10 pcs.
Dimensions (WxHxD) sales unit	260 x 155 x 200 mm	260 x 155 x 200 mm	260 x 155 x 200 mm	260 x 155 x 200 mm
Gross weight sales unit	0.092 kg	0.092 kg	0.092 kg	0.092 kg
Shipping unit	25 pcs.	25 pcs.	25 pcs.	25 pcs.
Packaging volume shipping package	8.1dm <sup>3</sup>	8.1dm <sup>3</sup>	8.1dm <sup>3</sup>	8.1dm <sup>3</sup>
Gross weight shipping unit	0.092 kg	0.092 kg	0.092 kg	0.092 kg
EAN	4010056165895	4010056165901	4010056165918	4010056165925
Article number	16589	16590	16591	16592

# Tap CATV 1 GHz

## DM 36 B 4013

Four-way tap, 13...15,5 dB



KLASSE  
A  
CLASS

## DM 37 B 6013

Six-way tap, 13...17,5 dB



KLASSE  
A  
CLASS

## DM 38 B 8013

Eight-way tap, 13...20 dB



KLASSE  
A  
CLASS

Technical data			
Frequency range	5...1000 MHz	5...1000 MHz	5...1006 MHz
Through loss	4 dB	6 dB	8 +/- 1.5 dB
TAP loss	13...15,5 dB	13...17,5 dB	13...20 +/- 1 dB
Directional attenuation	30...26/24 dB (5...470/470...1000 MHz)	30...26/24 dB (5...470/470...1000 MHz)	> 30 / > 24 dB (5...470/470...1000 MHz)
Isolation	40...36/32 dB (5...470/470...1000 MHz)	40...36/32 dB (5...470/470...1000 MHz)	> 40 / > 30 dB (5...470/470...1000 MHz)
Return loss	18...22 dB	18...22 dB	> 18 dB
Connectors			
F-socket	6 pcs. (1x input, 1x run through, 4x branch)	8 pcs. (1x input, 1x run through, 6x branch)	10 pcs. (1x input, 1x run through, 8x branch)
General data			
Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	Yes	Yes	Yes
Dimensions (width x height x depth)	92 x 54 x 42 mm	92 x 54 x 42 mm	115 x 54 x 42 mm
Packaging data			
Sales unit	10 pcs.	10 pcs.	10 pcs.
Dimensions (WxHxD) sales unit	260 x 155 x 200 mm	260 x 155 x 200 mm	mm
Gross weight sales unit	0.092 kg	0.162 kg	0.205 kg
Shipping unit	25 pcs.	25 pcs.	25 pcs.
Packaging volume shipping package	8.1dm <sup>3</sup>	8.1dm <sup>3</sup>	0.3dm <sup>3</sup>
Gross weight shipping unit	0.183 kg	0.189 kg	0.189 kg
EAN	4010056165932	4010056165949	4010056165956
Article number	16593	16594	16595



## DM 39 B

Three-way tap, 16 dB



KLASSE  
**A**  
CLASS

### Technical data

Frequency range	5...1000 MHz
Through loss	1,2...2,0 dB
TAP loss	16 dB
Directional attenuation	≥30 dB
Isolation	≥30 dB
Return loss	18...22 dB

### Connectors

F-socket	5 pcs. (1x input, 1x run through, 3x branch)
----------	--

### General data

Screening factor	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	No
Dimensions (width x height x depth)	74 x 50 x 18 mm

### Packaging data

Sales unit	10 pcs.
Dimensions (WxHxD) sales unit	400 x 320 x 150 mm
Gross weight sales unit	0.064 kg
Shipping unit	100 pcs.
Gross weight shipping unit	0.064 kg
EAN	4010056703073
Article number	70307

The DM 39 B is a 3-way splitter for cable TV. Its insertion loss is 2 dB and its tap loss is 16 dB. High shielding properties (class A) guarantee an interference-free transmission of the signals in the input and distribution systems. A fast and safe connection is ensured through F-sockets.

# Tap SAT

## DM 51 1010

One-way tap, 11 dB



KLASSE  
A  
CLASS

## DM 51 1015

One-way tap, 15 dB



KLASSE  
A  
CLASS

## DM 51 1020

One-way tap, 20 dB



KLASSE  
A  
CLASS

Technical data			
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz
Through loss	1,5...2,5 dB	1,0...2,0 dB	0,7...1,8 dB
TAP loss	11 dB	15 dB	20 dB
Directional attenuation	32/25/22 dB (5...40/40...100/100...2400 MHz)	35/30/25 dB (5...40/40...100/100...2400 MHz)	40/32/28 dB (5...40/40...100/100...2400 MHz)
Return loss	18...22 dB	18...22 dB	18...22 dB
<b>Connectors</b>			
F-socket	3 pcs. (1x input, 1x run through, 1x branch)	3 pcs. (1x input, 1x run through, 1x branch)	3 pcs. (1x input, 1x run through, 1x branch)
<b>General data</b>			
Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	Yes	Yes	Yes
Dimensions (width x height x depth)	52 x 50 x 18 mm	52 x 50 x 18 mm	52 x 50 x 18 mm
<b>Packaging data</b>			
Sales unit	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	36 x 32 x 19 mm	36 x 32 x 19 mm	36 x 32 x 19 mm
Gross weight sales unit	0.060 kg	0.060 kg	0.060 kg
Shipping unit	200 pcs.	200 pcs.	200 pcs.
Gross weight shipping unit	0.06 kg	0.06 kg	0.06 kg
EAN	4010056165970	4010056165987	4010056165994
Article number	16597	16598	16599



## DM 52 2010

Two-way tap, 11 dB

## DM 52 2015

Two-way tap, 15 dB

## DM 52 2020

Two-way tap, 20 dB



KLASSE  
**A**  
CLASS

KLASSE  
**A**  
CLASS

KLASSE  
**A**  
CLASS

Technical data			
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz
Through loss	3,0...4,0 dB	2,0...4,0 dB	1,5...3,5 dB
TAP loss	11 dB	15 dB	20 dB
Directional attenuation	23/20 dB (5...40/40...2400 MHz)	22 / 20 dB (5...40/40...2400 MHz)	25/20 dB (5...40/40...2400 MHz)
Isolation	≥28 dB	≥30 dB	≥32 dB
Return loss	18...22 dB	18...22 dB	18...22 dB
Connectors			
F-socket	4 pcs. (1x input, 1x run through, 2x branch)	4 pcs. (1x input, 1x run through, 2x branch)	4 pcs. (1x input, 1x run through, 2x branch)
General data			
Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	Yes	Yes	Yes
Dimensions (width x height x depth)	74 x 48 x 18 mm	74 x 48 x 18 mm	74 x 48 x 18 mm
Packaging data			
Sales unit	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	36 x 32 x 19 mm	36 x 32 x 19 mm	36 x 32 x 19 mm
Gross weight sales unit	0.060 kg	0.060 kg	0.060 kg
Shipping unit	200 pcs.	200 pcs.	200 pcs.
Gross weight shipping unit	0.06 kg	0.06 kg	0.06 kg
EAN	4010056166007	4010056166014	4010056166021
Article number	16600	16601	16602

# Tap SAT

## DM 54 A 4010

Four-way tap,  
11/12,5...14 dB



## DM 54 A 4015

Four-way tap,  
15/15 dB



## DM 54 A 4020

Four-way tap,  
20/20 dB



## DM 54 A 4025

Four-way tap, 12  
dB



### Technical data

Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz	5...2400 MHz
Through loss	3,5/4,5...5 dB (5...862/862...2400 MHz)	2,5/4,5 dB (5...862/862...2400 MHz)	1,0/2...2,5 dB (5...862/862...2400 MHz)	0,6/1,8...2,5 dB (5...862/862...2400 MHz)
TAP loss	11/12,5...14 dB (5...862/862...2400 MHz)	15/15 dB (5...862/862...2400 MHz)	20/20 dB (5...862/862...2400 MHz)	25/25 dB (5...862/862...2400 MHz)
Directional attenuation	≥25 dB	≥25 dB	≥25 dB	≥25 dB
Isolation	≥21 dB	≥21 dB	≥21 dB	≥21 dB
Return loss	18...22 dB	18...22 dB	18...22 dB	18...22 dB

### Connectors

F-socket	6 pcs. (1x input, 1x run through, 4x branch)	6 pcs. (1x input, 1x run through, 4x branch)	6 pcs. (1x input, 1x run through, 4x branch)	6 pcs. (1x input, 1x run through, 4x branch)
----------	--	--	--	--

### General data

Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	Yes	Yes	Yes	Yes
Dimensions (width x height x depth)	74 x 58 x 18 mm	74 x 58 x 18 mm	74 x 58 x 18 mm	74 x 58 x 18 mm

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	36 x 32 x 19 mm	36 x 32 x 19 mm	36 x 32 x 19 mm	36 x 32 x 19 mm
Gross weight sales unit	0.150 kg	0.080 kg	0.080 kg	0.140 kg
Shipping unit	50 pcs.	50 pcs.	50 pcs.	50 pcs.
Gross weight shipping unit	0.15 kg	0.08 kg	0.08 kg	0.14 kg
EAN	4010056166038	4010056166045	4010056166052	4010056166069
Article number	16603	16604	16605	16606

# Splitter SAT



## DM 02 B

Splitter, 2-way



KLASSE  
A  
CLASS

## DM 03 B

Splitter, 3-way



KLASSE  
A  
CLASS

## DM 04 B

Splitter, 4-way



KLASSE  
A  
CLASS

Technical data			
Frequency range	5...1000 MHz	5...1000 MHz	5...1000 MHz
Distribution loss	3.7 dB	5.9 dB	7.5 dB
Isolation	30 dB	30 dB	30 dB
Return loss	18 dB	18 dB	18 dB
Connectors			
F-socket	3 pcs. (1x input, 2x output)	4 pcs. (1x input, 3x output)	5 pcs. (1x input, 4x output)
General data			
Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	No	No	No
Dimensions (width x height x depth)	55x50x28 mm	78x50x28 mm	78x50x28 mm
Packaging data			
Sales unit	10 pcs.	10 pcs.	10 pcs.
Dimensions (WxHxD) sales unit	370 x 320 x 170 mm	400 x 320 x 150 mm	400 x 320 x 150 mm
Gross weight sales unit	0.060 kg	0.070 kg	0.080 kg
Shipping unit	100 pcs.	100 pcs.	100 pcs.
Packaging volume shipping package	0.2dm <sup>3</sup>	0.2dm <sup>3</sup>	0.2dm <sup>3</sup>
Gross weight shipping unit	0.06 kg	0.07 kg	0.08 kg
EAN	4010056702960	4010056702977	4010056702984
Article number	70296	70297	70298

# Splitter CATV 1 GHz

## DM 06 B

Splitter, 6-way



KLASSE  
**A**  
CLASS

## DM 08 B

Splitter, 8-way



KLASSE  
**A**  
CLASS

### Technical data

Frequency range	5...1000 MHz	5...1000 MHz
Distribution loss	10 dB	11 dB
Isolation	≥25 dB	>25 dB
Return loss	18 dB	18 dB

### Connectors

F-socket	7 pcs. (1x input, 6x output)	9 pcs. (1x input, 8x output)
----------	------------------------------	------------------------------

### General data

Screening factor	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	No	No
Dimensions (width x height x depth)	115x54x42 mm	115x54x42 mm

### Packaging data

Sales unit	10 pcs.	10 pcs.
Dimensions (WxHxD) sales unit	280 x 270 x 130 mm	350 x 270 x 130 mm
Gross weight sales unit	0.220 kg	0.220 kg
Shipping unit	25 pcs.	25 pcs.
Packaging volume shipping package	0.4dm <sup>3</sup>	0.5dm <sup>3</sup>
Gross weight shipping unit	0.22 kg	0.22 kg
EAN	4010056165758	4010056165765
Article number	16575	16576





## DM 90

SAT splitter



KLASSE  
A  
CLASS

## DM 50

SAT splitter



KLASSE  
A  
CLASS

Technical data		
Frequency range	5...862/950...2400 MHz (TERR/SAT)	5...862/950...2400 MHz (TERR/SAT)
Through loss	1,5...3,0/2...3,5 dB (TERR/SAT)	1,0...1,8/1,1...2,7 dB (TERR/SAT)
TAP loss	13...14/14...12 dB (TERR/SAT)	13...13,5/12,2...13,7 dB (TERR/SAT)
Isolation	35/38 dB (trunk, TERR/SAT)	35/35 dB (trunk, TERR/SAT)
Return loss	10 dB (min., SAT)	10 dB (min., SAT)
Connectors		
F-socket	36 pcs.	20 pcs.
General data		
Screening factor	Class A, EN 50083-2	Class A, EN 50083-2
DC Bypass IN/OUT 1A/30V	Yes	Yes
Dimensions (width x height x depth)	210 x 210 x 27 mm	140x140x27 mm
Packaging data		
Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	255 x 315 x 65 mm	28 x 20 x 9 mm
Gross weight sales unit	0.100 kg	0.600 kg
Gross weight shipping unit	kg	kg
EAN	4010056182014	4010056700713
Article number	18201	70071

# Splitter SAT

## DM 12 A

SAT splitter, 2-way

## DM 13 A

SAT splitter, 3-way

## DM 14 A

SAT splitter, 4-way

## DM 16 B

SAT splitter, 6-way



KLASSE  
**A**  
CLASS

KLASSE  
**A**  
CLASS

KLASSE  
**A**  
CLASS

KLASSE  
**A**  
CLASS

Technical data				
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz	5...2400 MHz
Distribution loss	4...6 dB	7...10,5 dB	8...11,5 dB	11...17 dB
Isolation	>20 dB	>20 dB	>20 dB	>20 dB
Return loss	18 dB	18 dB	18 dB	18 dB
Connectors				
F-socket	3 pcs. (1x input, 2x output)	4 pcs. (1x input, 3x output)	5 pcs. (1x input, 4x output)	7 pcs. (1x input, 6x output)
General data				
Screening factor	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)	>85 dB (class A)
DC Bypass IN/OUT 1A/30V	Yes	Yes	Yes	Yes
Dimensions (width x height x depth)	55x55x28 mm	74x55x18 mm	74x55x18 mm	92x35x28 mm
Packaging data				
Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	370 x 320 x 170 mm	370 x 320 x 170 mm	370 x 320 x 170 mm	370 x 320 x 170 mm
Gross weight sales unit	0.060 kg	0.060 kg	0.080 kg	0.110 kg
Shipping unit	100 pcs.	100 pcs.	100 pcs.	50 pcs.
Packaging volume shipping package	0.2dm <sup>3</sup>	0.2dm <sup>3</sup>	0.2dm <sup>3</sup>	0.2dm <sup>3</sup>
Gross weight shipping unit	0.06 kg	0.06 kg	0.08 kg	0.11 kg
EAN	4010056165772	4010056165789	4010056165796	4010056165802
Article number	16577	16578	16579	16580



WISI Electrical accessories:

**Always the perfect connection**





# Electrical accessories

**WISI cables, plugs and sockets** are perfectly matched, so that they achieve a consistently high screening factor. They are quick and easy to mount, have excellent performance and are manufactured in the proven and well known WISI quality.

The WISI connectors are characterized by a very high processing quality what is not only beneficial to the signal quality and a low power loss, but also to the simple and uncomplicated installation. For this WISI also provides the necessary tools. WISI also offers adapter so there is hardly a plug-in coaxial environment which can not be established with WISI connectors. With the WISI system you have the highest flexibility for your connections.



## WISI Electrical accessories at glance:

- Suitable for all cable types
- High quality
- Easy to use



# DC blocker

## DL 05

DC blocker



Technical data	
Frequency range	4...2500 MHz
Through loss	<0,8 dB
Connectors	
F-socket	2 pcs.
F-plug	0 pcs.
General data	
Feeding voltage	65 V AC
Test voltage	2120 V DC
Dimensions (width x height x depth)	SW11x33 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	3 x 1 x 1 mm
Gross weight sales unit	0.008 kg
Shipping unit	100 pcs.
Packaging volume shipping package	3dm <sup>3</sup>
Gross weight shipping unit	0.035 kg
EAN	4010056112929
Article number	11292

DC05 is a component for separating the circuit in satellite reception systems.

## DL 20 A

Galvanic separating element



Technical data	
Frequency range	5...1000 MHz
Through loss	<0,5 dB
Connectors	
F-socket	2 pcs.
General data	
Test voltage	2120 V DC
Dimensions (width x height x depth)	60 x 20 x 48 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	20 x 10 x 6 mm
Gross weight sales unit	0.063 kg
Gross weight shipping unit	0.063 kg
EAN	4010056177522
Article number	17752

DL 20 A galvanic isolation. For galvanic isolation of 2 transmission systems in BK-systems.



## DV 24

F-termination resistor



## DV 25

F-terminating resistor with DC-separation



Technical data	
Type	F-plug, load resistance 75 Ω
Type of mounting	Screwed
construction style	straight
Material	nickel plated brass
Dimensions (width x height x depth)	SW 11 x 17 mm
DC separation	No

Packaging data	
Sales unit	100 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	70 x 100 x 0 mm
Gross weight sales unit	0.003 kg
Shipping unit	1000 pcs.
Packaging volume shipping package	0.1dm <sup>3</sup>
Gross weight shipping unit	0.003 kg
EAN	4010056176990
Article number	17699

The DV 24 is a terminating resistor of 75 Ohm in F-technology for wave transactions of master cables and outputs.

Technical data	
Type	F-plug, load resistance 75 Ω
Type of mounting	Screwed
construction style	straight
Material	nickel plated brass
Dimensions (width x height x depth)	SW 11 x 28 mm
DC separation	Yes

Packaging data	
Sales unit	10 pcs. (PE-bag)
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.005 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.002dm <sup>3</sup>
Gross weight shipping unit	0.005 kg
EAN	4010056103088
Article number	10308

The DV 25 is a terminating resistor of 75 Ohm in F-technology in DC-division for wave transaction of master cables and outputs.

# F-plug adapter

## DV 50

F-plug



## DV 54

F-plug



## DV 55

F-plug



Technical data			
Type	F-plug	F-plug	F-plug
Type of mounting	Screwed	Screwed	Screwed
construction style	straight	straight	straight
Material	nickel plated brass	nickel plated brass	nickel plated brass
suitable cable type	MK 76	MK 15	MK 91, MK 96
Dimensions (width x height x depth)	SW 11 x 22 mm	SW 12 x 30 mm	SW 11 x 21 mm
DC separation	No	No	No
Packaging data			
Sales unit	100 pcs. (PE-bag)	25 pcs. (PE-bag)	100 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	90 x 120 x 0 mm	90 x 120 x 0 mm	90 x 120 x 0 mm
Gross weight sales unit	0.008 kg	0.022 kg	0.007 kg
Shipping unit	1000 pcs.	100 pcs.	1000 pcs.
Packaging volume shipping package	0.17dm <sup>3</sup>	0.17dm <sup>3</sup>	0.17dm <sup>3</sup>
Gross weight shipping unit	0.008 kg	0.022 kg	0.007 kg
EAN	4010056194956	4010056186548	4010056178659
Article number	19495	18654	17865



# F-Crimp-plug connector



## DV 85

F-plug, crimpable



## DV 90

F-Quick-plug, crimpable



## DV 95

F-Quick-plug, crimpable



## DV 97

F-Quick-ellbow connector, crimp



### Technical data

Type	F-plug	F-plug	F-plug	F-plug
Type of mounting	Crimp	Crimp	Crimp	Crimp
construction style	straight	straight	straight	angled
Material	nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
suitable cable type	MK 91, MK 96	MK 76	MK 91, MK 96	MK 91, MK 96
Dimensions (width x height x depth)	SW 11 x 20 mm	Ø 11,80 x 25 mm	Ø 11,80 x 25 mm	34,5 x 12 x 22,9 mm
DC separation	No	No	No	No

### Packaging data

Sales unit	100 pcs.	100 pcs.	100 pcs.	100 pcs.
Gross weight sales unit	0.007 kg	0.006 kg	0.006 kg	0.017 kg
Gross weight shipping unit	0.007 kg	0.006 kg	0.006 kg	0.017 kg
EAN	4010056115548	4010056135508	4010056135515	4010056177454
Article number	11554	13550	13551	17745

# F - compression connectors

## DV 10

F-Compress-plug



## DV 10 N

F-Compression-plug with NiTin-coating



### Technical data

Type	F-plug	F-plug
Type of mounting	compress	compress
construction style	straight	straight
Material	nickel plated brass	brass with NiTin-coating
suitable cable type	MK 76	MK 76
Dimensions (width x height x depth)	SW 11 x 21,30 mm	SW 11 x 21,30 mm
DC separation	No	No

### Packaging data

Sales unit	100 pcs. (PE-bag)	100 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	25 x 22 x 16 mm	25 x 22 x 16 mm
Gross weight sales unit	0.011 kg	0.011 kg
Shipping unit	1000 pcs.	1000 pcs.
Gross weight shipping unit	0.011 kg	0.011 kg
EAN	4010056141431	4010056196318
Article number	14143	19631



## DV 14 N

F-Compression-plug with NiTin-coating



Technical data	
Type	F-plug
Type of mounting	compress
construction style	straight
Material	brass with NiTin-coating
suitable cable type	MK 15
Dimensions (width x height x depth)	- mm
DC separation	No

Packaging data	
Sales unit	100 pcs.
Dimensions (WxHxD) sales unit	25 x 23 x 25 mm
Gross weight sales unit	0.021 kg
EAN	4010056719432
Article number	71943

The DV 14 N is an F-technology compression plug with a NiTin-coat for the cable type MK 15.

# F - compression connectors

## DV 15

F-Compress-plug



## DV 15 N

F-Compression-plug with NiTin-coating



Technical data		
Type	F-plug	F-plug
Type of mounting	compress	compress
construction style	straight	straight
Material	nickel plated brass	brass with NiTin-coating
suitable cable type	MK 91, MK 96	MK 91, MK 96
Dimensions (width x height x depth)	SW11x21,30 mm	SW11x21,30 mm
DC separation	No	No
Packaging data		
Sales unit	100 pcs.	100 pcs.
Dimensions (WxHxD) sales unit	25 x 23 x 25 mm	25 x 23 x 25 mm
Gross weight sales unit	0.010 kg	0.009 kg
Shipping unit	1000 pcs.	1000 pcs.
Gross weight shipping unit	0.01 kg	0.009 kg
EAN	4010056141455	4010056196325
Article number	14145	19632



## DV 07 0397

Coaxial socket



Technical data	
Type	IEC socket
Type of mounting	Plugged
construction style	straight
Material	nickel plated brass
suitable cable type	MK 76, MK 91, MK 96
Dimensions (width x height x depth)	Ø 14 x 38 mm
DC separation	No

Packaging data	
Sales unit	100 pcs. (PE-bag)
Gross weight sales unit	0.006 kg
Packaging volume shipping package	0.17dm <sup>3</sup>
Gross weight shipping unit	0.006 kg
EAN	4010056725556
Article number	72555

## DV 82 0397

Coaxial socket



Technical data	
Type	IEC socket
Type of mounting	Plugged
construction style	angled
Material	nickel plated brass
suitable cable type	MK 76, MK 91, MK 96
Dimensions (width x height x depth)	27,30x14,60x28,20 mm
DC separation	No

Packaging data	
Sales unit	10 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	30 x 21 x 15 mm
Gross weight sales unit	0.008 kg
Shipping unit	100 pcs.
Gross weight shipping unit	0.008 kg
EAN	4010056725563
Article number	72556

# Adapter

## DV 75

Terminating resistor 75 Ω



Technical data	
Type	IEC-plug, terminating resistor 75 Ω
Type of mounting	Plugged
construction style	straight
Material	nickel plated brass
Dimensions (width x height x depth)	Ø11 x 25 mm
DC separation	No

Packaging data	
Sales unit	10 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	70 x 100 x 0 mm
Gross weight sales unit	0.004 kg
Shipping unit	50 pcs.
Packaging volume shipping package	0.1dm <sup>3</sup>
Gross weight shipping unit	0.004 kg
EAN	4010056177102
Article number	17710

The DV 75 is an IEC-75 Ohm terminating resistor. With this service the distribution system will be completed.

# Adapter

## DV 49 A

Adapter plug



Technical data	
Type	F-adapter, F-Fix on F-Quick
Type of mounting	Screwed/plugged
construction style	straight
Material	nickel plated brass
Dimensions (width x height x depth)	SW11x22,30 mm
DC separation	No

Packaging data	
Sales unit	10 pcs.
Gross weight sales unit	0.007 kg
Shipping unit	100 pcs.
Packaging volume shipping package	0.004dm <sup>3</sup>
Gross weight shipping unit	0.007 kg
EAN	4010056129729
Article number	12972

The DV 49 A is an adapter plug of F-Fix and F-Quick to the screw /plug for the interconnection of multiswitches.



## DV 52

F-adapter



## DV 53

F-ellbow adapter



Technical data		
Type	Transition connector IEC Male to F socket	F-angular adapter F-plug on F-connector
Type of mounting	Screwed/plugged	Screwed
construction style	straight	angled
Material	nickel plated brass	nickel plated brass
Dimensions (width x height x depth)	11x25 mm	23,8x11x19,2 mm
DC separation	No	No
Packaging data		
Sales unit	10 pcs.	10 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	70 x 120 x 0 mm	90 x 120 x 0 mm
Gross weight sales unit	0.008 kg	0.014 kg
Shipping unit	100 pcs.	100 pcs.
Packaging volume shipping package	0.1dm <sup>3</sup>	0.17dm <sup>3</sup>
Gross weight shipping unit	0.008 kg	0.014 kg
EAN	4010056177065	4010056177072
Article number	17706	17707

# Connector

## DV 45

F-splice



## DV 46

F-splice



## DV 46 HQ

High quality plug adapter



Technical data			
Type	F-splice	F-splice	F-splice
Type of mounting	Screwed	Screwed	Screwed
construction style	angled 180°	straight	straight
Material	nickel plated brass	nickel plated brass	nickel plated brass
Dimensions (width x height x depth)	24,5x21x9,6 mm	11x20,8 mm	11x26 mm
DC separation	No	No	No
Packaging data			
Sales unit	10 pcs.	100 pcs. (PE-bag)	100 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	26 x 13 x 6,5 mm	90 x 120 x 0 mm	mm
Gross weight sales unit	0.018 kg	0.006 kg	0.006 kg
Shipping unit	100 pcs.	100 pcs.	100 pcs.
Gross weight shipping unit	0.018 kg	0.006 kg	0.006 kg
EAN	4010056177430	4010056177003	4010056722067
Article number	17743	17700	72206





## ZG 27

Chassis connection PG 11



## ZG 28

Chassis coupler



### Technical data

suitable cable type	MK 15
Type	Chassis connection PG 11
Cable dimensions	Ø 1,6 mm/Ø7,3 mm ( inner conductor diameter/ dielectric)

### Packaging data

Sales unit	10 pcs.
------------	---------

The ZG 27 is a PG 11 radial housing connection. Suitable for the amplifier series VX.

### Technical data

Type	Chassis connection PG 11 on F
------	-------------------------------

### Packaging data

Sales unit	10 pcs.
------------	---------

The ZG 28 is a PG 11 housing coupler for PG 11 on a F-socket. Suitable for the VX series.

## ZG 35 A

Chassis coupler



## ZG 01

Chassis coupler



### Technical data

Type	Chassis connection PG 11 on 3,5/12
------	------------------------------------

### Packaging data

Sales unit	10 pcs.
------------	---------

The ZG 35 A is a PG 11 housing coupler for PG 11 on 3,5/12. Suitable for the VX series.

### Packaging data

Sales unit	50 pcs.
------------	---------

Housing coupler PG11 on F

# House connection points / Handover point

## XU 60

House transfer point



## XU 60 0500

handover box, KDG version



Technical data		
Frequency range	5...862 MHz	5...862 MHz
Return loss	>18 dB (starting 47 MHz >18 dB -1,5 dB/oct. min. 14 dB)	>18 dB (starting 47 MHz >18 dB -1,5 dB/oct. min. 14 dB)
Through loss	<1,5 dB	<1,5 dB
Test point	-2 dB	-2 dB
General data		
Screening factor	Class A, EN 50083-2	Class A, EN 50083-2
Dimensions (width x height x depth)	109x107,5x52 mm	109x107,5x52 mm
Protection class	IP54	IP54
Packaging data		
Sales unit	1 pcs. (PE-bag)	1 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	400 x 125 x 130 mm	400 x 125 x 130 mm
Gross weight sales unit	0.300 kg	0.300 kg
Packaging volume shipping package	0.65	0.65
Gross weight shipping unit	0.3 kg	0.3 kg
EAN	4010056717117	4010056717124
Article number	71711	71712



## XU 64

Measuring module for XU 60



### Technical data

Frequency range	5...862 MHz (Measuring module for measuring into the underground cable)
-----------------	--

### Packaging data

Sales unit	1 pcs. (PE-bag)
Dimensions (WxHxD) sales unit	400 x 200 x 200 mm
Gross weight sales unit	0.007 kg
Packaging volume shipping package	0.08 dm <sup>3</sup>
Gross weight shipping unit	0.007 kg
EAN	4010056166687
Article number	16668

### Characteristics

- Unitymedia certified

# Cable end plug

## ZE 10 0200

Cable end plug  
KES



## ZE 11 0200

Cable end plug  
KES



## ZE 12 0200

Cable end plug  
KES



## ZE 13 C 0200

Cable end plug  
KES



Technical data				
Type	Cable end plug KES	Cable end plug KES	Cable end plug KES	Cable end plug KES
Type of mounting	Plugged	Plugged	Plugged	Plugged
construction style	straight	straight	straight	straight
Material	brass	brass	brass	brass
suitable cable type	Ø 1,1 mm/Ø7,3 mm ( inner conductor diameter/ dielectric) ikx	Ø 2,2 mm/Ø8,8 mm ( inner conductor diameter/ dielectric) nkx (MK 22)	Ø 3,3 mm/Ø13,5 mm ( inner conductor diameter/ dielectric) qkx (MK 33)	Ø 4,9 mm/Ø19,4 mm ( inner conductor diameter/ dielectric) skx
Dimensions	Ø21,80 x 56 mm	Ø 21,80x56 mm	Ø21,80 x 56 mm	Ø24 x 90 mm
DC seperation	No	No	No	No
Packaging data				
Sales unit	10 pcs.	10 pcs.	10 pcs.	5 pcs.
Dimensions (WxHxD) sales unit	135 x 455 x 75 mm	135 x 455 x 75 mm	135 x 455 x 75 mm	135 x 455 x 75 mm
Gross weight sales unit	0.044 kg	0.040 kg	0.026 kg	0.064 kg
Shipping unit	100 pcs.	100 pcs.	100 pcs.	50 pcs.
Packaging volume shipping package	0.05dm <sup>3</sup>	0.05dm <sup>3</sup>	0.05dm <sup>3</sup>	0.05dm <sup>3</sup>
Gross weight shipping unit	0.044 kg	0.04 kg	0.026 kg	0.064 kg
EAN	4010056102128	4010056102135	4010056102142	4010056173999
Article number	10212	10213	10214	17399



## ZE 14 0200

Cable end plug KES



## ZE 15 0200

Cable end plug KES



## ZE 16 0200

Cable end plug KES



Technical data			
Type	Cable end plug KES	Cable end plug KES	Cable end plug KES
Type of mounting	Plugged	Plugged	Plugged
construction style	straight	straight	straight
Material	brass	brass	brass
suitable cable type	Ø 1,7 mm/Ø 7,0 mm (inner conductor diameter/ dielectric)	Ø 1,8 mm/Ø 11 mm (inner conductor diameter/ dielectric) hxx	Ø 2,9 mm/Ø 19,4 mm (inner conductor diameter/ dielectric) kxx
Dimensions	Ø21,80 x 56 mm	Ø21,80 x 56 mm	Ø24 x 90 mm
DC separation	No	No	No
Packaging data			
Sales unit	10 pcs.	10 pcs.	5 pcs.
Dimensions (WxHxD) sales unit	155 x 300 x 75 mm	135 x 455 x 75 mm	135 x 455 x 75 mm
Gross weight sales unit	0.041 kg	0.032 kg	0.070 kg
Shipping unit	100 pcs.	50 pcs.	50 pcs.
Packaging volume shipping package	0.07dm <sup>3</sup>	0.05dm <sup>3</sup>	0.05dm <sup>3</sup>
Gross weight shipping unit	0.041 kg	0.032 kg	0.07 kg
EAN	4010056102166	4010056102173	4010056102180
Article number	10216	10217	10218

# Cable end plug

## ZG 22 0200

Chassis connection



## ZK 10 0200

Contact sleeve



## ZR 10 0200

Terminating resistor



### Technical data

Type	Adapter KES on IEC-coupling
Type of mounting	Plugged
construction style	straight
Material	nickel plated brass
suitable cable type	cable with cable end plug KES
Dimensions	Ø24 x 73 mm
DC separation	No

### Packaging data

Sales unit	5 pcs.
------------	--------

### Technical data

Type	Contact sleeve KES on KES
Type of mounting	Plugged
construction style	straight
Material	brass
suitable cable type	cable with cable end plug KES
Dimensions	Ø22x104,5 mm
DC separation	No

### Packaging data

Sales unit	1 pcs.
------------	--------

### Technical data

Type	Terminating resistor 75 Ω, KES
Type of mounting	Plugged
construction style	straight
Material	plastic
Dimensions	Ø22 x 98 mm
DC separation	No

### Packaging data

Sales unit	1 pcs.
------------	--------



## ZZ 11

Shrink sleeve set



## ZZ 12

Shrink sleeve set



### Technical data

Type	Shrink sleeve set for splitter / taps	Shrink sleeve set for coupling sleeve ZK 10 0200
construction style	straight	straight
Material	plastic	plastic
Dimensions (width x height x depth)	170 mm (length)	210 mm (length)
DC separation	No	No

### Packaging data

Sales unit	1 pcs.	1 pcs.
------------	--------	--------

# Grounding accessories

## NB 02

Equipotential bonding bar



## NB 02 F

Equipotential bonding block, duplex



## NB 04 F

Equipotential bonding block, quadruple



### Technical data

Material	Galvanized steel	nickel plated brass	nickel plated brass
Hole distance	170 mm	74 mm	137 mm
Hole diameter	5 mm	4 mm	4 mm
Dimensions (width x height x depth)	181x17x20 mm	84x24,5x27 mm	148x25x27 mm

### Packaging data

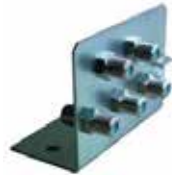
Sales unit	1 pcs.	1 pcs.	1 pcs.
------------	--------	--------	--------





## NB 05

Grounding plate, 5-times



## NB 09

Grounding angle, 9-times



### Technical data

Material	Steel	Steel
Hole distance	59.5 mm	125.9 mm
Hole diameter	6 mm	6 mm
Dimensions (width x height x depth)	79,50x60x53 mm	150,3x60x53 mm

### Packaging data

Sales unit	1 pcs.	1 pcs.
------------	--------	--------

# Transport boxes

## DX 01

Mounting case



## DX 02

Compression set for usage in the mounting case DX 01



### Technical data

Dimensions (width x height x depth)	442x357x117 mm
Dimensions inside	378x313x71 mm
Material	Plastic (ABS)
Weight	2,1 kg
Color	grey/blue

### Packaging data

Sales unit	1 pcs.
EAN	4010056743246
Article number	74324

The transport system WISI-DX ensures more order and clarity in the vehicle or operation site. The shock and impact resistant mounting case DX 01 made of ABS plastic is the basis for this extremely practical system. The case has a sturdy closer and can easily be transported thanks to the integrated handle. The quick click system makes it possible to stack mounting cases and separate them again with the click of a button.

