FRACARRO

153 Catalogue

TV and Satellite Solutions 2013

Products for the distribution of audio, video and data signals

Aerials

Electronic mast and indoor equipment

Headends

Fibre optic solutions and CATV systems

Multiswitches

Distribution components

Index

Fracarro Group

The company

Established in 1933, Fracarro is today one of the most important companies in Europe in the field of reception and distribution of audio video data signals and active security.
The synergy between the two sectors allows Fracarro to propose integrated solutions for the creation of intelligent buildings and dwellings to connect and interact actively worldwide.
Our aim is to guarantee the supply of high quality products with particular care to all connected services dedicated to the operators within that sector.

Today the company is able to guarantee a comprehensive catalogue of systems in the sector of audio, video and data for the reception and distribution of AVD signals: terrestrial and satellite antennas, amplifiers, mixers, power supplies, headends and distribution components.
With the introduction of DTT and having extensive experience in foreign markets, Fracarro is considered a reference point for solutions relating to the introduction of new technology.

ISO 9001 certification

Fracarro Quality System has being recognised with ISO9001 certification.

UNI EN ISO 9001

European directives conformity

Fracarro's products are compliant, if applicable, to the following European Directives:

- 2006/95/EC (LVD - Low Voltage DIRECTIVE)
- 2004/108/EC (EMC - ELECTROMAGNETIC COMPATIBILITY DIRECTIVE)

As they exceeded tests specified in the technical harmonized standards, carried out by leading accredited laboratories.
Such products are identified by the CE marking.

Warranty

Thanks to the quality and technological reliability of its products, Fracarro has decided to extend its guarantee from 2 to 4 years

The guarantee has been extended from 2 to 4 years for all terrestrial antennas, electronic mast and indoor devices, multiband amplifiers, headends, CATV and fibre optic systems, multiswitches, distribution components and Penta satellite dishes.

Technical assistance

Fracarro provides technical assistance to solve any installation problem in the fastest way.

The service is available in each Fracarro company, with specialised staff ready to provide information to define projects.

Training

Fracarro has always been at the forefront in providing information to operators about available technology and is committed to giving training initiatives during exhibitions and road shows, working closely with clients and partners.

As well as providing backup material and in depth information, the company is also preparing important training projects to guarantee professional growth for all field operators.

FRDesigner

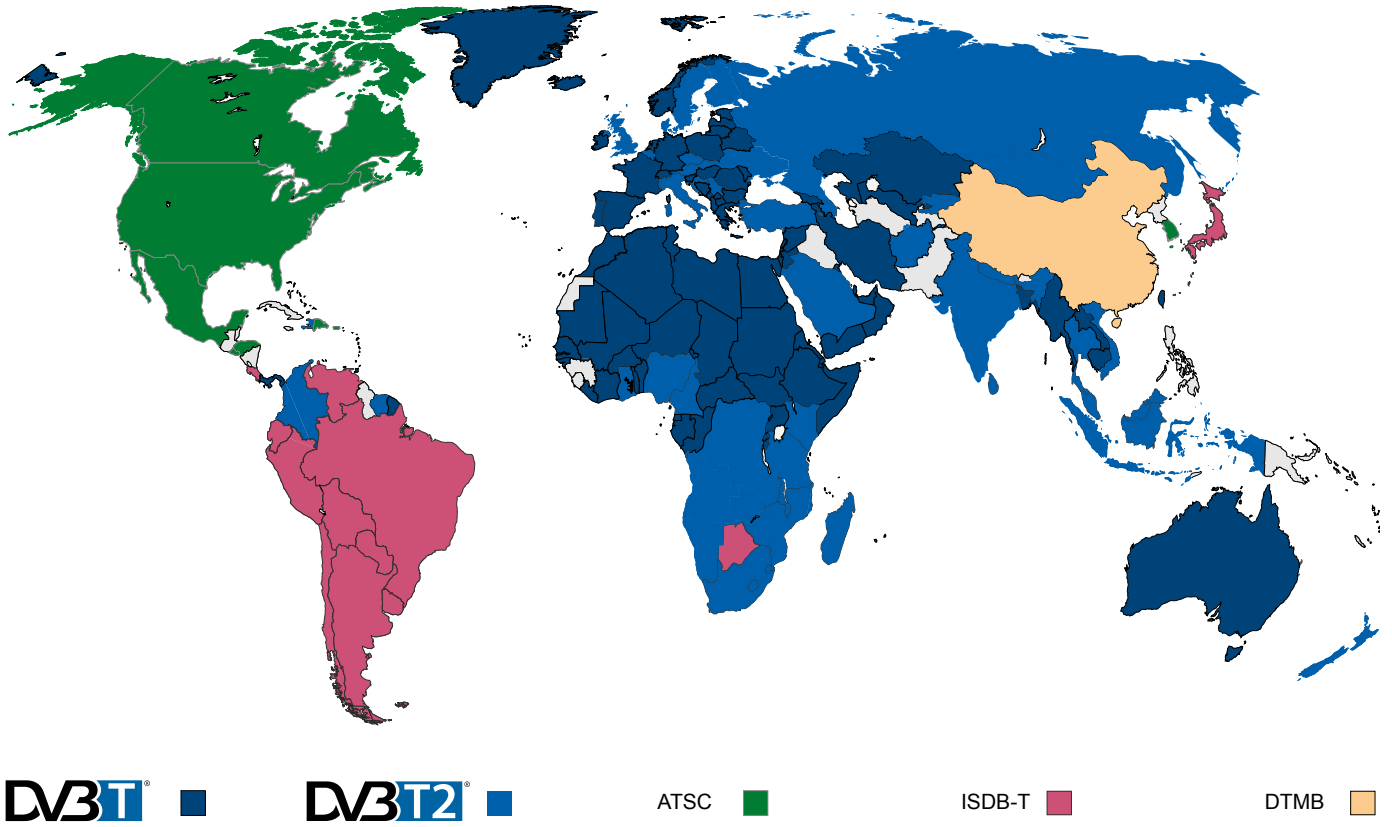
Fracarro has developed FRDesigner, a software system which enables you to easily design a complete system for the reception and distribution of audio-video-data signals.

All the information you need will be included for your project, from signal values to product costs and estimated manpower.

Combining technical calculations and currency values with the highest accuracy, FRDesigner will edit a definitive and complete offer which you can submit easily to your customer.

TV standards

DTT world map



Digital Terrestrial Television Systems.
Blue indicates countries that have adopted or deployed DVB-T and DVB-T2. January 2013

Source: www.dvb.org

Countries which have completed Analogue Switch Off (ASO)

Country	Standard	Compression	Country	Standard	Compression
Austria	DVB-T/DVB-T2	MPEG-2	Latvia	DVB-T/ DVB-T2	MPEG-4 AVC
Belgium	DVB-T	MPEG-2	Luxemburg	DVB-T	MPEG-2
Croatia	DVB-T	MPEG-2	Norway	DVB-T	MPEG-4 AVC
Czech rep.	DVB-T/DVB-T2	MPEG-2	Netherlands	DVB-T	MPEG-2
Denmark	DVB-T	MPEG-2/MPEG-4 AVC	Portugal	DVB-T	MPEG-4 AVC
Estonia	DVB-T/DVB-T2	MPEG-4 AVC	Slovak rep.	DVB-T/DVB-T2	MPEG-2
Finland	DVB-T/DVB-T2	MPEG-2	Slovenia	DVB-T	MPEG-4 AVC
France	DVB-T	MPEG-2/MPEG-4 AVC	Spain	DVB-T/DVB-T2	MPEG-2
Germany	DVB-T	MPEG-2	Sweden	DVB-T/DVB-T2	MPEG-2
Ireland	DVB-T	MPEG-2	Switzerland	DVB-T	MPEG-2
Italy	DVB-T/ DVB-T2	MPEG-4 AVC	UK	DVB-T/DVB-T2	MPEG-2
Lithuania	DVB-T/ DVB-T2	MPEG-4 AVC			

Sources: www.digitag.org - www.dvb.org (DTT deployment data at May 2013)

Main transmission standards

DTT	**DVB-T**	**DVB-T2**
Modulation	COFDM	COFDM
Number of sub carriers	2K, 8K	1K, 2K, 4K, 8K, 16K, 32K
Sub carriers modulation	QPSK , 16QAM, 64QAM	QPSK, 16QAM, 64QAM, 256QAM
FEC	1/2 , 2/3 , 3/4 , 5/6 , 7/8	1/2, 3/5, 2/3, 3/4, 4/5 , 5/6
Guard interval	1/4, 1/8, 1/16, 1/32	1/4, 19/256, 1/8, 19/128, 1/16, 1/32
Bandwidth	6, 7 or 8MHz	1.7, 5, 6, 7, 8, 10MHz
Maximum useful bit-rate	About 31.6Mbps	About 50Mbps
SAT	**DVB-S**	**DVB-S2**
Modulation	QPSK	QPSK, 8PSK, 16APSK, 32APSK
FEC	1/2 , 2/3 , 3/4 , 5/6 , 7/8	1/4 , 1/3 , 1/2 , 3/5 , 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

Available bit rates for a DVB-T system in 8MHz channels

Modulation	Codification value	Guard interval				Modulation	Codification value	Guard interval			
		1/4	1/8	1/16	1/32			1/4	1/8	1/16	1/32
QPSK	1/2	*4.98*	*5.53*	*5.85*	*6.03*	64QAM	1/2	*14.93*	*16.59*	*17.56*	*18.10*
	2/3	*6.64*	*7.37*	*7.81*	*8.04*		2/3	*19.91*	*22.12*	*23.42*	*24.13*
	3/4	*7.46*	*8.29*	*8.78*	*9.05*		3/4	*22.39*	*24.88*	*26.35*	*27.14*
	5/6	*8.29*	*9.22*	*9.76*	*10.05*		5/6	*24.88*	*27.65*	*29.27*	*30.16*
	7/8	*8.71*	*9.68*	*10.25*	*10.56*		7/8	*26.13*	*29.03*	*30.74*	*31.67*
16QAM	1/2	*9.95*	*11.06*	*11.71*	*12.06*						
	2/3	*13.27*	*14.75*	*15.61*	*16.09*						
	3/4	*14.93*	*16.59*	*17.56*	*18.10*						
	5/6	*16.59*	*18.43*	*19.52*	*20.11*						
	7/8	*17.42*	*19.35*	*20.49*	*21.11*						

Note: the values in italics are in Mbps

TV standards

CCIR - Standard

Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz	Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz	Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz
Standard B + G Europe											
Band I				S23	318-326	322	319.25	**Band V**			
E 2	47-54	50.5	48.25	S24	326-334	330	327.25	E38	606-614	610	607.25
E 3	54-61	57.5	55.25	S25	334-342	338	335.25	E39	614-622	618	615.25
E 4	61-68	64.5	62.25	S26	342-350	346	343.25	E40	622-630	626	623.25
Band S				S27	350-358	354	351.25	E41	630-638	634	631.25
S 1	104-111	107.5	105.25	S28	358-366	362	359.25	E42	638-646	642	639.25
S 2	111-118	114.5	112.25	S29	366-374	370	367.25	E43	646-654	650	647.25
S 3	118-125	121.5	119.25	S30	374-382	378	375.25	E44	654-662	658	655.25
S 4	125-132	128.5	126.25	S31	382-390	386	383.25	E45	662-670	666	663.25
S 5	132-139	135.5	133.25	S32	390-398	394	391.25	E46	670-678	674	671.25
S 6	139-146	142.5	140.25	S33	398-406	402	399.25	E47	678-686	682	679.25
S 7	146-153	149.5	147.25	S34	406-414	410	407.25	E48	686-694	690	687.25
S 8	153-160	156.5	154.25	S35	414-422	418	415.25	E49	694-702	698	695.25
S 9	160-167	163.5	161.25	S36	422-430	426	423.25	E50	702-710	706	703.25
S10	167-174	170.5	168.25	S37	430-438	434	431.25	E51	710-718	714	711.25
Band III				S38	438-446	442	439.25	E52	718-726	722	719.25
E 5	174-181	177.5	175.25	S39	446-454	450	447.25	E53	726-734	730	727.25
E 6	181-188	184.5	182.25	S40	454-462	458	455.25	E54	734-742	738	735.25
E 7	188-195	191.5	189.25	S41	462-470	466	463.25	E55	742-750	746	743.25
E 8	195-202	198.5	196.25	**Band IV**				E56	750-758	754	751.25
E 9	202-209	205.5	203.25	E21	470-478	474	471.25	E57	758-766	762	759.25
E10	209-216	212.5	210.25	E22	478-486	482	479.25	E58	766-774	770	767.25
E11	216-223	219.5	217.25	E23	486-494	490	487.25	E59	774-782	778	775.25
E12	223-230	226.5	224.25	E24	494-502	498	495.25	E60	782-790	786	783.25
Band S				E25	502-510	506	503.25	**LTE**			
S11	230-237	233.5	231.25	E26	510-518	514	511.25	E61	790-798	794	791.25
S12	237-244	240.5	238.25	E27	518-526	522	519.25	E62	798-806	802	799.25
S13	244-251	247.5	245.25	E28	526-534	530	527.25	E63	806-814	810	807.25
S14	251-258	254.5	252.25	E29	534-542	538	535.25	E64	814-822	818	815.25
S15	258-265	261.5	259.25	E30	542-550	546	543.25	E65	822-830	826	823.25
S16	265-272	268.5	266.25	E31	550-558	554	551.25	E66	830-838	834	831.25
S17	272-279	275.5	273.25	E32	558-566	562	559.25	E67	838-846	842	839.25
S18	279-286	282.5	280.25	E33	566-574	570	567.25	E68	846-854	850	847.25
S19	286-293	289.5	287.25	E34	574-582	578	575.25	E69	854-862	858	855.25
S20	293-300	296.5	294.25	E35	582-590	586	583.25				
S21	302-310	306	303.25	E36	590-598	594	591.25				
S22	310-318	314	311.25	E37	598-606	602	599.25				

CCIR - Standard

Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz	Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz	Channel	Channel frequency MHz	Digital central frequency MHz	Analogue picture carrier MHz
Standard D Russia - OIRT				**Standard I South Africa**				**Standard K French overseas territories**			
R 1	48.5-56.5	52.5	49.75	**Band III**				**Band III**			
R 2	58-66	62	59.25	I 4	174-182	178	175.25	K 4	174-182	178	175.25
R 3	76-84	80	77.25	I 5	182-190	186	183.25	K 5	182-190	186	183.25
Band II				I 6	190-198	194	191.25	K 6	190-198	194	191.25
R 4	84-92	88	85.25	I 7	198-206	202	199.25	K 7	198-206	202	199.25
R 5	92-100	96	93.25	I 8	206-214	210	207.25	K 8	206-214	210	207.25
Band III				I 9	214-222	218	215.25	K 9	214-222	218	215.25
R 6	174-182	182	175.25	I 10	222-230	226	223.25				
R 7	182-190	190	183.25	I 11	230-238	234	231.25				
R 8	190-198	198	191.25	I (12)	238-246	242	239.25				
R 9	198-206	206	199.25	I 13	246-254	250	247.25				
R 10	206-214	214	207.25								
R 11	214-222	222	215.25								
R 12	222-230	230	223.25								

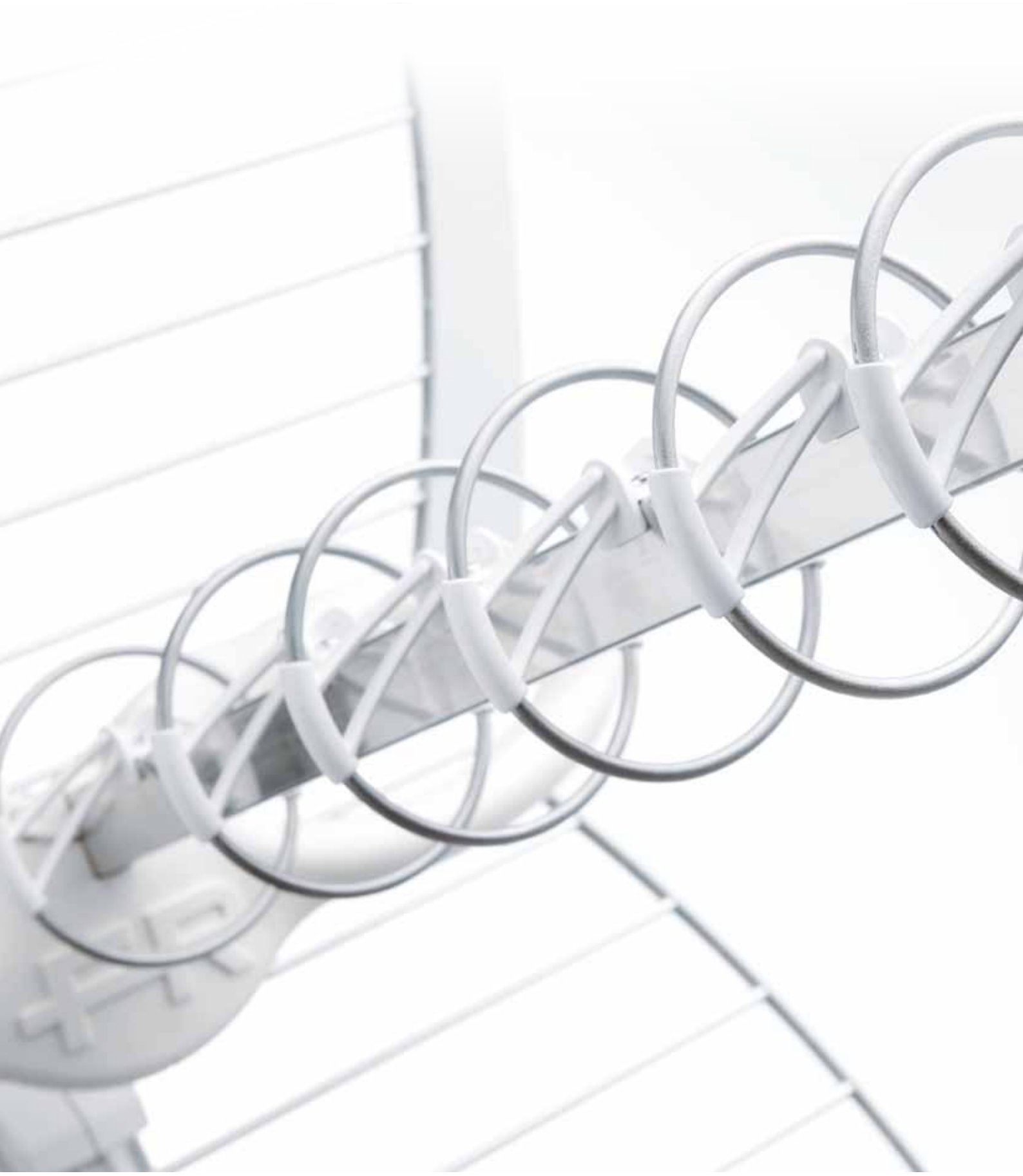
Level conversion table (75Ω)

mV	dBµV	dBm	mV	dBµV	dBm
0.10	40	-68.8	12.59	82	-26.8
0.12	42	-66.8	15.85	84	-24.8
0.16	44	-64.8	19.95	86	-22.8
0.20	46	-62.8	25.12	88	-20
0.25	48	-60.8	31.62	90	-18.8
0.31	50	-58.8	39.81	92	-16.8
0.39	52	-56.8	50.12	94	-14.8
0.50	54	-54.8	63.10	96	-12.8
0.63	56	-52.8	79.43	98	-10.8
0.79	58	-50.8	100.00	100	-8.8
1.00	60	-48.8	125.89	102	-6.8
1.26	62	-46.8	158.49	104	-4.8
1.58	64	-44.8	199.53	106	-2.8
2.00	66	-42.8	251.19	108	-0.8
2.51	68	-40.8	316.23	110	1.2
3.16	70	-38.8	398.11	112	3.2
3.98	72	-36.8	501.19	114	5.2
5.01	74	-34.8	630.96	116	7.2
6.31	76	-32.8	794.33	118	9.2
7.94	78	-30.8	1000.00	120	11.2
10.00	80	-28.8			

Comparison noise figure and signal-noise ratio

Noise figure	Kto	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
	dB	4.8	5.4	6.0	6.5	7.0	7.4	7.8	8.1	8.4	8.7	9.0
Noise voltage at 75 Ohm	dBµV	7.1	7.7	8.3	8.8	9.3	9.7	10.1	10.4	10.7	11.0	11.3

Aerials

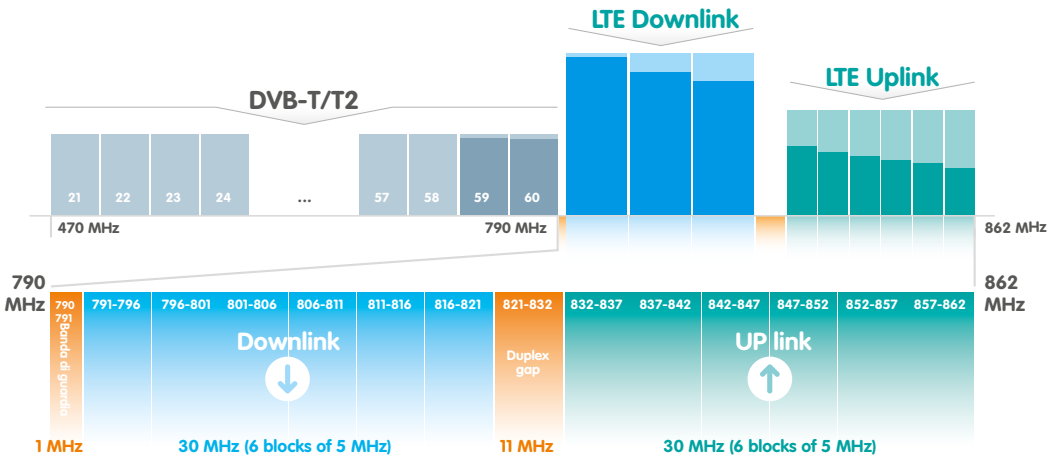


Aerials

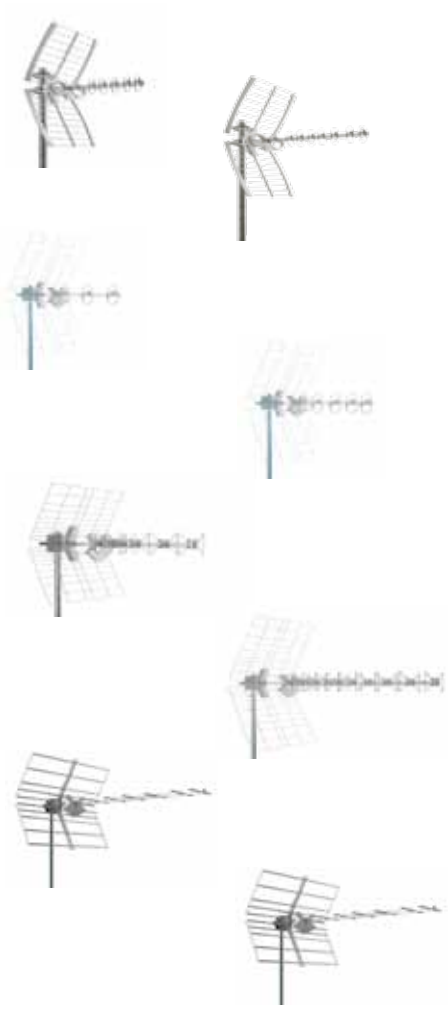
LTE filtering

LTE standard

The term LTE stands for Long Term Evolution, the new international standard, adopted by the European Union, which identifies technologies and types of service for broadband mobile data connection.
In order to transmit the Digital Terrestrial signals, the 800 Mhz band has been freed and its use is quite critical: infact, the LTE signals that are found in this band will be perfectly received by the current antennas and they have to be suitably filtered to avoid unpleasant interferences.



Fracarro LTE aerials range	
SIGMA 6HD LTE (page 20)	6 element UHF Aerial 15 dBi gain
SIGMA 8HD LTE (page 20)	8 element UHF Aerial 16 dBi gain
ALPHA 3HD LTE (page 22)	3 element UHF Aerial 13 dBi gain
ALPHA 3HD PLUS LTE (page 22)	3 element UHF Aerial 13 dBi gain
ALPHA 5HD LTE (page 22)	5 element UHF Aerial 14 dBi gain
ALPHA 5HD PLUS LTE (page 22)	5 element UHF Aerial 14 dBi gain
BLU 5HD LTE (page 25)	5 element UHF Aerial 15 dBi gain
BLU 10HD LTE (page 25)	10 element UHF Aerial 16 dBi gain
LAMBDA 9 LTE (page 26)	9 element UHF Aerial 14.5 dBi gain
LAMBDA 14 LTE (page 26)	14 element UHF Aerial 16 dBi gain
TAU LTE KILLER (page 30)	7 element UHF Aerial 14 dBi gain
TAU LTE KILLER PLUS (page 30)	7 element UHF Aerial 14 dBi gain



FM & DAB aerials

FM & DAB Series

FM & DAB aerials in different designs for the reception of FM radio signals to be used for MATV, SMATV and IRS installations.

▶ ANT1200A

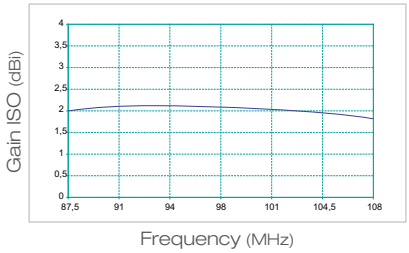
▶ FM OMNI

▶ DAB

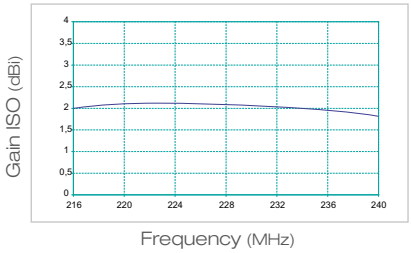
Item		ANT1200A	FM OMNI	DAB
Code		213001	213009	213010
Elements	No.	1	1	1
Channels		FM	FM	DAB
Bandwidth	MHz	87.5-108	87.5-108	216-240
Maximum gain	dBi	2.1	2.1	2.1
Front-to-back ratio	dB	Omni	Omni	Omni
Return loss	dB	-16	< -6	-16
Beamwidth (-3dB)	°	360	360	360
Wind load at 120Km/h (720N/m²)	Kg (N)	3 (29.43)	2.7 (26.46)	2 (19.62)
Connector	type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	96x77 (H x L)	63x10.5	59x8 (H x L)
Packaging				
Quantity	Pcs	10	10	8
Unit weight	Kg	0.9	0.84	0.54
Total weight	Kg	10.6	8.6	4.4
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		N/A		
Auxiliary boom		N/A		

Gain

ANT1200A - FM OMNI

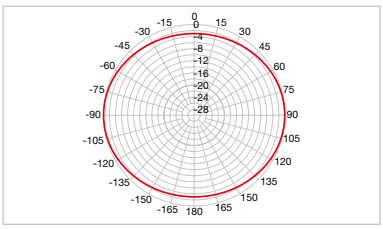


DAB

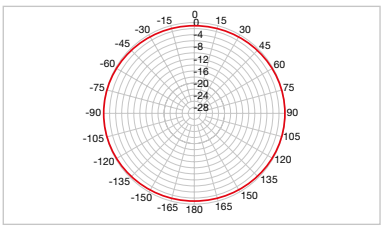


Pattern

ANT1200A - FM OMNI



DAB



VHF aerials

Band III wideband

Yagi wideband III aerials with F connector.
Ideal in situations where there are several band III channels.
They are available in 4 and 6 element versions to allow adequate gain in most reception situations.

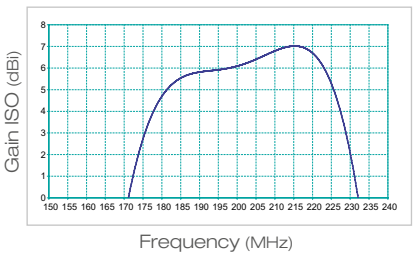
▶ 4 elements

▶ 6 elements

Item		4E512_F	6E512_F
Code		218706	218718
Elements	No.	4	6
Band		III	III
Channels		E5-E12	E5-E12
Bandwidth	MHz	174-230	174-230
Maximum gain	dBi	7	10
Front-to-back ratio	dB	16	18
Return loss	dB	-10	-12
Beamwidth (-3dB)	°	+/- 35	+/- 28
Wind load at 120Km/h (720N/m²)	Kg (N)	2.0 (19.62)	3.0 (29.43)
Connector	type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	108 x 83	181 x 82
Packaging			
Quantity	Pcs	20	20
Unit weight	Kg	0.73	0.96
Total weight	Kg	15.6	20.2
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		PVZ-60	
Polarisation vertical		PV10	
Polarisation vertical with tilt adj.		PV10	
Auxiliary boom		N/A	

Gain

4E512_F



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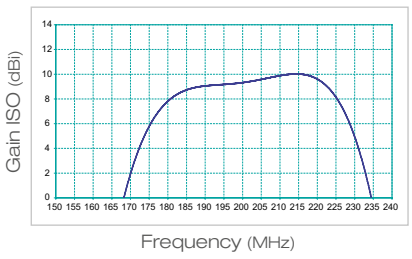
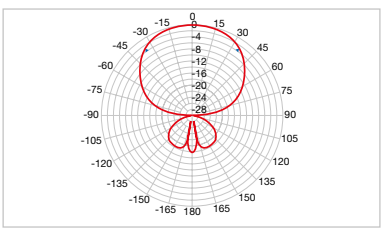
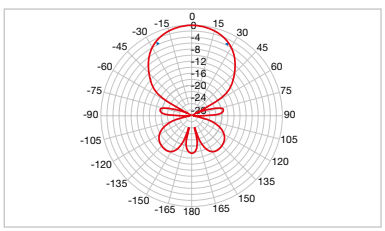


Pattern

4E512_F



6E512_F



VHF aerials

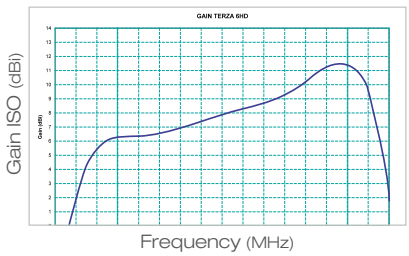
Band III wideband

New high quality and exclusive design VHF antenna. It is characterized by high gain, ease of installation and transport thanks to folding elements.
Important characteristics include: F connector and mast clamp with adjustable zenith.

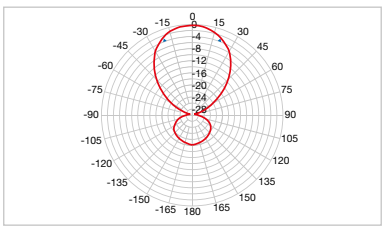
▶ **TERZA 6HD**

Item		TERZA 6HD
Code		213008
Elements	No.	6
Band		III
Channels		E5-E12
Bandwidth	MHz	174-230
Maximum gain	dBi	11
Front-to-back ratio	dB	25
Return loss	dB	-15
Beamwidth (-3dB)	°	+/- 26
Wind load at 120Km/h (720N/m²)	Kg (N)	3.8 (37.24)
Connector	type	F
Impedance	Ohm	75
Maximum mast Ø	mm	60
Dimensions (L x W)	cm	119 x 86
Packaging		
Quantity	Pcs	10
Unit weight	Kg	1.2
Total weight	Kg	12
Accessories		
Horizontal polarisation		Included
Horizontal polarisation with tilt adj.		MEC3603G - MEC3603Z
Vertical polarisation		Included
Vertical polarisation with tilt adj.		MEC3603G - MEC3603Z
Auxiliary boom		CA2

Gain — TERZA 6HD



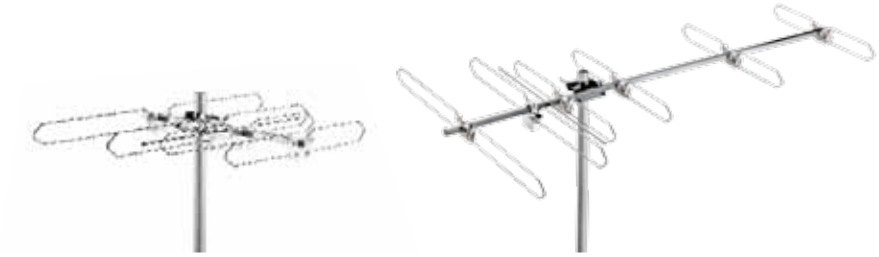
Pattern — TERZA 6HD



VHF aerials

High performance band III wideband

High quality pre-assembled aerials with a patent protected design and aesthetic innovations.
Important characteristics include: high gain, optimised impedance matching and excellent directivity.
Superior electrical and mechanical qualities, due to magnesium - aluminium alloy construction, guaranteeing long life.

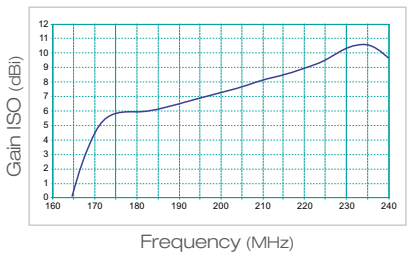


▶ BLV4F ▶ BLV6F

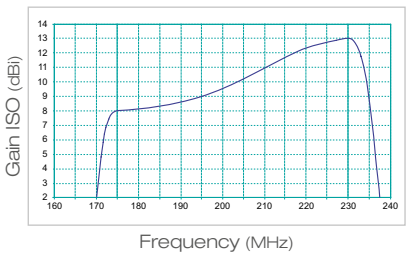
Item		BLV4F	BLV6F
Code		218038	218058
Elements	No.	4	6
Band		III	III
Channels		E5-E12	E5-E12
Bandwidth	MHz	174-230	174-230
Maximum gain	dBi	10.5	13
Front-to-back ratio	dB	20	24
Return loss	dB	-23	-22
Beamwidth (-3dB)	°	+/- 31	+/- 24
Wind load at 120Km/h (720N/m²)	Kg (N)	3.0 (29.43)	4.5 (44.14)
Connector	type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	64 x 87	149 x 87
Packaging			
Quantity	Pcs	10	3
Unit weight	Kg	1.23	2
Total weight	Kg	14.5	6
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Polarisation vertical		PV10	
Polarisation vertical with tilt adj.		PV10	
Auxiliary boom		N/A	

Gain

BLV4F

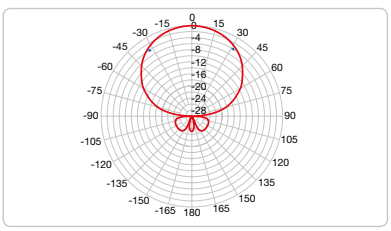


BLV6F

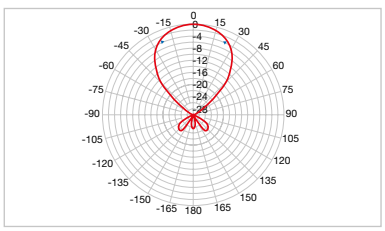


Pattern

BLV4F



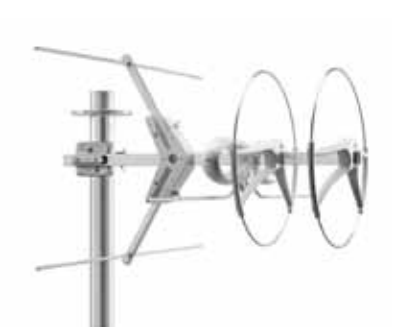
BLV6F



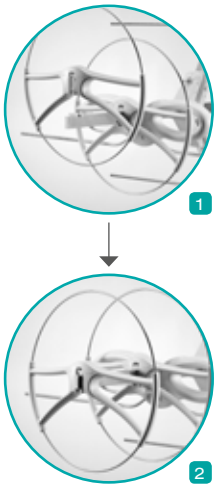
VHF aerials

SIGMA Series

New aerial for the reception of the VHF band, with an exclusive design (patented by Fracarro).
The Sigma V2 HD aerial is equipped with circular director elements and with a 2 element reflector that enables high electrical performances to be obtained, while maintaining a compact length.
Sigma aerials are completely pre-assembled and therefore they can be installed quickly and easily without any other tools.



SIGMA V2 HD

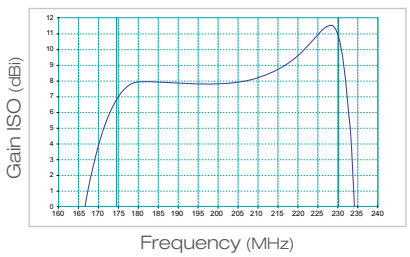


To mount elements

Item		SIGMA V2 HD
Code		213203
Elements	No.	2
Band		VHF
Channels		
Bandwidth	MHz	174-230
Maximum gain	dBi	11.5
Front-to-back ratio	dB	>25
Return loss	dB	-12
Beamwidth (-3dB)	°	+/-25
Wind load at 120Km/h (720N/m2)	Kg (N)	10 (98)
Connector	Type	F
Impedance	Ohm	75
Maximum mast Ø	mm	60
Dimensions (L x W)	cm	76x100.4
Packaging		
Quantity	Pcs	1
Unit weight	Kg	2.76
Total weight	Kg	2.76
Accessories		
Horizontal polarisation		Included
Horizontal polarisation with tilt adj.		Included
Polarisation vertical		Included
Polarisation vertical with tilt adj.		Included
Auxiliary boom		N/A

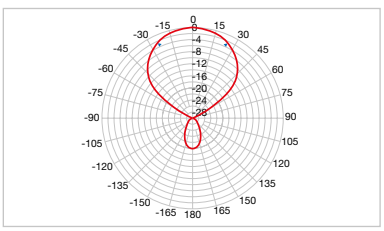
Gain

SIGMA V2 HD



Pattern

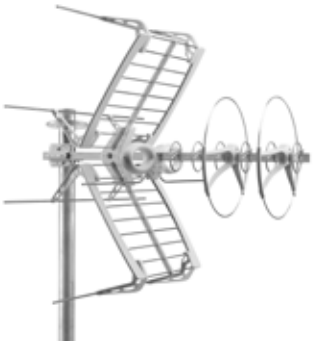
SIGMA V2 HD



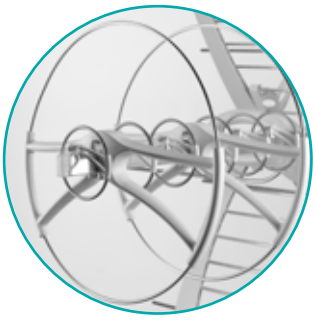
VHF + UHF aerials

SIGMA Series

Wideband loop Yagi aerials with F connector.
The revolutionary loop Yagi technology applied to this aerial allows the reception of both VHF and UHF bands with a unique aerial, guaranteeing the same performances of two separate aerials.
Sigma aerials can be installed quickly and easily without any other tools.



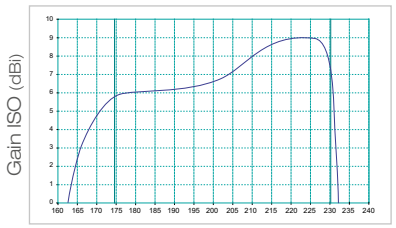
SIGMA COMBO HD

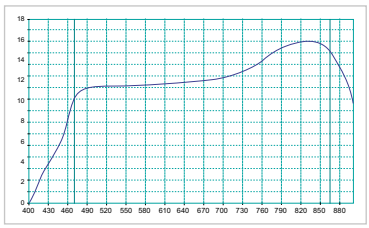


Element detail

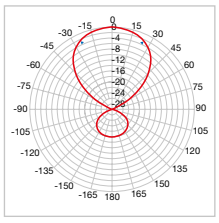
Item		SIGMA COMBO HD	
Code		213202	
		VHF	UHF
Elements	No.	2	6
Band		VHF	UHF
Channels		E5-E12	E21-E69
Bandwidth	MHz	174-230	470-862
Maximum gain	dBi	9	16
Front-to-back ratio	dB	20	32
Return loss	dB	14	18
Beamwidth (-3dB)	°	±20	±25
Wind load at 120Km/h (720N/m²)	Kg (N)	26 (256)	
Connector	type	F	
Impedance	Ohm	75	
Maximum mast Ø	mm	60	
Dimensions (L x W)	cm	108 x 100	
Packaging			
Quantity	Pcs	6	
Unit weight	Kg	3.83	
Total weight	Kg	27	
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		Included	
Auxiliary boom		N/A	

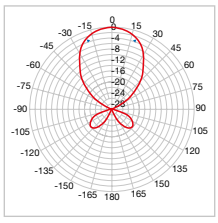
Gain — Combo - VHF Band — Combo - UHF Band





Pattern — Combo - VHF Band — Combo - UHF Band





Item	Code	Description	
SIGMA COMBO PWR HD	213214	Also available an active III+UHF dipole for SIGMA COMBO aerial. • The Sigma radiator contains an active dipole which substitutes an additional amplifier • 31dB max. equalised gain on the whole III+UHF band. Can be separately adjusted (III and UHF band) by using PSU300R power supply (see page 59) • Low "noise figure": <2.6dB • Low consumption: 26mA	

UHF aerials

SIGMA Series

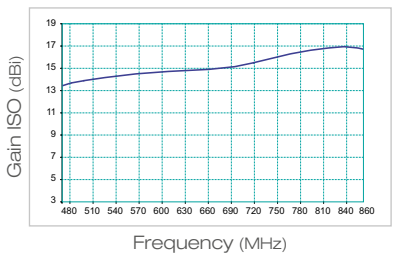
Wideband loop Yagi aerials with F connector.
Their original design, patented by Fracarro, allows a particular directivity (with the maximum reduction in interference) and a maximum gain comparable with an aerial twice its length.
Sigma aerials are completely pre-assembled, therefore they can be installed quickly and easily without any other tools.

- SIGMA 6HD
- SIGMA 6PWR HD
- SIGMA 9HD

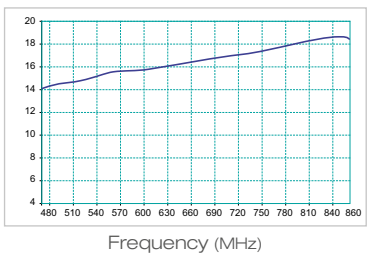
Item		SIGMA 6HD	SIGMA 6PWR HD	SIGMA 9HD
Code		213201	213209	213208
Elements	No.	6	6	9
Band		UHF	UHF	UHF
Channels		E21–E69	E21-E69	E21–E69
Bandwidth	MHz	470–862	470-862	470–862
Maximum gain	dBi	17	31	18.5
Front-to-back ratio	dB	32	32	32
Return loss	dB	-18	-18	-18
Beamwidth (-3dB)	°	± 18	+/- 18	± 18
Wind load at 120Km/h (720N/m²)	Kg (N)	23 (225.4)	23 (225.4)	23 (225.4)
Connector	type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	92 x 63	92X62,5	130 x 63
Packaging				
Quantity	Pcs	4	1	4
Unit weight	Kg	2.8	2.3	3.3
Total weight	Kg	12	2.9	16.8
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		Included		
Vertical polarisation		Included		
Vertical polarisation with tilt adj.		Included		
Auxiliary boom		N/A		

Gain

SIGMA 6HD

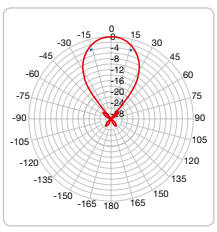


SIGMA 9HD

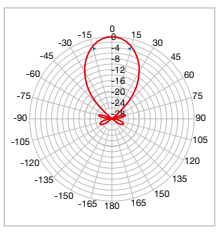


Pattern

SIGMA 6HD



SIGMA 9HD



Item	Code	Description	
SIGMA PWR HD	213204	Also available an active UHF dipole for SIGMA Series aerials. • The Sigma radiator contains an active dipole which substitutes an additional amplifier • 31dB max. equalised gain on the whole UHF band. Can be adjusted by using PSU200R power supply (see page 59) • Low "noise figure": <2.5dB • Low consumption: 26mA	

UHF aerials

SIGMA LTE Series

New models of the Sigma series, designed to filter the LTE interferences on the TV band.
Its accurate electrical design and the presence of a filter SAW integrated in the dipole allow a really high selectivity with a very high gain. Sigma LTE series maintains the same features of the Sigma family:
- High gain even with a short length ;
- Quick installation without any other tools;
- Remarkable directivity

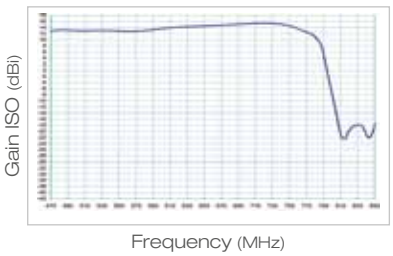
▶ SIGMA 6HD LTE

▶ SIGMA 8HD LTE

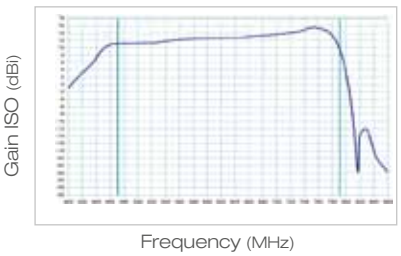
Item		SIGMA 6HD LTE	SIGMA 8HD LTE
Code		213219	213213
Elements	No.	6	8
Band		UHF	UHF
Channels		E21–E60	E21–E60
Bandwidth	MHz	470–790	470–790
Maximum gain	dBi	15	16
Front-to-back ratio	dB	32	32
Return loss	dB	-18	-18
Beamwidth (-3dB)	°	± 18	± 18
Wind load at 120Km/h (720N/m²)	Kg (N)	23 (225.4)	23 (225.4)
Connector	type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	92 x 62,5	119 x 63,3
Packaging			
Quantity	Pcs	1	1
Unit weight	Kg	2.3	2.77
Total weight	Kg	2.3	2.77
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		Included	
Auxiliary boom		N/A	

Gain

SIGMA 6HD LTE

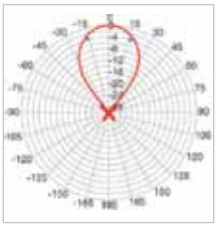


SIGMA 9HD LTE

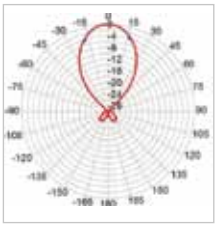


Pattern

SIGMA 6HD LTE



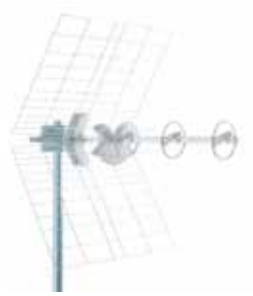
SIGMA 9HDLTE



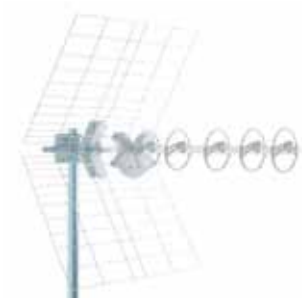
UHF aerials

ALPHA Series

Fracarro extends its ranges of Loop Yagi Antenna with the ALPHA Series, with a very high gain on the useful band. ALPHA aerials are completely pre-assembled and can be installed quickly and easily without any other tools



▶ ALPHA 3HD

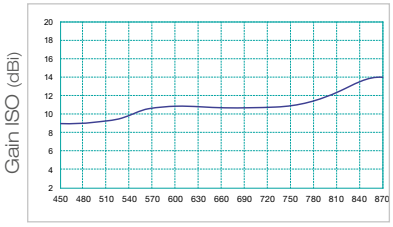


▶ ALPHA 5HD

Item		ALPHA 3HD	ALPHA 5HD
Code		213211	213212
Elements	No.	3	5
Band		UHF	UHF
Channels		E21–E60	E21–E60
Bandwidth	MHz	470–862	470–862
Maximum gain	dBi	13	14
Front-to-back ratio	dB	38	38
Return loss	dB	-18	-18
Beamwidth (-3dB)	°	± 25	± 22
Wind load at 120Km/h (720N/m²)	Kg (N)	5.7 (55.86)	5.7 (55.86)
Connector	type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	71x50	81x50
Packaging			
Quantity	Pcs	10	10
Unit weight	Kg	1,8	1,94
Total weight	Kg	18	19,4
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		Included	
Auxiliary boom		N/A	

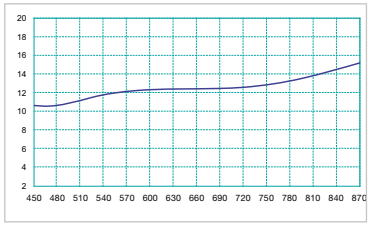
Gain

ALPHA 3HD



Frequency (MHz)

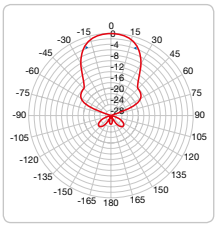
ALPHA 5HD



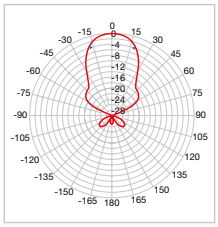
Frequency (MHz)

Pattern

ALPHA 3HD



ALPHA 5HD

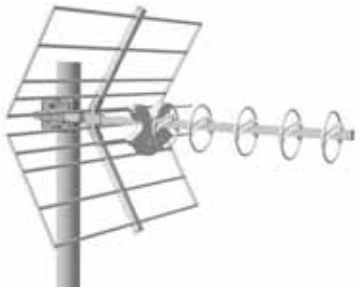


UHF aerials

ALPHA LTE Series

Fracarro extends its ranges of Loop Yagi Antenna with the ALPHA LTE and ALPHA PLUS LTE Se are completely pre-assembled and can be installed quickly and easily without any other tools

▶ ALPHA 3HD LTE

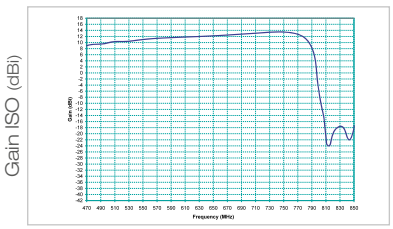


▶ ALPHA 5HD PLUS LTE

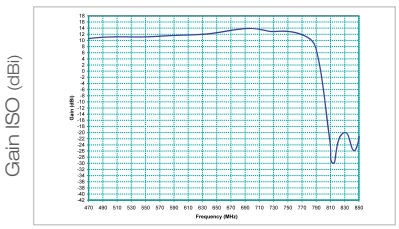
Item		ALPHA 3HD LTE	ALPHA 3HD PLUS LTE	ALPHA 5HD LTE	ALPHA 5HD PLUS LTE
Code		213217	213220	213213	213221
Elements	No.	3	3	5	5
Band		UHF	UHF	UHF	UHF
Channels		E21–E60	E21–E60	E21–E60	E21–E60
Bandwidth	MHz	470–790	470–790	470–790	470–790
Maximum gain	dBi	13	13	14	14
Front-to-back ratio	dB	38	38	38	38
Return loss	dB	-18	-18	-18	-18
Beamwidth (-3dB)	°	± 25	± 25	± 22	± 22
Wind load at 120Km/h (720N/m²)	Kg (N)	5.7 (55.86)	7.7 (75.46)	5.7 (55.86)	5.7 (55.86)
Connector	type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	71x50	71x50	81x50	81x50
Packaging					
Quantity	Pcs	10	10	1	1
Unit weight	Kg	1.8	1.8	2.77	2.77
Total weight	Kg	20.3	20.3	2.77	2.77
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		Included			
Vertical polarisation		Included			
Vertical polarisation with tilt adj.		Included			
Auxiliary boom		N/A			

Gain

ALPHA 3HD LTE
ALPHA 3HD PLUS LTE

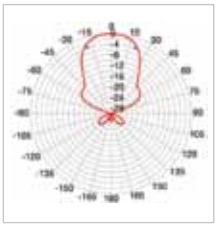


ALPHA 5HD LTE
ALPHA 5HD PLUS LTE

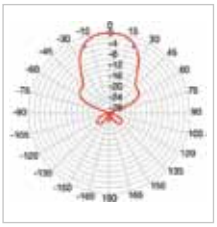


Pattern

ALPHA 3HD LTE
ALPHA 3HD PLUS LTE



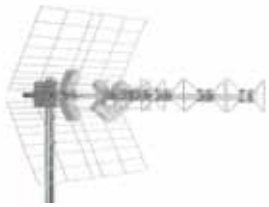
ALPHA 5HD LTE
ALPHA 5HD PLUS LTE



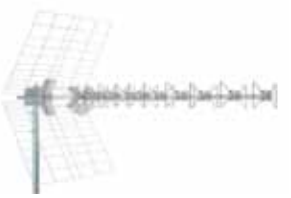
UHF aerials

BLU HD Series

New version of one of the most successful biconical aerial ranges on the market.
Superb electrical specifications with excellent directivity and gain.
BLU HD aerials are completely pre-assembled and can be installed quickly and easily without any other tools. A special care in the choice of materials allows to obtain an extremely robust antenna.



