FAGOR
ELECTRÓNICA

GENERAL CATALOGUE



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FAGOR ELECTRÓNICA

GENERAL CATALOGUE



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Reception

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MECHANICAL ACCESSORIES

TERRESTRIAL ANTENNAS

RADIO ANTENNAS

reception

ANF RADIO Series

Terrestrial antennas for analog and digital DAB radio.

APPLICATION

Community and individual installations of digital and analog radio reception.

FEATURES

- Made of aluminium.
- Waterproof connection box.
- F connectors.
- Quick installation.
- Omnidirectionals.
- ANF DAB: Antenna for digital radio reception.



ANF FM



ANF FMS



ANF DAB

MODEL		ANF FM	ANF FMS	ANF DAB
Reference		**80024**	**80025**	**80026**
Frequency range	**MHz**	87,5 ÷ 108		193 ÷ 230
Gain	**dB**	0		
Impedance	**Ω**	75		
Polarization		H	H/V	V
Packing dimensions (10 u.)	**mm**	490 x 220 x 600	650 x 280 x 320	800 x 200 x 250
Weight (10 u.)	**Kg**	7.2	6.8	6.1

TERRESTRIAL ANTENNAS
UHF ANTENNAS

reception

RHOMBUS Series

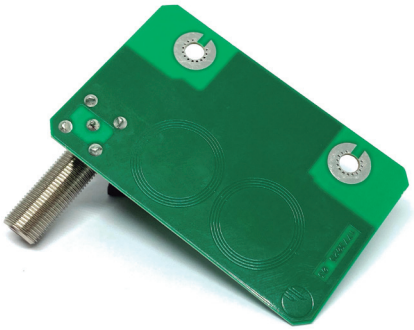
OPTIMISED DIGITAL TV HDTV ANTENNA with high gain and excellent mechanical resistance.



FEATURES

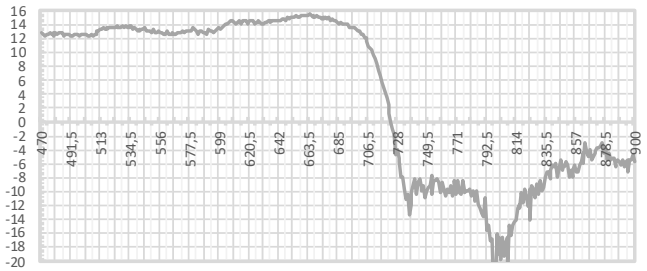
- Modern, optimised design to achieve optimum gain/size ratio.
- Self-adapting: provides a constant, balanced signal, minimizing loss and maximizing adaptation.
- Light weight and robust, designed with state-of-the-art technology to guarantee an excellent response and a long lifetime.
- Active/passive dipole.
- Easy installation, in just 3 clicks, no tools needed.
- Compact, small-sized single-unit packing.
- Simple, ergonomic mast fixing system to guarantee secure mounting.

PASSIVE DIPOLE



PATENTED

The new passive dipole incorporates SRR (Split Ring Resonator) technology that ensures maximum rejection of 5G signals, while maintaining the gain characteristics of the TV band. There is no need to add external filters.



MODEL			RHOMBUS A/P 48	RHOMBUS 5 A/P 48	RHOMBUS P 48	RHOMBUS 5 P 48
Reference			**84410**	**84412**	**84411**	**84413**
Channels			21 ÷ 48			
Gain		dB	17 (34 active)		17	
Power supply		V	12-24		-	
Current drawn		mA	45		-	
Impedance		Ω	75			
Return losses		dB	>10			
Back-to-front ratio		dB	24			
Horizontal opening angle		°	25			
Noise figure		dB	2			
Windload	130 km/h	N	65			
	160 km/h		92			
Packing dimensions (1 u.)		mm	600 x 375 x 170	600 x 400 x 690	600 x 375 x 170	600 x 400 x 690
Weight		Kg	2.15	10	2.15	10

LIGHTWEIGHT, BUT ROBUST

SELF-ADAPTING

LTE MAXIMUM PROTECTION

HIGH RESISTANCE

EASY INSTALLATION

COMPACT SINGLE-UNIT PACKAGING

TERRESTRIAL ANTENNAS
UHF ANTENNAS

reception

DIGIT 25 D2 Series

UHF antenna which offers high gain and great mechanical resistance.



APPLICATION
Digital and analog TV reception in individual and community installations.

FEATURES
- Compact and resistant with strong, undeformable clip.
- It has stud bolts to avoid being lost or dropped during assembly operations.
- Immune to most interference generated by different sources.
- It has an F connector which gives it high shielding.

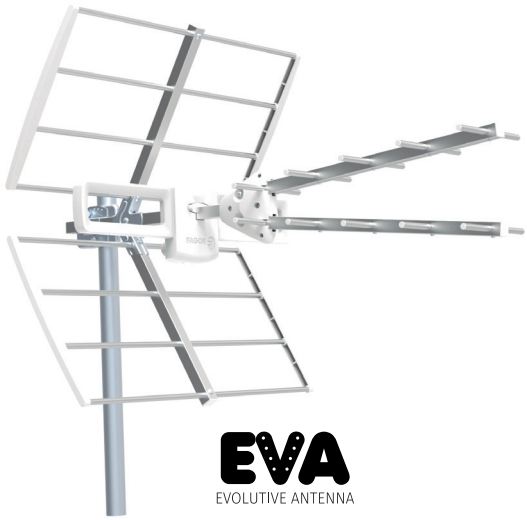
MODEL		Digit 25 LTE D2 6u
Reference		**84405**
Channels		21 ÷ 48
Gain	**dB**	13
Impedance	**Ω**	75
Return losses	**dB**	10
Front-to-back ratio	**dB**	24
Horizontal opening angle at -3 dB °<	**°**	36
Length	**mm**	1006
Windload 130 km/h 150 km/h	**N**	65 92
Packing units		6
Packing dimensions	**mm**	1030 x 370 x 355
Weight	**Kg**	1.45

TERRESTRIAL ANTENNAS
UHF ANTENNAS

reception

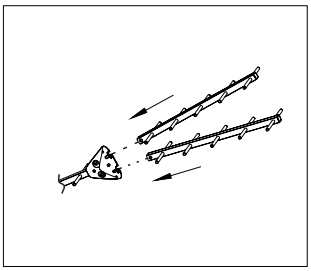
EVA Series

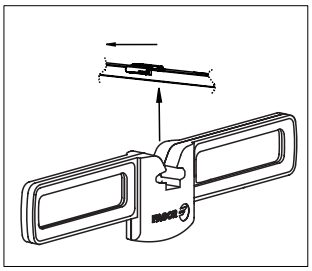
Digital and analog television reception in community and individual installations fully adapted to LTE.

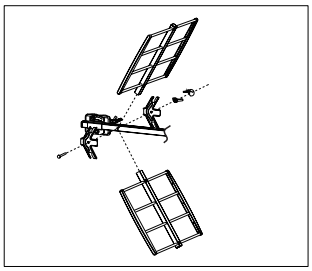


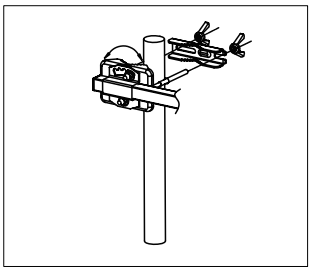
FEATURES

- Reduced size, minimum aesthetic impact, maximizing electrical parameters.
- High gain/length ratio.
- Easy installation, no tools required.
- Multiple packaging for better transport optimization.









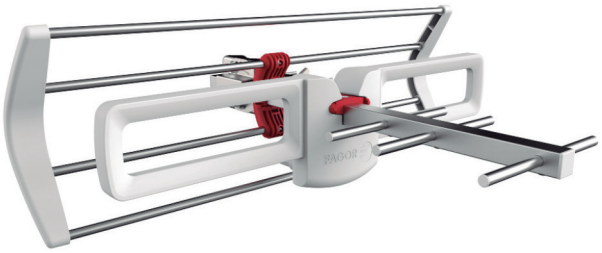
MODEL		EVA D2
Reference		**84415**
Channels		21 ÷ 48
Gain	**dB**	14
Impedance	**Ω**	75
Return losses	**dB**	15
Front-to-back ratio	**dB**	15
Horizontal opening angle	**°**	39
Length	**mm**	780
Packing dimensions	**mm**	559 x 310 x 500
Weight	**Kg**	5

TERRESTRIAL ANTENNAS
UHF ANTENNAS

reception

Aura Series

Antenna for digital and analog TV reception in community and individual installations, fully adapted to LTE.

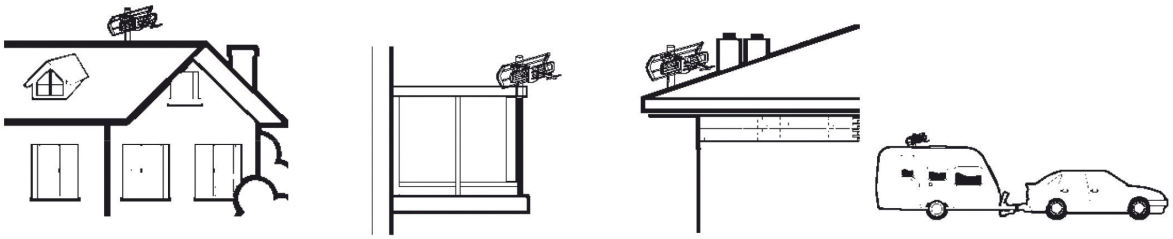




FEATURES

- Small size for minimum aesthetic impact.
- High gain / length ratio.
- Easy installation, no tools required.
- Optimized unit packaging.

EXAMPLE



MODEL		AURA D2
Reference		**84402**
Channels		21 ÷ 48
Gain	dB	12
Impedance	Ω	75
Return losses	dB	15
Front-to-back ratio	dB	15
Horizontal opening angle	°	15
Length	mm	430
Packing dimensions	mm	530 x 180 x 80
Weight	Kg	1.1

SATELLITE DISHES
DISHES

reception

Dishes

Satellite dishes manufactured of electro zinc-coated steel with a polyester coating ensuring high level of resistance to weather conditions.



APPLICATION

Suitable for community and individual Satellite TV installations. Available a wide range of diameters according to the size of the installation.

FEATURES

- The parabolic reflectors are designed to achieve high gain.
- Pole or wall mounting.

MODEL		PO 064	PO 081	DPO 105
Reference		**86064**	**86081**	**86105**
Diameter	**cm**	51 x 57	73 x 80	91 x 100
Focal distance	**cm**	32.7	46.8	58.3
Type of reflector		Offset		
Material		Electro zinc-coated steel		
Coating		Polyester		
Type of fixing		Floor / Wall / Pole		Mast
Mast diameter	**mm**	30 ÷ 60		
Elevation	**º**	17 ÷ 55		-5 ÷ 82
Offset angle	**º**	19		
Azimuth	**º**	180		
LNB fixing Ø	**mm**	25 ÷ 40		
Frequency range	**GHz**	10 ÷ 12.75		
Gain (11,7 GHz)	**dB**	35	38	39.2
Efficiency	**%**	>60		
Beam width (-3 dB)	**º**	2.8	2.4	2.1
F/D relation		0.64		
Wind speed		Operating: up to 100 km/h Maximum: up to 130 km/h		
Packing dimensions	**mm**	610 x 610 x 110	830 x 840 x 120	1020 x 1000 x 120
Weight	**Kg**	5	9	10

SATELLITE DISHES
KITS PO

reception

Satellite dish + LNB Kits

Kits composed of Offset satellite dishes manufactured of eletro-zinc coated steel with a polyester coating and LNB converters.



APPLICATION
Suitable for community and individual satellite TV installations.

FEATURES
- The parabolic reflectors are designed to achieve high gain, guaranteeing great strength and mechanical resistance.
- Easy fitting system.
- Universal LNB: low noise figure and high gain.

MODEL		KIT PO 064	KIT PO 081
Reference		**86164**	**86181**
Packing dimensions (4 u.)	**mm**	630 x 605x 113	850 x 844 x 125
Weight (4 u.)	**Kg**	14.7	17
SATELLITE DISH			
Diameter	**cm**	51 x 57	73 x 79
Focal distance	**cm**	32.7	53
Type of reflector		Offset	
Material		Electro zinc-coated steel	
Coating		Polyester	
Mast diameter	**mm**	30 ÷ 60	
Elevation		10º ÷ 90º	
Offset angle		28º	26º
Azimut		360º	
Frequency range	**GHz**	10,7 ÷ 12,75	
Gain (10.7 GHz)	**dBi**	33.5	35.9
Gain (11.7 GHz)	**dBi**	34.8	37.4
Gain (12.7 GHz)	**dBi**	35.4	38.0
Efficiency	**%**	> 70	
F/D relation		0.64	
Wind speed		Operating: up to 130 km/h Maximum: up to 150 km/h	
UNIVERSAL LNB			
Number of inputs		1	
Polarity		VL, HL, VH, HH	
Input frequency	**GHz**	Low Band 10.7 ÷ 11.7 High Band 11.7 ÷ 12.75	
Oscillator frequency	**GHz**	Low Band 9.75 High Band 10.60	
Output frequency range	**MHz**	Low Band 950 ÷ 1950 High Band 1100 ÷ 2150	
Noise figure at 20º C	**dB**	0.2	
Conversion gain	**dB**	50 ÷ 65 (typical 55)	
Output level (1 dB of compression)	**dB**	> 0 (typical 5)	
Power supply	**V**	11.5 ÷ 14 (V); 16 ÷ 19 (H);	
22 KHz tone		0.6 Vpp ± 0,2 for High band	
Consumption	**mA**	< 150	
Output connectors		F (h)	
Operating temperature range	**ºC**	- 25 ÷ + 60	

CONVERTERS

reception

LNB Series

Universal LNB for the satellite TV signal reception.



FEATURES

- Stand out for their low noise figure and high gain which together with Offset type satellite dishes make it possible to obtain merit factors ideal for collective installations.
- Big Cross Polarity Rejection: 25 dB.

MODEL		LNB 201 Universal	LNB 222 TWIN	LNB 244 QUAD	LNB 248 OCTO
Reference		**86129**	**86132**	**86134**	**86138**
Number of outputs		1	2	4	8
Polarity		VL, HL, VH, HH			
Input frequency	**GHz**	Low band 10.7 ÷ 11.7 High band 11.7 ÷ 12.75			
Oscillator frequency	**GHz**	Low band 9.75 ± 2 MHz High band 10.60 ± 2 MHz			
Output frequency range	**MHz**	Low band 950 ÷ 1950 High band 1100 ÷ 2150			
Noise figure at 20° C	**dB**	0.2			
Cross polarity rejection	**dB**	25			25
Conversion gain	**dB**	50 ÷ 65 (typical 58)			
Output level (1 dB of compression)	**dBm**	>0			
Power supply	**V**	11.5 ÷ 14 (V); 16 ÷ 19 (H)			11.5 ÷ 19
22 KHz tone		0.6 Vpp ± 0,2 for High band			-
Consumption	**mA**	<200	<300		215
Output connectors		F (f)			
Operating temperature range	**°C**	- 25 ÷ + 60			
Packing dimensions	**mm**	85 x 110 x 60	100 x 125 x 60	120 x 125 x 65	90 x 110 x 130
Weight	**Kg**	0.110	0.190	0.235	0.315

MODEL		LNB 182 Monoblock TWIN	LNB 184 Monoblock QUAD	LNB 204 Quattro
Reference		**86136**	**86137**	**86131**
Number of outputs		2	4	
Polarity		VL, HL, VH, HH Astra - Hotbird separate 6°		VL | HL | VH | HH
Input frequency	**GHz**	Low band 10.7 ÷ 11.7 High band 11.7 ÷ 12.75		
Oscillator frequency	**GHz**	Low band 9.75 ± 2 MHz High band 10.60 ± 2 MHz		
Output frequency range	**MHz**	Low band 950 ÷ 1950 High band 1100 ÷ 2150		
Noise figure at 20° C	**dB**	0.2		
Cross polarity rejection	**dB**	25		-
Conversion gain	**dB**	50 ÷ 65 (typical 58)		
Output level (1 dB of compression)	**dBm**	>0		
Power supply	**V**	11.5 ÷ 14 (V); 16 ÷ 19 (H)		11.5 ÷ 19
22 KHz tone		0.6 Vpp ± 0,2 for High band		-
Consumption	**mA**	<200		
Output connectors		F (f)		
Operating temperature range	**°C**	- 25 ÷ + 60		
Packing dimensions	**mm**	110 x 120 x 130	110 x 120 x 130	110 x 125 x 60
Weight	**Kg**	0.555	0.570	0.235

MECHANICAL ACCESSORIES

reception

Supports for **Antennas**

FLOOR MOUNT

Floor mount support 200 x 200 mm.

MODEL		PPA 200
Reference		**86104**
Distance between holes	**mm**	200 x 200
Hole diameter	**mm**	20
Height	**mm**	820
Tube diameter	**mm**	60
Units per package		1
Packing dimensions	**mm**	920 x 280 x 270
Weight	**Kg**	6.7



PPA 200

SUPPORT FOR WALL AND FLOOR

Allows mounting on both, wall or floor

MODEL		PPS 100	PPS 806
Reference		**86101**	**86102**
Distance between holes	**mm**	190 x 100	-
Hole diameter	**mm**	11.5	-
Height	**mm**	468 (squad) 713 (vertical)	-
Tube diameter	**mm**	50	40
Units per package		1	2
Packing dimensions	**mm**	525 x 280 x 260	720 x 235 x 50
Weight	**Kg**	4	3.3



PPS 100 PPS 806

DISH BASE

Base for embedded mounting. 200 x 200 mm.

MODEL		BPP 200
Reference		**82436**
Units per package		2
Packing dimensions	**mm**	480 x 290 x 320
Weight	**Kg**	6



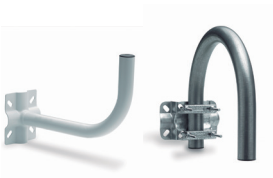
BPP 200

WALL MOUNT SUPPORTS

PML 32: L-shaped wall-mast support for parabolic dish 65 cm.

SPU 40: U-shaped wall bracket for dishes 65/80 cm.

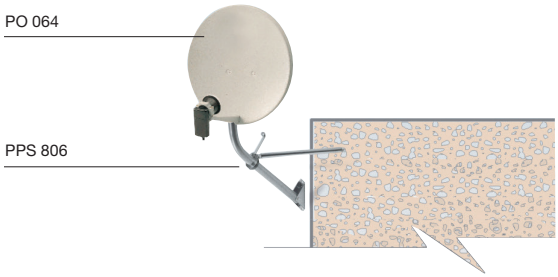
MODEL		PML 32	SPU 40
Reference		**86103**	**86106**
Tube diameter	**mm**	32	40
Units per package		10	10
Packing dimensions	**mm**	440 x 380 x 130	580 x 430 x 210
Weight	**Kg**	8	15



PML 32 SPU 40

INSTALLATION OF AN ANTENNA SUPPORT





MECHANICAL ACCESSORIES

reception

Towers

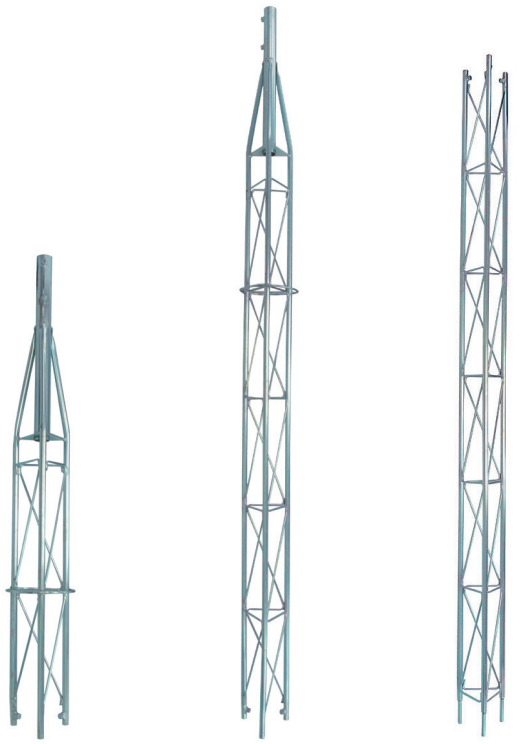
Triangular profile towers composed of several sections and an upper section to attach an antenna mast to them.

APPLICATION

Installations where antennas need to be placed higher or the antenna mast installation needs to be reinforced.

FEATURES

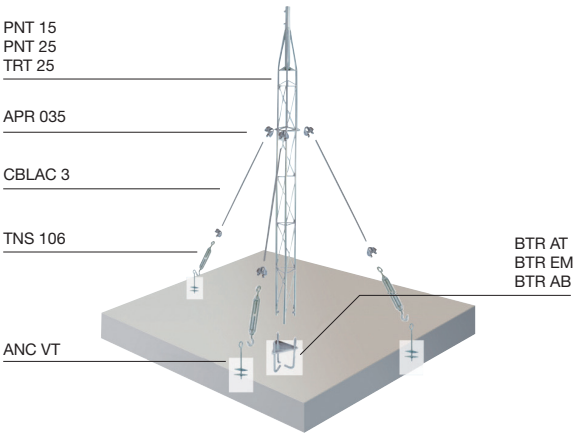
- Made of zinc-plated iron.
- Round tube diameter 20 mm.
- The towers are fixed to the ground or to the roof by means of a base that can be screwed or embedded.



PNT 15 PNT 25 TRT 25

MODEL		PNT 15	PNT 25	TRT 25
Reference		**82401**	**82402**	**82403**
Tower type	**m**	upper section		inferior
Height	**mm**	1500	2500	
Width	**mm**	180		
Max. mast diameter	**mm**	46		
Material		Zinc-plated iron		
Units per package		1		
Packing dimensions	**mm**	1500 x 180 x 180	2700 x 180 x 180	2500 x 180 x 180
Weight	**Kg**	5	8	7

TOWER INSTALLATION



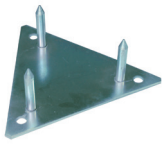
MECHANICAL ACCESSORIES

reception

Accessories **Towers**

TOWER BASE FOR SCREWING
Base to screw tower in zinc-plated iron.

MODEL		BTR AT
Reference		**82405**
Width	**mm**	180
Units per package		4
Packing dimensions	**mm**	310 x 310 x 220
Weight	**Kg**	6



TOWER BASE FOR EMBEDDING
Base for embedding tower in zinc-plated iron.

MODEL		BTR EM
Reference		**82406**
Width	**mm**	180
Units per package		4
Packing dimensions	**mm**	510 x 310 x 220
Weight	**Kg**	8



HINGED TOWER BASE FOR EMBEDDED INSTALLATION

MODEL		BTR AB
Reference		**82407**
Width	**mm**	180
Units per package		4
Packing dimensions	**mm**	510 x 310 x 220
Weight	**Kg**	8



WIND CABLE
Manufactured in 3 mm braided steel.

MODEL		CBL AC3
Reference		**82411**
Cable length	**m**	100
Packing dimensions	**mm**	190 x 190 x 60
Weight	**Kg**	1,5



WIND TENSOR
1/4” wind tensor. M8.

MODEL		TNS 106
Reference		**82427**
Units per package		25
Packing dimensions	**mm**	150 x 25 x 20
Weight	**Kg**	1



WIND ANCHORAGE
Wind anchorage with plates. M12.

MODEL		ANC VT
Reference		**82408**
Thread diameter		M12
Units per package		7
Packing dimensions	**mm**	515 x 305 x 120
Weight	**Kg**	28



WIND RING
Wind ring and mast stop flange.

MODEL		ARG V35	ARG V40
Reference		**82410**	**82409**
Mast diameter		35	40
Units per package		20	
Packing dimensions	**mm**	150 x 230 x 150	
Weight	**Kg**	3	



MECHANICAL ACCESSORIES

reception

Masts

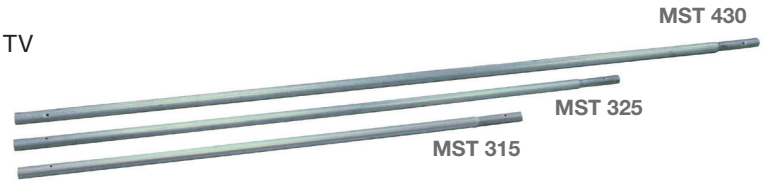
Antenna masts with sections to be assembled to form a longer mast.

APPLICATION

Installations where it is required to place terrestrial TV and radio antennas at a greater height.

FEATURES

- Made of galvanized steel.
- MTS 430 is applied on the tower toe.



MODEL		MST 430	MST 325	MST 315
Reference		**82414**	**82416**	**82415**
Height	**mm**	3000	2500	1500
Diameter	**mm**	40	35	
Thickness	**mm**	2	1.5	
Units per package		6	6	
Packing dimensions	**mm**	3000 x 125 x 100	2500 x 105 x 70	1500 x 105 x 70
Weight	**Kg**	34	18	9

Accessories **Masts**

BRACKETS FOR MASTS

Folding base of 41 mm. inside diameter for masts of 35 and 40 mm, diameter.

MODEL		BTJ 035
Reference		**82418**
Units per package		6
Packing dimensions	**mm**	310 x 310 x 220
Weight	**Kg**	6



CHIMNEY BRACKET

To install a mast on a chimney without making works on the facade.

MODEL		ACH 045
Reference		**82419**
Mast diameter	**mm**	Hasta 45
Units per package		8
Packing dimensions	**mm**	500 x 470 x 270
Weight	**Kg**	13



WIRE TIGHTENERS

Tightens cables for winds of 3 mm diameter M5.

MODEL		APR 035
Reference		**82429**
Units per package		25
Packing dimensions	**mm**	150 x 230 x 150
Weight	**Kg**	0.6



CLAMP

Clamp closed with nail.

MODEL		GRP 001
Reference		**82428**
Units per package		100
Packing dimensions	**mm**	150 x 230 x 150
Weight	**Kg**	1.5



MECHANICAL ACCESSORIES

reception

Claws

Reinforced claws for fixing masts to a wall, both for screwing and embedding.



APPLICATION

Installations where it is required to place terrestrial TV and radio antennas on a mast to a wall.

FEATURES

- Manufactured in zinc-plated iron.

MODEL		GRM U50	GRM U30	GRM A20	GRP AT	GRE AT
Reference		**82423**	**82422**	**82421**	**82434**	**82435**
Dimensions	**mm**	500	300	200	270 x 80	170 x 110
Fixing		embedded		screw		
Max. mast diameter	**mm**	60				
Units per packing		14				
Packing dimensions	**mm**	510 x 310 x 110	310 x 230 x 100	150 x 230 x 150	310 x 230 x 100	150 x 250 x 150
Weight	**Kg**	10	8	10	8	5

Flange

DOUBLE FLANGE

Zinc-plated U-bolt with three clamping jaws for attachment to the mast. For mast up to 60 mm diameter. M8.

MODEL		BRI D68
Reference		**82425**
Units per packing		25
Packing dimensions	**mm**	310 x 230 x 100
Weight	**Kg**	8



SINGLE FLANGE

Zinc-plated U-bolt with one clamp for attachment to the mast. For mast up to 60 mm diameter. M8.

MODEL		BRI SD68
Reference		**82426**
Units per packing		25
Packing dimensions	**mm**	310 x 230 x 100
Weight	**Kg**	5

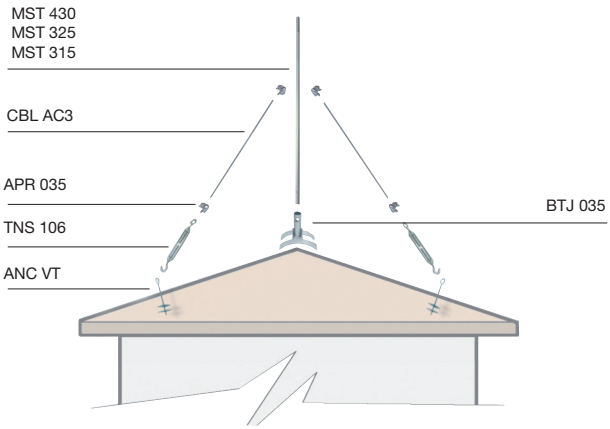


MECHANICAL ACCESSORIES

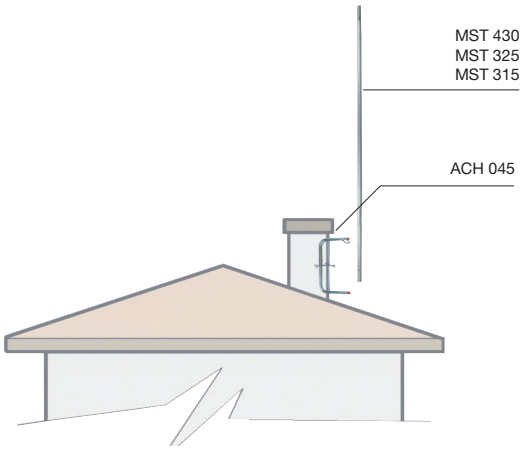
reception

Application **Examples**

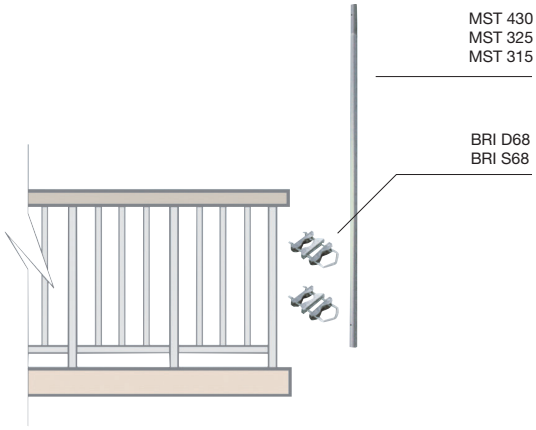
INSTALLATION OF A MAST ON A **ROOF**



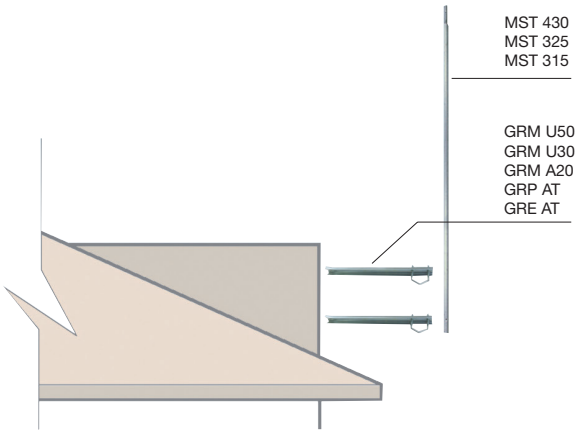
INSTALLATION OF A MAST ON A **CHIMNEY**



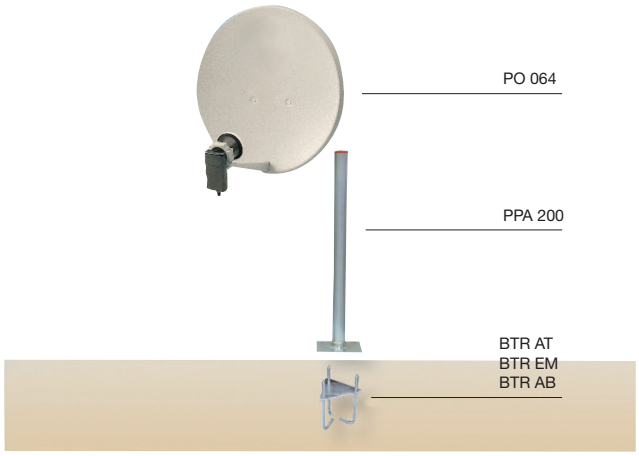
INSTALLATION OF A MAST ON A **RAILING**



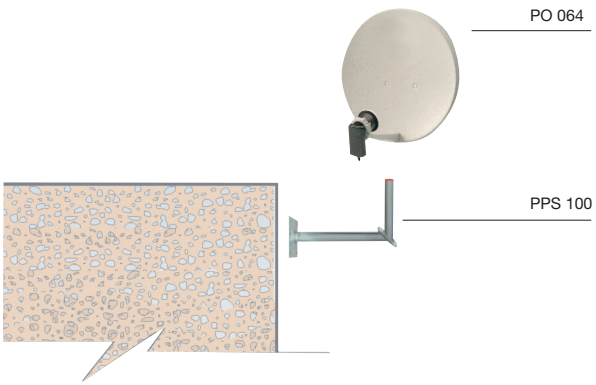
INSTALLATION OF A MAST ON A **WALL**



INSTALLATION OF A DISH ON A **BALCONY**



INSTALLATION OF A DISH ON A **WALL**




FM
VHF
UHF 1
UHF 2
SAT
RF
RF+SAT
evo
PRO 300
FAGOR



Headends

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MULTI-PROCESSING HEADENS

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PROGRAMMABLE AMPLIFIERS

MULTI-PROCESSING HEADENDS

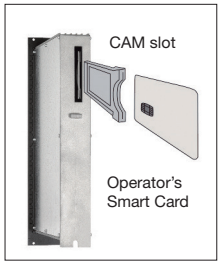
SAT TO COFDM TRANSMODULATOR

headends

STT 8000 Series

Digital/digital transmodulation of a transponder on the 1st IF Satellite band (950 ÷ 2150 MHz) modulated in QPSK or 8PSK to a channel modulated in COFDM on the 47 ÷ 862 MHz band. De-encyrption of one or more services when CAM+Smart Card are inserted (CI model).





