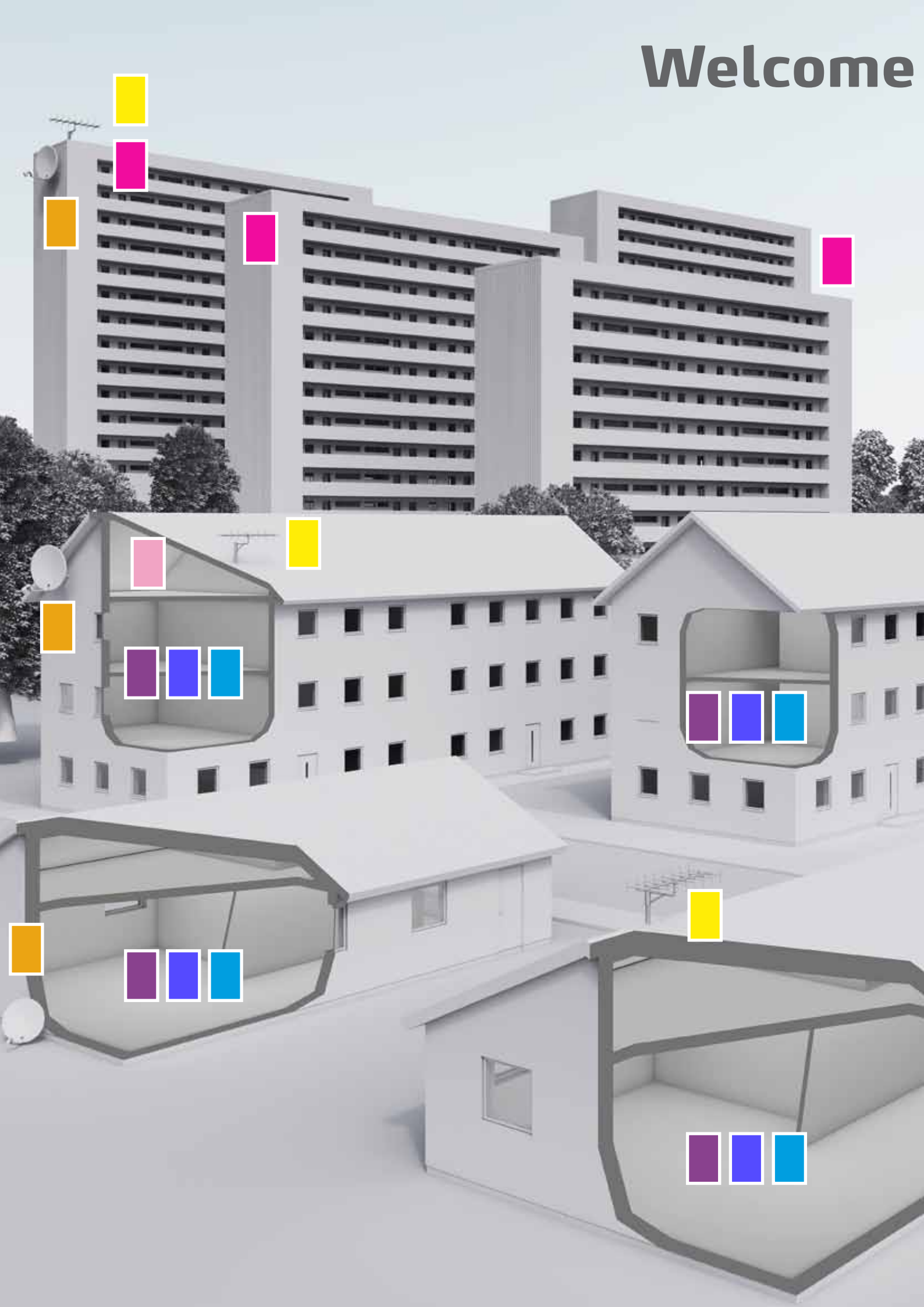
TRIAX

Main Catalogue 2012

- your ultimate connection

Welcome



to the Triax world

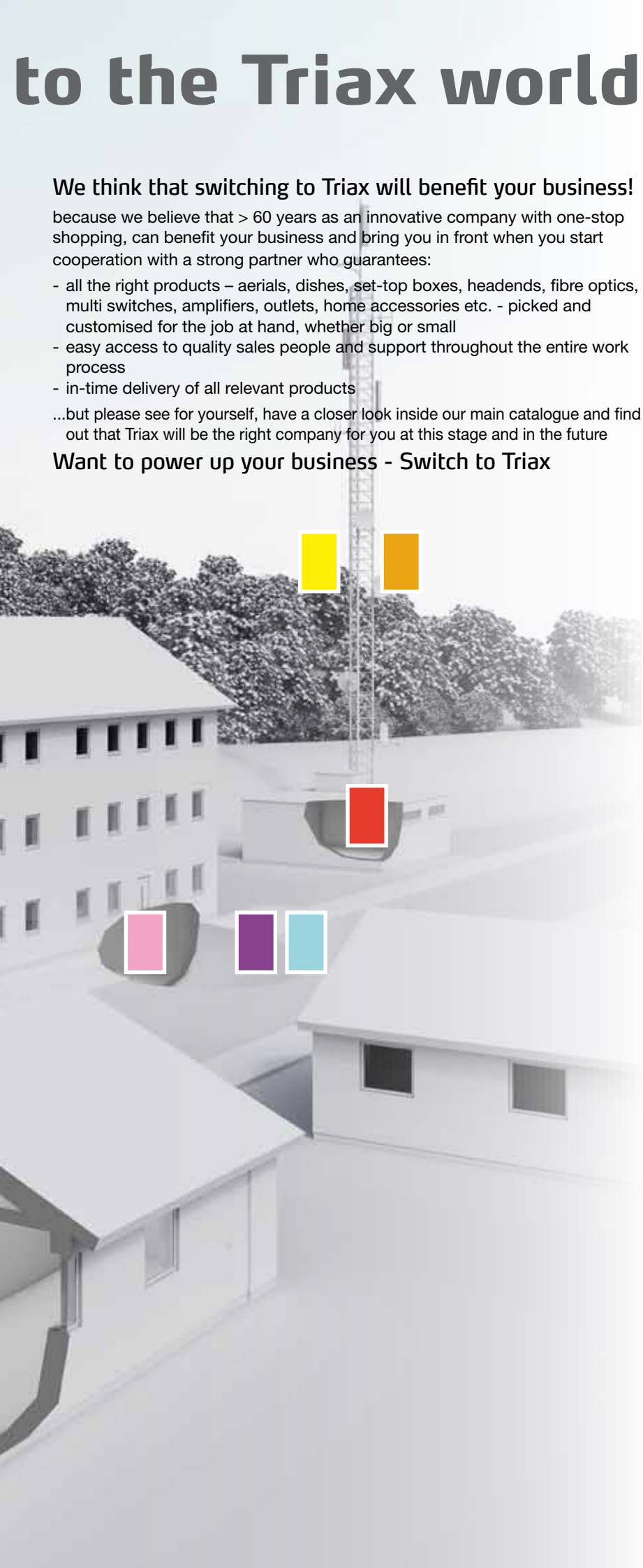
We think that switching to Triax will benefit your business!

because we believe that > 60 years as an innovative company with one-stop shopping, can benefit your business and bring you in front when you start cooperation with a strong partner who guarantees:

- all the right products – aerials, dishes, set-top boxes, headends, fibre optics, multi switches, amplifiers, outlets, home accessories etc. - picked and customised for the job at hand, whether big or small
- easy access to quality sales people and support throughout the entire work process
- in-time delivery of all relevant products

...but please see for yourself, have a closer look inside our main catalogue and find out that Triax will be the right company for you at this stage and in the future

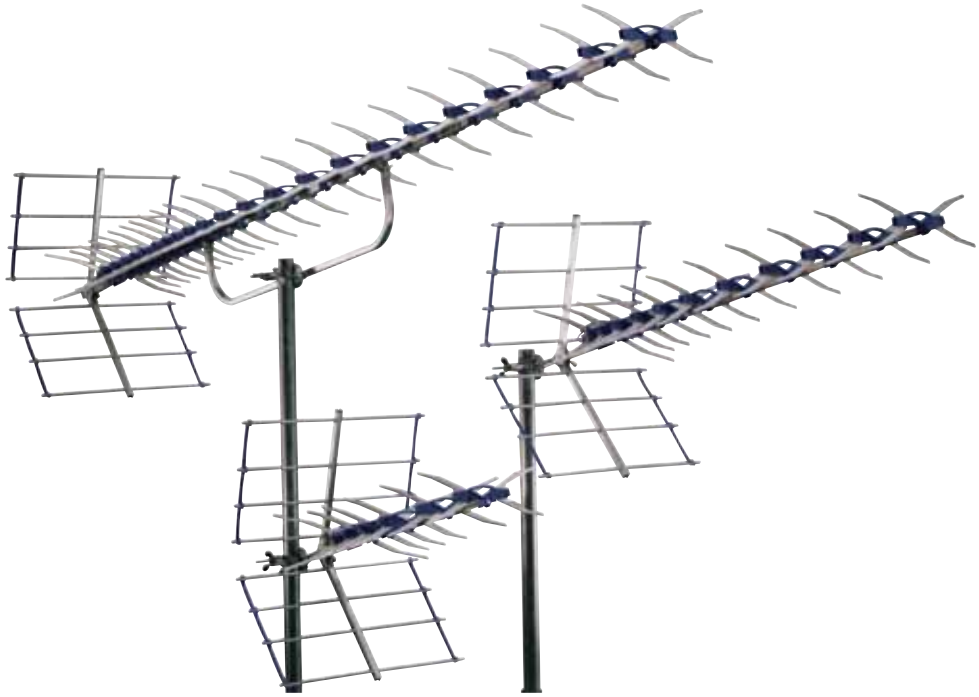
Want to power up your business - Switch to Triax



Notes

Terrestrial reception

Aerials construction and type overview



Aerials

Continuous development is taking place in the field of terrestrial aerials requiring us always to stay one step ahead. Our development and design expertise enables us to develop new products quickly for changing markets.

TRIAX develops and produces a wide range of aerials covering the VHF and UHF frequency bands. In our development work we utilise the latest technology of computer simulation and testing.

TRIAX aerials are manufactured with the utmost accuracy to ensure maximum gain.

TRIAX aerials comply with the DS/EN 60728-11 standard and are stress tested by exposure to more than 100.000 vibrations at the physical resonant frequency and to salt mist in order to ensure long life even under the most hostile weather conditions.

Construction and type overview

For the mechanical construction of all TRIAX aerials a strong and stable aluminium boom is used.The dipole and elements are mounted with a strong bracket made of metal or plastic.
The dipole is mounted with a cable housing made of polyehtylene which is resistant to thermal fluctuations and sunlight (UV-radiation)
The cable housing contains an impedance transformer 300/75 Ohm. Furthermore the boom is provided with a strong mast bracket to enable mounting on the mast without using any tools.

Types of aerials

Triax range of BIII aerials is manufactured in many different types as the following:

MT = Standard, horizontal mounting, mast bracket
MTD = Standard with dual reflector, horizontal mounting, mast bracket
MTL = Standard, vertical mounting, mast bracket
MTH = Lightweight, horizontal or vertical mounting, mast bracket
MTHD = Lightweight with dual reflector, horizontal mounting, mast bracket
MTHV = 3 and 4 elements, lightweight, window bracket, horizontal or vertical mounting
MTHV = 5 elements or FM omni, lightweight, window bracket, horizontal mounting

Application

Triax standard range of aerials covers the following VHF and UHF frequency bands:

Frequency Range	Band	Frequency (MHz)	Reception	Channel
VHF	BI	47-68	TV	2-4
VHF	BII	87-108	Radio	FM
VHF	BIII	174-230	TV/DAB	5-12
UHF	BIV	470-622	TV	21-39
UHF	BV	622-790 (862)	TV	40-60 (69)

- more information in „Technical appendix“.

Introduction

Radio antennas

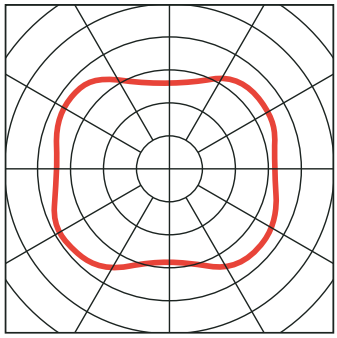
Stereo signals can be received using any FM antenna. Because, however, a higher signal level and greater freedom from reflection are needed for clear stereo reception than for mono reception, it is usually necessary to use a directional antenna.