### Technical data

Content	1x Compression tool DZ 15 2130, 1x Coaxial stripper MZ 01, 1x Tightening aid DZ 01, 50x F compression plug DV 15, 50x F plug DV 55
Dimensions (width x height x depth)	260x155x63 mm
Material	Plastic (ABS)
Weight	0,4 kg
Color	gray/transparent

### Packaging data

Sales unit	1 pcs.
EAN	4010056743253
Article number	74325

The pre-assembled compression set DX 02 for the mounting case DX 01 is perfectly suitable for assembling F-plugs directly on site.



## DX 03

Crimp set for the usage in the mounting case DX 01



### Technical data

Content	1x Crimping tool DZ 85, 1x Co-axial stripper MZ 01, 1x Tightening aid DZ 01, 50x F crimp plug DV 85, 50x F plug DV 55
Dimensions (width x height x depth)	260x155x63 mm
Material	Plastic (ABS)
Weight	kg
Color	gray/transparent

### Packaging data

Sales unit	1 pcs.
EAN	4010056743260
Article number	74326

The pre-assembled compression set DX 03 for the mounting case DX 01 is perfectly suitable for the crimping of all most common isolated cable lugs, plugs and connectors on site.

# Compression tool

## DZ 14

Compression tool for F-connector



## DZ 15 2130

Compression tool for F-connector



Technical data		
Type of mounting	compress	compress
Packaging data		
Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	260 x 80 x 45 mm	30 x 13 x 15 mm
Gross weight sales unit	0.500 kg	0.445 kg
Packaging volume shipping package	0.9	0.9
Gross weight shipping unit	0.5 kg	0.5 kg
EAN	4010056134327	4010056702618
Article number	13432	70261

# Crimping tool



## DZ 85

Crimping tool



## MZ 01

COAX stripper



### Technical data

Type of mounting	Crimp
Dimensions (width x height x depth)	70x122,5x23 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.500 kg
Packaging volume shipping package	0.9dm <sup>3</sup>
Gross weight shipping unit	0.5 kg
EAN	4010056123185
Article number	12318

DZ 85 is a tool for processing the crimp plugs DV 85, DV 95... The plug can be pressed with DZ 85 after the cable is set down and the plug is pushed onto the cable.

### Technical data

suitable cable type	MK 91, 96 (adjustable for other cable dimensions )
---------------------	--

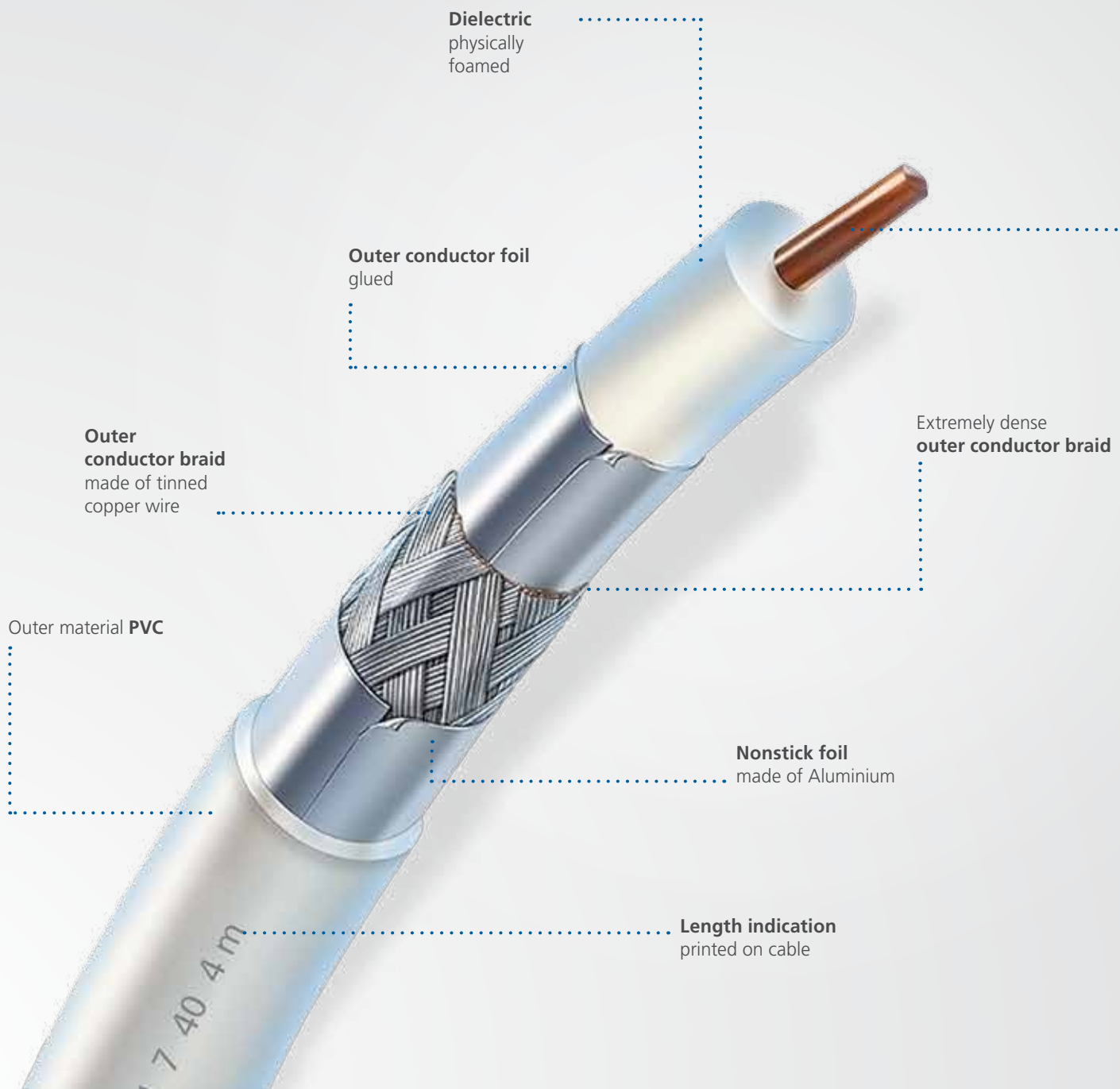
### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	400 x 330 x 180 mm
Gross weight sales unit	0.061 kg
EAN	4010056129569
Article number	12956

MZ 01 is a stripping tool for a fast, clean and standardised discontinuation of coaxial cables. The inner and outer conductors are cleared in one operation by 2 adjustable blades. Adaptable to different types of coaxial cables.

WISI Coaxial cables:

# Perfect for each installation





# Coaxial cables

**Inner conductor**  
made of blank  
copper wire

**Communication determines our everyday life, inform us, imparts knowledge and experiences. They help us understanding and solving problems.**

WISI makes every effort to provide you the necessary tools for your communication. With fully committed, highly motivated employees and the latest technology for today and tomorrow communication.

**WISI cables, plugs and sockets** are perfectly matched, so that they achieve a consistently high screening factor. They are quick and easy to mount, have excellent performance and are manufactured in the proven and well known WISI quality.

## WISI Coaxial cables at a glance:

- Better DC resistance by copper inner conductor
- Aging-resistant foamed dielectric
- Glued outer conductor foil, prevents slipping during assembly
- Uniform coverage of the cable through dense outer shield braid



# Coaxial cables

## MK 22

Coaxial cable, underground cable, Ø 12.5 mm



Coax cable for underground installation with PE-sheath.

Technical data	
<b>General data</b>	
Installation	BK/CATV networks/underground cable
Screening factor	Class A++, according to EN 50117-2-3
Color	black
Length	500 m (on demand 1000 m)
<b>Construction</b>	
Inner conductor	Ø2,20 mm (Cu bare)
Insulation	Ø8,80 mm (PE/air)
Sheath	Ø12,5 mm (PE black)
<b>Mechanical Data</b>	
Max. permissible force	350 N
Bending radius	min. 190 mm
Application temperature range	-20...+50 °C
Total weight	180 kg/km
<b>Electrical data</b>	
Impedance	75 Ω
Velocity ratio	0,89 v/c
capacity	50 pF/m
DC resistance inner conductor	5,6 Ω/km
DC resistance outer conductor	3,0 Ω/km
Loop resistance	8,6 Ω/km
Attenuation 5 MHz	0,6 dB
Attenuation 50 MHz	1,8 dB
Attenuation 100 MHz	2,6 dB
Attenuation 200 MHz	3,9 dB
Attenuation 800 MHz	8,6 dB
Attenuation 862 MHz	9,0 dB
Attenuation 950 MHz	9,7 dB
Attenuation 1750 MHz	14,4 dB
Attenuation 2400 MHz	17,7 dB
Attenuation 3000 MHz	20,6 dB
Return loss 5...470 MHz	28 dB
Return loss 470...1000 MHz	26 dB
Coupling resistance 5...30 MHz	<0,1 mΩ/m

Technical data	
Screening efficiency 30...1000 MHz	>120 dB
Screening efficiency 1000...2000 MHz	>110 dB
Screening efficiency 2000...3000 MHz	>100 dB
Packaging data	
Sales unit	500/1000 m
Gross weight sales unit	180 kg
Shipping unit	500/1000 m
Gross weight shipping unit	180 kg
EAN	4010056172916
Article number	17291

### Characteristics

- High screening factor
- Better DC resistance due to copper inner conductors

### Scope of delivery

- Coaxial cable 500 m





# MK 33

Coaxial cable, Ø 17 mm, underground cable



Coax cable for underground installation with PE-sheath.

Technical data	
<b>General data</b>	
Installation	BK/CATV networks/underground cable
Screening factor	Class A++, according to EN 50117-2-3
Color	black
Length	500 m (on demand 1000 m)
<b>Construction</b>	
Inner conductor	Ø3,27 mm (Cu bare)
Insulation	Ø13,50 mm (PE/air)
Sheath	Ø17,0 mm (PE black)
<b>Mechanical Data</b>	
Max. permissible force	550 N
Bending radius	min. 280 mm
Application temperature range	-20...+50 °C
Total weight	322 kg/km
<b>Electrical data</b>	
Impedance	75 Ω
Velocity ratio	0,89 v/c
capacity	50 pF/m
DC resistance inner conductor	2,5 Ω/km
DC resistance outer conductor	2,0 Ω/km
Loop resistance	4,5 Ω/km
Attenuation 5 MHz	0,4 dB (100 m)
Attenuation 50 MHz	1,2 dB (100 m)
Attenuation 100 MHz	1,7 dB (100 m)
Attenuation 200 MHz	2,4 dB (100 m)
Attenuation 800 MHz	5,5 dB (100 m)
Attenuation 862 MHz	5,9 dB (100 m)
Attenuation 950 MHz	6,1 dB (100 m)
Attenuation 1750 MHz	9,2 dB (100 m)
Attenuation 2400 MHz	11,5 dB (100 m)
Attenuation 3000 MHz	13,4 dB (100 m)
Return loss 5...470 MHz	28 dB
Return loss 470...1000 MHz	26 dB
Coupling resistance 5...30 MHz	<0,1 mΩ/m

Technical data	
Screening efficiency 30...1000 MHz	>120 dB
Screening efficiency 1000...2000 MHz	>110 dB
Screening efficiency 2000...3000 MHz	>100 dB
Packaging data	
Sales unit	500 m (on demand 1000 m)
Gross weight sales unit	322 kg
Shipping unit	500/ m
Gross weight shipping unit	322 kg
EAN	4010056172923
Article number	17292

### Characteristics

- High screening factor
- Better DC resistance due to copper inner conductors

### Scope of delivery

- Coaxial cable 500 m

# Coaxial cables

## MK 15 0500

Coaxial cable, damp proof, Ø 10,3 mm, length 500 m



Coax cable for installation in outdoor area.

### Technical data

Installation	wet room
Screening construction	3-way
Inner conductor material	Cu-core
Dielectric	Cell PE/copper braiding MK 15 + Al-foil
Outer conductor diameter	Bonded aluminium foil / copper braid
Outer jacket material	PE
Inner conductor diameter	1.63 mm
Dielectricum diameter	7.2 mm
Outer jacket diameter	10.3 mm
Loop resistance	16 Ω/km
Attenuation 5 MHz	0.9 dB (100 m)
Attenuation 50 MHz	2.8 dB (100 m)
Attenuation 600 MHz	10.1 dB (100 m)
Attenuation 1000 MHz	13.1 dB (100 m)
Loss 2200 MHz	20.7 dB (100 m)
Return loss 5...862 MHz	>28 dB
Return loss 862...2500 MHz	>23 dB
Screening factor	>100 dB
Coupling resistance 5...30 MHz	<1 mΩ/m

### General data

Color	black
Cable weight	76 kg/km
Bending radius	100 mm
Classification	Class A

### Packaging data

Sales unit	500 m (wood drum)
Gross weight shipping unit	0.076 kg
EAN	4010056149017
Article number	14901

### Characteristics

- Vodafone KDG certified
- Class A++



## MK 76 A 0100

Coaxial cable, Ø 5 mm, length 100 m, cable ring in plastic foil

## MK 76 A 0101

Coaxial cable, Ø 5 mm, length 100 m, on plastic drum

## MK 76 A 0500

Coaxial cable, Ø 5 mm, length 500 m, on plastic drum



### Technical data

Installation	Indoor installation	Indoor installation	Indoor installation
Screening construction	3-way	3-way	3-way
Inner conductor material	Cu-core	Cu-core	Cu-core
Dielectric	Cell PE/copper braiding MK 15 + Al-foil	Cell PE/copper braiding MK 15 + Al-foil	Cell PE/copper braiding MK 15 + Al-foil
Outer conductor diameter	mm Bonded aluminium foil / copper braid	Bonded aluminium foil / copper braid	mm Bonded aluminium foil / copper braid
Outer jacket material	PVC	PVC	PVC
Inner conductor diameter	0.8 mm	0.8 mm	0.8 mm
Dielectricum diameter	3.55 mm	3.55 mm	3.55 mm
Outer jacket diameter	5 mm	5 mm	5 mm
Loop resistance	54.5 Ω/km	54.5 Ω/km	54.5 Ω/km
Attenuation 5 MHz	1.9 dB (100 m)	1.9 dB (100 m)	1.9 dB (100 m)
Attenuation 50 MHz	5.7 dB (100 m)	5.7 dB (100 m)	5.7 dB (100 m)
Attenuation 600 MHz	20.5 dB (100 m)	20.5 dB (100 m)	20.5 dB (100 m)
Attenuation 1000 MHz	26.7 dB (100 m)	26.7 dB (100 m)	26.7 dB (100 m)
Loss 2200 MHz	40.6 dB (100 m)	40.6 dB (100 m)	40.6 dB (100 m)
Return loss 5...862 MHz	>26 dB	>26 dB	>26 dB
Return loss 862...2500 MHz	>18 dB	>18 dB	>18 dB
Screening factor	≥115 dB	≥115 dB	≥115 dB
Coupling resistance 5...30 MHz	≤5 mΩ/m	≤5 mΩ/m	≤5 mΩ/m
<b>General data</b>			
Color	White	White	White
Cable weight	26.6 kg/km	26.6 kg/km	26.6 kg/km
Bending radius single/multiple	25/50 mm	25/50 mm	25/50 mm
Classification	Class A	Class A	Class A

### Packaging data

Sales unit	100 m (Cable ring in plastic foil)	100 m (plastic drum)	500 m (plastic drum)
Shipping unit	500 m	500 m	1000 m

# Coaxial cables



## MK 91 0100

Coaxial cable, Ø 6,8 mm, length 100 m, 3-way Screening construction



## MK 91 0250

Coaxial cable, Ø 6,8 mm, length 250 m, 3-way Screening construction



## MK 91 0500

Coaxial cable, Ø 6,8 mm, length 500 m, 3-way Screening construction



### Technical data

	Indoor installation	Indoor installation	Indoor installation
Installation	Indoor installation	Indoor installation	Indoor installation
Screening construction	3-way	3-way	3-way
Inner conductor material	Cu-core	Cu-core	Cu-core
Dielectric	Cell PE/copper braiding MK 15 + Al-foil	Cell PE/copper braiding MK 15 + Al-foil	Cell PE/copper braiding MK 15 + Al-foil
Outer conductor diameter	Bonded aluminium foil, aluminium foil	mm Bonded aluminium foil, aluminium foil	mm Bonded aluminium foil, aluminium foil
Outer jacket material	PVC	PVC	PVC
Inner conductor diameter	1.02 mm	1.02 mm	1.02 mm
Dielectricum diameter	4.75 mm	4.75 mm	4.75 mm
Outer jacket diameter	6.5 mm	6.5 mm	6.5 mm
Loop resistance	39.5 Ω/km	39.5 Ω/km	39.5 Ω/km
Attenuation 5 MHz	1.5 dB (100 m)	1.5 dB (100 m)	1.5 dB (100 m)
Attenuation 50 MHz	4.1 dB (100 m)	4.1 dB (100 m)	4.1 dB (100 m)
Attenuation 600 MHz	15.2 dB (100 m)	15.2 dB (100 m)	15.2 dB (100 m)
Attenuation 1000 MHz	19.9 dB (100 m)	19.9 dB (100 m)	19.9 dB (100 m)
Loss 2200 MHz	30.4 dB (100 m)	30.4 dB (100 m)	30.4 dB (100 m)
Return loss 5...862 MHz	>26 dB	>26 dB	>26 dB
Return loss 862...2500 MHz	>18 dB	>18 dB	>18 dB
Screening factor	≥110 dB	≥110 dB	≥110 dB
Coupling resistance 5...30 MHz	≤5 mΩ/m	≤5 mΩ/m	≤5 mΩ/m

### General data

Color	White	White	White
Cable weight	36 kg/km	36 kg/km	36 kg/km
Bending radius single/multiple	35/70 mm	35/70 mm	35/70 mm
Classification	Class A	Class A	Class A

### Packaging data

Sales unit	100 m (Cable ring in plastic foil)	250 m (Cable ring in plastic foil)	500 m (plastic drum)
Shipping unit	600 m	500 m	500 m



## MK 96 A 0015

Coaxial cable Ø 6,8 mm, triple shield, PVC white, length 15 m

## MK 96 A 0025

Coaxial cable Ø 6,8 mm, triple shield, PVC white, length 25 m



### Technical data

#### General data

Installation	Indoor installation	Indoor installation
Screening factor	Class A+, according to EN 50117-2-4	Class A+, according to EN 50117-2-4
Color	White	White
Length	15 m	25 m

#### Construction

Screening construction	3-way	3-way
Inner conductor	Ø 1,02 mm (Cu)	Ø 1,02 mm (Cu)
Insulation	Ø 4,75 mm (Foam PE, gas injected)	Ø 4,75 mm (Foam PE, gas injected)
Outer conductor 1. Foil	Ø 4,85 mm (Al-Pet bonded)	Ø 4,85 mm (Al-Pet bonded)
Outer conductor 2. Braid	63 % (CuSn)	63 % (CuSn)
Outer conductor 3. Foil	Aluminium	Aluminium
Sheath	Ø 6,8 mm (PVC, white)	Ø 6,8 mm (PVC, white)

#### Mechanical Data

Max. permissible force	120 N	120 N
Bending radius single/multiple	35/75 mm	35/75 mm
Operating temperature	-15...+65 °C	-15...+65 °C
Application temperature range	-5...+50 °C	-5...+50 °C
Copper weight	ca. 16 kg/km	ca. 16 kg/km
Total weight	ca. 46 kg/km	ca. 46 kg/km
Thermal load	ca. 0,8 MJ/m	ca. 0,8 MJ/m

#### Electrical data

Impedance	75 Ω	75 Ω
Velocity ratio	0,84	0,84
capacity	52 pF/m	52 pF/m
DC resistance inner conductor	21,2 Ω/km	21,2 Ω/km

### Packaging data

Sales unit	1 pcs. (blister pack)	1 pcs. (blister pack)
------------	-----------------------	-----------------------

# Coaxial cables

## MK 96 A 0100

Coaxial cable  
100 m

## MK 96 A 0101

Coaxial cable  
100 m, on plastic  
drum

## MK 96 A 0250

Coaxial cable  
250 m

## MK 96 A 0500

Coaxial cable  
500 m



### Technical data

#### General data

Installation	Indoor installation	Indoor installation	Indoor installation	Indoor installation
Screening factor	Class A+, according to EN 50117-2-4	Class A+, according to EN 50117-2-4	Class A+, according to EN 50117-2-4	Class A+, according to EN 50117-2-4
Color	White	White	White	White
Length	100 m	100 m	250 m	500 m

#### Construction

Screening construction	3-way	3-way	3-way	3-way
Inner conductor	Ø 1,02 mm (Cu)	Ø 1,02 mm (Cu)	Ø 1,02 mm (Cu)	Ø 1,02 mm (Cu)
Insulation	Ø 4,75 mm (Foam PE, gas injected)	Ø 4,75 mm (Foam PE, gas injected)	Ø 4,75 mm (Foam PE, gas injected)	Ø 4,75 mm (Foam PE, gas injected)
Outer conductor 1. Foil	Ø 4,85 mm (Al-Pet bonded)	Ø 4,85 mm (Al-Pet bonded)	Ø 4,85 mm (Al-Pet bonded)	Ø 4,85 mm (Al-Pet bonded)
Outer conductor 2. Braid	63 % (CuSn)	63 % (CuSn)	63 % (CuSn)	63 % (CuSn)
Outer conductor 3. Foil	Aluminium	Aluminium	Aluminium	Aluminium
Sheath	Ø 6,8 mm (PVC, white)	Ø 6,8 mm (PVC, white)	Ø 6,8 mm (PVC, white)	Ø 6,8 mm (PVC, white)

#### Mechanical Data

Max. permissible force	120 N	120 N	120 N	120 N
Bending radius single/multiple	35/75 mm	35/75 mm	35/75 mm	35/75 mm
Operating temperature	-15...+65 °C	-15...+65 °C	-15...+65 °C	-15...+65 °C
Application temperature range	-5...+50 °C	-5...+50 °C	-5...+50 °C	-5...+50 °C
Copper weight	ca. 16 kg/km	ca. 16 kg/km	ca. 16 kg/km	ca. 16 kg/km
Total weight	ca. 46 kg/km	ca. 46 kg/km	ca. 46 kg/km	ca. 46 kg/km
Thermal load	ca. 0,8 MJ/m	ca. 0,8 MJ/m	ca. 0,8 MJ/m	ca. 0,8 MJ/m

#### Electrical data

Impedance	75 Ω	75 Ω	75 Ω	75 Ω
Velocity ratio	0,84	0,84	0,84	0,84
capacity	52 pF/m	52 pF/m	52 pF/m	52 pF/m
DC resistance inner conductor	21,2 Ω/km	21,2 Ω/km	21,2 Ω/km	21,2 Ω/km

### Packaging data

Sales unit	100 m (Cable ring in plastic foil)	100 m (plastic drum)	250 m (Shrink)	500 m (plastic drum)
------------	------------------------------------	----------------------	----------------	----------------------



## MK 96 L 0100

Coaxial cable halogenfree, triple shield, length 100 m, cable ring in plastic foil



## MK 96 L 0500

Coaxial cable halogenfree, triple shield, length 500 m on plastic drum



## MK 96 L 0251

Coaxial cable halogenfree, triple shield, length 250 m on plastic drum



### Technical data

General data		Indoor installation	Indoor installation
Installation	Indoor installation	3-way	3-way
Screening factor	Class A	Cu-core	Cu-core
Color	White	Cell PE/copper braiding MK 15 + Al-foil	Cell PE/copper braiding MK 15 + Al-foil
Length	100 m	Bonded aluminium foil / copper braid	Bonded aluminium foil / copper braid
Construction		LSZH-Compound	LSZH-Compound
Screening construction	3-way	1.02 mm	1.02 mm
Inner conductor	Ø 1,02 mm (Cu)	4.75 mm	4.75 mm
Insulation	Ø 4,75 mm (Foam PE, gas injected)	6.5 mm	6.5 mm
Outer conductor 1. Foil	Ø 4,85 mm (Al-Pet bonded)	34.5 Ω/km	34.5 Ω/km
Outer conductor 2. Braid	63 % (CuSn)	1.6 dB (100 m)	1.6 dB (100 m)
Outer conductor 3. Foil	Aluminium	4.1 dB (100 m)	4.1 dB (100 m)
Sheath	Ø 6,5 mm (halogenfree)	14.8 dB (100 m)	14.8 dB (100 m)
Mechanical Data		19.4 dB (100 m)	19.4 dB (100 m)
Max. permissible force	- N	29.7 dB (100 m)	29.7 dB (100 m)
Bending radius single/multiple	35/75 mm	>30 dB	>30 dB
Operating temperature	-15...+65 °C	>20 dB	>20 dB
Application temperature range	-5...+50 °C	≥115 dB	≥115 dB
Copper weight	ca. 16 kg/km	≤5 mΩ/m	≤5 mΩ/m
Total weight	ca. 43 kg/km		
Thermal load	ca. 0,67 MJ/m	White	White
Electrical data		43 kg/km	35/75 mm
Impedance	75 Ω	35/75 mm	Class A
Velocity ratio	0,84	Class A	
capacity	52 pF/m		
DC resistance inner conductor	21,5 Ω/km		

### Packaging data

Sales unit	100 m (Cable ring in plastic foil)	500 m (plastic drum)	m
------------	------------------------------------	----------------------	---

# Cable boxes

## MK 91 0252

Coaxial cable Ø 6,5 mm, triple shield, PVC white, COAXBox dispenser carton, length 250 m



MK 91 0252 is a coaxial cable for house installation. The triple shield ensures an undisturbed transmission in the distribution system for cable TV and satellite supply. A glued conductor foil prevents it to shift during assembly.

Technical data	
Installation	Indoor installation
Screening construction	3-way
Inner conductor material	Cu-core
Dielectric	Cell PE/copper braiding MK 15 + Al-foil
Outer conductor diameter	mm Bonded aluminium foil, aluminium foil
Outer jacket material	PVC
Inner conductor diameter	1.02 mm
Dielectricum diameter	4.75 mm
Outer jacket diameter	6.5 mm
Loop resistance	39.5 $\Omega$ /km
Attenuation 5 MHz	1.5 dB (100 m)
Attenuation 50 MHz	4.1 dB (100 m)
Attenuation 600 MHz	15.2 dB (100 m)
Attenuation 1000 MHz	19.9 dB (100 m)
Loss 2200 MHz	30.4 dB (100 m)
Return loss 5...862 MHz	>26 dB
Return loss 862...2500 MHz	>18 dB
Screening factor	$\geq$ 110 dB
Coupling resistance 5...30 MHz	$\leq$ 5 m $\Omega$ /m
General data	
Color	White
Cable weight	36 kg/km
Bending radius single/multiple	35/75 mm
Classification	Class A

Packaging data	
Sales unit	250 m (COAXBox carton)
Dimensions (WxHxD) sales unit	380x280x370 mm
Packaging volume sales unit	34,64 dm <sup>3</sup>
Gross weight sales unit	11,4 kg
Shipping unit	30 pcs.
Dimensions (WxHxD) shipping unit	120x80x155 cm
Packaging volume shipping package	1488dm <sup>3</sup>
Gross weight shipping unit	358 kg
EAN	4010056743482
Article number	74348

### Characteristics

- High screening factor
- Triple shield
- With printed meter indication
- Better DC resistance due to copper inner conductors
- Ageing resistance, foamed dielectric
- Bonded outer foil prevents shifting during assembly
- Even coverage of the cable by dense outer braid
- Class A





## MK 96 A 0252

Coaxial cable Ø 6,8 mm, triple shield, PVC white, in COAXBox dispenser carton, length 250 m



The high-quality triple shielded coax cable MK 96 A with its technical peak value is optimal for the flexible deployment in satellite reception, cable network, terrestrial and multimedia applications. The class A+ (DIN EN 50117-2-4) cable offers with its high screening efficiency of 120 dB best protection of TV signals in all deployment scenarios against external disturbances. With its size of 6.8 mm diameter PVC outer surface MK 96 A is ideal for the customized and simple mounting with WISIs connector systems and commodity connecting devices.