▶ BLU5HD

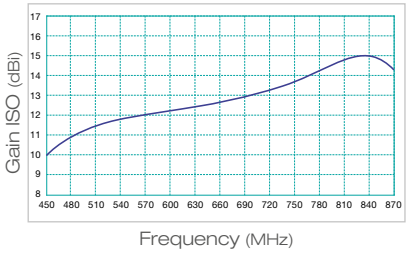


▶ BLU10HD

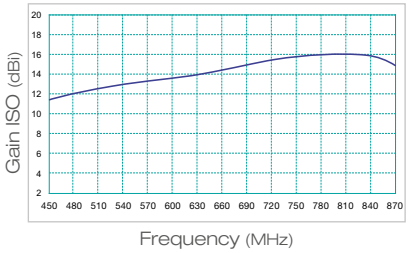
Item		BLU10B4	BLU10B5	BLU5HD	BLU10HD	BLU22HD
Code		217903	217904	217901	217902	217903
Elements	No.	10	10	5	10	22
Band		IV	V	UHF	UHF	UHF
Channels		E21-E37	E37-E69	E21-E69	E21-E69	E21-E69
Bandwidth	MHz	470-606	606-862	470-862	470-862	470-862
Maximum gain	dBi	13	16	15	16	19
Front-to-back ratio	dB	27	28	30	30	30
Return loss	dB	-20	-22	-16	-16	-18
Beamwidth (-3dB)	°	+/-22	+/-22	+/-25	+/-22	+/-17
Wind load at 120Km/h (720N/m²)		7.2 (70.56)	7.2 (70.56)	5.7 (55.86)	7.2 (70.56)	12.2 (119.56)
Connector		F	F	F	F	F
Impedance	Ohm	75	75	75	75	75
Maximum mast Ø	mm	60	60	60	60	60
Dimensions (L x W)	cm	122x50	119x50	84x50	119x50	242x50
Packaging						
Quantity	Pcs	10	10	10	10	1
Unit weight	Kg	2.52	2.28	1.72	2.27	3.57
Total weight	Kg	25.20	22.80	17.20	22.70	3.54
Accessories						
Horizontal polarisation		Included				
Horizontal polarisation with tilt adj.		Included				
Vertical polarisation		Included				
Vertical polarisation with tilt adj.		Included				
Auxiliary boom		N/A				Included

Gain

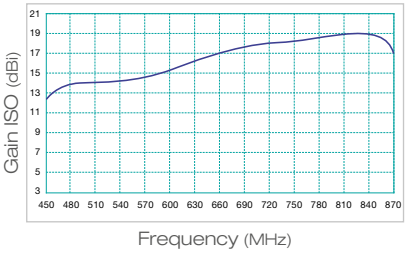
BLU5HD



BLU10HD

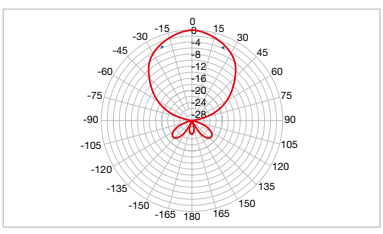


BLU22HD

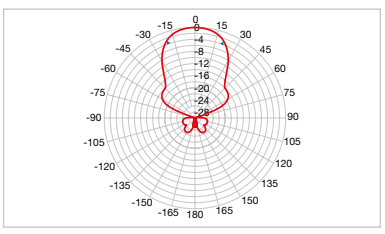


Pattern

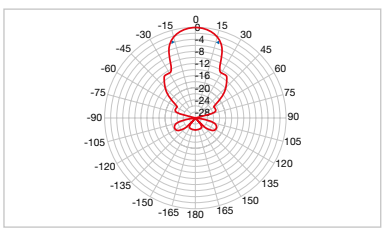
BLU5HD



BLU10HD



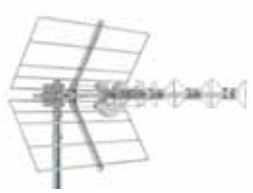
BLU22HD



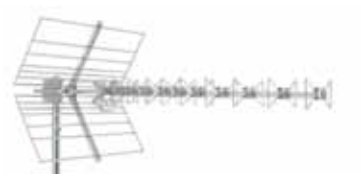
UHF aerials

BLU PLUS Series

Pre-assembled aerial with F connector and excellent performance: high gain, high directivity and very good return loss.



▶ BLU5PLUS

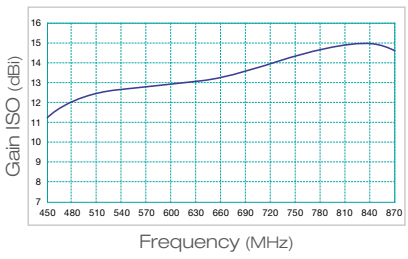


▶ BLU10PLUS

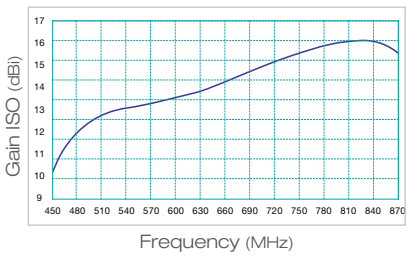
Item		BLU5PLUS	BLU10PLUS	BLU22PLUS
Code		217906	217907	217908
Elements	No.	5	10	22
Band		UHF	UHF	UHF
Channels		E21-E69	E21-E69	E21-E69
Bandwidth	MHz	470-862	470-862	470-862
Maximum gain	dBi	15	16	19
Front-to-back ratio	dB	32	30	30
Return loss	dB	-18	-16	-16
Beamwidth (-3dB)	°	+/- 23	+/- 21	+/- 15
Wind load at 120Km/h (720N/m²)		7.7 (75.46)	9.2 (90.16)	14.2 (139.16)
Connector		F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	84X50	119X50	242X50
Packaging				
Quantity	Pcs	8	10	1
Unit weight	Kg	1.55	2.02	3.55
Total weight	Kg	12.40	20.20	3.55
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		Included		
Vertical polarisation		Included		
Vertical polarisation with tilt adj.		Included		
Auxiliary boom		N.A.		

Gain

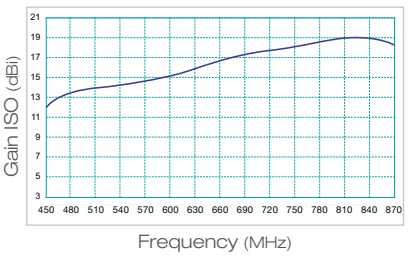
BLU5PLUS



BLU10PLUS

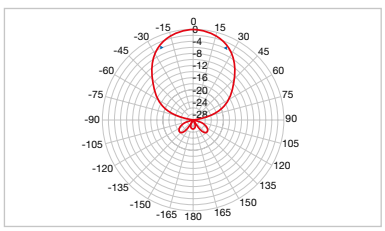


BLU22PLUS

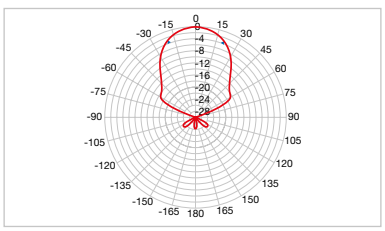


Pattern

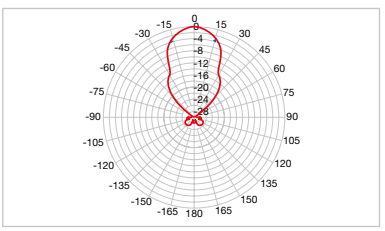
BLU5PLUS



BLU10PLUS



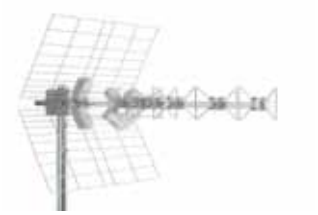
BLU22PLUS



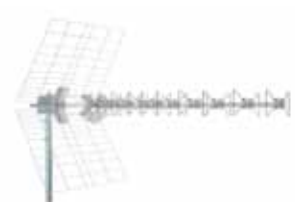
UHF aerials

BLU HD LTE Series

New version of one of the most successful biconical aerial ranges on the market.
Superb electrical specifications with excellent directivity and gain.
BLU HD LTE aerials are completely pre-assembled and can be installed quickly and easily without any other tools.
A special care in the choice of materials allows to obtain an extremely robust antenna.



▶ BLU 5HD LTE

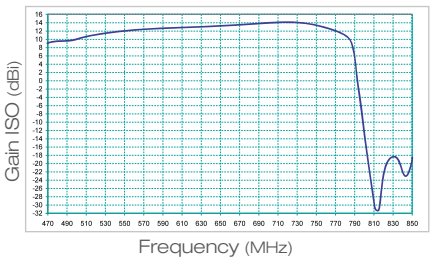


▶ BLU 10HD LTE

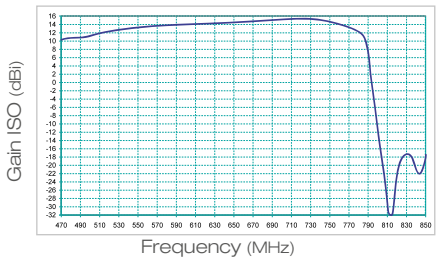
Item		BLU5HD LTE	BLU10HD LTE
Code		217910	217909
Elements	No.	5	10
Band		UHF	UHF
Channels		E21-E69	E21-E69
Bandwidth	MHz	470-790	470-790
Maximum gain	dBi	15	16
Front-to-back ratio	dB	30	30
Return loss	dB	-16	-16
Beamwidth (-3dB)	°	+/-25	+/-22
Wind load at 120Km/h (720N/m²)		5.7 (55.86)	7.2 (70.56)
Connector		F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	84x50	119x50
Quantity	Pcs	10	10
Unit weight	Kg	1.75	2.22
Total weight	Kg	19.4	24.6
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		Included	
Auxiliary boom		N.A.	

Gain

BLU5HD LTE

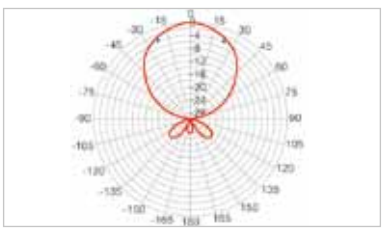


BLU10HD LTE

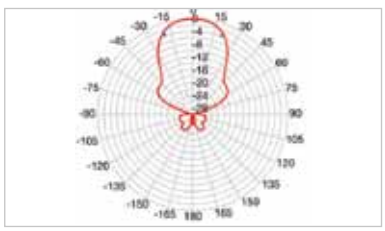


Pattern

BLU5HD LTE



BLU10HD LTE



UHF aerials

LAMBDA LTE Series

High performance aerials with F connector. The design of the connector cap and dipole clamp offer great protection. They are characterised by their excellent mechanical reflector sturdiness, high front-to-back ratio, good return loss and high gain. Mast clamp and joints of the boom are pre-assembled for easy installation. These aerials are also equipped with large wing nut bolt screws for excellent clamping.

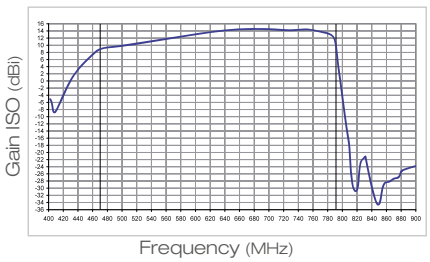
▶ LAMBDA 9 LTE

▶ LAMBDA 14 LTE

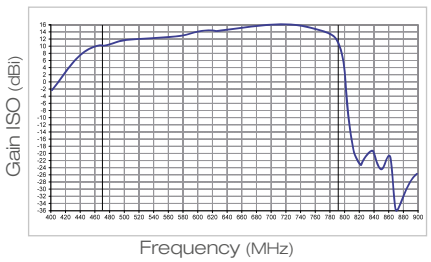
Item		LAMBDA 9 LTE	LAMBDA 14 LTE
Code		213057	213058
Elements	No.	9	14
Band		UHF	UHF
Channels		E21–E60	E21–E60
Bandwidth	MHz	470-790	470-790
Maximum gain	dBi	14.5	16
Front-to-back ratio	dB	24	26
Return loss	dB	-12	-14
Beamwidth (-3dB)	°	+/- 26	+/- 20
Wind load at 120Km/h (720N/m²)	Kg (N)	15 (147.15)	17.5 (171.67)
Connector	type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	55	55
Dimensions (L x W)	cm	152x50	177x50
Packaging			
Quantity	Pcs	1	1
Unit weight	Kg	2.72	3.38
Total weight	Kg	2.72	3.38
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		Included	
Auxiliary boom		N/A	Included

Gain

LAMBDA 9 LTE

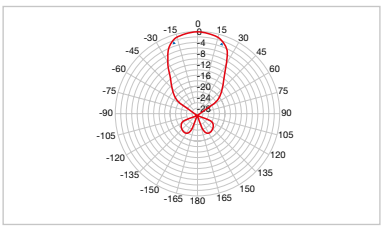


LAMBDA 14 LTE

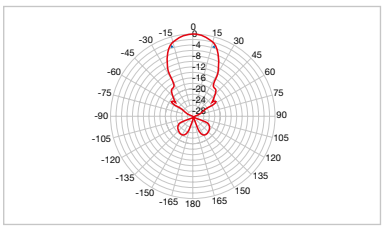


Pattern

LAMBDA 9 LTE



LAMBDA 14 LTE



UHF aerials

OMEGA Series

Excellent performance Yagi aerials, easy to install with high mechanical sturdiness. Important electrical performances include: high gain, high directivity and excellent front-to-back ratio.

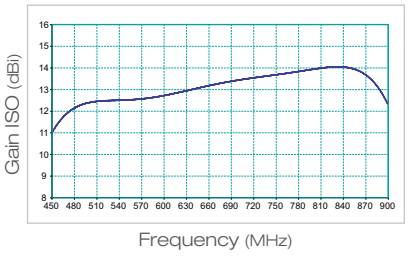
▶ OMEGA5

▶ OMEGA8

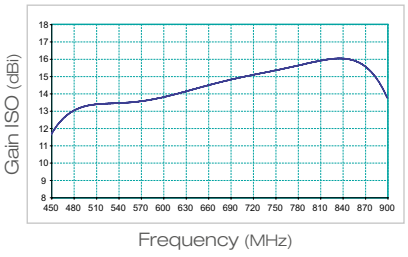
Item		OMEGA5	OMEGA8	OMEGA14
Code		213021	213022	213023
Elements	No.	5	8	14
Band		UHF	UHF	UHF
Channels		E21–E69	E21–E69	E21–E69
Bandwidth	MHz	470-862	470-862	470-862
Maximum gain	dBi	14	16	17.5
Front-to-back ratio	dB	32	32	30
Return loss	dB	-18	-18	-18
Beamwidth (-3dB)	°	+/- 23	+/- 22	+/- 19
Wind load at 120Km/h (720N/m²)	Kg (N)	4.5 (44.14)	5.5 (53.95)	8.0 (78.48)
Connector	type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	77x58	107x58	159x58
Packaging				
Quantity	Pcs	2	2	2
Unit weight	Kg	1.6	1.78	2.4
Total weight	Kg	3.2	3.56	4.8
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		Included		
Vertical polarisation		Included		
Vertical polarisation with tilt adj.		Included		
Auxiliary boom		N/A	CA2	Included

Gain

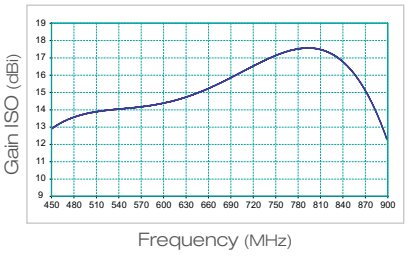
OMEGA5



OMEGA8

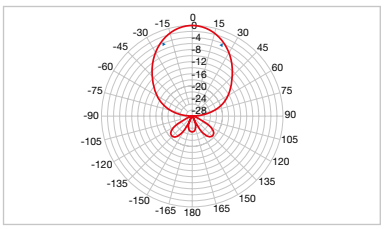


OMEGA14



Pattern

OMEGA5



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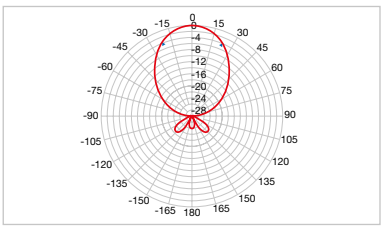
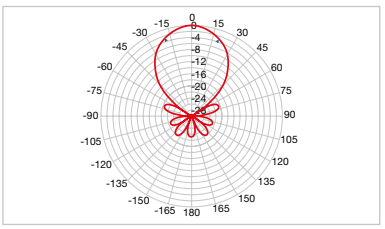


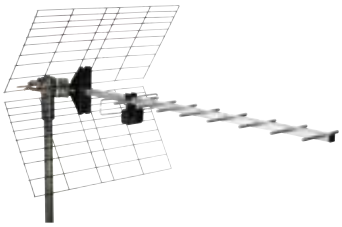
OMEGA14



UHF aerials

TAU Series - grid reflector

Yagi aerials with F connector.
Ideal for single or small MATV systems.
Steel boom, elements and reflector guarantee mechanical sturdiness.
Pre-assembled for easy installation.



▶ TAU11/..

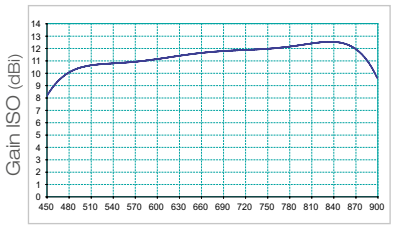
▶ TAU21/45

Item		TAU11/45	TAU11/4	TAU11/5	TAU21/45
Code		213101	213096	213097	213102
Elements	No.	11	11	11	21
Band		UHF	IV	V	UHF
Channels		E21–E69	E21–E37	E38–E69	E21-E69
Bandwidth	MHz	470-862	470–606	606-862	470-862
Maximum gain	dBi	12.5	13.5	12	14.5
Front-to-back ratio	dB	28	31	30	25
Return loss	dB	-16	-20	-17	-15
Beamwidth (-3dB)	°	+/- 23	+/- 23	+/- 23	+/- 22
Wind load at 120Km/h (720N/m²)	Kg (N)	3.2 (31.39)	3.7 (36.29)	3.2 (31.39)	4.8 (47.08)
Connector	type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	97x50	115x50	87x50	197x50
Packaging					
Quantity	Pcs	10	10	10	5
Unit weight	Kg	1.28	1.3	1.18	1.84
Total weight	Kg	14.8	15	13.8	10.2
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		Included			
Vertical polarisation		Included			
Vertical polarisation with tilt adj.		Included			
Auxiliary boom		N/A			Included

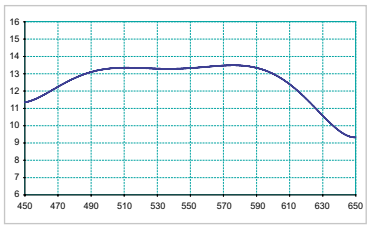
* For more information see www.dtg.org.uk web site.

Gain

TAU11/45

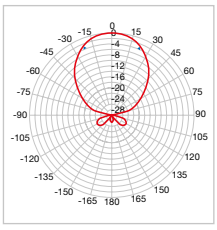


TAU11/4

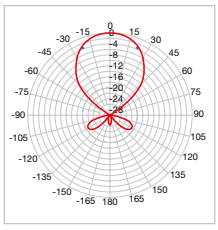


Pattern

TAU11/45

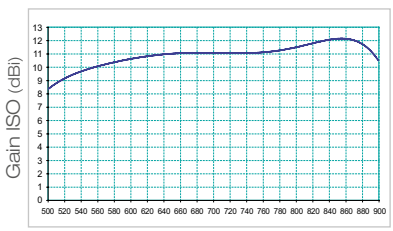


TAU11/4

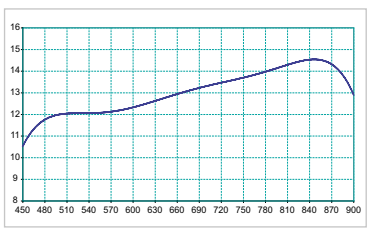


Gain

TAU11/5

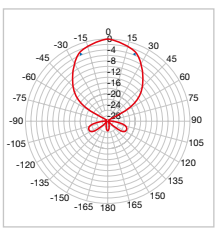


TAU21/45

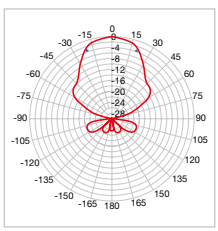


Pattern

TAU11/5



TAU21/45



UHF aerials

TAU Series - tube reflector

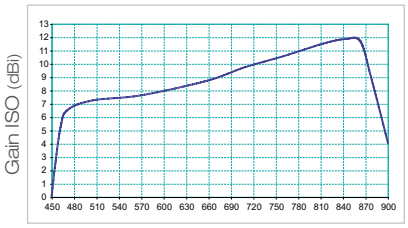
Yagi aerials with F connector.
Ideal for single or small MATV systems.
Steel boom, elements and reflector guarantee mechanical sturdiness.
Pre-assembled for easy installation.

▶ TAU15/..

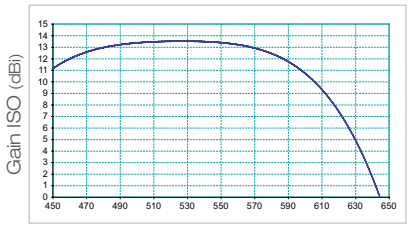
Item		TAU15/45	TAU15/4	TAU15/5
Code		213100	213094	213095
Elements	No.	15	15	15
Band		UHF	IV	V
Channels		E21–E69	E21–E37	E38–E69
Bandwidth	MHz	470-862	470–606	606-862
Maximum gain	dBi	12	13.5	11
Front-to-back ratio	dB	24	24	28
Return loss	dB	-14	-20	-16
Beamwidth (-3dB)	°	+/- 25	+/- 25	+/- 25
Wind load at 120Km/h (720N/m²)	Kg (N)	2.8 (27.46)	3.3 (32.37)	2.8 (27.46)
Connector	type	F	F	F
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (L x W)	cm	98x42	115x42	87x42
Packaging				
Quantity	Pcs	10	10	10
Unit weight	Kg	1	1.06	0.96
Total weight	Kg	12	12.6	11.6
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		Included		
Vertical polarisation		Included		
Vertical polarisation with tilt adj.		Included		
Auxiliary boom		N/A		

Gain

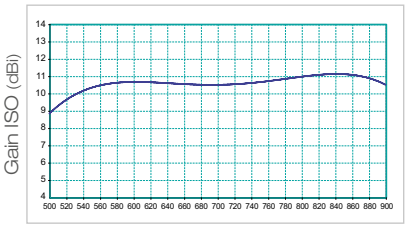
TAU15/45



TAU15/4

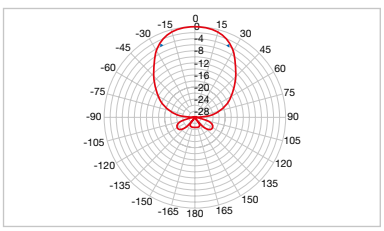


TAU15/5

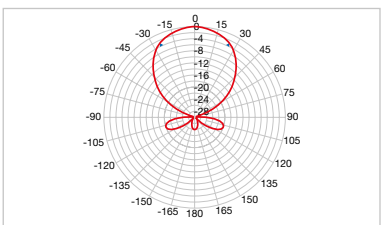


Pattern

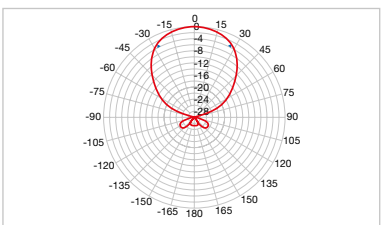
TAU15/45



TAU15/4



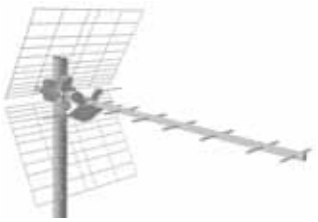
TAU15/5



UHF aerials

TAU LTE Series

Yagi aerials with F connector.
Ideal for single or small MATV systems.
Steel boom, elements and reflector guarantee mechanical sturdiness.
Pre-assembled for easy installation.



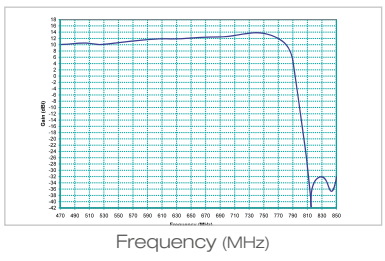
▶ TAU LTE KILLER

▶ TAU LTE KILLER PLUS

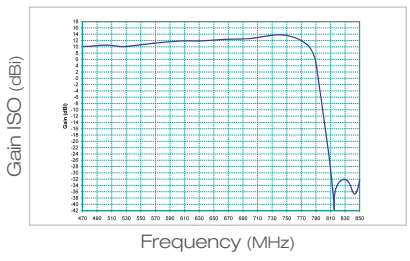
Item		TAU LTE KILLER	TAU LTE KILLER PLUS
Code		213103	213104
Elements	No.	7	7
Band		UHF	UHF
Channels		E21–E60	E21–E60
Bandwidth	MHz	470-790	470-790
Maximum gain	dBi	14	14
Front-to-back ratio	dB	38	38
Return loss	dB	-18	-18
Beamwidth (-3dB)	°	+/- 30	+/- 30
Wind load at 120Km/h (720N/m²)	Kg (N)	5.3 (51.94N)	5.3 (51.94N)
Connector	type	F	F
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	1170 x 497	1170 x 497
Packaging			
Quantity	Pcs	1	1
Unit weight	Kg	1.75	1.75
Total weight	Kg	1.9	1.9
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		Included	
Vertical polarisation		Included	
Vertical polarisation with tilt adj.		Included	
Auxiliary boom		N/A	

Gain

TAU LTE KILLER

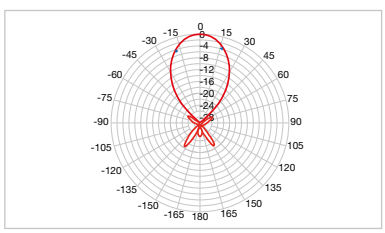


TAU LTE KILLER PLUS

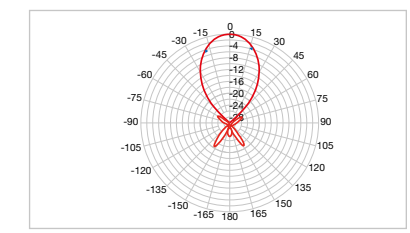


Pattern

TAU LTE KILLER



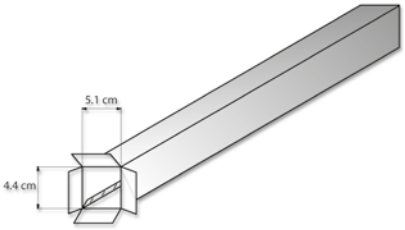
TAU LTE KILLER PLUS



UHF aerials

Yagi channel grouped

Yagi channel grouped aerials.
Good electrical performances and high selectivity make them ideal to receive particular groups of channels.
High mechanical sturdiness in the structure.



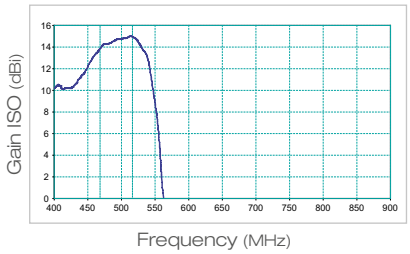
Easy to handle packaging

▶ 10F..

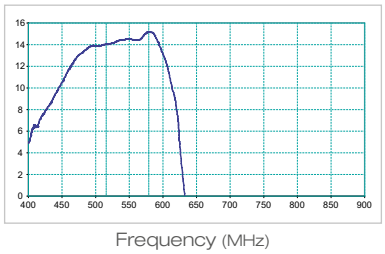
Item		10F2126		10F2734		10F3546		10F4769	
Code		219525		219532		219541		219563	
Elements	No.	10		10		10		10	
Channels		E21-E26		E27-E34		E35-E46		E47-E69	
Bandwidth	MHz	470-518		518-582		582-678		678-862	
Maximum gain	dBi	14.7		15		16		14.3	
Front-to-back ratio	dB	27		25		30		25	
Return loss	dB	-23		-23		-21		-15	
Beamwidth (-3dB)	°	+/- 21		+/- 21		+/- 20		+/- 20	
Wind load at 120Km/h (720N/m²)	Kg (N)	2.8 (27.44)		2.6 (25.48)		2.4 (23.52)		2.3 (22.54)	
Impedance	Ohm	75		75		75		75	
Maximum mast Ø	mm	42		42		42		42	
Dimensions (L x W)	cm	123x36		111x32		110x28		94x22	
Packaging									
Quantity	Pcs	20		20		20		20	
Unit weight	Kg	0.78		0.7		0.62		0.54	
Total weight	Kg	16		14.4		12.8		11.2	
Accessories									
Mast Ø	mm	42	60	42	60	42	60	42	60
Horizontal polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Horizontal polarisation with tilt adj.		PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60
Vertical polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Vertical polarisation with tilt adj.		PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60	PVZ-60
Auxiliary boom		N/A							

Gain

10F2126

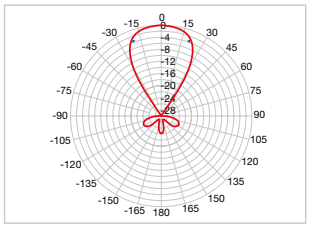


10F2734



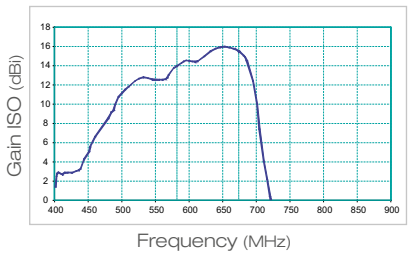
Pattern

Channel grouped

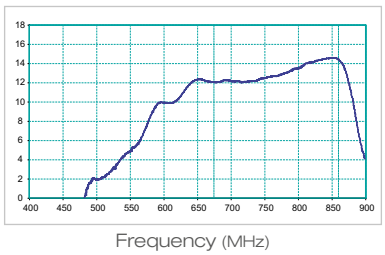


Gain

10F3546



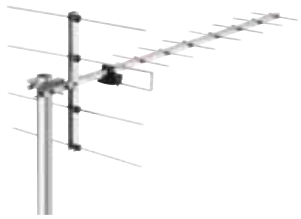
10F4769



UHF aerials

Yagi wideband

Yagi aerials with F connector and 4 element reflector, suitable for receiving full band IV, V or UHF. Important characteristics include: good electrical performance, small practical packaging for easy installation, transport and storage.

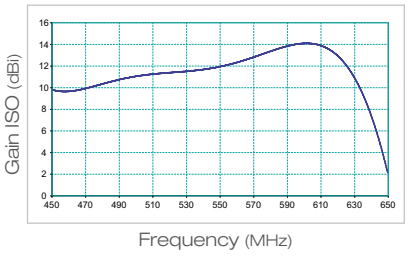


▶ 10BL..

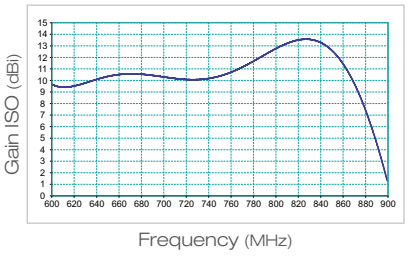
Item		10BL4F		10BL5F		10BL45F	
Code		219406		219407		219446	
Elements	No.	10		10		10	
Band		IV		V		UHF	
Channels		E21–E37		E38–E69		E21–E69	
Bandwidth	MHz	470–606		606-862		470-862	
Maximum gain	dBi	14		13.5		12.5	
Front-to-back ratio	dB	27		22		24	
Return loss	dB	-22		-17		-16	
Beamwidth (-3dB)	°	+/- 24		+/- 27		+/- 28	
Wind load at 120Km/h (720N/m²)	Kg (N)	2.8 (27.46)		2.3 (22.56)		2.3 (22.56)	
Impedance	Ohm	75		75		75	
Maximum mast Ø	mm	42		42		42	
Dimensions (L x W)	cm	135x36		103x28		94x36	
Packaging							
Quantity	Pcs	20		20		20	
Unit weight	Kg	0.752		0.612		0.625	
Total weight	Kg	18.04		15.24		15.5	
Accessories							
Mast Ø	mm	42	60	42	60	42	60
Horizontal polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Horizontal polarisation with tilt adj.		PVZ-60					
Vertical polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Vertical polarisation with tilt adj.		PVZ-60					
Auxiliary boom		N/A					

Gain

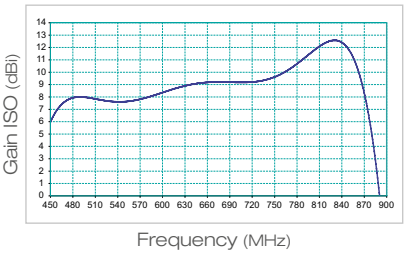
10BL4F



10BL5F

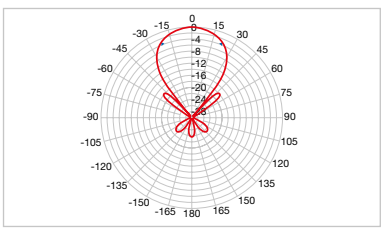


10BL45F

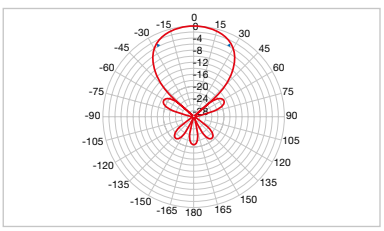


Pattern

10BL4F



10BL5F



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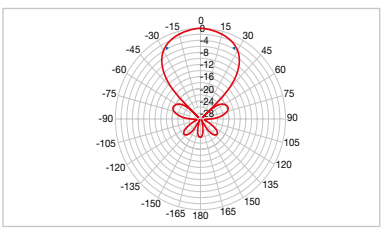


UHF aerials

Yagi fullband

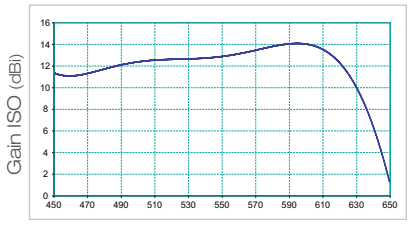
Yagi aerials with F connector and grid reflector, suitable for receiving full band IV, V or UHF. Important characteristics include: good electrical performance, small practical packaging for easy installation, transport and storage.

▶ 10RD..

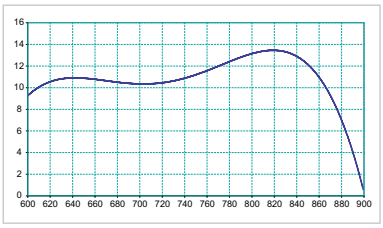
Item		10RD4F		10RD5F		10RD45F	
Code		219506		219507		219546	
Elements	No.	10		10		10	
Band		IV		V		UHF	
Channels		E21–E37		E38–E69		E21–E69	
Bandwidth	MHz	470–606		606-862		470-862	
Maximum gain	dBi	14		13.5		13	
Front-to-back ratio	dB	26		24		24	
Return loss	dB	-22		-18		-20	
Beamwidth (-3dB)	°	+/- 25		+/- 24		+/- 26	
Wind load at 120Km/h (720N/m²)	Kg (N)	2.9 (28.44)		2.5 (24.52)		2.5 (24.52)	
Connector	type	F		F		F	
Impedance	Ohm	75		75		75	
Maximum mast Ø	mm	42		42		42	
Dimensions (L x W)	cm	137x36		103x36		99x36	
Packaging							
Quantity	Pcs	20		20		20	
Unit weight	Kg	0.62		0.5		0.5	
Total weight	Kg	15.4		13		13	
Accessories							
Mast Ø	mm	42	60	42	60	42	60
Horizontal polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Horizontal polarisation with tilt adj.		PVZ-60					
Vertical polarisation		Included	PVZ-60	Included	PVZ-60	Included	PVZ-60
Vertical polarisation with tilt adj.		PVZ-60					
Auxiliary boom		N/A					

Gain

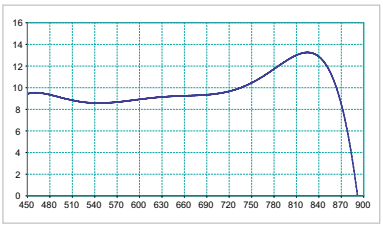
10RD4F



10RD5F

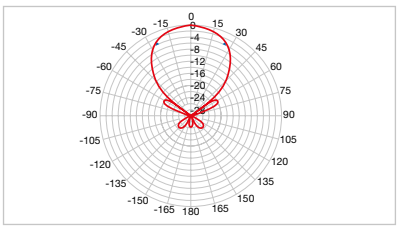


10RD45F

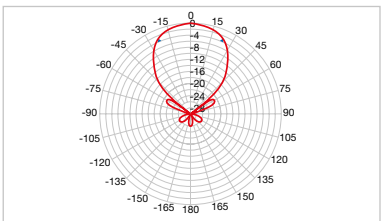


Pattern

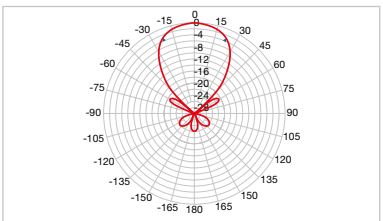
10RD4F



10RD5F

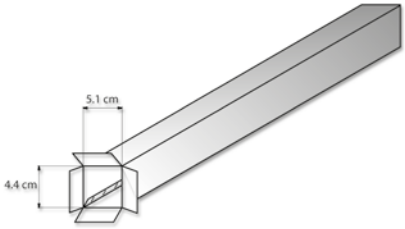


10RD45F



UHF aerials

Yagi fullband



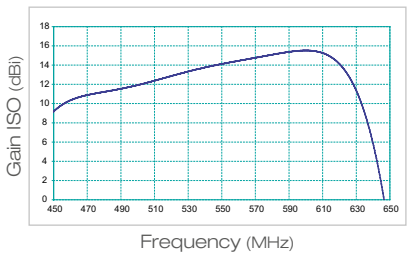
Easy to handle packaging

▶ 20RD..

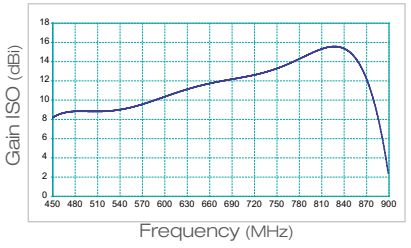
Item		20RD4F		20RD45F	
Code		219706		219746	
Elements	No.	20		20	
Band		IV		UHF	
Channels		E21–E37		E21–E69	
Bandwidth	MHz	470–606		470-862	
Maximum gain	dBi	15.5		15.5	
Front-to-back ratio	dB	28		24	
Return loss	dB	-18		-18	
Beamwidth (-3dB)	°	+/- 17		+/- 22	
Wind load at 120Km/h (720N/m²)	Kg (N)	5.1 (50.03)		4.3 (42.18)	
Connector	type	F		F	
Impedance	Ohm	75		75	
Maximum mast Ø	mm	42		42	
Dimensions (L x W)	cm	235x36		193x36	
Packaging					
Quantity	Pcs	20		20	
Unit weight	Kg	0.98		0.88	
Total weight	Kg	22.6		20.6	
Accessories					
Mast Ø	mm	42	60	42	60
Horizontal polarisation		Included	PVF-60	Included	PVF-60
Horizontal polarisation with tilt adj.		N/A			
Vertical polarisation		PV10			
Vertical polarisation with tilt adj.		PV10			
Auxiliary boom		Included			

Gain

20RD4F

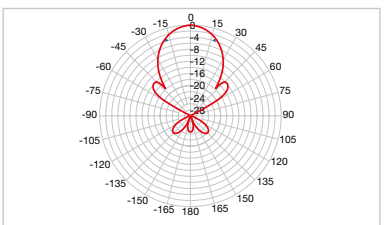


20RD45F

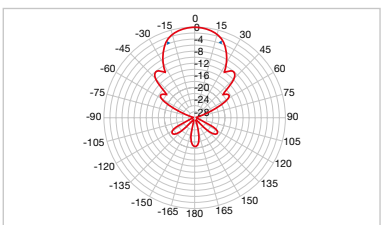


Pattern

20RD4F



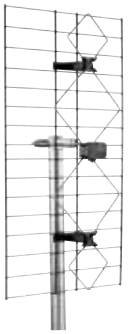
20RD45F



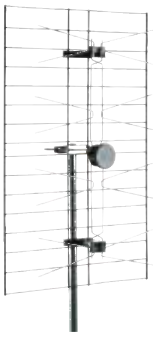
UHF aerials

Panel aerials

Panel aerials with high gain, steel reflector, F connector and aluminium radiant elements for PU4F and P54F and steel for PU4AF.



PU4F
P54F

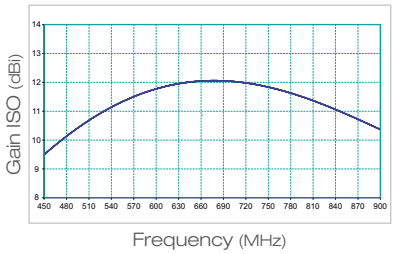


PU4AF

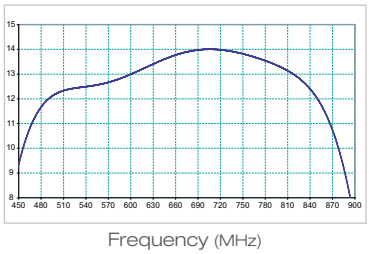
Item		PU4F	PU4AF	P54F
Code		217424	217423	217425
Band		UHF	UHF	V
Channels		E21-E69	E21-E69	E38-E69
Bandwidth	MHz	470-862	470-862	606-862
Maximum gain	dBi	12	14	12
Front-to-back ratio	dB	21	20	24
Return loss	dB	-14	-14	-13
Beamwidth (-3dB)	°	+/-30	+/-24	+/-30
Wind load at 120Km/h (720N/m²)	Kg (N)	4.0 (39.24)	5.0 (49.5)	3.2 (31.39)
Impedance	Ohm	75	75	75
Maximum mast Ø	mm	60	60	60
Dimensions (H x L)	cm	71x38.5	50x76.5	62x32
Packaging				
Quantity	Pcs	15	10	15
Unit weight	Kg	0.94	1.3	0.8
Total weight	Kg	14.8	13.3	12.4
Accessories				
Horizontal polarisation		Included		
Horizontal polarisation with tilt adj.		N/A		
Vertical polarisation		PVP		
Vertical polarisation with tilt adj.		N/A		
Auxiliary boom		N/A		

Gain

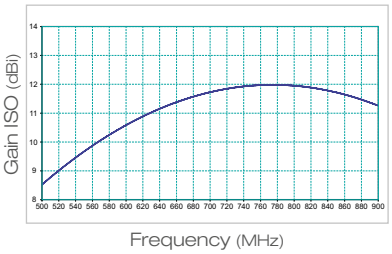
PU4F



PU4AF

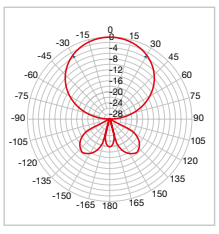


P54F

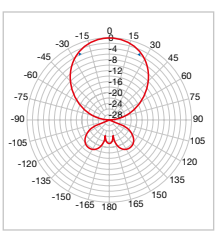


Pattern

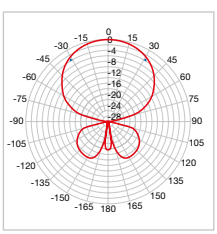
PU4F



PU4AF



P54F

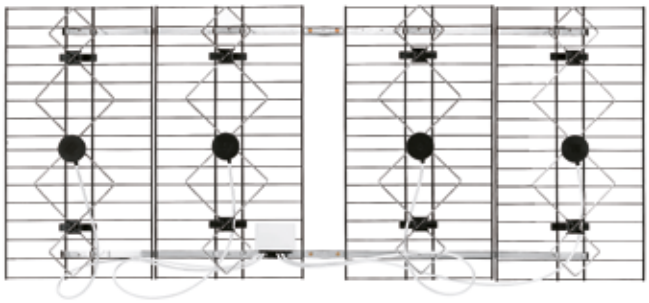


UHF aerials

Panel aerials

Multiple panel aerials with F connector. High gain and directivity of the multiple panel series are ideal for the reception of weak signals and signals from lots of different transmitters.

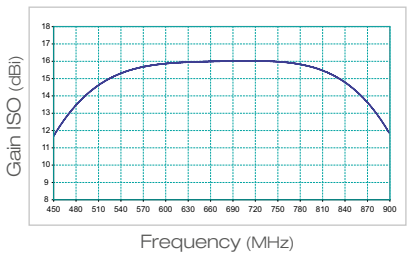
▶ PU16F



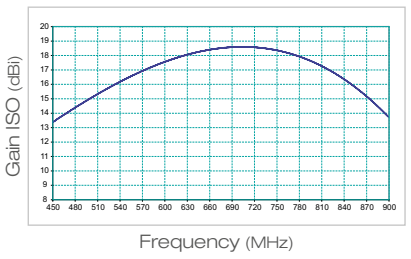
Item		PU8F	PU16F
Code		217428	217436
Band		UHF	UHF
Channels		E21-E69	E21-E69
Bandwidth	MHz	470-862	470-862
Maximum gain	dBi	16	18.5
Front-to-back ratio	dB	26	28
Return loss	dB	-10	-10
Beamwidth (-3dB)	°	+/-15	+/-10
Wind load at 120Km/h (720N/m²)	Kg(N)	13 (127.53)	26 (255.06)
Impedance	Ohm	75	75
Maximum mast Ø	mm	60	60
Dimensions (L x W)	cm	88.5x72	167x72
Packaging			
Quantity	Pcs	1	1
Unit weight	Kg	2.9	5.28
Total weight	Kg	2.9	5.28
Accessories			
Horizontal polarisation		Included	
Horizontal polarisation with tilt adj.		N/A	
Vertical polarisation		N/A	
Vertical polarisation with tilt adj.		N/A	
Auxiliary boom		N/A	

Gain

PU8F

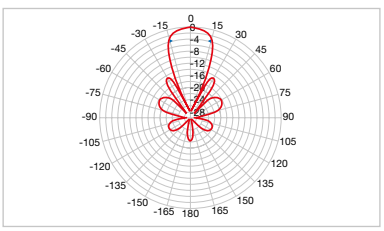


PU16F

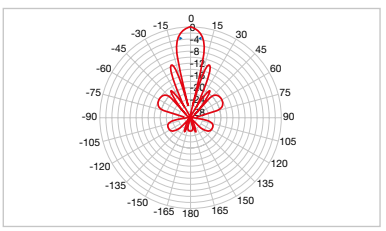


Pattern

PU8F



PU16F



LOG-PERIODIC aerials

LP Series with F connector

Log-periodic pre-assembled aerials characterised by: easy connection due to the connector being located near the mast clamp. High level design of the dipole connection guarantees a highly reliable RF contact. Due to the specific mast clamp these aerials can be assembled in vertical or horizontal polarisation without additional accessories.
They have excellent mechanical clamp resistance of the boom elements, great mechanical resistance at the rotation around the mast and good electrical performances.
F connector is protected by a cap with bayonet clamp.

