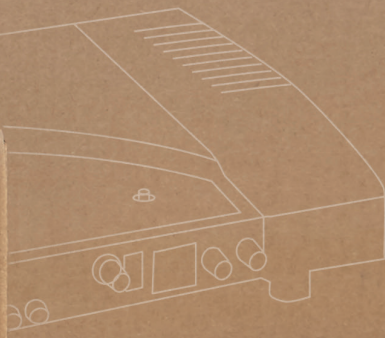
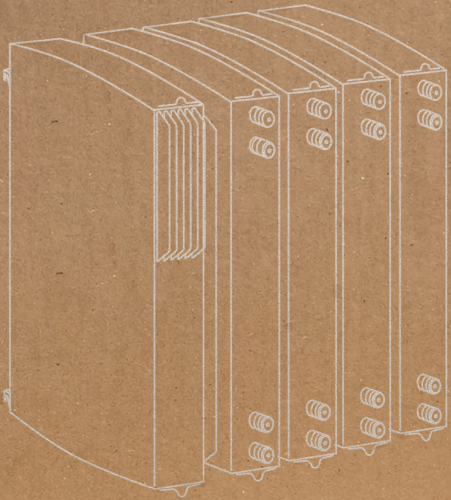
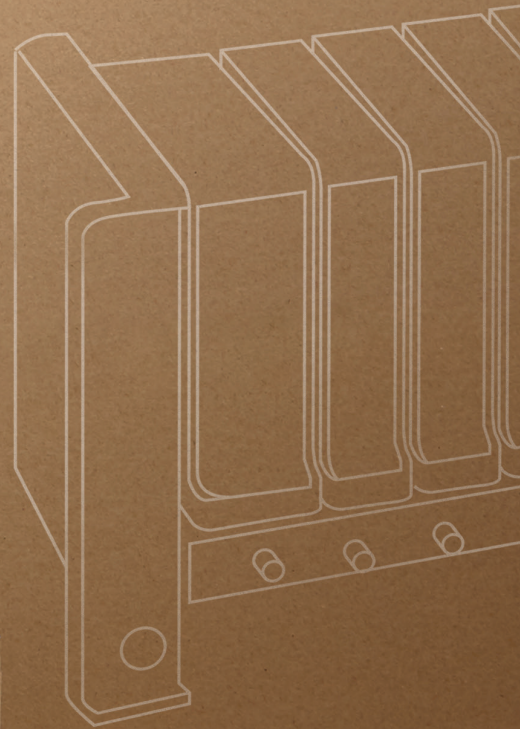




IKUSI
velatia

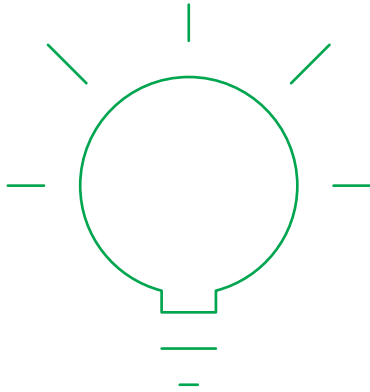


MULTIMEDIA CATALOGUE

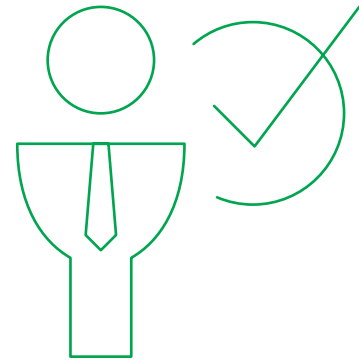


2017

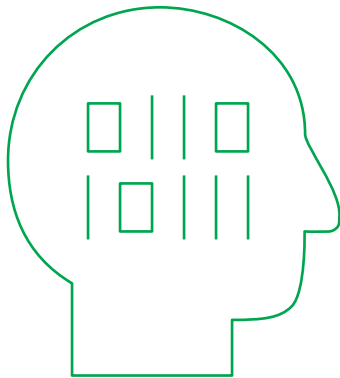
Ikusi Multimedia: Innovative technology for video & TV signal



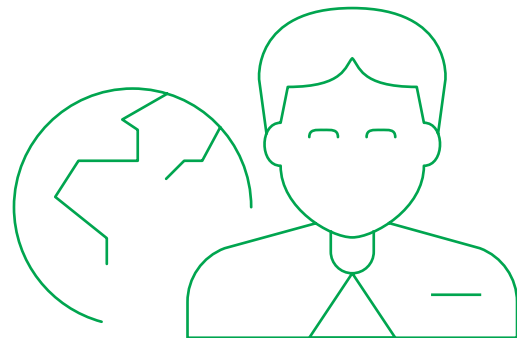
We are experts in innovative and high technology solutions for the reception, processing and distribution of television channels and video, aimed at operators, installers and integrators and to the professional electronic equipment distribution sector.



Our clients' targets become our own and we establish long term relations with these clients, with solid foundations, based on the creation of a common area and a strong commitment to sharing the same vision.



To turn our proposal into reality, we have a highly qualified professional team (technical, sales and R&D services) that we place at our clients' service.



Ikusi Multimedia forms part of Ikusi, a technological company specialising in technological solutions and applications that give greater intelligence and efficiency to areas such as security in infrastructures, road traffic and railway mobility, airports and cities: it designs, develops and manufactures products aimed at multimedia and remote control environments and it is a renowned integrator for telecommunications and IT networks.

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Us!

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television@ikusi.com
www.ikusi.tv



IKUSI
velatia

Reception Headends Distribution

Reception

Terrestrial **NEW**



HDT Antennas series (FLASHD type)
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Headends

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Headends

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HTL-STC

DVB-T/T2/S/S2/C ▶ DVB-T/C
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HTL-TT2

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HTL-ST2

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Ikusi Flow



Flow

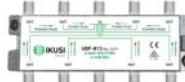
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Optical LNB

NUEVO



OPTICAL-LNB

ODU32-KIT

QUAD-GTU

QUATRO-GTU

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ODU-32

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Optical LNB **NUEVO**



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Reception

FLASHD antennas

NEW PRODUCT

1st & 2nd
Dividend



HDT618V

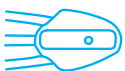
Antennas adapted to the new TV spectrum, rejecting LTE band interference.



Fully assembled

I-FIX

Automatic bracket



Instant opening with the touch of a button



Without tools



LTE rejection

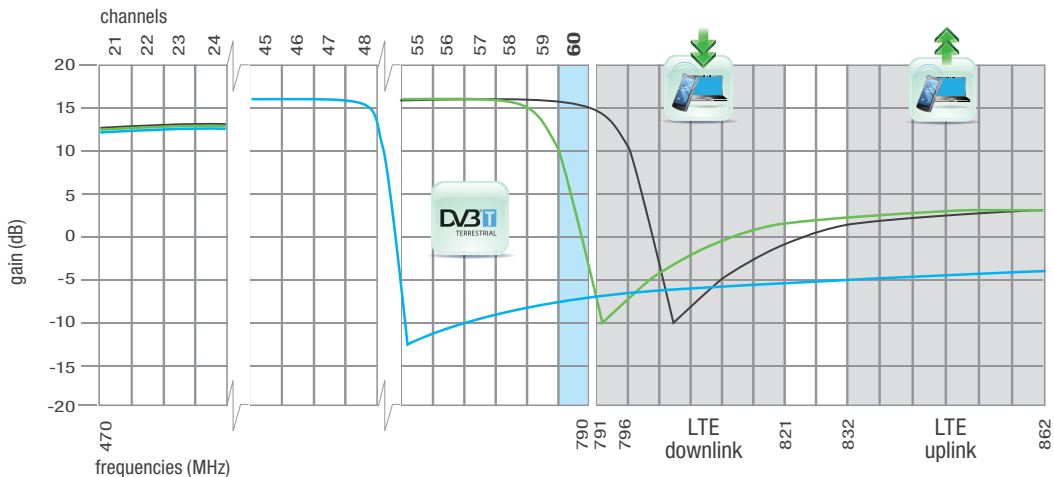


100% recyclable

Complete solution for receiving terrestrial TV signals.

FLASHD LTE gain diagrams

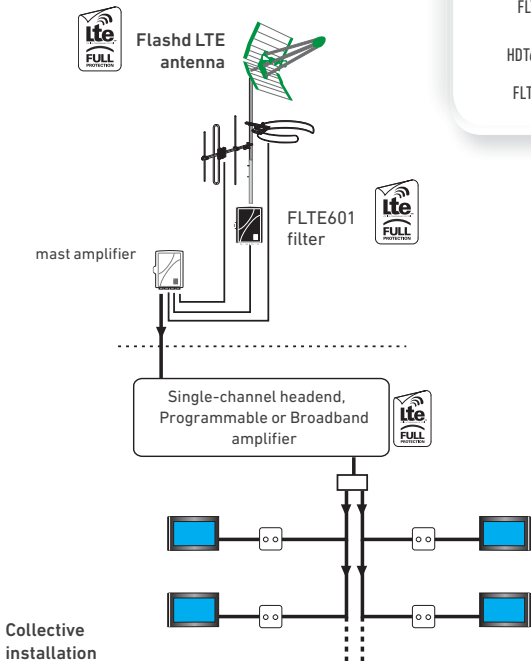
- HDT618 antenna gain diagram (21 - 60 channels)
- HDT818 antenna gain diagram (21 - 58 channels)
- HDT694 antenna gain diagram (21 - 48 channels)



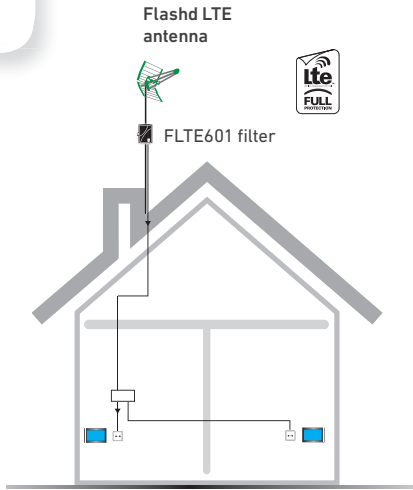
Installation example

Prevention Solutions against LTE signals

- | | |
|--|--|
| HDT694 antenna | • In installations with channel 48 |
| HDT818 antenna
or
FLTE601 filter | • In case of NOT having channels 59 and 60 |
| HDT618 antenna
+
FLTE601 filter | • In installations with channels 59 or 60
• Proximity of 4G mobile base station |



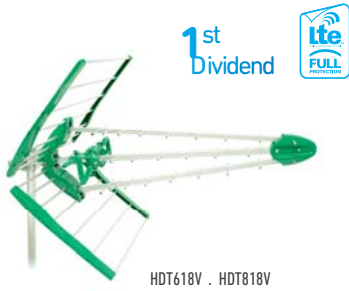
Collective installation



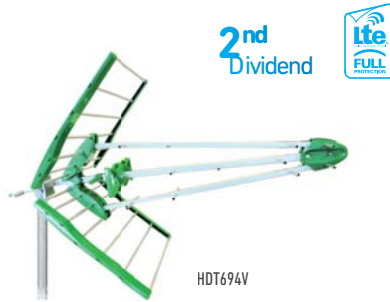
Single-family installation

Antennas FLASHD. HDT Series

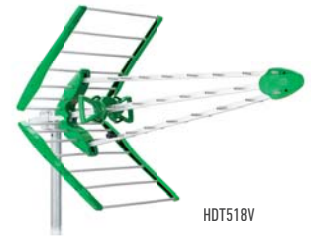
NEW PRODUCT



HDT618V . HDT818V



HDT694V



HDT518V

- Adapted models 1st and 2nd Digital Dividend.
- The key feature of the new Flashd LTE antennas is that they provide a strong rejection of LTE while maintaining current gains, very often without the need to incorporate a filter.
- Designed to help avoid the saturation of active equipment by LTE signals, rejecting frequencies above 694 and 790 MHz.
- HDT618. The antenna frequency response is cut off at channel 60.
- HDT818. The antenna frequency response is cut off at channel 58.
- HDT694. The antenna frequency response is cut off at channel 48.
- Supplied fully assembled.

- Unfold with a simple press of a button.
- Installed with one hand by means of *i-fix* automatic clamping.
- Passive compact dipole. Dihedral reflector, all aluminium parts.
- Fixed to masts of 25 to 50 mm. Adjustable tilt angle $\pm 40^\circ$.
- ABS enclosure with IP55 protection rating. Easy disassembly for fast coaxial cable connection.

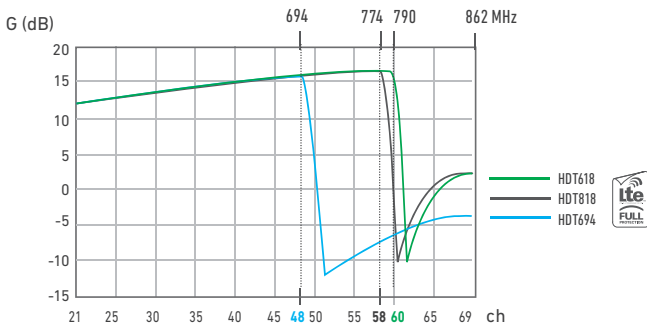
FLASHD LTE

MODEL		HDT618V	HDT818V	HDT694V
REF.		1808	1810	1812
Channels		21 - 60 (470-790 MHz)	21 - 58 (470-774 MHz)	21 - 48 (470-694 MHz)
Nominal gain	dB	17		
Front-to-back ratio	dB	≥ 20		
Beamwidth	H / V	40° / 50° (470 MHz) 55° / 65° (670 MHz)		
Windload	N	130 Km/h : 105 150 Km/h : 150		
Length	cm	105		
Quantity boxed		1		
Color		green		

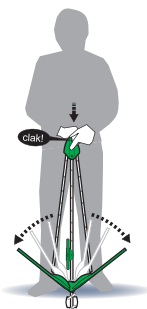
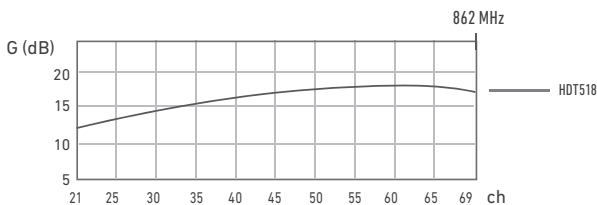
FLASHD

MODEL		HDT518V
REF.		1795
Channels		21 - 69 (470-862 MHz)
Nominal gain	dB	17.5
Front-to-back ratio	dB	≥ 20
Beamwidth	H / V	40° / 50° (470 MHz) 55° / 65° (670 MHz) 25° / 30° (860 MHz)
Windload	N	130 Km/h : 105 150 Km/h : 150
Length	cm	105
Quantity boxed		1
Color		green

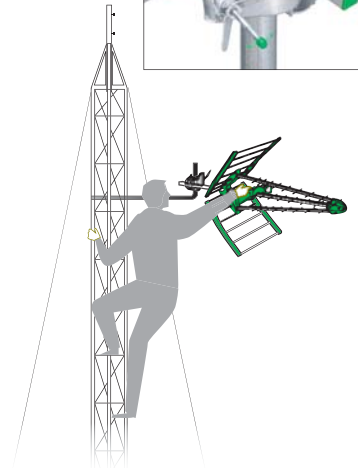
Gain diagrams



Gain diagrams



HDT antennas series
Unfolded by simply pressing a button!



Fastening with one hand!

Antennas FLASHD. HDT Series

NEW PRODUCT



- The smallest antenna range FLASHD for reception of TV signals in the UHF band, formed by a dihedral reflector made up of four aluminium tubes and a dipole (the same as the one in the FLASHD antenna).
- For vertical and horizontal polarization, allowing variation of elevation angle.
- Minimum packaging volume for transport and easy assembly without tools.
- Versatility in the pallet from 30cm to the desired height, in increments of 10cm
- Cable connection: F type connector. 1 screw-on plug and 1 rubber protection cap are supplied.
- Clamping system for masts Ø 25 to 50 mm

FLASHD COMPACT

MODEL	HDT513V		HDTC790V	
REF.	1803		1811	
Channels	21 - 69 (470-862 MHz)		21 - 60 (470-790 MHz)	
Nominal gain	dB	13		
Front-to-back ratio	dB	≥ 16		
Beamwidth	H / V	60° / 80°		
Windload	N	130 Km/h : 18 150 Km/h : 23		
Length	cm	80		
Quantity boxed	10			
Color	green			

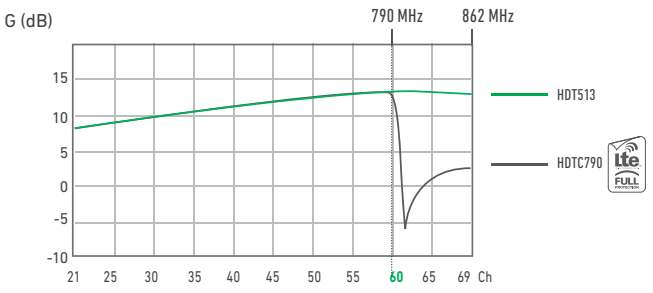
FLASHD NANO

MODEL	HDT511V		HDTN790V	
REF.	1800		1813	
Channels	21 - 69 (470-862 MHz)		21 - 60 (470-790 MHz)	
Nominal gain	dB	12		
Front-to-back ratio	dB	≥ 16		
Beamwidth	H / V	60° / 80°		
Windload	N	130 Km/h : 15 150 Km/h : 20		
Length	cm	50		
Quantity boxed	5			
Color	green			

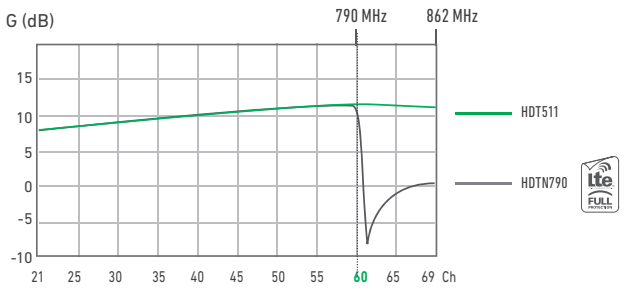
Antennas designed for installation in ...



Gain diagrams



Gain diagrams



FM radio antennas



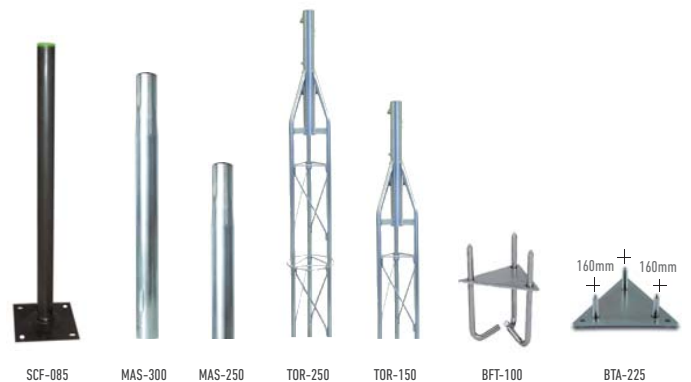
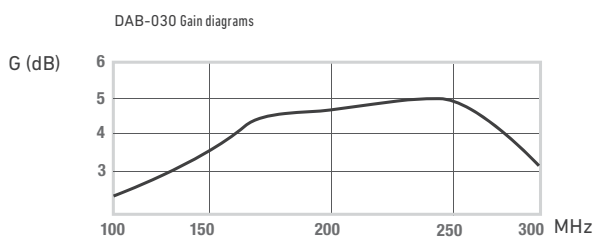
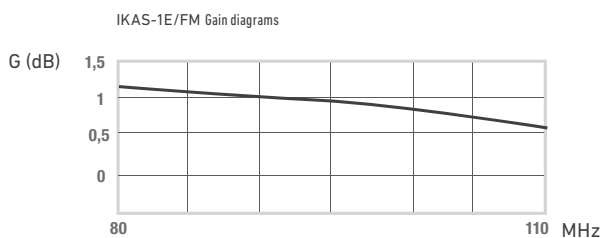
MODEL		IKS-1E/FM	DAB-030
REF.		1725	1730
Frequency range	MHz	88 - 108	174 - 240
Gain	dB	1	5
Front-to-back ratio	dB	0	10
Windload (for velocities 130/150 km/h)	N	28/38	15/20
Quantity boxed		5	5

- IKS-1E/FM antenna is circular type. Omnidirectional terrestrial reception FM (band II).
- DAB Yagi antenna type (3 items) is for receiving digital radio signals.

Masts and supports



MODEL	REF.	DESCRIPTION
KMV-100	1888	Wind set. Steelwire 25m, rigging screw, wirelock, for Ø 30-35 mm masts
GME-200	1886	Wall support bracket for Ø ≤45 mm masts
BMA-200	1887	Single angle pipe with 4 screws plate and polythene cap
GMA-400	1911	Wall-screwing clamp, length 40 cm for Ø ≤45 mm masts
BBT-100	1913	Titable ridge-tale base for Ø30 to 35 mm masts
BAP-200	1949	Hooked-support for SCF-085. Plate 200x200x2 mm and four M12 treaded hooks
SPA-240	3071	Wall-fixing "U" type. Wind of the arm: 24 cm. Pipe of Ø40 mm made of galvanized steel



MODEL	REF.	DESCRIPTION
SCF-085	1067	Ground-fixing "column" type. Height 90cm. Pipe of Ø50mm. Base 200x200 mm
MAS-300	1941	Plug-in mast 3m length x 40mm Ø. Thickness 2 mm
MAS-250	1880	Plug-in mast 2.5m length x 35mm Ø. Thickness 1,5 mm
TOR-250	1942	Trestle-power 2.5m. Top end adapted for housing the point mast
TOR-150	1944	Trestle-power 1.5m. Top end adapted for housing the point mast
BTA-225	1950	Screwed, triangular fixed base side 225mm. Three bolts for securing
BFT-100	1876	Hooked, triangular fixed base side 225mm. Three bolts for securing

Satellite dishes-offset type. RPA Series

NEWPRODUCT



MODEL		RPA-060	RPA-080	RPA-100	RPA-120
REF.		3065	3067	3069	3060
Diameter	mm	632 x 583	779 x 845	1032 x 952	1245 x 1348
Frequency range	GHz	10.5 - 13	10.5 - 13	10.5 - 13	10.5 - 13
Gain 12,75 GHz	dB	36.4	38.5	40.3	42.4
Disk coating		Grey polyester	Grey polyester	Grey polyester	Grey polyester
Mast clamp diameter	mm	25 / 50	30 / 60	35 / 60	40 / 60
Elevation angle	°	0 - 90	0 - 58	0 - 90	0 - 90
Structure material		Galvanized steel	Galvanized steel	Galvanized steel	Galvanized steel
Total weight (ud)	kg	2.40	4.91	8.40	13.30

LNBS. UEU Series

NEWPRODUCT



MODEL		UEU-121K	UEU-221K	UEU-421K	UEU-124K
REF.		1113	3083	1112	1114
Type		UNIVERSAL	TWIN	QUAD	QUATTRO
Input frequency	GHz	10.70 - 12.75			
Local oscillator	GHz	Low band 9.75 High band 10.60			
Output frequency	MHz	950 - 2150			
Phase noise at 10 kHz	dBc/Hz	-80			
Gain	dB	60 (±2)			
Noise figure typ	dB	0,2	0,32	0,2	0,2
IF output		1 (VL or VH or HL or HH)	2 (VL or VH or HL or HH)	4 (VL or VH or HL or HH)	4 (VL) (VH) (HL) (HH)
Control tone		low band 0 Hz high band 22 kHz	low band 0 Hz high band 22 kHz	low band 0 Hz high band 22 kHz	low band 0 Hz high band 22 kHz
Consumption	mA	100	190	210	190
Relative humidity	%	0 - 95	0 - 95	0 - 95	0 - 95
Power supply	VDC	vert.: 11 - 14 hor.: 16 - 20	vert.: 11 - 14 hor.: 16 - 20	vert.: 11 - 14 hor.: 16 - 20	vert.: 11 - 14 hor.: 16 - 20

Mast amplifier

SBA Series

1st & 2nd
Dividend



Mast amplifiers and power supplies



Individual installations



Optimum design for very low operative noise figure



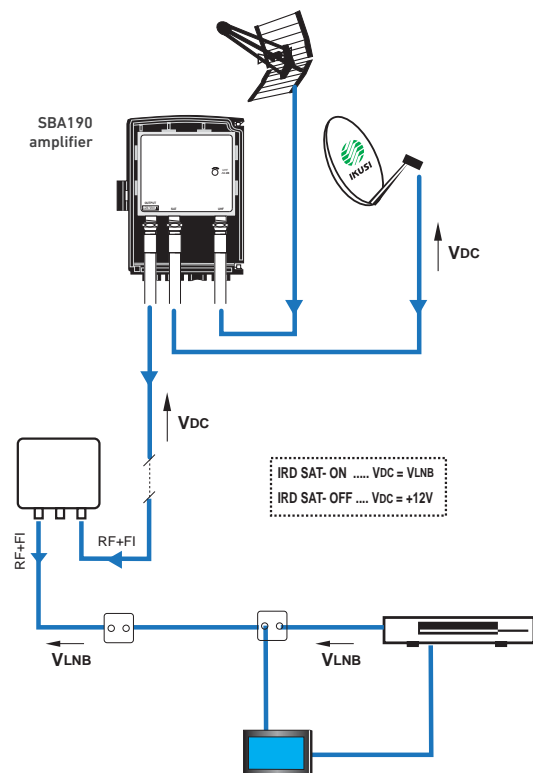
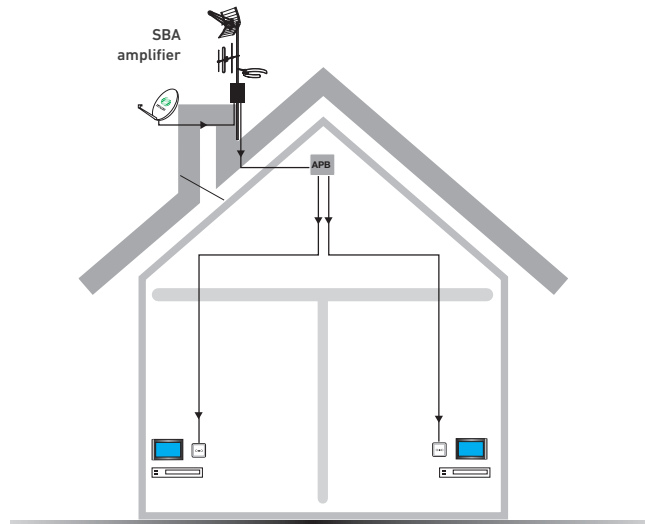
Adapted to the first and second digital dividend



Interstage variable attenuators

☐ Solution for amplifying the TV signal, providing protection against LTE interferences.

Application example



Mast amplifier

Shielded multiband amplifiers. SBA Series

NEW PRODUCT

1st & 2nd Dividend



MODELS	INPUTS
SBA100 Series	1 UHF
SBA101 Series	2 UHF - UHF
SBA102 Series	2 UHF - BI/DAB/BIII
SBA190 Series	2 UHF - SAT



- Adapted to the first and second digital dividend
- Very high UHF gain.
- Interstage variable attenuators.
- Optimum design for very low operative noise figure.
- Internal injection-moulded zinc alloy housing with F type ports.

1 UHF input

MODEL	REF.	SBA100 series	
SBA100-C69	1225	Frequency range MHz	470 - 862
SBA100-C60	1227		470 - 790 (1 st dividend)
SBA100-C48	1228		470 - 694 (2 nd dividend)
RF inputs		1	
		UHF	
Nominal gain	dB	> 40	
Gain adjustment	dB	0 - 15	
Noise figure	dB	≤ 2	
Output level (DIN-B, -60dB)	dBμV	106	
Operation voltage	Voc	+24	
Consumption	mA	50	
Dimensions	mm	96 x 125 x 46	

2 UHF - UHF inputs

MODEL	REF.	SBA101 Series		
SBA101-C69	1294	Frequency range MHz	470 - 862	
SBA101-C60	1295		470 - 790 (1 st dividend)	
SBA101-C48	1296		470 - 694 (2 nd dividend)	
RF inputs		2		
		UHF	UHF	
Nominal gain	dB	36		
Gain adjustment	dB	0 - 15		
Noise figure	dB	< 5		
Output level (DIN-B, -60dB)	dBμV	105		
Input isolation	dB	≥26		
Operation voltage	Voc	+24		
Consumption	mA	60		
Dimensions	mm	96 x 125 x 46		

2 UHF-BI/BIII/DAB inputs

MODEL	REF.	SBA102 Series		
SBA102-C69	1300	Frequency range MHz	470 - 862	47 - 108 174 - 240
SBA102-C60	1301		470 - 790 (1 st dividend)	
SBA102-C48	1302		470 - 694 (2 nd dividend)	
RF inputs		2		
		UHF	BI/DAB/BIII	
Nominal gain	dB	25	-1	
Gain adjustment	dB	0 - 15		
Noise figure	dB	≤ 2	1	
Output level (DIN-B, -60dB)	dBμV	106		
Input isolation	dB	≥26		
Operation voltage	Voc	+24		
Consumption	mA	40		
Dimensions	mm	96 x 125 x 46		

2 UHF-SAT inputs

MODEL	REF.	SBA190 Series		
SBA190-C69	1306	Frequency range MHz	470 - 862	950 - 2150
SBA190-C60	1307		470 - 790 (1 st dividend)	
SBA190-C48	1308		470 - 694 (2 nd dividend)	
RF inputs		2		
		UHF	SAT	
Nominal gain	dB	35	-2	
Gain adjustment	dB	0 - 15		
Noise figure	dB	≤ 2	2	
Output level (DIN-B, -60dB)	dBμV	105		
Input isolation		≥26		
Operation voltage	Voc	+12 / +24 In the case of not using the SAT input, it can be supplied with +24 VDC		
Consumption	mA	40		
Dimensions	mm	96 x 125 x 46		

Shielded power supplies. APB Series NEWPRODUCT



MODELOS	SALIDAS	TENSIÓN
APB-112-M	1	+12 Vdc
APB-224-M	2	+24 Vdc
APB-124	2	+24 Vdc
APB-424	4	+24 Vdc



- 1 RF input + DC output port — 2 or 4 RF output ports.
- 24 and 12 VDC operation voltage.
- Mains lead with bipolar plug. LED indicator.
- Reduced plastic box. Quick fixing system.

«MICRO» power supplies +12 and +24 Vdc

MODEL	APB-112-M	APB-224-M
REF.	3436	3437
Regulation type	switch mode	
Outputs	1	2
Mains voltage (50 Hz)	Vac	110-240
Output voltage	Vdc	+12 (±5%) +24 (±5%)
Max output current	mA	100
Frequency range	MHz	40 - 2150 40 - 862
RF insertion loss	dB	≤ 4
Dimensions	mm	50 x 50 x 25 50 x 50 x 25

Power supplies +24Vdc

MODEL	APB-124	APB-424
REF.	3432	3438
Regulation type	switch mode	
Outputs	2	4
Mains voltage (50 Hz)	Vac	230-240 110-240
Output voltage	Vdc	+24 (±5%) +24 (±5%)
Max output current	mA	100
Frequency range	MHz	40 - 862
RF insertion loss	dB	≤ 4
Dimensions	mm	90 x 58 x 22

Amplifier+Power supply kits

NEWPRODUCT



MODEL	REF.	DESCRIPTION
JSBA100-C69	1223	Amplifier SBA100-C69 + Power supply APB-124
JSBA100-C60	1222	Amplifier SBA100-C60 + Power supply APB-124
JSBA100-C48	1224	Amplifier SBA100-C48 + Power supply APB-124





Headends



ONE Series



Programmable Multichannel Amplifiers.
 Complete solution for signal processing of TV (terrestrial and satellite) in communities.



Designed for installations with satellite signal



Replaceable power supply

10x5 canales

10 tuneable UHF filters with the variable band width of 1 to 5 channels.




Reprogrammable as many times as required
 Programmed without the need for external control.



