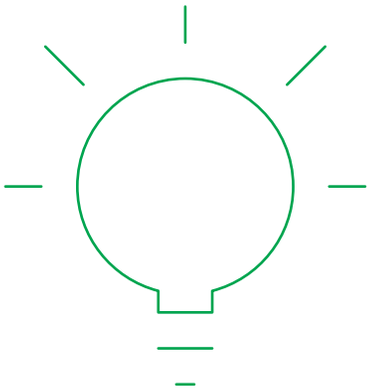
IKUSI
velatia

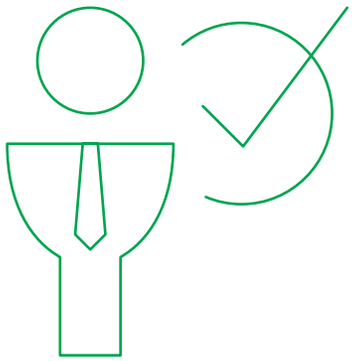
Multimedia Catalogue

smartexperience

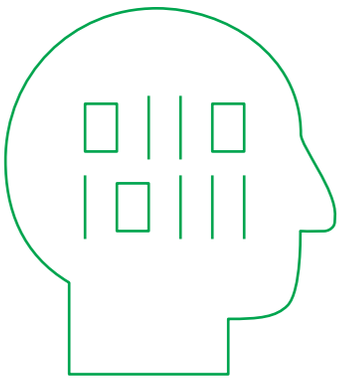
Ikusi Multimedia:
Innovative technology for video & TV signal



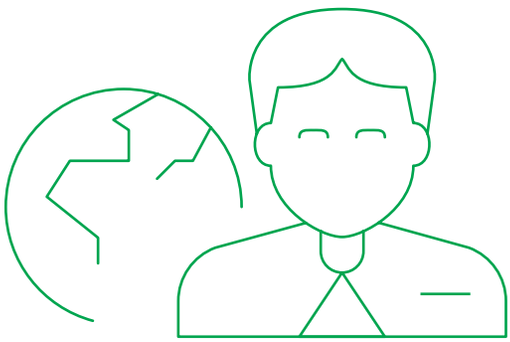
We are experts in innovative and high technology solutions for the reception, processing and distribution of television channels and video, aimed at operators, installers and integrators and to the professional electronic equipment distribution sector.



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.

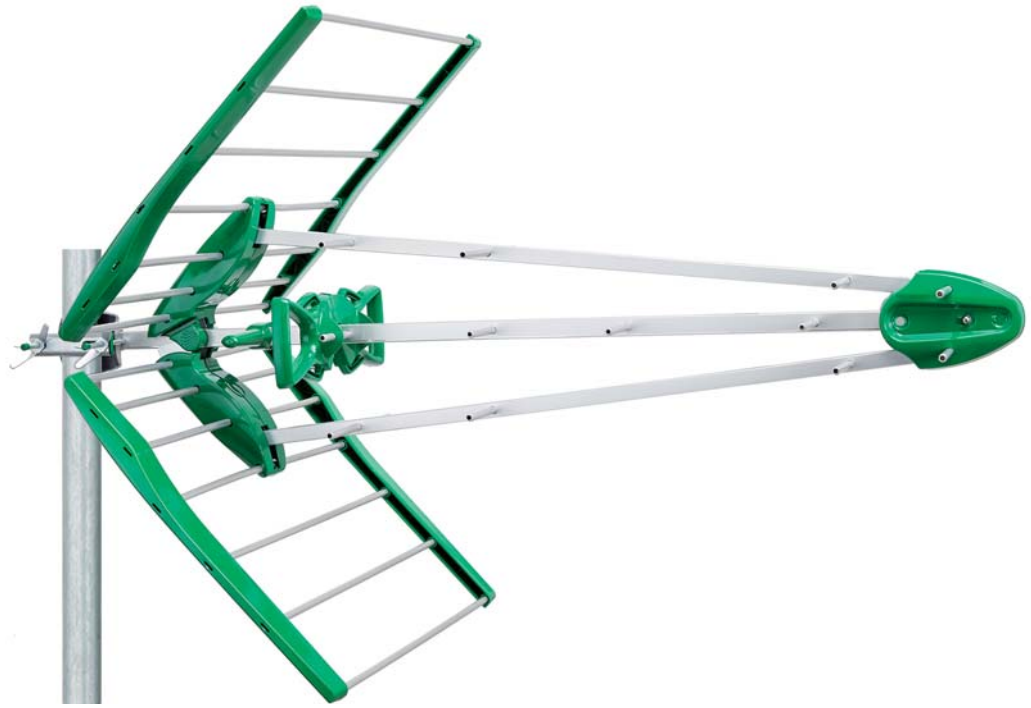
Contact Us!

Pº Miramón, 170 · 20014 San Sebastián, SPAIN · Tel.: +34 943 44 88 00
Customer area: +34 943 44 89 44
television@ikusi.com
www.ikusi.tv

Multimedia Catalogue

Index

Antennas adapted to the new TV spectrum, rejecting LTE bands interferences.



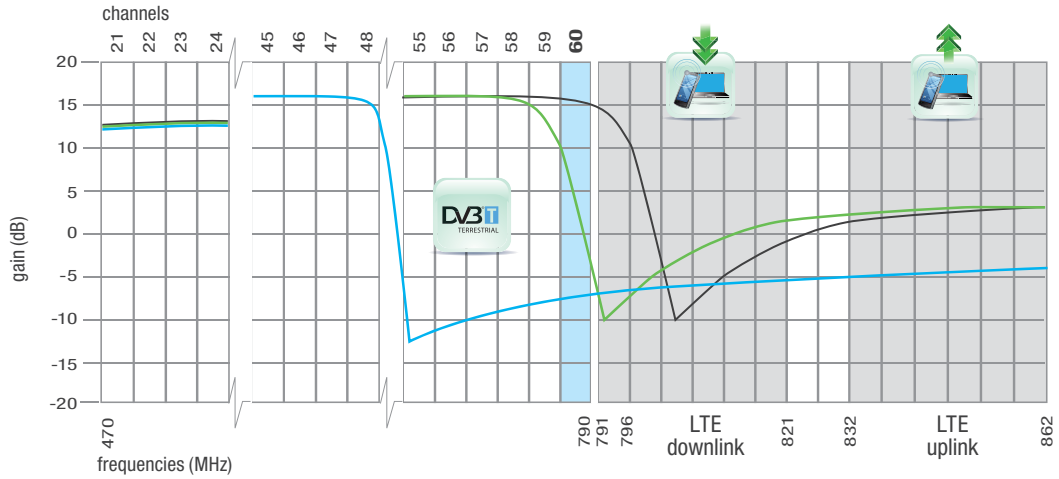
HDTF-C48V

- Fully assembled
- Instant opening with the touch of a button
- Adapted models 1st and 2nd Digital Dividend
- High gain
  Stable reception
- 100% recyclable

Complete solution for receiving terrestrial TV signals.

FLASHD LTE gain diagrams

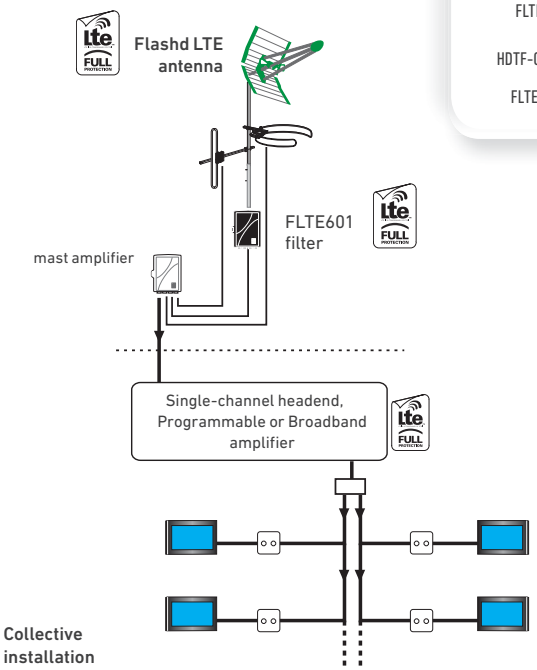
HDTF-C60 antenna gain diagram (21 - 60 channels)
HDTF-C58 antenna gain diagram (21 - 58 channels)
HDTF-C48 antenna gain diagram (21 - 48 channels)

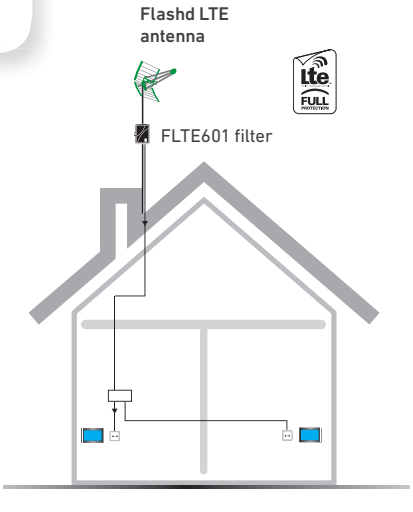


Installation example

Prevention Solutions against LTE signals

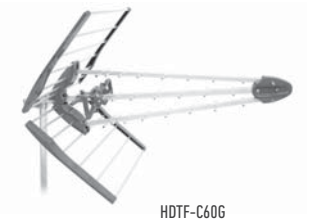
HDTF-C48 antenna	• In istallations with channel 48
HDTF-C58 antenna or FLTE601 filter	• In case of NOT having channels 59 and 60
HDTF-C60 antenna + FLTE601 filter	• In istallations with channels 59 or 60 • Proximity of 4G mobile base station

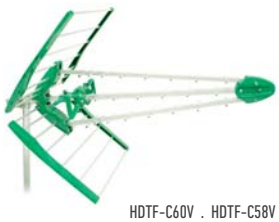




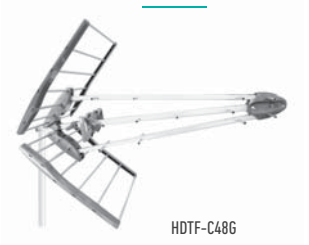
Antennas FLASHD. HDTF Series

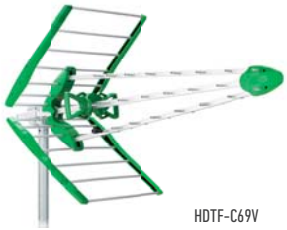
LTE1


HDTF-C60G


HDTF-C60V . HDTF-C58V

LTE2


HDTF-C48G


HDTF-C69V

- Adapted models to the 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 higher frequencies 694 or 790 MHz depending on model.

  HDTF-C60. The antenna frequency response is cut off at channel 60.
  HDTF-C58. The antenna frequency response is cut off at channel 58.
  HDTF-C48. The antenna frequency response is cut off at channel 48.

- Supplied fully assembled.
- Unfold with a simple press of a button.
- Passive compact dipole. Dihedral reflector, all aluminium parts.
- Fixed to masts of 25 to 50 mm. Adjustable tilt angle ±40°.
- ABS enclosure with IP55 protection rating. Easy disassembly for fast coaxial cable connection.

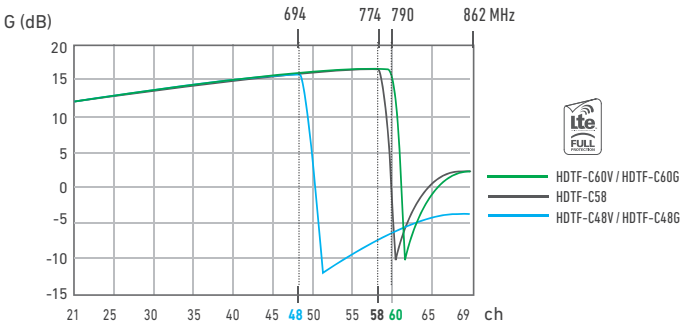
FLASHD LTE

MODEL		HDTF-C60V	HDTF-C60G	HDTF-C58V	HDTF-C48V	HDTF-C48G
REF.		1821	1820	1819	1818	1816
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	gray	green	green	gray

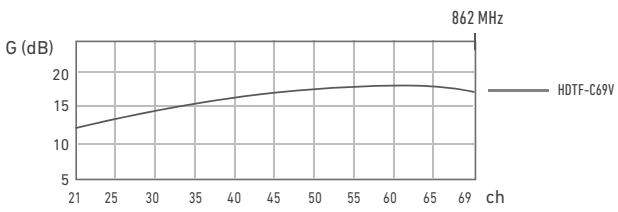
FLASHD

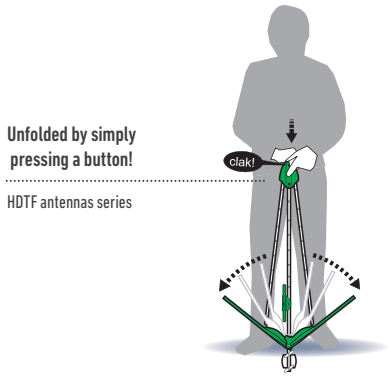
MODEL		HDTF-C69V
REF.		1817
Channels		21 - 69 (470-862 MHz)
Nominal gain	dB	17.5
Front-to-back ratio	dB	≥20
Beamwidth	H / V	40° / 50° (470 MHz) 55° / 65° (670 MHz) 25° / 30° (860 MHz)
Windload	N	130 Km/h : 105 150 Km/h : 150
Length	cm	105
Quantity boxed		1
Color		green

Gain diagrams



Gain diagrams





Antennas FLASHD. HDT Series

LTE1

HDT513V

HDTC790V

LTE1

HDT511V

HDTN790V

- 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 ...

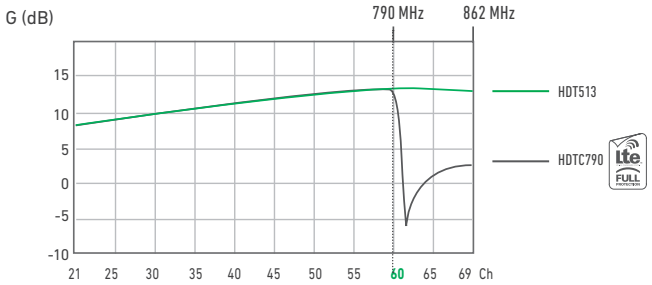
In the bungalow

In the shop

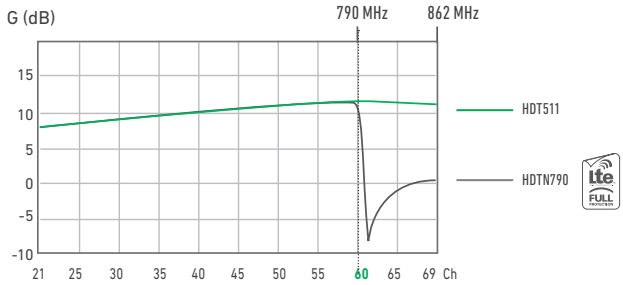
In the mobile home

In the cottage

Gain diagrams



Gain diagrams



FM radio antennas

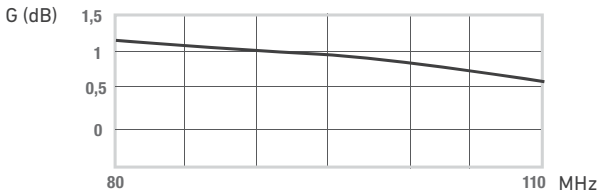
IKS-1E/FM

DAB-031

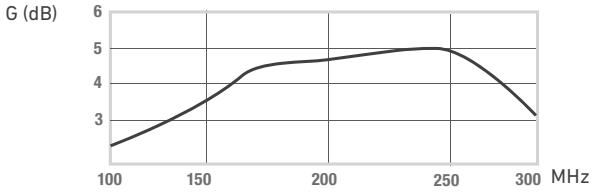
MODEL		IKS-1E/FM	DAB-031
REF.		1725	1728
Frequency range	MHz	88 - 108	174 - 240
Gain	dB	1	2
Front-to-back ratio	dB	0	0
Windload (for velocities 130/150 km/h)	N	28/38	15/20
Quantity boxed		5	5

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

IKAS-1E/FM Gain diagrams



DAB-030 Gain diagrams



Masts and supports

KMV-100

GME-200

BMA-200

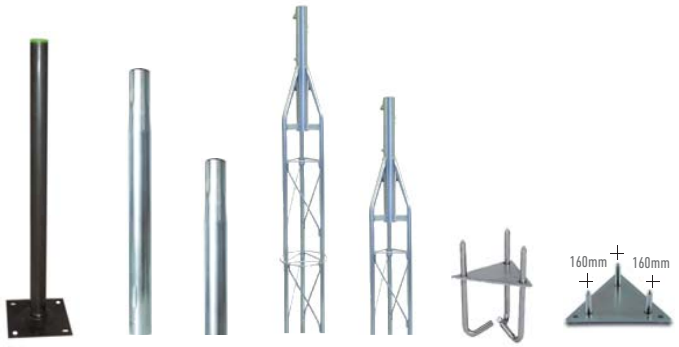
GMA-400

BBT-100

BAP-200

SPA-240

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



SCF-085 MAS-300 MAS-250 TOR-250 TOR-150 BFT-100 BTA-225

SCF-085	1067	Ground-fixing "column" type. Heigh 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 offset dishes. RPA Series

RPA-060

RPA-080

RPA-100

RPA-120

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

UEU-121K

UEU-221K

UEU-421K

UEU-124K

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			
Local Oscillator Temperature Drift (@ -40 ~ 60 °C)	MHz	± 3			
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
Reletive 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

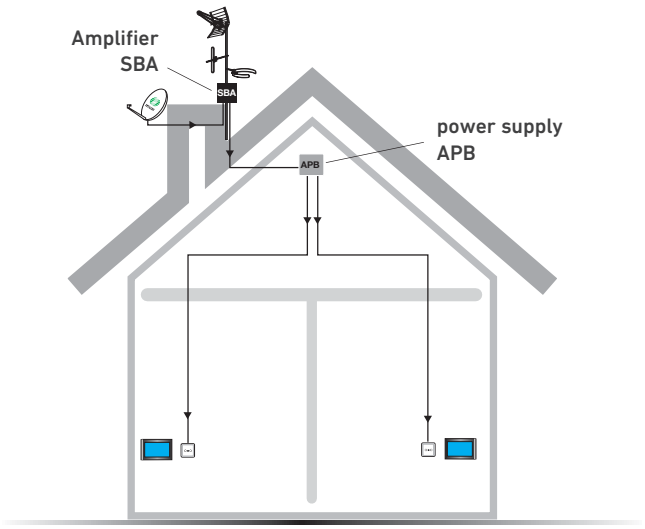
Mast amplifiers and power supplies

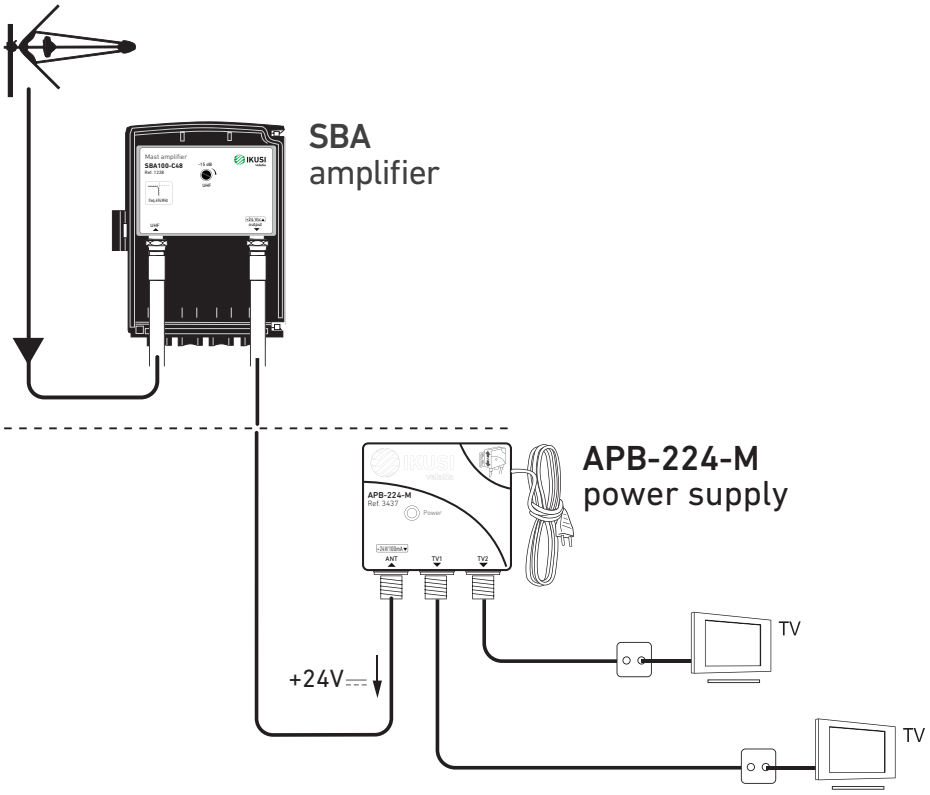
- Very high UHF gain
- Individual installations
- Optimum design for very low operative noise figure
- Adapted to the first and second digital dividend
- Interstage variable attenuators

SBA amplifiers and APB power supplies

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

Application example





Shielded multiband mast amplifiers. SBA Series

LTE1 LTE2




- 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 (1st dividend)
SBA100-C48	1228		470 - 694 (2nd 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		Vdc	+24
Consumption		mA	55
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 (1st dividend)	
SBA101-C48	1296		470 - 694 (2nd 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		Vdc	+24	
Consumption		mA	55	
Dimensions		mm	96 x 125 x 46	

2 UHF-BI/FM//DAB/BIII inputs

MODEL	REF.	SBA102 Series		
SBA102-C69	1300	Frequency range MHz	470 - 862	47 - 240
SBA102-C60	1301		470 - 790 (1st dividend)	
SBA102-C48	1302		470 - 694 (2nd dividend)	
RF inputs			2	
			UHF	BI/FM/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		Vdc	+24	
Consumption		mA	45	
Dimensions		mm	96 x 125 x 46	

2 UHF-SAT inputs

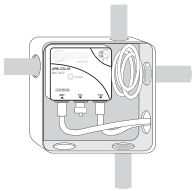
MODEL	REF.	SBA190 Series		
SBA190-C69	1306	Frequency range MHz	470 - 862	950 - 2400
SBA190-C60	1307		470 - 790 (1st dividend)	
SBA190-C48	1308		470 - 694 (2nd dividend)	
RF inputs			2	
			UHF	SAT
Nominal gain		dB	35	-2
Gain adjustment		dB	0 - 15	-
Noise figure		dB	≤ 2	
Output level (DIN-B, -60dB)		dBµV	105	-
Input isolation			≥26	
Operation voltage		Vdc	+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

the smallest
in the market!