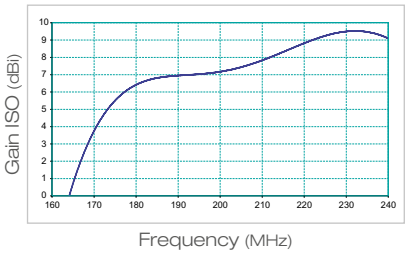
▶ LP4F

▶ LP..F

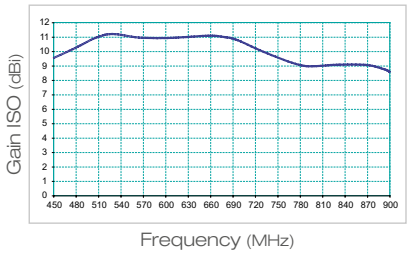
Item		LP345F	LP345MF	LP4F	LP45NF
Code		216170	216169	216151	216150
Band		III+UHF	III+UHF	IV	UHF
Channels		E5-E12 / E21-E69	E5-E12 / E21-E69	E21-E37	E21-E69
Bandwidth	MHz	174-230 / 470-862	174-230 / 470-862	470-606	470-862
Maximum gain	dBi	9.5 / 11	8.5 / 9.5	10	11.5
Front-to-back ratio	dB	24 / 32	22 / 30	32	36
Return loss	dB	-16 / -16	-14 / -13	-18	-15
Beamwidth (-3dB)	°	+/-34 | +/-31	+/-34 | +/-30	+/-25	+/-25
Wind load at 120Km/h (720N/m²)	Kg (N)	3.9 (38.25)	2.7 (26.48)	2.8 (27.46)	3.0 (29.43)
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	115x86	77x86	65x33	115x86
Packaging					
Quantity	Pcs	20	20	60	20
Unit weight	Kg	1.12	0.9	0.56	0.792
Total weight	Kg	22.9	18.5	38	15.84
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		PV10			
Vertical polarisation		Included			
Vertical polarisation with tilt adj.		PV10			
Auxiliary boom		N/A			

Gain

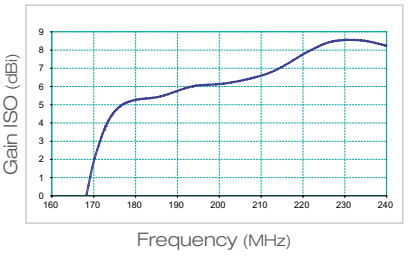
LP345F - Band III



LP345F - UHF Band

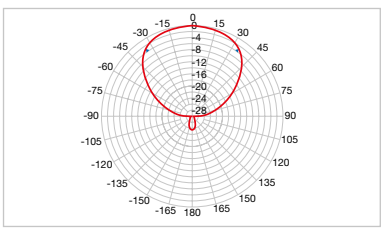


LP345MF - Band III

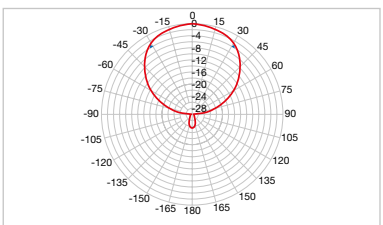


Pattern

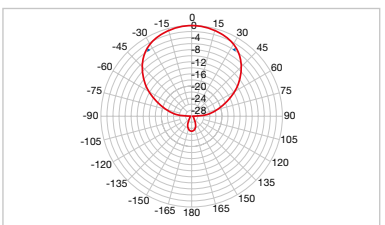
LP345F - Band III



LP345F - UHF Band



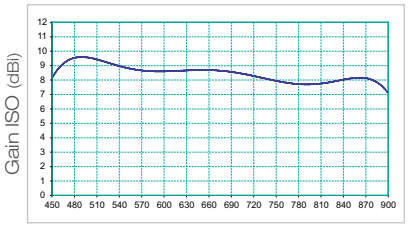
LP345MF - Band III



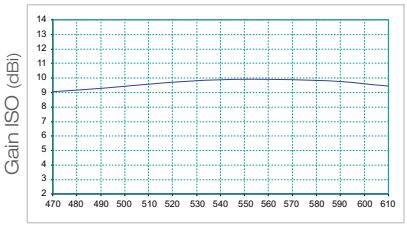
Aerials

Gain

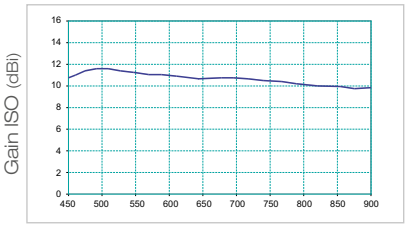
LP345MF - UHF Band



LP4F - Band IV

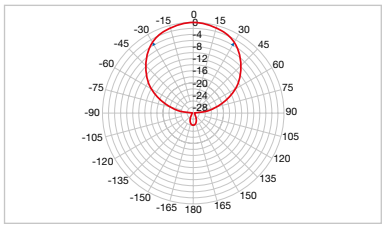


LP45NF - UHF Band

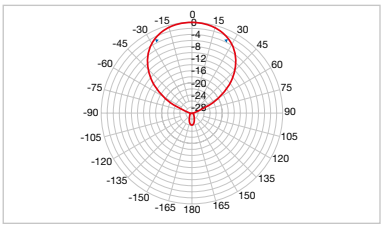


Pattern

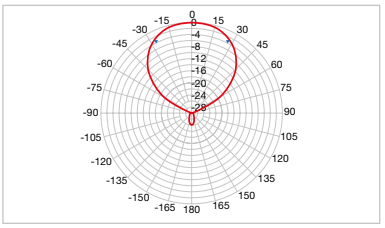
LP345MF - UHF Band



LP4F - Band IV



LP45NF - UHF Band



LOG-PERIODIC aerials

LP Series with F connector

Log-periodic pre-assembled aerials characterised by: easy connection due to the connector being located near the mast clamp. High level design of the dipole connection guarantees a highly reliable RF contact. Due to the specific mast clamp these aerials can be assembled in vertical or horizontal polarisation without additional accessories. They have excellent mechanical clamp resistance of the boom elements, great mechanical resistance at the rotation around the mast and good electrical performances. F connector is protected by a cap with bayonet clamp.

▶ LP..F

F connector detail

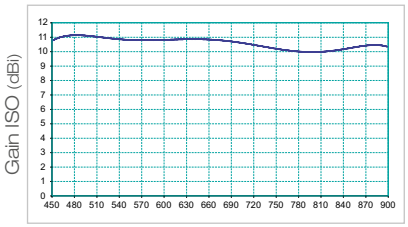
▶ LPV..F

Item		LP45F	LP5F	LPV345F	LP34F
Code		216149	216108	217350	216135
Band		UHF	V	III+UHF	III+IV
Channels		E21-E69	E38-E69	E5-E12 / E21-E37	E5-E12
Bandwidth	MHz	470-862	606-862	174-230 / 470-606	174-230
Maximum gain	dBi	11	12	9 / 11.5	9.5 / 11
Front-to-back ratio	dB	36	36	24 / 32	21 / 25
Return loss	dB	-15	-15	-18 / -13	-18 / -15
Beamwidth (-3dB)	°	+/-28	+/-25	+/-23 I +/-21	+/-35 I +/-28
Wind load at 120Km/h (720N/m²)	Kg (N)	3.0 (29.43)	3.0 (29.43)	2.8 (27.46)	2.8 (27.46)
Connector	type	F	F	F	F
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	99x32	99x24	75x79	115x86
Packaging					
Quantity	Pcs	20	20	20	20
Unit weight	Kg	0.792	0.767	0.85	1.125
Total weight	Kg	16.34	15.84	17.5	23

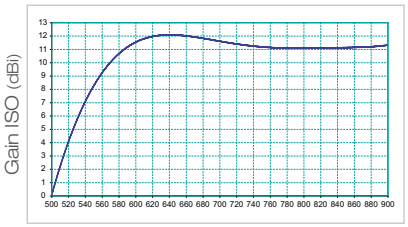
Accessories		
Horizontal polarisation		Included
Horizontal polarisation with tilt adj.		PV10
Vertical polarisation		Included
Vertical polarisation with tilt adj.		PV10
Auxiliary boom		N/A

Gain

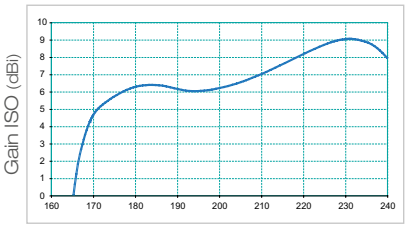
LP45F - UHF Band



LP5F - Band V

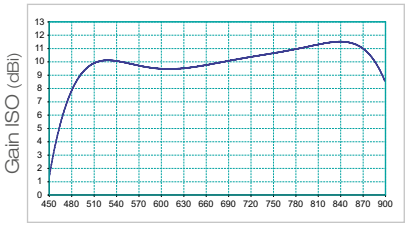


LPV345F - Band III

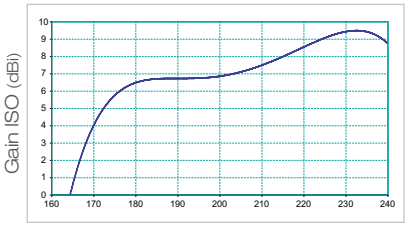


Gain

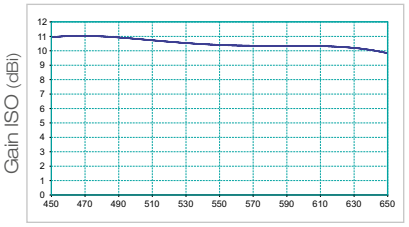
LPV345F - UHF Band



LP34F - Band III

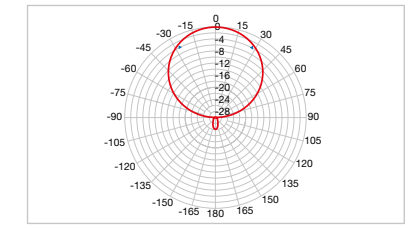


LP34F - Band IV

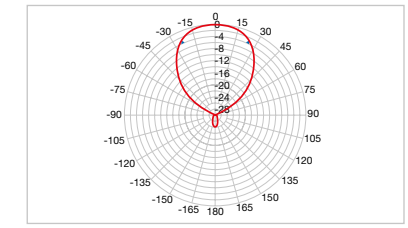


Pattern

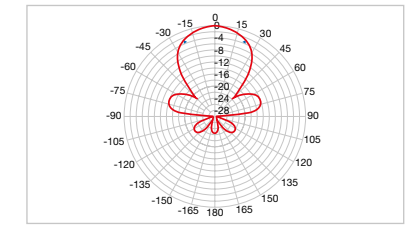
LP45F - UHF Band



LP5F - Band V

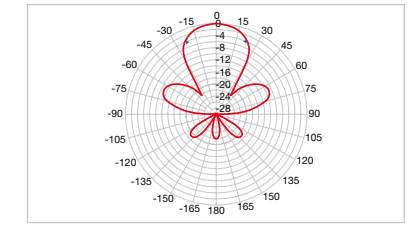


LPV345F - Band III

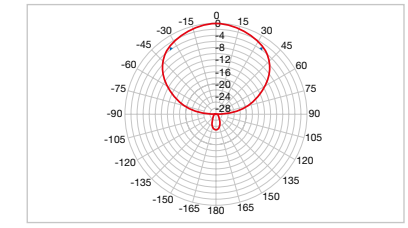


Pattern

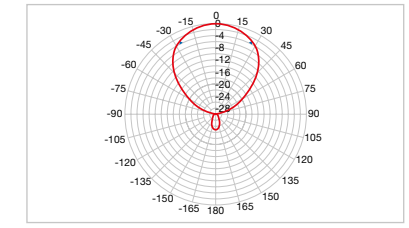
LPV345F - UHF Band



LP34F - Band III



LP34F - Band IV

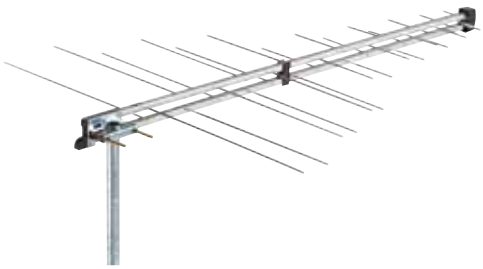


LOG-PERIODIC aerials

LP Series

Pre-assembled aerials that are easy to install and characterised by a highly reliable RF connection. They are available in various models in order to fulfil most installations.

▶ LPV345HV

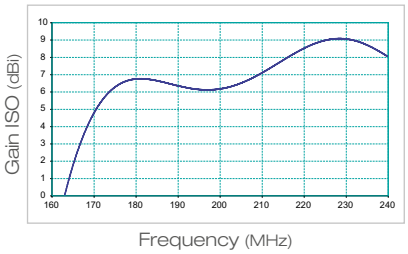


▶ LP..HV

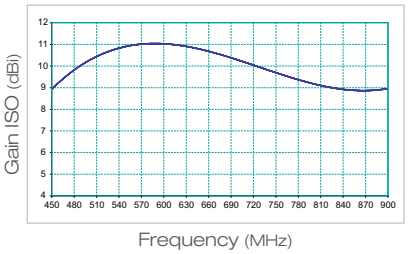
Item		LP345HV	LP345MHV	LP45HV	LPV345HV
Code		216168	216167	216147	217349
Band		III+UHF	III+UHF	UHF	III+UHF
Channels		E5-E12 E21-E69	E5-E12 E21-E69	E21-E69	E5-E12 E21-E69
Bandwidth	MHz	174-230 470-862	174-230 470-862	470-862	174-230 470-862
Maximum gain	dBi	9 / 11	8.5 / 9.5	10	9 / 11.5
Front-to-back ratio	dB	24 / 32	22 / 30	36	24 / 32
Return loss	dB	-13/-13	-14 /-12	-15	-18 / -18
Beamwidth (-3dB)	°	+/-34 +/-31	+/-34 +/-30	+/-28	+/-23 +/-21
Wind load at 120Km/h (720N/m²)	Kg (N)	3.9(38.25)	2.7(26.48)	3.0(29.43)	3.9(38.25)
Impedance	Ohm	75	75	75	75
Maximum mast Ø	mm	60	60	60	60
Dimensions (L x W)	cm	111x86	72x86	94x32	111x86
Packaging					
Quantity	Pcs	20	20	20	20
Unit weight	Kg	1.04	0.83	0.78	0.8
Total weight	Kg	21.3	17.1	16.1	16.5
Accessories					
Horizontal polarisation		Included			
Horizontal polarisation with tilt adj.		PV10			
Vertical polarisation		Included			
Vertical polarisation with tilt adj.		PV10			
Auxiliary boom		N/A			

Gain

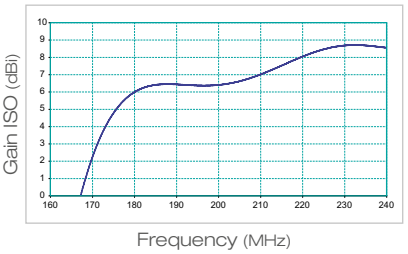
LP345HV - Band III



LP345HV - UHF Band

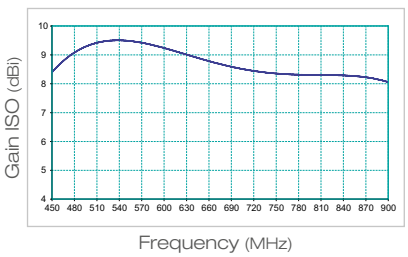


LP345MHV - Band III

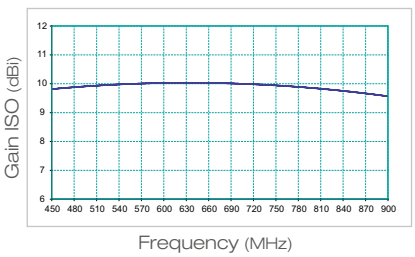


Gain

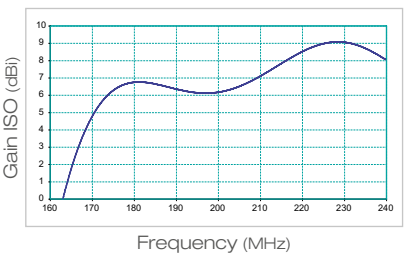
LP345MHV - UHF Band



LP45HV - UHF Band

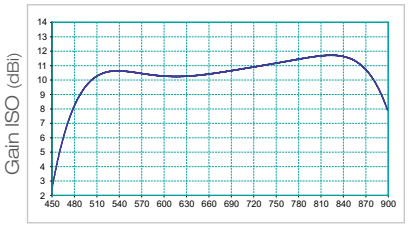


LPV345HV - Band III



Gain

LPV345HV - UHF Band



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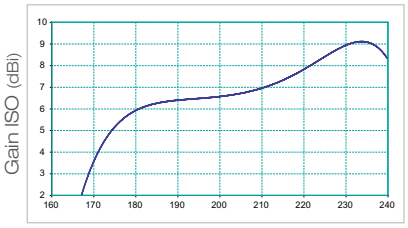
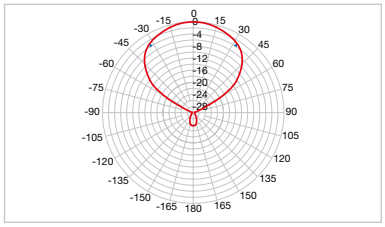


Pattern

LP345HV - Band III



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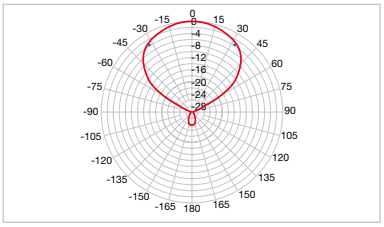

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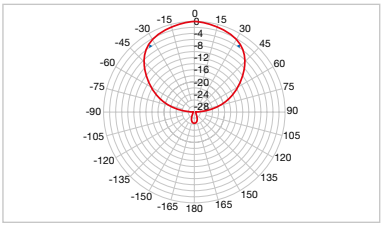
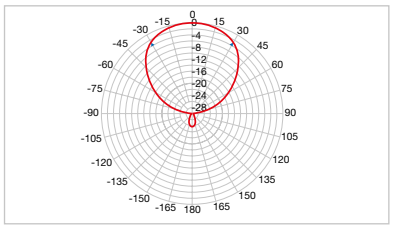


Pattern

LP345MHV - UHF Band



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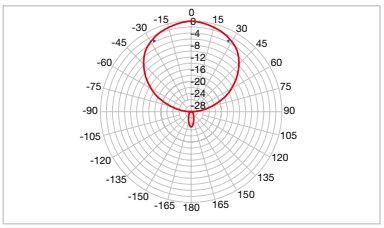

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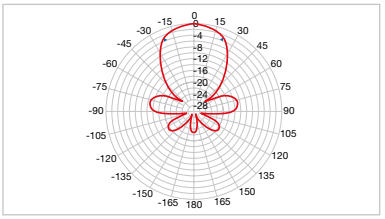
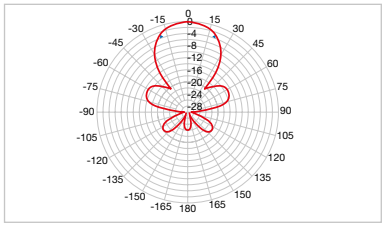
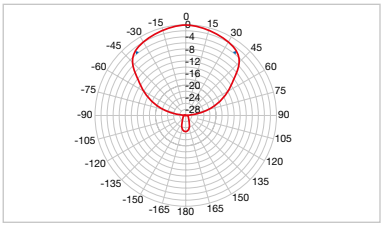


Pattern

LPV345HV - UHF Band



LP34HV - Band II



Indoor aerials

Amplified indoor aerial

All the aerials from the Fracarro range are capable of receiving analogue and digital terrestrial signals (ready for DTT).
Power supply: 230Vac - 50Hz or 12Vdc

▶ **DOMUS**

Item	Code	VHF gain dB	UHF gain dB
DOMUS	289560	20	32

Aerial accessories

Auxiliary booms

CA1 and CA2 are designed to be used with different aerials.
Auxiliary boom increases the mechanical strength of these aerials.

CA1

Item	Code	Wind load at 120Km/h Kg	Packaging Pcs	Kg
CA1	219600	0.8	20	6.2
CA2	219602	0.8	20	6.2

Check the technical data of each antenna for the required auxiliary boom.

Aerial accessories

Mast

Wide range of steel masts, hot dip galvanized welded to ensure the highest quality and durability.

PaloSB - PaloCB - TEL..

Pal curva..40

Item	Code	Description	Packaging Pcs
Telescopic masts with cap			
TEL1,5/4	287243	mt 2+2=4, Ø 25+30 mm, sp. 1,5 mm, 2 nuts M8	5
TEL2/4	287241	mt 2+2=4, Ø 28+35 mm, sp. 2 mm, 4 nuts M8	3
TEL2/6	287242	mt 2x3=6, Ø 28+35+42 mm, sp. 2 mm, 4 nuts M8	2
Masts without nuts with cap			
PaloSB2 1,5/25	287244	mt 2, Ø 25x1,5mm	10
PaloSB2 2/28	287245	mt 2, Ø 28x2mm	5
PaloSB3 2/28	287246	mt 3, Ø 28x2mm	5
Masts with nuts and cap			
PaloCB2 1,5/30	284247	mt 2 Ø 30x1,5 mm, 2 nuts M8	5
PaloCB2 1,5/35	287248	mt 2 Ø 35x1,5 mm, 2 nuts M8	5
PaloCB2 1,5/40	287249	mt 2 Ø 40x1,5 mm, 2 nuts M8	5
PaloCB2 2/35	287250	mt 2 Ø 35x2 mm, 4 nuts M8	5
PaloCB2 2/42	287251	mt 2 Ø 42x2 mm, 4 nuts M8	5
PaloCB2 2/50	287252	mt 2 Ø 50x2 mm, 4 nuts M8	3
PaloCB2 3/60	287256	mt 2 Ø 60x3 mm, 4 nuts M8	2
PaloCB3 2/35	287253	mt 3 Ø 35x2 mm, 4 nuts M8	5
PaloCB3 2/42	287254	mt 3 Ø 42x2 mm, 4 nuts M8	3
PaloCB3 2/50	287255	mt 3 Ø 50x2 mm, 4 nuts M8	2
PaloCB3 3/60	287257	mt 3 Ø 60x3 mm, 4 nuts M8	1
Elbow shaped masts			
Pal curva40+att	287258	Elbow shaped mast 2 mt, fixing clips 5 cm distance. Diam. Ø 40x2mm. Elbow dismountable 180° Ø 48x2 mm	1
Pal curva50+att	287259	Elbow shaped mast 2 mt, fixing clips 5 cm distance. Diam. Ø 50x2mm.Elbow dismountable 180° from Ø 60x2 to Ø 50x2 mm	1

Aerial accessories

Mast brackets

ZN RING

ZN ESP...

ZN 3P REG

ZN PM...

ZN RINF

ZN ECONO 10

CAV 8 UNIVERSAL

ZN SOLAI

ZN FR...

NASTRO ZN FR

ZN CAMINO

ZN MURO

Item	Code	Description	Packaging Pcs
ZN RING	287271	Mast bracket for railing, with nuts, Ø 30÷50 mm. Electrolytic zinc coating.	70
ZN ESP TU10	287260	Adjustable mast bracket, tube 10 cm, Ø 25÷50 mm. Electrolytic zinc coating.	50
ZN ESP TU15	287261	Adjustable mast bracket, tube 15 cm, Ø 25÷50 mm. Electrolytic zinc coating.	50
ZN ESP TU20	287262	Adjustable mast bracket, tube 20 cm, Ø 25÷50 mm. Electrolytic zinc coating.	50
ZN ESP TO10	287268	Adjustable mast bracket, reinforcing rod 10 cm. Electrolytic zinc coating.	50
ZN ESP TO15	287269	Adjustable mast bracket, reinforcing rod 15 cm. Electrolytic zinc coating.	50
ZN ESP TO20	287270	Adjustable mast bracket, reinforcing rod 20 cm. Electrolytic zinc coating.	30
ZN 3P REG	287272	Tripod mast mount, adjustable 26÷46. Hot-dipped zinc coating.	12
ZN PM EMILIA	287273	“Emilia” bracket for Ø 40÷90 mm. Hot-dipped zinc coating.	12
ZN PM ECONO	287274	Cheap bracket for Ø 25÷60 mm. Hot-dipped zinc coating.	40
ZN PM RINF	287275	Reinforced bracket for Ø 30÷60 mm. Hot-dipped zinc coating.	15
ZN RINF5	287276	Reinforced bracket, 5 cm dist. for Ø 30÷60 mm. Hot-dipped zinc coating.	12
ZN RINF10	287277	Reinforced bracket, 10 cm dist. for Ø 30÷60 mm. Hot-dipped zinc coating.	12
ZN RINF20	287278	Reinforced bracket, 20 cm dist. for Ø 30÷60 mm. Hot-dipped zinc coating.	10
ZN ECONO10	287279	Cheap bracket dist. 10, for Ø 30÷60 mm. Hot-dipped zinc coating.	25
CAV 8 DIST	287280	“8” clevis with distance 60mm, for Ø 30÷60 mm. Hot-dipped zinc coating.	15
CAV 8 UNIVERSAL	287281	Universal “8” clevis for Ø 30÷60 mm. Electrolytic zinc coating.	25
CAV 8	287282	“8” clevis for Ø 25mm. Electrolytic zinc coating.	60
ZN SOLAI	287283	Plate for Ø 30÷50 mm. Hot-dipped zinc coating.	20
ZN FR CAMnew28	287285	Chimney mount, 28 cm, Ø 25÷50mm. Hot-dipped zinc coating.	20
ZN FR CAMnew32	287286	Chimney mount, 32 cm, Ø 25÷50mm. Hot-dipped zinc coating.	20
ZN FR CAM32	287284	Chimney mount, 32 cm, Ø 25÷50mm. Hot-dipped zinc coating.	12
NASTRO ZN FR	287263	Zinc belt for french brackets 40x0,5mm,25mt. Electrolytic zinc coating.	1
ZN CAMINO	287287	Chimney mount, dist. 14 cm, Ø 25÷45mm. Electrolytic zinc coating.	30
ZN MURO	287288	Reinforced wall mount 30cm. Electrolytic zinc coating.	25

Aerial accessories

Mechanical accessories

▶ RALLA TRIS

▶ CONTROPIASTRA

▶ TEGOLA...

▶ CAPPUCCIO PVC

Item	Code	Description	Packaging Pcs
RALLA TRIS	287289	Belt 20x3, for Ø 25÷45 mm. Electrolytic zinc coating.	100
TENDIFILO	287290	Tension disks M90, for wire Ø 5mm max. Electrolytic zinc coating.	100
CONTROPIASTRA	287291	Guard plate for ZN PM EMILIA. Hot-dipped zinc coating.	1
TEGOLA PVC	287292	PVC tile for max Ø 60mm	30
TEGOLA PIOMBO	287293	Lead tile for max Ø 60mm	5
CAPPUCCIO PVC	287294	PVC cap for Ø 40÷80 mm	1

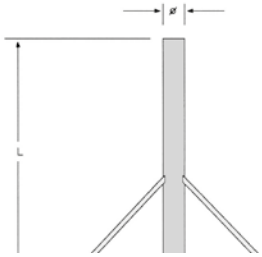
Aerial accessories

Mechanical accessories for satellite dishes

▶ SUP UNIVERSAL

▶ SUP MURO..

▶ SUP CURVO



▶ BA914

Item	Code	Description	Packaging Pcs
SUP UNIVERSAL	287264	Universal dish bracket Ø 40x1,4mm. Hot-dipped zinc coating.	15
SUP MURO26	287265	Wall bracket dist. 26 cm Ø 40x1,4mm. Hot-dipped zinc coating.	20
SUP MURO46	287266	Wall bracket dist. 46 cm Ø 40x1,4mm. Hot-dipped zinc coating.	10
SUP CURVO180G	287267	Elbow shaped bracket Ø 30x60mm. Tube Ø 40x1,4mm. Hot-dipped zinc coating.	8

Item	Code	Description	Fig.	Ø mm	L cm	H cm	Mast bracket mm	Packaging Pcs	Weight Kg
BA914	280674	Base for dish mount	1e	76	100	-	-	1	13

* Use STF kit for mast installation.

SAT dishes

PENTA Series

Back of Penta85

Dual feed support

Penta White

Penta Grey

Penta Brick red

Item		PENTA DIGIT	PENTA85
Frequency range	GHz	10.7-12.75	10.7-12.75
Dimensions Ø	mm	624x624	775x775
Offset angle	°	22.3	22.1
Efficiency		≥70%	≥70%
Gain at 10.95GHz	dB	36.5	39
Cross polarisation on axis	dB	>37	>38
First side lobe	dB	<-32	<-34
Noise temperature		40°K at 30° elevat.	40°K at 30° elevat.
F/D ratio		0.7	0.7
Beamwidth (-3dB)	°	3	2.2
LNB clamp	mm	23-28; 40; 60	23-28; 40; 60
Elevation angle		Maximum tilt 60°	Maximum tilt 60°
Mast clamp	mm	35-80	35-80
Material		Alumium/steel	Alumium/steel
Bracket material		Steel - aluminium/zinc treatment	Steel - aluminium/zinc treatment
Wind load at 150Km/h	Kg	53	81

Individual packaging

Equivalent Ø cm	Model	Item	Code	Material	Colours	Dual feed support 6°	Mounting kit	Packaging Pcs
68	DIGIT	DIGIT-A	211104	Steel	White	DFPDIGIT (211003)	Included	1
		DIGIT-GA	211105		Grey			
		DIGIT-RA	211106		Brick red			
		DIGIT	211101	Aluminium	White			
		DIGIT-G	211102		Grey			
		DIGIT-R	211103		Brick red			
85	PENTA	PENTA85-A	211205	Steel	White	DFP85R (211002) DFP85 (211001)		
		PENTA85G-A	211206		Grey			
		PENTA85R-A	211207		Brick red			
		PENTA85	211201	Aluminium	White			
		PENTA85G	211203		Grey			
		PENTA85R	211204		Brick red			

Multiple packaging

Equivalent Ø cm	Model	Item	Code	Material	Colours	Dual feed support 6°	Mounting kit	Packaging Pcs
68	DIGIT	DGTX10-A	211112	Steel	White	DFPDIGIT (211003)	ZNCDGTX10 (211110)	10
		DGTX10-GA	211116		Grey			
		DGTX10-RA	211115		Brick red			
		DGTX10	211111	Aluminium	White			
85	PENTA	P85X10-A	211210	Steel	White	DFP85R (211002) DFP85 (211001	ZNC85X10 (211208)	
		P85GX10-A	211217		Grey			
		P85RX10-A	211216		Brick red			
		P85X10	211209	Aluminium	White			
		P85GX10-B	211212		Grey			
		P85RX10-B	211211		Brick red			

SAT dishes

Offset Series

RO80AS + ZNO80AS

RO80AP + ZNO80APN (premounted)

RO85A + ZNO85P

R0100 + ZNO100C PT100

RO100A + ZNO100P

RO125AP + ZNO125P

Diameter cm	Item	External dimensions mm	Offset angle °	F/D	Elevation range °	Mast diameter mm	Efficiency %	Gain at 10.7GHz dB	Gain at 11.7GHz dB	Gain at 12.7GHz dB
60	RO60A	632x583	24	0.66	4 / 55	20-50	>69	34.7	35.5	36.2
75	SAT12751*	750x640	23	0.7	0 / 55	30-60	>70	36.2	36.5	36.9
	SAT12753	830x750	23	0.65	15 / 48	50-60	>70	37.2	37.6	38.0
80	P80APN	768x846	23	0.66	0 / 80	30-60	>75	37.0	37.7	38.5
	RO80AP	768x846	23	0.66	0 / 80	30-60	>75	37.0	37.7	38.5
	RO80AS	845x779	23	0.66	17 / 58	30-60	>75	37.0	37.7	38.5
85	RO85AP	910x837	21	0.66	1 / 60	30-60	>70	37.4	38.2	38.9
90	SAT12901	1030x900	21	0.5	5 / 55	50-60	>70	38.1	38.8	39.5
100	PT100C	970x1040	21	0.66	0 / 80	30-90	>70	39.7	40.2	40.5
	PT100AC	970x1040	21	0.66	0 / 80	30-90	>70	39.7	40.2	40.5
	RO100CR	970x1040	21	0.66	0 / 80	30-90	>70	39.7	40.2	40.5
	RO100AC	970x 1040	21	0.66	0 / 80	30-90	>70	39.7	40.2	40.5
	RO100AP	1032x952	23	0.66	0 / 90	35-60	>72	39.4	40.0	40.6
120	RO120N	1164x1240	23	0.66	20 / 50	55-100	>70	40.5	41.4	42.3
125	RO125AP	1345x1240	23	0.66	0 / 90	40-60	>74	41.0	41.6	42.4
150	RO150	1614x1488	21.3	0.66	20 / 90	55-100	>70	42.6	43.4	44.2

* BI-SAT 6°/9°

Individual packaging							
Equivalent Ø cm	Item	Code	Material	Colours	Dual feed support 6°	Mounting kit	Packaging Pcs
75	**SAT12751**	SAT12751	Composit	Light Gray	-	Included	1
	SAT12753	SAT12753	Composit	Light Gray	-		
80	**P80APN**	211316	Steel	White	DFAN (289487)	Included	
90	**SAT12901**	SAT12901	Composit	White	-	Included	
100	**PT100C**	289291	Aluminium	Light Gray	DFO100C (289294)	Included	
	PT100AC	289293	Steel	White	DFO100C (289294)	Included	
120	**RO120N**	289197	Aluminium	White	DFO120N (289199)	AZO120N/ (289196) AZO120PP(289949)	
150	**RO150**	289139	Aluminium	White	DFO120N (289199)	AZO150 (289140)	
Multiple packaging							
Equivalent Ø cm	Item	Code	Material	Colours	Dual feed support 6°	Mounting kit	Packaging Pcs
60	**RO60AX10**	280610	Steel	White	-	ZNO60AC (289279)	10
80	**RO80APX50**	289479	Steel	White	DFAN (289487)	ZNO80APN (289480)	50
	RO80APX200	289283					200
	RO80ASX50	287148	Steel	White	DFAN (289487)	ZNO80AS (287149)	50
	RO80ASX200	287147					200
85	**RO85APX5G**	289828	Aluminium	Gray	DFO100C (289294)	ZNO85PX5G (289829)	5
100	**RO100APX5G**	289830	Aluminium	Gray	DFAN (289487)	ZNO100PX5 (289831)	5
	RO100CRX6	289287	Aluminium	Red	DFO100C (289294)	ZNO100C (289285)	6
	RO100ACX6	289299	Steel	White			6
125	**RO125APX3G**	289832	Aluminium	Gray	-	ZNO125PX3 (289833)	3

Wind load refers to the diameter of the reflector with 120Km/h wind speed (Kg)									
Ø (cm) dish	65	65	75	80	85	90	100	120	150
Wind load @ 120Km/h (Kg)	34	42	47	55.2	70	80	91	145	235

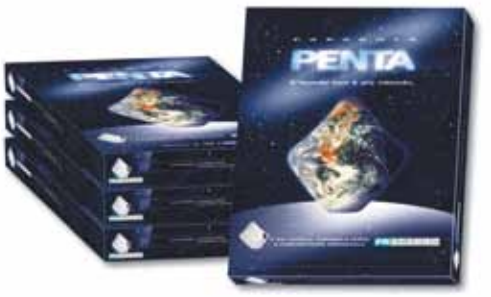
SAT dishes

Kit system

Digital Kits

▶ Digital Kit

▶ Offset Kit



▶ Penta Kit

Item	Code	Description	Item	Code	Description
P80APK	211308	• RO80AP dish • Universal LNB	**DIGIT-AK**	211108	• DIGIT-A dish • Universal LNB
P85AK	211220	• PENTA85-A dish • Universal LNB	**DIGITK**	211107	• DIGIT dish • Universal LNB
P85K	211219	• PENTA85 dish • Universal LNB	**SAT21601**	211311	• White parabolic 60cm offset dish • Universal

Kit system

Kit Sat

9+13 new sat, new spaces via eutelsat
www.doppiofeed.com

▶ Offset Kit

▶ Penta Digit Kit

▶ Packaging

Item	Code	Description
Kit 9/13 RO80	211319	• Offest 80cm dish • 4° monobloc LNB
Kit 9/13 DIGIT	211321	• DIGIT dish • 4° monobloc LNB

LNB's

Universal LNB's

The Fracarro range of LNB'S guarantee excellent signal quality and can be used for all requirements, from a simple individual installation to the most complex DTH installation and for multipoint distribution. Low phase noise and high reliability guarantee a maximum quality reception of all High Definition (HD) programs.

▶ UX-S

▶ UX-TW

▶ UX-OCTO

▶ UX-MBS6

▶ UX-QT

Item	Code	Number of outputs	Gain dB		Power consumption mA
Universal Single LNB					
UX-S	287144	1	55		70
Universal Twin LNB					
UX-TW	287143	2	55		150
Universal Quad LNB					
UX-QD	287146	4	55		160
Universal Octo LNB					
UX-OCTO	287142	8	55		190
Universal Monobloc LNB					
UX-MBS6	287139	1	55	6°	110
UX-MBTW6	287140	2	55	6°	190
UX-MBQD6	287141	4	55	6°	190
Universal Quattro LNB					
UX-QT	287145	4 (VL.VH, HL, HH)	55		170
UX-QT LTE	287302	4 (VL.VH, HL, HH)	55		160

SAT dishes

LNB's

SCR LNB's

This universal LNB allows up to 4 decoders to be connected simultaneously (it can receive all satellite channels independently) using a simple splitter, enhancing the performance of the existing TV installation.
Exclusive technical solutions ensure all 4 outlets work constantly.

- Low phase noise
- Low consumption
- 4 SCR outputs + 1 legacy (universal) output
- High frequency stability

▶ **SCR41**

Item	SCR41	SCR output	LEGACY output
Code	287109		
No. of users		4	1
Input frequency	GHz	10.7 to 11.7 - 11.7 to 12.75	10.7 to 11.7 - 11.7 to 12.75
Gain	dB	50-65	50-65
Consumption	mA	350 max.	
Output frequency	MHz	1210 - 1420 - 1680 - 2040	950-2150
Band and polarity selection		DiSEqC-ST command	Vertical 11.5 to 14 V - Horizontal 16 to 19V Low Band 0KHz - High Band 22KHz±4KHz

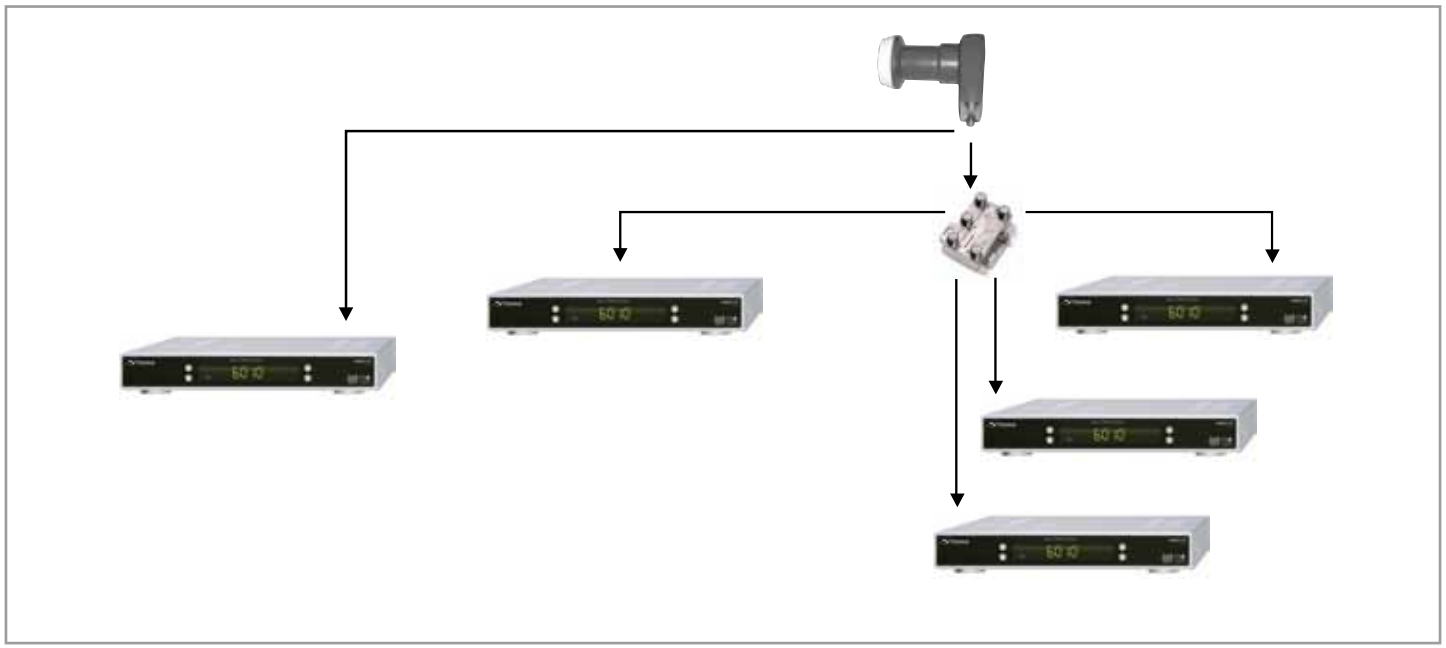
Installation example

SCR LNB'S

SCR LNBs allow up to 4 satellite receivers to be connected to the same dish by using a single cable.
SCR LNBs have a double output:

- "Legacy" behaves like a universal one output LNB,
- "Unicable" connects the cable to the 4 satellite receivers.

By simultaneously using the 2 outputs, it is possible to connect up to 5 satellit receivers.



DiSEqC switches

DSQ.. Series

Line switches with DiSEqC control on coaxial cable, controlled by satellite receivers with built-in DiSEqC tone generator.

▶ **DSQ21J**

▶ **DSQ41J**

Item	Code	Band Hz	Inputs No.	Outputs No.	Insertion loss dB	DiSEqC	Isolation dB	Packaging Pcs
DSQ21J*	289588	950-2300	2	1	4	2.0	35	1
DSQ41J*	289589	950-2300	4	1	4	2.0	35	1

* Outdoor plastic box included.

Line amplifiers

AS.. and AMP Series

To amplify satellite signals to power a small system or preamplify satellite signals to power larger systems.
Operates on 900-2150MHz with a sloped gain to compensate for the coaxial cable loss.
Die-cast aluminium housing with female F connectors.

▶ **AS20**

Item	Code	Band Hz	Gain dB	Noise dB	Op. voltage V	Consump. mA	Impedance Ohm	Connectors	Output dBµV	Packaging Pcs	Dimensions mm
AS10	289253	950-2150	9-12	<7	13-18	25@13V	75	F female	110	10	Ø 17 - l=70
AMP6600	AMP6600	950-2150	12-17	8	13-18	40@13V	75	F female	105	1	1x1.5x70
AS20**	284013	950-2150	17-20	10	13-20	80@13V	75	F female	120	1	71.5x51x21

** Mast housing (product CNJS) available for external use.

Electronic mast and indoor equipment

Electronic mast and indoor equipment

Mast equipment

LTE FILTERS

Lte filters

Indoor and outdoor LTE filters to avoid
any eventual interference due to LTE (4G) signals.

- High selectivity up to 30dB@793 MHz
- Low insertion loss

▶ **LTE FILTER ..**
Dimensions 70x20x20mm

▶ **4GKILLER**
Dimensions 74x36x58mm

Item	Code	Inp. 1	Inp. 2	Insertion loss dB Inp. 1	Filtering class	IP protection	Selectivity
4GKILLER	226710	VHF+UHF	470-790	1	A - CEI100-7	-	30dB@793MHz
LTE FILTER 60	226709	VHF+UHF	470-790	1,5	-	IP66	30dB@801MHz
LTE FILTER 59	226711	VHF+UHF	47-782	1,5	-	IP66	30dB@791MHz

Combiners - Attenuators

Mast combiners with F connectors

2 or 3 input combiners with F connectors, can be used as a demixer using the output connector as an input (mix). Impedance 75 Ohm. Adjustable plastic strap for mast mounting Ø 60mm max.
Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

- Totally shielded metal frame

▶ **MX..**
Dimensions 74x36x58mm

Item	Code	Input 1	Input 2	Input 3	Output 1	Output 2	Insertion loss dB Inp. 1	Insertion loss dB Inp.2	Insertion loss dB Inp. 3	Return loss dB	Mul. pack. Pcs
MX201	223201	VHF + DC	UHF	-	Mix + DC	-	0.2	0.2	-	20	6
MX202	223202	VHF + UHF + DC	VHF + UHF (with or without DC)	-	Mix + DC	-	4	4	-	10	6
MX203	223203	VHF + DC	UHF	-	Mix + DC	Mix + DC	3.5	3.5	-	10	6
MX205	223217	VHF + UHF	Sat + DC	-	Mix + DC	-	0.5	1	-	15	6
MX206	223218	B. I + FM	B. III	UHF + DC	Mix + DC	-	0.5	0.5	1	15	6
MX210	223222	VHF	B. IV	B. V + DC	Mix + DC	-	0.5	1	1	15	6
MX210..*	223223	VHF	B.IV	B.V+DC	Mix + DC	-	0.5	1	1	15	6
MX211	223221	VHF	UHF	UHF + DC	Mix + DC	-	0.5	4	4	15	6

(1) Models with suffix /.. are tuned specially, the last channel of band IV and the first channel of band V must be specified on order

Combiners - Attenuators

Mast combiners with saddle and clamp connections

2 or 3 input combiners, can be used as demixer using the output connector as an input (mix). Impedance 75 Ohm. Adjustable plastic strap for mast mounting Ø 60mm max. Compatible with DTT signals in COFDM modulation. Operating temperature: -10 to 55°C.

▶ **ESV..**
Dimensions 74x36x58mm

Item	Code	Inp. 1	Inp. 2	Inp. 3	Output 1	Output 2	Insertion loss dB			Return loss	Pack.
							Inp. 1	Inp.2	Inp. 3	dB	Pcs
ESV45[1]	226804	VHF	IV (ch. 21-35)	V (ch. 39-69) + DC	Mix + DC	-	0.5	1	1	10	10
ESV45S[2]	226807	VHF	IV (ch. 21-32)	V (ch. 36-69) + DC	Mix + DC	-	0.5	1	1	10	10
ESVUU	226806	VHF	UHF + DC	UHF	Mix + DC	-	0.5	4	4	10	10
ESVU	226801	VHF	UHF + DC	-	Mix + DC	-	1	1	-	10	10

[1] Band IV ends at 590MHz (channel 35), band V begins at 614MHz (channel E39)
[2] Band IV ends at 566MHz (channel 32), band V begins at 590MHz (channel E36)

Combiners - Attenuators

Channel mast combiners

Combiners used for mixing 1, 2 or 3 UHF channels (CHANNELS INPUT) from a second aerial to the rest of the TV channels (TV INPUT). They are totally shielded in a metal case with black plastic housing and are equipped with "F" type connectors. Adjustable plastic strap for mast mounting Ø 60mm max.

▶ **MEF1/..**
Dimensions 105x60x120mm

▶ **MEF2/.. - MEF3/..**
Dimensions 127x58x129mm

Item	Code	Operating freq. MHz	Insertable channels No.	CHANNELS INPUT		TV INPUT		Pack. Pcs
				Insertion loss dB	Non-adjacent channels selectivity dB	Insertion loss dB	Channel traps attenuation dB	
MEF1/.[1]	225881	470-862	1 (21-31)	4	20	5	15	1
MEF1/..[1]	225882	470-862	1 (32-56)	4	20	5	15	1
MEF1/...[1]	225883	470-862	1 (57-69)	4	20	5	15	1
MEF2/..[1]	225992	470-862	2	4	20	5	15	1
MEF3/..[1]	225993	470-862	3	4	20	5	15	1

[1] Complete the code by inserting the channel reference.

Mast equipment

Combiners - Attenuators

Indoor combiner with F connectors

Indoor combiner with F connectors. Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

• Totally shielded metal frame

Item	Code	Inp. 1	Inp. 2	Output 1	Insertion loss dB		Return loss	Mul. pack.
					Inp. 1	Inp.2	dB	Pcs
JSVU3	223109	VHF + S (40-446MHz)	UHF (470-862MHz)	Mix	1	1	10	20

Combiners - Attenuators

Indoor combiners

Indoor TV SAT combiners that can also be used as a demixer.
Compatible with DTT signals in
COFDM modulation. Operating temperature: -10 to 55°C.

• High isolation between inputs

▶ **MXST**
Dimensions 48x50x20mm

Item	Code	Inp. 1	Inp. 2	Output 1	Insertion loss dB		Return loss	Mul. pack.
					Inp. 1	Inp.2	dB	Pcs
MXST	226400	TV (47-862MHz)	SAT + DC (950-2150MHz)	Mix + DC	0.5	0.5	15	15
PAS0303011	PAS0303011	TV (47-862MHz)	SAT + DC (950-2150MHz)	Mix + DC	0.5	0.5	10	15

Combiners - Attenuators

Channel attenuators

For connection after the aerial and before any eventual amplifier. For two or more sections which can be tuned to different frequencies or to the same frequency if greater attenuation is required. To tune, turn the core of the trimmer. D.C. through-line (apart from SF5).
Packaging 10 Pcs

• The various sections are independent and do not affect each other

▶ **SF..**
Dimensions 28x78x20mm

Item	Code	Two cells - For indoor installations
SF4	226707	Stops one or two band IV channels. Attenuation from 20 to 30dB. Coaxial connectors I.E.C. Ø 9.5mm.
SF5	226708	Stops one or two band V channels. Attenuation from 20 to 30dB. Coaxial connectors I.E.C. Ø 9.5mm.

Mast amplifiers

ES.. Series

To amplify and mix signals coming from 1 or 2 aerials. Waterproof plastic housing. Power requirement 12VDC, on a single output.
Adjustable plastic strap for mast mounting Ø 60mm max.
Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

▶ **ES..**
Dimensions 74x36x58mm

Item	Code	Inputs	Input band MHz	Gain dB	Output level* dBµV	Noise figure dB	Power consump. mA@12VDC	Pack. Pcs
ES1/Q	226905	1	174-862	12	115	4	28	10
ES1/RVU	226909	2	IN1: 47-230 IN2: 470-862	4-12	115	4	27	10
ES2/Q	226913	1	174-862	22	115	4	50	10
ES2RT	226912	1	47-862	8-23	115	4	50	10
ES2/RU	226917	1	470-862	10-25	115	4	55	10

Mast amplifiers

JS2RT

To amplify signals coming from 1 aerial.
Waterproof plastic housing. Power requirement 12VDC, on a single output.
Adjustable plastic strap for mast mounting Ø 60mm max.
Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

• Totally shielded metal frame with F connectors

▶ **JS2RT**
Dimensions 74x35x89mm

Item	Code	Inputs	Input band MHz	Gain dB	Output level dBµV	Noise figure dB	Power consump. mA@12VDC	Pack. Pcs
JS2RT	223101	1	47-862	7-22	115	4	60	10

Accessories

IZ2

Item	Code	Description
IZ2	290018	Impedance for D.C. transfer between two terminals on multi-band amplifiers. Packaging 100 pcs

Mast equipment

Mast amplifiers

MAP 12 Volt Series

MAP amplifiers to mix and amplify signals from one or more aerials.
Power requirement 12V, one mixed output.
Compatible with DTT signals in COFDM modulation.
Adjustable plastic strap for mast mounting Ø 60mm max.
Operating temperature: -10 to 55°C.

- Totally shielded in a metal case and “F” type connectors
- The innovative plastic housing system locks the cover in place.
  The amplifier can be tilted inside to enable quick and easy installation.