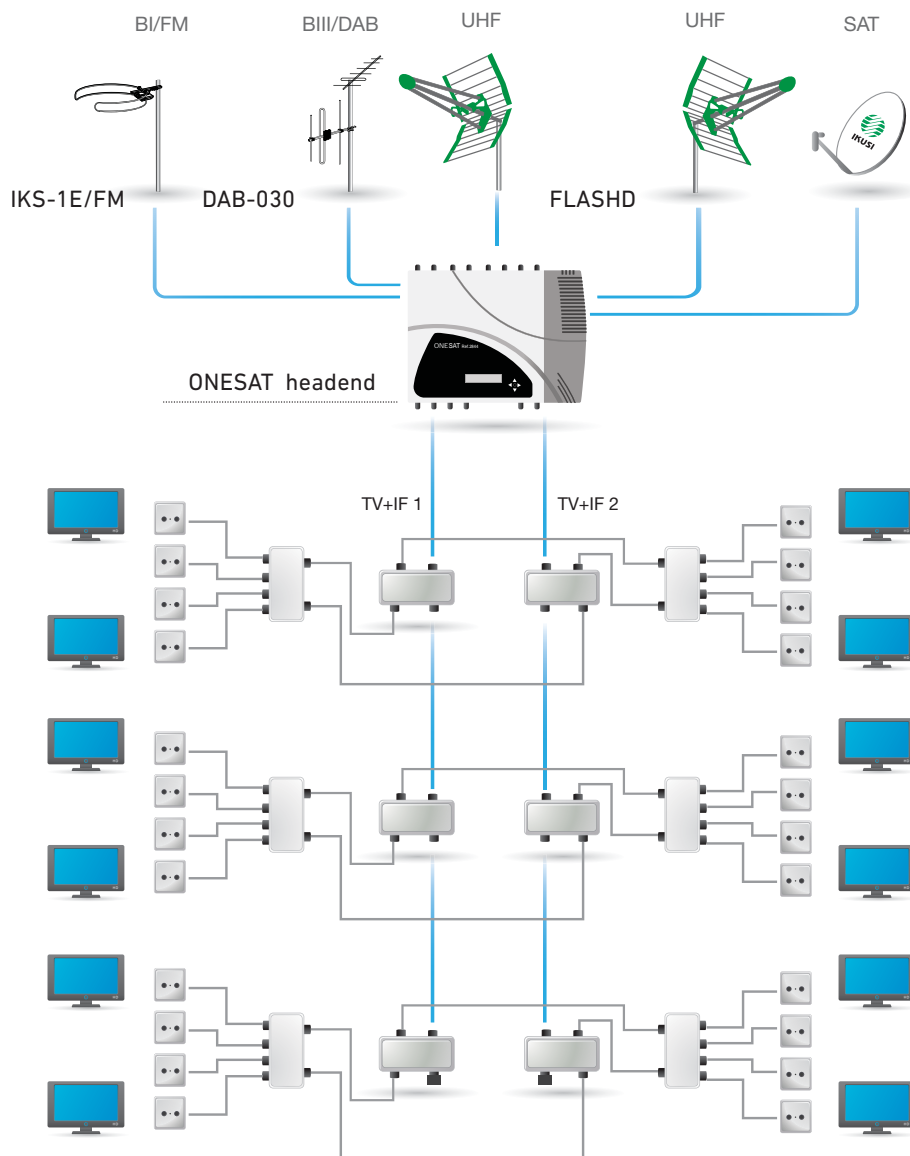
Adapted to the first digital dividend



Equalisation and automatic gain control.

 Comprehensive solution for processing TV signals (terrestrial and satellite) in communications with over 20 outlets.

Installation example



Terr & Sat programmable multichannel amplifier. ONESAT



- Self-installation function.
- All settings are automatically memorised.
- Reprogrammable as many times as required. Programmed without the need for external control.
- 10 tuneable UHF filters with the variable band width of 1 to 5 channels.
- Terrestrial inputs (BI-FM, BIII-DAB, UHF and EXT) and satellite input with low noise figure.
- Two types of configurable output:
 - Configuration: 1 OUTPUT (high Power)
TV (123 dB μ V) + SAT1 (116 dB μ V)
 - Configuration: 2 OUTPUTS
TV (118 dB μ V) + SAT1 (116 dB μ V)
TV (118 dB μ V) + SAT2
- Allows the user to block the use of channels 61 to 69.
- Equalisation and automatic gain control.
- Internal configuration cloning with transferral to another equipment.
- Equipment locking by security code.
- Silent and extra slim.

MODEL		ONESAT (AFP-292)							
REF.		2844							
Inputs		1	1	1	3			1	1
		BI/FM	DAB/BIII	EXT (VHF/UHF)	UHF 3	UHF 2	UHF1	IF-SAT1	IF-SAT2 (passive)
Frequency range	MHz	47 - 108	174 - 240	47 - 240 / 470 - 862	470 - 862/790 (*)			950-2150	
Input configuration		-			0	0	10	-	
Number of programmable UHF filters per input		-			1	0	9	-	
		-			3	0	7	-	
		-			3	5	2	-	
		-			1	7	2	-	
Gain	config TV2 & TV1	30	35	35	35/55 switchable			40	-1.5
	config TV1	35	40	40	40/60 switchable			40	
Gain adjustment	dB	25	20		30			20	
Noise figure	dB	< 6				< 9			
Optimum input margin	dB μ V	60-85	60-80		50-100			68-88	
Return losses	dB	> 10							
Selectivity (± 10 MHz of channels ends)	dB	-			10			-	
Uncoupling between inputs	dB	-			> 20			-	
Output level	config TV2 & TV1	113	113	VHF: 113 UHF: 118	118			116	
	config TV1	118	118	VHF: 113 UHF: 123	123			116	
Output level adjustment	dB	20							
AGC tolerance	dB	-			± 1			-	
Switchable preamplifier voltage	V	-			off-12-24			off-13-18	
Maximum preamplifier current	mA	-			100			300	
Preamplifier tones	kHz	-			-			0-22	
Slope adjustment	dB	-			-			0-9	
Test output	dB	-30							
Mains voltage	VAC	230 - 240							
Consumption		28 W / 0.25 A							
Operating temperature	$^{\circ}$ C	-5 ... +50							
Dimensions	mm	300 x 250 x 40							

(*) with LTE Protection

Terrestrial programmable multichannel amplifier. ONE118



- Self-installation function.
- All settings are automatically memorised.
- Reprogrammable as many times as required. Programmed without the need for external control.
- 10 tuneable UHF filters with the variable band width of 1 to 5 channels.
- Terrestrial inputs (BI-FM, BIII-DAB, UHF and EXT) and satellite input with low noise figure.
- Allows the user to block the use of channels 61 to 69.
- Equalisation and automatic gain control.
- Internal configuration cloning with transferral to another equipment.
- Equipment locking by security code.
- Silent and extra slim.

MODEL		ONE118 (AFP-201)				
REF.		2845				
Inputs		1	1	3		
		BI/FM	DAB/BIII	UHF 3	UHF 2	UHF1
Frequency range	MHz	47 - 108	174 - 240	470 - 862/790 (*)		
Input configuration				0	0	10
Number of programmable UHF filters per input				1	0	9
				3	0	7
				3	5	2
				1	7	2
Gain	dB	30	40	55		
Gain adjustment	dB	25	20	30		
Noise figure	dB	< 6				
Optimum input margin	dBµV	60-85	60-80	50-100		
Return losses	dB	> 10				
Selectivity (±10MHz of channels ends)	dB	-		10		
Uncoupling between inputs	dB	-		> 20		
Output level	dBµV	118	118	118		
Output level adjustment	dB	20				
AGC tolerance	dB	-		± 1		
Switchable preamplifier voltage	V	-		off-12-24		
Maximum preamplifier current	mA	-		100		
Test output	dB	-30				
Mains voltage	VAC	230 - 240				
Consumption		25 W / 0.25 A				
Operating temperature	°C	-5 ... +50				
Dimensions	mm	300 x 250 x 40				

(*) with LTE Protection

Terrestrial programmable headend. ONEHOME



- ONE Home model is a programmable amplification headend designed to selectively filter analogue and digital UHF channels. Suitable for single-family and collective dwellings, they are the ideal solution for managing signals of different frequencies and bandwidths.
- Designed for single family homes.
- Self-installation function.
- 10 tuneable UHF filters with the capacity to process 1 to 5 channels each.
- Replaceable power supply.

MODEL		ONE HOME	
REF.		2849	
Inputs		1	1
		BI/FM	UHF
Frequency range	MHz	47 - 108	470 - 862
Number of filters		–	10
Number of channels per filter		–	5
Gain	dB	-2	25/45 switchable
Gain adjustment	dB	–	30
Input amplifier (20 dB)	dB	–	Yes
Noise figure	dB	–	< 6
Optimum input margin	dB μ V	–	50-80 ; 70-100
Automatic Gain Control		–	Yes
Selectivity (\pm 10 MHz of channel ends)	dB	–	10
Output level (DIN 45004B)	dB μ V	–	113
Return losses	dB	> 10	> 10
AGC tolerance	dB	–	\pm 1
Switchable preamplifier voltage	V	–	off-12-24
Preamplifier tones	kHz	–	
Maximum preamplifier voltage		–	100
Slope adjustment	dB	–	
Mains voltage	VAC	230 - 240	
Consumption	W	12	
Mains connector		IEC C8	
Operating temperature	$^{\circ}$ C	-5 ... +50	
Dimensions	mm	300 x 250 x 41	

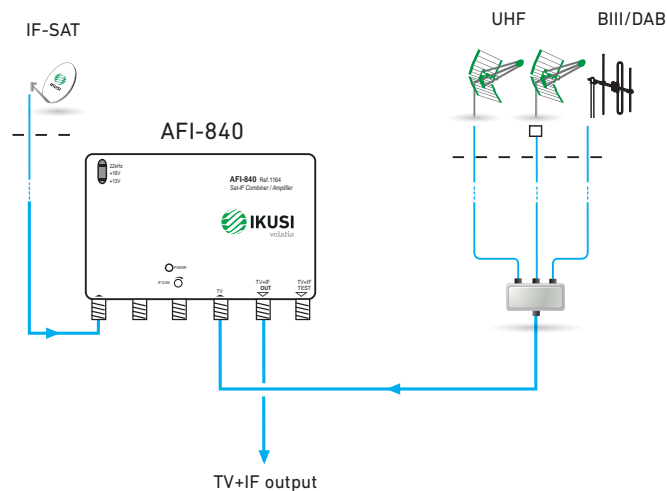
Sat-IF combiner/amplifier



- 1 Satellite 950-2150 MHz input port, with adjustable gain and pre-emphasized response to compensate for cable losses.
- 1 Terrestrial coupling 5-862 MHz input port; 1 Combined Satellite+Terrestrial output port; 1 output test port.
- Mains powered 50/60 Hz. Electrical safety protection level: Class II. Mains lead and plug included.
- Line powering of LNB. Generation of voltage/tone for selection of H/V polarisation and high/low frequency sub-band by the small plug-in bridges provided.
- Small plastic box, with protective cover. Internal zinc alloy chassis. F type connection.
- Indoor mounting. Wall- fixing.

MODEL		AFI-840
REF.		1164
IF Sat band	MHz	950 - 2150
Response flatness	dB	± 1,5
Gain	dB	34 - 40 (6 dB fixed slope)
Continuous gain adjustment	dB	0 - 18
Output level (-35 dB IMD3, EN 50083-3)	dBµV	120
Input/output return loss	dB	≥ 6
Noise figure	dB	< 8
TV band	MHz	5 - 862
TV coupling loss	dB	≤ 1,5
Output test (TV+IF)	dB	-30 ±1.5
Mains voltage (50/60 Hz)	VAC	100 - 240
Consumption	W	6
Insertable voltage/tone to Sat-IF input port		+13 VDC / +18 VDC 0 / 22 kHz
Max LNB power current	mA	200 (at +13 VDC & at +18 VDC)
Dimensions	mm	120 x 85 x 50

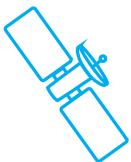
Installation example



NBS Series



Broadband amplifiers with high, medium and low power.



Models with satellite input



Replaceable power supply



Interstage input attenuators equipments




Easy to set up



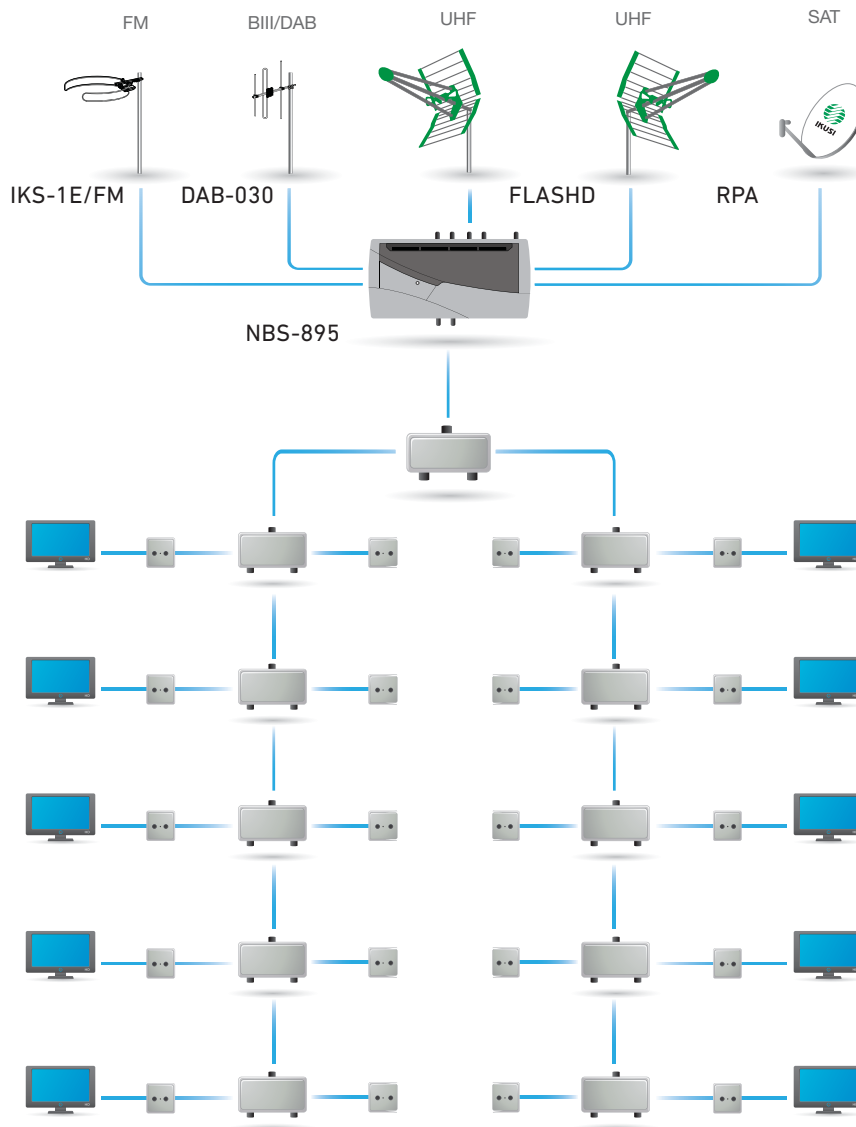
Adapted to the digital dividend



Maximum performance

 Amplifies, equalizes and combines analog or digital radio and television signals in medium size facilities.

Installation example



Terrestrial and satellite headend amplifiers. NBS



- High-power broadband amplifiers, for terrestrial and satellite signals in small installations.
- Three models:
NBS-801 (1 broadband input ; 1 output),
NBS-804 (4 inputs BI/FM-BIII/DAB-2xUHF ; 1 output)
NBS-895 (5 inputs BI/FM-BIII/DAB-2xUHF-IF SAT ; 1 output)
- Interstage input attenuators.
- Powered by switching power supply, in removable box.
- By inserting a bridge, you can select the cutoff frequency low-pass filter in the upper UHF, switchable between 862 MHz and 790 MHz.
- Power passing to input.
- Zamak housing with protective cover for adjustment potentiometers.
- F Connectors. Wall fixing and indoor mounting. Grounding terminal.
- Compatible with UNICABLE TM.

High-power broadband amplifiers

MODEL		NBS-801	NBS-804	NBS-895
REF.		3531	3532	3534
Inputs		1	4 BI/FM-BIII/DAB-2xUHF	5 BI/FM-BIII/DAB-2xUHF-IF SAT
Frequency range	MHz	45-862 / 45-790 *	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 / 470-790 *	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 / 470-790 * IF-SAT: 950-2150
Gain	dB	42	BI/FM: 42 BIII/DAB: 42 2xUHF: 45	BI/FM: 42 BIII/DAB: 42 2xUHF: 45 IF-SAT: 40
Gain adjustment	dB	0 - 18	0 - 18	0 - 18
Slope control range	dB	0 - 12	—	IF-SAT: 0 / 6
Response flatness	dB	±2	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1,5	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1,5 IF-SAT: ±2
Outputs		1	1	1
Output test	dB	-30	-30	-30
Output level	dBµV	TV: 118 (DIN-45004B IMD -60 dB)	TV: 118 (DIN-45004B IMD -60 dB)	TV: 118 IF-SAT: 120 (EN 50083-3 IMD -35 dB)
Noise figure	dB	6	BI/FM: 7 BIII/DAB: 7 2xUHF: 8	BI/FM: 7 BIII/DAB: 7 2xUHF: 8 IF-SAT: 9
Input/output return loss	dB	10	10	TV: 10 IF-SAT: 6
Voltage/current preamplifier mast		12-24V / 100mA	UHF2: 12-24 V / 100 mA	UHF2: 12-24 V / 100 mA IF-SAT: 13-18V / 100 mA LNB: 0/22 kHz
Mains supply voltage	VAC	240 (+10% -15%)	240 (+10% -15%)	240 (+10% -15%)
Consumo	W	11	11	16
Dimensions	mm		230 x 145 x 43	

* Switchable frequency range by inserting a plug-in bridge supplied.
1. Compatible with UNICABLE™

Terrestrial and satellite headend amplifiers. NBS



NBS-600

- Mid-power broadband amplifiers, for terrestrial and satellite signals in small installations.
- Two models :
NBS-604 (4 inputs BI/FM-BIII/DAB-2xUHF ; 1 output),
NBS-695 (5 inputs BI/FM-BIII/DAB-2xUHF-IF SAT ; 1 output)
- Interstage input attenuators.
- Powered by switching power supply, in removable box.
- By inserting a bridge, you can select the cutoff frequency low-pass filter in the upper UHF, switchable between 862 MHz and 790 MHz.
- Power passing to input.
- Zamak housing with protective cover for adjustment potentiometers.
- F Connectors. Wall fixing and indoor mounting. Grounding terminal.
- Compatible with UNICABLE TM

Medium power amplifiers

MODEL	NBS-604		NBS-695	
REF.	3529		3530	
Inputs	4 BI/FM-BIII/DAB-2xUHF		5 BI/FM-BIII/DAB-2xUHF-IF-SAT	
Frequency range	MHz	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 / 470-790 *	MHz	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 / 470-790 * IF-SAT: 950-2150
Gain	dB	BI/FM: 36 BIII/DAB: 36 2xUHF: 39	dB	BI/FM: 36 BIII/DAB: 36 2xUHF: 39 IF-SAT: 34
Gain adjustment	dB	0 - 18	dB	0 - 18
Slope control range	dB	—	dB	IF-SAT : 0 / 6
Response flatness	dB	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1,5	dB	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1,5 IF-SAT: ±2
Outputs	1		1	
Output test	dB	-30	dB	-30
Output level	dBμV	TV: 112 (DIN-45004B IMD -60 dB)	dBμV	TV: 112 IF-SAT: 114 (EN 50083-3 IMD -35 dB)
Noise figure	dB	BI/FM: 7 BIII/DAB: 7 2xUHF: 8	dB	BI/FM: 7 BIII/DAB: 7 2xUHF: 8 IF-SAT: 9
Input/output return loss	dB	10	dB	TV: 10 IF-SAT: 6
Voltage/current preamplifier mast		UHF2: 12-24 V / 100 mA		UHF2: 12-24 V / 100 mA IF-SAT: 13-18V / 100 mA LNB: 0/22 kHz
Mains supply voltage	VAC	240 (+10% -15%)	VAC	240 (+10% -15%)
Consumption	W	8	W	11
Dimensions	mm	230 x 145 x 45		

* Switchable frequency range by inserting a plug-in bridge supplied.
1. Compatible with UNICABLE™

Low power amplifier

MODEL	NBS-204	
REF.	3516	
Inputs	4 BI-FM-BIII/DAB-UHF	
Frequency range	MHz	BI: 45-68 FM: 88-108 BIII/DAB: 174-240 UHF: 470-862/790*
Gain	dB	BI: 31 FM: 31 BIII/DAB: 31 UHF: 31
Gain adjustment	dB	BI-FM-BIII/DAB: 0 - 18 UHF: 0 - 15
Slope control range	dB	—
Response flatness	dB	BI-FM-BIII/DAB: ±2 UHF: ±2
Outputs	1	
Output test	dB	-30
Output level (DIN-45004B IMD -60 dB)	dBμV	106
Noise figure	dB	BI-FM-BIII/DAB: 4.5 UHF: 5
Input/output return loss	dB	10
Mains supply voltage	VAC	240 (+10% -15%)
Consumption	W	3
Dimensions	mm	155 x 80 x 40

* Switchable frequency range by inserting a plug-in bridge supplied.
1. Compatible with UNICABLE™

NBS-204

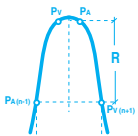
- Low-power broadband amplifiers, for terrestrial signals in small installations.
- Input attenuators.
- By inserting a bridge, you can select the cutoff frequency low-pass filter in the upper UHF, switchable between 862 MHz and 790 MHz.
- F Connectors. Wall fixing and indoor mounting.



SZB Series



Modular Headend amplifier channel TV and Radio.



High Selectivity



Rejection LTE frequencies



Gain adjustment.
Interstage attenuators



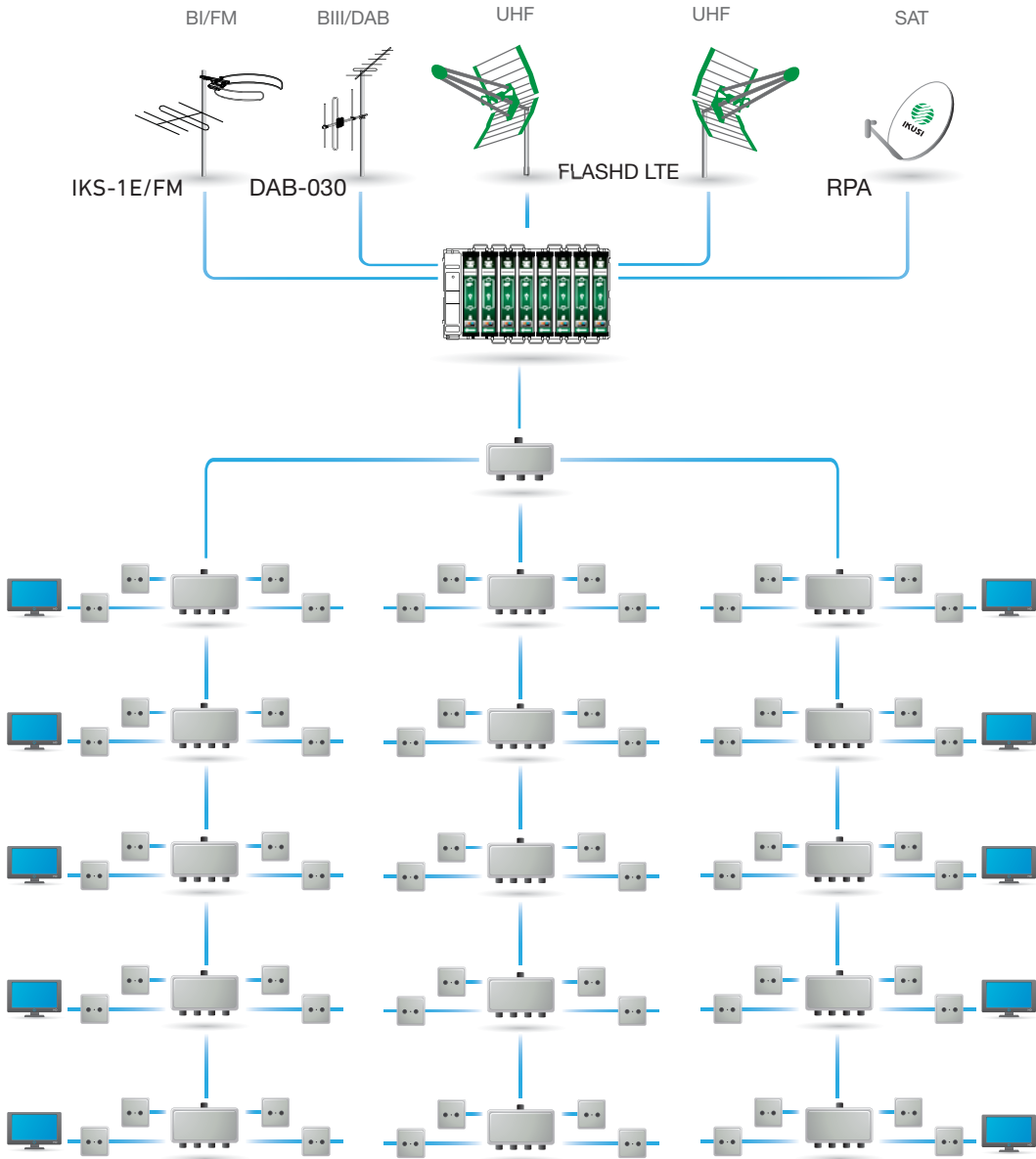
Toolless mounting



High output level

TV amplifiers single-channels, multichannels, modulators and Sat-IF combiner ready for digital dividend.

Installation example



TV single-channel amplifiers



- Ready for digital dividend.
- TV single-channel amplifiers, Z input de-multiplexing and Z output multiplexing. Adjacent channel operation allowed in UHF band.
- FM Radio and DAB Amplifiers.
- It is advisable to place the amplifiers on the base-plate following an increasing order of number of channel (frequency). The RF output of the headend will be taken from the last one of the modules ordered in this way.
- Toolless mounting.

MODEL		SZB-129	SZB-128	SZB-168	SZB-139	SZB-148 *
REF.		2294	2293	3160	3152	2246
Bandwidth		FM	FM	DAB	1 channel BIII ¹	1 channel UHF ²
Gain ^{3,4}	dB	57	30	53	56	52
Noise figure	dB	4	7,5	8	7	9
Output level EN 50083-3, -35dB	dBµV	(2x) 113 IMD -50dB			(2x) 121	
Z output return loss	dB	≥ 6				
Consumption	mA	100	80	100	100	100
Dimensions	mm	190 x 38 x 87				

* SZB-148 high selectivity. Amplification of one analog or digital UHF channel, either non-adjacent or adjacent.

Each amplifier is packed with 1 Z bridge Ref. 2247

1 Also 1 channel S3 to S18.

2 Also 1 channel S19 to S38.

3 Adjustable -20 dB (-30 dB in SZB-148). Interstage attenuator in all models —maintenance of low noise figure—.

4 Subtract 3.5 dB if Z input demultiplexing is used.

Particular ordering instruction: Specify the TV channel for single-channel amplifiers.

TV Multichannel amplifier



- TV multichannel amplifier.
Especially created for amplification of combined analog and digital channels. Z input de-multiplexing and Z output multiplexing. Adjacent channel operation allowed in UHF band.
- Output voltage +24 VDC is automatically connected to the RF modules through a connecting bar at the base-plate.
- Toolless mounting.

MODEL		SZB-180		
REF.		2248		
Bandwidth		2 UHF channels	3 UHF channels	4 UHF channels
Gain	dB	60		
Noise figure	dB	5		
Output level	dBµV	(2x) 118	(2x) 116	(2x) 115
Z Output return loss	dB	≥ 6		
Consumption	mA	100		
Dimensions	mm	190 x 38 x 87		

1 Adjustable -20 dB . Interstage attenuator —maintenance of low noise figure—. The free output ports need to be terminated using a 75Ω terminator.

Sat-IF Combiner/Amplifier



- 1 Satellite input 950-2150 MHz with adjustable gain and sloped response to compensate for cable loss; 1 terrestrial coupling input 5-862 MHz; 1 satellite+terrestrial output.
- Automatic power connection, either via contact terminal (SZB application) or via terrestrial coupling input port (MZ6 applications).
- LNB coax line powering. The SZB-190 generates the required voltage/ tone signals for the selection of H/V polarisation and high/low frequency sub-band. Programmable values by micro-switches.

MODEL		SZB-190
REF.		1346
Sat-IF band	MHz	950 - 2150
Gain (7 dB fixed slope)	dB	33 (950 MHz) 40 (2150 MHz)
Gain adjustment	dB	18
Output level (IMD -35dB, EN 50083-3)	dBμV	120
Noise figure	dB	< 8
Terrestrial band	MHz	5 - 862
Terrestrial coupling loss	dB	< 1
Operating voltage	Voc	+ 24
Consumption	mA	120
Insertable voltage/tone to Sat-IF input port		+13 / +18 Voc ; 0 / 22 kHz
Max LNB power current	mA	350 (at +18 Voc) / 250 (at +13 Voc)

Power supply



- Electrical safety protection level: Class II. Mains lead with bipolar plug.
- Output voltage is additionally available from two auxiliar jacks, for connection to one or two power inserters (mast-head amplifier remote powering). Banana jumper supplied.

MODEL		SZB-212
REF.		2228
Regulation type		switch mode
Mains supply voltage (50/60 Hz)	Vac	185 - 264
Output voltage	Voc	+24 (±5%)
Max output current	A	2

Accessories

MODEL	REF.	DESCRIPTION
BAS-919	2225	Base plate with power connecting bar. Capacity: 1 power supply+8 RF modules SZB; or 9 RF modules.
BAS-913	2222	Base plate with power connecting bar. Capacity: 1 power supply+2 modules.
COF-809	2224	Housing for 1 BAS-919. Dimensions: 420 x 346 x 180 mm.
PZB-453	2247	Z plug bridge, F connectors. Length: 45.3 mm.
CTF-075	2221	Charge 75Ω.



BAS-919



COF-809



BAS-913



PZB-453



CTF-075

MAC Series



High definition Standalone modulator.

HDMI

HDMI input
HD multimedia interface



DVB-T / DVB-C / IP outputs

CVBS

CVBS inputs and stereo audio



Video playback
through USB port

BNC

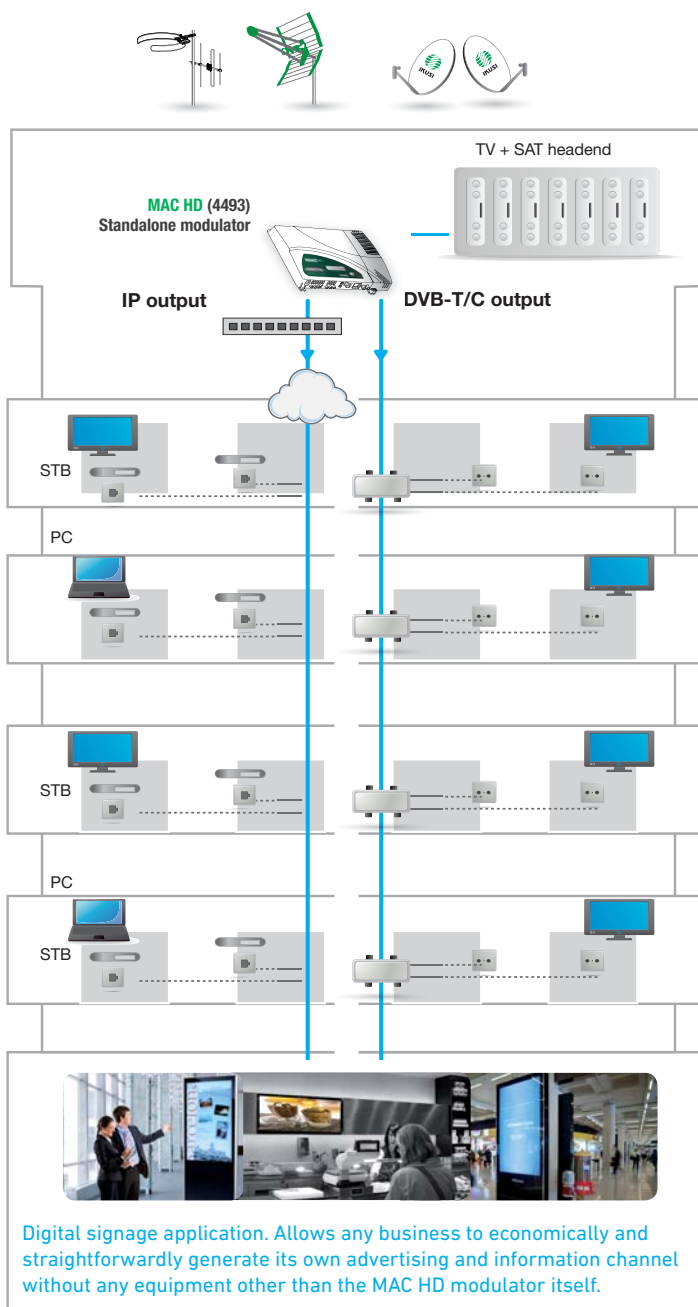
HD-SDI input
Digital video interface



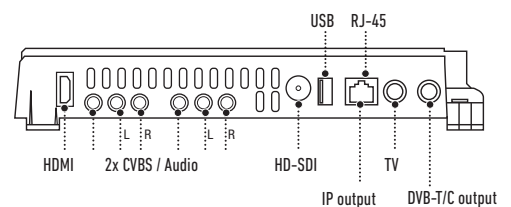
Remote control via web

☐ A solution that allows audio and video, HDMI or HD-SDI signals to be inserted in DTTV distributions and an output signal in DVB-T / DVB-C and IP to be obtained.