NEWPRODUCT

APB-224-M



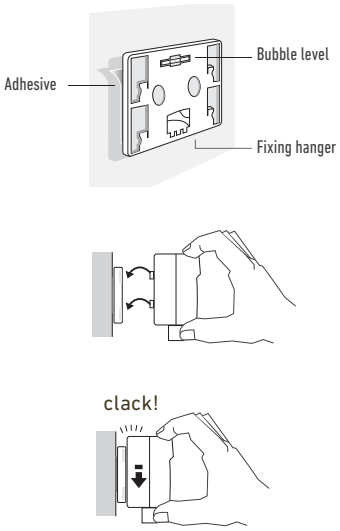
the only power supply that is integrated in a box of 80x80 mm

APB-112-M

«MICRO» power supply +24 VDC

MODEL		APB-224-M
REF.		3437
Regulation type		switch mode
Outputs		2
Mains voltage (50 Hz)	VAC	100 - 240
Output voltage	VDC	+24 (±5%)
Output voltage	mA	100
Frequency range	MHz	47 - 862
RF insertion loss	dB	≤ 4
Dimensions	mm	50 x 50 x 25

Wall fixing system

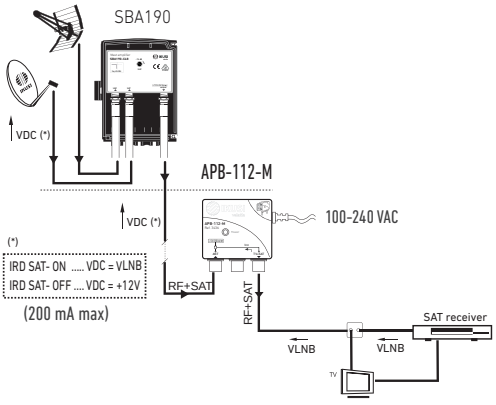


«MICRO» power supply +12 VDC for SBA190 amplifier

MODEL		APB-112-M
REF.		3436
Regulation type		switch mode
Output		1
Mains voltage (50 Hz)	VAC	100 - 240
Output voltage	VDC	+12 (±5%)
Output voltage	mA	200
Frequency range	MHz	47 - 2400
RF insertion loss	dB	≤ 1.5
Current pass through	mA	300
Dimensions	mm	50 x 50 x 25

When the user's SAT receiver is OFF or stand-by, the APB-112-M power supply operates normally, providing +12V voltage for the mast-head preamplifier.

When the SAT receiver is switched ON, the APB-112-M comes automatically to stand-by and let pass the voltage/tone signals coming from the receiver, so that the LNB as well as the SBA190 preamplifier are powered by the SAT receiver.

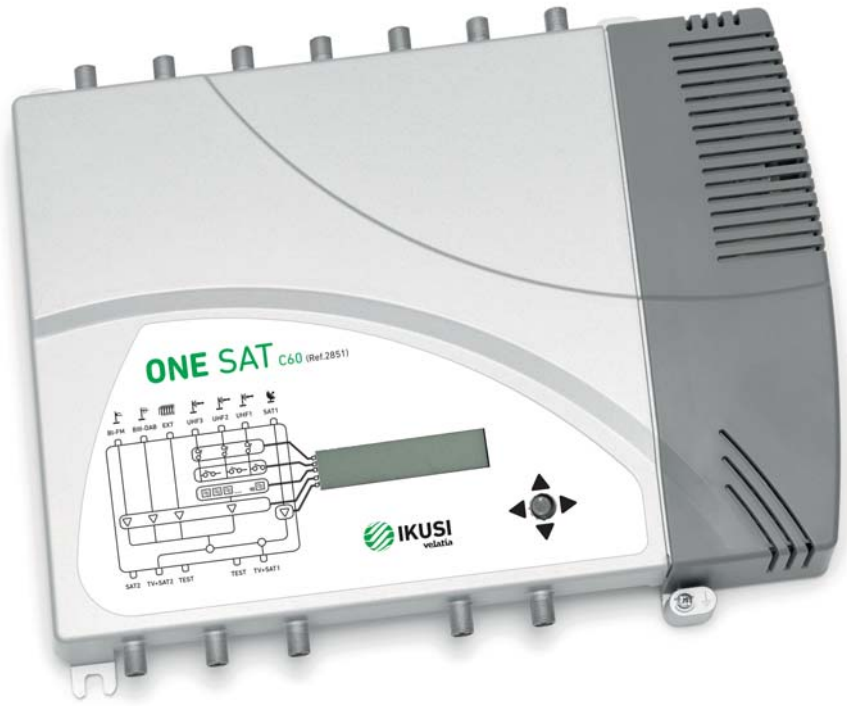


Amplifier+Power supply kits

MODEL	REF.	DESCRIPTION
JSBA100-C69	1223	Amplifier SBA100-C69 + Power supply APB-224-M
JSBA100-C60	1222	Amplifier SBA100-C60 + Power supply APB-224-M
JSBA100-C48	1224	Amplifier SBA100-C48 + Power supply APB-224-M

SBA-100 APB-224-M

Terrestrial and Satellite programmable ampfilied headends.

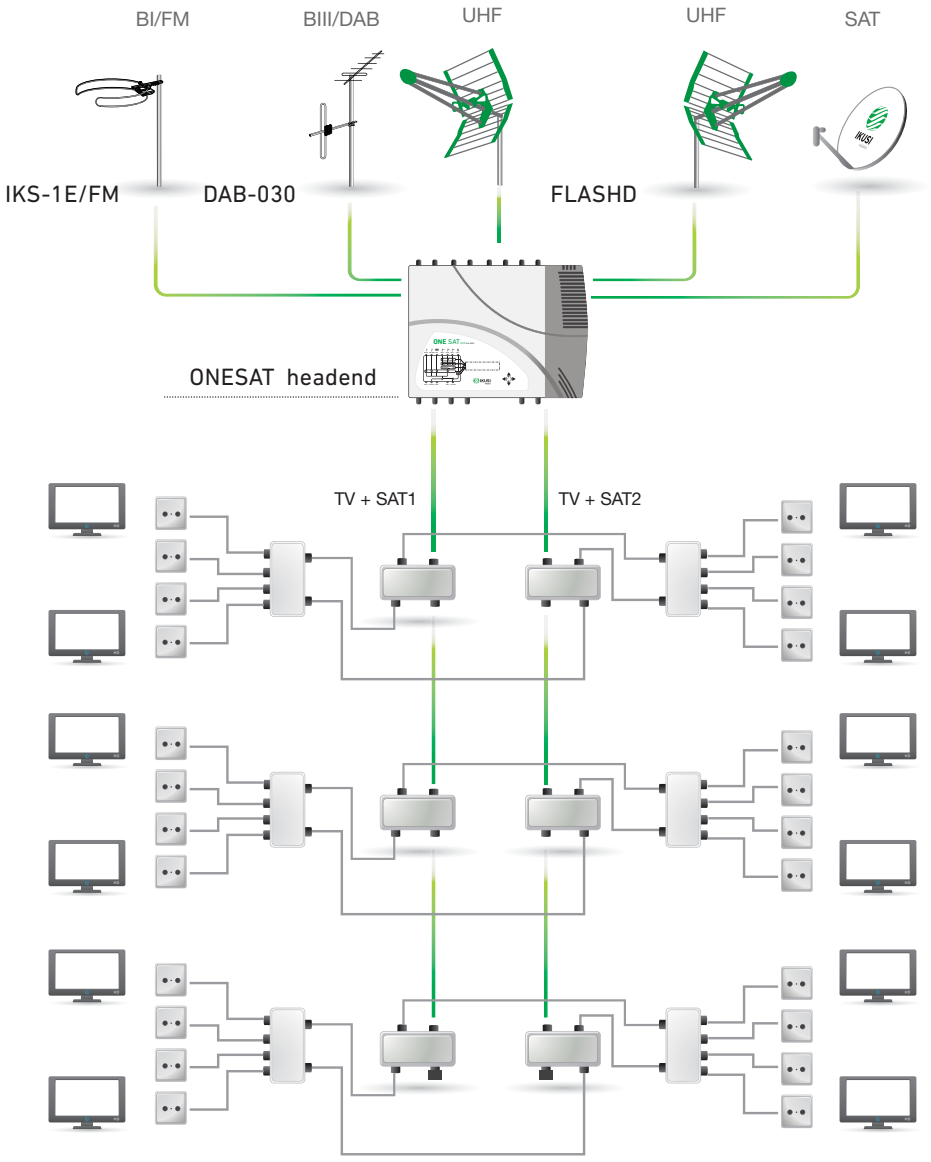


ONESAT-C60

- 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 and second digital dividend
- Equalisation and automatic gain control
- Replaceable power supply

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

Installation example



Terr & Sat programmable multichannel amplifier. ONESAT

LTE1 LTE2 NEW

- 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 dBµV) + SAT1 (122 dBµV)

  Configuration: 2 OUTPUTS
  TV (118 dBµV) + SAT1 (122 dBµV)
  TV (118 dBµV) + SAT2
- SAW filtering.
- Equalisation and automatic gain control.
- Internal configuration cloning with transferral to another equipment.
- Equipment locking by security code.
- Silent and extra slim.

MODEL	REF.	ONESAT Series								
ONESAT-C69	2850	Frequency range (MHz)	47 - 108	174 - 240	47 - 240 / 470 - 862	**470 - 862**			950 - 2150	
ONESAT-C60	2851					**470 - 790**				
ONESAT-C48	2852					**470 - 694**				
Inputs			1 **BI/FM**	1 **DAB/BIII**	1 **EXT (VHF/UHF)**	3 **UHF 3**	3 **UHF 2**	3 **UHF 1**	1 **FI-SAT 1**	1 **FI-SAT 2** (passive)
Input configuration Number of programmable UHF filters per input			–			0 1 3 3 1	0 0 0 5 7	10 9 7 2 2	–	
Number of channels per filter			1 ... 5							
Gain	config TV2 & TV1	dB	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		dBµV	60 - 85	60 - 80		50 - 100			40 - 80	
Return losses		dB	> 10							
Selectivity (±10MHz of channels ends)		dB	–			10			–	
Uncoupling between inputs		dB	–			> 20			–	
Output level	config TV2 & TV1	dBµV	113 *1	113 *1	VHF: 113 UHF: 118 *1	118 *1			122 *2	
	config TV1		118 *1	118 *1	VHF: 113 UHF: 123 *1	123 *1			122 *2	
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	110 - 240							
Consumption		W	20							
Operating temperature		°C	-5 ... +50							
Dimensions		mm	300 x 250 x 40							

*1 IMD3 -52 dBc (DIN 45004B)
*2 IMD3 -35 dBc (EN 59983-3)

Terrestrial programmable multichannel amplifier. ONE118

LTE1 LTE2 NEW

- 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 and UHF).
- SAW filtering.
- Equalisation and automatic gain control.
- Internal configuration cloning with transferral to another equipment.
- Equipment locking by security code.
- Silent and extra slim.

MODEL	REF.	ONE118 Series					
ONE118-C69	2853	Frequency range (MHz)	47 - 108	174 - 240	**470 - 862**		
ONE118-C60	2854				**470 - 790**		
ONE118-C48	2855				**470 - 694**		
Inputs			1 BI/FM	1 DAB/BIII	**UHF 3**	3 **UHF 2**	**UHF 1**
Input configuration Number of programmable UHF filters per input			–		0 1 3 3 1	0 0 0 5 7	10 9 7 2 2
Number of channels per filter			1 ... 5				
Gain	dB		35	40	35/55 switchable		
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 (± 10 MHz of channel ends)	dB				10		
Uncoupling between inputs	dB		–		> 20		
Output level	dBµV		118 *1	118 *1	118 *1		
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		110 - 240				
Consumption	W		15				
Operating temperature	°C		-5 ... +50				
Dimensions	mm		300 x 250 x 40				

*1 IMD3 -52 dBc (DIN 45004B)

Terrestrial programmable headend. ONEHOME

LTE1 LTE2 NEW

- ONE HOME models 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.
- Self-installation function.
- 10 tuneable UHF filters with the capacity to process 1 to 5 channels each.
- SAW filtering.
- Terrestrial inputs (BI-FM and UHF).
- Replaceable power supply.

MODEL	REF.	ONEHOME Series			
ONEHOME-C69	2856	Frequency range (MHz)	47 - 108	470 - 862	
ONEHOME-C60	2857			470 - 790	
ONEHOME-C48	2858			470 - 694	
Inputs			1 **BI/FM**	1 **UHF**	
Input configuration Number of programmable UHF filters per input			–	10	0	0
				9	0	1
				7	0	3
				2	5	3
				2	7	1
Number of channels per filter				1 ... 5		
Gain		dB	-5	20/40 switchable		
Gain adjustment		dB	–	30		
Noise figure		dB	–	< 6		
Optimum input margin		dBµV	–	50 - 100		
Return losses		dB	> 10	> 10		
Selectivity (± 10 MHz of channel ends)		dB	–	10		
Output level		dBµV	–	113 *1		
Output level adjustment		dB	–	20		
AGC tolerance		dB	–	± 1		
Switchable preamplifier voltage		V	–	off-12-24		
Maximum preamplifier voltage		mA	–	100		
Test output		dB	-30			
Mains voltage		VAC	110 - 240			
Consumption		W	10			
Operating temperature		°C	-5 ... +50			
Dimensions		mm	300 x 250 x 40			

IKUSI velatia

smartexperience

ONE Series

Comprehensive solution for processing TV signals

- Greater rejection of LTE
- Lower consumption
- Improved self-installation

3 models designed for all types of installation

- **ONESAT**
  . 6 terrestrial inputs
  +2 satellite inputs
  . 2 configurables outputs
  . High-power 122 dBµV

- **ONE118**
  . 3 UHF inputs
  . Power 118 dBµV

- **ONEHOME**
  . 1 UHF input (economic)
  . Power 113 dBµV

Broadband amplifiers with high, medium and low power.

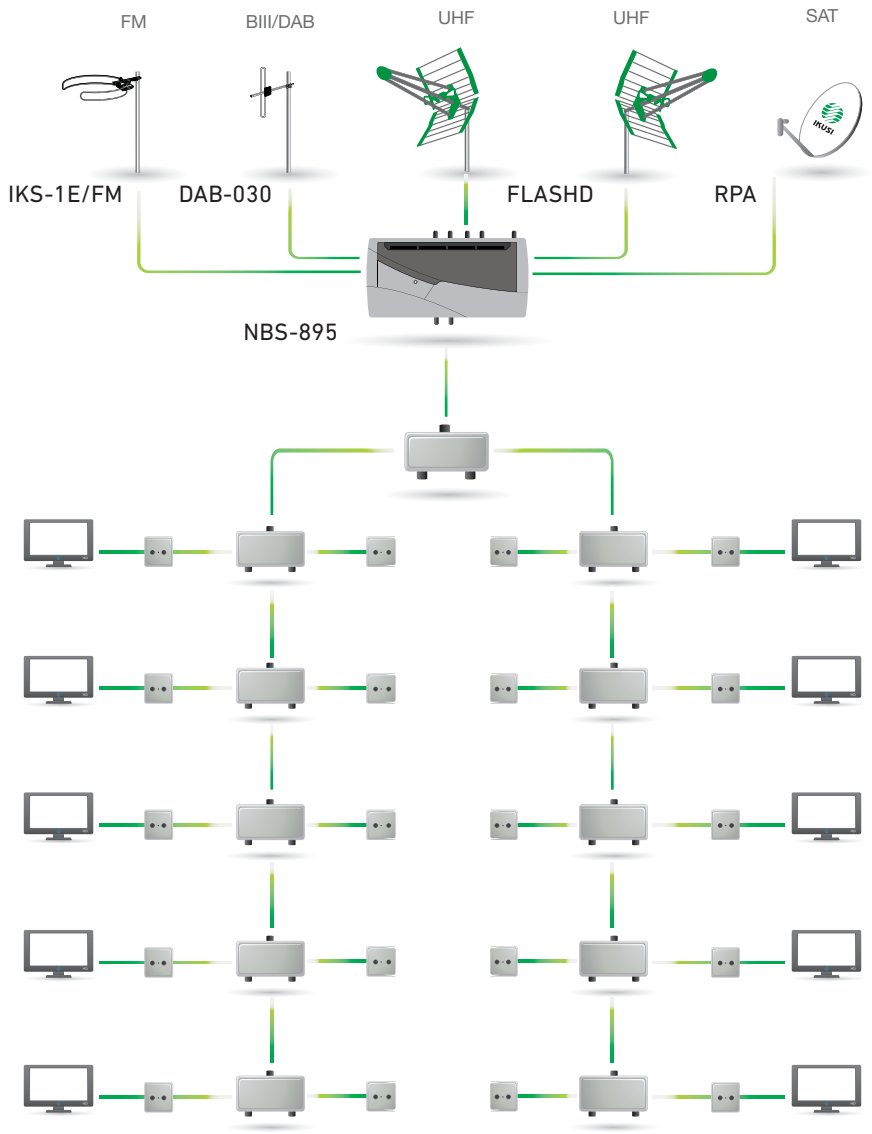
NBS800

- Adapted to the first and second digital dividend
- High-power broadband amplifiers, for terrestrial and satellite signals in small installations
- Interstage input attenuators
- Power passing to input
- Output test for checks without disconnecting the service

NBS amplifiers

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

Installation example



Terrestrial and satellite headend amplifiers. NBS series

LTE1 LTE2

- Adapted to the first and second digital dividend.
- High-power broadband amplifiers, for terrestrial and satellite signals in small installations. NBS800 series high-power broadband amplifiers, NBS600 series mid-power broadband amplifiers.
- Interstage input attenuators.
- SAW filtering.
- Powered by switching power supply, in removable box.
- 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 **NBS800** series
  Output level:
  TV: 118 dBµV
  IF-SAT: 120 dBµV

MODEL (REF.)		NBS801-C69 (3571) NBS801-C60 (3572) NBS801-C48 (3573)	NBS804-C69 (3562) NBS804-C60 (3563) NBS804-C48 (3564)	NBS895-C69 (3574) NBS895-C60 (3575) NBS895-C48 (3576)
Inputs		1	4 BI/FM - BIII/DAB - 2xUHF	5 BI/FM - BIII/DAB -2xUHF - FI SAT
Frequency range	MHz	45-862 **NBS801-C69** 45-790 **NBS801-C60** 45-694 **NBS801-C48**	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 **NBS804-C69** 470-790 **NBS804-C60** 470-694 **NBS804-C48**	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 **NBS895-C69** 470-790 **NBS895-C60** 470-694 **NBS895-C48** FI-SAT: 950-2400
Gain	dB	42	BI/FM: 42 BIII/DAB: 42 2xUHF: 45	BI/FM: 42 BIII/DAB: 42 2xUHF: 45 FI-SAT: 40
Gain adjustment	dB	0 - 18	0 - 18	0 - 18
Slope control range	dB	0 - 12	–	FI-SAT : 0 / 6 bridge
Response flatness	dB	±2	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1.5	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1.5 FI-SAT: ±2
Outputs		1	1	1
Output test	dB	-30	-30	-30
Output level Terr: (DIN-45004B IMD -60 dB) Sat: (EN 50083-3 IMD -35 dB)	dBµV	118	BI/FM: 118 BIII/DAB: 118 2xUHF: 118	BI/FM: 118 BIII/DAB: 118 2xUHF: 118 FI-SAT: 120
Noise figure	dB	6	BI/FM: 6 BIII/DAB: 6 2xUHF: 8	BI/FM: 6 BIII/DAB: 6 2xUHF: 8 FI-SAT: 9
Input/output return loss	dB	10	10	BI/FM-BIII/DAB-2xUHF: 10 FI-SAT: 6
Voltage/current preamplifier mast		12-24V 100mA	UHF2: 12-24V 100 mA	UHF2: 0-12-24 V · 100 mA FI SAT: 0-13-18V · 100 mA LNB: 0-22 kHz
Mains supply voltage (+10% -15%)	Vac	230-240	230-240	230-240
Consumption	W	8	8	16
Dimensions	mm	230 x 145 x 43		

• Models NBS895 Compatible with UNICABLE ™

Terrestrial and satellite amplifiers

LTE1 LTE2

- Midi power broadband amplifiers **NBS600** series
  Output level:
  TV: 112 dBµV
  IF-SAT: 114 dBµV