▶ **MAP1.. - MAP2.. - MAP3..**
Dimensions 105x60x95mm

▶ **MAP4.. - MAP5..**
Dimensions 105x60x120mm

Item	Code	Inputs	Input band	Gain dB	Output level* dBµV	Gain adj. dB	Noise figure dB	Power consump. mA@12VDC	Pack. Pcs
MAP104	223111	1	V	25	115	15	5	60	10
MAP105	223120	1	UHF	33	115	15	6	85	10
MAP106(1)	223122	1	VHF+UHF	34	115	15	5	75	10
MAP113 LTE	223513	1	UHF	34	115	15	5	75	10
MAP206(1)	223150	2	VHF, UHF	35, 36	108	15, 15	5, 5	75	10
MAP207	223147	2	III+UHF, UHF	21, 21	108	15, 15	8, 8	65	10
MAP208	223161	2	III, UHF	34, 35	108	15, 15	4, 3	80	10
MAP210	223124	2	VHF+IV, V	-2, 11	105	-, -	-, 5	40	10
MAP210/..(3)	223126	2	VHF+IV, V	-2, 11	112	-, -	-, 5	40	1
MAP204(1)	223148	2	VHF, UHF	26, 24	112	15, 15	5, 5	65	10
MAP303	223130	3	VHF, IV, V	-2, -2, 12	112	-, -, -	-, -, 5	40	10
MAP303/..(2)	223132	3	VHF, IV, V	-2, -2, 12	112	-, -, -	-, -, 5	40	1
MAP310(2)	223145	3	FM, DAB, UHF	-1, 14, 14	115	-, -, -	4, 4	35	10
MAP311(2)	223146	3	FM, DAB, UHF	-1, 25, 24	115	-, 15, 15	4, 5	60	10
MAP312(1)	223142	3	VHF, IV, V	25, 24, 25	115	15, 15, 15	5, 6, 6	65	10
MAP312/..(1)(3)	223159	3	VHF, IV, V	25, 24, 25	115	15, 15, 15	5, 6, 6	65	1
MAP313(1)	223152	3	VHF, UHF, UHF	24, 30, 30	115	15, 15, 15	5, 8, 8	80	10
MAP313LTE	223511	3	VHF, UHF, UHF	24, 30, 30	115	15,15,15	5,8,8	75	5
MAP315(1)	223163	3	VHF, UHF, UHF	34, 40, 40	115	15, 15, 15	5, 8, 8	95	10
MAP400(1)	223141	4	VHF, VHF, UHF, UHF	-4, 21, 19, 19	112	-, 15, 15, 15	-, 5, 8, 8	60	5
MAP401	223195	4	I+III, FM, UHF, SAT	20,20,30,-2	111,111,115,-	15,15,15,-	5,5,6,-	85 (without LNB)	5
MAP540LTE	223508	4	III+DAB, IV, V, UHF	15,10,10,10	115	-,-,-,-	4,8,8,8	40	5
MAP540/35-36	223501	4	III+DAB, IV, V, UHF	15,10,10,11	115	-,-,-,-	4,8,8,8	40	5
MAP540/31-33	223502	4	III+DAB, IV, V, UHF	15,10,10,11	115	-,-,-,-	4,8,8,8	40	5
MAP541LTE	223509	4	III+DAB, IV, V, UHF	24,19,20,20	115	15,15,15,15	4,8,8,8	60	5
MAP541/35-36	223503	4	III+DAB, IV, V, UHF	24,19,20,20	115	15,15,15,15	4,8,8,8	60	5
MAP541/31-33	223504	4	III+DAB, IV, V, UHF	24,19,20,20	115	15,15,15,15	4,8,8,8	60	5

(1) To allow the FM band to pass, cut the P1 link
(2) DAB = 210-240MHz
(3) Models with suffix /.. are tuned specially, the last channel of band IV and the first channel of band V must be specified on order (e.g. MAP501/38-41)
• In the standard models without a suffix, band IV includes channels E21-E35 and band V includes channels E39-E69

Mast amplifiers

MAP 24 Volt Series

MAP amplifiers to mix and amplify signals from one or more aerials. Power requirement 24V, one mixed output.
Compatible with DTT signals in COFDM modulation.
Adjustable plastic strap for mast mounting Ø 60mm max.
Operating temperature: -10 to 55°C.

- Totally shielded in a metal case and "F" type connectors
- The innovative plastic housing system locks the cover in place. The amplifier can be tilted to enable quick and easy installation.

▶ **MAP1.. - MAP2.. - MAP3..**
Dimensions 105x60x95mm

▶ **MAP4..**
Dimensions 105x60x120mm

Item	Code	Inputs	Input band	Gain dB	Output level* dBµV	Gain adj. dB	Noise figure dB	Power consump. mA@12VDC	Pack. Pcs
MAP102	223121	1	UHF	33	115	15	6	70	10
MAP103[1]	223123	1	VHF+UHF	34	115	15	5	70	10
MAP201	223162	2	III, UHF	34, 35	115	15, 15	4, 3	75	10
MAP201LTE [1]	223512	2	VHF+UHF	24,34	115	15,15	5,5	75	10
MAP202[1]	223151	2	VHF, UHF	35, 36	115	15, 15	5, 5	70	10
MAP209[1]	223149	2	VHF, UHF	26, 24	115	15, 15	5, 5	70	10
MAP300[1]	223164	3	VHF, UHF, UHF	34, 40, 40	115	15, 15, 15	5, 8, 8	95	10
MAP306/..[1][2]	223154	3	VHF, IV, V	34, 32, 34	115	15, 15, 15	5, 6, 6	80	1
MAP402[1]	223166	4	VHF, IV, V, UHF	34, 41, 41, 42	115	15, 15, 15, 15	5, 8, 8, 8	90	10
MAP402/..[1][2]	223165	4	VHF, IV, V, UHF	34, 41, 41, 42	115	15, 15, 15, 15	5, 8, 8, 8	90	1

Mast amplifiers

MAP LOW NOISE and INTERSTAGE 12-24 Volt Series

MAP amplifiers mix and amplify the signals from one or more aerials. They are totally shielded in a metal case and have "F" type connectors. The innovative plastic housing system locks the cover in place. The amplifier can be tilted to enable quick and easy installation. Compatible with DTT signals in COFDM modulation.
Adjustable plastic strap for mast mounting Ø 60mm max. Operating temperature: -10 to 55°C.

- The interstage adjustment enables the user to obtain a low noise figure even if the interstage signal is lowered

Item	Code	Inputs	Input band	Gain dB	Output level* dBµV	Gain adj. dB	Noise figure dB	Power consump. mA@12VDC	Pack. Pcs
MAP110	223196	1	DAB + UHF	13	115	-	2.5	30	10
MAP111	223506	1	UHF	13	115	-	2.5	30	10
MAP115I[3]	223197	1	DAB + UHF	27	115	15	2.5	60	10
MAP116I	223507	1	UHF	27	115	15	2.5	60	10
MAP223I[4]	223190	2	III, UHF	24, 33	114	10, 10	4, 2.5	60	10
MAP224I[5]	223191	2	III, UHF	24, 33	114	10, 10	4, 2.5	60	10
MAP212	223184	2	III, UHF	18, 27	114	-, -	4, 2.5	45	10
MAP317I	223187	3	I+FM, III, UHF	12, 24, 33	114	10, 10, 10	4.5, 4, 3	70	10
MAP316I	223186	3	VHF, UHF, UHF	22, 20, 32	114	10, 10, 10	4.5, 4, 3	70	10

[1] To allow the FM band to pass, cut the P1 link
[2] Models with suffix /.. are tuned specially, the last channel of band IV and the first channel of band V must be specified on order (e.g. MAP501/38-41)
[3] Also available with a white case: MAP115IB - code 223198
[4] 12 VDC
[5] 24 VDC

• In the standard models without a suffix, band IV includes channels E21-E35 and band V includes channels E39-E69

Mast equipment

Mast amplifiers

MAK Series

MAK amplifiers are used to mix and amplify signals from different aerials in small and medium installations.
The compact housing enables installation in confined spaces.
Power requirement 12VDC. Adjustable gain 0-20dB on each input. Compatible with DTT signals in COFDM modulation.
Adjustable plastic strap for mast mounting Ø 60mm max.
Operating temperature: -10 to 55°C.

- Separate amplification for VHF and UHF bands
- Remote power supply adjustable on each input, 100mA max.
- Totally shielded in a metal case with black plastic housing and equipped with "F" type connectors

MAK..
Dimensions 127x58x129mm

Item	Code	Inputs	Inputs / Gain dB						Noise figure dB VHF/UHF	Output level* dBµV VHF/UHF	Power consump mA@12VDC	Pack. Pcs
			B. I	B. III	B. IV	B. V	B. UHF	B. UHF				
MAK2510	223344	1	-	21	25	25	-	-	4/8	115/120	105	1
MAK2510DT	223397	1	-	21	25	25	-	-	4/8	115/120	105	1
MAK2331	223343	3	21		-	-	23	23	4/8	115/118	85	1
MAK2332	223341	3	21		26	24	-	-	4/5	115/118	85	1
MAK2332/..[1]	223348	3	21		26	24	-	-	4/5	115/118	85	1
MAK2340/31-33	223398	4	-	19	22	22	22	-	4/8	115/118	85	1
MAK2340/35-36	223399	4	-	19	22	22	22	-	4/8	115/118	85	1
MAK2350/..[1]	223347	5	21	19	22	22	22	-	4/8	115/118	85	1
MAK2640/31-33	223395	4	-	30	30	30	30	-	4/8	115/120	175	1
MAK2640/35-36	223396	4	-	30	30	30	30	-	4/8	115/120	175	1
MAK2650/..[1]	223352	5	30	30	30	30	30	-	4/8	115/120	175	1

[1] Models with suffix /.. are tuned specially, the last channel of band IV and the first channel of band V must be specified on order (e.g. MAK2332/38-41)
- In the standard model without suffix, band IV includes channels E21-E35 and band V includes channels E39-E69

Power supplies

AM.. Series

The AM series is an effective answer to all power supply requirements in any aerial installation. There is a suitable model for the system to be created, both in terms of emitted current (from 50 to 100mA) and number of outputs (one or two). Class II isolation.
Terminal connectors. Compatible with DTT signals in COFDM modulation.
Operating temperature: -10 to 55°C.

- Designed to meet the strictest qualitative and safety requirements
- Equipped with accident prevention devices
- Shut down in case of short circuits

AM..
Dimensions 50x87x46mm

Item	Code	Input mains voltage Vac, Hz	Output mains voltage VDC	Max. output current mA	No. of outputs	Insertion loss dB	Pack. Pcs
AM50N	289112	220-230, 50-60	12	50	1	0.2	20
AM100N	289113	220-230, 50-60	12	100	1	0.2	20
AM102N	289119	220-230, 50-60	12	100	2	4	20

Power supplies

PSU.. Series - Switching mode

Totally shielded in a metallic case to prevent any kind of interference. Available with 12 or 24VDC output voltage. Isolation class: II. F connectors. Fully compatible with DTT signals in COFDM modulation. Operating temperature: -10 to 55°C.

- Switch mode power supply, high efficiency and low consumption
- Plastic case suitable for fixing to a table or wall
- Protected against accidental short circuits, operation is restored after a short circuit
- PSU200R: switch mode power supply with internal level adjustment which is to be used in conjunction with the SIGMA PWR HD (see page 19)

PSU200R
Dimensions 120x97x43mm

PSU..
Dimensions 92x49x109mm

Item	Code	Mains voltage input Vac, Hz	Mains voltage output VDC	Max. output current mA	RF bandwidth MHz	No. of outputs	Insertion loss dB	Adjust. dB	Pack. Pcs
PSU411*	289561	220-240, 50-60	12	200	5-862	1	0.2	-	1
PSU412	289562	220-240, 50-60	12	200	5-862	2	4	-	1
PSU341	289563	220-240, 50-60	24	100	5-862	1	0.2	-	1
PSU342	289564	220-240, 50-60	24	100	5-862	2	4	-	1
PSU511**	289851	220-240, 50-60	12	200	5-2400	1	2	-	1
PSU200R*	213205	220-230, 50-60	12	120	5-862	1	0.5	20dB	1
PSU300R*	213215	220-230, 50-60	12	120	5-862	1	0,5	VHF/ UHF 20db	1

* Also available with UK plug: PSU411UK - Code 289559
** DiSEqC pass-through available

Indoor electronic equipment

Indoor amplifiers

AFI Series

New range of indoor amplifiers that enable the user to amplify and distribute TV and SAT signals to every outlet, guaranteeing optimum signal level throughout the system. Compact and elegant design.
Fully compatible with DTT signals in COFDM modulation.

- Switch mode power supply, high efficiency and low consumption
- Screw driver included for gain and tilt adjustment
- All the adjustments are located under the panel which can be opened or completely detached
- Hidden slots for neat wall mounting
- Green LED indicates status ON

▶ **AFI..**

Item	Code	Inputs	Bands MHz	Gain (adj.) dB	No. of outputs	Noise figure dB	Output level* dBµV	Pack. Pcs
AFI121T	223231	1	TV (47-862)	15	2	4	111	1
AFI112T	223230	1	TV (47-862)	20 (15)	1	4	115	1
AFI122T	223233	1 input with return path and TV band fixed tilt	TV (88-862) RC (5-65)	10@88MHz (15) 20@862MHz (15) -4	2	5.5	115	1
AFI313T	223236	3 inputs with separate adjustments	b.I+FM (47-108) b.III (174-300) b. UHF(470-862)	24 (15) 24 (15) 30 (15)	1	4.5	117	1
AFI123T	223235	1 input with separate V/U adjustment	VHF (47-300) UHF (470-862)	30 (15) 30 (15)	2	4.5	113	1
AFI123W	223237	1 TV+SAT input with separate adjustment	TV (47-862MHz) SAT (950-2150MHz)	TV 20 (20) SAT 20@950MHz 30@2150MHz (fixed tilt 10dB) (20)	2	TV: 5.5 SAT: 6.5	117	1

*** For exclusively DTT distributions the output level can be increased by 7dB (i.e. 108 analogue --> 115 digital).**

General features		
Power supply	Vac, Hz	220-240, 50-60
Isolation class		II
IN/OUT impedance	Ohm	75
IN/OUT connectors		F female
Band linearity	dB	±2
Max. power consumption	W	1.8, 2.5 (AFI123W)
Compliant to		EN50083-2, EN60065 Directives 89/336/CEE(EMC),73/23/CEE (low voltage)
Dimensions	mm	120x97x43
Operating temperature	°C	-10 to +55

Indoor modulators

MOD Series

Indoor modulator that allows you to convert any composite AV source directly to digital DVB-T or DVB-C. It converts composite Analogue signals (PAL, NTSC or SECAM) from Video Cameras, Security Cameras, DVD players and set top boxes into COFDM or PAL. The full standard modulator is compact, easy to maintain and simple to install. Extra functionality provides excellent compatibility with all digital TVs. Plug and play setup or create your own channel name , Logical Channel Number and RF output.

▶ MOD-...

Item		MOD-COFDM	MOD-DVB-T/C
Code		280006	280008
Inputs	1	3 RCA Cinch (video / stereo audio)	
	2	F female MIX	
INPUT 1 RCA			
Base-band video input level (Yellow)	Vpp	0.7 – 1.5	
Video standard supported		PAL, NTSC, SECAM	
Impedance	Ohm	75	
Audio input level (white=Left, Red=Right)	Vpp	0.1 - 4	
Impedance	Kohm	> 10	
Audio level Adjustment	dB	-6 to +34 (in respect to 1Vp nom.) or ALC	
INPUT SIGNAL PROCESSING			
Minimum video data rate	Mbit/sec	8 (or less w/ lower data rate DVB-T configuration)	
Audio data rate	Kb/sec	256	
Audio sampling rate	KHz	32, 44.1 ,48 selectable	
Audio mode		Stereo or mono	
Country of Installation		Europe, UK, France, Australia, other countries	
Channel name		Selectable thr. TPE (14 Char. max.)	
LCN number		From 1 to 999 (100 default)	
Video aspect ratio		4:3 , 16:9, AUTO (detected from input signal)	
OUTPUT 1			
COFDM standard		DVB-T	DVB-T/ DVB-C
Output channel bandwith	MHz	7 / 8	
Carriers number	No.	8K	
Carrier modulation		QPSK , 16QAM, 64QAM Selectable	
FEC		1/2, 2/3, 3/4, 5/6, 7/8	
Guard interval		1/4, 1/8,1/16,1/32	
Output frequency range	MHz	111-300,470,862	
Output frequency accuracy	KHz	±20	
Output level	dBuV	60 ÷ 90, adjustable in 1dB steps	
Output MER	dB	>33	
Symbol rate QAM			1-6.999 Msym/s
Carrier modulation QAM			16QAM, 32QAM, 64QAM, 128QAM, 256QAM
MAIN FEATURES			
Mains	Vac/Hz	220-240, 50-60	
Power consumption	W	Typical 7.5	
Connectors type		RCA: video/audio in. F female: RF mix/output	
Operating temperature		-10 to +55	
IP protection		IP20	
Basic setup mode		4digit display and 3 keys	
Advanced setup mode		TPE	
Compliant with		EN60065: 2004-06, EN50083-2: 2002-05	

Indoor electronic equipment

Indoor modulators

MOD90 - MOD90R

Double sideband indoor audio/video modulators. Output channel programmable via dip-switch. Stable frequency output due to PLL Synthesis and controlled via microprocessor. The modulator can be powered from the receiver or using an external power supply (9-24V/80mA max). Packaging 1 pc.

- This unit can be used to distribute signals from a receiver without a modulator
- Audio/video input connection via SCART socket and high output level (90dBµV)
- Adjustable audio/video inputs
- Multistandard

▶ **MOD90 - MOD90R**

Item		MOD90	MOD90R
Code		280001	280002
Power supply	V	9-24	9-24
Connection	type	Coaxial cable or Jack	Coaxial cable or Jack
Max. consumption	mA	80	80
Video signal level	Vpp	1	1
Audio signal level	Vrms	1	1
Bandwidth	MHz	5-2300	5-2300
RF output level	dBµV	75-90 (adjustable)	75-90 (adjustable)
Output channels		IF + E2-E12 + S1-S20 + E21-E70	IF + E2-E12 + S1-S20 + E21-E70
Available standards		PAL B/G, I, D/K, SECAM L, H	PAL B/G, I, D/K, SECAM L, H
Pass-through attenuation	dB	4 ± 1	4 ± 1
RF connectors	type	F	F
A/V connectors	type	Pass-through scart	RCA
Dimensions	mm	100x75x30	80x75x30
Operating temperature	°C	-10 to +40	-10 to +40

Indoor modulators

MOD90S

Multistandard double sideband audio/video stereo A2 modulator with Crystal PLL synthesizer to set up the output frequency.
The VHF and UHF frequency band and the high flexibility with multi-standard selection enable it to be used in many different installations.

- PLL crystal frequency stabilisation

▶ **MOD90S**

Item			MOD90S
Code			287058
Composite video input	Frequency range	Hz-MHz	20 - 6
	Input level/Impedance	Vpp/Ohm	0.9 – 1.1 / 75
Audio input	Frequency range	Hz	20 - 15,000
	Input level/Impedance	mVpp/KOhm	775 (typ.) / 10
	Frequency deviation	kHz	±50
	Level adjustment	dB	±6 (programmable)
RF output	Modulated output level	dBµV	90 (typical)
	Output level adjustment	dB	20
	Available standards		B/G, D/K, H, I, SECAM L, M/N, (programmable)
	Output frequency range	MHz	47-68, 170-300, 470-862 (programmable)
Sub-carrier frequency	Sound 1	MHz	4.5, 5.5, 6.0, 6.5 (programmable)
	Sound 2	MHz	5.742
Video carrier frequency fine tuning		MHz	±2.25 in steps 0.25 (programmable)
Sound 1 sub-carrier frequency		dB	12/16
Sound 2 sub-carrier frequency		dB	21 ± 3
Amplitude modulation depth		%	81 (typical)
Weighted signal to noise ratio		dB	>55
Power consumption		W	2.5
Mains		Vac, Hz	230, 50
Operating temperature		°C	-10 to +40

Mast channel processors

ICP/UU - MCP/UU

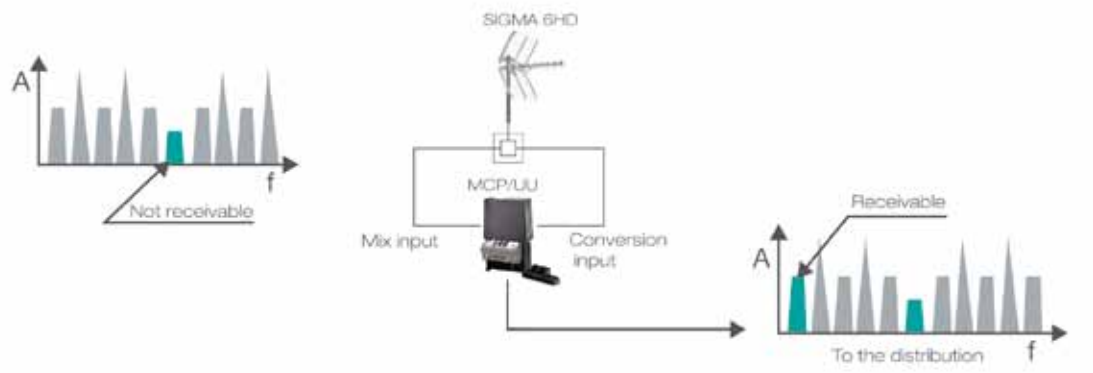
Agile RF converters to process analogue and digital terrestrial channels used to move a channel from its original frequency to anywhere else in the UHF band. Input and output
frequencies are set by means of a built-in dip-switch.
Due to the high SAW selectivity, it can also be used as a single channel filter. Level adjustment through an internal attenuator.
Input to mix all other existing channels from a different aerial.

- Dual conversion technology and SAW filter to distribuite adjacent channels and avoid spurious signals in the band
- Fully programmable through a dip-switch
- Wide dinamic input range
- Input MIX to combine the output signal from another aerial
- ICP/UU for indoor installations, MCP/UU for outdoor installations

▶ ICP/UU ▶ MCP/UU

Item		ICP/UU	MCP/UU
Code		223367	223366
Inputs	No.	2	
Input 1	Band	UHF	
Input 2	Band	III + S + UHF	
Output	Band	III + S + UHF	
Input 1 conversion			
Input frequency	MHz	470 - 862	
Channels	No.	21 – 69	
Channel selection		Dip-switch	
Frequency step	MHz	8	
Max. input RF level	dBµV	90	
Gain	dB	15	
Gain adjustment	dB	20	
Phase noise	dBc/Hz	85 @ 10KHz	
Maximum output level	dBµV	90 (IM3 -54dBc 2 tones)	
Maximum output level	dBµV	97 (IM3 -35dBc 2 tones)	
Input 2 MIX			
Bandwidth	MHz	47 – 862	
Insertion loss	dB	-4	
General features			
Mains voltage	V, Hz	220-240~, 50-60	-
Power consumption	W	5	-
Supply voltage	Vdc	-	12 (from output connector)
Current consumption	mA	-	170
Operating temperature	°C	-5 to +55	
Dimensions	mm	127x58x128	127x58x129
Compliant		EN60065: 2004-06, EN50083-2: 2006-06	EN50083-2: 2006-06

Installation example



Multiband amplifiers and equaliser filters

Multiband amplifiers

MBJ Series

Multiband amplifiers to amplify and mix signals from several sources. Two versions, one 115dBµV and the other 123dBµV, to be used in small and medium networks. Metal housing, totally shielded, with plastic cover and F connectors. Compatible with DTT signals in COFDM modulation. Packaging 1 pc.

- Separate amplification for VHF and UHF bands
- All the adjustments are located under the cover to prevent unauthorised access
- Switch mode power supply, high efficiency and low consumption
- Remote power supply selectable on each input, 100mA max

▶ **MBJ..**

Item	Code	Inputs No.	Inputs / Gain dB								Output level	Noise figure VHF/UHF dB	Power cons. W
			VHF E2-S30	B. I+FM+C	B. I	B. III	B. IV	B. V	B. UHF	B. UHF			
MBJ2510	223301	1	-	-	-	21	25	25	-	-	115/118	4/8	5
MBJ2510DT	223405	1	-	-	-	21	25	25	-	-	115/118	4/8	5
MBJ2557	223300	4	28	FM 28	-	-	-	-	-	26	115/118	4/6	5
MBJ2320	223408	2	VHF+UHF23	-	-	-	-	-	24	-	115/118	5/6	5
MBJ2321	223334	2	24	-	-	-	-	-	24	-	115/118	5/6	5
MBJ2331	223303	3	-	-	21	21	-	-	23	23	115/118	4/8	5
MBJ2340/35-36	223403	4	-	-	-	III+ DAB19	22	22	22	-	115/118	4/8	5
MBJ2340/31-33	223404	4	-	-	-	III+ DAB19	22	22	22	-	115/118	4/8	5
MBJ2350	223308	5	-	-	21	19	22	22	22	-	115/118	4/8	5
MBJ2350/..[1]	223309	5	-	-	21	19	22	22	22	-	115/118	4/8	5
MBJ2356	223313	5	-	21	-	19	22	22	22	-	115/118	4/8	5
MBJ2356/..[1]	223314	5	-	21	-	19	22	22	22	-	115/118	4/8	5
MBJ2620	223335	2	30	-	-	-	-	-	30	-	113/117	4.5/5.5	5
MBJ2640	223336	4(2 out)	-	25	-	25	-	-	30	30	113/117	4/8	5
MBJ2640/35-36	223406	4	-	-	-	III+ DAB30	30	30	30	-	115/120	4/8	5
MBJ2640/31-33	223407	4	-	-	-	III+ DAB30	30	30	30	-	115/120	4/8	5
MBJ2650	223316	5	-	-	30	30	30	30	30	-	115/120	4/8	5
MBJ3610	223409	1	-	-	-	33	-	-	33	-	116/123	4/6	7
MBJ3620	223333	2	35	-	-	-	-	-	35	-	116/123	4/6	7
MBJ3631	223322	3	-	-	33		-	-	33	33	116/123	4/8	7
MBJ3640LTE	223410	4	-	-		III+ DAB33	33	33	34	-	116/123	4/8	7
MBJ3640/35-36	223401	4	-	-		III+ DAB33	33	33	34	-	116/123	4/8	7
MBJ3640/31-33	223322	4	-	-		III+ DAB33	33	33	34	-	116/123	4/8	7
MBJ3650	223324	5	-	-	33	33	33	33	34	-	116/123	4/8	7
MBJ3650/..[1]	223325	5	-	-	33	33	33	33	34	-	116/123	4/8	7
MBJ3656	223328	5	-	33	-	31	31	32	32	-	116/123	4/8	7

General features		
Remote power	VDC	12, 100mA total, available on any input
Gain adjustment	dB	0 to 20 on every input
Mains voltage	Vac, Hz	220-240, 50-60
Connectors		F female
Dimensions (LxHxW)	mm	127x58x128
Operating temperature	°C	-10 to 55

[1] Models with suffix /.. are tuned specially, the last channel of band IV and the first channel of band V must be specified on order (e.g. MBJ3650/38-40)
[2] Also available SAT input: gain 33-38dB (sloped)
- In the standard models without suffix, band IV includes channels E21-E35 and band V includes channels E39-E69

Multiband amplifiers

MBX Series

Multiband amplifiers to amplify and mix signals from several sources.
Die-cast housing, totally shielded with F connectors. Separate VHF and UHF band amplification on the 125dBµV version, broadband push-pull amplification on the 130dBµV version. High gain and high output level allow the use of these products in medium to large installations. Cover fixed with safety screws. Compatible with DTT signals in COFDM modulation. Packaging 1 pc.

- High output level, up to 130dBµV
- Test point -30dB available on all products
- All the adjustments under the cover to prevent unauthorised access
- Switch mode power supply, high efficiency and low consumption
- Remote power supply adjustable on each input, 100mA max.

▶ **MBX..**

Item	Code	Inputs	Inputs / Gain dB									Output level (-35dBc 2 carr.)	Noise figure	Power cons.
		No.	VHF 47-238MHz E2-S30	FM 87.5-108MHz	B. I	B. III	B. IV	B. V	B. UHF	B. UHF	B. UHF	dBµV VHF/UHF	dB VHF/UHF	W
MBX5540/35-36	235103	4	-	-	-	31	30	30	30	-	-	122/125	4.5/8.5	8.5
MBX5540/31-33	235104	4	-	-	-	31	30	30	30	-	-	122/125	4.5/8.5	8.5
MBX5541	235002	4	-	31	30		-	-	30	30	-	122/125	4.5/7.5	8.5
MBX5550	235004	5	-	-	31(1)	31	30	30	30	-	-	122/125	4.5/8.5	8.5
MBX5550/..(2)	235008	5	-	-	31(1)	31	30	30	30	-	-	122/125	4.5/8.5	8.5
MBX5551(3)	235015	5	-	34	34	34	-	-	32	32	-	122/125	5/8.5	8.5
MBX5710.	235025	1	43	-	-	-	-	-	43	-	-	122/125	4.5/6	8.5
MBX5720	235021	2	43	-	-	-	-	-	43	-	-	122/125	4.5/6	8.5
MBX5721	235107	2	VHF+UHF 38	-	-	-	-	-	43	-	-	122/125	4.5/6	8.5
MBX5740/35-36	235101	4	-	-	-	38	43	43	43	-	-	122/125	4.5/8.5	8.5
MBX5740/31-33	235102	4	-	-	-	38	43	43	43	-	-	122/125	4.5/8.5	8.5
MBX5740LTE	235108	4	-	-	-	38	43	43	43	-	-	122/125	4.5/7.5	8.5
MBX5741*	235001	4	-	35	B. I 36	B. III 38		-	-	43	43	-	122/125	4.5/7.5	8.5
MBX5750	235003	5	-	-	35(1)	38	43	43	43	-	-	122/125	4.5/8.5	8.5
MBX5750/..(2)	235009	5	-	-	35(1)	38	43	43	43	-	-	122/125	5/8.5	8.5
MBX5752(3)	235014	5	-	35	B. I 36	B. III 38		-	-	30	42	42	122/125	5/8.5	8.5
MBX5851(3)	235016	5	-	34	34	34	-	-	44	44	-	122/125	5/8.5	8.5
MBX7740/35-36	235105	4	-	-	-	40	40	40	40	-	-	130	11	13.5
MBX7740/31-33	235106	4	-	-	-	40	40	40	40	-	-	130	11	13.5
MBX7741	235006	4	-	40	40		-	-	40	40	-	130	11	13.5
MBX7750	235005	5	-	-	40(1)	40	40	40	40	-	-	130	11	13.5

* Also available with UK plug: MBX5741UK - Code 235012

General features		
Gain adjustment	dB	0-20 on every input
Linearity	dB	± 2
Isolation between inputs	dB	> 20
Mains voltage	Vac, Hz	Switch mode, isolation class: II 220-240, 50-60
Connectors		F, 75 Ohm
Protection		IP20
Dimensions (LxHxW)	mm	194x143x64
Operating temperature	°C	-10 to +55

Item	Code	
MBX0001	235000	Accessories kit composed of no. 2 plastic supports & mounting screws, used to install the MBX series leaving a space between the amplifer and the wall. Packaging 10 pcs.

(1) Ability to extend the band up to 108MHz using an internal jumper (2)Models with suffix /.. are tuned specially, the last channel of band IV and the first channel of band V must be specified on order (e.g. MBX5750/38-40) (3)MBX0001 spacing kit included in the packaging. •In the standard models without suffix band IV includes channels E21-E35 and band V includes the channels E39-E69

Multiband amplifiers and equaliser filters

Headend amplifiers

AMP9764 - AMP9564

Mains powered amplifiers to amplify satellite signals with passive loop-through of the TV signal. To be used as a launch amplifier in IF systems or as a SAT line amplifier. They allow gain and slope adjustment in the SAT band. Cover fixed with safety screws. No DC pass from the output to the inputs. Compatible with DTT signals in COFDM modulation. For installation, supports are available (item MBX0001, see page 64) that leave a space of 19mm
between the amplifier and the wall, allowing room for cables or the amplifier to be mounted in different positions. Packaging 1 pc.

- LNB power supply: 0V, 14V, 18V, 0/22Hz
- Low insertion loss in RF band
- Switch mode power supply, high efficiency and low consumption
- All the adjustments are located under the cover to prevent unauthorised access

AMP9764
Dimensions194x143x64mm

Item	Code	Inputs No.	Bandwidth MHz	Gain dB	Gain adjustment dB	Tilt adjustment dB	Output level dBµV	Noise figure dB
AMP9764	235053	2	940-2400 47-862	40 -2	0-20 -	15 -	125 -	10 -
AMP9564	228371	2	950-2150 5-862	37@950MHz, 43@2150MHz -2	0-20 -	10 -	120 -	<7 -

General features					
Test socket	dB	- 30	Flatness	dB	±2
Mains voltage	Vac, Hz	220-240, 50-60	Connectors		F
Power consumption	W	11	Protection		IP20, for internal use
Impedance	Ohm	75	Operating temperature	°C	-10 to +55

Equaliser filters

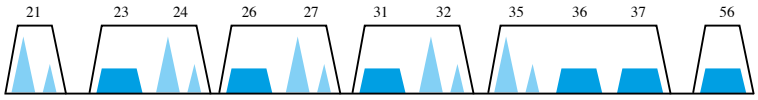
FIL.., PAS..

Made to order filters

- Controlled tilt when adjusting attenuation
- Good selectivity (3 cells)
- Low insertion loss
- Potentiometer for fine tuning with no deterioration in impedance

▶ FIL.., PAS..

Example of the use of a channel group equaliser filter

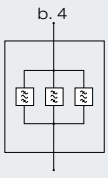


General features

No. of inputs		1-5	Variable attenuation dynamics	dB	18 typ.
No. of outputs		1-4	Continuous component transmission		Yes
No. of channels		1 to 5 for each cluster	Connectors		F
Insertion loss	dB	4 typ.	Dimensions (LxHxW)	mm	170x105x50
Min. freq. deviation between vision carriers	MHz	16	Fixing		4 screws
Channel protection at n +/- 2	dB	18 typ.			

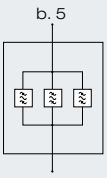
Item **FIL132200**
Code 226611

1 input UHF band 4
3 clusters
1 output



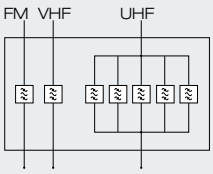
Item **FIL132201**
Code 226612

1 input UHF band 5
3 clusters
1 output



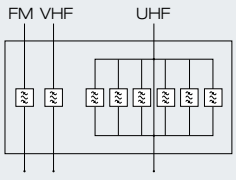
Item **PAS0436301**
Code 226625

3 inputs: FM – VHF - UHF
1 cluster VHF
5 clusters UHF



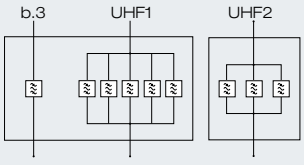
Item **PAS0437301**
Code 226626

3 inputs: FM – VHF - UHF
1 cluster VHF
6 clusters UHF



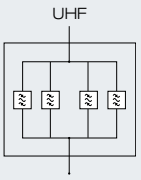
Item **FIL392110** - Code 289672

3 inputs
VHF - UHF1 - UHF2
1 cluster on VHF
5 clusters on UHF1
3 clusters on UHF2
(all of them in Band 4 or Band 5)



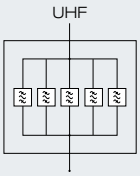
Item **FIL141200**
Code 226618

1 input UHF
4 clusters
1 output



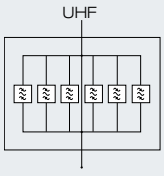
Item **FIL151200**
Code 226619

1 input UHF
5 clusters
1 output



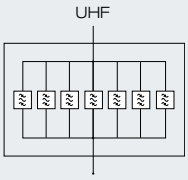
Item **FIL161200**
Code 226620

1 input UHF
6 clusters
1 output



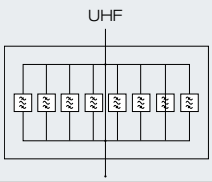
Item **FIL171200**
Code 226621

1 input UHF
7 clusters
1 output



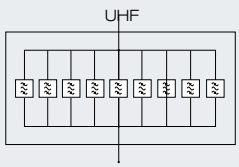
Item **FIL181200**
Code 226622

1 input UHF
8 clusters
1 output



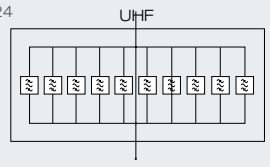
Item **FIL191200**
Code 226623

1 input UHF
9 clusters
1 output



Item **FIL191201**
Code 226624

1 input UHF
10 clusters
1 output



Multiband amplifiers and equaliser filters

Programmable equaliser filters

FIL Series

FIL Series is the new range of highly selectable programmable cluster headends designed by Fracarro's internal R&D department. It is duitable to filter from 1 up to 6 channels for each cluster, selectable

- Programmable using the built-in keypad and LCD display or using a PC based software
- Possible to copy the configuration from a headend to another one by means of a USB pen drive, quickly and easily
- "Clusters autoalignment" function for automatic gain adjustment which enables equalised output signals and a better noise figure
- Clusters can be split over 3 different UHF inputs through a completely flexible matrix
- Heat dissipation by natural convection, no fans required, reducing maintenance costs

▶ **FIL10**

Item		FIL 06		
Code		272107		
Inputs		B. III+DAB	UHF1	UHF2
Frequency	MHz	174-320	470-862	470-862
Selectable cluster on inputs	UHF1 UHF2	- -	5, 6 1, 2, 3, 4, 5, 6	
Gain	dB	18	18	18
Dynamic adjustment (on each input)	dB	20	20	20
Cluster adjustment	dB	-	20	20
Max. input level	dBµV	100	90	90
Max. output level	dBµV	90	90	90
Remote power (max. 250/100mA)		-	12/24V	12/24V

Item		FIL 10			
Code		272108			
Inputs		B. III+DAB	UHF1	UHF2	UHF2
Frequency	MHz	174-320	470-862	470-862	470-862
Selectable cluster on inputs	UHF1 UHF2 UHF3	- - -	8,9,10 5,6,7,8,9,10 1,2,3,4,5,6,7,8,9,10		
Gain	dB	18	18	18	18
Dynamic adjustment (on each input)	dB	20	20	20	20
Cluster adjustment	dB	-	20	20	20
Max. input level	dBµV	100	90	90	90
Max. output level	dBµV	90	90	90	90
Remote power (max. 250/100mA)		-	12/24V	12/24V	12/24V

General features		
Cluster selectivity	dB	20@10MHz
Cluster bandwidth	MHz	8-48 (1-64ch)
IN/OUT return loss	dB	>10
Mains	Vac	220-240
Power consumption	W	25 (FIL 10), 20 (FIL 06)
Noise figure (III+DAB, UHF)	dB	6.6
Operating temperature	° C	-5 to +50
Dimensions	mm	230x230x50 (FIL 10), 160x230x50 (FIL 06)

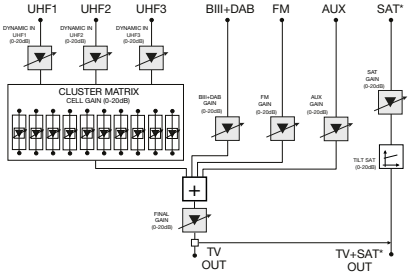
Programmable headends

FRPRO.. Series

FRPRO is the new range of highly selectable programmable cluster headends designed by Fracarro's internal R&D department. Available in 4 versions, the head-ends enable different TV channels to be filtered and amplified. The clusters in the UHF band can be programmed for each channel, from 1 to 6 channels. For the FR-PRO10x Series the maximum number of clusters is 10, this means the headend can distribute up to 60 channels (6 channels x 10 clusters).

- Programmable using the built-in keypad and LCD display or using a PC based software
- Possible to copy the configuration from a headend to another one, either the same model or a headend belonging to the range by means of a USB pen drive, quickly and easily
- "Clusters autoalignment" function for automatic gain adjustment which enables equalised output signals and a better noise figure
- Clusters can be split over 3 different UHF inputs through a completely flexible matrix
- Heat dissipation by natural convection, no fans required, reducing maintenance costs

FRPRO.. Series



Item		FRPRO 06				
Code		272106				
Inputs	No.	FM	B. III+DAB	AUX	UHF1	UHF2
Frequency	MHz	88-108	174-300	47-862	470-862	470-862
Selectable cluster on inputs	UHF1 UHF2	- -	- -	- -	5, 6 1, 2, 3, 4, 5, 6	
Gain	dB	46	36	36	43	43
Dynamic adjustment (on each input)	dB	20	20	20	20	20
Cluster adjustment	dB				20	20
Master level adjustement	dB	20				
Max. input level	dBµV DTT	90	85	110	90	90
Max. output level	dBµV DTT	121				
Remote power (max. 250/100mA)		No	No	No	12/24V	12/24V

Item		FRPRO 10 - FRPRO 10A - FRPRO 10S						
Code		272102 - 272103 - 272104						
Inputs	No.	FM	B. III+DAB	AUX	UHF1	UHF2	UHF3	SAT (FRPRO 10S only)
Frequency	MHz	88-108	174-300	47-862	470-862	470-86	470-862	950-2150
Selectable cluster on inputs	UHF1 UHF2 UHF3	- - -	- - -	- - -	8, 9, 10 5, 6, 7, 8, 9, 10 1, 2, 3, 4, 5, 6, 7, 8, 9, 10			
Gain	dB	46	46	36	43 (PRO10, 10S) 48 (PRO10A)	43 (PRO10, 10S) 48 (PRO10A)	43 (PRO10, 10S) 48 (PRO10A)	35-42 sloped
Dynamic adjustment (on each input)	dB	20	20	20	20	20	20	20
Cluster adjustment	dB				20	20	20	-
Master level adjustement	dB	20	20	20	20	20	20	-
Max. input level	dBµV DTT	90	85	110	90	90	90	-
Max. output level	dBµV DTT	120 (PRO 10S) - 121 (PRO 10) - 125 (PRO 10A)						
Remote power (max. 250/100mA)		No	No	No	12/24V	12/24V	12/24V	13/18,0-22kHz

General features		
Cluster selectivity	dB	20@10MHz
Cluster bandwidth	MHz	8-48 (1-64ch)
IN/OUT return loss	dB	>10
Outputs		1 + 1 for test (-25dB) + 1 TV/SAT (FRPRO 10S only)
Mains	Vac	220-240
Power consumption	W	19 (FRPRO 06) / 23 (FRPRO 10) 25 (FRPRO 10A) / 32 (FRPRO 10S)
Operating temperature	° C	-5 to +50
Noise figure (FM, III+DAB, UHF, AUX)	dB	6, 6, 6, 10

Headends

Headends

Compact headends

Compact Line Series

SIG9506 - SIG9606

Compact headend for the reception and distribution of 6 digital terrestrial (SIG9606) or satellite (SIG9506) channels. It demodulates and remodulates them into the entire RF band. Stereo versions are available (SIG9506S, SIG9606S). Compact headend includes 6 QPSK or COFDM receivers, 6 A/V modulators, 6-way combiner with existing TV signal mixing, power supply and programming unit with backlit display.
A/V outputs are available to connect external modulators.
Earth bounding connection. Compliant to EN50083-2.

▶ SIG9506.. ▶ SIG9606..

- Fullband modulator (174-446MHz + 470-867MHz)
- Easy to install, all items are included in one box
- SIG9506: each single receiver can generate 14 or 18V, 22KHz tone and DiSEqC 1.0, suitable to feed an LNB or to control a multiswitch output
- SIG9606: 12VDC 100mA socket available to supply pre-amplifiers through a power inserter (MPCCF)
- Software available to set up the headend using a PC (using item KRS-RJ, not included)
- Software can be upgraded on site (using item KRS-RJ, not included)
- Heat dissipation by natural convection, no fans needed, reducing maintenance costs

Installation examples

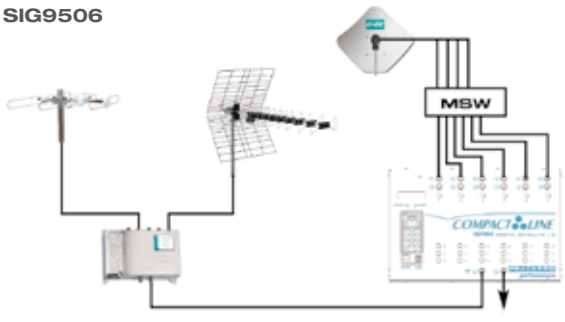
QPSK and COFDM headends

Connecting several receivers to the same polarity

SIG9506

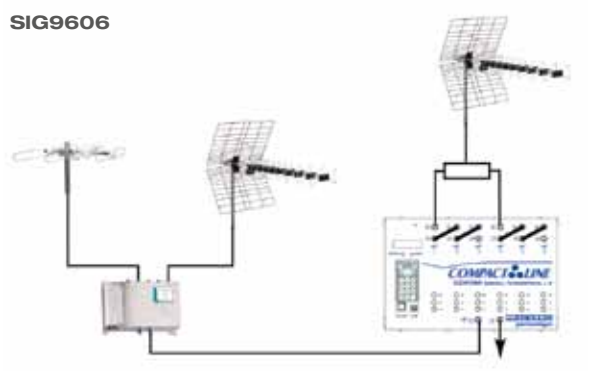
Using a multiswitch to distribute signals to all receivers

SIG9506



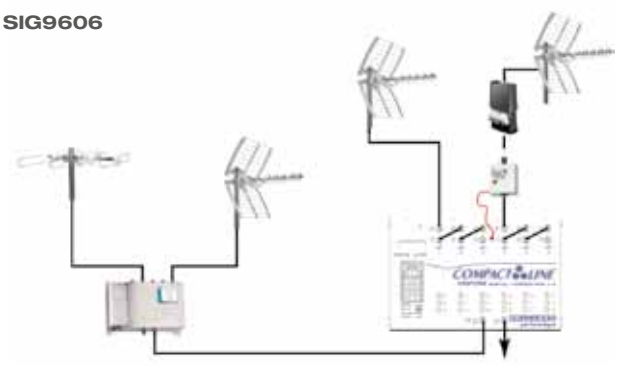
Connecting several receivers to the same polarity

SIG9606



Using a masthead amplifier to amplify the signal

SIG9606



Item			SIG9506..		SIG9606..	
Code			SIG9506 (283126)	SIG9506S (283127)	SIG9606 (283128	SIG9606S (283129)
Inputs SAT QPSK TV COFDM	Input frequency	MHz	950-2150		174-230 + 470-862	
	Input level	dBµV	45-80		35-80	
	Impedance	Ohm	75			
	Bandwidth	MHz	36		7 or 8	
	Input step tuning		1MHz		166.6KHz	
	Loop-through insertion loss	dB	-4 to +4		-1 to +5	
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal			
	DiSEqC		1.0 4 positions 0/14/18V 0/22KHz		-	
	LNB power supply		Max. 400mA@14V		12VDC 100mA available on external socket	
QPSK demodulation	AFC range		-2.5 to +2.5MHz		±285KHz (2K) ±142KHz (8K)	
	Symbol rate	Msymb/sec	2-35 (compatible SCPC/MCPC)		-	
	FEC		Auto		-	
COFDM demodulation	Carriers		-		2K, 8K	
	Modulation		-		QPSK, 16QAM, 64QAM	
	Hierarchy		-		High/low priority	
	Guard interval		-		1/4, 1/8, 1/16, 1/32	
	FEC		-		1/2,2/3,3/4,5/6,7/,8	
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP@ML)			
	Audio decoder		MPEG-2 Layer I and Layer II			
	Colour standard		PAL/SECAM/NTSC	PAL B/G	PAL/SECAM/NTSC	PAL B/G
	Video format		4:3, 16:9, pan scan, letter box			
	Audio format		Mono, language 1, language 2	Stereo, dual sound, mono, auto	Mono, language 1, language 2	Stereo, dual sound, mono, auto
A/V outputs	Video type		Composite			
	Video level	Vpp-Ohm	1-75			
	Max. audio level	Ohm-mVrms	600-600			
	Band frequency	Hz	20-15000			
TV modulator	Modulator		DSB (double sideband)			
	Standard		PAL (B/G ,D/K, I, N, H), SECAM L, NTSC M	PAL B/G	PAL (B/G ,D/K, I, N, H), SECAM L, NTSC M	PAL B/G
	Output frequency (channels)	MHz MHz	VHF: 174-446 (E5-S38) UHF: 470-862 (E21-E69)			
	Output level	dBµV	100			
	Output level adjustment	dB	10 (independent for every channel)			
	Audio level adjustment	dB	0-10			
	S/N weighted	dB	52 typ.			
	Output channel programming		By frequency (steps of 250KHz) or by channel			
	No. of outputs		2 outputs (output and mix input)			
	TV mixing input	MHz	47-862			
	TV mixing insertion loss	dB	2			
	Test signal		Black screen or white rows to be used for radio signal distribution			
General features	Input connectors		2 x F connectors (input + loop-through) for every channel			
	Output connectors		2 F connectors (output and mix input)			
	A/V output connectors		1 x RCA connector for every channel			
	Mains voltage	Vac, Hz	220-240, 50-60			
	Power consumption	W	63	70	53	60
	Compliant		EN50083-3, EN60065			
	Dimensions	mm	370x240x150			
	Operating temperature	°C	-10 to +45			

Mid level headends

K Series

Modular systems for MATV/SMATV systems

The design targets of the K series are:

- Easy installation and maintenance
- Flexibility in the unit/headend composition (particularly for the integration between traditional TV, satellite TV and satellite IF)
- Solid and inexpensive without compromising performance
- Ready for future product ranges
- In compliance with all European and international regulations in force, including electromagnetic compatibility (mark, according to 2004/108/EC directive).

The main features of K series products are:

- All products are fully compatible with digital (terrestrial and satellite) programs
- Fixing to a standard DIN bar provides good mechanical strength and maximum density when assembling the headends. It also allows the use of a wide range of standard accessories available on the market
- Single voltage feed (12V, negative). A local power supply is provided where necessary. It is quick and easy to replace and keeps spare parts down to a minimum
- All modules have a solid mechanical structure. In particular, channel filters - where dimensional stability and surface conductivity are critical features - come in die-cast small silver plated boxes
- For RF connections, all modules use “F” connectors with quick fit interconnection bridges
- Wide range of products dedicated to digital terrestrial and satellite signals. They perfectly integrate with existing headends, fulfilling any installation requirement
- Adjacent channel distribution is possible due to the channel filters selectivity together with the vestigial sideband (VSB) modulators used in satellite receivers
- Active filters for digital terrestrial have been developed using the KF and K120 active channel filters. These have been calibrated specially for the distribution of new COFDM modulated signals
- 19” rack installation possible
- Software can be upgraded on site using the KRS-RJ adaptor (not included)
- Programmable using a TPE or via FHM software (these items are not included)

K Series

Channel amplifiers

Channel amplifiers with five resonant circuits for VHF modules and four for UHF modules. Excellent selectivity allows the distribution of adjacent channels.
The SMD amplification card ensures a high degree of reliability and accuracy. Not sensitive to static discharge and temperature change, stability has been taken into account during the
design phase.
Operating temperature: –10° to +55°C.
Packaging 1 pc.