Television antennas for DVB-T

DVB-T reception is possible with any antenna that is suitable for the related frequency band and polarization. In the catalogue all antennas suitable for the reception of DVB-T signals in VHF III and UHF IV/V bands are marked with the DVB logo.

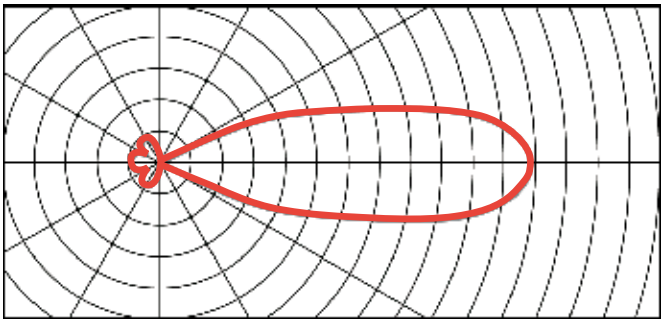
Omnidirectional reception

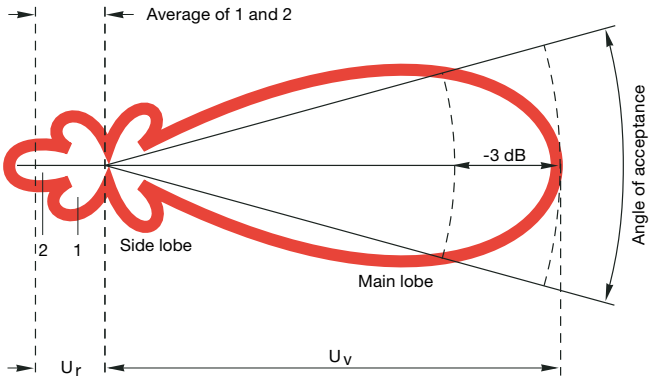
The omnidirectional radio antenna has approximately the same sensitivity for all directions and can only be recommended for well supplied reception areas.



Directional reception

The directional antenna receives signals from one main direction better than omnidirectional antennas, but has poorer reception of signals from other directions.
A directional antenna is absolutely necessary for areas where signals are weak, or in areas where a particular weak transmitter is to be received.





Radiation pattern – The most important terms

Gain
Ratio of an antenna's reception power in its main receiving direction to receive power of a $\lambda/2$ dipole at the same installation site (logarithmic measure expressed in dB)

Angle of acceptance
Angular aperture of the major lobe between the points where the gain is lower by 3 dB than its maximum value

Major lobe
Section of the radiation pattern in the direction of the maximum gain

Side lobe
Lateral and rearward lobe-shaped sections of the radiation pattern that have a lower gain than in the main receiving direction

Front to back ratio*
Ratio of the voltage Uv in the main receiving direction to an average Ur generated on the basis of the voltages of the side lobe 2 in the back direction (180°) and of the larger side lobe 1 in the rear sector (90°-270°) (logarithmic measure expressed in dB)

* Corresponding to a definition by the Technical Commission of the "Receiving Antennas" association in ZVEI

DVB Digital Video Broadcasting

Antennas are suitable for the reception of digital terestrial signals (DVB-T)

Mast calculation

The conditions detailed in the DE/EN 60728-11 must be observed when mounting aerials on a mast.

The sum of the moments resulting from the intrinsic moment of the mast and the bending moments caused by the mounted antennas must not exceed the maximum permitted bending moments of the mast itself.

The bending moment caused by an antenna is calculated by the following formula:

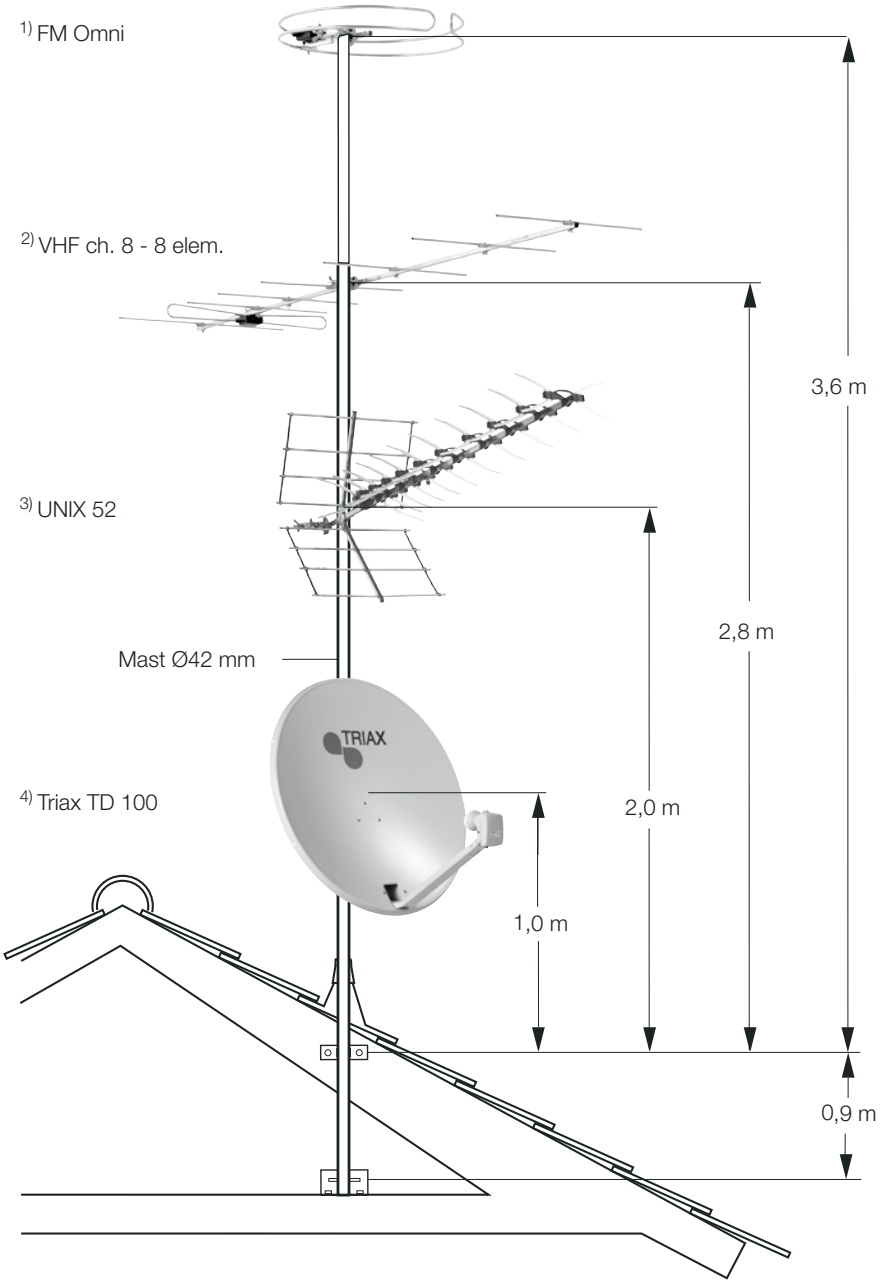
Wind load (N) x distance (m)
= bending moment (Nm)

The distance and bending moment refer to the top clamping point. Bending moments in excess of 1650 Nm require proof of structural stability.

Wind load	x	distance	=	bending moment
[1] 16 N	x	3,6 m	=	57.6 Nm
[2] 56 N	x	2,8 m	=	156.8 Nm
[3] 96 N	x	2,0 m	=	192,0 Nm
[4] 619 N	x	1 m	=	619,0 Nm

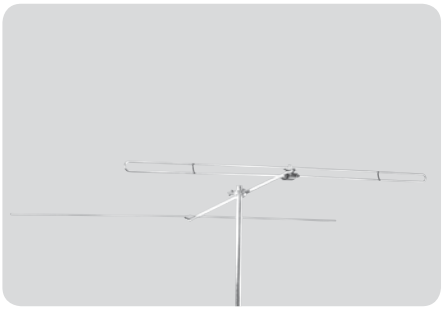
Total bending moment of the antennas **1025,4 Nm**

The total bending moment for the antenna at 1025.4 Nm is less than the usable bending moment for the antenna to be mounted of **1250 Nm**.
Therefore the intended configuration is permitted!

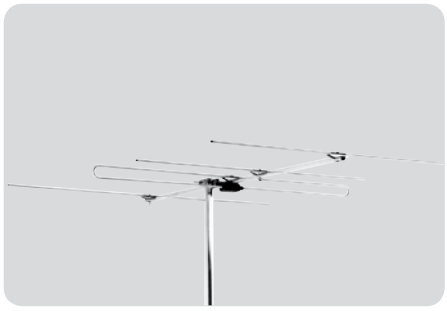


In accordance with DIN EN 50083-1 the clamped length of the mast must be at least 1/6 of the mast length

Triax band II aerial (FM)



FM 2 - 2 elem.

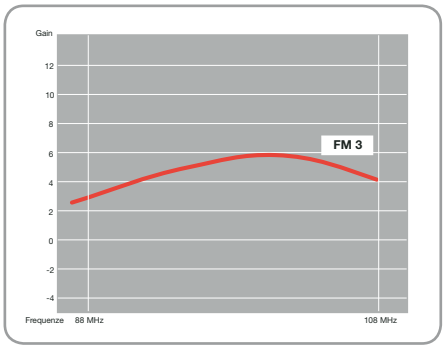


FM 4 - 4 elem.

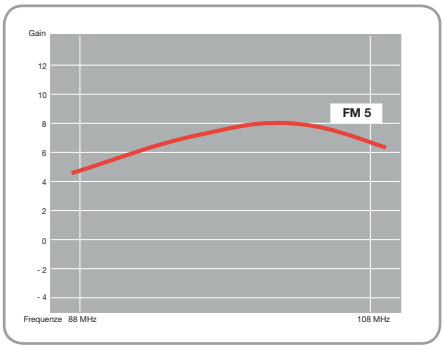
TRIAX band II aerials are wide band aerials covering the entire frequency range from 87 to 108 MHz.
Band II aerials are provided with a light-alloy metal boom made of 18 x 18 mm square tubes.
The dipole and the elements are made of Ø12 mm tube provided with strings to damp vibrations and to prevent element resonance.
All aerials are provided with brackets for aerial masts up to Ø60 mm.

Technical data

Type		FM 1	FM 2	FM 3	FM 5
Art. No.		**100160**	**100161**	**100162**	**100164**
Channel					
Band		BII	BII	BII	BII
Elements	pcs.	1	2	3	5
Gain	dBi	2.1	4.0	6.0	8.0
Front to back ratio	dB	0	10	16	20
Beamwidth hor.	deg. (°)	± 90	± 37	± 35	± 27
Windload	N	28	40	56	80
Weight	kg	0.3	1.1	1.3	1.7
Material		Aluminium	Aluminium	Aluminium	Aluminium
Dimensions					
length	mm	100	820	1188	1932
width	mm	1500	1577	1577	1577
Connector		SC-type	SC-type	SC-type	SC-type
Construction type		MTH	MT	MT	MT
Remarks					



FM 3 elem.

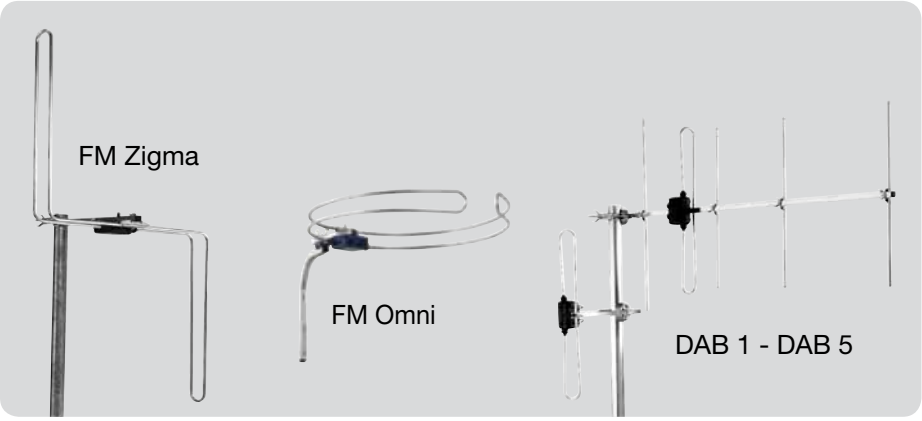


FM 5 elem.