MODEL(REF.)		NBS604-C69 (3565) NBS604-C60 (3566) NBS604-C48 (3567)	NBS695-C69 (3568) NBS695-C60 (3569) NBS695-C48 (3570)
Inputs		4 BI/FM - BIII/DAB - 2xUHF	5 BI/FM - BIII/DAB -2xUHF - FI SAT
Frequency range	MHz	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 **NBS604-C69** 470-790 **NBS604-C60** 470-694 **NBS604-C48**	BI/FM: 45-112 BIII/DAB: 174-240 2xUHF: 470-862 **NBS695-C69** 470-790 **NBS695-C60** 470-694 **NBS695-C48** FI-SAT: 950-2400
Gain	dB	BI/FM: 36 BIII/DAB: 36 2xUHF: 39	BI/FM: 36 BIII/DAB: 36 2xUHF: 39 FI-SAT: 34
Gain adjustment	dB	0 - 18	0 - 18
Slope control range	dB	–	FI-SAT : 0 / 6 o o bridge
Response flatness	dB	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1.5	BI/FM: ±2 BIII/DAB: ±2 2xUHF: ±1.5 FI-SAT: ±2
Outputs		1	1
Output test	dB	-30	-30
Output level Terr: (DIN-45004B IMD -60 dB) Sat: (EN 50083-3 IMD -35 dB)	dBµV	BI/FM: 112 BIII/DAB: 112 2xUHF: 112	BI/FM: 112 BIII/DAB: 112 2xUHF: 112 FI-SAT: 114
Noise figure	dB	BI/FM: 6 BIII/DAB: 6 2xUHF: 8	BI/FM: 6 BIII/DAB: 6 2xUHF: 8 FI-SAT: 9
Input/output return loss	dB	10	BI/FM-BIII/DAB-2xUHF: 10 FI-SAT: 6
Voltage/current preamplifier mast		UHF2: 12-24V 100 mA	UHF2: 0-12-24 V · 100 mA FI SAT: 0-13-18V · 100 mA LNB: 0-22 kHz
Mains supply voltage	VAC	230-240	230-240
Consumption	W	5	8
Dimensions		230 x 145 x 43	

- Models NBS695 Compatible with UNICABLE ™

Terrestrial amplifier

- Low-power broadband amplifier **NBS-204**
  Output level:
  TV: 106 dBµV

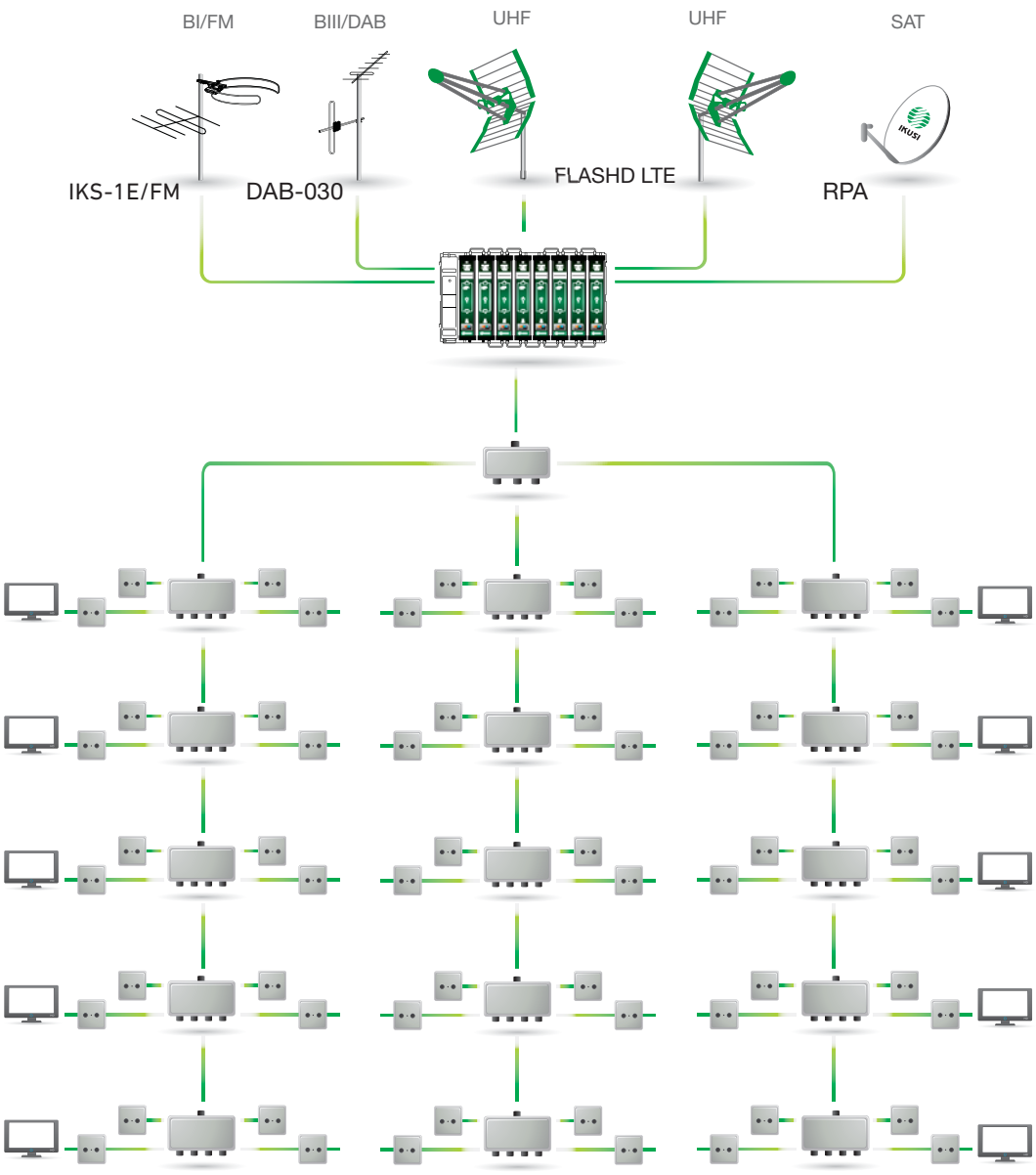
MODEL		NBS-204
REF.		3516
Inputs		4 BI-FM-BIII/DAB-UHF
Frequency range	MHz	BI: 45-68 FM: 88-108 BIII/DAB: 174-240 UHF: 470-862/790*
Gain	dB	BI: 31 FM: 31 BIII/DAB: 31 UHF: 31
Gain adjustment	dB	BI-FM-BIII/DAB: 0 - 18 UHF: 0 - 15
Slope control range	dB	–
Response flatness	dB	BI-FM-BIII/DAB: ±2 UHF: ±2
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
Dimensiones	mm	155 x 80 x 40

Modular Headend amplifier channel TV and Radio.

- High Selectivity
- High output level
- Headend adapted to the 1st digital dividen
- Gain adjustment. Interstage attenuators
- Toolless mounting

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-adjacente 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). Inerstage attenuator in all models —maintenance of low noise figure—.
4 Substract 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	VDC	+ 24
Consumption	mA	120
Insertable voltage/tone to Sat-IF input port		+13 / +18 VDC ; 0 / 22 kHz
Max LNB power current	mA	350 (at +18 VDC) / 250 (at +13 VDC)

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	VDC	+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

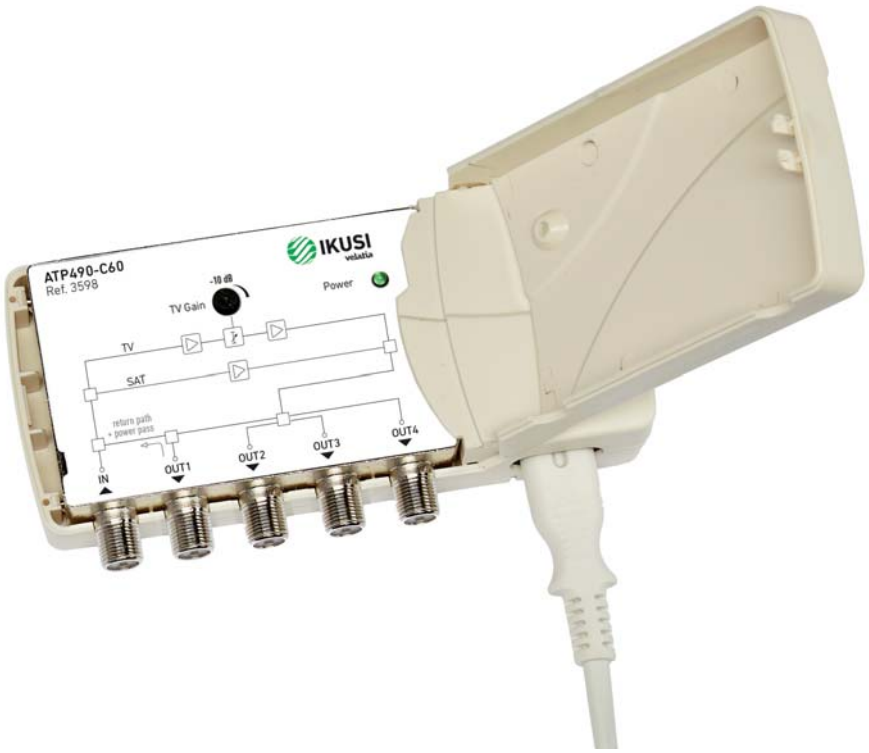
COF-809

BAS-913

PZB-453

CTF-075

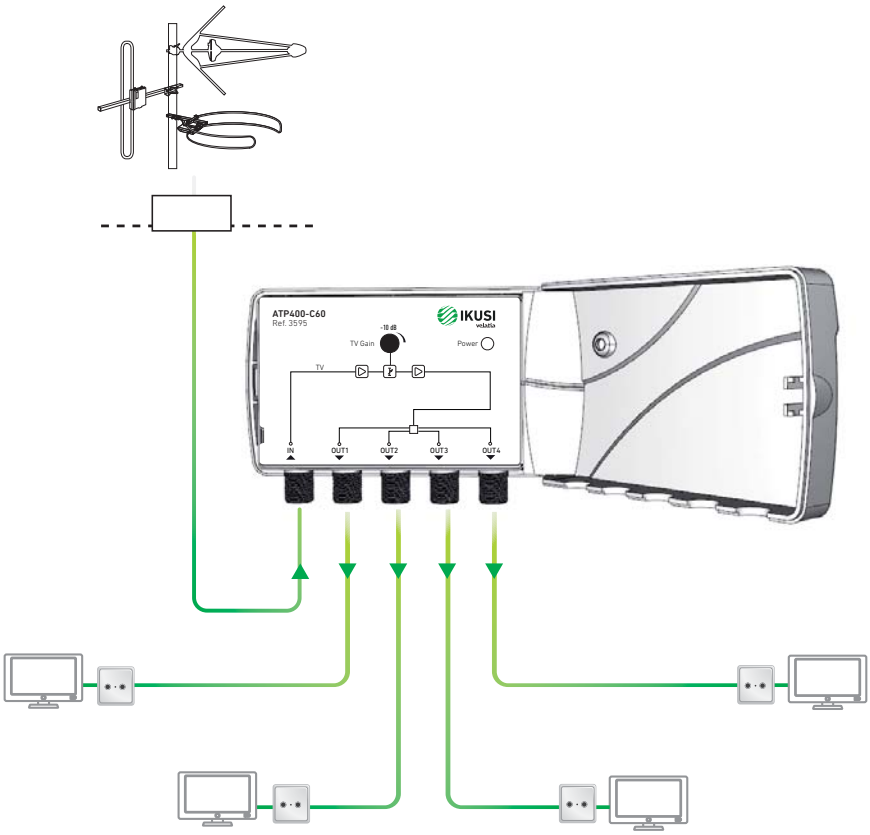
Terrestrial and Satellite broadband amplifiers adapted to the digital dividend for indoor home installation.



- Mini headend for a household with several reception antenna
- Models adapted to the 1st and 2nd Digital Dividend
- Gain adjustment potentiometers
- Power supply extended range
- Included wall fixing system

Ideal for extending the household network.

Application example



Easy to fix/release the amplifier to the wall

fig.1

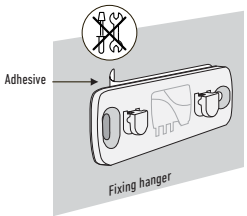


fig.2

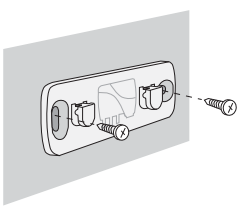


fig.3

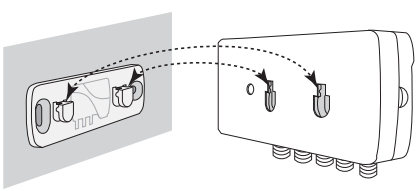
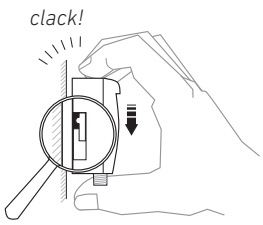


fig.4



Apartment amplifier. ATP series

LTE1 LTE2 NEW


ATP190


ATP490

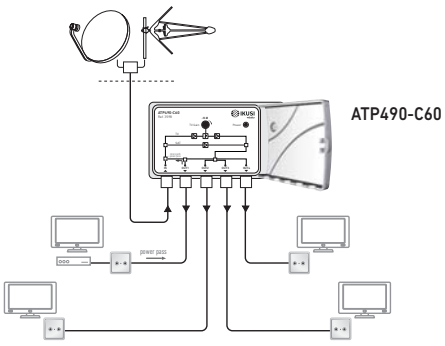

ATP290

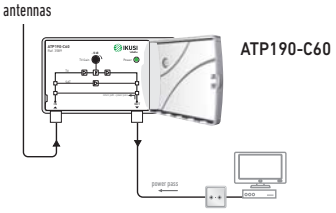
- Models adapted to the 1st and 2nd Digital Dividend.
- Terrestrial and satellite outputs.
- Gain adjustment potentiometers.
- Return path in ATP190, ATP290 and ATP490 series.
- Power supply extended range (110VAC-240VAC).
- Mains lead with bipolar plug.

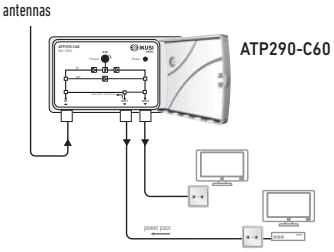
MODEL	REF.	ATP190 series		
ATP190-C69	3588	Frequency range MHz	47 - 862	950 - 2400
ATP190-C60	3589		47 - 790 (1st dividend)	
ATP190-C48	3590		47 - 694 (2nd dividend)	
Inputs			1	
Outputs			1	
Gain		dB	Terr: >18	Sat: >22
Gain adjustment		dB	Terr: >10	-
Output level		dBµV	Terr: 106 (IMD3 -60dB (DIN 45004B)	Sat: 112 (IMD3 - 35dB (EN 50083-3)
Return path frequency		MHz	5 - 30	
Noise figure		dB	<5	<6
Mains supply voltage		VAC	100 - 240	
DC transit		mA	500	
Consumption		W	<3	
Dimensions		mm	135 x70 x 30	

MODEL	REF.	ATP290 series		
ATP290-C69	3591	Frequency range MHz	47 - 862	950 - 2400
ATP290-C60	3592		47 - 790 (1st dividend)	
ATP290-C48	3593		47 - 694 (2nd dividend)	
Inputs			1	
Outputs			2	
Gain		dB	Terr: >14	Sat: >18
Gain adjustment		dB	Terr: >10	-
Output level		dBµV	Terr: 102 (IMD3 -60dB (DIN 45004B)	Sat: 108 (IMD3 - 35dB (EN 50083-3)
Return path frequency		MHz	5 - 30 (OUT1)	
Noise figure		dB	<5	<6
Mains supply voltage		VAC	100 - 240	
DC transit		mA	500 (OUT1)	
Consumption		W	<3	
Dimensions		mm	135 x70 x 30	

MODEL	REF.	ATP490 series		
ATP490-C69	3597	Frequency range MHz	47 - 862	950 - 2400
ATP490-C60	3598		47 - 790 (1st dividend)	
ATP490-C48	3599		47 - 694 (2nd dividend)	
Inputs			1	
Outputs			4	
Gain		dB	Terr: >10	Sat: >14
Gain adjustment		dB	Terr: >10	-
Output level		dBµV	Terr: 99 (IMD3 -60dB (DIN 45004B)	Sat: 105 (IMD3 - 35dB (EN 50083-3)
Return path frequency		MHz	5 - 30 (OUT1)	
Noise figure		dB	<6	<7
Mains supply voltage		VAC	100 - 240	
DC transit		mA	500 (OUT1)	
Consumption		W	<3	
Dimensions		mm	135 x70 x 30	







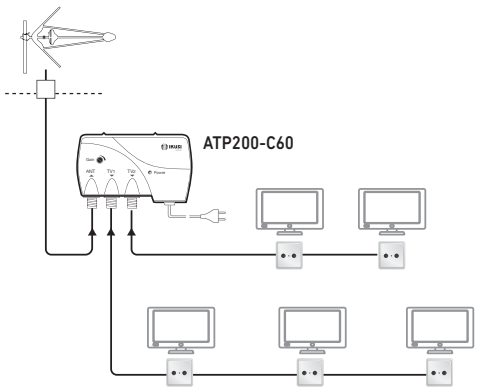
Apartment amplifier. ATP series

LTE1 LTE2 NEW

ATP200

- Models adapted to the 1st and 2nd Digital Dividend.
- Gain adjustment potentiometers.

MODEL	REF.	ATP200 series	
ATP200-C69	3583	Frequency range MHz	47 - 862
ATP200-C60	3434		47 - 790 (1st dividend)
ATP200-C48	3584		47 - 694 (2nd 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

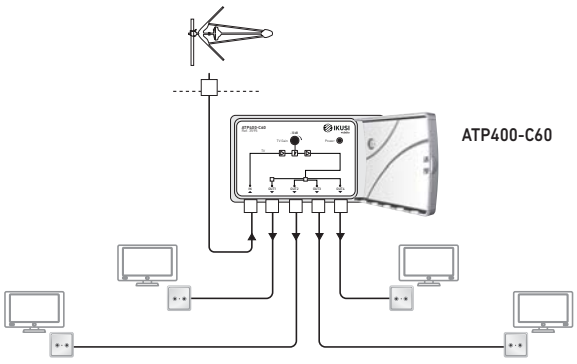


LTE1 LTE2 NEW

ATP400

- Models adapted to the 1st and 2nd Digital Dividend.
- Power supply extended range 100-240 VAC.
- Mains powered, 50/60 Hz. Mains lead with bipolar plug.

MODEL	REF.	ATP400 series	
ATP400-C69	3594	Frequency range MHz	47 - 862
ATP400-C60	3595		47 - 790 (1st dividend)
ATP400-C48	3596		47 - 694 (2nd 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

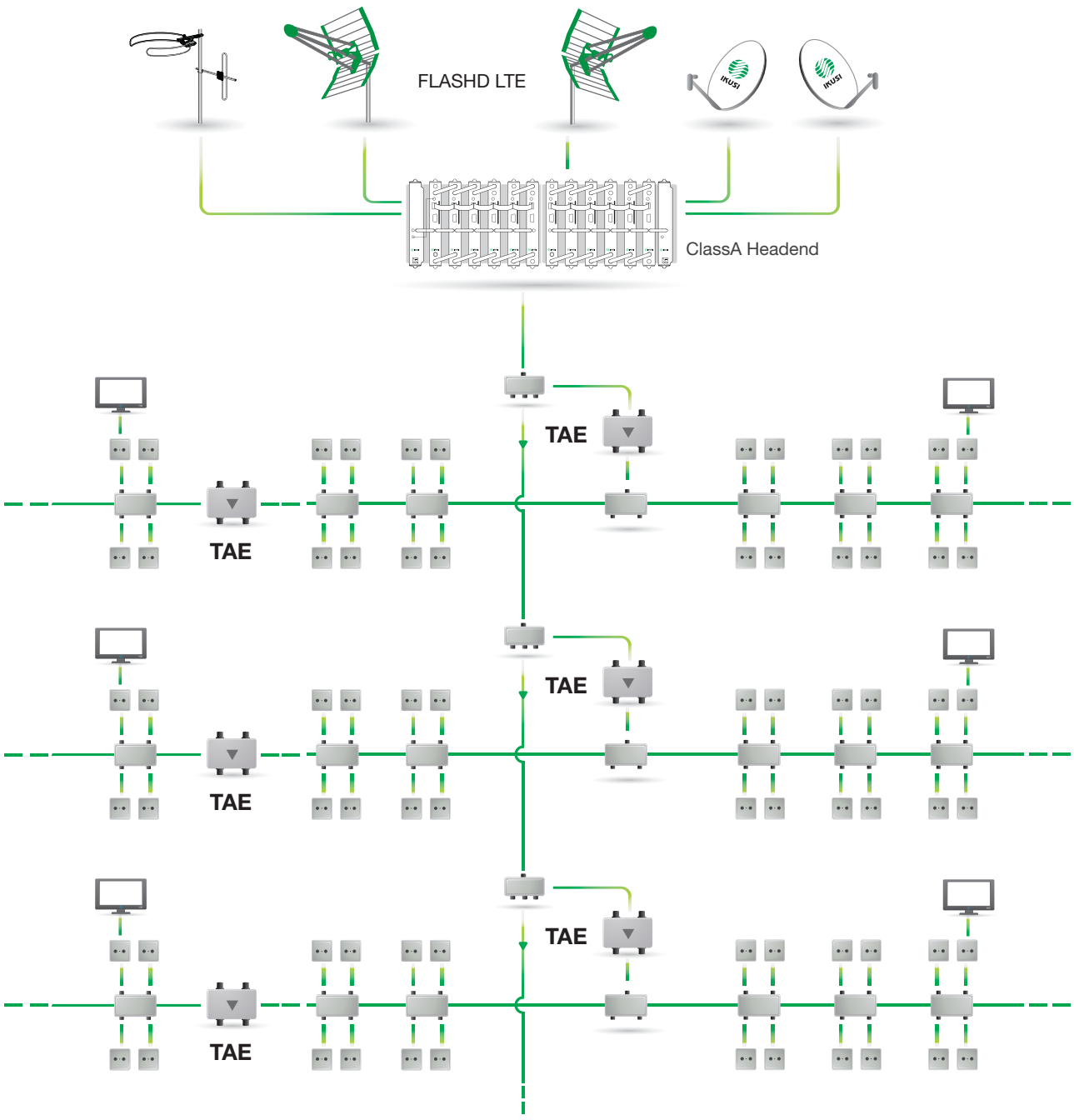


862 MHz and 2150 MHz amplifiers with active return path.

- Terrestrial and IF satellite distribution signals
- Attenuation and equalization adjustments of TV signals by potentiometer
- TV signal outupt and reverse path input
- 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 (DIN 45004B -60dB)	dBµV	124	120	118
Output level (CTB, CSO -60dB, EN 42 ch)	dBµV	108	104	103
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 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, depending model.
- 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 downlead 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.