Technical data	
Installation	Indoor installation
Classification	Class A+
Color	White
Construction	
Screening construction	3-way
Inner conductor	Ø 1,02 mm (Cu)
Insulation	Ø 4,75 mm (Foam PE, gas injected)
Outer conductor 1. Foil	Ø 4,85 mm (Al-Pet bonded)
Outer conductor 2. Braid	63 % (CuSn)
Outer conductor 3. Foil	Aluminium
Sheath	Ø 6,8 mm (PVC, white)
Mechanical Data	
Max. permissible force	120 N
Bending radius single/multiple	35/75 mm
Operating temperature	- 15...+ 65 °C
Application temperature range	-5...+50 °C
Copper weight	ca. 16 kg/km
Total weight	ca. 46 kg/km
Thermal load	ca. 0,8 MJ/m
Electrical data	
Impedance	75 Ω
Velocity ratio	0,84
capacity	52 pF/m
DC resistance inner conductor	21,2 Ω/km
DC resistance outer conductor	11,7 Ω/km
Loop resistance	32,9 Ω/km
Rated current	8 A
Attenuation 5 MHz	1,6 dB (100 m)
Attenuation 50 MHz	4,1 dB (100 m)
Attenuation 100 MHz	5,9 dB (100 m)
Attenuation 200 MHz	8,4 dB (100 m)
Attenuation 400 MHz	12,0 dB (100 m)
Attenuation 600 MHz	14,8 dB (100 m)
Attenuation 800 MHz	17,2 dB (100 m)
Attenuation 860 MHz	17,9 dB (100 m)
Attenuation 1000 MHz	19,4 dB (100 m)
Attenuation 1200 MHz	21,4 dB (100 m)
Attenuation 1400 MHz	23,2 dB (100 m)

Technical data	
Attenuation 1600 MHz	24,9 dB (100 m)
Attenuation 2000 MHz	28,2 dB (100 m)
Loss 2200 MHz	29,7 dB (100 m)
Attenuation 2400 MHz	31,4 dB (100 m)
Attenuation 2600 MHz	32,8 dB (100 m)
Attenuation 2800 MHz	34,2 dB (100 m)
Attenuation 3000 MHz	35,6 dB (100 m)
Return loss 5...470 MHz	> 30 dB
Return loss 470...1000 MHz	> 26 dB
Return loss 1000...2000 MHz	> 23 dB
Return loss 2000...3000 MHz	> 20 dB
Coupling resistance 5...30 MHz	≤ 2 mΩ/m
Screening efficiency 30...1000 MHz	≥ 120 dB
Screening efficiency 1000...2000 MHz	≥ 120 dB
Screening efficiency 2000...3000 MHz	≥ 105 dB
Screening class EN 50117-2-4	A+

Packaging data	
Sales unit	250 m (COAXBox carton)
Dimensions (WxHxD) sales unit	380x280x370 mm
Gross weight sales unit	13,4 kg
Dimensions (WxHxD) shipping unit	120x80x155 mm
Gross weight shipping unit	433 kg
EAN	4010056743475
Article number	74347

### Characteristics

- Screening class A+ (EN 50117-2-4)
- 120 dB screening efficiency
- Triple shield
- Transfer impedance 5...30 MHz, ≤2 mΩ/m
- Long lifespan by high-quality materials
- Excellent insulating and installation properties
- Easy mounting with WISI connector systems (DV 85, DV 15, DV 15N und DV 55)
- Certified by Vodafone

# Connection cable



## BK 76 0035

Patch cable, 35 cm, 75 Ohm

## BK 76 0045

Patch cable, 45 cm, 75 Ohm

## BK 96 0030

Patch cable, 30 cm, 75 Ohm

## BK 96 0040

Patch cable, 40 cm, 75 Ohm



### Technical data

Connectors				
F-Quick-plug	2 pcs. (straight, compress)	2 pcs. (straight, compress)	2 pcs. (straight, compress)	2 pcs. (straight, compress)
General data				
Length	0.35 m	0.45 m	0.3 m	0.4 m
Outer jacket material	PVC (RoHS compliant)	PVC (RoHS compliant)	PVC (RoHS compliant)	PVC (RoHS compliant)

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
------------	--------	--------	--------	--------



## DS 35 0035

DATA-connection cable F-Quick + F-Quick, 0,35 m

### Characteristics

- 2x F-Quick
- 0,35 m length

## DS 35 0050

DATA-connection cable F-Quick + F-Quick, 0,5 m

### Characteristics

- 2x F-Quick
- 0,5 m length

## DS 35 0150

DATA-connection cable F-Quick + F-Quick, 1,5 m

### Characteristics

- 2x F-Quick
- 1,5 m length

## DS 35 0250

DATA-connection cable F-Quick + F-Quick, 2,5 m

### Characteristics

- 2x F-Quick
- 2,5 m length



### Technical data

Connectors				
F-Quick-plug	2 pcs. (straight)	2 pcs. (straight)	2 pcs. (straight)	2 pcs. (straight)
General data				
Length	0.35 m	0.5 m	1.5 m	2.5 m
Outer jacket material	PVC (RoHS compliant)	PVC (RoHS compliant)	PVC (RoHS compliant)	PVC (RoHS compliant)
Operating temperature range	-15...+65 °C	-15...+65 °C	-15...+65 °C	-15...+65 °C

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
------------	--------	--------	--------	--------



## DS 26 0301

DATA-connection cable,  
F-Quick + WICLIC-angle  
plug, 3 m

## DS 26 0501

DATA-connection cable,  
F-Quick + WICLIC-angle  
plug, 5 m

## DS 26 0901

DATA-connection cable,  
F-Quick + WICLIC-angle  
plug, 9 m



### Technical data

#### Connectors

F-Quick-plug	1 pcs. (straight)	1 pcs. (straight)	1 pcs. (straight)
Wiclic quick plug	1 pcs. (tilted)	1 pcs. (tilted)	1 pcs. (tilted)

#### General data

Length	3 m	5 m	9 m
Outer jacket material	PVC (RoHS compliant)	PVC (RoHS compliant)	PVC (RoHS compliant)
Operating temperature range	-15...+65 °C	-15...+65 °C	-15...+65 °C

#### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.
------------	--------	--------	--------

# Connection cable



## DS 30 U 0150

connecting cable F-Quick / Wiclic angled  
1,5 m



## DS 30 U 0300

connecting cable F-Quick / Wiclic angled  
3 m



## DS 30 U 0900

connecting cable F-Quick / Wiclic angled  
9 m



### Technical data

#### Mechanical Data

Length	1,5 m	3,0 m	9,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectricum diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	Al/Pet bonded	Al/Pet bonded	Al/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	Al/Pet	Al/Pet	Al/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White
Text	(DS30U 0150 105dB WISI YYY,WW)	(DS30U 0300 105dB WISI YYY,WW)	(DS30U 0900 105dB WISI YYY,WW)

#### F-quick connector

	(IEC 61169-47)	(IEC 61169-47)	(IEC 61169-47)
F-quick-male outer conductor	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring
F-quick-male inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)
Pull off / push on force F-quick	≥40 N	≥40 N	≥40 N

#### Wiclic angled

Wiclic outer conductor 1	Contact: BECU / white bronze plated	Contact: BECU / white bronze plated	Contact: BECU / white bronze plated
Wiclic outer conductor 2	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Wiclic inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)

### Packaging data

Sales unit	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)
------------	---------------------------------	---------------------------------	---------------------------------



## DS 32 U 0125

connecting  
cable IEC con-  
nector/Wiclic  
angled 1,25 m

## DS 32 U 0150

connecting  
cable IEC male  
/ Wiclic angled  
1,5 m

## DS 32 U 0300

connecting  
cable IEC male  
/ Wiclic angled  
3 m

## DS 32 U 0600

connecting  
cable IEC male  
/ Wiclic angled  
6 m

## DS 32 U 0900

connecting  
cable IEC male  
/ Wiclic angled  
9 m



### Technical data

#### Mechanical Data

Length	1,25 m	1,5 m	3,0 m	6,0 m	9,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / con- nector	>130 N Cable / con- nector	>130 N Cable / con- nector	>130 N Cable / con- nector	>130 N Cable / con- nector
Bending radius	30 mm	30 mm	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE	PE	PE
Dielectricum diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	AL/Pet	AL/Pet	AL/Pet	AL/Pet	AL/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White	3 mm White	3 mm White
Text	(DS32U 0125 105dB WISI YYY,WW)	(DS32U 0150 105dB WISI YYY,WW)	(DS32U 0300 105dB WISI YYY,WW)	(DS32U 0600 105dB WISI YYY,WW)	(DS32U 0900 105dB WISI YYY,WW)

#### IEC connector

IEC-male outer conductor	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	≥40 N	≥40 N	≥40 N	≥40 N	≥40 N

#### Wiclic angled

Wiclic outer conductor 1	Contact: BECU / white bronze plated	Contact: BECU / white bronze plated	Contact: BECU / white bronze plated	Contact: BECU / white bronze plated	Contact: BECU / white bronze plated
Wiclic outer conductor 2	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Wiclic inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)

# Connection cable



## DS 37 U 0150

connecting cable IEC-  
female / IEC-male, 1,5  
m



## DS 37 U 0250

connecting cable IEC-  
female / IEC-male, 2,5  
m



## DS 37 U 0300

connecting cable IEC-  
female / IEC-male, 3 m



### Technical data

#### Mechanical Data

	1,5 m	2,5 m	3,0 m
Length	1,5 m	2,5 m	3,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

	1,5 m	2,5 m	3,0 m
Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectric diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	Al/Pet bonded	Al/Pet bonded	Al/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	Al/Pet	Al/Pet	Al/Pet

#### Labeling

	1,5 m	2,5 m	3,0 m
Character height	3 mm White	3 mm White	3 mm White
Text	(DS37U 0150 105dB WISI YYY,WW)	(DS37U 0250 105dB WISI YYY,WW)	(DS37U 0300 105dB WISI YYY,WW)

#### IEC connector

	1,5 m	2,5 m	3,0 m
IEC connector	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-male outer conductor	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	≥40 N	≥40 N	≥40 N
IEC-female outer conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring
IEC-female inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)

#### Electrical data

	1,5 m	2,5 m	3,0 m
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz

### Packaging data

	1,5 m	2,5 m	3,0 m
Sales unit	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)



## DS 37 U 0500

connecting cable IEC-  
female / IEC-male, 5 m

## DS 37 U 0750

connecting cable IEC-  
female / IEC-male, 7,5  
m

## DS 37 U 1000

connecting cable IEC-  
female / IEC-male, 10  
m



### Technical data

#### Mechanical Data

	5,0 m	7,5 m	10,0 m
Length	5,0 m	7,5 m	10,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

	5,0 m	7,5 m	10,0 m
Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectricum diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	AL/Pet	AL/Pet	AL/Pet

#### Labeling

	5,0 m	7,5 m	10,0 m
Character height	3 mm White	3 mm White	3 mm White
Text	(DS37U 0500 105dB WISI YYY,WW)	(DS37U 0750 105dB WISI YYY,WW)	(DS37U 1000 105dB WISI YYY,WW)

#### IEC connector

	5,0 m	7,5 m	10,0 m
IEC-male outer conductor	(IEC 61169-2) Brass, plating white bronze. Color code: blue ring	(IEC 61169-2) Brass, plating white bronze. Color code: blue ring	(IEC 61169-2) Brass, plating white bronze. Color code: blue ring
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	≥40 N	≥40 N	≥40 N
IEC-female outer conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring
IEC-female inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)

#### Electrical data

	5,0 m	7,5 m	10,0 m
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz

### Packaging data

	5,0 m	7,5 m	10,0 m
Sales unit	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)

# Connection cable



## DS 38 U 0150

connecting cable  
F-Quick / IEC-  
female, 1,5 m

## DS 38 U 0250

connecting cable  
F-Quick / IEC-  
female, 2,5 m

## DS 38 U 0300

connecting cable  
F-Quick / IEC-  
female, 3 m

## DS 38 U 0500

connecting cable  
F-Quick / IEC-  
female, 5 m



### Technical data

#### Mechanical Data

Length	1,5 m	2,5 m	3,0 m	5,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE	PE
Dielectric diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	AL/Pet	AL/Pet	AL/Pet	AL/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White	3 mm White
Text	(DS38U 0150 105dB WISI YYY,WW)	(DS38U 0250 105dB WISI YYY,WW)	(DS38U 0300 105dB WISI YYY,WW)	(DS38U 0500 105dB WISI YYY,WW)

#### F-quick connector

	(IEC 61169-47)	(IEC 61169-47)	(IEC 61169-47)	(IEC 61169-47)
F-quick-male outer conductor	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring
F-quick-male inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)

Pull off / push on force F-quick	≥40 N	≥40 N	≥40 N	≥40 N
----------------------------------	-------	-------	-------	-------

#### IEC connector

	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-female outer conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring
IEC-female inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)

Pull off / push on force IEC	≥40 N	≥40 N	≥40 N	≥40 N
------------------------------	-------	-------	-------	-------





## DS 39 U 0150

connecting cable F-Quick / IEC-  
male, 1,5 m

## DS 39 U 0250

connecting cable F-Quick / IEC-  
male, 2,5 m



### Technical data

#### Mechanical Data

Length	1,5 m	2,5 m
Bend protection	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm
Outer jacket material	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE
Dielectric diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	AL/Pet bonded	AL/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	AL/Pet	AL/Pet

#### Labeling

Character height	3 mm White	3 mm White
Text	(DS39U 0150 105dB WISI YYY,WW)	(DS39U 0250 105dB WISI YYY,WW)

#### F-quick connector

	(IEC 61169-47)	(IEC 61169-47)
F-quick-male outer conductor	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring
F-quick-male inner conductor	Brass, (Plating gold)	Brass, (Plating gold)
Pull off / push on force F-quick	≥40 N	≥40 N

#### IEC connector

	(IEC 61169-2)	(IEC 61169-2)
IEC-male outer conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	≥40 N	≥40 N

# Connection cable



## DS 39 U 0300

connecting cable F-Quick / IEC-male, 3 m

## DS 39 U 0500

connecting cable F-Quick / IEC-male, 5 m

## DS 39 U 1000

connecting cable F-Quick / IEC-male, 10 m



### Technical data

#### Mechanical Data

Length	3,0 m	5,0 m	10,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)
<b>Cable construction</b>			
Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectric diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	Al/Pet bonded	Al/Pet bonded	Al/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	Al/Pet	Al/Pet	Al/Pet
<b>Labeling</b>			
Character height	3 mm White	3 mm White	3 mm White
Text	(DS39U 0300 105dB WISI YYY,WW)	(DS39U 0500 105dB WISI YYY,WW)	(DS39U 1000 105dB WISI YYY,WW)
<b>F-quick connector</b>	(IEC 61169-47)	(IEC 61169-47)	(IEC 61169-47)
F-quick-male outer conductor	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring
F-quick-male inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)
Pull off / push on force F-quick	≥40 N	≥40 N	≥40 N
<b>IEC connector</b>	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-male outer conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	≥40 N	≥40 N	≥40 N



## DS 40 U 0150

connecting cable F-Quick / F-Quick angled, 1,5 m

## DS 40 U 0300

connecting cable F-Quick / F-Quick angled, 3 m

## DS 40 U 0500

connecting cable F-Quick / F-Quick angled, 5 m



### Technical data

#### Mechanical Data

Length	1,5 m	3,0 m	5,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectricum diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	Al/Pet bonded	Al/Pet bonded	Al/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	Al/Pet	Al/Pet	Al/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White
Text	(DS40U 0150 105dB WISI YYY,WW)	(DS40U 0300 105dB WISI YYY,WW)	(DS40U 0500 105dB WISI YYY,WW)

#### F-quick connector

F-quick connector	(IEC 61169-47)	(IEC 61169-47)	(IEC 61169-47)
F-quick connector angled	(IEC 61169-47)	(IEC 61169-47)	(IEC 61169-47)
F-quick-male outer conductor	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring
F-quick-male inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)
Pull off / push on force F-quick	≥40 N	≥40 N	≥40 N

#### Electrical data

Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz
Insertion loss at 1006 MHz	<0,9 dB	<0,9 dB	<0,9 dB

# Connection cable



## DS 46 U 0150

connecting cable IEC female / IEC Stecker angled, 1,5 m



## DS 46 U 0300

connecting cable IEC female / IEC Stecker angled, 3 m



## DS 46 U 0500

connecting cable IEC female / IEC Stecker angled, 5 m



### Technical data

#### Mechanical Data

Length	1,5 m	3,0 m	5,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)
<b>Cable construction</b>			
Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectricum diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	Al/Pet bonded	Al/Pet bonded	Al/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	Al/Pet	Al/Pet	Al/Pet
<b>Labeling</b>			
Character height	3 mm White	3 mm White	3 mm White
Text	(DS46U 0150 105dB WISI YYY,WW)	(DS46U 0300 105dB WISI YYY,WW)	(DS46U 0500 105dB WISI YYY,WW)
<b>IEC connector</b>	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-female outer conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring
IEC-female inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
<b>IEC male angled</b>	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-male outer conductor	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	≥40 N	≥40 N	≥40 N



## DS 47 U 0150

connecting cable IEC male / IEC female angled, 1,5 m

## DS 47 U 0300

connecting cable IEC male / IEC female angled, 3 m

## DS 47 U 0500

connecting cable IEC male / IEC female angled, 5 m



### Technical data

#### Mechanical Data

Length	1,5 m	3,0 m	5,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectric diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	AL/Pet	AL/Pet	AL/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White
Text	(DS47U 0150 105dB WISI YYY,WW)	(DS47U 0300 105dB WISI YYY,WW)	(DS47U 0500 105dB WISI YYY,WW)

#### IEC female angled

IEC-female outer conductor	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-female inner conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring

#### IEC male

IEC-male outer conductor	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring	Brass, plating white bronze. Color code: blue ring
	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
	≥40 N	≥40 N	≥40 N

# Connection cable



## DS 48 U 0150

connecting cable F-Quick / IEC male angled, 1,5 m



## DS 48 U 0300

connecting cable F-Quick / IEC male angled, 3 m



## DS 48 U 0500

connecting cable F-Quick / IEC male angled, 5 m



### Technical data

#### Mechanical Data

Length	1,5 m	3,0 m	5,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectric diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	Al/Pet bonded	Al/Pet bonded	Al/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	Al/Pet	Al/Pet	Al/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White
Text	(DS48U 0150 105dB WISI YYY,WWW)	(DS48U 0300 105dB WISI YYY,WWW)	(DS48U 0500 105dB WISI YYY,WWW)

#### F-quick connector

F-quick-male outer conductor	(IEC 61169-47)	(IEC 61169-47)	(IEC 61169-47)
F-quick-male inner conductor	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring
Pull off / push on force F-quick	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)
	≥40 N	≥40 N	≥40 N

#### IEC female angled

IEC-female outer conductor	(IEC 61169-2)	(IEC 61169-2)	(IEC 61169-2)
IEC-female inner conductor	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring	Brass, plating white bronze. Color code: green ring
Pull off / push on force IEC	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
	≥40 N	≥40 N	≥40 N



## DS 49 U 0150

connecting cable IEC-  
male / F-Quick angled,  
1,5 m



## DS 49 U 0300

connecting cable IEC-  
male / F-Quick angled,  
3 m



## DS 49 U 0500

Connecting cable IEC-  
male / F-Quick angled,  
5 m



### Technical data

#### Mechanical Data

Length	1,5 m	3,0 m	5,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE
Dielectricum diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	AL/Pet	AL/Pet	AL/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White
Text	(DS49U 0150 105dB WISI YYY,WW)	(DS49U 0300 105dB WISI YYY,WW)	(DS49U 0500 105dB WISI YYY,WW)

#### F-quick connector angled

F-quick-male outer conductor	(IEC 61169-47) Brass, Plating white bronze. Color code: red ring	(IEC 61169-47) Brass, Plating white bronze. Color code: red ring	(IEC 61169-47) Brass, Plating white bronze. Color code: red ring
F-quick-male inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)
Pull off / push on force F-quick	≥40 N	≥40 N	≥40 N

#### IEC male

IEC-male outer conductor	(IEC 61169-2) Brass, plating white bronze. Color code: blue ring	(IEC 61169-2) Brass, plating white bronze. Color code: blue ring	(IEC 61169-2) Brass, plating white bronze. Color code: blue ring
IEC-male inner conductor	Brass, (plating white bronze)	Brass, (plating white bronze)	Brass, (plating white bronze)
Pull off / push on force IEC	N	N	N

### Packaging data

Sales unit	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)	1 pcs. (individual plastic bag)
------------	---------------------------------	---------------------------------	---------------------------------

# Connection cable



## DS 50 U 0150

connecting cable  
F-Quick / F-Quick,  
1,5 m

## DS 50 U 0250

connecting cable  
F-Quick / F-Quick,  
2,5 m

## DS 50 U 0300

connecting cable  
F-Quick/ F-Quick,  
3 m

## DS 50 U 0500

connecting cable  
F-Quick / F-Quick,  
5 m



### Technical data

#### Mechanical Data

Length	1,5 m	2,5 m	3,0 m	5,0 m
Bend protection	Shrink tube	Shrink tube	Shrink tube	Shrink tube
Breaking stress	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector	>130 N Cable / connector
Bending radius	30 mm	30 mm	30 mm	30 mm
Outer jacket material	PVC black	PVC black	PVC black	PVC black
Outer jacket diameter	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)	Ø 5,00 mm (±0,1 mm)

#### Cable construction

Inner conductor material	Cu-core	Cu-core	Cu-core	Cu-core
Inner conductor diameter	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)	Ø 0,8 mm (±0,02 mm)
Dielectric	PE	PE	PE	PE
Dielectricum diameter	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)	Ø 3,55 mm (±0,05 mm)
Outer conductor 1	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded	AL/Pet bonded
Outer conductor 2	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)	Braid TCCA 24 x 4 x 0,12 (75% coverage)
Outer conductor 3	AL/Pet	AL/Pet	AL/Pet	AL/Pet

#### Labeling

Character height	3 mm White	3 mm White	3 mm White	3 mm White
Text	(DS50U 0150 105dB WISI YYY,WW)	(DS50U 0250 105dB WISI YYY,WW)	(DS50U 0300 105dB WISI YYY,WW)	(DS50U 0500 105dB WISI YYY,WW)

#### F-quick connector

F-quick-male outer conductor	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring	Brass, Plating white bronze. Color code: red ring
F-quick-male inner conductor	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)	Brass, (Plating gold)
Pull off / push on force F-quick	≥40 N	≥40 N	≥40 N	≥40 N

#### Electrical data

Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz	5...2400 MHz
Insertion loss at 1006 MHz	<0,9 dB	<0,9 dB	<1,8 dB	<3,0 dB
Insertion loss at 2400 MHz	<1,3 dB	<1,3 dB	<2,7 dB	<4,5 dB





WISI antennas:

# Perfect reception at every weather

**Corrosion-resistant aluminum reflector, powder-coated**

for a discreet installation available in **three colours**

**Reinforced back panel** for more stability

**easy mounting** of the reflector thru suspension unit

**Feed holder** made of die cast aluminum

**Cable management** for aesthetic assembly





# Satellite Receiving Systems

**Communication defines our everyday life, informs us, imparts knowledge and experience. It supports our understanding and helps us solving problems.**

WISI's highly-motivated staff is fully committed to provide you with the state-of-the-art technology for communication today and tomorrow.

**WISI TOPLINE antennas** are rustproof and completely weatherproof. Due to the excellent material and precise manufacturing, the antennas do not warp even with extreme temperature fluctuations. This guarantees a top picture quality in almost all weather conditions.

Of course WISI TOPLINE antennas are extremely easy to install, highly resilient, durable, recyclable and designed for modern technologies. So simply the best that WISI have to offer in antenna technology.

upgradeable with  
**optional multifeed  
bar** for up to 4 LNBS



**GOLD PLATED  
CONNECTIONS  
FOR A BETTER CONTACT**

**WISI feed systems** can be used with all antennas that have a 40 mm feed mount. They are easy to adjust and also suitable with Duo Feed mounts for the reception of ASTRA and EUTELSAT.

WISI feed systems are characterized by a high linear performance over the complete frequency range. They have a low-noise and are energy-saving. Each WISI feed system gets a final inspection in the laboratory - for a long untroubled reception.

The special construction and tie-down weather protection cap provide protection against all weather conditions, even after many years.

# Parabol offset antennas

## OA 13 A

Orbit Line parabol offset antenna, 125 cm, light grey



Technical data	
gain	43 dB (12 GHz)
Aperture angle	<1,37 ° (3 dB)
Wind load up to 20m mounting height	1450 N
General data	
Reflector material	Aluminium, powder-coated
Reflector colour	Light grey (RAL 7035)
Diameter	125 cm
Mounting clip	55...100 mm
Setting range elevation	20...50 °
Weight	12,8 kg

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	140 x 130 x 15 / Zubehör: 100 x 27 x 35 mm
Gross weight sales unit	22.000 kg
Gross weight shipping unit	33 kg
EAN	4010056175665
Article number	17566

Aluminium offset antennas , light-grey. Hot zinc dipped fastening in reflector colour, powder-coated.

## OA 10

Orbit Line parabol offset antenna, 100 cm, light grey



Technical data	
gain	38...40 dB
Aperture angle	<1,8 ° (3 dB)
Wind load up to 20m mounting height	872 N
General data	
Reflector material	Aluminium
Reflector colour	Light grey (RAL 7035)
Diameter	100 cm
Mounting clip	32...80 mm
Setting range elevation	15...55 °
Weight	11 kg

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	1080 x 1100 x 120 mm
Gross weight sales unit	11.000 kg
Gross weight shipping unit	11 kg
EAN	4010056114107
Article number	11410

Aluminium offset antenna, light grey. Mast fixing hot-dip galvanized, feed holder 40 mm. Mast or wall mounting.



## OA 36 G

Orbit Line parabol offset antenna, 60 cm, light grey



## OA 36 H

Orbit Line Parabol offset antenna, 60 cm, basalt grey



## OA 36 I

Orbit Line Parabol off-set antenna, 60 cm, red brown



Technical data			
gain	35 dB	35 dB	35 dB
Aperture angle	<3,0 ° (3 dB)	<3,0 ° (3 dB)	<3,0 ° (3 dB)
Wind load up to 20m mounting height	280 N	280 N	280 N
General data			
Reflector material	Aluminium, powder-coated	Aluminium, powder-coated	Aluminium, powder-coated
Reflector colour	Light grey (RAL 7035)	Basalt grey (RAL 7012)	red brown (RAL 8012)
Diameter	60 cm	60 cm	60 cm
Mounting clip	32...60 mm	32...60 mm	32...60 mm
Setting range elevation	16...50 °	16...50 °	16...50 °
Weight	1.6 kg	1.6 kg	1.6 kg
Packaging data			
Sales unit	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	620 x 115 x 690 mm	620 x 115 x 690 mm	620 x 115 x 690 mm
Gross weight sales unit	3.100 kg	3.100 kg	3.100 kg
Shipping unit	18 pcs.	18 pcs.	18 pcs.
Gross weight shipping unit	3.1 kg	3.1 kg	3.1 kg
EAN	4010056134259	4010056134266	4010056134273
Article number	13425	13426	13427

# Parabol offset antennas

## OA 38 G

Orbit Line parabol offset antenna, 80 cm, light grey



## OA 38 H

Orbit Line Parabol offset antenna, 80 cm, basalt grey



## OA 38 I

Orbit Line Parabol off-set antenna, 80 cm, red brown



Technical data			
gain	37 dB	37 dB	37 dB
Aperture angle	<2,5 ° (3 dB)	<2,5 ° (3 dB)	<2,5 ° (3 dB)
Wind load up to 20m mounting height	525 N	525 N	525 N
General data			
Reflector material	Aluminium, powder-coated	Aluminium, powder-coated	Aluminium, powder-coated
Reflector colour	Light grey (RAL 7035)	Basalt grey (RAL 7012)	red brown (RAL 8012)
Diameter	80 cm	80 cm	80 cm
Mounting clip	32...60 mm	32...60 mm	32...60 mm
Setting range elevation	16...50 °	16...50 °	16...50 °
Weight	3.8 kg	3.8 kg	3.8 kg
Packaging data			
Sales unit	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	780 x 140 x 870 mm	780 x 140 x 870 mm	780 x 140 x 870 mm
Gross weight sales unit	5.600 kg	5.600 kg	5.600 kg
Shipping unit	15 pcs.	15 pcs.	15 pcs.
Gross weight shipping unit	5.6 kg	5.6 kg	5.6 kg
EAN	4010056134280	4010056134297	4010056134303
Article number	13428	13429	13430



## OA 85 G

Orbit Topline parabol offset antenna, 85 cm, light grey



## OA 85 H

Orbit Topline Parabol offset antenna, 85 cm, basalt grey



## OA 85 I

Orbit Topline Parabol offset antenna, 85 cm, red brown



### Technical data

gain	37 dB (12 GHz)	37 dB (12 GHz)	37 dB (12 GHz)
Aperture angle	<2,2 ° (3 dB)	<2,2 ° (3 dB)	<2,2 ° (3 dB)
Wind load up to 20m mounting height	478 N	478 N	478 N
<b>General data</b>			
Reflector material	Aluminium, powder-coated	Aluminium, powder-coated	Aluminium, powder-coated
Reflector colour	Light grey (RAL 7035)	Basalt grey (RAL 7012)	red brown (RAL 8012)
Diameter	85 cm	85 cm	85 cm
Mounting clip	32...76 mm	32...76 mm	32...76 mm
Setting range elevation	0...90 °	0...90 °	0...90 °
Weight	5.8 kg	5.8 kg	5.8 kg

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	770 x 200 x 895 mm	910 x 780 x 200 mm	770 x 200 x 895 mm
Gross weight sales unit	8.600 kg	8.600 kg	8.600 kg
Gross weight shipping unit	8.6 kg	8.6 kg	8.6 kg
EAN	4010056189082	4010056189105	4010056189112
Article number	18908	18910	18911

# Parabol offset antennas

## OA 100 G

Orbit Topline Parabol offset antenna, 100 cm, light grey



## OA 100 H

Orbit Topline Parabol offset antenna, 100 cm, basalt grey



## OA 100 I

Orbit Topline Parabol offset antenna, 100 cm, red brown



Technical data			
gain	39,8...40,9 dB (12 GHz)	39,8...40,9 dB (12 GHz)	39,8...40,9 dB (12 GHz)
Aperture angle	<1,8 ° (3 dB)	<1,8 ° (3 dB)	<1,8 ° (3 dB)
General data			
Reflector material	Aluminium, powder-coated	Aluminium, powder-coated	Aluminium, powder-coated
Reflector colour	Light grey (RAL 7035)	Basalt grey (RAL 7012)	red brown (RAL 8012)
Diameter	100 cm	100 cm	100 cm
Mounting clip	32...76 mm	32...76 mm	32...76 mm
Setting range elevation	5...70 °	5...70 °	5...70 °
Packaging data			
Sales unit	1 pcs.	1 pcs.	1 pcs.
Gross weight sales unit	11 kg	11 kg	11.000 kg
Gross weight shipping unit	11 kg	11 kg	11 kg
EAN	4010056730567	4010056730574	4010056730581
Article number	73056	73057	73058



# Feed systems



## OC 06 D

Universal feed system, Quad-Switch



## OC 01 D

Universal feed system, Single



## OC 02 D

Universal feed system, Twin, light grey



## OC 04 D

Universal feed system, Quattro



### Technical data

Subscriber	4 pcs.	1 pcs.	2 pcs.	pcs. Depending on the multiswitch
Type	QUAD-SWITCH	SINGLE	TWIN	QUATTRO
Input frequency	10,70...11,70/11,70...12,75 GHz (Low-Band/High-Band)	10,70...11,70/11,70...12,75 GHz (Low-Band/High-Band)	10,70...11,70/11,70...12,75 GHz (Low-Band/High-Band)	10,70...11,70/11,70...12,75 GHz (Low-Band/High-Band)
Oscillator frequency	9,75/10,6 GHz (Low-Band/High-Band)	9,75/10,6 GHz (Low-Band/High-Band)	9,75/10,6 GHz (Low-Band/High-Band)	9,75/10,6 GHz (Low-Band/High-Band)
Output frequency range	950...2150 MHz	950...2150 MHz	950...2150 MHz	950...2150 MHz
<b>Connectors</b>				
F-socket	4 pcs.	1 pcs.	2 pcs.	4 pcs.
<b>General data</b>				
LNB supply voltage	11...14,2/15,5...21 V (Vertical/Horizontal, 22 kHz)	11...14,2/15,5...21 V (Vertical/Horizontal, 22 kHz)	11...14,2/15,5...21 V (Vertical/Horizontal, 22 kHz)	11...21 V
Power consumption max.	200 mA	120 mA	180 mA	200 mA
Color	Light grey (RAL 7035)	Light grey (RAL 7035)	Light grey (RAL 7035)	Light grey (RAL 7035)
Feed diameter	40 mm	40 mm	40 mm	40 mm
Operating temperature range	-30...+60 °C	-30...+60 °C	-30...+60 °C	-30...+60 °C

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	164 x 116 x 66 mm	116 x 97 x 55 mm	134 x 136 x 66 mm	164 x 116 x 66 mm
Gross weight sales unit	0.348 kg	0.148 kg	0.256 kg	0.350 kg
Shipping unit	10 pcs.	10 pcs.	10 pcs.	10 pcs.
Gross weight shipping unit	0,243 kg	0,132 kg	0,181 kg	0,243 kg
EAN	4010056737924	4010056737931	4010056737948	4010056737917
Article number	73792	73793	73794	73791

# Accessories Parabol offset antennas

## OF 85 0002

multifeed bar for 2 feed systems

## OF 85 0004

multifeed bar for 4 feed systems



Technical data		
Number feedsystems	2 pcs.	4 pcs.
Type of offset antenna	OA 38, OA 85, OA 100	OA 38, OA 85, OA 100
Diameter	40 mm	40 mm
General data		
Color	silver	silver
Packaging data		
Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	25 x 8 x 3 mm	43 x 8 x 3 mm
Packaging volume sales unit	dm <sup>3</sup>	dm <sup>3</sup>
Gross weight sales unit	0.138 kg	0.277 kg
Shipping unit	1 pcs.	1 pcs.
Dimensions (WxHxD) shipping unit	mm	mm
Packaging volume shipping package		
Gross weight shipping unit	0.05 kg	0.25 kg
EAN	4010056189129	4010056189136
Article number	18912	18913

# Multiswitch, Stand alone, 5 inputs



## DG 508

Multiswitch, stand alone, 5 inputs, 8 participant outputs



## DG 514

multiswitch, stand alone, 5 inputs, 14 participant outputs



Technical data		
<b>SAT-IF trunk</b>		
Inputs SAT	4 pcs.	4 pcs.
Frequency range SAT	950...2150 MHz	950...2150 MHz
<b>Terrestrial trunk</b>		
Inputs TERR	1 pcs.	1 pcs.
Frequency range TERR	47...862 MHz	47...862 MHz
Subscriber outputs	8 pcs.	14 pcs.
Frequency range	47...2150 MHz	47...2150 MHz
Tap loss TERR	27 dB	27 dB
Tap loss SAT	-3...+3 dB	-3...+3 dB
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	22/30 dB	22/30 dB
<b>Connectors</b>		
F-socket	14 pcs.	14 pcs.
<b>General data</b>		
Operating voltage AC	10...19 V	10...19 V
Power consumption	0,3 W	0,3 W
Power consumption max.	30 mA (without LNB)	30 mA (without LNB)
LNB supply voltage	13/18 V LNB-feed over participants output	13/18 V LNB-feed over participants output
LNB electrical power supply	No LNB supply. Supply via participants outputs from the receiver	No LNB supply. Supply via participants outputs from the receiver
Dimensions (width x height x depth)	139x139x37 mm	139x139x37 mm
Control signal	22 kHz (13/18 V)	22 kHz (13/18 V)
Operating temperature range	-20...+50 °C	-20...+50 °C
<b>Packaging data</b>		
Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	170 x 160 x 50 mm	mm
Gross weight sales unit	0.600 kg	0.580 kg
Shipping unit	5 pcs.	5 pcs.
Gross weight shipping unit	5 kg	5 kg
EAN	4010056731175	4010056731182
Article number	73117	73118

# Multiswitch, cascade, 5 inputs

## DY 12

Multiswitch, stand alone & cascade



## DY 16

Multiswitch, stand alone & cascade



### Technical data

#### SAT-IF trunk

Inputs SAT	4 pcs.	4 pcs.
Frequency range SAT	950...2400 MHz	950...2400 MHz
Gain SAT	12 dB	12 dB
Decoupling SAT -SAT	30 dB	30 dB
Output level SAT	103 dB	103 dB

#### Terrestrial trunk

Inputs TERR	1 pcs.	1 pcs.
Frequency range TERR	5...862 MHz	5...862 MHz
Through loss TERR	8.5 dB	8.5 dB
Subscriber outputs	12 pcs.	16 pcs.
Frequency range	5...2400 MHz	5...2400 MHz
Tap loss TERR	22 dB	22 dB
Tap loss SAT	0 dB	0 dB
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB	>30 dB

#### Connectors

F-socket	22 pcs.	26 pcs.
----------	---------	---------

#### General data

Operating voltage AC	230 V (50/60 Hz)	230 V (50/60 Hz)
Operating voltage DC	13 V DC	13 V DC
Power input standby	<2,7 W	<1,5 W
Power consumption	17,5/<1,5 W (with LNB/without LNB)	17,5/<2,7 W (with LNB/without LNB )
LNB supply voltage	14 V	14 V
LNB electrical power supply	0.35 A	0.35 A
Screening factor	Class A, EN 50083-2	Class A, EN 50083-2

### Packaging data

Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	207 x 140 x 64 mm	230 x 150 x 65 mm
Gross weight sales unit	1.100 kg	1.110 kg
Shipping unit	5 pcs.	5 pcs.
Packaging volume shipping package	1.85dm <sup>3</sup>	2.24dm <sup>3</sup>
Gross weight shipping unit	1.1 kg	1.11 kg
EAN	4010056132415	4010056130381
Article number	13241	13038

# Multiswitch, cascade, 5 inputs



## DY 44 A

Multiswitch, cascade



KLASSE  
A  
CLASS

## DY 46 A

Multiswitch, cascade



KLASSE  
A  
CLASS

### Technical data

#### SAT-IF trunk

Inputs SAT	4 pcs.	4 pcs.
Frequency range SAT	950...2400 MHz	950...2400 MHz
Through loss SAT	1,3...3,4 dB	1,3...3,4 dB
Decoupling SAT -SAT	>30 dB	>30 dB

#### Terrestrial trunk

Inputs TERR	1 pcs.	1 pcs.
Frequency range TERR	5...862 MHz	5...862 MHz
Through loss TERR	5.5 dB	5.5 dB
Subscriber outputs	4 pcs.	6 pcs.
Frequency range	5...2400 MHz	5...2400 MHz
Tap loss TERR	22 dB (5 dB-slope)	22 dB (5 dB slope)
Tap loss SAT	21...16 dB (5 dB-slope)	21...16 dB (5 dB slope)
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB	>30 dB

#### Connectors

F-socket	14 pcs.	16 pcs.
----------	---------	---------

#### General data

Screening factor	Class A, EN 50083-2	Class A, EN 50083-2
Dimensions (width x height x depth)	139x139x27 mm	139x139x27 mm
Cascadable with	DY 44A...48A, DY 54B...58B, DY 12, DY 16, DY 50A	DY 44A...48A, DY 54B...58B, DY12, DY 16, DY 50A
Control signal	22 kHz (13/18 V)	22 kHz (13/18 V)

### Packaging data

Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	230 x 150 x 65 mm	230 x 150 x 65 mm
Gross weight sales unit	0.700 kg	0.620 kg
Shipping unit	5 pcs.	5 pcs.
Packaging volume shipping package	2.24dm <sup>3</sup>	2.24dm <sup>3</sup>
Gross weight shipping unit	0.7 kg	0.62 kg
EAN	4010056137748	4010056137755
Article number	13774	13775

# Multischalter, cascade, 5 inputs

## DY 44 A

Multiswitch, cascade



## DY 46 A

Multiswitch, cascade



### Technical data

#### SAT-IF trunk

Inputs SAT	4 pcs.	4 pcs.
Frequency range SAT	950...2400 MHz	950...2400 MHz
Through loss SAT	1,3...3,4 dB	1,3...3,4 dB
Decoupling SAT -SAT	>30 dB	>30 dB

#### Terrestrial trunk

Inputs TERR	1 pcs.	1 pcs.
Frequency range TERR	5...862 MHz	5...862 MHz
Through loss TERR	5.5 dB	5.5 dB
Subscriber outputs	4 pcs.	6 pcs.
Frequency range	5...2400 MHz	5...2400 MHz
Tap loss TERR	22 dB (5 dB-slope)	22 dB (5 dB slope)
Tap loss SAT	21...16 dB (5 dB-slope)	21...16 dB (5 dB slope)
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB	>30 dB

#### Connectors

F-socket	14 pcs.	16 pcs.
----------	---------	---------

#### General data

Screening factor	Class A, EN 50083-2	Class A, EN 50083-2
Dimensions (width x height x depth)	139x139x27 mm	139x139x27 mm
Cascadable with	DY 44A...48A, DY 54B...58B, DY 12, DY 16, DY 50A	DY 44A...48A, DY 54B...58B, DY12, DY 16, DY 50A
Control signal	22 kHz (13/18 V)	22 kHz (13/18 V)

### Packaging data

Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	230 x 150 x 65 mm	230 x 150 x 65 mm
Gross weight sales unit	0.700 kg	0.620 kg
Shipping unit	5 pcs.	5 pcs.
Packaging volume shipping package	2.24dm <sup>3</sup>	2.24dm <sup>3</sup>
Gross weight shipping unit	0.7 kg	0.62 kg
EAN	4010056137748	4010056137755
Article number	13774	13775

# Multiswitch, cascade, 5 inputs



## DY 48 A

Multiswitch, cascade



The DY 48 A is a cascadable multiswitch with 8 subscriber outputs. The terrestrial signals are generally distributed passively. The insertion loss at SAT takes 1.3 to 3.4 dB. The power supply to the multiswitch can be achieved via the connected terminals, but it is also possible to supply power through a separate power supply unit. The multiswitch is cascadable with DY 44A-48A, DY 54B-58B, DY 12, DY 16 and DY 50A.