APPLICATION

Large and medium size installations where it is necessary to distribute digital satellite signals (in any format), through the terrestrial RF band (47 ÷ 862 MHz).

FEATURES

- Selection of services of interest at the output, adapting the transport stream. Channel occupancy indication.
- LCN (channel number) assignment to services to facilitate automatic tuning of STBs.
- Transport stream processing: regeneration of tables, date and time correction, editing of program names, ...
- PID (Packet ID) filtering.
- SID (Service ID) editing.
- Nit table regeneration in the module and installation levels.
- Editing of names and network IDs.
- Software upgradeable with MCU / LPU.
- Allows to combine services from two different inputs on each of the two outputs.

Supply voltage	**V**	5	12	17	30
Current drawn STT (CI)	**mA**	720 (850)	375	20	2
Current drawn STT-TWIN (CI)	**mA**	860	420	20	2
Total Power without CAM	**W**	9.5 (STT) / 9.75 (STT-TWIN)			
Operating temperature range	**ºC**	0 ÷ 45			

MODEL		STT-TWIN 8000	STT-TWIN MS 8000	STT-TWIN-CI 8000	STT 8000	STT-CI 8000
Reference		**08275**	**08289**	**08276**	**08280**	**08281**
INPUT						
Multiplex number		2 loop or independent)	1	2 loop or independent)	1	
Frequency band	**MHz**	950 ÷ 2150				
Input level	**dBµV**	40 ÷ 86				
Modulation type		QPSK - 8PSK				
Symbol rate	**MB**	1 ÷ 45				
Through losses	**dB**	< 2				
LNB control		22 KHz 13/17 V or DiSEqC 1.2				
Selection of multiple PLPs		-	Yes	-		
OUTPUT						
Multiplex number		Selectable 2 or 1	1	Selectable 2 or 1	1	
Frequency band	**MHz**	47 ÷ 862				
COFDM modulation type		2K; 8K				
Modulation parameters		DVB-T				
Output constellation		QPSK, 16 QAM, 64 QAM				
MER	**dB**	> 38				
Output level	**dBµV**	78	80	78	80	
Regulation of output level	**dB**	15				
CAM module (not included)		No		According to Norm EN 50221	No	According to Norm EN 50221
CAM module current drawn	**mA**	-		5V-250 MA	-	5V-250 MA
Programming		UCF 300 / PC (with MCU/LPU 8000)				
Packing dimensions	**mm**	265 x 195 x 40				
Weight	**Kg**	1.33				

MULTI-PROCESSING HEADENDS

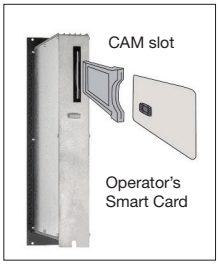
COFDM TO COFDM REGENERATION

headends

TTT 8000 Series

Transmodulation from one or two DVB-T/T2 multiplexes to one or two DVB-T output multiplexes in the RF band (47÷862 MHz). Regeneration of those multiplexes contains.





APPLICATION

Ideal for it use in hotel, hospital and public buildings installations and small CATV networks, for the distribution through a single cable of digital terrestrial signals modulated in DVB-T2. The Common Interface models (8291 and 8293) allow opening scrambled signals using CAM modules with cards with the rights.

FEATURES

- Selection of services of interest at the output, adapting the transport stream.
- Opening of the scrambled services with the CI models (8291/8293). The Twin model allows opening services from both inputs.
- Transport Stream processing:
  - DVB-SI table regeneration: table version edition.
  - Nit table regeneration in the module and installation levels.
  - Transport Stream parameters edition: tsid, onid.
  - Service parameters edition: name and service identifier (SID).
  - Network parameters edition: name and network identifier (NID).
  - LCN (Logic Chanel Number) edition.
  - PID filtering, for eliminating the not interesting PID or fixing a PID Audio.
- Transport Stream frame correction and output MER regeneration.
- Upgradable software through control unit MCU/LPU.

Supply voltage	**V**	5	12	30
Current drawn TTT/TTT-CI	**mA**	600/730	375	2
Current drawn TTT TWIN-CI	**mA**	900	450	2
Total Power without CAM	**W**	7.5 (TTT), 8 (TTT-CI) / 10 (TTT-TWIN-CI)		
Operating temperature range	**°C**	0 ÷ 45		

MODEL		TTT 8000	TTT-CI 8000	TTT-TWIN-CI 8000
Reference		**08290**	**08291**	**08293**
INPUT				
Multiplex number		1		2
Standard		DVB-T (EN 300744)		DVB (EN 302755)
Frequency band	**MHz**	174 ÷ 862 (Δ = 166 KHz)		
Input level	**dBµV**	40 ÷ 90		47 ÷ 90
Input loop through losses	**dB**	± 1		< 1.5
TRANSPORT STREAM PROCESSING				
Conditional access		No	Yes	Si (EN 50221)
Table processing		PAT, CAT, PMT, SDT, NIT, EIT, BAT, TDT/TOT		
Parameter edition		tsid, onid, sid, nid, service_name, network_name, LCN		
OUTPUT				
Multiplex number		1		2
Standard		DVB-T (EN 300744)		
Band width	**MHz**	6, 7, 8		
MER	**dB**	> 38		
RF OUTPUT				
Frequency band	**MHz**	50.5 ÷ 858 (Δ = 166 KHz)		
Output level	**dBµV**	65 ÷ 80 (Δ = 0.5 dBµV)		65 ÷ 78 (Δ = 0.5 dBµV)
Output loop through losses	**dB**	< 1.5		
Spurious in band	**dBc**	< - 54		
Packing dimensions	**mm**	265 x 195 x 40		
Weight	**Kg**	1.33		

MULTI-PROCESSING HEADENDS

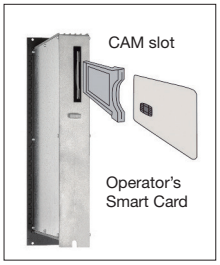
SAT TO QAM TRANSMODULATOR

headends

SCT 8000 Series

Digital transmodulation of one or two transponders from the 1st IF Satellite band (950 ÷ 2150 MHz) to a QAM channel modulated in the 47 ÷ 862 MHz band. The SCT-CI model decrypts one or more services by inserting the CAM + Smart.





APPLICATION

Large and medium size installations where it is necessary to distribute digital satellite signals (in any format), through the terrestrial RF band (47 ÷ 862 MHz).

FEATURES

- Demodulation, detection and correction of received signal errors.
- Optimal output signal quality with very high MER level.
- Independent LNB control: 22 KHz tone, 13/17V and DiSEqC commands.
- New Linux based software platform: faster software update and module programming.
- New chipset with very low power consumption: lower heating, longer life. Selection of services of interest within the transport frame.
- Indication of residual channel capacity.
- LCN (channel number) assignment to services to facilitate automatic tuning of STBs.
- Transport Stream processing: regeneration of tables, date and time correction, editing of program names, ...
- Regeneration of the NIT table at individual and installation level.
- Edition of the name and network IDs.
- Upgradable software through control unit MCU/LPU.
- Allows to combine services from two different inputs on each of the two outputs.

Supply voltage	**V**	5	12	17	30
Current drawn SCT (CI)	**mA**	720 (850)	375	20	2
Current drawn SCT-TWIN (CI)	**mA**	860	420	20	2
Total Power without CAM	**W**	9.5 (STT) / 9.75 (SCT-TWIN)			
Operating temperature range	**ºC**	0 ÷ 45			

MODEL		SCT-TWIN 8000	SCT-TWIN-CI 8000	SCT 8000	SCT-CI 8000
Reference		**08272**	**08273**	**08270**	**08271**
INPUT					
Multiplex number		2 (loop or independent)		1	
Frequency band	**MHz**	950 ÷ 2150			
Input level	**dBµV**	40 ÷ 86			
Modulation type		QPSK - 8PSK			
Symbol rate	**Mbaud**	1 ÷ 45			
Through losses	**dB**	< 2			
LNB control		22 KHz 13/17 V or DiSEqC 1.2			
Conditional access		No	According to norm EN 50221	No	According to norm EN 50221
TRANSPORT STREAM					
PCR correction		Yes			
Table processing		PAT, CAT, PMT, SDT, NIT, EIT, BAT, TDT/TOT			
LCN insertion		Yes			
PID filtering		Yes			
OUTPUT QAM MODULATION					
Modulation parameters		QAM			
Symbol rate	**Mbaud**	1 ÷ 6.96			
QAM order		16, 32, 64, 128, 256			
MER	**dB**	> 38			
RF OUTPUT					
Number of channels		15			
Frequency band	**MHz**	47 ÷ 862 (Δ = 166 KHz)			
COFDM modulation	**dBµV**	65 ÷ 78 (Δ = 0.5 dBµV)		65 ÷ 80 (Δ = 0.5 dBµV)	
Spurious in band	**dBc**	- 54			
CAM module current drawn		-	5V-250 mA	-	5V-250 mA
Programming		UCF 300 / PC (with MCU/LPU 8000)			
Packing dimensions	**mm**	265 x 195 x 40			
Weight	**Kg**	1.33			

MULTI-PROCESSING HEADENDS

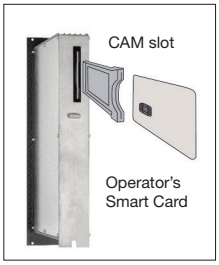
COFDM TO QAM TRANSMODULATOR

headends

TCT 8000 Series

Digital transmodulation of the content of one or two COFDM modulated terrestrial digital multiplexes (COFDM) to one or two QAM modulated channels in the 47 ÷ 862 MHz band for distribution on cable networks. The CI models allow decrypting services by inserting a CAM and card with rights.





APPLICATION

Distribution of content from terrestrial broadcasts on cable networks modulating the signal in QAM.

FEATURES

- Selection of the services of interest from any input to any output, indicating the channel capacity.
- Decryption of closed programs with CI models (8261/8263). The twin model allows simultaneous opening of services from both inputs.
- Transport-Stream processing.
- Regeneration of DVB- SI tables: editing of table versions.
- Regeneration of the NIT table at module level or at installation level.
- Editing of transport stream parameters: tsid, onid.
- Editing service parameters: name and service identifier (sid).
- Editing network parameters: name and network identifier (nid).
- Insertion of LCN (channel number).
- Removal of PIDs that are not of interest.
- Correction of errors in the transport frame and regeneration of the output MER.
- Software upgradeable with MCU / LPU.

Supply voltage	**V**	5	12	30
Current drawn TCT/TCT-CI	**mA**	580/710	340	2
Current drawn TCT TWIN-CI	**mA**	900	450	2
Total Power without CAM	**W**	7.5 (TCT), 8 (TCT-CI) / 10 (TCT-TWIN-CI)		
Operating temperature range	**ºC**	0 ÷ 45		

MODEL		TCT 8000	TCT-CI 8000	TCT-TWIN-CI 8000
Reference		**08260**	**08261**	**08263**
INPUT				
Multiplex number		1		2
Standard		DVB-T (EN 300744)		DVB (EN 302755)
Frequency band	**MHz**	174 ÷ 862 (Δ = 166 KHz)		
Input level	**dBµV**	40 ÷ 90		47 ÷ 90
Input loop through losses	**dB**	± 1		< 1.5
TRANSPORT STREAM PROCESSING				
Conditional access		No	Yes (EN 50221)	
Table processing		PAT, CAT, PMT, SDT, NIT, EIT, BAT, TDT/TOT		
Parameter edition		tsid, onid, sid, nid, service_name, network_name, LCN		
OUTPUT				
Multiplex number		1		2
Standard		QAM		
Symbol rate	**MB**	1 ÷ 6,96		
QAM order		16, 32, 64, 128, 256		
MER	**dB**	> 38		
RF OUTPUT				
Frequency band	**MHz**	50.5 ÷ 858 (Δ = 166 KHz)		
Output level	**dBµV**	65 ÷ 80 (Δ = 0.5 dBµV)		65 ÷ 78 (Δ = 0.5 dBµV)
Output loop through losses	**dB**	< 1.5		
Spurious in band	**dBc**	< - 54		
Packing dimensions	**mm**	265 x 195 x 40		
Weight	**Kg**	1.33		

MULTI-PROCESSING HEADENDS

headends

A/V —> RF DIGITAL ENCODER

DEN 8000

APPLICATION

The DEN 8000 encoder, modulates the content of 4 analogue audio/video signals to a DVB-ASI format.

FEATURES

- Multiplexer function for up to 4 analogue A/V sources (PAL, NTSC).
- MPEG-2 MP@ML output video encoding, bit rate 1-15Mbps.
- MPEG-1 Layer 1, Layer 2 audio encoding.
- Programming via front panel (keyboard + LCD display) or PC (local or remote).
- Mountable in 19” rack.
- Includes:
  - 4 x 3RCA-3BNC cables for 4 analogue A/V sources.
  - 1 x BNC-F(m) cable for one COFDM output.
  - 1 x user’s manual.
  - 1 x 230Vac cable



Supply voltage	**V**	90 ÷ 250
Consumption	**W**	25
Operating temperature range	**ºC**	0 ÷ 45

MODEL		DEN 8000
Reference		**08200**
INPUT		
Video format		4 x CVBS
Video Standard		PAL, NTSC
Video connectors		BNC, 75 Ohm
A/V connectors		3 RCA / BNC
Input audio		1 x Stereo / 2 x Mono
OUTPUT		
Standard		DVB-ASI
ASI connectors		2 x BNC, 75 Ohm
Video encoding		MPEG-1, MPEG-2 MP@ML
Bit Rate video	**Mbps**	1 - 15
Video format		Full D1, Half D1, SIF
Audio encoding		MPEG-1 Layer 1, Layer 2
Sample Rate audio		32, 44.1, 48
Packing dimensions	**mm**	580 x 580 x 135
Weight	**Kg**	6.2

MULTI-PROCESSING HEADENDS

headends

ASI —> QAM DIGITAL MODULATOR

ACM 8000



APPLICATION

Modulates the incoming MPEG-2 TS in DVB-ASI signal into a DBV-C channel.

FEATURES

- Indication of residual channel capacity.
- Regeneration of the Network Information Table (NIT), either locally for each module or for the entire installation.
- TS processing with LCN insertion, PCR restamping and TS remapping.
- Selection of programmes.

Supply voltage	**V**	5	12	17	30
Consumption (6 W)	**mA**	800	360	0	2
Operating temperature range	**°C**	0 ÷ 45			

MODEL		ACM 8000
Reference		**08202**
INPUT		
Standard		DVB-ASI
Package length		Automatic detection 188/204 Bytes
Input connector		F(H)
TS PROCESSING		
LCN insertion		Yes
Operating modes		Transparent / Re-multiplexer
QAM OUTPUT		
Standard		QAM
Symbol rate	**Mbaud**	1 ÷ 6.96
QAM order		16, 32, 64, 128, 256
MER	**dB**	>38
Through losses	**dB**	1.5
RF OUTPUT		
Frequency band	**MHz**	50.5 ÷ 858 (Δ = 166 KHz)
Output level	**dBµV**	65 ÷ 80 (Δ = 0,5 dBµV)
Through losses	**dB**	< 1.5
Spurious in band	**dBc**	< - 54
Programming		UCF 300 / PC (with MCU / LPU 8000)
GENERAL		
Packing dimensions	**mm**	265 x 194 x 55
Weight	**Kg**	1.33

MULTI-PROCESSING HEADENDS

ASI —> DVB-T DIGITAL MODULATOR

headends

DMT 8000



APPLICATION

The DMT 8000 digital modulator modulates the incoming MPEG-2 TS in DVBASI signal into a COFDM channel.

FEATURES

- Indication of residual channel capacity.
- Regeneration of the Network Information Table (NIT), either locally for each module or for the entire installation.
- TS processing with LCN insertion, PCR restamping and TS remapping.
- Selection of programmes.

Supply voltage	**V**	5	12	17	30
Consumption (8.4 W)	**mA**	800	360	0	2
Operating temperature range	**°C**	0 ÷ 45			

MODEL		DMT 8000
Reference		**08201**
INPUT		
Standard		DVB-ASI
Package length		Automatic detection 188/204 Bytes
Input connector		F(F)
TS PROCESSING		
LCN insertion		Yes
Operating modes		Transparent / Re-multiplexer
OUTPUT		
Standard		DVB-T
Frequency band	**MHz**	47 - 862
COFDM modulation		2K/8K
Constellation type		QPSK/16 QAM / 64 QAM
MER	**dB**	> 38
Output level	**dBµV**	80
Output level adjustment	**dB**	15
Programming		UCF 300 / PC (con MCU / LPU 8000)
Packing dimensions	**mm**	265 x 195 x 40
Weight	**Kg**	1.33

MULTI-PROCESSING HEADENDS

headends

DVB-S2 MPEG-4 ENCODING + ANALOGUE MODULATING

SRD 8000 Series

SRD 8000 is a quad DVB-S/S2 decoder that supports the MPEG-4 and MPEG-2 video standards and the MPEG-1 audio encoding. It has 4 Audio/Video plus 4 HDMI outputs.

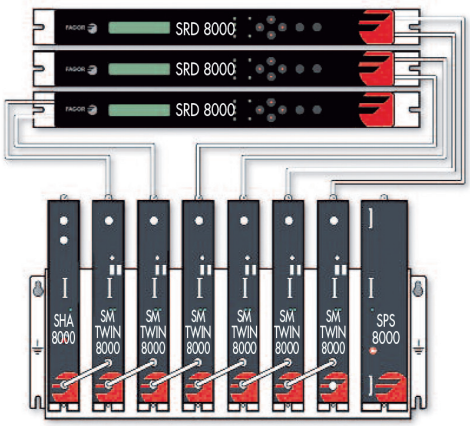


FEATURES

- Support DVB-S/S2 input.
- Support HDMI and AV output.
- Support H.264/MPEG4 AVC and MPEG-2 video and MPEG-1 and AAC audio coding.
- Support PAL/NTSC.
- Real-time monitoring of input and output signal.
- LCD/Keyboard control by front panel and network management by Ethernet.

MODEL		SRD 8000
Reference		**08210**
INPUT		4 (female “F”)
Frequency range	**MHz**	950 ÷ 2150
Max. input level	**dB**	83
Modulation type		QPSK, 8 PSK (Satellite)
LNB control		22 KHz 13/17 V
Outputs		4 HDMI 1.4 4 CVBS Video (BNC) 4 Audio 1xStereo / 2xMono (BNC) MPEG-2 SD 4:2:0 MP@ML
VIDEO DECODE MODE		MPEG-4 AVC SD MP@L4 MPEG-4 AVC HD MP@L5.0/HP@5.0 MPEG-1 layer2/MP3
Audio decode mode		Dolby digital (AC-3): Dolby Digital Plus (E-AC-3) MPEG-4 AAC7AAC Plus (HE-AAC v)
Supply voltage	**Vac**	90 ÷ 250
Consumption	**W**	25
Operating temperature range	**ºC**	0 - 45
Packing dimensions	**mm**	580 x 580 x 135
Weight	**Kg**	6.2

Example



4 DVB-S2/MPEG TO ANALOGUE (PAL/SECAM)

Reference	Model	UN
08210	SRD 8000	3
18902	SM TWIN 8000	6
68001	SPS 8000 - LP	1
35083	SHA 8000	1
83814	PMD 800	6
83807	BA 807	1
83805	BST 807	1
84033	CMD 3 RCA	12

Headend for distributing in PAL analogue modulation, up to 12 digital services from DVB-S/S2 satellite transponders.

MULTI-PROCESSING HEADENDS

A/V TO RF MODULATORS

headends

SM-TWIN-8000

Twin modulator with VSB outputs, that allows adjacent channel operation. A programmable output channel means that the modulator can easily be inserted into the headend since it operates in any TV channel (BI,BIII, "S" Bands and UHF). The stereo model includes STERO/DUAL signals processing.



APPLICATION

Analogue satellite TV community installations, where locally produced channels insertion is needed.

FEATURES

- It offers the possibility of fine tuning the output channel frequency to disperse intermodulation products in installations with many channels.
- RF output signal ON/OFF switchable for analysis and headend adjustment.
- Incorporates black video generator.

Supply voltage	**V**	5		12		17	30	
Model		Mono	Stereo	Mono	Stereo	Mono	Stereo	Mono	Stereo
Consumption	**mA**	570	590	330	350	0	2	
Total power	**W**	6.9 (Mono) - 7.2 (Stereo)						
Operating temperature range	**ºC**	0 ÷ 45						

MODEL		SM-TWIN 8000	SM-TWIN-ST 8000	SM-TWIN-W 8000
Reference		**19802**	**19803**	**19807**
Output connectors		F(f)		
Audio/video input connector		MINI DIN 6 routes		
Audio Pre-emphasis	**µs**	50		
Video input level (75 ohm)	**Vpp**	1		
Audio input level (10 Kohm)	**Vpp**	1		
Output channels VSB	**MHz**	47 to 862 (2 adjacent channels)		
Channels band width		7 / 8 (programmable)		8
Output level	**dBµV**	86 with 15 dB regulation		
Spurious in channel	**dBc**	60		
Spurious in band	**dBc**	56		
C/N ratio (8 modules)	**dB**	In channel: 56 In band for min. output level: 63		
Carrier accuracy	**KHz**	±30		
Carrier stability	**KHz**	±10		
Output frequency resolution	**KHz**	125		
Video modulation depth	**%**	85		
Vc / Ac ratio	**dB**	15		
Programming		UCF 300 / PC (with MCU / LPU 8000)		
TV Standard		PAL B/G		SECAM L, SECAM D/K, PAL I, PAL D/K
Vc / Ac separation	**MHz**	5.5		PAL (I:6,0., D/K:6,5) / SECAM (L:6,5, D/K:6,5)
Audio output modes		Mono	Stereo / Dual switchable (A/B - B/A)	Mono
Packing dimensions	**mm**	265 x 195 x 40		
Weight	**Kg**	1.0		

MULTI-PROCESSING HEADENDS

FM AMPLIFIER

headends

RHA 8000

FM amplifier that allows radio signal FM & DAB processing in community headends.



APPLICATION

Community installations where FM & DAB radio signal distribution is needed.

FEATURES

- Incorporates an RF signal combiner with the FM/DAB signal.
- Allows selective attenuation of the FM signals by means of its selective Notch Filters.

Supply voltage	**V**	5	12	17	30
Consumption	**mA**	15	195	-	<5
Total power	**W**	2.5			
Operating temperature range	**ºC**	0 ÷ 45			

MODEL		RHA 8000
Reference		**35080**
FM frequency range	**MHz**	87.5 ÷ 108
DAB frequency range	**MHz**	195 ÷ 223
RF frequency range	**MHz**	47 ÷ 862
FM gain	**dB**	>10
DAB gain	**dB**	>5
FM regulation	**dB**	40±2
DAB regulation	**dB**	20±2
Operative FM input level	**dBµV**	60 ÷ 100
Operative DAB input level	**dBµV**	60 ÷ 80
FM noise figure	**dB**	7
DAB noise figure	**dB**	6
FM output level DIN45004B (-35dBc)	**dBµV**	80
DAB output level DIN45004B (-35dBc)	**dBµV**	75
Selective attenuation (notch filters)	**dB**	>10dB (1 filter) >15dB (2 filters) >19dB (3 filters)
Through losses RF	**dB**	< 1.5
Packing dimensions	**mm**	265 x 195 x 40
Weight	**Kg**	1.33

MULTI-PROCESSING HEADENDS

HEADEND AMPLIFIER

headends

SHA-SAC 8000



Broadband Amplifiers for 8000 series headends. The SHA model is a single input amplifier. The SAC Amplifier is a 4 input model to combine and amplify up to 4 frames.

APPLICATION

TV community installations, both SMATV and CATV.

FEATURES

- They have gain regulation and a TEST output.
- Low noise figure and output level regulation.
- Screws and power supply cable included.
- Optimum frequency response.
- High dynamic threshold.

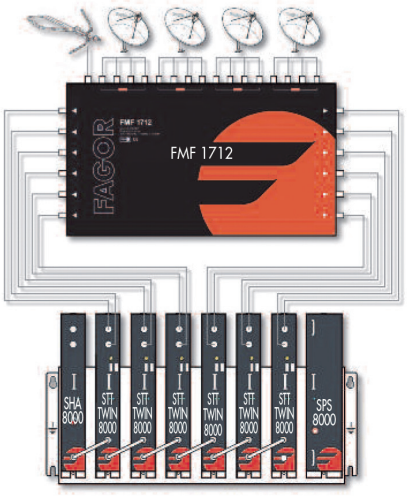
		SHA		SAC	
Supply voltage	**Vdc**	5	12	5	12
Consumption	**mA**	20 (10W)	825 (10,3W)	20 (10W)	825 (10,3W)
Total power	**W**	2,5			
Operating temperature range	**°C**	0 ÷ 45			

MODEL		SAC 8000	SHA 8000
Reference		**35081**	**35083**
Nº inputs		4	1
Frequency band	**MHz**	47 ÷ 862	
Input impedance	**Ohm**	75	
Gain	**dB**	43	
Regulation	**dB**	20	
Noise figure	**dB**	7	
IM3 output level (-60 dBc DIN 45004B)	**dBµV**	120	
Output level stability	**dB**	± 2	
Packing dimensions	**mm**	265 x 195 x 40	
Weight	**Kg**	1.25	

Example

Reference	Model	UN
86471	FMF 1712	1
08275	STT-TWIN-CI 8000	6
68000	SPS 8000	1
35083	SHA 8000	1
83814	PMD 800	6
83807	BA 807	1
83805	BST 807	1

12 MUX DVB-T output transmodulator headends. Through the use of a multiswitch, the headend can select any service available in the polarities connected to the multiswitch.



MULTI-PROCESSING HEADENDS

HEADEND CONTROL WITH PC MASTER CONTROL UNIT

headends

MCU-ETH 8000 / ECU 8000

MCU 8000: Control Unit for the permanent supervision of the headend.



FEATURES

- Access to the 8000 series headend modules:
  - Local: with a PC connected to the USB port of the MCU.
  - Local: through a LAN network via Ethernet.
  - Remote: via Internet access, and with the MCU connected to a LAN gateway.
- Upgrading of the firmware.
- Monitoring of alarms generated by the headend modules.
- Utilities to speed up the programming of installations (copy-paste, save-import module or installation).
- Management of output channels and their automatic assignment.
- Diagnosis of the headend.

Extension unit, that in combination with the Master Control Unit allows a permanent supervision of the headend (1 ECU x frame).



FEATURES

- Configuration of the headend through the USB port on a PC.
- Upgrading of the firmware.
- Monitoring of the main parameters.
- Diagnosis of the headend.

		MCU-ETH 8000	ECU 8000
Supply voltage	**Vdc**	5	12
Consumption	**mA**	260	160
Operating temperature range	**°C**	0 ÷ 45	

MODEL		MCU-ETH 8000	ECU 8000
Reference		**85110**	**85114**
Local communication with PC		USB 2.0 12 Mbps	-
LAN network communication		Ethernet 100-BaseT over RJ-45	-
Com. with processing module		BUS CAN 1 Mbps	
Packing dimensions	**mm**	270 x 195 x 40	
Weight	**Kg**	1.50	

MULTI-PROCESSING HEADENDS

headends

POWER SUPPLY

SPS 8000



The SPS 8000 model is a multi-voltage power supply that can be connected to a common power BUS shared with various power supplies.

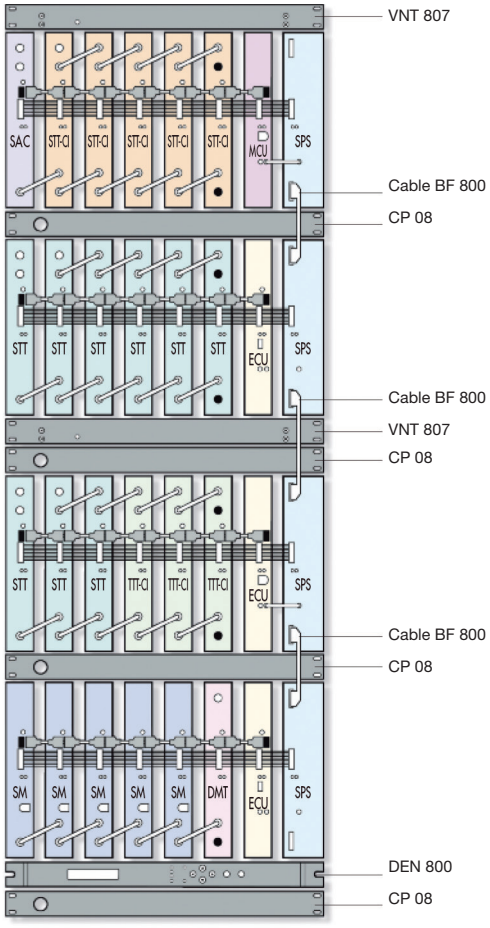
APPLICATION

Power supply for 8000 series headends, its capacity for sharing the load makes it suitable for redundant systems.

FEATURES

- " Load sharing technology (SPS 8000).
- In case of failure of one power supply, the 3 remaining ones feed the racks (see example).

Example



RECOMMENDED LOAD LIMIT (SPS-LP): 55W

5 x STT + 2 LNB
4 x STT + 3 LNB
4 x STT + SHA + 1 LNB
4 x STT-CI + 3 LNB
4 x STT-TWIN + 2 LNB
3 x STT-TWIN + SHA + 1 LNB
4 x STT-TWIN-CI + 2 LNB
3 x STT-TWIN-CI + SHA + 1 LNB
4 x TTT-TWIN-CI
5 x SM-TWIN-ST + SAC

MODEL		SPS 8000				SPS-LP 8000			
Reference		**68000**				**68001**			
Input voltage	**Vac**	187 ÷ 264				195 ÷ 265			
Output voltages	**Vdc**	30	17	12	5	30	17	12	5
Max. current per output	**A**	0.1	0.5	4	7.5	0.03	0.2	2.5	4
Output current drawn	**W**	95				55			
Packing dimensions	**mm**	275 x 185 x 60				265 x 185 x 60			
Weight	**Kg**	1.5				1.4			

MULTI-PROCESSING HEADENDS

PORTABLE CONTROL UNIT

headends

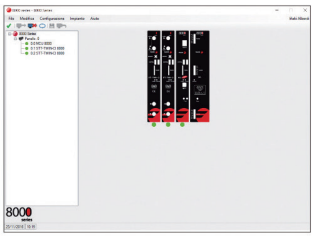
LPU 8000

Portable control unit for local programming via PC of a 8000 series headend.



FEATURES

- Software and firmware upgrading.
- Main parameters control.
- Headend setting up through the USB port of a PC.





Supply voltage	**Vdc**	5
Consumption	**mA**	260
Operating temperature range	**ºC**	0 ÷ 45

MODEL		LPU 8000
Reference		**86116**
Local communication with PC		USB 2.012 Mbps
Com. with processing module		BUS CAN 1 Mbps
Packing dimensions	**mm**	270 x 195 x 40
Weight	**Kg**	1.50

MULTI-PROCESSING HEADENDS

MCU-2G/ETHERNET-GATEWAY

headends

MGG / MEG 8000

The 8000 series headend can be programmed remotely through Ethernet router (MEG 8000) or 2G/3G modem (MGG 800) plus a LPU 8000 or MCU 8000 unit.