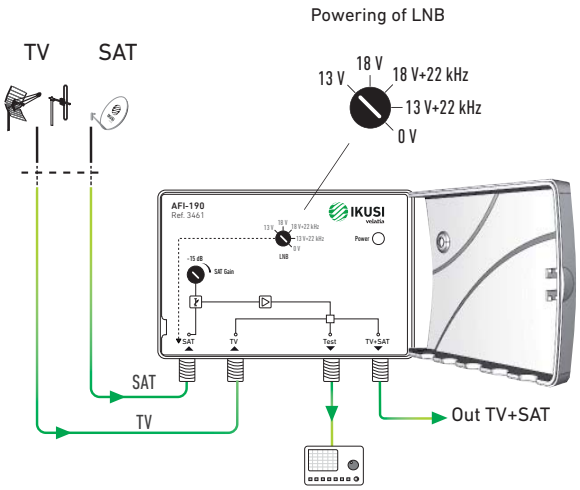
MODEL			SAE-912	SAE-916
REF.			3500	3503
Powering mode			Mains	
Bandwidth	Terrestrial (TV) Satellite (IF) Return	MHz	45 - 862 950 - 2150 5 - 35 (passive path)	86 - 862 950 - 2150 5 - 65 (active path)
Terrestrial path (TV)				
Response flatness		dB	± 1.5	
Nominal gain		dB	35	
Variable interstage attenuator		dB	0 - 18	
Slope control range		dB	0 - 18	
Noise figure		dB	≤ 8	
Output level (DIN 45004B -60dB)		dBµV	118	
Output level (CTB, CSO -60dB, EN 42 ch)		dBµV	102	
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 (EN 50083 -35dB)		dBµV	120	
Return path				
Nominal gain		dB	-2.5	12
Selectable attenuation		dB	–	0 - 11
Max RF input level		dBµV	–	98 / 93
Noise figure		dB	–	≤ 7
Output level (DIN 45004B -60dB)		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	Terrestrial (TV) Satellite (IF-1) Satellite (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 (DIN 45004B -60dB)		dBµV	118
Output level (CTB, CSO -60dB, EN 42 ch)		dBµV	102
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 (EN 50083 -35dB)		dBµV	120
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

TV-SAT combiner

- 1 satellite 950-2450 MHz input port, with gain adjustment potentiometer;
  1 terrestrial coupling 5-790 MHz input port;
  1 satellite+Terrestrial output port;
  1 output test port.
- Line powering of LNB. Voltage/tone injection for selection of polarity and band by rotary commutator.
- Universal alternating power supply. Electrical safety protection level Class II. Insertable power cord with bipolar plug.
- Plastic box with protective cover. F type connectors.
- Indoor mounting through an fixing hanger.

MODEL		AFI-190
REF.		3461
TV frequency band	MHz	5 - 790
SAT frequency Band	MHz	950 - 2450
Inputs (TV and SAT)		2
Salida (TV+SAT)		1
TV+SAT output test	dB	-30
TV Gain (passive)	dB	-1
SAT Gain	dB	> 34
SAT gain adjustment	dB	0 - 15
Output level (IMD3 -35 dB, EN 50083-3)	dBµV	120
Input/output return loss	dB	≥ 6
Noise figure	dB	< 8
Mains supply voltage	VAC	100 - 240
Regulation type		Switched mode
Insertable Voltage/Tone to SAT input port		0V ; 13V+22kHz ; 18V+22kHz ; 18V ; 13V
Max LNB power current	mA	200 (+13 VDC / +18 VDC)
Consumption	W	< 6
Dimensions	mm	120 x 85 x 50



Easy to fix/release the amplifier to the wall

fig.1

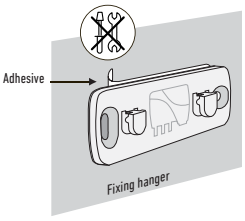


fig.2

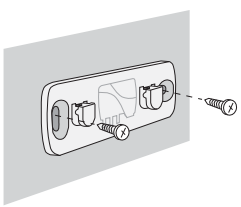


fig.3

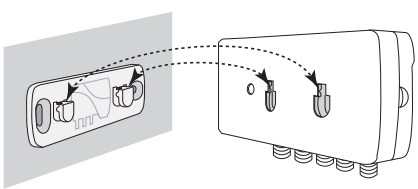
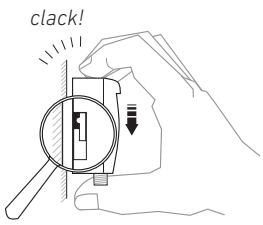


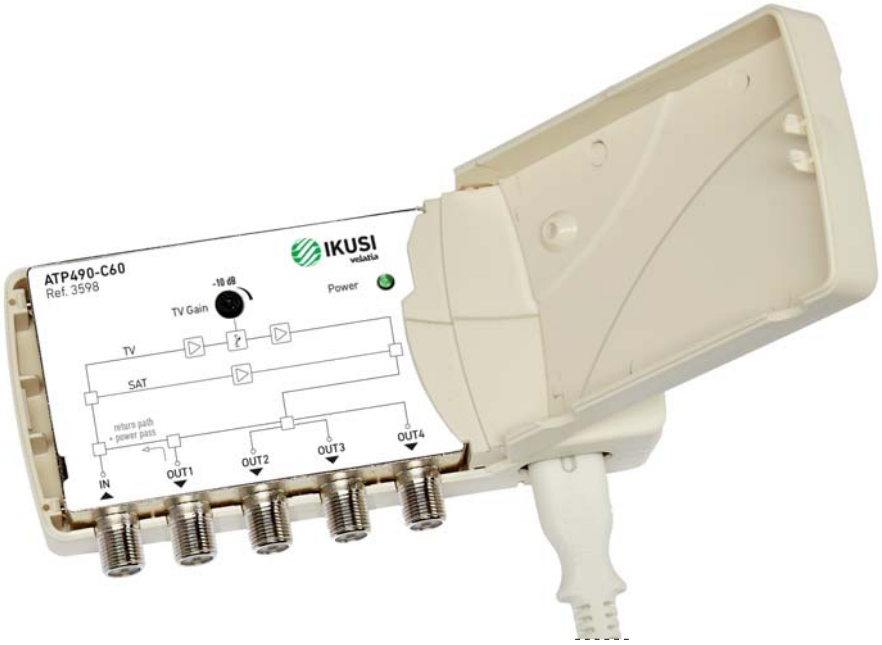
fig.4



smartexperience

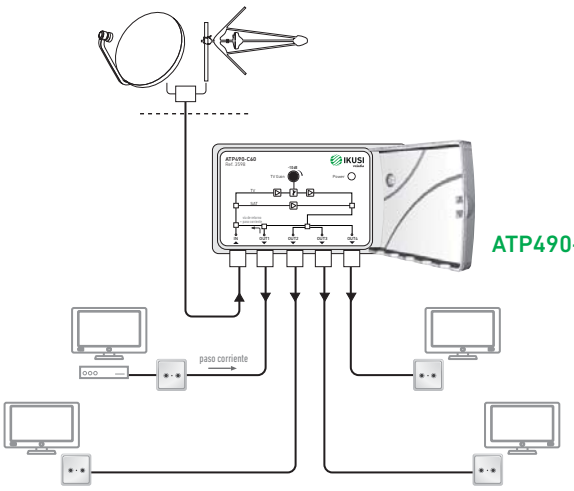
ATP Series

New range of apartment amplifiers



- 5 models
  . 1, 2 and 4 Terr/Sat/VR outputs.
  . 2 and 4 Terr outputs.
- Models adapted to the 1st and 2nd Digital Dividend (channels 48 or 60).
- Easy to fix/release the amplifier to the wall.

Installation example



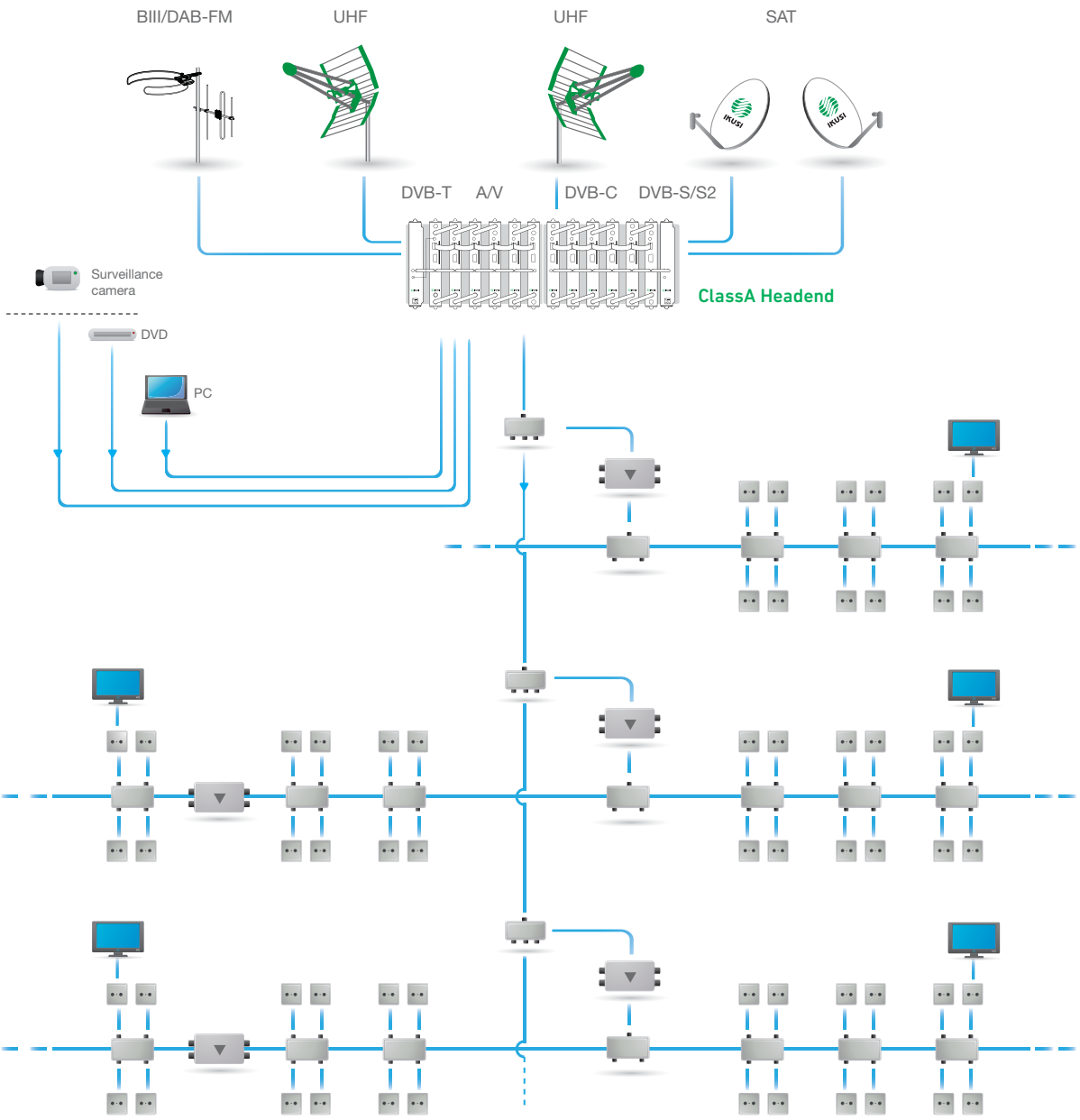
ATP490-C60 amplifier

Processing of analogue and digital terrestrial, satellite, cable and baseband signals. IPTV

- Resolving any type of installation
- Reliable and tough
- High compatibility between modules
- It allows pay-TV channels to be received
- SD HD — Supports SD and HD channels
- LCN — Logical Numbering Function for LCN Channels

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

Installation example



DVB-T output

DVB-S/S2 ▸ DVB-T transmodulator

MTI-900

MTI-800

- Digital transmodulation (DVB-S/S2 to DVB-T) with Transport Stream Processing. The DVB-S/S2 channels located in the Sat-IF frequency band (950-2150 MHz) are transformed to DVB-T 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 tansmodulators 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 DVB-T 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 DVB-T 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	dBµV	44 ... 84 (DVB-S) 39 ... 84 (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/C 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/C 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	
Loopthrough 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

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

- 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 proecessors.
  - 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.

DVB-T output

DVB-T ▶ DVB-T transmodulator

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)	dBµV	35 ... 100
Input loop-trhough 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	dBµV	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

- 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.

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-encryptes 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		VSB (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	dBµV	44 ... 84
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	dBµV	44 ... 84
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

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 berween: 45 - 862	
Adjustable output level		dBµV	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	

- 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.

IF-IF converter

Processes 3 frequencies DVB-S/S2

SPC-030

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		
Inuput 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

- 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.

DVB-C output

DVB-S/S2 ▶ DVB-C transmodulator

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

- 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.

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.

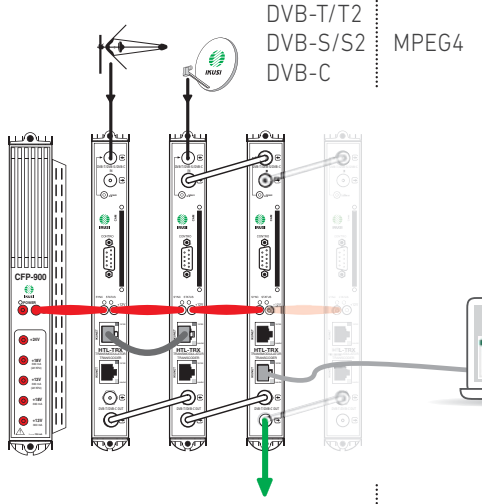
The TDI headends provide a QAM multichannel signal whose level is appropriate to feed the distribution network. An extension input at the HPA amplifier allows easy coupling of the wideband 47-862 MHz signal provided by another existing headend. The user requires a DVB-C Receiver to convert the QAM signals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

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
- Security of contents
- Universal input tuners: DVB-T/T2, DVB-S/S2, DVB-C
- MPEG4 to MPEG2 transcoding
- Easy-to-adjust headend using a Wizard application
- More channels in less space

Remote configuration through web interface.

UNIVERSAL HEADEND
Transmodulator
Transcoder



REMOTE CHANNEL MANAGEMENT
- Control of several headends from one point

SELECTION OF SERVICES
- "Drag and Drop"

AUTOMATIC CONFIGURATION
- Using Wizard application

SEPARATION OF AUDIOS
- Generation of one TV channel for each audio

PRE-BOOKING OF CHANNELS
- To prevent a future rescannig of the televisions

INDEPENDENT OUTPUT CHANNELS
- To prevent a future retuning of the televisions

DVB-T and DVB-C output

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

- 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 then 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 discretional 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

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 nº 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 2 ... 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
Transcoding			
Supported usecases			1080i mpeg4 > 576i mpeg2
			576i mpeg4 > 576i mpeg2
Audio			AC3 > mpeg I layer II
			AC3Plus > mpeg I layer II
Outputs			DVB-T in accordance with ETSI EN 300 744 DVB-C in accordance with ETSI EN 300 429
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
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
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

- 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, DVB-S/S2 or DVB-C 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 discretional 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

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 nº 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 2 ... 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			DVB-T in accordance with ETSI EN 300 744 DVB-C in accordance with ETSI EN 300 429
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
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
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, 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		DVB-T in accordance with ETSI EN 300 744 DVB-C in accordance with ETSI EN 300 429
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

Power supply

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 mast 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

- 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.

Multiplexor

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

- 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.

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	47 - 862
	Gain	dB	6
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

Programming unit

MODEL	SPI-300
REF.	4070

- For programming the ClassA modules. Cable connection to the DB-9 front panel socket.
- 20x4 character alphanumerical 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

SMR-601 PMR-601 OMR-601

BAS-700 COF-700

MODEL	REF.	DESCRIPTION
SMR-601	4280	Rack-frame for ClassA assemblies, 6U hight. 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.

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.
BUS-013	4430	Pack containing 11 (10x short + 1x long) jumpers for IKUSUP communication bus between ClassA modules.

It receives contents from 4 DVB-T/T2, DVB-S/S2 or DVB-C transponders/muxes and broadcasts them in 4 DVB-T, DVB-C or IP output channels.

NEWPRODUCT

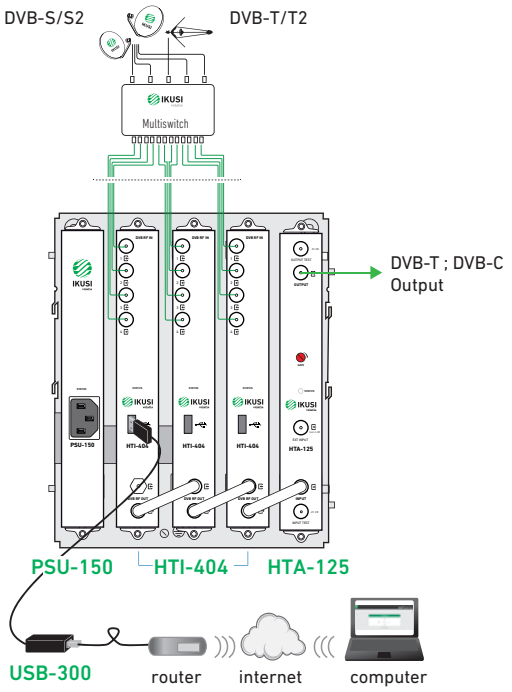
- Quad universal tuner
- Output 4 DVB-T or DVB-C selectable channels
- Remote managment enabled
- It allows a future increase in services
- It allows a video service to be sent with several different languages without taking up more space
- It allows channel lineups to be created and managed remotely
- Power supplied through the backplane, without bridges
- European Product

Headend that allows to use four independent inputs (to be used with a multiswitch) or to use in “1 Input + Loop through” mode (for Unicable or terrestrial/cable antenna installations).

QUAD UNIVERSAL TUNER
Receives four independent multiplex/transponders in any common DVB format

REMOTE CHANNEL MANAGEMENT
Control of several headends from one point

COMPATIBLE WITH “IKUSI HEADEND DISCOVERY”
Allows to detect the modules of the header without having to modify the PC network configuration



MULTISTREAM SUPPORTED
+ 200 additional TV channels

PRE-BOOKING OF CHANNELS
To prevent a future rescanning of the televisions

SEPARATION OF AUDIOS
Generation of one TV channel for each audio

INDEPENDENT OUTPUT CHANNELS
Distributed over any part of the band

INTERCONNECTED BASE-PLATE
REDUNDANT POWER SUPPLY
Power supplied through the backplane, without bridges

DVB-T and DVB-C Output

DVB-T/T2/S/S2/C ▶ DVB-T/C Quad transmodulator

NEWPRODUCT

- Versatile transmodulation of DVB-T/T2, DVB-S/S2 and DVB-C channels to DVB-T/DVB-C channels.
- The HTI-404 module can receive 4 DVB-T/T2, DVB-S/S2 or DVB-C muxes and broadcasts them in 4 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.
- 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 channel lineups to be created and managed remotely, ensuring that the lineup is completely customisable without having to work in-situ.
- The four DVB-T/C output channels can be distributed onto any part of the band.
- Total control of the multiswitch. Fitted with DiSEqC.

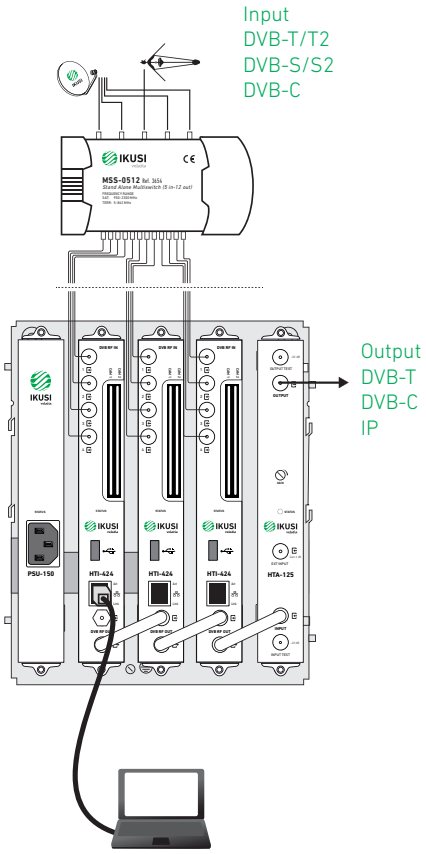
MODEL		HTI-404
REF.		3864
Inputs		4
Input frequency range	MHz	DVB-T/T2 : 47 - 862 DVB-S/S2 : 950 - 2150 DVB-C : 47 - 862
Input level	dBµV	40 - 92
Symbol rate	MS/s	DVB-S: 1...45 DVB-S2: 1... 45 DVB-C: 1... 6.952
Maximum input current		100mA in 2,3 and 4 connectors. 250mA in 1 connector
Fitted with DiSEqC (v. 1.1)		No limit on number of polarities
TS Procesing		
PSI/SI adaptation		Generating and inserting tables PAT, PMT, CAT, SDT, BAT, NIT, TDT, TOT, EIT
NIT adaptation		Yes (automatically generated)
SDT adaptation		Yes (configurable input name)
LCN, TDT, TOT management		Yes
Cloned services		Yes, from any input to any output
Outputs		
Number of outputs		4 channels DVB-T / DVB-C (47 - 862 MHz)
MER	dB	> 40
Output level	dBµV	85
Maximum output bit rate DVB-T	Mbps	31.7
Operation modes DVB-T		2K / 8K
Output bandwidth DVB-T	MHz	6 / 7 / 8
Modulation formats DVB-C		16 QAM / 32 QAM / 64 QAM /128 QAM / 256 QAM
Maximum output bit rate DVB-C	Mbps	53
Adjustable output level	dB	-15
Symbol rate DVB-C	MS/s	3 ... 7.2
Output loop-through loss	dB	1.1
General		
Configuration		PC. Interface web Ikusi Headend Discovery (v1.8.5)
Management interface		USB 2.0 Host frontal
Supply voltage	VDC	+24
Operating temperature	°C	0... +45
Consumption	A	0.67
Dimensions	mm	230 x 195 x 32

Coming Soon!