Installation example



Digital signage application. Allows any business to economically and straightforwardly generate its own advertising and information channel without any equipment other than the MAC HD modulator itself.



Possible combinations:

- SD CVBS/Audio + SD CVBS/Audio
 - SD HDMI + SD CVBS/Audio
 - SD SDI + SD CVBS/Audio
 - SD + USB
- } 2 simultaneous SD channels
} 1 channel SD + USB
- HD HDMI
 - HD SDI
 - HD + USB
- } 1 channel HD
} 1 channel HD + USB

High definition standalone modulator



MAC-HD

- Audio/Video ► DVB-T ; DVB-C and IP
- Two analogue video and audio channels through 6 RCA jacks.
- Digital audio and video channel in HDMI format through HDMI connector.
- Digital audio and video channel in HD-SDI format through BNC connector.
- Web interface configuration by application IKUSI HEADEND DISCOVER

MODEL		MAC-HD
REF.		4493
Video input		4 (2x) CVBS, HDMI, HD-SDI
Video standard		PAL/SECAM/NTSC/B&W
Input level CVBS	Vpp	0.7 - 1.4
Audio inputs		1 (mono and stereo)
Audio input level (analogue)		0.5 - 2.5
Video compression		MPEG2 MP@ML, H.264/MPEG4 AVC MP L4.1
Audio compression		MPEG1 layer II
Maximum resolution		1080p60
DVB-T / DVB-C output		DVB-T in accordance with ETSI EN 300 744 DVB-C in accordance with ETSI EN 300 429
Bandwidths	MHz	6 / 7 / 8
Number of carriers		2K / 8K
MER	dB	≥ 40
Frequency range	MHz	45 - 858
Output level	dBuV	≥ 80
Output attenuation	dB	0.5
Lever adjustment	dB	-25
Frequency stability	ppm	±30
Spurious in band	dBc	≤-60
Noise figure (ΔB = 8 MHz)	dBc	≤-65
Loophrough frequency		45 MHz at 2.5 GHz
DVB-C symbol rate	Kbps	3000 - 8000
Constellation		DVB-T: 16QAM , 64QAM DVB-C: 16QAM , 32QAM , 64QAM , 128QAM , 256QAM
IP output		IEEE 802.3 10/100 Base T
IP encapsulated type		According to ETSI TS 102 034 v1.31(2007-10) and SMPTE ST 2022-2:2007
Outflow IP		CBR / VBR
IP address		Unicast / Multicast
Protocols		UDP / RTP
IP encapsulated format		SPTS
DVB processing		PAT, PMT, SDT, TDT, TOT
NIT and SDT adaptation		Yes
PSI/SI adaptation		Generation and insertion of PAT, PMT, SDT, NIT tables
SID configuration		Yes
Channel name edition (EIT)		Yes (ex. "camera pool")
EIT edition		Yes (ex. "open 9h from 18h")
Firmware upgrade		Yes, web or USB interface
Mains voltage	VAC	230 - 240
Consumption	W	19
Dimensions / poids	mm/kg	300 x 250 x 40 / 2.5

New option with QAM output.

The MAC HD model is a standalone modulator unit which can handle different audio and video formats to make up a high-definition DVB-T/C and IP channel which can be active simultaneously.

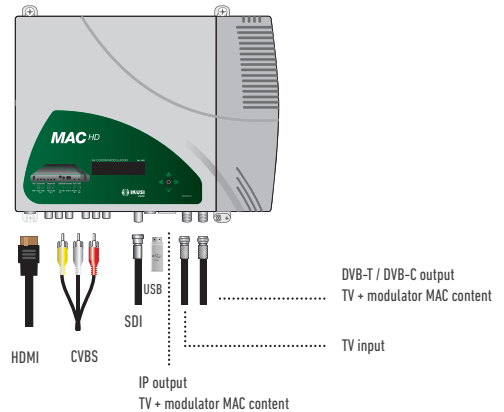
The unit has three output types:

- DVB-T ; DVB-C and IP.

This product aims to meet video signal distribution requirements in residential facilities, hotels and landmark buildings, along with video surveillance installations with COFDM/QAM and IP digital TV modulation. The MAC HD also has a USB interface to add new functions thanks to the evolving computer software, such as video playback from a USB memory stick for digital signage and other possible future additions.

The end user can program the modulator in different ways:

- LCD and joystick placed on the front of the unit.
- Web interface configuration by application IKUSI HEADEND DISCOVERY. (Programming with IP output is only possible with this mode).



Some of the supported video sources

- Blu-Ray channel
- DVD channel
- Satellite channel (IRD)
- Video surveillance channel
- Studio channel
- Information channel
- Advertising channel USB

MAC Series Modulators

HD & SD Multi-input Standalone modulators

New
COFDM &
QAM output



MAC-HD



MAC-HOME HD



MAC-HOME

MAC-HD

- Two analogue video and audio channels through 6 RCA jacks..
- A digital audio and video channel in HDMI format through HDMI connector.
- A digital audio and video channel in HD-SDI format through BNC connector.
- Three output type: DVB-T ; DVB-C and IP.

MAC-HOME HD

- A CVBS analogue audio and video channel through RCA jacks.
- A digital audio and video channel in HDMI format through an HDMI connector.
- Can play back content from the HDMI or CVBS connector and the memory stick at the same time.
- Two output type: DVB-T and DVB-C.

MAC HOME

- Maximum compression quality MPEG-2 & H.264/MPEG-4 AVC.
- Video playback through USB port.
- Inputs: CVBS, S-VIDEO, Y Pb Pr, RGB, USB.
- Output: DVB-T.

AV-DVB-T Standalone modulator



MAC-HOME

- Audio/Video ► DVB-T
- Maximum compression quality MPEG-2 & H.264/MPEG-4 AVC
- S-VIDEO and component VIDEO input connector (Y Pb Pr, RGB) for optimum image quality.
- CVBS and stereo audio input connectors
- Video playback through USB port.
- LCN support and DVB processing.
- Removable power supply.

Model		MAC-HOME
REF.		4488
Input		CVBS, S-VIDEO, Y Pb Pr, RGB, USB
Video input level (CVBS)	Vpp	0.7 ... 1.4
Video standard		PAL/NTSC/SECAM/B&W
Audio input		1x mono/stereo
Audio input level (analogue)	Vpp	0.5 ... 2.5
Video compression		MPEG2 MP@ML, H.264/MPEG-4 AVC MP L4.1
Video resolution		720x576, 25 fps (PAL), 720x480, 30 fps (NTSC)
Video bitrate	Mbits/s	3 - 10
Audio		MPEG1 Layer II
Audio bitrate	Kbits/s	96, 128, 160, 192, 224, 256, 320, 384
DVB Processing		
Insertion of tables		PAT, PMT, SDT, NIT
Configuration		Channel Name, SID, LCN, NID, Network Name, Provider Name, TSID, ONID, NIT MODE, LCN Private Descriptor
DVB-T output		DVB-T according to ETSI EN 300 744
Bandwidth	MHz	6 / 7 / 8
Number of carriers		2k (UK) / 8k (FR)
MER	dB	≥ 35
Central frequency	MHz	474 - 858
Output level	dBµV	≥ 80
Output attenuation	dB	≤ 1.5
Ajuste de nivel	dB	-25
Frequency stability	ppm	≤ ±30
Noise figure (ΔB=8MHz)	dBc	≤ -45
Loophthrough		45 MHz to 2,5 GHz
Mains voltage	VAC	230 - 240
Consumption	W	8.1
Dimensions (without connec.)	mm	210 x 114 x 32
Video input connectors		1 RCA (CVBS) ; 1 MINI DIN (S-VIDEO) , Y Pb Pr, RGB ; 1 USB
Audio input connectors		2 RCA (L and R)
Firmware interface		Included

USB PLAYER function. Create your own advertising and information channel using only your Mac Home.

The Mac-Home modulator now has a new function to create and play back videos created by users with the software supplied with the product.

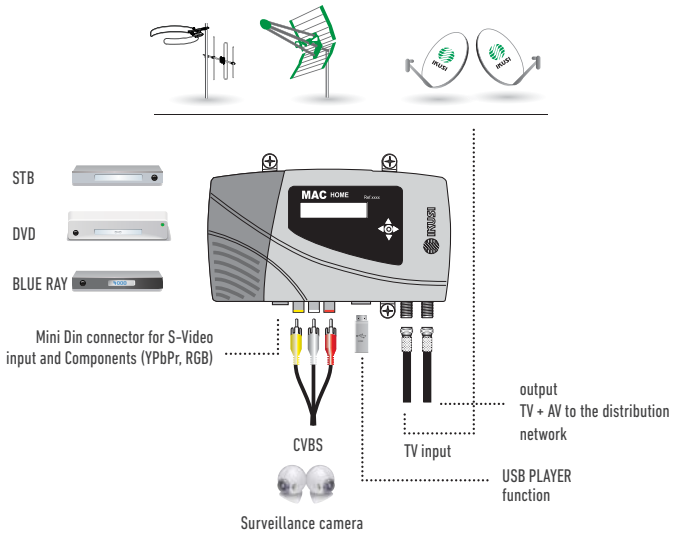
The Mac-Home modulator now has a new function to create and play back videos created by users with the software supplied with the product.

Users can create files containing images, videos and music in a simple and intuitive way, and play them on a television network such as a Service Channel (in communities of residents) or those designed for Digital Signage in countless applications, including advertising and information (hotels, restaurants, shopping centres, supermarkets, exhibition rooms, conferences, museums etc.).

After downloading and installing the "conversor-mac-installer.exe" application on their PC, users create a composition of images with audio that can be played back through the modulator's USB port.

Video and image files in the following formats are supported:

- Image: jpg, png, bmp, gif
- Video: wmv, mpg, mp4, ts, avi
- Audio: mp3



... for communities of residents an information channel on their television



... for hotels meeting rooms, exhibitions, messages, etc



... for shopping centres new collections, special deals, etc



... for restaurants information about daily menus, special deals, etc



... for Public Spaces advertising, user information, news, etc



High definition standalone modulator. HDMI, CVBS inputs



MAC-HOME HD

- Audio/Video ► DVB-T and DVB-C
- A CVBS analogue audio and video channel through RCA jacks.
- A digital audio and video channel in HDMI format through an HDMI connector.
- Can play back content from the HDMI or CVBS connector and the memory stick at the same time.
- Maximum compression quality MPEG2 & MPEG4/H.264.

MODEL		MAC-HOME HD
REF.		4482
Input		CVBS, HDMI
Video standard		PAL/NTSC/SECAM/B&W
Audio input		1 (mono and stereo)
Video		MPEG2 MP@ML, H.264/MPEG4 AVC MP L4.1
Video quality		SD, HD (480i, 576i, 480P, 576P, 720p50, 720p, 1080i50, 1080i60, 1080p60, 1080p50)
Maximum resolution		1080i60
Audio		MPEG2 L1/L2, LC-AAC, HE-AAC
Analogue audio		Yes
Digital audio		Yes (HDMI)
Audio output level (analogue)		0.5 - 2.5
DVB-T / DVB-C Output		DVB-T accordance with ETSI EN 300 744 DVB-C accordance with ETSI EN 300 429
Bandwidth	MHz	6/7/8
Number of carriers		2K (UK) / 8K (FR)
MER	dB	≥ 40
Frequency range	MHz	45 - 858
Output level	dBµV	≥ 80
Output attenuation	dB	1
Lever adjustment	dB	-25
Frequency stability	ppm	≤±30
Noise figure (ΔB = 8 MHz)		≤-60
Loophrough frequency		45 MHz to 2.5 GHz
DVB-C symbol rate	Kbps	3000 - 8000
Constellation		DVB-T: 16QAM, 64QAM DVB-C: 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
NIT adaptation		Yes (generated automatically)
SDT adaptation		Yes (entering configurable name)
TS Monitoring		Yes
PSI/SI adaptation		Generation and insertion of tables PAT, PMT, SDT, NIT
Network configuration		NID, ONID, TSID, Network name, Provide
SID configuration		Yes
LCN processing		Yes
LCN modes		OFF, Europe, Independent Television Comision (UK), Nordig mode V1, Nordig mode V2, Generic Mode
Mains voltage	VAC	230 - 240
Firmware upgrade		Yes, web or USB interface

The MAC HOME HD model is a standalone modulator unit which can handle different audio and video formats to make up a high-definition COFDM channel.

The unit has two types of non-simultaneous input:

- A CVBS analogue audio and video channel through RCA jacks.
- A digital audio and video channel in HDMI format through an HDMI connector.

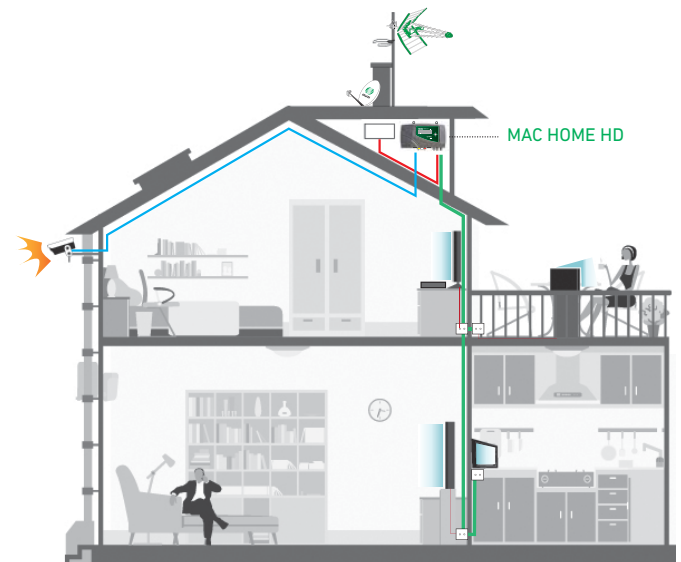
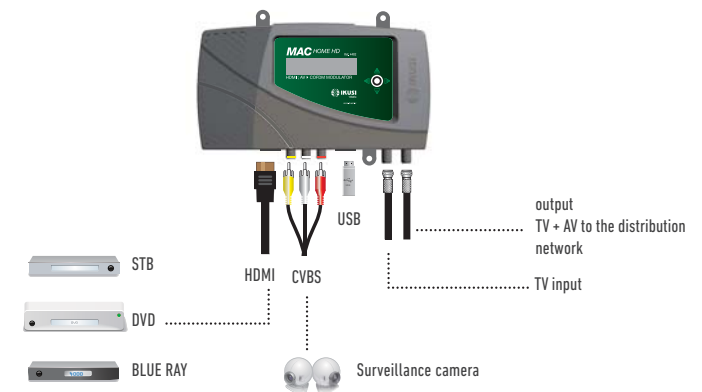
With an MPEG2 encoding stage in SD and MPEG4/H.264 in HD and audio compression formats MPEG2 L1/L2, LC-AAC, HE-AAC.

The MAC HOME HD modulator also has a USB Interface to add new functions thanks to the evolving software of the unit, such as: video playback from a USB memory stick for digital signage and other possible future additions, along with firmware upgrades.

The MAC HOME HD unit can play back content from the HDMI or CVBS connector and the memory stick at the same time.

The modulator is programmed by the end user through an LCD display + 5-position joystick as a keypad.

This product aims to meet video signal distribution requirements in residential facilities, hotels and landmark buildings, along with video surveillance installations with COFDM digital TV modulation.



High definition standalone modulator. HDMI and CVBS inputs

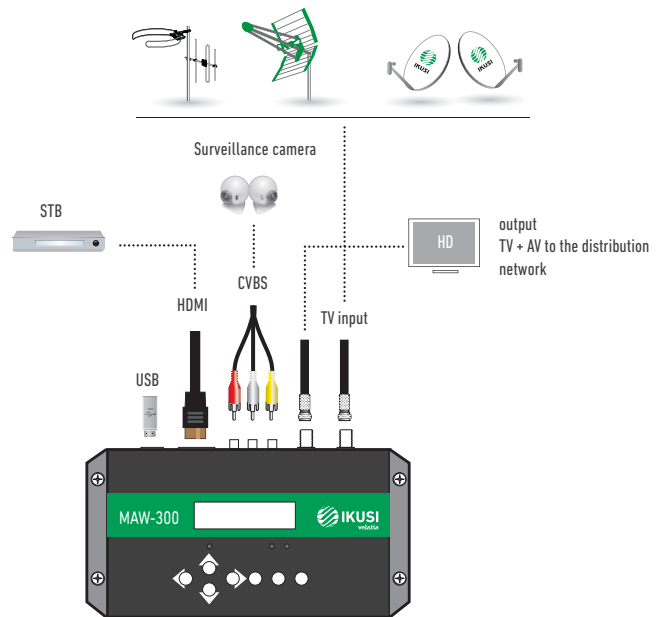
NEW PRODUCT



- Audio/Video ► DVB-T
- A digital video and audio channel in HDMI format, HDMI connector.
- An analogical CVBS audio and video channel, RCA connectors.
- MPEG4/H.264 coding in HD.
- Cascade installation.
- Possibility of changing the LCN.

- Local configuration with LCD screen.
- Household modulator that allows audio and video signals to be inserted into TV distributions.
- The input source can be: a Blu-ray player, satellite receiver, closed circuit surveillance camera, DVD, etc.

MODEL		MAW-300
REF.		3030
Video input		CVBS, HDMI
HDMI compression		
Video standard		PAL/NTSC/SECAM/B&W
Audio input		1 (mono and stereo)
Codificación vídeo		H.264/MPEG4 MP@L 3.0/3.1/4.0
Video resolution		input: 480i60, 576i50, 720p60, 1080i50, 1080i60, 1080p60 output: 480p30, 576p25, 720p60, 1080p25, 1080p30
Aspect ratio		16:9, 4:3
Video bit rate	Mbps	1000 - 18000
Audio sample rate	kHz	48
Audio bit rate	kbps	64, 96, 128, 192, 256, 320
DVB-T modulation		
Standard		DVB-T
Bandwidth	MHz	6, 7, 8
Constellation		QPSK, 16QAM, 64QAM
Guard interval		1/32, 1/16, 1/8, 1/4
Code rate		1/2, 2/3, 3/4, 5/6, 7/8
Transmission mode		2K, 8K
MER	dB	≥32
RF frequency	MHz	139 - 862
RF output level	dBµV	94 - 104 (0.1 dB step)
General		
Management		Local LCD + control buttons
LCN insertion		Yes
Upgrade		USB
Power supply	VDC	12
Operating temperature	°C	0 - 45
Dimensions	mm	183 x 110 x 50
Weight	kg	1



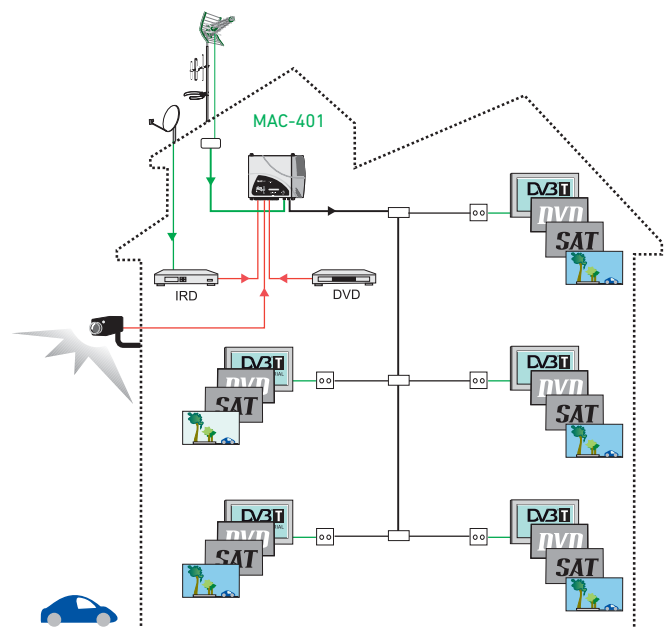
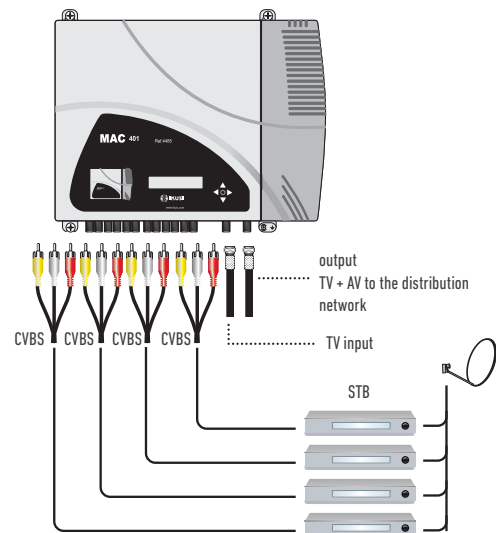
4xAV ▶ DVB-T standalone modulator



- Audio/Video ▶ DVB-T
- 4 CVBS and stereo audio input connectors.
- Excellent modulation quality MER: 38dB.
- LCN support (Logical Channel Number).
- AV1 to AV4 are also serially digitalised, coded in MPEG2 and modulated in COFDM. The COFDM base band signal is modulated on an RF carrier that can be adjusted at the output to the VHF and UHF bands.
- RF COFDM DVB-T output.

- Editable channel name and information to be shown on the TV set.
- Modulated channel and USB player channel can be transmitted simultaneously.
- Processing and insertion of PSI/SI tables.
- Remote control and firmware updates via web/Ethernet.
- User interface with LCD display and control button for basic configuration.
- All settings are automatically memorised.
- Reprogrammable as many times as required.
- Firmware updated via Ethernet connection with web browser.
- Replaceable power supply.

MODEL		MAC-401
Ref.		4485
Input		4x CVBS
Video input level (CBVS)	Vpp	0.7 ... 1.4
Video coding		PAL/NTSC/SECAM
Audio input		4x mono/stereo
Audio input level	Vpp	0.5 ... 4.0
Compression video		MPEG2 MP@ML
Video resolution		720x576, 25 fps (PAL), 720x480, 30 fps (NTSC)
Video Bit Rate	Mbits/s	3 - 10
Audio		MPEG1 Layer II
Audio Bit Rate	Kbits/s	96, 128, 160, 192, 224, 256, 320, 384
Insertion of tables		PAT, PMT, SDT, NIT
Configuration		Channel Name, SID, LCN, NID, Network Name, Provider Name, TSID, ONID, NIT MODE, LCN Private Descriptor
Output		DVB-T according to ETSI EN 300 744
Bandwidth	MHz	6/7/8
Carriers		2K (UK) / 8K (FR)
MER	dB	38 (typ.)
Central frequency	MHz	51 - 858
Output level	dBμV	≥ 80
Output attenuation	dB	1
Level adjustment	dB	-15
Frequency stability	ppm	≤ ±30
Noise figure (ΔB=8MHz)	dBc	≤ -70
Loophrough		Yes
Power supply	VAC	230 - 240
Consumption		0.45 A / 30 W
Dimensions (without connectors)	mm	300 x 250 x 44
Weight	kg	2.5
LAN connector		RJ-45
Remote control		Ethernet 10BaseT 10/100 Mbits/seg
Local interface		LCD + Joystick
Remote interfaz / Update		Web / Ethernet



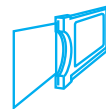
Serie ClassA



ClassA is a complete range of functional modules for processing of analogue and digital terrestrial, satellite, cable and baseband signals. It also includes optical transmitters and receivers and IP streamers.



More languages



It allows pay-TV channels to be received



Supports SD and HD channels



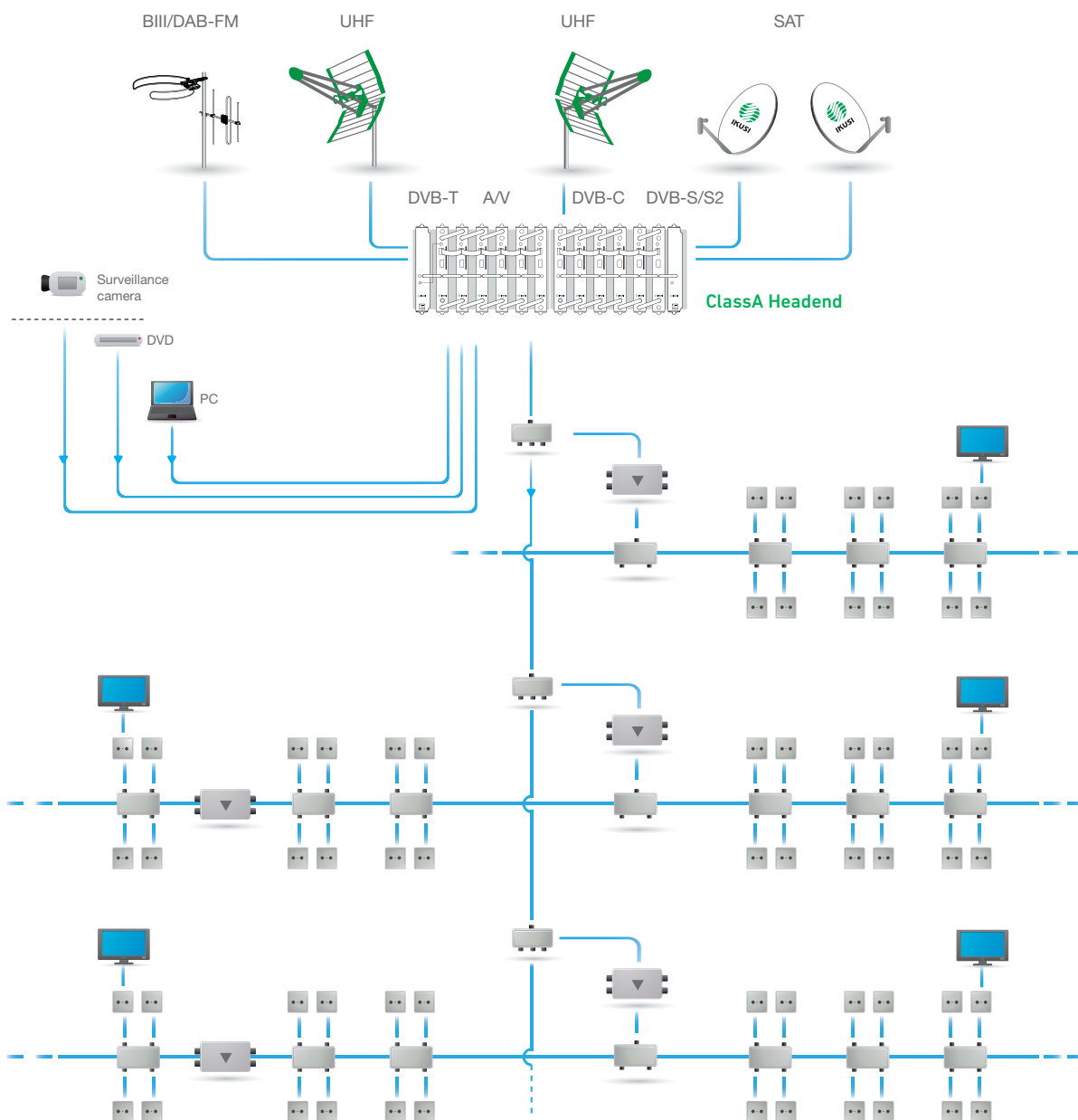
Logical Numbering Function for LCN Channels



Strong when there are cuts in the signal or power supply

☐ A solution combining reception, modulation, security and ease of use and allows to manage any type of TV/vidéo signal.

Installation example



DVB-T output DVB-S/S2 ▶ DVB-T transmodulator



MTI-900

MTI-800

- **Digital transmodulation (QPSK/8PSK to COFDM) with Transport Stream Processing.** The QPSK or 8PSK channels located in the Sat-IF frequency band (950-2150 MHz) are transformed to COFDM channels located in the 47-862 MHz band. Range includes two transmodulators: MTI-900 and MTI-800. The MTI-900 has Common Interface (EN 50221) for discretionary de-encrypting of TV programmes.

- A MTI headend includes:

- As many MTI transmodulators as COFDM channels to be distributed. At MTI-900 module, one CAM (Conditional Access Module) containing the Operator's Smart Card must fit the front panel slot.
- One HPA that amplifies the sum of the output COFDM channels from the transmodulators.
- One or more CFP Power Supplies.
- One or more Rack-Frames or wall-fixing Base-Plates. The base-plates can be joined horizontally.
- Usually, housing units for the base-plates.
- If the headend is large, one or more AMX-400 combiners.

The MTI headends provide a COFDM multichannel signal whose level is appropriate to feed the distribution network. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend. You can use your TV DTT (Digital Terrestrial Television) for programs receiving satellite channels treated at the station MTI.

MODEL	MTI-900		MTI-800	
REF.	4098		4099	
Reception	DVB-S (QPSK) DVB-S2 (QPSK/8PSK)			
Transport Stream (TS) processing	Yes			
Common interface slot (EN 50221)	Yes		NO	
Number of encrypted programmes being supported	Variable (depends on the CAM)		—	
DVB-S/S2 Input section				
Standard	EN 300 421			
Input frequency	MHz	950 - 2150		
Input level	dBm	-65 ... -25 (DVB-S) -70 ... -25 (DVB-S2)		
Input loop-through gain	dB	0 (±1)		
AFC pull-in range	MHz	±5		
Input Symbol rate	MS/s	2 ... 45 (DVB-S) 10 ... 30 (DVB-S2)		
COFDM Re-modulation section				
Data processing	EN 300 744			
Output operation modes	2K ,, 4K (DVB-H) ,, 8K			
Constellation	QPSK ,, 16QAM ,, 64QAM			
Code rate	1/2 ,, 2/3 ,, 3/4 ,, 5/6 ,, 7/8			
Guard interval	1/4 ,, 1/8 ,, 1/16 ,, 1/32			
MER (Modulation Error Ratio)	dB	> 38 (typ.)		
COFDM Output section				
Selectable output channel located between:	MHz	47 - 862		
Bandwidth	MHz	5 (DVB-H) ,, 6 ,, 7 ,, 8		
Adjustable output level	dBµV	65 to 80		
Frequency stability	ppm	± ±30		
Output loop-through loss	dB	1.1		
Spurious in band	dBc	< -50		
Broadband noise (ΔB=5 MHz)	dBc	< -75		
General				
Supply voltage	VDC	+12		
Consumption	mA	730 (without CAM) 870 (with CAM)	730	
Operating temperature	°C	0 ... +45		
Input RF connector type	(2x) female F			
Output RF connector type	(2x) female F			
DC connector type	banana socket			
CAM entrance	1 slot (EN 50221)		—	
Programming interface	RS-232 / DB-9			
IKUSUP bus connector	(2x) 4 pin socket			
Dimensions	mm	230 x 195 x 32		

DVB-T/DVB-C and IP output A/V ▶ DVB-T ; DVB-C modulators



MHD-201

MHD-202

- The MHD-201 is a module designed and manufactured completely with in-house technology, that is able to treat different video and audio formats, to create a high-definition output channel in DVB-T/C and in IP which can be active simultaneously.
- The unit has various types of inputs:
Two analogue audio and video channels, through RCA connectors.
One digital audio and video channel in HDMI, through an HDMI connection.
One digital audio and video channel in HD-SDI, through a BNC connector.
- High definition RF output channel in DVB-T and in IP which can be active simultaneously.
- This product solution fulfils the needs of video signal distribution in residential facilities, hospitals, hotels and unique buildings and also CCTV integration in existing installations. The MHD-201 has also an USB interface for HD video contents playback from a USB memory automatically.
- The MHD-202 is a module designed in-house and manufactured with our own technology, capable of modulating two HD audio and video sources to make up one or two high definition RF output channels (in accordance with the input bitrate) in DVB-T and in IP which can be active simultaneously.
- The unit is fitted with two HDMI digital audio and video inputs through HDMI connectors.
- The output stage is capable of generating two RF channels, one for each HDMI input.
- Moreover, the MHD-202 has a USB interface for automatic playback of SD and HD content from a pendrive.
- This function allows applications such as:
 - use in digital signage,
 - creation of an information channel,
 - integration of any video source in the existing TV network.
- The modulator is programmed by the end user using a local or remote web interface through an RJ-45 connector.
- This modulator is compatible with the application for PC: "IKUSI HEADEND DISCOVERY"

MODEL	MHD-201		MHD-202	
REF.	3854		3855	
Inputs	(2x) CVBS, HDMI, HD-SDI		(2x) HDMI	
Input level (CVBS)	Vpp	0,7 - 1,4	-	
Video standard	PAL/SECAM/NTSC/B&W		-	
Audio standard	1 (Mono and Stereo)		-	
Video compression	MPEG2 MP@ML, H.264/MPEG4 AVC MP L4.1			
Audio compression	MPEG1 layer II			
Video quality	SD, HD (480i, 576i, 480p, 576p, 720p50, 720p, 1080i50, 1080i60, 1080p50, 1080p60)			
Maximum resolution	1080p60			
DVB-T / DVB-C outputs		DVB-T in accordance with ETSI EN 300 744 DVB-C in accordance with ETSI EN 300 429		
Bandwidth	MHz	6 / 7 / 8		
Number of carriers		2K / 8K		
MER	dB	≥ 40		
Central frequency	MHz	45 - 858		
Output level	dBμV	≥ 80		
Output attenuation	dB	0.5		
Level adjustment	dB	-25		
Frequency stability	ppm	±30		
Noise figure (ΔB = 8 MHz)	dBc	≤ -65		
Loophrough frequency		45 MHz to 2,5 GHz		
DVB-C output symbol rate	Kbps	3000 - 8000		
Constellation		DVB-T: 16QAM, 64QAM DVB-C: 16QAM, 32QAM, 64QAM, 128QAM, 256QAM		
IP output		IEEE 802.3 10/100 Base T		
IP encapsulated type		According to ETSI TS 102 034 v1.31(2007-10) and SMPTE ST 2022-2:2007		
Outflow IP		CBR/VBR		
IP Address		Unicast/Multicast		
Protocols		UDP/RTP		
IP encapsulated format		SPTS		
DVB processing		PAT, PMT, SDT, NIT		
NIT and SDT adaptation		Yes		
PSI/SI adaptation		PAT, PMT, SDT, NIT		
TS monitoring		Yes		
Network configuration		NID, ONID, TSID, Network name, Provider		
SID configuration		Yes		
LCN, TDT, TOT processing		Yes		
Channel name edition (EIT)		Yes (ex. "camera pool")		
Event description (EIT)		Yes (ex. "open from 9am to 18pm")		
Supply voltage	Vdc	+12		
Firmware upgrade		web interface		
Playback from a USB		Yes		
Consumption	A	1.3	1.9	
Dimensions	mm	230 x 195 x 32		

DVB-T output Terrestrial/cable TV channel processor



- Double conversion in the 45-862 MHz frequency range. IF SAW filtering.
- Agile Processing module, usable either as channel converters (output channel is different to input channel) or as channel processor (output channel is the same as input channel). Adjacent channel operation at input and output.
- A TPC headend includes:
 - As many TPC processing modules as channels to be converted or processed.
 - One HPA amplifier that amplifies the sum of the combined output TV channels from the processors.
 - One or more CFP power supplies.
 - One or more rack-frames or wall fixing base plates. The base plates can be joined horizontally.
 - Usually, housing units for the base plates.
 - If the headend is voluminous, one or more AMX-400 combiners.