FEATURES

- Internal configuration web server.
- Remote firmware update.
- DHCP server (for Ethernet and Wi-Fi interfaces).
- 3G supervision to keep the connection always active.

MODEL		MGG 8000	MEG 8000
Reference		**85117**	**85118**
Interfaces	**USB**	USB 2.0 OTG	
	ETHERNET	10/100 Base-T RJ45	
	SIM	-	SIM Card interface 1.8V/3V
	Antenne GSM	-	FME 3m GSM5 antenna included
Router 3G	**UMTS/HSPA+**	-	Five-Band 800/850/900/1900/2100MHz
	GSM/GPRS/EDGE	-	GPRS class 12 Quad band 850/900/1800/1900MHz
AC input	**V_{AC}**	90 a 264 (adapter included)	
DC input	**V_{DC}**	24V (7 ÷ 50V_{DC})	
Operating temperature range	**ºC**	-40ºC to +85ºC	
Packing dimensions	**mm**	201 x 163 x 98	
Weight	**Kg**	< 0.5	

MULTI-PROCESSING HEADENDS

headends

Accessories

COMMUNICATION BUS BETWEEN MODULES

Reference	83811
Application	PC programming
Mod.	USB 800



COMMUNICATION BUS BETWEEN FRAMES

Reference	83812
Application	PC programming
Mod.	USB 801



120 OHMS USB LOAD

Reference	83813
Application	8000 Series
Mod.	CU 120



POWER BUS

Reference	83807
Application	7 modules + power supply
Mod.	BA 807



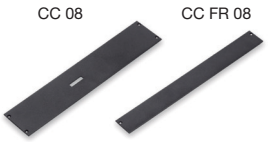
RF BRIDGE

Reference	83814
Application	8000 Series
Mod.	PMD 800



19” RACK BLIND COVERS

Reference	83803	83816
Application	19” rack frame	
Mod.	CC 08	CC FR 08



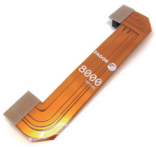
PASSAGE COVER BETWEEN FRAMES

Reference	83817
Application	19” rack frame
Mod.	CP 08



POWER SUPPLY BUS

Reference	83810
Application	19” rack
Mod.	BF 800



MINI DIN - 3RCA CABLE

Reference	84033
Application	MINI DIN 5 / 3 RCA
Mod.	CDM 3 RCA



MULTI-PROCESSING HEADENDS

headends

Accessories for **Wall mounting**

VENTILATED HOUSING

Designed for wall mounting.
Includes all necessary accessories.
Ventilation unit and 3 power socket.
With safety lock.
Dimensions: 515 x 250 x 370 mm.
Weight: 6,9 Kg.

Reference	83806
Application	7 modules + power supply
Mod.	CFR 807



FRAME

Designed for installation and protection of the 8000 series headend.
Includes all necessary accessories for wall mounting.
Dimensions: 450 x 15 x 170 mm.
Depth with modules: 200 mm.

Reference	83805
Application	7 modules + power supply
Mod.	BST 807



19" RACK VENTILATION UNIT

Designed for installation on BST 807 frame.
Dimensions: 160 x 135 x 50 mm.
Supply voltage: 230V / 200 mA.
Weight: 0,8 Kg.

Reference	83818
Application	Frame without housing
Mod.	VNT 800



Accessories for **Rack 19" mounting**

19" RACK FRAME

Designed for mounting the 8000 series modules on 19" rack.
Dimensions: 485 x 185 x 265 mm.

Reference	83800
Application	7 modules + power supply
Mod.	BSR 807



VENTILATION UNIT

Designed for installation on 19" rack.
Dimensions: 485 x 285 x 45 mm.
Supply voltage: 230V / 200 mA.

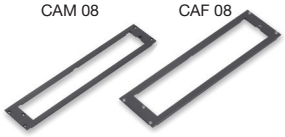
Reference	83801
Application	19" Rack
Mod.	VNT 807



19" RACK ADJUSTMENT PLATES ON

CAM 08: for module.
CAF 08: for power supply.

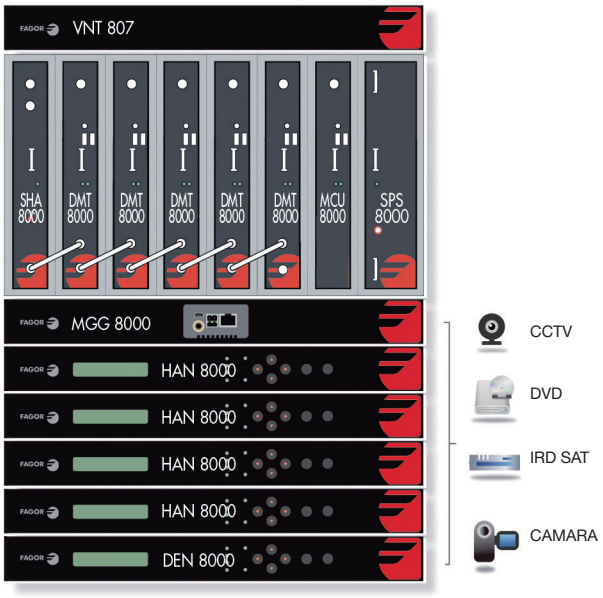
Reference	83802 83804
Application	19" Rack
Mod.	CAM 08 CAF 08



MULTI-PROCESSING HEADENDS

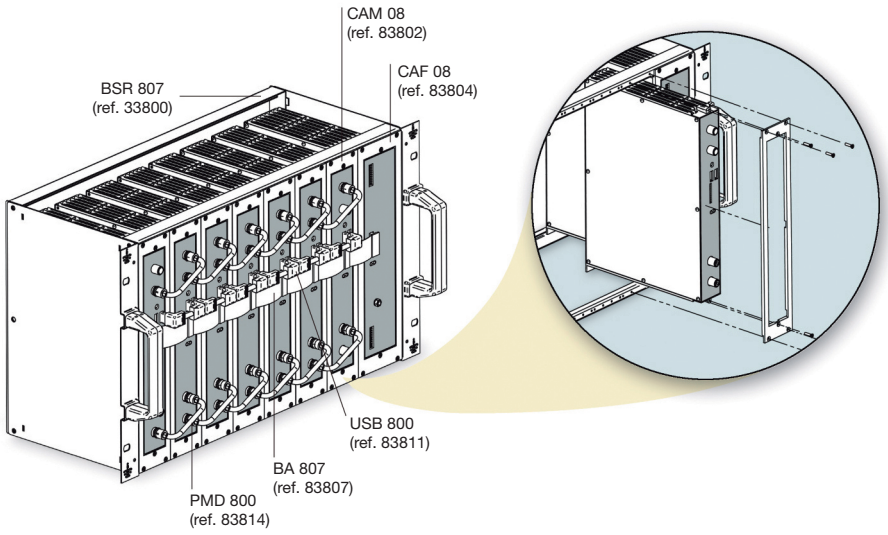
headends

Application **examples**



Reference	Model	UN
08200	DEN 8000	1
08205	HAN 8000	4
08201	DMT 8000	5
35083	SHA 8000	1
68000	SPS 8000	1
85110	MCU 8000	1
85118	MGG 8000	1
83801	VNT 807	1
83802	CAM 08	7
83804	CAF 08	1
83814	PMD 800	6
83811	USB 800	7
83813	CU 120	1
83807	BA 807	1
83800	BSR 807	1
84019	CX 75 F	6

Headend for the distribution up to 20 channels coming from different sources such as DVD or Blue Ray players , CCTV cameras, or STB receivers. The input signal can be analogue (composed video) or digital HDMI input.



IP STREAMING HEADENDS

SAT TO IP STREAMER

headends

SIT Series

ipolo IP SYSTEM

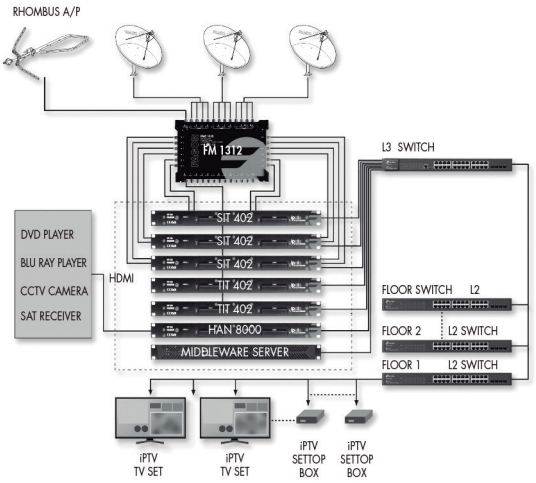
These devices take services from satellite transponders and after selecting them, transmit them in IP packages for their distribution in an Ethernet network. The Common Interface models allow to decrypt scrambled services using CAM's and cards with rights.



FEATURES

- The metal case is ready for the 19" rack mounting and has the possibility of adding ventilation fans.
- Each module has two independent streaming outputs with a capacity of more than 12 services each one.
- The modules are programmable through its web server locally or in remote mode.
- PID filtering.
- Possibility of creating services mixing Audio PID's with Video PID's. For instance, two services with the same video but with audio in two different languages.

Example



MODEL		SIT 402	SIT 422
Reference		**08240**	**08241**
INPUT			
Inputs		4 (2 + 2, Loop or independent)	
Modulation type		QPSK, 8-PSK	
Frequency range	**MHz**	950 ÷ 2150	
Input level	**dBµV**	47 ÷ 86	
Symbol Rate	**MB**	1 ÷ 62 / 1 ÷ 45	
Code rate		1/2, 2/3, 3/5, 3/4, 4/5, 5/6, 7/8, 8/9, 9/10	
Roll-Off		0.15, 0.20, 0.25, 0.35	
LNB control		22 KHz 13/17 V or DiSEqC 1.0	
DVB-SI AND TS PROCESSING			
Conditional access		NO	EN 50221
Table processing		PAT, PMT, SDT, PID filtering, Service creation and edition	
Output format		SPTS/MPTS	
OUTPUT			
Number		2 independent	
Number of services		32 (2x16)	
Physical interface		Ethernet 100-BaseT over RJ-45 (IEEE 802.3u)	
TCP/IP Streaming protocol		IP multicast (RTP or UDP)	
Signalling protocols		SAP	
CONTROL INTERFACE			
Number		2 independent	
Physical Standard		Ethernet 100/1000-BaseT over RJ-45	
Protocol		Web Server	

IP STREAMING HEADENDS

TERRESTRIAL TV TO IP STREAMER

headends

TIT Series

ipolo IP SYSTEM

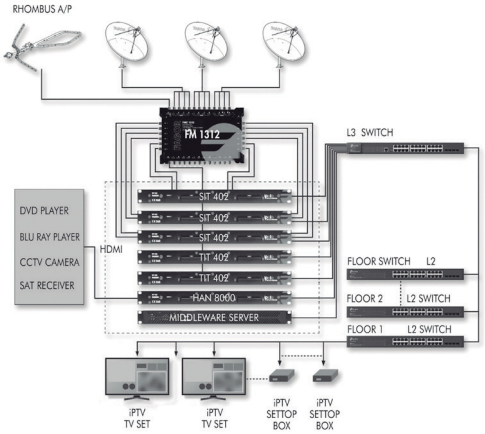
These transmodulators take services from digital Terrestrial TV channels and, after selecting the desired services, convert them for IPTV distribution into an Ethernet network. Common Interface models allow you to decode encrypted services using CAM modules and subscriber cards.



FEATURES

- The metal case is ready for the 19" rack mounting and has the possibility of adding ventilation fans.
- Each module has two independent streaming outputs with a capacity of more than 12 services each one.
- The modules are programmable through its web server locally or in remote mode.
- PID filtering.
- Possibility of creating services mixing Audio PID's with Video PID's. For instance, two services with the same video but with audio in two different languages.

Example



MODEL		TIT 402	TIT 422
Reference		**08245**	**08246**
INPUT			
Inputs		4 (2 +2)	
Standard		DVB-T (EN 300 744, EN 302 755)	
Frequency range	**MHz**	174 ÷ 862	
Input level	**dBµV**	47 ÷ 90	
FEC mode		LDPC+BCH/ Convolutional Coding+Reed Solomon	
Code rate		1/2,3/5, 2/3, 3/4,4/5, 5/6, 7/8	
Guard interval		1/4, 1/8, 1/16, 1/32; (19/128, 19/256, 1/128)	
FFT		2K, 8K / 1K, 2K, 4K, 8K, 16K, 32K	
DC pass		Switchable 12Vdc 100mA	
DVB-SI & TS PROCESSING			
Conditional access		NO	EN 50221
Table processing		PAT, PMT, SDT, PID filtering, Service creation and edition	
Output format		SPTS/MPTS	
OUTPUT			
Number		2 independents	
Number of services		32 (2x16)	
Physical interface		Ethernet 100-BaseT over RJ-45 (IEEE 802.3u)	
TCP/IP Streaming protocol		IP multicast (RTP or UDP)	
Signalling protocols		SAP	
CONTROL INTERFACE			
Number		2 independents	
Physical Standard		Ethernet 1000-BaseT over RJ-45	
Protocol		Web Server	

IP STREAMING HEADENDS

STREAMER HDMI A IP

HAN Series

headends

The HAN 8000 encoder modulates ,the content of 4 HDMI input (MPEG-4 AVC/H.264 HD) signals to a DVB-ASI or IP output.



APPLICATION

It is used to watch the content of several HD digital sources, such as satellite receivers, DVD or Blue-ray players, etc, on a TV equipped with a DTT receiver

FEATURES

- Multiplexer function for 4 HDMI inputs (MPEG-4 AVC/H.264 HD).
- Supports HDCP
- HD resolution up to 1920*1080_60p.
- MPEG-1 Layer 1, Layer 2 audio encoding.
- Programming via front panel (keyboard + LCD display) or PC (local or remote).
- Mountable in 19” rack.
- Includes:
  - 1 x BNC-F(m) cable for one COFDM output.
  - 1 x user’s manual.
  - 1 x 230Vac cable.

Supply voltage	**V**	90 ÷ 250
Consumption	**W**	25
Operating temperature range	**ºC**	0 ÷ 45

MODEL		HAN 8000
Reference		**08205**
VIDEO ENCODING		H.264/AVC High Profile Level 4.0 (HD)
Input		HDMI x 4 + ASI
Resolution		1920*1080_60p, 1920*1080_50p; 1920*1080_60i, 1920*1080_50i; 1280*720_60p, 1280*720_50p
AUDIO ENCODING		MPEG1 Layer II
Sample rate	**KHz**	34/44,1/48
Bit rate	**Kbps**	128, 160, 192, 224, 256, 320, 384
ASI OUTPUT		DVB-ASI
Connector type		2 x BNC, 75 Ohm
IP OUTPUT		IP/UDP (TS over IP); MOTPS/SPTS/Unicast/Multicast
Connector Type		RJ-45
Output bit rate	**Mbps**	80 (4:2:0)
Programming		Keyboard + LCD / NMS (Ethernet RJ-45)
Packing dimensions	**mm**	580 x 580 x 135
Weight	**Kg**	6.2

CHANNEL AMPLIFIERS

DVB-T/H CHANNEL AMPLIFIERS

NEXUM Series

headends

AGC Channel amplifier suitable for channel amplification of the DTT multiplex in MATV systems. The Nexum DVB-T / H series allows operation in adjacent channel, both in VHF and UHF.



serie nexum digital

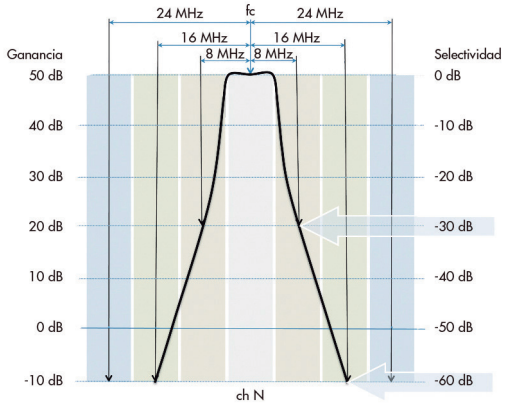
APPLICATION

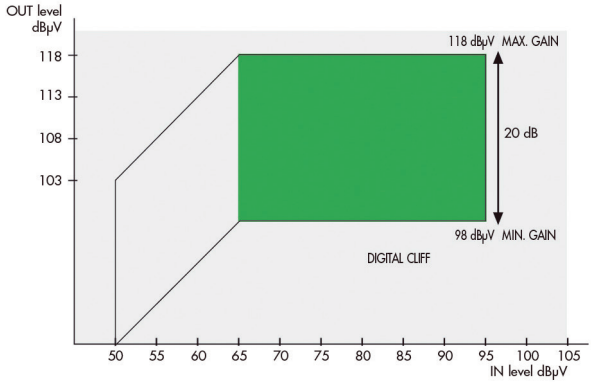
Medium- to large-sized community digital and analogue TV installations located in poor reception areas with big level differences between channels.

FEATURES

- Exceptional selectivity and high output level.
- Constant Output Level within the Input Operative Range, maintaining the quality of the signal.
- High shielding degree, metal chassis (zamak) with “F” connectors.
- Modular design that allows channel configuration according to installation needs.
- Easy to set-up due to its system of splitting at input and combining at output.







MODEL		NEX 645		
Reference		**34121...69**	**39821...69**	**39725...32**
Channels		21...69		05...12
Max. output level (DIN K)	**dBµV**	125		120
Max. COFDM output level	**dBµV**	118 IMD3 - 35 dB		115 IMD3 - 35 dB
Gain	**dB**	53		43
Manual output regulation	**dB**	20		30
Operative input range	**dBµV**	65...95		72...102
Min. input level	**dBµV**	45		45
Band width	**MHz**	8		7
Selectivity	**dB**	30 fc N ± 8 MHz 60 fc N ± 16 MHz 70 fc N ± 24 MHz		30 fc N ± 7 MHz 60 fc N ± 14 MHz 70 fc N ± 21 MHz
Return losses	**dB**	9		
Noise figure	**dB**	11		
Supply voltage	**Vdc**	24	12	24
Consumption	**mA**	125	200	120
Operating temperature range	**ºC**	0 ÷ 50		
Packing dimensions	**mm**	195 x 70 x 32		
Weight	**Kg**	0.45		

* MER OUT: 30 dB; MER IN 38 dB, OUT Level 75 ÷ 118 dBµV.

CHANNEL AMPLIFIERS

DAB, FM AMPLIFIERS AND MULTICHANNEL

headends

NEX Series

serie nexum digital

Multichannel amplifier, suitable for amplifying and filtering of TV signals in MATV headend systems. These amplifiers are perfect for working in adjacent channels.



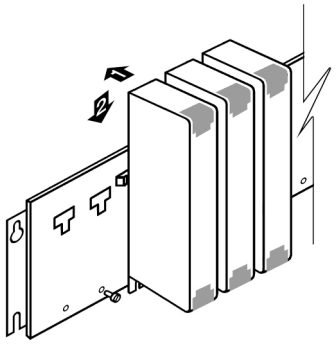
APPLICATION

Medium- to large-sized community digital and analogue TV installations located in poor reception areas with big level differences between channels.

FEATURES

- Metal chassis (zamak), integrating the input/output connectors to give the unit great strength.
- High shielding degree.
- High reliability and screening factor due to “F” connectors.
- Modular design that allows channel configuration according to installation needs.
- The use of filters with high “Q” factor (quality factor) inductive lines guarantees a high channel selectivity.
- Easy to set-up due to its system of splitting at input and combining at output.

Supply voltage	**Vdc**	24
Consumption (24 Vdc)	**mA**	110
Operating temperature range	**°C**	0 ÷ 50



MODEL		NEX 402	NEX DAB	NEX 545 2 channels	NEX 545 3 channels
Reference		**39200**	**39201**	**39501...20**	**39580...600**
Channels		FM 87 ÷ 108	DAB 195 ÷ 223	— *	— *
Max. output level	**dBµV**	115 (DIN B –35 dB)		112 (2 Ch AM-TV) 109 (2 Ch COFDM)	111 (3 Ch AM-TV) 107 (3 Ch COFDM)
Gain	**dB**	40		50	
Gain adjustment	**dB**	30			
Band width	**MHz**	21	28	16	24
Selectivity **PVN-PAN-1** **PAN-PVN+1** **PV+20 MHz**	**dB**	@ –15 MHz 35 23 @ +15 MHz 30 8		— 30 30	
Return losses	**dB**	9			
Noise figure	**dB**	4	5	11	
Input-Output impedance	**Ω**	75			
Input-Output connectors		F (h)			
Packing dimensions	**mm**	195 x 70 x 32			
Weight	**Kg**	0.45			

* Different configurations upon request.

CHANNEL AMPLIFIERS

NEXUM SERIES
1st FI SAT AMPLIFIER

headends

IFA 400

Equalized amplifier for the 950 to 2300 MHz band. Amplifies the 1st IF SAT signal and mixes it with terrestrial channels.



serie nexum digital

APPLICATION

Community digital and analogue satellite TV installations where the 1st IF SAT signal has to be distributed.

FEATURES

- Metal chassis (zamak), integrating the input/output connectors to give the unit great strength.
- High shielding degree.
- High reliability and screening factor due to its “F” connectors.
- Easy to set-up due to its system of splitting at input and combining at output.

Supply voltage	**Vdc**	24 (130 mA)
Consumption	**mA**	65
Operating temperature range	**°C**	0 ÷ 50

MODEL		IFA 400
Reference		**39204**
Frequencies covered	**MHz**	950 ÷ 2150
Number of inputs 1st IF		1 (950 ÷ 2150 MHz)
Number of inputs RF		1 (5 ÷ 862 MHz)
Gain (1st FI)	**dB**	40 (950 MHz) 48 (2150 MHz)
Noise figure	**dB**	7
RF signal rejection (1st IF input)	**dB**	40 (5÷862 MHz)
Through losses RF	**dB**	1,5 (5 ÷ 862 MHz)
Gain adjustment	**dB**	20 (950 ÷ 2150 MHz)
Output level @2150 MHz	**dBµV**	125 (DIN 45004B, DIM –35 dBc) 113 (30 transponders, DIM –35 dBc)
Return losses	**dB**	9
Voltage to LNB		13 VDC / 300 mA
Packing dimensions	**mm**	195 x 70 x 32
Weight	**Kg**	0.35

CHANNEL AMPLIFIERS

NEXUM SERIES

headends

Accessories

FRAME

Designed for mounting modules of the Nexum Series Modular System. The kit supplied includes all necessary accessories for wall mounting.
Raster 40 mm.
Dimensions:
Ref. 83109: 531 x 139 x 15 mm.
Ref. 83110: 747 x 139 x 15 mm.
Ref. 83111: 480 x 177 x 70 mm.
Ref. 83112: 325 x 140 x 15 mm.

Reference	83112	83109	83110	83111
Application	6 mod. + power supply	12 mod. + power supply	18 mod. + power supply	10 mod. + power supply for 19" Rack mounting
Mod.	BST N06	BST N12	BST N18	BSK N10

BST N12 and BST N18



BSK N10



HOUSING

Designed for installation and protection of Nexum system. Includes all necessary accessories for wall mounting. With safety lock. Allows KIT VNT 56 (Ref. 83004) to be mounted.
Dimensions:
Ref. 83608: 365 x 165 x 250 mm. (2 Kg)
Ref. 83609: 570 x 165 x 250 mm. (4 Kg)
Ref. 83607: 725 x 165 x 250 mm. (6 Kg)
Ref. 83604: 790 x 209 x 595 mm. (8 Kg)

Reference	83608	83609	83607	83604
Application	6 mod. Nexum+power supply	12 mod. Nexum+power supply	18 mod. Nexum+power supply	Housing for 2x18 (2x12) Nexum or 1x18 (1x12) Nexum + 1x8 SCM 6000 ventilation unit 83004
Mod.	CFR N106	CFR N112	CFR N118	CFR N218

CFR N218



CFR N118



75 Ω F-F COAXIAL BRIDGE

Rigid 75 Ω coaxial bridge for splitting or combining RF signals.
Raster 40 mm.

Reference	84034
Application	F(m)-F(m)
Mod.	PMD FFN



POWER SUPPLY

Power supply module for providing operating voltage to the Nexum series modular system.
Zamak chassis with metal covers.
High degree of shielding.

Reference	69023	69610	69620
Output voltage	24 ± 5% Vac		12 ± 5% Vac
Consumption (55 W output)	70 VA	24 VA	
Number of modules	till 18	till 8	till 10
Dimensions	205 x 70 x 80 mm	260 x 75 x 35 mm	
Weight	0.75 Kg		
Mod.	SPS 523	SPS 610	SPS 620

SPS 523



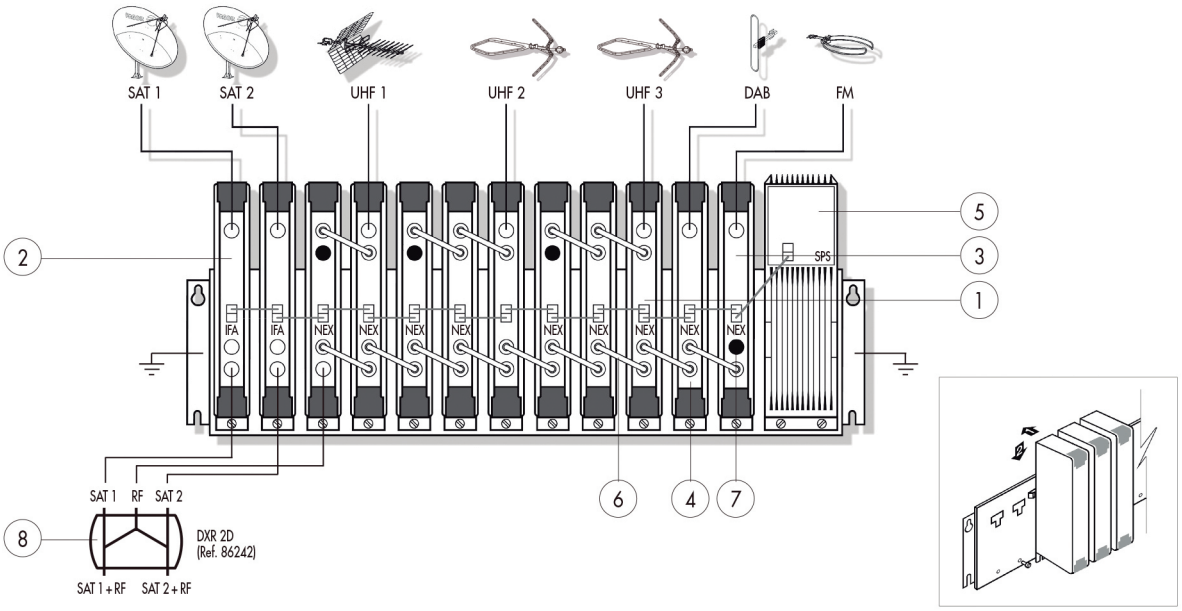
CHANNEL AMPLIFIERS

NEXUM SERIES

headends

Application **examples**

- 47 ÷ 2150 MHz
- 2 polarities of 1st IF SAT
- 8 terrestrial channels, analogue or digital
- FM radio
- DAB radio



N.	Description		Nexum Series
1	Channel amplifier	- NEX 645 DVB-T/H	**Ref. 34121...69**
2	1st IF SAT amplifier	- IFA	**Ref. 39204**
3	Amplifier FM radio	- NEX 402	**Ref. 39200**
4	Amplifier DAB radio	- NEX DAB	**Ref. 39201**
5	Power supply	- SPS	**Ref. 69023**
6	75Ω F-F coaxial bridge	- PMD FFN	**Ref. 84034**
7	Load	- CX 75F	**Ref. 84011**
8	Splitter- Combiner	- DRX 2D	**Ref. 86242**

PROGRAMMABLE AMPLIFIERS

headends

SELECTIVE PROGRAMMABLE RF CONVERTER

EVO PRO Series

Programmable converter that allows filtering, converting and amplifying up to 32 digital signals from the terrestrial band.



APPLICATION

Distribution of RF band signals for individual and collective installations.

FEATURES

- 4 VHF/UHF band inputs. 1 FM input.
- The 300 model incorporates 1st IF SAT amplification, with input polarity selection.
- Up to 32 VHF and UHF channel filters, with the possibility of conversion to another output channel.
- Automatic search of the channels present in each VHF/UHF input, adding them to the channel list.
- Automatic level detection of VHF/UHF input signals.
- CAG with wide dynamic range at the input.
- Programmable VHF/UHF internal pre-amplifier.
- Activation of power supply to pre-amplifiers.
- High selectivity (>65dB) and rejection to adjacent channels.
- High rejection SAW filters for LTE bands (4G / 5G).
- Automatic band selection for each input, according to the channel configuration (model 100).
- In the PRO 100 D2 model, each input is assigned to a specific band, to optimize its operation.
- Programming via keypad or Android application.

Supply voltage	**V**	100 ÷ 240
Consumption	**W**	10
Operating temperature range	**°C**	-10 ÷ 50

MODEL		**EVO PRO 100**		**EVO PRO 100 D2**			**EVO PRO 300**			
Reference		**35570**		**35540**			**35590**			
Frequency bands		**FM**	**VHF/UHF**	**FM**	**VHF**	**UHF**	**FM**	**VHF**	**UHF**	**SAT**
Multiplex number		1	4	1	1	3	1	1	2	1
Band	**MHz**	88÷108	VHF: 174÷240 UHF: 470÷862 UHF: 470÷790 UHF: 470÷694	88÷108	174÷230	470÷694	88÷108	174÷230	470÷694	950÷2150
Operational input level	**dBµV**	<78	<108	<78	<108		<78	<108		68÷88
Number of filters		-	32 program-mable	-	32 programmable		-	32 programmable		-
Return losses	**dB**	>10								
Digital output level	**dBµV**	-	93 ÷ 115	-	93 ÷ 115		-	89 ÷ 109		-
Test output level	**dB**	-30		-30			-			
Gain	**dB**	5/35	CAG	5/35	CAG		5/35	CAG		25 ÷ 45
Tilt	**dB**	0 ÷ 9		0 ÷ 9			0 ÷ 9			8
Output MER	**dB**	-	35 (for MER input >38 dB)	-	35 (for MER input >38 dB)		-	35 (for MER input >38 dB)		-
DC current Pass		NO	12V / 100mA	NO	12V / 100mA		NO	12V / 100mA		13V-17V 0-22KHz 150mA
Packing dimensions	**mm**	230 x 218 x 54								
Weight	**Kg**	1.04								

PROGRAMMABLE AMPLIFIERS

headends

PROGRAMMABLE SELECTIVE AMPLIFIER

SURF PRO 6

Robust and compact amplifier for distribution of terrestrial television signals in medium sized installations. Programming via UCF 300 remote control.



APPLICATION

Distribution of the RF signal for medium-sized installations.

FEATURES

- 2 programmable UHF inputs with 6 channel filters with variable width from 1 to 6 channels.
- 1 BI / BIII / VHF input
- 1 FM input.
- 1 auxiliary input
- Automatic adjustment system (AES) to ensure proper adjustment of output levels.
- Metal housing for maximum protection and high shielding.
- Easy programming via the UCF 300 remote control.
- Possibility to add 3 additional filters via the Book Extend.
- Ref. 35562 adapted to the second digital dividend up to CH48.