New Transmodulator

HTI-424

- Quad transmodulator
- IP output
- Double Common Interface
- Ethernet connector
- 1 input + loop or 4 inputs
- IP Multicast, IP Unicast
- Multistream supported



Power supply

NEWPRODUCT

MODEL		PSU-150
REF.		3865
Regulation type		switched-mode
Mains supply voltage (50/60 Hz)	VAC	100 - 240
Output voltage	V	+24
Max current	A	6.5
Efficiency	%	> 89
Operating temperature	°C	-10 ... +45
Mains lead		Class I IEC 320/C13 (not included)
Dimensions	mm	230 x 190 x 33

- The PSU-150 power supply has the capacity to deliver power to the most demanding HTI headend configuration.
- The current distribution is done through the BACK-500 base plate, without plug bridges.
- The power supply can be istalled in any position of the BACK-500 base plate, except in the slot reserved to the master device (second slot)
- Morever, its design allows to use the power supply in installations with 2 power supplies, working in redundant way.

Power amplifier

- Amplification of the signal generated by a headend of HTI modules. Additionally, the HTA-125 has an extension input that facilitates coupling of the signal provided by another existing headend.

MODEL			HTA-125
REF.			3868
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
Output level (IMD2 -60dB, EN 50083-3)		dBµV	≥ 120
Input test		dBµV	-20 ±1.5
Output test		dB	-30 ±1
Extension input	Bandwidth	MHz	47 - 862
	Gain	dB	6
Supply voltage		VDC	+24
Consumption		mA	450
Operating temperature		°C	-10... +55
RF and Test connectors			Female F
Dimensions		mm	230 x 195 x 32

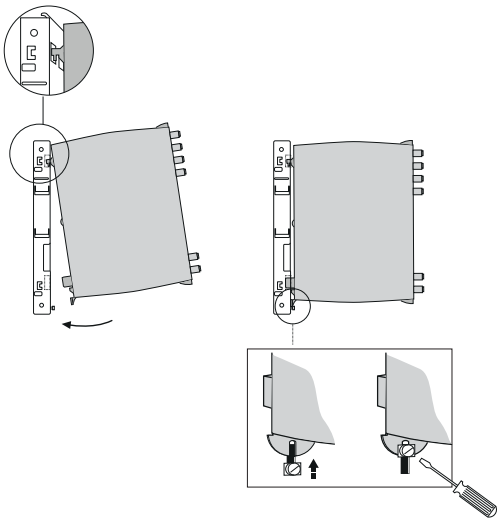
Base-plate for HTI Headend

NEWPRODUCT

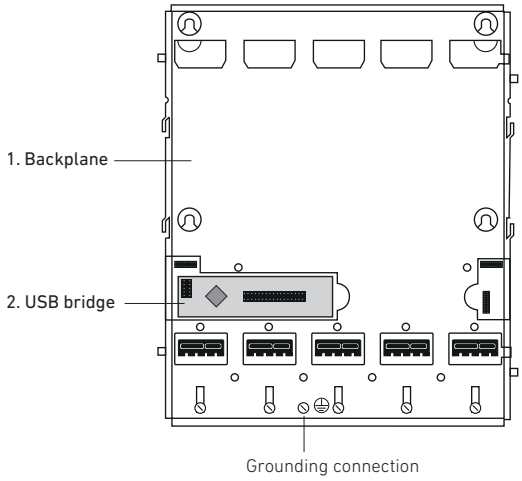
MODEL	BACK-500
REF.	3866

- The BACK-500 base-plate allows to fix mechanically the HTI product range modules, to distribute the supply lines and to communicate the different modules that are inserted in the headend.
- The base-plate is formed by two parts:
  1. Backplane
  2. USB bridge
- The backplane is in charge of fixing the modules, distributing the power supply and carrying the communication lines towards the USB bridge.
- The USB bridge in in charge of connection all the modules that are inserted in the base-plate with the master module.
- Interconnected base-plate, does not need alimentation bridges between modules.
- The base-plate can be fixed to the wall or in a rack frame by means SR-HTI of fixing accessories (joining 2 base-plates.

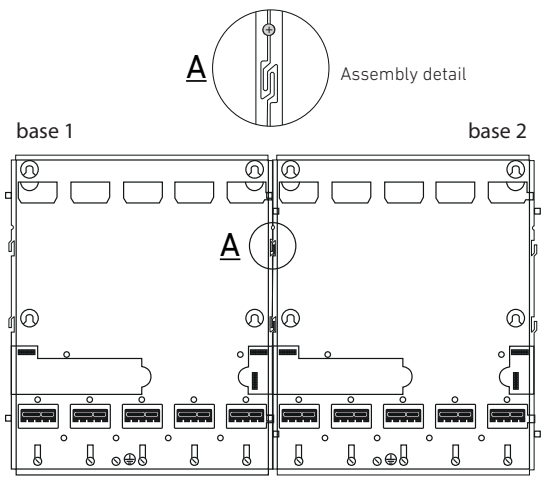
Fitting modules in the base-plate



Base-plate BACK-500

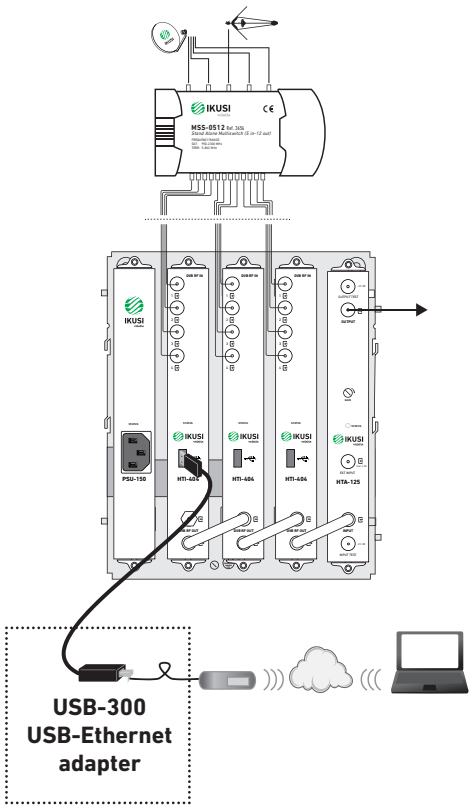


Horizontal joining of two BACK-500 base-plates



USB-Ethernet adapter for local or remote control

NEWPRODUCT

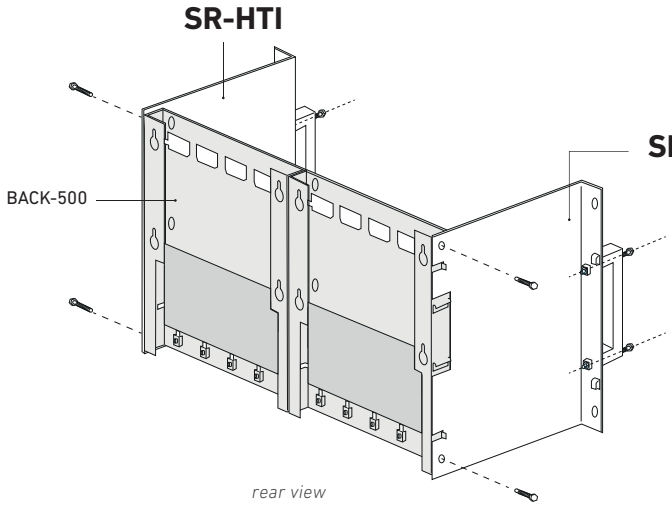


MODEL	USB-300	
REF.	4284	
Connectivity		
Device Interfaces	RJ-45 Ethernet Port (10/100/1000 Mbps)	USB Type A Connector
LEDs	Speed (orange)	Link/ACT (green)
Standards	USB Specification Version 3.0 USB Specification Version 2.0 USB Specification Version 1.1 USB Specification Version 1.0 OHCI (Open Host Controller Interface)	EHCI (Enhanced Host Controller Interface) IEEE 802.3 Ethernet IEEE 802.3u 100BASE-T, TX, and T4 compatible Supports suspended mode and remote wakeup Supports full and half duplex in gigabit Ethernet mode
General		
Minimum System Requirements	Operating system: Microsoft Windows 8/7/ Vista/XP SP3	Mac OS 10.6 to 10.8 Linux kernel 2.6.14x or above
Power Management	Advanced Power Management reduces power usage during idle or light traffic periods	
Physical		
Power	Input: Bus-powered 500 mA, 5 V DC	Consumption: 150 mA, 3.3 V DC
Temperature	Operating: 0 to 45 °C (32 to 113 °F)	Storage: -20 to 70 °C (-4 to 158 °F)
Humidity	Operating: 10% to 90% non-condensing	Storage: 5% to 90% non-condensing
Dimensions	74.4 x 21 x 16 mm (2.93 x 0.83 x .063 inches)	
Weight	46.4 grams (1.64 oz)	
Certifications	CE	FCC

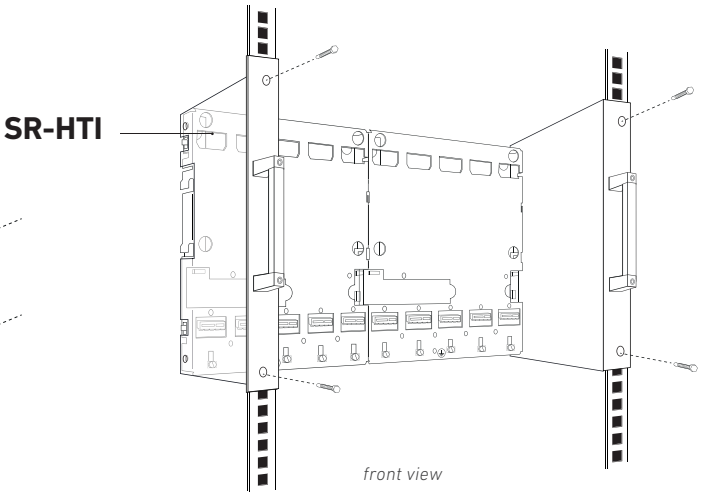
Support to install the headend in a 19“ rack

MODEL	SR-HTI
REF.	3867
Number of supports	2 units
Handles	2 plastic units
Material	Galvanized sheet
Dimensions	26,5 x 20 cm

Application example



Rack 19” fixing for two base-plates (BACK-500) headend installation



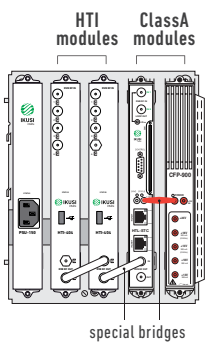
Complete assembly of the rack

Special Accessories

MODEL	REF.	DESCRIPTION
ADA-HTI	4285	Special bridges, to install ClassA modules in the HTI base-plate (BACK-500)

Z plug bridge

Power supply bridge



The first Smart Headend for television.

DEMO

Requests
Your demo
now!

FUNCTIONALITY

DEVICE
MANAGER

- License Free
- Internal satellite and terrestrial multiswitch included. Easy remote operation, no cabling needed.
- Easy set up and commissioning, fastest in the market.
- Programming and control through LAN or WiFi.
- High density output. More than 50 multiplexes in one rack.
- Add new services without re-scanning TV sets.
- Dual CI modules for descrambling. IP pool technology.
- Internal 2x1Gb IPTV output ports. No additional hardware is needed.
- Demultiplexing MPTS to SPTS.

- High density input. Up to 40 transponders in one rack.
- Advanced audio languages management.
- Internal DRM scrambling. All solutions in one!
- Noiseless fan. Auto speed regulation and fully hot-swappable.
- Stream processing included to save bandwidth through services filtering.
- Optional redundancy for all modules.
- IP Device Manager Software, compatible with Samsung/LG/Philips TVs directly. Others through STB.
- Hot-swap for IN/OUT/SEC modules. The whole configuration is transferred automatically to the new module.

FLOW IN2 (Ref. 4318) and **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 15 SPTS per CAM (up to 30 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 RPSU REDUNDANT (Ref. 4320)

Redundant power supply.

. Ensuring uninterrupted power in the event of failure of one of the two available power supplies.
. The damaged power supply can be changed without disconnecting the headend from the power.
. Integrates two identical power suplies in a 1RU (rack unit) chassis.

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 IRD Extender (Ref. 1051)

FLOW STB (Ref. 1050) **FLOW STB AC3+ IP** (Ref. 4329)

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

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

FUNCTIONALITY

DEVICE MANAGER

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.

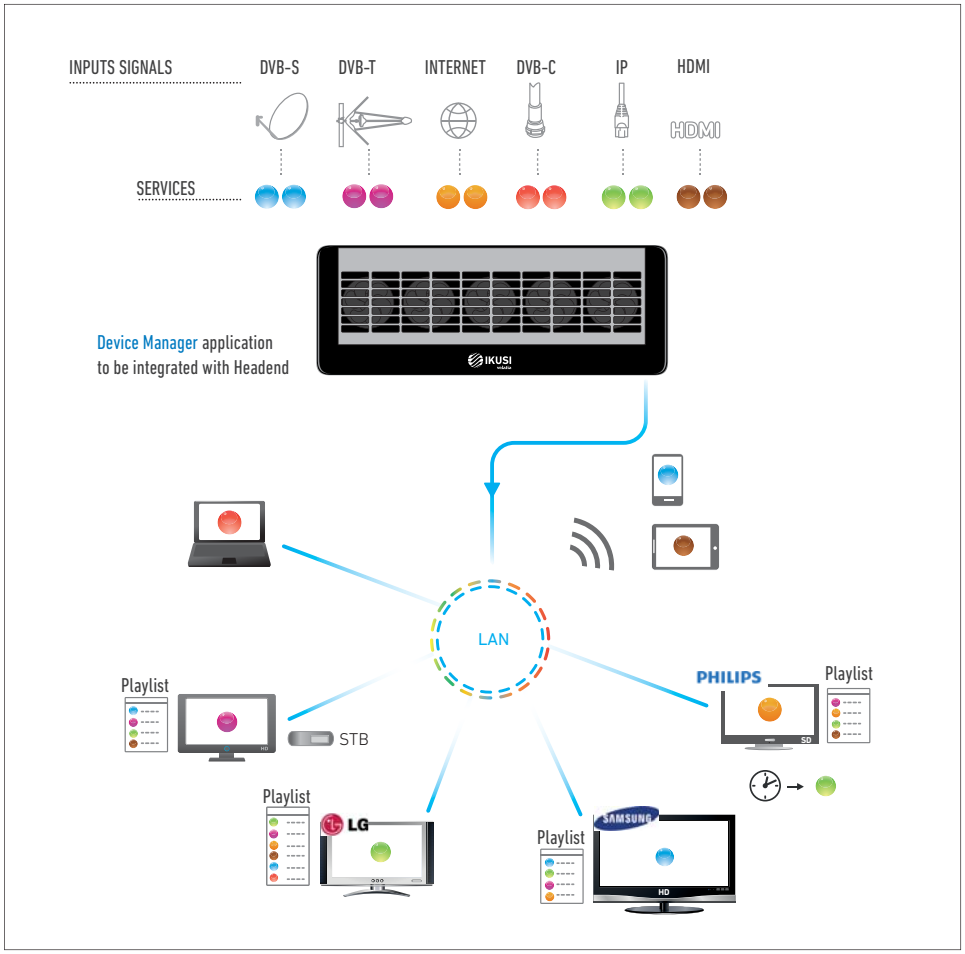
- The content that is to be reproduced on each viewing device (or multi-screen spaces) to be selected individually in a remote manner, allowing what is being reproduced at each viewing point to be managed and controlled.

- 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:

PHILIPS LG SAMSUNG

Installation example



High definition stand-alone modulator.

HDMI
HDMI input
HD multimedia interface

CVBS
CVBS inputs and stereo audio

SDI
HD-SDI input
Digital video interface

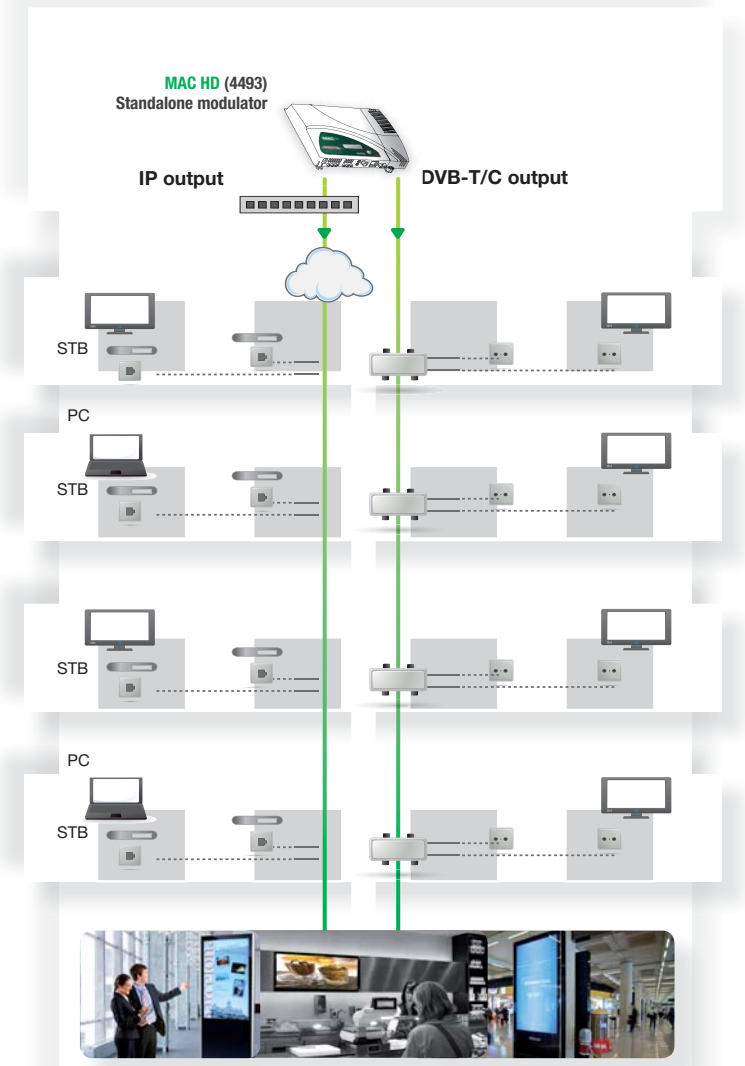
DVB-T / DVB-C / IP outputs

Video playback through USB port

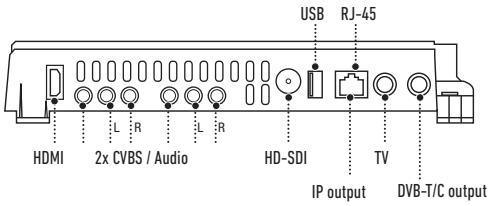
Remote control via web

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 stand-alone modulator. DVB-T, DVB-C, IP output

- 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

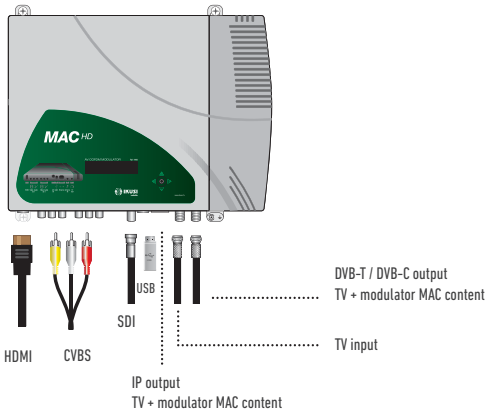
MODEL		MAC-HD
REF.		4493
Video input		**4 (2x) CVBS, HDMI, HD-SDI**
Video standard		PAL/SECAM/NTSC/B&W
Input level CVBS	Vpp	0.7 - 1.4
Audio inputs		1 (mono and stereo)
Audio input level (analogue)		0.5 - 2.5
Video compression		MPEG2 MP@ML, H.264/MPEG4 AVC MP L4.1
Audio compression		MPEG1 layer II
Maximum 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	dBµV	≥ 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
Loopthrough 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
Protocolos		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

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

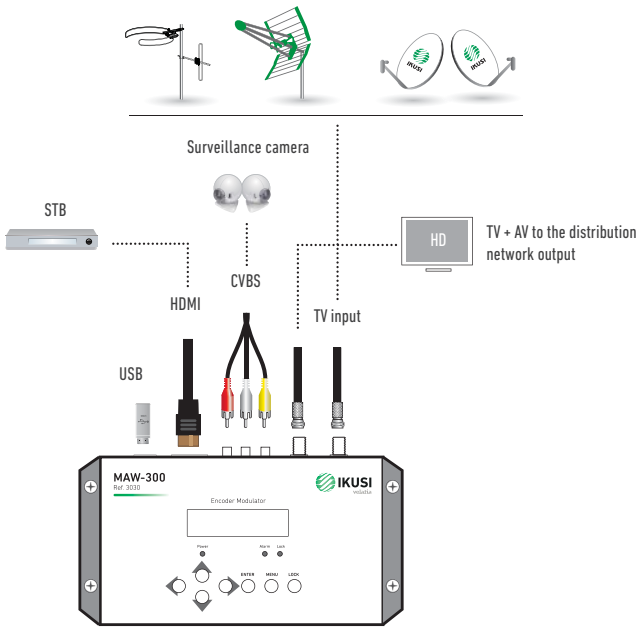
Information channel

Advertising channel USB

High definition stand-alone modulator. DVB-T output

- 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



AV-DVB-T stand-alone modulator

- 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
Loopthrough		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.