The TPC headends provide a TV multichannel signal whose level is appropriate to feed the distribution network. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend.

MODEL		TPC-010
REF.		3842
Type of application channel		Digital
TV System / Standard		DVB-T ,, DVB-C ,, B/G, D/K, I, L
Frequency band of input TV channel	MHz	45 - 862
Frequency selection steps	MHz	0.500
Input level (CAG 40 dB ; manual adjustment for L-system channels)	dBµV	40 - 80
Selectable tuning offset	kHz	(±) 125 / 250 / 375 / 500
Noise figure	dB	< 9 (input level <70 dBµV)
Bandwidth of SAW filtering (at -3 dB)	MHz	6.875 (for 7 MHz channels) 7.850 (for 8 MHz channels)
Selectivity for 7 MHz channels	dB	> 9 (fc ± 3.75 MHz) > 70 (fc ± 4.75 MHz)
Selectivity for 8 MHz channels	dB	> 18 (fc ± 4.75 MHz) > 70 (fc ± 5.25 MHz)
Image rejection	dB	> 70
Adjustable output level	dBµV	55 to 70
Output loop-through loss	dB	1.1 (typ) .. 1.4 (max)
Group delay	ns	< ±40
Spurious in band	dBc	< -58
Phase noise of output channel (@ 1kHz)	dBc/Hz	< -92 (processor) < -80 (converter)
Broadband noise (ΔB=5 MHz)	dBc	< -75
Supply voltage	VDC	+12
Consumption	mA	540
Operating temperature	°C	0 ... +45
Input RF connector type		(1x) female F
Output RF connector type		(2x) female F
DC connector type		"banana" socket
Programming interface		RS-232 / DB-9
Dimensions	mm	230 x 195 x 32

DVB-T output

DVB-T ► DVB-T transmodulator



- The TGT is a DVB-T to DVB-T Transport Stream Regenerator/Processor.
- The product is designed to correct and rebuild a poor quality COFDM signal back to Quasi Transmission Standard. The product also allows the user to change various parameters of the regenerated COFDM stream at the output.
- A TGT headend includes:
 - As many TGT Regenerators as COFDM channels being received.
 - One or more AMX-400 combiners if the headend being assembled is extensive.
 - One HPA Amplifier to launch the combined output COFDM channels from the regenerators.
 - One or more CFP Power Supplies.
 - One or more Rack Frames or wall mounting Base Plates. The base plates can be joined horizontally.
 - Housing units for the base plates if required.
 - If the headend is large, one or more AMX-400 combiners.

The TGT headends deliver a multichannel COFDM signal with sufficient power to drive a distribution network.

An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by other existing headend equipment.

MODEL		TGT-100
REF.		4026
Remote mode		Yes
Transport Stream (TS) processing		Yes
Input section (COFDM)		
Standard		EN 300 744
Input frequency band	MHz	174 - 230 and 470 - 862
Bandwidth	MHz	7 .. 8
Mode (automatic detection)		2K .. 8K
Constellation		QPSK .. 16QAM .. 64QAM
Hierarchy		High Priority .. Low Priority
Input level (contellation: 64QAM/code rate: 2/3)	dBpV	35 ... 100
Input loop-through gain	dB	0.5 (±1)
Guard interval (automatic detection)		1/4 .. 1/8 .. 1/16 .. 1/32
COFDM Re-modulation section		
Data processing		2K .. 4K (DVB-H) .. 8K
Constellation		QPSK .. 16QAM .. 64QAM
Code rate		1/2 .. 2/3 .. 3/4 .. 5/6 .. 7/8
Guard interval (automatic detection)		1/4 .. 1/8 .. 1/16 .. 1/32
In-depth interleaving (only on DVB-H)		Applicable (on 2K and 4K modes)
MER	dB	> 38 (typ.)
Output section (COFDM)		
Selectable output channel located between:	MHz	47 - 862
Bandwidth	MHz	5 (DVB-H) .. 6 .. 7 .. 8
Adjustable output level	dBpV	65 to 80
Frequency stability	ppm	±30
Output loop-through loss	dB	1.1
Spurious in band	dBc	< -50
Broadband noise (ΔB=8MHz)	dBc	< -75
General		
Supply voltage	VDC	+12
Consumption	mA	670
Operating temperature	°C	0 ... +45
Input RF connector type		(2x) female F
Output RF connector type		(2x) female F
DC connector type		"banana" socket
Programming interface		RS-232 / DB-9
IKUSUP bus connector		(2x) 4 pin socket
Dimensions	mm	230 x 195 x 32

AM output DVB-S ► AM transmodulator



- Reception of encrypted Sat-TV programs. Standard DVB-S / MPEG-2 (EN 300 421).
- Receiving Modules with Common Interface (EN 50221). The encrypted TV programmes transmitted on QPSK channels are de-encrypted and presented on conventional VHF/UHF channels (any TV system or Colour system).
- An SRC headend includes:
 - As many SRC Receiving Modules as de-encrypted TV programmes to be distributed. At each module, one CAM (Conditional Access Module) containing the Operator's Smart Card must fit the front panel slot.
 - One HPA Amplifier that amplifies the sum of the receivers' output TV channels. One or more CFP Power Supplies.
 - One or more Rack-Frames or wall-fixing Base-Plates. The base-plates can be joined horizontally.
 - Usually, housing units for the base-plates.
 - If the headend is large, one or more AMX-400 combiners.

The SRC headends provide a TV multichannel signal whose level is appropriate to feed the distribution network. With an SRC installed in the headend, the end user does not require a Set Top Box or any additional devices to view the de-encrypted digital TV programs being distributed. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend.

An SRC receiving module with CAM+Operator's smart card inserted, carries out a complete channel processing from the input to the input:

- tunes a DVB-S Sat-IF digital channel in the 950-2150 MHz band,
- selects an encrypted TV programme from the multiplex being received, and
- de-encrypts and presents it on a conventional TV channel that is selectable throughout the 45-862 MHz.

MODEL		SRC-111
REF.		4096
Output TV-channel spectrum		VSF (Vestigial Side Band)
Remote mode		Yes
Output channel TV system		B / G
Audio operation mode		Mono ⁽¹⁾
Output channel colour system		PAL , SECAM , NTSC
Selectable output channel located between:	MHz	45 - 862
Input section (QPSK)		
Inpt frequency	MHz	950 - 2150
Input level	dBm	-65 ... -25
Input loop-through gain	dB	0 (±1)
AFC pull-in range	MHz	±5
Input symbol rate	MS/s	2 ... 45
MPEG-2 decoding		
Video decoding		Main Profile @ Main level
Audio decoding		Layer II
Teletext - subtitles insertion		Yes
Image format conversion		16:9 a 4:3 Pan&Scan and 16:9 a 4:3 Letter-box
External V/A loop		
Video and L/R audio output levels	Vpp	1.0 (video) 0 ... 2.0 (audio)
Video and L/R audio input levels	Vpp	0.9 ... 1.1 (video) 0.5 ... 1.0 (audio)
V & A re-modulation section		
Adjustable video modulation depth	%	80 to 90
Adjustable audio peak deviation	kHz	±10 to ±50
Output section (TV channel)		
Adjustable output level	dBµV	65 to 80
Output loop-through loss	dB	1.1
Adjustable carrier level ratio	dB	12 / 16
Group delay precorrection		Yes
Weighted SNR	dB	> 60
Spurious in band	dBc	< -60
Broadband noise (ΔB=5 MHz)	dBc	< -75
General		
Supply voltage	VDC	+12
Max consumption (CAM included)	mA	680
Operating temperature	°C	0 ... +45
Input RF connector type		(2x) female F
Output RF connector type		(2x) female F
DC connector type		banana socket
CAM entrance		Slot
Programming interface		RS-232 / DB-9
Video/audio loop connector type		mini-DIN (6-way)
IKUSUP bus connector		(2x) 4-pin socket
Dimensions	mm	230 x 195 x 32

AM output DVB-S ▶ AM transmodulator



- Terrestrial TV reception, standard DVB-S / MPEG-2 (EN 300 421).
- Digital-to-Analogue Transmodulation Process (QPSK - AM) that presents the clear TV programmes transmitted in QPSK Sat-TV channels on conventional VHF/UHF channels (VSB vestigial side band; any TV system and Colour system).
- An SRF headend includes:
 - As many SRF receiving modules as free-to-air TV programmes to be distributed.
 - One HPA amplifier that amplifies the sum of the combined output TV channels from the receivers.
 - One or more CFP power supply.
 - One or more rack-frames or wall fixing base plates. The base plates can be joined horizontally.
 - Usually, one housing unit.
 - If the headend is voluminous, one or more AMX-400 combiners.

The SRF headends provide a TV multichannel signal whose level is appropriate to feed the distribution network. With a SRF installed in the headend, the end user does not require a Set Top Box or any additional devices to view the clear digital TV programs being distributed. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend.

A SRF receiving module carries out the complete channel processing from the input to the output:

- tunes a QPSK Sat-IF digital channel in the 950-2150 MHz band,
- selects a TV programme from the multiplex received, and
- directs it to a conventional TV channel which is selectable throughout the 45-862 MHz band.

Range includes different models for VSB output channel spectrums; for B/G, D/K, I, L or M/N TV system; and for mono or A2 stereo/dual sounds.

MODEL		SRF-011
REF.		4084
Output TV-channel spectrum		VSB (Vestigial Side Band)
Remote mode		NO
Output channel TV system		B / G / D / K / I / L
Output channel audio system		Mono ⁽¹⁾
Output channel colour system		PAL , SECAM , NTSC
Selectable output channel located between:	MHz	45 - 862
Input section (DVB-S)		
Input frequency band	MHz	950 - 2150
Input level	dBm	-65 ... -25
Input loop-through gain	dB	0 (±1)
AFC pull-in range	MHz	±5
Input symbol rate	MS/s	2 ... 45
MPEG-2 decoding section		
Video decoding		Main Profile @ Main level
Audio decoding		Layer II
Teletex - Subtitles insertion		Yes
Image Format Conversion		16:9 to 4:3 Pan&Scan and 16:9 to 4:3 Letter-box
V/A re-modulation section		
Adjustable video modulation depth	%	80 to 90
Adjustable audio peak deviation	kHz	±10 to ±50
Output section (TV channel)		
Adjustable output level	dBµV	65 to 80
Output loop-through loss	dB	1.1
Adjustable carrier level ratio	dB	12 / 16 (Mono ; A2: Audio1) 20 (A2: Audio2)
Weighted SNR	dB	> 60
Spurious in band	dBc	< -58
Broadband noise (ΔB=5 MHz)	dBc	< -75
General		
Supply voltage	VDC	+12
Consumption	mA	540
Operating temperature	°C	0 ... +45
Input RF connector type		(2x) female F
Output RF connector type		(2x) female F
DC connector type		banana socket
Programming interface		RS-232 / DB-9
Dimensions	mm	230 x 195 x 32

AM output

A/V ▶ AM Twin modulators



MCP-801



MCP-811

- Vestigial side band twin modulators.
- The twin ones integrate two modulators in one module.
- IF modulation and SAW filtering for maximum harmonic reduction and true VSB response. Adjacent channel operation.
- Frequency agility. Any selectable TV channel within the 45-862 MHz band. PLL frequency synthesized.
- Built-in test pattern generator.
- In twin modulators, the two generated TV channels are combined internally to make up one bi-channel output signal.

MODEL		MCP-801	MCP-811
REF.		3849	3851
TV system		B/G/D/K/I/L	B / G
Audio system		Mono	
Input		(2x) Video .. (2x) Audio	
Selectable output channel located between:	MHz	TV Bi-channel each one of the two channels is selectable between: 45 - 862	
Adjustable output level	dBuV	68 to 78	
Intercarrier frequency	Audio 1 MHz	5.5	
Adjustable carrier level ratio	dB	12 / 16	
Video input level	Vpp	0.7 ... 1.4	
Video input impedance	Ω	75	
Adjustable video modulation depth	%	80 to 90	
Audio input level	Vpp	0.5 ... 4.0	
Audio input impedance	Ω	> 600	
Adjustable audio peak deviation	kHz	±40 to ±50	
Audio pre-emphasis	μs	50	
Weighted SNR	dB	> 59	
Differential gain	%	< 3	
Differentian phase	°	< 3	
K-factor (2T pulse)	%	< 3	< 2.5
Spurious in band	dBc	< -57	
Broadband noise (ΔB=5 MHz)	dBc	< -73	
Output loop-through loss	dB	0.7 (typ) .. 1.2 (max)	
Supply voltage	VDC	+12	
Consumption	mA	460	
Video connector type		(2x) female RCA	
Audio connector type		(4x) female RCA	
Output RF connector type		(2x) female F	
DC connector type		banana socket	
Programming interface		RS-232 / DB-9	
Dimensions	mm	230 x 195 x 32	

IF-IF converter

Processes 3 frequencies DVB-S/S2



SPC-030

- Frequency conversion of Sat-IF channels coming from different satellites or polarizations in order to establish a new frequency plan where all the converted channels are transmitted on a single cable.
- Use with digital channels.
- Triple Converter. Conversion of three channels.
- Input mode configurable:
 - a) Loop-through, which facilitates interconnection of several modules to convert many channels transported by a down-lead cable.
 - b) Two independent inputs, for converting one channel transported by a down-lead cable and two channels transported by another.

MODEL		SPC-030
REF.		3844
Number of SAT-IF channels converted		3
Input mode		Configurable: a) Loop-through b) Two independent inputs: port up : 2-channel input port down : 1-channel input
Input section		
Input frequency	MHz	950 - 2150
Input level	dBμV	-60 ... -20
Input symbol rate	dB	6 ... 45
Max level difference between input signals		25
Noise figure		< 10
Input loop-through gain		0 (±2)
Output section		
Output frequency band	MHz	950 - 2150
Output response flatness	MHz	< 3
Adjustable output level	dBμV	-38 to -23
Phase noise	ppm	DVB-S2 compatible
Output loop-through loss	dB	1 (typ.) .. 1.8 (max)
Spurious in band	dBc	< -35
General		
Supply voltage	VDC	+12
Consumption	mA	210
Operating temperature	°C	0 ... +45
Input RF connector type		(2x) female F
Output RF connector type		(2x) female F
DC connector		banana socket
Programming interface		RS-232 / DB-9
Dimensions	mm	230 x 195 x 32

DVB-C output DVB-S/S2 ► DVB-C transmodulator



- **Digital Transmodulation (DVB-S/S2 to DVB-C).**

The DVB-S/S2 channels located in the Sat-IF frequency band (950-2150 MHz) are transformed to DVB-C channels (16 to 256 symbols) located in the 45-862 MHz band.

- A MDI headend includes:

- As many MDI Transmodulators as QAM channels to be distributed.
- One HPA Amplifier that amplifies the sum of the combined output QAM channels from the transmodulators.
- One or more CFP Power Supplies.
- One or more Rack-Frames or wall-fixing Base-Plates. The base-plates can be joined horizontally.
- Usually, housing units for the base-plates.
- If the headend is large, one or more AMX-400 combiners.

The MDI headend provide a QAM multichannel signal whose level is appropriate to feed the distribution network. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend. The user requires a DVB-C Receiver to convert the QAM signals into the appropriate signals that can be accepted by a conventional TV set, and to control access to encrypted TV programmes.

MODEL		MDI-910
REF.		4020
Reception		DVB-S2 DVB-S
Transport Stream processing		Yes
Common Interface (EN 50221)		Yes
Input section (DVB-S/S2)		
Standard		EN 302 307
Input frequency band	MHz	950 - 2150
Input level	dBm	-70 ... -25 (DVB-S2) -65 ... -25 (DVB-S)
Input loop-through gain	dB	0 (±1)
AFC pull-in range	MHz	±5
Input symbol rate	MS/s	10 ... 30 (DVB-S2) 2 ... 45 (DVB-S)
Re-modulation section (DVB-C)		
Data processing		EN 300 744
Selectable modulation scheme		16QAM ,, 32QAM ,, 64QAM ,, 128QAM ,, 256QAM
MER (Modulation Error Ratio)	dB	> 40 (typ.)
Output symbol ratio	MS/s	1 ... 8
Selectable Roll-Off factor	%	12 ,, 13 ,, 15
Output section (DVB-C)		
Selectable output channel located between:	MHz	47 - 862
Bandwidth	MHz	5 (DVB-H) ,, 6 ,, 7 ,, 8
Adjustable output level	dBµV	65 to 80
Output loop-through loss	dB	1.1
Spurious in band	dBc	< -55
Broadband noise (ΔB=5 MHz)	dBc	< -75
General		
Supply voltage	VDC	+12
Consumption	mA	710 (without CAM) 850 (with CAM)
Operating temperature	°C	0 ... +45
DC connector type		banana socket
CAM entrance		slot
Programming Interface		RS-232 / DB-9
IKUSUP bus connector		(2x) 4-pin socket
Dimensions	mm	230 x 195 x 32

DVB-C output

DVB-T ► DVB-C transmodulator



MODEL		TDI-900
REF.		4021
Remote mode		Yes
Transport Stream (TS) processing		Yes
Input section (DVB-T)		
Standard		EN 300 744
Input frequency	MHz	174 - 230 and 470 - 862
Bandwidth	MHz	7 .. 8
Mode (automatic detection)		2K .. 8K
Constellation (automatic detection)		QPSK .. 16QAM .. 64QAM
Hierarchy		High Priority .. Low Priority
Input level	dBµV	35 ... 100
Input loop-through gain	dB	0.5 (±1)
Guard interval (automatic detection)		1/4 .. 1/8 .. 1/16 .. 1/32
Re-modulation section (DVB-C)		
Data processing		EN 300 429
Selectable Modulation Scheme of output signal		16QAM .. 32QAM .. 64QAM .. 128QAM .. 256QAM
MER (Modulation Error Ratio)	dB	> 40 (typ.)
Output symbol rate	MS/s	1 ... 8
Selectable Roll-Off factor	%	12 .. 13 .. 15
RF output section (DVB-C)		
Selectable output channel located between:	MHz	47 - 862
Adjustable output level	dBµV	65 to 80
Output loop-through loss	dB	1.1
Spurious in band	dBc	< -55
Broadband noise (ΔB=5 MHz)	dBc	< -75
General		
Supply voltage	VDC	+12
Consumption	mA	650
Operating temperature	°C	0 ... +45
Input RF connector type		(2x) female F
Output RF connector type		(2x) female F
DC connector type		banana socket
Programming Interface		RS-232 / DB-9
IKUSUP bus connector		(2x) 4-pin socket
Dimensions	mm	230 x 195 x 32

• **Digital Transmodulation (DVB-T to DVB-C) with Transport Stream Processing.**
The DVB-T channels located in the 174-230 MHz or 470-862 MHz bands are transformed to DVB-C channels (16 to 256 symbols) located in the 47-862 MHz band. NIT table can be adapted to the new network created.

- A TDI headend includes:
 - As many TDI Transmodulators as QAM channels to be distributed.
 - One HPA Amplifier that amplifies the sum of the combined output QAM channels from the transmodulators.
 - One or more CFP Power Supplies.
 - One or more Rack-Frames or wall-fixing Base-Plates. The base-plates can be joined horizontally.
 - Usually, housing units for the base-plates.
 - If the headend is large, one or more AMX-400 combiners.

The TDI headends provide a QAM multichannel signal whose level is appropriate to feed the distribution network. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend. The user requires a DVB-C Receiver to convert the QAM signals into the appropriate signals that can be accepted by a conventional TV set, and to control access to encrypted TV programmes.

ADVANCED ClassA Headend

ADVANCED ClassA. HTL Series

NEW PRODUCT



ClassA modules with IKUNET communications bus that allow all the modules to be adjusted and controlled as a headend.



It allows channels to be added/modified without having to retune the television sets



Universal input tuners: DVB-T/T2, DVB-S/S2, DVB-C



Selectable DVB-T or DVB-C output



MPEG4 to MPEG2 transcoding



Common interface



Easy-to-adjust headend using a Wizard application

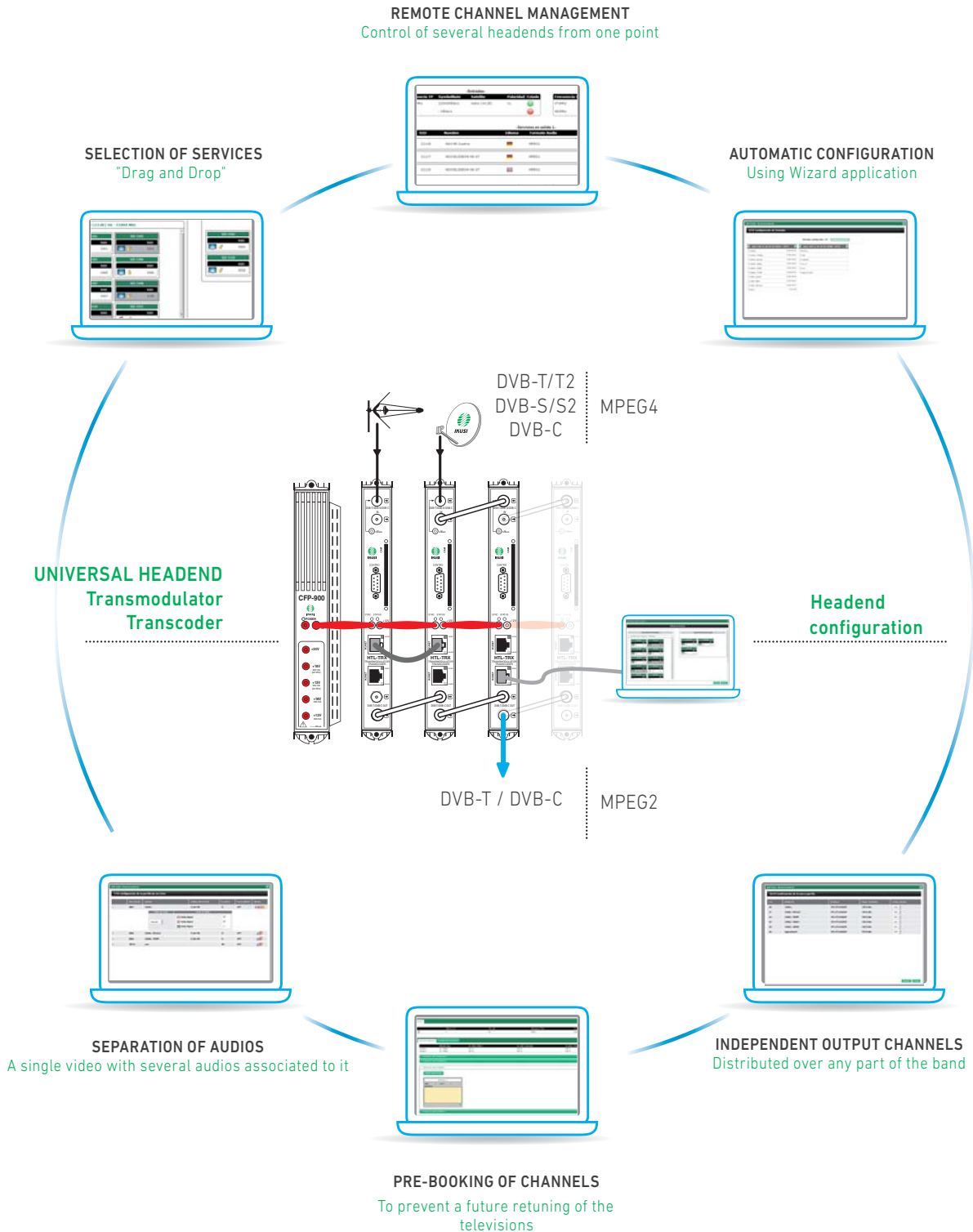


More channels in less space



Ikusi Headend Discovery application

Remote configuration through web interface.



DVB-T and DVB-C output

Double transmodulator DVB-T/T2 ; DVB-S/S2 ; DVB-C ▶ DVB-T and DVB-C
MPEG4 ▶ MPEG2 transcoder

NEWPRODUCT



- **Transcoding of MPEG4 to MPEG2 input services.**
Versatile transmodulation of DVB-T/T2, DVB-S/S2 and DVB-C channels to DVB-T/DVB-C channels.
- The HTL-TRX module can receive 2 DVB-T/T2 or DVB-S/S2 or DVB-C muxes and combine them on 2 DVB-T or DVB-C output channels. It handles HD and SD services both on MPEG4 H.264 and on MPEG-2, allowing HD contents to be received on SD televisions.
- One module acts as the "master" to ensure the configuration (remote or local through PC) is carried out at the complete headend level, through the IKUNET bus and not module by module.
- It has a Common Interface (EN 50221) for discretionary decryption of programmes in accordance with the inserted CAM module.
- With Ikusi's Transcoding solution, the old TV SD equipment does not need to be changed and the latest content can still be enjoyed. The Ikusi headend offers the chance of deciding when and how to up-date the television sets.
- It allows a future increase in channels to be foreseen in order for the televisions to have them already on their lists, avoiding the need for retuning.
- It allows a video service to be sent with several different languages without taking up more space than that corresponding to an RF channel. The television shows "a programme" for each language, avoiding the need for users to have to choose their "language" on the television remote control.
- It is compatible with the PC application: "IKUSI HEADEND DISCOVERY" (this can be downloaded from <http://areacliente.ikusi.tv>).
- It allows grids of channels to be created and managed remotely, ensuring that the grid is completely customisable without having to intervene in-situ.
- It allows multiple headends to be managed from a single point for efficient maintenance.
- The two COFDM channels can be distributed onto any part of the band.
- The Wizard installation assistant allows us to carry out a step-by-step headend configuration that is quick and easy. It is executed by turning slave into Master or entering from the general menu.
- Total control of the multiswitch. Fitted with DiSEqC (v. 2)

MODEL		HTL-TRX	
REF.		3861	
Inputs		2 (or loop through)	
Standards		EN 300 744 DVB-T EN 302 755 DVB-T2 EN 300 421 DVB-S EN 302 307 DVB-S2 EN 300 744 DVB-C	
Reception		DVB-T/T2 ; DVB-S/S2 ; DVB-C	
Frequency range	MHz	DVB-T: 47 - 862 DVB-S: 950 - 2150 DVB-C: 47 - 862	
No. tuned programs		-If transcoder activated, treatment capacity is limited to 4 channels and up to 8 audio streams. -If transcoder deactivated, treatment capacity is limited only by output bitrate. Typically up to 31 Mbps for DVB-T and up to 55 Mbps for DVB-C. -Transcoder does not treat subtitles HD to subtitle SD.	
Max n° of decrypted programmes		Variable (depending on CAM)	
Input level	dBµV	40 - 92	
Input loop gain		dB	
Symbol rate	DVB-S	2 ... 45	
	DVB-S2	8 ... 45	
	DVB-C	7 max	
TS Processing			
PSI/SI adaptation		Generating and inserting tables PAT, PMT, CAT, SDT, NIT, TOT and BAT	
NIT (Network Information Table) adaptation		Yes (generated automatically)	
SDT (Service Description Table) adaptation		Yes (configurable name input)	
Processing LCN, TDT, TOT		Yes	
Transcoding			
Supported usecases		1080i mpeg4 > 576i mpeg2	
		576i mpeg4 > 576i mpeg2	
Audio		AC3 > mpeg I layer II	
		AC3Plus > mpeg I layer II	
Outputs			
No. of outputs		2 DVB-T / DVB-C	
Output frequency	MHz	DVB-T: 47 - 862 DVB-C: 47 - 862	
MER	dB	> 40	
Output level	dBµV	80	
Adjustable output level	dB	-15	
Bandwidth	MHz	6 / 7 / 8	
Loop step attenuation	dB	1.1	
DVB-C symbol rate	MS/s	7.2 max	
General			
Remote control		Yes	
Configuration		PC. Web. Ikusi Headend Discovery Wizard assistant	
Supply voltage	VDC	+12	
Consumption	A	2	
Firmware upgrade		Web interface	
Operating temperature		°C 0 ... +45	
CAM		1 slot (EN 50221)	
Bus IKUNET connector		2x RJ-45	
Dimensions		mm 230 x 195 x 32	

DVB-T and DVB-C output

Double transmodulator DVB-T/T2 ; DVB-S/S2 ; DVB-C ▶ DVB-T and DVB-C

NEW PRODUCT



- Versatile transmodulation of DVB-T/T2, DVB-S/S2 and DVB-C channels to DVB-T/DVB-C channels.
- The HTL-STC module can receive 2 DVB-T/T2 or DVB-S/S2 muxes and combine them on 2 DVB-T or DVB-C output channels.
- One module acts as the “master” to ensure the configuration (remote or local through PC) is carried out at the complete headend level, through the IKUNET bus and not module by module.
- The Wizard installation assistant allows us to carry out a step-by-step headend configuration that is quick and easy.
- It has a Common Interface (EN 50221) for discretionary decryption of programmes in accordance with the inserted CAM module.
- It allows a future increase in services to be foreseen in order for the televisions to have them already on their lists, avoiding the need for retuning.
- It allows a video service to be sent with several different languages without taking up more space than that corresponding to an RF channel. The television shows “a programme” for each language, avoiding the need for users to have to choose their “language” on the television remote control.
- It is compatible with the PC application: “IKUSI HEADEND DISCOVERY” This instrument provides installers with a tool that allows them to detect the headend’s modules without having to modify the PC’s network configuration. (This can be downloaded from www.ikusi.tv).
- It allows grids of channels to be created and managed remotely, ensuring that the grid is completely customisable without having to intervene in-situ.
- The two DVB-T/C output channels can be distributed onto any part of the band.
- Total control of the multiswitch. Fitted with DiSEqC (v. 2)

MODEL		HTL-STC	
REF.		3860	
Inputs		2 (or loop through)	
Standards		EN 300 744 DVB-T EN 302 755 DVB-T2 EN 300 421 DVB-S EN 302 307 DVB-S2 EN 300 744 DVB-C	
Reception		DVB-T /T2 ; DVB-S/S2 ; DVB-C	
Frequency range	MHz	DVB-T: 47 - 862 DVB-S: 950 - 2150 DVB-C: 47 - 862	
Max n° of decrypted programmes		Variable (depending on CAM)	
Input level	dBµV	40 - 92	
Input loop gain	dB	0 (±1)	
Symbol rate	DVB-S DVB-S2 DVB-C	MS/s	2 ... 45 8 ... 45 7 max
TS processing			
PSI/SI adaptation		Generating and inserting tables PAT, PMT, CAT, SDT, NIT, TOT and BAT	
NIT (Network Information Table) adaptation		Yes (generated automatically)	
SDT (Service Description Table) adaptation		Yes (configurable name input)	
Processing LCN, TDT, TOT		Yes	
Outputs			
No. of outputs		2 DVB-T / DVB-C	
Output frequency	MHz	DVB-T: 47 - 862 DVB-C: 47 - 862	
MER	dB	> 40	
Output level	dBµV	80	
Adjustable output level	dB	-15	
Bandwidth	MHz	6 / 7 / 8	
Loop step attenuation	dB	1.1	
DVB-C symbol rate	MS/s	7.2 max	
General			
Remote control		Yes	
Configuration		PC. Web, Ikusi Headend Discovery Wizard assistant	
Supply voltage	VDC	+12	
Consumption	A	2	
Firmware upgrade		Web interface	
Operating temperature	°C	0 ... +45	
CAM		1 slot (EN 50221)	
Bus IKUNET connector		2x RJ-45	
Dimensions	mm	230 x 195 x 32	

DVB-T and DVB-C output

DVB-T/T2 ▶ DVB-T and DVB-C twin transmodulator

MPEG4 ▶ MPEG2 transcoder



- Conversion solution for DVB-T/T2 MPEG4 services to DVB-T/DVB-C MPEG2. This includes the transmodulator function of DVB-T2 channels to DVB-T/DVB-C channels
- The terrestrial HTL-TT2 module can receive 2 DVB-T/T2 muxes and combine them on 2 DVB-T/DVB-C output channels. It handles HD and SD services both on MPEG4 H.264 and on MPEG-2, allowing HD content to be received on SD televisions.
- One module acts as the "master" to ensure the configuration (remote or local through PC) is carried out at the complete headend level, through the IKUNET bus and not module by module.
- With Ikusi's Transcoding solution, the old TV SD equipment does not need to be changed and the latest content can still be enjoyed. The Ikusi headend offers the chance of deciding when and how to up-date the television sets.