Supply voltage	**Va**	185 ÷ 265
Consumption	**W**	13 W (<120 mA)
Operating temperature range	**°C**	-10 ÷ 50

MODEL		SURF PRO 6 D2			
Reference		35562			
Band		BI/BIII	UHF	FM	Auxiliary
Number of outputs		1	2	1	1
Number of filters		Broadband	6	Broadband	1
Input and filter configuration		-	6 - 0 4 - 2 3 - 3	-	-
Bandwidth	**MHz**	47 ÷ 68 174 ÷ 230	470 ÷ 694	87,5 ÷ 108	47 ÷ 68 132 ÷ 862
Programmable filter width		-	1÷ 6 channels	-	-
Gain	**dB**	35	45	30	18
Independent regulation per filter	**dB**	≥30			-
Selectivity N (±16 MHz)	**dB**	-	20	-	-
Noise figure	**dB**	6			-
Operational input level	**dBµV**	55	50 ÷ 93	71 ÷ 101	75 ÷ 90
Output level DIN 45004B	**dBµV**	117		107 @ –35 dBc	117
Output level 10 channels	**dBµV**	107			
Programmable output level	**dB**	95 ÷ 107			
Isolation between inputs	**dB**	UHF > 20 dB VHF/UHF/FM > 50			-
DC pass		-	12-24V / 50mA (Programmable)	-	-
Packing dimensions	**mm**	195 x 70 x 32			
Weight	**Kg**	0.45			


Power
BI/FM
BIII/DAB
UHF 1
UHF 2
moon
Multiband amplifier
MAF 411
FAGOR
FAGOR
AM 331
FM
V
U
OUT
FM
BIII/DAB
UHF



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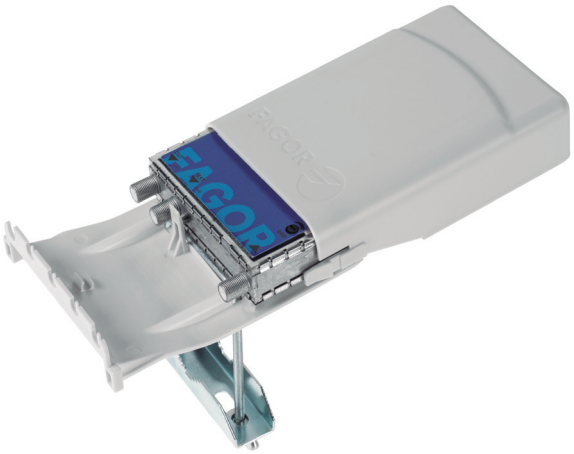
MAST AMPLIFIERS

MAST BAND AMPLIFIER

electronics

AML 500 Series

Professional mast band amplifiers, LTE protected (700 MHz band - second Digital Dividend) immune to all signals from other services which share the radioelectric spectrum, such as mobile phones, wireless transmissions, terrestrial communications...



APPLICATION

Suitable for individual systems or small installations, with high sensitivity and output power (114 dBµV), the AML is a heavy-duty amplifier, totally adapted to the new LTE signals of the second Digital Dividend.

FEATURES

- Very low noise figure and independent from gain regulation.
- Low noise figure in the high gain models.
- Allows high input levels in the low gain models.
- LTE ready.
- The mechanical solution guarantees an exceptional immunity against noise invasion, a critical aspect for DTT reception.
- F connectors.
- Output level Test.

Supply voltage	**Vdc**	24 ± 10%
Operating temperature range	**°C**	– 20... +60

Reference	Model	Composition
36654	AML 510K	KIT AML 510 K amplifier + power supply
36656	AML 530 K	KIT AML 530 K amplifier + power supply
36658	AML 540K	KIT AML 540 K amplifier+ power supply

MODEL		AML 510	AML 530			AML 540			
Reference		**36650**	**36651**			**36652**			
Nbr. of inputs		1	3			4			
Bands		UHF*	FM	BIII-DAB	UHF*	FM	BIII-DAB	UHF*	UHF*
Gain	**dB**	38	28	28	38	28	28	38	38
Gain regulation	**dB**	15	20	20	15	20	20	15	15
Output level DIN 45004B-60	**dBµV**	114							
Noise figure	**dB**	3	7	3	3	7	3	6	6
Rejection out of band	**dB**	Compliance with EN 5008, 3-2 “Antenna Input Resistance”, LTE Ready							
Test output	**dB**	-30				-			
Supply voltage	**Vdc**	24V ± 10%							
Consumption	**mA**	80							
DC pass	**mA**	45	-		45	-		45	
Operating temperature range	**°C**	- 20... +60							
Packing dimensions	**mm**	170 x 105 x 50							
Weight	**Kg**	0.355							

* UHF: 470-694 MHz

MAST AMPLIFIERS

electronics

MASTIO AML 900 Series

Mast band amplifier specially designed for the reception of DTT signals with optimum quality.



APPLICATION

Suitable for TV / FM signal distribution in individual systems or small installations.

FEATURES

- Small size.
- 100% protected zamak box provides excellent immunity against interference.
- Protected against LTE signals.

MODEL		AML 910 L D2	AML 910 DC D2	AML 920 L D2		AML 920 DC D2		AML 930 DC D2		
Reference		**36961**	**36962**	**36963**		**36964**		**36965**		
Nbr. of inputs		1	1	2		2		3		
Bands		UHF 470÷694	UHF 470÷694	BIII 174÷230	UHF 470÷694	BIII 174÷230	UHF 470÷694	BIII 174÷230	UHF 470÷694	UHF 470÷694
Gain	**dB**	25	35	20	25	30	35	25	35	35
Gain regulation	**dB**	15								
Output level	**dBµV**	108								
Input/output impedance	**Ω**	75								
Noise figure	**dB**	3	3	4		3		4	5	5
Consumption	**mA**	60	80	60		80		80		
DC pass	**mA**	-	45	-		-	45	-	45	45
Supply voltage	**VDC**	24 ± 10%								
Packing dimensions	**mm**	89 x 97 x 45								
Weight	**Kg**	0.2								

MAST AMPLIFIER AND POWER SUPPLY KIT

Reference	Model	Composition
36955	AML 910 L D2 K	Mast amplifier and power supply kit (24V, 150mA). 1 UHF input, 25dB gain, 108dB output level.
36956	AML 910 DC D2 K	Mast amplifier and power supply kit (24V, 150mA). 1 UHF input, 35dB gain, 108dB output level.
36958	AML 920 DC D2 K	Mast amplifier and power supply kit (24V, 150mA). 2 inputs, BIII;UHF, 30;35dB gain, 108dB output level.
36959	AML 910 L D2 K	Mast amplifier and power supply kit (24V, 150mA). 2 inputs, BIII;UHF, 25;25dB gain, 108dB output level.
36959	AML 930 DC D2 K	Mast amplifier and power supply kit (24V, 150mA). 3 inputs, BIII, UHF 1, UHF 2, 35dB gain, 108dB output level.

ALSO AVAILABLE WITH DIN RAIL ADAPTER

Reference	Model
36970	AML 910 L D2 K RD
36971	AML 910 DC D2 K RD
36972	AML 910 DC A D2 K RD



MAST AMPLIFIERS

electronics

AMS 130 Series

Terrestrial signal mast amplifier with SAT IF mix.



APPLICATION

Single home installations.

FEATURES

- Terrestrial VHF and UHF inputs.
- Satellite mix input.
- Noise figure independent of gain regulation.
- F connectors.
- Broad input level range.

Reference	Model	Composition
36646	AMS 130 K	Mast amplifiers kit + FA 301 S

MODEL		AMS 130		
Reference		**36645**		
N° of inputs		3		
Bands		VHF 47÷230	UHF 470÷790	SAT 950÷2150
Gain	**dB**	24	33	-2
Gain regulation	**dB**	20	20	-
Output level DIN 45004B-60	**dBµV**	110		-
Input / output impedance	**Ω**	75		
Test output	**dB**	-30		
Consumption	**mA**	85		
Packing dimensions	**mm**	115 x 65 x 100		
Weight	**Kg**	0.215		

MAST AMPLIFIERS

POWER SUPPLY

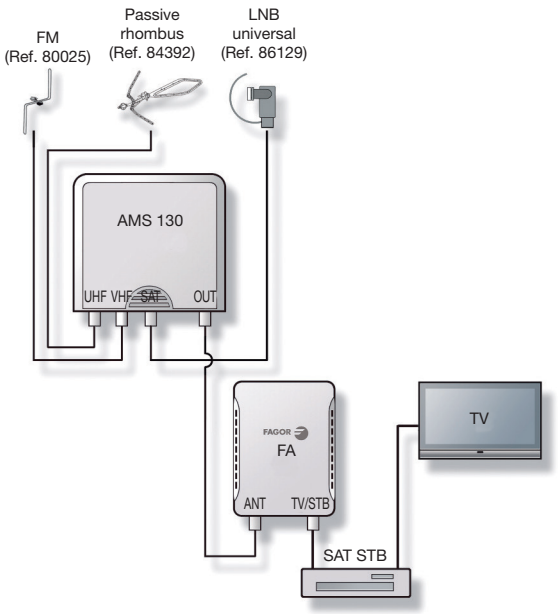
FA 301 S

electronics

12V power supply with set-top box presence detection.
In that case the set-top-box feeds the amplifier.



Example



MODEL		FA 301 S
Reference		**66109**
N° of inputs		1
Band		5÷862
Supply voltage	**V**	12V and 13/17V through the STB
Gain regulation	**dB**	300
Packing dimensions	**mm**	110 x 40 x 120
Weight	**Kg**	0.215

MAST AMPLIFIERS

POWER SUPPLY

FA 242/244 Series

electronics

Power supply suitable for powering an AMB 900 series mast band amplifier.

FEATURES

- Protected against short circuits.
- Shielded RF circuit according to CE standard.
- Class II power supply, reinforced insulation.



Supply voltage	**V**	195-265
Operating temperature range	**°C**	0-50

MODEL		FA 242	FA 244
Reference		**66116**	**66117**
N° of inputs		2	4
Frequency band	**MHz**	5÷862	
Insertion losses	**dB**	4	7
Input / output impedance	**Ohm**	75	
Supply voltage	**Vdc**	24±10%	
Max. current per output	**mA**	150	
Packing dimensions	**mm**	130 x 86 x 35	125 x 100 x 40
Weight	**Kg**	0.20	0.24

MULTIBAND AMPLIFIERS

1ST IF SAT AMPLIFIER

IFA 3000 Book

electronics

1st IF SAT amplifier with programmable supply voltage for a Universal LNB and diplexed combining of the VHF and UHF channels.

APPLICATION

Community satellite TV installations with IF processors.

FEATURES

- A high performance RF / 1st IF SAT diplexer guarantees a noise free terrestrial TV reception.
- High efficiency switching power supply.
- Amplification with pre-equalization in the satellite band to compensate for distribution network losses.
- High output power 120 dBµV.
- LNB polarity selection by 13/17V power supply and 0/22 KHz tone sending.



Supply voltage	**Vac**	195 - 265
Consumption	**W**	12
Operating temperature range	**°C**	-10 ÷ 50

MODEL		IFA 3000 BOOK
Reference		**35911**
Input/Output connectors		F (f)
Number of inputs		1 input 1st FI SAT + 1 input RF
LNB DC pass		0, 13, 17 V / 0, 22 KHz (250 mA)
1st IF SAT frequency range	**MHz**	950 ÷ 2300
1st IF SAT input rejection	**dB**	40 @ 5 ÷ 862 MHz
RF frequency range	**MHz**	5 ÷ 862
RF through losses	**dB**	1,5
Output band covered	**MHz**	5 ÷ 2300
IF Input level	**dBµV**	68 ÷ 88
1st IF SAT gain	**dB**	35 @ 950 MHz 47 @ 2150 MHz
Gain regulation	**dB**	20
Noise figure	**dB**	8
Output level	**dBµV**	120 (DIN 45004B, -35 dBc) / 110 (15 transponders)
Packing dimensions	**mm**	103 x 171 x 23
Weight	**Kg**	0.75

MULTIBAND AMPLIFIERS

MULTIBAND AMPLIFIERS MOON SERIES

electronics

MAF Series

High power multiband amplifiers for the distribution of terrestrial and satellite television signals.



APPLICATION

Ideal for amplification of signals from various antennas in communities.

FEATURES

- High output power.
- Metal body in aluminum of reduced dimensions for a high gain and output level.
- Input switchable DC pass.
- High linearity.
- Integrated power supply, easily removable in case of reparation.
- Low noise figure at input.
- LTE protection filters for interfering signals (694 or 790 MHz depending on model).
- Models with satellite input available: MAF 311 and MAF 411.

Supply voltage	**V**	195 ÷ 265
Operating temperature range	**°C**	-10 ÷ 50

TERRESTRIAL INPUT MODELS

MODEL		MAF 301*			MAF 401*			
Reference		**35100**			**35105**			
Inputs		BI/FM	DAB/BIII	UHF	BI/FM	DAB/BIII	UHF	UHF
Frequency band	**MHz**	88÷108	174÷230	470÷694	88÷108	174÷230	470÷694	470÷694
Output level DIN 45004 B (-60dB)	**dBµV**	117		119	117		119	
Gain	**dB**	30		45	30		45	
Gain regulation	**dB**	20						
Test output level	**dB**	-30						
Noise figure	**dB**	6						
DC pass 24Vdc	**mA**	-		100	-	-	100	
Consumption	**W**	10						
Packing dimensions	**mm**	166 x 274 x 62						
Weight	**Kg**	0.65						

TERRESTRIAL + SATELLITE INPUT MODELS

MODEL		MAF 311				MAF 411				
Reference		**35115**				**35120**				
Inputs		BI/FM	DAB/BIII	UHF	SAT	BI/FM	DAB/BIII	UHF	UHF	SAT
Frequency band	**MHz**	88÷108	174÷230	470÷694	950÷2150	88÷108	174÷230	470÷694	470÷694	950÷2150
Output level DIN 45004 B (-60dB) SAT (-35dB)	**dBµV**	117		119	120	117		119		120
Gain	**dB**	30		45	35-43	30		45		35-43
Gain regulation	**dB**	20								
Test output level	**dB**	-30								
Noise figure	**dB**	6								
DC pass 24Vdc	**mA**	-		100	-	-	-	100		-
Supply voltage LNB 13/17Vdc/22KHz	**mA**	-			200	-				200
Consumption	**W**	12								
Packing dimensions	**mm**	166 x 274 x 62								
Weight	**Kg**	0.65								

***Models CH 60:** MAF 300 (Ref. 35101) & MAF 400 (Ref. 35106)

MULTIBAND AMPLIFIERS

MINI MULTIBAND AMPLIFIER

electronics

AM Series

Self-powered multiband amplifier for indoor use, LTE adapted.



APPLICATION

Suitable for individual or small/medium size installations where it is necessary to amplify signals coming from several antenna inputs, achieving the best filtering and amplification of each one of them.

FEATURES

- RF circuit housed in a metal box that provides a CE degree of shielding.
- Small size minimizes visual impact and facilitates installation.
- Independent gain regulation on each VHF and UHF input.
- LTE ready models.

Supply voltage	**V**	195 ÷ 265
Consumption	**W**	2,2
Operating temperature range	**°C**	0 ÷ 50

MODEL		AM 221*		AM 321*			AM 331		
Reference		**35385**		**35386**			**35387**		
Multiplex number		2		3			3		
Bands	**MHz**	BIII/DAB 174÷ 230	UHF 470 ÷ 694	BIII/DAB 174÷ 230	UHF 470 ÷ 694	UHF 470 ÷ 694	FM 88÷108	BIII/DAB 174÷ 230	UHF 470 ÷ 694
Gain	**dB**	30	38	30	35		30		35
Gain regulation	**dB**	20	15	20	15	15	20	15	15
Noise figure	**dB**	3		3	6		7	3	
Output level DIN B/60dB	**dBµV**	108							
Output level 6 MUX BIII/UHF		106							
Impedance	**Ohm**	75							
Packing dimensions	**mm**	125 x 100 x 40							
Weight	**Kg**	0.23							

***Models CH 60:** AM 221 D (Ref. 35381) & AM 321 D (Ref. 35 382)

DISTRIBUTION AMPLIFIERS

IP63 DISTRIBUTION AMPLIFIERS

SABAL Series

electronics

Amplifiers specially designed for the distribution of the RF and 1st IF SAT signal.



APPLICATION

Designed to work under adverse weather conditions, where a robust amplifier is needed.

FEATURES

- Their circuit is integrated in a Zamak box, which ensures correct operation of the amplifier, complies IP 63 standard.
- Allow return path operation and have slope control for the direct way.
- The DWBA 415 model is a double extension amplifier, valid for a two-cable system with two independent satellite TV circuits and a common one for terrestrial TV, in addition to the return path.
- The amplifier has been optimised by specific circuits which protect it against telecommunications services on adjacent frequency bands.
- Integrates a switch mode power supply to reduce the inside temperature and help extend the life of the equipment.

Supply voltage	**Vac**	230 ± 15 %
Operating temperature range	**°C**	0 ÷ 50

MODEL		DA 354		WBA 433			D WBA 415		
Reference		**35924**		**35930**			**35934**		
Numbers of inputs		1		1			2		
Band coverage	**MHz**	5 ÷ 30**	47 ÷ 862	5 ÷ 30**	47 ÷ 862	950 ÷ 2300	5 ÷ 30**	47 ÷ 862	950 ÷ 2300
Max. output level*	**dBµV**	117	121 (IM2= 115 dBµV)	-	116	117	-	117	125
Input / output impedance	**Ω**	75							
Return losses	**dB**	15	10	15	10	6	15	10	6
Gain	**dB**	15	35	-2	35	34 - 41	-2	35	34 - 41
Level adjustment	**dB**	20	20	-	20	20	-	20	20
Variable	**dB**	-	20	-	20	-	-	0 - 18	-
Switchable	**dB**	-	-	-	-	7/14	-	-	7/14
Test output level	**dB**	1 IN - 1 OUT		1 IN - 1 OUT			2 OUT		
TEST output attenuation	**dB**	30							
Noise figure (typ.)	**dB**	9	6	-	6.5	8.5	-	6.5	8.5
Input / output connectors		F (h)							
Protection rating		IP63							
Consumption	**VA**	17					27.5		
Packing dimensions	**mm**	280 x 175 x 60							
Weight	**Kg**	3.1					3.2		

* 950 ÷ 2300 MHz: IM3 a – 35 dB
5 ÷ 862 MHz: IM3 a – 60dB
** DA 354 A (Ref. 35925): 5 ÷ 66 return path
** WBA 433 A (Ref. 35932): 5 ÷ 66 return path
** D WBA 415 A (Ref.35935): 5 ÷ 66 return path

DISTRIBUTION AMPLIFIERS

MOON DISTRIBUTION AMPLIFIERS

electronics

WAF Series

High power and high performance broadband amplifiers ideal for the distribution of terrestrial and satellite television signals.

APPLICATION

Ideal for the amplification of all TV channels in community installations.

FEATURES

- High power output.
- Aluminium metal body with reduced dimensions for high gain and high power output level.
- High linearity, power and gains, in a light and compact format.
- Output slope equalization.
- Integrated power supply, easily removable in case of repair needs.
- Allows the passage of the return path in extended band and has slope control for the direct path.
- The WAF 422 model is valid for a two-cable system with two independent satellite TV circuits and a common one for terrestrial TV, in addition to the return path.



Supply voltage	**V**	195 ÷ 265
Operating temperature range	**ºC**	0 ÷ 50

MODEL		WAF 210		WAF 311			WAF 422			
Reference		**35150**		**35152**			**35154**			
Multiplex number		1		1			2			
Number of outputs		1		1			2			
Test		2 (Input + Output)		2 (Input + Output)			4 (2 Output + 2 Input)			
Band	**MHz**	5 ÷ 65	86 ÷ 862	5 ÷ 65	86 ÷ 862	950 ÷ 2150	4 ÷ 65	86 ÷ 862	950 ÷ 2150	950 ÷ 2150
Output level	**dBµV**	115	120	115	120		-	118	120	
Return losses	**dB**	≥10		≥10		≥6	≥10		≥6	
Gain	**dB**	15	40	15	40	35 ÷ 43	-2	40	35 ÷ 43	
Level adjustment	**dB**	0 ÷ 20		0 ÷ 20			0 ÷ 20			
Equalisation	**dB**	-	0 ÷ 20	-	0 ÷ 20	7	-	0 ÷ 20	7	
TEST attenuation	**dB**	30								
Noise figure	**dB**	≤10	≤8	≤10	≤8	≤10	-	≤8	≤10	
Connectors		F (female)								
Consumption	**W**	6		7			8			
Packing dimensions	**mm**	166 x 274 x 62								
Weight	**Kg**	0.65								

DISTRIBUTION AMPLIFIERS

RF DISTRIBUTION AMPLIFIER

SAB Series

electronics

RF distribution amplifier (47 to 862 MHz).



APPLICATION

Designed as a distribution amplifier for medium size buildings.

FEATURES

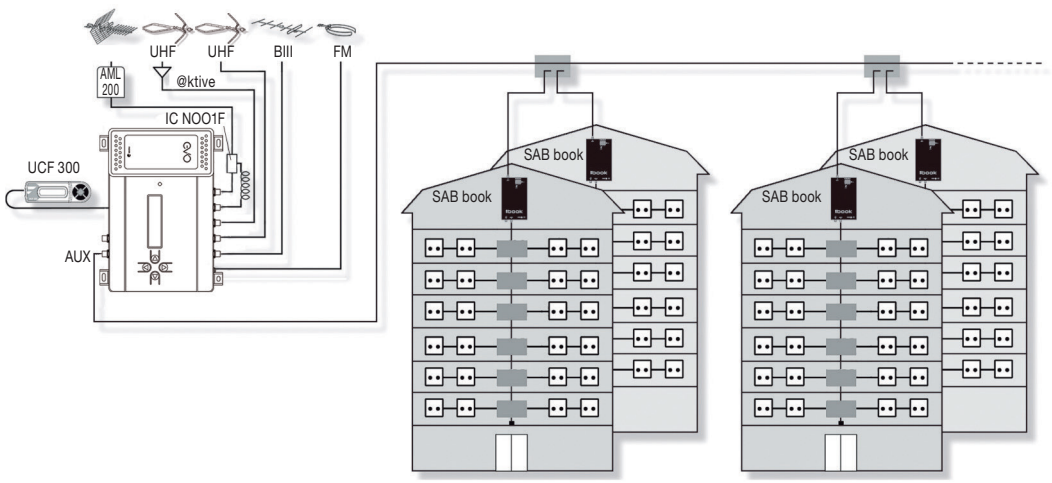
- The circuit is housed in a single-part metal case.
- High linearity.
- DC pass for pre-amplifier powering.
- Switchable equalization12dB.
- 10dB input switchable attenuation for high input levels.
- Test output for measurements.

Supply voltage	**Vac**	185 - 265
Consumption	**W**	7 (70mA)
Operating temperature range	**ºC**	- 0 ÷ 50

MODEL		SAB book*	SAB 101 D2**
Reference		**35960**	**35971**
Number of inputs		1	
Band width	**MHz**	47 ÷ 862	47 ÷ 694
Gain	**dB**	37	
Regulation	**dB**	20	
Switchable attenuator	**dB**	10	
Switchable equalization	**dB**	12 (47 MHz)	
Noise figure (max. gain)	**dB**	5.5	
Input level without attenuation	**dBµV**	40 ÷ 75 (50 ÷ 85)*	
Output level DIN 45004 B (-60 dB)	**dBµV**	> 120	
Return losses IN/OUT	**dB**	> 10	
TEST output	**dB**	-30	
DC pass 12V		12 V 100mA switchable	
Shielding	**dB**	class A	
Packing dimensions	**mm**	290 x 156 x 47	

***BS plug model:** SAB BOOK BS (Ref. 35961)
****Model CH 60:** SAB 101 D(Ref. 35970)

Example
MicroMATV EVO + SAB book



INDOOR AMPLIFIERS

RF INDOOR AMPLIFIER

electronics

AD 620

Suitable for the distribution of TV/ M signals to one or more receivers away from the main socket.



FEATURES

- Two different models for 800 MHz and 700 MHz band LTE signals.
- Shielded RF circuit and VHF and UHF independent gain adjustment.
- Its small size minimizes visual impact
- 36440: AD 620 up to 790 MHz.
- 36441: AD 620 D2 up to 694 MHz.

Supply voltage	**Vac**	195-264 Vac 50/60 Hz
Consumption	**W**	1.5
Operating temperature range	**°C**	0 a 50

MODEL		AD 620		AD 620 D2	
Reference		**36440**		**36441**	
Multiplex number		1		1	
Number of outputs		2		2	
Band coverage	**MHz**	VHF 40-318	UHF 470-790	VHF 40-318	UHF 470-694
Gain	**dB**	15	22	15	22
Gain regulation	**dB**	15		15	
Max. output level (DIN 45004B)	**dBµV**	105 Min.		105 Min.	
Noise figure	**dB**	7	5	7	5
Impedance	**Ω**	75		75	
Input/output connectors		F (female)		F (female)	
Packing dimensions	**mm**	130 x 86 x 35			
Weight	**Kg**	0.20			

INDOOR AMPLIFIERS

RF INDOOR AMPLIFIER

electronics

AD 640

Suitable for the distribution of TV/ FM signals to one or more receivers away from the main socket.



FEATURES

- Two different models for 800 MHz and 700 MHz band LTE signals.
- Shielded RF circuit and VHF and UHF independent gain adjustment.
- Its small size minimizes visual impact
- 36442: AD 640 D up to 790 MHz.
- 36443: AD 642 D2 up to 694 MHz.

Supply voltage	**Vac**	195-264 Vac 50/60 Hz
Consumption	**W**	1.5
Operating temperature range	**°C**	0 to 50

MODEL		AD 640 D	AD 640 D2
Reference		**36442**	**36443**
Multiplex number		1	1
Number of outputs		4	4
Frequency band	**MHz**	47-790	47-694
Gain	**dB**	18	18
Gain regulation	**dB**	16	16
Max. output level (DIN 45004B)	**dBµV**	100	100
Noise figure	**dB**	4	4
Impedance	**Ω**	75	75
Input/output connectors		F (female)	F (female)
Packing dimensions	**mm**	125 x 100 x 40	
Weight	**Kg**	0.24	

INDOOR AMPLIFIERS

RF+FI INDOOR AMPLIFIER

AD 2300

electronics

Self-powered broadband amplifier for indoor use.

APPLICATION

Suitable for individual digital terrestrial TV installations with several TV sets located away from the main socket.

FEATURES

- The circuit is housed in a zamak box that ensures a high level of shielding.
- Switching power supply, which reduces consumption and inner temperature and guarantees a long life product.
- Independent regulation.
- Allows DC pass between any output.
- AD 2300: it has two independent outputs, the second one attenuated 10 dB with respect to the first one.

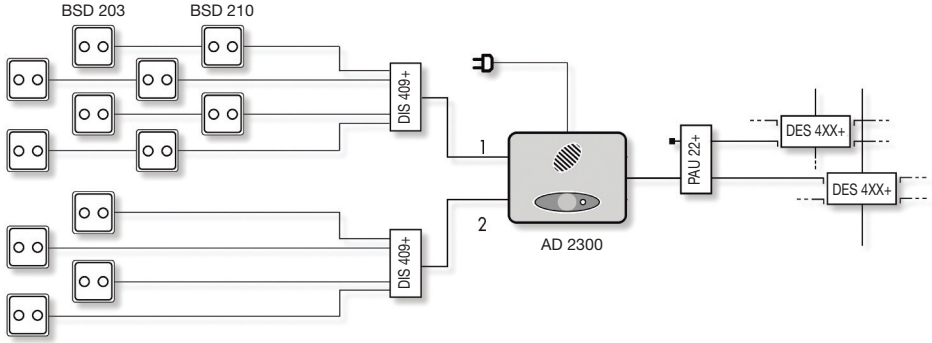


Supply voltage	**Vdc**	195 - 265
Power consumption	**W**	5.5 VA
Operating temperature range	**°C**	0 ÷ 50

MODEL		**AD 2300**			
Reference		**36230**			
Number of inputs		1			
Number of outputs		2			
Frequency band	**MHz**	RF 47 ÷ 862		SAT 950 ÷ 2150	
Gain		47 MHz	862 MHz	950 MHz	2150 MHz
• Output 1	**dB**	16	20	23	30
• Output 2		4	8	13	20
Max. output level DIN 4500 4B*	**dBµV**	108 (Output 1) 96 (Output 2)		114 (Output 1) 104 (Output 2)	
Gain regulation	**dB**	20		-	
Impedance	**Ω**	75			
Return path through loss	**dB**	3,5 (Output 1)			
Input / output connectors		F(h)			
Max. current drawn	**A**	0.5			
Packing dimensions	**mm**	165 x 92 x 60			
Weight	**Kg**	0.4			

* 950 ÷ 2300 MHz: IM3 a -35 dB
47 ÷ 862 MHz: IM3 a - 60 dB

INDOOR AMPLIFICATION RF and 1st FI SAT



INDOOR AMPLIFIERS

DIGITAL MODULATOR HDMI COFDM

electronics

HTT 103

Digital modulator to distribute a modulated HDMI signal in COFDM, DVB-T...



htt 103 HDMI COFDM

APPLICATION

Distribution of HDMI signals from a terrestrial or satellite TV receiver, DVD or Blue-Ray players, digital cameras, etc. on a coaxial network, modulated in COFDM.

FEATURES

- Configurable bitrate.
- LCN (Logic Chanel Number) editing.
- High quality MER modulation ≥ 34dB.
- Local programming via keypad and alphanumeric LCD display.
- Metal housing with slots to facilitate ventilation of the equipment.

MODEL		HTT 103
Reference		**86541**
VIDEO ENCODING		H.264
Inputs		HDMI x 1 + RF
Resolution		1920*1080_60p; 1920*1080_50p; 1920*1080_60i; 1920*1080_50i; 1280*720_60p, 1280*720_50p
AUDIO ENCODING		MPEG1 layer II
MODULATION STANDARD		EN300744
FFT modes		2K, 8K
Bandwidth	**MHz**	6, 7, 8
Constellation		64 QAM
Guard interval		1/32
FEC		7/8
MER	**dB**	>34dB
RF frequency	**MHz**	50 ÷ 860
RF output level	**dBµV**	70 ÷ 100, step 1dBµV
Programmation		LCD + control buttons
Supply voltage		12V / 1.5A
Packing dimensions	**mm**	125 x 100 x 28
Weight	**Kg**	0.75

INDOOR MODULATORS

DIGITAL MODULATOR HDMI or A/V

electronics

HTT 113/114

Digital modulator that converts the HDMI or A/V signal into a DVB-T channel. It processes HDMI signals coming from satellite receivers, DVD computers or Blu Ray players into COFDM signals.





APPLICATION

Distribution of signals from equipment with HDMI output in digital TV signal distribution networks. Ideal for installations in bars, hotels, etc.

FEATURES

- Possibility of modulating an HDMI or A/V signal, resolution up to 1080p and 4K in the case of HTT 114.
- HDMI loop output same resolution as input.
- Antenna input for mixing with the modulated signal.
- Excellent MER modulation quality > 35 dB.
- Programming via display and built-in keyboards.

MODEL		HTT 113	HTT 114
Reference		**86545**	**86546**
VIDEO ENCODING		H.264	H.264
Inputs		HDMI x 1 + 1 CVBS + RF	HDMI x 1 + 1 CVBS + RF
Resolution		576i PAL / 480i NTSC / 1920*1080_60p; 1920*1080_50p; 1920*1080_60i; 1920*1080_50i; 1280*720_60p, 1280*720_50p	576i PAL / 480i NTSC / 1920*1080_60p; 1920*1080_50p; 1920*1080_60i; 1920*1080_50i; 1280*720_60p, 1280*720_50p / 4K
AUDIO ENCODING		MPEG1 layer II	
Audio input format		Stereo channel L/R	
Input audio		RCA	
MODULATION STANDARD		EN300744	
FFT modes		2K, 8K	
Channel width	**MHz**	6, 7, 8	
Constellation		QPSK, 16 QAM, 64 QAM	
Guard interval		¼, 1/8, 1/16, 1/32	
FEC		1/2, 2/3, 2/4, 5/6, 7/8	
MER	**dB**	>35dB	
RF frequency	**MHz**	50 ÷ 860	
RF output level	**dBµV**	70 ÷ 100, step 1dBµV	
Supply voltage		12V / 1,5A	
Working temperature		0 ÷ +50°C	
Packing dimensions	**mm**	297 x 157 x 81	
Weight	**Kg**	0.9	

INDOOR MODULATORS

HDMI/DOWN SCALER DISTRIBUTOR

electronics

HHD 102 S

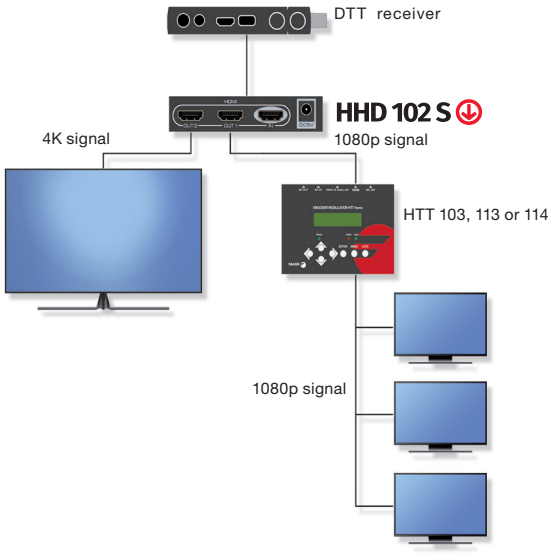
The HHD 102 S Converter/Distributor is a device that allows to distribute the signal at the HDMI input to two HDMI outputs. At the same time, it adapts the resolution of the HDMI signal at the output to the resolution of the equipment connected to it, lowering the resolution to the required format.