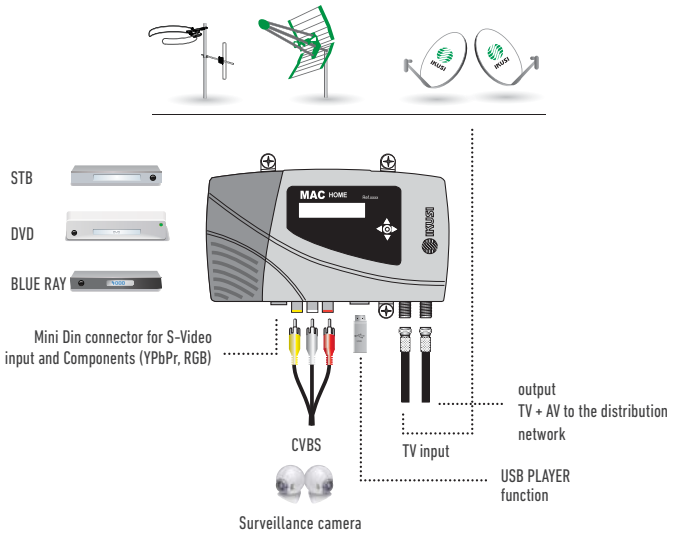
The Mac-Home modulator now has a new function to create and play back videos created by users with the software supplied with the product.

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 restaurants information about daily menus, special deals, etc

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

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

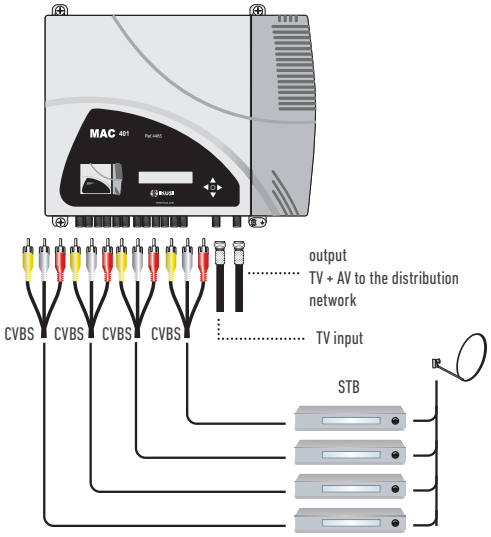
... for shopping centres new collections, special deals, etc

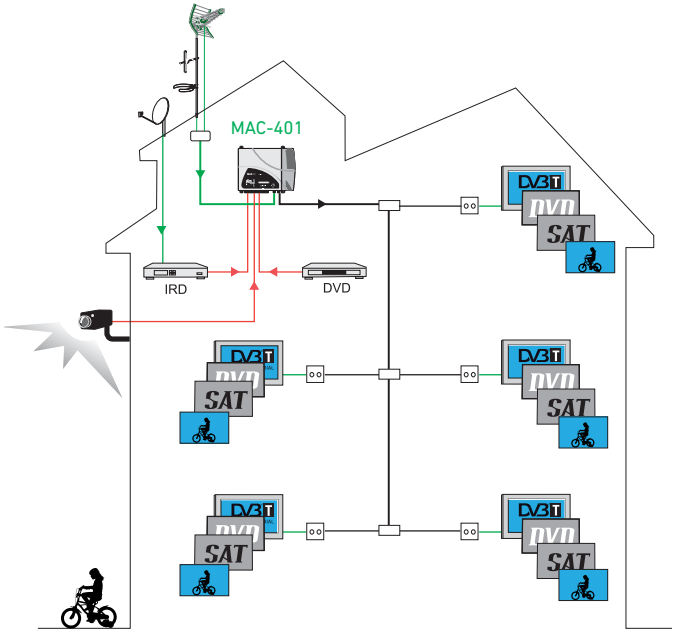
4xAV ▸ DVB-T stand-alone modulator

- 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 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
Frquency stability	ppm	≤ ±30
Noise figure (ΔB=8MHz)	dBc	≤ -70
Loopthrough		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





Home DSB TV stand-alone modulator

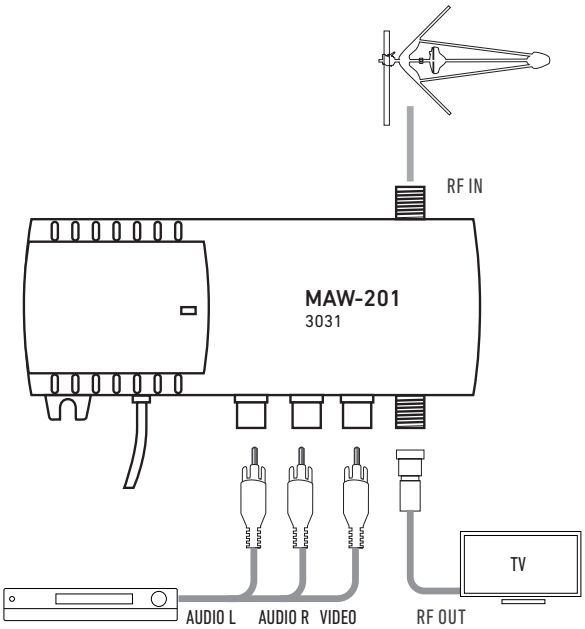
- The MAW-201 modulator generates double sideband, mono sound TV channels of the systems B/G/D/K/I/L/M/N/Australia.
- Appropriate use with TV satellite receivers, VCR's and video cameras.
- Possible connection of stereo sound sources. L and R signals are summed by the modulator itself.
- Panel potentiometers for audio modulation and RF output level settings.
- Indoor mounting.

MODEL		MAW-201
REF.		3031
Video input	Frequency range Level / Impedance	20 Hz - 6 MHz 1 ±0.1 V / 75 Ω
Audio input	Frequency range Level adjustment Level / Impedance / Deviation *	20 HZ - 15 Hz 0 ... 7 dB 2x 775 mV RMS / 10 kΩ / 50 kHz*
RF output	Level (typical) / impedance Level adjustment Frequency range (programmable)	85 dBµV / 75 Ω 0 ... -20 dB 45 - 84 MHz ; 170 - 300 MHz ; 470 - 862 MHz
Selectable TV system		B/G/D/K/H/I/L/M/N/AUSTRALIA
Number of outputs		(1F) RF + (3 RCA) video/audio R-L
Number of inputs		(1F) RF

Sound subcarrier frequency (programmable)	4.5 MHz ; 5.5 MHz ; 6.0 MHz ; 6.5 MHz
Fine tuning range of video carrier frequency (programm.)	± 2.25 MHz max. by 0.25 MHz step
Combining through loss	2.5 dB
Frequency range of RF combining	45 - 862 MHz
Video frequency response	± 1 dB
A/V ratio (programmable)	12/16 dB
Amplitude modulation depth, typical	81 %
Signal/noise ratio, weighted	≥ 55 dB
Supply voltage limit values, power consumption	198-250 V~ 50/60 Hz 3 W
Operating temperature range	-10 °C ... +50 °C
Dimensions/Weight (packed)	133 x 73 x 39 mm / 0.36 kg

* Available to set standard deviation ± 50 kHz of sound carrier when input level 340 mV÷775 mV in both audio inputs.

Installation example



IKUSI velatia

smartexperience

Serie MAC

Multi-input stand-alone encoders

MAC-HD

MAC-401

MAC-HOME

■ MAC-HD

· 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.

· Three types of output: DVB-T ; DVB-C and IP.

■ MAC-HOME

· Maximum compression quality MPEG-2 & H.264/MPEG-4 AVC.

· Video playback through USB port.

· Output types: CVBS, S-VIDEO, Y Pb Pr, RGB, USB.

· Input: DVB-T.

■ MAC-401

· 4 CVBS and stereo audio input connectors.

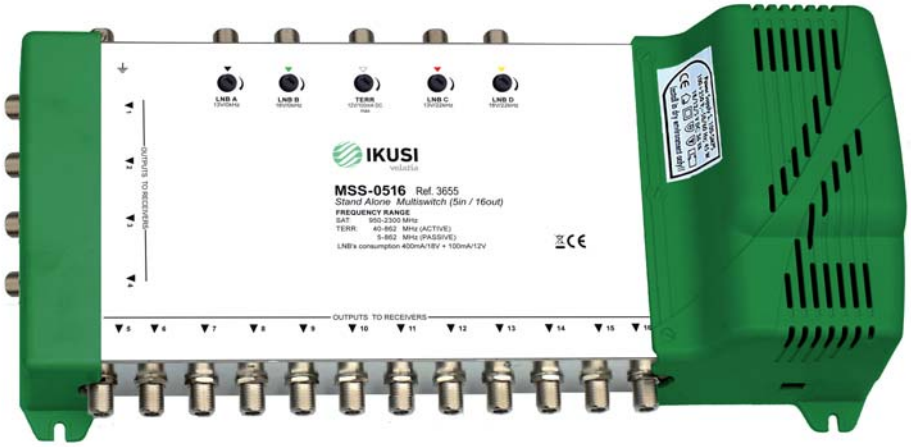
· Excellent modulation quality MER: 38dB.

· LCN support

· Firmware updated via Ethernet connection with web browser.

· RF COFDM DVB-T output.

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



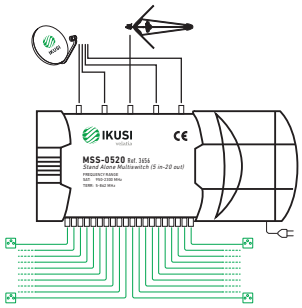
- Stand alone and cascadables Multiswitches
- Shielded multiswitches with integrated power supply
- Distributions up to 32 users
- They support DiseqC2.0 commands
- European Product

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

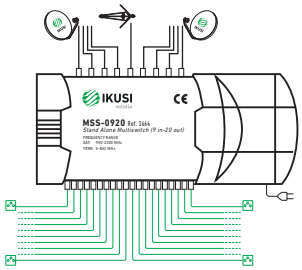
Installation example

STANDALONE

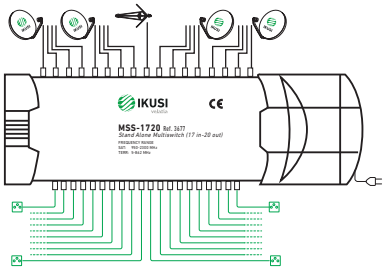
1 satellite and 20 users



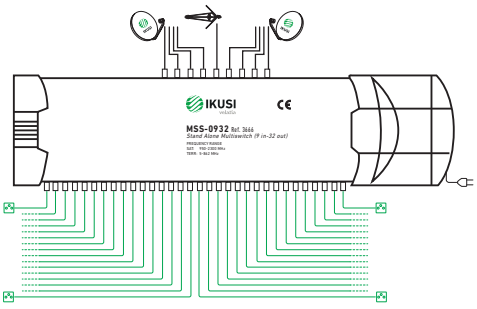
2 satellites and 20 users



4 satellites and 20 users

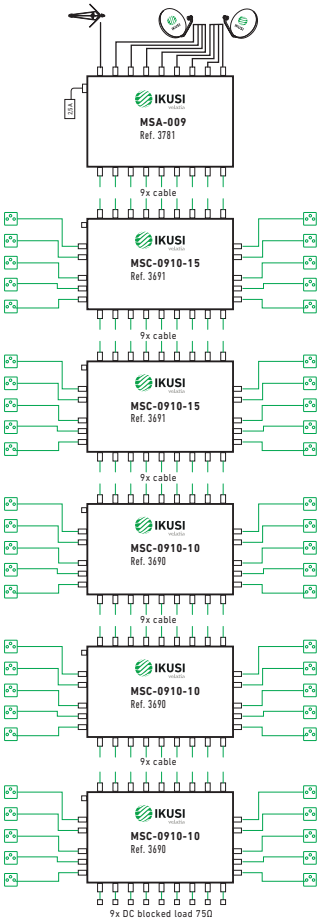


2 satellites and 32 users



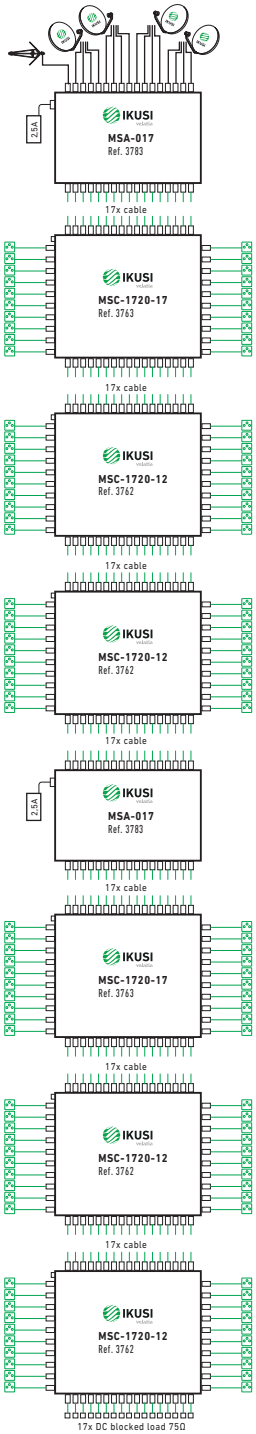
CASCADABLE

2 satellite and 50 users

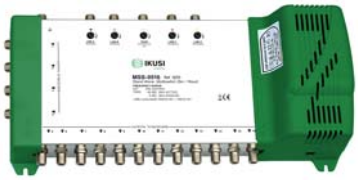


CASCADABLE

4 satellite and 120 users



5 inputs. MSS series



All models with integrated power supply except MSS-0532 with external power supply

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 - 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	40 - 862 5 - 862
Insertion loss SAT		dB	3	4	0	0	2	2	2	950 MHz= 8 ; 2150 MHz= +5
Insertion loss	TERR active TERR paesive	dB	2 19	3 20	-7 21	-6 22	10 23	10 24	10 25	5 27
Isolation between V/H polarizations		dB	20	20	20	20	20	20	20	–
Isolation between L/H bands		dB	25	25	25	25	25	25	25	–
Maximum input level SAT		dBµV	90	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	90 100	90 110
Maximum output level SAT		dBµV	87	86	90	90	88	88	88	85
Max output leve	TERR activ TERR passive	dBµV	91 81	90 80	92 79	91 78	80 77	80 76	80 75	85 83
Current consumption from each receiver		mA	40	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	5 3.5	9 7
Input voltage		VAC	90 - 265	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	-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	47.0 x 15.2 x 8.7	35.5 x 35 x 5

9 inputs. MSS series

All models with integrated power supply except MSS-0932 with external power supply

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 - 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	0	0	0	0	4	5	950 MHz= 8 ; 2150 MHz= +5
Insertion loss	TERR active TERR paesive	dB	-3 12	0 16	3 18	5 21	7 24	8 25	5 27
Isolation between V/H polarizations		dB	20	20	20	20	20	20	25
Isolation between L/H bands		dB	25	25	25	25	25	25	30
Maximum input level SAT		dBµV	90	90	90	90	90	90	85
Max input level	TERR active TERR passive	dBµV	90 100	90 100	90 100	90 100	90 100	90 100	90 110
Maximum output level SAT		dBµV	90	90	90	90	86	85	85
Max output leve	TERR activ TERR passive	dBµV	93 88	90 84	87 82	85 79	83 76	82 75	85 83
Current consumption from each receiver		mA	50	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	4.5 3	13 11
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	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	47.0 x 15.2 x 8.7	35.5 x 35 x 5

13 inputs. MSS series

All models with integrated power supply except MSS-1332 with external power supply

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 - 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	0	0	0	0	4	5	950 MHz= 8 ; 2150 MHz= +5
Insertion loss	TERR active TERR paesive	dB	0 12	2 16	5 19	7 21	9 24	10 25	5 27
Isolation between V/H polarizations		dB	20	20	20	20	20	20	20
Isolation between L/H bands		dB	25	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	90 100	90 100	90 100	90 100	90 100	90 100	90 110
Maximum output level SAT		dBµV	90	90	90	90	86	85	85
Max output leve	TERR activ TERR passive	dBµV	90 88	88 84	85 81	83 79	81 76	80 75	85 83
Current consumption from each receiver		mA	75	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	6.5 4.5	17 15
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	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 8.77	47.0 x 15.2 x 8.7	35.5 x 35 x 5

17 inputs. MSS series

All models with integrated power supply except MSS-1732 with external power supply

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 - 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 paesive	dB	2 16	5 19	7 21	9 24	10 25	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	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 leve	TERR activ TERR passive	dBµV	90 84	85 81	83 79	81 76	80 75	85 83
Current consumption from each receiver		mA	75	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	6.5 4.5	21 19
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 8.77	47.0 x 15.2 x 8.7	35.5 x 35 x 5

5 inputs. MSC series

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	4	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	5	10	5	10
Insertion loss TERR tap	dB	18	21	21	24	24	27	25	28
Isolation between V/H polatizations 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	30	30	30	30
Isolation between trunk lines	dB	30	30	30	30	25	25	25	25
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
Maximun user output level SAT	dBµV	85	85	85	80	85	80	85	80
Maximun user output leve TERR	dBµV	92	89	89	86	86	83	85	82
Current consumption from receiver (18V)	mA	50	50	50	50	50	50	50	50
Operating temperature	°C	-26 ... +60	-26 ... +60	-26 ... +60	-26 ... +60	-26 ... +60	-26 ... +60	-26 ... +60	-26 ... +60
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

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 polatizations 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 berween 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
Maximun user output level SAT	dBµV	95	90	95	90	93	88	93	88
Maximun user output leve 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

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 polatizations 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 berween 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
Maximun user output level SAT	dBµV	95	90	95	90	93	88	93	88
Maximun user output leve TERR	dBµV	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

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 polatizations 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 berween 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
Maximun user output level SAT	dBµV	95	90	95	90	93	88	93	88
Maximun user output leve TERR	dBµV	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

MSA-005

MSA-009

MSA-013

MSA-017

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	dBµV	103 - 98	90	90	90
Maximum input level TERR	dBµV	99 - 94	85	85	85
Maximum output level SAT	dBµV	113	115	115	115
Maximum output level TERR	dBµV	109	107	107	107
Current consommation	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 in MSA-005 model

Power supply

MODEL		PSA-012
REF.		3784
Input voltage		90-265 AC 50/60 Hz
Output voltage	Vdc	12
Maximal output current	A	2
Efficiency	%	75
Operating temperature	°C	-30 ... +50
Dimensions	mm	16 x 6.4 x 5

Splitters UDA series

UDA-505

UDA-500

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	ºC	-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

F connectors

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

2400 MHz indoor Tap-offs. UDM series





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	dB	≤ 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	dB	≥ 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	dB	≤ 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	dB	≥ 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	dB	≥ 38	≥ 39	≥ 46	≥ 50
	301-862 MHz		≥ 35	≥ 37	≥ 42	≥ 45
	950-2400 MHz		≥ 28	≥ 37	≥ 39	≥ 35

4 outputs

			UDM-410	UDM-415	UDM-420	UDM-425
REF.			2060	2061	2062	2063
Outputs			4			
Tap loss (± 1dB)		dB	10	15	20	25
Through loss	5-862 MHz	dB	≤ 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	dB	≥ 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	dB	≥ 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 (± 1dB)		dB	15	20	25
Through loss	5-862 MHz	dB	≤ 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	dB	≥ 30	≥ 37	≥ 37
	301-862 MHz		≥ 30	≥ 33	≥ 37
	950-2400 MHz		≥ 23	≥ 25	≥ 27
Tap-to-tap isolation	5-300 MHz	dB	≥ 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 (± 1dB)		dB	16	20	25
Through loss	5-862 MHz	dB	≤ 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	dB	≥ 30	≥ 30	≥ 33
	301-862 MHz		≥ 30	≥ 30	≥ 36
	950-2400 MHz		≥ 27	≥ 23	≥ 28
Tap-to-tap isolation	5-300 MHz	dB	≥ 34	≥ 30	≥ 30
	301-862 MHz		≥ 32	≥ 28	≥ 28
	950-2400 MHz		≥ 25	≥ 28	≥ 28

2300 MHz indoor splitters. UDF series

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

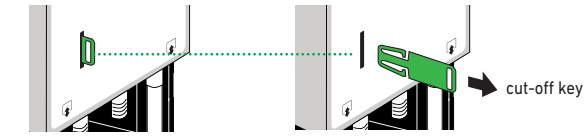
TV-IF combiner

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

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.