MODEL		HTL-TT2
REF.		3859
Inputs		1 (dual tuner)
Standard		EN 300 744 DVB-T ; EN 302 755 DVB-T2
Reception		DVB-T / DVB-T2
Frequency band	MHz	47 - 862
No. tuned programs		-If transcoder activated, treatment capacity is limited to 4 channels and up to 8 audio streams. -If transcoder deactivated, treatment capacity is limited only by output bitrate. Typically up to 31 Mbps for DVB-T and up to 55 Mbps for DVB-C. -Transcoder does not treat subtitles HD to subtitle SD.
Input level	dBμV	40 - 92
Input loop gain	dB	0 (±1)
TS Processing		
PSI/SI adaptation		Generating and inserting tables PAT, PMT, CAT, SDT, NIT, TOT and BAT
NIT (Network Information Table) adaptation		Yes (generated automatically)
SDT (Service Description Table) adaptation		Yes (configurable name input)
Processing LCN, TOT, TOT		Yes
Transcoding		
Supported usecases		1080i mpeg4 > 576i mpeg2
		576i mpeg4 > 576i mpeg2
Audio		AC3 > mpeg I layer II
		AC3Plus > mpeg I layer II
Outputs		
No. of outputs		2 channels DVB-T / DVB-C
Frequency band	MHz	DVB-T: 47 - 862 DVB-C: 47 - 862
Operation modes		2K ; 8K
MER	dB	> 40
Output level	dBμV	80
Adjustable output level	dB	-15
DVB-T modulation formats		QPSK ; 16QAM ; 64QAM
DVB-T code ratio		1/2 , 2/3 , 3/4 , 5/6 , 7/8
DVB-T guard interval		1/4 , 1/8 , 1/16 , 1/32
Bandwidth	MHz	6 / 7 / 8
Loop step attenuation	dB	1.1
DVB-C symbol rate	MS/s	7.2 max
Frequency stability	ppm	≤ ±30
General		
Remote control		Yes
Configuration		PC. Web, Ikusi Headend Discovery Wizard assistant
Supply voltage	VDC	+12
Consumption	A	2
Firmware upgrade		web interface
Operating temperature	°C	0 ... +45
IKUNET bus connector		2x RJ-45
Dimensions	mm	230 x 195 x 32

DVB-T and DVB-C output DVB-S/S2 ▶ DVB-T and DVB-C twin transmodulator



- HTL-ST2 is a product which is designed given the increasing need for complex channel grids in hotels, with multiple inputs which increase the density of channels handled by each module.
- The module input connection is software configurable ("2 input" or "1 input+loop") and is equipped with DiSeqC function, meaning each module can be tuned at two satellite frequencies with different polarities. Each transmodulator includes a Web server.
- Pre-reserve channels: Envisages a future increase in channels, meaning the television sets have them in their lists and do not need to be retuned in the future.
- Separation audios: Sends a video service with several different languages or audios using the same space as for an RF channel. The television present "a programme" for each language, avoiding the need for the user to choose "language" with the remote control.
- The HTL-ST2 transmodulator is compatible with the application for PC: "IKUSI HEADEND DISCOVERY" (can be downloaded from ikusi.tv).
- This tool allows the installer to detect the headend modules without having to modify the PC network card.
- The HTL-ST2 headend can be used to create channel grids and manage them remotely, providing a fully customisable grid without the need for on-site intervention. Used to manage multiple headends from a single point for efficient maintenance.
- Independent output channels: The two COFDM channels can be distributed in any part of the 51-858 MHz band.
- The step-by-step Wizard can be used to quickly and straightforwardly configure the headend.
- Total control multiswitch. Combines with greater availability of channels and satellites, without having to physically interact with the headernd.

MODEL		HTL-ST2
REF.		3858
Standard		EN 300 421 DVB-S EN 302 307 DVB-S2
N° of inputs		2 2 polarities or 1 polarity + Loopthrough
Frequency band		MHz 950 - 2150
Fitted with DiSeqC (v. 1.08)		No limit on number of polarities. Can use more satellites and remotely change the required channels
Max n° of decrypted programmes		Variable (depending on CAM)
Input level		dBm -65...-25 (DVB-S) -70...-25 (DVB-S2)
Input loop gain		dB 0 (±1)
AFC pull-in range		MHz ±5
Input Symbol rate		MS/s 2 ... 45 8 ... 45
TS Processing		
PSI/SI adaptation		Generating and inserting tables PAT, PMT, CAT, SDT, NIT, TOT and BAT
NIT adaptation		Yes (generated automatically)
SDT adaptation		Yes (configurable name input)
TS monitoring		Yes
Processing LCN, TDT, TOT		Yes
Outputs		
No. of outputs		2 channels DVB-T / DVB-C
Frequency band		MHz DVB-T: 47 - 862 DVB-C: 47 - 862
Operation modes		2K ; 8K
MER		dB > 40
Output level		dBmV 80
Adjustable output level		dB -15
Modulation formats		QPSK ; 16QAM ; 64QAM
Code ratio		1/2 , 2/3 , 3/4 , 5/6 , 7/8
Guard interval		1/4 , 1/8 , 1/16 , 1/32
Output bandwidth		MHz 6 / 7 / 8
Output loop step attenuation		dB 1.1
Frequency stability		ppm ≤ ±30
General		
Configuration		PC. Web, Ikusi Headend Discovery
Firmware upgrade		Web Interface
Supply voltage		VDC +12
Consumption		A 1.6 (no CAM)
Operating temperature		°C 0 ... +45
Common interface		1 slot (EN50221)
IKUNET bus connector		2x RJ45
Dimensions		mm 230 x 195 x 32

Power supply



- The CFP-900 power supply has been designed to supply enough power to most ClassA headend configurations.

Its high output current capacity (9A) means it must be used with a high current plug bridge, supplied with all IKUSI ClassA devices and vital in installations that demand more than 5A (see picture).

- The CFP-900 power supply also has all the necessary auxiliary outputs to supply external elements like preamplifiers and LNBs.

Other differentiating characteristics are its high efficiency and the fact that it implements a power factor corrector to optimize mains consumption.

MODEL		CFP-900
REF.		4492
Regulation type		switch mode
Mains supply voltage (50/60 Hz)	VAC	100 - 240
Outputs		+12V (9A) ClassA modules +24V (60mA) for most preamplifiers +18V (300mA) for LNB +18V / 22kHz (300mA) for LNB +13V (300mA) for LNB +13V / 22kHz (300mA) for LNB
Max total current for +24, +18 and +13V	mA	700
Efficiency	%	> 85
Operating temperature	°C	-10 ... +55
Mains lead		Yes
Dimensions	mm	230 x 195 x 48

Multiplexor



- Application in large ClassA headends where the modules (processors, receivers, transmodulators, modulators, regenerators) are mounted in several deck-arranged rack-frames or baseplates. The AMX-400 is a 4-input combiner that has been designed to combine up to 24 channels (6 channels per input).
- The system is expandable, so that it is possible to combine up to 96 channels by using 4 AMX-400 and one final passive combiner (or another AMX at IMD decrease's expense).
- The sum of the combined signals is connected to the HPA launch amplifier.

MODEL		AMX-400
REF.		4433
No. of inputs	MHz	4
Frequency range	dB	45 - 862
Response flatness	dB	±1.5
Gain	dB	7
IMD for 4x6 channels, 72 dBµV input level	dB	-75
Output variable attenuator	dB	0 - 10
Input and output return loss	dB	≥ 10
Output test	dB	-20 ±1
Supply voltage	VDC	+12
Consumption	mA	470
RF and test connectors		Female F
DC connectors		banana socket
Dimensions	mm	230 x 195 x 32

Power amplifier



- Amplification of the combined multichannel signal in a ClassA assembly.
- Variable attenuation is shared on two interstage sections, featuring delayed behaviour on the first one. Maintenance of a low noise figure.
- Extension input allows coupling of the wideband signal provided by another existing headend.
- Each module is packed with a DC plug bridge, 53 mm length, for connection of +12 VD voltage.

MODEL		HPA-125
REF.		4427
Technology		Push-pull
Bandwidth	MHz	47 - 862
Gain	dB	45
Interstage variable attenuator	dB	0 - 20
Noise figure	dB	≤ 6
Output level (IMD3 -60dB, DIN 45004B)	dB	≥ 125 ¹
Output level (IMD2 -60dB, EN 50083-3)	dBμV	≥ 120
Output level (CTB -60 dB, EN 42 channels)	dBμV	≥ 111
Output level (CSO -60 dB, EN 42 channels)	dBμV	≥ 115
Input test	dBμV	-20 ±1.5
Output test	dB	-30 ±1
Extension input	Bandwidth	MHz
	Gain	dB
Supply voltage	VDC	+12
Consumption	mA	830
RF and Test connectors		female F
DC connector type		banana socket
Dimensions	mm	230 x 195 x 32

Sat-IF combiner/amplifier



- Application in ClassA headends to drive Sat-IF distribution lines. One HPA-920 per polarity or IF signal being distributed.
- 1 satellite IF input port, with adjustable gain and 0 / 7 dB switchable slope to compensate for cable losses ; 1 terrestrial TV coupling port ; 1 combined TV+IF output port ; 1 output test port.
- "Banana" socket to connect the power for the attached LNB.

MODEL		HPA-920
REF.		4437
Sat-IF band	MHz	950 - 2150
Response flatness	dB	±1
Nominal gain	dB	40
Continuous gain adjustment	dB	0 - 18
Slope switchable	dB	0 / 7
Output level (-35 dB IMD3, EN 50083-3)	dBμV	≥ 120
Input/output return loss	dB	≥ 10
Noise figure	dB	< 7
TV band	MHz	5 - 862
Output test (TV+IF)	dB	TV: -30 ±1 .. IF: -30 ±1.5
Supply voltage	VDC	+12
Consumption	mA	250
Dimensions	mm	230 x 195 x 32

Rack cabinets 19" for ClassA headend

NEW PRODUCT



MODEL		ARE-120	ARE-220	ARE-320	ARE-420
REF.		2174	2169	2171	2172
Panel height	U	12	22	32	42
Outside dimensions (h x w x d)	mm	658 x 600 x 450	1110 x 600 x 600	1649 x 600 x 600	1999 x 600 x 600
Packed weight	kg	30	63	76	88

- Inner and outer frame made in high quality steel.
- Four inner 19" frames manufactured in 2 mm.
- Front glass and vented door with lock.
- Top and bottom cable entrance.
- 19" schuko socket board.
- Caged nuts included.
- High resistance casters.
- The cabinet has a temperature control unit on its top which controls the operation of the fans.

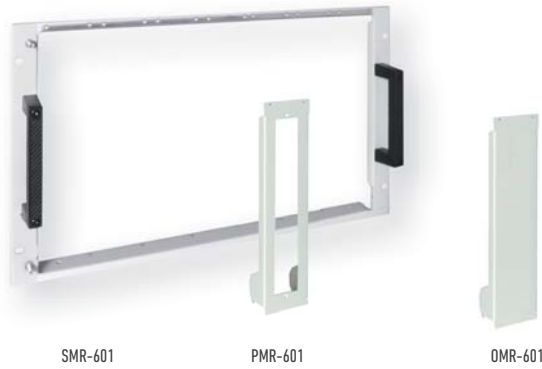
Programming unit



MODEL	SPI-300
REF.	4070

- For programming the ClassA modules. Cable connection to the DB-9 front panel socket.
- 20x4 character alphanumeric display. Numerical and function keys.
- Microprocessor controlled. User friendly software (selectable language: english, spanish, french). Built-in diagnostic and error identification. Module firmware update. Firmware of the SPI-300 can also be updated through a PC.
- Capacity of 500 preset memory allocations for repetitive ClassA module configurations.
- No battery required. Powered through the interface lead (max consumption: 150 mA). DC jack to connect a +15 VDC voltage from an auxiliary power supply when updating the internal firmware through a PC.
- Dimensions: 160x75x40 mm.

ClassA accessories for rack installation



MODEL	REF.	DESCRIPTION
SMR-601	4280	Rack-frame for ClassA assemblies, 6U high. Easy integration in standard 19" racks. Capacity: 7 modules.
PMR-601	4281	Fixing-plate to fasten a ClassA module to the SMR-600 rack-frame.
OMR-601	4282	6U - 12E (260x60 mm) blank panel to fill the unoccupied places on the SMR-601 rack-frame.

ClassA accessories

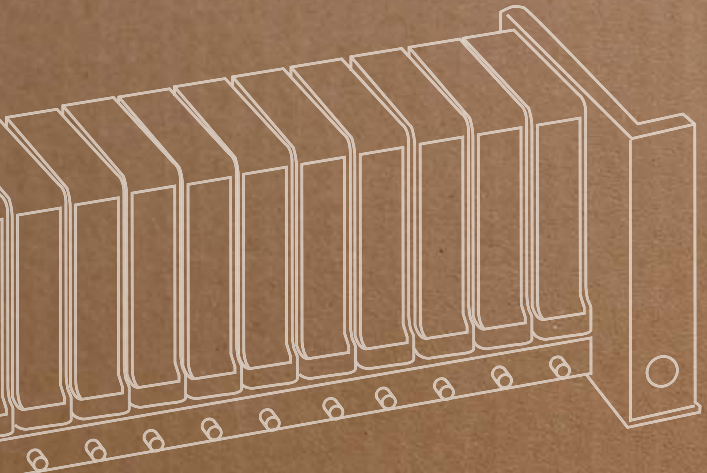


MODEL	REF.	DESCRIPTION
BAS-900	4411	Base plate. Capacity: 9 modules. Dimensions: 563x257x24 mm.
BAS-700	4403	Base plate. Capacity: 7 modules. Dimensions: 441x257x24 mm.
COF-700	4402	Housing for 1 BAS-700. Dimensions: 430x341x258 mm. Indoor mounting. Metallic. Lock/key closing system.



ikusiflow

The first TV Smart
Headend



density
RF
coax
content
security
management
coax
RF
advanced
ergonomics
ikusiflow
IPTV
reliability
management
versatile
API
coax
DRM
simplicity
management
@IP
interface
Device Manager



High density
Small footprint per channel

Capable of processing more than
 200 SD services or 120 HD services



Content driven
Manages content and not technical parameters

User friendly interface which
 minimizes configuration time



**No need for
 additional licenses**



**One platform for
 all your TV needs**

Designed to convert any TV input
 into any TV output standard



Multistandard

Ikusi Flow adapts to your present
and to your future

FUNCTIONALITY

DEVICE
MANAGER

NEW!



Double secure

Premium content always protected
by including DRM protection

Ikusi Flow modules



FLOW IN (Ref. 4306) y **FLOW IN4** (Ref. 4319)

Input module. Frontend.

- . Double tuner. Universal Input module DVB S/S2/T/T2/C.
- . Auto Scan: Discovers all the services in the cables.
- . HOT SWAP without reconfiguring manually.



FLOW SEC (Ref. 4311)

Security management module.

- . Decrypting function (CAS) and re-encrypting function (DRM).
- . 2 x CI slots per module.
- . Manages streams coming from any input and going to any output ("uncoupled" input, CAM and output).
- . CAM restoration in case of decryption failure.
- . Supports up to 16 SPTS per CAM (up to 32 SPTS per module).



FLOW ENC (Ref. 4315)

Encoding module.

- . Encodes 4 x HDMI input signals.
- . H.264 MPEG-4 or MPEG-2 video compression.
- . Full HD quality.
- . Up to 40 x HDMI inputs in 4RU space.



FLOW OUT (Ref. 4313)

Output module. Backend.

- . Quad Universal and Multistandard output module DVB-T & DVB-C.
- . Four carriers in 8K.
- . Up to 8 SPTS per carrier = up to 32 SPTS per module.
- . Output level: 78 to 108 dbuV.



FLOW HUB (Ref. 4314)

Control unit of the platform.

- . Complete internal management .
- . Connected headend: Ikusi Flow wifi and LAN access. Local and remote management.
- . Guided installation through a wizard.
- . 2 Gigabit Ethernet ports for IP Multicast services.
- . Spare modules support for redundancy.



FLOW PSU (Ref. 4308)

Power supply for the platform.

- . More efficiency: Half-Bridge topology.
- . Thermal protection (to protect against external cooling failures).
- . Power factor corrector.



FLOW BASE (Ref. 4312)

Chassis of the platform.

- . "Self-assembly" chassis.
- . 19" rack and wall mounting with the same chassis.
- . Installation without tools or accessories.
- . Real 4 RU (including wires passing).



FLOW COVER (Ref. 4316)

Ventilation cover for the platform.

- . Magnetic attachment system with triple function: securing the cover to the chassis, electrical connection and fans speed auto-management.
- . 5 fans per cover.
- . New noiseless fans generation based on magnetic technology, without rubbing or friction.



FLOW STB (Ref. 1050)

Set-Top-Box to be integrated with FLOW DEVICE MGR.

- . High Quality Sound and Image.
- . Quick Data Processing.
- . Functions on Demand.
- . Programmable remote control.





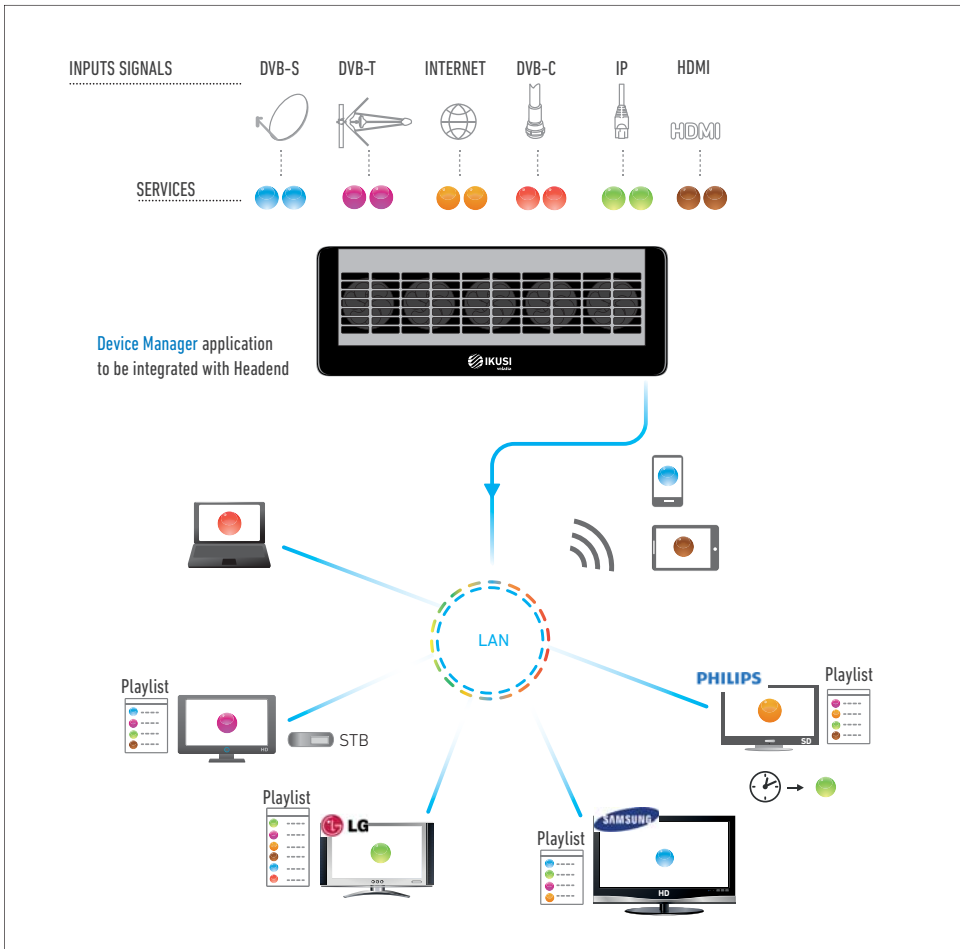
Device Manager is the new Application integrated into Ikusi FLOW that offers management of the contents and of the devices on the IPTV network in a centralised way, allowing:

- Different lists to be made, offering the possibility of sending groups of content to devices either individually or in groups. It allows the contents available to be controlled on each of the televisions.
- The content that is to be reproduced on each viewing device (or multi-screen spaces) to be selected individually in a remote manner, allowing what is being reproduced at each viewing point to be managed and controlled.
- Televisions by the main manufacturers can be turned on, turned off and the sound controlled as on or muted. The list of available services can be allocated to groups or individual Televisions and channels can be remotely changed. The state of the Television can be viewed remotely as well as seeing what channel is playing.

Ikusi Device Manager is compatible with the main television brands:



Installation example







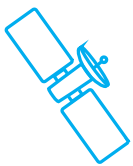
Distribution



TAE and SAE series



862 MHz and 2150 MHz amplifiers with active return path.



Terrestrial and IF satellite distribution signals



TV signal output and reverse path input



Attenuation and equalization adjustments of TV signals by potentiometer



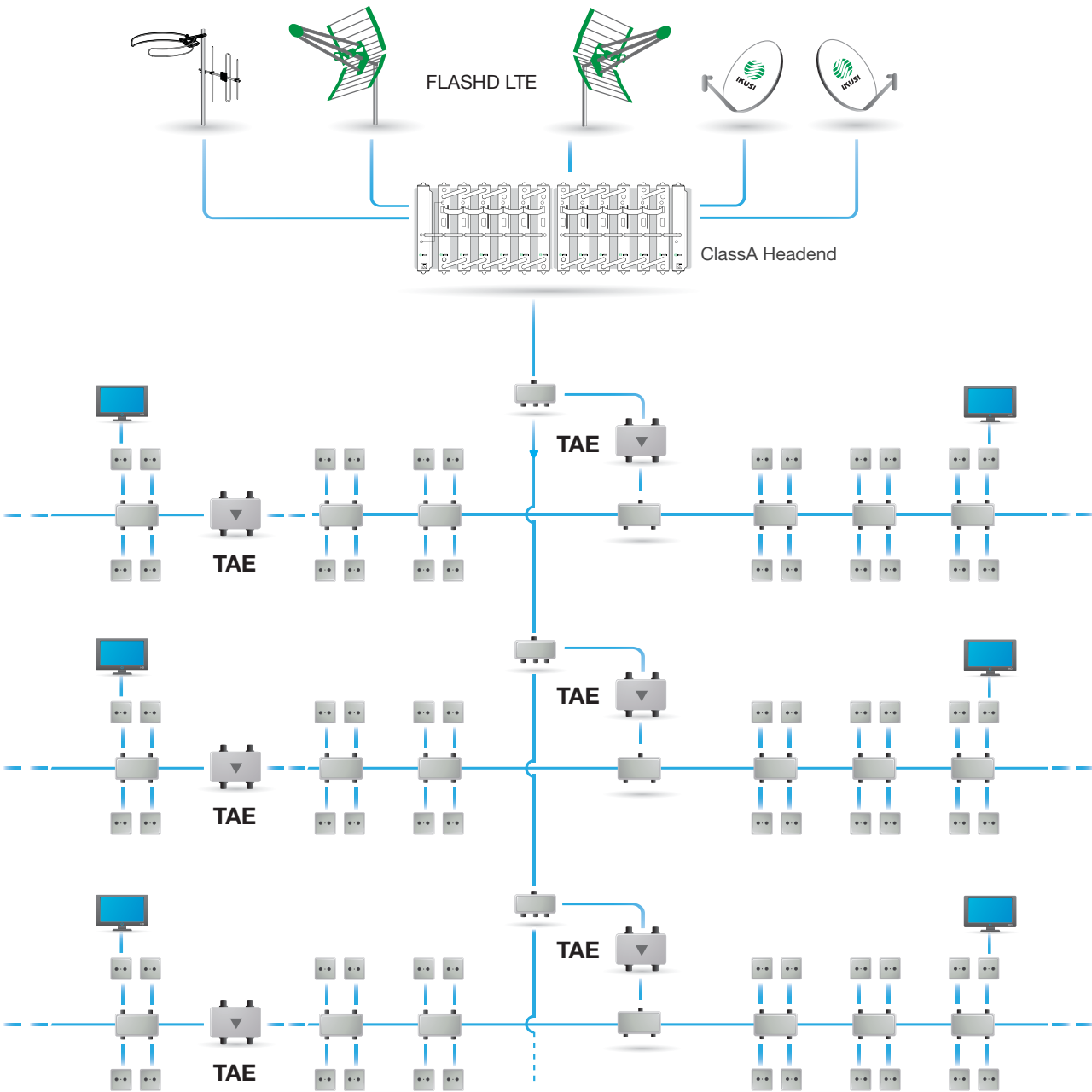
Low consumption



Attenuation and equalization adjustments

□ Distribution of television, sound and interactive multimedia signals. Ideal for hotels and dense multiple dwelling units.

Installation example



TAE amplifiers series



TAE1125 . TAE1118 . TAE1120

- TAE series, ideal for hotels and dense multiple dwelling units.
- 862 MHz amplifiers with active return path on all models.
- Mains or line powering 50/60. Operation shown by led. Mains lead insertable in connection socket.
- Attenuation and equalization adjustments of TV signals by potentiometer. Selection of return signal attenuation by the insertion of small plug-in links provided.
- Forward and reverse output test.
- Power Doubling technology (TAE1125) and Push-pull technology (TAE1120 and TAE1118).
- Zamak housing with protective cover for the adjustment controls. Wall fixing. Indoor mounting. Grounding terminal.
- Removable Power Supply.

MODEL		TAE1125	TAE1120	TAE1118
REF.		3249	3264	3263
Powering mode		Mains	Mains	Mains
Bandwidth-Forward path	MHz	86 - 862	86 - 862	86 - 862
Bandwidth-Reverse path	MHz	5 - 66	5 - 66	5 - 66
Forward path				
Response flatness	dB	±0.75	±0.75	±0.75
Nominal gain	dB	35	35	35
Input variable attenuator	dB	0 - 18	0 - 18	0 - 18
Slope control range	dB	0 - 18	0 - 18	0 - 18
Noise figure	dB	≤ 5	≤ 8	≤ 8
Output level (IM3 -60dB, DIN 45004B)	dBµV	124	120	118
Output level (IM2 -60dB, EN 50083-3)	dBµV	115	115	115
Output level (CTB -60dB, EN 42 ch)	dBµV	110	105	103
Output level (CSO -60dB, EN 42 ch)	dBµV	114	108	106
Output test	dB	-30	-30	-20
Reverse path				
Nominal gain	dB	25.5	25.5	12
Input variable attenuator	dB	0 - 18	0 - 18	0 - 11
Noise figure	dB	≤ 7	≤ 7	≤ 7
Output level (-60dB, DIN 45004B)	dBµV	115	110	110
Output level (IM2 -60dB, EN 50083-3)	dBµV	108	105	105
Output test	dB	-30	-30	-20
General				
Operating supply voltage	Vac	230-240	230-240	230-240
Consumption	W	15	10	10
Dimensions	mA	222 x 140 x 44	222 x 140 x 44	222 x 140 x 44

SAE amplifiers series



SAE-912 . SAE-916



SAE-920

- Distribution of terrestrial TV, satellite IF and multimedia signals.
- 1 RF input - 1 RF output.
- Terrestrial and satellite frequencies amplified separately.
- Passive or active return path, with respective 35/45 MHz or 65/86 MHz splits.
- Attenuation and equalization adjustments of TV and IF signals by potentiometer.
- Zinc alloy housing with protective cover. F connectors. Wall fixing. Indoor mounting.

- Application in collective installations with two download distribution cables carrying 2 satellite IF and 1 terrestrial TV signals.
- 1 TV + IF-1 input — 1 IF-2 input
1 TV + IF-1 output — 1 TV + IF-2 output
- Separated amplification paths for TV, IF-1 and IF-2 signals, each including attenuation and equalization adjustment potentiometers.
- GaAs-MESFET technology used for terrestrial amplification.
- External 75Ω output test ports.
- Zinc alloy housing with protective cover for adjustment potentiometers. F type connection. Wall-fixing
- Indoor mounting. Grounding terminal.

MODEL		SAE-912		SAE-916	
REF.		3500		3503	
TPowering mode		Mains			
Bandwidth	Terrestrial (TV) Satellite (BIS) Return	MHz	45 - 862 950 - 2150 5 - 35 (passive path)	86 - 862 950 - 2150 5 - 65 (active path)	
Terrestrial path (TV)					
Response flatness		dB	± 1.5		
Nominal gain		dB	35		
Variable interstage attenuator		dB	0 - 18		
Slope control range		dB	0 - 18		
Noise figure		dB	≤ 8		
Output level		dBμV	118 ¹ / 115 ² / 103 ³		
Output test		dB	-20 ± 1.5		
Satellite path (IF)					
Response flatness		dB	± 2		
Nominal gain		dB	40		
Variable interstage attenuator		dB	0 - 18		
Slope control range		dB	0 - 12		
Noise figure		dB	≤ 6		
Output level		dBμV	120 ⁴		
Return path					
Nominal gain		dB	-2,5	12	
Selectable attenuation		dB	—	0 - 11	
Max RF input level		dBμV	—	98 ¹ / 93 ²	
Noise figure		dB	—	≤ 7	
Output level		dBμV	—	110	
General					
Mains supply voltage (50/60 Hz)	VAC		230 - 240	230 - 240	
Consumption	W		8,5	9	
Dimensions	mm		222 x 140 x 44		

MODEL		SAE-920			
REF.		3507			
Powering mode		Mains			
Bandwidth	IF-1 TV IF-2	MHz	45 - 862 950 - 2150 950 - 2150		
RF inputs			2 (TV+IF-1 ; IF-2)		
RF outputs			2 (TV+IF-1 ; TV+IF-2)		
Terrestrial path (TV)					
Response flatness		dB	± 1,5		
Nominal gain		dB	35		
Variable interstage attenuator		dB	0 - 18		
Slope control range		dB	0 - 18		
Noise figure		dB	≤ 8		
RF output level		dBμV	(2x) 118 ¹ / 115 ² / 103 ³		
Output test		dB	-20 ± 1.5		
Satellite path					
Response flatness		dB	± 2		
Nominal gain		dB	40		
Variable interstage attenuator		dB	0 - 18		
Slope control range		dB	0 - 12		
Noise figure		dB	≤ 6		
RF output level		dBμV	120 ⁴		
Output test		dB	-20 ± 1.5		
General					
Operating temperature		°C	-10 ... +55		
Mains supply voltage		VAC	230 - 240		
Consumption		W	15		
Dimensions		mm	222 x 140 x 44		

¹ IMD3 -60dB (DIN 45004B) ; ² IMD2 -60dB (EN 50083-3)

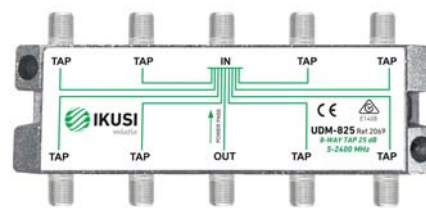
³ CTB, CSO -60dB (42 ch, EN 50083-3) ; ⁴ IMD3 -35dB (EN 50083-3)

¹ IMD3 -60dB (DIN 45004B). See reduction table ; ² IMD2 -60dB (EN 50083-3)

³ CTB, CSO -60dB (42 ch, EN 50083-3) ; ⁴ IMD3 -35dB (EN 50083-3).