▶ **KF/.. - KF/DAB - K120L/..**
Dimensions 32x129x86mm

Item	Code	Gain (adj.) dB	Selectivity dB Standard B/G*				Return loss input dB	Return loss output dB	Max. output level dBµV	Noise figure typ. dB	Channels	Max. power consumption mA
			ACn-2	ACn-1	VCn+1	VCn+2						
KF/..	2701xx	9 (45)	35	5	9	35	10	15	93	7	E2-E4	20@12VDC
		9 (45)	-	-	-	-	15	15	90	4	FM	20@12VDC
		9 (45)	40	5	10	44	10	10	95	9	E5-E12	20@12VDC
		7 (30)	35	5	10	40	10	10	95	10	S11-S20	20@12VDC
		11 (35)	42	10	6	46	12	12	95	10	S21-S38	38@12VDC
		11 (35)	42	10	16	46	10	10	95	10	E21-E69	38@12VDC

K Series

DAB amplifiers

Channel amplifiers to filter and distribute the DAB (Digital Audio Broadcasting) band. Packaging 1 pc.

Item	Code	Gain (adj.) dB	Return loss input dB	Return loss output dB	Max.output level dBµV	Bandwidth MHz	Max. power consumption mA
KF/DAB	270058	14 (45)	10	10	100	217-230	20@12VDC
KF/DAB1	270060	12 (45)	10	10	100	195-223	20@12VDC
K120/DAB1	270278	45 (40)	10	10	120	195-223	180@12VDC

K Series

120dBµV output channel amplifiers

Channel amplifiers with five resonant circuits.
Excellent selectivity allows the distribution of adjacent channels. The SMD amplification card ensures a high degree of reliability and accuracy. Not sensitive to static discharge and temperature change, stability has been taken into account during the design phase. Operating temperature: from –10° to +55°C. Packaging 1 pc.

Item	Code	Gain (adj.) dB	Selectivity dB Standard B/G*				Output level dBµV	Noise figure dB	Channels	Max. power consumption mA
			ACn-2	ACn-1	VCn+1	VCn+2				
K120L/..	2708xx	45 (40)	35	5	9	35	120	8	E2-E4	180@12VDC
		40 (40)	-	-	-	-	112	5	FM	200@12VDC
		45 (40)	40	5	10	44	120	9	S1-S10	180@12VDC
		45 (40)	40	5	10	44	120	9	E5-E12	180@12VDC
		45 (30)	35	5	10	40	120	10	S11-S20	200@12VDC
		45 (30)	42	10	16	46	120	9	S21-S38	200@12VDC
		45 (30)	42	10	16	46	120	9	S39-S41	200@12VDC
		45 (30)	42	12	18	46	120	9	E21-E69	200@12VDC

***** It is possible to adjust the amplifier to a different standard on request.

Mid level headends

K Series

Channel amplifiers with automatic gain control (AGC)

Channel amplifiers with five resonant circuits for VHF and UHF bands.
Excellent selectivity allows the distribution of adjacent channels.
The automatic gain control gives a constant output level even with a varying input level. Essential in conditions where the signal reception level may vary and also useful in CATV networks with cascaded line amplifiers and for the inputs of fibre optic links.
Operating temperature: -10° to +55°C.
Packaging 1 pc.

K120A/.. - KFB..
KF-K120L-K120A/...DT
Dimensions 32x129x86mm

Item	Code	Max. input level dBµV	Selectivity dB Standard B/G*				Output level adj. dB	AGC dynamic (max.) dB	Noise figure dB	Channels	Max. power consumption mA
			ACn-2	ACn-1	VCn+1	VCn+2					
K120A/..	2707xx	90	42	12	18	46	110-120	25	8	E2-E4	210@12VDC
		95	42	12	18	46	110-120	30	9	E5-E12	210@12VDC
		95	42	12	18	46	110-120	30	10	E21-E69	210@12VDC

K Series

Band amplifiers

These are provided with three channel traps to equalise the input channels or to eliminate unwanted channels. Each trap has 15dB attenuation and can be tuned by the installer.
The KFB4 and KFB5 can be placed alongside the KF/.. filters being careful not to tune to future channel requirements. They use the same mechanical structure as the K series, with F connectors and a self mixed output. Packaging 1pc.

Item	Code	Bandwidth MHz	Gain (adj.) dB	Return loss input dB	Return loss output dB	Max.output level dBµV	Noise figure typ. dB	Max. power consumption mA
KFB3	270063	174-240	30 (20)	10	10	100	5	100@12VDC
KFB4	270054	470-590	13 (20)	10	15	100	4	130@12VDC
KFB5	270055	606-862	11 (20)	10	15	100	4	130@12VDC
KFB5/..	270062	start channel on request	30 (20)	10	10	100	5	130@12VDC
KFBU	270064	174-240	30 (20)	10	10	100	5	100@12VDC

K Series

Channel amplifiers for DTT

Single channel amplified filters, KF/..DT, K120L/..DT and K120A/..DT for the distribution of digital terrestrial television signals.

Item	Code	Gain (adj.) dB	Max. input power dBµV	SELECTIVITY				Max. output power dBµV	Noise figure dB	Channels	Max. absorption mA
				Bandwidth 7MHz		Bandwidth 8MHz					
				Fc ± 3.5MHz	Fc ± 7MHz	Fc ± 4MHz	Fc ± 8MHz				
KF/...DT	2701xxDT	9 (45)	-	7	30	-	-	90	9	E5-E12	20 - 12VDC
		11 (35)	-	-	-	7	25		10	E21-E69	38 - 12VDC
K120L/...DT	2708xxDT	45 (40)	-	7	30	-	-	115	9	E5-E12	180 - 12VDC
		45 (30)	-	-	-	8	33		9	E21-E69	200 - 12VDC
K120A/...DT	2707xxDT	-	90	7	30	-	-	115-105	9	E5-E12	210 - 12VDC
		-		-	-	8	30		9	E21-E69	210 - 12VDC

* It is possible to adjust the amplifier to a different standard on request.

K Series

QPSK-COFDM FTA transmodulator

All in one solution to receive all programs contained in a DVB-S transponder and create a DTT mux in the VHF or UHF band.

- Dynamic bit rate measurement for each program of the selected transponder and for the generated output COFDM multiplex
- Management and settings of all COFDM parameters
- ARP technology: automatic recovery procedure to protect the higher priority programs and guarantee continuity of service if bit rate overflow occurs
- Priority management of the programs included in the output multiplex
- LCN settings to adjust the channel number order in all TV sets connected to the headend

KSTT
Dimensions 40x200x155mm

Item			KSTT
Code			270641
Satellite front-end	Input frequency	MHz	950-2150
	Bandwidth	MHz	36
	Input level	dBµV	48-85
	Input step tuning	MHz	1
	LNB control		0/14/18VDC, 0/22KHz, DiSEqC 1.0
	Demodulation		QPSK (DVB-S)
	FEC		1/2, 2/3, 3/4, 5/6, 7/8, AUTO
	Symbol rate	Msymb/sec	2 - 40
	AFC range	MHz	-3 to +3
	Loop-through input loss	dB	2.5
COFDM modulation	Trasmission standard		DVB-T
	Bandwidth	MHz	6, 7, 8
	Carriers		2k, 8k
	Modulation		QPSK, 16-QAM, 64-QAM
	Guard interval		1/4, 1/8, 1/16, 1/32
	FEC		1/2, 2/3, 3/4, 5/6, 7/8
RF output	Output frequency	MHz	111-862
	Output channels		S2-E69
	Max. output level	dBµV	85
	Output level adjustment	dB	0-15
	RF mix input	MHz	47-862
	Output step tuning	KHz	10
	RF insertion loss	dB	1
	Flatness	dB	1
	Output MER	dB	36
	Spurious rejection	dB	>50
General features	Supply voltage	V	12
	Current absorption	mA	Max. 600 (without LNB) Max. 1000 (with LNB)
	Connectors	Type	F female
	Programming unit		TPE
	Compliant		EN50083-2, EN60065, EN50221, ETSI TS101699
	Operating temperature	°C	-10 to +55

Mid level headends

K Series

Digital QPSK receiver with fullband DSB modulator

Free-to-air digital satellite receiver equipped with DSB multistandard analogue modulator to distribute signals to all TV's within the installation.
Possible to receive SCPC programs. Automatic PID updating.

- VHF output band modulator (E5-S38) + UHF (E21-E69)
- LNB power supply

▶ **KDF**

Item			KDF
Code			282646
SAT QPSK input	Input frequency	MHz	950-2150
	Input level	dBµV	45-80
	Impedance	Ohm	75
	Bandwidth	MHz	36
	Input step tuning	MHz	1
	AFC range	MHz	-2.5 to 2.5
	Loop-through gain	dB	-4 to +4
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal
	LNB power supply		0/12V, 22KHz, DiSEqC 1.1 (4 positions), max. 250mA
QPSK demodulation	Symbol rate	Msymb/sec	2 - 35 (compatible SCPC/MCPC)
	FEC		Auto
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)
	Audio decoder		MPEG-2 Layer I and Layer II
	Colour standard		PAL, SECAM, NTSC
	Video format		16:9, pan scan, letter box
	Audio format		Mono, language 1, language 2
TV modulator	Modulator		DSB (double sideband)
	Standard		PAL (B/G ,D/K, I, N, H, M), SECAM L, NTSC M
	Output frequency	MHz	174-446 + 470-862
	Channels		E5-S38 + E21-E21-E69
	Output level	dBµV	90
	Output level adjustment	dB	15 by means of trimmer
	Audio level adjustment	dB	0-10
	S/N weighted	dB	52
	Output channel programming		By frequency (steps of 250KHz) or by channel
	No. of outputs		2 outputs (output and mix input)
	TV mixing input	MHz	47-862
	TV mixing insertion loss	dB	<2
	Test signal		Black screen or white rows. With radio signal distribution, a picture with the radio name is shown
General features	Connectors		F
	Programming unit		TPE
	Power supply	VDC	12
	Consumption	mA	Without LNB: 500, with LNB: 850
	Compliant		EN 50083-2
	Dimensions	mm	74x36x58mm
	Operating temperature	°C	-10 to +55

K Series

QPSK receivers with vestigial sideband modulator

Digital processors for the reception of free-to-air satellite programs transmitted with QPSK modulation. The fullband modulator covers the whole 47-862MHz band allowing the distribution of adjacent channels. Ideal for use in condominium and hotel headends where it is necessary to distribute the signal to a high number of sockets.

- Wideband modulator distributes signals from 47 to 862MHz
- Vestigial sideband modulator allows adjacent channel distribution
- LNB power supply, 14/18V 0/22KHz, DiSEqC 1.0
- RCA connectors with audio/video signal available on all versions
- Subtitle and teletext management
- WSS signals compatible for the auto-adjustment of the TV video formats

▶ KDSR

Item			KDSR	KDSR-S	KDSR-M	KDSR-AV
Code			270624	270623	270622	270621
SAT QPSK input	Input frequency	MHz	950-2150			
	Input level	dBµV	43-84			
	Impedance	Ohm	75			
	Bandwidth	MHz	36			
	Input step tuning	MHz	1			
	AFC range	MHz	±3			
	Loop-through gain	dB	-4 to 0			
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal			
	LNB power supply		0/14/18VDC, 0/22KHz, max. 200mA@14VDC - DiSEqC 4 pos			
QPSK demodulation	Symbol rate	Msymb/sec	2-45			
	FEC		1/2,2/3,3/4,5/6,7/8, auto			
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)			
	Audio decoder		MPEG-2 Layer I and Layer II			
	Colour standard		PAL	PAL	PAL, SECAM, NTSC	PAL, SECAM, NTSC
	Video format		Letter box, pan scan, combined, adapted 16:9			
	Audio format		Mono, language 1, language 2	Mono, stereo, dual sound	Mono, language 1, language 2	Mono, language 1, language 2, stereo
	Teletext		Yes			
RCA outputs	Video type		Composite			
	Video level	Vpp-Ohm	1-75			
	Max. audio level	Vrms-kOhm	0.5-10			
	Band frequency	Hz	20-15000			
TV modulator	Modulator		VSB mono	VSB stereo	VSB multistandard	-
	Standard		PAL B/G	PAL B/G	D/K, I, N, H, SECAM L, NTSC M	-
	Output frequency	MHz	47-862			-
	Channels		E2-E69			-
	Output level	dBµV	90			-
	Output level adjustment	dB	0-15 by means of TPE			-
	Audio level adjustment		Yes			-
	S/N weighted	dB	≥57			-
	Output channel programming		By frequency (steps of 250KHz) or by channel			-
	No. of outputs		2 outputs (output and mix input)			-
	TV mixing input	MHz	47-862			-
	TV mixing insertion loss	dB	<1.5			-
	Test signal		Black screen or white rows to be used for radio signal distribution			
General features	Input connectors		2 F connectors (input + loop through)			
	Output connectors		2 F connectors (output and mix input)			-
	A/V connectors		3 x RCA			
	Programming unit		TPE			
	Power supply	VDC	12 ÷ 5%			
	Consumption	mA	With LNB: 1010 without LNB: 730	With LNB: 1060 without LNB: 780	With LNB: 1010 without LNB: 730	With LNB: 670 without LNB: 390
	Compliant		EN 50083-2			
	Dimensions	mm	40x200x155			
	Operating temperature	°C	-10 to +45			

Mid level headends

K Series

COFDM receivers with vestigial sideband modulator

DTT processors for the reception of free-to-air programs transmitted with COFDM modulation. The fullband modulator covers the whole 47-862MHz band allowing the distribution of adjacent channels. Ideal for use in condominium and hotel headends where it is necessary to distribute the signal to a high number of sockets.

- Wideband modulator distributes signals from 47 to 862MHz
- Vestigial sideband modulator allows adjacent channel distribution
- RCA connectors with audio/video signal available on all versions
- Subtitle and teletext management
- WSS signals compatible for the auto-adjustment of the TV video formats

KDTR - KDTR-S
KDTR-M - KDTR-AV

Item			KDTR	KDTR-S	KDTR-M	KDTR-AV
Code			270624	270623	270622	270621
TV COFDM input	Input frequency	MHz	174-230 + 470-862			
	Input level	dBµV	35-80			
	Impedance	Ohm	75			
	Bandwidth	MHz	7 or 8			
	Input step tuning	MHz	166.7			
	AFC range	MHz	±285 (2K) ±142 (8K)			
	Loop-through gain	dB	-1.5 to +4			
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal			
COFDM demodulation	Carriers		2K , 8K			
	Modulation		QPSK, 16QAM, 64QAM			
	Hierarchy		High/low priority			
	Guard interval		1/4, 1/8, 1/16, 1/32			
	FEC		1/2,2/3,3/4,5/6,7/,8, auto			
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)			
	Audio decoder		MPEG-2 Layer I and Layer II			
	Colour standard		PAL	PAL	PAL, SECAM, NTSC	PAL, SECAM, NTSC
	Video format		Letter box, pan scan, combined, adapted 16:9			
	Audio format		Mono, language 1, language 2	Mono, stereo, dual sound	Mono, language 1, language 2	Mono, language 1, language 2, stereo
	Teletext		Yes			
RCA outputs	Video type		Composite			
	Video level	Vpp-Ohm	1-75			
	Max. audio level	Vrms-kOhm	0.5-10			
	Band frequency	Hz	20-15000			
TV modulator	Modulator		VSB mono	VSB stereo	VSB multistandard	-
	Standard		PAL B/G	PAL B/G	D/K, I, N, H, SECAM L, NTSC M	-
	Output frequency	MHz	47-862			-
	Channels		E2-E69			-
	Output level	dBµV	90			-
	Output level adjustment	dB	0-15 by means of TPE			-
	Audio level adjustment		Yes			-
	S/N weighted	dB	≥57			-
	Output channel programming		By frequency (steps of 250KHz) or by channel			-
	No. of outputs		2 outputs (output and mix input)			-
	TV mixing input	MHz	47-862			-
	TV mixing insertion loss	dB	<1.5			-
	Test signal		Black screen or white rows to be used for radio signal distribution			
General features	Input connectors		2 F connectors (output + loop through)			
	Output connectors		2 F connectors (output and mix input)			-
	A/V connectors		3 x RCA			
	Programming unit		TPE			
	Power supply	VDC	12 ± 5%			
	Consumption	mA	670	700	670	330
	Compliant		EN 50083-2			
	Dimensions	mm	40x200x155			
	Operating temperature	°C	-10 to +45			

K Series

Agile channel processor

Fully agile RF channel processor to process and convert terrestrial digital and analogue channels. Due to the high selectivity, it can also be used as a filter.
AGC (automatic gain control) facility to maintain a constant output level regardless of the fluctuation of the input signal.

- Dual conversion technology and dual SAW filter to distribuite adjacent channels and avoid spurious signals in the band
- Single product to convert a channel within 47-862MHz
- Perfect management when conversion of either adjacent digital or strongly unequalised channels is required
- Wide dynamic input range to guarantee good reception of programs even when signals are weak
- Mixing output to combine the output signal from other K Series modules with very low insertion loss (<1dB in the whole RF band)

▶ **KCPN**

Item			KCPN
Code			282618
TV Standard	Digital		DVB-T – DVB-C
	Analogue		PAL B/G/I/L/D/K
Input frequency		MHz	47-862
Bandwidth		MHz	7–8
Input level	Digital	dBµV	45–80
	Analogue		55–90
Loop-through input gain		dB	1
Input step tuning		KHz	125
Output frequency		MHz	47–862
Max. output level	Digital	dBµV	85
	Analogue	dBµV	92
Output level adjustment		dB	0–15
TV mixing input		MHz	5–862
TV mixing insertion loss		dB	<1
Noise figure		dB	5
Phase noise		dBc/KHz	-85@10
Power supply		VDC	12
Consumption		mA	Max. 500
Dimensions		mm	40x200x155mm
Connectors		Type	F female
Operating temperature		°C	-10 to +55
Compliant			EN50083-2:2008-03

Mid level headends

K Series

Vestigial sideband modulators

Audio video vestigial sideband modulators.
Three versions for each model are available: PAL B/G mono, PAL B/G stereo and multistandard mono.

- High output C/N
- Audio and video input adjustment using a trimmer

▶ KM - KMS - KMM

Item			KM	KMS	KMM
Code			270630	270631	270632
Input		No.	3 x RCA (cinch)		
Output		No.	2 F connectors (output + mix input)		
Video input	Impedance	Ohm	75		
	Input level	Vpp	0.7 – 1.2		
Audio Input	Impedance	KOhm	10		
	Input level	Vrms	0.25 – 0.75		
Standard			PAL B/G mono	PAL B/G stereo	Multistandard N, H, D, K, I, L
Audio carrier frequency	B/G mono	MHz	5.5	-	-
	B/G stereo		-	-	-
	Left carrier	MHz	-	5.5	-
	Right carrier	MHz	-	5.74	-
	L, D/H	MHz	-	-	6.5
	I	MHz	-	-	6
	N	MHz	-	-	4.5
Video/audio power carrier ratio	N	dB	-	-	10
	H	dB	-	-	14
	I	dB	-	-	14
	D/K	dB	-	-	13
	L	dB	-	-	8
	B/G mono	dB	14	-	-
	B/G stereo	dB	14 (left c.) 21 (right c.)		
Modulation with audio input 1kHz, 0.5Vrms	B/G	KHz	49		-
	N (FM)	KHz	-	-	<42
	H	KHz	-	-	44
	I, D/K (FM)	KHz	-	-	>47
	L (AM)	KHz	-	-	80%
Modulation depth for 1Vpp video input	D/K, I, B/G		80% typ.		
	L		-	-	90–97%
Output frequency (channels)		MHz	47–862 (E5-E69)		
Output channel programming			By frequency (steps of 250KHz) or by channel		
Channel standard			B/G Europe, L France, B Australia		PAL I, B/G Europe, L France, B Australia, NTSC M
Max. output level		dBµV	90		
Output level adjustment		dB	0 – 15 by means of TPE		
Insertion loss		dB	<1.5		
C/N on channel		dB	>57		
Spurious rejection		dB	57		
General features	Mains voltage	VDC	12		
	Consumption	mA	400	500	400
	Power consumption	W	4.8	6	4.8
	Operating temperature	°C	-10 to +55		
	Dimensions	mm	40x200x155		
	Compliant		EN 50083-2		

K Series

SAT amplifiers + TV mixer

Amplifies satellite IF (950-2150MHz) whilst mixing terrestrial TV frequencies of 47-862MHz. Overcomes the higher losses experienced when distributing SAT IF.

▶ **KX125 - KX125NT**
KX125E
Dimensions 32x129x86mm

Item	Code	Input frequency MHz	Gain (adj.) dB 950MHz	Gain (adj.) dB 2150MHz	Max. output dBµV	Noise figure dB	Max. power consumption mA	Packaging Pcs
KX125	282104	950-2150	38 (20)	44 (20)	125	6	310@12VDC	1
		47-862	-1		-	-		
KX125NT	282105	950-2150	35 (20)		125	6	280@12VDC	1
		47-862	-1		-	-		
KX125E	282106	950-2150	38 (20)	44 (20)	125	6	310@12VDC	1
		47-862	-1		-	-		
	With 12VDC available in the SAT input to power an LNB							

K Series

Transponder amplified selective filter

The KFT module selects and amplifies a DVB-S transponder between 950 to 2150MHz.
The filter uses K series housing with F connectors and is self-mixing both for input and output.

▶ **KFT**
Dimensions 32x129x86mm

Item	Code	Input frequency MHz	Gain (adj.) dB	Bandwidth MHz	Output level dBµV	Max. power consumption mA	Packaging Pcs
KFT/.*	282614	950-1450	18 (20)	33	100	105@12VDC	1
KFT/..*	282615	1451-1700	18 (20)	33	100	105@12VDC	1
KFT/...*	282616	1701-2150	18 (20)	33	100	105@12VDC	1

* The transponder frequency must be specified on order.

Mid level headends

K Series

Programmable IF-IF DVB-S2 converter

Fully agile IF-IF converter that enables the selection of a transponder from 950-2150MHz and converts it to a free position in the same band.
Usable as a SAT filter, by setting the same input and output frequency.
Fully compliant with DVB-S2, DVB-S and analogue transponders.

- IF-IF converter compatible with DVB-S2 standard, programmable using a TPE
- SAW filtering technology guarantees high quality in conversion and distribution of adjacent transponders
- The converter is provided with AGC to keep the output level constant
- Very low phase noise makes it particularly suitable for HD transponders
- Remote power supply programmed via software

▶ **KIF-S2**

Item			KIF-S2
Code			282589
Inputs			1 SAT input and 1 loop-through output to other modules
Outputs			1 SAT output and 1 mix-in input to mix the signal coming from other modules
Input and output frequency SAT		MHz	950 – 2150
Supported SAT Standard			Digital: DVB-S QPSK
			Digital: DVB-S2 QPSK 8PSK
			Analogue: FM
Input level		dBµV	55-90
Max. output level		dBµV	90
Output level adjustment		dB	0-15
Bandwidth		MHz	36 o 27
Loop-through insertion loss		dB	<1
Mix in insertion loss		dB	<1
Return loss		dB	>10
LNB power supply		VDC - mA	12 - 250 max. - programmable via TPE
General features	Connectors	Type	F female
	Mains voltage	VDC	12
	Consumption	mA	300 (550 when LNB power supply is set)
	Dimensions	mm	32x129x86
	Operating temperature	°C	-10 to +55

K Series

Return channel amplifiers

The KW540 amplifies the return channel 5-40MHz and mixes the TV signal between 54 and 862MHz.
It can be used in installations where an interactive distribution network is present.

▶ **KW540**
Dimensions 32x129x86mm

Item	Code	Input frequency range MHz	Gain (adj.) dB	Output level dBµV	Noise figure dB	Max. power consumption mA	Packaging Pcs
KW540	270057	5-40	20(20)	105	5	30@12VDC	1
		54-862	-1.5	-	-		

K Series

Final push-pull amplifiers

Broadband launch amplifier with push-pull technology allows the amplification of the whole 47-862MHz band, including the S band. With one input and one output, the KW series are used to amplify the signal from KF filters or other modules (receivers, modulators, etc).
The KW35E passes the return channel (5-30MHz).

KW20D
Dimensions 63x184x107mm

KW35D
Dimensions 63x184x107mm

KW33C - KW44C
Dimensions 63x184x107mm

KW35E
Dimensions 63x184x107mm

Item	Code	Frequency range MHz	Gain (adj.) dB	Slope adjustment dB	Max. output level dBµV	Noise figure typ. dB	Max. power consumption mA	Packaging Pcs
KW33B	270050	47-862	34 (20)	-	116	8	300@12VDC	1
KW33C	270053	47-862	32 (20)	0-20	120	9	510@12VDC	1
KW44C	270051	47-862	44 (20)	0-20	120	8	550@12VDC	1
KW20D	270049	47-862	20 (20)	0-20	125	6	550@12VDC	1
KW35D	270061	47-862	35 (20)	0-20	125	5	640@12VDC	1
KW35E	270059	5-30 - 47-862	35 (20)	0-20	129	6	830@12VDC	1

K Series

Power supplies

The power supply units contain switching technology to ensure the best performance and reliability.
They are protected from both short and long term overloads.
Isolation: class II.
Operating temperature: -10°C to +55°C.

KP15
Dimensions 40x130x86mm

KP35
Dimensions 63x165x107mm

KP62
Dimensions 63x165x107mm

Item	Code	Mains voltage Vac, Hz	Power consumption W	Output voltage V	Max. current A	Packaging Pcs
KP15	270018	220-240, 50-60	23	12	1.5	1
KP35	270017	220-240, 50-60	55	12	3.5	1
KP62	270019	220-240, 50-60	87	12	6.2	1

Mid level headends

K Series

Accessories

Cabinets specially designed for easy installation and maintenance of MATV/SMATV headends.
- Perforated back for attaching the DIN bar. Thickness: 1.5mm
- Single structure (sides plus back) to be fixed at the rear
- Door with lock

▶ KA400

▶ KA800

Item	Code	Length mm	Height mm	Width mm	Packaging Pcs
KA400	270001	390	340	170	1
KA800	293434	800	500	180	1
KD100N	270002	**DIN BAR (35x15x1.5mm) galvanised** Length 1m, used for installing K series modules.			2

Headline Series

Accessories

Programming unit with numeric keypad and graphic display. Enables the programming of all new modules in the K Series and Headline range and also the original K Series modules.

▶ TPE

Item	Code	Description	Packaging Pcs
TPE	282733	**Programming unit** Programming unit with numeric keypad and graphic display.	1
CVDC50	280376	**12V cable feed** Length 50cm	1
KRS-RJ	282732	**USB-RJ45 adapter**	1

K Series

Accessories

Plug-in "F" bridges

These are shielded quick push on connectors. For connections between an active splitter and receiver modules as well as between the active splitter and self-mixing line of the output signal.

- Shielded

Item	Code	Length mm	Compatible with	Packaging Pcs	
KRF15	289537	150	KDTR, KDSR, KCPN, KM, KDF, KSTT	20	
KRF45	289538	450	KW and KX125, KSTT	10	

Plug-in "F" bridges

These are shielded quick push on connectors. For connecting modules.

- Shielded

Item	Code	Length mm	Compatible with	Packaging Pcs	
KPR37	289485	37	KF, K120L, K120A, KIF-S2, KFT, KFB4, KFB5, KFBU, KFB3	20	
KPR41	289486	41	Headline modules, KF, K120L, K120A, KIF-S2, KFT, KFB4, KFB5, KFBU, KFB3	20	
KPR52	289491	52	KDTR, KDSR, KCPN, KSTT	20	

Plug-in "F" bridges

These are shielded twist on connectors. For connecting modules.

- Shielded

Item	Code	Length mm	Compatible with	Packaging Pcs	
KPN42	289245	42	KF, K120L, K120A, KIF-S2, KFT, KFB4, KFB5, KFBU, KFB3	10	
KPN51	289244	51	KDTR, KDSR, KCPN, KSTT	10	

Broadband pre-amplifiers

To be used to increase weak signals before entering a KF amplifier or K120 filter.
As they are easy to connect, they are particularly suitable for use with the MBX and K series. Metal housing. 1 transistor.
V.S.W.R. < 2. With socket and 30cm cable with D.C. plug. Input R.F. only.
Powered via output connector or D.C. plug.

Item	Code	Band inputs	Gain dB	Noise figure dB	Max. output level dBµV	Bandwidth MHz	Max. power consumption mA	Packaging Pcs	
MP04AF	236505	IV	17	3	108	470-590	20	10	
MP05AF	236506	V	14	4	108	606-862	20	10	
MP45AF	236507	UHF	15	4	108	470-862	20	10	
MP13AF[1]	236504	VHF	20	3	108	47-300	25	10	
MPCCF	236508	**D.C. Inserter** For supplying D.C. to pre-amplifiers. With plug, socket and 20cm lead for D.C. Ø 2.3mm. With F connector							

(1) With FM trap filter.

Mid level headends

MATV headend with selective agile filters

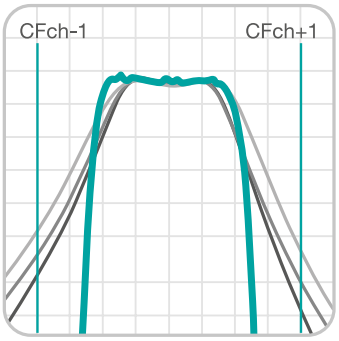
SAF-HD

MATV compact headend to filter DVB-T and DVB-T2 signals including 7 or 10 UHF agile active filters with very high selectivity and AGC (Automatic Gain Control) circuit to keep the output level stable when the signals at the aerial are floating.

All the filters can be set via the on-board programmer (or via PC) to any UHF frequency and can even be used as a channel converter in the same frequency band. The VHF input allows to filter and amplify the FM and the VHF bands with separate adjustment.
The new SAF headend is ideal to distribute signals with perfect equalisation and high quality to the network distribution with a high power level in order to reach those longer distances.

- Perfect for High Definition (HD) and Standard Definition (SD) digital terrestrial multiplex due to the very low phase noise
- UHF agile filters equipped with SAW technology providing very high selectivity (see figure)
- USB port to upload/download via USB the settings to another headend
- Auto equalisation function to give a perfect levelling of the distributed signal saving on installation time
- Offset adjustment for each filter to reduce the noise coming from upper or lower adjacent channels
- Remote power supply for mast amplifier available on any UHF input, 12V, selected via software
- Compact housing to fit narrow technical room without fans inside the product
- 100dBµV power level per channel to reach longer distances directly from the headend

SAF-HD 10 - SAF-HD 7
Dimensions 360x225x60mm



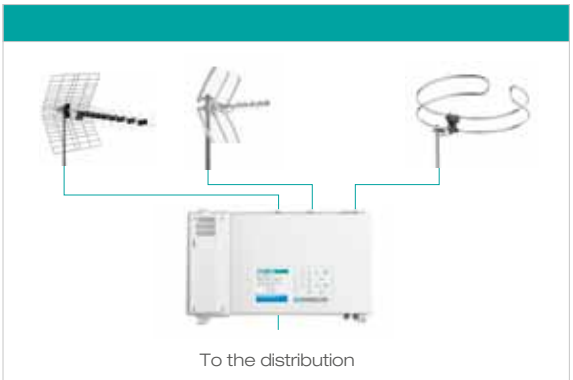
SAF-HD
Resonant circuits

Item			SAF-HD 10	SAF-HD 7
Code			272008	272009
UHF filter characteristics	Filters	No.	10	7
	Input frequency	MHz	470-862	
	Input level	dBµV	50-73 (for 40 channels)	
	Max. input power	dBµV	90 (for each UHF input)	
	Filter bandwidth	MHz	8	
	Filter selectivity	dB	≥50@Cf ± 5MHz	
	AGC dynamic	dB	23	
	Flatness	dB	±1	
	Level adjustment	dB	10 (1dB steps)	
	Frequency offset	KHz	500 (125KHz steps)	
	Frequency accuracy	KHz	70	
FM + VHF filter characteristics	Input frequency	MHz	87-108, 174-240	
	Input level	dBµV	VHF/DAB: 53-73, FM: 60-80	
	Max. gain	dB	VHF/DAB: 45, FM: 40	
	Gain adjustment	dB	VHF/DAB: 20, FM: 20	
Output signal	Max. output power	dBµV	100 per channel	
	Output level adjustment	dB	15	
	Test output	dB	-25	
	Noise figure	dB	9	

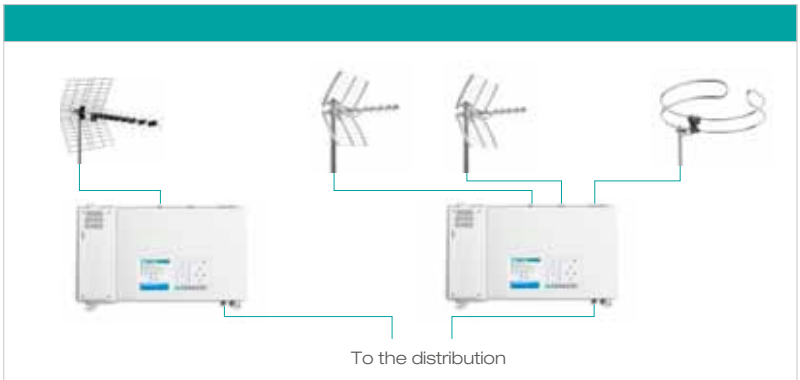
Item			SAF-HD 10	SAF-HD 7
Code			272008	272009
General features	Remote power supply	V	12 on each UHF input, selectable via software	
	Max. remote supply current	mA@V	200@12	
	Mains voltage	Vac, Hz	184-264, ~ 50-60, Class: II	
	Consumption	W	33	30
	Connectors	Type	F female	
	Input demixing		Input 1: filter 1-3 Input 2: filter 1-6 Input 3: filter 1-10	
	Compliant		EN50083-2, EN60065	
	Operating temperature	°C	-10 to +55	

Installation example

SAF-HD



To the distribution



To the distribution

Mid level headends

SMATV headend with 8 digital receivers with common interface

Digiflex Series

SMATV headend for the reception and distribution of 8 digital terrestrial or satellite channels. Demodulates 8 digital channels and remodulates them into the RF band (47-862MHz). The front panel is removable with a lock to avoid common interface modules or cards being removed. Wall mount or 19" cabinet installation.

- Easy to install, included in one box: power supply, 8 QPSK (SIG9708CI) or COFDM (SIG9808CI) receivers with common interface slot, 8 A/V vestigial sideband modulators, wideband (47-862MHz) with audio stereo, combiner to mix 8 RF channels, final amplifier 98dBµV per channel
- Two A/V input/output connectors are available to connect external devices (DVD players, cameras, etc.)
- Master/slave setting available to share one smart card among several receivers, to decrypt several programs with only one subcription (if allowed by the pay-TV service provider).
- SIG9708CI: each receiver can generate 14 or 18V, 22KHz tone and DiSEqC 1.0, suitable to feed an LNB or control multiswitch output
- WSS signals compatible for the auto-adjustment of the TV video formats
- Heat dissipation by natural convection, no fans required, reducing maintenance costs
- Software available to set the headend using a PC

DIGIFLEX
Dimensions 430X305X200mm

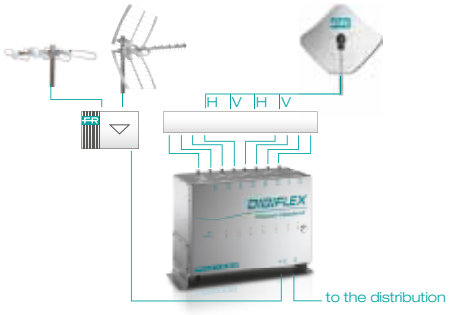
Item			SIG9708CI*	SIG9808CI*
Code			283141	283145
SAT QPSK/TV COFDM input	Input frequency	MHz	950-2150	174-230 + 470-862
	Input level	dBuV	45-80	35-80
	Impedance	Ohm	75	
	Bandwidth	MHz	36	7 or 8
	Input step tuning	MHz	1	-
	AFC range	MHz	-3 to +3	± 285 (2K) ± 142 (8k)
	LNB power supply		0/14/18VDC, 0/22KHz, max. 400@14VDC, DiSEqC 1.0	-
COFDM demodulation	Demodulation		-	ETS 300744
	FEC		-	1/2, 2/3, 3/4, 5/6, 7/8, AUTO
	Carriers		-	2K, 8K
	Modulation		-	QPSK, 16-QAM, 64-QAM
	Guard interval			1/4, 1/8, 1/16, 1/32
QPSK demodulatio	Symbol rate	Msymb/sec	1-45 (compatible SCPC/MCPC)	-
	FEC		1/2,2/3,3/4,5/6,7/,8, auto	-
MPEG specification	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)	
	Audio decoder		MPEG-2 Layer I and Layer II	
	Colour standard		PAL	
	Video format		Adapted 16:9, pan scan, letter box, combined	
	Audio format		Stereo, dual sound	
	Teletext		Yes	
TV modulator	Modulator		VSB	
	Standard		PAL B/G Stereo	
	Output frequency	MHz	47-862	
	Channels	MHz	E2-E69	
	Output level	dBuV	98	
	Output level adjustment	dB	10 (independent for every channel)	
	Audio level adjustment	dB	10 (adjustment steps)	
	S/N weighted	dB	54	
	Output channel programming		By frequency (steps of 250KHz) or by channel	
	No. of outputs		2 outputs (output and mix input)	
	TV mixing input	MHz	47-862	
	TV mixing insertion loss	dB	4	
	Test signa		Black screen or white rows to be used for radio signal distribution	
General features	Input connectors		1 F connector for every channel	
	Output connectors		2 F connectors (output and mix input)	
	A/V input connectors		2 x SUB-D 15 pin	
	Programming unit		TPE (not included)	
	Mains voltage	Vac, Hz	220-240, 50-60	
	Power consumption	W	130	110
	Compliant		EN50083-2, EN60065, EN50221, ETSI TS101699	
	Operating temperature	°C	-10 to +45	

Item	Code	Description	
SIG9708PS	283144	Power supply for installation in Digiflex headends	
SIG9708MR	283143	QPSK CI receiver for installation in Digiflex headends	
SIG9708CA	283142	Digiflex housing with power supply	
SIG9808MR	283146	COFDM CI receiver for installation in Digiflex headends	
SIG9808LT	283147	Loop-through amplifier	

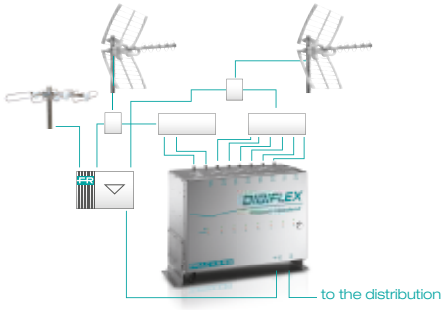
Installation example

Digiflex Series

SIG9708CI - Using a msw to distribute signals to all receivers



SIG9808CI - External splitter to split the signal



Mid level headends

Twin DVBS2 CI – DVBT/C transmodulator

3DGflex Series

The new twin DVB-S2 CI-COFDM, part of the brand new 3DGFLEX range which allows you to simultaneously receive programs from up to 3 different satellite transponders HD or SD (2 trasponders from the 2 indipendent SAT input and one available on the back panel loop through).
Generating 2 “ad-Hoc” muxes giving the installer the flexibility to choose the contents to be distributed.
Fully manageable parameters for both muxes and individual programs (LCN, SID, PDSD, NIT, …).The smart cabinet is capable of powering and programming up to 6 individual modules. Allows to select via sw the standard output in DVB-T or DVB-C.

- Twin Philosophy: 2 SAT input (DVB-S2), 2 indipendent output mux, 2 Common Interface.
- “Mux-ad-Hoc”: you can create a mux with the choosen programs from up to 3 satellite transponders and manage all the descriptor parameters of each mux (ONID, TSID, NetID,…) and each program inside the mux (LCN, SID, PID, Program name..).
- Back panel loop-thorugh of the signals from previous modules.
- ARP 2.0 = Automatic Recovery Procedure to save the higher priority programs and guarantee Continuity of Service when bit rate overflows occurr. All the program are sequentially restored when the global bit rate returns within the limits.
- AUTO REMAPPING function: you can change in real time the program inside the mux without rescanning all the TV set along the network.
- WEB interface included in each module; basic setup available by on board keyboard.
- Remote management included to monitor and edit the set up of the headened remotely.
- USB Port to upload/download pre-setted set up or for the firmware uppgrade.
- DVB-T/DVB-C output selectable via sw: one product to fit every coax network distribution.

3DG-2S2-2T
Dimensions 430X305X200mm

3DG-BOX
Dimensions 430X305X200mm

Item			3DG-2S2-ST	
Code			283157	
Front-End	N° input	N°	2	
	Input frequency	MHz	950÷2150	
	Bandwidth	MHz	36	
	Input level	dBµV	48÷80	
	Input step tuning	MHz	1	
	LNB control		0/14/18VDC, 0/22KHz, DiSEqC 1.0	
	Demodulation		DVB-S2 (8-PSK, QPSK), DVB-S (QPSK)	
	FEC		1/2, 2/3, 3/4, 5/6, 7/8, AUTO	
	Symbol rate	MS/sec	2 ÷ 45 (DVB-S) - 2 ÷ 30 (DVB-S2)	
	AFC Range		-4 ÷ +4MHz	
Modulation			DVB-T	DVB-C
	N° generated mux	N°	2	2
	Trasmission standard		DVB-T (COFDM)	DVB-C
	Bandwidth	MHz	6, 7, 8	(depends on the output SR that was set)
	Carriers		2k, 8k	-
	Modulation		QPSK, 16-QAM, 64-QAM	16QAM, 32 QAM, 64QAM, 128QAM, 256QAM
	Guard interval		1/4, 1/8, 1/16, 1/32	-
	FEC		1/2, 2/3, 3/4, 5/6, 7/8	Reed Solomon (204, 188)
	Symbol Rate	Msymb	-	1000 to 7000
	Spectrum		Normal/Inverted	
	Operating Mode		Normal, Single Carrier	
RF Output	Output frequency	MHz	111÷862	
	Output channels		S2÷E69	
	Output step tuning	KHz	10	
	Max. output level	dBµV	102	
	Output level adjustment	dB	0÷15	
	Flatness	dB	± 1.5	
	Output MER	dB	≥ 36	
	Spurious rejection	dBc	< -40	

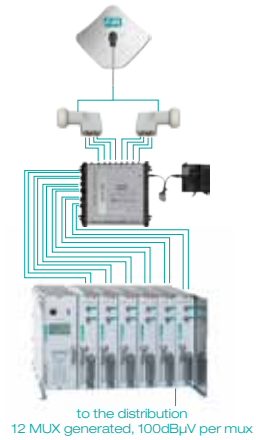
		3DG-BOX
Code		283156
Max. number of modules	N°	6
RF mix input	MHz	47÷862
RF insertion loss	dB	2.5
Mains Supply	Vac, Hz	184-264, 50/60
Power consumption	W	105 (no CAM)
Connectors	tipo	F female (RF), RJ45 (programming and remote monitoring), USB (FW upgrade)
Dimensions (L.× W.× H)	mm	415 x 260 x 265
Opertaing temperature	°C	-10 ÷ +50 (no CAM)
Compliant		EN50083-2, EN60065

Installation example

3DGflex Series

3DGFLEX - Using a msw to distribute signals to all receivers

3DGFLEX - Using a msw to distribute signals to all receivers



High level headends

Headline Series

The professional solution

The design targets of the Headline Series are:

- 19" rack mounting for professional installation
- Flexibility in headend composition, easy integration of different modules
- Constant operation of the installation, the hot insertion of modules allows modules to be added or changed without switching off the whole headend
- Easy maintenance, programming the modules is possible from any interconnection module or remotely via PC, Ethernet or GSM
- Efficiency, each single module has its own power supply, no need for power supply redundancy to ensure the correct functionality of the headend

The basic system is composed of an interconnection module in a frame with a range of further modules and a programming unit. The modules are installed in a premounted 19" subrack to be fitted into a 19" rack cabinet.
The programming unit is linked to one interconnection module and enables all the modules installed in the headend to be programmed. A remote programming unit is available.

The main features of Headline series product are:

- Complete range of products equipped with different technological solutions: analogue and digital modulators, IP encoders and fibre optic modules
- Easy integration of different modules
- 220V mains voltage distributed to all the modules through the interconnection module
- All the connectors are located on the front panel

Headline Series

Controller host and programming software

Module for local and remote connectivity of the professional Headline headends via Ethernet (LAN or WAN) and GSM.
Fracarro Headend Management (FHM) software enables the headend devices' firmware to be updated remotely.
The SIG7905 also enables all the modules installed in a rack to be monitored.
Firmware can also be upgraded (for the SIG7905 and for the other modules) by using a USB pen drive.

▶ **SIG7905**

Item		SIG7905			
Code			283941		
Mass memory	SD Slot (SD card not supplied)	General features	Mains voltage	Vac, Hz	220-240~, 50-60
Connection to external peripheral units	RS-232 serial port		Consumption	W	4
Connection to the Ethernet network	Ethernet RJ-45		Compliant		EN50083-2, EN60065
Connection to pen drive	USB 1 (200mA), USB2 (400mA)		Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
Digital video input	RJ-45 10-pole connector		Operating temperature	°C	-10 to +45
Front key to change status (temporary suspension of the Controller Host – Master/Slave activities)	Key to change status				

Item	Code	Description	
FHM	289888	**Programming software for Fracarro headends: K Series, SAF, Digiflex, Headline** • Using FHM with the controller host SIG7905 critical parameters of connected modules can be viewed locally or remotely • For user defined parameters an upper and lower alarm limit can be set	

Headline Series

Modulators

Audio video modulators, double conversion, double saw filter and tracking filter built in. One modulator covers the whole 47-862MHz band and a very high C/N ratio in the band allows the distribution of more than 80 channels. Available in PAL B/G mono (SIG7282), PAL B/G stereo (SIG7282S) and multistandard (SIG7281).

- Fully agile output modulators, with double conversion, saw filter and tracking filter built in.
  Using only one modulator, the whole 47-862MHz band can be covered, simplifying the installation and maintenance of the system
- High output level, 95dBµV, to mix all the channels together
- RCA (cinch) connectors for audio and video input, F connectors for RF output
- 70cm RCA cable and KPR41 solid bridge are included
- Programmable via FHM software

▶ **SIG72..**

Item			SIG7282	SIG7282S	SIG7281
Code			283943	283944	283933
Video signal input	Impedance	Ohm	75		
	Level	Vpp	0.7-1.4		
Left and right audio input	Impedance	KOhm	10		
	Nominal input level	Vpp	0.5-3.5		0.5-2
Standard			PAL B/G mono	PAL B/G stereo	D/K, I, L, N, H
			Mono	Mono, stereo, dual sound	Mono
Audio carrier frequency	B/G standard mono or left carrier	MHz	5.50	5.50	-
	Right carrier	MHz	-	5.74	-
	Standard H	MHz	-	-	5.50
	Standard L D/K	MHz	-	-	6.50
	Standard I	MHz	-	-	6.00
	Standard N	MHz	-	-	4.50
Video/audio power carrier ratio	Standard N	dB	-	-	10
	Standard H	dB	-	-	14
	Standard I	dB	-	-	14
	Standard D/K	dB	-	-	13
	Standard L	dB	-	-	8
	Standard B/G: Mono (5.5MHz)	dB	13	13	-
	Stereo (5.74MHz)	dB	-	20	-
Modulation with audio input 1KHz, 0.5Vrms	B/G	KHz	45	45	49
	N (FM)	KHz	-	-	42
	H	KHz	-	-	44
	I, D/K (FM)	KHz	-	-	>47
	L (AM)		-	-	80%
Output frequency		MHz	47-862		
Channels			E2-E69		
Output level		dBµV ± dB	95 ± 2		
	Level adjustment	dB	15 by steps of 1		
	Loop-through attenuation	dB	< 1.5@860MHz		
	Return loss	dB	>10		
C/N in the channel N ±3		dB	>66		
C/N ±40MHz		dB	>70		
S/N		dB	>50		
S/N in the channel		dB	50		
S/N with 80 channels		dB	48		
Spurious rejection		dB	>60		
Mains voltage		Vac, Hz	20-240, 50-60		
Power consumption		W	8		
Compliant			EN50083-2, EN60065		
Dimensions (rack version)		mm	35.5 (7e) x 133.3 (3U) x 240		
Operating temperature		°C	-10 to +45		

High level headends

Headline Series

COFDM receivers

COFDM receivers to distribute a free-to-air (SIG7531) or encrypted (SIG7540) signal from a terrestrial digital source (DVB-T).
In a typical application they can be connected to an SIG7120 module (modulator) that uses the TS flow to create a COFDM multiplex. They can also be connected to an IP encoder SIG7720 creating multiple IP multicast streams. They can also be installed as a single unit to distribute one program through RCA outputs (for MPEG-2 compressed programs).

- Ideal solutions for regeneration of DTT signals
- Enables the audio/video signal to be available as a TS MPEG2/MPEG4 form distributed from the back panel
- Loop-through input for the connection of several receivers on the same SAT polarity
- Remote configuration and monitoring (via SIG7905 controller host and FHM software)
- HD compliant

SIG7531

SIG7540

Item			SIG7531	SIG7540
Code			283952	283951
Terrestrial COFDM input	Bandwidth	MHz	174 - 230, 470 - 862	
	Minimum frequency step tuning	KHz	167	
	Channel bandwidth	MHz	7, 8	
	Loop-through bandwidth	MHz	47-862	
	Loop-through insertion loss	dB	-3 to 2	1
	Input level	dBµV	35-80	
	AFC	KHz	±285 (2k), ±142 (8k)	
	Symbol rate	Msymb/sec	2-30	
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal	
COFDM demodulation	Carrier		2k, 8k	
	Guard Interval		1/4, 1/8, 1/16, 1/32	
	Modulation		QPSK, 16QAM, 64QAM	
	Hierarchy		High/low priority	
	FEC		1/2 , 2/3 , 3/4, 5/6, 7/8, auto	
Common Interface	Connector		-	PCMCIA
	Standard		-	Interface standard EN50221, TS101699
MPEG decodification	Video decoder		MPEG-2 ML@MP	
	Audio decoder		MPEG-2 Layer I and II	
	Video standard		PAL, PAL-N, SECAM-L, NTSC-M, PAL-M	
	Video format		Adapted 16/9, letter box, pan scan, combined	Adapted 16/9, letter box, pan
	Audio format		Mono, mono lang. 1, mono lang. 2, stereo	
RCA outputs	Output connector		RCA female	
	Audio level	mVrms	550 max.	
	Video level	Vpp - Ohm	1 typical - 75	
	SINAD	dB	45	
TS outputs	Connectors		48 pins on the back panel	
	Type		Parallel	
General features	Mains voltage	Vac, Hz	220-240~, 50-60	
	Power consumption	W	4.5	7 (with CAM)
	Compliant		EN60065: 2004-06, EN50083-2: 2002-05	
	Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240	
	Operating temperature	°C	-10 to +45	

Headline Series

SAT receivers

The **SIG7330** QPSK receivers with audio/video outputs on RCA (cinch connectors to receive free-to-air digital satellite programs. The **SIG7330** module has also a TS output on the back panel. One input and one loop-through output for the connection of several receivers on the same SAT polarity.
The **SIG7340** QPSK receivers with Common Interface slot to receive free-to-air or encrypted digital satellite programs available on audio/video outputs with RCA (cinch) connectors. The **SIG7340** module has also a TS output on the back panel. Loop-through output for the connection of several receivers on the same SAT polarity.
The **SIG7100** module, with its Common interface, distributes an encrypted or free-to-air digital signal from satellite in DVB-S or DVB-S2 standard. It can be installed as a standalone unit to distribute one program through the RCA outputs or it can be connected to an **SIG7120** module (COFDM modulator) or SIG728x modules (analogue modulators).
When connected to the **SIG7120** it enables the distribution of a compressed MPEG-4 channel.