Triax band II (FM) and DAB aerial

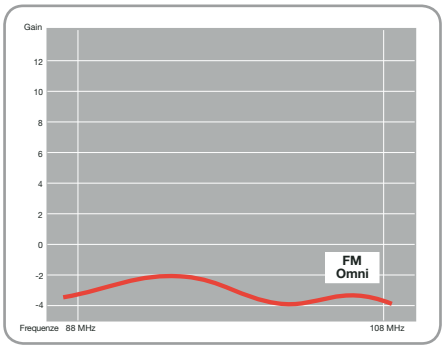
The FM omni-directional aerial is specially designed for areas with many powerful stations transmitting from many directions.
FM omni-directional is available with mast brackets or window brackets.
The Zigma aerial is a dual-polarisation 1 element aerial.

The DAB aerial covers the frequency range 200-240 MHz (VHF Ch. 9-13)

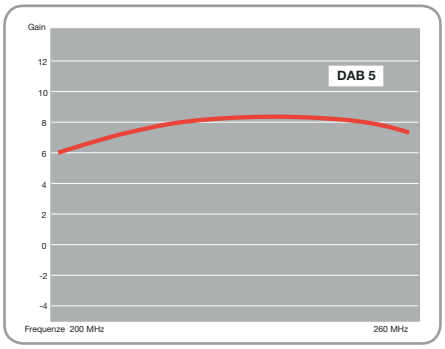


Technical data

Type		FM Omni Mast	FM Omni Window	FM Zigma	DAB 1	DAB 5
Art. No.		**100189**	**100192**	**100193**	**100170**	**100171**
Channel					9-13	9-13
Band		BII	BII	BII	BIII	BIII
Elements	pcs.	1	1	1	1	5
Gain	dBi	- 2.0	- 2.0	- 1.0	2.2	8.0
Front to back ratio	dB	0	0	0		> 12
Beamwidth hor.	deg. (°)	± 180	± 180	± 45H/± 180V	± 180	± 33-43
Windload	N	16	16	31	20	43
Weight	kg	0.6	0.6	0.7	0.45	0.75
Material		Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
Dimensions length width	 mm mm	 Ø 505	 Ø 505	 550 1140	 400 625	 1095 705
Connector		SC-type	SC-type	SC-type	SC-type	SC-type
Construction type		MT	MTHV	MT	MTH	MTH
Remarks					200-240 MHz	200-240 MHz



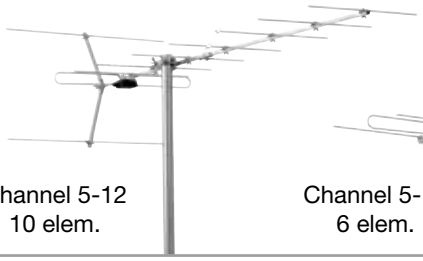
FM Omni-directional



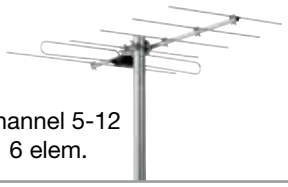
DAB 5

Triax band III wideband aerial (VHF)

Channel 5-12
4 elem. window



Channel 5-12
10 elem.

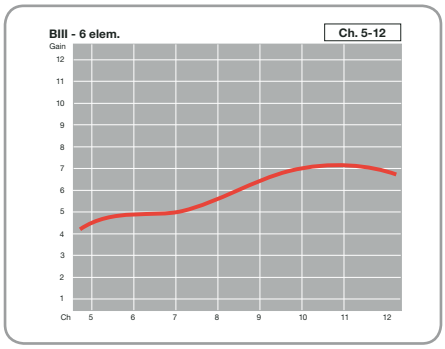


Channel 5-12
6 elem.

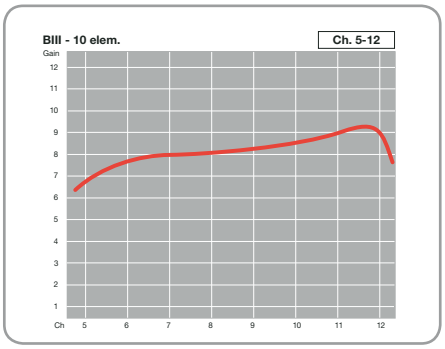
Band III aerials are wideband, channel or channel group types for horizontal or vertical mounting. The aerials are provided with brackets for masts up to Ø60 mm or with window brackets.

Technical data

Type Art. No.		Channel 5-12 104663	Channel 5-12 106663	Channel 5-12 103861	Channel 5-12 103862	Channel 5-12 104665	Channel 5-12 104579
Channel		5-12	5-12	5-12	5-12	5-12	5-12
Band		BIII	BIII	BIII	BIII	BIII	BIII
Elements	pcs.	4	4	4	6	6	10
Gain	dBi	5.0	5.0	5.0	7.5	7.5	9.5
Front to back ratio	dB	14	14	14	16	16	22
Beamwidth hor.	deg. (°)	± 34	± 34	± 34	± 26	± 26	± 23
Windload	N	34	34	34	48	48	78
Weight	kg	0.7	0.7	0.7	0.9	0.9	1.3
Material		Alu.	Alu.	Alu.	Alu.	Alu.	Alu.
Dimensions							
length	mm	852	852	852	1410	1410	1735
width	mm	800	800	800	800	800	880
Connector		SC-type	SC-type	F-con	F-con	SC-type	SC-type
Construction type		MTH	MTHV	MTHV	MTH	MTH	MTHD
Remarks			Vertical				



Ch. 5-12 6 elem.



Ch. 5-12 10 elem.

Triax Digi - band IV/V aerial (UHF)

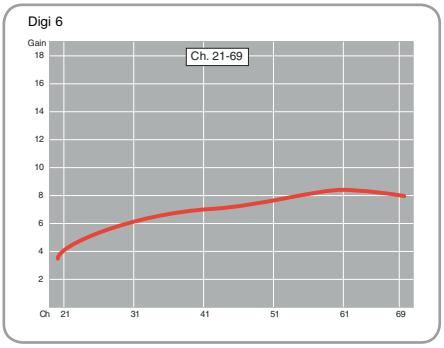
TRIAX Digi 6 aerials have been designed for UHF-reception and are available in band IV/V (E21-60 and E21-69) versions, featuring high gain and channel selectivity. With their excellent gain and excellent front to back ratios these aerials ensure superior TV reception.
The aerials are made of an aluminium, magnesium and manganese alloy which is extremely resistant to sea fog and acid rain.

Digi 6

Technical data

Type **Art. No.**		**Digi 6** *UHF* **108380**	**Digi 6W** *UHF* **108200**	**Digi 6W** *UHF* **108201**
Channel		E21-60	E21-69	E21-69
Band		BIV/V	BIV/V	BIV/V
Elements	pcs.	6	6	6
Gain	dBi	10.0	8.5	8.5
Front to back ratio	dB	17	17	17
Beamwidth hor.	deg. (°)	± 25	± 25	± 25
Windload	N	14	14	14
Weight	kg	0.45	0.45	0.45
Material		Alu.	Alu.	Alu.
Dimensions				
length	mm	718	718	718
width	mm	260	260	260
Connector		F-con	F-con	F-con
Remarks				window bracket

LTE is a trademark of ETSI



Digi 6 - 6 elem. wideband

Triax Digi - band IV/V aerial (UHF)

Digi 10

TRIAX Digi 10 aerials have been designed for UHF-reception and are available in band IV/V (E21-60 and E21-69) versions, featuring high gain and channel selectivity. With their excellent gain and excellent front to back ratios these aerials ensure superior TV reception.
The aerials are made of an aluminium, magnesium and manganese alloy which is extremely resistant to sea fog and acid rain.

Technical data

Type **Art. No.**		**Digi 10** *UHF* **108381**	**Digi 10W** *UHF* **108311**	**Digi 10W** *UHF* **108808**	**Digi 10W** *UHF* **108319**
Channel		E21-60	E21-69	E21-69	E21-69
Band		BIV/V	BIV/V	BIV/V	BIV/V
Elements	pcs.	10	10	10	10
Gain	dBi	13.0	12.5	12.5	12.5
Front to back ratio	dB	21	21	21	21
Beamwidth hor.	deg. (°)	± 23	± 23	± 23	± 23
Windload	N	22	22	22	22
Weight	kg	0.65	0.65	0.65	0.65
Material		Alu.	Alu.	Alu.	Alu.
Dimensions					
length	mm	1015	975	975	975
width	mm	350	350	350	350
Connector		F-con	F-con	SC-type	F-con
Remarks				w. filter	window bracket

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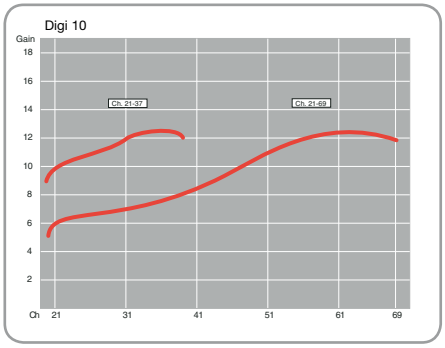


Digi 10 - 10 elem.

Triax Digi - band IV/V aerial (UHF)

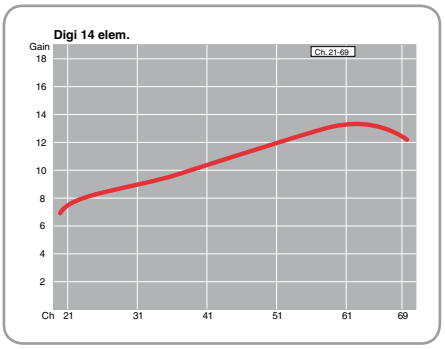
All of the Digi aerials are provided with the snap lock dipole house, made from UV-resistant plastic, which protects the balun with capacitive signal transfer against corrosion.
The aerials are provided with adjustable elevation mast brackets designed for masts up to Ø60 mm.

Technical data

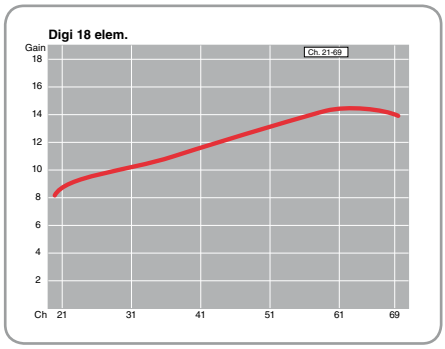
Type		Digi 14 *UHF*	Digi 14W *UHF*	Digi 14W *UHF*	Digi 18 *UHF*	Digi 18W *UHF*	Yagi 18 *UHF*
Art. No.		**108382**	**108341**	**108612**	**108383**	**108361**	**107368**
Channel		E21-60	E21-69	E21-69	E21-60	E21-60	E21-69
Band		BIV/V	BIV/V	BIV/V	BIV/V	BIV/V	BIV/V
Elements	pcs.	14	14	14	18	18	18
Gain	dBi	13.5	13.5	13.5	14.5	14.5	14.5
Front to back ratio	dB	25	25	25	25	25	25
Beamwidth hor.	deg. (°)	± 21	± 21	± 21	± 18	± 18	± 18
Windload	N	54	54	54	59	59	59
Weight	kg	0.77	0.77	0.77	1.05	1.05	1.05
Material		Alu.	Alu.	Alu.	Alu.	Alu.	Alu.
Dimensions							
length	mm	1015	967	967	1446	1446	1446
width	mm	420	420	420	420	420	420
Connector		F-con	F-con	SC-type	F-con	F-con	F-con
Remarks				w. filter			

LTE is a trademark of ETSI

LTE is a trademark of ETSI

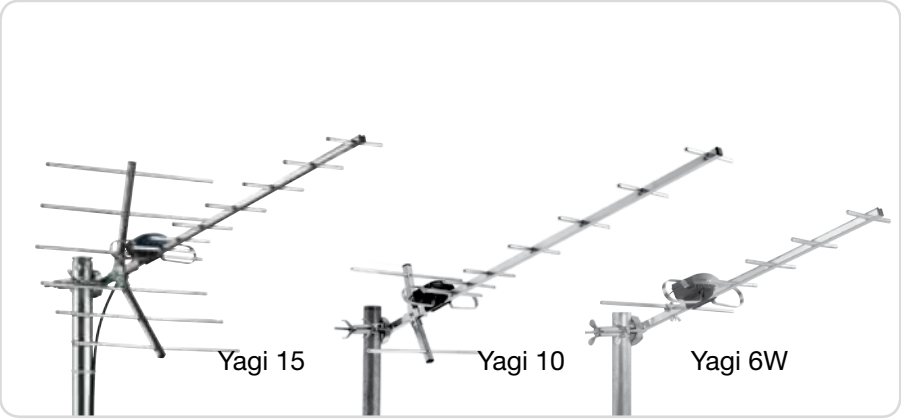


Digi 14 elem.