### Technical data

#### SAT-IF trunk

Inputs SAT	4 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	1,3...3,4 dB
Decoupling SAT -SAT	>30 dB

#### Terrestrial trunk

Inputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	5.5 dB
Subscriber outputs	8 pcs.
Frequency range	5...2400 MHz
Tap loss TERR	22 dB (5 dB slope)
Tap loss SAT	21...16 dB (5 dB slope)
Decoupling Subscriber - Subscriber TERR	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB

#### Connectors

F-socket	18 pcs.
----------	---------

#### General data

Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	139x139x27 mm
Cascadable with	DY 44A...48A, DY 54B...58B, DY 12, DY 16, DY 50A
Control signal	22 kHz (13/18 V)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	197 x 230 x 75 mm
Gross weight sales unit	0.700 kg
Shipping unit	5 pcs.
Packaging volume shipping package	3.4dm <sup>3</sup>
Gross weight shipping unit	0.7 kg
EAN	4010056137762
Article number	13776

### Characteristics

- cascade

# Multiswitch, cascade, 5 inputs

## DY 54 B

Multiswitch, stand alone & cascade



KLASSE  
A  
CLASS

## DY 56 B

Multiswitch, stand alone & cascade



KLASSE  
A  
CLASS

## DY 58 B

Multiswitch, stand alone & cascade



KLASSE  
A  
CLASS

### Technical data

#### SAT-IF trunk

Inputs SAT	4 pcs.	4 pcs.	4 pcs.
Frequency range SAT	950...2400 MHz	950...2400 MHz	950...2400 MHz
Gain SAT	15 dB	15 dB	15 dB
Decoupling SAT -SAT	30 dB	30 dB	30 dB
Output level SAT	105 dB (SAT 3. Ord. EN 50083-3/35dB)	105 dB (SAT 3. Ord. EN 50083-3/35dB)	105 dB (SAT 3. Ord. EN 50083-3/35dB)

#### Terrestrial trunk

Inputs TERR	1 pcs.	1 pcs.	1 pcs.
Frequency range TERR	5...862 MHz	5...862 MHz	5...862 MHz
Gain TERR	14 dB	14 dB	14 dB
Output level TERR	105 dB $\mu$ V (TERR 3. Ord. EN 50083-3/60dB)	105 dB $\mu$ V (TERR 3. Ord. EN 50083-3/60dB)	105 dB $\mu$ V (TERR 3. Ord. EN 50083-3/60dB)
Subscriber outputs	4 pcs.	6 pcs.	8 pcs.
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz
Tap loss TERR	2 dB	2 dB	2 dB
Tap loss SAT	0 dB	0 dB	0 dB
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB	>30 dB	>30 dB

#### Connectors

F-socket	14 pcs.	16 pcs.	16 pcs.
----------	---------	---------	---------

#### General data

Operating voltage AC	230 V (50/60 Hz)	230 V (50/60 Hz)	230 V (50/60 Hz)
Operating voltage DC	14 V DC	14 V DC	14 V DC
Power input standby	<1,5 W	<1,5 W	<1,5 W
Power consumption	17,5/<3,9 W (with LNB/without LNB)	17,5/<3,9 W (with LNB/without LNB)	17,5/<3,9 W (with LNB/without LNB)
LNB supply voltage	14 V	14 V	14 V
LNB electrical power supply	0.29 A	0.29 A	0.29 A

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.
------------	--------	--------	--------



# Multiswitch, 9 inputs



## DY 04

Multiswitch, stand alone & cascade



KLASSE  
**A**  
CLASS

## DY 06

Multiswitch, stand alone & cascade



KLASSE  
**A**  
CLASS

## DY 08

Multiswitch, stand alone & cascade



KLASSE  
**A**  
CLASS

### Technical data

#### SAT-IF trunk

Inputs SAT	8 pcs.	8 pcs.	8 pcs.
Frequency range SAT	950...2400 MHz	950...2400 MHz	950...2400 MHz
Gain SAT	15 dB	15 dB	15 dB
Decoupling SAT -SAT	>27 dB	>27 dB	>27 dB
Output level SAT	111 dB (SAT 3. Ord. EN 50083-3/35dB)	111 dB (SAT 3. Ord. EN 50083-3/35dB)	111 dB (SAT 3. Ord. EN 50083-3/35dB)

#### Terrestrial trunk

Inputs TERR	1 pcs.	1 pcs.	1 pcs.
Frequency range TERR	5...862 MHz	5...862 MHz	5...862 MHz
Through loss TERR	6 dB	6 dB	6 dB
Subscriber outputs	4 pcs.	6 pcs.	8 pcs.
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz
Tap loss TERR	22 dB	22 dB	22 dB
Tap loss SAT	0 dB	0 dB	0 dB
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB	>30 dB	>30 dB

#### Connectors

F-socket	22 pcs.	24 pcs.	26 pcs.
----------	---------	---------	---------

#### General data

Operating voltage AC	230 V	230 V	230 V
Operating voltage DC	14 V DC	14 V DC	14 V DC
Power input standby	<1,5 W	<1,5 W	<1,5 W
Power consumption	17,5/<4,5 W (with LNB / without LNB)	17,5/<4,5 W (with LNB/without LNB)	17,5/<4,5 W (with LNB/without LNB)
LNB supply voltage	14 V	14 V	14 V
LNB electrical power supply	0.7 A	0.7 A	0.7 A
Screening factor	Class A, EN 50083-2	Class A, EN 50083-2	Class A, EN 50083-2

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.
------------	--------	--------	--------

# Multiswitch, 9 inputs

## DY 94 A

Multiswitch, cascade



## DY 96 A

Multiswitch, cascade



## DY 98 A

Multiswitch, cascade



### Technical data

#### SAT-IF trunk

Inputs SAT	8 pcs.	8 pcs.	8 pcs.
Frequency range SAT	950...2400 MHz	950...2400 MHz	950...2400 MHz
Through loss SAT	1,3...3,4 dB	1,3...3,4 dB	1,3...3,4 dB
Decoupling SAT -SAT	27 dB	27 dB	27 dB

#### Terrestrial trunk

Inputs TERR	1 pcs.	1 pcs.	1 pcs.
Frequency range TERR	5...862 MHz	5...862 MHz	5...862 MHz
Through loss TERR	5.5 dB	5.5 dB	5.5 dB
Subscriber outputs	4 pcs.	6 pcs.	8 pcs.
Frequency range	5...2400 MHz	5...2400 MHz	5...2400 MHz
Tap loss TERR	21 dB	21 dB	21 dB
Tap loss SAT	21...16 dB (5 dB slope)	21...16 dB (5 dB slope)	21...16 dB (5 dB slope)
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB	>30 dB	>30 dB

#### Connectors

F-socket	22 pcs.	24 pcs.	26 pcs.
----------	---------	---------	---------

#### General data

Screening factor	Class A, EN 50083-2	Class A, EN 50083-2	Class A, EN 50083-2
Dimensions (width x height x depth)	210x139x27 mm	210x139x27 mm	210x139x27 mm
Cascadable with	DY 94A...98A, DY 04...08, DY 90	DY 94A...98A, DY 04...08, DY 90	DY 94A...98A, DY 04...08, DY 90
Control signal	14/18 V, 22 kHz, DiSEqC 2.0	14/18 V, 22 kHz, DiSEqC 2.0	14/18 V, 22 kHz, DiSEqC 2.0

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	230 x 150 x 65 mm	230 x 150 x 65 mm	230 x 150 x 65 mm
Gross weight sales unit	1.200 kg	0.800 kg	1.300 kg
Shipping unit	5 pcs.	5 pcs.	5 pcs.
Packaging volume shipping package	2.24dm <sup>3</sup>	2.24dm <sup>3</sup>	2.24dm <sup>3</sup>
Gross weight shipping unit	1.2 kg	0.8 kg	1.3 kg
EAN	4010056137731	4010056137724	4010056137717
Article number	13773	13772	13771

# Multiswitch, cascade, 17 inputs



## DY 25

Multiswitch, stand alone & cascade



## DY 26

Multiswitch, stand alone & cascade



### Technical data

#### SAT-IF trunk

Inputs SAT	16 pcs.	16 pcs.
Frequency range SAT	950...2400 MHz	950...2400 MHz
Gain SAT	15 dB	0 dB
Input level area SAT	0...12 dB	0 dB
Decoupling SAT -SAT	30 dB	30 dB
Output level SAT	105 dB (SAT 3. Ord. EN 50083-3/35dB)	- dB
Through loss SAT	- dB	1,2...3,5 dB

#### Terrestrial trunk

Inputs TERR	1 pcs.	1 pcs.
Frequency range TERR	5...862 MHz	5...862 MHz
Through loss TERR	4...5,5 dB	4...5,5 dB
Subscriber outputs	8 pcs.	8 pcs.
Frequency range	5...2400 MHz	5...2400 MHz
Tap loss TERR	22 dB	22 dB
Tap loss SAT	0 dB	21...16 dB (5 dB slope)
Decoupling Subscriber - Subscriber TERR	>42 dB	>42 dB
Decoupling Subscriber - Subscriber SAT	>30 dB	>30 dB

#### Connectors

F-socket	25 pcs.	25 pcs.
----------	---------	---------

#### General data

Operating voltage AC	230 V (50/60 Hz)	- V
Operating voltage DC	14 V DC	- V DC
Power input standby	<1,5 W	- W
Power consumption	24/<4,5 W (with LNB/without LNB)	- W
LNB supply voltage	14 V	- V

### Packaging data

Sales unit	1 pcs.	1 pcs.
Dimensions (WxHxD) sales unit	145 x 365 x 65 mm	145 x 335 x 33 mm
Gross weight sales unit	1.600 kg	1.600 kg
Packaging volume shipping package	3.44dm <sup>3</sup>	1.6dm <sup>3</sup>
Gross weight shipping unit	1.6 kg	1.6 kg
EAN	4010056146566	4010056146573
Article number	14656	14657

# Multiswitch, unicable, 5 inputs

## DY 64 1800

Unicable multiswitch, 1x 8 participants



The DY 64 1800 is a cascadable Unicable switch for supply of up to 8 subscriber. The 8 available addresses are provided with 1 output. The regulated output level of 90 dB $\mu$ V ensures a good supply also for older systems. The Unicable switch can be supplied with power from the connected terminals or through a separate power supply unit. The transmission of signals in the throughput is passive, whereby a direct voltage path is guaranteed. The terrestrial signals are only passively distributed. The zinc diecast enables an optimum shield and heat dissipation. With the F-Quick system, a fast optimal connection is guaranteed. Cascadable with DY 50A, DY 44A...48A, DY 54B...58B, DY 12, DY 16, DY 64.

### Technical data

<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	1,3...1,6 dB
Decoupling SAT -SAT	35 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	1,1...2,0 dB
Subscriber outputs	8 pcs.
Frequency range	5...2400 MHz
Output level Teiln SAT	90 dB $\mu$ V ( $\pm$ 3, SAT 3. Ord. EN 50083-3)
Tap loss TERR	10,0...13,5 dB
<b>Connectors</b>	
F-socket	13 pcs.
<b>General data</b>	
Operating voltage DC	14 V DC
Power input standby	5 W
Power consumption	18 W
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	139x139x27 mm
Operating temperature range	0...+55 °C
Cascadable with	DY 50A, DY 44A...48A, DY 54B...58B, DY 12, DY 16, DY 64
Control signal	Unicable EN50494
Unicable frequencies	8 pcs. (1178/1280/1382/1484/1586/1688/1790/1892 MHz)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	230 x 150 x 65 mm
Gross weight sales unit	0.950 kg
Shipping unit	5 pcs.
Packaging volume shipping package	2.24dm <sup>3</sup>
Gross weight shipping unit	0.95 kg
EAN	4010056103569
Article number	10356

### Characteristics

- 4 SAT-inputs (L/H, L/V, H/H, H/V) and 1 TERR-input
- 1 satellite
- Single cable solution for 8 subscribers
- With further multiswitches cascadable
- HDTV
- Low noise factor/figure
- Transmission frequency 5-2400 MHz
- Screening class A
- Plugs are cast solid with the chassis
- Optimal connection with F-Quick-System



## DY 64 1810

Unicable multiswitches with power supply



The DY 64 1810 is a cascable Unicable switch for supply of up to 8 subscriber. The 8 available addresses are provided with 1 output. The regulated output level of 90 dB $\mu$ V ensures a good supply also for older systems. The Unicable switch can be supplied with power from the connected terminals or through a separate power supply unit. The transmission of signals in the throughput is passive, whereby a direct voltage path is guaranteed. The terrestrial signals are only passively distributed. The zinc diecast enables an optimum shield and heat dissipation. With the F-Quick system, a fast optimal connection is guaranteed. Cascadable with DY 50A, DY 44A...48A, DY 54B...58B, DY 12, DY 16, DY 64.

### Technical data

<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	1,3...1,6 dB
Decoupling SAT -SAT	35 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	1,1...2,0 dB
Subscriber outputs	8 pcs.
Frequency range	5...2400 MHz
Output level TeilN SAT	90 dB $\mu$ V ( $\pm$ 3, SAT 3. Ord. EN 50083-3)
Tap loss TERR	10,0...13,5 dB
<b>Connectors</b>	
F-socket	13 pcs.
<b>General data</b>	
Operating voltage AC	230 V (50/60 Hz)
Operating voltage DC	14 V DC
Power input standby	<1,5 W
Power consumption	17,5/<4,5 W (with LNB/without LNB)
LNB supply voltage	14...18 V
LNB electrical power supply	0.76 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	139x139x58 mm
Operating temperature range	0...+55 °C
Cascadable with	DY 50A, DY 44A...48A, DY 54B...58B, DY 12, DY 16, DY 64
Control signal	Unicable EN50494
Unicable frequencies	8 pcs. (1178/1280/1382/1484/1586/1688/1790/1892 MHz)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	230 x 150 x 65 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.950 kg
Shipping unit	5 pcs.
Packaging volume shipping package	2.24dm <sup>3</sup>
Gross weight shipping unit	0.95 kg
EAN	4010056127152
Article number	12715

### Characteristics

- 4 SAT-inputs (L/H, L/V, H/H, H/V) and 1 TERR-input
- 1 satellite
- Single cable solution for 8 subscribers
- With further multiswitches cascable
- HDTV
- Low noise factor/figure
- Transmission frequency 5-2400 MHz
- Screening class A
- Plugs are cast solid with the chassis
- Optimal connection with F-Quick-System

### Scope of delivery

- 5x terminating resistor DV 25

# Multiswitch, unicable, 8 inputs

## DY 68 1800

for 2 satellite, 1x 8 participant



### Technical data

#### SAT-IF trunk

Inputs SAT	8 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	1,8...2,5 dB
Decoupling SAT -SAT	min. 35 dB

#### Terrestrial trunk

Inputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	1,1...2,1 dB
Subscriber outputs	8 pcs.
Output level Teiln SAT	90 dB $\mu$ V ( $\pm$ 3, SAT 3. Ord. EN 50083-3)
Tap loss TERR	10,0...13,5 dB

#### Connectors

F-socket	13 pcs.
----------	---------

#### General data

Operating voltage DC	14 V DC
Power input standby	5 W
Power consumption	18 W
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	210 x 139 x 58 mm
Operating temperature range	-20...+50 °C
Cascadable with	DY 68, DY 90, DM 90, DY 08, DY 06, DY 04, DY 98A, DY 96A, DY 94A
Control signal	Unicable EN50494

### Packaging data

Sales unit	1 pcs.
EAN	4010056127169
Article number	12716

### Characteristics

- 8 SAT inputs (A/B input L/H, L/V, H/H, H/V) and 1 TERR input
- 2 satellites
- Single cable solution for 8 subscribers
- With further multiswitches cascadable
- HDTV
- Low noise factor/figure
- Transmission frequency 5-2400 MHz
- Screening class A
- Plugs are cast solid with the chassis
- Optimal connection with F-Quick-System



# DY 68 1810

for 2 satellite, 1x 8 participant



Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	1,3...1,6 dB
Decoupling SAT -SAT	35 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	1,1...2,0 dB
Subscriber outputs	8 pcs.
Frequency range	5...2400 MHz
Output level Teiln SAT	90 dBμV (±3, SAT 3. Ord. EN 50083-3)
Tap loss TERR	10,0...13,5 dB
<b>Connectors</b>	
F-socket	13 pcs.
<b>General data</b>	
Operating voltage AC	230 V (50/60 Hz)
Operating voltage DC	14 V DC
Power input standby	<1,5 W
Power consumption	17,5/<4,5 W (with LNB/without LNB)
LNB supply voltage	14...18 V
LNB electrical power supply	0.76 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	139 x 139 x 58 mm
Operating temperature range	0...+55 °C
Cascadable with	DY 68, DY 90, DM 90, DY 08, DY 06, DY 04, DY 98A, DY 96A, DY 94A
Control signal	Unicable EN50494
Unicable frequencies	8 pcs. (1178/1280/1382/1484/1586/1688/1790/1892 MHz)

Packaging data	
Sales unit	pcs.
EAN	4010056701420
Article number	70142

### Characteristics

- 8 SAT inputs (A/B input L/H, L/V, H/H, H/V) and 1 TERR input
- Single cable solution for 8 subscribers
- With further multiswitches cascadable
- HDTV
- Low noise factor/figure
- Transmission frequency 5-2400 MHz
- Screening class A
- Plugs are cast solid with the chassis
- Optimal connection with F-Quick-System
- With power supply

### Scope of delivery

- 9x terminating resistor DV 25

# Accessories Multiswitch

## DY 50 A

SAT amplifier



## DY 90

SAT-ZF amplifier



Technical data	
<b>terrestrial</b>	
Frequency range TERR	85...862 MHz
Gain TERR	15...22 dB
Output level 1	115 dB $\mu$ V (3.system EN50083-3, 60 dB)
Attenuator TERR	0...15 dB
Frequency range return channel	5...65 MHz
Gain return channel	8...9 dB
Attenuator return channel TERR	0...10 dB
<b>SAT</b>	
Frequency range SAT	950...2400 MHz
Gain SAT	16...23 dB
Output level 2	115 dB $\mu$ V (3.order EN50083-3, 35 dB)
Noise figure SAT	11...4 dB
Attenuator SAT	0...15 dB
Isolation trunk	38 dB
<b>Connectors</b>	
F-socket	12 pcs.
<b>General data</b>	
Operating voltage DC	13/14 V DC
Current consumption 13/14 V DC	370 mA
Output voltage	13/14 V DC
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	140x140x27 mm
Operating temperature range	0...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.

The DY 50 A is an SAT amplifier. It is equipped with 4 SAT inputs/outputs and 1 terrestrial input/output. The terrestrial signal can be strengthened from 15 to 22 dB and the output level is 115 dB $\mu$ V. The increase for the feedback channel is 8 to 9 dB. The power supply can go via the throughput or a separate power supply unit (DY 55) to ensure power supply.

Technical data	
<b>terrestrial</b>	
Frequency range TERR	85...862 MHz
Gain TERR	16...22 dB
Output level 1	115 dB $\mu$ V (3.system EN50083-3, 60 dB)
Attenuator TERR	0...15 dB
Frequency range return channel	5...65 MHz
Gain return channel	8...9 dB
Attenuator return channel TERR	0...10 dB
<b>SAT</b>	
Frequency range SAT	950...2400 MHz
Gain SAT	16...24 dB
Output level 2	115 dB $\mu$ V (3.order EN50083-3, 35 dB)
Noise figure SAT	12...5 dB
Attenuator SAT	0...15 dB
Isolation trunk	38 dB
<b>Connectors</b>	
F-socket	20 pcs.
<b>General data</b>	
Operating voltage DC	13/14 V DC
Current consumption 13/14 V DC	520 mA
Output voltage	13/14 V DC
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	210 x 140 x 27 mm
Operating temperature range	0...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.

The DY 90 is an SAT amplifier. It is equipped with 8 SAT inputs/outputs and 1 terrestrial input/output. The terrestrial signal can be strengthened from 16 to 22 dB and the output level is 115 dB $\mu$ V. The SAT signal can be strengthened from 16 to 24 dB and the output level is 115 dB $\mu$ V. The increase for the feedback channel is 8 to 9 dB. The power supply can go via the throughput or through a separate power supply unit (DG 55) to ensure power supply.





## DG 55

Wall wart 230 V AC, 13 V DC



### Technical data

General data	
F-plug	1 pcs.
Operating voltage	90...264 V AC
Power consumption	<31 W
Output voltage	13 V DC ( $\pm 0,4$ V)
Max. load current	2 A
Max. output power	26 W
Max. humidity, non condensing	90 %
Protection class	II
Protection class system EN 60529 (DIN 40050)	IP 41
Electrical safety standard	EN 60065, EN 60950
EMC	EN 50083-2
Dimensions W x H x D	86 x 49,5 x 32 mm
Operating temperature range	-25...+55 °C
Storage temperature	-25...+70 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	kg
Shipping unit	pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	
Gross weight shipping unit	kg
EAN	4010056743505
Article number	74350

# Überspannungsschutz

## DL 400

Surge protector



Overvoltage protection for SAT distribution facilities as well as protection of SAT inputs at signal processing. With the DL400, all following components are protected from undesirable voltage peaks.

Technical data	
<b>Connectors</b>	
F socket (SAT / power supply)	8 / 1 pcs.
Frequency range	950...2200 MHz
input level max	115 dB $\mu$ V
Through loss	1...2 dB
return loss EN60728-3	Class A
Isolation trunk	35 dB (min. typ > 40 dB)
DiSEqC / 22 kHz passage	No
surge protection	EN 61643-21
Rated leakage current (8/20 $\mu$ s)	5 kA
Protective level at 10 kA (8/20 $\mu$ s) Cat. C2	<30 V
Protective level at 1 kV/ $\mu$ s Cat. C3	<30 V
Protective level at 2.5 kV (10/350 $\mu$ s) Cat. D1	<30 V
Protective level at 6 kV (10/700 $\mu$ s) Cat. B2	<30 V
Alternating current stability	5 A
Overload error state	1
DC resistance input > output	1 $\Omega$
Highest perm. Voltage U <sub>c</sub>	20 V DC
Rated current trunk	1000 mA
<b>General data</b>	
Current rates DC infeed	2500 mA max.
Power consumption	<0,2 W
Operating voltage DC	0...18 V DC
Protection class	IP20
Operating temperature range	0...55 °C
Screen class	A
Dimensions (width x height x depth)	85x38,5x140 mm
Weight	0,240 kg
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	mm
Packaging volume sales unit	dm <sup>3</sup>

Gross weight sales unit	kg
Shipping unit	pcs.
Dimensions (WxHxD) shipping unit	mm
Packaging volume shipping package	
Gross weight shipping unit	kg
EAN	4010056736194
Article number	74025

### Characteristics

- 4 x SAT protection in one unit, module case sideways stackable for expansion to additional levels
- Überspannungsschutz für das DG SAT-Verteilssystem
- Typical operation site between (Quattro) LNB and cascaded multiswitches / headend or for protection of potential differences between dedicated building structures.
- remote power that SAT- trunk line via the lateral F-connector, powering to the output can be switched off
- overvoltage detection with LED- status indicator (only with active power supply)



# Multiswitch 5 inputs, Stand alone

## DRS 0508

FLEXSWITCH multiswitch 5 in 8, stand alone



The DRS 0508 is a stand alone multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The stand alone device is equipped with an integrated power supply which ensures the LNB powering. Additionally integrated is a 22 KHz generator which allows the usage of Quad-LNBs. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the eight subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRS 0508 is realised through an active terrestrial and satellite path.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	8 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	0...+5 dB
Insertion TERR	-2 dB (±2 dB)
Max. output level subscriber SAT	101 dBμV
Max. output level subscriber TERR	90 dBμV
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	13 pcs.
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Quad LNB support	Yes
LNB supply voltage	18 V (22 kHz)
Current consumption LNB	max. 500 mA
Operating voltage	90...264 V AC, 50/60 Hz
Power consumption max.	3 W
Screening factor	Class A, according to EN 50083-2

Technical data	
Impedance	75 Ω
Operating temperature range	0...+55 °C
Weight	0,46 kg
Dimensions (width x height x depth)	222 x 110 x 57 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	330 x 115 x 60 mm
Packaging volume sales unit	2,2 dm <sup>3</sup>
Gross weight sales unit	0,54 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	330 x 115 x 60 mm
Packaging volume shipping package	2,2dm <sup>3</sup>
Gross weight shipping unit	0,54 kg
EAN	4010056749507
Article number	74950

### Characteristics

- Stand alone multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Quad-LNB support
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs
- Made in Germany



# DRS 0512

FLEXSWITCH multiswitch 5 in 12, stand alone



The DRS 0512 is a stand alone multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The stand alone device is equipped with an integrated power supply which ensures the LNB powering. Additionally integrated is a 22 KHz generator which allows the usage of Quad-LNBs. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 12 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRS 0512 is realised through an active terrestrial and satellite path.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	12 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-1...+4 dB
Insertion TERR	-2 dB (±2 dB)
Max. output level subscriber SAT	101 dBµV
Max. output level subscriber TERR	84 dBµV
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	17 pcs.
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Quad LNB support	Yes
LNB supply voltage	18 V (22 kHz)
Current consumption LNB	max. 500 mA
Operating voltage	90...264 V AC, 50/60 Hz
Power consumption max.	0,5 W
Screening factor	Class A, according to EN 50083-2

Technical data	
Impedance	75 Ω
Operating temperature range	0...+55 °C
Weight	0,62 kg
Dimensions (width x height x depth)	310 x 110 x 57 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	390 x 120 x 60 mm
Packaging volume sales unit	4,7 dm <sup>3</sup>
Gross weight sales unit	0,7 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	390 x 120 x 60 mm
Packaging volume shipping package	4,7dm <sup>3</sup>
Gross weight shipping unit	0,7 kg
EAN	4010056749514
Article number	74951

### Characteristics

- Stand alone multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Quad-LNB support
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs
- Made in Germany

# Multiswitch 5 inputs, Stand alone

## DRS 0516

FLEXSWITCH multiswitch 5 in 16, stand alone



The DRS 0516 is a stand alone multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The stand alone device is equipped with an integrated power supply which ensures the LNB powering. Additionally integrated is a 22 KHz generator which allows the usage of Quad-LNBs. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 16 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRS 0516 is realised through an active terrestrial and satellite path.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	16 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-1...+4 dB
Insertion TERR	-2 dB (±2 dB)
Max. output level subscriber SAT	101 dBμV
Max. output level subscriber TERR	84 dBμV
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	21 pcs.
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Quad LNB support	Yes
LNB supply voltage	18 V (22 kHz)
Current consumption LNB	max. 500 mA
Operating voltage	90...264 V AC, 50/60 Hz
Power consumption max.	0,5 W
Screening factor	Class A, according to EN 50083-2

Technical data	
Impedance	75 Ω
Operating temperature range	0...+55 °C
Weight	0,64 kg
Dimensions (width x height x depth)	310 x 110 x 57 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	390 x 120 x 60 mm
Packaging volume sales unit	4,7 dm <sup>3</sup>
Gross weight sales unit	0,7 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	390 x 120 x 60 mm
Packaging volume shipping package	4,7dm <sup>3</sup>
Gross weight shipping unit	0,7 kg
EAN	4010056749521
Article number	74952

### Characteristics

- Stand alone multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Quad-LNB support
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs
- Made in Germany



# DRS 0524

FLEXSWITCH multiswitch 5 in 24, stand alone



The DRS 0524 is a stand alone multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The stand alone device is equipped with an integrated power supply which ensures the LNB powering. Additionally integrated is a 22 KHz generator which allows the usage of Quad-LNBs. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 24 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRS 0524 is realised through an active terrestrial and satellite path.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	24 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-1...+4 dB
Insertion TERR	-2 dB (±2 dB)
Max. output level subscriber SAT	101 dBµV
Max. output level subscriber TERR	84 dBµV
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	29 pcs.
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Quad LNB support	Yes
LNB supply voltage	18 V (22 kHz)
Current consumption LNB	max. 500 mA
Operating voltage	90...264 V AC, 50/60 Hz
Power consumption max.	1 W
Screening factor	Class A, according to EN 50083-2

Technical data	
Impedance	75 Ω
Operating temperature range	0...+55 °C
Weight	0,86 kg
Dimensions (width x height x depth)	324 x 140 x 63 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm³
Gross weight sales unit	1,06 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm³
Gross weight shipping unit	1,06 kg
EAN	4010056750053
Article number	75005

### Characteristics

- Stand alone multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Quad-LNB support
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs
- Made in Germany

# Multiswitch 5 inputs, Stand alone

## DRS 0532

FLEXSWITCH multiswitch 5 in 32, stand alone



The DRS 0532 is a stand alone multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The stand alone device is equipped with an integrated power supply which ensures the LNB powering. Additionally integrated is a 22 KHz generator which allows the usage of Quad-LNBs. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 32 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRS 0532 is realised through an active terrestrial and satellite path.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	32 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-1...+4 dB
Insertion TERR	-2 dB (±2 dB)
Max. output level subscriber SAT	101 dB $\mu$ V
Max. output level subscriber TERR	84 dB $\mu$ V
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	37 pcs.
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Quad LNB support	Yes
LNB supply voltage	18 V (22 kHz)
Current consumption LNB	max. 500 mA
Operating voltage	90...264 V AC, 50/60 Hz
Power consumption max.	1 W
Screening factor	Class A, according to EN 50083-2