HHD 102 S

FEATURES

- One HDMI 2.0 input/ two HDMI 2.0 outputs.
- Supports resolutions up to 4K*2K@60Hz.
- HDR support.
- Downscales the input resolution (up to 4K@60Hz) to the format supported by output devices up to 480i.
- Can be powered at 5V through any USB input of a TV.
- A 220Vac to 5Vdc power supply is included.



MODEL		HHD 102 S
Reference		
HDMI Resolution		4K@60Hz /4K@30Hz/3D/1080P/1080i/720p/576p/576i/480P/480i
Audio Format		DTS-HD/Dolby-trueHD/LPCM7.1/DTS/Dolby-AC3/DSD
Maximum bandwidth	**MHz**	600
Maximum baud rate	**Gbps**	18Gbps
TMDS input/output signal		0.5~1.5Volts p-p (TTL)
DDC input/output signal		5Volts p-p (TTL)
Input cable distance		≤10m(1080P)/5M(4K) AWG24 HDMI standard cable
Output cable distance		≤10m(1080P)/5M(4K) AWG24 HDMI standard cable
Maximum working current	**mA**	400
Mains adapter input		AC (50HZ, 60HZ) :100V-240V; Output: DC5V/1A
Operating temperature range		-0 to +40ºC
Storage temperature range		-20 to +60ºC
Operating humidity limits		5 to 85%HR (without condensation)
Storage humidity limits		5 to 85%HR (without condensation)
Packing dimensions	**mm**	95 x 53 x 22
Weight	**Kg**	0.138

INDOOR MODULATORS

SELF-POWERED AUDIO/VIDEO MODULATOR

electronics

MOD 500 N

Self-powered modulator which generates an RF channel with the Audio and Video information coming from a Video, DVD, IRD, video door entry system, security cameras, etc.



Supply voltage	**Vdc**	198 - 250
Consumption	**W**	2.5 VA
Operating temperature range	**°C**	0 ÷ 50

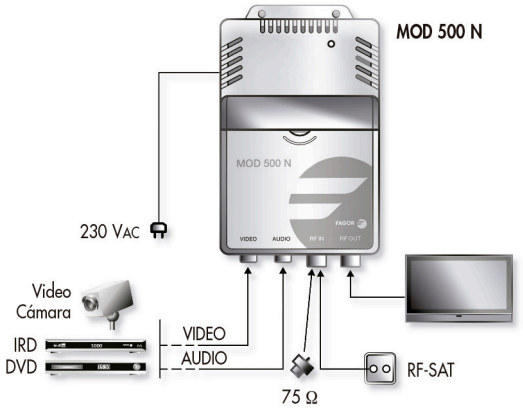
APPLICATION

This modulator enables the reception of a signal coming from a receiver with Audio and Video output, on a TV set without Audio and Video input. The antenna signal from an outlet socket can be combined with a newly generated channel and both are delivered at the output, thus enabling their coaxial cable distribution throughout the dwelling.

FEATURES

- Compact design, making it easy to install.
- The output channel is easily programmed by two buttons and an alphanumerical display.
- Audio volume can be adjusted to be equalised with the volume of other programmes.
- Incorporates a video-test bar generator making TV tuning easier.
- Multi-standard and multi-band, with one single model covering all standards and channels.
- A PLL circuit ensures high stability of the output channel.

Application example



MODEL		MOD 500 N	
Reference		**86521**	
Output frequency	**MHz**	47 ÷ 862	BI E2-4 BIII E5 ÷ E12 BS S11 ÷ S20 UHF 21 ÷ 69
Output level	**dBµV**	60 ÷ 75 (adjustable)	
Passage band	**MHz**	47 ÷ 2150	
Through losses	**dB**	47 ÷ 862 MHz : 2.5 862 ÷ 2150 MHz : 4	
Video input level	**Vpp**	1	
Audio input level	**Vpp**	0.15 ÷ 0.77	
Connectors		FR: F (f) VIDEO / AUDIO: RCA (f)	
Packing dimensions	**mm**	110 x 50 x 134	
Weight	**Kg**	0.3	

DTT RECEIVERS

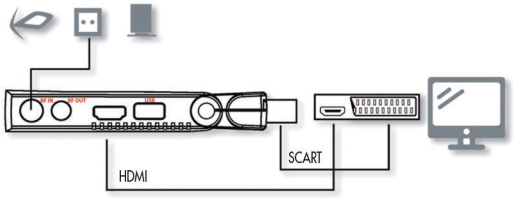
HIGH & STANDARD DEFINITION DTT RECEIVER

electronics

Tedi 5000 HD

DTT receiver for High Definition and standard definition broadcasts with a small size suitable for any type of TV. It has an HDMI output for connection to HDTV compatible televisions and an audio/ video output (SCART). It also has a USB 2.0 port for recording or playback of photos, movies...





FEATURES

- DVB-T/T-2, MPEG-4, MPEG-2 standard.
- USB 2.0 port.
- HDMI 1.3b output.
- “Time Shift” via USB 2.0. with recording option.
- Media player: plays photos, music, videos.. (MP3, JPEG, BMP and OGC files).
- Screen-format 16:9/4:3.
- DVB EN300743 teletext and DVB ETS300472 teletext by VBI and OSD.
- Parental lock.
- Auto save function for last channel used.
- Low consumption.

MODEL		Tedi 5000 HD
Reference		**86537**
Power supply		90 ~ 250V; 50/60Hz
Standby		0.5 W MAX.
Current drawn (max.)		10 W
Input impedance		75 Ohm
Input connector		RF IEC female, 9.5mm
Input frequency		VHF:173.5MHz - 230MHz UHF:474MHz - 866MHz
Input level		64QAM:-78.5 ~ -8.75dBm /16QAM:-84 ~ -8.75dBm / QPSK:-90.3 ~ -8.75dBm
RF channel bandwidth		6, 7, 8 MHz
HDMI output		19 PIN female; HDMI 1.3b
Input connector		IR minijack 3.5mm
USB		USB 2.0
Constellation		QPSK, 16QAM, 64QAM
Video decode		MPEG2 ISO/IEC 13818-2 MP@ML, H.264 (MPEG4 part 10) 4.1/MPEG-2 MP@HL
Video resolution		480i, 480p, 576i, 576p, 720p, 1080i, 1080p
Audio decode		MPEG-1, MPEG-2 (Layer I/II), MP3, AC-3 (Dolby Digital),AAC-LC,WMA
Audio mode		Left/Right/Stereo/Mono
Operating temperature range	**°C**	0-40
Weight	**Kg**	0.90

MULTISWITCHES

electronics

MFC Series

SAT-IF cascadable multiswitches.
4, 8, 12 & 16 SAT inputs + 1 Terrestrial input.



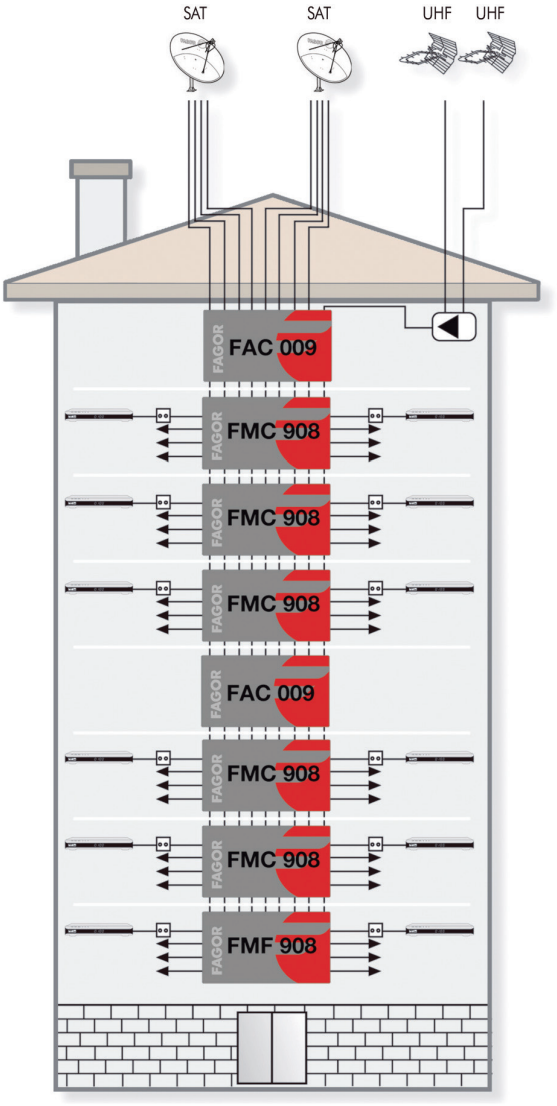
APPLICATION

For the distribution of satellite TV signal up to 16 polarities. Each user receives both satellite and terrestrial signal by only one coaxial cable and any satellite polarisation can be selected from each user's receiver.

FEATURES

- Low cascading loss at high subscriber extensions.
- Cascade distribution of 4, 8, 12 and 16 satellite polarizations.
- Input for terrestrial signal, compatible with terrestrial digital broadcast (DVB-T).
- Control by voltage/tone from the user´s receiver. Satellite selection through DiSEqC 2.0.-2.1.
- The high selectivity of the input filters guarantees the maximum quality of the signal.
- Terminal multiswitches and amplifiers: power supply included.
- LNB Quattro & LNB Quad compatible.

8 POLARITIES/ 48 SUBSCRIBERS





POWER SUPPLY WITH EUROPEAN PLUG

MODEL	SPS 1825	SPS 1825
Reference	**86430**	**86480**
Output voltage	18 Vcc 2.5A	18 Vcc 2.5A
Input voltage **Vac**	80-260	80-260

PROGRAMMING

The UCM 100 programming unit allows to modify the output configuration:

- Give priority to one of the polarities to work with receivers without DiSEqC commands.
- Blocking the signal of one, several or all polarities.

MODEL	UCM 100
Reference	**86599**
Connector	F (female)

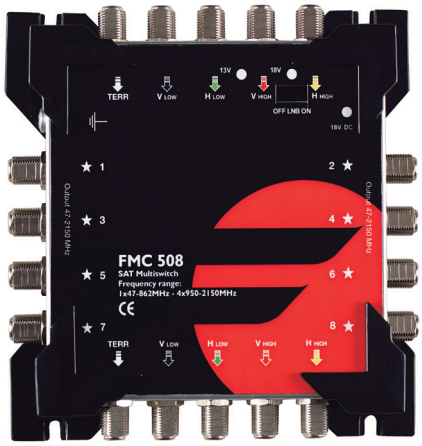
MULTISWITCHES

CASCADABLE MULTISWITCHES 5 INPUTS SYSTEM

electronics

FMC Series

SAT-IF cascade multiswitches 4 SAT inputs + 1 Terrestrial input.



APPLICATION

For the distribution of satellite TV signal up to 5 polarities. Each user receives both satellite and terrestrial signal by only one coaxial cable.

FEATURES

- FMC series, cascade models, FMF series final models.
- Input for terrestrial signal, compatible with terrestrial digital broadcast (DVB-T).
- Control by voltage/tone from the user's receiver. Satellite selection through DiSEqC 2.0.-2.1.
- FMF models include power supply SPS 1825.

MODELS WITH BS PLUG

	FMF 508 BS	FMF 512 BS	FMF 516 BS	FMF 524 BS	FMF 532 BS
Reference	**86484**	**86485**	**86486**	**86487**	**86488**

MODEL			FMC 508	FMC 512	FMC 516	FMC 524	FMC 532	FMF 508	FMF 512	FMF 516	FMF 524	FMF 532
Reference			**86432**	**86433**	**86434**	**86445**	**86446**	**86460**	**86461**	**86462**	**86463**	**86464**
Inputs			4 SAT + 1 TERR									
Subscriber outputs			8	12	16	24	32	8	12	16	24	32
Frequency range	**TERR**	dB	70÷862									
	SAT		950÷2150									
Tap gain / loss	**TERR**	dB	-2 ± 2	-2 ± 2	-3 ± 2	-7 ± 2	-8 ± 2	2 ± 2	2 ± 2	-0 ± 2	-2 ± 2	-3 ± 2
	SAT		-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)
Passage loss	**TERR**	dB	-4	-4	-4,5	-5	-6	-				
	SAT		-1,5	-2	-2,5	-3	-4					
Isolation	**SAT-SAT**	dB	>40									
	SAT-TERR		>35									
	OUT-OUT		>35									
Max. Output level (SAT-35dB IM3)	**SAT**	dBµV	102									
Satellite and polarity selection			13 Vdc / 18 Vdc - 0 / 22 KHz DiSEqC 2.0-2.1									
Max. current consumption (without LNB)		mA	180			300		180			300	
Supply voltage		Vac	-					195-265 Vac / 18Vdc / 2.5 A				
Operating temperature range		°C	-10 to 40									
Packing dimensions		mm	220 x 245 x 50			233 x 315 x 50	233 x 350 x 50	220 x 245 x 50			233 x 315 x 50	233 x 350 x 50
Weight		Kg	0.55	0.6	0.75	1.15	1.3	0.6	0.65	0.8	1.2	1.35

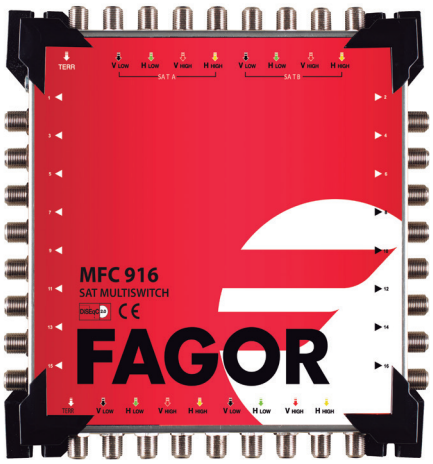
MULTISWITCHES

CASCADABLE MULTISWITCHES 9 INPUTS SYSTEM

electronics

MFC Series

SAT-IF cascade multiswitches 8 SAT inputs + 1 Terrestrial input.



APPLICATION

For the distribution of satellite TV signal up to 9 polarities. Each user receives both satellite and terrestrial signals by only one coaxial cable.

FEATURES

- MFC series, cascade models, MFF series final models.
- Input for terrestrial signal, compatible with terrestrial digital broadcast (DVB-T).
- Control by voltage/tone from the user's receiver. Satellite selection through DiSEqC 2.0.-2.1.
- MFF models include power supply SPS 1825.

MODELS WITH BS PLUG

	FMF 908	FMF 912	FMF 916	FMF 924	FMF 932
Reference	**86489**	**86490**	**86491**	**86492**	**86493**

MODEL			MFC 908	MFC 912	MFC 916	MFC 924	MFC 932	MFF 908	MFF 912	MFF 916	MFF 924	MFF 932
Reference			**86723**	**86721**	**86719**	**86715**	**86713**	**86722**	**86720**	**86718**	**86714**	**86712**
Inputs			8 SAT + 1 TERR									
Subscriber outputs			8	12	16	24	32	8	12	16	24	32
Frequency range	**TERR**	**MHz**	47 - 862									
	SAT		950 - 2150									
Tap gain / loss	**TERR**	**dB**	-20	-23	-24	-27	-28	-16	-19	-20	-23	-24
	SAT		-2..2 (±2)	-2..2 (±2)	-2..2 (±2)	-2..2 (±2)	-2..2 (±2)	-2..2 (±2)	-2..2 (±2)	-2..2 (±2)	-2..2 (±2)	-2..2 (±2)
Passage loss	**TERR**	**dB**	-3	-3	-3,5	-4	-5	-				
	SAT		-1,5	-2	-2,5	-3	-4					
Isolation	**SAT-SAT**	**dB**	>34									
	SAT-TERR		>36									
	OUT-OUT		>34									
Max. Output level (Ter.-60 dBIM3, SAT -35dB IM3)	**TERR**	**dBµV**	90									
	SAT		102									
Satellite and polarity selection			DiSEqC 2.0-2.1 / 13Vdc / 18Vdc-									
Max. current consumption (without LNB)		**mA**	180			300		180			300	
Operating temperature range		**ºC**	-10 to 40									
Packing dimensions		**mm**	236 x 315 x 50			235 x 630 x 50		235 x 315 x 50			235 x 630 x 50	
Weight		**Kg**	0.62	0.65	0.77	1.12	1.37	0.52	0.65	0.77	1.12	1.37

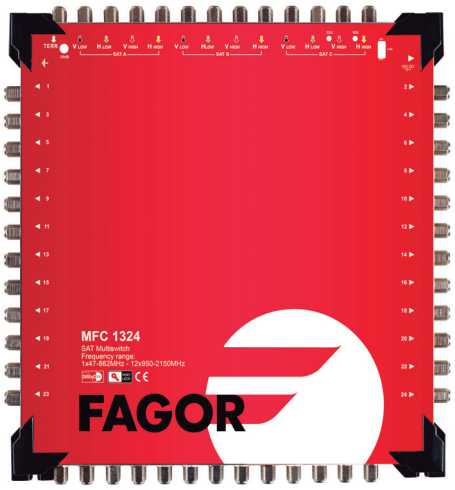
MULTISWITCHES

CASCADABLE MULTISWITCHES 13 INPUTS SYSTEM

electronics

MFC Series

SAT-IF cascade multiswitches 12 SAT inputs + 1 Terrestrial input.



APPLICATION

For the distribution of satellite TV signal up to 12 polarities. Each user receives both satellite and terrestrial signals by only one coaxial cable.

FEATURES

- MFC series, cascade models, MFF series final models.
- 12-polarity cascade distribution of 3 satellites.
- Input for terrestrial signal, compatible with terrestrial digital broadcast (DVB-T).
- Control by voltage/tone from the user´s receiver. Satellite selection through DiSEqC 2.0.-2.1.
- MFF models include power supply SPS 1225.

MODEL			MFC 1308	MFC 1312	MFC 1316	MFC 1320	MFC 1324	MFC 1332	MFF 1308	MFF 1312	MFF 1316	MFF 1320	MFF 1324	MFF 1332
Reference			**86735**	**86733**	**86731**	**86729**	**86727**	**86725**	**86734**	**86732**	**86730**	**86728**	**86726**	**86724**
Inputs			12 SAT + 1 TERR											
Subscriber outputs			8	12	16	20	24	32	8	12	16	20	24	32
Frequency range	**TERR**	**dB**	47÷862											
	SAT		950÷2150											
Tap gain / loss	**TERR**	**dB**	-20	-23	-24	-26	-27	-28	-16	-19	-20	-22	-23	-24
	SAT		-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)
Passage loss	**TERR**	**dB**	-3	-3	-3,5	-4	-4	-5	-					
	SAT		-1,5	-2	-2,5	-3	-3	-4						
Isolation	**SAT-SAT**	**dB**	>34											
	SAT-TERR		>36											
	OUT-OUT		>34											
Max. Output level (SAT-35dB IM3)	**SAT**	**dBµV**	90											
			102											
Satellite and polarity selection			13 Vdc / 18 Vdc - DiSEqC 2.0-2.1											
Max. current consumption (without LNB)		**mA**	180			300			180			300		
Supply voltage		**Vac**	-						195-265 Vac / 12Vdc / 2500					
Operating temperature range		**°C**	-10 to 40											
Packing dimensions		**mm**	370 x 245 x 50			10 x 350 x 50			370 x 245 x 50			10 x 350 x 50		
Weight		**Kg**	0.8	1	1.1	1.30	1.5	1.7	1	1.2	1.3	1.5	1.7	1.9

MULTISWITCHES

CASCADABLE MULTISWITCHES 17 INPUTS SYSTEM

electronics

FMC Series

SAT-IF cascade multiswitches 16 SAT inputs + 1 Terrestrial input.



APPLICATION

For the distribution of satellite TV signal up to 16 polarities. Each user receives both satellite and terrestrial signals by only one coaxial cable.

FEATURES

- MFC series, cascade models, MFF series final models.
- 15-polarity cascade distribution of 3 satellites.
- Input for terrestrial signal, compatible with terrestrial digital broadcast (DVB-T).
- Control by voltage/tone from the user´s receiver. Satellite selection through DiSEqC 2.0.-2.1.
- MFF models include power supply SPS 1825.

MODEL			MFC 1708	MFC 1712	MFC 1716	MFC 1720	MFC 1724	MFC 1732	MFF 1708	MFF 1712	MFF 1716	MFF 1720	MMF 1724	MMF 1732
Reference			**86747**	**86745**	**86743**	**86741**	**86739**	**86737**	**86746**	**86744**	**86742**	**86740**	**86738**	**86736**
Inputs			16 SAT + 1 TERR											
Subscriber outputs			8	12	16	20	24	32	8	12	16	20	24	32
Frequency range	**TERR**	dB	47÷862											
	SAT		950÷2150											
Tap gain / loss	**TERR**	dB	-20	-23	-24	-26	-27	-28	-16	-19	-20	-22	-23	-24
	SAT		-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)	-2÷2 (±2)
Passage loss	**TERR**	dB	-3	-3	-3,5	-4	-4	-5	-					
	SAT		-1,5	-2	-2,5	-3	-3	-4						
Isolation	**SAT-SAT**	dB	>34											
	SAT-TERR		>36											
	OUT-OUT		>34											
Max. Output level (SAT-35dB IM3)	**SAT**	dBµV	90 102											
Satellite and polarity selection			13 Vdc / 18 Vdc DiSEqC 2.0-2.1											
Max. current consumption (without LNB)		mA	180			300			180			300		
Supply voltage		Vac	-						195-265 Vac / 12 Vdc / 2500					
Operating temperature range		°C	-10 to 40											
Weight		Kg	0.97	1.12	1.51	1.84	2.15	2.67	1.27	1.51	1.81	2.14	2.45	2.3

MULTISWITCHES

CASCADABLE MULTISWITCHES AMPLIFIER SERIES

electronics

FAC Series

Amplifier up to 16 polarities + terrestrial input.



APPLICATION

Suitable as head amplifiers or distribution amplifiers in cascade multiswitch installations.

FEATURES

- 4, 8, 12 and 16 satellite polarities amplifier.
- High linearity with 4dB slope to compensate distribution losses.
- Passive terrestrial input.
- Includes SPS 1825 power supply.

MODELS WITH BS PLUG

	FAC 005	FAC 009	FAC 013	FAC 017
Reference	**86481**	**86482**	**86449**	**86483**

MODEL			FAC 005	FAC 009	FAC 013	FAC 017
Reference			**86442**	**86443**	**86630**	**86444**
Inputs			4 SAT + 1 TERR	8 SAT + 1 TERR	12 SAT + 1 TERR	16 SAT + 1 TERR
Frequency band	**TERR**	**dB**	70÷790			
	SAT		950÷2150			
Gain	**TERR**	**dB**	-1± 2			
	SAT		22 ± 1 (4DB tilt)			
Regulation gain	**TERR**	**dB**	20			
	SAT		20			
Isolation	**SAT-SAT**	**dB**	>33	>33	>33	>33
	SAT-TERR		>50	>50	>50	>50
Max. output level (TERR. -60 dB IM3, SAT -35dB IM3)	**SAT**	**dBµV**	120			
	TERR		110			
Consommation (without LNB)		**mA**	50			
Supply voltage			18Vdc 2.5A			
Operating temperature range		**ºC**	-10 to 40			
Packing dimensions		**mm**	220 x 250 x 50	235 x 315 x 50	230 x 310 x 50	250 x 500 x50
Weight		**Kg**	0.55	1.21	1.35	1.51

MULTISWITCHES

SPLITTERS AND TAP-OFFS SERIES

electronics

FSP/FTP Series

Splitters and tap-offs that allow to enlarge the size of the installation.



MODEL			SPLITTERS			TAP-OFFS					
			FSP 005	FSP 009	FSP 017	FTP 505	FTP 510	FTP 909	FTP 918	FTP 1717	FTP 1734
Reference			**86451**	**86454**	**86457**	**86452**	**86453**	**86455**	**86456**	**86458**	**86459**
Inputs			4 SAT + 1 TERR	8 SAT + 1 TERR	16 SAT + 1 TERR	4 SAT + 1 TERR		8 SAT + 1 TERR		16 SAT + 1 TERR	
Outputs			2x5 (4+1)	2x9 (8+1)	2x17 (16+1)	5 (4+1)	2x5 (4+1)	9 (8+1)	2x9 (8+1)	17 (16+1)	2x17 (16+1)
Bands	**TERR**	**MHz**	47÷862								
	SAT		950÷2150								
Derivation	**TERR**	**dB**				-12	-12	-12	-12	-12	-12
	SAT					-12	-12	-12	-12	-12	-12
Attenuation	**TERR**	**dB**	-4	-4	-4	-1,5	-2	-1,5	-2	-1,5	-2
	SAT		-4	-4	-4	-0,5	-1	-0,5	-1	-0,5	-1
Isolation	**SAT-SAT**		>35			>35					
	SAT-TERR	**dB**	>35			>35					
	OUT-OUT		>20			>30					
Operating temperature range		**°C**	-10 to 40								
Packing dimensions		**mm**	220 x 250 x 50	235 x 315 x 50	150 x 500 x 50	220 x 250 x 50		235 x 315 x 50		150 x 500 x 50	
Weight		**Kg**	0.25	0.4	0.6	0.25	0.28	0.4	0.4	0.6	0.6

MULTISWITCHES

PROGRAMMABLE MULTISWITCH UNICABLE II

electronics

FMU 402 Series

Unicable II compatible programmable multiswitch for distribution of terrestrial and satellite signal through a single cable up to 32 users.



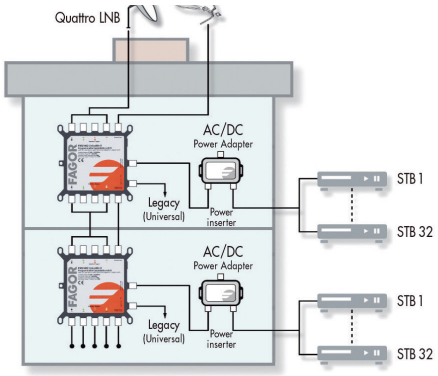
APPLICATION

Distribution of satellite signals minimizing the installation cost and time. Small hotels, rural houses, etc.

FEATURES

- dCSS technology.
- 4 satellite polarity input plus terrestrial input.
- Unicable output + Legacy output.
- Pass-through outputs for cascade installation.
- Programmable output bands configuration.
- Unicable II (EN50607) and Unicable I (EN50494) compatible.
- Packing includes power supply and power inserter.

Example



MODEL			FMU 402
Reference			**86550**
Inputs			4 SAT (950-2150 MHz) + 1 TERR (47-862 MHz)
Loop-through losses (max)	**SAT** **TERR**	**dB**	3 3
Outputs			4 loop through satellite IF +1 loop through terrestrial 1 Unicable output up to 32 users 1 legacy output (terr+sat)
Input level range		**dBµV**	59 ÷ 94
Output signal level		**dBµV**	83 dBµV (with CAG)
Band width		**MHz**	Configurable 10-80 (36MHz default)
Gain		**dB**	< 3
Frequency range			Configurable Unicable II (EN50607) / Unicable I (EN50494)
Isolation	**SAT-SAT** **SAT-TERR** **SAT channel-channel**	**dB**	> 28
Integrated phase noise			1,5º max
Legacy port switching			VL: 13V/0KHz; VH: 13V/22KHz HL: 18V/0KHz; HH: 18V/22KHz
LNB power supply			13/18V, max 300mA
Consumption			450mA @ 13Vdc (max)
Operating temperature range		**ºC**	–20 ÷ +60
Packing dimensions		**mm**	120 x 125 x 75
Weight		**Kg**	0.5


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Distribution

80
DISTRIBUTION COMPONENTS 1 GHz

81 - 84
DISTRIBUTION COMPONENTS 2 GHz

85 - 89
OUTLET SOCKETS

90
COAXIAL CABLE



DISTRIBUTION COMPONENTS 1GHz

TAP-OFFS & SPLITTERS WITH “F” CONNECTOR

distribution

REP / DER 1GHz series



Tap-offs and splitters with “F” connector totally shielded.

APPLICATION

TV installation both individual or community.

FEATURES

- Tap-offs: 2 and 4 outputs.
  Splitters: 2. 4 and 6 outputs.
- DC pass: DC block

MODEL			SPLITTERS			
			REP 204 C	REP 306 C	REP 408 C	REP 612 C
Reference			**85470**	**85471**	**85472**	**85474**
Number of outputs			2	3	4	6
Covered band		MHz	5 ÷ 1000			
Tap loss	5 - 1000 MHz	dB	-			
Through loss	5 - 47 MHz	dB	3.6	7	7.1	9.5
	47 - 470 MHz		3.6	7	7.5	9.5
	470 - 862 MHz		3.8	7	8	10.5
	862 - 1000 MHz		4	7	8	11
Output isolation	5 - 47 MHz	dB	20	22	20	18
	47 - 470 MHz		22	22	22	18
	470 - 862 MHz		22	22	22	18
	862 - 1000 MHz		22	22	22	18
Return losses		dB	20			
Shielding efficiency		dB	-110			
Packing dimensions (10 u.)		mm	115 x 105 x 57	115 x 105 x 57	160 x 105 x 57	205 x 125 x 67
Weight (10 u.)		Kg	0.50	0.50	0.60	1.10

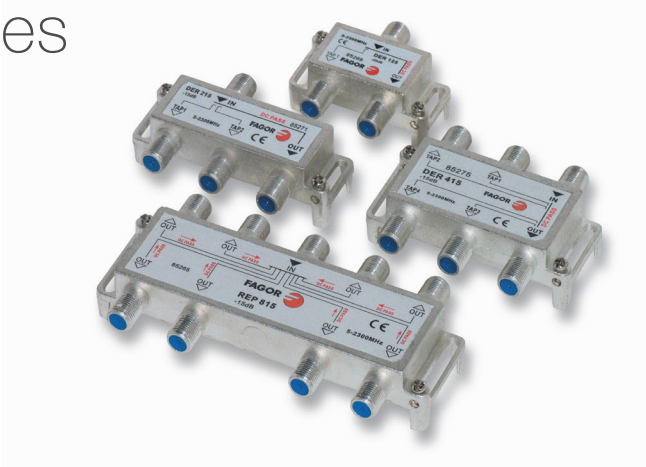
MODEL			TAP-OFFS							
			DER 214 C	DER 217 C	DER 223 C	DER 226 C	DER 414 C	DER 417 C	DER 423 C	DER 426 C
Reference			**85480**	**85481**	**85482**	**85483**	**85485**	**85486**	**85487**	**85488**
Number of outputs			2				4			
Covered band		MHz	5 ÷ 1000							
Tap loss	5 - 1000 MHz	dB	14	17	23	26	14	17	23	26
Through loss	5 - 47 MHz	dB	1.5	1.4	1.1	1.1	3.7	1.4	1.2	1.2
	47 - 470 MHz		2	1.5	1.2	1.2	3.8	1.5	1.2	1.2
	470 - 862 MHz		2	1.5	1.4	1.4	4	1.8	1.6	1.6
	862 - 1000 MHz		2.3	1.7	1.5	30	4.2	2	1.8	1.8
Output isolation	5 - 47 MHz	dB	24	27	30	30	24	25	28	30
	47 - 470 MHz		24	27	30	30	24	25	28	30
	470 - 862 MHz		24	27	30	30	24	25	28	30
	862 - 1000 MHz		24	27	28	28	24	25	28	30
Return losses		dB	20							
Shielding efficiency		dB	-110							
Packing dimensions (10 u.)		mm	160 x 105 x 57				205 x 125 x 67			
Weight (10 u.)		Kg	0.60				0.70			

DISTRIBUTION COMPONENTS 2GHz

TAP-OFFS & SPLITTERS WITH “F” CONNECTOR

distribution

REP / DER 2GHz series



Tap-offs and splitters with “F” connector totally shielded.