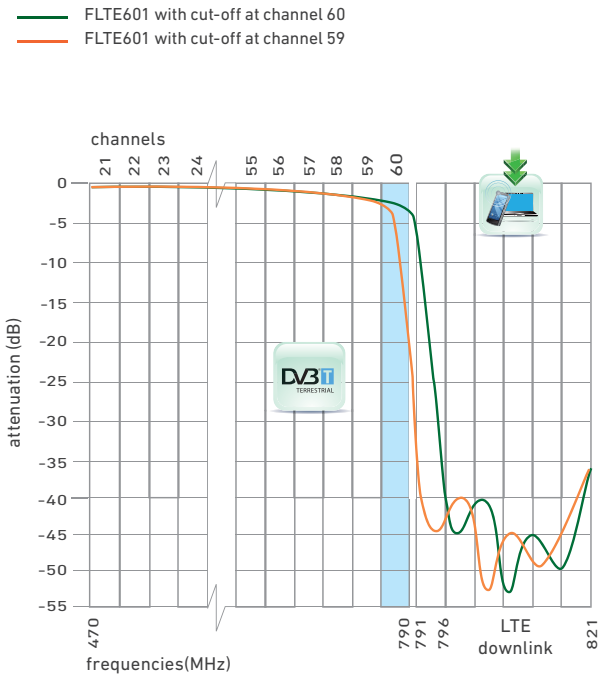
MODEL		FLTE601	
REF.		1435	
Two cut-off options		59 channel	60 channel
Pass band frequencies	MHz	470 ... 782	470 ... 790
Attenuation LTE frequencies	dB	see graph on next page	
Insertion losses	dB		
Dimensions	mm	96 x 125 x 46	



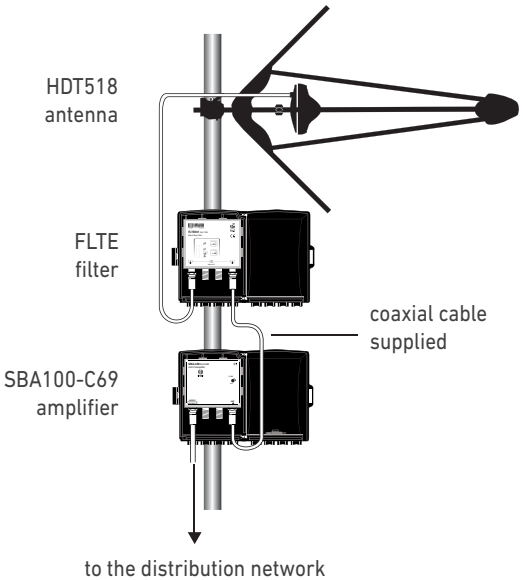
pass filter up to channel 59

pass filter up to channel 60

Filter attenuation graph



Installation example



Rejection of LTE frequencies for 2nd digital dividend

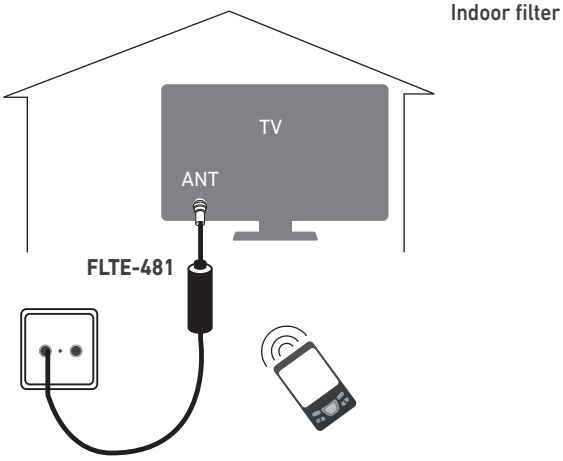
FLTE-481

FLTE-482

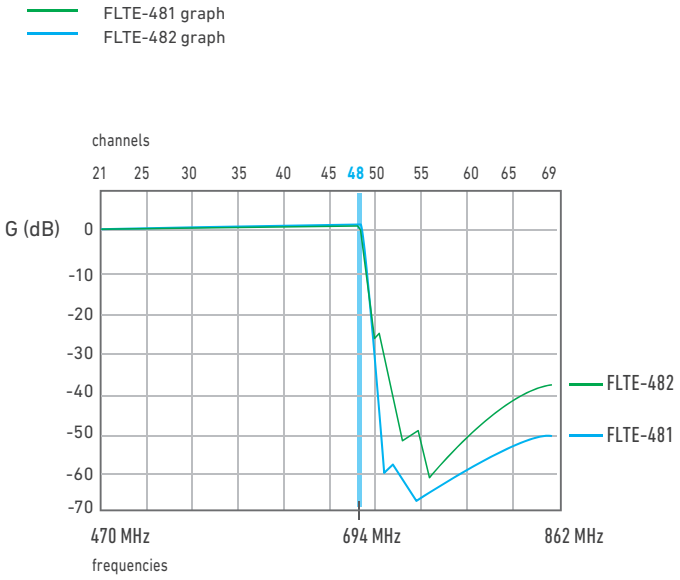
- Rejection of LTE frequencies for 2nd dividend
- 2 models: Indoor and outdoor
- Maximum attenuation for LTE frequencies
- High selectivity and minimal losses

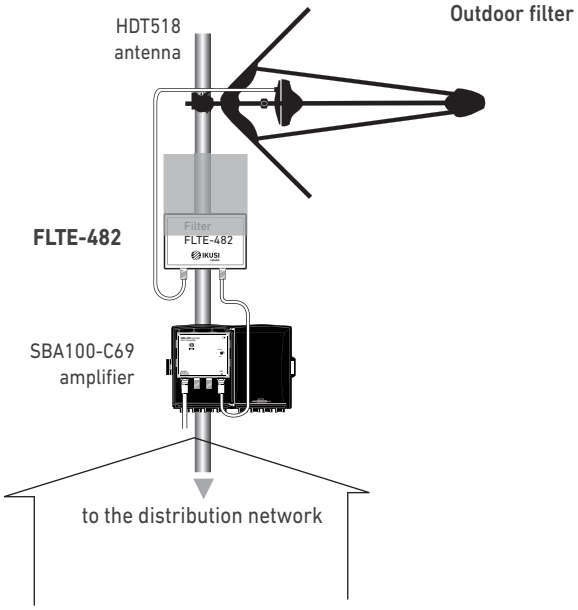
MODEL		FLTE-481		FLTE-482	
REF.		1436		1437	
Installation type		Indoor		Outdoor	
Cut-off at channel		48 channel			
Pass band frequencies	MHz	470 - 694			
Frequencies range	MHZ	0 - 686	686 - 694	698 - 733	733 - 862
Insertion losses	dB	<1.5	<2.5	>5	>25
Dimensions	mm	70 x 30ø		55 x 40 x 15 with protective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

Installation example



Filter attenuation graph





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	5 - 862
Transfer loss	input - TV	dB	≤ 3.5	–
	input - RD		≤ 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		≤ 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	TV/RD : 5 - 862 SAT : 950 - 2300
Transfer loss	input - TV/RD	dB	4.5	11	15	19
	input - SAT		5.5	11	15	18
Max through loss	5-862 MHz	dB	–	2	1.3	1.3
	950-2300 MHz		–	3	2.5	2.5
TV/RD - SAT isolation		dB	> 25			
DC transit through the SAT output			Yes	Yes	Yes	Yes

PSE-300

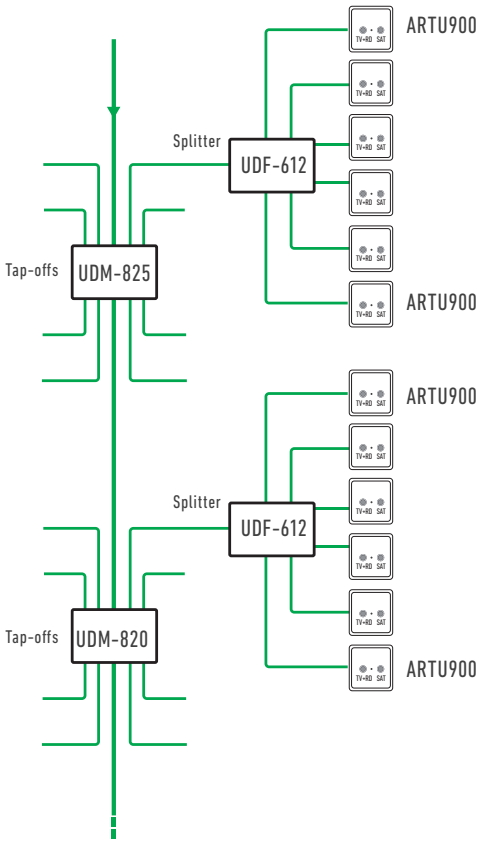
ABT-210

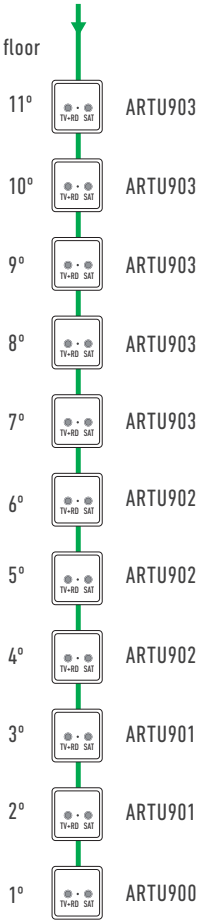
MODEL			PSE-300
REF.			5360
Frequency range		MHz	TV : 5 - 68 y 125 - 862 RD : 88 - 108 SAT : 950 - 2300
Transfer loss	input - TV	dB	≤ 2
	input - RD		≤ 2
	input - SAT		≤ 3
TV-RD and TV-SAT isolation		dB	> 18
SAT-RD isolation		dB	> 18
DC transit through the SAT outputT		dB	Yes
Coverplate + surface mounting frame			Yes

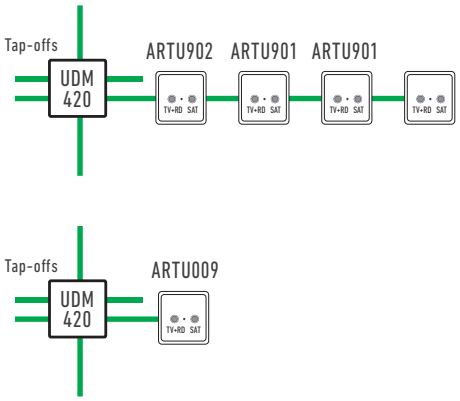
MODEL	ABT-210
REF.	1460
Mounting of the outlets without embedding the body in the wall (ARTUs models)	

Outlets. ARTU series

Application examples for ARTU outlets







* distance between outlets 3 mts

07

Coaxial cables

CCI-175 CCI-179 CCH-175 CCI-174 17VATCAPH1 CCT-171 CCT-125

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	dB							
50 MHz		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	10.3	10.3	10.5	10.5	7.3
470 MHz		12.8	13.0	12.8	12.8	13.0	13.0	9.2
790 MHz		15.0	14.7	14.0	14.4	15.0	14.4	12.2
862 MHz		17.0	18.0	17.0	17.0	18.0	18.0	13.3
1000 MHz		19.2	19.5	19.2	19.2	19.5	19.5	14.2
1750 MHz		25.7	26.0	25.7	25.7	26.0	26.0	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


CFR-680


CTF-190


CTF-125


CAD


CHD-950


CCF-111


CFC-600


BCF-060


SAI-311


UCR-600


UCF-170


CTF-075


FAV-020


AV-020


V-2T


IFC-215


FIS-950


FAV-920

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. Nickeled 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. Dimensions: 51 x 49 x 22 mm.

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

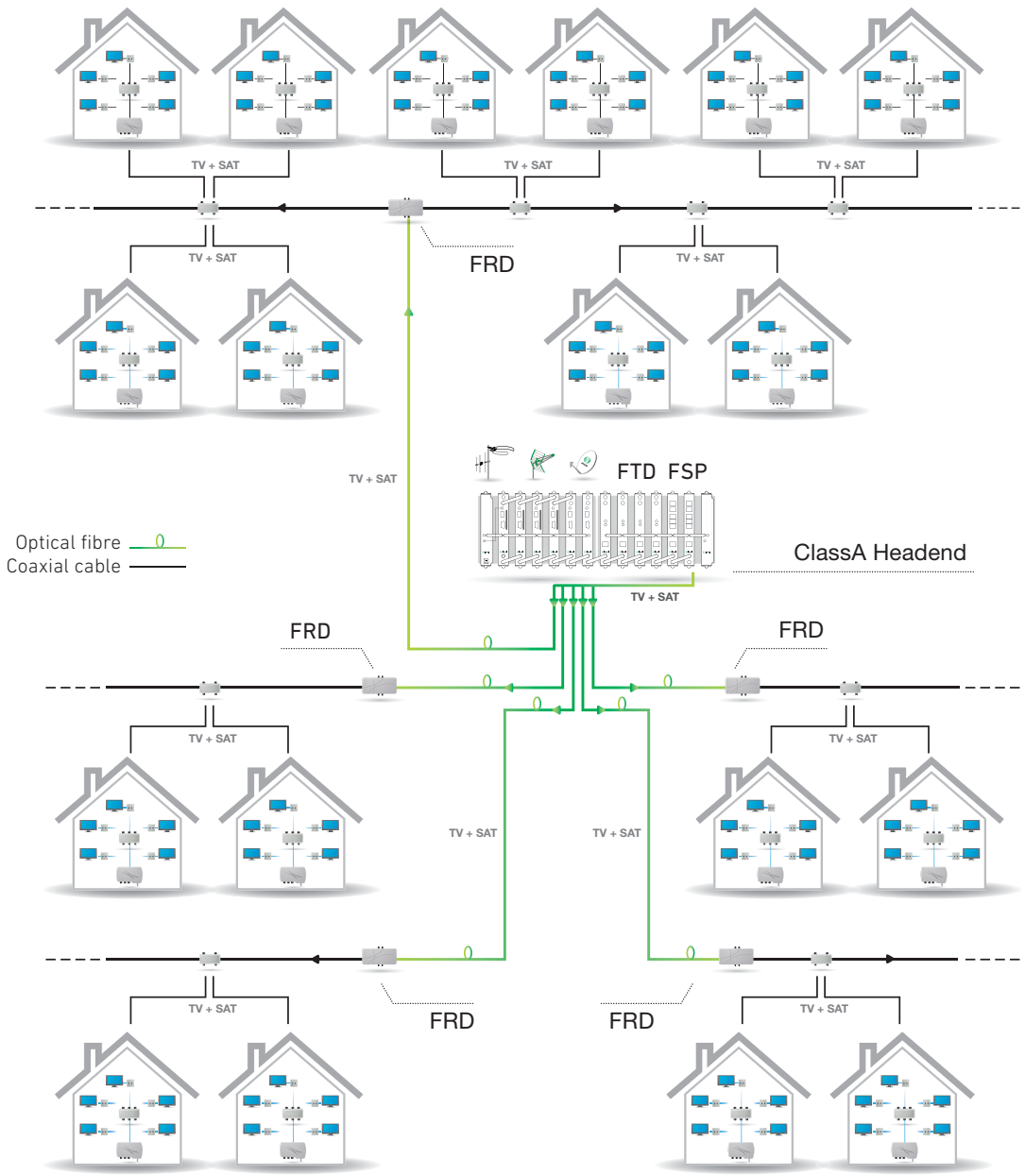
FTD-420

FRD-400

- Connection of singlemode type optical fibre
- TV+IF output signals
- TV+IF-SAT Optical receiver FRD-400
- Replaceable power supply
- 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.
- Ultralineal, 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

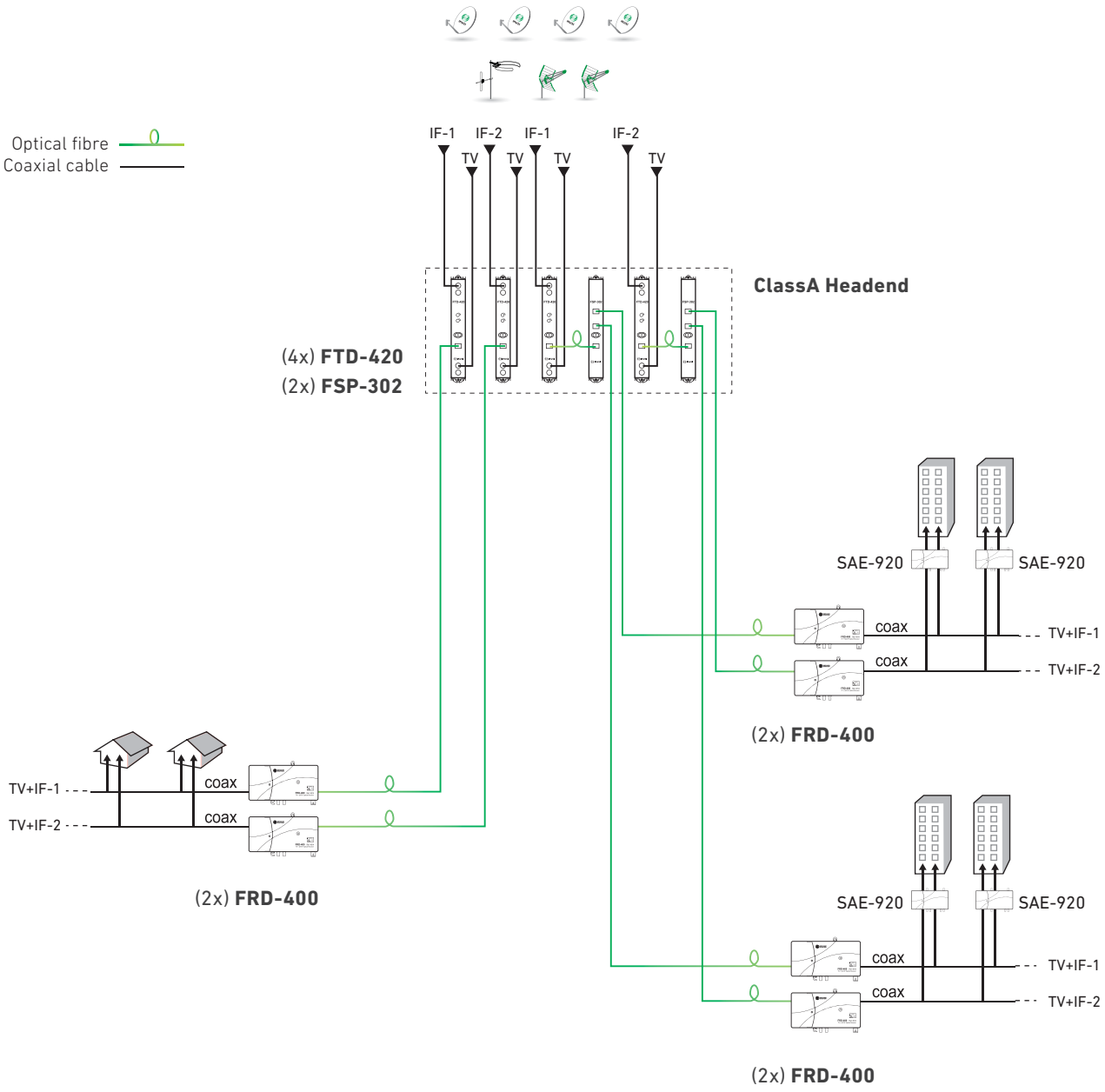
Optical splitting modules

- 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.

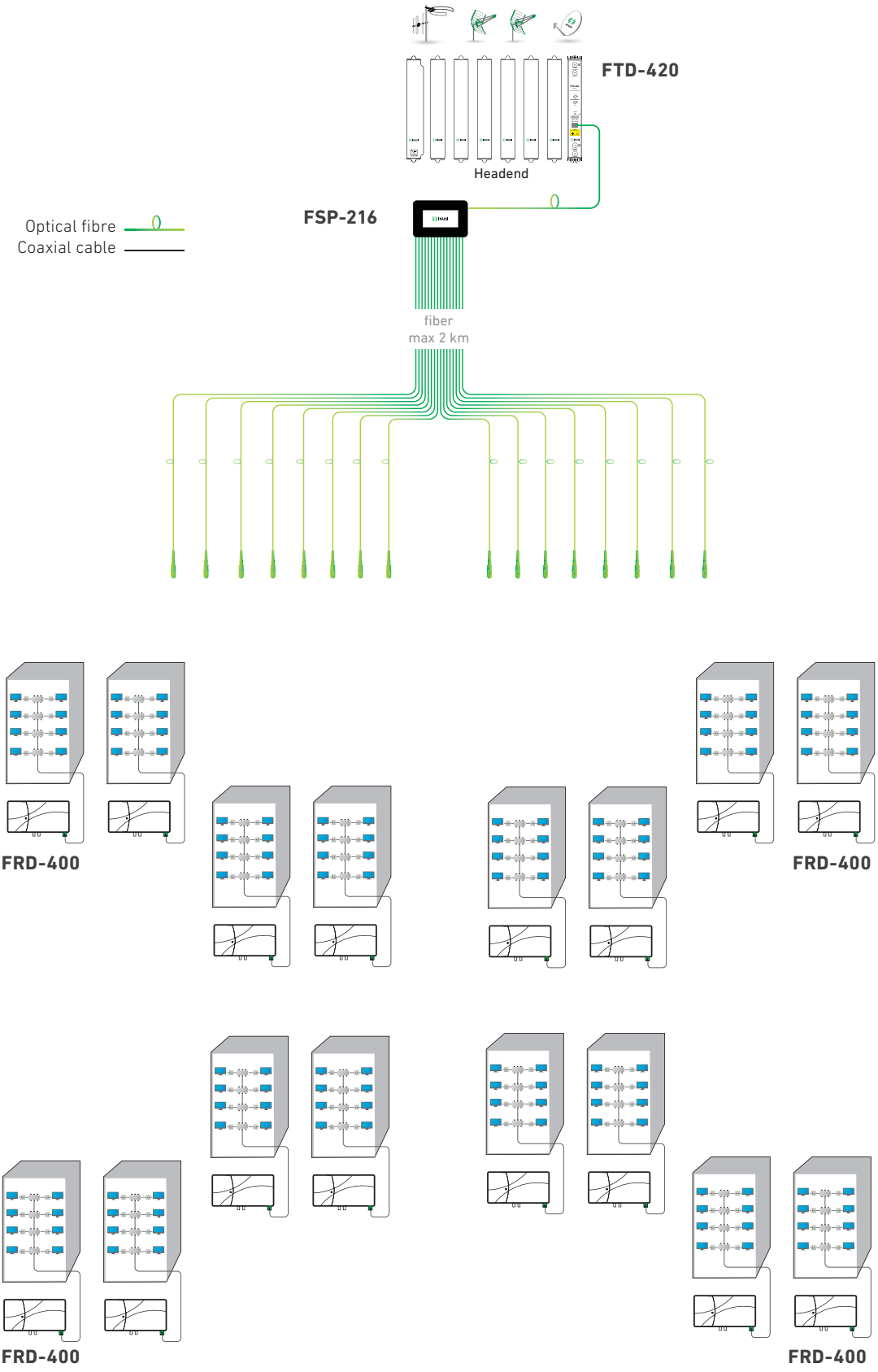
MODEL			FRD-400
REF.			4914
Optical window		dBm	-4 ... +1
Forward RF output frequency		MHz	45-862 (TV) and 950-2150 (IF)
Optical section			
Optical wavelength		nm	1290 - 1600
Optical output return loss		dB	> 50
Optical input connector type			SC / APC
RF section			
RF flatness		dB	±1.5 (TV) „ ±2 (IF)
RF output level	Analogue TV	dBµV	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-204