Technical data	
Impedance	75 $\Omega$
Operating temperature range	0...+55 °C
Weight	0,9 kg
Dimensions (width x height x depth)	324 x 140 x 63 mm
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm <sup>3</sup>
Gross weight sales unit	1,1 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm <sup>3</sup>
Gross weight shipping unit	1,1 kg
EAN	4010056750060
Article number	75006

### Characteristics

- Stand alone multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Quad-LNB support
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs
- Made in Germany



# Multiswitch 5 inputs, receiver power



## DRR 0508

FLEXSWITCH multiswitch, receiver power, 5 in 8



The DRR 0508 is a receiver powered multiswitch with five inputs for the distribution of one satellite and terrestrial signals. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the eight subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRR 0508 is realised through an active satellite path. Through the passive terrestrial path, it is possible to feed in multimedia services like "LAN over Coax" or signals from a headend system. The LNB is powered by the switching voltage of the connected receivers and an additional power supply is not required, which reduces the operating costs.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	8 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	0...+5 dB
Insertion TERR	-18 dB (±2 dB)
Max. output level subscriber SAT	101 dBμV
Max. output level subscriber TERR	50... 110 dBμV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	13 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Operating voltage	receiver powered
Power consumption max.	<0,5 W
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Weight	0,24 kg

Technical data	
Dimensions (width x height x depth)	130 x 110 x 45 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	115 x 115 x 40 mm
Packaging volume sales unit	0,53 dm <sup>3</sup>
Gross weight sales unit	0,28 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	115 x 115 x 40 mm
Packaging volume shipping package	0,53dm <sup>3</sup>
Gross weight shipping unit	0,28 kg
EAN	4010056749736
Article number	74973

### Characteristics

- Receiver powered multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Power supply-free usage
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs
- Made in Germany

# Multiswitch 5 inputs, cascade

## DRC 0508

FLEXSWITCH multiswitch 5 in 8, cascade, TERR. active



The DRC 0508 is a cascadable multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The polarisations are available at five cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the eight subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0508 is realised through an active terrestrial and satellite path. The LNB can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Outputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	-1...-2 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Through loss TERR	-2 dB ( $\pm 1$ dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	8 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-3...0 dB
Insertion TERR	0 dB ( $\pm 3$ dB)
Max. output level subscriber SAT	101 dB $\mu$ V
Max. output level subscriber TERR	84 dB $\mu$ V
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	13 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	<2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 $\Omega$
Operating temperature range	-20...70 °C
Cascadable with	DRC 0508, DRC 0512, DRC 0516, DRC 0524, DRC 0532
Weight	0,38 kg
Dimensions (width x height x depth)	140 x 140 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	270 x 170 x 70 mm
Packaging volume sales unit	3,2 dm <sup>3</sup>
Gross weight sales unit	0,54 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 170 x 70 mm
Packaging volume shipping package	3,2dm <sup>3</sup>
Gross weight shipping unit	0,54 kg
EAN	4010056749538
Article number	74953

### Characteristics

- Cascadable multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRC 0512

FLEXSWITCH multiswitch 5 in 12, cascade, TERR. active



The DRC 0512 is a cascadable multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The polarisations are available at five cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 12 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0512 is realised through an active terrestrial and satellite path. The LNB can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Outputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	-2...-4 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Through loss TERR	-1...-2 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	12 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-4...-1 dB
Insertion TERR	0 dB (±3 dB)
Max. output level subscriber SAT	101 dBµV
Max. output level subscriber TERR	84 dBµV
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	17 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	<2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 0508, DRC 0512, DRC 0516, DRC 0524, DRC 0532
Weight	0,54 kg
Dimensions (width x height x depth)	220 x 140 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	270 x 170 x 70 mm
Packaging volume sales unit	3,2 dm³
Gross weight sales unit	0,7 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 170 x 70 mm
Packaging volume shipping package	3,2dm³
Gross weight shipping unit	0,7 kg
EAN	4010056749545
Article number	74954

### Characteristics

- Cascadable multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 5 inputs, cascade

## DRC 0516

FLEXSWITCH multiswitch 5 in 16, cascade, TERR. active



The DRC 0516 is a cascadable multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The polarisations are available at five cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 16 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0516 is realised through an active terrestrial and satellite path. The LNB can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Outputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	-2...-4 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Through loss TERR	-1...-2 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	16 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-4...-1 dB
Insertion TERR	0 dB ( $\pm 3$ dB)
Max. output level subscriber SAT	101 dB $\mu$ V
Max. output level subscriber TERR	84 dB $\mu$ V
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	21 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	<2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 $\Omega$
Operating temperature range	-20...70 °C
Cascadable with	DRC 0508, DRC 0512, DRC 0516, DRC 0524, DRC 0532
Weight	0,56 kg
Dimensions (width x height x depth)	220 x 140 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	270 x 170 x 70 mm
Packaging volume sales unit	3,2 dm <sup>3</sup>
Gross weight sales unit	0,72 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 170 x 70 mm
Packaging volume shipping package	3,2dm <sup>3</sup>
Gross weight shipping unit	0,72 kg
EAN	4010056749552
Article number	74955

### Characteristics

- Cascadable multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRC 0524

FLEXSWITCH multiswitch 5 in 24, cascade, TERR. active



The DRC 0524 is a cascadable multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The polarisations are available at five cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 24 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0524 is realised through an active terrestrial and satellite path. The LNB can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Outputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	-2...-6 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Through loss TERR	-2 dB (±2 dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	24 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-6...0 dB
Insertion TERR	-2 dB (±2 dB)
Max. output level subscriber SAT	101 dBµV
Max. output level subscriber TERR	91 dBµV
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	29 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	<2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 0508, DRC 0512, DRC 0516, DRC 0524, DRC 0532
Weight	0,64 kg
Dimensions (width x height x depth)	240 x 140 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	270 x 170 x 70 mm
Packaging volume sales unit	3,2 dm <sup>3</sup>
Gross weight sales unit	0,8 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 170 x 70 mm
Packaging volume shipping package	3,2dm <sup>3</sup>
Gross weight shipping unit	0,8 kg
EAN	4010056749569
Article number	74956

### Characteristics

- Cascadable multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 5 inputs, cascade

## DRC 0532

FLEXSWITCH multiswitch 5 in 32, cascade, TERR. active



The DRC 0532 is a cascadable multiswitch with five inputs for the distribution of one satellite and terrestrial signals. The polarisations are available at five cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 32 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0532 is realised through an active terrestrial and satellite path. The LNB can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Outputs SAT	4 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	-2...-6 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	40... 862 MHz
Through loss TERR	-2 dB (±2 dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	32 pcs.
Frequency range	40...2400 MHz
TERR type	active
Insertion loss SAT	-6...0 dB
Insertion TERR	-2 dB (±2 dB)
Max. output level subscriber SAT	101 dBμV
Max. output level subscriber TERR	91 dBμV
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz
Current consumption from receiver	30 mA
<b>Connectors</b>	
F-socket	37 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	<2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 0508, DRC 0512, DRC 0516, DRC 0524, DRC 0532
Weight	0,68 kg
Dimensions (width x height x depth)	240 x 140 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	270 x 170 x 70 mm
Packaging volume sales unit	3,2 dm <sup>3</sup>
Gross weight sales unit	0,84 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 170 x 70 mm
Packaging volume shipping package	3,2dm <sup>3</sup>
Gross weight shipping unit	0,84 kg
EAN	4010056749576
Article number	74957

### Characteristics

- Cascadable multiswitch for the distribution of 4 satellite polarisations and terrestrial signals
- Active terrestrial path to distribute DVB-T/T2, DAB and FM without an additional amplifier
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRR 0908

FLEXSWITCH multiswitch, receiver power, 9 in 8



The DRR 0908 is a receiver powered multiswitch with nine inputs for the distribution of two satellite and terrestrial signals. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the eight subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRR 0508 is realised through an active satellite path. Through the passive terrestrial path, it is possible to feed in multimedia services like "LAN over Coax" or signals from a headend system. The LNB is powered by the switching voltage of the connected receivers and an additional power supply is not required, which reduces the operating costs.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Frequency range SAT	950... 2400 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	8 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	-4...+2 dB
Insertion TERR	-15 dB (±3 dB)
Max. output level subscriber SAT	101 dBµV
Max. output level subscriber TERR	50... 110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	56 mA
<b>Connectors</b>	
F-socket	17 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Operating voltage	receiver powered
Power consumption max.	<1 W
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Weight	0,48 kg

Technical data	
Dimensions (width x height x depth)	230 x 110 x 63 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	330 x 115 x 60 mm
Packaging volume sales unit	2,2 dm³
Gross weight sales unit	0,56 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	330 x 115 x 60 mm
Packaging volume shipping package	2,2dm³
Gross weight shipping unit	0,56 kg
EAN	4010056749750
Article number	74975

### Characteristics

- Receiver powered multiswitch for the distribution of 8 satellite polarisations and terrestrial signals
- Power supply-free usage
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs
- Made in Germany

# Multiswitch 9 inputs, cascade

## DRC 0908

FLEXSWITCH multiswitch 9 in 8, cascade, TERR. passive



The DRC 0908 is a cascadable multiswitch with nine inputs for the distribution of two satellites and terrestrial signals. The polarisations are available at nine cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the eight subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0908 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBS can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Outputs SAT	8 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	-1 dB ( $\pm 1$ dB)
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	-2 dB ( $\pm 2$ dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	8 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	0...+2 dB
Insertion TERR	-26 dB ( $\pm 2$ dB)
Max. output level subscriber SAT	101 dB $\mu$ V
Max. output level subscriber TERR	50...110 dB $\mu$ V (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	45 mA
<b>Connectors</b>	
F-socket	17 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	12...20 V DC
Power consumption max.	<0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 $\Omega$
Operating temperature range	-20...70 $^{\circ}$ C
Cascadable with	DRC 0908, DRC 0912, DRC 0916, DRC 0924, DRC 0932
Weight	0,52 kg
Dimensions (width x height x depth)	129 x 202 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	270 x 170 x 70 mm
Packaging volume sales unit	3,2 dm <sup>3</sup>
Gross weight sales unit	0,68 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	270 x 170 x 70 mm
Packaging volume shipping package	3,2dm <sup>3</sup>
Gross weight shipping unit	0,68 kg
EAN	4010056749583
Article number	74958

### Characteristics

- Cascadable multiswitch for the distribution of 8 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany





# DRC 0912

FLEXSWITCH multiswitch 9 in 12, cascade, TERR. passive



The DRC 0912 is a cascadable multiswitch with nine inputs for the distribution of two satellites and terrestrial signals. The polarisations are available at nine cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 12 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0912 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Outputs SAT	8 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	-2 dB (±2 dB)
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	-2 dB (±2 dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	12 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	-2...+2 dB
Insertion TERR	-30 dB (±3 dB)
Max. output level subscriber SAT	105 dBµV
Max. output level subscriber TERR	50...110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	45 mA
<b>Connectors</b>	
F-socket	21 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	12...20 V DC
Power consumption max.	<0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 0908, DRC 0912, DRC 0916, DRC 0924, DRC 0932
Weight	0,72 kg
Dimensions (width x height x depth)	190 x 203 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm³
Gross weight sales unit	0,92 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm³
Gross weight shipping unit	0,92 kg
EAN	4010056749590
Article number	74959

- Characteristics**
- Cascadable multiswitch for the distribution of 8 satellite polarisations and terrestrial signals
  - Passive terrestrial path
  - Integrated SAT amplifier for low insertion loss
  - Pre-emphasis to compensate the cable loss at high frequencies
  - Terrestrial signals available at the receiver without any power supply of the multiswitch
  - High screening efficiency according to Class A
  - Compact dimensions paired with installation friendly distance between the F-connectors
  - Colour-coded inputs and outputs
  - Made in Germany

# Multiswitch 9 inputs, cascade

## DRC 0916

FLEXSWITCH multiswitch 9 in 16, cascade, TERR. passive



The DRC 0916 is a cascadable multiswitch with nine inputs for the distribution of two satellites and terrestrial signals. The polarisations are available at nine cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 16 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0916 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Outputs SAT	8 pcs.
Frequency range SAT	950...2400 MHz
Through loss SAT	-2 dB ( $\pm 2$ dB)
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Through loss TERR	-2 dB ( $\pm 2$ dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	16 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	-2...+2 dB
Insertion TERR	-30 dB ( $\pm 3$ dB)
Max. output level subscriber SAT	105 dB $\mu$ V
Max. output level subscriber TERR	50...110 dB $\mu$ V (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	45 mA
<b>Connectors</b>	
F-socket	25 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	12...20 V DC
Power consumption max.	<0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 $\Omega$
Operating temperature range	-20...70 $^{\circ}$ C
Cascadable with	DRC 0908, DRC 0912, DRC 0916, DRC 0924, DRC 0932
Weight	0,72 kg
Dimensions (width x height x depth)	190 x 203 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm <sup>3</sup>
Gross weight sales unit	0,92 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm <sup>3</sup>
Gross weight shipping unit	0,92 kg
EAN	4010056749606
Article number	74960

### Characteristics

- Cascadable multiswitch for the distribution of 8 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRC 0924

FLEXSWITCH multiswitch 9 in 24, cascade, TERR. passive



The DRC 0924 is a cascadable multiswitch with nine inputs for the distribution of two satellites and terrestrial signals. The polarisations are available at nine cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 24 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0924 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Outputs SAT	8 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	-2...-4 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	-3 dB (±2 dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	24 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	-2...+2 dB
Insertion TERR	-32 dB (±3 dB)
Max. output level subscriber SAT	105 dBµV
Max. output level subscriber TERR	50... 110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	45 mA
<b>Connectors</b>	
F-socket	33 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	12...20 V DC
Power consumption max.	<0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 0908, DRC 0912, DRC 0916, DRC 0924, DRC 0932
Weight	1,14 kg
Dimensions (width x height x depth)	308 x 205 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 330 x 70 mm
Packaging volume sales unit	8 dm³
Gross weight sales unit	1,38 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 330 x 70 mm
Packaging volume shipping package	8dm³
Gross weight shipping unit	1,38 kg
EAN	4010056749613
Article number	74961

### Characteristics

- Cascadable multiswitch for the distribution of 8 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 9 inputs, cascade

## DRC 0932

FLEXSWITCH multiswitch 9 in 32, cascade, TERR. passive



The DRC 0932 is a cascadable multiswitch with nine inputs for the distribution of two satellites and terrestrial signals. The polarisations are available at nine cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 32 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 0932 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Outputs SAT	8 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	-2...-4 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	>10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	-3 dB (±2 dB)
Isolation TERR - SAT	30 dB typ.
Return loss TERR	>10 dB
<b>Subscriber outputs</b>	
Outputs	32 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	-2...+2 dB
Insertion TERR	-32 dB (±3 dB)
Max. output level subscriber SAT	105 dBμV
Max. output level subscriber TERR	50... 110 dBμV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	45 mA
<b>Connectors</b>	
F-socket	41 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	12...20 V DC
Power consumption max.	<0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 0908, DRC 0912, DRC 0916, DRC 0924, DRC 0932
Weight	1,16 kg
Dimensions (width x height x depth)	308 x 205 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 330 x 70 mm
Packaging volume sales unit	8 dm <sup>3</sup>
Gross weight sales unit	1,4 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 330 x 70 mm
Packaging volume shipping package	8dm <sup>3</sup>
Gross weight shipping unit	1,4 kg
EAN	4010056749620
Article number	74962

### Characteristics

- Cascadable multiswitch for the distribution of 8 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRC 1308

FLEXSWITCH multiswitch 13 in 8, cascade, TERR. passive



The DRC 1308 is a cascadable multiswitch with 13 inputs for the distribution of three satellites and terrestrial signals. The polarisations are available at 13 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the eight subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1308 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	12 pcs.
Outputs SAT	12 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	1...2 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	2...3 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	8 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	4...0 dB
Insertion TERR	24 dB (±2 dB)
Max. output level subscriber SAT	102 dBµV
Max. output level subscriber TERR	50...110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	21 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1308, DRC 1312, DRC 1316, DRC 1324, DRC 1332
Weight	0,72 kg
Dimensions (width x height x depth)	130x 290 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm³
Gross weight sales unit	0,92 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm³
Gross weight shipping unit	0,92 kg
EAN	4010056749637
Article number	74963

### Characteristics

- Cascadable multiswitch for the distribution of 12 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 13 inputs, cascade

## DRC 1312

FLEXSWITCH multiswitch 13 in 12, cascade, TERR. passive



KLASSE  
**A**  
CLASS

The DRC 1312 is a cascadable multiswitch with 13 inputs for the distribution of three satellites and terrestrial signals. The polarisations are available at 13 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 12 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1312 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

### Technical data

<b>SAT-IF trunk</b>	
Inputs SAT	12 pcs.
Outputs SAT	12 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	1...3 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	2...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	12 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	3...0 dB
Insertion TERR	28 dB (±3 dB)
Max. output level subscriber SAT	102 dBμV
Max. output level subscriber TERR	50...110 dBμV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	25 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

### Technical data

Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1308, DRC 1312, DRC 1316, DRC 1324, DRC 1332
Weight	0,98 kg
Dimensions (width x height x depth)	189 x 291 x 63 mm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm <sup>3</sup>
Gross weight sales unit	1,18 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm <sup>3</sup>
Gross weight shipping unit	1,18 kg
EAN	4010056749644
Article number	74964

### Characteristics

- Cascadable multiswitch for the distribution of 12 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRC 1316

FLEXSWITCH multiswitch 13 in 16, cascade, TERR. passive



The DRC 1316 is a cascadable multiswitch with 13 inputs for the distribution of three satellites and terrestrial signals. The polarisations are available at 13 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 16 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1316 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	12 pcs.
Outputs SAT	12 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	1...3 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	2...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	16 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	3...0 dB
Insertion TERR	28 dB (±3 dB)
Max. output level subscriber SAT	102 dBµV
Max. output level subscriber TERR	50...110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	29 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1308, DRC 1312, DRC 1316, DRC 1324, DRC 1332
Weight	1,04 kg
Dimensions (width x height x depth)	189 x 291 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 330 x 70 mm
Packaging volume sales unit	8 dm³
Gross weight sales unit	1,28 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 330 x 70 mm
Packaging volume shipping package	8dm³
Gross weight shipping unit	1,28 kg
EAN	4010056749651
Article number	74965

### Characteristics

- Cascadable multiswitch for the distribution of 12 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 13 inputs, cascade

## DRC 1324

FLEXSWITCH multiswitch 13 in 24, cascade, TERR. passive



The DRC 1324 is a cascadable multiswitch with 13 inputs for the distribution of three satellites and terrestrial signals. The polarisations are available at 13 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 24 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1324 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	12 pcs.
Outputs SAT	12 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	2...5 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	3...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	24 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	2...0 dB
Insertion TERR	33 dB (±3 dB)
Max. output level subscriber SAT	102 dBμV
Max. output level subscriber TERR	50... 110 dBμV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	37 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1308, DRC 1312, DRC 1316, DRC 1324, DRC 1332
Weight	1,52 kg
Dimensions (width x height x depth)	310 x 293 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 330 x 70 mm
Packaging volume sales unit	8 dm <sup>3</sup>
Gross weight sales unit	1,76 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 330 x 70 mm
Packaging volume shipping package	8dm <sup>3</sup>
Gross weight shipping unit	1,64 kg
EAN	4010056749668
Article number	74966

### Characteristics

- Cascadable multiswitch for the distribution of 12 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany





# DRC 1332

FLEXSWITCH multiswitch 13 in 32, cascade, TERR. passive



The DRC 1332 is a cascadable multiswitch with 13 inputs for the distribution of three satellites and terrestrial signals. The polarisations are available at 13 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 32 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1332 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	12 pcs.
Outputs SAT	12 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	2...5 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	3...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	32 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	2...0 dB
Insertion TERR	33 dB (±3 dB)
Max. output level subscriber SAT	102 dBµV
Max. output level subscriber TERR	50... 110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	45 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1308, DRC 1312, DRC 1316, DRC 1324, DRC 1332
Weight	1,52 kg
Dimensions (width x height x depth)	310 x 293 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 330 x 70 mm
Packaging volume sales unit	8 dm³
Gross weight sales unit	1,76 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 330 x 70 mm
Packaging volume shipping package	8dm³
Gross weight shipping unit	1,76 kg
EAN	4010056749675
Article number	74967

### Characteristics

- Cascadable multiswitch for the distribution of 12 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 17 inputs, cascade

## DRC 1708

FLEXSWITCH multiswitch 17 in 8, cascade, TERR. passive



The DRC 1708 is a cascadable multiswitch with 17 inputs for the distribution of four satellites and terrestrial signals. The polarisations are available at 17 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the eight subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1708 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	16 pcs.
Outputs SAT	16 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	1...2 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	2...3 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	8 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	2...0 dB
Insertion TERR	24 dB (±2 dB)
Max. output level subscriber SAT	102 dBμV
Max. output level subscriber TERR	50...110 dBμV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	25 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1708, DRC 1712, DRC 1716, DRC 1724, DRC 1732
Weight	0,76 kg
Dimensions (width x height x depth)	130 x 290 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 155 x 70 mm
Packaging volume sales unit	3,7 dm <sup>3</sup>
Gross weight sales unit	0,88 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 155 x 70 mm
Packaging volume shipping package	3,7dm <sup>3</sup>
Gross weight shipping unit	0,88 kg
EAN	4010056749682
Article number	74968

### Characteristics

- Cascadable multiswitch for the distribution of 16 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



## DRC 1712

FLEXSWITCH multiswitch 17 in 12, cascade, TERR. passive



The DRC 1712 is a cascadable multiswitch with 17 inputs for the distribution of four satellites and terrestrial signals. The polarisations are available at 17 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 12 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1712 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	16 pcs.
Outputs SAT	16 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	1...3 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	2...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	12 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	3...0 dB
Insertion TERR	28 dB (±3 dB)
Max. output level subscriber SAT	102 dBµV
Max. output level subscriber TERR	50...110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	29 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1708, DRC 1712, DRC 1716, DRC 1724, DRC 1732
Weight	1 kg
Dimensions (width x height x depth)	189 x 291 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm <sup>3</sup>
Gross weight sales unit	1,22 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm <sup>3</sup>
Gross weight shipping unit	1,22 kg
EAN	4010056749699
Article number	74969

### Characteristics

- Cascadable multiswitch for the distribution of 16 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 17 inputs, cascade

## DRC 1716

FLEXSWITCH multiswitch 17 in 16, cascade, TERR. passive



The DRC 1716 is a cascadable multiswitch with 17 inputs for the distribution of four satellites and terrestrial signals. The polarisations are available at 17 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 16 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1716 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	16 pcs.
Outputs SAT	16 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	1...3 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	2...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	16 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	3...0 dB
Insertion TERR	28 dB (±3 dB)
Max. output level subscriber SAT	102 dBμV
Max. output level subscriber TERR	50...110 dBμV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	33 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1708, DRC 1712, DRC 1716, DRC 1724, DRC 1732
Weight	1,02 kg
Dimensions (width x height x depth)	189 x 291 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	370 x 235 x 70 mm
Packaging volume sales unit	6 dm <sup>3</sup>
Gross weight sales unit	1,22 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	370 x 235 x 70 mm
Packaging volume shipping package	6dm <sup>3</sup>
Gross weight shipping unit	1,22 kg
EAN	4010056749705
Article number	74970

### Characteristics

- Cascadable multiswitch for the distribution of 16 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRC 1724

FLEXSWITCH multiswitch 17 in 24, cascade, TERR. passive



The DRC 1724 is a cascadable multiswitch with 17 inputs for the distribution of four satellites and terrestrial signals. The polarisations are available at 17 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 24 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1724 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	16 pcs.
Outputs SAT	16 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	2...5 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	3...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	24 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	2...0 dB
Insertion TERR	33 dB (±3 dB)
Max. output level subscriber SAT	102 dBµV
Max. output level subscriber TERR	50...110 dBµV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	41 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1708, DRC 1712, DRC 1716, DRC 1724, DRC 1732
Weight	1,54 kg
Dimensions (width x height x depth)	310 x 293 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 330 x 70 mm
Packaging volume sales unit	8 dm³
Gross weight sales unit	1,78 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 330 x 70 mm
Packaging volume shipping package	8dm³
Gross weight shipping unit	1,78 kg
EAN	4010056749712
Article number	74971

### Characteristics

- Cascadable multiswitch for the distribution of 16 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany

# Multiswitch 17 inputs, cascade

## DRC 1732

FLEXSWITCH multiswitch 17 in 32, cascade, TERR. passive



The DRC 1732 is a cascadable multiswitch with 17 inputs for the distribution of four satellites and terrestrial signals. The polarisations are available at 17 cascade outputs for the installation of further multiswitches. Commercially available DVB-S/S2 set-top-boxes or TVs with an integrated receiver can be used at the 32 subscriber outputs. Inserted terrestrial signals like DVB-T/T2, DAB or FM are available at each subscriber output as well. The very low insertion loss of the DRC 1732 is realised through an active satellite path. Through the passive terrestrial path it is possible to feed in multimedia services like "LAN over Coax", or signals from a central headend system. The LNBs can be powered by previously installed amplifiers, or the available power supply DRP 1533.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	16 pcs.
Outputs SAT	16 pcs.
Frequency range SAT	950... 2400 MHz
Through loss SAT	2...6 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	> 10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Outputs TERR	1 pcs.
Frequency range TERR	5... 862 MHz
Through loss TERR	3...5 dB
Isolation TERR - SAT	30 dB typ.
Return loss TERR	> 10 dB
<b>Subscriber outputs</b>	
Outputs	32 pcs.
Frequency range	5...2400 MHz
TERR type	passive
Insertion loss SAT	2...0 dB
Insertion TERR	33 dB (±3 dB)
Max. output level subscriber SAT	102 dBμV
Max. output level subscriber TERR	50...110 dBμV (passive)
Return loss subscriber SAT	>10 dB
Return loss subscriber TERR	>10 dB
Control signal	14/18 V, 0/22 kHz, DiSEqC 1.0
Current consumption from receiver	55 mA
<b>Connectors</b>	
F-socket	49 pcs.
DC supply voltage	Connector type DC 5.5/2.1 mm
Colour-coding	VL = black; HL = green; VH = red; HH = yellow
<b>General data</b>	
Power indicator	LED
Operating voltage	15 V DC
Power consumption max.	< 0,2 W

Technical data	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...70 °C
Cascadable with	DRC 1708, DRC 1712, DRC 1716, DRC 1724, DRC 1732
Weight	1,58 kg
Dimensions (width x height x depth)	310 x 293 x 63 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	350 x 330 x 70 mm
Packaging volume sales unit	8 dm <sup>3</sup>
Gross weight sales unit	1,82 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	350 x 330 x 70 mm
Packaging volume shipping package	8dm <sup>3</sup>
Gross weight shipping unit	1,82 kg
EAN	4010056749729
Article number	74972

### Characteristics

- Cascadable multiswitch for the distribution of 16 satellite polarisations and terrestrial signals
- Passive terrestrial path
- Integrated SAT amplifier for low insertion loss
- Pre-emphasis to compensate the cable loss at high frequencies
- Terrestrial signals available at the receiver without any power supply of the multiswitch
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F-connectors
- Colour-coded inputs and outputs
- Made in Germany



# DRA 5120

FLEXSWITCH line amplifier, for a satellite



The DRA 5120 is an amplifier for 4 polarizations of one satellite and terrestrial signals. With a gain of 20 dB the DRA 5120 is optimally suited for use as line amplifier in multi-switch cascades. The gain can be individually adjusted at each input in the range of 5...20 dB, in order to compensate differences in level between the individual polarizations. The supply voltage can be realized either locally, through the optional power supply DRP 1533 or via remote power at the trunk lines.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950...2200 MHz
Gain SAT	20 dB
Attenuator SAT	0...15 dB
Max. output level SAT	105 dB $\mu$ V
Equalization SAT	4 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	12 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	10...862 MHz
Gain TERR	20 dB
Attenuation TERR	0...15 dB
Max. output level TERR	112 dB $\mu$ V
Isolation TERR - SAT	30 dB typ.
Return loss TERR	12 dB
Noise figure	12 dB
<b>Connectors</b>	
F-socket	10 pcs.
DC supply voltage	
<b>General data</b>	
Operating voltage	15 V DC
Current consumption	<400 mA
Screening factor	Class A, according to EN 50083-2
Impedance	75 $\Omega$
Operating temperature range	-20...+50 °C
Weight	0,28 kg
Dimensions (width x height x depth)	140 x 71 x 45 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	150 x 80 x 50 mm
Packaging volume sales unit	0,6 dm <sup>3</sup>
Gross weight sales unit	0,3 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	150 x 80 x 50 mm
Packaging volume shipping package	0,6dm <sup>3</sup>
Gross weight shipping unit	0,3 kg
EAN	4010056749774
Article number	74977

### Characteristics

- Line amplifier for 4 satellite and 1 terrestrial signals
- Adjustable gain from 5...20 dB at each input
- Remote-powered via the SAT-IF trunk lines
- Switchable DC bypass
- High screening efficiency according to Class A
- Made in Germany

# Amplifiers

## DRA 9120

FLEXSWITCH line amplifier, for two satellites



The DRA 9120 is an amplifier for 8 polarizations of two satellite and terrestrial signals. With a gain of 20 dB the DRA 9120 is optimally suited for use as line amplifier in multi-switch cascades. The gain can be individually adjusted at each input in the range of 5...20 dB, in order to compensate differences in level between the individual polarizations. The supply voltage can be realized either locally, through the optional power supply DRP 1533 or via remote power at the trunk lines.

Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Frequency range SAT	950...2200 MHz
Gain SAT	20 dB
Attenuator SAT	0...15 dB
Max. output level SAT	105 dB $\mu$ V
Equalization SAT	4 dB
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	12 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	10...862 MHz
Gain TERR	20 dB
Attenuation TERR	0...15 dB
Max. output level TERR	112 dB $\mu$ V
Isolation TERR - SAT	30 dB typ.
Return loss TERR	12 dB
Noise figure	12 dB
<b>Connectors</b>	
F-socket	10 pcs.
DC supply voltage	
<b>General data</b>	
Operating voltage	15 V DC
Current consumption	<600 mA
Screening factor	Class A, according to EN 50083-2
Impedance	75 $\Omega$
Operating temperature range	-20...+50 °C
Weight	0,42 kg
Dimensions (width x height x depth)	220 x 71 x 45 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	220 x 80 x 50 mm
Packaging volume sales unit	0,88 dm <sup>3</sup>
Gross weight sales unit	0,46 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 80 x 50 mm
Packaging volume shipping package	0,88dm <sup>3</sup>
Gross weight shipping unit	0,46 kg
EAN	4010056749781
Article number	74978

### Characteristics

- Line amplifier for 8 satellite and 1 terrestrial signals
- Adjustable gain from 5...20 dB at each input
- Remote-powered via the SAT-IF trunk lines
- Switchable DC bypass
- High screening efficiency according to Class A
- Made in Germany





# DRX 5002

FLEXSWITCH distributor, 2-way for one satellite



Technical data	
<b>SAT-IF trunk</b>	
Inputs SAT	4 pcs.
Frequency range SAT	950...2200 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	10 dB
<b>Distribution outputs</b>	
Outputs SAT	8 pcs.
Outputs TERR	2 pcs.
Frequency range	5...2200 MHz
Distribution loss SAT	6 dB (±1 dB)
Distribution loss TERR	4,5 dB (±1 dB)
Return loss	10 dB
<b>Connectors</b>	
F-socket	15 pcs.
<b>General data</b>	
Screening factor	Class A, according to EN 50083-2
Impedance	75 Ω
Operating temperature range	-20...+50 °C
Weight	0,3 kg
Dimensions (width x height x depth)	140 x 71 x 45 mm

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	150 x 80 x 50 mm
Packaging volume sales unit	0,6 dm <sup>3</sup>
Gross weight sales unit	0,32 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	150 x 80 x 50 mm
Packaging volume shipping package	0,6dm <sup>3</sup>
Gross weight shipping unit	0,32 kg
EAN	4010056749798
Article number	74979

### Characteristics

- Passive 2-way splitter for one satellite and terrestrial signals
- Switchable DC bypass for LNB powering
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F connectors
- Made in Germany

# Taps/Splitters

## DRX 9002

FLEX SWITCH distributor, 2-fold for two satellites



### Technical data

<b>SAT-IF trunk</b>	
Inputs SAT	8 pcs.
Frequency range SAT	950...2200 MHz
Decoupling SAT -SAT	30 dB typ.
Return loss SAT	10 dB
<b>Terrestrial trunk</b>	
Inputs TERR	1 pcs.
Frequency range TERR	5...862 MHz
Isolation TERR - SAT	30 dB typ.
Return loss TERR	10 dB
<b>Distribution outputs</b>	
Outputs SAT	16 pcs.
Outputs TERR	2 pcs.
Frequency range	5...2200 MHz
Distribution loss SAT	6 dB ( $\pm 1$ dB)
Distribution loss TERR	4,5 dB ( $\pm 1$ dB)
Return loss	10 dB
<b>Connectors</b>	
F-socket	27 pcs.
<b>General data</b>	
Screening factor	Class A, according to EN 50083-2
Impedance	75 $\Omega$
Operating temperature range	-20...+50 °C
Weight	0,44 kg
Dimensions (width x height x depth)	220 x 71 x 45 mm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	220 x 80 x 50 mm
Packaging volume sales unit	0,88 dm <sup>3</sup>
Gross weight sales unit	0,48 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	220 x 80 x 50 mm
Packaging volume shipping package	0,88dm <sup>3</sup>
Gross weight shipping unit	0,48 kg
EAN	4010056749804
Article number	74980

### Characteristics

- Passive 2-way splitter for two satellite and terrestrial signals
- Switchable DC bypass for LNB powering
- High screening efficiency according to Class A
- Compact dimensions paired with installation friendly distance between the F connectors
- Made in Germany



## DRI 0210

Power feed DC



## DRP 1533

Wall wart 230 V AC, 15 V DC



### Technical data

Frequency range	10...2200 MHz
Through loss SAT	2 dB ( $\pm 1$ dB)
Decoupling the levels, SAT -> SAT	>35 dB
Return loss SAT	>10 dB

### General data

Connectors	F-connectors
Impedance	75 $\Omega$
Max. remote power LNB	1000 mA
Trunk line DC power	switchable
Ambient temperature	-20...+50 °C
Dimensions (width x height x depth)	100 x 60 x 75 mm

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	170 x 130 x 50 mm
Packaging volume sales unit	1,1 dm <sup>3</sup>
Gross weight sales unit	0,2 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170 x 130 x 50 mm
Packaging volume shipping package	1,1dm <sup>3</sup>
Gross weight shipping unit	0,2 kg
EAN	4010056749842
Article number	74984

### Technical data

#### General data

Connector	Connector type DC 5.5/2.1 mm
Operating voltage	90...264 V AC
Output voltage	15 V DC
Max. load current	3,3 A
Max. output power	49,5 W
Max. humidity, non condensing	25...75 %
Protection class	II
Electrical safety standard	EN 60950-1
EMC	EN 50083-2
Dimensions W x H x D	116 x 33 x 51 mm
Operating temperature range	-20...+50 °C
Storage temperature	-10...+80 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	170 x 130 x 50 mm
Packaging volume sales unit	1,1 dm <sup>3</sup>
Gross weight sales unit	0,44 kg
Shipping unit	1 pcs.
Dimensions (WxHxD) shipping unit	170 x 130 x 50 mm
Packaging volume shipping package	1,1dm <sup>3</sup>
Gross weight shipping unit	0,44 kg
EAN	4010056743505
Article number	74983

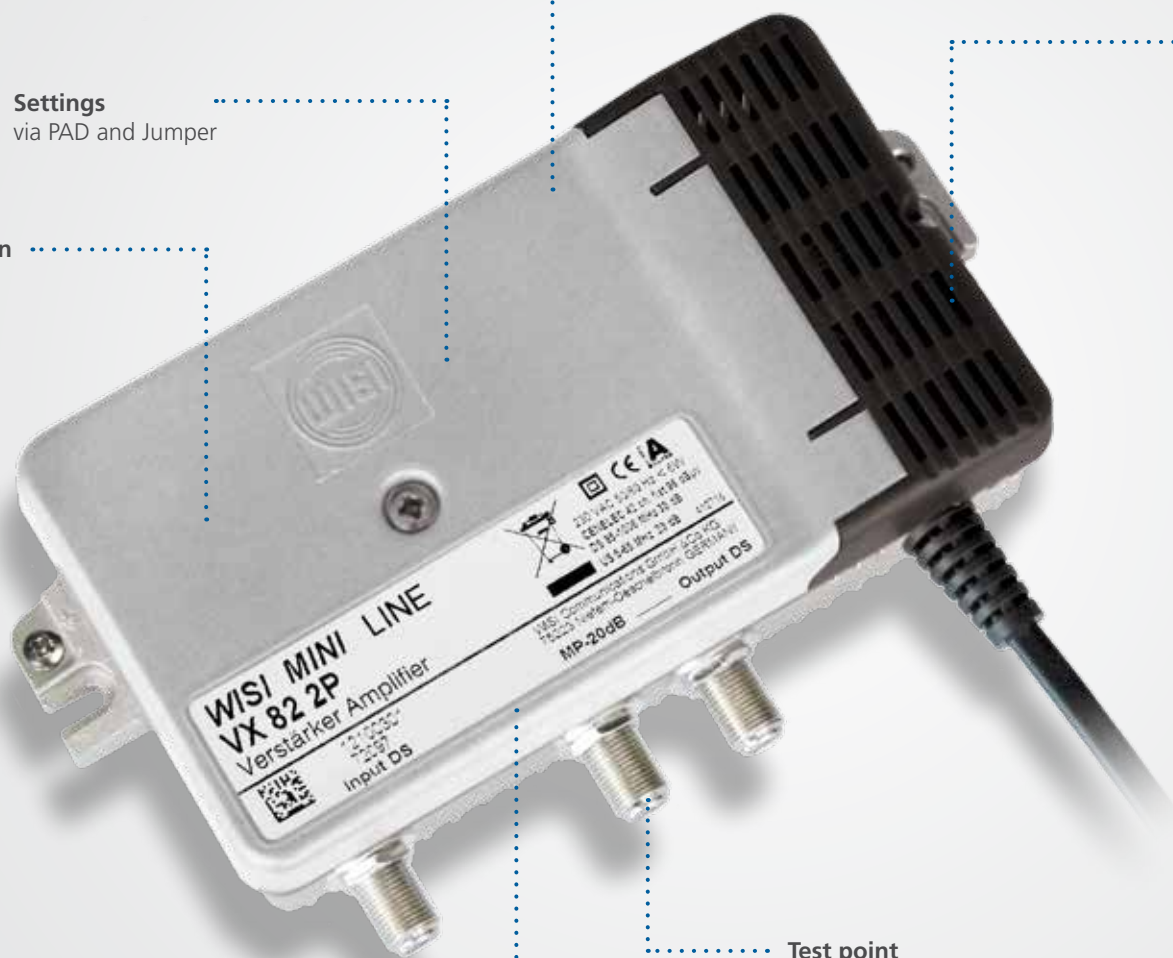
The DRP 1533 is a wall wart with 230 V AC, 50/60 Hz and has a output power from 15 V DC. It is usable for the FLEXSWITCH series.

# WISI Amplifiers: Tough guys for every application

housing with high  
screening factor

Settings  
via PAD and Jumper

Compact design



Test point

integrated  
Return path amplifier



# Amplifiers

**WISI in-house distribution amplifiers** meet all the requirements from terminal in a family house or in apartment buildings to supply in high-rise buildings, with WISI find the right type having the right performance.

All amplifiers have a robust, corrosion-resistant die-cast zinc housing with lamellar for excellent air circulation and heat derivation, are multimedia capable and comply with Class A.

WISI in-house distribution amplifiers convince with the latest technology and have been certified for installation by many cable operators.

## WISI Amplifiers at a glance:

- Certified by many cable network operators
- High efficiency
- Compact design
- Low power consumption

... very low  
power consumption

# Multiband amplifier

## VS 80 A

Multiband amplifier, split band



## VS 83 B

Multiband amplifier



Technical data	
<b>Downstream</b>	
Inputs	4 pcs.
Frequency range input 1	47...108 MHz (FS Band 1 and FM)
Frequency range input 2	174...230 MHz (FS Band 2)
Frequency range input 3	470...862 MHz (FS Band 4)
Frequency range input 4	470...862 MHz (FS Band 5)
Gain input 1	36 dB (input level regulator 0-18 dB)
Gain input 2	37 dB (input level regulator 0-18 dB)
Gain input 3	42 dB (input level regulator 0-18 dB)
Gain input 4	42 dB (input level regulator 0-18 dB)
Output level 1	119 dB $\mu$ V (EN50083-5)
Output test point	-20 dB
<b>Connectors</b>	
F-socket	6 pcs.
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	3.5 W
Screening factor	Class A, EN 50083-2
Operating temperature range	-20...+55 °C
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 143 x 50 mm
Packaging volume sales unit	1,2 dm <sup>3</sup>
Gross weight sales unit	0.860 kg
Shipping unit	10 pcs.
Gross weight shipping unit	0.86 kg
EAN	4010056170189
Article number	17018

Multiband amplifier in split band technology for volumes 1-5

Technical data	
<b>Downstream</b>	
Inputs	4 pcs.
Frequency range input 1	40...108 MHz (FS Band 1 and FM)
Frequency range input 2	160...260 MHz (FS Band 2)
Frequency range input 3	470...862 MHz (FS Band 4 and 5)
Frequency range input 4	470...862 MHz (FS Band 4 and 5)
Gain input 1	20 dB (input level regulator 0-20 dB)
Gain input 2	20 dB (input level regulator 0-20 dB)
Gain input 3	30 dB (input level regulator 0-16 dB)
Gain input 4	30 dB (input level regulator 0-16 dB)
Output level 1	106 dB $\mu$ V
Output level 2	106 dB $\mu$ V
<b>Connectors</b>	
F-socket	6 pcs.
<b>General data</b>	
Operating voltage AC	230 V
Feeding voltage DC	24 V DC (50mA)
Power consumption	7 W
Screening factor	Class A, EN 50083-2
Operating temperature range	-10...+65 °C
Protection class	IP20
<b>Packaging data</b>	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	16 x 10 x 5 mm
Gross weight sales unit	0.700 kg
Shipping unit	pcs.
Gross weight shipping unit	0.7 kg
EAN	4010056191559
Article number	19155

Multiband amplifier for volumes 1-5

# Split band amplifier



## VS 93 B

2,4 GHz-splitband amplifier



Split band amplifier to bring together terrestrial and 1 SAT frequency band on a trunk line.

Technical data	
<b>SAT-IF</b>	
Inputs SAT	1 pcs.
Frequency range SAT	950...2400 MHz
Gain SAT	27...35 dB
Attenuator SAT	0...18 dB
Equalizer SAT	8...16 dB (Jumper 0/8 dB + 8 dB fix)
Output level SAT	115 dB
Noise figure SAT	7 dB
<b>terrestrial</b>	
Inputs TERR	2 pcs. (1 active/1 passive)
Frequency range TERR	5...862 MHz
Gain TERR	13...18 dB
Attenuator TERR	0...18 dB
Equalizer TERR	5 dB (fix)
Output level TERR	109 dB $\mu$ V
Output level	94 dB $\mu$ V
Through loss TERR	2.5 dB (passive way)
Return channel frequency range	5...65 MHz
Return path amplification	-3 dB
<b>Connectors</b>	
F-socket	3 pcs.
<b>General data</b>	
Operating voltage AC	230 V (50/60 Hz)
Power consumption	4 W
LNB supply voltage	18 V
LNB electrical power supply	0.3 A (short-circuit-proof)
EMC	
Dimensions (width x height x depth)	145 x 120 x 38 mm
Operating temperature range	-20...+50 °C

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	197 x 230 x 75 mm
Packaging volume sales unit	3.4 dm <sup>3</sup>
Gross weight sales unit	0.950 kg
Shipping unit	10 pcs.
EAN	4010056186258
Article number	18625

# Split band amplifier

## VS 95

Split band amplifier



Splitband amplifier for terrestrial and 2 SAT frequency bands for 2 trunk lines.

### Technical data

<b>SAT-IF</b>	
Inputs SAT	2 pcs. (via filter)
Frequency range SAT	950...2150 MHz
Gain SAT	29...32 dB
Attenuator SAT	20 dB
Equalizer SAT	7 dB (switchable)
Output level SAT	106 dB
Noise figure SAT	6 dB
<b>terrestrial</b>	
Inputs TERR	2 pcs. (via filter)
Frequency range TERR	47...862 MHz
Gain TERR	23...29 dB
Attenuator TERR	20 dB
Equalizer TERR	6 dB (switchable)
Output level TERR	117 dB $\mu$ V
<b>Connectors</b>	
F-socket	4 pcs.
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	9 W
LNB supply voltage	0 V
LNB electrical power supply	- A
EMC	Class A, EN 50083-2
Dimensions (width x height x depth)	177 x 122 x 40 mm
Operating temperature range	-10...+50 °C

### Packaging data

Sales unit	1 pcs.
Dimensions (WxD) sales unit	197 x 230 x 75 mm
Gross weight sales unit	1.250 kg
Shipping unit	5 pcs.
Packaging volume shipping package	3.4dm <sup>3</sup>
Gross weight shipping unit	1.25 kg
EAN	4010056130053
Article number	13005



# In-house distribution amplifier Mini Line



## VX 86

In-house amplifier



Broadband in-house amplifier for use in coaxial networks recommended for 1-3 households

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Frequency range downstream	47...862 MHz
Gain downstream	18...21 dB
Noise figure downstream	<8 dB
Attenuator downstream	0...18 dB
Equalizer downstream	3...18 dB
interstage equalizer downstream	3 dB (constant)
Output level 1	96 dB $\mu$ V (DS, CENELEC 42 channels, flat)
Output level 2	98.5 dB $\mu$ V (DS, CENELEC 42 channels, 6 dB slope)
Output level 3	114 dB $\mu$ V (DS, EN50083-5, 3.Ord.)
<b>Upstream</b>	
Frequency range upstream	5...30 MHz (passive)
<b>Connectors</b>	
F-socket	2 pcs.
<b>General data</b>	
Operating voltage AC	230 V (50/60 Hz)
Power consumption	3.5 W
EMC	Class A, EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN61000-4-5, 1,2/50 $\mu$ s pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 143 x 50 mm
Gross weight sales unit	0.871 kg
Packaging volume shipping package	1.2dm <sup>3</sup>
Gross weight shipping unit	0.871 kg
EAN	4010056163457
Article number	16345

### Characteristics

- With passive return path
- Adjustable level and equalizer
- F-connectors
- Wall mounting
- Metal housing

# In-house distribution amplifier Mini Line

## VX 87

In-house amplifier



Broadband in-house amplifier for use in coaxial networks recommended for 1-3 households

### Technical data

Downstream	
Inputs	1 pcs.
Frequency range downstream	47...862 MHz
Gain downstream	28...31 dB
Noise figure downstream	<8 dB
Attenuator downstream	0...18 dB
Equalizer downstream	3...18 dB
interstage equalizer downstream	3 dB (constant)
Output level 1	96 dB $\mu$ V (DS, CENELEC 42 channels, flat)
Output level 2	98.5 dB $\mu$ V (DS, CENELEC 42 channels, 6 dB slope)
Output level 3	114 dB $\mu$ V (DS, EN50083-5, 3.Ord.)
Upstream	
Frequency range upstream	5...30 MHz (passive)
Connectors	
F-socket	2 pcs.
General data	
Operating voltage AC	230 V (50/60 Hz)
Power consumption	3.5 W
EMC	Class A, EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN61000-4-5, 1,2/50 $\mu$ s pulse)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 143 x 50 mm
Gross weight sales unit	0.840 kg
Packaging volume shipping package	1.2dm <sup>3</sup>
Gross weight shipping unit	0.84 kg
EAN	4010056163464
Article number	16346

### Characteristics

- With passive return path
- Adjustable level and equalizer
- F-connectors
- Wall mounting
- Metal housing



# VX 81 0S

Homeamplifier, 1 GHz, KDG 1TS140



Locally fed 1GHz distribution amplifier in Mini Line housing with fold-up lid. The programming elements allow variable adjustment. Functional equation with PAD-based version 8x OP.

Technical data	
<b>Down-Stream / DS</b>	
Frequency range downstream	85...1006 MHz
Gain downstream	21 dB
Frequency response	$\leq \pm 0,8$ dB
Output level	$\geq 98$ dB $\mu$ V (CENELEC 42 Ch, flat, CTB/CSO $\geq 60$ dB)
IN-ATT (adjuster)	0...20 dB
IN-EQ (adjuster)	0...20 dB
Interstage-EQ (fix)	3 dB
noise figure	$\leq 7$ dB
<b>Upstream (US)</b>	
US frequency range	5...65 MHz
Gain upstream	16 dB
Frequency response upstream	$\leq \pm 0,8$ dB
Output level	120 dB $\mu$ V (KDG TS140 medium load; BER $< 1e-10-6$ )
IN-ATT (adjuster)	0...20 dB
noise figure	$\leq 7$ dB
<b>General data</b>	
HF-connections	F
Impedance	75 $\Omega$
Return loss	$\geq 14$ dB (>40 MHz - 1,5 dB Okta-ve $\geq 10$ dB)
Lightning protection	1 kV (severity 1 / EN60728-3)
EMC	EN50083-2
Supply voltage	230 V ( $\pm 10\%$ )
Power consumption max.	$\leq 4,5$ W
Ambient temperature	-20...+55 °C
Storage temperature	-25...+75 °C
Protection class	IP20

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0,726 kg
Shipping unit	pcs.
EAN	4010056741235
Article number	74123

### Characteristics

- Compact housing MiniLine
- All RF connections F-connector
- setting elements with rotary switch
- Flap-lid for easy handling

# In-house distribution amplifier Mini Line

## VX 82 0S

Homeamplifier, 1 GHz, KDG 1TS140



Locally fed 1GHz distribution amplifier in Mini Line housing with fold-up lid. The programming elements allow variable adjustment. Functional equation with PAD-based version 8x OP.

### Technical data

Down-Stream / DS	
Frequency range downstream	85...1006 MHz
Gain downstream	31 dB
Frequency response	$\leq \pm 0,8$ dB
Output level	$\geq 98$ dB $\mu$ V (CENELEC 42 Ch, flat, CTB/CSO $\geq 60$ dB)
IN-ATT (adjuster)	0...20 dB
IN-EQ (adjuster)	0...20 dB
Interstage-EQ (fix)	3 dB
noise figure	$\leq 6,5$ dB
Upstream (US)	
US frequency range	5...65 MHz
Gain upstream	25 dB
Frequency response upstream	$\leq \pm 0,8$ dB
Output level	120 dB $\mu$ V (KDG TS140 medium load; BER $< 1e-10-6$ )
IN-ATT (adjuster)	0...20 dB
noise figure	$\leq 4,5$ dB
General data	
HF-connections	F
Impedance	75 $\Omega$
Return loss	$\geq 14$ dB (>40 MHz - 1,5 dB Okta-ve $\geq 10$ dB)
Lightning protection	1 kV (severity 1 / EN60728-3)
EMC	EN50083-2
Supply voltage	230 V ( $\pm 10\%$ )
Power consumption max.	$\leq 5,5$ W
Ambient temperature	-20...+55 °C
Storage temperature	-25...+75 °C
Protection class	IP20

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0,726 kg
EAN	4010056741242
Article number	74124

### Characteristics

- Compact housing MiniLine
- All RF connections F-connector
- setting elements with rotary switch
- Flap-lid for easy handling



# VX 83 0S

Homeamplifier, 1 GHz, KDG 1TS140



Locally fed 1GHz distribution amplifier in Mini Line housing with fold-up lid. The programming elements allow variable adjustment. Functional equation with PAD-based version 8x OP.

Technical data	
<b>Down-Stream / DS</b>	
Frequency range downstream	85...1006 MHz
Gain downstream	31 dB
Frequency response	$\leq \pm 0,8$ dB
Output level	$\geq 102$ dB $\mu$ V (CENELEC 42 Ch, flat, CTB/CSO $\geq 60$ dB)
IN-ATT (adjuster)	0...20 dB
IN-EQ (adjuster)	0...20 dB
Interstage-EQ (fix)	3 dB
noise figure	$\leq 6,5$ dB
<b>Upstream (US)</b>	
US frequency range	5...65 MHz
Gain upstream	25 dB
Frequency response upstream	$\leq \pm 0,8$ dB
Output level	120 dB $\mu$ V (KDG TS140 medium load; BER $< 1e-10-6$ )
IN-ATT (adjuster)	0...20 dB
noise figure	$\leq 4,5$ dB
<b>General data</b>	
HF-connections	F
Impedance	75 $\Omega$
Return loss	$\geq 14$ dB (>40 MHz - 1,5 dB Okta-ve $\geq 10$ dB)
Lightning protection	1 kV (severity 1 / EN60728-3)
EMC	EN50083-2
Supply voltage	230 V ( $\pm 10\%$ )
Power consumption max.	$\leq 5,5$ W
Ambient temperature	-20...+55 °C
Storage temperature	-25...+75 °C
Protection class	IP20

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0,726 kg
Shipping unit	pcs.
EAN	4010056741259
Article number	74125

### Characteristics

- Compact housing MiniLine
- All RF connections F-connector
- setting elements with rotary switch
- Flap-lid for easy handling

# In-house distribution amplifier Mini Line

## VX 82 2P

In-house amplifier



Broadband in-house amplifier for use in coaxial networks recommended for 4-6 households, classification 1TS 140 B 3.2, authorization of network operator

### Technical data

Downstream	
Inputs	1 pcs.
Frequency range downstream	85...1006 MHz
Gain downstream	33 dB
Noise figure downstream	≤6,0 dB
Attenuator downstream	0...20 dB
Equalizer downstream	0...20 dB (Interstage-equalizer 0/7 dB)
Output level 1	99 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB/>60 dB)
Upstream	
Frequency range upstream	5...65 MHz
Gain upstream	23 dB
noise figure upstream	≤5 dB
attenuator upstream input	0...20 dB
Equalizer US	3 dB (Interstage, fix)
Output level 4	120 dB $\mu$ V (KDG 1TS140 - average load with QAM 64 MER >35 dB, BER 1x10 <sup>-8</sup> )
Output test point	-20 dB
Connectors	
F-socket	3 pcs.
General data	
Operating voltage AC	230 V (50/60 Hz)
Power consumption	≤6,0 W
EMC	EN 50083-2
Dimensions (width x height x depth)	163x90x50 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN60728-3, 1,2/50 $\mu$ s pulse)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 143 x 50 mm
Gross weight sales unit	0.810 kg
Shipping unit	1 pcs.
EAN	4010056720858
Article number	72085

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Screening ensured with open flap-lid
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring point at the output
- Return path amplifier on the circuit board
- Low power consumption, high output level
- Unitymedia certified

# In-house distribution amplifier Mini Line



## VX 67 B

In-house amplifier



Broadband in-house amplifier for use in coaxial networks with direct connection for up to 4 antenna outlets.



Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Frequency range downstream	85...1006 MHz
Gain downstream	6 dB
Output level 1	≥87 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	1 dB
noise figure upstream	≤18 dB
Output level 4	116 dBμV (DIN. IMA2/3 >50 dB)
<b>Connectors</b>	
F-socket	5 pcs.
<b>General data</b>	
Operating voltage AC	230 V (±10 %)
Power consumption	3 W
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	165x105x45 mm
Operating temperature range	-25...+75 °C
Protection class	IP20

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 150 x 50 mm
Gross weight sales unit	0.870 kg
Packaging volume shipping package	1.2dm <sup>3</sup>
Gross weight shipping unit	0.87 kg
EAN	4010056715960
Article number	71596

### Characteristics

- Adjustable level and equalizer
- F-connectors
- Wall mounting
- Metal housing

# In-house distribution amplifier Midi Line

## VX 89 2P

In-house amplifier



Broadband in-house amplifier for use in coaxial networks recommended for 4-6 households, classification 1TS 140 C 4.2, authorisation of network operator

### Technical data

Downstream	
Inputs	1 pcs.
Frequency range downstream	85...1006 MHz
Gain downstream	35 dB
Noise figure downstream	≤6,0 dB
Attenuator downstream	0...20 dB
Equalizer downstream	0...20 dB (Interstage-equalizer 0/7 dB)
Output level 1	101 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB/>60 dB)
Upstream	
Frequency range upstream	5...65 MHz
Gain upstream	25 dB
noise figure upstream	≤5 dB
attenuator upstream input	0...20 dB
Equalizer US	3 dB (Interstage, fix)
Output level 4	120 dB $\mu$ V (KDG 1TS140 - average load with QAM 64 MER >35 dB, BER 1x10 <sup>-8</sup> )
Output test point	-20 dB
Connectors	
F-socket	3 pcs.
General data	
Operating voltage AC	230 V
Power consumption	≤6,0 W
EMC	EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 50 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN60728-3, 1,2/50 $\mu$ s pulse)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 143 x 50 mm
Gross weight sales unit	0.720 kg
Shipping unit	1 pcs.
EAN	4010056720865
Article number	72086

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Screening ensured with open flap-lid
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring point at the output
- Return path amplifier on the circuit board
- Low power consumption, high output level
- Unitymedia certified





## VX 88 OP

In-house/distribution amplifier, locally supplied



MIDI-LINE distribution amplifier in zinc diecast housing, flap cover for easy handling, attenuators and equaliser configurable via PADs and jumper. Measuring points on the input and output. Return path amplifier on the main board, low power input and high power output. Classification: VX 88 OP: KDG 1TS140 B (3.2)

Technical data	
<b>Down-Stream / DS</b>	
Frequency range downstream	85...1006 MHz
Gain downstream	30 dB
Attenuator downstream	0...20 dB
Equalizer downstream	0...20 dB
interstage equalizer downstream	0/6 dB
Output level 1	100 dB $\mu$ V
Noise figure downstream	$\leq 7,0$ dB
<b>Upstream (US)</b>	
Frequency range upstream	5...65 MHz
Gain upstream	25 dB
attenuator upstream input	0...20 dB
Equalizer US	0/3/6/9 dB
noise figure upstream	$\leq 5$ dB
Output level	120 dB $\mu$ V
input test point (bidirectional)	-20 dB
output test point (directional coupler)	-20 dB
<b>General data</b>	
Impedance	75 $\Omega$
Operating voltage	230 V AC ( $\pm 10\%$ , LED green)
Power consumption	$\leq 5,5$ W
Operating temperature range	-20...+55 $^{\circ}$ C
Storage temperature	-25...+75 $^{\circ}$ C
Protection class	IP20
Electro Magnetic Compatibility (EMC)	EN50083-2
Lightning protection	1 kV (EN60728-2:- 1,2/50 $\mu$ s pulse)
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.726 kg
EAN	4010056733957
Article number	73395

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring points at the input and output
- Return path amplifier on the circuit board
- Low power consumption, high output level
- Classification: KDG 1TS140 C (3.2)

# In-house distribution amplifier Midi Line

## VX 89 OP

In-house/distribution amplifier, locally supplied



MIDI-line distribution amplifier in zinc diecast housing, flap cover for easy handling, attenuators and equaliser configurable via PADs and jumper. Measuring points on the input and output. Return path amplifier on the main board, low power input and high power output. Classification: VX 89 OP: KDG 1TS140 C (4.2)

### Technical data

Down-Stream / DS	
Frequency range downstream	85...1006 MHz
Gain downstream	38 dB
Attenuator downstream	0...20 dB
Equalizer downstream	0...20 dB
interstage equalizer downstream	0/6 dB
Output level 1	100 dB $\mu$ V
Noise figure downstream	$\leq 7,0$ dB
Upstream (US)	
Frequency range upstream	5...65 MHz
Gain upstream	28 dB
attenuator upstream input	0...20 dB
Equalizer US	0/3/6/9 dB
noise figure upstream	$\leq 5$ dB
Output level	120 dB $\mu$ V
input test point (bidirectional)	-20 dB
output test point (directional coupler)	-20 dB
General data	
Impedance	75 $\Omega$
Operating voltage	230 V AC ( $\pm 10\%$ , LED green)
Power consumption	$\leq 5,5$ W
Operating temperature range	-20...+55 $^{\circ}$ C
Protection class	IP20
Storage temperature	-25...+75 $^{\circ}$ C
Electro Magnetic Compatibility (EMC)	EN50083-2
Lightning protection	1 kV (EN60728-2:- 1,2/50 $\mu$ s pulse)
Dimensions (width x height x depth)	163 x 90 x 50 mm

### Packaging data

Sales unit	1 pcs.
Gross weight sales unit	0.726 kg
EAN	4010056733964
Article number	73396

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring points at the input and output
- Return path amplifier on the circuit board
- Low power consumption, high output level
- Classification: KDG 1TS140 C (4.2)

# In-house distribution amplifier Home Line



## VX 43 D 2018

In-house amplifier



Broadband in-house amplifier for use in coaxial networks recommended for 4-6 households, classification 1TS 140 C 1.3, authorisation of network operator

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB (resistance)
Frequency range downstream	85...1006 MHz
Gain downstream	18 dB
Noise figure downstream	<7,5 dB
Attenuator downstream	0...15 dB (1 dB-steps)
Equalizer downstream	0...22,5 dB (1,5 dB-steps)
Output level 1	≥107 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output test point	20 dB (directional coupler)
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	31/21 dB (Jumper)
noise figure upstream	<7 dB
attenuator upstream input	0...15 dB (1 dB-steps)
Equalizer US	0/3/6/9 dB (Jumper)
Output level 4	120 dBμV (3 x 64 QAM-signals)
<b>Connectors</b>	
F-socket	4 pcs.
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	6 W
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN61000-4-5, 1,2/50 μs pulse)

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.706 kg
Packaging volume shipping package	1.2dm <sup>3</sup>
Gross weight shipping unit	0.706 kg
EAN	4010056706883
Article number	70688

### Characteristics

- Zinc die-cast housing
- Return path amplifier and diplexer on board
- External test points
- Alignment by uninterruptible rotary switch and jumper
- Passive return path ( jumper )

# In-house distribution amplifier Home Line

## VX 45 D 3830

In-house amplifier



Broadband in-house amplifier for use in coaxial networks recommended for 7 to 18 households.

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB (resistance)
Frequency range downstream	85...1006 MHz
Gain downstream	38 dB
Noise figure downstream	<7,5 dB
Attenuator downstream	0...15 dB (1 dB-steps)
Equalizer downstream	0...22,5 dB (1,5 dB-steps)
Interstage attenuator downstream	0/6 dB (Jumper)
interstage equalizer downstream	0/6 dB (Jumper)
Output level 1	≥107 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output test point	20 dB (directional coupler)
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	30 dB
noise figure upstream	<6 dB
attenuator upstream input	0...15 dB (1 dB-steps)
attenuator upstream output	0/10 dB (Jumper)
Equalizer US	0/3/6/9 dB (Jumper)
Output level 4	120 dBμV (3 x 64 QAM-signals)
<b>Connectors</b>	
F-socket	4 pcs.
<b>General data</b>	
Operating voltage AC	230 V
Power consumption	6 W
Screening factor	dB Class A, EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN61000-4-5, 1,2/50 μs pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 143 x 50 mm
Gross weight sales unit	0.670 kg
Packaging volume shipping package	1.2dm <sup>3</sup>
Gross weight shipping unit	0.67 kg
EAN	4010056739690
Article number	73969

### Characteristics

- Zinc die-cast housing
- Return path amplifier and diplexer on board
- External test points
- Alignment by uninterruptible rotary switch and jumper
- Passive return path ( jumper )



## VX 45 E

In-house amplifier



Broadband in-house amplifier for use in coaxial networks recommended for 7 to 18 households

### Technical data

Downstream	
Inputs	1 pcs.
Input measurement socket	20 dB (resistance)
Frequency range downstream	47...862 MHz
Gain downstream	36 dB
Noise figure downstream	7.5 dB
Attenuator downstream	0...25 dB (5 dB-jumper, 15 dB in 1 dB-steps)
Equalizer downstream	0...22,5 dB (1,5 dB-steps)
Interstage attenuator downstream	0/6 dB (Jumper)
interstage equalizer downstream	0/6 dB (Jumper)
Output level 1	106 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output test point	20 dB (directional coupler)
Connectors	
F-socket	4 pcs.
General data	
Operating voltage AC	230 V
Power consumption	5 W
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 47 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN61000-4-5, 1,2/50 $\mu$ s pulse)

### Packaging data

Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	166 x 143 x 50 mm
Gross weight sales unit	1.200 kg
Packaging volume shipping package	1.2dm <sup>3</sup>
Gross weight shipping unit	1.2 kg
EAN	4010056739706
Article number	73970

### Characteristics

- high quality downstream amplifier with band 1
- Zinc die-cast housing
- External test points
- Alignment by uninterruptible rotary switch and jumper
- Passive return path ( jumper )

# In-house distribution amplifier Home Line

## VX 45 2P

In-house/distribution amplifier, locally supplied



Broadband in-house amplifier for use in coaxial networks recommended for 7-18 households, classification 1TS 140 C 4.3

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	-20 dB
Frequency range downstream	85...1006 MHz
Gain downstream	39 dB
Noise figure downstream	≤6,0 dB
Attenuator downstream	0...20 dB (Interstage-loss 0/6 dB)
Equalizer downstream	0...20 dB (Interstage-equalizer 0/7 dB)
Output level 1	106 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB/>60 dB)
Output test point	-20 dB
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	29 dB
noise figure upstream	≤5 dB
attenuator upstream input	0...20 dB
Equalizer US	3 dB (Interstage, fix)
Output level 4	120 dB $\mu$ V (KDG 1TS140 - average load with QAM 64 MER >35 dB, BER 1x10 <sup>-8</sup> )
<b>Connectors</b>	
F-socket	4 pcs.
Operating voltage AC	230 V (50/60 Hz)
Power consumption	≤6 W
EMC	EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 50 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN60728-3, 1,2/50 $\mu$ s pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	175 x 170 x 54 mm
Gross weight sales unit	0.625 kg
Shipping unit	1 pcs.
EAN	4010056720872
Article number	72087

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Screening ensured with open flap-lid
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring points at the input and output
- Return path amplifier on the circuit board
- Low power consumption, high output level
- Unitymedia certified



# VX 46 2P

In-house/distribution amplifier, locally supplied



Broadband in-house amplifier for use in coaxial networks recommended for 7-18 households, classification 1TS 140 C 4.3

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	-20 dB
Frequency range downstream	85...1006 MHz
Gain downstream	41 dB
Noise figure downstream	≤6,0 dB
Attenuator downstream	0...20 dB (Interstage-loss 0/6 dB)
Equalizer downstream	0...20 dB (Interstage-equalizer 0/7 dB)
Output level 1	107 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB/>60 dB)
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	32 dB
noise figure upstream	≤5 dB
attenuator upstream input	0...20 dB
Equalizer US	3 dB (Interstage, fix)
Output level 4	120 dBμV (KDG 1TS140 - average load with QAM 64 MER >35 dB, BER 1x10-8)
Output test point	-20 dB
<b>Connectors</b>	
F-socket	4 pcs.
<b>General data</b>	
Operating voltage AC	230 V (50/60 Hz)
Power consumption	≤6,0 W
Screening factor	EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 50 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	1 kV (EN60728-3, 1,2/50 μs pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	175 x 170 x 54 mm
Gross weight sales unit	0.600 kg
Shipping unit	1 pcs.
EAN	4010056720889
Article number	72088

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Screening ensured with open flap-lid
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring points at the input and output
- Return path amplifier on the circuit board
- Low power consumption, high output level
- Unitymedia certified