Digi 18 elem.

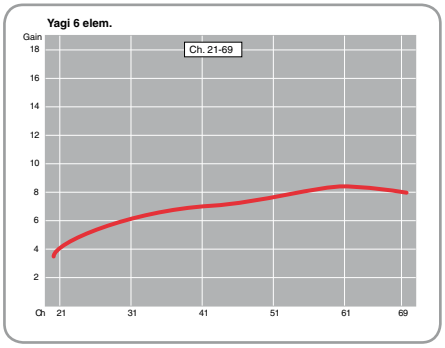
Triax Yagi - band IV/V aerial (UHF)



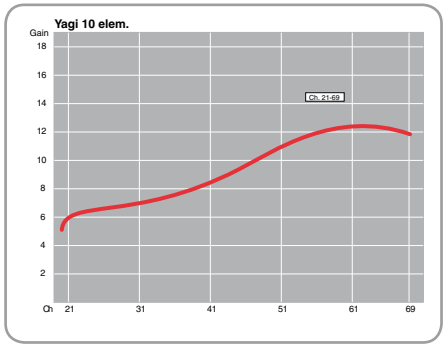
TRIAX Yagi aerials have been designed for UHF-reception and are available in band IV (ch 21-37) and band IV/V (ch 21-69) versions, featuring high gain and channel selectivity. With their excellent gain and excellent front to back ratios these aerials ensure superior TV reception. The Yagi 6 aerial is only available in channel 21-69 versions. The aerials are made of an aluminium, magnesium and manganese alloy which is extremely resistant to sea fog and acid rain.

Technical data

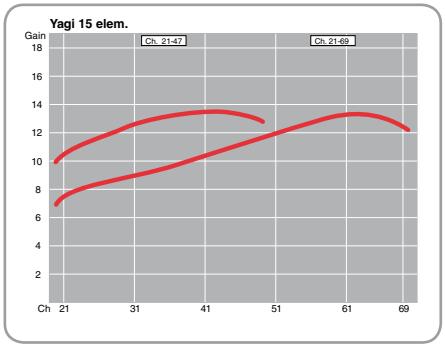
Type		Yagi 6	Yagi 10	Yagi 15	Yagi 15	Yagi 15
Art. No.		**107205**	**107317**	**107347**	**107349**	**107350**
Channel		21-69	21-69	21-47	36-69	21-69
Band		BIV/V	BIV/V	BIV/V	BIV/V	BIV/V
Elements	pcs.	6	10	15	15	15
Gain	dBi	8.5	12.5	13.5	13.5	13.5
Front to back ratio	dB	17	21	25	25	25
Beamwidth hor.	deg. (°)	± 25	± 23	± 21	± 21	± 21
Windload	N	14	22	58	54	54
Weight	kg	0.45	0.65	0.80	0.77	0.77
Material		Alu.	Alu.	Alu.	Alu.	Alu.
Dimensions						
length	mm	718	975			
width	mm	260	350			
Connector		F-con	F-con	F-con	F-con	F-con
Remarks						



Yagi 6 - 6 elem. wideband



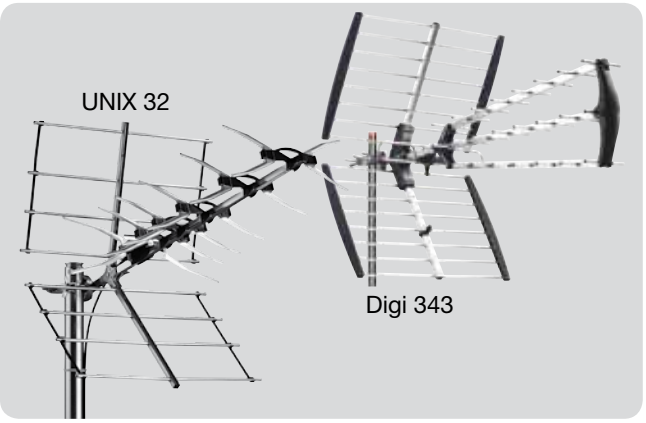
Yagi 10 - 10 elem. wideband



Yagi 15 - 15 elem.

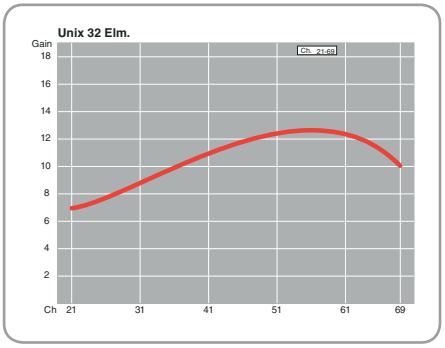
Triax UNIX 32 - band IV/V aerial (UHF)

TRIAX UNIX aerials have been designed for UHF-reception. With their excellent gain and excellent front to back ratios these aerials ensure superior TV reception. The aerials have been designed to ensure optimum reception even under difficult conditions. Easy and uncomplicated mounting is ensured by the snap-lock dipole house made of UV-resistant plastic. The balun with capacitive signal transfer from the dipole ensures matching adjustment with lower insertion loss. At the same time galvanic corrosion between the different materials in contact with each other is avoided. The aerials are made of salt water resistant aluminium, ensuring long service life.

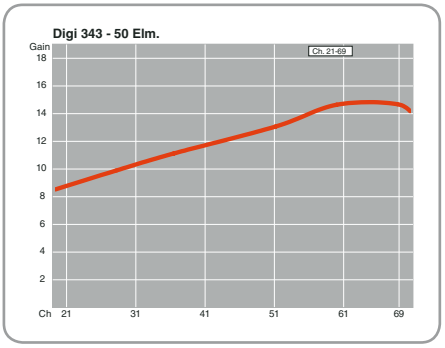


Technical data

Type **Art. No.**		**UNIX 32** *UHF* **107750**	**Digi 343** *UHF* **108960**	**Digi 343** *UHF* **108975**
Channel		E21-69	E21-60	E21-69
Band		BIV/V	BIV/V	BIV/V
Elements	pcs.	32	43	43
Gain	dBi	12.5	15.5	15.5
Front to back ratio	dB	24	20	20
Beamwidth hor.	deg. (°)	± 20	± 15	± 15
Windload	N	58	150	150
Weight	kg	1.45	1.6	1.6
Material		Alu.	Alu.	Alu.
Dimensions				
length	mm	791	1056	1056
width	mm	500	540	540
Connector		F-con	F-con	F-con
Remarks				

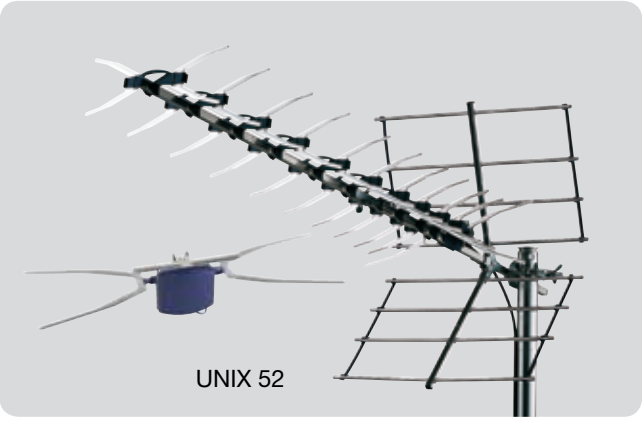


UNIX 32 elem.



Digi 343 - 50 elem.

Triax UNIX 52 - band IV/V aerial (UHF)

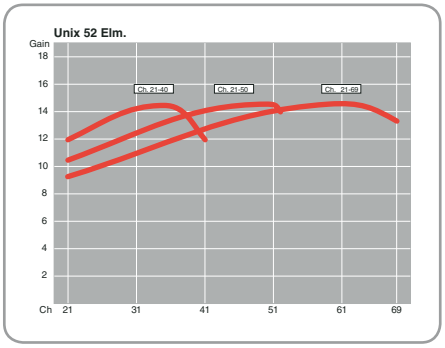


UNIX 52

TRIAX UNIX aerials have been designed for UHF-reception and are available in a 52 element version for channel groups as well as wideband. With their excellent gain and excellent front to back ratios these aerials ensure superior TV reception. The aerials have been designed to ensure optimum reception even under difficult conditions. Easy and uncomplicated mounting is ensured by the snap-lock dipole house made of UV-resistant plastic. The balun with capacitive signal transfer from the dipole ensures matching adjustment with lower insertion loss. At the same time galvanic corrosion between the different materials in contact with each other is avoided. The aerials are made of salt water resistant aluminium, ensuring long service life.

Technical data

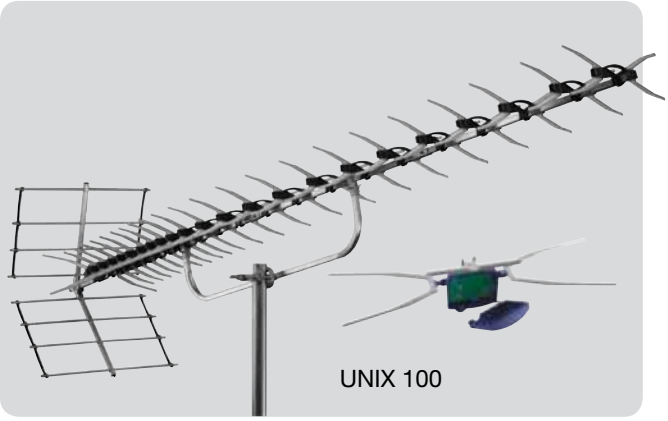
Type		**UNIX 52**	**UNIX 52**	**UNIX 52** *digital*	**UNIX 52** *digital*
Art. No.		**107770**	**107766**	**107767**	**107776**
Channel		E21-40	E21-50	E21-69	E21-69
Band		Group	Group	BIV/V	BIV/V
Elements	pcs.	52	52	52	52
Gain	dBi	14.5	14.5	14.5	14.5
Front to back ratio	dB	25	25	25	25
Beamwidth hor.	deg. (°)	± 15	± 15	± 15	± 15
Windload	N	96	96	96	96
Weight	kg	1.72	1.68	1.63	1.63
Material		Alu.	Alu.	Alu.	Alu.
Dimensions					
length	mm	1512	1410	1297	1297
width	mm	500	500	500	500
Connector		F-con	F-con	F-con	F-con
Remarks					



UNIX 52 elem.

Triax UNIX 100 - band IV/V aerial (UHF)

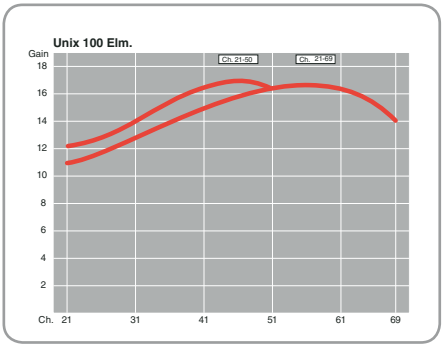
TRIAX UNIX aerials have been designed for UHF-reception and are available in a 100 element version for channel groups as well as wideband. With their excellent gain and excellent front to back ratios these aerials ensure superior TV reception. The aerials have been designed to ensure optimum reception even under difficult conditions. Easy and uncomplicated mounting is ensured by the snap-lock dipole house made of UV-resistant plastic. The balun with capacitive signal transfer from the dipole ensures matching adjustment with lower insertion loss. The aerials are made of salt water resistant aluminium, ensuring long service life.
UNIX 100 is provided with a support boom, and all types are provided with elevation type mast brackets.