FSP-208

FSP-216

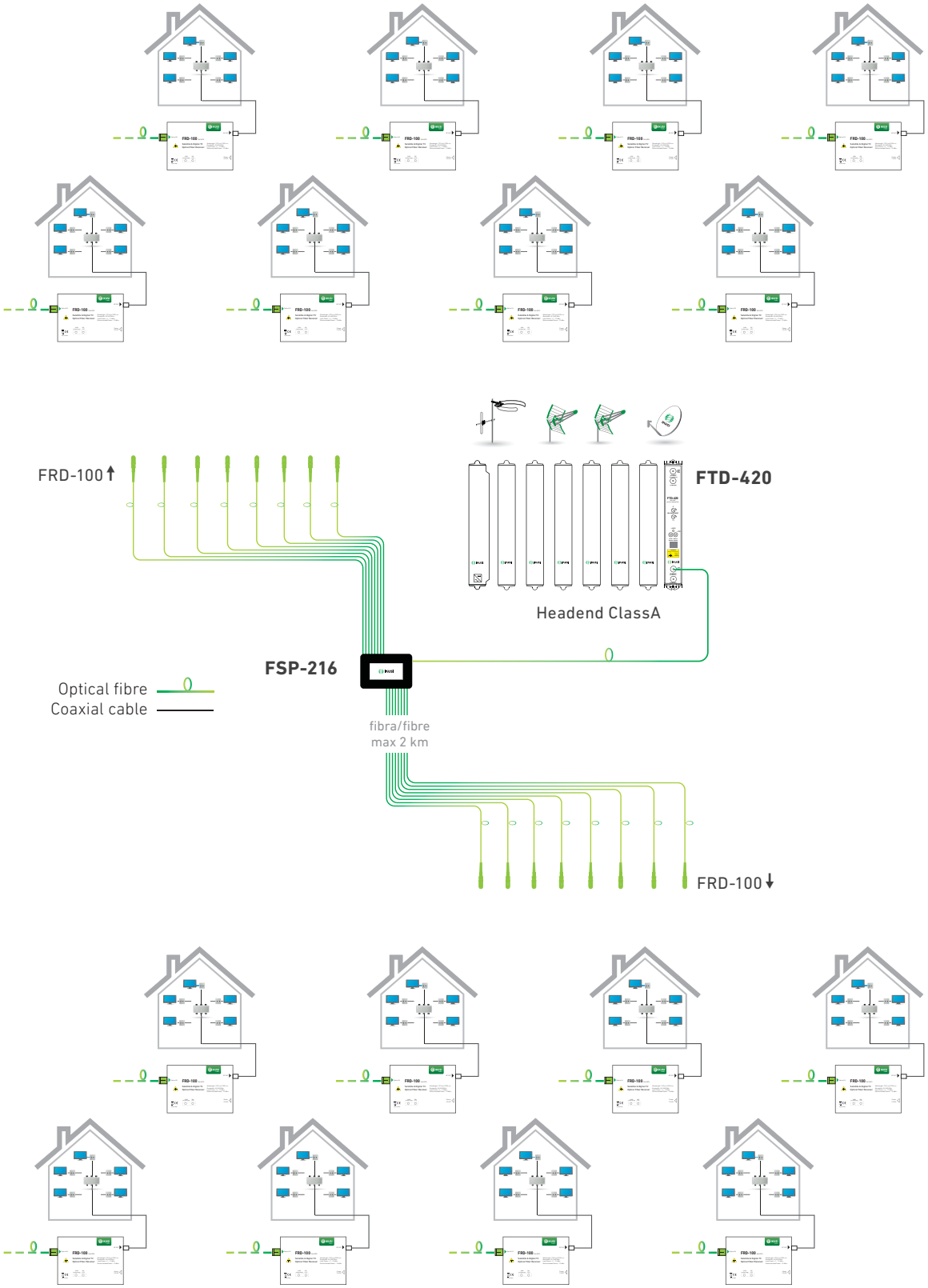
Optical attenuators

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

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

- 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 (Included) using an independent F connector.

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

Sat+Terr (DTT) optical receivers

MODEL		QUAD-GTU	QUATRO-GTU
REF.		4952	4953
Outputs		4	5 VL-HL-VH-HH-(DTT+Radio)
Optical input power	dBm	-12 to -3	
Satelllite output level	dBµV	60 to 77	
Terrestrial output level	dBµV	64 to 74	
Supply voltage	VDC / A	6 / 1	

QUAD-GTU

QUATRO-GTU

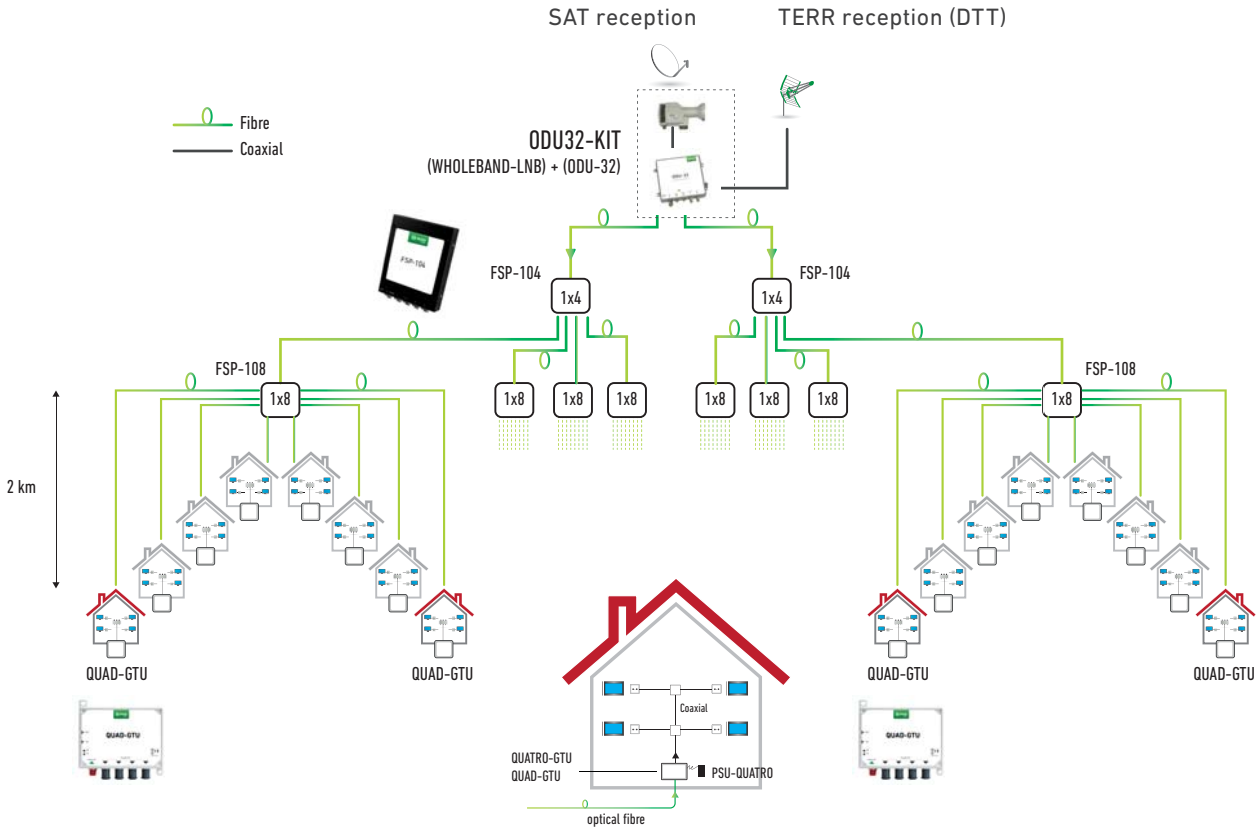
Power supply 20V

MODEL		PSU-QUATRO
REF.		4951
Input voltage	VAC / Hz	100-240 / 50/60
Output voltage	VDC	20
Maximal output current	A	1,2
Output power	W	24
Overcurrent protection	A	5,5
Operating temperature	°C	0 – 40
Dimensions	mm	84,9 x 50 x 40,5
Weight	gr	200

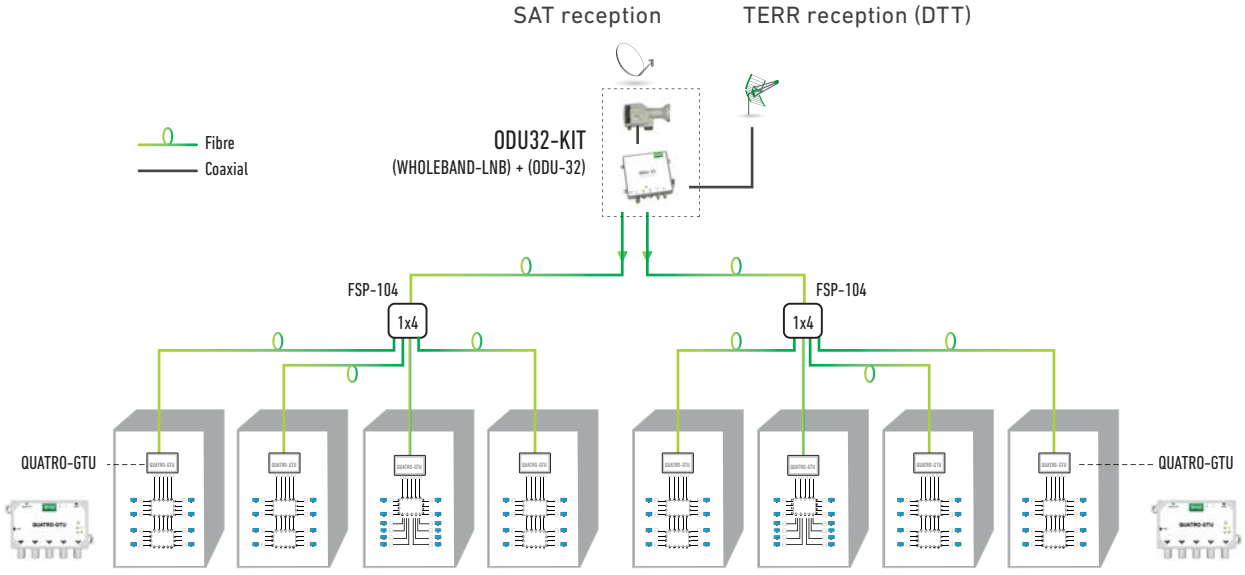
PSU-QUATRO

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



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

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
Attenuation	dB	4.0	6.13	7.32	10.5

FSP-104

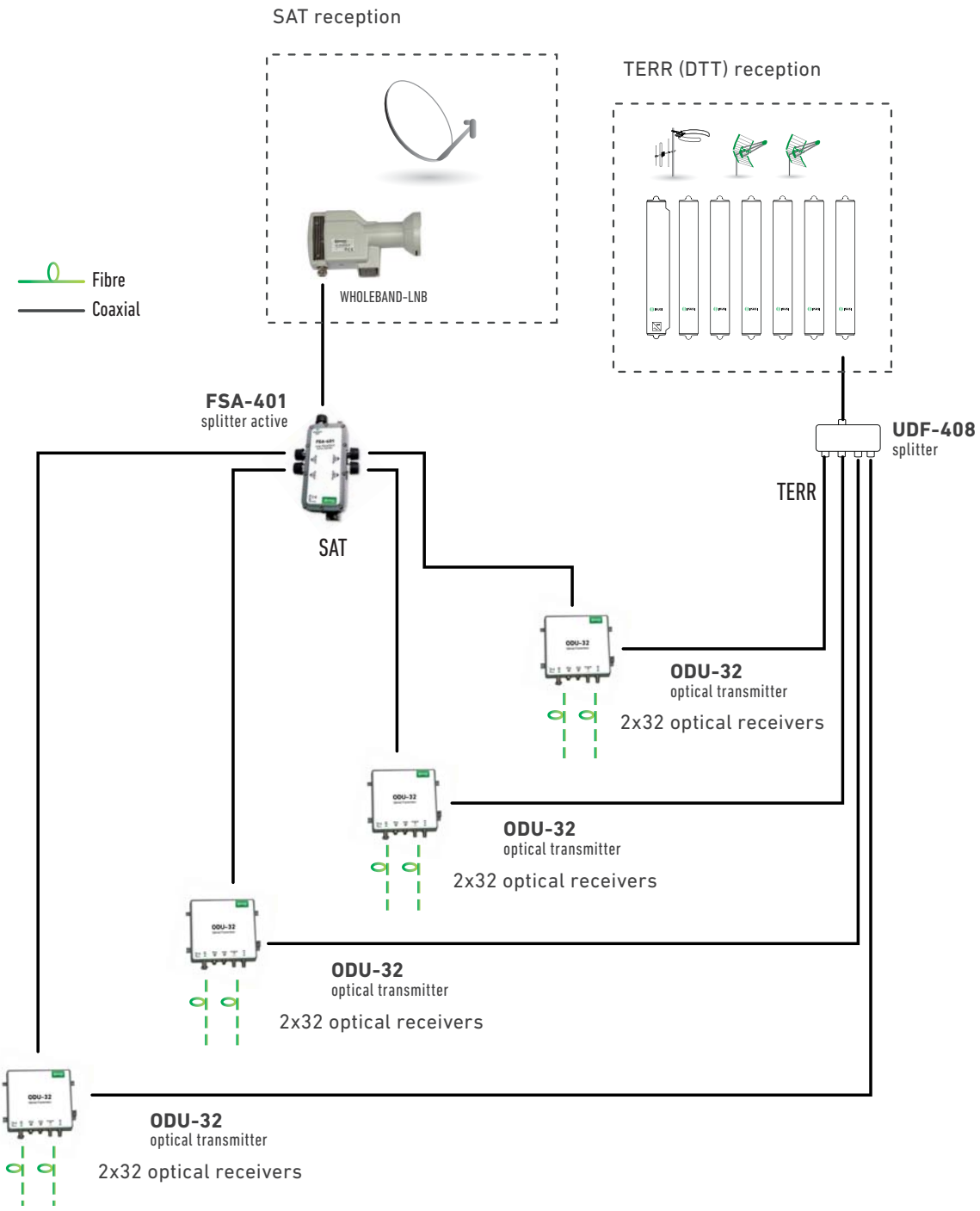
Optical attenuators (FC/PC)

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 converter

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

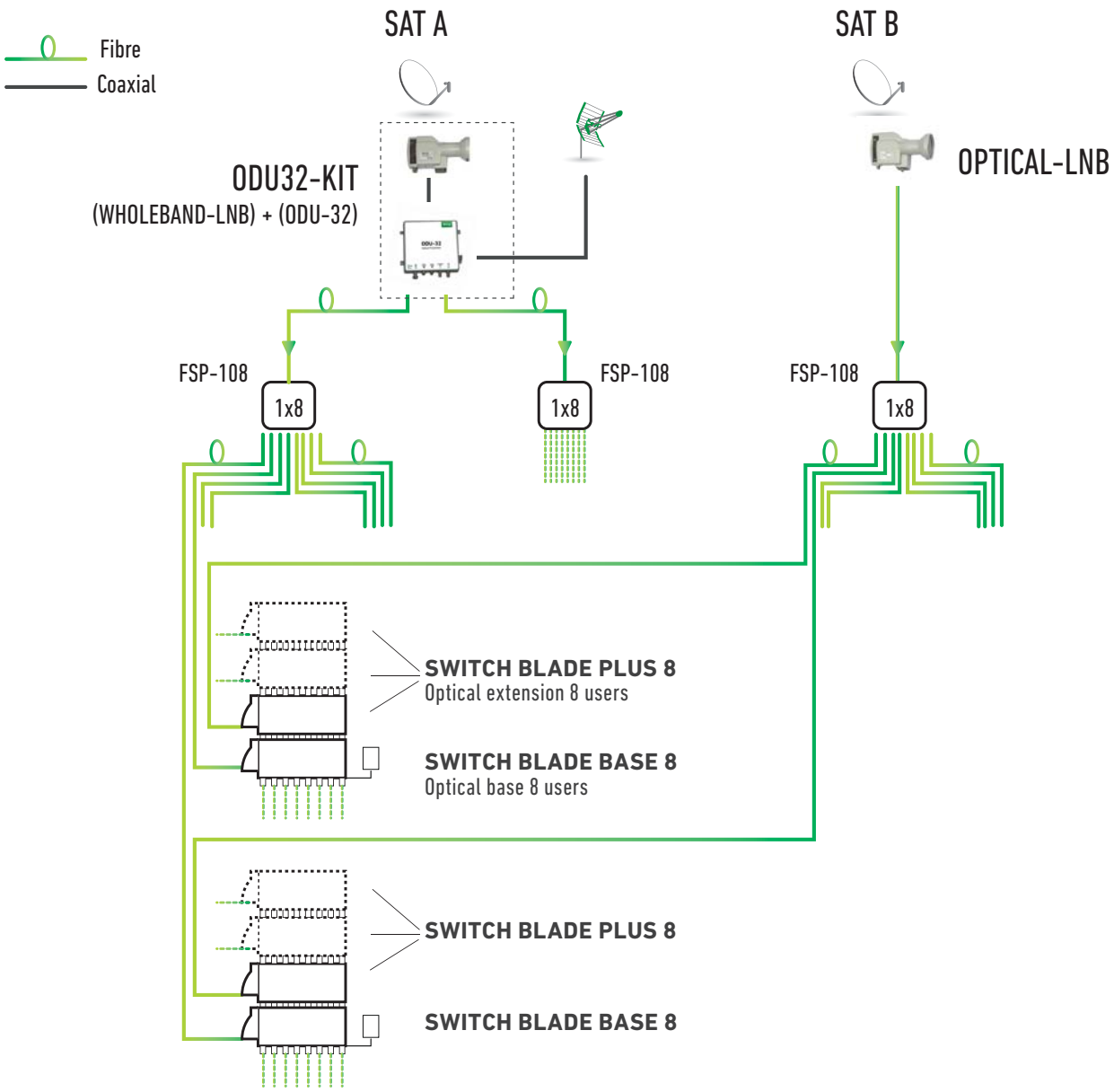
SatPlus8 way unit connects to the SwitchBlade Base8 Unit allowing a 2nd, 3rd, or 4th Satellite feed to be connected into a system if required.
(1 x Switch Blade Base 8 way + 3 x Switch Blade Plus 8 way)

1 SAT 2 SAT 3 SAT 4 SAT

SWITCH BLADE PLUS 8

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

Installation example



FC/PC barrel connector

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

Rack cabinets 19"

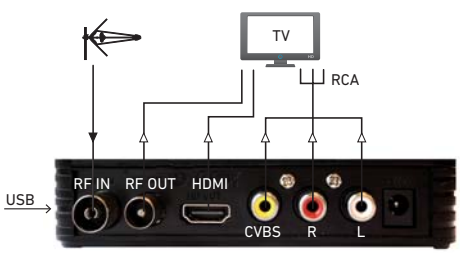
MODEL		ARE-120	ARE-220	ARE-320	ARE-420
REF.		2174	2169	2171	2172
Panel height	U	12	22	32	42
Outside dimensions (hxwxd)	mm	658 x 600 x 450	1166 x 600 x 600	1610 x 600 x 600	2055 x 600 x 600
Packed weight	kg	30	63	76	88

- 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.

DVB-T/T2 Set-Top-Box

MODEL		RDT-100
REF.		1065
System	Standard	ETSI EN 302 755 (DVB-T2)
Tuner	Input frequency	VHF: 170-230 MHz UHF: 470-860 MHZ
	RF Input level	-78 ~ -20 dBm
	RF Bandwidth	7 MHz and 8 MHz
	Modulation	QPSK, 16 QAM, 64 QAM, 256 QAM
Video	Decoder format	MPEG4 AVC/H.264 HP@L4 MPEG2 MP@MP.HL
	Output format	576i/576p/1080i/1080p
	Output Port	HDMI, AV
Audio	Decoder format	MPEG-1 (layer 1&2&3), WMA, AC3
	Audio output	Coaxial, L/R
USB 2.0	Supported capacity	500 GB
	Supported media	MP3, WMA, JPEG, BMP, AVI, MKV
Power	Supply voltage	100-240 V ~ 50/60 Hz
	Maximun power consumption	< 10 W
	Standby power consumption	< 1 W
Weight		0.5 kg
Size		130 x 102 x 28 mm

RDT-100



Ikusi was born more than 45 years 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.

International presence

IKUSI
velatia

Paseo Miramón, 170
20014 Donostia/San Sebastián
Gipuzkoa, España
Tel.: +34 943 44 89 44
Fax: +34 943 44 88 20
television@ikusi.com
www.ikusi.tv

ESPAÑA
Pol. Ind. San Marcos
c/ Morse esq. Franklin
28906 Getafe, Madrid
Tel.: +34 915 15 51 10
television@ikusi.com
www.ikusi.tv

FRANCE
62 avenue du 8 mai 1945
64101 Bayonne Cedex
Tel.: +33 1 42 84 87 12
france.tv@ikusi.com
www.ikusi.tv/fr

MIDDLE EAST
6WA-504, Dubai
Airport Free Zone
PO Box: 54585 Dubai - U.A.E.
Telf: +971 4 2994770
Fax: +971 4 2994775
dubai.tv@ikusi.com
www.ikusi.tv/en

AUSTRALIA - NEW ZEALAND
7 Amsted Road
3153 Bayswater (Victoria)
Telf: +61 3 97208000
Fax: +61 3 97207422
australia.tv@ikusi.com
www.ikusi.tv/en

IKUSI
velatia

Paseo Miramón, 170 · 20014 San Sebastián, Spain
T. +34 943 44 88 00 · television@ikusi.com
www.ikusi.tv