# In-house distribution amplifier Home Line

## VX 47 2P

In-house/distribution amplifier, locally supplied



Broadband in-house amplifier for use in coaxial networks recommended for 7-12 households, classification 1TS 140 C 3.3, cascade operation

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Frequency range downstream	85...1006 MHz
Gain downstream	32 dB
Noise figure downstream	≤6,0 dB
Attenuator downstream	0...20 dB (Interstage-loss 0/6 dB)
Equalizer downstream	0...20 dB (Interstage-equalizer 0/7/10 dB)
cable simulator downstream	0...10 dB
Output level 1	106 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB >60 dB/>60 dB)
Output test point	-20 dB
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	22 dB
noise figure upstream	≤5 dB
attenuator upstream input	0...20 dB
attenuator upstream output	0...20 dB
Equalizer US	0...15 dB
Output level 4	120 dB $\mu$ V (KDG 1TS140 - average load with QAM 64 MER >35 dB, BER 1x10 <sup>-8</sup> )
<b>Connectors</b>	
F-socket	4 pcs.
<b>General data</b>	
Operating voltage AC	230 V (50/60 Hz)
Power consumption	6,0 W (max.)
Screening factor	EN 50083-2
Dimensions (width x height x depth)	163 x 90 x 50 mm
Operating temperature range	-20...+55 °C
Protection class	IP20
Lightning protection	4,5 kV (EN60728-3, 1,2/50 $\mu$ s pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	175 x 170 x 54 mm
Packaging volume sales unit	dm <sup>3</sup>
Gross weight sales unit	0.586 kg
Shipping unit	1 pcs.
EAN	4010056721527
Article number	72152

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Screening ensured with open flap-lid
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring points at the input and output
- Return path amplifier on the circuit board
- Low power consumption, high output level





# VX 45 0P

In-house/distribution amplifier, locally supplied



Home-Line distribution amplifier in zinc diecast housing, flap cover for easy handling, attenuators and equaliser configurable via PADs and jumper. Measuring points on the input and output. Return path amplifier on the main board, low power input and high power output. Classification: KDG 1TS140 C (4.3)

Technical data	
<b>Down-Stream / DS</b>	
Frequency range downstream	85...1006 MHz
Gain downstream	38 dB
Attenuator downstream	0...20 dB
Equalizer downstream	0...20 dB
interstage equalizer downstream	0/6 dB
Output level 1	107 dB $\mu$ V
Noise figure downstream	$\leq$ 6,0 dB
<b>Upstream (US)</b>	
Frequency range upstream	5...65 MHz
Gain upstream	28 dB
attenuator upstream input	0...20 dB
Equalizer US	0/3/6/9 dB
noise figure upstream	$\leq$ 5 dB
Output level	120 dB $\mu$ V
input test point (bidirectional)	-20 dB
output test point (directional coupler)	-20 dB
<b>General data</b>	
Impedance	75 $\Omega$
Operating voltage	230 V AC ( $\pm$ 10%, LED green)
Power consumption	$\leq$ 6,0 W
Operating temperature range	-20...+55 $^{\circ}$ C
Storage temperature	-25...+75 $^{\circ}$ C
Protection class	IP20
Electro Magnetic Compatibility (EMC)	EN50083-2
Lightning protection	1 kV (EN60728-3: - 1,2/50 $\mu$ s pulse)
Dimensions (width x height x depth)	163 x 90 x 50 mm

Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	0.726 kg
EAN	4010056733568
Article number	73356

### Characteristics

- Zinc die-cast housing
- Flap-lid for easy handling
- Configuration of attenuators and equalizers via PADs and jumpers
- Measuring points at the input and output
- Return path amplifier on the circuit board
- Low power consumption, high output level
- Classification: KDG 1TS140 C (4.3)

# In-house distribution amplifier Home Line

## VX 1014

In-house amplifier



### Technical data

Downstream	
with US-module VX 101-0650	
Frequency range	85...1006 MHz (without US-module)
Return loss	≥ 18 dB (-1,5 dB/Oct.)
Gain	15 dB (±0,5 dB)
Frequency response	typ. ± 0,5 dB (max. ± 0,8 dB)
cable simulator downstream	0/5/10 dB (Jumper)
Attenuator downstream	0...15 dB (Q-Step 1dB step size)
Equalizer downstream	0...22,5 dB (Q-Step 1.5 dB step size)
output level CC 101 channels flat	CTB / 66 dB ≥ 97 dBμV, CSO / 66 dB ≥ 95 dBμV
Noise figure	typ. 6 dB (max. 8 dB)
Test point downstream output	-20 dB (directional coupler)
Upstream	
with US-module VX 101-0650	
Frequency range	5...65 MHz
Return loss	≥ 18 dB ≥ 40 MHz 18 dB -1,5dB/Okt.
Gain	10 dB (± 0,75 dB)
Frequency response	typ. ± 0,5 dB (max. ± 0,8 dB)
attenuator upstream output	0...15 dB (Q-Step 1dB step size)
noise figure	< 6 dB
output level DIN - IMA 2	typ. 108 min. 106 dBμV
output level DIN - IMA 3	typ. 114 min 112 dBμV
ICS Option	
(slot for receiver EN60728-14)	
Ingress Control Switch (ICS)	0/6/40 dB
General data	
RF connectors	F
Impedance	75 Ω
Supply voltage	230 V AC
Power consumption max.	< 6 W
Ambient temperature	-20...+55 °C
Protection class	IP 20
EMC	EN50083-2

### Technical data

Surge protection RF Ports	2 kV (1,2/50 μs pulse EN61000-4-5)
Dimensions (width x height x depth)	163 x 90 x 47 mm

### Packaging data

Sales unit	pcs.
Dimensions (WxHxD) sales unit	163 x 90 x 47 mm
EAN	4010056732950
Article number	73295

### Characteristics

- Zinc pressure cast housing - home line
- Return path amplifier and diplex-filter modular
- ICS option modular
- Damping adjustment and equaliser adjustment interruption-free with Q-step switcher



# VX 1020

In-house amplifier



Technical data	
<b>Downstream</b>	
with US-module VX 102-0650	
Frequency range	85...1006 MHz (without US-module)
Return loss	≥ 18 dB (-1,5 dB/Oct.)
Gain	21 dB (±0,5 dB)
Frequency response	typ. ± 0,5 dB (max. ± 0,8 dB)
cable simulator downstream	0/5/10 dB (Jumper)
Attenuator downstream	0...15 dB (Q-Step 1dB step size)
Equalizer downstream	0...22,5 dB (Q-Step 1.5 dB step size)
Interstage Slope	0/4,5 dB (Jumper)
output level CC 101 channels flat	CTB / 66 dB ≥ 100 dBμV, CSO / 66 dB ≥ 100 dBμV
Noise figure	typ. 6 dB max. 7,5 dB
Test point downstream output	-20 dB (directional coupler)
Test point downstream input	-20 dB (Bidirectional)
<b>Upstream</b>	
with US-module VX 102-0650	
Frequency range	5...65 MHz
Return loss	≥ 18 dB ≥ 40 MHz 18 dB -1,5dB/Okt.
Gain	22 dB ± 0,75 dB, (Jumper 22/30dB)
Frequency response	typ. ± 0,5 dB max. ± 0,7 dB
attenuator upstream output	0...22,5 dB (Q-Step 1.5 dB step size)
interstage equaliser upstream	0/1,5/3/4,5/6 dB (Jumper)
noise figure	<6 dB (22 dB-position), <4,5 dB (30 dB-position)
output level DIN - IMA 2	typ. 108 min. 106 dBμV
output level DIN - IMA 3	typ. 114 min. 112 dBμV
<b>ICS Option</b>	(slot for receiver EN60728-14)
Ingress Control Switch (ICS)	0/6/40 dB
<b>General data</b>	
RF connectors	F
Impedance	75 Ω

Technical data	
Supply voltage	230 V AC
Power consumption max.	< 6 W
Ambient temperature	-20...+55 °C
Protection class	IP 20
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 μs pulse EN61000-4-5)
Dimensions (width x height x depth)	163 x 90 x 47 mm
Packaging data	
Sales unit	pcs.
Dimensions (WxHxD) sales unit	163 x 90 x 47 mm
EAN	4010056732967
Article number	73296

### Characteristics

- Zinc pressure cast housing - home line
- Return path amplifier and diplex-filter modular
- ICS option modular
- Damping adjustment and equaliser adjustment interruption-free with Q-step switcher

# In-house distribution amplifier Home Line

## VX 2015 065

Building CATV Amplifier



The VX 2015 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	85...1218 MHz
Gain	15 dB ( $\pm 0,7$ dB)
Ripple	$\leq \pm 0,8$ dB
Noise figure	$<7,0$ dB @ 1 GHz, $<8,0$ dB @ 1,2 GHz
Output level	101 dB $\mu$ V (CENELEC 41 Ch. (CSO/CTB $\geq 60$ dB), flat)
Output level	100 dB $\mu$ V (110 Ch/QAM 256, flat, BER $<1$ E-9)
Output level	100 dB $\mu$ V (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB / 1218 MHz Drehpunkt (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4 dB (Jumper)
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...65 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE04/0150)
Gain	21 dB ( $\pm 0,7$ dB)
Ripple	$\pm 0,5$ dB
Noise figure	$<8,5$ dB
Output level	110 dB $\mu$ V (6 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0/2/4/6/8 dB (Jumper)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14
Test point	-20 dB

Technical data	
<b>General data</b>	
RF connectors	F
Impedance	75 $\Omega$
In/Output return loss	5...40 MHz $>16$ , $>40$ MHz -1,5dB Oktave, $>12$
Supply voltage	230 V AC $\pm 10$ %
Power consumption	$<6$ W
Ambient temperature	-20...+55 $^{\circ}$ C
Protection class	IP 20
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 $\mu$ s pulse EN61000-4-5)
Dimensions W x H x D	163 x 90 x 50 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056745318
Article number	74531

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Low power input  $<6$  W



# VX 2015 204

## Building CATV Amplifier



The VX 2015 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	258...1218 MHz
Gain	15 dB ( $\pm 0,7$ dB)
Ripple	$\leq \pm 0,8$ dB
Noise figure	$<7,0$ dB @ 1 GHz, $<8,0$ dB @ 1,2 GHz
Output level	101 dB $\mu$ V (CENELEC 41 Ch. (CSO/CTB $\geq 60$ dB), flat)
Output level	100 dB $\mu$ V (110 Ch/QAM 256, flat, BER $<1$ E-9)
Output level	100 dB $\mu$ V (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB/1218 MHz Drehpunkt (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4 dB (Jumper)
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...204 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE04/0150)
Gain	21 dB ( $\pm 0,8$ dB)
Ripple	$\pm 0,5$ dB
Noise figure	$<8,5$ dB
Output level	110 dB $\mu$ V (6 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0/2/4/6/8 dB (Jumper)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14
Test point	-20 dB

Technical data	
<b>General data</b>	
RF connectors	F
Impedance	75 $\Omega$
In/Output return loss	5...40 MHz $>16$ , $>40$ MHz -1,5dB Oktave, $>12$
Supply voltage	230 V AC $\pm 10$ %
Power consumption	$< 6$ W
Ambient temperature	-20...+55 $^{\circ}$ C
Protection class	IP 20
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 $\mu$ s pulse EN61000-4-5)
Dimensions W x H x D	163 x 90 x 50 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056737511
Article number	73751

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Low power input  $<6$  W

# In-house distribution amplifier Value Line

## VX 16 C 0650

In-house/distribution amplifier, locally supplied

Broadband distribution amplifier for use in coaxial networks.



Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	-20 dB
Input return loss	≥18 dB (-1,5 dB/Okt., 14 dB)
Frequency range downstream	85...1006 MHz
Gain downstream	40/32 dB
Noise figure downstream	≤5 dB
Attenuator downstream	0...20 dB (PAD)
Equalizer downstream	0...20 dB (PAD)
Interstage attenuator downstream	0...8 dB (PAD, 6 dB by 32 dB amplifier)
interstage equalizer downstream	0/7/10 dB (Jumper, 1006 MHz)
cable simulator downstream	0...10 dB (PAD)
Output level 1	111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB/>60 dB)
Output test point	-20 dB
Output splitter	pcs. optional, by distribution module XM...2. Output can be switched
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	22/32 dB (return channel full channel load)
noise figure upstream	≤5 dB
attenuator upstream input	0...20 dB (PAD)
attenuator upstream output	0...20 dB (PAD)
Equalizer US	0...15 dB (PAD)
Output level 3	120 dBμV (1 TS 140 average load QAM64 MER >35, BER <1 x 10 <sup>-8</sup> )
Output level 4	110 dBμV (US, EN50083-5/2. Ord)
Upstream test point	-20 dB
<b>Connectors</b>	
F-socket	2 pcs.
<b>General data</b>	

Technical data	
Operating voltage AC	230 V
Power consumption	<11,5/<12,5 W (Amplifying 32 dB/40 dB, + 2 W with return channel amplifier)
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	232x145x86 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	5 kV (EN61000-4-5, 1,2/50 μs pulse)
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056730932
Article number	73487

### Characteristics

- Vodafone KDG certified
- Unitymedia certified



# VX 19 C 0650

In-house distribution amplifier, remote-fed



Broadband distribution amplifier with remote feeding for use in coaxial networks.



Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	-20 dB
Input return loss	≥18 dB (-1,5 dB/Okt., 14 dB)
Frequency range downstream	85...1006 MHz
Gain downstream	40/32 dB
Noise figure downstream	≤5 dB
Attenuator downstream	0...20 dB (PAD)
Equalizer downstream	0...20 dB (PAD)
Interstage attenuator downstream	0...8 dB (PAD, 6 dB by 32 dB amplifier)
interstage equalizer downstream	0/7/10 dB (Jumper, 1006 MHz)
cable simulator downstream	0...10 dB (PAD)
Output level 1	111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB/>60 dB)
Output test point	-20 dB
Output splitter	pcs. optional, by distribution module XM...2. Output can be switched
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	22/32 dB (return channel full channel load)
noise figure upstream	≤5 dB
attenuator upstream input	0...20 dB (PAD)
attenuator upstream output	0...20 dB (PAD)
Equalizer US	0...15 dB (PAD)
Output level 3	120 dBμV (1 TS 140 average load QAM64 MER >35, BER <1 x 10 <sup>-8</sup> )
Output level 4	110 dBμV (US, EN50083-5/2. Ord)
<b>Connectors</b>	
PG11	2 pcs.
<b>General data</b>	
Operating voltage AC	27...65 V (50/60 Hz)

Technical data	
Power consumption	<11,5/<12,5 W (Amplifying 32 dB/40 dB, + 2 W with return channel amplifier)
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	232x145x86 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	5 kV (EN61000-4-5, 1,2/50 μs pulse)
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	305 x 180 x 90 mm
EAN	4010056721558
Article number	72155

### Characteristics

- Vodafone KDG certified
- Unitymedia certified

# In-house distribution amplifier Value Line

## VX 24

In-house/distribution amplifier, locally supplied



Programmable broadband distribution amplifier for use in coaxial networks, delivery without return path modules. Settings via handset OH41. Second output configurable by splitter module XM..

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	-20 dB
Input return loss	18 dB (-1,5 dB/Oct.)
Frequency range downstream	47(85)...862 MHz (depending on diplexers)
Gain downstream	36 dB (single output)
Noise figure downstream	<7 dB
Attenuator downstream	0...15 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Interstage attenuator downstream	0/5 dB (Jumper)
interstage equalizer downstream	0/7 dB (Jumper)
Output level 1	109 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB $\geq$ 64 dB/ $\geq$ 60 dB)
Output level 2	112 dB $\mu$ V (CENELEC 42 channels, 9 dB slope, at CSO/CTB $\geq$ 63 dB/ $\geq$ 60 dB)
<b>Upstream</b>	
Frequency range upstream	5...65/18...65 MHz (depending on diplexers)
Gain upstream	30 dB
attenuator upstream input	0...30/4...30 dB (1 dB-steps, 4...30 dB at Interstage loss/equalizer 0 dB)
Equalizer US	0...10 dB (0,5 dB steps)
Output level 3	114 dB $\mu$ V (2. system)
Output level 4	114 dB $\mu$ V (3. system)
ICS, US	0/8/>45 dB
Upstream test point	-20 dB
<b>Connectors</b>	
PG11	3 pcs.
<b>General data</b>	
Operating voltage AC	180...265 V (50/60 Hz)
Power consumption	<13 W (with return path amplifier)
Screening factor	Class A, EN 50083-2

Technical data	
Dimensions (width x height x depth)	236,8x145,2x89,2 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	4/2 kV (HF-connections/ power supply; EN61000-4-5, 1,2/50 $\mu$ s pulse)
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	310 x 180 x 95 mm
Gross weight sales unit	1.910 kg
EAN	4010056129668
Article number	12966

### Characteristics

- Locally supplied
- CATV amplifier with high output level
- Protection class IP 66
- All setting with handset OH 41
- Active and passive return channel module
- Pluggable output splitter





## VX 25

In-house distribution amplifier, remote-fed



Programmable broadband distribution amplifier for use in coaxial networks, delivery without return path modules. Settings via handset OH41. Second output configurable by splitter module XM..

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	-20 dB
Input return loss	18 dB (-1,5 dB/Oct.)
Frequency range downstream	47(85)...862 MHz (depending on diplexers)
Gain downstream	36 dB (single output)
Noise figure downstream	<7 dB
Attenuator downstream	0...15 dB (0,5 dB steps)
Equalizer downstream	0...15 dB (0,5 dB steps)
Interstage attenuator downstream	0/5 dB
interstage equalizer downstream	0/7 dB
Output level 1	109 dB $\mu$ V (CENELEC 42 channels, flat, at CSO/CTB $\geq$ 64 dB/ $\geq$ 60 dB)
Output level 2	112 dB $\mu$ V (CENELEC 42 channels, 9 dB slope, at CSO/CTB $\geq$ 63 dB/ $\geq$ 60 dB)
<b>Upstream</b>	
Frequency range upstream	5...65/18...65 MHz (depending on diplexers)
Gain upstream	30 dB
attenuator upstream input	0...30/4...30 dB (1 dB-steps, 4...30 dB at Interstage loss/equalizer 0 dB)
Equalizer US	0...10 dB (0,5 dB steps)
Output level 3	114 dB $\mu$ V (2. system)
Output level 4	114 dB $\mu$ V (3. system)
ICS, US	0/8/>45 dB
Upstream test point	-20 dB
<b>Connectors</b>	
PG11	3 pcs.
<b>General data</b>	
Operating voltage AC	27...65 V
Power consumption	<13 W (with return path amplifier)
Remote power	<6/<3 A (input/ output)

Technical data	
Screening factor	dB Class A, EN 50083-2
Dimensions (width x height x depth)	236,8x145,2x89,2 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	4/2 kV (HF-connections/ power supply; EN61000-4-5, 1,2/50 $\mu$ s pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	280 x 175 x 88 mm
Gross weight sales unit	2.130 kg
EAN	4010056129675
Article number	12967

### Characteristics

- Remote powered
- CATV amplifier with high output level
- Protection class IP 66
- All setting with handset OH 41
- Active and passive return channel module
- Pluggable output splitter

# In-house distribution amplifier Value Line

## VX 26 H

In-house/distribution amplifier, locally supplied



The VX 26 H is a local feeding distribution amplifier with an integrated feedback channel and diplex filter. The settings can be adjusted via jumper or Q-steps and therefore an uninterrupted adjustment option is possible.

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB (resistance)
Input return loss	>18 dB (-1 dB/oct.)
Frequency range downstream	85...1006 MHz
Gain downstream	41 dB
Noise figure downstream	<6 dB
Attenuator downstream	0...15 dB (1 dB-steps)
Equalizer downstream	0...22,5 dB (1,5 dB-steps)
Interstage attenuator downstream	0/5 dB (Jumper)
interstage equalizer downstream	0/3/6/9 dB (Jumper)
Output level 1	111 dB $\mu$ V (CENELEC 42 channels, flat, CSO/CTB >65 dB/>60 dB)
Output level 2	114 dB $\mu$ V (CENELEC 42 Kanäle, 6dB slope, bei CSO/CTB 65/60 dB)
Output test point	-20 dB (directional coupler)
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	24 dB (return channel full channel load)
noise figure upstream	<6 dB
attenuator upstream input	0...15 dB (1 dB-steps)
attenuator upstream output	0...15 dB (1 dB-steps + 5 dB Interstage Jumper)
Equalizer US	0/3/6/9 dB (Jumper)
Output level US	112 dB $\mu$ V (1 TS 140)
Output test jack US	-20 dB
<b>Connectors</b>	
F-socket	4 pcs.
<b>General data</b>	
Operating voltage AC	180...265 V (50/60 Hz)
Power consumption	18 W
Screening factor	dB Class A, EN 50083-2

Technical data	
Dimensions (width x height x depth)	231 x 158 x 85 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	4 kV (EN61000-4-5, 1,2/50 $\mu$ s pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxD) sales unit	310 x 180 x 95 mm
Packaging volume sales unit	5,3 dm <sup>3</sup>
Gross weight sales unit	1,8 kg
EAN	4010056184858
Article number	18485

### Characteristics

- Uninterruptible setting
- Screwed, folding housing cover
- Integrated return channel and diplexers
- All settings via exact switching step (Q-step) or jumper
- Output splitter (jumper)
- Lightning protection HF- connections 4 kV



# VX 29 H

In-house distribution amplifier, remote-fed



Broadband distribution amplifier with remote feeding for use in coaxial networks.

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	-20 dB (resistance)
Input return loss	>18 dB (-1 dB/oct.)
Frequency range downstream	85...1006 MHz
Gain downstream	41 dB
Noise figure downstream	<6 dB
Attenuator downstream	0...15 dB (1 dB-steps)
Equalizer downstream	0...22,5 dB (1,5 dB-steps)
Interstage attenuator downstream	0/5 dB (Jumper)
interstage equalizer downstream	0/3/6/9 dB (Jumper)
cable simulator downstream	0/5 dB (Jumper)
Output level 1	111 dB $\mu$ V (CENELEC 42 channels, flat, CSO/CTB >65 dB/>60 dB)
Output level 2	114 dB $\mu$ V (CENELEC 42 Kanäle, 6dB slope, bei CSO/CTB 65/60 dB)
Output test point	-20 dB (directional coupler)
Output return loss	>18 dB
<b>Upstream</b>	
Frequency range upstream	5...65 MHz
Gain upstream	24 dB (return channel full channel load)
noise figure upstream	<6 dB
attenuator upstream input	0...15 dB (1 dB-steps)
attenuator upstream output	0...15 dB (1 dB-steps, + 5 dB Interstage Jumper)
Equalizer US	0/3/6/9 dB (Jumper)
Output level US	112 dB $\mu$ V (1 TS 140)
Output test jack US	-20 dB
<b>Connectors</b>	
PG11	3 pcs.
F-socket	1 pcs.
<b>General data</b>	
Operating voltage AC	27...65 V

Technical data	
Power consumption	18 W
Remote power	7/3 A (input/ output)
Screening factor	dB Class A, EN 50083-2
Dimensions (width x height x depth)	231x158x85 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	4 kV (EN61000-4-5 1,2/50 $\mu$ s pulse)
Packaging data	
Sales unit	1 pcs.
Gross weight sales unit	1,665 kg
Packaging volume shipping package	4,4 dm <sup>3</sup>
Gross weight shipping unit	1,665 kg
EAN	4010056188986
Article number	18898

### Characteristics

- Uninterruptible setting
- Screwed, folding housing cover
- Integrated return channel and diplexers
- All settings via exact switching step (Q-step) or jumper
- Output splitter (jumper)
- Lightning protection HF- connections 4 kV
- CSO >65 dB
- CTB >60 dB

# In-house distribution amplifier Value Line

## VX 2022 065

Building CATV Amplifier



The VX 2022 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	85...1218 MHz
Gain	22 dB ( $\pm$ 0,8 dB)
Ripple	$\leq \pm$ 0,8 dB
Noise figure	<7,5 dB @ 1 GHz, <8,0 dB @ 1,2 GHz
Output level	106 dB $\mu$ V (CENELEC 41 Ch. (CSO/CTB $\geq$ 60 dB), flat)
Output level	103 dB $\mu$ V (110 Ch/QAM 256, flat, BER <1 E-9)
Output level	102 dB $\mu$ V (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB/1218 Drehpunkt (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4/6 dB (Jumper)
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...65 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE 04 0150)
Gain	21 dB ( $\pm$ 0,8 dB)
Ripple	$\pm$ 0,5 dB
Noise figure	<8,5 dB
Output level	110 dB $\mu$ V (6 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0...8 dB (Jumper 4 Steps)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14
Test point	-20 dB

Technical data	
<b>General data</b>	
RF connectors	PG 11/F
Impedance	75 $\Omega$
In/Output return loss	5...40 MHz >16, >40MHz -1,5dB Oktave, >12
Supply voltage	230 V AC $\pm$ 10 %
Power consumption	<13 W
Ambient temperature	-20...+55 $^{\circ}$ C
Protection class	IP 67
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 $\mu$ s pulse EN61000-4-5)
Dimensions W x H x D	232 x 158 x 86 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056745325
Article number	74532

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Low power input <13 W



# VX 2022 204

## Building CATV Amplifier



The VX 2022 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	258...1218 MHz
Gain	22 dB ( $\pm 0,8$ dB)
Ripple	$\leq \pm 0,8$ dB
Noise figure	$<7,5$ dB @ 1 GHz, $<8,0$ dB @ 1,2 GHz
Output level	106 dB $\mu$ V (CENELEC 41 Ch. (CSO/CTB $\geq 60$ dB), flat)
Output level	103 dB $\mu$ V (110 Ch/QAM 256, flat, BER $<1$ E-9)
Output level	102 dB $\mu$ V (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB/1218 MHz Drehpunkt (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4/6 dB (Jumper)
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...204 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE 04 0150)
Gain	21 dB ( $\pm 0,8$ dB)
Ripple	$\pm 0,5$ dB
Noise figure	$<8,5$ dB
Output level	107 dB $\mu$ V (24 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0...8 dB (Jumper 4 Steps)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14
Test point	-20 dB

Technical data	
<b>General data</b>	
RF connectors	PG 11/F
Impedance	75 $\Omega$
In/Output return loss	5...40 MHz $>16$ , $>40$ MHz -1,5dB Oktave, $>12$
Supply voltage	230 V AC $\pm 10$ %
Power consumption	$< 13$ W
Ambient temperature	-20...+55 $^{\circ}$ C
Protection class	IP 67
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 $\mu$ s pulse EN61000-4-5)
Dimensions W x H x D	232 x 158 x 86 mm
<b>Packaging data</b>	
Sales unit	1 pcs.
EAN	4010056737528
Article number	73752

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Low power input  $<13$  W

# In-house distribution amplifier Value Line

## VX 2030 065

Building CATV Amplifier



The VX 2030 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	85...1218 MHz
Gain	30 dB ( $\pm 1$ dB)
Ripple	$\leq \pm 0,8$ dB
Noise figure	$< 7,5$ dB @ 1 GHz, $< 8,0$ dB @ 1,2 GHz
Output level	112 dB $\mu$ V (CENELEC 41 Ch. (CSO/CTB $\geq 60$ dB), flat)
Output level	107 dB $\mu$ V (110 Ch/QAM 256, flat, BER $< 1$ E-9)
Output level	106 dB $\mu$ V (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB/ 1218 MHz Drehpunkt (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4/6/8 dB (Jumper)
Interstage attenuation	0/2/4/6 dB
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...65 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE 04 0150)
Gain	29 dB ( $\pm 1$ dB)
Ripple	$\pm 0,5$ dB
Noise figure	$< 6,5$ dB
Output level	110 dB $\mu$ V (6 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0/2/4/6/8 dB (Jumper)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14

Technical data	
Test point	-20 dB
<b>General data</b>	
RF connectors	PG 11/F
Impedance	75 $\Omega$
In/Output return loss	5...40 MHz $> 16$ , $> 40$ MHz -1,5dB Oktave, $> 12$
Supply voltage	230 V AC $\pm 10$ %
Power consumption	$< 18$ W
Ambient temperature	-20...+55 $^{\circ}$ C
Protection class	IP 67
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 $\mu$ s pulse EN61000-4-5)
Dimensions W x H x D	232 x 158 x 86 mm

Packaging data	
Sales unit	1 pcs.
EAN	4010056745332
Article number	74533

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Low power input  $< 18$  W



# VX 2030 204

## Building CATV Amplifier



The VX 2030 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	258...1218 MHz
Gain	30 dB (±1 dB)
Ripple	≤ ± 0,8 dB
Noise figure	<7,5 dB @ 1 GHz, <8,0 dB @ 1,2 GHz
Output level	112 dBμV (CENELEC 41 Ch. (CSO/CTB ≥ 60 dB), flat)
Output level	107 dBμV (110 Ch/QAM 256, flat, BER <1 E-9)
Output level	106 dBμV (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB/1218 MHz Drehpunkt (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4/6/8 dB (Jumper)
Interstage attenuation	0/2/4/6 dB
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...204 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE 04 0150)
Gain	29 dB (±1 dB)
Ripple	± 0,5 dB
Noise figure	<6,5 dB
Output level	107 dBμV (24 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0/2/4/6/8 dB (Jumper)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14

Technical data	
Test point	-20 dB
<b>General data</b>	
RF connectors	PG 11/F
Impedance	75 Ω
In/Output return loss	5...40 MHz >16, >40MHz -1,5dB Oktave, >12
Supply voltage	230 V AC ±10 %
Power consumption	< 18 W
Ambient temperature	-20...+55 °C
Protection class	IP 67
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 μs pulse EN61000-4-5)
Dimensions W x H x D	232 x 158 x 86 mm

Packaging data	
Sales unit	1 pcs.
EAN	4010056737535
Article number	73753

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Low power input <18 W

# In-house distribution amplifier Value Line

## VX 2035 065

Building CATV Amplifier



The VX 2035 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	85...1218 MHz
Gain	35 dB ( $\pm 1$ dB)
Ripple	$\leq \pm 0,8$ dB
Noise figure	$< 7,5$ dB @ 1 GHz, $< 8,0$ dB @ 1,2 GHz
Output level	115 dB $\mu$ V (CENELEC 41 Ch. (CSO/CTB $\geq 60$ dB), flat)
Output level	111 dB $\mu$ V (110 Ch/QAM 256, flat, BER $< 1$ E-9)
Output level	110 dB $\mu$ V (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB/1218 MHz (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4/6/8/10 dB (Jumper)
Interstage attenuation	0/2/4/6 dB
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...65 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE04/0150)
Gain	29 dB ( $\pm 1$ dB)
Ripple	$\pm 0,5$ dB
Noise figure	$< 6,5$ dB
Output level	110 dB $\mu$ V (6 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0/2/4/6/8 dB (Jumper)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14

Technical data	
Test point	-20 dB
<b>General data</b>	
RF connectors	PG 11/F
Impedance	75 $\Omega$
In/Output return loss	5...40 MHz $> 16$ , $> 40$ MHz -1,5dB Oktave, $> 12$
Supply voltage	230 V AC $\pm 10$ %
Power consumption	$< 22$ W
Ambient temperature	-20...+55 $^{\circ}$ C
Protection class	IP 67
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 $\mu$ s pulse EN61000-4-5)
Dimensions W x H x D	232 x 158 x 86 mm

Packaging data	
Sales unit	1 pcs.
EAN	4010056745349
Article number	74534

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Very low power consumption  $< 22$  W.





# VX 2035 204

## Building CATV Amplifier



The VX 2035 is a location feeding in-house amplifier with a frequency range up to 1.2 GHz. It has an active output and a measuring socket on the input and output. Diplex filter and return path amplifier are grouped together on a module (VX201-xxx) and available in the versions 65 MHz, 85 MHz and 204 MHz. All settings are done without interruption with Q-step switch or jumper. In addition, a high pass filter XE-xx can be plugged in the return path to influence the ingress influences.

Technical data	
<b>Downstream</b>	
Frequency range	258...1218 MHz
Gain	35 dB (±1 dB)
Ripple	≤ ± 0,8 dB
Noise figure	<7,5 dB @ 1 GHz, <8,0 dB @ 1,2 GHz
Output level	115 dBμV (CENELEC 41 Ch. (CSO/CTB ≥ 60 dB), flat)
Output level	111 dBμV (110 Ch/QAM 256, flat, BER <1 E-9)
Output level	110 dBμV (all QAM (138 x 256 QAM), EN60728-3-1, flat)
Input cable simulator	0/5/10 dB (Jumper)
Input attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Input equalizer	0...30 dB/1218 MHz Drehpunkt (Rotary switch 15 Steps)
Step size	2 dB
Interstage equalizer (Slope)	0/2/4/6/8/10 dB (Jumper)
Interstage attenuation	0/2/4/6 dB
Test point	-20 dB
<b>Upstream</b>	
Frequency range	5...204 MHz
High pass filter pluggable (optional)	15 MHz (WISI - XE04/0150)
Gain	29 dB (±1 dB)
Ripple	± 0,5 dB
Noise figure	< 6,5 dB
Output level	107 dBμV (24 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB
Interstage equalizer	0/2/4/6/8 dB (Jumper)
Output attenuator	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)
Ingress control switch (optional)	nach ICS EN 60728-14

Technical data	
Test point	-20 dB
<b>General data</b>	
RF connectors	PG 11/F
Impedance	75 Ω
In/Output return loss	5...40 MHz >16, >40MHz -1,5dB Oktave, >12
Supply voltage	230 V AC ±10 %
Power consumption	< 22 W
Ambient temperature	-20...+55 °C
Protection class	IP 67
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 μs pulse EN61000-4-5)
Dimensions W x H x D	232 x 158 x 86 mm

Packaging data	
Sales unit	1 pcs.
EAN	4010056737542
Article number	73754

### Characteristics

- High output level up to 1.2 GHz, with low power input
- Active single output
- Measuring socket for input and output
- All settings (gain, slope etc.) by rotary switch and Jumper
- Diplex filters, return amplifier pluggable on one module
- Optional - receiver according to EN 60728-14 for ICS-settings
- Optional - pluggable high pass filter at the feedback channel
- Very low power consumption <22 W.