UNIX 100

Technical data

Type		**UNIX 100**	**UNIX 100** *digital*	**UNIX 100** *digital*
Art. No.		**107768**	**107769**	**107756**
Channel		E21-50	E21-69	E21-69
Band		Group	Group	BIV/V
Elements	pcs.	100	100	100
Gain	dBi	17.0	17.0	17.0
Front to back ratio	dB	27	27	27
Beamwidth hor.	deg. (°)	± 11	± 11	± 11
Windload	N	176	152	152
Weight	kg	2.50	2.46	2.46
Material		Alu.	Alu.	Alu.
Dimensions				
length	mm	2332	2257	2257
width	mm	500	500	500
Connector		F-con	F-con	F-con
Remarks		- with support boom	- with support boom	- with support boom

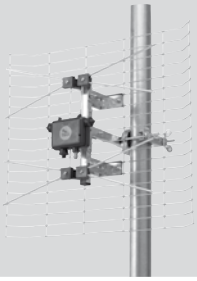


UNIX 100 elem.

Triax BB Grid - band IV/V aerial (UHF)

Digi grid
UHF flat
panel aerial

UHF BB
Mini-Grid

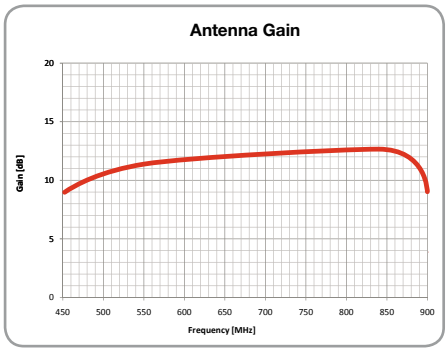


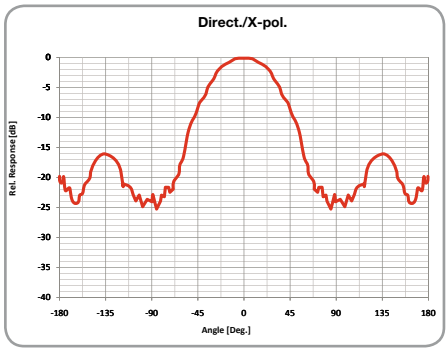
The Triax Digi grid have a large beam-width, high gain and the excellent front/back ratio makes this the ideal aerial for receiving digital TV signals in regions with medium to high signal level. The aerial is compact and very easy to install for anyone – Just slide it out and fasten the wingnuts.

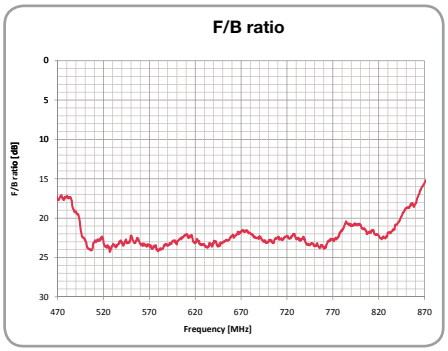
- Very easy installation
- F-connector and watercap
- Stable and strong construction
- All mounting with wing nuts
- Strong and stable single-packaging

Technical data

Type **Art. No.**		**BB Mini-Grid** **108010**	**BB Grid** *digital* **108015**
Channel		E21-69	E21-69
Band		BIV/V	BIV/V
Elements	pcs.	8	16
Gain	dBi	6.0	12.5
Front to back ratio	dB	28	22
Beamwidth hor. ver.	deg. (°) deg. (°)	± 34 ± 20	± 25 ± 20
Windload	N	38	78
Weight	kg	1.25	1.65
Material		Alu.	Alu./plast
Dimensions length width	 mm mm	 480 480	 805 545
Connector		SC-type	F-con
Remarks			

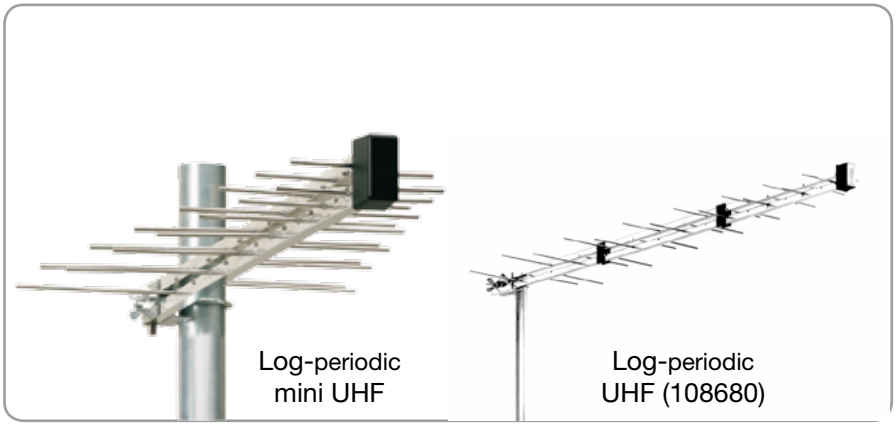






Triax Log-periodic aerial (VHF/UHF - UHF)

A log-periodic aerial is especially suitable for poor reception conditions, with reflection (shadows), but where the signal level is OK.

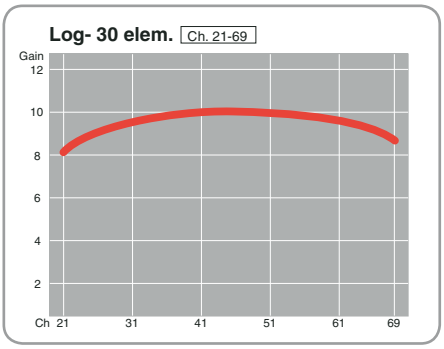


Log-periodic mini UHF

Log-periodic UHF (108680)

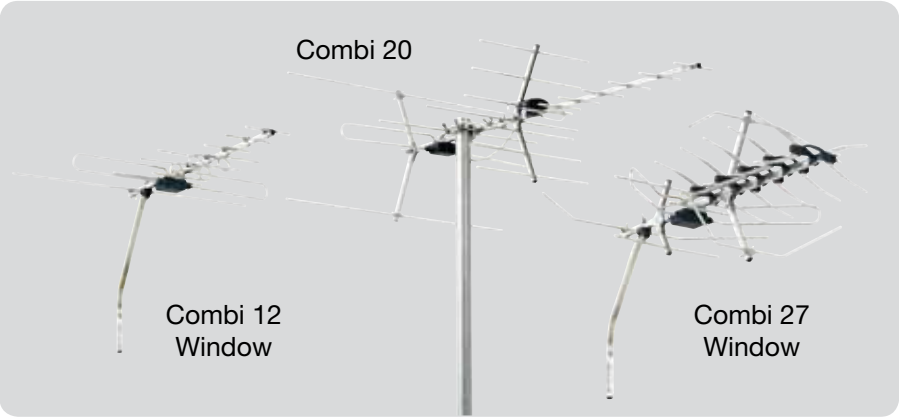
Technical data

Type Art. No.		Log-periodic mini - UHF 108678	Log-periodic UHF 108680
Channel		E21-69	E21-69
Band		BIV/V	BIV/V
Elements	pcs.	28	30
Gain	dBi	8.0	10.0
Front to back ratio	dB	> 22	> 30
Beamwidth hor. ver.	deg. (°) deg. (°)	± 28	± 25
Windload	N	25	30
Weight	kg	0.54	0.60
Material		Alu.	Alu.
Dimensions length width	 mm mm	 770 320	 1210 320
Connector		F-con	F-con
Remarks			



Log-periodic UHF

Triax Combi aerial (VHF/UHF)

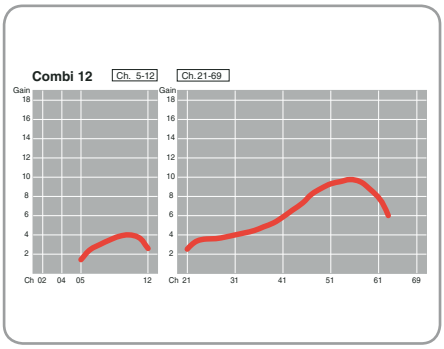


The combined aerials are designed for VHF/UHF reception and ensure perfect reception of the signals.
All types are made of high-quality material and are extremely resistant to sea fog and hostile weather conditions.
The aerials are provided with mast brackets designed for masts up to Ø60 mm.

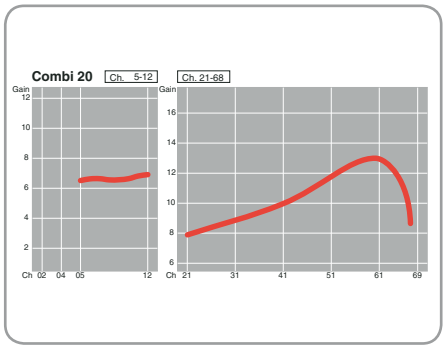
- Improved UHF/VHF gain
- Increased number of elements to provide the aerials with more gain
- New balun which ensures improved matching
- Easy to install
- Elevation type mast brackets included

Technical data

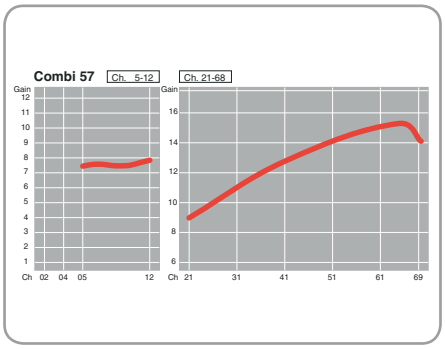
Type Art. No.			Combi 12 *Mast* 108936	Combi 12 *Window* 108937	Combi 20 108694	Combi 27 *Window* 108687	Combi 27 *Mast* 108688	Combi 57 108696
Channel			E5-12/E21-60	E5-12/E21-60	E5-12/E21-60	E5-12/E21-60	E5-12/E21-60	E5-12/E21-60
Band			BIII/BIV-V	BIII/BIV-V	BIII/BIV-V	BIII/BIV-V	BIII/BIV-V	BIII/BIV-V
Elements		pcs.	4/8	4/8	5/15	4/23	4/23	5/52
Gain	VHF UHF	dBi dBi	4.0 4.0/9.0	4.0 4.0/9.0	6.0 11.5	7.0 13.0	7.0 13.0	8.0 14.5
Front to back ratio - hor. - ver.		dB dB	12.0 15.0	12.0 15.0	12.0 17.0	17.0 25.0	17.0 25.0	17.0 25.0
Beamwidth	- hor. - ver.	deg. (°) deg. (°)	± 32 ± 15	± 32 ± 15	± 35 ± 25	± 31 ± 22	± 31 ± 22	± 31 ± 15
Windload		N	34	34	56	72	72	146
Weight		kg	0.75	0.75	1.00	1.80	1.80	2.90
Material			Alu.	Alu.	Alu.	Alu.	Alu.	Alu.
Dimensions length width		mm mm	866 855	866 855	815 760	490 880	490 880	1725 880
Connector			SC-type	SC-type	SC-type	SC-type	SC-type	SC-type
Type			MTH	MTH	MTH	MTH	MTH	MTH



Combi 12



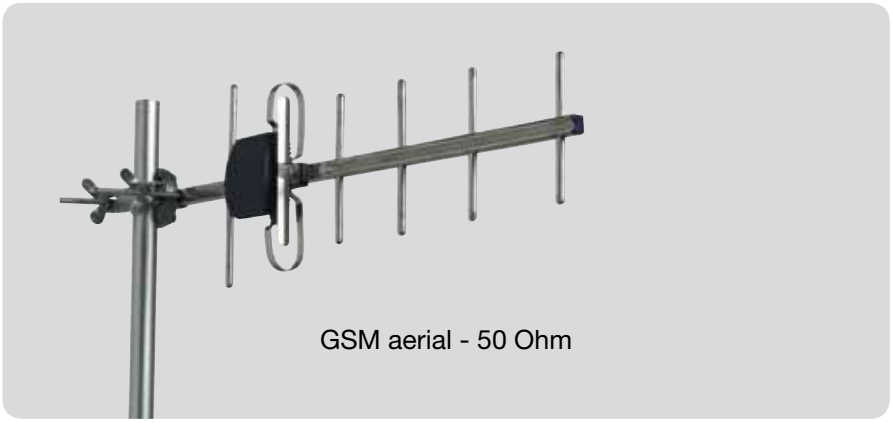
Combi 20



Combi 57

Triax GSM aerial

TRIAX Yagi aerials for GSM reception have been designed for reception of the mobile-phone band, featuring high gain and band selectivity.
With the high gain and excellent front to back ratio, this aerial ensures superior reception where there is a weak signal from the mobile-transmitters.