2400 MHz indoor Tap-offs. UDM series

NEW PRODUCT



1 output

MODEL		UDM-110	UDM-115	UDM-120	UDM-125
REF.		2052	2053	2054	2055
Outputs		1			
Tap loss (± 0.7 dB)	dB	10	15	20	25
Through loss	5-862 MHz	≤ 1.1	≤ 1.0	≤ 0.9	≤ 0.5
	950-2150 MHz	≤ 1.2	≤ 1.7	≤ 1.4	≤ 1.5
	2150-2400 MHz	≤ 2.8	≤ 2.8	≤ 2.7	≤ 2.7
Directional isolation	5-300 MHz	≥ 29	≥ 28	≥ 31	≥ 38
	301-862 MHz	≥ 29	≥ 27	≥ 28	≥ 35
	950-2400 MHz	≥ 19	≥ 23	≥ 19	≥ 24

2 outputs

MODEL		UDM-210	UDM-215	UDM-220	UDM-225
REF.		2056	2057	2058	2059
Outputs		2			
Tap loss (± 0.7 dB)	dB	10	15	20	25
Through loss	5-862 MHz	≤ 2.3	≤ 1.6	≤ 1.1	≤ 1.1
	950-2150 MHz	≤ 3.5	≤ 2.5	≤ 2.2	≤ 2.3
	2150-2400 MHz	≤ 4	≤ 3.5	≤ 3.3	≤ 3.3
Directional isolation	5-300 MHz	≥ 26	≥ 29	≥ 31	≥ 35
	301-862 MHz	≥ 26	≥ 27	≥ 29	≥ 32
	950-2400 MHz	≥ 20	≥ 22	≥ 26	≥ 28
Tap-to-tap isolation	5-300 MHz	≥ 38	≥ 39	≥ 46	≥ 50
	301-862 MHz	≥ 35	≥ 37	≥ 42	≥ 45
	950-2400 MHz	≥ 28	≥ 37	≥ 39	≥ 35

4 outputs

MODEL		UDM-410	UDM-415	UDM-420	UDM-425
REF.		2060	2061	2062	2063
Outputs		4			
Tap loss (± 1 dB)	dB	10	15	20	25
Through loss	5-862 MHz	≤ 4.0	≤ 1.9	≤ 0.9	≤ 0.6
	950-2150 MHz	≤ 4.8	≤ 3.5	≤ 2.8	≤ 2.8
	2150-2400 MHz	≤ 5.3	≤ 4.2	≤ 3.9	≤ 3.4
Directional isolation	5-300 MHz	≥ 35	≥ 30	≥ 37	≥ 37
	301-862 MHz	≥ 33	≥ 30	≥ 33	≥ 37
	950-2400 MHz	≥ 29	≥ 23	≥ 25	≥ 27
Tap-to-tap isolation	5-300 MHz	≥ 29	≥ 30	≥ 29	≥ 30
	301-862 MHz	≥ 26	≥ 28	≥ 26	≥ 26
	950-2400 MHz	≥ 24	≥ 28	≥ 24	≥ 26

6 outputs

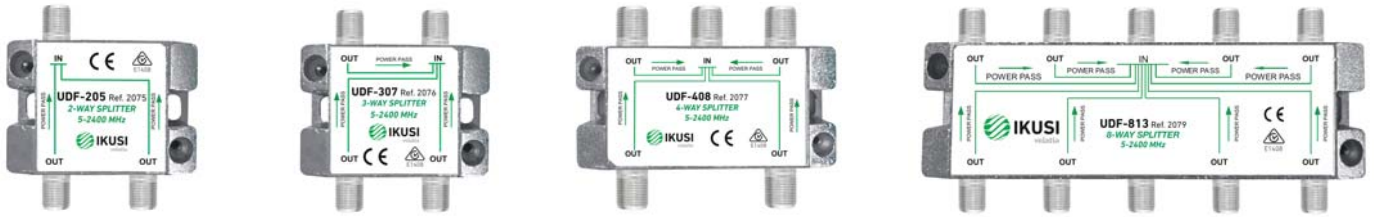
MODEL		UDM-615	UDM-620	UDM-625
REF.		2064	2065	2066
Outputs		6		
Tap loss (± 1 dB)	dB	15	20	25
Through loss	5-862 MHz	≤ 4.8	≤ 4.8	≤ 3.2
	950-2150 MHz	≤ 5.7	≤ 4.8	≤ 3.8
	2150-2400 MHz	≤ 7	≤ 5	≤ 4.3
Directional isolation	5-300 MHz	≥ 30	≥ 37	≥ 37
	301-862 MHz	≥ 30	≥ 33	≥ 37
	950-2400 MHz	≥ 23	≥ 25	≥ 27
Tap-to-tap isolation	5-300 MHz	≥ 30	≥ 29	≥ 30
	301-862 MHz	≥ 28	≥ 26	≥ 26
	950-2400 MHz	≥ 28	≥ 24	≥ 26

8 outputs

MODEL		UDM-815	UDM-820	UDM-825
REF.		2067	2068	2069
Outputs		8		
Tap loss (± 1 dB)	dB	16	20	25
Through loss	5-862 MHz	≤ 4.3	≤ 2.4	≤ 2.2
	950-2150 MHz	≤ 5.8	≤ 5	≤ 3.3
	2150-2400 MHz	≤ 6	≤ 5.5	≤ 4.6
Directional isolation	5-300 MHz	≥ 30	≥ 30	≥ 33
	301-862 MHz	≥ 30	≥ 30	≥ 36
	950-2400 MHz	≥ 27	≥ 23	≥ 28
Tap-to-tap isolation	5-300 MHz	≥ 34	≥ 30	≥ 30
	301-862 MHz	≥ 32	≥ 28	≥ 28
	950-2400 MHz	≥ 25	≥ 28	≥ 28

2300 MHz indoor splitters. UDF series

NEW PRODUCT



MODEL			UDF-205	UDF-307	UDF-408	UDF-612	UDF-813
REF.			2075	2076	2077	2078	2079
No. of ways			2	3	4	6	8
Insertion loss	5-862 MHz	dB	≤ 3.6	≤ 6.8	≤ 8.1	≤ 11.8	≤ 11.9
	950-1550 MHz		≤ 4.1	≤ 8.5	≤ 9.1	≤ 13.5	≤ 14.1
	1551-2150 MHz		≤ 4.5	≤ 9.7	≤ 10.4	≤ 15.1	≤ 15.8
	2151-2400 MHz		≤ 6	≤ 10.1	≤ 11	≤ 15.1	≤ 17
Output isolation	5-300 MHz	dB	≥ 35	≥ 25	≥ 24	≥ 28	≥ 26
	301-862 MHz		≥ 34	≥ 25	≥ 22	≥ 25	≥ 28
	950-2400 MHz		≥ 20	≥ 21	≥ 22	≥ 25	≥ 28

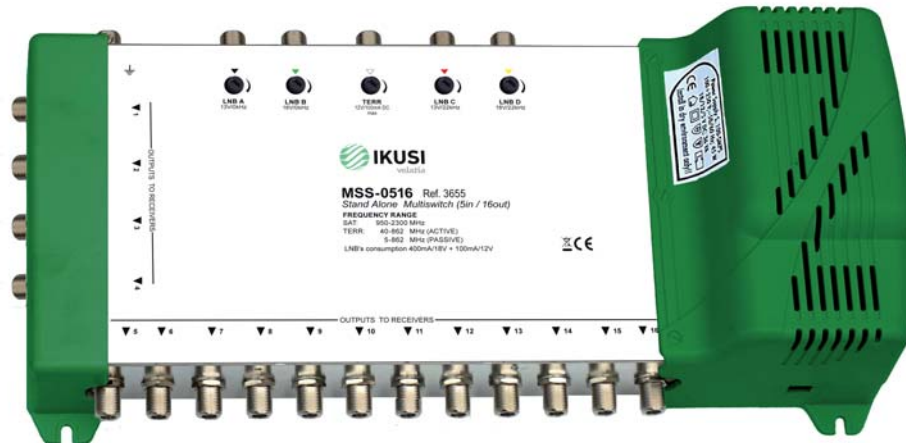
TV-IF combiner



MODEL			DMS-300
REF.			3372
RF inputs			3 TV (5-862 MHz) ; IF-1 (950-2150 MHz) ; IF-2 (950-2150 MHz)
RF outputs			2 TV + IF-1 TV + IF-2
Insertion loss	dB	TV: ≤ 4 , IF-1/IF-2: ≤ 2	
Input isolation	dB	≥ 25	
Power passing to IF inputs			Yes (18V/500 mA max)
Dimensions	mm	122 x 45 x 20	

Standalone and Cascadable Multiswitches

NEWPRODUCT



Complete range of multiswitch equipment for standalone or cascadable installations including, terrestrial and satellite signals.



European Product



Shielded multiswitches with integrated power supply



Distributions up to 32 users

DiseqC2.0

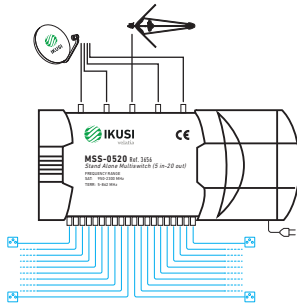
They support DiseqC2.0 commands

☐ A solution for distributing the signals from 1 to 4 satellites for up to 32 users.

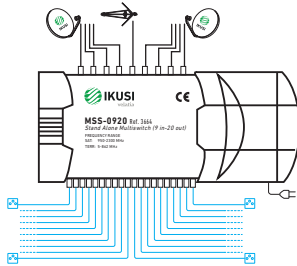
Installation example

STANDALONE

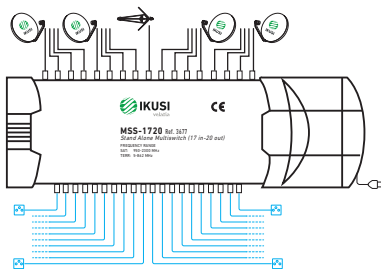
1 satellite and 20 users



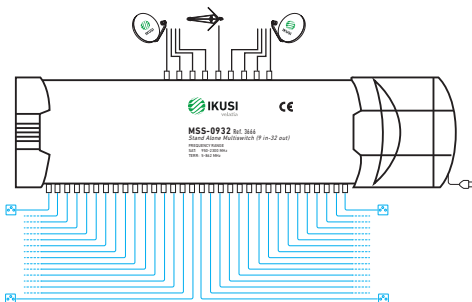
2 satellites and 20 users



4 satellites and 20 users

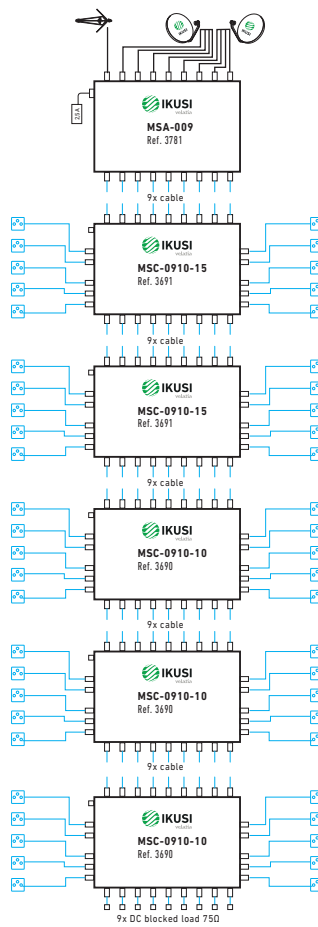


2 satellites and 32 users



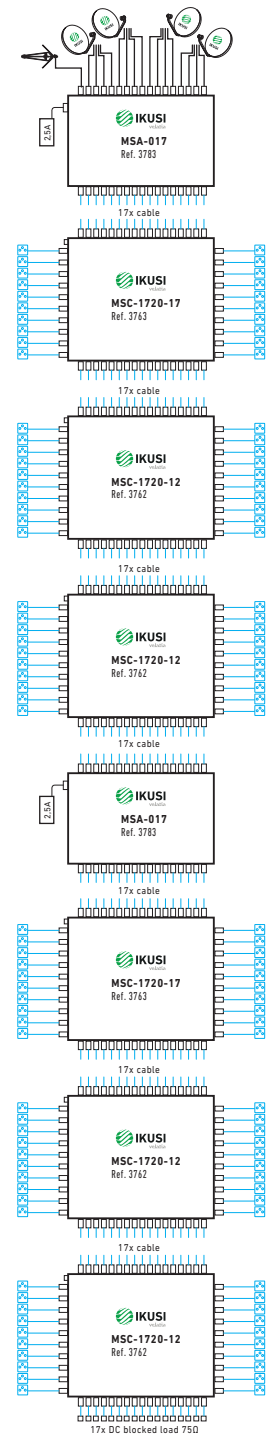
CASCADABLE

2 satellite and 50 users



CASCADABLE

4 satellite and 120 users



Standalone Multiswitches

5 inputs. MSS series

NEWPRODUCT



MODEL		MSS-0504	MSS-0508	MSS-0512	MSS-0516	MSS-0520	MSS-0524	MSS-0528	MSS-0532
REF.		3652	3653	3654	3655	3656	3657	3658	3659
Number of inputs		5 (4 SAT inputs+1 TERR input)							
Number of outputs (users)		4	8	12	16	20	24	28	32
Frequency range SAT		MHz	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2150
Frequency range	TERR active TERR passive	MHz	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862
Insertion loss SAT		dB	3	4	0	0	2	2	950 MHz= 8 ; 2150 MHz= +5
Insertion loss	TERR active TERR passive	dB	2 19	3 20	-7 21	-6 22	10 23	10 24	5 27
Isolation between V/H polarizations		dB	20	20	20	20	20	20	-
Isolation between L/H bands		dB	25	25	25	25	25	25	-
Maximum input level SAT		dBμV	90	90	90	90	90	90	85
Max input level	TERR active TERR passive	dBμV	93 100	93 100	85 100	85 100	90 100	90 100	90 110
Maximum output level SAT		dBμV	87	86	90	90	88	88	85
Max output level	TERR active TERR passive	dBμV	91 81	90 80	92 79	91 78	80 77	80 76	85 83
Current consumption from each receiver		mA	40	40	40	40	40	40	55
Power supply consumption	TERR active TERR passive	W	6 4	6 4	9 5	9 5	5 3.5	5 3.5	9 7
Input voltage		VAC	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265
Operating temperature		°C	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-25 ... +50
Dimensions		cm	26.5 x 15.2 x 8.7	27.5 x 15.2 x 8.7	34.7 x 15.2 x 8.7	35.4 x 15.2 x 8.7	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	35.5 x 35 x 5

9 inputs. MSS series

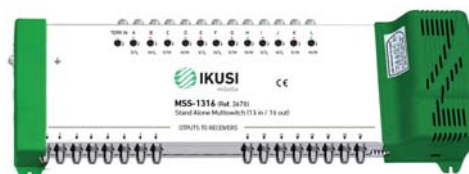
NEWPRODUCT



MODEL		MSS-0904	MSS-0908	MSS-0912	MSS-0916	MSS-0920	MSS-0926	MSS-0932	
REF.		3660	3661	3662	3663	3664	3665	3666	
Number of inputs		9 (8 SAT inputs+1 TERR input)							
Number of outputs (users)		4	8	12	16	20	26	32	
Frequency range SAT		MHz	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2150	
Frequency range	TERR active TERR passive	MHz	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	
Insertion loss SAT		dB	0	0	0	0	4	950 MHz= 8 ; 2150 MHz= +5	
Insertion loss	TERR active TERR passive	dB	-3 12	0 16	3 18	5 21	7 24	8 25	
Isolation between V/H polarizations		dB	20	20	20	20	20	25	
Isolation between L/H bands		dB	25	25	25	25	25	30	
Maximum input level SAT		dBμV	90	90	90	90	90	85	
Max input level	TERR active TERR passive	dBμV	90 100	90 100	90 100	90 100	90 100	90 110	
Maximum output level SAT		dBμV	90	90	90	90	86	85	
Max output level	TERR active TERR passive	dBμV	93 88	90 84	87 82	85 79	83 76	82 75	
Current consumption from each receiver		mA	50	50	50	50	50	70	
Power supply consumption	TERR active TERR passive	W	4.5 3	4.5 3	4.5 3	4.5 3	4.5 3	13 11	
Input voltage		VAC	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265	
Operating temperature		°C	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-25 ... +50	
Dimensions		cm	34.7 x 15.2 x 8.7	34.7 x 15.2 x 8.7	34.7 x 15.2 x 8.7	35.4 x 15.2 x 8.7	47.0 x 15.2 x 8.7	35.5 x 35 x 5	

13 inputs. MSS series

NEWPRODUCT



MODEL		MSS-1304	MSS-1308	MSS-1312	MSS-1316	MSS-1320	MSS-1326	MSS-1332
REF.		3667	3668	3669	3670	3671	3672	3673
Number of inputs		13 (12 SAT inputs+1 TERR input)						
Number of outputs (users)		4	8	12	16	20	26	32
Frequency range SAT		MHz	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2150
Frequency range	TERR active TERR passive	MHz	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862
Insertion loss SAT		dB	0	0	0	4	5	950 MHz= 8 ; 2150 MHz= +5
Insertion loss	TERR active TERR passive	dB	0 12	2 16	5 19	7 21	9 24	10 25
Isolation between V/H polarizations		dB	20	20	20	20	20	20
Isolation between L/H bands		dB	25	25	25	25	25	25
Maximum input level SAT		dBμV	90	90	90	90	90	85
Max input level	TERR active TERR passive	dBμV	90 100	90 100	90 100	90 100	90 100	90 110
Maximum output level SAT		dBμV	90	90	90	86	85	85
Max output level	TERR active TERR passive	dBμV	90 88	88 84	85 81	83 79	81 76	80 75
Current consumption from each receiver		mA	75	75	75	75	75	85
Power supply consumption	TERR active TERR passive	W	6.5 4.5	6.5 4.5	6.5 4.5	6.5 4.5	6.5 4.5	17 15
Input voltage		Vac	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265
Operating temperature		°C	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-25 ... +50
Dimensions		cm	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	35.5 x 35 x 5

17 inputs. MSS series

NEWPRODUCT



MODEL		MSS-1708	MSS-1712	MSS-1716	MSS-1720	MSS-1726	MSS-1732
REF.		3674	3675	3676	3677	3678	3679
Number of inputs		17 (16 SAT inputs+1 TERR input)					
Number of outputs (users)		8	12	16	20	26	32
Frequency range SAT		MHz	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2150
Frequency range	TERR active TERR passive	MHz	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862	40 - 862 5 - 862
Insertion loss SAT		dB	0	0	4	5	950 MHz= 8 ; 2150 MHz= +5
Insertion loss	TERR active TERR passive	dB	2 16	5 19	7 21	9 24	10 25
Isolation between V/H polarizations		dB	20	20	20	20	20
Isolation between L/H bands		dB	25	25	25	25	25
Maximum input level SAT		dBμV	90	90	90	90	85
Max input level	TERR active TERR passive	dBμV	90 100	90 100	90 100	90 100	90 110
Maximum output level SAT		dBμV	90	90	90	86	85
Max output level	TERR active TERR passive	dBμV	90 84	85 81	83 79	81 76	80 75
Current consumption from each receiver		mA	75	75	75	75	100
Power supply consumption	TERR active TERR passive	W	6.5 4.5	6.5 4.5	6.5 4.5	6.5 4.5	21 19
Input voltage		Vac	90 - 265	90 - 265	90 - 265	90 - 265	90 - 265
Operating temperature		°C	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-25 ... +50
Dimensions		cm	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	47.0 x 15.2 x 8.7	35.5 x 35 x 5

Cascadable Multiswitches

5 inputs. MSC series

NEWPRODUCT



MODEL		MSC-0504-05	MSC-0504-10	MSC-0508-05	MSC-0508-10	MSC-0512-05	MSC-0512-10	MSC-0516-05	MSC-0516-10
REF.		3680	3681	3682	3683	3684	3685	3686	3687
Number of inputs		5 (4 SAT inputs+1 TERR input)							
Number of outputs		5							
Number of user outputs		4	4	8	8	12	12	16	16
Frequency range SAT	MHz	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300	950 - 2300
Frequency range TERR	MHz	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862
Insertion loss SAT trunk	dB	2	2	2	2	2	2	2	2
Insertion loss TERR trunk	dB	3	3	3	3	3	3	3	3
Insertion loss SAT user	dB	5	10	5	10	10	10	10	10
Insertion loss TERR tap	dB	18	21	21	24	22	22	22	22
Isolation between V/H polarizations at user output	dB	25	25	25	25	25	25	25	25
Isolation between bands L/H at user output	dB	30	30	30	30	22	22	22	22
Isolation between trunk lines	dB	30	30	30	30	30	30	30	30
Maximum input level SAT	dBμV	90	90	90	90	90	90	90	90
Maximum input level TERR	dBμV	110	110	110	110	110	110	110	110
Maximum user output level SAT	dBμV	85	85	85	80	80	80	80	80
Maximum user output level TERR	dBμV	92	89	89	86	85	85	85	85
Current consumption from receiver (18V)	mA	50	50	50	50	50	50	50	50
Operating temperature	°C	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70	-30 ... +70
Dimensions (w x d x h)	cm	12.7 x 10.4 x 4.1	12.7 x 10.4 x 4.1	13.5 x 10.4 x 4.1	13.5 x 10.4 x 4.1	13.5 x 10.4 x 4.1	13.5 x 10.4 x 4.1	13.5 x 10.4 x 4.1	13.5 x 10.4 x 4.1

9 inputs. MSC series

NEWPRODUCT



MODEL		MSC-0906-10	MSC-0906-15	MSC-0910-10	MSC-0910-15	MSC-0916-12	MSC-0916-17	MSC-0920-12	MSC-0920-17
REF.		3688	3689	3690	3691	3692	3693	3694	3695
Number of inputs		9 (8 SAT inputs+1 TERR input)							
Number of outputs		9							
Number of user outputs		6	6	10	10	16	16	20	20
Frequency range SAT	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150
Frequency range TERR	MHz	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862
Insertion loss SAT trunk	dB	2	2	2.5	2.5	3	3	3.5	3.5
Insertion loss TERR trunk	dB	3	3	4	4	7	7	8	8
Insertion loss SAT user	dB	10	15	10	15	12	17	12	17
Insertion loss TERR tap	dB	18	18	22	22	26	26	28	28
Isolation between V/H polarizations at user output	dB	22	22	22	22	20	20	20	20
Isolation between bands L/H at user output	dB	22	22	22	22	22	22	22	22
Isolation between trunk lines	dB	25	25	25	25	25	25	25	25
Maximum input level SAT	dBμV	105	105	105	105	105	105	105	105
Maximum input level TERR	dBμV	105	105	105	105	105	105	105	105
Maximum user output level SAT	dBμV	95	90	95	90	93	88	93	88
Maximum user output level TERR	dBμV	87	87	83	83	79	79	77	77
Current consumption from receiver (18V)	mA	80	80	80	80	80	80	80	80
Operating temperature	°C	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Dimensions (w x d x h)	cm	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1

13 inputs. MSC series

NEW PRODUCT



MODEL		MSC-1306-10	MSC-1306-15	MSC-1310-10	MSC-1310-15	MSC-1316-12	MSC-1316-17	MSC-1320-12	MSC-1320-17
REF.		3696	3697	3698	3699	3752	3753	3754	3755
Number of inputs		13 (12 SAT inputs+1 TERR input)							
Number of outputs		13							
Number of user outputs		6	6	10	10	16	16	20	20
Frequency range SAT	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150
Frequency range TERR	MHz	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862
Insertion loss SAT trunk	dB	2	2	2.5	2.5	3	3	3.5	3.5
Insertion loss TERR trunk	dB	3	3	4	4	7	7	8	8
Insertion loss SAT user	dB	10	15	10	15	12	17	12	17
Insertion loss TERR tap	dB	18	18	22	22	26	26	28	28
Isolation between V/H polarizations at user output	dB	22	22	22	22	20	20	20	20
Isolation between bands L/H at user output	dB	22	22	22	22	22	22	22	22
Isolation between trunk lines	dB	25	25	25	25	25	25	25	25
Maximum input level SAT	dB μ V	105	105	105	105	105	105	105	105
Maximum input level TERR	dB μ V	105	105	105	105	105	105	105	105
Maximum user output level SAT	dB μ V	95	90	95	90	93	88	93	88
Maximum user output level TERR	dB μ V	87	87	83	83	79	79	77	77
Current consumption from receiver (18V)	mA	100	100	100	100	100	100	100	100
Operating temperature	°C	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Dimensions (w x d x h)	cm	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1

17 inputs. MSC series

NEW PRODUCT



MODEL		MSC-1706-10	MSC-1706-15	MSC-1710-10	MSC-1710-15	MSC-1716-12	MSC-1716-17	MSC-1720-12	MSC-1720-17
REF.		3756	3757	3758	3759	3760	3761	3762	3763
Number of inputs		17 (16 SAT inputs+1 TERR input)							
Number of outputs		17							
Number of user outputs		6	6	10	10	16	16	20	20
Frequency range SAT	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150	950 - 2150
Frequency range TERR	MHz	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862	5 - 862
Insertion loss SAT trunk	dB	2	2	2.5	2.5	3	3	3.5	3.5
Insertion loss TERR trunk	dB	3	3	4	4	7	7	8	8
Insertion loss SAT user	dB	10	15	10	15	12	17	12	17
Insertion loss TERR tap	dB	18	18	22	22	26	26	28	28
Isolation between V/H polarizations at user output	dB	22	22	22	22	20	20	20	20
Isolation between bands L/H at user output	dB	22	22	22	22	22	22	22	22
Isolation between trunk lines	dB	25	25	25	25	25	25	25	25
Maximum input level SAT	dB μ V	105	105	105	105	105	105	105	105
Maximum input level TERR	dB μ V	105	105	105	105	105	105	105	105
Maximum user output level SAT	dB μ V	95	90	95	90	93	88	93	88
Maximum user output level TERR	dB μ V	87	87	83	83	79	79	77	77
Current consumption from receiver (18V)	mA	100	100	100	100	100	100	100	100
Operating temperature	°C	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Dimensions (w x d x h)	cm	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 14.6 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1	18.6 x 24.5 x 5.1

Amplifiers MSA series

NEWPRODUCT



MODEL		MSA-005	MSA-009	MSA-013	MSA-017
REF.		3780	3781	3782	3783
Number of inputs		5 (4 SAT inputs+1 TERR input)	9 (8 SAT inputs+1 TERR input)	13 (12 SAT inputs+1 TERR input)	17 (16 SAT inputs+1 TERR input)
Number of outputs		5	9	13	17
Frequency range SAT	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150
Frequency range TERR	MHz	40 - 862	40 - 862	40 - 862	40 - 862
Gain SAT	dB	10 - 15	25	25	25
Gain TERR	dB	10 - 15	22	22	22
Isolation between trunk lines	dB	25	25	25	25
Maximum input level SAT	dB μ V	103 - 98	90	90	90
Maximum input level TERR	dB μ V	99 - 94	85	85	85
Maximum output level SAT	dB μ V	113	115	115	115
Maximum output level TERR	dB μ V	109	107	107	107
Current consumption	mA	350	700	1100	1350
DC supply voltage	Vdc	9 - 20	12	12	12
Operating temperature	°C	-30 ... +70	-25 ... +50	-25 ... +50	-25 ... +50
Dimensions (w x d x h)	cm	12,7 x 10,4 x 4,1	18,6 x 14,6 x 5,5	18,6 x 14,6 x 5,5	18,6 x 14,6 x 5,5

Power supply not included

Power supply

NEWPRODUCT



MODEL	PSA-012
REF.	3784
Input voltage	90-265 AC 50/60 Hz
Output voltage	12 Vdc
Maximal output current	2 A
Efficiency	75 %
Operating temperature	-30 ... +50 °C
Dimensions	16 x 6,4 x 5 mm

Splitters UDA series

NEWPRODUCT



MODEL	UDA-505		UDA-500	
REF.	3786		3787	
Number of inputs	5 (4 SAT inputs+1 TERR input)		5 (4 SAT inputs+1 TERR input)	
Number of outputs	10		10	
Frequency range SAT	MHz	950 - 2300	950 - 2300	
Frequency range TERR	MHz	5 - 862	48 - 862	
Insertion loss SAT	dB	5	-1	
Insertion loss TERR	dB	4	-7	
Isolation between trunks	dB	35	35	
Isolation between outputs of each SAT splitter	dB	13	13	
Isolation between outputs of each TERR splitter	dB	7	13	
Maximum input level SAT	dBμV	-	94	
Maximum input level TERR	dBμV	-	92	
Maximum output level SAT (trunk or split)	dBμV	-	96	
Maximum output level TERR (trunk or split)	dBμV	-	100	
Total current level SAT (tap)	mA	-	115	
Operating temperature	°C	-30 ... +70	-30 ... +70	
Dimensions (w x d x h)	cm	13.5 x 10,4 x 4,1	13.5 x 10,4 x 4,1	

Power supply not included

3

Distribution

F connectors

NEWPRODUCT



BCF-060

MODEL	REF.	DESCRIPTION
BCF-060	2379	60V AC/DC block type male-female F connector
FMM-100	3211	Quick F connector male-female

Apartment amplifier. ATP series

NEW PRODUCT

1er y 2º
Dividendo



- Models adapted to the 1st and 2nd Digital Dividend.
- Terrestrial and satellite outputs.
- Gain adjustment potentiometers.
- Return path in ATP190, ATP290 and ATP490 series.
- Power supply extended range (110-240V).
- Mains lead.

MODELS	INPUTS	OUTPUTS
ATP190 series	1 TERR + SAT + VR	1
ATP104 series	4 BI-FM-BII/DAB-UHF	1
ATP200 series	1 VHF-UHF	2
ATP290 series	1 TERR + SAT + VR	2
ATP400 series	1 VHF-UHF	4
ATP490 series	1 TERR + SAT + VR	4

MODEL	REF.	ATP190 series		
ATP190-C69	3588	Frequency range MHz	950 - 2150	47 - 862
ATP190-C60	3589			47 - 790 (1 st dividend)
ATP190-C48	3590			47 - 694 (2 nd dividend)
Inputs				1
Outputs				1
Gain	dB		Sat: >22	Terr: >18
Gain adjustment	dB		-	Terr: >10
Output level	dBµV		Sat: 118	Terr: 110
Return path frequency	MHz		5 - 30	
Noise figure	dB		<7	
Mains supply voltage	VAC		100 - 240	
DC transit			Yes	
Consumption	W		<3	
Dimensions	mm		135 x70 x30	

MODELO	REF.	Serie ATP490			
ATP490-C69	3597	Frequency range MHz	950 - 2150	47 - 862	
ATP490-C60	3598			47 - 790 (1 st dividend)	
ATP490-C48	3599			47 - 694 (2 nd dividend)	
Inputs				1	
Outputs				4	
Gain	dB		Sat: >22	Terr: >18	
Gain adjustment	dB		-	Terr: >10	
Output level	dBµV		Sat: 113	Terr: 103	
Return path frequency	MHz		5 - 30		
Noise figure	dB		<7		
Mains supply voltage	VAC		100 - 240		
DC transit			Yes (on an output)		
Consumption	W		<3		
Dimensions	mm		135 x70 x30		

MODEL	REF.	ATP400 series		
ATP400-C69	3594	Frequency range MHz	47 - 862	
ATP400-C60	3595		47 - 790 (1 st dividend)	
ATP400-C48	3596		47 - 694 (2 nd dividend)	
Inputs			1	
Outputs			4	
Gain	dB		22	
Gain adjustment	dB		15	
Output level	dBµV		>103	
Noise figure	dB		<4	
Mains supply voltage	VAC		100 - 240	
Consumption	W		<3	
Dimensions	mm		135 x70 x30	

MODEL	REF.	ATP104 series				
ATP104-C69	3585	Frequency range MHz	45 - 68	88 - 108	174 - 240	47 - 862
ATP104-C60	3586					47 - 790 (1 st div.)
ATP104-C48	3587					47 - 694 (2 nd div.)
Inputs			1 BI	1 FM	1 BIII/DAB	1 UHF
Outputs			1			
Gain	dB		>31			
Gain adjustment	dB		>15			
Output level	dBµV		106			
Noise figure	dB		<4			
Mains supply voltage	VAC		100 - 240			
Consumption	W		<3			
Dimensions	mm		135 x70 x30			

Apartment amplifier. ATP series

NEW PRODUCT

1^{er} y 2^o
Dividendo



- Models adapted to the 1st and 2nd Digital Dividend.
- Terrestrial and satellite outputs.
- Gain adjustment potentiometers.
- Return path in ATP190, ATP290 and ATP490 series.
- Power supply extended range (110-240V).
- Mains lead.