# In-house distribution amplifier Value Line

## VX 1027

In-house amplifier



Technical data	
<b>Downstream</b>	
with US-module VX 102-0650	
Frequency range	85...1006 MHz (without US-module)
Return loss	≥ 18 dB (-1,5 dB/Oct.)
Gain	27,5 dB (± 0,75 dB)
Frequency response	typ. ± 0,5 dB (max. ± 0,8 dB)
cable simulator downstream	0/5/10 dB (Jumper)
Attenuator downstream	0...22,5 dB (Q-Step 1.5 dB step size)
Equalizer downstream	0...22,5 dB (Q-Step 1.5 dB step size)
Interstage Slope	0/5,5 dB (Jumper)
output level CC 101 channels flat	CTB / 66 dB ≥ 103 dBμV, CSO / 66 dB ≥ 105 dBμV
Noise figure	typ. 6 dB max. 7,5 dB
Test point downstream output	-20 dB (directional coupler)
Test point downstream input	-20 dB (Bidirectional)
<b>Upstream</b>	
with US-module VX 102-0650	
Frequency range	5...65 MHz
Return loss	≥ 18 dB ≥ 40 MHz 18 dB -1,5dB/Okt.
Gain	22 dB ± 0,75 dB, (Jumper 22/30dB)
Frequency response	typ. ± 0,5 dB max. ± 0,7 dB
attenuator upstream output	0...22,5 dB (Q-Step 1.5 dB step size)
interstage equaliser upstream	0/1,5/3/4,5/6 dB (Jumper)
noise figure	<6 dB (22 dB-position), <4,5 dB (30 dB-position)
output level DIN - IMA 2	typ. 108 min. 106 dBμV
output level DIN - IMA 3	typ. 114 min. 112 dBμV
<b>ICS Option</b> (slot for receiver EN60728-14)	
Ingress Control Switch (ICS)	0/6/40 dB
<b>General data</b>	
RF connectors	F

Technical data	
Impedance	75 Ω
Supply voltage	230 V AC
Power consumption max.	< 14 W
Ambient temperature	-20...+55 °C
Protection class	IP 20
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 μs pulse EN61000-4-5)
Dimensions (width x height x depth)	163x90x47 mm

Packaging data	
Sales unit	pcs.
Dimensions (WxHxD) sales unit	163 x 90 x 47 mm
EAN	4010056732974
Article number	73297

### Characteristics

- Aluminium pressure cast housing - value line
- Return path amplifier and diplex-filter modular
- ICS option modular
- Damping adjustment and equaliser adjustment interruption-free with Q-step switcher



# VX 1035

In-house amplifier



Technical data	
<b>Downstream</b>	
with US-module VX 102-0650	
Frequency range	85...1006 MHz (without US-module)
Return loss	≥ 18 dB (-1,5 dB/Oct.)
Gain	34 dB (± 0,75 dB)
Frequency response	typ. ± 0,5 dB (max. ± 0,8 dB)
cable simulator downstream	0/5/10 dB (Jumper)
Attenuator downstream	0...22,5 dB (Q-Step 1.5 dB step size)
Equalizer downstream	0...22,5 dB (Q-Step 1.5 dB step size)
Interstage Slope	0/5,5 dB (Jumper)
output level CC 101 channels flat	CTB / 66 dB ≥ 106 dBμV, CSO / 66 dB ≥ 110 dBμV
Noise figure	typ. 6 dB max. 7,5 dB
Test point downstream output	-20 dB (directional coupler)
Test point downstream input	-20 dB (Bidirectional)
<b>Upstream</b>	
with US-module VX 102-0650	
Frequency range	5...65 MHz
Return loss	≥ 18 dB ≥ 40 MHz 18 dB -1,5dB/Okt.
Gain	22 dB ± 0,75 dB, (Jumper 22/30dB)
Frequency response	typ. ± 0,5 dB max. ± 0,7 dB
attenuator upstream output	0...22,5 dB (Q-Step 1.5 dB step size)
interstage equaliser upstream	0/1,5/3/4,5/6 dB (Jumper)
noise figure	<6 dB (22 dB-position), <4,5 dB (30 dB-position)
output level DIN - IMA 2	typ. 108 min. 106 dBμV
output level DIN - IMA 3	typ. 114 min. 112 dBμV
<b>ICS Option</b> (slot for receiver EN60728-14)	
Ingress Control Switch (ICS)	0/6/40 dB
<b>General data</b>	
RF connectors	F

Technical data	
Impedance	75 Ω
Supply voltage	230 V AC
Power consumption max.	< 16 W
Ambient temperature	-20...+55 °C
Protection class	IP 20
EMC	EN50083-2
Surge protection RF Ports	2 kV (1,2/50 μs pulse EN61000-4-5)
Dimensions (width x height x depth)	163x90x47 mm

Packaging data	
Sales unit	pcs.
Dimensions (WxHxD) sales unit	163 x 90 x 47 mm
EAN	4010056732981
Article number	73298

### Characteristics

- Aluminium pressure cast housing - value line
- Return path amplifier and diplex-filter modular
- ICS option modular
- Damping adjustment and equaliser adjustment interruption-free with Q-step switcher

# Accessories Value Line

## XP 0000

Attenuator pad, 0 dB



Technical data	
Through loss	0 dB
Frequency range	5...1006 MHz

Packaging data	
Sales unit	10 pcs.

## XP 0001

Attenuator pad, 1 dB



Technical data	
Through loss	1 dB
Frequency range	5...1006 MHz

Packaging data	
Sales unit	10 pcs.

## XP 0002

Attenuator pad, 2 dB



Technical data	
Through loss	2 dB
Frequency range	5...1006 MHz

Packaging data	
Sales unit	10 pcs.

## XP 0003

Attenuator pad, 3 dB



Technical data	
Through loss	3 dB
Frequency range	5...1006 MHz

Packaging data	
Sales unit	10 pcs.

## XP 0004

Attenuator pad, 4 dB



Technical data	
Through loss	4 dB
Frequency range	5...1006 MHz

Packaging data	
Sales unit	10 pcs.

## XP 0005

Attenuator pad, 5 dB



Technical data	
Through loss	5 dB
Frequency range	5...1006 MHz

Packaging data	
Sales unit	10 pcs.



## XP 0006

Attenuator pad, 6 dB



## XP 0007

Attenuator pad, 7 dB



## XP 0008

Attenuator pad, 8 dB



### Technical data

Through loss	6 dB
Frequency range	5...1006 MHz

### Packaging data

Sales unit	10 pcs.
------------	---------

### Technical data

Through loss	7 dB
Frequency range	5...1006 MHz

### Packaging data

Sales unit	10 pcs.
------------	---------

### Technical data

Through loss	8 dB
Frequency range	5...1006 MHz

### Packaging data

Sales unit	10 pcs.
------------	---------

## XP 0009

Attenuator pad, 9 dB



## XP 0010

Attenuator pad, 10 dB



## XP 0011

Attenuatorpad, 11 dB



### Technical data

Through loss	9 dB
--------------	------

### Packaging data

Sales unit	10 pcs.
------------	---------

### Technical data

Through loss	10 dB
--------------	-------

### Packaging data

Sales unit	10 pcs.
------------	---------

### Technical data

Through loss	11 dB
--------------	-------

### Packaging data

Sales unit	10 pcs.
------------	---------

# Accessories Value Line

## XP 0012

Attenuator pad, 12 dB



Technical data	
Through loss	12 dB

Packaging data	
Sales unit	10 pcs.

## XP 0013

Attenuator pad, 13 dB



Technical data	
Through loss	13 dB

Packaging data	
Sales unit	10 pcs.

## XP 0014

Attenuator pad, 14 dB



Technical data	
Through loss	14 dB

Packaging data	
Sales unit	10 pcs.

## XP 0015

Attenuator pad, 15 dB



Technical data	
Through loss	15 dB

Packaging data	
Sales unit	10 pcs.

## XP 0016

Attenuator pad, 16 dB



Technical data	
Through loss	16 dB

Packaging data	
Sales unit	10 pcs.

## XP 0017

Attenuator pad, 17 dB



Technical data	
Through loss	17 dB

Packaging data	
Sales unit	10 pcs.



## XP 0018

Attenuator pad, 18 dB



## XP 0019

Attenuator pad, 19 dB



## XP 0020

Attenuator path, 20 dB



### Technical data

Through loss | 18 dB

### Packaging data

Sales unit | 10 pcs.

### Technical data

Through loss | 19 dB

### Packaging data

Sales unit | 10 pcs.

### Technical data

Through loss | 20 dB

### Packaging data

Sales unit | 10 pcs.

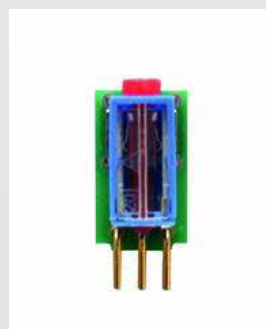
## XP BOX 01

attenuator pad set 0...20 dB



## XPU 020

attenuator pad, 0...20 dB,  
adjustable



## VX 27 A

Retun path module active



### Technical data

Through loss | 0...20 dB (single  
Pads with the mea-  
surements 0...20 dB)

### Packaging data

Sales unit | 1 pcs.

### Technical data

Through loss | 0...20 dB (adju-  
stable)

### Packaging data

Sales unit | 10 pcs.

### Packaging data

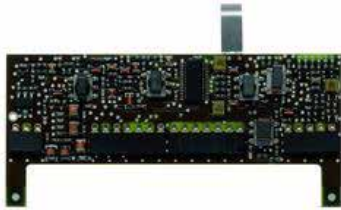
Sales unit | 1 pcs.

KLASSE  
A  
CLASS

# Accessories Value Line

## VX 27 A 1200

Retun path module active



KLASSE  
**A**  
CLASS

### Packaging data

Sales unit	1 pcs.
------------	--------

## XE 20 B 0650

Diplexer 65/85 MHz



### Packaging data

Sales unit	1 pcs.
------------	--------

## XE 29

power supply connector for VX 29



### Packaging data

Sales unit	1 pcs.
------------	--------

## XE 54 A

System equalizer



### Technical data

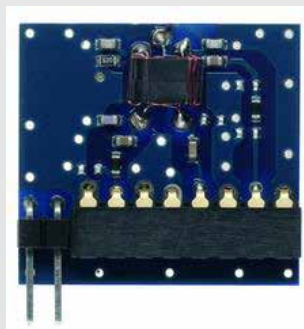
Equalization	2 dB (Increase of the frequency range 47...200/300...600 MHz)
--------------	---

### Packaging data

Sales unit	1 pcs.
------------	--------

## XM 25 0082

Output tap pluggable



### Technical data

Through loss	2/8 dB
--------------	--------

### Packaging data

Sales unit	1 pcs.
------------	--------

## XM 25 0131

Output tap pluggable



### Technical data

Through loss	1/13 dB
--------------	---------

### Packaging data

Sales unit	1 pcs.
------------	--------





## VX 201 065

Return amplifier

## VX 201 204

Return amplifier

Technical data		
<b>Downstream</b>		
Frequency range	85...1218 MHz	258...1218 MHz
<b>Upstream</b>		
Frequency range	5...65 MHz	5...204 MHz
High pass filter pluggable	15 MHz (WISI - XE04/0150)	15 MHz (WISI - XE04/0150)
Gain	VX 2015/2022: 21 dB ( $\pm 0,8$ dB), VX 2030/2035: 29 dB ( $\pm 1$ dB)	VX 2015/2022: 21 dB ( $\pm 0,8$ dB), VX 2030/2035: 29 dB ( $\pm 1$ dB)
Ripple	$\pm 0,5$ dB	$\pm 0,5$ dB
Noise figure	VX 2015/2022: $<8,5$ dB, VX 2030/2035: $<6,5$ dB	VX 2015/2022: $<8,5$ dB, VX 2030/2035: $<6,5$ dB
Output level	110 dB $\mu$ V (6 x 256 QAM)	107 dB $\mu$ V (24 x 256 QAM)
Interstage attenuator	0...15 dB (Rotary switch 15 Steps)	0...15 dB (Rotary switch 15 Steps)
Step size	1 dB	1 dB
Interstage equalizer	0/2/4/6/8 dB (Jumper)	0/2/4/6/8 dB (Jumper)
Output attenuator	0/10 dB (Jumper)	0/10 dB (Jumper)
Output equalizer	0/6 dB (Jumper)	0/6 dB (Jumper)
Ingress control switch ICS EN 60728	0/-6/ $<$ -45 dB	0/-6/ $<$ -45 dB
<b>Packaging data</b>		
Sales unit	1 pcs.	1 pcs.
EAN	4010056745356	4010056745370
Article number	74535	74537

# HFC amplifier Compact Line

## VX 52 A

Universal line amplifier, locally supplied



The VX 52 A is a Universal line local feeding amplifier that has 2 active outputs and slots for feedback channel amplifiers, diplex filter modules and distributor/splitter modules. In addition, it has an incorporated VX 58 ASC module. All settings are adjusted via OH 41 or LMT (laptop).

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB
Input return loss	>20 dB
Frequency range downstream	47/85...1006 MHz (depending on diplexers)
Gain downstream	41(37) dB (with VX 58 for control range ASLC)
Noise figure downstream	≤6,5 dB
Attenuator downstream	0...15 dB (0,1 dB-steps)
Equalizer downstream	0...15 dB (0,1 dB-steps)
Interstage attenuator downstream	0/5/10 dB
interstage equalizer downstream	0/6/9 dB
Output level 1	111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output level 2	114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output test point	20 dB
Output return loss	>20 dB
Output splitter	1 pcs. (Output level -4 dB with output splitter)
<b>Upstream</b>	
Frequency range upstream	5...30/65 MHz (depending on diplexers)
Gain upstream	30 dB
noise figure upstream	≤7 dB
attenuator upstream input	0...30 dB (0,1 dB-steps)
attenuator upstream output	0...30 dB (0,1 dB-steps)
Equalizer US	0...10 dB (0,5 dB steps)
Output level 4	116 dBμV
ICS, US	0/-8/-45 dB
Upstream test point	20 dB
<b>Connectors</b>	
PG11	4 pcs.
<b>General data</b>	

Technical data	
Operating voltage AC	180...265 V (50/60 Hz)
Power consumption	23/21 W (with/without transponder)
Remote power	<8 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	261x215x100,4 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	6 kV at all inputs and outputs
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 283 x 155 mm
Gross weight sales unit	3.655 kg
Packaging volume shipping package	15dm <sup>3</sup>
Gross weight shipping unit	3.655 kg
EAN	4010056704209
Article number	70420

### Characteristics

- Active single output
- All settings with OH 41 A handset or LMT (laptop) when using a HMS-transponder
- Interface for NMS-function
- Diplex filters and splitter / tap modules pluggable
- Return channel amplifier pluggable
- ASC module VX 58



# VX 53 A

Universal line amplifier, remote supplied



The VX 53 A is a Universal line remote feeding amplifier that has 1 active output and slots for feeding channels. In addition, it has an incorporated VX 58 ASC module. All settings are adjusted via OH 41 or LMT (laptop).

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB
Input return loss	>20 dB
Frequency range downstream	47/85...1006 MHz
Gain downstream	41(37) dB (with VX 58 for control range ASLC)
Noise figure downstream	≤6,5 dB
Attenuator downstream	0...15 dB (0,1 dB-steps)
Equalizer downstream	0...15 dB (0,1 dB-steps)
Interstage attenuator downstream	0/5/10 dB
interstage equalizer downstream	0/6/9 dB
Output level 1	1x 111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output level 2	1x 114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output test point	20 dB
Output return loss	>20 dB
Output splitter	1 pcs. (Output level -4 dB with output splitter)
<b>Upstream</b>	
Frequency range upstream	5...30/65 MHz (depending on diplexers)
Gain upstream	30 dB
noise figure upstream	≤7 dB
attenuator upstream input	0...30 dB (0,1 dB-steps)
attenuator upstream output	0...30 dB (0,1 dB-steps)
Equalizer US	0...10 dB (0,5 dB steps)
Output level 4	116 dBμV
ICS, US	0/-8/-45 dB
Upstream test point	20 dB
<b>Connectors</b>	
PG11	4 pcs.
<b>General data</b>	
Operating voltage AC	27...65 V (50/60 Hz)

Technical data	
Power consumption	23/21 W (with/without transponder)
Remote power	<8 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	261x215x100,4 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	6 kV at all inputs and outputs
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 283 x 155 mm
Gross weight sales unit	3.655 kg
Packaging volume shipping package	15dm <sup>3</sup>
Gross weight shipping unit	3.655 kg
EAN	4010056704216
Article number	70421

### Characteristics

- Active single output
- All settings with OH 41 A handset or LMT (laptop) when using a HMS-transponder
- Interface for NMS-function
- Diplex filters and splitter / tap modules pluggable
- Return channel amplifier pluggable
- ASC module VX 58

# HFC amplifier Compact Line

## VX 54 A

Universal line amplifier, locally supplied



The VX 54 A is a Universal line location feeding amplifier that has 1 active output and slots for feeding channels. In addition, it has an incorporated VX 58 ASC module. All settings are adjusted via OH 41 or LMT (laptop).

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB
Input return loss	>20 dB
Frequency range downstream	47/85...1006 MHz
Gain downstream	33(29) dB (with VX 58 for control range ASLC)
Noise figure downstream	≤6,5 dB
Attenuator downstream	0...15 dB (0,1 dB-steps)
Equalizer downstream	0...15 dB (0,1 dB-steps)
Interstage attenuator downstream	0/5/10 dB
interstage equalizer downstream	0/6/9 dB
Output level 1	111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output level 2	114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output test point	20 dB
Output return loss	>20 dB
Output splitter	1 pcs. (Output level -4 dB with output splitter)
<b>Upstream</b>	
Frequency range upstream	5...30/65 MHz (depending on diplexers)
Gain upstream	30 dB
noise figure upstream	≤7 dB
attenuator upstream input	0...30 dB (0,1 dB-steps)
attenuator upstream output	0...30 dB (0,1 dB-steps)
Equalizer US	0...10 dB (0,5 dB steps)
Output level 3	116 dBμV (EN 50083-5 US)
ICS, US	0/-8/-45 dB
Upstream test point	20 dB
<b>Connectors</b>	
PG11	4 pcs.
<b>General data</b>	
Operating voltage AC	180...265 V (50/60 Hz)

Technical data	
Power consumption	22/20 W (with/without transponder)
Remote power	>8 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	261x215x100,4 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	6 kV at all inputs and outputs
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 283 x 155 mm
Gross weight sales unit	3.655 kg
Packaging volume shipping package	15dm <sup>3</sup>
Gross weight shipping unit	3.655 kg
EAN	4010056707125
Article number	70712

### Characteristics

- Active single output
- All settings with OH 41 A handset or LMT (laptop) when using a HMS-transponder
- Interface for NMS-function
- Diplex filters and splitter / tap modules pluggable
- Return channel amplifier pluggable
- ASC module VX 58



# VX 55 A

Universal line amplifier, remote supplied



The VX 55 A is a Universal line remote feeding amplifier that has 1 active output and slots for feeding channels. In addition, it has an incorporated VX 58 ASC module. All settings are adjusted via OH 41 or LMT (laptop).

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB
Input return loss	>20 dB
Frequency range downstream	47/85...1006 MHz
Gain downstream	33(29) dB (with VX 58 for control range ASLC)
Noise figure downstream	≤6,5 dB
Attenuator downstream	0...15 dB (0,1 dB-steps)
Equalizer downstream	0...15 dB (0,1 dB-steps)
Interstage attenuator downstream	0/5/10 dB
interstage equalizer downstream	0/6/9 dB
Output level 1	111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output level 2	114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output test point	20 dB
Output return loss	>20 dB
Output splitter	1 pcs. (Output level -4 dB with output splitter)
<b>Upstream</b>	
Frequency range upstream	5...30/65 MHz (depending on diplexers)
Gain upstream	30 dB
noise figure upstream	≤7 dB
attenuator upstream input	0...30 dB (0,1 dB-steps)
attenuator upstream output	0...30 dB (0,1 dB-steps)
Equalizer US	0...10 dB (0,5 dB steps)
Output level 3	116 dBμV (EN 50083-5 US)
ICS, US	0/-8/-45 dB
Upstream test point	20 dB
<b>Connectors</b>	
PG11	4 pcs.
<b>General data</b>	
Operating voltage AC	27...65 V (50/60 Hz)

Technical data	
Power consumption	22 / 20 W (with/without transponder)
Remote power	<8 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	261x215x100,4 mm
Operating temperature range	-20...+55 °C
Protection class	IP66
Lightning protection	6 kV at all inputs and outputs
Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 283 x 155 mm
Gross weight sales unit	3.655 kg
Packaging volume shipping package	15dm <sup>3</sup>
Gross weight shipping unit	3.655 kg
EAN	4010056707132
Article number	70713

### Characteristics

- Active single output
- All settings with OH 41 A handset or LMT (laptop) when using a HMS-transponder
- Interface for NMS-function
- Diplex filters and splitter / tap modules pluggable
- Return channel amplifier pluggable
- ASC module VX 58

# HFC amplifier Compact Line

## VX 56 A

Universal line amplifier, locally supplied



The VX 56 A is a Universal line location feeding amplifier that has 2 active output and slots for feeding channels. In addition, it has an incorporated VX 58 ASC module. All settings are adjusted via OH 41 or LMT (laptop).

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB
Input return loss	>20 dB
Frequency range downstream	47/85...1006 MHz
Gain downstream	2x 39,5 dB (with XM 51 A (4/4 dB))
Noise figure downstream	≤6,5 dB
Attenuator downstream	0...15 dB (0,1 dB-steps)
Equalizer downstream	0...15 dB (0,1 dB-steps)
Interstage attenuator downstream	0/5/10 dB
interstage equalizer downstream	0/6/9 dB
Output level 1	2x 111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output level 2	2x 114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output test point	20 dB
Output return loss	>20 dB
Output splitter	1 pcs.
<b>Upstream</b>	
Frequency range upstream	5...30/65 MHz (depending on diplexers)
Gain upstream	26 dB
noise figure upstream	≤10 dB
attenuator upstream input	0...30 dB
attenuator upstream output	dB
Equalizer US	0...10 dB
Output level 4	116 dBμV
ICS, US	0/-8/-45 dB (switchable)
Upstream test point	20 dB
<b>Connectors</b>	
PG11	4 pcs.
<b>General data</b>	
Operating voltage AC	180...265 V (50/60 Hz)

Technical data	
Power consumption	33/31 W (with/without transponder)
Remote power	<8 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	261x215x100,4 mm
Operating temperature range	-20...+50 °C
Protection class	IP66
Lightning protection	6 kV (EN61000-4-5, 1,2/50 μs pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 283 x 155 mm
Gross weight sales unit	3.655 kg
Packaging volume shipping package	15dm <sup>3</sup>
Gross weight shipping unit	3.655 kg
EAN	4010056704223
Article number	70422

### Characteristics

- Two active outputs
- All settings with OH 41 A handset or LMT (laptop) when using a HMS-transponder
- Interface for NMS-function
- Diplex filters and splitter / tap modules pluggable
- Return channel amplifier pluggable
- ASC module VX 58



# VX 57 A

Universal line amplifier, remote supplied



The VX 57 A is a Universal line remote feeding amplifier that has 2 active output and slots for feeding channels. In addition, it has an incorporated VX 58 ASC module. All settings are adjusted via OH 41 or LMT (laptop).

Technical data	
<b>Downstream</b>	
Inputs	1 pcs.
Input measurement socket	20 dB
Input return loss	>20 dB
Frequency range downstream	47/85...1006 MHz
Gain downstream	2x 39,5 dB (with XM 51 A (4/4 dB))
Noise figure downstream	≤6,5 dB
Attenuator downstream	0...15 dB (0,1 dB-steps)
Equalizer downstream	0...15 dB (0,1 dB-steps)
Interstage attenuator downstream	0/5/10 dB
interstage equalizer downstream	0/6/9 dB
Output level 1	2x 111 dBμV (CENELEC 42 channels, flat, at CSO/CTB >60 dB)
Output level 2	2x 114 dBμV (CENELEC 42 channels, 6 dB slope, at CSO/CTB >60 dB)
Output test point	20 dB
Output return loss	>20 dB
Output splitter	1 pcs.
<b>Upstream</b>	
Frequency range upstream	5...30/65 MHz (depending on duplexers)
Gain upstream	26 dB
noise figure upstream	≤10 dB
attenuator upstream input	0...30 dB
attenuator upstream output	0...30 dB
Equalizer US	0...10 dB
Output level 4	116 dBμV
ICS, US	0/-8/-45 dB (switchable)
Upstream test point	20 dB
<b>Connectors</b>	
PG11	4 pcs.
<b>General data</b>	
Operating voltage AC	27...65 V (50/60 Hz)

Technical data	
Power consumption	33/31 W (with/without transponder)
Remote power	<8 A
Screening factor	Class A, EN 50083-2
Dimensions (width x height x depth)	261x215x100,4 mm
Operating temperature range	-20...+50 °C
Lightning protection	6 kV (EN61000-4-5, 1,2/50 μs pulse)

Packaging data	
Sales unit	1 pcs.
Dimensions (WxHxD) sales unit	340 x 283 x 155 mm
Gross weight sales unit	3.500 kg
Packaging volume shipping package	15dm <sup>3</sup>
Gross weight shipping unit	3.5 kg
EAN	4010056704230
Article number	70423

### Characteristics

- Two active outputs
- All settings with OH 41 A handset or LMT (laptop) when using a HMS-transponder
- Interface for NMS-function
- Diplex filters and splitter / tap modules pluggable
- Return channel amplifier pluggable
- ASC module VX 58

# Accessories Compact Line

## VX 58 0407

Pilot detector



KLASSE  
**A**  
CLASS

## VX 58 0607

Pilot detector



KLASSE  
**A**  
CLASS

## VX 58 0703

Pilot detector



KLASSE  
**A**  
CLASS

## VX 58 0855

Pilot detector



KLASSE  
**A**  
CLASS

### Technical data

Upper pilot frequency	287,25...407,25 MHz	415,25...607,25 MHz	615,25...703,25 MHz	711,25...855,25 MHz
Pilot frequency below	110,25...140,25 MHz	110,25...140,25 MHz	110,25...140,25 MHz	110,25...140,25 MHz
Control range	±0,9 dB (47 MHz)	±0,9 dB (47 MHz)	±0,9 dB (47 MHz)	±0,9 dB (47 MHz)
Control range	±2,9 dB (470 MHz)	±2,9 dB (470 MHz)	±2,0 dB (470 MHz)	±2,0 dB (470 MHz)
Control range	±3,4 dB (606 MHz)	±3,4 dB (606 MHz)	±3,4 dB (606 MHz)	±3,4 dB (606 MHz)
Control range	±4 dB (862 MHz)	±4 dB (862 MHz)	±4 dB (862 MHz)	±4 dB (862 MHz)
Control range	±4 dB (47...862 MHz)	±4 dB (47...862 MHz)	±4 dB (47...862 MHz)	±4 dB (47...862 MHz)

### Packaging data

Sales unit	1 pcs.	1 pcs.	1 pcs.	1 pcs.
------------	--------	--------	--------	--------

## XM 55

Splitter



## XM 56

Splitter



## VT 51 A

HMS-Transponder



### Technical data

Frequency range	5...1006 MHz
TAP loss	13 dB
Through loss	1 dB
Isolation	> 30 dB

### Packaging data

Sales unit	1 pcs.
------------	--------

### Technical data

Frequency range	5...1006 MHz
TAP loss	18 dB
Through loss	1 dB
Isolation	> 30 dB

### Packaging data

Sales unit	1 pcs.
------------	--------

### Packaging data

Sales unit	1 pcs.
------------	--------





## XE 50 A 0650

Diplexer 65/85 MHz



## XE 51 A

Equalizer module



## XE 52 A

Equalizer module



### Technical data

Frequency range high-pass	85...1006 MHz
Frequency range low-pass	5...65 MHz
Impedance	75 Ω

### Packaging data

Sales unit	1 pcs.
------------	--------

### Technical data

Frequency range	47...1006 MHz
Equalization	3/9 dB
Impedance	75 Ω

### Packaging data

Sales unit	1 pcs.
------------	--------

### Technical data

Frequency range	47...1006 MHz
Equalization	12/18 dB
Impedance	75 Ω

### Packaging data

Sales unit	1 pcs.
------------	--------

## XE 57

cable simulator downstream



## XM 51 A

Splitter



## XM 53

Splitter



### Technical data

Frequency range	85...862 MHz
Impedance	75 Ω
Equalization	6/9 dB (Cable imitation)

### Packaging data

Sales unit	1 pcs.
------------	--------

### Technical data

Frequency range	5...1006 MHz
Impedance	75 Ω
Distribution loss	4 dB
Isolation	≥ 20 dB

### Packaging data

Sales unit	1 pcs.
------------	--------

### Technical data

Frequency range	5...1006 MHz
TAP loss	8 dB
Through loss	2 dB
Isolation	> 25 dB

### Packaging data

Sales unit	1 pcs.
------------	--------

WISI Measuring receivers:

**Your needs  
decide**





# Measuring receivers

**The increasing digitalization and the HD image rendering create new demands on businesses.**

**WISI WA measuring receivers** are designed for the needs of the professional trade and provide all necessary measurement capabilities for installation and service of measuring and distribution systems. A simple operation, high functionality, high measurement accuracy and designed for everyday practice facilities distinguishes each WISI meter. Retrofit technology and the possibility of software updates make WISI gauges a durable and economical everyday companion.

Your requirements determine which model you choose. With every WISI measuring receiver, you decide for powerful and robust measurement technology that will convince you with every use anew.

## WISI measuring receivers at a glance (WA 32 P):

- Analog: SAT, BK, TV, FM
- Digital: SAT, BK, terrestrial
- Analog and digital imaging via built in 4" color TFT display
- Built in back channel measurement
- Analyzer for all areas
- 99 station presets
- 1 x CI slot (Common Interface)
- Fully occupied SCART socket
- Built-in mains and charging part
- Includes bag and battery pack

# DVB-C Analyzer

## WA 41 C

DVB-C Analyzer



The WA 41 is a powerful tool to monitor and analyze the Transport Stream traffic that carries information of audio, video and data of the digital television channels. The WA 41 is able to analyze one RF and one ASI inputs.

Technical data	
Frequency range	47...1000 MHz (Demodulation mode, Downlink), 47...1000 MHz (Spectrum mode, Downlink), 5...85 MHz (Spectrum mode, Uplink)
Tuning	Channel/Frequency/Channel plan
Connectors Input	
RF Downlink	1 x 75 Ohm F female connector
RF Uplink (optional)	1 x 75 Ohm F female connector
Cable modem (optional)	1 x 75 Ohm F female connector
Transport stream (ASI)	1 x 75 Ohm ASI IN BNC
Transport stream (IP, optional)	1 x RJ45 Gigabit Ethernet
Connectors output	
Transport stream	1 x 75 Ohm ASI OUT BNC
Audio/Video	1 x HDMI 1.4
Demodulation Mode	
Frequency range	47...1000 MHz
Demodulation	ITU-T J.83 Annex A/C standard
QAM Constellations	16-, 32-, 64-, 128-, 256- QAM
Symbol rate	2...6,9 MSymb/sec
Q.A.L. Technology (QAM Auto look)	Automatic detection of signal Characteristics and modulation parameters
RF Level range	-70...+15 dBm (for a single input channel)
Input sensitivity	-60 dBm
C/N	up to 50 dB
MER	up to 43 dB, ( $\pm$ 2dB), (6,9 MSym/s, QAM 256, Level > -45 dBm), (Resolution 0,1 dB)
BER (Annex A/C)	1.0E-3 to 1.0E-9
PreBER (Annex B)	1.0E-3 to 1.0E-8
PostBER (Annex B)	1.0E-3 to 1.0E-9
Spectrum Downlink	
Frequency range	47...1000 MHz
Span	10, 20, 50,100, 200, 500, 1000 MHz
Automatic Reference Level	Yes

Technical data	
Marks	2
User defined mask	for allarms
Spectrum Uplink (optional)	
Frequency range	5...85 MHz
Span	80 MHz
Automatic Reference Level	Yes
Channel plan	
Factory channel plans	up to 24 different world wider regions
MPEG data	
ETSI TR 101 290	Level 1, 2 and 3 priority errors (Level 3 opt.)
Alarms log analysis	Yes
PCR jitter	Yes (opt.)
Bit rate	Services, Null packets, SI tables, All TS packets
Bitrate profiles	MGB1, MGB2, MGB5, MGB5B, MGB5C, MBG5D
Transport Stream Treeview	Yes
Polling	Yes
Service parameters	Service name, provider name, SID, AID, PID, encode type, audio and video bitrates
Cable Modem (optional)	
Modes	Docsis 3.0/2.0/1.1/1.0 with BPI/BPI+
Downstream	up to 8 channels (88...1002 MHz)
Upstream	up to 4 channels
Connect Status	DS and US frequency, DHCP, TOD, config. name, level of security, DOCSIS version
Modem Emulation	Connection status of the modem, instantaneous speed and size data sent through the modem
Interfaces	
USB	1 pcs. (2.0)



Technical data	
RJ45	2 pcs. (IP input optional)
Kind of display	LCD
Keyboard	Function buttons on the front panel
Monitoring	
Web Interface	Yes
SNMP	V2.0
Front Panel	Yes
Packaging data	
Sales unit	1 pcs.
EAN	4010056744915
Article number	74491

**WISI Communications GmbH & Co. KG**

P.O. Box 1220

75223 Niefern - Oeschelbronn, Germany

Phone: +49 72 33-66-2 80

Fax: +49 72 33-66-3 50

E-Mail: [export@wisi.de](mailto:export@wisi.de)