GSM aerial - 50 Ohm

Technical data

Type **Art. No.**		**GSM 900** *872-960* **109807**	**GSM 900** *872-960* **109812**
Channel	MHz	872-960	872-960
Band		GSM	GSM
Elements	pcs.	6	6
Gain	dBi	9.0	9.0
Front to back ratio	dB	15	15
Beamwidth hor.	deg. (°)	± 25	± 25
Windload	N	14	14
Weight	kg	0.50	0.50
Material		Alu.	Alu.
Dimensions length width	 mm mm	 710 260	 710 260
Connector		SC-type	SC-type
Type		Window bracket	Mast bracket
Packing size		1	1

Triax UFO aerial (VHF/UHF - digital)

UFO with plastic base

UFO with centre mount

UFO with universal mount

UFO with mastmount

A small and discreet antenna which can be placed almost everywhere on the house, roof or balcony.

- Compact 360˚ omnidirectional antenna
- Optimized for DVB-T, reception of FM/DAB/BIII/UHF signals
- Integrated 28dB amplifier
- The antenna is surface-treated to withstand impacts from saltwater and weather conditions
- Delivered with several brackets for different purposes
- The ideal flexible solution for home, caravan, boat, mobile home, bus and truck

Technical data

Type Art. No.			UFO 100 *Digital* 109100	UFO 120 *Digital* 109120	UFO 140 *Digital* 109140
Frequency range	FM VHF UHF	MHz MHz MHz	87.5-108 174-230 470-862	87.5-108 174-230 470-862	87.5-108 174-230 470-790
Channels			FM/5-12/21-69	FM/5-12/21-69	FM/5-12/21-60
Elements		pcs.	1	1	1
Opening angle	ver./hor.	deg.	90/360	90/360	90/360
Windload		N	5.5	5.5	5.5
Gain		dB	28	28	28
Noise figure		dB	2.5	2.5	2.5
Max. output voltage		dBµV	108	108	108
Supply voltage		V	5-24	5-24	5-24
Power consumption		mA	50	50	50
Dimensions	length width height	mm mm mm	325 255 65	325 255 65	325 255 65
Connector			F-connectors	F-connectors	F-connectors
Bracketry			Mast bracket Ø25-60 Plastic base	Mast bracket Ø25-60 Universal mount Plastic base Centre mount	Mast bracket Ø25-60 Universal mount Plastic base

LTE is a trademark of ETSI

Accessories

IFP 502
Power supply
Art. No. 339502

IFP 529
Power inserter
Art. No. 339529

Centre mount
Art. No. 133225

Triax indoor aerial (DVB-T, VHF/UHF)

Small and very elegant passive and active indoor antenna, some especially designed for reception of DVB-T signals.

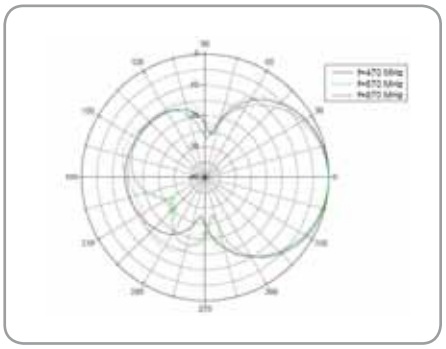
The DVB-T 300i antenna comes in an elegant blister pack and the indoor FM/TV aerial in a giftbox, ready for display in the shop.

Read more on the Triax DIGIT-800 aerial is for UHF/DVB-T reception further down this page

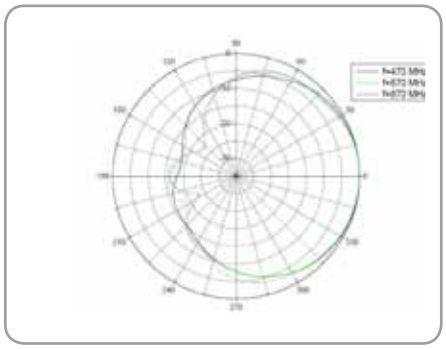
Indoor aerial | Active indoor aerial | Digit 800 DVB-T aerial

Technical data

TYPE Art. No.			Indoor aerial Ch. 2-69 111000	DVB-T 300i - active aerial 111010	Digit 800 DVB-T 109800
Channel		Ch. Ch.	2-12 21-69	5-12 21-69	 21-69
Frequency range		MHz MHz	47-862	174-230 470-862	 470-862
Elements		Pcs.	1	1	1
Gain		dB		15.0	4.0
Noise figure (VHF/UHF)		dB		3.4/3.5	
Max. output voltage (IMA3)		dBµV		93.0	
Front to back ratio		dB		> 25.0	
Beamwidth hor.		deg.	± 180	± 180	± 30
Weight		kg		0.120	
Material			Aluminium	Aluminium	ABS plastic
Colour				Matt black	White
Dimensions	length width depth	mm mm mm	1439 420	145 60 7.5	330 350 145
Connector			IEC - type	IEC - type	F-con
Voltage		V/DC		+ 4.5 via coax cable	
Remarks			Also suitable for DVB-T	Suitable for DVB-T delivered in a 1 pcs.blister pack	For indoor or outdoor use



Digit 800 - horizontal beam



Digit 800 - vertical beam

Triax DIGIT-800 aerial
- for UHF/DVB-T reception.

- Excellent reception from UHF band
- Optimized for DVB-T reception
- Modern, aesthetic, light and stable construction
- Both for indoor and outdoor use
- Easy mounting – without tools
- Very suitable as transmitter aerial for repeater applications
- For mast- and wall-mounting

Terrestrial reception

Triax MFA mast amplifier series

High-performance range of mast amplifiers with F-connector

- F-connectors on all in- and outputs
- Simple and easy installation
- Unique mounting system
- Attractive design in a 4-terminal waterproof masthousing
- Wide range with 1, 2 or 3 inputs and 1 output
- High gain and output voltage
- Fixed or adjustable gain
- Low noise figures
- Power stabiliser enables use of power unit from 12V to 24V
- FM notch-version
- High output level
- RF shielded and CE compliant (EN 50083)

Technical data

Type			MFA 302	MFA 312	MFA 320	MFA 321	MFA 325
			BIII/UHF	BI-BIII/UHF	BI-FM/BIII/UHF	VHF/UHF/FM	VHF/UHF
Art. No.			340302	340312	340320	340321	340325
Input 1	Frequency	MHz	175-862	47-68/175-230/470-862	470-862	47-862	47-862
	Channel		5-12/21-69	2-4/5-12/21-69	21-69	2-4/5-12/21-69	2-4/5-69
	Gain	dB	20	15-25/25-35	25-35	22-32	25
Input 2	Frequency	MHz			175-230	88-108	
	Channel				5-12	FM	
	Gain	dB			15-25	10-20	
Input 3	Frequency	MHz			47-108		
	Channel				2-4/FM		
	Gain	dB			15-25		
Noise figure	typ. (max.)						
	UHF 1	dB	3.0	4.5	4.0	3.5	2.2
	UHF 2	dB					
	BII/BIII/VHF	dB	3.0		4.0	5.0	2.2
	DAB						
Return loss	in/out	dB					
Max. output voltage @ -60 dB IMA		dBµV	103	103	103	103	105
Number of in-/outputs			1/1	1/1	3/1	2/1	1/1
Voltage		VDC	12-24	12-24	12-24	12-24	12-24
Power		mA	30	30	25	25	25
DC throughpower							
Connector			F-con	F-con	F-con	F-con	F-con
Weight		kg	0.230	0.230	0.230	0.230	0.230
Dimensions	Height	mm	108	108	108	108	108
	Depth	mm	50	50	50	50	50
	Width	mm	120	120	120	120	120
Remarks				FM notch 2 input with 2 attenuators		TV: BI+BIII+UHF	Low noise

Triax MFA mast amplifier series

High-performance range of mast amplifiers with F-connector

- F-connectors on all in- and outputs
- Simple and easy installation
- Unique mounting system
- Attractive design in a 4-terminal waterproof masthousing
- Wide range with 1, 2 or 3 inputs and 1 output
- High gain and output voltage
- Fixed or adjustable gain
- Low noise figures
- Power stabiliser enables use of power unit from 12V to 24V
- FM notch-version
- High output level
- RF shielded and CE compliant (EN 50083)

Technical data

Type			MFA 612	MFA 622	MFA 624	MFA 625	MFA 633
			UHF	UHF/UHF	UHF	UHF	UHF
Art. No.			340612	340622	340624	340625	340633
Input 1	Frequency	MHz	470-862	470-862	470-862	470-862	470-862
	Channel		21-69	21-69	21-69	21-69	21-69
	Gain	dB	12	20-30	25.0	15	24-34
Input 2	Frequency	MHz		470-862			
	Channel			21-69			
	Gain	dB		20-30			
Input 3	Frequency	MHz					
	Channel						
	Gain	dB					
Noise figure	typ. (max.)						
	UHF 1	dB	1.9	6.5	2.5	2.5	2.5
	UHF 2	dB					
	BII/BIII/VHF	dB					
	DAB						
Return loss	in/out	dB	10/10		10/10		10/10
Max. output voltage @ -60 dB IMA		dBµV	105	105	105	105	105
Number of in-/outputs			1/1	2/2	1/1	1/1	1/1
Voltage		VDC	12-24	12-24	12-24	12	12-24
Power		mA	Yes	55	Yes	30	Yes
DC throughpower			26	Yes	48	Yes	60
Connector			F-con	F-con	F-con	F-con	F-con
Weight		kg	0.205	0.230	0.205		0.205
Dimensions	Height	mm	115	115	115	124	115
	Depth	mm	60	60	60	55	60
	Width	mm	117	137	117	138	117
Remarks				2 inputs - 2 outputs			

Triax MFA mast amplifier series

The new MFA 611 - MFA 621 -MFA 656 mast amplifier series is wideband amplifiers featuring 1-2-3 inputs and 1-2 outputs and prepared to cut off channels E61-69, as the European Commission has decided to assign the 790 – 862 MHz frequency band (channels 61-69) to mobile communication services.

LTE is a trademark of ETSI

Technical data

Type			MFA 611	MFA 621	MFA 656	MFA 641	MFA 642
			UHF/BIII	UHF/BIII/BII	UHF/BIII-DAB/BII	UHF/BII	UHF/BII
Art. No.			340611	340621	340656	340641	340642
Input 1	Frequency	MHz	174-230/470-790	174-230/470-790	470-790	470-862	470-862
	Channel		5-12 / 21-60	5-12 / 21-60	21-60	21-69	21-69
	Gain	dB	15-30/10-25	5-15/20-35	20-35	24-34	24-34
Input 2	Frequency	MHz		87-108	174-230	87-108	87-108
	Channel			BII (FM)	5-12/DAB	BII (FM)	BII (FM)
	Gain	dB		5-15	10-22	14-24	-2
Input 3	Frequency	MHz			87-108		
	Channel				FM		
	Gain	dB			5-15		
Noise figure	typ. (max.)						
	UHF 1	dB	≤ 3.5	≤ 2.5	≤ 2.5	≤ 2.5	≤ 2.5
	UHF 2	dB					
	BII	dB		≤ 2.5	≤ 2.5	≤ 4.5	
	BIII/DAB		≤ 3.5	≤ 2.5	≤ 2.5		
Return loss	in/out	dB	10/8	10/8	10/8	10/10	10/10
Max. output voltage @ -60 dB IMA		dBµV	103	103	103	105	105
Number of in-/outputs			1/2	2/1	3/1	2/1	2/1
Voltage		VDC	12-24	12-24	12-24	12-24	12-24
Power		mA				60	60
LED indicator		Green	Yes	Yes	Yes	Yes	Yes
DC throughpower							
Connector			F-con	F-con	F-con	F-con	F-con
Weight		kg	0.205	0.205	0.230	0.205	0.205
Dimensions	Height	mm	115	115	115	115	115
	Depth	mm	60	60	60	60	60
	Width	mm	107	117	137	117	117
Remarks							

Triax MFA mast amplifier series

High-performance range of mast amplifiers with F-connector

- F-connectors on all in- and outputs
- Simple and easy installation
- Unique mounting system
- Attractive design in a waterproof masthousing
- High gain and output voltage
- Fixed or adjustable gain
- Unique power stabiliser enables use of any power unit from 12 V to 24 V
- Built-in green LED indicator light when power is on
- Low noise figures
- High output level