MODEL	REF.	Serie ATP200	
ATP200-C69	3583	Frequency range MHz	47 - 862
ATP200-C60	3434		47 - 790 (1 st dividend)
ATP200-C48	3584		47 - 694 (2 nd dividend)
Inputs		1	
Outputs		2	
Gain	dB	25	
Gain adjustment	dB	15	
Output level	dBμV	103	
Noise figure	dB	<4	
Mains supply voltage	VAC	100 - 240	
Consumption	W	<1,5	
Dimensions	mm	90 x 58 x 27	

MODEL	REF.	Serie ATP290		
ATP290-C69	3591	Frequency range MHz	950 - 2150	47 - 862
ATP290-C60	3592			47 - 790 (1 st dividend)
ATP290-C48	3593			47 - 694 (2 nd dividend)
Inputs		1		
Outputs		2		
Gain	dB	Sat: >22	Terr: >18	
Gain adjustment	dB	-	Terr: >10	
Output level	dBμV	Sat: 116	Terr: 106	
Return path frequency	MHz	5 - 30		
Noise figure	dB	<7		
Mains supply voltage	VAC	100 - 240		
DC transit		Yes (on an output)		
Consumption	W	<3		
Dimensions	mm	135 x 70 x 30		

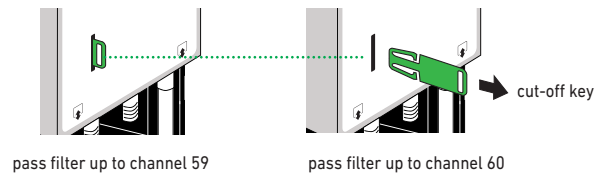
LTE band-stop filter

Filter with two options of cut-off: At channel 59 or 60

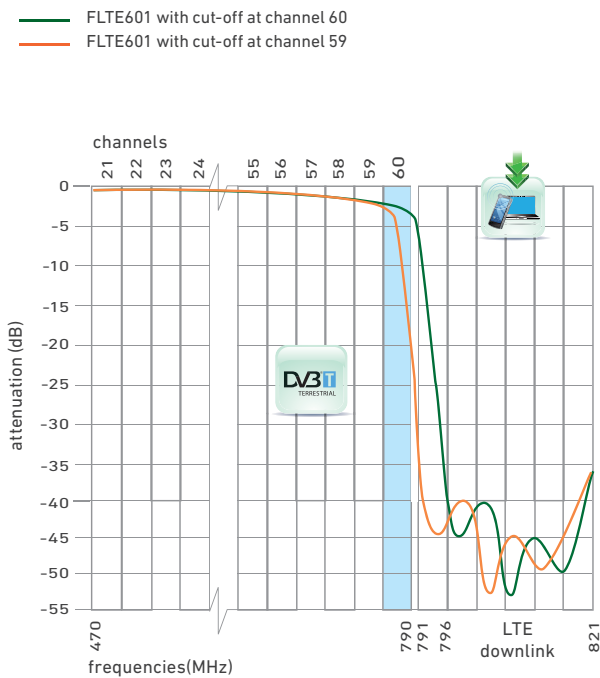


- High-rejection helicoid filter designed with a new concept.
- One single filter with two stop frequencies on channel 59 or 60, depending on the radio spectrum, the FLTE601 can be configured as a pass filter up to channel 59 or channel 60. A built-in key makes it easy to do.
- Designed for most installations, comparable with the top-range filters on the market, capable of providing maximum protection to TV installations, preventing damaging LTE down-links.
- In cases in which the TV installation is very close to the LTE base stations and channel 60 is available, it may be necessary to combine the LTE Flashd Antenna + FLTE601 filter.
- Minimal losses on the highest TV channel and rejection of more than 45 dB to the LTE frequencies.
- Equipped with a connectorized coaxial cable coupling on both ends, making the connection easier for the installer, with the subsequent time savings.
- Housed in weatherproof box with an IP55 protection level.

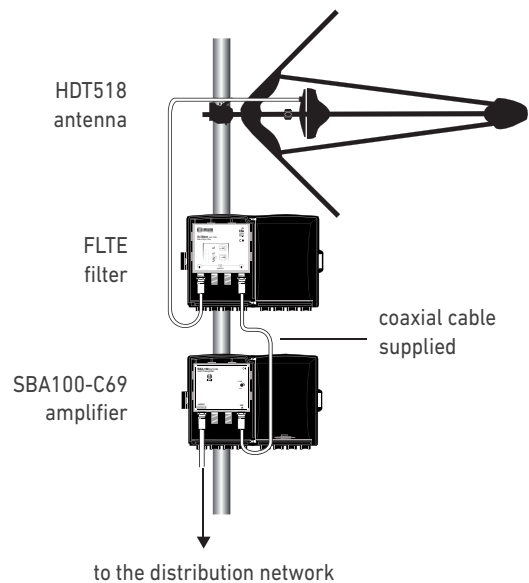
MODEL		FLTE601	
REF.		1435	
Two cut-off options		59 channel	60 channel
Pass band frequencies	MHz	470 ... 782	470 ... 790
Attenuation LTE frequencies	dB	see graph on next page	
Insertion losses	dB		
Dimensions	mm	96 x 125 x 46	



Filter attenuation graph



Installation example



Rejection of LTE frequencies for 2nd digital dividend

NEW PRODUCT



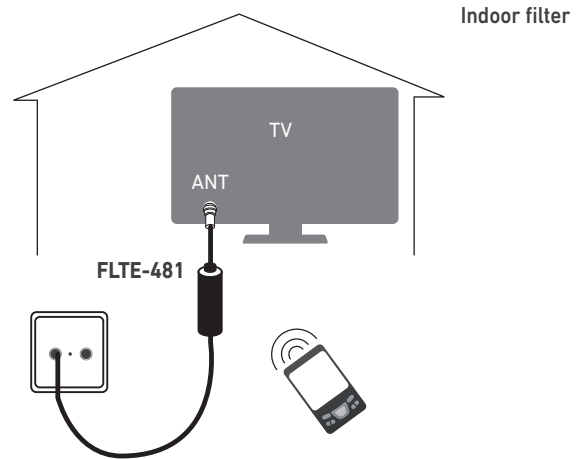
FLTE-481

FLTE-482

- Rejection of LTE frequencies for 2nd dividend
- 2 models: Indoor and outdoor
- Maximum attenuation for LTE frequencies
- High selectivity and minimal losses

MODEL	FLTE-481		FLTE-482		
REF.	1436		1437		
Installation type	Indoor		Outdoor		
Cut-off at channel	48 channel				
Pass band frequencies	MHz 470 - 694				
Frequencies range	MHZ	0 - 686	686 - 694	698 - 733	733 - 862
Insertion losses	dB	<1.5	<2.5	>5	>25
Dimensions	mm	70 x 30ø		55 x 40 x 15 with protective box	

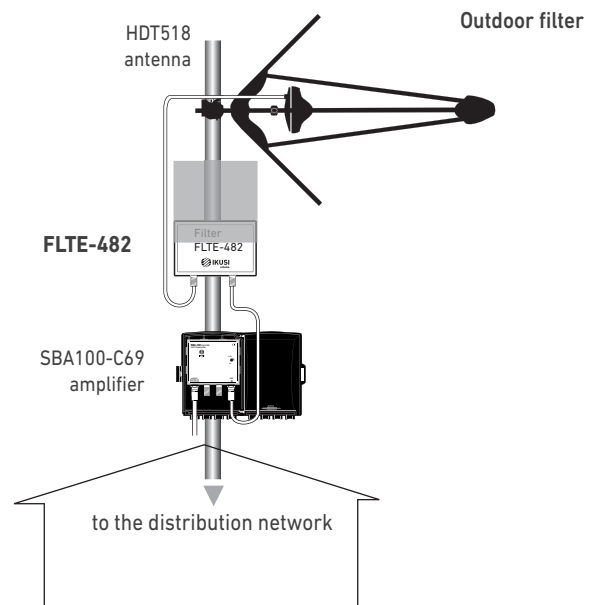
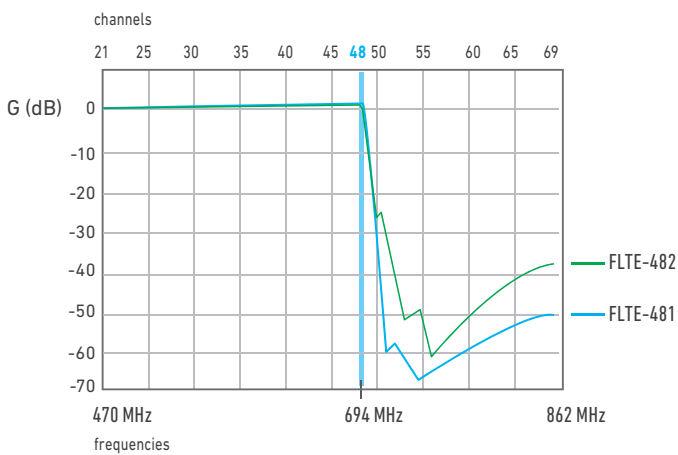
Installation example



Indoor filter

Filter attenuation graph

— FLTE-481 graph
— FLTE-482 graph



Outdoor filter

Analog modulator

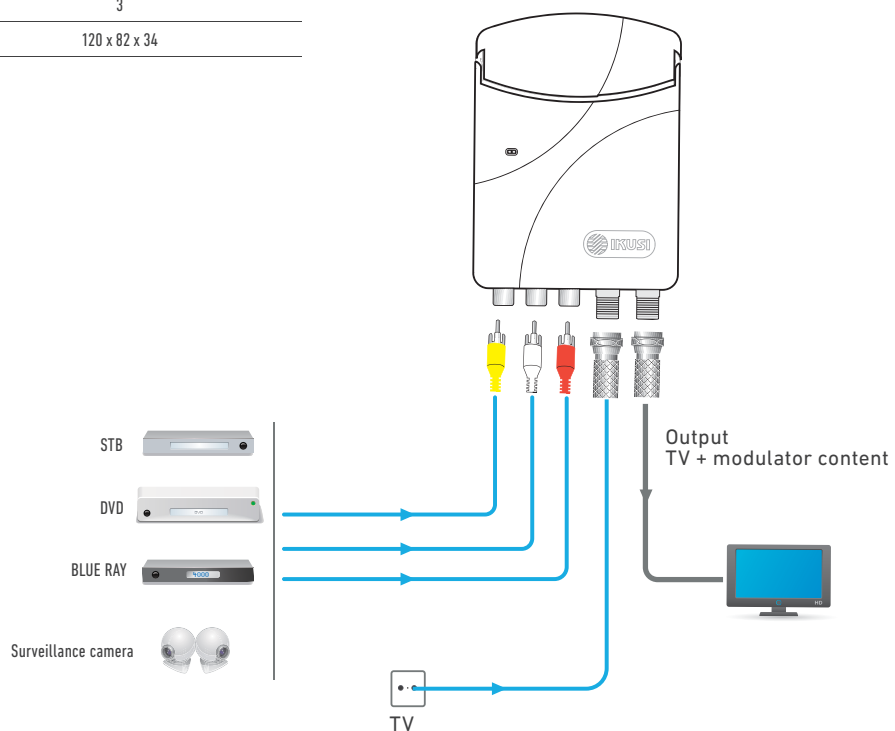
Home DSB TV standalone modulator



- Appropriate use with TV satellite receivers, VCR's and video cameras.
- Direct video/audio modulation. Multistandard. Mono sound. DSB (Double Side-Band) TV output channel.
- Agile selection of channel. Possibility of shifting the standard video carrier frequency up to ± 2.5 MHz.
- Possible connection of stereo sound sources. L and R signals are summed by the modulator itself.
- Built-in test pattern generator.
- Two buttons and one 2-digit LED display for selection and programming of operating parameters.
- Panel potentiometers for audio modulation and RF output level settings.
- Input port for RF coupling of antenna/SMATV signal.
- External plastic box. Indoor mounting. Wall fixing by two screws. AC power indicator.
- Insertable mains lead.

MODEL		MAW-200
REF.		3029
Output TV channel frequency	MHz	45 - 84 174 - 300 470 - 862
Selectable TV system		B, G, H, D, K, I, L, M, N
Output channel spectrum		Double Side Band
Audio operation mode		Mono
RF coupling frequencies	MHz	47 - 2150 (TV+IF)
Fine tuning of video carrier frequency	MHz	$\pm 2,5$ (steps of 0.25 MHz)
Adjustable output level	dB μ V	65 - 85
Switchable carrier level ratio	dB	12 \pm 3 / 16 \pm 3
Video input level	Vpp	0.9 ... 1.1
Video modulation depth	%	81 (typ.)
Audio input level	mV	150 ... 775
Weighted S/N ratio	dB	> 55
Mains voltage	VAC	230 - 240
Consumption	W	3
Dimensions	mm	120 x 82 x 34

Installation example



Outlets. ARTU series



ARTU009 . ARTU900



ARTU001 . ARTU000



ARTU058

MODEL		ARTU001	ARTU000
REF.		2736	2735
Technology type		End outlet / Resistive	End outlet / Bridged
Frequency range		MHz	5 - 862
Transfer loss	input - TV	dB	≤ 3.5
	input - RD	dB	≤ 10
TV - RD isolation		dB	> 12.5
Coverplate		with coverplate	

MODEL		ARTU009	ARTU058	ARTU059
REF.		2472	2740	2473
Technology type		End outlet		
Frequency range		MHz	TV/RD : 5 - 862 SAT : 950 - 2300	
Transfer loss	input - TV/RD	dB	≤ 1.5	
	input - SAT	dB	≤ 2	
TV/RD - SAT isolation		dB	> 25	
DC transit through the SAT output		Yes		No
Coverplate		with coverplate	without coverplate	

MODEL		ARTU900	ARTU901	ARTU902	ARTU903
REF.		2474	2475	2476	2477
Technology type		End outlet	Line outlet	Line outlet	Line outlet
Frequency range		MHz	TV/RD : 5 - 862 SAT : 950 - 2300	TV/RD : 5 - 862 SAT : 950 - 2300	TV/RD : 5 - 862 SAT : 950 - 2300
Transfer loss	input - TV/RD	dB	4.5	11	15
	input - SAT	dB	5.5	11	15
Max through loss	5-862 MHz	dB	—	2	1.3
	950-2300 MHz	dB	—	3	2.5
TV/RD - SAT isolation		dB	> 25		
DC transit through the SAT output		Yes	Yes	Yes	Yes



PSE-300



ABT-210

MODEL		PSE-300
REF.		5360
Frequency range		MHz
		TV : 5 - 68 y 125 - 862 RD : 88 - 108 SAT : 950 - 2300
Transfer loss	input - TV	dB
	input - RD	dB
	input - SAT	dB
TV-RD and TV-SAT isolation		dB
SAT-RD isolation		dB
DC transit through the SAT output		dB
Coverplate + surface mounting frame		Yes

MODEL		ABT-210
REF.		1460
Mounting of the outlets without embedding the body in the wall (ARTUs models)		

Coaxial cables

NEWPRODUCT



MODEL		CCI-175	CCI-179	CCH-175	CCI-174	17VATCAPH1	CCT-171	CCT-125
REF.		2522	2521	2506	2016	2493	2505	2514
Inner conductor Diameter	mm	Cu 1.13	Cu 1.10	Cu 1.13	Cu 1.13	CCS (Copper-plated steel) 1.13	Cu 1.10	Cu 1.6
Dielectric Diameter	mm	PE 4.8	PE 5	PE 4.8	PE 4.8	PE 4.8	PE 5	PE 7.1
Outer conductor Diameter	mm	Cu (tape) + Cu (braid) 5.3	Al (tape) + Al (braid) 5.6	Cu (tape) + Cu (braid) 5.3	Cu (tape) + Cu (braid) 5.3	Al (tape) + Al (braid) 5.4	Al (tape) + Al (braid) 5.6	Al (tape) + Al (braid) 7.8
Outer sheath Diameter	mm	PVC white 6.8	PVC white 7	Polyolefin black (LSOH) * 6.8	PVC black 6.8	PVC white 6.8	PE black 7	PE black 10
Attenuation/100m								
50 MHz	dB	4.5	4.6	4.5	4.5	4.6	4.6	3.1
200 MHz		8.4	8.5	8.4	8.4	8.5	8.5	6.2
300 MHz		10.3	10.5	8.0	8.0	10.5	10.5	7.3
470 MHz		12.8	13.0	10.3	10.3	13	13	9.2
862 MHz		17.0	18.0	12.8	12.8	18	18	13.3
1000 MHz		19.2	19.5	17.0	19.2	19.5	19.5	14.2
1750 MHz		25.7	26.0	19.2	25.7	26	26	19.5
2150 MHz		28.1	29.8	28.1	28.1	29.8	29.8	21.6
Supply unit		(4x) reel 100 m	(4x) reel 100 m	(4x) reel 100 m	(4x) reel 100 m	(4x) reel 100 m	(4x) reel 100 m	reel 200 m

All the cables are manufactured using the Physical Process. Advantages: high mechanical strength, optimum electrical isolation and good stability of characteristics over time.

* LSOH: Low Smoke Zero Halogen. Outer sheath of the CCH-175 does not contain halogens. It is flame retardant (EN/IEC 60332-3), the density of the smoke produced when the cable is burnt is very low (EN/IEC 61034-2) and the fumes are nontoxic (IEC 60754-2).

Connectors

NEWPRODUCT



Connectors for indoor distribution cables

TYPE	MODEL	REF.	DESCRIPTION
F CONNECTORS	CFR-680	2377	Screw-on plug. Use cable CCI
IEC CONNECTORS	CAD	1502	Elbow plug
	CHD-950	1503	Elbow jack
COMPRESSION CONNECTORS	CCF-111	3133	RG11 Compression connector. Use cable CCT-125
	CFC-600	3131	RG6 Compression connector for remaining cables
CRIMP CONNECTORS	CTF-125	2513	RG11 crimp connector. Use cable CCT-125
	CTF-190	2368	RG6 crimp connector for remaining cables
BLOCK CONNECTOR	BCF-060	2379	60V AC/DC block "F" type male-female connector
CHARGE 75 Ω	CTF-075	2221	F type. For loading an F port. Nickered brass
TOOLS	UCF-170	1847	Hex crimp tool for CTF-125 and CTF-190 connectors
	UCR-600	3132	Compression tool for CCF-111 and CFC-600 connectors
ADAPTER	SAI-311	1640	Female-female barrel (brass) "F" type

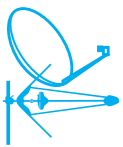
Plug-in electronic accessories

TYPE	MODEL	REF.	DESCRIPTION
ATTENUATORS	FAV-020	3105	Variable 0-20 dB in VHF/UHF. Constant impedance. Female-Male.
	AV-020	1674	Attenuator variable 0-20 dB in VHF-UHF. Constant impedance. F-M
SPLITTER	V-2T	1408	2 way splitters / 2 input combiners. Insertion loss: ≤ 4dB
POWER INSERTER	IFC-215	3241	Power inserter (1A/24 V). Frequency range: 10-2150 MHz. Insertion loss: ≤ 1 dB
IF ACCESSORIES	FIS-950	1107	950-2150 MHz IF amplifier. Sloped gain: 12 up to 20 dB. Noise figure: 7 dB. Operating voltage: +15 ... +18 VDC. Consumption: 40 mA
	FAV-920	3242	18 dB variable attenuator. Min attenuation: ≤ 1.5 dB (5-1000 MHz) and ≤ 4 dB (1001-2150 MHz). DC by-pass. F-type male-female connectors

Distribution with fibre optics



An optical system formed by an emitter, a receiver and splitters.



TV+IF output signals




Replaceable power supply



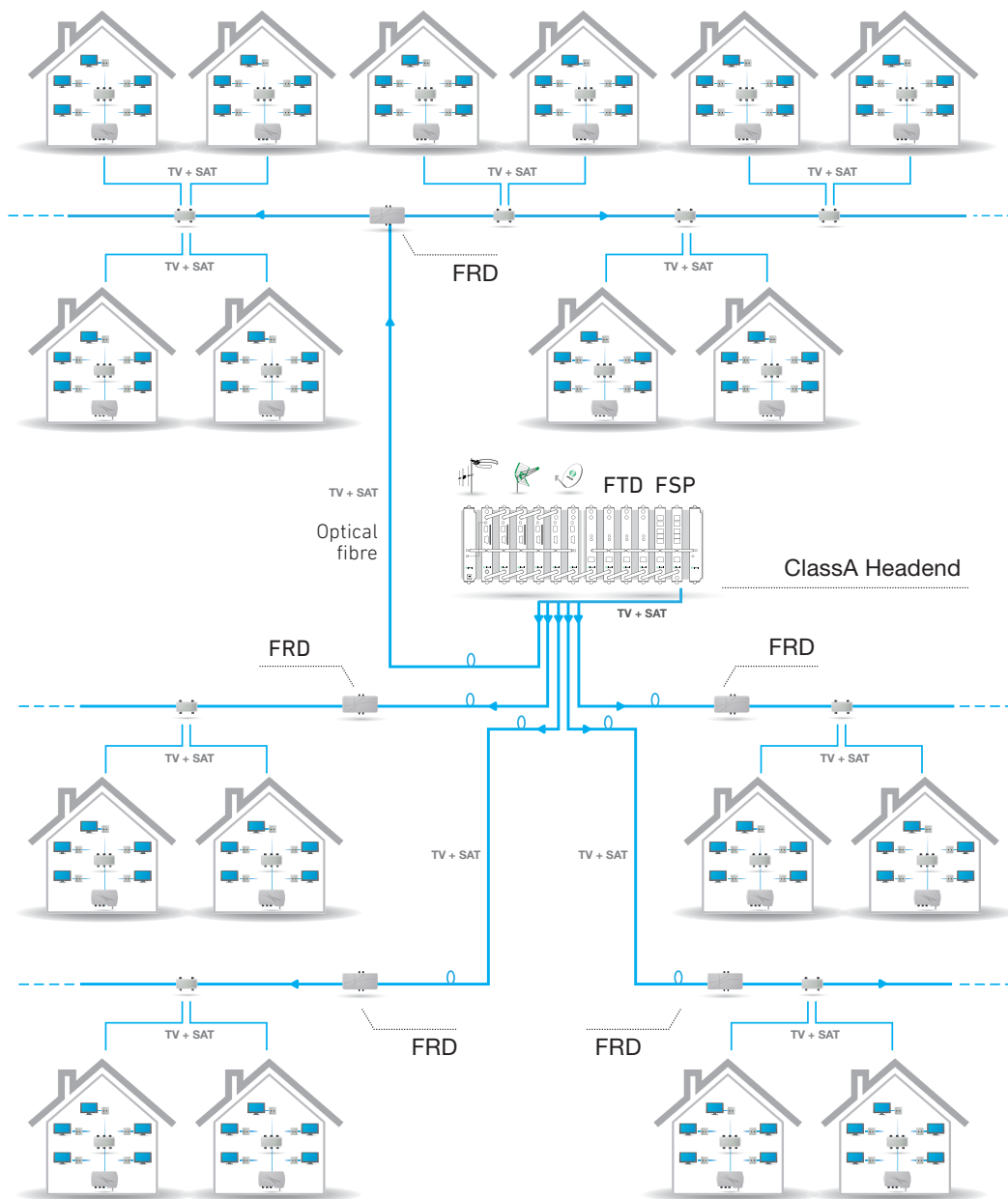
Connection of singlemode type optical fibre



Easy to set up

 Solution for distribution of DTT and satellite IF signals over large collective installations: residential districts, hotels, hospitals.

Installation example



TV+SAT-IF optical transmitter



- 1 TV input (45-862 MHz) — 1 SAT-IF input (950-2150 MHz) — 1 Optical output (1310 nm). Connection of singlemode type optical fibre.
- Solution for distribution of terrestrial TV and satellite IF signals (analog and digital) over large collective installations: residential districts, hotels, hospitals.
- Ultralinear, APC-controlled, 4 mW DFB (Distributed Feedback) laser. Fully compatible with PAL, SECAM, NTSC, FM, DVB-S, DVB-T, DVB-C and other standards.
- TV and SAT-IF separate ways with very high RF amplification gain. Independent OMI settings for TV and SAT-IF.
- DC powered by a CFP power supply module. Mountable on baseplates or rack-frame of ClassA headend.

MODEL		FTD-420
REF.		4915
Optical output power	mW	4 (=6 dBm)
RF inputs		2 TV (45-862 MHz) IF (950-2150 MHz)
Optical section		
Optical wavelength	nm	1310 (±20)
Relative intensity noise (RIN) of the laser	dB/Hz	< -150
Optical output return loss	dB	> 50
Optical output connector		SC / APC
RF section		
TV input level (for OMI 4% CENELEC carriers)	dBµV	72 ... 87
IF input level (for OMI 1.6%)	dBµV	72 ... 87

RF flatness	dB	±0.75 (TV) ,, ±1 (IF)
Adjustm. of TV level to laser - TV-OMI adjustment	dB	-15 ... 0
Adjustm. of IF level to laser - IF-OMI adjustment	dB	-15 ... 0
RF input impedance	Ω	75
RF input return loss	dB	> 12 (TV) ,, > 10 (IF)
General		
Power requirements		+12 VDC / 650 mA
DC connector type		banana socket
Dimensions	mm	230 x 195 x 32

Optical splitting modules

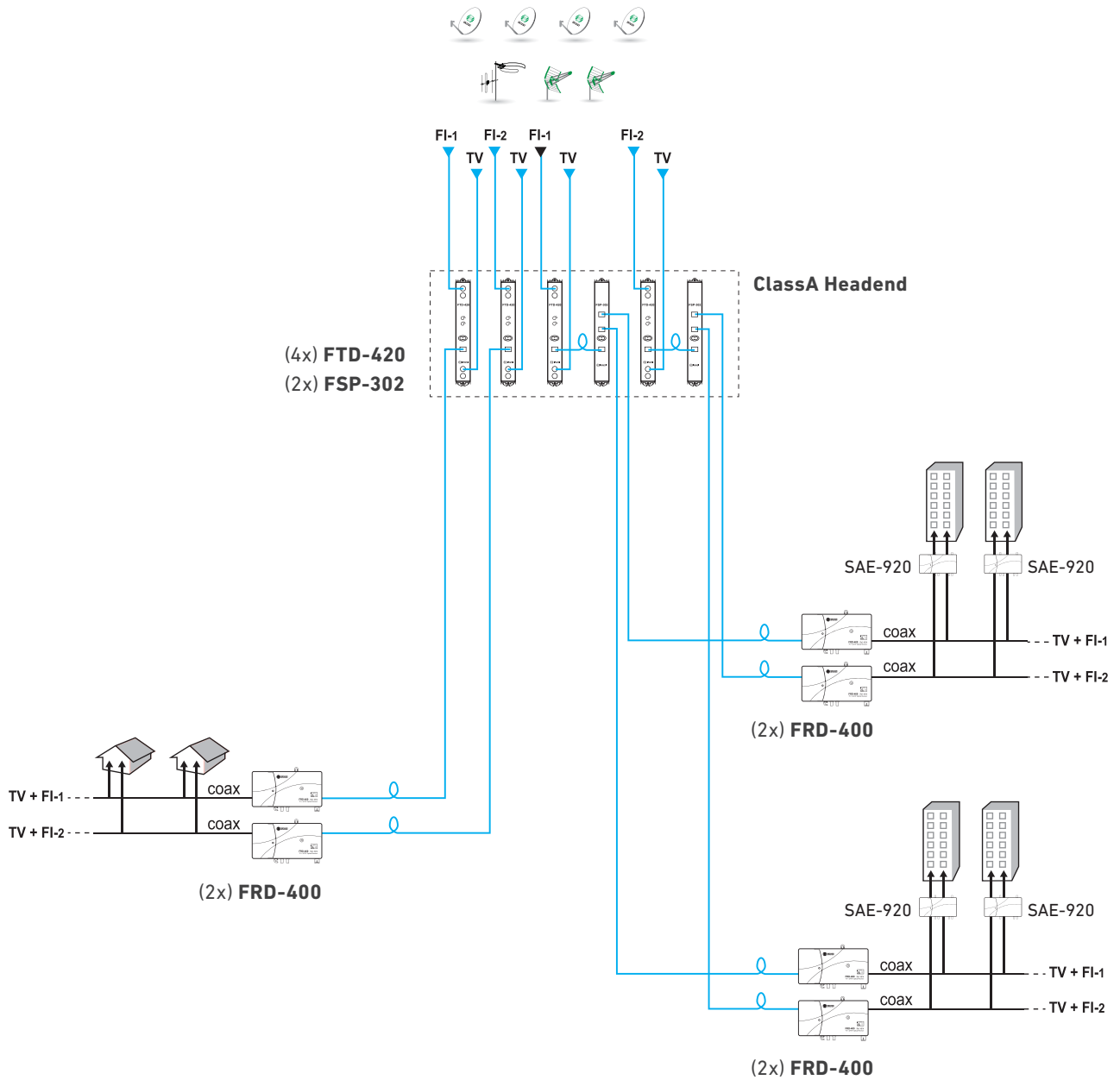


- 2, 3, 4, and 6-way optical splitters for singlemode fibre applications.
- Mountable on baseplates or rack-frame of ClassA headend. The splitters share out the optical power of FTD transmitters to feed multiple field nodes, hence maximizing the use of optical transmission equipment.

MODEL		FSP-302	FSP-303	FSP-304	FSP-306
REF.		4904	4905	4916	4918
No. of optical outputs		2	3	4	6
Wavelength	nm	1310 ±40 1550 ±40			1310 ±40
Insertion loss	dB	3.7	5.5	7.2	9.0
Return loss	dB	> 55			
Output isolation	dB	> 55			
Input/output connectors		SC / APC			
Dimension		mm 230 x 195 x 32			

 A solution for the distribution DTT and IF satellite signals in extensive group installations.

Installation example



TV+IF-SAT optical receiver



- 1 optical input (1290-1600 nm) — 1 RF output (45-2150 MHz).
- Connection of singlemode type optical fibre.
- Especially designed for the delivery of terrestrial and satellite signals (analog and digital) over large collective installations.
- Mains powered, 50/60 Hz. Electrical safety protection level: Class II. Insertable power cord with bipolar plug.
- Injection-moulded zinc alloy housings. Wall-fixing. Indoor mounting.