- CI slot available to decode the encrypted programs.
- SIG7340 module can be used as a second CAM card
- They can generate 14 or 18V, 22 KHz tone and DiSEqC 1.0, suitable to power LNB or to control multiswitch output
- Programmable via FHM software
- Ideal for the reception of High Definition (HD) programs

SIG7330

SIG7340
SIG7100

Item			SIG7330	SIG7340	SIG7100
Code			283954	283955	283949
SAT input	Input frequency	MHz	950-2150		
	Input level	dBµV	48-85		
	Impedance	Ohm	75		
	Standard		DVB-S		DVB-S, DVB-S2
	Input step tuning	MHz	1		
	AFC range	MHz	±5		
	Loop-through insertion loss	dB	2		
	Max. no. of modules possible to loop-through		Depends on the frequency and the level of the input signal		
	LNB power supply		0/14/18VDC, max. 0-22KHz max. 200mA@14VDC DiSEqC 4 pos		
Demodulation	Symbol rate	Msymb/sec	2-40 (DVB-S)	2-40 (DVB-S)	2-40 (DVB-S), 2-30 (DVB-S2)
	FEC		1/2,2/3,3/4,5/6,7/8, auto		
Common Interface	connector		-	PCMCIA	
	standard		-	EN50221, TS101699	
Audio /video outputs	Video decoder		MPEG-2 Main profile, Main level (MP @ ML)		
	Audio decoder		MPEG-2 Layer I and Layer II		
	TV standard encoder		PAL, PAL-N, PAL-M, SECAM-L, NTSC-M		
	Video format		Adapted 16/9, letter box, pan scan		
	Audio format		Mono, mono language 1, mono language 2, stereo		
	Teletext		Yes		
RCA outputs	Video		Composite		
	Video output level	Vpp - Ohm	1-75		
	S/N video weighted	dB	65		
	Max. audio level	KOhm - VRMS	10 - 0.5		
	Audio band frequency	Hz	20-15000		
	S/N audio weighted	dB	>60		
TS outputs	Connectors		48 pins on the back panel		
	Type		Parallel		
General features	Input connectors		2 F connectors (SAT IN+DC, SAT OUT loop-through)		
	A/V connectors		3 x RCA		
	Programming interface		TPE		
	Mains voltage	Vac, Hz	220-240, 50-60 (by means of SIG7901 or SIG7902)		
	Power consumption	W	11		
	Compliant		EN60065: 2004-06, EN50083-2: 2002-05		
	Dimensions (rack version)	mm	133.3 (7e) x 35.5 (3U) x 240		
	Operating temperature	°C	-10 to +45		

High level headends

Headline Series

COFDM modulators

The SIG7120 modulates a signal (TS) received in the input from the back panel in COFDM DVB-T standard. The main application is DVB-S2 to COFDM transmodulation, when connected to an SIG7100 module.
On the front panel there is an additional F connector for output loop-through feature.

- Possibility to choose the desired COFDM modulation
- Output level adjustment
- High Definition (HD) compliant
- When connected to different receivers (SAT, COFDM, A/V, etc.), different types of transmodulation can be performed
- Programmable via FHM software

▶ **SIG7120**

The SIG7121 modulates a signal received in the ASI input to DVB-T standard (using COFDM modulation). The main application is for signals coming from an SIG7404 analogue to ASI 4 input converter. LCN embedded.

- COFDM modulator with ASI input on the front panel
- Remote configuration and monitoring (via controller host SIG7905 and FHM software)
- High Definition (HD) compliant
- MPEG2/MPEG4 compliant

▶ **SIG7121**

Item			SIG7120	SIG7121
Code			283950	283953
Transport stream input	Connectors		48 pins on the back panel	
	Types		Parallel	
	Max. bit rate	Mbit/s	100	
ASI input	ASI connector		-	BNC, 75 Ohm
	Max. bit rate	Mbit/s	-	216
Output signal	Output connector		F female	
	Output frequency	MHz	108-862	
	Frequency step	KHz	10	
	Max. output level	dBµV	85±2	
	Level adjustment	dB	0-15 (step 1dB)	
	Loop-through loss	dB	<1.5	
	Carrier		2K, 8K	
	Modulation		QPSK, 16QAM, 64QAM	
	FEC		1/2, 2/3, 3/4, 5/6, 7/8	
	Guard interval		1/4, 1/8,1/16, 1/32	
	Spectrum		Normal/Inverted	
General features	Mains voltage	Vac, Hz	220-240, 50-60	
	Power consumption	W	10	11
	Dimensions	mm	35.5 (7e) x 133.3 (3U) x 240	
	Operating temperature	°C	-10 to +45	

Headline Series

Analogue to MPEG-2 TS encoder

The SIG7404 module encodes 4 analogue inputs. It enables the audio/video signals to be available in the transport stream in an MPEG2 form, distributed on the ASI output.
In a typical application, it can be connected to the SIG7121 module (modulator)that, using TS flow, creates a COFDM multiplex.
It can also be connected to an IP encoder SIG7720 creating many IP multicast streams.

- Supports 4 input AV signals with coding and multiplexing
- Standard video channel MPEG-2 coding
- Bit rate 1 - 15Mbps
- Formats supported are Full D1, Half D1, SIF, QSIF
- Supports PAL and NTSC

▶ **SIG7404**

Item			SIG7404
Code			287075
Input	Video connectors		CVBS, S-Video
	Video format		PAL, NTSC
	Audio connectors		Analogue balanced
Output	Type		DVB-ASI
	Max. bit rate	Mbps	170
	Effective bit rate	Mbps	1-15
	Connectors		BNC, 75 Ohm
	ASI mode		BYTE
Coding	Video standard		MPEG-1, MPEG-2 , MP@ML(4:2:0)
	Video bit rate	Mbps	2.5-15
	Audio		MPEG-1 Layer I, Layer II
	Audio rate	Kbps	32, 64, 128, 192, 256, 384
	Audio sampling rate	KHz	32, 44.1, 48
General features	Output connector		ASI
	Video standard		PAL, NTSC
	Video format		Full D1, Half D1, SIF, QSIF
	Mains voltage	Hz	220-240V~, 50-60
	Power consumption	W	30
	Dimensions	mm	318 x 483 x 44
	Operating temperature	°C	-10 to +45

Headline Series

QAM modulator with ASI input

The SIG7111 modulates a signal received from the ASI input to DVB-C standard (using QAM modulation). It can be used to modulate different analogue signals coming from the SIG7404 encoder or to modulate Transport Stream available on the back panel from digital receivers (SIG7100, SIG7540, etc).

- QAM modulator with ASI input on the front panel
- Remote configuration and monitoring (via controller host SIG7905 and FHM software)
- High Definition (HD) compliant
- MPEG2/MPEG4 compliant

SIG7111

Item			SIG7111
Code			283958
ASI input	ASI connector		BNC, 75 Ohm
	Max. bit rate	Mbit/s	216
TS input	Connector		48 pins on the back panel
	Type		Parallel
	Max. bit rate	Mbit/s	100
Output signal	Output connector		F female
	Output frequency	MHz	111-862
	Frequency step	KHz	10
	Maximum output level	dBµV	85 ± 3
	Level adjustment	dB	0-15
	Loop-through loss	dB	<1.5
	Modulation type		DVB-C
	Channel bandwidth		Depends on SR output settings
	Symbol rate	Ksymb	3000-6999
	Carrier modulation		16QAM, 32QAM, 64QAM, 128QAM, 256QAM (adjustable)
	FEC		Reed Solomon (204, 188)
	Spectrum		Normal, inverted (adj.)
	Operating mode		Normal, single carrier (adj.)
	MER	dB	>34
	Spurious rejection in the output range	dB	<50
General features	Mains voltage	Vac, Hz	220-240~, 50-60
	Power consumption	W	10
	Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
	Operating temperature	°C	-5 to +45

Headline Series

ASI IN to TS OUT converter

SIG7400 converts an ASI digital Transport Stream, available on BNC input connector, into digital Transport Stream available on 48 pin back-panel connector.
In a typical application, it is connected, through rack back-panel to one or more SIG7720 (IP encoder) or SIG7120 (COFDM modulator) modules that, using Transport Stream flow, create many IP multicasts streaming or many DTT multiplex.

- Ideal solution for ASI to IP conversion (with SIG7720) or for ASI to COFDM (with SIG7120)
- One ASI flow can be shared with many IP streamers (SIG7720) or COFDM modulators (SIG7120)
- High Definition (HD) compliant
- Input bit rate up to 216Mbps (ASI IN)
- Output bit rate up to 100Mbps (TS OUT)

▶ **SIG7400**

Item			SIG7400
Code			283956
Input	ASI connector		BNC, 75 Ohm
	Max. bit rate	Mbps	216
Output	Connector		48 pins on the back panel
	Max. bit rate	Mbps	100
General features	Mains voltage	Vac, Hz	220-240~, 50-60
	Power consumption	W	11
	Dimensions (rack version)	mm	133.3 (7e) x 35.5 (3U) x 240
	Operating temperature	°C	-10 to +45

Headline Series

TS IN to ASI OUT converter

SIG7401 converts a digital Transport Stream available on 48 pin back-panel connector into an ASI digital Transport Stream available on BNC output front connector.
In a typical application, it is connected, through the 48 pin back-panel, to a DVB-S/S2 receiver (SIG7100, SIG7330 or SIG7340 products) or to a DVB-T receiver (SIG7531 or SIG7540 products). It captures the TS traffic and converts it into ASI output format.

- Ideal solution for DVB-S/S2 to ASI conversion (with SIG7100) or for DVB-T to ASI conversion (with SIG7540)
- The ASI output can be connected to external professional devices like ASI remultiplexers or ASI encryptors
- High Definition (HD) compliant
- Output bit rate up to 216Mbps
- Input bit rate up to 100Mbps

▶ **SIG7401**

Item			SIG7401
Code			283957
Output	ASI connector		BNC, 75 Ohm
	Max. bit rate	Mbps	216
Input	Connector		48 pins on the back panel
	Max. bit rate	Mbps	100
General features	Mains voltage	Vac, Hz	220-240~, 50-60
	Power consumption	W	11
	Dimensions (rack version)	mm	133.3 (7e) x 35.5 (3U) x 240
	Operating temperature	°C	-10 to +45

High level headends

Headline Series

Transmitters

Optical transmitter that converts an RF TV-SAT signal into an optical signal. The signals are transmitted at 1310nm with optical power of 13mW.
This high powered signal can be split up to 16 times. Five different LEDs show you the module status - module on, laser on, over current, laser temperature and board temperature.

- High optical power
- High Definition (HD) compliant
- Very high S/N
- Programmable via FHM software
- Can be remotely controlled

▶ **SIG7600-HTX**

Item		SIG7400
Code		283956
Optical wavelength	nm	1310
Optical output power	mW (dBm)	13 (11.1)
Optical return loss	dB	> 55
RF bandwidth	MHz	47-2150
Flatness TV (47-862MHz)	dB	±1
Flatness SAT (950-2150MHz)	dB	±2
Link flatness (47-2150MHz)	dB	±2.5
RF input level	dBµV	80-85 (opt. 85)
RF return loss	dB	>10
Input impedance	Ohm	75
RF connector		F female
Optical connector		SC/APC
Mains voltage	Vac, Hz	220-240, 50-60
Power consuption	W	4
Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
Operating temperature	°C	-10 to +45

Headline Series

Transmitters

Optical splitters that split the optical signal into two outputs (SIG7622) and four outputs (SIG7624).
The optical signal on all the outputs depends only on the typical insertion loss.

- Optimised insertion loss
- High Definition (HD) compliant
- Professional rack solution

▶ **SIG7622 - SIG7624**

Item		SIG7622	SIG7624
Code		270687	270688
Wave length	nm	1310, 1550	1310, 1550
No. of outputs		2	4
Insertion loss	dB	3.2	6.4
Return loss	dB	>50	>50
Isolation	dB	>50	>50
Connectors	Type	SC/APC	SC/APC
Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240	35.5 (7e) x 133.3 (3U) x 240
Operating temperature	°C	-10 to +45	-10 to +45

Headline Series

IP encoders (FTA)

Encoders that work as a DVB-S (SIG7710) and DVB-T (SIG7730) to IP gateway.
Satellite and Digital Terrestrial Television signals are received on the F connector input, converted to IP standard signals and streamed through RJ45 output port into LAN.
From the user side, the programs and services can be viewed using an IP set top box (STB) on TV devices or using dedicated software on PC.

- Programs and services delivered as multicast or unicast streams
- Loop-through (active/passive) input allows easy management of the headend
- MPEG-2/MPEG-4 compliant
- Programmable via Web Interface or via FHM software

▶ **SIG7710 - SIG7730**

Item			SIG7710	SIG7730
Code			283945	283946
Input	Input frequency	MHz	950–2150	174–230, 470–862
	Input frequency step	MHz	1	-
	Min. frequency step	KHz	-	166.7
	AFC 2K 8K	MHz KHz KHz	±3 - -	- ±285 ±142
	Loop-through loss	dB	<1.5	<1.5
	Input level	dBµV	40–84	30–80
	Return loss	dB	10	-
	LNB power supply	V, KHz, mA	0/14/18, 0/22, 200	-
	DiSEqC		1.0	-
	Demodulation		ETS 300421	-
	Symbol rate	MSy/sec	2–35	-
	FEC		1/2, 2/3, 3/4, 5/6, 7/8, auto	-
Input signal	Carrier		-	2K, 8K
	Modulation		-	QPSK, 16QAM, 64QAM
	Hierarchy		-	High / low priority
	Timeguard		-	1/4, 1/8, 1/16, 1/32
	FEC		-	1/2, 2/3, 3/4, 5/6, 7/8, auto
	Demodulation		-	ETS300744
	Connectors	Type	F	
Output	LAN Interface		IEEE 802.3 100BaseT	
	Incapsulation		ETSI TS102034	
	Type of streaming		Multicast/Unicast	
	Web services		DVB Encapsulation, http, TELNET, FTP, SAP	
General features	Mains voltage	Vac, Hz	220-240~, 50-60	
	Consumption	W	11	4
	Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240	
	Operating temperature		°C	-10 to +45

High level headends

Headline Series

IP encoder from TS

Encoder that works from Transport Stream (TS) to IP gateway.
Signals are received on the back-panel, converted to IP standard signals and streamed through RJ45 output port into LAN.
Input signal can be received from either SIG7100 module (DVB-S2 to TS) or SIG7540 module (DVB-T).

- Programs and services are delivered as multicast or unicast streams
- Loop-through (active/passive) input allows easy management of the headend
- MPEG-2/MPEG-4 compliant
- Programmable via Web Interface or via FHM software

▶ **SIG7720**

Item			SIG7720
Code			283947
Input	Connector	Type	48 pins on the back pane
	Max. bit rate	Mbit/s	100
Output	LAN interface		IEEE 802.3 100BaseT
	Incapsulation		ETSI TS102034
	Type of streaming		Multicast/Unicast
	Web services		DVB Encapsulation, http, TELNET, FTP, SAP
General features	Mains voltage	Vac, Hz	220-240, 50-60
	Power consumption	W	8
	Dimensions (rack version)	mm	35.5(7e) x 133.3 (3U) x 240
	Operating temperature	°C	-10 to +45

Headline Series

Interconnection module

Interconnection module to power and address the headline modules.
The interconnection module is installed in sub-rack SIG7901 or SIG7902.
Allows the distribution of mains voltage to power all modules installed in the same row.
It also distributes the data bus to address and control the modules.

▶ **SIG7900**

Item		SIG7900
Code		283935
Mains voltage	Vac, Hz	220-240, 50-60, class II
Power consumption	W max.	2 (stand alone) 100 (with all the modules connected)
Back panel connections		Mains voltage, RS485, address line
Compliant		EN50083-1, EN50083-2, EN60065
Dimensions (rack version)	mm	35.5 (7e) x 133.3 (3U) x 240
Operating temperature	°C	-10 to +45

Headline Series

Accessories

Item	Code	Description	
SIG7901	283930	19" sub-rack to be installed in a 19" rack cabinet. Interconnection module SIG7900 included. SIG7901 is fully mounted, with all the accessories included in the packaging (mains cord, extracting tools, channel labels and module labels).	
SIG7902	283929	Sub-rack to be wall mounted. 6 modules plus one SIG7900 can be fitted. Interconnection module SIG7900 included. SIG7902 is fully mounted, with all the accessories included in the packaging (mains cord, extracting tools, channel labels and module labels).	
SIG7903	283928	Spacer kit to allow the 19" subrack SIG7901 to be mounted further back than the other equipment in the 19"rack cabinet.	
SIG7904	283927	Front plate, 3U 1 slot, to be used with SIG7901 and SIG7902 to cover empty bays.	

High level headends

Headline Series

Accessories

Programming unit with numeric keypad and graphic display. Enables the programming of all new modules in the K Series and Headline range and also the original K Series modules.

- Compatible with all K Series modules (emulates KTP for original modules)
- Compatible with all Headline modules
- USB drivers available for PC connection
- Language menu available: Italian, English, German, French, Spanish and Portuguese
- Max. addressable modules: 253
- Copy function available, to copy the settings from one device to another
- Adjustable contrast (31 steps)
- Display: LCD graphic backlit display, 16x4 characters
- 18 button keypad

▶ **TPE**

Item	Code	Description	Packaging Pcs
TPE	282733	**Programming unit** Programming unit with numeric keypad and graphic display.	1

Item	Code	Description	
CV-RCA/HQ	289852	1High quality A/V cable with 3 RCA connectors 27.5cm in length, 38.5cm in length with 3 connectors	

Headline Series

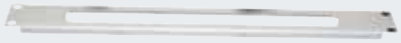
19” rack cabinets

The range includes two floor standing cabinets and one wall mounted cabinet, with accessories, to be used to install SMATV headends for K Series and Headline. The cabinets and accessories are available on request with a delivery time of 20 days from order. All the products are packaged individually. The height of the 19” rack is given in U, one U equals 44.45mm. The width is given in e, one e equals 5.08mm. One cabinet can contain 84e, equal to 42.6cm (the space needed to install the equipment with a width of 19” is 48.26cm). One inch equals 2.54cm.

Item	Code	Description	
RACK42U	289722	19” floor standing cabinet. Tempered glazed door. All side and rear cabinet panels can be disassembled for easy installation of equipment. The 19” uprights are adjustable according to the depth of the equipment to be installed. Two apertures for feeding cables into the unit at floor level or at the top where a ventilation kit can be fitted. The cabinets are supplied pre mounted. Dimensions mm (wxdxh): 600x400x1957 - Width: 84e - Max. depth : 320mm - Height: 42U	
RACK27U	289721	19” floor standing cabinet. Tempered glazed door. All side and rear cabinet panels can be disassembled for easy installation of equipment. The 19” uprights are adjustable according to the depth of the equipment to be installed. Two apertures for feeding cables into the unit at floor level or at the top where a ventilation kit can be fitted. The cabinets are supplied pre mounted. Dimensions mm (wxdxh): 600x400x1290 - Width: 84e - Max. depth: 320mm - Height: 27U	
RACK6U	289720	19” wall mounted cabinet. Tempered glazed door that can be rotated 180°. The 19” uprights are adjustable according to the depth of the equipment to be installed. Two apertures for power cables at floor level or at the top where a ventilation kit can be fitted. Dimensions mm (wxdxh): 550x320x310 - Width: 84e - Depth: 280mm - Height: 6U	

Headline Series

Rack accessories

Item	Code	Description	
RACK01	289708	Set of 50 M6 cage nuts and 50 screws.	
RACK02	289709	Set of 4 levelling feet	
RACK03	289710	Set of 4 wheels (two with brakes)	
RACK04	289711	1U cable inlet panel	
RACK05	289712	3U blank panel	
RACK06	289713	19" shelf - 250mm	
RACK07	289714	1U blank panel	
RACK08	289715	2U, 150mm recessed panel	
RACK09	289716	4U, 150mm recessed panel	
RACK10	289717	2 fan units with steel grid. Recommended for RACK27U	
RACK11	289718	3 fan units with steel grid and thermostat. Recommended for RACK42U	
RACK12	289719	Power duct with 5 universal sockets with magneto-thermal switch (4.5kA)	

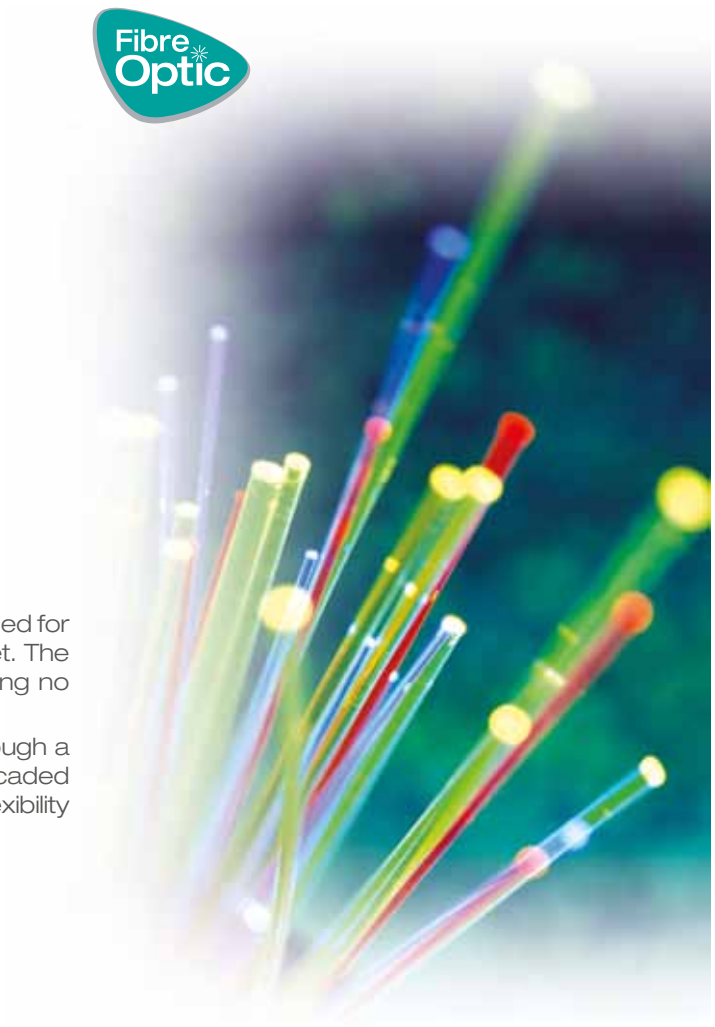
Fibre optic solutions and CATV systems

Fibre optic solutions and CATV systems

Fibre optic

Fibre optic characteristics

- Suitable for TV and satellite applications
- Optimal electrical performance
- Low signal loss over long distances
- Installation problems and signal quality degradation reduced as line amplifiers not required
- Large bandwidth ideal for digital distribution
- Excellent linearity, well above coaxial standards
- Easy and cost effective to install
- Fibre optic cables are smaller in diameter and contain multiple fibres
- Broadband access in fibre is also available for other applications
- Isolated: not affected by electromagnetic interference
- Can be laid with electrical cable in power lines
- The Fracarro range allows you to create customised interactive networks due to return path modules



Home Fibre

Fracarro's new innovative Home Fibre Optic system is designed for its simplicity of installation from the headend to the wall outlet. The system uses a conventional LNB and dish assembly requiring no special optical alignment tools.

It is capable of carrying all satellite and terrestrial signals through a single 9/125 glass fibre. Additional transmitters can be cascaded using a standard 5 core co-axial back bone giving greater flexibility in system design to supply a large number of outlets.

K Series system: applications

- Multi-dwelling units
- Hotels
- Hospitals
- Commercial sites
- Sports stadiums
- Areas where electromagnetic interference is a problem
- Sites where a degree of waterproofing is required

Headline Series

High power optical transmitter, 2 and 4 way splitters available in the Headline range (see page 101)

Home Fibre Optical transmitters

OPT TX-DT

OPT TX-DT, 5mW optical transmitter, works in the second optical transmission window (1310nm) and manages the SAT signals - from a traditional LNB and dish combination - including full bandwidth DTT. Equipped with automatic gain control (AGC), up to a maximum of 7 transmitters can easily be connected together using the typical cascade distribution infrastructure, serving up to 896 wall outlets per trunk.

▶ OPT TX-DT

Item		OPT TX-DT
Code		270694
RF inputs	No.	5 (4 SAT + 1 TERR)
RF outputs	No.	7 (4 SAT + 1 TERR + 2 TEST)
Optical output	No.	1 SC/APC
SAT Inputs		
Bandwidth	MHz	950 - 2150
Connectors		F Female
Input return loss	dB	10
Trunk insertion loss	dB	<2
Input level	dBuV	69 – 86
TV Input		
Bandwidth	MHz	87 – 862
Connectors		F Female
Input return loss	dB	10
Trunk insertion loss	dB	1
DVB-T input level	dBuV	80 @10 ch
Test Output		
Bandwidth	MHz	87 to 862/950 to 2150
Connectors		F Female
Input return loss	dB	10
Test connector attenuation	dBuV	59 each channel
Optical Output		
Connectors		SC/APC
Wavelength		1310
Optical power	dB	7 (5mW)
Optical return loss	dBuV	>45
Safety class		1M
Main Features		
Mains	Vac/Hz	184 - 264/50 - 60
Power consumption	W	15
Remote LNB powering	mA	200 @ 14V (4 SAT connectors)
Operating temperature	°C	-5 to +55
AGC dynamics laser modulation	dB	20
LED	dBuV	Green power on Red laser extra current
Standard conformity		CEI EN 50083-2 EN60065
Dimensions	mm	230x230x50

Fibre optic

Home Fibre Optical receivers

OPT RX-DT Quad, OPT-RX-Quattro

The range of optical receivers includes several options, tailored to different system requirements: from the Quad with 4 universal outputs for direct connection to the TV, to the Quattro with fiveindependent outputs (HL, VL, HH, VH and TV) for multiswitch systems.
There is also a version available with a single terrestrial output.

▶ OPT-RX DT

▶ OPT-RX Quattro

▶ OPT-RX-TV

Item		OPT-RX-DT	OPT-RX-Quattro	OPT-RX-TV
Code		270693	270695	270696
Optical input	No.	1 SC/APC	1 SC/APC	1 SC/APC
RF outputs	No.	4 TERR + SAT	4 SAT (VL, HL, VH, HH) + TV	1 TERR
Optical Input				
Optical connector	MHz	SC/APC		
Wavelength	nm	1310		
Optical return loss	dB	>45		
Max. optical input level	dBm	-7		
RF Outputs				
Bandwidth	MHz	87 – 862/ 950 - 2150		87-862
Connectors		F female		
Return loss	dB	10		
Output level @ 20dB optical attenuation	dBuV	70 (TV) and 70 (SAT)	88 (TV) and 82 (SAT)	70
Output connector control	dBuV	DiSEqC	-	-
Main Features				
Mains		184 – 264/50 - 60 (Vac/Hz)	14/18 V on all outputs, 330mA@18V, 380mA@14V	184 – 264/50 - 60 (Vac/Hz)
Power consumption		7 W		
Operating temperature	°C	-5 to +50		
LED	dBuV	Green power on		
Standard conformity		CEI EN 50083-2 EN60065	CEI EN 50083-2	CEI EN 50083-2 EN60065
Dimensions	mm	250x140x50	250x140x50	120x97x43

Home Fibre splitters, taps and optical cables

Splitters and Taps

Characterised by their compact size, the Home Fibre splitters and taps distribute signals throughout the building on a single-mode fibre optic cable (operating wavelength 1260nm - 1590nm).
The innovative "MINI" optical connector, just 3mm in diameter, ensures that the wiring is easy in any installation environment. The cables are supplied pre-terminated and the optical connections are protected by suitable caps.

▶ **VOV.. / VOT..**
Dimensions 52x92x11mm

Item		VOV 2	VOV 4
Code		287210	287211
Ways		1X2	1X4
Insertion loss	dB	<3,9	<7,8
Outputs	No.	2	4
Wavelength	nm	1260 - 1650	1260 - 1650
Optical return loss	dB	>50	>50
Max power input	mW	500	500

Item		1 way taps			4 way taps		
		VOT 7/3	VOT 8/2	VOT 9/1	VOT 3/4	VOT 2/3	VOT 1/2
Code		287212	287213	287214	287217	287216	287215
Ways		1	1	1	4	4	4
Trunk line loss	dB	<2,1	<1,5	<0,8	<3,8	<3,1	<2,5
Tap loss	dB	<6,4	<8,5	<12,7	<11,4	<13,7	<15
Outputs	No.	1	1	1	4	4	4
Wavelength	nm	1260 - 1650	1260 - 1650	1260 - 1650	1260 - 1650	1260 - 1650	1260 - 1650
Optical return loss	dB	>50	>50	>55	>55	>55	>55
Max power input	mW	500	500	500	500	500	500

Home Fibre splitters, taps and optical cables

Cables and accessories

▶ **PR..**

▶ **PR ADAPT**

▶ **MIN/MIN**

▶ **PULL CONN**

Item	Code	Description
PR003	287219	Single mode pre-terminated fibre cables 3 mt, optical return loss >55
PR005	287220	Single mode pre-terminated fibre cables 5 mt, optical return loss >55
PR010	287221	Single mode pre-terminated fibre cables 10 mt, optical return loss >55
PR025	287222	Single mode pre-terminated fibre cables 25 mt, optical return loss >55
PR100	287223	Single mode pre-terminated fibre cables 100 mt, optical return loss >55
SUPP VOV/VOT	287240	VOV/ VOT Wall Mount
PR ADAPT	287226	Adaptor SC/APC - Mini
MIN/MIN	287225	Adaptor Mini-Mini
PULL CONN	287224	Pull connector

Fibre optic

Optical transmitters and receivers

OPT.. Series

OPT-TX 51 converts and distributes terrestrial and 4 satellite polarities through one single fibre cable, saving time and money in installation.
Viceversa OPT-RX51 converts back these terrestrial and satellite signals.
OPT-TX54 and OPT-RX54 are respectively a 4 optical transmitter and a 4 optical receiver for TV-SAT signals in the same housing.

▶ **OPT-TX51**
OPT-TX54

▶ **OPT-RX51**
OPT-RX54

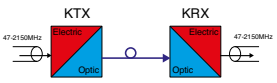
Item	Code	OPTICAL INTERFACE			RF SECTION							
		Wave length nm	Output power dBm	Input power dBm	RF bandwidth MHz	Link gain @0db optatt dB	Max. input level @-35dBc dBµV	Max. output level @-35dBc dBµV	Power supply Vac, Hz	LNB remote supply mA	Current consump. mA	Power consump. W
OPT-TX51	270690	1510-1530 1550-1570	5 (each wavelenght)	-	47-862, 950-2150	3	117	-	220-240, 50-60	300	-	5
OPT-RX51	270691	1000-1650	-	5	47-862 950-2200	9	-	115	14/18V	-	240	4
OPT-TX54	270692	1310	5	-	47-862, 950-2150	9	112	-	220-240, 50-60	300	-	5
OPT-RX54	270689	1510-1530	-	5 (each wavelenght)	47-862, 950-2200	3	-	115	14/18V	-	240	4

Optical transmitters and receivers

KTX - KRX / KTX-RC / KRX-RC

KTX optical transmitter converts an RF TV-SAT signal into an optical signal. KRX optical receiver converts the optical signal into a TV-SAT signal.
KTX-RC optical transmitter converts the return channel signal into an optical signal and mixes the TV-SAT signal. KRX-RC optical receiver converts the optical return path into electrical signal and demixes the TV-SAT signal.
SC/ACP connectors on the optical interface.

▶ **KTX**
KRX



Item	Code	OPTICAL INTERFACE			RF SECTION						
		Wave length nm	Input power dBm	Output power dBm	Bandwidth MHz	Return loss dB	Gain dB	Max. input level dBµV	Max. output level dBµV	Power consumption mA	Power supply V
KTX	270686	1310±20	-	6	47-2150	>12	-20	89 (88-860MHz)* 79 (950-2150MHz)	-	80	12
KRX	270677	1100±1600	-10 to +6	-	47-2150	>12	+25	-	94 (88-860MHz)** 84 (950-2150MHz)	150	12

* Set input level to obtain the following performances from the output of the KRX reciever with optic input 0dBm. TV band: SNR>51dB, CSO<-60dBc, CTB<-60dBc (42 CENELEC channels) – SAT band: C/IMD>35dB (30 transponders)
** Optic input 0dBm received from KTX

Item	Code	OPTICAL INTERFACE			RF SECTION							
		Wave length nm	Input power dBm	Output power dBm	Bandwidth MHz	Diplexer MHz	Return loss dB	Gain dB	Max. input level dBµV	Max. output level dBµV	Power consump. mA	Power supply V
KTX-RC	270671	1310±20	-	0	5-65	5-65/ 88-2150	>10	-24	96 (5-65MHz)*	-	160	12
KRX-RC	270672	1100-1600	-10 to 0	-	5-65	5-65/ 88-2150	>10	+28	-	93 (5-65MHz)*	90	12

* Set up level to have IM2 and IM3 <-47dBc with two tones as per specifications EUROINCSIG

Optical splitters

KSP.. and SIG76.. Series

KSP1_2 and SIG7622 split the optical signal into two outputs,
KSP1_4 and SIG7624 into four outputs.
These items can be installed anywhere in the
distribution network without using a power supply.

▶ **KSP..**

▶ **SIG7622**
SIG7624

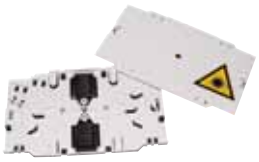
Item	Code	OPTICAL INTERFACE					
		Wave length nm	No. of outputs	Insertion loss dB	Return loss dB	Isolation dB	Connectors type
KSP1_2	270679	1310, 1550	2	3.2	>45	>45	SC/ACP
KSP1_4	270680	1310, 1550	4	6.4	>45	>45	SC/ACP
SIG7622	270687	1310, 1550	2	3.2	>50	>50	SC/ACP
SIG7624	270688	1310, 1550	4	6.4	>50	>50	SC/ACP

Accessories

Adaptors and accessories box

▶ **BR2/ BR4**

▶ **BFO-SC-APC**



Item	Code	Description
PIGTAIL	287092	1m pigtail. SC/APC
BR2-AA	289360	Singlemode patch cables / 2m with connectors. SC/APC-SC/APC
BR4-AA	289362	Singlemode patch cables / 4m with connectors. SC/APC-SC/APC
BFO-SC-APC	289349	Adaptor for single mode angled connectors. For mounting in patch panel.
OPO12P	289402	Extremely compact fibre organiser (12 positions). Developed to ensure the best position for fibre optic cables. Plastic casing - Dimensions : 150x95x10mm

Accessories

Splice box

Wall and rack mounting solution.

▶ **OPB18I - OPB8I**

▶ **OPB24IR**

Item	Code	Casing	Dimensions mm	Positions	Notes
OPB18I	289403	Painted steel	365x320x100	18 positions	For inserting additional optical cables
OPB8I	289405	Painted steel	160x140x50	8 positions	For inserting additional optical cables
OPB24IR	289404	Painted steel	240x43x223	19" Rack - 24 positions	For inserting additional optical cables

Accessories

Splice box

This guide should be used in order to obtain optimum performance from your FRACARRO optical system.

STEP 1:
You need to know the number of digital channels at the input and the optical attenuation of the link. Firstly, ensure you know how many digital channels you want to transmit in the optical link: for example, 20 digital terrestrial channels. You will then need to know the amount of optical loss between the transmitter and the receiver (for example, if there is a 2-way optical splitter and 5Km of fibre optic, the loss will be around 4.5dB).

STEP 2:
You need to determine the optimum input level which depends on the number of channels to be transmitted. So, if we consider 20 digital terrestrial channels from the previous example the bottom row of the table shows that no more than 102dBµV can be applied. With this maximum input channel power you will reach the best CNR ratio and the maximum permitted power output.

OPT-RX51
Output level per channel (dBµV)

Pout (dBµV)											Opt. Att. (dB)
											0
											1
106								59.7	60.8	61.8	2
104							57.7	58.8	59.8	60.8	3
102						55.7	56.8	57.8	58.8	59.7	4
100					53.7	54.8	55.8	56.8	57.7	58.6	5
98				51.7	52.8	53.8	54.8	55.7	56.6	57.4	6
96			49.7	50.8	51.8	52.8	53.7	54.6	55.4	56.2	7
94		47.7	48.8	49.8	50.8	51.7	52.6	53.4	54.2	54.9	8
92	45.7	46.8	47.8	48.8	49.7	50.6	51.4	52.2	52.9	53.5	9
90	44.8	45.8	46.8	47.7	48.6	49.4	50.2	50.9	51.5	52.1	10
88	43.8	44.8	45.7	46.6	47.4	48.2	48.9	49.5	50.1	50.6	11
86	42.8	43.7	44.6	45.4	46.2	46.9	47.5	48.1	48.6	49.1	12
84	41.7	42.6	43.4	44.2	44.9	45.5	46.1	46.6	47.1	47.5	13
82	40.6	41.4	42.2	42.9	43.5	44.1	44.6	45.1	45.5	45.9	14
80	39.4	40.2	40.9	41.5	42.1	42.6	43.1	43.5	43.9	44.2	15
78	38.2	38.9	39.5	40.1	40.6	41.1	41.5	41.9	42.2	42.5	16
76	36.9	37.5	38.1	38.6	39.1	39.5	39.9	40.2	40.5	40.7	17
74	35.5	36.1	36.6	37.1	37.5	37.9	38.2	38.5	38.7	38.8	18
72	34.1	34.6	35.1	35.5	35.9	36.2	36.5	36.7	36.8		
70	32.6	33.1	33.5	33.9	34.2	34.5	34.7	34.8			
68	31.1	31.5	31.9	32.2	32.5	32.7	32.8				
66	29.5	29.9	30.2	30.5	30.7	30.8					
64	27.9	28.2	28.5	28.7	28.8						
62	26.2	26.5	26.7	26.8							
60	24.5	24.7	24.8								
58	22.7	22.8									
56	20.8										
	94	96	98	100	102	104	106	108	110	112	Pin (dBµV)
	max for 126	max for 80	max for 50	max for 32	max for 20	max for 13	max for 8	max for 5	max for 3	max for 2	Channels

OPT-TX51
Input level per channel (dBµV)

STEP 3:
Considering the input power and an optical attenuation of 0.25-0.3dB/Km (for OPT-TX items) or of 0.4dB/Km (for KTX and SIG7600-HTX items) you will be able to read the CNR value and the guaranteed output level at the intersection of the optical attenuation diagonal and of the input level column.

Further examples are shown in the user guide: we recommend they are read carefully!

TV amplifiers

J21B - J31B

Push-pull amplifiers with excellent performance in band linearity and flatness. This unit conforms to standard EN60065 and is manufactured in die cast housing with F connectors and direct connection to the mains. Shielding factor to standard EN50083-2. It is possible to equalise cable losses from 0 to 20dB.
Mains voltage 220-240V~ , 50-60Hz. Power consumption 3.5W.

J21B - J31B

Item	Code	Gain (adj.) dB	No. of outputs	Output level dBµV	Noise figure dB	Frequency MHz	Operating temperature °C	Packaging Pcs
J21B	223023	21 (20)	1	117	10	47-862	-10 to +55	1
J31B	223024	31 (20)	1	117	10	47-862	-10 to +55	1

TV amplifiers

AMP9762 - AMP9762B

Terrestrial line amplifiers with return path. To be used as the final amplifier before wall outlets. Normally used to amplify signals in small distribution networks.
These amplifiers can be used at the output of an optical link.
All the adjustments are internally located under the die cast cover to prevent unauthorised access. The die cast cover is secured with safety screws. For installation, supports are available (item MBX0001 see page 64) that leave a space of 19mm between the amplifier and the wall, allowing room for cables or the amplifier to be mounted in
different positions. Packaging 1 pc.

- Gain and slope can be adjusted
- Passive or active return path, switchable by the installer

AMP9762
AMP9762B

Item		AMP9762* - AMP9762B	
Code		235051 - 235055	
Bandwidth	MHz	5-30 (AMP9762), 5-65 (AMP9762B)	47-862 (AMP9762), 88-862 (AMP9762B)
Gain	dB	25 **	40
Flatness	dB	±2	±2
Gain adjustment	dB	-	0-20
Slope adjustment	dB	-	0-20
Max. output level			
IM3 -60dB 3 unequal tones	dBµV	100	120
IM3 -54dB 2 equal tones	dBµV	100	120
IM3 -52dB 3 equal tones	dBµV	98	118
IM3 -60dB 3 equal tones	dBµV	94	114
IM3 -60dB 2 equal tones	dBµV	97	117
IM2 -60dB 2 equal tones	dBµV	95	115
Noise figure	dB	3	8
Impedance	Ohm	75	
Connectors	Type	F	
Test point	dB	-30	
Mains voltage	Vac, Hz	220-240, 50-60	
Power consumption	W	9	
Protection index		IP20	
Dimensions (l x h x w)	mm	194x143x53	
Operating temperature	°C	-10 to +55	

CATV amplifiers

AMP5121.. Series

Distribution amplifiers to be used in HFC (hybrid fibre cable) networks.

- High output level and low power consumption using GaAs FET hybrid technology
- Gain and tilt adjustment using attenuators
- Integrated active or passive return path, selected by a switch
- Mains or line powered with switch mode power supply
- Die-cast aluminium housing meeting IP65 protection
- 5A AC power pass through to any terminal and 10A external AC input terminal
- Excellent surge and transient protection

AMP5121L
AMP5121M

ACCESSORIES AMP5121 SERIES
- Diplexer filter modules: MDA.. , 2 pieces per product
- Interstage modules: MEX.. , 1 piece per product
- Output splitter modules: MS.. , 1 piece per product

ATTENTION: the products need further accessories and connectors to function which are not included in the packaging
Minimum configuration requires:
- 2 x diplexer filter modules MDA (see page 111), if not required replace them with two ML02 link modules
- 1 piece x interstage module MEX (see page 111), if not required replace it with one ML01 module
- The amplifier is supplied with PG11 threads, adaptors not included. Page 114 shows the list of available adaptors

Item		AMP5121L	AMP5121M
Code		289696	289695
Forward path, bandwidth (depends on diplexer modules)	MHz	47-862	
Gain	47/862MHz - dB	38/38	
Attenuation	dB	0-18	
Equaliser	dB	0-18	
Linearity	dB	±1	
Output level, 3rd order (DIN 45004 B)	dBµV	124	
Output level, 2nd order (DIN 45004 B)	dBµV	122	
Output level, CTB (42 ch CENELEC)	flat/8dB tilt - dBµV	108.5/111	
Output level, CSO (42 ch CENELEC)	dBµV	112	
Noise figure	47/862MHz - dB	5/6.5	
Return loss, @40 MHz	dB	18-1.5/oct	
Return path, bandwidth (depends on diplexer modules)	MHz	5-65	
Line power, voltage	Vac	24-65	-
Line power, current	mA	750-330	-
Mains power, voltage	Vac	-	175-260
Power consumption (incl. return path)	W	13.5	
Operating temperature	°C	- 10 to 55	
Dimensions (l x h x w)	mm	200x180x82	
Packaging	pcs	5	3

* UK version available: AMP9762UK - Code 235054
** Return path gain can be set to -2dB.

CATV amplifiers

AMP522.. Series

Distribution amplifiers to be used in HFC (hybrid fibre cable) networks

- High output level and low power consumption using GaAs FET hybrid technology
- Gain and tilt adjustment using attenuators (AMP522AL - AMP522AM) or using PAD (AMP522PL - AMP522PM)
- Mains or line powered with switch mode power supply
- Integrated active or passive return path, selected by a switch
- Die-cast aluminium housing meeting IP65 protection
- 5A AC power pass through to any terminal and 10A external AC input terminal
- Excellent surge and transient protection

AMP522AL - AMP522AM
AMP522PL - AMP522PM

ACCESSORIES AMP522Ax - AMP522Px SERIES

- Diplexer filter modules: MDA for the return path, 2 pieces per product
- Interstage module: MEX, 1 piece per product
- Output splitter module: MSxx , 1 piece per module
- DIB module: MDIB, to reduce noise from the return path
- Link module MLxx, to be used to replace MDA, MS
- Pad modules: MPG, to be used to set the attenuation and tilt (only for AMP522Px)

ATTENTION: the products need further accessories and connectors to function which are not included in the packaging

Minimum configuration requires:

- 2 x diplexer filter modules MDA (see page 111), if not required replace them with two ML02 link modules
- The amplifier is supplied with PG11 threads, adaptors not included. Page 114 shows the list of available adaptors
- Only for AMP522Ax: 1 piece x interstage module MEX (see page 111), if not required replace it with one ML01 module
- Only for AMP522Px: 6 pieces of MPG pad modules (see page 111)

Item		AMP522AL	AMP522AM	AMP522PL	AMP522PM
Code		289602	289604	289601	289603
Forward path					
Bandwidth (depends on diplexer modules)	MHz	47-862			
Gain (8dB gain switch)	47/862 MHz - dB	30/38			
Gain adjustment	dB	0-18 by attenuators		0-22 by pads	
Gain adjustment	dB	0-18 by attenuators		0-18 by pads	
Linearity	dB	±1			
3rd order (DIN 45004 B)	dBµV	124			
2nd order (DIN 45004 A1)	dBµV	121			
CTB (42 ch CENELEC)	flat/8dB tilt - dBµV	108/110			
CTB (42 ch CENELEC) by 6dB interstage att.	flat/8dB tilt - dBµV	107.5/109.5			
CSO (42 ch CENELEC)	dBµV	110			
Noise figure	47/862 MHz - dB	5/6.5			
Noise figure by 6dB interstage att.	47/862 MHz - dB	6/8	5/7	6/8	5/7
Return loss, @40MHz	dB	18-1.5/oct			
Return path					
Bandwidth (depends on diplexer modules)	MHz	5-65			
Gain	dB	23			
Gain adjustment	dB	0-18 by attenuators		0-18 by pads	
Equaliser	dB	0-8 by attenuators		0-8 by pads	
Linearity	dB	± 1			
3rd order (DIN 45004 B)	dBµV	119			
2nd order (DIN 45004 A1)	dBµV	104			
Noise figure	dB	6			
General features					
Line power, voltage	Vac	24-65	-	24-65	-
Line power, current	mA	540-250	-	540-250	-
Mains power, voltage	Vac		175-260		175-260
Power consumption (incl. return path)	W	12.5			
Dimensions (l x h x w)	mm	200x180x82			
Operating temperature	°C	-10 to +55			

Note: All specifications are with 0dB link modules. If other modules are inserted, please correct for insertion loss.

Accessories

Plug-in modules

Diplexer modules

Modules to be used with the AMP522.. amplifier range to mix/demix the return and the forward path.
Packaging 10 pcs.

Item	Code	Frequency range, forward path MHz	Frequency range, return path MHz	Insertion loss return path dB	Insertion loss forward path dB	
MDA3047	289613	47-862	5-30	0.6@30MHz -	- 0.6@47MHz 0.3@862MHz	
MDA6587	289617	87-862	5-65	0.7@65MHz -	- 0.7@87MHz 0.3@862MHz	

Splitter modules

Modules to be used with the AMP522.. amplifier range to set the outputs. Packaging 10 pcs.

Item		MS100	MS101	MS110	MS114	MS118	MS207	MS404
Code		289650	289651	289652	289653	289654	289690	289656
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000
Insertion loss, output A	dB	0	No pass	-	-	-	-	-
5/606/862/1000MHz		-	-	10.2/9.9/9.9/10	14.2/14/14/14	18.2/18/17.8/18	7.3/6.8/6.8/6.9	3.3/3.5/3.7/3.9
Insertion loss, output B	dB	No pass	0	-	-	-	-	-
5/606/862/1000MHz		-	-	0.9/1.1/1.3/1.4	1.1/0.7/0.9/1.2	0.7/0.4/0.5/0.7	1.8/2.2/2.4/2.5	3.3/3.5/3.7/3.9
Isolation, out A - out B @ 40	MHz	-	-	>29-1.5/oct	>34-1.5/oct	>38-1.5/oct	>23-1.5/oct	>20-1.5/oct

Link modules

Item	Code	Description	
ML01	289627	Link module ML01 is used as a bridge socket for the interstage modules and/or socket for return path modules (2 pcs). ML02 link module is used as a bridge in the splitter and diplex filter sockets. Frequency range: 5-1000MHz - Insertion loss: 0dB Return loss: 26-1.5/oct. - Packaging 10 pcs	
ML02	289628		
MP20	289629	Test module to be inserted in the MS-module socket to avoid interrupting the connected distribution network. Frequency range: 5-1000MHz - Tap loss: 20dB Linearity: ±0.5dB - Packaging 5 pcs	

Interstage modules

Modules to be used with the AMP5121.. and AMP522.. amplifiers to provide attenuation and slope between the two different forward amplifier stages. Packaging 10 pcs.

Item	Code	Frequency MHz	Insertion loss pos. A 47/862MHz MHz	Insertion loss pos. B 47/862MHz dB	
MEX800/08	289620	47-862	0/0	8/0.3	
MEX800/06	289619	47-862	0/0	6/0.3	

PAD attenuator modules

High quality gold plated 1GHz pads for amplifier slope and attenuation. Packaging 10 pcs.

Item	Code	Attenuation - tilt	Item	Code	Attenuation - tilt	
MPG00	289630	attenuation 0dB - tilt 0dB	**MPG09**	289639	attenuation 9dB - tilt 9dB	
MPG01	289631	attenuation 1dB - tilt 1dB	**MPG10**	289640	attenuation 10dB - tilt 10dB	
MPG02	289632	attenuation 2dB - tilt 2dB	**MPG12**	289641	attenuation 12dB - tilt 11.5dB	
MPG03	289633	attenuation 3dB - tilt 3dB	**MPG14**	289642	attenuation 14dB - tilt 13dB	
MPG04	289634	attenuation 4dB - tilt 4dB	**MPG16**	289643	attenuation 16dB - tilt 14.5dB	
MPG05	289635	attenuation 5dB - tilt 5dB	**MPG18**	289644	attenuation 18dB - tilt 16dB	
MPG06	289636	attenuation 6dB - tilt 6dB	**MPG20**	289645	attenuation 20dB - tilt 17dB	
MPG07	289637	attenuation 7dB - tilt 7dB	**MPG22**	289646	attenuation 22dB - tilt 18.5dB	
MPG08	289638	attenuation 8dB - tilt 8dB				

UBB amplifiers

AMP9763 - AMP9763B

UBB (ultra broadband) line amplifiers with return path. To be used as the final amplifier before wall outlets. Normally used to amplify signals in small distribution networks. Can be used to amplify the signals after an optical link. All adjustments are internally located under the die cast cover secured with safety screws to prevent unauthorised access. Packaging 1 pc.