Technical data

Type			MFA 645 UHF/DAB	MFA 652 UHF/VHF	MFA 655 UHF/BII/DAB	MFA 665 UHF/UHF/VHF	MFA 651 ***DVB-T***
Art. No.			**340645**	**340652**	**340655**	**340665**	**340651**
Input 1	Frequency	MHz	470-862	470-862	470-862	470-862	470-862
	Channel		21-69	21-69	21-69	21-69	21-69
	Gain	dB	24-34	13-23	13-23	13-23	12
Input 2	Frequency	MHz	174-230	47-230	87-108	470-862	
	Channel		5-12/DAB	2-4/5-12	BII (FM)	21-69	
	Gain	dB	14-24	13-23	2-12	12-22	
Input 3	Frequency	MHz			174-230	47-230	
	Channel				BIII (DAB)	2-4/FM/5-12	
	Gain	dB			13-23	13-23	
Noise figure	typ. (max.)						
	UHF 1	dB	≤ 2.5	≤ 4.5	≤ 4.3	≤ 3.8	1.8
	UHF 2	dB				≤ 12.0	
	BII/BIII/VHF	dB	≤ 4.5	≤ 4.0	≤ 6.5	≤ 4.5	
	BIII/DAB				≤ 3.5		
Return loss	in/out	dB	10/10	10/10	10/10	10/10	
Max. output voltage @ -60 dB IMA		dBµV	105	102	105	109	105
Number of in-/outputs			2/1	2/1	3/1	3/1	1/1
Voltage		VDC	12-24	12-24	12-24	12-24	5-12
Power		mA	60	53	48	98	65
LED indicator		Green	Yes	Yes	Yes	Yes	
DC throughpower							
Connector			F-con	F-con	F-con	F-con	F-con
Weight		kg	0.205	0.205	0.205	0.205	0.230
Dimensions	Height	mm	115	115	115	115	108
	Depth	mm	60	60	60	60	50
	Width	mm	117	117	137	137	120
Remarks							

Triax MFA kit (amplifier + power supply)

High-performance range of MFA mast amplifiers combined with the excellent IFP power supply in a attractive modern housing design - both equipped with F-connector

Complete kit of MFA amplifier incl. power supply

Type **Art. No.**			**MFA 402** **340402**	**MFA 412** **340412**	**MFA 420** **340420**
Set consists of: - amplifier - power supply			MFA 302 + IFP 501	MFA 312 + IFP 502	MFA 320 + IFP 502
Weight		kg	0.645	0.645	0.645
Dimensions	Height Depth Width	mm mm mm	170 78 242	170 78 242	170 78 242
Remarks					

AFA Micro UHF amplifier
Active wideband micro amplifier can change your UHF-aerial with F-connector, to an active antenna. Works with 5 VDC from your digital Set Top Box, or with 5-12 VDC from any power supply.

Technical data

Type			AFA Micro UHF
Art. No.			340012
Input 1	Frequency	MHz	470-862
	Channel		21-69
	Gain	dB	12
Input 2	Frequency	MHz	
	Channel		
	Gain	dB	
Input 3	Frequency	MHz	
	Channel		
	Gain	dB	
Noise figure			
	UHF	dB	2.3
	VHF	dB	
Return loss	in/out	dB	> 10
Max. output voltage @ -60 dB IMA		dBµV	95
Number of in-/outputs			1/1
Voltage		VDC	5-12
Power		mA	10-22
DC throughpower			
Connector	Input		F-male
	Output		F-female
Weight		kg	0.230
Dimensions	Height	mm	47
	Depth	mm	
	Width	mm	Ø 20.5
Remarks			

Triax MFC multi band mast combiners

MFC range of mast combiners with F-connector

- Improved attractive housing
- Unique mounting system
- Mast or wall mounting
- F-connector
- Wide range with 2 or 3 inputs and 1 output
- Switchable DC-through power
- RF shielded

Waterproof housing

Easy installation of MFC combiner filter

Technical data

Type			MFC 101	MFC 102	MFC 104	MFC 105	MFC 106
			TV/SAT	TV/SAT	AM/FM/TV	VHF/UHF	FM/TV
Art. No.			340101	340102	340104	340105	340106
Input 1	Frequency	MHz	950-2150	950-2150	470-862	47-862	47-68/139-862
	Channel		IF	IF	21-69	2-69	2-69
	Through loss	dB	3.0	3.0	2.0	4.0	1.0
Input 2	Frequency	MHz	47-2300	470-862	175-230	47-862	87.5-108
	Channel		2-69	21-69	5-12	2-69	FM
	Through loss	dB	2.0	2.0	1.5	4.0	1.0
Input 3	Frequency	MHz		47-230	0.15 - 108		
	Channel			2-12	AM/1-4/FM		
	Through loss	dB		1.5	1.0		
Stop band attenuation							
	VHF/BI	dB	> 20	> 20	> 20	> 20	> 20
	FM	dB	> 20	> 20	> 20	> 20	> 20
	BIII	dB	> 20	> 20	> 20	> 20	> 20
	UHF	dB	> 20	> 20	> 20	> 20	> 20
	SAT	dB	> 50	> 50			
Number of in-/outputs			2/1	2/1	3/1	2/1	2/1
DC throughpower			SAT	SAT	UHF	Both inputs	VHF/UHF
Connector			F-con	F-con	F-con	F-con	F-con
Weight		kg	0.175	0.175	0.175	0.175	0.175
Dimensions	Height	mm	117	117	117	117	117
	Depth	mm	50	50	50	50	50
	Width	mm	120	120	120	120	120
Remarks							

Triax MFC multi band mast combiners

MFC features:

- Improved attractive housing
- F-connector
- Easy mounting on mast or wall
- Wide range with 2 or 3 inputs and 1 output
- Switchable DC-through power
- RF shielded
- 2 inputs: VHF/UHF and SAT
- 5 V power feed for active antenna or pre-amplifier
- DC power pass for LNB supply
- Fully shielded
- Waterproof housing

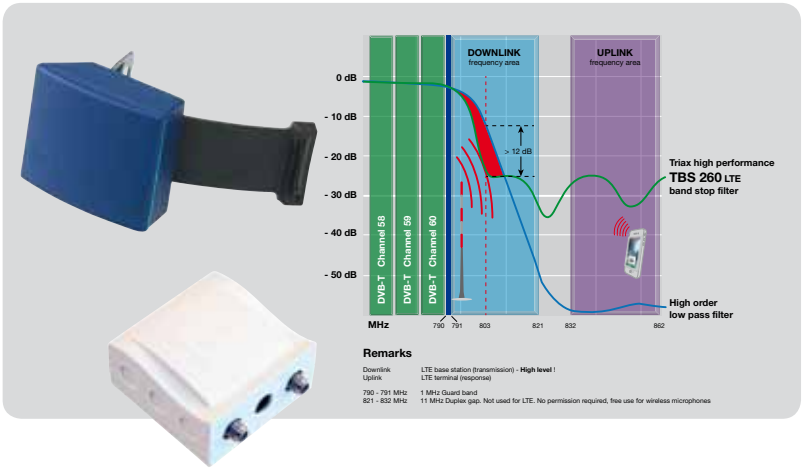
Technical data

Type **Art. No.**			**MFC 130** VHF/UHF **340130**	**MFC 140** AV/VHF/UHF **340140**	**MFC 150** UHF/UHF **340150**	**MFC 151** TV/SAT **340151**	**TV/SAT Diecast** **340110**
Input 1	Frequency Channel Through loss	MHz dB	470-862 21-69 1.0	470-862 21-69 1.0	470-862 21-69 4.5	950-2400 IF 2.0	950-2400 IF 2.0/3.0
Input 2	Frequency Channel Through loss	MHz dB	47-230 2-12 1.0	174-230 2-12 1.0	470-862 21-69 4.5	47-862 2-69 1.0	5-862 2-69 2.0
Input 3	Frequency Channel Through loss	MHz dB		2.5-108 AM/BII 3.5/1.0			
Stop band attenuation							
	VHF/BI	dB	> 16	> 20		> 20	> 20
	FM	dB		> 25		> 20	> 20
	BIII/DAB	dB				> 20	> 20
	UHF	dB	> 16	> 20	> 20/> 20	> 20	> 20
	SAT	dB				> 35	> 22/25
Number of in-/outputs			2/1	3/1	3/1	2/1	2/1
DC throughpower			5-24V (mechanical)	UHF 5-24V	UHF 5-24V	SAT and 5V Ter.	SAT
Connector			F-con	F-con	F-con	F-con	F-con
Weight		kg	0.205	0.265	0.265	0.200	
Dimensions	Height Depth Width	mm mm mm	115 60 117	115 60 117	115 60 117	117 50 120	
Remarks			Throughpower both outputs			5 V-DC throughpower from sat receiver	Diecast housing

Triax TBS band stop filter - LTE protected

High Performance
LTE Band Stop Filters

Triax high performance band stop LTE filters protect from interference on DVB-T signals and protect from overload from strong LTE signals (base station transmitters) on antenna amplifier, TV-tuner, set-top box, and TV.
Triax high performance filters protect from the entire LTE mobile broadband spectrum Ch. 61-69 (791-862MHz). Triax high performance LTE band stop filters are customised to provide the highest protection in the LTE mobile broadband “downlink” frequency spectrum 791-821 MHz, where LTE transmission levels will be highest.



Technical data

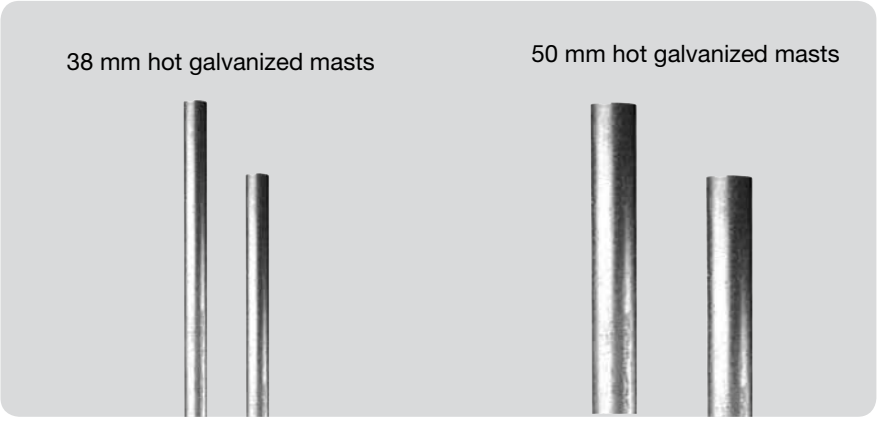
Type			TBSI 259 Band stop filter	TBSO 259 Band stop filter	TBSI 260 Band stop filter	TBSO 260 Band stop filter
Art. No.	- indoor		314070		314072	
	- outdoor			314071		314073
Input	Band		BI/BII/BIII (DAB)/UHF	BI/BII/BIII (DAB)/UHF	BI/BII/BIII (DAB)/UHF	BI/BII/BIII (DAB)/UHF
	Frequency	MHz	47-782	47-782	47-790	47-790
	Channel		2-59	2-59	2-60	2-60
Through loss						
	47-766/766-782 MHz	dB	≤ 1.0 / 3.0	≤ 1.0 / 3.0		
	47-774/774-790 MHz	dB			≤1.0 / 3.0	≤1.0 / 3.0
Rejection						
	792-795 MHz	dB	≥ 10.0	≥ 10.0		
	795-862 MHz	dB	≥ 20.0	≥ 20.0		
	800-803 MHz	dB			≥ 12.0	≥ 12.0
	803-862 MHz	dB			≥ 20.0	≥ 20.0
Return loss						
	47-782	MHz	> 12.0	> 12.0		
	47-790	MHz			> 12.0	> 12.0
Cross band with partly reception		MHz	782-792	782-792	790-800	790-800
Impedance		Ohm	75	75	75	75
Shielding efficiency		dB	≥ 75.0	≥ 75.0	≥ 75.0	≥ 75.0
Shielding measured according EN 50083-2 & 60728-2 typical		dB	≥ 79.0	≥ 79.0	≥ 79.0	≥ 79.0
Number of in-/outputs			1/1	1/1	1/1	1/1
DC throughpower			Yes	Yes	Yes	Yes
Connector			F-con	F-con	F-con	F-con
Weight		kg	0.150 / 0.175	0.150 / 0.175	0.150 / 0.175	0.150 / 0.175
Dimensions	Height	mm/mm	75/108	75/108	75/108	75/108
	Depth	mm/mm	36/50	36/50	36/50	36/50
	Width	mm/mm	75/120	75/120	75/120	75/120

LTE is a trademark of ETSI

Mounting accessories

Mast for mounting on brackets, roof beams

Triax range of masts and brackets for perfect installations.
Triax has a wide range of mounting brackets for aerials, all for your needs. Please read the section with mast calculation in accordance with the EN 50083-1 norm with a restriction of 1650 Nm as maximum on a normal building.