APPLICATION

TV installations both individual or community.

FEATURES

- Tap-offs: 1. 2. 4. 6 and 8 outputs.
- Splitters: 2. 3. 4. 6 and 8 outputs.
- DC pass:

  REP: through the input/output (main)

  DER: through all outputs. They allow cables to pass through the rear.

MODEL			SPLITTERS					TAP-OFFS							
			REP 204	REP 307	REP 409	REP 613	REP 815	DER 110	DER 115	DER 120	DER 125	DER 210	DER 215	DER 220	DER 225
Reference			**85261**	**85262**	**85263**	**85264**	**85265**	**85266**	**85267**	**85268**	**85269**	**85270**	**85271**	**85272**	**85273**
Number of outputs			2	3	4	6	8	1				2			
Covered band		MHz	5 ÷ 2300												
Tap loss	5 - 2300 MHz	dB	-	-	-	-	-	10	15	20	25	10	15	20	25
Through loss	5 - 47 MHz	dB	4	6.5	7.5	10.5	11	2.2	1.3	1.1	1	3.5	2.5	1.5	1
	47 - 862 MHz		4	7.5	8	11	12	2.2	1.5	1.1	1	3	2.2	1.5	1
	950 - 2150 MHz		5.5	9	9.5	14.5	15.5	2.2	2.2	1.9	1.8	3.5	3	2.8	1.7
	2150 - 2300 MHz		6	10	10.5	15	16	2.2	2.2	2.2	2.1	4	3	3	2.1
Directional attenuation	5 - 47 MHz	dB	-	-	-	-	-	25	25	27	30	20	25	30	35
	47 - 862 MHz		-	-	-	-	-	24	24	25	27	23	22	25	35
	950 - 2150 MHz		-	-	-	-	-	23	23	23	24	18	22	22	28
	2150 - 2300 MHz		-	-	-	-	-	23	23	23	24	18	21	22	26
Output isolation	5 - 47 MHz	dB	20	20	21	22	24	-	-	-	-	40	45	60	22
	47 - 862 MHz		21	21	21	22	22	-	-	-	-	30	35	45	22
	950 - 2150 MHz	dB	20	21	21	21	21	-	-	-	-	28	30	32	22
	2150 - 2300 MHz		20	20	21	20	21	-	-	-	-	28	30	32	22
Return losses	5 - 862 MHz	dB	12												
	950 - 2150 MHz		10												
Min. screening factor	5 - 862 MHz	dB	65												
	950 - 2150 MHz		55												
Packing dimensions (10 u.)		mm	115 x 105 x 57	160 x 105 x 57		205 x 125 x 67		118 x 108 x 61	115 x 105 x 57			160 x 105 x 57			
Weight (10 u.)		Kg	0.50	0.60		1.10		0.66	0.50			0.60			

MODEL			TAP-OFFS									
			DER 410	DER 415	DER 420	DER 425	DER 615	DER 620	DER 625	DER 815	DER 820	DER 825
Reference			**85274**	**85275**	**85276**	**85277**	**85278**	**85279**	**85280**	**85281**	**85282**	**85283**
Number of outputs			4				6			8		
Covered band		MHz	5 ÷ 2300									
Tap loss	5 - 2300 MHz	dB	10	15	20	25	15	20	25	15	20	25
Through loss	5 - 47 MHz	dB	4	2	1	1	3.5	1.5	0.5	3.5	1.5	1
	47 - 862 MHz		4	2.5	1	1	4	2	1.5	4	2	1
	950 - 2150 MHz		5	4	2	2	5	4.5	3.5	5	3.5	2
	2150 - 2300 MHz		5.5	4.5	3	2	5.5	5	5	5.5	3.7	2.5
Directional attenuation	5 - 47 MHz	dB	25	30	38	45	25	30	30	25	30	30
	47 - 862 MHz		27	28	30	32	22	25	30	22	25	30
	950 - 2150 MHz		25	25	25	25	22	25	25	22	25	25
	2150 - 2300 MHz		25	25	25	25	21	24	24	20	24	24
Output isolation	5 - 47 MHz	dB	23	23	23	23	22	25	25	22	27	27
	47 - 862 MHz		22	22	22	22	22	22	22	22	22	22
	950 - 2150 MHz	dB	21	22	22	22	22	22	22	22	22	22
	2150 - 2300 MHz		21	21	21	21	16	16	16	16	16	22
Return losses	5 - 862 MHz	dB	12									
	950 - 2150 MHz		10									
Min. screening factor	5 - 862 MHz	dB	65									
	950 - 2150 MHz		55									
Packing dimensions (10 u.)		mm	205 x 125 x 67				205 x 125 x 67					
Weight (10 u.)		Kg	0.70				1.10					

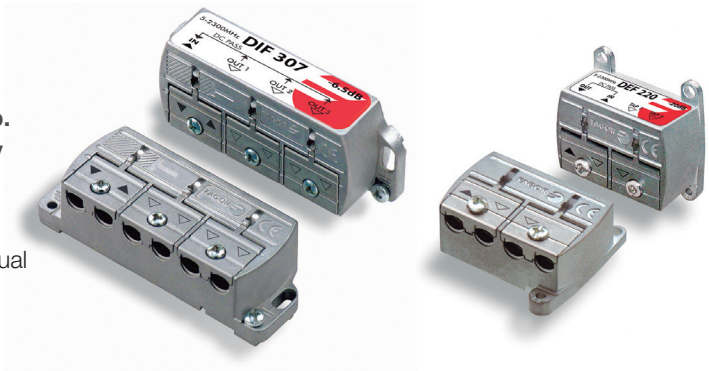
DISTRIBUTION COMPONENTS 2GHz

SHIELDED TAP-OFFS AND SPLITTERS

distribution

DEF / DIF series

Shielded tap-offs and splitters with saddle & clamp. Suitable for digital signal distribution in community installations.



APPLICATION

Analogue and Digital Terrestrial TV Installations, both individual or community.

FEATURES

- Maximum efficiency with minimum output level at headend.
- Same level between users in the same floor.
- Linear attenuation in the whole band.
- High signal levels can be used thanks to a special shielding design.
- Easy to set up.
- Valid for reduced space installations.

MODEL		PI-DES	PE-DES +	PI-DES/DIS+S
				
Reference		**85013**	**85014**	**85016**
Packing dimensions	mm	380 x 160 x 160	47 x 110 x 155	92 x 55 x 285
Weight	Kg	1.1	0.4	0.3

MODEL			SPLITTERS				TAP-OFFS			
			DIF 204	DIF 307	DIF 409	DIF 513	DEF 107	DEF 111	DEF 116	DEF 120
Reference			**85500**	**85501**	**85502**	**85503**	**85504**	**85505**	**85506**	**85507**
Number of outputs			2	3	4	5 3/2	1			
Covered band		MHz	5 ÷ 2300							
Insertion loss	**5 - 47 MHz**	dB	3.5	6.5	7.5	7.5 / 11	3.5	2	1.4	1.1
	47 - 550 MHz		3.5	6.5	7.5	7.5 / 11	2.5	1.7	1.4	1.1
	550 - 862 MHz		4	6.5	7.5	8 / 11.5	2.5	1.7	1.4	1.1
	950 - 1550 MHz		4.5	7.5	8.5	9 / 12.5	3	2	1.7	1.3
	1550 - 2150 MHz		5.5	8.5	9.5	10 / 13	3.5	2.3	2	1.5
	2150 - 2300 MHz		5.5	8.5	9.5	10.5 / 14	3.5	2.3	2	1.5
IN-TAP tap loss	**5 - 47 MHz**	dB					7	11	16	20
	47 - 550 MHz						7	11	16	20
	550 - 862 MHz						7	11	16	20
	950 - 1550 MHz						7	11	16	20
	1550 - 2150 MHz						7	11	16	20
	2150 - 2300 MHz						7	11	16	20
OUT-TAP isolation	**47 - 950 MHz**	dB					25	25	28	33
	950 - 2150 MHz						20	20	25	28
Output isolation	**47 - 862 MHz**	dB	24	24	24	24	-	-	-	-
	950 - 2150 MHz		22	22	22	22	-	-	-	-
IN return loss	**47 - 862 MHz**	dB	14	14	14	12	14	18	18	18
	950 - 2150 MHz		12	14	14	14	14	15	15	15
OUT return loss	**47 - 862 MHz**	dB	13	12	12	14	14	18	18	18
	950 - 2150 MHz		12	12	12	12	14	15	15	15
TAP return loss	**47 - 862 MHz**	dB					14	18	18	18
	950 - 2150 MHz						14	15	15	15
DC pass	**IN - OUT**		NO	NO	NO	NO	YES	YES	YES	YES
24 Vdc. 0. 5A. 22 KHz	**OUT - IN**		YES	YES	YES	YES	YES	YES	YES	YES
DC pass	**IN - TAP**						NO	NO	NO	NO
24 Vdc. 0. 5A. 22 KHz	**TAP - IN**						NO	NO	NO	NO
	TAP - TAP						-	-	-	-
Packing dimensions (10 u.)		mm	118 x 108 x 61		185 x 90 x 50		118 x 108 x 61			
Weight (10 u.)		Kg	0.66		0.85		0.66			

DISTRIBUTION COMPONENTS 2GHz

SHIELDED TAP-OFFS AND SPLITTERS

distribution

DEF / DIF series



Shielded tap-offs and splitters with saddle & clamp. Suitable for digital signal distribution in community installations.

APPLICATION

Analogue and Digital Terrestrial TV Installations, both individual or community.

FEATURES

- Maximum efficiency with minimum output level at headend.
- Same level between users in the same floor.
- Linear attenuation in the whole band.
- High signal levels can be used thanks to a special shielding design.
- Easy to set up.
- Valid for reduced space installations.

MODEL			TAP-OFFS							
			DEF 211	DEF 216	DEF 220	DEF 225	DEF 411	DEF 416	DEF 420	DEF 425
Reference			85505	85509	85510	85511	85512	85513	85514	85515
Number of outputs			2				4			
Covered band		MHz	5 ÷ 2300							
Insertion loss	5 - 47 MHz	dB	2.5	1.2	0.7	0.5	4	1.8	0.9	0.6
	47 - 550 MHz		2.2	1.1	0.8	0.5	3.5	1.8	0.9	0.6
	550 - 862 MHz		2.4	1.1	0.8	0.6	4	1.9	0.9	0.7
	950 - 1550 MHz		2.9	1.5	1	1	4.2	2.8	1.4	1.1
	1550 - 2150 MHz		3.2	1.5	1.2	1.4	4.4	3.2	1.9	1.6
	2150 - 2300 MHz		3.7	2	1.5	1.8	4.5	3.5	2	1.7
IN-TAP tap loss	5 - 47 MHz	dB	11	16	21	25	11	15.5	20	25
	47 - 550 MHz		11	16	21	25	11	16	20	25
	550 - 862 MHz		11	16	21	25	11	16	20	25
	950 - 1550 MHz		11	16	21	25	12	16	20	25
	1550 - 2150 MHz		11.5	16.5	21.5	25	13	16	20	25.5
	2150 - 2300 MHz		11.5	16.5	21.5	25.5	13	16.5	20.5	25.5
OUT-TAP isolation	47 - 950 MHz	dB	23	24	25	25	23	25	25	25
	950 - 2150 MHz		20	21	25	25	23	25	25	25
Output isolation	47 - 862 MHz	dB	21	22	22	25	21	21	22	21
	950 - 2150 MHz		21	22	22	25	21	21	22	23
IN return loss	47 - 862 MHz	dB	17	20	20	22	15	16	20	22
	950 - 2150 MHz		20	20	25	17	18	18	18	19
OUT return loss	47 - 862 MHz	dB	20	20	25	22	20	22	23	25
	950 - 2150 MHz		17	16	17	15	16	18	17	16
TAP return loss	47 - 862 MHz	dB	12	13	17	16	18	19	21	20
	950 - 2150 MHz		12	12	12	12	16	16	16	16
DC pass 24 Vdc. 0. 5A. 22 KHz	IN - OUT		YES							
	OUT - IN		YES							
DC pass 24 Vdc. 0. 5A. 22 KHz	IN - TAP		NO							
	TAP - IN		NO							
	TAP - TAP		NO							
Packing dimensions (10 u.)		mm	118 x 108 x 61				185 x 90 x 50			
Weight (10 u.)		Kg	0.66				0.85			

DISTRIBUTION COMPONENTS 2GHz

SHIELDED DIPLEXERS

distribution

DXR + series

Shielded diplexers with saddle & clamp connection.



APPLICATION

Suitable for digital or analogue TV installations

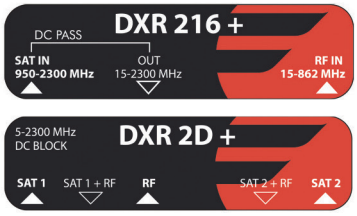
- DXR 216 +: diplexer with 2 inputs / 1 output, suitable for splitting or combining RF / 1st IF SAT signals.
- DXR 2D +: distributes the RF signals, allowing to mix it with 1st IF SAT signals.

FEATURES

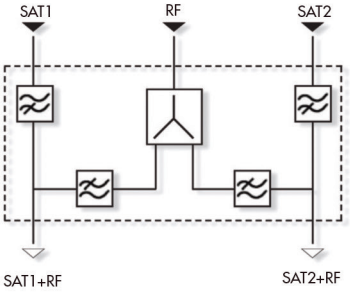
- High shielding zamak box.
- Low losses and excellent frequency response.
- Easy to install in small spaces.
- DXR 216 +: DiSEqC signal pass through from the output to the satellite input.

MODEL		DXR 216+		DXR 2D+	
Reference		**86244**		**86243**	
DC Pass 24 Vdc. 0 5A. 2 KHZ		SAT IN - OUT		-	
Covered band		RF	SAT	RF	SAT
Frequency range	**MHz**	15 ÷ 862	950 ÷ 2300	15 ÷ 862	950 ÷ 2300
Number of inputs		1	1	1	2 (SAT 1 & SAT 2)
Number of outputs		1		2 (SAT 1 + RF & SAT 2+ RF)	
Through loss	**dB**	1..7	2	5	1 (950-1200 MHz 2 dB)
Rejection SAT input to RF	**dB**	33		25	
Rejection RF input to SAT	**dB**	25		25	
Impedance	**Ω**	75			
Return loss	**dB**	10			
Packing dimensions	**mm**	185 x 90 x 50			
Weight	**Kg**	0.85			

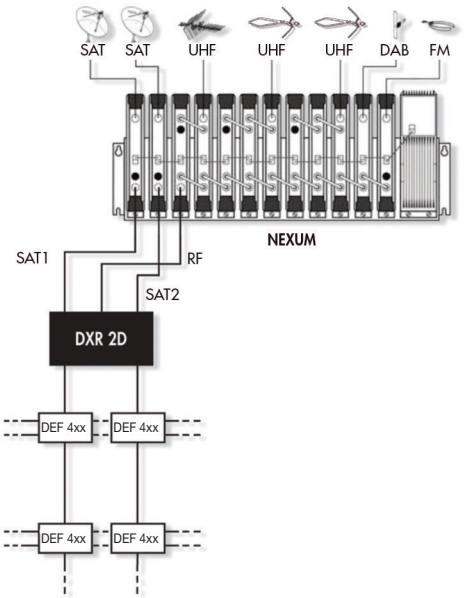
Connections



Internal diagram DXR 2D +



Application example DXR 2D +



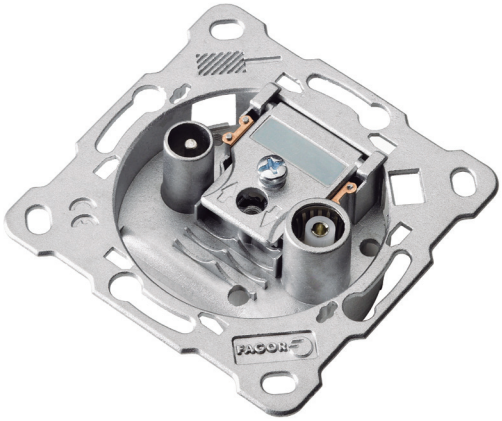
OUTLET SOCKETS

5 ÷ 1000 MHz

distribution

BRF Series

Outlet sockets with inductive devices for adequate filtering of the signals at the outputs, with minimum through losses.



APPLICATION

TV Installations, both individual or community up to 1000 MHz to be used as end socket or for cascading.

FEATURES

- The circuit has a metal (zamak) housing to achieve a high degree of shielding.
- It has a special shielding at the input and output connections, and it is designed for easy installation.
- Compatible with most of the electrical devices available.

Frequency (MHz)	5	68	87.5	106	118	1000
TV						
RADIO						

MODEL			BRF 01 S	BRF 11 S	BRF 01 N	BRF 05 N	BIF 09 N
Reference			86275	86274	86276	86277	85161
Technology			Inductive				
Band coverage		MHz	5 ÷ 1000	5 ÷ 1250	5 ÷ 1000		
Through losses	Return path 5 - 68 MHz	dB	Single*		End	25	15
	68 - 470 MHz						1
	470 - 1000 MHz						
Derivation losses	Return path 5 - 68 MHz	dB	0.5		25	75	11
	TV 118 - 470 MHz				3	7	
	TV 470 - 1000 MHz						
	R 87.5 - 108 MHz		6		6	125	18
Directivity	TV - OUT	dB	-		-	15	
	R - OUT					30	
Isolation	TV - OUTR		30				
Shielding factor	40 - 470 MHz	dB	75				
	70 - 862 MHz		65				
Impedance		Ω	75				
Return losses		dB	9.5				
Output connectors (UNE 20-523-79)		R	IEC 9.5 (f)				
		TV	IEC 9.5 (m)				
Packing dimensions (20 u.)		mm	300 x 165 x 85				
Weight (20 u.)		Kg	1.5				

* BRF 01 S model must be connected directly to tap-off or splitter.

TV - FM cover

MODEL		C BIF	C BIF B
Reference		85033	85034
Color		beige	white
Packing dimensions (20 u.)	mm	190 x 90 x 85	
Weight (20 u.)	Kg	0.5	

Supplement for surface mounting

MODEL		SS BT	SS BT B
Reference		85020	85031
Color		beige	white
Packing dimensions (15 u.)	mm	260 x 135 x 90	
Weight (15 u.)	Kg	0.5	

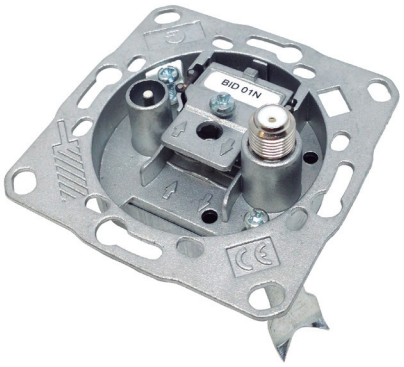
OUTLET SOCKETS

FOR DATA

distribution

BID N Series

Outlet sockets with inductive devices for adequate filtering of the signals at the outputs, with minimum through losses.

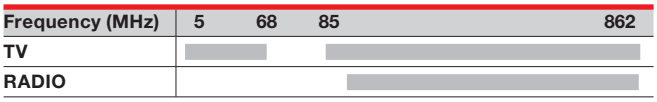


APPLICATION

TV Installations, both individual or community up to 1000 MHz to be used as end socket or for cascading.

FEATURES

- The circuit has a metal (zamak) housing to achieve a high degree of shielding.
- It has a special shielding at the input and output connections, and it is designed for easy installation.
- Compatible with most of the electrical devices available.



MODEL				BID 01 N	BID 10 N
Reference				**85167**	**85168**
Technology				Inductive	
Band coverage			**MHz**	5 ÷ 862	
Through losses		**5 ÷ 862 MHz**	**dB**	End	4
Derivation losses	**TV**	**87.5 ÷ 90 MHz**	**dB**	6	9
		90 ÷ 862 MHz		5	8
	DATA	**5 ÷ 65 MHz**		1	3.5
		87.5 ÷ 862 MHz		5	10
Directivity		**TV - OUT**	**dB**	15	
		R - OUT		25	

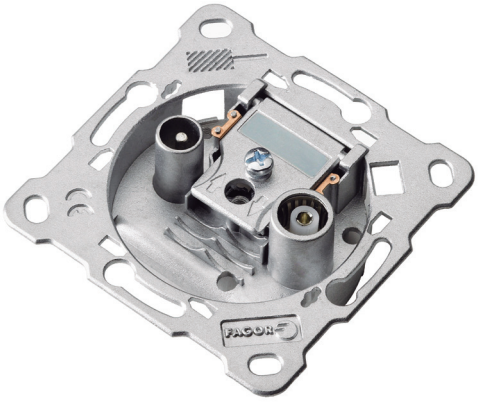
OUTLET SOCKETS

5 ÷ 2300 MHz

distribution

BSF 200 Series

Outlet sockets with inductive devices for adequate filtering of the signals at the outputs, with minimum through losses.



Frequency (MHz)	5	862	950	2300
TV				
SAT				

APPLICATION

TV Installations up to 2300MHz, both individual or community to be used as end socket or for cascading.

FEATURES

- The circuit has a metal (zamak) housing to achieve a high degree of shielding.
- It has a special shielding at the input and output connections, and it is designed for easy installation.
- The outlet´s directivity guarantees enough isolation between floors.

MODEL			BSF 201 S	BSF 201 S DC	BSF 203 N	BSF 203 DC	BSF 210 N	BSF 210 DC	BSF 215 N	BSF 220 N
Reference			**86250**	**86253**	**86255**	**86254**	**86257**	**86256**	**86259**	**86258**
Number of outputs			2							
Band coverage		**MHz**	5 ÷ 2300							
DC pass	**IN-OUT 300 mA max**		-	SI	-	SI	-	SI	-	
	SAT 300 mA max		-	SI	-	SI	-	SI	-	
Through losses	**5 - 30 MHz**	**dB**	Single*		End		3.0		3.0	
	47 - 862 MHz						2.5		2.0	1.8
	950 - 2150 MHz						2.5		3.0	
	2150 - 2300 MHz						3.0		3.0	
Derivation losses	**5 - 30 MHz**	**dB**	0.5		2.0		10		15	16
	47 - 862 MHz		1		3.0		11.5		15	20
	950 - 2150 MHz		1		3.0		12		16	20
	2150 - 2300 MHz		1		3.0		12.5		16	22
Directivity	**5 - 30 MHz**	**dB**	-		-		15		23	25
	47 - 862 MHz		-		-		22		23	25
	950 - 2150 MHz		-		-		18		20	25
	2150 - 2300 MHz		-		-		20		20	23
Isolation	**5 - 30 MHz**	**dB**	30		30		30		25	35
	47 - 862 MHz		15		15		25		25	30
	950 - 2150 MHz		15		15		15		15	25
	2150 - 2300 MHz		18		18		25		20	30
Return losses	**5 - 862 MHz**	**dB**	10							
	950 - 2300 MHz		6							
Shielding factor	**VHF** **30 - 300 MHz**	**dB**	75							
	UHF **300 - 862 MHz**		65							
	SAT **950 - 2300 MHz**		55							
Output connectors (UNE 20-523-79)		**TV**	IEC 9.5 (m)							
		SAT	IEC 9.5 (h)							
Packing dimensions (20 u.)		**mm**	300 x 165 x 85							
Weight (20 u.)		**Kg**	2							

* BSD 201 S and BSD 201 S DC models must be connected directly to tap-off or splitter.

TV - SAT cover

MODEL		C BSD	C BSD B
Reference		**86230**	**86231**
Color		beige	white
Packing dimensions (20 u.)	**mm**	190 x 90 x 85	
Weight (20 u.)	**Kg**	0.5	

Supplement for surface mounting

MODEL		SS BT	SS BT B
Reference		**85020**	**85031**
Color		beige	white
Packing dimensions (15 u.)	**mm**	260 x 135 x 90	
Weight (15 u.)	**Kg**	0.5	

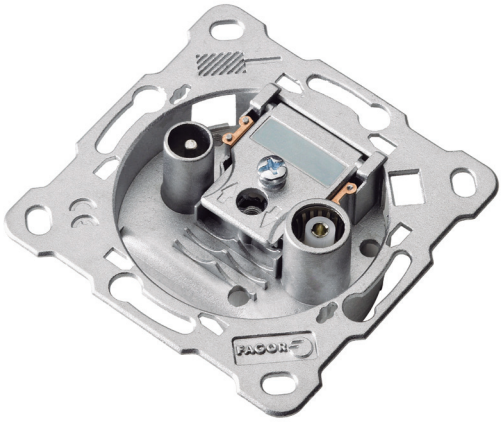
OUTLET SOCKETS

5 ÷ 2300 MHz

distribution

BSF 400 Series

2GHz outlet sockets for cascading.



APPLICATION

Suitable for renovation in inhabited housing. Assembly in series or cascade, with the bases connected to each other. Select the model according to its attenuation and the level required in the installation.

FEATURES

- Current pass-through IN-OUT and SAT output (IEC female).
- Output 5 2300 MHz on IEC male and female connectors.
- Easy installation.
- High shielding factor.

Frequency (MHz)	5	862	950	2300
TV				
SAT				

MODEL			BSF 403 DC	BSF 411 DC	BSD 416 DC	BSD 425 DC
Reference			86265	86266	86225	86227
Number of outputs			2			
Band coverage		MHz	5 ÷ 2300			
DC pass	IN-OUT 300 mA max		-	yes		
	SAT 300 mA max		yes			
Through losses	5 - 30 MHz	dB		3.0	1.4	0.9
	47 - 862 MHz	dB	End	2.5	1.2	0.9
	950 - 2150 MHz	dB	End	3.0	2.2	2.0
	2150 - 2300 MHz	dB		3.5	2.5	2.2
Derivation losses	5 - 30 MHz	dB	4.5	11	16.5	25
	47 - 862 MHz	dB	3.5			
	950 - 2150 MHz	dB	5.5			
	2150 - 2300 MHz	dB	6			
Directivity	5 - 30 MHz	dB	-	20	23	30
	47 - 862 MHz	dB		23	23	30
	950 - 2150 MHz	dB		18	20	20
	2150 - 2300 MHz	dB		16	17	20
Isolations	5 - 30 MHz	dB	5	17	17	20
	47 - 862 MHz	dB	10	20	20	25
	950 - 2150 MHz	dB	12	18	18	20
	2150 - 2300 MHz	dB	12	18	18	20
Return losses	5 - 862 MHz	dB		10		14
	950 - 2300 MHz	dB		10		
Shielding factor VHF	30 - 300 MHz	dB	75			
Shielding factor UHF	300 - 862 MHz	dB	65			
Shielding factor SAT	950 - 2300 MHz	dB	55			
Output connectors (UNE 20-523-79)		TV	IEC 9.5 (m)			
		SAT	IEC 9.5 (f)			
Packing dimensions (20 u.)		mm	300 x 105 x 85			
Weight (20 u.)		Kg	2			

TV - SAT cover

MODEL		C BSD	C BSD B
Reference		86230	86231
Color		beige	white
Packing dimensions (20 u.)	mm	190 x 90 x 85	
Weight (20 u.)	Kg	0.5	

Supplement for surface mounting

MODEL		SS BT	SS BT B
Reference		85020	85031
Color		beige	white
Packing dimensions (15 u.)	mm	260 x 135 x 90	
Weight (15 u.)	Kg	0.5	

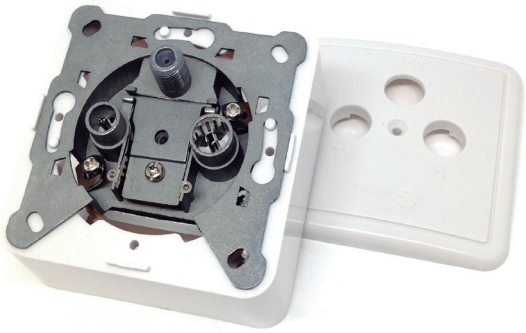
OUTLET SOCKETS

5 ÷ 2300 MHz

distribution

BSD 300 SB Series

Outlet sockets with 3 outputs TV. Radio and SAT.

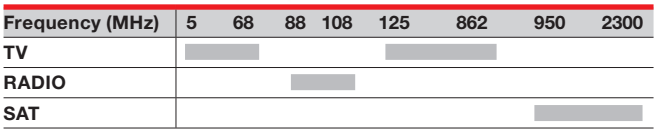


APPLICATION

Suitable for Digital TV, up to 2300 MHz in individual and community installations.

FEATURES

- The circuit has a metal (zamak) housing to achieve a high degree of shielding.
- It has a special shielding at the input and output connections, and it is designed for easy installation.
- The outlet´s directivity guarantees enough isolation between floors.
- Compatible with most of the electrical devices available.



MODEL				BSD 301 SB (End)	BSD 310 SB (Cascade)
Reference				**86236**	**86237**
Number of outputs				3 (TV / FM / SAT)	
Banda coverage			**MHz**	5 ÷ 2300	
DC pass				SAT-IN	SAT-IN / OUT-IN
Through losses		**5 - 2300 MHz**	**dB**	-	5
Derivation losses	**TV**	**5 - 68 MHz**	**dB**	1	10
		125 - 862 MHz		1.5	
	FM	**88- 108 MHz**		1	
	SAT	**950 - 2300 MHz**		2	
Isolation	**FM-TV**	**5 - 68 MHz**	**dB**	20	
		88 - 108 MHz			
		125 - 862 MHz			
	FM-SAT	**88 - 108 MHz**			
	TV-SAT	**5 - 860 MHz**			
		950 - 2300 MHz			
Output connectors			**TV**	IEC 9.5 (m)	
			FM	IEC 9.5 (f)	
			SAT	F (f)	
Packing dimensions (20 u.)			**mm**	300 x 165 x 85	
Weight (20 u.)			**Kg**	2	

COAXIAL CABLES

distribution

CCF Series

Low loss cables, manufactured with polyethylene dielectric with physical expansion to guarantee the maintenance of the characteristics over time with very slow deterioration.



APPLICATION

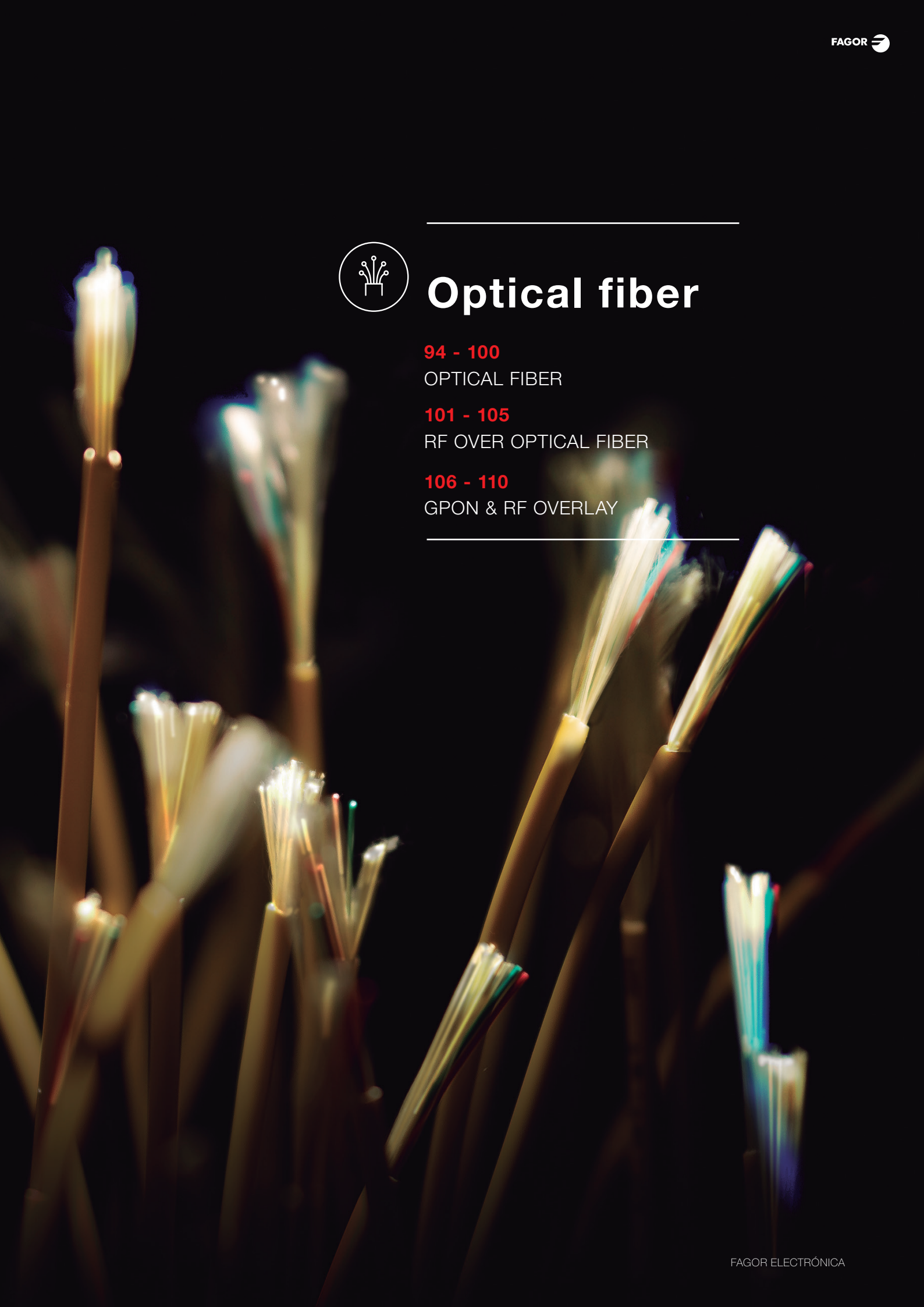
- CCF 021 CCA Dca: optimized for dispersion networks.
- CCF 019 CCA Dca and CCF 019 CCA Dca N: optimized for intra dwelling distribution.
- CCF 019 CCA Eca and CCF 019 CCA Eca N: especially suitable for home refurbishments
- CCF 020 A Eca: cable specially designed for DIGITAL SATELLITE CHANNEL installations.
- CCF 018-T A Eca: cable with high insulation against electrical noise, valid for environments such as industry.
- CCF SAT Eca: specially designed for use in 1st IF distributions.
- CCF TRA: valid for trunk installations.