- Gain and slope adjustment in TV and SAT band
- Passive or active return path, switchable by the installer

AMP9763
AMP9763B

Item		AMP9763 - AMP9763B		
Code		235052 - 235056		
Bandwidth	MHz	5-30 (AMP9763), 5-65 (AMP9763B)	47-862 (AMP9763), 88-862 (AMP9763B)	950-2400
Gain	dB	25 *	40	40
Flatness	dB	±2	±2	±2
Gain adjustment	dB	-	0-20	0-20
Slope adjustment	dB	-	0-20	0-20
Max. output level				
IM3 -60 dB 3 unequal tones	dBµV	100	120	-
IM3 -54 dB 2 equal tones	dBµV	100	120	-
IM3 -52 dB 3 equal tones	dBµV	98	118	-
IM3 -60 dB 3 equal tones	dBµV	94	114	-
IM3 -60 dB 2 equal tones	dBµV	97	117	-
IM2 -60 dB 2 equal tones	dBµV	95	115	-
IM2 -35 dB 2 equal tones	dBµV	-	-	125
Noise figure	dB	3	8	10
Connectors		F		
Impedance	Ohm	75		
Test point	dB	-30		
Mains voltage	Vac, Hz	220-240, 50-60		
Power consumption	W	16		
Protection index		IP20		
Dimensions (l x h x w)	mm	194x143x53		
Operating temperature	°C	-10 to +55		

* Return path gain can be set to -2dB.

Note: Spacers available (item MBX0001 see page 64) for installation to leave a 19mm gap between the amplifier and the wall to allow cable to be run neatly behind the amplifier.

CATV C4 UBB amplifiers

AMP523.. Series

These amplifiers are used as trunk distribution amplifiers in large networks with TV and SAT band distribution. They amplify the forward and return path.
Mains and remote powered versions available. PG11 thread for different connector types. Packaging 1 pc.

- High output level and low power consumption
- Switchable passive or active return path
- Gain and tilt adjustment using attenuators
- LED operating indication
- Minimal noise figure through equalisation and attenuation after pre-amplifier stage

AMP523L
AMP523M

Item		AMP523L - AMP523M		
Code		289896 - 289895		
Frequency	MHz	4-65	86-862	950-2400
Gain	dB	Switchable	34	40
Flatness	dB	-	±1	±1.5
Gain adjustment	dB	-	0-20	0-20
Noise figure	dB	6.5	7	8.5
Equalisation	dB	-	0-20	0-20
Max. output level				
60dB IMA3 (DIN45004B)	dBµV	19	120	-
60dB IMA2 (DIN45004A1)	dBµV	111	118	-
60dB CTB	dBµV	05	114	-
60dB CSO	dBµV	106	117	-
35dB IMA3/2150	dBµV	-	-	120
Return loss	dB	20@40MHz - 1.5/oct		
Operating voltage	Vac	AMP523L: 24-70	AMP523M: 180-265	
Consumption	W	AMP523L: 13-15	AMP523M: 13	
Transit current	A	-	AMP523M: 2.5	
Connectors		PG11		
Dimensions (l x h x w)	mm	242x163x60 (IP66)		
Operating temperature	°C	- 10 to +55		

Attention: The product has to be completed with connectors, not included in the packaging (see following page).

Accessories

Adaptors and accessories box

Item	Code	Description	
PG11-3,5/12	289658	PG11 to 3.5/12 adaptor - packaging 10 pcs	
PG11-5/8	289659	PG11 to 5/8" reduction ring - packaging 100 pcs	
PG11-F	289660	PG11 to F adaptor - packaging 10 pcs	
PAD-BOX	289661	Box with a variety of pads and other accessories.	
		MPG00 - Pack. 12 pcs / ML01 - Pack. 6 pcs	
		MPG02 to 22 - Pack. 3 pcs each / 5A fuses - Pack. 5 pcs	
		MS100 - Pack. 2 pcs / O rings - Pack. 10 pcs	
		MS101 - Pack. 2 pcs / Terminals - Pack. 10 pcs	
		MS404 - Pack. 2 pcs	

Accessories

PSU8510

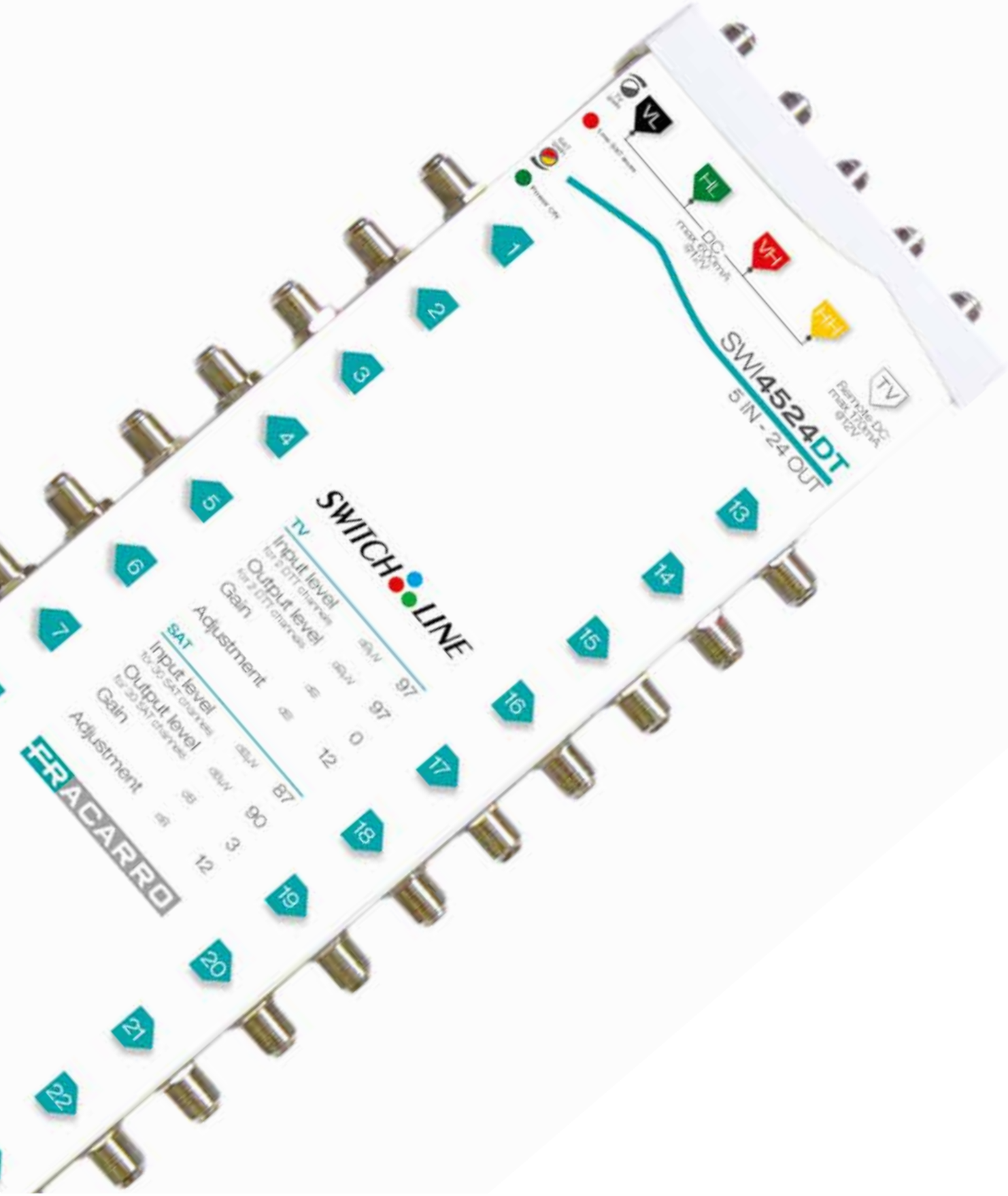
Power supply for CATV networks, to be used to power line and distribution amplifiers (AMP5121L, AMP522AL, AMP522PL and AMP523L) through the cable. Power inserter built-in, with two outputs.
Output voltage (48, 60 or 68Vac, selectable by means of a fuse) can be injected in one or both trunk. PG11 tread, 5/8" reduction ring included.
Operating temperature: -10 to +55 °C

- High output current, 10A max.
- Die-cast housing, IP65
- Output voltage can be injected in both outputs
- Protected against accidental short circuit and overload

▶ **PSU8510**

Item		PSU8510
Code		289847
Outputs	No.	2
Bandwidth	MHz	5-862
Output voltage	Vac	Selectable 48, 60 or 68 by means of fuse
Output current	A	10@48Vac
Mains voltage	Vac, Hz	230, 50-60
Connector	type	PG11 with 5/8" reduction ring
Max. power consumption	W	600 @ 48Vac
Dimensions	mm	210x170x115
Operating temperature	°C	- 10 to + 55

Multiswitches



Multiswitches

Multiswitches

Compact multiswitches

SWI95../UK Series

5 input compact adjustable multiswitches
(4 SAT + 1 TV)

- TV gain adjustment
- 2 x SAT gain adjustments (high and low band)
- Fixed gain on the return path
- Full HD compliant
- 2A@14V power supply for mixed systems (like SWI85... cascadable series)
- Standard colour coding for easy installation

▶ **SWI95../UK**

Item		SWI9508/UK*	SWI9512/UK*	SWI9516/UK*
Code		271106	271107	271108
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	12	16
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain	dB	5 to 10	5 to 10	3 to 9
Gain adjustment	dB	15	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)
TV				
Bandwidth	MHz	85-862	85-862	85-862
Gain	dB	2 to 5	2 to 5	1 to 4
Gain adjustment	dB	20	20	20
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	103 (-35dBc 2 tones)
RETURN PATH				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	8	7	6
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	108 (-35dBc 2 tones)
GENERAL PARAMETERS				
LBN power supply	mA	1550	1450	1360
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	450	550	640
Dimensions (lxhxw)	mm	380x127x60	455x127x60	530x127x60
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

*** The UK plug is removable, please use CVMS-EU (code 280005) to use the European version**

Compact multiswitches

SWI45.. Series

5 input compact multiswitches (4 SAT + 1 TV)

- Active TV/SAT band
- Compact size
- Switch mode power supply guarantees high reliability
- Return path included
- Full HD compliant
- Standard colour coding for easy installation

▶ **SWI45..**

Item		SWI4508	SWI4512	SWI4516
Code		271101	271102	271103
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	12	16
Bandwidth SAT	MHz	950-2150	950-2150	950-2150
Gain SAT	dB	0	0	0
Maximum output level SAT	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
Bandwidth TV	MHz	85-862	85-862	85-862
Gain TV	dB	-4	-5	-6
Maximum output level TV	dBµV	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)
RETURN PATH				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	-16	-17	-19
GENERAL PARAMETERS				
LNB power supply	mA, V	300, 14	300, 14	300, 14
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Dimensions (lxhxw)	mm	245x125x45	325x125x45	405x125x45
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Item		SWI4508DT	SWI4512DT	SWI4516DT	SWI4524DT	SWI4532DT
Code		271148	271149	271150	271151	271152
No. of inputs		4 SAT, 1 TV	4 SAT, 1 TV	4 SAT, 1 TV	4 SAT, 1 TV	4 SAT, 1 TV
No. of outputs		8	12	16	24	32
Bandwidth SAT	MHz	950-2400	950-2400	950-2400	950-2400	950-2400
Gain SAT	dB	3	3	3	3	3
Max out. level SAT (-35dBc 2 tones)	dBµV	102	102	90 (30 SAT trasponders)	90 (30 SAT trasponders)	90 (30 SAT trasponders)
Bandwidth TV	MHz	85-862	85-862	85-862	85-862	85-862
Gain TV	dB	3	3	0	0	0
Maximum output level TV	dBµV	97	97	97	97	97
RETURN PATH						
Bandwidth	MHz	5-65	5-65	5-65	5-65	5-65
Gain	dB	-8	-8	-13	-13	-13
GENERAL PARAMETERS						
LNB power supply	mA, V	600, 12	600, 12	600, 12	600, 12	600, 12
Mains voltage	mA, V	400, 12	400, 12	400, 14	400, 14	400, 14
Dimensions (lxhxw)	mm	145 x 120 x 25	200 x 120 x 25	260 x 120 x 25	340 x 120 x 25	420 x 120 x 25
Operating temperature	°C	-10 to +55	-10 to +55	-10 to +55	-10 to +55	-10 to +55

Multiswitches

Compact multiswitches

SWI5..DC Series

5 input compact multiswitches (4 SAT +1 TV)

- The LNB and multiswitch can be powered by a receiver
- 12V automatic circuit to power a masthead amplifier
- Additional connector to feed a high power masthead amplifier
- Compact size
- Full HD compliant

▶ **SWI5..DC**

Item		SWI508DC	SWI516DC
Code		271115	271117
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	16
SAT			
Bandwidth	MHz	950-2150	950-2150
Gain (tilt)	dB	-2 to 1	-2 to 1
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
TV			
Bandwidth*	MHz+	5-862	5-862
Gain	dB	-14	-20
GENERAL PARAMETERS			
Switching control	V, KHz	14/18, 0/22	14/18, 0/22
Power consumption	mA	35	35
Dimensions (lxhxw)	mm	200x118x30	390x118x30
Operating temperature	°C	-10 to 55	-10 to 55

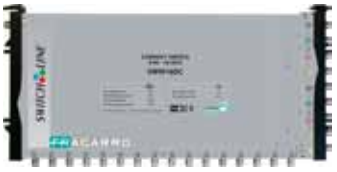
*Return path included

Compact multiswitches

SWI9..DC Series

9 input compact multiswitches (8 SAT + 1 TV)

- The LNB and multiswitch can be powered by a receiver
- Active/passive terrestrial gain
- Circuit for automatic detection and 12V supply current for terrestrial masthead amplifier
- Additional connector to supply on terrestrial input when necessary
- High SAT output level – 105dBµV
- HD compliant - Low power consumption



▶ SWI9..DC

Item		SWI908DC	SWI916DC
Code		271118	271119
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		8	16
SAT			
Bandwidth	MHz	950-2150	950-2150
Gain	dB	-2 to 1	-2 to 1
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
TV			
Bandwidth	MHz	88-862	88-862
Gain (active/passive)	dB	0 / -16	-3 / -20
Maximum output level	dBµV	97 (-35dBc 2 tones)	97 (-35dBc 2 tones)
RETURN PATH (only when passive)			
Bandwidth	MHz	5-65	5-65
Gain	dB	-16	-20
GENERAL PARAMETERS			
Isolation SAT-SAT	dB	30	30
Switching control	V, KHz	14/18, 0/22	14/18, 0/22
Power consumption	mA	passive 60 (per output) active 60 (per output) + 70 (TV amplifier)	passive 60 (per output) active 60 (per output) + 70 (TV amplifier)
Dimensions (lxhxw)	mm	230x180x30	395x180x30
Operating temperature	°C	-10 to 55	-10 to 55

Compact multiswitches

SWI59..A Series

9 input compact multiswitches (8 SAT +1 TV)

- Dip switch for each output to set the main satellite
- Dip switch to power masthead amplifier
- Active SAT band to guarantee the quality of the SAT signal with long cable drops - Return path included
- Full HD compliant
- Switch mode power supply guarantees high reliability

▶ SWI59..A

Item		SWI5908A	SWI5912A	SWI5916A
Code		271052	271053	271054
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		8	12	16
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain	dB	3	2	4 to 1
Maximum output level	dBµV	90 (-35dBc 2 tones)	90 (-35dBc 2 tones)	90 (-35dBc 2 tones)
TV				
Bandwidth	MHz	5-862*	5-862*	5-862*
Gain	dB	-16	-18	-20
GENERAL PARAMETERS				
LNB power supply	mA, V	600/14	600/14	600/14
Switching control	V, KHz	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	25	25	25
Dimensions (lxhxw)	mm	305x125x65	385x125x65	445x125x65
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Multiswitches

Compact multiswitches

SWI59..AS Series

9 input compact multiswitches (8 SAT +1 TV)

- Dip switch to select terrestrial active or passive path
- Standalone power supply for easier installation
- Full HD compliant
- Bandwidth up to 2300MHz
- Standard colour coding for easy installation

SWI59..AS

Item		SWI5906AS	SWI5908AS	SWI5912AS
Code		287035	287036	287037
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		6	8	12
SAT				
Bandwidth	MHz	950-2300	950-2300	950-2300
Gain	dB	0	-2	-2
Maximum output level	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
TV				
Bandwidth *	MHz	5-862	5-862	5-862
Gain	dB	-7 (passive), 13 (active)	-7 (passive), 13 (active)	-10 (passive), 0 (active)
Maximum output level **	dBµV	105 (passive), 95 (active)	105 (passive), 95 (active)	105 (passive), 95 (active)
GENERAL PARAMETERS				
LNB power supply	mA, V	1600, 12	1600, 12	1600, 12
Switching control	V, KHz	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	40	40	40
Dimensions (lxhxw)	mm	300x105x51	300x105x51	300x195x51
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60

Item		SWI5916AS	SWI5924AS	SWI5932AS
Code		287038	287206	287207
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		16	24	32
SAT				
Bandwidth	MHz	950-2300	950-2300	950-2300
Gain	dB	-3	-3	-5
Maximum output level	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
TV				
Bandwidth *	MHz	5-862	5-862	5-862
Gain	dB	-10 (passive), 0 (active)	-14 (passive), -4 (active)	-16 (passive), -6 (active)
Maximum output level **	dBµV	105 (passive), 95 (active)	105 (passive), 95 (active)	105 (passive), 95 (active)
GENERAL PARAMETERS				
LNB power supply	mA, V	1600, 12	1600, 12	1600, 12
Switching control	V, KHz	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	40	40	40
Dimensions (lxhxw)	mm	300x195x51	300x210x50	400x210x50
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60

*Return path included
** (-35dBc 2 tones)

Compact multiswitches

SWI517..AS Series

17 input compact multiswitches (16 SAT +1 TV)

- Dip switch to select terrestrial active or passive path
- Standalone power supply for easier installation
- Full HD compliant
- Bandwidth up to 2300MHz
- Standard colour coding for easy installationy

▶ **SWI517..AS**

Item		SWI51706AS	SWI51712AS	SWI51716AS
Code		287039	287040	2897041
No. of inputs		17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)
No. of outputs		6	12	16
SAT				
Bandwidth	MHz	950-2300	950-2300	950-2300
Gain	dB	-3	-3	-5
Maximum output level	dBµV	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)	95 (-35dBc 2 tones)
TV				
Bandwidth*	MHz	5-862	5-862	5-862
Gain	dB	-7 (passive), +3 (active)	-10 (passive), 0 (active)	-10 (passive), 0 (active)
Maximum output level**	dBµV	100 (passive), 90 (active)	100 (passive), 90 (active)	100 (passive), 90 (active)
GENERAL PARAMETERS				
LNB power supply	mA, V	1600, 12	1600, 12	1600, 12
Switching control	V, KHz	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0	14/18, 0/22 DISEqC 2.0
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Power consumption	mA	60	60	60
Dimensions (lxhxw)	mm	430x105x51	430x195x51	430x240x51
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60

*Return path included
** (-35dBc 2 tones)

Multiswitches

Cascadable multiswitches

SWI44.. Series

4 input cascadable multiswitches (4 SAT)

- The LNB can be powered directly from the decoder
- Four different levels of attenuation -17dB, -8dB, 0dB and +12dB for signal balancing
- Full HD compliant
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation.

▶ SWI4404...

▶ SWI4406...

▶ SWI4408...

Item		SWI4404+12	SWI4404-00	SWI4404-08	SWI4404-17
Code		271134	271081	271082	271083
No. of inputs		4	4	4	4
No. of outputs		4	4	4	4
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2150
Gain (tilt)	dB	+12	0	-8	-17
Insertion loss	dB	3	2	2	2
Maximum output level	dBµV	105 (-3dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	55	35	35	15
Dimensions (lxhxw)	mm	90x70x20	90x70x20	90x70x20	90x70x20
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55
Item		**SWI4406+12**	**SWI4406-00**	**SWI4406-08**	**SWI4406-17**
Code		271135	271084	271085	271086
No. of inputs		4	4	4	4
No. of outputs		6	6	6	6
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2150
Gain (tilt)	dB	+12	0	-8	-17
Insertion loss	dB	4	2	2	2
Maximum output level	dBµV	105 (-3dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	55	35	35	15
Dimensions (lxhxw)	mm	119x70x20	119x70x20	119x70x20	119x70x20
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55
Item		**SWI4408+12**	**SWI4408-00**	**SWI4408-08**	**SWI4408-17**
Code		271136	271087	271088	271089
No. of inputs		4	4	4	4
No. of outputs		8	8	8	8
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2150
Gain (tilt)	dB	+12	0	-8	-17
Insertion loss	dB	5	3	3	3
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	55	35	35	15
Dimensions (lxhxw)	mm	150x70x20	150x70x20	150x70x20	150x70x20
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Cascadable multiswitches

SWI35.. Series

5 input cascadable multiswitches (4 SAT + 1 TV)

- Three different levels of attenuation on SAT -17dB, -8dB and 0dB for signal balancing
- Terminal version available with 0dB attenuation
- Return path included on all switches
- With the MiniDiSEqC and Tool Kit it is possibile to distribute up to 4 satellites (16 polarities) + TV
- The MiniDiSEqC with 2 SAT inputs has a dip-switch to select the main satellite input
- Full HD compliant
- Standard colour coding for easy installation

▶ SWI3504...

▶ SWI3506...

▶ SWI3508...

Item		SWI3504P.	SWI3504A10	SWI3504A.	SWI3504T.
Code		271013-C	271008	271011-C	271015-C
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		4	4	4	4
Gain SAT	dB	-20 to -16 (tilted)	-8	-2 to 1 (tilted)	-1 to 2 (tilted)
Insertion loss SAT	dB	2	2	2	-
Maximum output level SAT	dBµV	-	110 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Gain TV	dB	-19	-15	-15	-12
Insertion loss TV	dB	2.5	3	3.5	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	15	40	35	35
Dimensions (lxhxw)	mm	120x118x30	120x118x30	120x118x30	120x118x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55
Item		**SWI3506P.**	**SWI3506A10**	**SWI3506A.**	**SWI3506T.**
Code		271014-C	271009	271012-C	271016-C
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		6	6	6	6
Gain SAT	dB	-21 to -16 (tilted)	-8	-3 to 1 (tilted)	-2 to 2 (tilted)
nsertion loss SAT	dB	2.5	2.5	2.5	-
Maximum output level SAT	dBµV	-	110 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Gain TV	dB	-19	-15	-15	-13
Insertion loss TV	dB	4	4.5	5	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	15	40	35	35
Dimensions (lxhxw)	mm	160x118x30	160x118x30	160x118x30	160x118x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55
Item		**SWI3508P.**	**SWI3508A10**	**SWI3508A.**	**SWI3508T.**
Code		271018-C	271010	271017-C	271019-C
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	8	8	8
Gain SAT	dB	-21 to -16 (tilted)	-8	-2 to 1 (tilted)	-2 to 1 (tilted)
Insertion loss SAT	dB	3.5	3.5	3.5	-
Maximum output level SAT	dBµV	-	110 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Gain TV	dB	-25	-22	-22	-14
Insertion loss TV	dB	1	3	3	-
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	15	40	35	35
Dimensions (lxhxw)	mm	200x118x30	200x118x30	200x118x30	200x118x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Multiswitches

Cascadable multiswitches

SWI85..PLUS Series

5 input cascadable adjustable multiswitches (4 SAT + 1 TV)

- Optimised energy consumption
- Capable of 100m drop length
- Very high isolation (45dB)
- Very high electrical performance
- TV gain adjustment
- 2 x SAT gain adjustments (high and low band)
- Fixed gain on the return path
- Full HD compliant
- Can be used with SWI95../UK to create a mixed system
- Standard colour coding for easy installation

GREEN PRODUCT

SWI85..PLUS

Item		SWI8508PLUS	SWI8512PLUS	SWI8516PLUS
Code		271055	271056	271063
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		8	12	16
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain (tilt)	dB	-4 to 0	-4 to 0	-3 to 1
Gain adjustment	dB	15	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)	108 (-35dBc 2 tones)
Insertion loss	dB	2	2.5	2.5
TV				
Bandwidth	MHz	85-862	85-862	85-862
Gain (tilt)	dB	-8 to -4	-8 to -4	-9 to -5
Gain adjustment	dB	20	20	20
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	102 (-35dBc 2 tones)
Insertion loss	dB	1.5	2	2
RETURN PATH				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	-4	-5	-6
Maximum output level	dB	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)
Insertion loss	dBµV	1	1	1
GENERAL PARAMETERS				
Power supply	V	14/18	14/18	14/18
Switching control	V, KHz	14/18, 0/22	14/18, 0/22	14/18, 0/22
Power consumption	mA	280 (14V), 220 (18V)	280 (14V), 220 (18V)	280 (14V), 220 (18V)
Dimensions (lxhxw)	mm	260x120x30	340x120x30	425x120x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Cascadable multiswitches

SWI85..STPLUS Series

5 input cascadable multiswitches (4 SAT + 1 TV)

- Optimised energy consumption
- Capable of 100m loop length
- Very high isolation (45dB)
- Very high electrical performance
- TV gain adjustment
- 2 x SAT gain adjustments (high and low band)
- Fixed gain on the return path
- Full HD compliant
- Can be used with SWI95../UK to create a mixed system
- Standard colour coding for easy installation

GREEN PRODUCT

▶ SWI85..STPLUS

Item		SWI8524STPLUS	SWI8532STPLUS
Code		271057	271058
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)
No. of outputs		24	32
SAT			
Bandwidth	MHz	950-2150	950-2150
Gain (tilt)	dB	-6 to 0	-5 to +1
Gain adjustment	dB	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	108 (-35dBc 2 tones)
Insertion loss	dB	5	5
TV			
Bandwidth	MHz	85-862	85-862
Gain (tilt)	dB	-9 to -6	-11 to -5
Gain adjustment	dB	20	20
Maximum output level	dBµV	105 (-35dBc 2 tones)	102 (-35dBc 2 tones)
Insertion loss	dB	4	4
RETURN PATH			
Bandwidth	MHz	5-65	5-65
Gain	dB	-5	-6
Maximum output level	dB	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)
Insertion loss	dBµV	2	2
GENERAL PARAMETERS			
Power supply	V	14/18	14/18
Switching control	V, KHz	14/18, 0/22	14/18, 0/22
Power consumption	mA	560 (14V), 440 (18V)	560 (14V), 440 (18V)
Dimensions (lxhxw)	mm	355x120x60	440x120x60
Operating temperature	°C	-10 to 55	-10 to 55

Multiswitches

Cascadable multiswitches

SWI39.. Series

9 input cascadable multiswitches (8 SAT + 1 TV)

- 3 types: passive SAT, active SAT and terminal with active SAT
- Dip-switch for each output to set the main satellite
- Return path included on all switches
- Full HD compliant
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation

▶ SWI3906...

▶ SWI3908.

Item		SWI3906P	SWI3906A	SWI3906T
Code		271025	271024	271026
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		6	6	6
Gain SAT (tilt)	dB	-22 to -17	-3 to 0	0 to 3
Insertion loss SAT	dB	3	3	-
Maximum output level SAT	dBµV	-	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Gain TV	dB	-19	-16	-13
Insertion loss TV	dB	3	4	-
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	35	50	50
Dimensions (lxhxw)	mm	170x125x52	170x125x52	170x125x52
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Item		SWI3908P	SWI3908A
Code		271028	271027
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		8	8
Gain SAT (tilt)	dB	-21 to -16	-2 to 0
Insertion loss SAT	dB	3	3
Maximum output level SAT	dBµV	-	105 (-35dBc 2 tones)
Gain TV	dB	-25	-22
Insertion loss TV	dB	2	3
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	35	50
Dimensions (lxhxw)	mm	210x125x52	210x125x52
Operating temperature	°C	-10 to 55	-10 to 55

Cascadable multiswitches

SWI39AT

Adjustable shunt

- Enables the creation of a 9 input active TV system
- Adjustable gain on SAT/Terrestrial tap outputs
- Low insertion loss on trunk path
- Active return channel and Full HD compliant
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation

▶ **SWI39AT**

Item		SWI39AT
Code		271020
No. of inputs		9 (8 SAT + 1 TV)
No. of outputs		9
No. of tapped outputs		9
Bandwidth SAT	MHz	950-2150
Gain SAT (tilt)	dB	-2 to 0
Gain adjustment SAT	dB	15
Maximum output level SAT	dBµV	116 (-35dBc 2 tones)
Insertion loss SAT	dB	1.5
Bandwidth TV	MHz	85-862
Gain TV	dB	10 to 15
Gain adjustment TV	dB	15
Maximum output level TV	dBµV	120 (-35dBc 2 tones)
Insertion loss TV	dB	1.5
RETURN PATH		
Bandwidth	MHz	5-65
Gain	dB	12
Maximum output level	dBµV	104 (-35dBc 2 tones)
Insertion loss	dB	1.5
GENERAL PARAMETERS		
Power consumption	mA	320 (14V)
Dimensions (lxhxw)	mm	170x140x60
Operating temperature	°C	-10 to 55

Multiswitches

Cascadable multiswitches

SWI39..S Series

9 input cascadable multiswitches (8 SAT +1 TV)

- Isolation between outputs >30dB
- Cost effective and Full HD compliant
- Bandwidth up to 2300MHz
- Standard colour coding for easy installation

▶ **SWI39..S**

Item		SWI3906S	SWI3908S	SWI3912S	SWI3916S
Code		289783	289784	289785	289786
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		6	8	12	16
Bandwidth SAT	MHz	950-2300	950-2300	950-2300	950-2300
Gain SAT	dB	0	0	-2	-2
Maximum output level SAT	dBµV	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)
Insertion loss SAT	dB	2	2	4	4
Bandwidth TV*	MHz	5-862	5-862	5-862	5-862
Gain TV	dB	-17	-17	-21	-21
Insertion loss TV	dB	4	4	4	4
GENERAL PARAMETERS					
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	40	40	40	40
Dimensions (lxhxw)	mm	215x105x40	215x105x40	215x195x40	215x195x40
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60	-20 to 60

*Return path included

Cascadable multiswitches

SWI89..PLUS Series

9 input cascadable adjustable multiswitches (8 SAT +1 TV)

- Optimised energy consumption
- Capable of 100m drop length
- Very high isolation (>45dB)
- Very high electrical performance
- TV gain adjustment
- 2 x SAT gain adjustments (SAT1 and SAT2)
- Fixed gain on the return path
- Full HD compliant
- Can be used with SWI95../UK to create a mixed system
- Standard colour coding for easy installation

GREEN PRODUCT

▶ SWI89..PLUS

Item		SWI8908PLUS	SWI8912PLUS	SWI8916PLUS
Code		271067	271068	271069
No. of inputs		9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)
No. of outputs		8	12	16
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain	dB	-3 to 3	-4 to 2	-6 to 0
Gain adjustment	dB	15	15	15
Maximum output level	dBµV	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)	110 (-35dBc 2 tones)
Insertion loss	dB	2	2.5	3
TV				
Bandwidth	MHz	85-862	85-862	85-862
Gain	dB	-7 to -3	-9 to -4	-11 to -5
Gain adjustment	dB	20	20	20
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Insertion loss	dB	2	2	2
RETURN PATH				
Bandwidth	MHz	5-65	5-65	5-65
Gain	dB	-3	-5	-7
Maximum output level	dBµV	95 (-35dBc 2 tones)	97 (-35dBc 2 tones)	97 (-35dBc 2 tones)
Insertion loss	dB	1	2	2
GENERAL PARAMETERS				
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	350(14V), 280(18V)	350(14V), 280(18V)	350(14V), 280(18V)
Mains voltage	V	14 - 18	14 - 18	14 - 18
Dimensions (lxhxw)	mm	260x180x30	340x180x30	425x180x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Multiswitches

Cascadable multiswitches

SWI317..AS Series

17 input cascadable multiswitches
(16 SAT +1 TV)

- Isolation between outputs >30dB
- Cost effective
- Full HD compliant
- Bandwidth up to 2300 MHz
- Standard colour coding for easy installation

▶ **SWI317..S**

Item		SWI31706S	SWI31712S	SWI31716S
Code		289780	289781	289782
No. of inputs		17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)	17 (16 SAT + 1 TV)
No. of outputs		6	12	16
SAT				
Bandwidth	MHz	950-2300	950-2300	950-2300
Gain	dB	-3	-4	-5
Maximum output level	dBµV	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)	100 (-35dBc 2 tones)
Insertion loss	dB	3	4	4
TV				
Bandwidth*	MHz	5-862	5-862	5-862
Gain	dB	-17	-21	-21
Insertion loss	dB	4	4	4
GENERAL PARAMETERS				
Switching control	V, KHz	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0	14/18, 0/22 DiSEqC 2.0
Power consumption	mA	60	60	60
Dimensions (lxhxw)	mm	345x105x40	345x195x40	345x240x40
Operating temperature	°C	-20 to 60	-20 to 60	-20 to 60

*Return path included

Cascadable multiswitches

SCR.. Series

4 input and 5 input SCR cascadable adjustable multi-switches

- Multiple STBs* and PVRs can be connected by a single cable
- Adjustable SAT and TV gain
- High gain for splitting compensation
- Low insertion loss
- Compact size
- Standard colour coding for easy installation

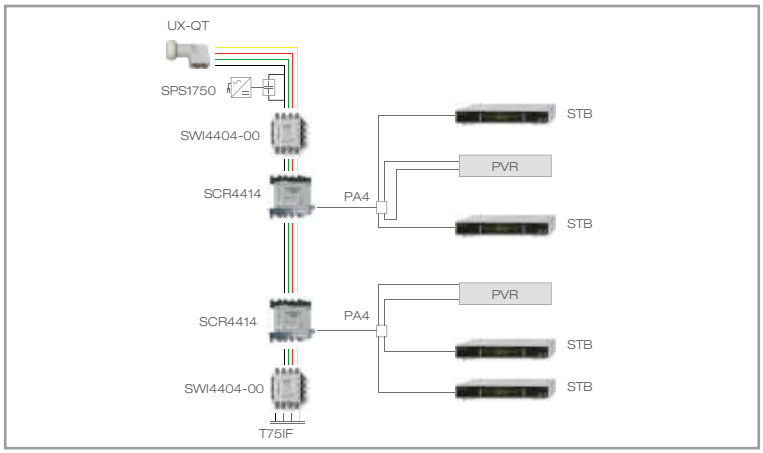
▶ SCR4414

▶ SCR8514

Item		SCR4414	SCR8514
Code		271120	271121
No. of inputs		4 SAT	4 SAT + 1 TV
No. of outputs		1 output for 4 users	1 output for 4 users
SAT			
Output band frequency	MHz	1210, 1420, 1680, 2040	1210, 1420, 1680, 2040
Gain (tilted) dip-switch position 1	dB	16	16
dip-switch position 2	dB	7	7
Maximum output level	dBµV	105 (-35dBc 2 tones)	105 (-35dBc 2 tones)
Insertion loss	dB	1	1
TV			
Bandwtdth	MHz	–	85-862
Gain	dB	–	12
Gain adjustment	dB	–	15
Maximum output level	dBµV	–	107 (-60dBc 3 tones)
Insertion loss	dB	–	1
GENERAL PARAMETERS			
Switching control		SCR	SCR
Power consumption	mA	220	280
Dimensions (lxhxw)	mm	120x120x35	120x120x35
Operating temperature	°C	-10 to +55	-10 to +55

* Compatible with SCR protocol

Installation example



Amplifiers

Headend amplifiers

AMP Series

AMP9254
Headend amplifier with 5 inputs (4 SAT + 1 TV)
- Gain adjustment for each SAT input
- For small and medium systems
- 400mA to power the LNB

AMP9254

AMP9254A
Headend amplifier with 5 inputs (4 SAT + 1 TV)
- Tilt and gain adjustment for each SAT input
- There is a connector to insert DC on lines 1 and 2
- For medium and large systems or where there are long distances between switches
- 400mA to power the LNB

AMP9254A

AMP9294

AMP9294
Headend amplifier with 9 inputs (8 SAT + 1 TV)
- Gain adjustment for each SAT input
- For small and medium systems
- 600mA to power the LNB

AMP9S, AMP17S
Headend amplifiers with 9 inputs (8 SAT + 1 TV) and 17 inputs (16 SAT + 1 TV)
- Tilt and gain adjustment for each SAT input
- Gain adjustment for TV input
- High maximum output level
- Bandwidth up to 2300MHz
- 1800mA to power the LNB

AMP9S

AMP17S

Item		AMP9254	AMP9254A	AMP9294	AMP9S	AMP17S
Code		271031	271033	271032	289778	289779
No. of inputs		5 (4 SAT + 1 TV)	5 (4 SAT + 1 TV)	9 (8 SAT + 1 TV)	9 (8 SAT + 1 TV)	17 (16 SAT + 1 TV)
SAT						
Bandwidth	MHz	950-2150	950-2150	950-2150	950-2300	950-2300
Gain	dB	19-25 (fixed tilt)	32	20-24 (fixed tilt)	27	27
Gain adjustment	dB	15	15	15	10	10
Tilt adjustment	dB	-	12	-	4	4
Maximum output level*	dBµV	112	116	112	115	115
TV						
Bandwidth	MHz	5-862	5-862	5-862	47-862	47-862
Gain	dB	-1	-1	-1	30	30
Gain adjustment	dB	-	-	-	10	10
Maximum output level*	dBµV	-	-	-	114	114
GENERAL PARAMETERS						
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60	220-240, 50-60	220-240, 50-60
LBN power supply	mA, V	400, 14	400, 14	600, 14	1800, 12	1800, 12
Dimensions (lxhxw)	mm	235x125x65	235x125x65	320x125x65	350x130x90	430x130x90
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-20 to 60	-20 to 60

* (-35dBc 2 tones)

Line amplifiers

SWA.. Series

SWA5424

Line amplifier with 4 SAT inputs

- Tilt and gain adjustment for each SAT input
- For medium and large systems
- Remote power supply through SAT trunk lines 1 (VL), 2 (HL) and 3 (VH)
- DC pass through HH line

SWA5424

SWA5414

Line amplifier with 4 SAT inputs

- Fixed gain
- For small and medium systems
- Can be powered directly through the DC F connector or by using an external power supply connected to the trunk line 1 (VL)

SWA5122

SWA5122

Line amplifier with 2 inputs (1 SAT + 1 TV)

- Tilt and gain adjustment on TV line
- Return path gain adjustment
- For small and medium systems
- Remote power supply through SAT trunk line

SWA5414

Item		SWA5424	SWA5414	SWA5122
Code		271034	271036	271035
No. of inputs		4 SAT	4 SAT	2 (1 SAT + 1 TV)
SAT				
Bandwidth	MHz	950-2150	950-2150	950-2150
Gain	dB	25	12 to 16 (tilted)	-1
Gain adjustment	dB	15	-	-
Tilt adjustment	dB	15	-	-
Maximum output level	dBµV	116	108	-
Noise figure	dB	8	8	-
TV				
Bandwidth	MHz	-	-	85-862
Gain	dB	-	-	30
Gain adjustment	dB	-	-	15
Tilt adjustment	dB	-	-	15
Maximum output level	dBµV	-	-	116
Noise figure	dB	-	-	8
RETURN PATH				
Bandwidth	MHz	-	-	5-65
Gain	dB	-	-	15
Gain adjustment	dB	-	-	10
Maximum output level	dBµV	-	-	106
Noise figure	dB	-	-	7
GENERAL PARAMETERS				
Power supply	V	14-30	14-18	14-30 on SAT
Power consumption	mA, V	300, 14	120, 14	400, 14
Dimensions (lxhxw)	mm	198x108x30	90x90x20	198x108x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

Power supplies - Accessories

Power supplies

AMP2000/UK
Power supply with DC inserter
- 14Vcc 2A output voltage
- Supplied with 220-240V~ , 50-60Hz.

SPS1750
Power supply with DC inserter
- 15Vcc 0.6A output voltage
- Supplied with 220-240V~ , 50-60Hz.

▶ **AMP2000/UK**

PSU3001
Power supply with 2 DC inserters
- 18Vcc 3A output voltage
- Supplied with 220-240V~, 50-60Hz.

▶ **SPS1750**

▶ **PSU3001**

Item		AMP2000/UK*	SPS1750	PSU3001**
Code		271140	289087	271160
Bandwidth	MHz	5-2400	40-2150	5-2400
Output voltage	V	12	15	18
Output current	A	2	0.6	3 (total)
Insertion loss	dB	1.5	1.5	1.5
GENERAL PARAMETERS				
Mains voltage	V, Hz	220-240, 50-60	220-240, 50-60	220-240, 50-60
Isolation	Class	II	II	II
Connector	Type	F	F	F
Dimensions (lxhxw)	mm	185x100x60	48x68x90	165x63x107
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55

* The UK plug is removable

** Also available with UK plug: PSU3001/UK - code 271159

Item	Code	Description	
CVMS-EU	280005	Power cable with European plug to be used with SWI95../UK switches and AMP2000/UK power supply. Cable length 1.6m. Available in individual or multiple packaging (10 pcs).	

Accessories

Splitters and taps

- SWI44T15 Tap: DC pass on each trunk line
- SWI44SP2 Splitter: DC pass from output ports to input port on each polarisation
- SWI85T15 Tap: DC pass on each SAT line
- SWI85SPL2 Splitter: DC pass on each SAT line
- Additional F connector for power injection on each SAT input/output (available on the 5 input model)
- Plastic bracket for quick and easy installation
- Standard colour coding for easy installation

▶ SWI44...

▶ SWI85....

Item		SWI44SP2	SWI44T15	SWI85SPL2	SWI85T15
Code		271091	271092	271096	271095
No. of inputs		4 SAT	4 SAT	5 (4 SAT +1 TV) + 1 DC	5 (4 SAT +1 TV) + 1 DC
No. of outputs		4+4	4+4	5+5	5+5
Bandwidth SAT	MHz	950-2150	950-2150	950-2150	950-2150
Gain SAT	dB	-	-16 to -13	-	-12
Insertion loss SAT	dB	4.5	1	4.5	2
Bandwidth TV	MHz	5-862	5-862	5-862	5-862
Gain TV	dB	-	-	-4.5	-12
Insertion loss TV	dB	-	-	-	2
GENERAL PARAMETERS					
Isolation SAT-SAT	dB	≥ 30	≥ 30	≥ 30	≥ 30
Isolation SAT-TV	dB	≥ 30	≥ 30	≥ 30	≥ 30
Dimensions (lxhxw)	mm	90x70x20	90x70x20	198x108x30	198x108x30
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Accessories

Mini DiSEqC

Accessory for modular 8SAT or 16SAT solutions + terrestrial

- SWM1305A Kit (code 271000) available to combine SWI35.. multiswitches and Mini DiSEqC

▶ SWI1201B

▶ SWI1401B

▶ SWM1305A

Item		SWI1201B	SWI1401B	SWI1301B	SWI1501B
Code		271071	271072	271073	271074
No. of inputs		2 (1 with TV mix)	4 (1 with TV mix)	2 SAT + 1 TV	4 SAT + 1 TV
Input	A	SAT + TV	SAT + TV	SAT	SAT
Input	B	SAT	SAT	SAT	SAT
Input	C	-	SAT	-	SAT
Input	D	-	SAT	-	SAT
Input	E	-	-	TV	TV
No. of outputs		1	1	1	1
Bandwidth SAT	MHz	950-2150	950-2150	950-2150	950-2150
Insertion loss SAT	dB	1.5	1.5	1.5	1.5
Bandwidth TV	MHz	5-862	5-862	5-862	5-862
Insertion loss TV	dB	2	1.5	2	1.5
Power consumption TV	mA	25	25	25	25
Dimensions (lxhxw)	mm	80x55x45	155x55x45	80x55x45	155x55x45
Operating temperature	°C	-10 to 55	-10 to 55	-10 to 55	-10 to 55

Distribution components

Distribution componensts

Splitters and taps

Clamp distribution components

5-2400MHz

To complete the Fracarro range of distribution components the range called CAD S has been designed. Their patented features make them reliable and easy to install.
They guarantee superb shielding (class A) and excellent impedance matching CAD S splitters and taps velopment project and are one of-a-kind with a UBB input to allow single cable connection.

Class A

New screw

▶ **CAD S**

SPLITTERS

Item	Code	Splitters	Insertion loss dB					Output-output isolation dB				
			RC 5-40 MHz	TV 47-862 MHz	SAT			RC 5-40 MHz	TV 47-862 MHz	SAT		
					950-1750 MHz	1750-2150 MHz	2150-2400 MHz			950-1750 MHz	1750-2150 MHz	2150-2400 MHz
PP2	220802	2 way	4	4	4.5	5	5.5	25	22	20	20	18
PP3	220803	3 way	6.5	6.5	6.5	7	8	20	20	20	20	18
PP4	220804	4 way	9.5	9.5	10	10.5	11	20	25	25	20	18
PP5	220805	5 way	11	11	11.5	12	13	20	25	25	22	18

1 WAY TAPS

Item	Code	Insertion loss dB					Tap loss dB					Output-tap isolation dB				
		RC 5-40 MHz	TV 47-862 MHz	SAT			RC 5-40 MHz	TV 47-862 MHz	SAT			RC 5-40 MHz	TV 47-862 MHz	SAT		
				950-1750 MHz	1750-2150 MHz	2150-2400 MHz			950-1750 MHz	1750-2150 MHz	2150-2400 MHz			950-1750 MHz	1750-2150 MHz	2150-2400 MHz
CD1-10	220810	1.8	1.6	2	2.3	2.6	10	10	10	10	10	28	30	30	28	32
CD1-14	220814	0.8	0.8	1.3	1.5	2	14.5	14.5	14.5	14.5	14	30	33	25	25	24
CD1-18	220818	0.8	0.8	1.3	1.5	2	18	18	17.5	18	18	32	35	30	27	24
CD1-22	220822	0.8	0.8	1.3	1.5	2	22	22	21.5	22	22	36	40	35	30	27

2 WAY TAPS

Item	Code	Insertion loss dB					Tap loss dB					Output-tap isolation dB				
		RC 5-40 MHz	TV 47-862 MHz	SAT			RC 5-40 MHz	TV 47-862 MHz	SAT			RC 5-40 MHz	TV 47-862 MHz	SAT		
				950-1750 MHz	1750-2150 MHz	2150-2400 MHz			950-1750 MHz	1750-2150 MHz	2150-2400 MHz			950-1750 MHz	1750-2150 MHz	2150-2400 MHz
CD2-10	220830	3.5	3	3.3	4.2	4.7	11	10	10.5	10.5	11	25	28	23	20	18
CD2-14	220834	1.6	1.5	2.5	2.7	3.5	15	15	14.5	14.5	14.5	30	35	25	23	23
CD2-18	220838	2.6	1.5	2.5	2.7	3.5	18	18	18	18	18	32	37	28	26	26
CD2-22	220842	1.6	1.5	2.5	2.7	3.5	22	22	22	22	22	35	40	32	30	30

Clamp distribution components

5-2400MHz

New screw

To complete the Fracarro range of distribution components the range called CAD S has been designed.
Their patented features make them reliable and easy to install. They guarantee superb shielding (class A) and excellent impedance matching;
CAD S splitters and taps (1, 2 or 4 way) are the result of an intensive development project and are one of-a-kind with a UBB input to allow single cable connection.

Class A

▶ CAD S

4 WAY TAPS

Item	Code	Insertion loss dB					Tap loss dB					Output-tap isolation dB				
		RC 5-40 MHz	TV 47-862 MHz	SAT			RC 5-40 MHz	TV 47-862 MHz	SAT			RC 5-40 MHz	TV 47-862 MHz	SAT		
				950-1750 MHz	1750-2150 MHz	2150-2400 MHz			950-1750 MHz	1750-2150 MHz	2150-2400 MHz			950-1750 MHz	1750-2150 MHz	2150-2400 MHz
CD4-12	220852	4	3.7	4.5	5.5	6.5	13	12	12	12.5	13	27	27	27	25	25
CD4-14	220854	3.5	3.3	3.7	4.5	5	14	14	14.5	14.5	14.5	30	30	30	25	25
CD4-18	220858	1.6	1.5	2.5	3.5	4	19	18	18	18	18	33	35	33	30	25
CD4-22	220862	1.6	1.5	2.5	3.3	3.8	22	22	22	22	22	37	38	37	30	30

Clamp distribution components

Accessories

Indoor and outdoor boxes for CAD S .

▶ BIC

▶ BOC

▶ ARD

Item	Code	Description
BIC	220800	Indoor box for CAD S
BOC	220801	Outdoor box for CAD S
ARD	220891	Din rail adaptor for CAD S

Splitters and taps

Distribution components with F connectors

5-2400MHz

These taps and splitters have been designed to be used in TV and Satellite distribution systems. Their compact design enable them to be installed in many locations.
The main features are: die cast metal housing, low insertion losses, high return loss and separation, F connectors, earthing screw and wall fixing.

SPLITTERS

▶ PA.. ▶ DE1-.. ▶ DE2-..