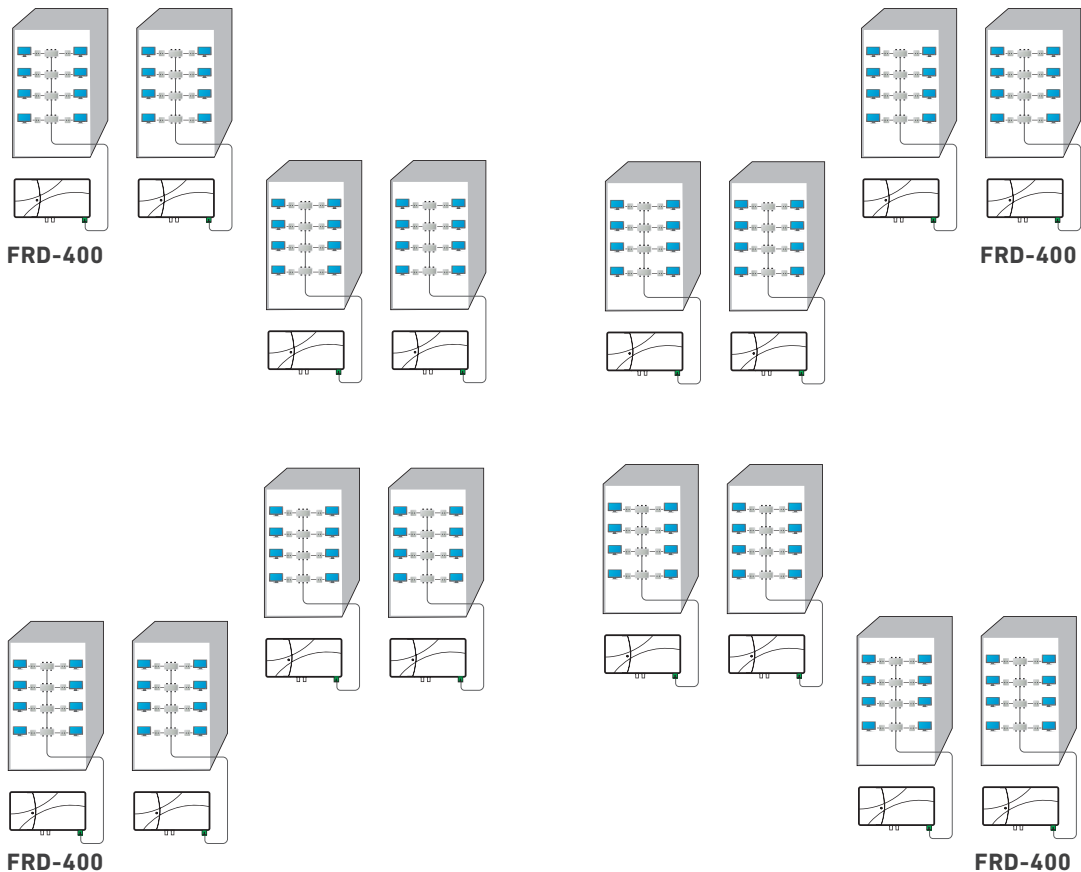
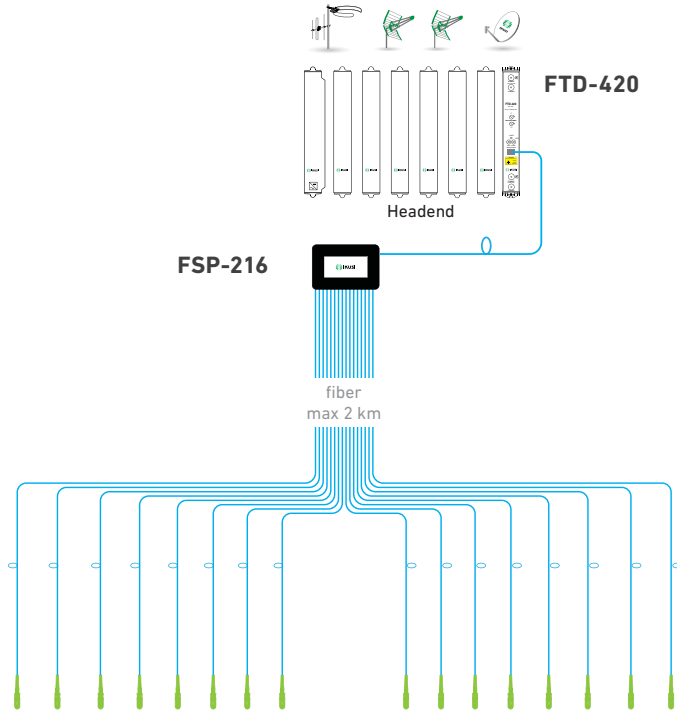
MODEL		FRD-400	
REF.		4914	
Optical window	dBm	-4 ... +1	
Forward RF output frequency	MHz	45-862 (TV) and 950-2150 (IF)	
Optical section			
Optical wavelength	nm	1290 - 1600	
Optical output return loss	dB	> 50	
Optical input connector type		SC / APC	
RF section			
RF flatness	dB	±1.5 (TV) .. ±2 (IF)	
RF output level	Analogue TV	dB μ V	119 ¹ / 104 ²
	IF		120 ³ / 105 ⁴
CNR	Analogue TV	dB	52.5 ⁵ / 50 ⁶
	IF		36 ⁷ / 33.5 ⁸
CTB	dB	58 ⁵ / 60 ⁶	

CSO	dB	59 ⁵ / 63 ⁶
Variable attenuator for TV	dB	0 - 15
Range of slope control for TV	dB	0 - 15
IF Variable attenuator	dB	0 - 15
IF slope control	dB	0 - 10
Output return loss	dB	>12 (TV) , 10 (IF)
Output test	dB	-30
General		
Mains voltage	VAC	230 - 240
Consumption	W	15
Dimensions	mm	222 x 140 x 44

1 -60dB IMD3 (DIN 45004B) ; 2 -With 42 Cenelec carriers and 4% OMI ;
 3 -35dB IMD3 (EN 50083-3) ; 4 -1.6% OMI5
 5 -For maximum optical input power and note2-marked RF output level.
 6 -For minimum optical input power and note2-marked RF output level.
 7 -For maximum optical input power and note4-marked RF output level.
 8 -For minimum optical input power and note4-marked RF output level.

Especially designed for the delivery of DTT and satellite digital signals over large collective installations.

Installation example



Sat/Terr optical fibre receiver

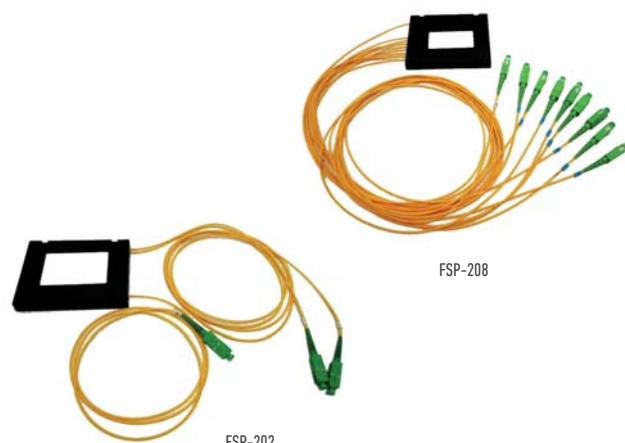
MODEL		FRD-100
REF.		4895
Frequency range	MHz	45 - 2600
Optical wavelength	nm	1290 - 1600
Output level	dBµV	Input level 0 dbm = 94 Input level -3 dbm = 88 Input level -6 dbm = 82 Input level -9 dbm = 76
CNR (DVB-T signals) for output level	dB	46
Coaxial connector		F
Optical connectors		SC/APC
Optical window	dBm	-13 ... +1
Consumption (12V)	W	3.5
Power supply	Vdc	18
Dimensions	mm	118 x 210 x 40



FRD-100

Optical splitters

MODEL		FSP-202	FSP-204	FSP-208	FSP-216
REF.		4896	4898	4897	4899
Number of optical outputs		2	4	8	16
Wavelength	nm	1290 ... 1610			
Attenuation	dB	4	7.3	10.3	13.5
Insertion loss	dB	> 60			
Outputs isolation	dB	> 60			
In/Out connectors		SC / APC			
Dimensions	mm	100 x 80 x 10			



FSP-202

FSP-208

Optical attenuator

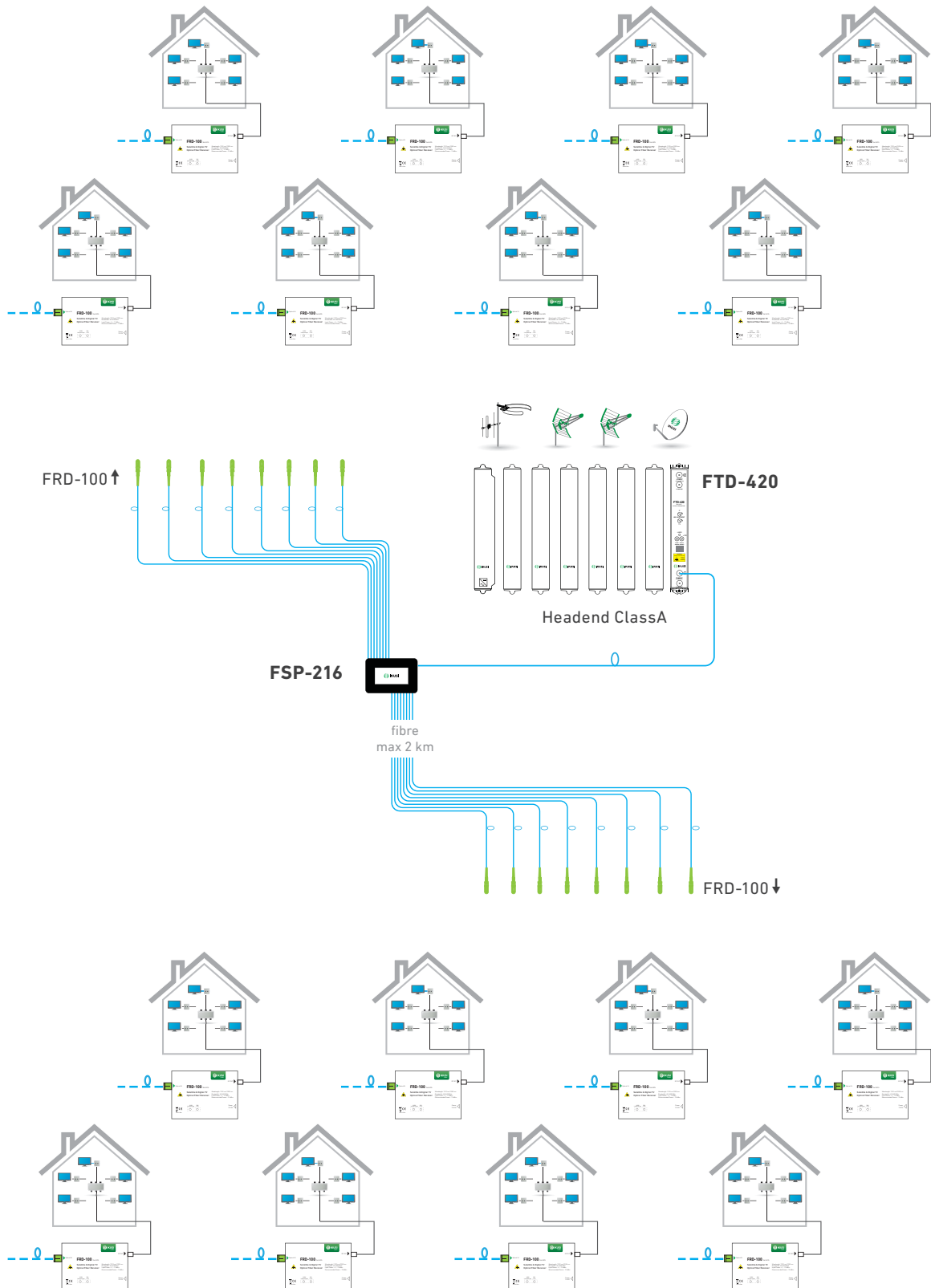
MODEL		FAO-004	FAO-006
REF.		4892	4893
Attenuation	dB	4	6
Connectors		SC / APC	SC / APC
Dimensions	mm	230 x 195 x 32	230 x 195 x 32



FAO-006

Application in the fibre optic distribution of DTT and satellite TV signals in single family residential developments.

Installation example



LNB with optical output

- A solution for satellite signal distribution, covering long distances without hardly any loss (< 0,3 dB/km).
- With an output power of 7 dBm, it can feed up to 32 distribution points over a great distance.
- It can distribute four polarities or 4 bands using a single optical fibre.
- An FC/PC connector allows single-mode optical fibre connection.
- Power supply using an independent F connector.

MODEL		OPTICAL-LNB
REF.		4956
Reception frequency range	GHz	10.7 - 12.75
Output frequency range LNB	GHz	0.95 - 5.45
Optical output		1
Optical power	dBm	7
Optical wavelengths	nm	1310
Noise figure to 25°C	dB	0.5
Max noise figure to 25°C	dB	1.1
Gain maximale	dB	72
Supply voltage	VDC	12
Image rejection	dB	40
Consumption	mA	450
Operating temperature	°C	-30 ... +60



OPTICAL-LNB

Kit LNB+Transmitter+Power Supply

MODEL		ODU32-KIT
REF.		4957
Reception frequency range	GHz	10.7 - 12.75
Output frequency range LNB	GHz	0.95 - 5.45
Output		Coaxial RF
Gain	dB	72
Power supply LNB	VDC	12
Output connector		N 50 Ω
Operating temperature	°C	-30 ... +60
SAT + TERR (DTT) Transmitter		
Input SAT frequency range	GHz	0.95 - 5.45
Input TERR frequency range	MHz	88-108 / 213 - 230 / 470 - 854
Terrestrial input level	dBμV	75
Terrestrial input connector		F
Optical output		2
Satellite input connector		N 50 Ω
Optical output level	dBm	(2x) 7
Supply voltage	VDC / A	12 / 1



ODU32-KIT

PSU, mast strap & mounting bracket included in the kit

Sat+Terr (DTT) optical receivers

MODEL		QUAD-GTU	QUATRO-GTU
REF.		4952	4953
Outputs		4	4
Optical input power	dBm	0 to -15	
Satellite output level	dBμV	60 to 77	
Terrestrial output level	dBμV	64 to 74	
Supply voltage	VDC / A	6 / 1	

Powered by STB or PSU



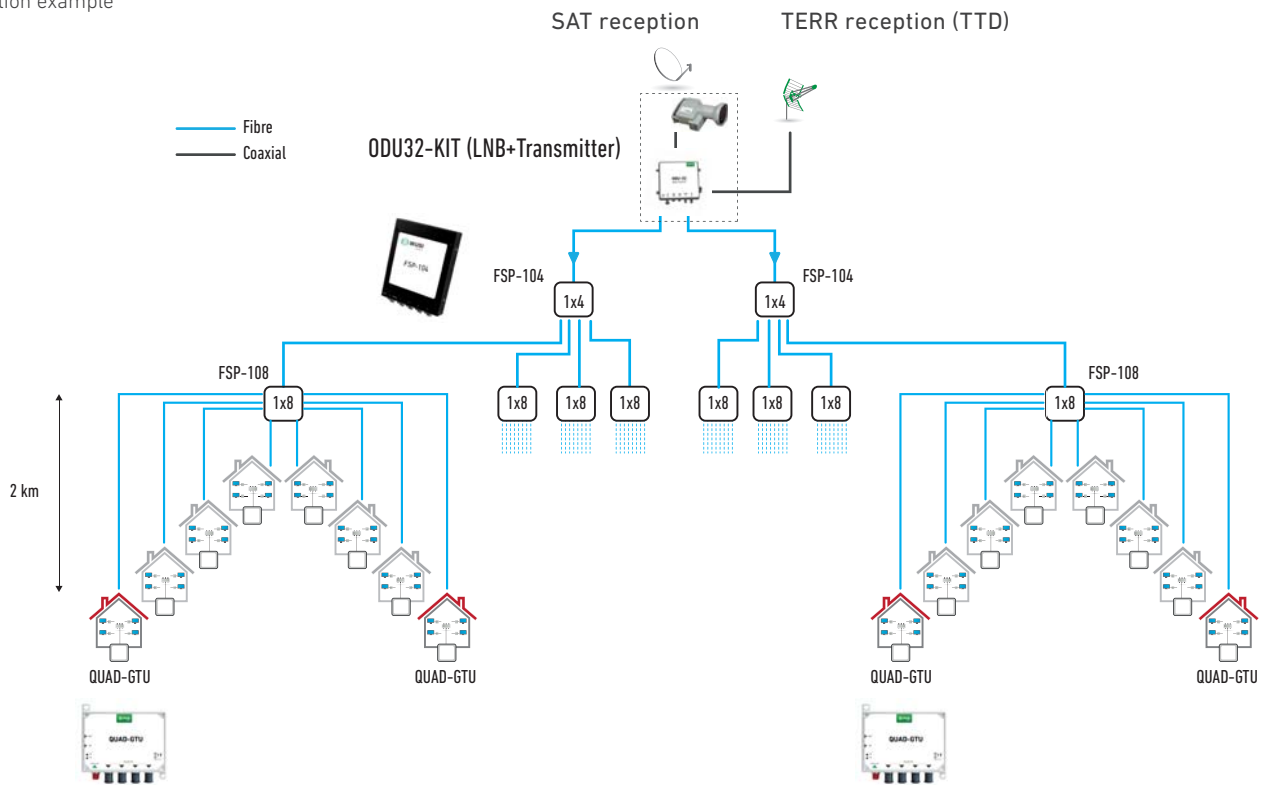
QUAD-GTU



QUATRO-GTU

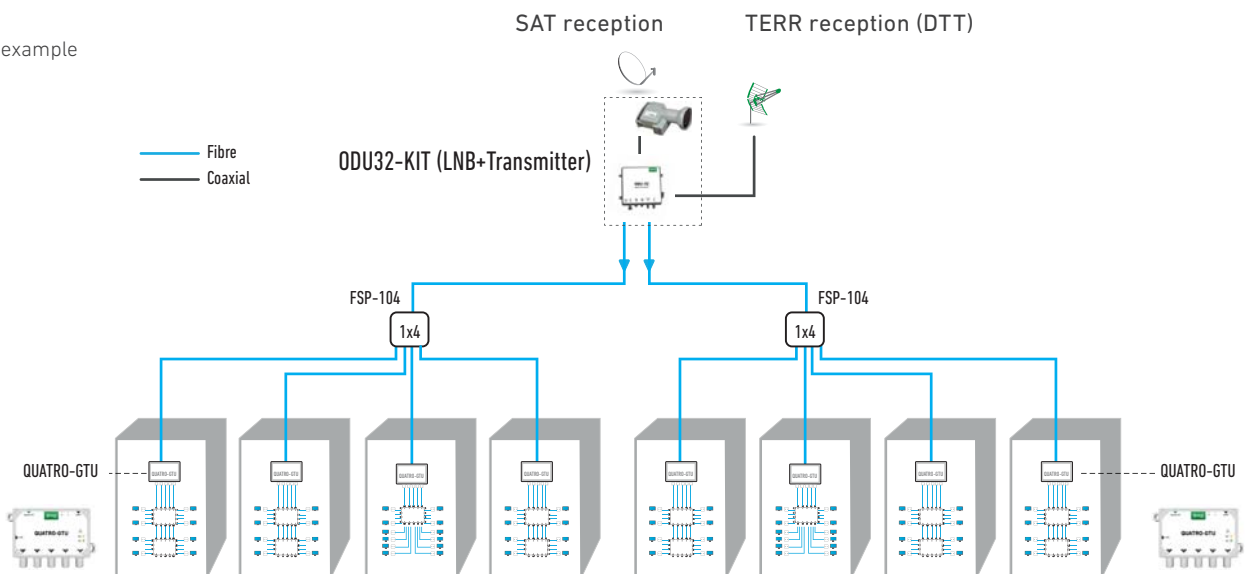
Application in the optical fibre distribution of DTT signals and IF satellite signals in installations of up to 64 optical receivers.

Installation example



Combination of optical LNB + multiswitches in cascadable or star basis

Installation example



LNB input 4 polarities RF

MODEL		WHOLEBAND-LNB
REF.		4955
Input frequency range	GHz	10.7 - 12.75
Output frequency range	GHz	0.95 - 5.45
Output		Coaxial RF
Gain	dB	72
Noise figure (typical at 25 °C)	dB	0.7
Output connector		N 50 Ω
Operating temperature	°C	-30 ... +60
LNB power supply	VDC	12

Power supply not included



WHOLEBAND-LNB

Sat+Terr optical transmitter

MODEL		ODU-32
REF.		4961
Input SAT frequency range	GHz	0.95 - 5.45
Input TERR frequency range	MHz	88-108 / 213 - 230 / 470 - 854
Terrestrial output level	dBμV	75
Terrestrial input connector		F
Optical outputs		2
Satellite input connector		N 50 Ω
Optical output level	dBm	(2x) 7
Supply voltage	VDC / A	12 / 1

Power supply not included



ODU-32

Active splitter

MODEL		FSA-401
REF.		4962
Frequency range	GHz	0.95 - 5.45
Number of outputs		4
Connectors		N 50 Ω
Distribution loss	dB	0

Power supply not included



FSA-401

Optical splitters (FC/PC)

MODEL	FSP-102	FSP-103	FSP-104	FSP-108
REF.	4888	4889	4890	4891
Outputs	2	3	4	8
Dimensions	(2x) 1 m	(3x) 1 m	(4x) 1 m	(8x) 1 m

Power supply not included



FSP-104

Optical attenuators (FC/PC)

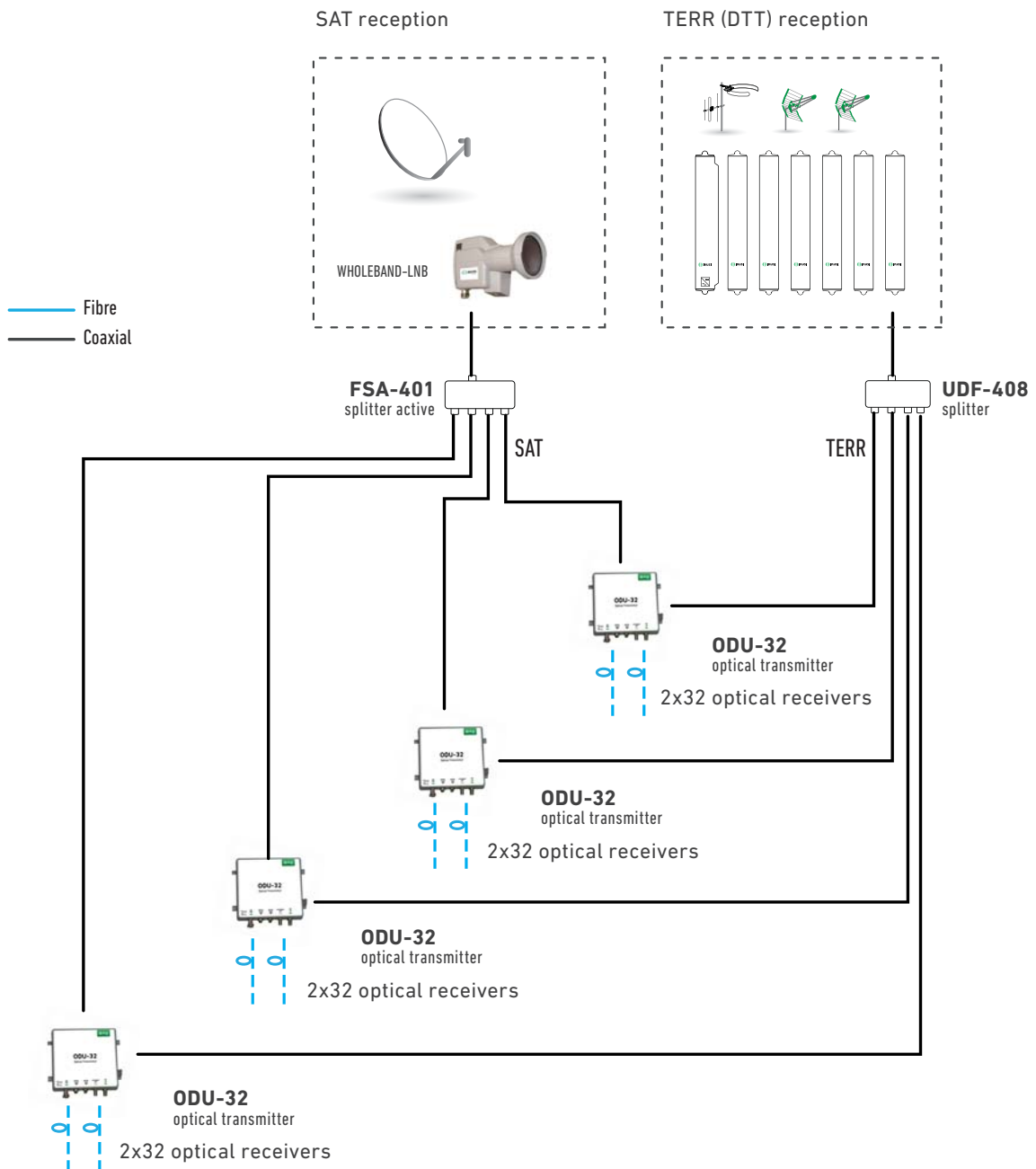
MODEL		FAO-105	FAO-110	FAO-115
REF.		4946	4947	4948
Attenuation	dB	5	10	15



FAO-105

Application in fibre optic distribution of DTT and satellite IF in installations of up to 256 optical receivers.

Installation example



Sat+Terr (DTT) optical convertor

NEW PRODUCT

MODEL		O2E
REF.		4968
Optical Wavelength	nm	100 - 1650
Optical return loss	dB	20
Input optical power	dBm	min: -15 ; max: -3
SAT frequency	GHz	0.95 - 5.45
Satellite return loss	dB	9
Satellite output power	dBμV	80
Terrestrial frequency range	MHz	DTT: 470-862 ; DAB: 174-240 ; FM: 88-108
Terrestrial output power	dBμV	87
Input voltage range	V	10 - 24
Consumption	mA	65

Power supply not included



O2E

Optical Receiver (Twin SCR Unicable Output)

MODEL		DSCR-GTU
REF.		4967
Satellite frequency range	MHz	950 - 2150
Satellite return loss	dB	10
Satellite output level	dBμV	75
Terrestrial frequency range	MHz	DTT: 470-862 ; DAB: 174-240 ; FM: 88-108
Terrestrial return loss	dB	8
Terrestrial output level	dBμV	71
Optical wavelength	nm	1100 to 1650
Optical input power	dBm	min: -12 ; max: -3
Input voltage range	V	20
Consumption	mA	430 max

Power supply not included



DSCR-GTU

SwitchBlade Base8 Unit

MODEL		SWITCH-BLADE BASE 8
REF.		4965
Satellite frequency range	MHz	950 - 2150
Satellite return loss	dB	10
Satellite output level	dBμV	79
Noise figure	dB	5
Terrestrial frequency range	MHz	DTT: 470-862 ; DAB: 174-240 ; FM: 88-108
Terrestrial output level	dBμV	69 (for 6 multiplexes)
Input voltage range	V	11 - 20



SWITCH BLADE BASE 8

SwitchBlade Plus 8 Unit

MODEL		SWITCH-BLADE PLUS 8
REF.		4964

SatPlus8 way unit connects to the SwitchBlade Base8 Unit allowing a 2nd, 3rd, or 4th Satellite feed to be connected into a system if required.
(1 x Switch Blade Base 8 way + 3 x Switch Blade Plus 8 way)



SWITCH BLADE PLUS 8



FC/PC barrel connector

NEW PRODUCT

MODEL	BARREL CONNECTOR
REF.	4966

Used For Joining 2 Pre Terminated Optical Leads Together



High frequency interconnect cable

MODEL	CCO-502	
REF.	4960	
Impedance	Ω	50
Connector type	N	
Dimensions	m	2




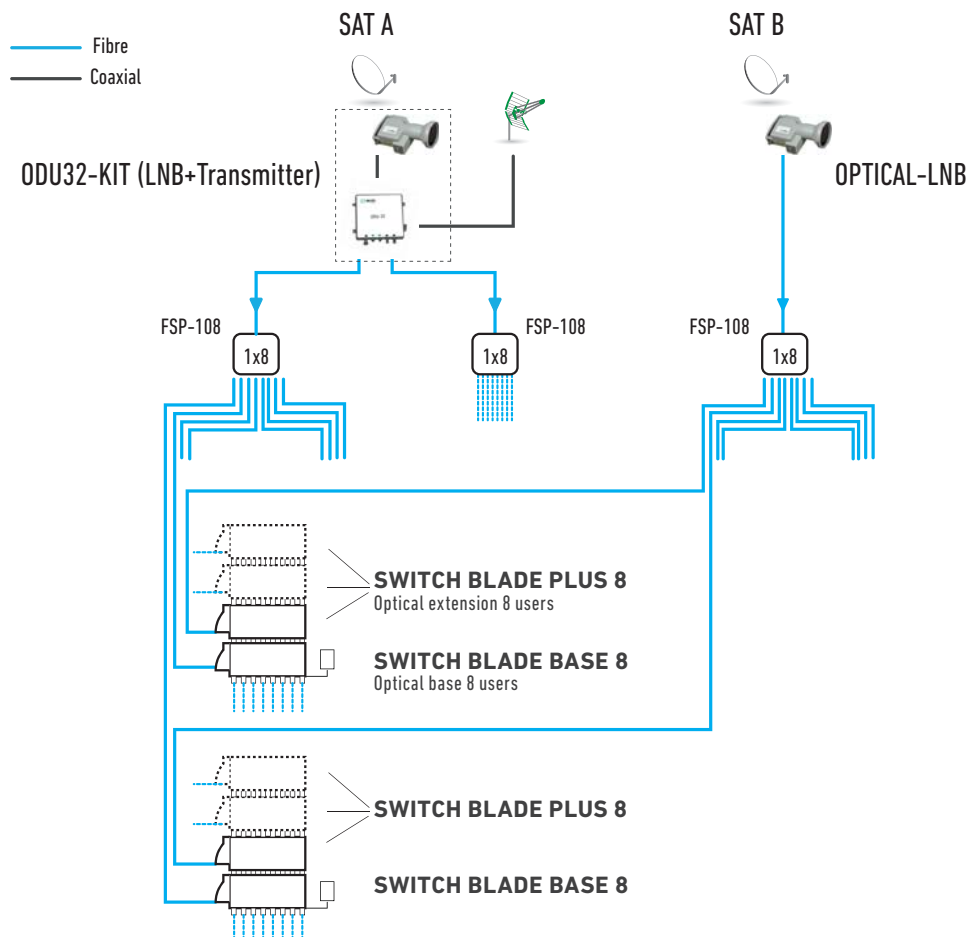
FC/PC Pre-Terminated Fibre

Suitable for indoor/outdoor use

MODEL	FLO-005	FLO-010	FLO-020	FLO-030	FLO-040	FLO-050	FLO-075	FLO-100	
REF.	4933	4934	4935	4936	4937	4938	4939	4940	
Dimensions	m	5	10	20	30	40	50	75	100



 Application in the distribution by fibre optic of DTT signals and IF up to 4 satellites.



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AMX-400	4433	60	CCI-175	2522	92	GMA-400	1911	12
APB-112-M	3436	17	CCI-179	2521	92	GME-200	1886	12
APB-124	3432	17	CCO-502	4960	107	HDT511V	1800	11
APB-224-M	3437	17	CCT-125	2514	92	HDT513V	1803	11
APB-424	3438	17	CCT-171	2505	92	HDT518V	1795	10
ARE-120	2174	62	CFP-900	4492	60	HDT618V	1808	10
ARE-220	2169	62	CFR-680	2377	93	HDT694V	1812	10
ARE-320	2171	62	CHD-950	1503	93	HDT818V	1810	10
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3692	MSC-0916-12	82	4433	AMX-400	60			



Ikusi was born more than 45 year ago. Today, it has a team made up of over 800 professionals and clients in over 80 countries, devoting 4% of its invoicing to R&D+i. Ikusi is present in 9 countries: Germany, Australia, Chile, Colombia, USA, Spain, UAE, France and Mexico.

In addition to this, Ikusi forms part of Velatia, a family, industrial and technological group with a global vocation, made up of a multicultural team of almost 2,900 people from 20 countries. Velatia has offices in 19 countries, 15 manufacturing centres and a first rate Research and Technology Centre on a worldwide scale.

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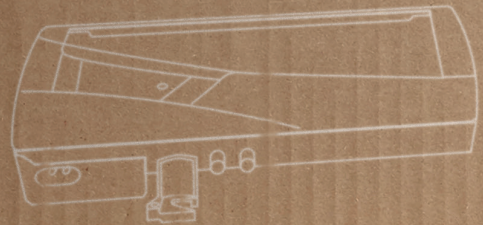
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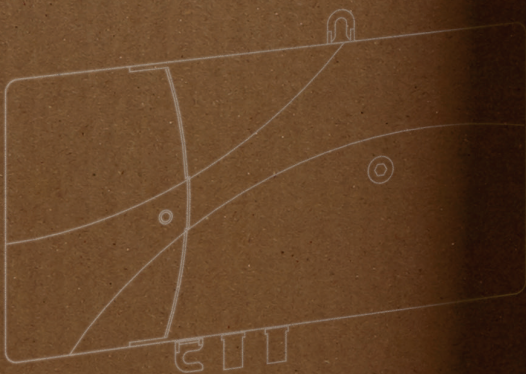
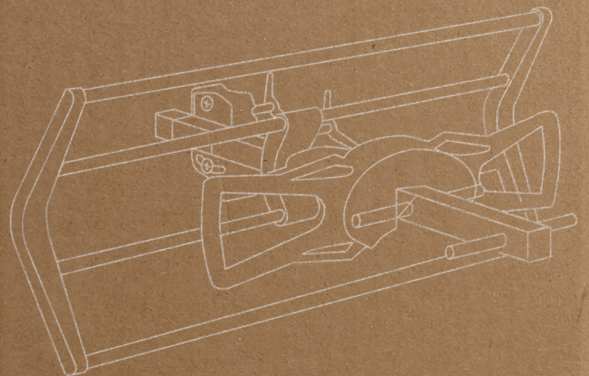
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