FEATURES

- When distributing with cable exposed to sunlight, coaxial cable with black PE cover should be used.

MODEL			CCF 021 CCA Dca	CCF 019 CCA Dca N	CCF 019 CCA Dca	CCF 019 CCA Eca	CCF 020 A Eca	CCF 018-T A Eca	CCF 019 CCA Eca N	CCF 020 A Eca N	CCF SAT Eca	CCF 020 A Eca	CCF TRA Fca
Reference			84172	84173	84174	84125	84128	84132	84134	84138	84164	84175	84111
Coil length		m	100					500	250	100		500	250
Coil support			Cardboard					Wood	Cardboard			Wood	
Coils per pack			5					1		5		1	
CPR class			Dca. s2-d2-a2			Eca							Fca
Class			Class B	Class A			Class B	Class A+	Class A	Class B	Class A	Class B	Class A
Internal conductor	**Material**		Cu				CCS	Cu		CCS	Cu	CCS	Cu
	Diameter	mm	1.02	1.13			1.02		1.13	1.02	1.13	1.02	1.63
	Resistance	Ω/Km	22	19			80	22	19	80	19	80	19
Dielectric	**Material**		PEE										
	Diameter	mm	4.7	4.8			4.7		4.8	4.7	4.8	4.7	7.2
Shielding sheet	**Material**		Cu Al	Cu/P			Al/P/Al		Cu/P	Al/P/Al	Cu/P	Al/P/Al	
External conductor	**Material**		CCA				Al		CCA	Al	Cu	Al	CuSn
	Resistance	Ω/Km	35	30			60	22	30	60	21	60	8
External cover	**Material**		PVC white	PVC black	PVC white				PE black		PVC white		PE black
	Diameter	mm	6.7	6.8			6.6	6.7	6.8	6.9	6.8	6.6	10.1
	Min. curvature radius	mm	40				46	40		46	40	46	80
Attenuation dB/100 m	**5**	MHz	4.5				4.8	4.5	4.8		3	4.8	3.1
	100	MHz	5.8	6			6.6	5.8	6.7	6.6	6	6.6	4.4
	200	MHz	8.2	8.1			8.6	8.2	8.3	8.6	8.1	8.6	5.92
	300	MHz	10.2	10			10.2				10	10.2	7.2
	470	MHz	13.2	12.6			12.7	13.2	12.8	12.7	12.6	12.7	9.6
	600	MHz	14.8	14.3			15.1	14.8	15	15.1	14.3	15.1	10.3
	860	MHz	18.2	17.4			19.5	18.2	17	19.5	17.4	19.5	12.8
	1000	MHz	20.3	19.2			20.4	20.3	17.9	20.4	19.2	20.4	13.6
	1350	MHz	24.1	21			24.1		20	24.1	21	24.1	16.2
	1500	MHz	24.5	23			24.5		22.4	24.5	23	24.5	17.1
	1750	MHz	26.7	25.4			26.7		24.5	26.7	25.4	26.7	18.5
	2050	MHz	28.6	28.2			29.3	28.6	26.4	29.3	28.2	29.3	20
	2150	MHz	30.4	29.1			30.7	30.4	28.6	30.7	29.1	30.7	21
Shielding attenuation	**5-1000**	MHz	> 65	> 75			> 65	> 75		> 65	> 80	> 65	> 90
	1000-3000	MHz	> 55	> 65			> 55	> 65		> 55	> 75	> 55	> 85
Impedance		Ω	75										
Packing dimensions		mm	270x270x660					330x330x330	360x360x180	270x270x660		330x330x330	360x360x330
Weight		Kg	4.5/22.5	5/25			3.8/19	20	9.8	3.8/19	5/25	20	22





Optical fiber

94 - 100
OPTICAL FIBER

101 - 105
RF OVER OPTICAL FIBER

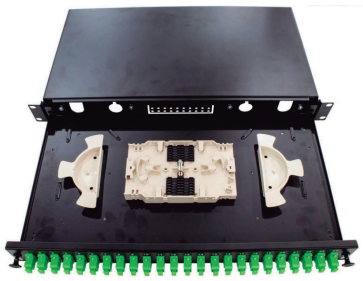
106 - 110
GPON & RF OVERLAY

OPTICAL FIBER

optical fiber

DISTRIBUTION PATCH PANEL

RPR Series



Optical Fiber distribution patch panel and cabinet used as interconnection point between the optical cables of distribution networks of the operators and the distribution network of the building. Prepared to install adapters the panels come with splices trays to load the pigtails and splice sleeves. In addition. it provides robust fiber management and protection for FTTX network construction.

APPLICATION

- Widely used in FTTH access network
- Telecommunication networks
- CATV networks
- Data communications networks
- Local area networks



FEATURES

RPR024:

- 19 inch standard 1U size, light weight and robust structure.
- Pull-out design for easy fiber and splice access.
- Includes SC/APC adapters and splices trays for 24 ports.

RPP 048:

- Multi-operator cabinet with six trays and capacity for 48 fibers.
- Allow the connection between multiple operators and clients
- Separated compartments by a distribution panel of up to 48 optical fibers that allows the installation of the cables by means of fusion or direct connection.

MODEL		RPR 024	RPR 048
Reference		**42411**	**42412**
Inputs		4 port max. Ø21mm. 20 port max. 4mm	4+2 port max. Ø18mm
Outputs		24 ports SC/APC	48 ports SC
Nº SC adapters		24 SC/APC adapters included	48 (not included)
Nº Splices/tray		2*12	6*8
Splitter PLC		No	(1:2) (1:4) (1:8) (1:16) (not included)
IP protection		IP30	
Mounting type		Rack 19" 1U pull-out design	Wall mounting
Material		Cold steel of 1.2mm	PC+ABS RAL 7035
Dimensions	**mm**	435*242*45	450*150*180
Gross Weight	**Kg**		3.2

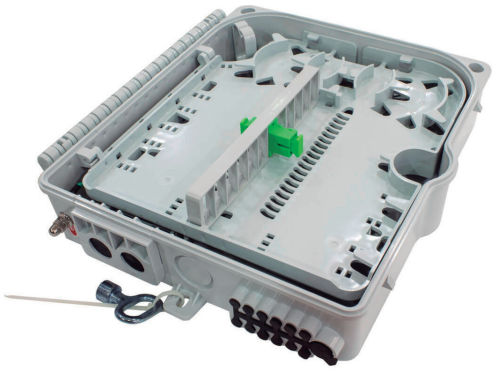
OPTICAL FIBER

optical fiber

TERMINAL BOX

RSP Series

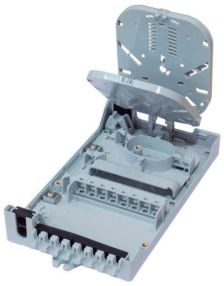
Fiber termination boxes where drop cables are connected to the riser trunk cable in FTTx fiber optic network systems. Supports fiber splicing, connection via SC/APC connectors, installation of a splitter, distribution, storage and connection of cables in a single unit.
In addition. it provides robust fiber protection and management in buildings with FTTx networks.



APPLICATION

- Widely used in FTTH access network
- Telecommunication networks
- CATV networks
- Data communications networks
- Local area networks





FEATURES

- Waterproof design with high level of protection.
- Integrated with splice tray and cable management bars.
- Manages fibers in a reasonable fiber radius condition.
- Easy to maintain and expand capacity.
- Fiber bend radius control over 40 mm.
- Optionally allows the installation of a splitter.

MODEL		RSP 008	RSP 012	RSP 024
Reference		**42401**	**42402**	**42403**
Inputs		2 port max. Ø10mm	2 port max. Ø17mm	
Outputs		8 ports max. Ø5mm	12 ports max. Ø4mm	24 ports max. Ø4mm
Nº SC adapters		8 (not included)	15 (not included)	24 (not included)
Nº Splices/tray		2 x 8	1 x 20	1 x 46
Splitter PLC		(1:2) (1:4) (1:8) (not included)		(1:2) (1:4) (1:8) (1:16) (not included)
IP protection		IP65	IP66	
Mounting type		wall		
Material		PC+ABS	PC+ABS Anti-UV	
Dimensions	mm	235 x 126 x 52	233 x 214 x 71	333 x 280 x 100
Gross Weight	Kg	0.45	0.87	1.45

OPTIC FIBER

optical fiber

TERMINAL KIT

PAU Series

Kit consisting of a fiber optic terminal box (User Access Point) with 2 outlets ports and a 2-fiber drop cable connectorized at one end (connected inside the terminal box).



APPLICATION

- Widely used in FTTH access network.
- Telecommunications networks.
- CATV networks.
- Data communications networks.
- Local area networks.

FEATURES

- 2 female SC/APC type adapters with self-closing cap included.
- Euroclass Dca -s2.d1. a1 cable.
- Wall or socket fixing by means of 2 screws and 2 plugs (included).
- Supplied in dispenser box.
- Available in various lengths.

MODELO		PAU PT 015	PAU PT 025	PAU PT 040	PAU PT 055
Reference		**42422**	**42424**	**42427**	**42430**
Inputs		ABS white color 2 ports. IP52. 100x80x23 mm			
Outputs		9/125. Single mode ITU-T G.657A2			
Fiber type		9/125. Single mode ITU-T G.657A2			
Fiber color		Red-green			
Reaction to fire	**CPR**	Dca s2.a1.d1			
Max. Attenuation	**dB**	0.4 (1310) / 0.3 (1550)			
Tensile strength	**N**	450			
Bending radius	**mm**	5 x cable diameter			
Diameter of cover	**mm**	4			
Packaging		Dispenser box 25x25x6cm			
Working temperature	**°C**	-20 to 60			
Length	**m**	15	25	40	55

OPTICAL FIBER

optical fiber

OPTICAL FIBER CABLE

CFO Series





Fiber Optic Cable composed of 2 fibers and LSFH sheath for indoor installation. Each fiber has its individual coating and is identified with a different color, allowing a better organization and facilitating the identification of each fiber, with a Euroclass CPR class D classification in terms of reaction to fire, thanks to its LSFH jacket.

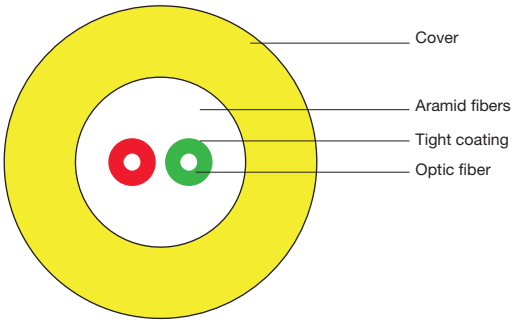
APPLICATION

Optical fiber cable for indoor use.

FEATURES

- Low attenuation.
- Includes aramid fibers (kevlar) to reinforce its structure.
- DCA Euroclass.
- Fiber type 9/125. ITU-T G.657A2.
- Diameter of the fiber tight coating: 900µm.
- Supplied in boxes of 500 m.

CABLE SECTION DETAIL



MODEL			CFO ID 002 Dca
Article number			**42501**
Cable Type			2-Fiber Indoor Optical Drop Cable
Fiber type			9/125. ITU-T G657A2
Max. attenuation		**dB/km**	0.40 (1310 nm) / 0.30 (1550 nm)
Fiber cladding	**Material**		PVC
	Diameter	**mm**	0.90 ± 0.05
Jacket	**Material**		LSFH (Low Smoke Free Halogen) and flame retardant
	Diameter	**mm**	4.0 ± 0.2
Reaction to fire		**CPR**	Dca-s2.d1.a1
Min. bending radius			5 x diameter
Traction resistance		**N**	450
Working temperature		**ºC**	-20 to 60
Supply			500 m
Cover color			PANTONE 115 C
Weight (kg/cardboard)		**Kg**	7.5
Dimensions (mm carboard)			320 x 290 x 320

OPTICAL FIBER

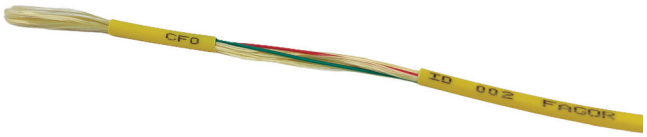
optical fiber

OPTICAL FIBER CABLE

CFO Series

Fiber Optic Cable composed of 2 fibers and LSFH sheath for indoor installation. Each fiber has its individual coating and is identified with a different color, allowing a better organization and facilitating the identification of each fiber, with a Euroclass CPR class D classification in terms of reaction to fire, thanks to its LSFH jacket.





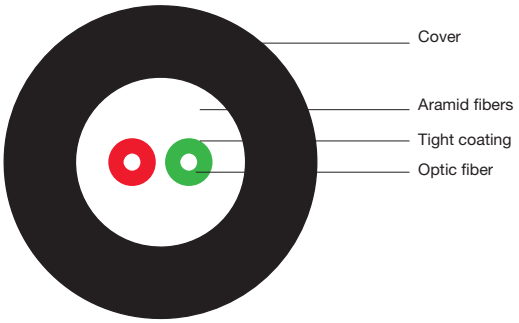
APPLICATION

Optical fiber cable for outdoor use.

FEATURES

- Low attenuation.
- Includes aramid fibers (kevlar) to reinforce its structure.
- DCA Euroclass.
- Fiber type 9/125. ITU-T G.657A2.
- Diameter of the fiber tight coating: 900µm.
- Supplied in boxes of 500 m.

CABLE SECTION DETAIL



MODEL			CFO ED 002 Dca
Article number			**42502**
Cable Type			2-Fiber Indoor Optical Drop Cable
Fiber type			9/125. ITU-T G657A2
Max. attenuation		**dB/km**	0.40 (1310 nm) / 0.30 (1550 nm)
Fiber cladding	**Material**		LSZH
	Diameter	**mm**	0.90 ± 0.05
Jacket	**Material**		LSFH (Low Smoke Free Halogen) and flame retardant
	Diameter	**mm**	4.0 ± 0.2
Reaction to fire		**CPR**	Dca-s2.d1.a1
Min. bending radius			5 x diameter
Traction resistance		**N**	450
Working temperature		**ºC**	-20 to 60
Supply			500
Cover color			black
Weight (kg/cardboard)		**Kg**	7.5
Dimensions (mm carboard)			320 x 290 x 320

OPTICAL FIBER

optical fiber

MULTIFIBER CABLE

CFO Series



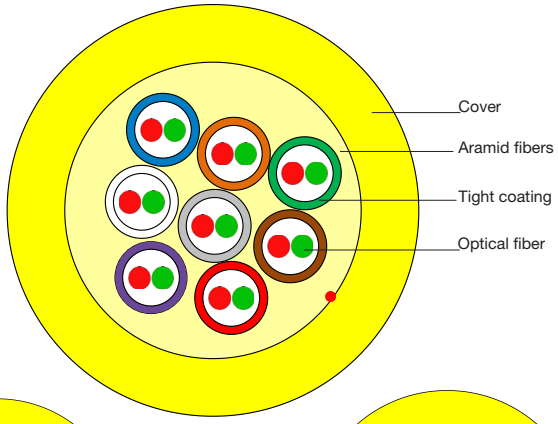
Optical fibre cable and LSFH sheath for indoor installation. Each fiber has its individual coating and is identified with a different color, allowing a better organization and facilitating the identification of each fiber. At the reaction to fire level. it has a Euroclass CPR class D classification, thanks to its LSFH jacket.

APPLICATION

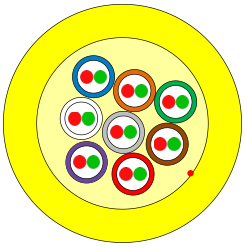
Optical fiber cable for indoor connection.

FEATURES

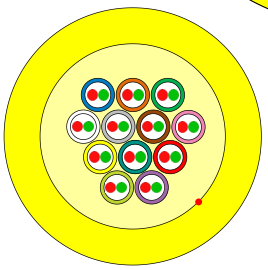
- Low attenuation.
- Includes aramid fibers (kevlar) to reinforce its structure.
- Euroclass Dca.
- Fiber type 9/125. ITU-T G.657A2.



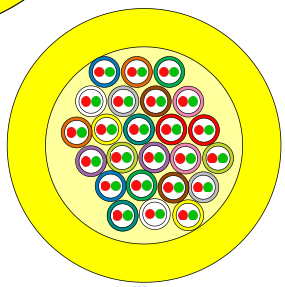
CABLE SECTION DETAIL



16 fibers



24 fibers



48 fibers

MODELO			CFO ID 016 Dca	CFO ID 024 Dca	CFO ID 048 Dca
Reference			**42503**	**42504**	**42505**
Cable type			Optica cable for indoor		
No. of fibers			16	24	48
Fiber type			9/125. ITU-T G.657A2		
Max. attenuation	**1310 nm**	**dB/km**	≤ 0.4		
	1550 nm		≤ 0.3		
Micromodule coating	**Material**		LSZH		
	Diameter	**mm**	0.90 ± 0.05		
Cover	**Material**		LSZH (Low Smoke Zero Halogen) &UV flame retardant		
	Diameter	**mm**	7.2 ± 0.3	8.4 ± 0.3	6.2 ± 0.3
Reaction to fire		**CPR**	Dca-s1.d0.a1		
Min. bending radius			10 x diameter		
Traction resistance		**N**	1000		
Working temperature		**°C**	-20 to 60		
Supply		**m**	1000	700	500
Cover color			PANTONE 115 C		
Weight		**Kg**	42	29.4	26.6
Dimensions		**mm**	520 x 350 x 520		

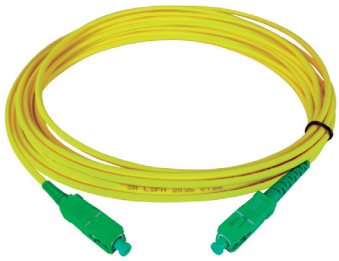
OPTICAL FIBER

optical fiber

PATCH CORDS

LFO Series

1 fiber DCa patch cords preconnectorized SC/APC at both ends. Available in various lengths. Diameter 3mm.



MODEL		LFO ID A 110	LFO ID A 115	LFO ID A 125	LFO ID A 140
Reference		42441	42442	42444	42447
Length	m	10	25	25	40

ADAPTER
CKF SA 001

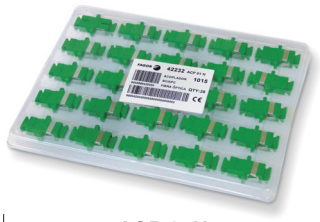
Keystone adapter for SC/APC connector.



MODEL		CKF SA 001
Reference		42088
Units per packing	m	10

ADAPTER
ACP 01N

Adapter for SC/APC connector.



MODEL		ACP 01N
Reference		42232
Units per packing	m	50

PIGTAIL
PGT 01N

One meter pigtail with one SC/APC connector.



MODEL		PGT 01N
Reference		42201
Units per packing	m	10

SLEEVE
PTR 01N

Splices sleeves



MODEL		PTR 01N
Reference		42234
Units per packing	m	100

CONNECTOR
CNR 01N

Fast SC/APC connector



MODEL		CNR 01N
Reference		42223
Units per packing	m	10

RF OVER OPTICAL FIBER

OPTICAL FIBRE TRANSMITTERS

optical fiber

COMPACT Series

Optical fiber transmitter, designed for FTTH (fiber to the home) networks.



APPLICATION

Suitable for RF signal distribution over optical fiber networks.

FEATURES

- Die-cast aluminum housing, nickel plated.
- Excellent linearity and flatness.
- Uses active GaAs amplification devices.
- Ultra low noise.
- Smaller size and easier installation
- Red LED power indication.
- LNB polarity selection via 13/18V power supply and 0/22KHz tone sending.

MODEL		ROT 310C
Reference		**88501**
INPUT/OUTPUTS		
RF input		F-female
Optical output		SC/APC
Power input		F-female
OPTICAL PARAMETERS		
Optical output power	**dBm**	10
Optical return loss	**dB**	≥45
Output wavelength	**nm**	1310
Optic fiber type		single-mode
RF PARAMETERS		
Frequency range	**MHz**	47-2150
Flatness	**dB**	±0.75
CATV input level	**dBµV**	80±5
SMATV input level	**dBµV**	70±5
CNR	**dB**	≥52
CSO	**dB**	≥60
CTB	**dB**	≥63
Return loss	**dB**	≥16
Input impedance	**Ω**	75
OTHER PARAMETERS		
Supply voltage	**VDC**	12 V
Maximum current to LNB	**mA**	500
22KHz	**KHz**	22±4
Power consumption	**W**	<2
Operating temperature	**ºC**	-5 ÷ 55
Dimensions	**mm**	100 x 98 x 28
Housing material		Aluminum alloy

RF OVER OPTICAL FIBER

OPTICAL FIBER RECEIVERS

optical fiber

COMPACT Series

Optical fiber receiver, designed for FTTH (fiber to the home) networks.



APPLICATION

Suitable for RF signal distribution over optical fiber networks.

FETAURES

- Excellent linearity and flatness.
- Incorporates high performance optical CAG.
- Valid for 1310 and 1550 nm.
- Ultra low noise.
- Smaller size and easier installation.
- Red LED for power indication.
- Green/red LED to indicate optimum optical power.

MODEL		ROR 260C
Reference		**88511**
INPUTS/OUTPUTS		
RF input		F-female
Optical output		SC/APC
Power input		F-female
OPTICAL PARAMETERS		
Response capability	**A/W**	≥0.9
Optical input power	**dBm**	-14~+3
		-7~+2 (with CAG)
Optical return loss	**dB**	≥45
Output wavelength	**nm**	1260~1600
Optical fiber type		Single mode
RF PARAMETERS		
Frequency range	**MHz**	47-860
		950-2150
Flatness	**dB**	±0.75
Output level	**dBµV**	≥80 @CATV
		≥70 @SMATV
CNR	**dB**	≥50
CSO	**dB**	≥62
CTB	**dB**	≥65
Return loss	**dB**	≥1
AGC stability	**dB**	±1
Output impedance	**Ω**	75
OTHER PARAMETERS		
Supply voltage	**VDC**	12 V
Power consumption	**W**	<2
Operating temperature	**ºC**	-5 ÷ 55
Dimensions	**mm**	75 x 63 x 17
Housing material		Aluminum alloy

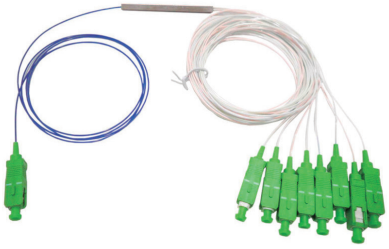
RF OVER OPTICAL FIBER

SPLITTERS PLC

optical fiber

OSP Series

Passive optical fiber signal splitters for distribution in FTTH networks.





APPLICATION

Suitable for passive optical signal distribution.

FEATURES

- SC/APC connectors.
- PLC technology.
- Minimum attenuation.
- Compact format.

MODEL		OSP 102 P	OSP 104 P	OSP 108 P	OSP 116 P	OSP 132 P
Reference		**10451**	**10452**	**10453**	**10454**	**10455**
Inputs / Outputs		1/2	1/4	1/8	1/16	1/32
Fiber type		G657A1				
Fiber length	**m**	1				
Connector type		SC / APC				
Wavelength	**nm**	1260 - 1650				
Insertion loss	**dB @ 1310 nm**	3.8	6.9	10.1	13.5	17.1
	dB @ 1490 nm	3.9	7	10.2	13.6	17.1
	dB @ 1550 nm	3.9	7	10.3	13.6	17.1
Polarization losses	**dB**	0.15				
Return loss	**dB**	>55				
Uniformity	**dB**	0.4				
Directivity	**dB**	>55				
Storage temperature.	**°C**	-40 ... +85				
Working temperature	**°C**	-40 ... +85				
Dimensions	**mm**	4 x 7 x 60			4 x 12 x 60	6 x 20 x 80

RF OVER OPTICAL FIBER

WALL-MOUNTED OPTICAL SPLITTERS

optical fiber

FOSP Series

Passive optical fibre signal splitters for distribution in FTTH networks.



APPLICATION

Suitable for optical fiber signal distribution.

FEATURES

- SC/APC connectors included.
- Minimal attenuation.
- Compact format for wall mounting.

MODEL		FOSP 108	FOSP 116
Reference		**88060**	**88060**
Inputs / Outputs		1/8	1/16
Connector type		SC / APC	
Wavelength	nm	1260 - 1650	
Insertion losses	dB @ 1310 nm	10.1	13.5
	dB @ 1490 nm	10.2	13.6
	dB @ 1550 nm	10.3	13.6
Polarization losses	dB	0.15	
Return losses	dB	>55	
Uniformity	dB	0.4	
Directivity	dB	>55	
Storage temperature	°C	-40 ... +85	
Working temperature	°C	-5 ... +55	
Dimensions	mm	217 x 125 x 35	

RF OVER OPTICAL FIBER

RACK 19” OPTICAL SPLITTERS

optical fiber

FOSR Series

Passive optical fibre signal splitters for distribution in FTTH networks.



APPLICATION

Suitable for passive optical signal distribution.

FEATURES

- SC/APC connectors included.
- Minimum attenuation.
- 19” rack format.

MODEL		FOSR 108	FOSR 116	FOSR 132	FOSR 164
Reference		**88070**	**88071**	**88072**	**88073**
Inputs / Outputs		1/8	1/16	1/32	1/64
Connector type		SC / APC			
Wavelength	**nm**	1260 - 1650			
Insertion losses	**dB @ 1310 nm**	10.1	13.5	17.1	20.2
	dB @ 1490 nm	10.2	13.6	17.1	20.2
	dB @ 1550 nm	10.3	13.6	17.1	20.2
Polarization losses	**dB**	0.15			
Return losses	**dB**	>55			
Uniformity	**dB**	0.4			
Directivity	**dB**	>55			
Storage temperature	**ºC**	-40 ... +85			
Working temperature	**ºC**	-5 ... +55			
Dimensions	**mm**	435 x 325 x 55			

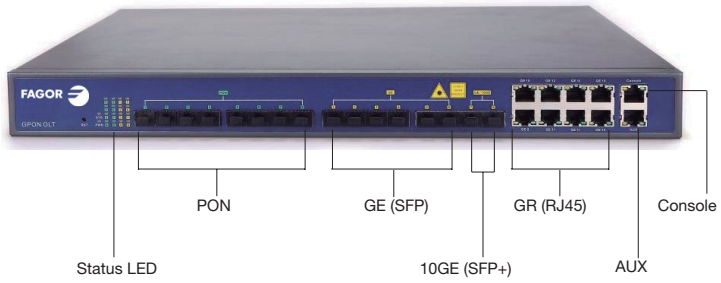
GPON & RF OVERLAY

OPTICAL LINE TERMINATION FOR GPON NETWORKS

OLT Series

optical fiber

Headend equipment for GPON networks. Intuitive Web-based configuration without the need for external systems. 8 GPON downlink ports.



FEATURES

- 6 GE SFP ports. 2 10GE SFP+ ports. 8 GE RJ45 uplink ports.
- ITU-T G.984.x and G.988 compliant.
- Remote management via SNMP/WEB/EMS.
- Speed per PON port: downstream 2.5Gbps. upstream 1.25 Gbps.
- Supports ONT auto-discovery and remote software upgrade via OMCI.
- Dual hot-swappable power supply.
- 1U 19" rack.

MODEL		OLT 880
Reference		**10421**
INPUT		
Uplink Interfaces		2 ports 10GE (SFP+) 6 ports 1GE SFP 8 ports 1GE RJ45
Management Interfaces		1 RJ45 FE AUX 1RJ45 console
CATV input power	**dBm**	-5 to 10
OUTPUT		
No. of GPON ports		8 SFP ports
No. of splitting per port		1:128
Downstream bitrate per PON	**Gbps**	2.488
Upstream bitrate per PON	**Gbps**	1.244
GPON standard		ITU-T G.984.X/G-988
Transmission distance	**km**	20
Wavelengths	**nm**	TX 1490 / RX 1310
SFP connectors		SC/UPC
Fiber type		9/125um SM
No. of VLANs		4096
VLAN management		port VLAN. tag/untag. transparent transmission. VLAN translation. QinQ
Multicast		256 IP groups. IGMP snooping
DHCP		server. relay. snooping
QoS		per port. VID. TOS and MAC
Management interface		Web/Telnet/CLI/EMS
Management port		Ethernet RJ45
Status LED		IN/OUT/POWER
Mounting		19" rack 1U
Power supply (redundant)	**Vac**	100 ÷ 240. 50-60Hz
Consumption	**W**	45
Operating temperature	**ºC**	0 ÷ 50
Storage temperature	**ºC**	-40 ÷ 85
Storage humidity	**%**	5 ÷ 90
Dimensions	**mm**	422 × 200 × 44
Weight	**Kg**	3.1

GPON & RF OVERLAY

optical fiber

OPTICAL NETWORK UNIT FOR GPON NETWORKS

ONT Series

GPON optical network terminal.



FEATURES

- Several 10/100/1000BASE-T Ethernet ports.
- 1- and 2-band Wi-Fi with transfer rates from 300 to 1200 Mbps.
- POTS port for telephony.
- Compatible with ITU-T G.984.x standard.
- Compatible with Triple play services: Internet. VoIP and IPTV.
- Maximum speed: downstream 2.5Gbps. upstream 1.25 Gbps.
- Management via OMCI. Web. SSH. TR069.