Item	Code	Splitters	Insertion loss dB						Output-output isolation dB					
			5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
PA2	280701	2 way	< 4	< 4	< 4.5	< 5.5	< 5.5	< 6	> 22	> 22	> 20	> 20	> 20	> 23
PA3	280703	3 way	< 7	< 8	< 8	< 10	< 10.5	< 11	> 22	> 22	> 22	> 22	> 22	> 22
PA4	280702	4 way	< 7.5	< 8.5	< 9	< 11	< 11.5	< 12	> 30	> 30	> 25	> 26	> 22	> 22
PA6	280704	6 way	< 10.5	< 10.5	< 12	< 13.5	< 14.5	< 16	> 22	> 22	> 22	> 22	> 22	> 22
PA8	280705	8 way	< 12	< 12	< 13.5	< 15.5	< 16.5	< 17	> 20	> 20	> 20	> 20	> 20	> 20

1 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE1-10	280710	< 1.5	< 1.3	< 1.3	< 1.6	< 2	< 2	10.5	10.5	10.5	11	11	11	> 40	> 35	> 32	> 27	> 24	> 24
DE1-14	280711	< 1	< 0.8	< 0.8	< 1.2	< 1.3	< 1.5	14	14	14	14	14	14	> 32	> 29	> 28	> 28	> 30	> 25
DE1-18	280712	< 0.8	< 0.7	< 0.7	< 0.9	< 1	< 1.3	18.5	18.5	18.5	18.5	18	17.5	> 45	> 36	> 31	> 31	> 27	> 22
DE1-22	280713	< 0.6	< 0.6	< 0.5	< 0.8	< 1	< 1.7	22	22	22	22	22	22	> 50	> 38	> 33	> 33	> 31	> 27

2 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE2-10	280714	< 2.5	< 2.5	< 2.5	< 2.5	< 2.8	< 3.5	10	10	10	10	11	11.5	> 25	> 28	> 28	> 25	> 25	> 23
DE2-14	280715	< 1.5	< 1.5	< 1.5	< 1.8	< 2	< 2.2	14	14	14	14	14	14	> 35	> 29	> 25	> 25	> 23	> 23
DE2-18	280716	< 1.2	< 1.2	< 1.2	< 1.5	< 1.8	< 2	18	18	18	18	18	19	> 45	> 35	> 30	> 27	> 27	> 25
DE2-22	280717	< 1.2	< 1.2	< 1.1	< 1.5	< 1.8	< 2.2	22	22	22	22	22	22	> 45	> 40	> 35	> 31	> 27	> 27

Distribution components with F connectors

5-2400MHz

These taps and splitters have been designed to be used in TV and Satellite distribution systems. Their compact design enable them to be installed in many locations.
The main features are: die cast metal housing, low insertion losses, high return loss and separation, F connectors, earthing screw and wall fixings.

▶ DE4-..

▶ DE6-..

4 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE4-12	280718	< 3.5	< 3.5	< 4.3	< 5.1	< 5.2	< 5.4	11.5	11.5	11.5	13	14	15.5	> 35	> 35	> 30	> 28	> 28	> 28
DE4-14	280719	< 2.5	< 2.3	< 2.5	< 3	< 3.5	< 4	14.5	14	13.5	14	14.5	15	> 32	> 32	> 35	> 30	> 27	> 30
DE4-18	280720	< 1.5	< 1.3	< 1.3	< 1.5	< 1.8	< 2	18	18	18	18.5	19	19	> 45	> 45	> 45	> 35	> 30	> 30
DE4-22	280721	< 1	< 1	< 1	< 1.2	< 1.5	< 1.5	21.5	21.5	22	22.5	23	24	> 38	> 37	> 33	> 31	> 27	> 26

6 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE6-16	280722	< 4.5	< 5	< 5	< 5.5	< 5.5	< 5.5	14±1	14±1	14±1	15±1	16.5±1.5	18±1.5	> 25	> 22	> 22	> 22	> 22	> 22
DE6-20	280723	< 2.5	< 3	< 3	< 4	< 4.5	< 5.5	19±1	19±1	19±1	19.5±1.5	20±1.5	20±1.5	> 30	> 25	> 22	> 22	> 22	> 22
DE6-25	280724	< 1.5	< 1.5	< 1.5	< 2	< 2.5	< 3.5	24±1	24±1	24±1	24±1	24±1.5	24.5±2	> 30	> 30	> 22	> 22	> 22	> 22

8 WAY TAPS

Item	Code	Insertion loss dB						Tap loss dB						Output-tap isolation dB					
		5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz	5-40 MHz	40-470 MHz	470-1000 MHz	1000-1750 MHz	1750-2050 MHz	2050-2400 MHz
DE8-16	280725	< 4.5	< 5	< 5	< 5.5	< 5.5	< 5.5	14±1	15±1	15±1	16.5±1.5	18±1.5	19.5±1.5	> 30	> 25	> 25	> 25	> 25	> 25
DE8-20	280726	< 2.5	< 2.5	< 3.5	< 4.5	< 5	< 5.5	19±1	19±1	19±1	19±1	19±1.5	20±1.5	> 30	> 25	> 20	> 20	> 20	> 20
DE8-25	280727	< 1	< 1.5	< 1.5	< 2	< 2.5	< 2.5	23.5±1	23.5±1	23.5±1	24±1	24±1.5	25±3	> 30	> 30	> 25	> 20	> 20	> 20

Splitters and taps

Distribution components with F connectors

5-2400MHz

Splitters and taps with F connectors.
Their compact design enables them to be installed in many locations. Their main features are: zinc die cast housing with nickel plate, low insertion loss, high isolation and return loss, earthing screws and wall fixings.

SPLITTERS

▶ SPT..

▶ TA..

Item	Code	Outputs	Insertion loss dB				Output-output isolation dB			
			5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
SPT2	289860	2	< 4	< 4	< 4.5	< 5	> 18	> 20	> 20	> 18
SPT3	289861	3	< 6	< 6.5	< 7	< 9	> 18	> 20	> 20	> 18
SPT4	289862	4	< 8	< 8	< 9	< 10	> 18	> 20	> 20	> 18
SPT6	289863	6	< 10	< 10	< 12	< 14	> 18	> 20	> 20	> 18
SPT8	289864	8	< 13	< 13	< 15	< 17	> 18	> 20	> 20	> 18

1 WAY TAPS

Item	Code	Tap loss dB	Insertion loss dB				Output-output isolation dB			
			5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
TA1-11	289865	11 ± 1.5	< 2	< 2.5	< 3	< 3.5	> 23	> 23	>20	> 18
TA1-15	289866	15 ± 1.5	< 1.5	< 2	< 2.5	< 3	> 23	> 23	>20	> 18
TA1-20	289867	20 ± 1.5	< 1.3	< 1.8	< 2.8	< 3	> 23	> 23	>20	> 18

2 WAY TAPS

Item	Code	Tap loss dB	Insertion loss dB				Output-output isolation dB			
			5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
TA2-11	289868	11 ± 1.5	< 3.5	< 4	< 4.5	< 5	> 23	> 23	>20	> 18
TA2-15	289869	15 ± 1.5	< 2.2	< 2.5	< 3.5	< 4	> 23	> 23	>20	> 18
TA2-20	289870	20 ± 1.5	< 2	< 2.5	< 3	< 4	> 23	> 23	>20	> 18
TA2-25	289871	25 ± 1.5	< 2	< 2.5	< 3	< 4	> 23	> 23	>20	> 18
TA2-30	289872	30 ± 1.5	< 2	< 2.5	< 3	< 4	> 23	> 23	>20	> 18

4 WAY TAPS

Item	Code	Tap loss dB	Insertion loss dB				Output-output isolation dB			
			5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
TA4-13	289873	13 ± 1.5	< 4.5	< 5	< 5.5	< 6.5	> 23	> 23	> 20	> 18
TA4-16	289874	16 ± 1.5	< 3	< 4	< 5	< 5.5	> 23	> 23	> 20	> 18
TA4-21	289875	21 ± 1.5	< 2.5	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18
TA4-25	289876	25 ± 1.5	< 2	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18

6 WAY TAPS

Item	Code	Tap loss dB	Insertion loss dB				Output-output isolation dB			
			5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
TA6-16	289877	16 ± 1.5	< 4	< 4	< 5.5	< 8	> 23	> 23	> 20	> 18
TA6-20	289878	20 ± 1.5	< 2.5	< 3	< 4	< 4.5	> 23	> 23	> 20	> 18
TA6-25	289879	25 ± 1.5	< 2	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18

8 WAY TAPS

Item	Code	Tap loss dB	Insertion loss dB				Output-output isolation dB			
			5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950 -2150 MHz	2150-2400 MHz
TA8-15	289880	16 ± 1.5	< 4	< 4	< 5.5	< 8	> 23	> 23	> 20	> 18
TA8-20	289881	20 1.5	< 3	< 3.5	< 4.5	< 5	> 23	> 23	> 20	> 18
TA8-25	289882	25 1.5	< 2	< 3	< 3.5	< 4.5	> 23	> 23	> 20	> 18

Distribution components with F connectors

5-1000MHz

Splitters and taps designed to be used in CATV distribution systems. Their compact design enables them to be installed in many locations. Their main features are: zinc die cast housing with nickel plate; F connectors; high isolation and return loss in accordance with EN 50083-4; earthing screws and wall fixings; high screening efficiency in accordance with EN 50083-2: Class A.

▶ **SPL..**

▶ **TAP..**

SPLITTERS

Item	Code	No. of outputs	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions mm
			5-47 MHz	47-470 MHz	470-1000 MHz	5-47 MHz	47-470 MHz	470-1000 MHz	15-47 MHz	47-470 MHz	470-1000 MHz	
SPL12	280788	2	<3.5	<3.7	<4.0	>20	>25	>24	>22	>20	>17	54x48x19
SPL13	280789	3	<6.3	<6.8	<7.0	>25	>23	>20	>22	>20	>16	75x48x19
SPL13A	280790	3	<7.2(out 2-3) <3.7(out 1)	<7.5(out 2-3) <3.9(out 1)	<8.0(out 2-3) <4.2(out 1)	>28	>25	>22	>22	>20	>16	
SPL14	280791	4	<7.0	<7.5	<8.0	>28	>25	>22	>22	>20	>18	
SPL16	280792	6	<9.6	<10.5	<11.2	>22	>20	>18	>22	>20	>18	120x60x24

Splitters and taps

1 WAY TAPS

Item	Code	Tap loss db	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions mm
			5-47 MHz	47-470 MHz	470-1000 MHz	5-47 MHz	47-470 MHz	470-1000 MHz	15-47 MHz	47-470 MHz	470-1000 MHz	
TAP1106	280760	6	<2.4	<2.6	<3.0	>23	>25	>20	>16	>16	>16	54x48x19
TAP1108	280761	8	<1.8	<1.8	<2.4	>25	>28	>22	>15	>18	>18	
TAP1111	280762	11	<1.0	<1.0	<1.5	>30	>27	>24	>16	>18	>15	
TAP1114	280763	14	<1.0	<1.0	<1.4	>30	>27	>24	>16	>18	>15	
TAP1117	280764	17	<0.8	<0.8	<1.3	>30	>27	>24	>18	>20	>15	
TAP1120	280765	20	<1.0	<1.2	<1.3	>30	>27	>24	>21	>16	>15	
TAP1123	280766	23	<0.8	<1.0	<1.2	>30	>27	>24	>21	>16	>15	

2 WAY TAPS

Item	Code	Tap loss db	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions mm
			5-47 MHz	47-470 MHz	470-1000 MHz	5-47 MHz	47-470 MHz	470-1000 MHz	15-47 MHz	47-470 MHz	470-1000 MHz	
TAP1208	280767	8	<3.7	<3.7	<4.0	>28	>24	>20	>16	>18	>15	75x48x19
TAP1211	280768	11	<2.2	<2.5	<3.0	>22	>22	>20	>12	>18	>14	
TAP1214	280769	14	<2.2	<2.5	<3.0	>27	>25	>22	>15	>18	>15	
TAP1217	280770	17	<1.2	<1.5	<2.0	>27	>24	>20	>16	>17	>14	
TAP1220	280771	20	<1.2	<1.5	<2.0	>30	>25	>20	>16	>18	>15	
TAP1223	280772	23	<1.2	<1.5	<2.0	>35	>33	>27	>16	>18	>15	

4 WAY TAPS

Item	Code	Tap loss db	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions mm
			5-47 MHz	47-470 MHz	470-1000 MHz	5-47 MHz	47-470 MHz	470-1000 MHz	15-47 MHz	47-470 MHz	470-1000 MHz	
TAP1408	280773	8	-	-	-	>22	>22	>20	>13	>18	>14	87x55x37
TAP1411	280774	11	< 3.7	< 4.0	< 5.0	>22	>24	>20	>13	>18	>14	
TAP1414	280775	14	< 2.4	< 2.8	< 3.5	>22	>24	>20	>13	>17	>14	
TAP1417	280759	17	< 1.9	< 1.9	< 1.9	>22	>24	>20	>13	>18	>14	
TAP1420	280776	20	< 1.1	< 1.2	< 1.6	>22	>20	>20	>13	>18	>14	
TAP1423	280777	23	< 0.8	< 1.0	< 1.4	>24	>20	>20	>13	>18	>14	

6 WAY TAPS

Item	Code	Tap loss db	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions mm
			5-47 MHz	47-470 MHz	470-1000 MHz	5-47 MHz	47-470 MHz	470-1000 MHz	15-47 MHz	47-470 MHz	470-1000 MHz	
TAP1611	280778	11	-	-	-	>16	>20	>15	>16	>16	>16	87x55x37
TAP1614	280779	14	< 3.0	< 3.6	< 4.0	>16	>20	>15	>16	>16	>16	
TAP1617	280780	17	< 2.0	< 2.3	< 2.5	>16	>20	>15	>16	>16	>16	
TAP1620	280781	20	< 1.3	< 1.4	< 1.9	>16	>20	>15	>16	>16	>16	
TAP1623	280782	23	< 1.0	< 1.0	< 1.6	>16	>20	>15	>16	>16	>16	

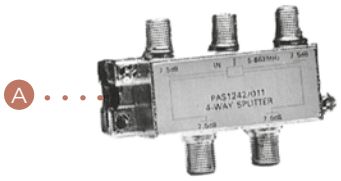
8 WAY TAPS

Item	Code	Tap loss db	Insertion loss dB			Isolation dB min.			Return loss dB min.			Dimensions mm
			5-47 MHz	47-470 MHz	470-1000 MHz	5-47 MHz	47-470 MHz	470-1000 MHz	15-47 MHz	47-470 MHz	470-1000 MHz	
TAP1812	280783	12	-	-	-	>22	>22	>20	>15	>18	>14	119x55x37
TAP1814	280784	14	< 3.7	< 4.0	< 5.0	>22	>22	>20	>15	>18	>14	
TAP1817	280785	17	< 2.4	< 2.8	< 3.5	>22	>22	>20	>15	>18	>14	
TAP1820	280786	20	< 1.2	< 1.4	< 1.8	>22	>22	>20	>15	>18	>14	
TAP1823	280787	23	< 0.9	< 1.1	< 1.6	>22	>22	>20	>16	>17	>16	

Distribution components with F connectors

5-862MHz

2, 3 and 4 way splitters



▶ **PAS12(X)2011**

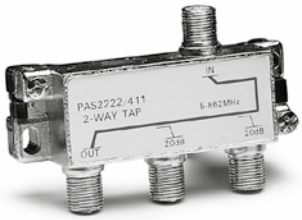
PAS12(X)2011

Item	Code	Insertion loss dB			Isolation between outputs dB			Dimensions	Weight
		5-40 MHz	40-470 MHz	470-862 MHz	5-40 MHz	40-470 MHz	470-862 MHz	mm	g
PAS1222011, 2 out.	PAS1222011	3.4 ± 0.3	3.4 ± 0.3	3.6 ± 0.4	16	22	20	53x50x25	55
PAS1232011, 3 out.	PAS1232011	5.3 ± 0.3	5.3 ± 0.3	5.6 ± 0.5	16	20	18	74x50x25	76
PAS1242011, 4 out.	PAS1242011	7.2 ± 0.3	7.2 ± 0.3	7.5 ± 0.5	18	20	6	74x50x25	8

Distribution components with F connectors

5-862MHz

1, 2, 4, 6 and 8 way taps



▶ **PAS2222(X)11**

▶ **PAS2242(X)11**

▶ **PAS2212(X)11**

▶ **PAS22(X)2811**

PAS2212(X)11 - 1 WAY TAPS

Item	Code	Tap loss dB			Isolation loss dB			Output-tap isolation dB		
		5-40 MHz	40-470 MHz	470-862 MHz	5-40 MHz	40-470 MHz	470-862 MHz	5-40 MHz	40-470 MHz	470-862 MHz
PAS2212111	PAS2212111	8.5 ± 1	8.5 ± 1	8.5 ± 1	1.6 ± 0.2	1.6 ± 0.2	2 ± 0.3	22	20	18
PAS2212211	PAS2212211	12.5 ± 1	12.5 ± 1	12.5 ± 1	0.7 ± 0.2	0.7 ± 0.2	0.8 ± 0.3	26	26	16
PAS2212311	PAS2212311	16 ± 1	16 ± 1	16 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	28	26	26
PAS2212411	PAS2212411	20 ± 1	20 ± 1	20 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	30	26
PAS2212511	PAS2212511	24 ± 1	24 ± 1	24 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	32	32	28

Splitters and taps

PAS2222(X)11 - 2 WAY TAPS

Item	Code	Tap loss dB			Isolation loss dB			Output-tap isolation dB		
		5-40 MHz	40-470 MHz	470-862 MHz	5-40 MHz	40-470 MHz	470-862 MHz	5-40 MHz	40-470 MHz	470-862 MHz
PAS2222111	PAS2222111	8.5 ± 1	8.5 ± 1	8.5 ± 1	3.4 ± 0.5	3.6 ± 0.5	3.8 ± 0.5	22	20	16
PAS2222211	PAS2222111	12.5 ± 1	12.5 ± 1	12.5 ± 1	1.2 ± 0.3	1.2 ± 0.3	1.2 ± 0.4	26	24	22
PAS2222311	PAS2222311	16 ± 1	16 ± 1	16 ± 1	1.2 ± 0.3	1.2 ± 0.3	1.5 ± 0.4	28	24	22
PAS2222411	PAS2222411	20 ± 1	20 ± 1	20 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	28	26
PAS2222511	PAS2222511	24 ± 1	24 ± 1	24 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	30	30
PAS2222611	PAS2222611	27 ± 1	27 ± 1	27 ± 1	0.5 ± 0.2	0.5 ± 0.2	0.6 ± 0.3	30	30	30

PAS2242(X)11 - 4 WAY TAPS

Item	Code	Tap loss dB		Isolation loss dB	Output-tap isolation dB		
		5-862 MHz		5-862 MHz	5-40MHz	40-470 MHz	470-862 MHz
		Tap 1 & 2	Tap 3 & 4				
PAS2242211	PAS2242211	12 ± 1	13 ± 1	4.5 ± 1	26	26	22
PAS2242311	PAS2242311	16 ± 1	17 ± 1	2.5 ± 1	26	26	22
PAS2242411	PAS2242411	20 ± 1	21 ± 1	2.5 ± 1	30	30	26
PAS2242511	PAS2242511	24 ± 1	25 ± 1	2.5 ± 1	30	30	28

PAS2242(X)11 - 4 WAY TAPS

Item	Code		Tap loss dB			Isolation loss dB	Output-tap isolation dB		
			5-40 MHz	40-470 MHz	470-862 MHz	5-862 MHz	5-40 MHz	40-470 MHz	470-862 MHz
PAS2242811 4 channels	PAS2242811	Tap 1	12.5 ± 1	12.5 ± 1	12.5 ± 1	4 ± 1	27	26	24
		Tap 2	13.5 ± 1.5	13.5 ± 1.5	13.5 ± 1.5				
		Tap 3	14.5 ± 1.5	14.5 ± 1.5	14.5 ± 1.5				
		Tap 4	15.5 ± 1.5	15.5 ± 1.5	15.5 ± 1.5				
PAS2262811 6 channels	PAS2262811	Tap 5	17 ± 1.5	17 ± 1	17 ± 1	6 ± 1	27	26	24
		Tap 6	13.5 ± 1.5	13.5 ± 1.5	13.5 ± 1.5				
PAS2282811 8 channels	PAS2282811	Tap 7	19 ± 1.5	19 ± 1	19 ± 1	8 ± 1	27	26	24
		Tap 8	19.5 ± 1.5	19.5 ± 1.5	19.5 ± 1.5				

Saddle and clamp distribution components

47-862MHz

Fully shielded metal housing screw and saddle clamp splitters. It is not advisable to feed the output sockets directly because of the low separation. Socket should be connected to a tap output. One input - several outputs. V.S.W.R. <1.2

▶ **PP..**

Item	Code	No. of outputs	Attenuation dB		Packaging
			input and output	between two outputs	Pcs
PP12	220370	2	4	18	10
PP13	220376	3	6	15	10
PP14	220390	4	7	10	10
PP12DC(1)	220375	2	4	18	10
PP14DC(1)	220392	4	8	10	10
IP2(1)	220322	2	4	18	10

(1) With DC pass between input and one output

Saddle and clamp distribution components

47-862MHz

Fully shielded metal housing screw and saddle clamp taps. 1 input, 1 through-line output, 1 or more tapped outputs.
Suitable for through-line or as terminal as well, by fitting a resistive load CR75I.

▶ **CD..**

1 output												
Item	Code	Insertion loss dB		Output-tap isolation dB Bands				Isolation between outputs dB Bands				V.S.W.R Input
		min.	max.	1	3	4	5	1	3	4	5	<
CD11	220660	0.8	1.1	10	10	10	10	—	—	—	—	1.2

2 output												
Item	Code	Insertion loss dB		Output-tap isolation dB Bands				Isolation between outputs dB Bands				V.S.W.R Input
		min.	max.	1	3	4	5	1	3	4	5	<
CD12	220670	1.3	1.8	11	11	10	10	21	21	19	19	1.4
CD142	220652	0.6	1.1	15	15	14	14	28	27	26	25	1.2

4 output												
Item	Code	Insertion loss dB		Output-tap isolation dB Bands				Isolation between outputs dB Bands				V.S.W.R Input
		min.	max.	1	3	4	5	1	3	4	5	<
CD144	220654	0.8	2.8	16	16	15	15	13/21	16/27	18/35	18/40	1.5

Splitters and taps - Outlets

Saddle and clamp distribution components

47-862MHz

Directional taps with fixed separation from the main line for all frequencies.

▶ **CAD**

Item	Code	Insertion loss dB		Output-tap isolation dB Bands				Isolation between outputs dB Bands				V.S.W.R Input
		min.	max.	1	3	4	5	1	3	4	5	<
1 output												
CAD11	220451	0.1	0.7	27	17	11	12	45	38	36	35	1.1
2 outputs												
CAD12	220452	0.1	0.8	27	18	12	13	53	43	30	26	1.2
3 outputs												
CAD13	220453	0.2	2	27	17	12	15	44/40	35/30	34/25	32/35	1.3
4 outputs												
CAD14	220454	0.1	1.9	27	17	12	15	48/60	37/60	29/52	25/45	1.2

Saddle and clamp distribution components

Accessories

Indoor box for 47-862MHz splitters and taps

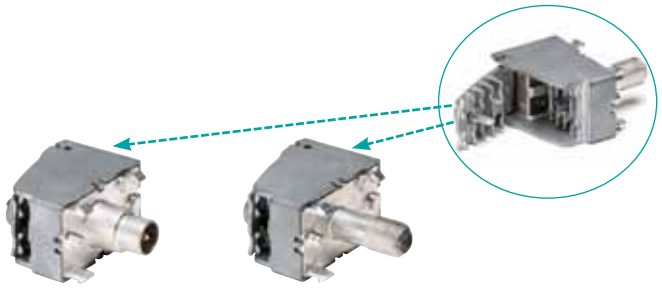
▶ **CN9**

Item	Code	Description
CN9	256309	Indoor box for CAD

5-2400MHz outlets

SPI.. and SPF.. Series

Single outlets 5-2400MHz. High screening efficiency to standard EN 50083-4 Class A.
The outlet is designed with an innovative system to connect to coaxial cable. It enables the user to connect to a cable with a diameter between 5 and 7mm.
Terminal outlets allow the current to pass through the input and user output. Pass-through outlets allow the current to pass through input and output and blocks it on user output.



▶ SPI.. ▶ SPF..

Item	Code	Insertion loss dB				Distribution loss dB				Outlet type	Connector
		Return path	TV	SAT		Return path	TV	SAT			
		5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz		
SPI00(1)	220711	—	—	—	—	< 0.5	< 0.5	< 0.8	< 0.8	Terminal	IEC male
SPI05	220712	< 5	< 5	< 7	< 8	< 5	< 5	< 7	< 8	Pass-through	
SPI10	220713	< 2.5	< 2.5	< 3	< 3.2	10.5	10	10.5	11		
SPI14	220714	< 1.5	< 1.2	< 2.2	< 2.5	15	14.5	14.5	15		
SPI18	220715	< 1.5	< 1.2	< 2.2	< 2.5	18.5	18	18	18.5		
SPI22	220716	< 1.5	< 1.2	< 2.2	< 2.5	22.5	22	22	22.5		

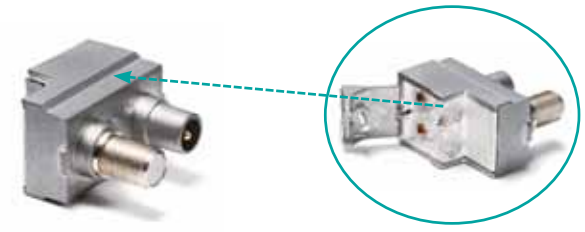
Item	Code	Insertion loss dB				Distribution loss dB				Outlet type	Connector
		Return path	TV	SAT		Return path	TV	SAT			
		5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz	5-40 MHz	47-862 MHz	950-2150 MHz	2150-2400 MHz		
SPF00(1)	220721	—	—	—	—	< 0.5	< 0.5	< 0.8	< 0.8	Terminal	F female
SPF05	220722	< 5	< 5	< 7	< 8	< 5	< 5	< 7	< 8	Pass-through	
SPF10	220723	< 2.5	< 2.5	< 3	< 3.2	10.5	10	10.5	11		
SPF14	220724	< 1.5	< 1.2	< 2.2	< 2.5	15	14.5	14.5	15		
SPF18	220725	< 1.5	< 1.2	< 2.2	< 2.5	18.5	18	18	18.5		
SPF22	220726	< 1.5	< 1.2	< 2.2	< 2.5	22.5	22	22	22.5		

(1) DC passes between the input and the output connector

5-2400MHz outlets

PDM.. Series

Demix outlets allow the user to split, via two different connectors, TV-SAT signals (5-2400MHz). They have a clamp connection to insert the cable. It enables the user to connect a cable with a diameter between 5 and 7mm.
This range of outlets allow the current to pass through the input and user SAT output. It is a special pass-through outlet and for this reason the last outlet has been closed with an isolated 75 Ohm load.



▶ PDM..

Item	Code	Insertion loss dB		Distribution loss dB		Pack. Pcs	Outlet type
		TV	SAT	TV	SAT		
		47-862 MHz	950-2400 MHz	47-862 MHz	950-2400 MHz		
PDM00	220003	—	—	< 2	< 2	10	Terminal
PDM05	220002	< 6.0	< 6.0	< 6	< 6		Pass-through
PDM10	220001	< 4.0	< 4.0	10	11		
PDM14	220004	< 3	< 3.5	14	15		
PDM18	220005	< 2.5	< 3.5	19	19		
PDM22	220006	< 2.5	< 3.5	22	23		

Outlets

Adaptors for outlets

SPI..., SPF.., and PDM.. Series





▶ PL1

Adaptors	Colour	Item	Code	Type	Packaging Pcs
Ticino Axolute ®	White	BT-AX	287126	Single	20
		BT-AX2	287127	Demix	10
Ticino Axolute Silver ®	Silver	BT-AXS	289737	Single	20
		BT-AXS2	289739	Demix	10
Ticino Axolute Black ®	Black	BT-AXB	289738	Single	20
		BT-AXB2	289740	Demix	10
Ticino International ®	Black	BT-INT	280754	Single	20
		BT-INT2	280801	Demix	10
Ticino Light ®	Ice	BT-LIG	280752	Single	20
		BT-LIG2	280802	Demix	10
Ticino Light Tech ®	Dark grey	BT-LIGT	280699	Single	20
		BT-LIGT2	280803	Demix	10
Ticino Magic ®	Ivory	BT-MA	280755	Single	20
		BT-MA2	280804	Demix	10
Ticino Living ®	Black	BT-LIV	280753	Single	20
		BT-LIV2	280805	Demix	10
Ticino Luna ®	White	BT-LU	280756	Single	20
		BT-LU2	280806	Demix	10
Ticino Matix ®	White	BT-MAT	280757	Single	20
		BT-M AT2	280807	Demix	10
Ticino Magic TT ®	Ivory	BT-TT	280742	Single	20
		BT-MATT2	280808	Demix	10
Vimar Eikon Next ®	Dark grey	VI-EKN	289798	Single	20
		VI-EKN2	289799	Demix	10
Vimar Eikon White ®	White	VI-EKW	280839	Single	20
		VI-EKW2	280840	Demix	10
Vimar Eikon Black ®	Black	VI-EKB	289741	Single	20
		VI-EKB2	289742	Demix	10
Vimar Idea ®	Black	VI-ID	280749	Single	20
		VI-ID2	280810	Demix	10
Vimar Idea Bianca ®	White	VI-IDB	280748	Single	20
		VI-IDB2	280811	Demix	10
Vimar 8000 ®	Ivory	VI-80	280750	Single	20
		VI-802	280809	Demix	10
Vimar Plana ®	White	VI-PL	280751	Single	20
		VI-PL2	280812	Demix	10
Vimar Plana Silver ®	Silver	VI-PLS	287121	Single	20
		VI-PLS2	287122	Demix	10
Gewiss Chorus Bianco Lucido ®	Bright white	GW-CB	280837	Single	20
		GW-CB2	280838	Demix	10
Gewiss Chorus Nero Satinato ®	Glossed black	GW-CN	280835	Single	20
		GW-CN2	280836	Demix	10
Gewiss Chorus Titanio Verniciato ®	Varnished titanium	GW-CT	280833	Single	20
		GW-CT2	280834	Demix	10
Gewiss Playbus ®	Black	GW-PL	280797	Single	20
		GW-PL2	280813	Demix	10
Gewiss System Black ®	Black	GW-SYB	280796	Single	20
		GW-SYB2	280814	Demix	10
Gewiss System White ®	White	GW-SYW	280798	Single	20
		GW-SYW2	280815	Demix	10
ABB Chiara ®	White	AB-CH	280831	Single	20
		AB-CH2	280832	Demix	10
Ave Sistema 45 Noir ®	Black	AV-SNO	280743	Single	20
		AV-SNO2	280816	Demix	10
Ave Sistema 45 Banquise ®	Ice	AV-SBA	280745	Single	20
		AV-SBA2	280817	Demix	10
Ave Sistema 45 Blanc ®	White	AV-SBL	280746	Single	20
		AV-SBL2	280818	Demix	10
Ave Sistema 45 Ral ®	Ivory	AV-SGR	280744	Single	20
		AV-SRA2	280819	Demix	10
Legrand Cross ®	White	LG-CR	280747	Single	20
		LG-CR2	280820	Demix	10
Legrand Vela Scura ®	Black	LG-VES	280800	Single	20
		LG-VES2	280821	Demix	10
Legrand Vela Chiara ®	Ice	LG-VEC	280799	Single	20
		LG-VEC2	280822	Demix	10

Item	Code	Description
PL1	280736	Cover for SPI.. and SPF.. - For European boxes ø 60mm
PL1UK	280794	Cover for SPI.. and SPF.. - For UK boxes

CATV wall outlets

Wall outlets with FM and TV outputs. Terminal and pass-through versions available. Return channel on TV output.
Terminal version with RC on FM outlet (PAS0021411) also available.

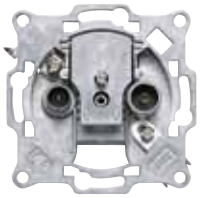
▶ **PAS0021...**

Item	Code	Output	Connector type	Bandwith MHz	Tap loss dB	Insertion loss dB	Outlet type
PAS0021411	PAS0021411	R TV	IEC female IEC male	5-108 120-862	-	2	Terminal
PAS0021511	PAS0021511	R TV	IEC female IEC male	88-108 5-68/120-862	-	2	Terminal
PAS0023211	PAS0023211	R TV	IEC female IEC male	88-108 5-68/120-862	8	2.5	Pass-through
PAS0023311	PAS0023311	R TV	IEC female IEC male	88-108 5-68/120-862	11	1.5	Pass-through
PAS0023411	PAS0023411	R TV	IEC female IEC male	88-108 5-68/120-862	14	1	Pass-through
PAS0032101*	PAS0032101	R TV DATA	IEC female IEC male F female	88-108 120-862 5-1000	-	4 4 5	Terminal
PAS5321	PAS5321	Wall mounting box					

*with data input

Wall outlets TV + SAT

Wall outlets with TV and SAT outputs.
One terminal version and 5 pass-through versions available: from 6dB loss up to 22dB loss.



▶ **PRI..**

▶ **PL2**

Item	Code	Output	Connector	Bandwith MHz	Tap loss dB	Insertion loss dB	Outlet type	Dimensions mm
PRI00	280730	TV SAT	IEC female IEC male	5-40/47-862 950-2300	-	1.5 2	Terminal	76 x 76 x 32
PRI06	280731	TV SAT	IEC female IEC male	5-40/47-862 950-2300	6	2 2.5	Pass-through	
PRI10	280732	TV SAT	IEC female IEC male	5-40/47-862 950-2300	10	1.5 2	Pass-through	
PRI14	280733	TV SAT	IEC female IEC male	5-40/47-862 950-2300	14	1.5 2	Pass-through	
PRI18	280734	TV SAT	IEC female IEC male	5-40/47-862 950-2300	18	1.5 2	Pass-through	
PRI22	280735	TV SAT	IEC female IEC male	5-40/47-862 950-2300	22	1.5 2	Pass-through	
PL2	280737	Cover						
CAPL	280741	Box						

Outlets - Connectors

Wall outlets TV + SAT

Wall outlets with TV and SAT outputs.
One terminal version and 5 pass-through versions available:
from 6dB loss up to 22dB loss.

▶ **PAS0032**

▶ **PAS0042**

Item	Code	Output	Connector	Bandwith MHz	Tap loss dB	Insertion loss dB	Outlet type
PAS0032	PAS0032	TV R SAT*	IEC female IEC male F female	5-68/120-862 88-108 950-2150	-	1.5 2 2	Terminal
PAS0032D*	PAS0032D	FM+DAB TV SAT *	IEC female IEC male F female	87-240 5-68/260-862 950 - 2300	-	1.5 1.5 2	Terminal
PAS0032211	PAS0032211	TV R SAT*	IIEC female IEC male F female	5-68/120-862 88-108 950-2150	8	2 4 4	Pass-through
PR3-10-DC	289795	TV R SAT*	IEC female IEC male F female	5-74/120-862 87.5-108 950-2150	10	3 2.5 3	Pass-through
PAS0042	PAS0042	TV R SAT1* SAT2*	IEC female IEC male F female F female	5-68/120-862 88-108 950-2150 950-2150	-	2.5 2.5 2 3	Terminal

* D.C. pass: 500mA max.

Connectors

I.E.C. connectors

▶ **SP1**

▶ **SP5**

▶ **PR1**

▶ **PR5**

▶ **PR11**

MALE CONNECTORS

Item	Code	Type	Copper plated		ø mm	Packaging
			screw	shielded	9.5	Pcs
SP1	290351	Cable connector - straight	x		x	100
SP5	290354	Cable connector - straight		x	x	100

FEMALE CONNECTORS

Item	Code	Type	Copper plated		ø mm	Packaging
			screw	shielded	9.5	Pcs
PR1	290451	Cable connector - straight	x		x	100
PR5	290454	Cable connector - with screw		x	x	50
PR11	290365	For wall outlets - L shaped		x	x	50

Connectors

F connectors

CF..B ▶ CFR.. ▶ CCF.. ▶ CCOM F5.1 ▶ CCOM F5.1S ▶ CCOM IEC ▶ TCOM pocket ▶ TCOM all size

F MALE TWIST ON CONNECTORS

Item	Code	Description	Cables Ø mm	Ring colour	Packaging pcs
CF50B	287189	Quick F male	4.9-5.0	red	100
CF60B	287190		5.9-6.0	green	
CF66B	287191		6.5-6.6	yellow	
CF70B	287192		6.9-7.0	blue	

F MALE QUICK CONNECTORS

Item	Code	Description	Cables Ø mm	Ring colour	Packaging pcs
CFR50B	287193	Plug-in F male	4.9-5.0	red	100
CFR60B	287194		5.9-6.0	green	
CFR66B	287195		6.5-6.6	yellow	

CRIMP F CONNECTORS

Item	Code	Description	Cables Ø mm	Ring colour	Packaging pcs
CCF50B	287196	Crimp F male	5.0	red	100
CCF60B	287197		6.0	green	
CCF66B	287198		6.5-6.6	yellow	
CCF102B	287199		5.9-6.0	grey	

COMPRESSION F CONNECTORS

Item	Code		Cables Ø mm	Ring colour	Packaging pcs
CCOM F5.1	287301	Compression F male	Dielectric 5.1	light blue	100
CCOM F5.1 S	287295	Compression F male - self install	Dielectric 5.1	light blue	50
CCOM F10.5	287297	Compression F male	External 10.5	yellow	100
CCOM IEC6F	287298	IEC Compression F female	Dielectric 6	light blue	100
CCOM IEC6M	287300	IEC Compression F male	Dielectric 6	light blue	100

TOOLS

Item	Code	Description	Dimensione	Packaging pcs
TCOM pocket	287296	Tool for cables RG59	140x55x25	1
TCOM all size	287299	Tool for all sizes	210x75x25	1

Accessories

75 Ohm loads - Adaptors

▶ CA75F ▶ T75IF ▶ CR75I ▶ TF90 ▶ GCF ▶ GC1 ▶ PAUTV ▶ PAS3236Q ▶ PAS3236Q ▶ PAS61..

Item	Code	Description	Packaging Pcs
CA75F	289085	Single load - F male connector	100
T75IF	290002	Isolated load - F male connector	20
CR75I	289776	Coaxial for TV	20
AR20F	287202	Adjustable attenuator	5
FEB	287203	Compression F connector for multiswitch earth bonding	10

ADAPTORS

Item	Code	Description	Packaging Pcs
TF90	289543	Right angle F male to F female	50
GCF	289544	F female - F female	50
GC1	290030	Cable connector	100
PAUTV	280373	Dual F female - F female - F female grounding back	250
PAS3236Q	PAS3236Q	F male - F male quick	1
PAS3213001	PAS3213001	F female - F female with DC block	20
PAS6106	289770	5-2400MHz attenuator - Att. 6dB - DC pass	5

ACCESSORIES

Item	Code	Description	Packaging Pcs
PRT1	210095	Earth terminal board - For earth connection of 6 coaxial cables in a TV distribution network. Best fitted near the amplifier	25

Distribution components with F connectors

5-2400MHz

Coaxial cables for indoor installation with PVC sheath

Fracarro offers both single installation cable (class B) or large network cables (class A) e.g. hotels, resorts, hospitals, etc. Double screened cable is available for high screening efficiency (more than 90dB), required for professional installations.

Coaxial cables for outdoor installation with PE sheath

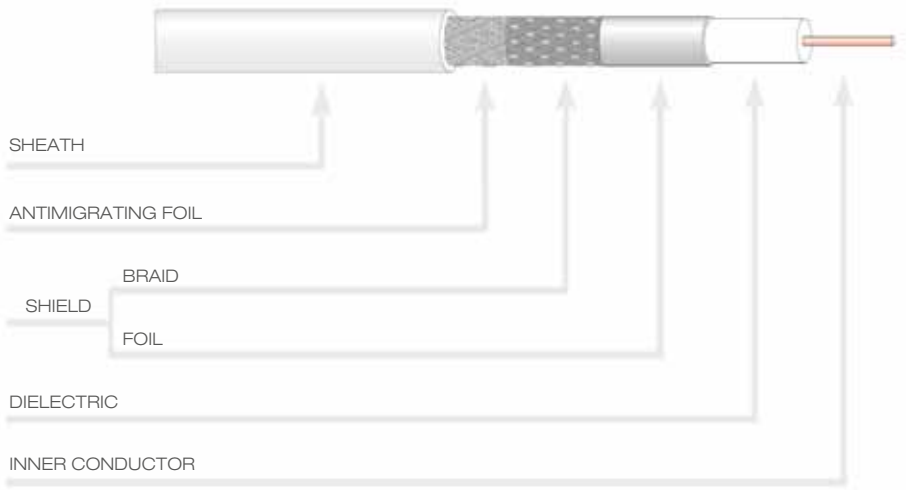
Class A cables with high screening efficiency and low attenuation. The PE sheath allows the cables to be installed in external or damp environments.

Multicoax cables

These cables can be used in multiswitch networks where a large number of cables are installed. Inside one sheath there are 4, 5 or 9 cables with different colours to make identification and connection to switches easier.

General features

Installation temperature: -5°C to +50°C. Operating temperature: -15°C to +55°C . Compliant to EN50117.



Legend

Cu:	Copper
AL:	Aluminium
CuSn:	Tinned copper
PEE:	Physical foam polyethylene
PE:	Polyethylene
PET:	Pet foil
PVC:	Polyvinyl chloride
LSZH:	Low smoke zero halogens
AL/PET:	Aluminium + Pet foil
AL/PET/AL:	Aluminium + Pet + Aluminium foil
Cu/PET:	Copper + Pet foil
Cu/PET/Cu:	Copper + Pet + Copper foil

Coaxial cables

Coaxial cables for indoor installation, PVC sheath

Item		PAS4025	PAS4046	PAS4036	PAS4037
Inner conductor	Composition	Cu	Cw	Cu	Cu
	Ø mm	0.80	1.02	1.0	1.13
Dielectric	Composition	PEE	PEE	PEE	PEE
	Ø mm	3.5	4.6	4.7	4.85
Screen	Foil	AL/PET/AL	AL/PET/AL	AL/PET/AL	AL/PET/AL
	%	100%	100%	100%	100%
	Braid	CuSn	AL	CuSn	AL
	%	40%	64.5%	30%	35%
	Foil				
	%				
Antimigrating foil		PET	PET	PET	PET
Sheath	Composition	PVC White	PVC White	PVC White	PVC White
	Ø mm	5	6.9	6.7	6.8
ELECTRICAL PERFORMANCE					
Impedance @ 200MHz	Ohm	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52	52	52	53
Velocity ratio		84%	84%	84%	85%
Min. bending radius	mm	35	35	35	35
Attenuation @ 20°C dB/100mt					
MHz	5	2.0	2.1	1.6	1.5
MHz	50	5.9	5.1	4.6	4.3
MHz	200	11.3	9.5	9.0	8.4
MHz	470	17.6	-	14.5	13.6
MHz	800	23.3	20.6	18.6	17.2
MHz	1000	26.3	23.4	21.1	19.8
MHz	1350	30.8	25	25.0	23.3
MHz	1750	35.6	28.7	27.9	27.0
MHz	2150	40.0	31.7	31.7	30.6
MHz	2400	42.2	33.2	33.2	32.5
MHz	2700	45.2	35.3	35.8	35.0
Return loss dB					
MHz	50-470	>28	>30	>30	>29
MHz	470-862	>26	>25	>25	>25
MHz	862-1750	>20	>20	>20	>20
MHz	1750-2400	>20	>20	>20	>20
Screening efficiency dB					
MHz	5-30	>65	>65	>65	>65
MHz	30-1000	>80	>75	>75	>80
MHz	1000-2150	>85	>75	>80	>70
DC Resistance					
Inner	Ohm/Km	35	103	22.5	21.5
Outer	Ohm/Km	33	64	31	27
PACKAGING					
Plastic Reel 100m	Item		PAS4046100	PAS4036104	PAS4037104
	Code		289802	PAS4036104	PAS4037104
200 m	Item	PAS4025202			
	Code	289700			

Coaxial cables

Coaxial cables for indoor installation, PVC sheath

Item		PAS4016102 Class A+	PAS4017101 Class A+	PAS4007111 Class A+	PAS4009101 Class A+
Inner conductor	Composition	Cu	Cu	Cu	Cu
	Ø mm	1.0	1.13	1.13	1.7
Dielectric	Composition	PEE	PEE	PEE	PEE
	Ø mm	4.7	4.8	4.8	7.2
Screen	Foil	AL/PET/AL	AL/PET/AL	AL/PET/AL	AL/PET/AL
	%	100%	100%	100%	100%
	Braid	CuSn	CuSn	CuSn	CuSn
	%	40%	40%	40%	56%
	Foil			AL/PET	
	%			100%	
Antimigrating foil		PET	PET	PET	PET
Sheath	Composition	PVC White	PVC White	PVC White	PVC White
	Ø mm	6.7	6.8	6.8	10.2
ELECTRICAL PERFORMANCE					
Impedance @ 200MHz	Ohm	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52	52	52	52
Velocity ratio		84%	85%	85%	85%
Min. bending radius	mm	35	35	35	115
Attenuation @ 20°C dB/100mt					
MHz	5	1.6	1.3	1.3	0.8
MHz	50	4.6	4.3	4.1	2.6
MHz	200	9.0	8.4	8.0	5.4
MHz	470	14.5	13.4	12.6	8.5
MHz	800	18.6	17.2	16.8	11.0
MHz	1000	21.1	19.5	18.9	12.9
MHz	1350	25.0	23.0	22.3	15.2
MHz	1750	27.9	26.2	25.5	17.6
MHz	2150	31.7	29.5	28.7	19.8
MHz	2400	33.2	31.9	30.4	21.5
MHz	2700	35.8	33.0	32.8	23.2
Return loss dB					
MHz	50-470	>30	>30	>30	>30
MHz	470-862	>25	>28	>28	>28
MHz	862-1750	>20	>23	>25	>25
MHz	1750-2400	>20	>23	>20	>18
Screening efficiency dB					
MHz	5-30	>75	>75	>85	>80
MHz	30-1000	>85	>85	>95	>85
MHz	1000-2150	>85	>85	>90	>85
DC Resistance					
Inner	Ohm/Km	22.5	18	18	9
Outer	Ohm/Km	27	26	21	9.7
PACKAGING					
Plastic Reel 100m	Item	PAS4016102	PAS4017101	PAS4007111	PAS4009101
	Code	PAS4016102	PAS4017101	PAS4007111	PAS4009101

Coaxial cables

Coaxial cables for outdoor installation, PE sheath

Item		PAS4136104	PAS4116102 Class A	PAS4117101 Class A	PAS4107111 Class A	PAS4109101 Class A
Inner conductor	Composition	Cu	Cu	Cu	Cu	Cu
	Ø mm	1.0	1.0	1.13	1.13	1.7
Dielectric	Composition	PEE	PEE	PEE	PEE	PEE
	Ø mm	4.7	4.7	4.8	4.8	7.2
Screen	Foil	AL/PET/AL	AL/PET/AL	AL/PET/AL	AL/PET/AL	AL/PET/AL
	%	100%	100%	100%	100%	100%
	Braid	CuSn	CuSn	CuSn	CuSn	CuSn
	%	30%	40%	40%	40%	56%
	Foil	-	-	-	AL/PET	-
	%	-	-	-	100%	-
Antimigrating foil		PET	PET	PET	PET	-
Sheath	Composition	PE Black	PE Black	PE Black	PE Black	PE Black
	Ø mm	6.7	6.7	6.8	6.8	10.2
ELECTRICAL PERFORMANCE						
Impedance @ 200MHz	Ohm	75 ± 3	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52	52	52	52	52
Velocity ratio		84%	84%	84%	85%	85%
Min. bending radius	mm	35	35	35	35	115
Attenuation @ 20°C dB/100mt						
MHz	5	1.6	1.6	1.3	1.3	0.8
MHz	50	4.6	4.6	4.3	4.1	2.6
MHz	200	9.0	9.0	8.4	8.0	5.4
MHz	470	14.5	14.5	13.4	12.6	8.5
MHz	800	18.6	18.6	17.2	16.8	11.0
MHz	1000	21.1	21.1	19.5	18.9	12.9
MHz	1350	25.0	25.0	23.0	22.3	15.2
MHz	1750	27.9	27.9	26.2	25.5	17.6
MHz	2150	31.7	31.7	29.5	28.7	19.8
MHz	2400	33.2	33.2	31.9	30.4	21.5
MHz	2700	35.8	35.8	33.0	32.8	23.2
Return loss dB						
MHz	30-470	>30	>30	>30	>30	>30
MHz	470-862	>25	>25	>28	>28	>28
MHz	862-1750	>20	>20	>23	>25	>25
MHz	1750-2400	>20	>20	>23	>20	>18
Screening efficiency dB						
MHz	10-30	>65	>75	>75	>85	>80
MHz	30-1000	>75	>85	>85	>95	>85
MHz	1000-2150	>80	>85	>85	>90	>85
DC Resistance						
Inner	Ohm/Km	22.5	22.5	18	18	9
Outer	Ohm/Km	31	27	26	21	9.7
PACKAGING						
Plastic Reel 100m	Item	PAS4136104	PAS4116102	PAS4117101	PAS4107111	PAS4109101
	Code	PAS4136104	PAS4116102	PAS4117101	PAS4107111	PAS4109101

Multicoax cables

Multicoax cables

Item		4 x PAS4016	4 x PAS4116 Class A	5 x PAS4016 Class A	9 x PAS4017 Class A
Inner conductor	Composition	Cu	Cu	Cu	Cu
	Ø mm	1.0	1.0	1	1.13
Dielectric	Composition	PEE	PEE	PEE	PEE
	Ø mm	4.7	4.7	4.7	4.8
Screen	Foil	AL/PET/AL	AL/PET/AL	AL/PET/AL	AL/PET/AL
	%	100%	100%	100%	100%
	Braid	CuSn	CuSn	CuSn	CuSn
	%	40%	40%	40%	40%
	Foil	-	-	-	-
	%	-	-	-	-
Internal Sheath	Composition	PVC 4 Colours	PVC 4 Colours	PVC 5 Colours	PVC 9 Colours
	Ø mm	6.6	6.6	6.6	6.6
External Sheath	Composition	PVC White	PVC White	PVC White	PVC Black
	Ø mm	19	19	20.5	25
ELECTRICAL PERFORMANCE					
Impedance @ 200MHz	Ohm	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52	52	52	52
Velocity ratio		84%	84%	84%	85%
Min. bending radius	mm	35	35	35	35
Attenuation @ 20°C dB/100mt					
MHz	5	1.6	1.6	1.6	1.3
MHz	50	4.6	4.6	4.6	4.3
MHz	200	9.0	9.0	9.0	8.4
MHz	470	14.5	14.5	14.5	13.4
MHz	800	18.6	18.6	18.6	17.2
MHz	1000	21.1	21.1	21.1	19.5
MHz	1350	25.0	25.0	25.0	23.0
MHz	1750	27.9	27.9	27.9	26.2
MHz	2150	31.7	31.7	31.7	29.5
MHz	2400	33.2	33.2	33.2	31.9
MHz	2700	35.8	35.8	35.8	33.0
Return loss dB					
MHz	30-470	>30	>30	>30	>30
MHz	470-862	>25	>25	>25	>28
MHz	862-1750	>20	>20	>20	>23
MHz	1750-2400	>20	>20	>20	>23
Screening efficiency dB					
MHz	10-30	>75	>75	>75	>75
MHz	30-900	>85	>85	>85	>85
MHz	900-2150	>85	>85	>85	>85
DC Resistance					
Inner	Ohm	22.5	22.5	22.5	18
Outer	Ohm	27	27	27	26
PACKAGING					
Wooden Reel 100m	Item	PAS4004112	PAS4304102	PAS4004102	PAS4004109
	Code	PAS4004112	PAS4304102	PAS4004102	PAS4004109

Index of products