MODEL		ONT 115	ONT 112 C	ONT 412 C	ONT 425
Reference		**10433**	**10432**	**10431**	**10434**
GPON Standard		ITU-T G.984.X (G.984.5 WBF)			
Class		B+			
Wavelengths	nm	Downlink 1490 / Uplink 1310			
SFP Connectors		SC/APC			
Authentication		SN or password according to G.984.3			
Other		Flexible mapping between GEM port and TCONT			
Ethernet ports		1GE+3FE RJ45		4GE RJ45	
Router functionality		Bridging & Switching (802.1d / 802.1q) 8 traffic priorities (802.1p). VLAN filtering. IGMP multicast for IPTV			
CATV					
Bandwidth		---	54-870MHz		---
Impedance		---	75		---
TELEPHONY POTS					
REN		Max. 4 REN			
Connectors		2 RJ11		1 RJ11	
Ring tones		DTMF			
Protocols		G.711A/μ. G.729a/b. and G.722. T.30/T.38/G.711 fax mode. SIP			
WIFI SPECIFICATION					
Standard		IEEE 802.11 /b/g/n (2.4) 2x2 MIMO			IEEE 802.11 a/b/g/n/ac (2.4/5G) 2x2 MIMO
Bandwidth		300Mbps			300Mbps (2.4G). 867Mbps (5G)
Antenna		2x5dBi	2x2dBi		2x5dBi
Others		4 different SSIDs. WPS/WMM			4+4 different SSIDs. WPS/ WMM
Management interface		Web/OMCI/TR069			
Status LED		POWER/PON/LOS/LAN/ TEL/USB/WLAN/WPS	POWER/PON/LOS/LAN/TEL/USB/WLAN/WPS/CATV		POWER/PON/LOS/LAN/ TEL/USB/WLAN/WPS
Mounting		Wall and desktop			
Power supply (redundant)	V	11-14Vdc. 1.5A (AC adapter included)	11-14Vdc. 1A (AC adapter included)	11-14Vdc. 2A (AC adapter included)	11-14Vdc. 1.5A (AC adapter included)
Consumption	W	5.5	7.3	7.5	5.3
Operating temperature	°C	0 ÷ 40			
Storage temperature	°C	-40 ÷ 85			
Storage humidity	%	5 ÷ 95			
Dimensions	mm	176 x 138.5 x 28	175 x 115 x 34	173 x 120 x 30	
Weight	Kg	0.28	0.27	0.4	0.25

GPON & RF OVERLAY

OPTICAL TRANSMITTER

optical fiber

ROT Series

1550 nm optical transmitter for use in FTTH. FTTx PON. Triple-play and RF Overlay.



APPLICATION

Conversion of RF signals into amplitude-modulated optical signals for CATV HFC networks.

FEATURES

- Equipped with DFB laser. for very good linearity and high optical output power.
- Advanced multi-frequency RF predistortion technology ensures perfect CTB and CSO performance at high standard CNR value.
- Automatic gain control (AGC) enables stable output at different RF input levels.
- Different networks can be optimized by OMI adjustment.
- Automatic temperature control, which ensures a long service life of the device.
- Built-in dual backup power supply.
- Configuration of system parameters controlled by the front panel keypad or by the user-friendly web interface.
- A standard RJ45 interface is provided. which supports SNMP and WEB remote network management.

MODEL		ROT 506
Reference		**10400**
OPTICAL PARAMETERS		
Output power	**dBm**	6
Output wavelength	**nm**	1550
Laser linewidth		0.65
SMSR	**dB**	≥45
XP	**dB**	≥20
RIN	**dB/Hz**	≤-160
Optical return loss	**dB**	≥50
Fiber connector		SC/APC
RF PARAMETER		
Frequency Range	**MHz**	47-862
Input level	**dBµV**	70…100
Flatness	**dB**	±0.75
CNR	**dB**	≥51
CTB	**dB**	≥65
CSO	**dB**	≥60
Return loss	**dB**	≥16
Input impedance	**Ω**	75
RF connector		F-female
OTHER PARAMETERS		
Network management interface		SNMP and WEB
Power supply	**V**	90 ÷ 265
Power consumption	**W**	≤30
Operating temperature	**ºC**	-5 ÷ 55
Storage temperature	**ºC**	-40 ÷ 85
Operating relative humidity	**%**	5 ÷ 95
Dimension	**mm**	370 × 483 × 44
Weight	**Kg**	4.1

GPON & RF OVERLAY

OPTICAL YEDFA AMPLIFIER

optical fiber

OYA Series

Optical amplifier in rack format, compatible with EPON/GPON systems.



APPLICATION

Suitable for fiber optic signal distribution.

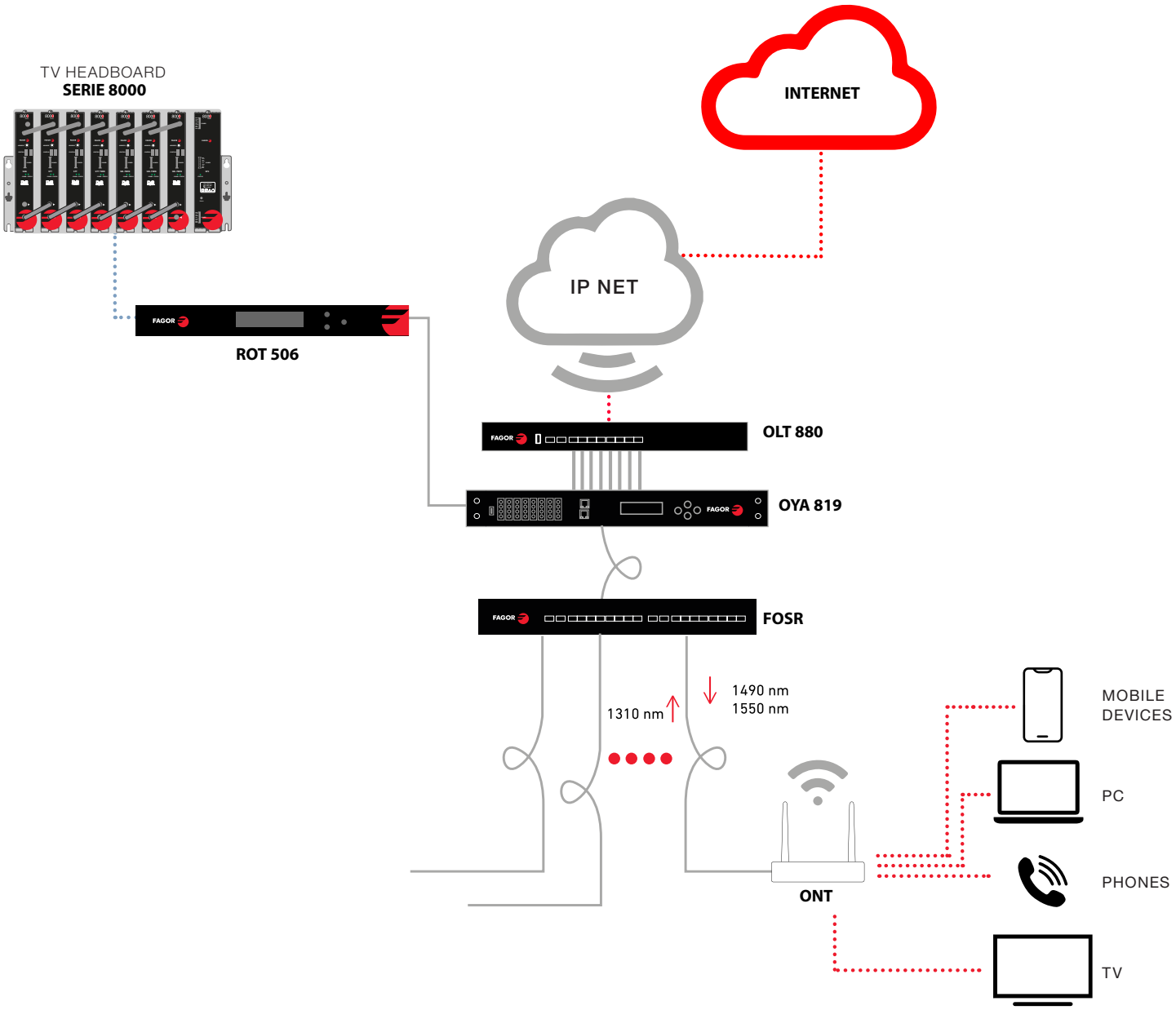
FEATURES

- 8 WDM (RF Overlay+GPON) output ports.
- Output power 8*19dBm.
- Adjustable output power from -3 to 0 dB.
- Wide input range from -5 to 10 dBm.
- Very low noise figure.
- Input/output/status/power status indicator LEDs.
- Laser Bias input level and current monitoring and alarms.
- Dual hot-swappable power supply.
- Control and monitoring via WEB/SNMP.
- 1U 19” rack.

MODEL		OYA 819
Part number		**10412**
No. of ports OLT		8
INPUT		
CATV Wavelength	nm	1540-1560
OLT Wavelength	nm	1310/1490
CATV input power	dBm	-5 a 10
OUTPUT		
Output power	dBm	8*19
Output power regulation	dB	-3 a 0
Power stability per port	dB	0.1
Noise figure (@6dBm Input)	dB	4 (max. 5.8)
INPUT-OUTPUT		
Return loss	dB	55
IN-OUT isolation	dB	30
OLT optical connectors		SC/UPC
CATV+OUT optical connectors		SC/APC
OTHER PARAMETERS		
Management interface		SNMP/WEB
Management port		Ethernet RJ45
Display and buttons		LCD/4
Status LED		IN/OUT/POWER
Mounting		19” rack 1U
Power supply (redundant)	V	90 ÷ 265
Consumption	W	≤50
Operating temperature	ºC	-5 ÷ 50
Storage temperature	ºC	-20 ÷ 85
Storage humidity	%	5 ÷ 95
Dimension	mm	483 ×422 × 44
Weight	Kg	11.5

optical fiber

TYPICAL SCHEME
GPON + RF Overlay







Cabinets and racks

CABINETS AND RACKS

CABINET

cabinets and racks

RSI Series

Cabinets built in DC01 cold rolled steel of 1mm thickness.



FEATURES

- Powder coated in oven-dried white RAL 9003.
- Incorporates lock with keys, built without hinges that allows the door to be interchangeable and can be opened to the right and to the left.
- Rear with wooden panel, to facilitate the placement of equipment and driving.

MODEL		RSI 441	RSI 511	RPR 571
Reference		**60001**	**60002**	**60003**
Dimensions	**cm**	45 x 45 x 15	55 x 100 x 15	50 x 70 x 15

CABINETS AND RACKS

19”RACKS

cabinets and racks

RAC Series

Cabinet made of cold rolled sheet metal powder coated in black RAL 9004.



FEATURES

- Removable side panels with quick locking system and housing for key lock.
- Front and rear 19” profiles adjustable in depth.
- Load capacity 60kg.
- Depth of 450mm.

MODEL		RAC 19 6U	RAC 19 9U	RAC 19 12U
Reference		**60022**	**60023**	**60024**
Dimensions	**cm**	36.8 x 60 x 45	50.1 x 60 x 45	63.5 x 60 x 45

CABINETS AND RACKS

NETWORK TERMINATION REGISTER

cabinets and racks

RTR Series

Network termination cabinet. made of cold rolled steel, hinged.



FEATURES

- Coated with RAL 9003 white oven-dried epoxy paint.
- Depth adjustable frame, to cover wall imperfections by means of adjusting screws.
- The door is equipped with vents, hinges, sliding quick release and ground sockets.
- Rear with wooden panel to facilitate the placement of equipment and conduction.

MODEL		RTR B568
Reference		**60041**
Dimensions	**cm**	50 x 60 x 8



Accessories

accessories

MALE F CONNECTOR



MODEL	CNR MF
Reference	84012
Type or cable	CCF 017/019/020/SAT or similar

ZAMAK SHIELDED CONNECTOR



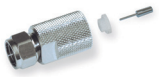
MODEL	CNR MI S	CNR HI S
Reference	84038	84039
Type of connector	IEC 9.5 (m)	IEC 9.5 (f)

SHIELDED CONNECTOR



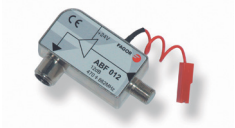
MODELO	CNR MI	CNR H
Reference	84028	84029
Type of connector	IEC 9.5 (m)	IEC 9.5 (f)

CONNECTOR



MODELO	CNR F TRN
Reference	84014
Type or cable	CCF TRN / CCF TRA

BROAD BAND AMPLIFIER (UHF)



MODEL	ABF 012
Reference	85053
Type of connector	F(f)-F(m)

1st IF SAT LINE AMPLIFIER



MODEL	AL 46
Reference	86246
Type of connector	F (f)-F (m)

ADJUSTABLE ATTENUATOR



MODEL	AT 020
Reference	85007
Type of connector	IEC (f)-IEC (m)

ADJUSTABLE ATTENUATOR



MODEL	ATV 020
Reference	85050
Type of connector	F(f)-F(f)

FIX ATTENUATOR



MODEL	FAT 010
Reference	85041
Type of connector	F(f)-F(m)

75 Ω F LOAD



MODEL	CX 75 F
Reference	84011
Type of connector	F (m)

TWO WAY SPLITTER COMBINER



MODEL	MB 021
Reference	85001
Type of connector	2 x IEC(f) - 1 x IEC (m)

TWO WAY SPLITTER COMBINER



MODEL	DB 012
Reference	85002
Type of connector	2 x IEC(f) - 1 x IEC (m)

accessories

TWO WAY SPLITTER COMBINER

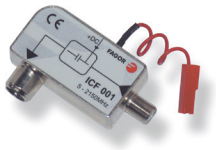
Band coverage: 5 ÷ 862 MHz
Impedance: 75 Ω
Combining losses: 4 dB
Output isolation: 22 dB



MODEL	MD 012F
Reference	85028
Type of connector	F (f)

SUPPLY INJECTOR

Suitable for amplifiers supply
Band coverage: 5 ÷ 2150 MHz
Return losses: –10 dB
Through losses: 0.5 dB
DC pass: 1 A



MODEL	ICF 001
Reference	85051
Type of connector	F(f)-F(m)

HIGH PASS FILTER

Passage band: 470÷1000 MHz
Insertion losses: 0.5 dB
Impedance: 75 Ω



MODEL	FPA 470
Reference	85042
Type of connector	F (m)-F (f)

LOADING RESISTOR

75 Ω resistor suitable for loading unused inputs / outputs.



MODEL	RC 075
Reference	85010
Type of connector	-

ADAPTER

F female-female (5 ÷ 2300 MHz) adapter.



MODEL	ADF HHS
Reference	84016
Type of connector	F(f)-F(f)

COMPRESSION MALE F CONNECTOR



MODEL	CNR MFC
Reference	85095
Type of connector	F (m)

75 Ω F-F COAXIAL BRIDGE

Rigid 75 Ω coaxial bridge for splitting or combining RF signals.

- Raster: 47.7 mm. (Ref. 8314) 8000 Series
- Raster: 48 mm. (Ref. 84031 and 84003) Multi-processing system
- Raster: 40 mm. (Ref. 84034) Nexum system


PMD FF


PMD FF N

MODEL	PMD 8000	PMD FFN
Reference	83814	84034
Type of connector	F (m) - F (m)	

SAFETY 75 OHM CHARGE



MODEL	CXA 75 F
Reference	85090
Type of connector	F (m)

F CONNECTOR COMPRESSION TOOL



MODEL	UUH 01	UCC 01
Reference	85092	85097
Type of connector	RJ 45 MALE fast mounting	RJ 45 MALE

SURGE ARRESTER 90V



MODEL	SAFE 100
Reference	85040
Type of connector	F(h)

SAFETY 75 OHM CHARGE UNBLOCKING TOOL



MODEL	UCA 01
Reference	85091
Type of connector	-

Technical notes

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TECHNICAL NOTES

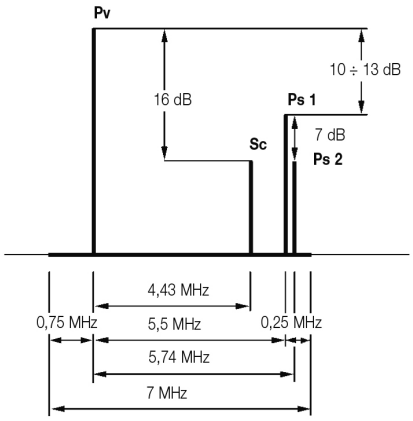
128 - 129
INDEX PER MODEL

TECHNICAL NOTES

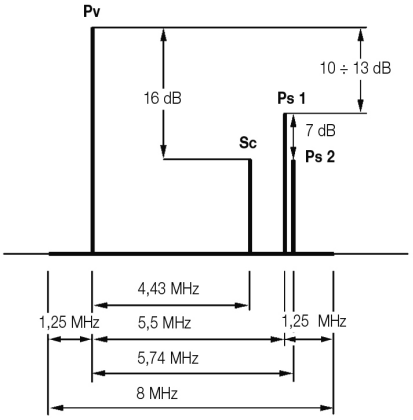
Channel assignment

TV BAND	CHANNEL	CHANNEL LIMITS	PICTURE CARRIER	AUDIO CARRIER
Standard B	**Italy**			
BI	A	52.5 - 59.5	53.75	59.25
	B	61 - 68	62.25	67.75
B (II)	C	81 - 88	82.25	87.75
B (III)	D	174 - 181	175.25	180.75
	E	182.5 - 189.5	183.75	189.25
	F	191 - 198	192.25	197.75
	G	200 - 207	201.25	206.75
	H	209 - 216	210.25	215.75
	H1	216 - 223	217.25	222.75
	H2	223 - 230	224.25	229.75
Standard D	**OIRT**			
BI	I	48.5 - 56.5	49.75	56.25
	II	58 - 66	59.25	65.75
	III	76 - 84	77.25	83.75
B (II)	IV	84 - 92	85.25	91.75
	V	92 - 100	93.25	99.75
B (III)	VI	174 - 182	175.25	181.75
	VII	182 - 190	183.25	189.75
	VIII	190 - 198	191.25	197.75
	IX	198 - 206	199.25	205.75
	X	206 - 214	207.25	213.75
	XI	214 - 222	215.25	221.75
	XII	222 - 230	223.25	229.75
Standard I	**Ireland**			
BI	A	44.5 - 52.5	45.75	51.75
	B	52.5 - 60.5	53.75	59.75
	C	60.5 - 68.5	61.75	67.75
BIII	D	174 - 182	175.25	181.25
	E	182 - 190	183.25	189.25
	F	190 - 198	191.25	197.75
	G	198 - 206	199.25	205.25
	H	206 - 214	207.25	213.25
	I	214 - 222	215.25	221.25
	J	222 - 230	223.25	229.20
Standard L	**France**			
BI	2	49.00 - 57.00	49.25	55.75
	3	53.75 - 61.75	54.00	60.50
	4	57.00 - 65.00	57.25	63.75
BIII	5	174.75 - 182.75	176.00	182.50
	6	182.75 - 190.75	184.00	190.50
	7	190.75 - 198.75	192.00	198.50
	8	198.75 - 206.75	200.00	206.50
	9	206.75 - 214.75	208.00	214.50
	10	214.75 - 222.75	216.00	222.50

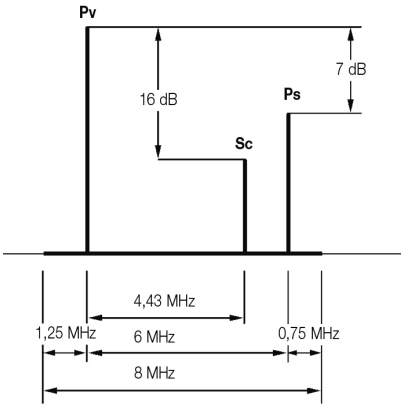
STANDARD B



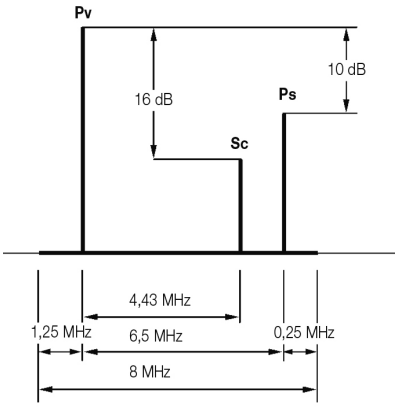
STANDARD D



STANDARD I



STANDARD L



TECHNICAL NOTES

CCIR standards

CCIRR-Standard		B	D	G	H	I	K	L	M	N
Number of lines		625								
Channel width		7	8						6	
Video bandwidth	MHz	5	6	5		5.5	6		4.2	
Video-sound spacing		+5.5	+6.5	+5.5		+6	+6.5		+4.5	
Vestigial sideband	MHz	0.75		1.25			0.75	1.25	0.75	
Video modulation		Neg.						Pos.	Neg.	
Sound modulation		FM						AM	FM	

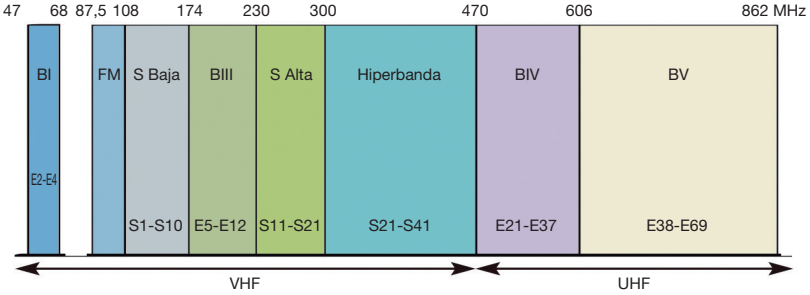
COUNTRY	VHF	UHF	TV STANDARD
Argelia	B	H	PAL
Argentina	N	N	PAL-N
Australia	B	H	PAL
Austria	B	G	PAL
Bahrein	B	G	PAL
Belgium	B	H	PAL
Bulgary	D	K	SECAM
China	D	K	PAL
Cyprus	B	G	PAL/SECAM
Czech Rep.	D	K	SECAM
Denmark	B	G	PAL
Egypt	B	G, H	SECAM
Finland	B	G	PAL
France	L	L	SECAM
Germany	B	G	PAL
Gibraltar	B	G	PAL
Great Britain	I	I	PAL
Greece	B	G	SECAM
Holland	B	G	PAL
Hong Kong	I	I	PAL
Hungary	D	K	SECAM
Iceland	B	G	PAL
India	B	-	PAL
Indonesia	B	-	PAL
Irak	B	-	SECAM
Iran	B	G	SECAM
Ireland	I	I	PAL
Israel	B	G	PAL
Italy	B	G	PAL
Japan	M	M	NRSC
Jordan	B	G	PAL
Korea	M	-	NTSC
Kuwait	B	G	PAL
Lebanon	B	-	SECAM
Libya	B	H	SECAM

COUNTRY	VHF	UHF	TV STANDARD
Luxembourg	B/L	G/L	SECAM/PAL
Malaysia	B	G	PAL
Malta	B	H	PAL
Mexico	M	M	NTSC
Monaco	E	L/G	SECAM/PAL
Morocco	B	H	SECAM
Nigeria	B	G	PAL
Norway	B	G	PAL
Oman	B	G	PAL
Pakistan	B	G	PAL
Philippines	M	M	NTSC
Poland	D	K	SECAM
Portugal	B	G	PAL
Quatar	B	G	PAL
Romania	D	K	PAL
Russia	D	K	SECAM
Saudi Arabia	B	G	PAL/SECAM
Singapore	B	G	PAL
Southafrica	I	I	PAL
Spain	B	G	PAL
Sri Lanka	B	-	PAL
Sweden	B	G	PAL
Switzerland	B	G	PAL
Syria	B	-	SECAM
Thailand	B/M	-	PAL
Tunisia	B	G	SECAM
Turkey	B	G	PAL
U.A.E.	B	G	PAL
U.S.A.	M	M	NTSC
Yemen	B	-	PAL
Yugoslavia	B	G	PAL

CCIR = Comité Consultatif International des Radiocommunications
PAL = Phase Alternation Line
SECAM = Séquentielle à mémoire
NTSC = National Television System Commitee

TECHNICAL NOTES

Frequency allocations



Channels according to CCIR. B. G. I (EUROPE) standards

CHAN-NEL	CHANNEL BANDWIDTH	VIDEO (B)	AUDIO (B)	FREC. CENTRAL
	MHz			
VHF Band I				
2	47...54	48.25	53.75	50.5
3	54...61	55.25	60.75	57.5
4	61...68	62.25	67.75	64.5
VHF Band S (low)				
S1	104...111	105.25	110.75	107.5
S2	111...118	112.25	117.75	114.5
S3	118...125	119.25	124.75	121.5
S4	125...132	126.25	131.75	128.5
S5	132...139	133.25	138.75	135.5
S6	139...146	140.25	145.75	142.5
S7	146...153	147.25	152.75	149.5
S8	153...160	154.25	159.75	156.5
S9	160...167	161.25	166.75	163.5
S10	167...174	168.25	173.75	170.5
VHF Band S (high)				
S11	230...237	231.25	236.75	233.5
S12	237...244	238.25	243.75	240.5
S13	244...251	245.25	250.75	247.5
S14	251...258	252.25	257.75	254.5
S15	258...265	259.25	264.75	261.5
S16	265...272	266.25	271.75	268.5
S17	272...279	273.25	278.75	275.5
S18	279...286	280.25	285.75	282.5
S19	286...293	287.25	292.75	289.5
S20	293...300	294.25	299.75	296.5
VHF Hyperband				
S21	302...310	303.25	308.75	306
S22	310...318	311.25	316.75	314
S23	318...326	319.25	324.75	322
S24	326...334	327.25	332.75	330
S25	334...342	335.25	340.75	338
S26	342...350	343.25	348.75	346
S27	350...358	351.25	356.75	354
S28	358...366	359.25	364.75	362
S29	366...374	367.25	372.75	370
S30	374...382	375.25	380.75	378
S31	382...390	383.25	388.75	386
S32	390...398	391.25	396.75	394
S33	398...406	399.25	404.75	402
S34	406...414	407.25	412.75	410
S35	414...422	415.25	420.75	418
S36	422...430	423.25	428.75	426
S37	430...438	431.25	436.75	434
S38	438...446	439.25	444.75	442
S39	446...454	447.25	452.75	450
S40	454...462	455.25	460.75	458
S41	462...470	463.25	468.75	468

CANAL	CHANNEL BANDWIDTH	VÍDEO G. I	AUDIO G	AUDIO I	FREC. CENTRAL
	MHz				
UHF					
21	470...478	471.25	476.75	477.25	474
22	478...486	479.25	484.75	485.25	482
23	486...494	487.25	492.75	493.25	490
24	494...502	495.25	500.75	501.25	498
25	502...510	503.25	508.75	509.25	506
26	510...518	511.25	516.75	517.25	514
27	518...526	519.25	524.75	525.25	522
28	526...534	527.25	532.75	533.25	530
29	534...542	535.25	540.75	541.25	538
30	542...550	543.25	548.75	549.25	546
31	550...558	551.25	556.75	557.25	554
32	558...566	559.25	564.75	565.25	562
33	566...574	567.25	572.75	573.25	570
34	574...582	575.25	580.75	581.25	578
35	582...590	583.25	588.75	589.25	586
36	590...598	591.25	596.75	597.25	594
37	598...606	599.25	604.75	605.25	602
38	606...614	607.25	612.75	613.25	610
39	614...622	615.25	620.75	621.25	618
40	622...630	623.25	628.75	629.25	626
41	630...638	631.25	636.75	637.25	634
42	638...646	639.25	644.75	645.25	642
43	646..654	647.25	652.75	653.25	650
44	654...662	655.25	660.75	661.25	658
45	662...670	663.25	668.75	669.25	666
46	670...678	671.25	676.75	677.25	674
47	678...686	679.25	684.75	685.25	682
48	686...694	687.25	692.75	693.25	690
49	694...702	695.25	700.75	701.25	698
50	702...710	703.25	708.75	709.25	706
51	710...718	711.25	716.75	717.25	714
52	718...726	719.25	724.75	725.25	722
53	726...734	727.25	732.75	733.25	730
54	734...742	735.25	740.75	741.25	738
55	742...750	743.25	748.75	749.25	746
56	750...758	751.25	756.75	757.25	754
57	758...766	759.25	764.75	765.25	762
58	766...774	767.25	772.75	773.25	770
59	774...782	775.25	780.75	781.25	778
60	782...790	783.25	788.75	789.25	786
61	790...798	791.25	796.75	797.25	794
62	798...806	799.25	804.75	805.25	802
63	806...814	807.25	812.75	813.25	810
64	814...822	815.25	820.75	821.25	818
65	822...830	823.25	828.75	829.25	826
66	830...838	831.25	836.75	837.25	834
67	838...846	839.25	844.75	845.25	842
68	846...854	847.25	852.75	853.25	850
69	854...862	855.25	860.75	861.25	858

TECHNICAL NOTES

Conversion table

µV 75 Ω	dBµV	dBm
1	0	-109
1.5	3.5	-105.5
2	6	-103
2.5	8.0	-101
3	9.5	-99.5
3.5	11	-98
4	12	-97
4.5	13	-96
5	14	-95
6	15.5	-93.5
7	17	-92
8	18	-91
9	19	-90
10	20	-89
15	23.5	-85.5
20	26	-83
25	28	-81
30	29.5	-79.5
35	31	-78
40	32	-77
45	33	-76
50	34	-75
60	35.5	-73.5
70	37	-72
80	38	-71
90	39	-70
100	40	-69
150	43.5	-66.5
200	46	-63
250	48	-61
300	49.5	-59.5
350	51	-58
400	52	-57
450	53	-56
500	54	-55
600	55.5	-53.5
700	57	-52
800	58	-51
900	59	-50

mV 75 Ω	dBµV	dBm
1	60	-149
1.5	63.5	-45.5
2	66	-43
2.5	68	-41
3	69.5	-39.5
3.5	71	-38
4	72	-37
4.5	73	-36
5	74	-35
6	75.5	-33.5
7	77	-32
8	78	-31
9	79	-30
10	80	-29
15	83.5	-25.5
20	86	-23
25	88	-21
30	89.5	-19.5
35	91	-18
40	92	-17
45	93	-16
50	94	-15
60	95.5	-13.5
70	97	-12
80	98	-11
90	99	-10
100	100	-9
150	103.5	-5.5
200	106	-3
250	108	-1
300	109.5	+0.5
350	111	+2
400	112	+3
450	113	+4
500	114	+5
600	115.5	+6.5
700	117	+8
800	118	+9
900	119	+10
1.000	120	+11

V 75 Ω	dBµV	dBm
1	120	+11
1.5	123.5	+14.5
2	126	+17
2.5	128	+19
3	129.5	+20.5
3.5	131	+22
4	132	+23
4.5	133	+24
5	134	+25
6	135.5	+26.5
7	137	+28
8	138	+29
9	139	+30
10	140	+31

Relación tensión/dB

x(–)	dB	(+) x
1.0	0.0	1.0
0.94	0.5	1.06
0.89	1	1.12
0.84	1.5	1.19
0.8	2	1.25
0.75	2.5	1.33
0.71	3	1.41
0.67	3.5	1.5
0.63	4	1.6
0.6	4.5	1.67
0.56	5	1.78
0.53	5.5	1.88
0.5	6	2.0
0.47	6.5	2.12
0.45	7	2.24
0.42	7.5	2.37
0.4	8	2.5
0.38	8.5	2.66
0.35	9	2.82
0.33	9.5	3.0
0.32	10	3.16
0.28	11	3.55
0.25	12	4.0
0.22	13	4.5
0.2	14	5.0
0.18	15	5.62
0.16	16	6.3
0.14	17	7.1
0.125	18	8.0
0.11	19	8.9
0.10	20	10.0
0.89	21	11.2
0.08	22	12.5
0.071	23	14.1
0.063	24	16.0
0.056	25	17.8
0.05	26	20.0
0.045	27	22.4
0.04	28	25.0
0.035	29	28.2
0.032	30	31.6
0.028	31	35.5
0.025	32	40
0.022	33	45
0.02	34	50
0.018	35	56
0.016	36	63
0.014	37	71
0.0125	38	80
0.011	39	89
0.010	40	100
0.0056	45	178
0.0032	50	316
0.0018	55	562
0.001	60	1.000

Broad band amplifiers

Reduction of the output level for broadband amplifiers according to the number of channels.

Nr. of digital channels		2	4	5	6	8	16	24	32	64
Reduction of the output level (Rc)	dB	-3	-6	-7	-8	-9	-12	-14	-15	-18

Nr. of analogue channels		2	4	5	6	8	16	24	32	64
Reduction of the output level (Rc)	dB	0	-3	-4	-5	-6	-9	-11	-12	-15

Cascade amplification

Reduction of output level for broadband amplifiers according to the number of cascade amplifiers in the system.

Nr. of amplifiers		-	2	3	4	5	6	7
Reduction of the output level (R_A)	dB	0	3	4.8	6	7	7.8	8.5

The output level of the amplifiers must be reduced according to the table above to keep the intermodulation products at the same level.

$N_O = N_S - R_C - R_A$
N_O = Max. operating level.
N_S = Output level (DIN 45004 B. IM3 –60 dB).
R_C = Reduction by nr. of channels.
R_A = Reduction by nr. of amplifiers

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