Technical data on hot galvanized 38 mm steel masts

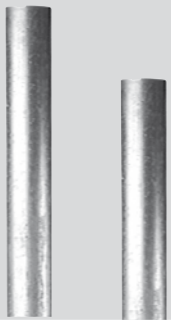
Type Art. No.		Mast 38 mm 140030	Mast 38 mm 140113	Mast 38 mm 140031	Mast 38 mm 140112	Mast 38 mm 140110	Mast 38 mm 140111
Diameter	mm	38	38	38	38	38	38
Length	m	1.5	3.0	3.0	4.0	6.0	2.0
Thickness	mm	1.5	1.5	1.5	1.5	1.5	1.5
Max. bending moment	Nm	540	540	540	540	540	540
Weight	kg						
Packing QTY	pcs.	10	1	10	1	1	10
Remarks						DIN 2394	DIN 2394

Technical data on hot galvanized 50 mm steel masts

Type Art. No.		Mast 50 mm 140028	Mast 50 mm 140029	Mast 50 mm 140008	Mast 50 mm 140120	Mast 50 mm 140126
Diameter	mm	50	50	50	50	50
Length	m	2.0	3.0	4.0	6.0	3.0
Thickness	mm	2.0	2.0	2.0	2.0	2.0
Max. bending moment	Nm		1540	1540	1540	1540
Weight	kg					
Packing QTY	pcs.	10	1	1	1	1
Remarks		- for composition	- for composition		DIN 2394	DIN 2394

Mast for mounting on brackets, roof beams

50 mm masts for extention brackets



Pipe holders for bottom pipe

Technical data on 50 mm bottom steel masts

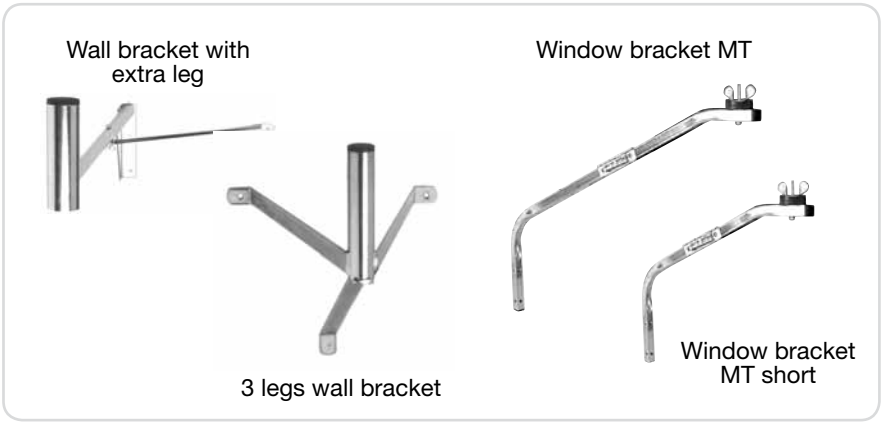
Type Art. No.		Mast 50 mm 140121	Mast 50 mm 140122	Pipe holders f. bottom pipe 140128
Diameter	mm	50	50	52
Length	m	3.0	6.0	
Thickness	mm	2.0	2.0	
Max. bending moment	Nm			
Weight	kg			
Packing QTY	pcs.	1	1	2
Remarks		- with holes for extention brackets		- for extention of bottom masts

Technical data on mast tops

Type Art. No.		Mast top 38 mm 140213	Mast top 50 mm 140215
Diameter	mm	38	50
Colour		Grey	Grey
Weight	kg		
Packing QTY	pcs.	1	1
Remarks			

Wall and window brackets

Triax's range of brackets for perfect installations.

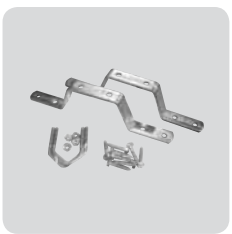


Technical data on wall and window brackets

Type		Wall bracket	Wall bracket	Window bracket Type MT	Window bracket Type MT short
Art. No.		140044	140045	130009	130016
Diameter	mm	Ø30	Ø30	18 x 18	18 x 18
Clearance from wall	mm	600	350	600	190
Height	mm	150	200		
Weight	kg				
Packing QTY	pcs.	1	1	1	1
Remarks		- with extra leg	- 3 legs	- complete with screws	- complete with screws

Technical data on complete sets of wall brackets

Type		Wall bracket 2 legs 7.5 cm	Wall bracket 2 legs 25-50 cm	Wall bracket 2+3 legs 25-50 cm	Wall bracket 2+3 legs 25-50 cm
Art. No.		140036	140037	140047	140048
Mast diameter	mm	30-50	max. Ø51	max. Ø51	max. Ø51
Clearance from wall	mm	75	250-500 adjustable	250-500 adjustable	500-750 adjustable
Material		Steel	5 x 35 steel	5 x 35 steel	5 x 35 steel
Surface tratment	mm	Galv.	Electrogalv.	Electrogalv.	Electrogalv.
Weight	kg				
Dimension box	mm		360 x 130 x 40	360 x 210 x 40	360 x 150 x 40
Packing QTY	pcs.	1	1	1	1




Technical data on hot galvanized wall brackets - 2 legs

Type Art. No.		Wall bracket 2 leg - 5 cm 131010	Wall bracket 2 leg - 15 cm 131020	Wall bracket 2 leg - 25 cm 131030	Wall bracket 2 leg - 35 cm 131040	Wall bracket 2 leg - 45 cm 131050
Mast diameter	mm	30-50	30-50	30-50	30-50	30-50
Clearance from wall	mm	50	150	250	350	450
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Weight	kg					
Packing QTY	pcs.	1	1	1	1	1





Technical data on hot galvanized wall brackets - 3 legs

Type Art. No.		Wall bracket 3 leg - 15 cm 131021	Wall bracket 3 leg - 25 cm 131031	Wall bracket 3 leg - 35 cm 131041	Wall bracket 3 leg - 45 cm 131051	Wall bracket 3 leg - 55 cm 131061
Mast diameter	mm	30-50	30-50	30-50	30-50	30-50
Clearance from wall	mm	150	250	350	450	550
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Weight	kg					
Packing QTY	pcs.	1	1	1	1	1





Technical data on hot galvanized wall brackets - 3 legs

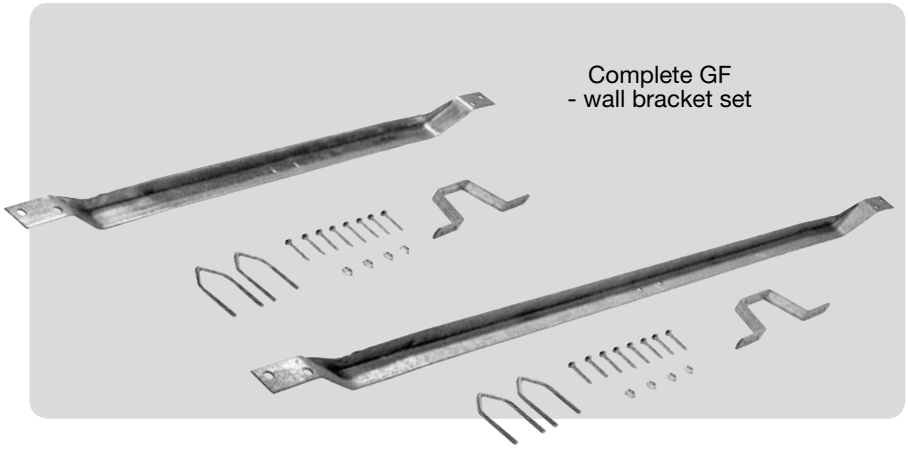
Type Art. No.		Wall bracket 3 leg - 65 cm 131071	Wall bracket 3 leg - 75 cm 131081
Mast diameter	mm	30-50	30-50
Clearance from wall	mm	650	750
Material		Galv. steel	Galv. steel
Weight	kg		
Packing QTY	pcs.	1	1





Wall bracket set

Triax's range of brackets for perfect installations.



Technical data on wall brackets

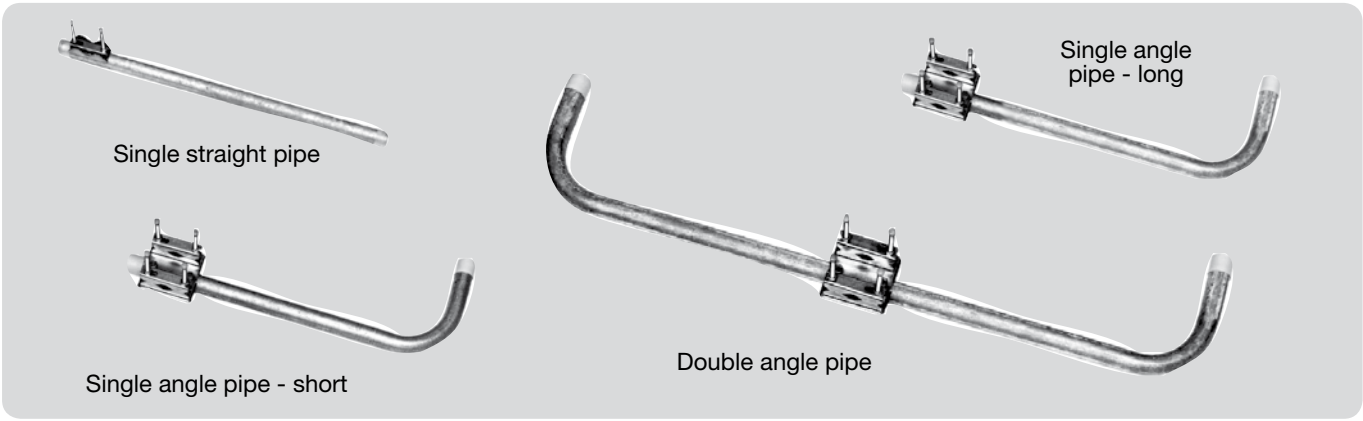
Type Art. No.		GF 85 bracket set 140033	GF 110-170 bracket set 140040	GF 125 bracket set 140038	GF 175 bracket set 140039
Diameter	mm	30-50	30-50	30-50	30-50
Clearance from wall	mm	75	75	75	75
Length	mm	850	1100-1750	1250	1750
Height	mm	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Weight	kg				
Packing QTY	pcs.	1	1	1	1

Technical data on mast brackets

Type Art. No.		Mast brac. straight 132003	Mast brac. right 132004	Mast brac. left 132005	Mast brac. Universal 132102	Mast brac. straight 132006	Mast brac. right 132007	Mast brac. left 132008
Diameter	mm	38	38	38	42	50	50	50
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Weight	kg							
Packing QTY	pcs.	1	1	1	1	1	1	1



Mounting pipes



Technical data on mounting pipes

Type Art. No.		Single straight pipe 140005	Single angle pipe - short 140010	Single angle pipe - long 140011	Double angle pipe 140012
Mast diameter	mm	30-50	30-50	30-50	30-50
Diameter on bracket	mm	32	32	32	32
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel
Length	mm	500	500	900	1000
Height	mm	210	210	210	210
Weight	kg				
Packing QTY	pcs.	1	1	1	1
Remarks					

Technical data on mounting pipes

Type Art. No.		Pipe 140116	Pipe SR 2530-2B 140118
Mast diameter	mm	30-50	30-50
Diameter on bracket	mm		
Material		Galv. steel	Galv. steel
Length	mm		
Height	mm		
Weight	kg		
Packing QTY	pcs.	1	1
Remarks		- for mounting aerials vertical	

Mounting clamps

Technical data on accessories

Type		Clamp	U-clamp	Double mast clamp
Art. No.		133107	140035	133245
Mast diameter	mm	30-50		30-50
Material		Steel		Steel
Surface tratment	mm	Galv.	Electro galv.	Galv.
Weight	kg			
Packing QTY	pcs.	1	2	1
Remarks			Galv. U-clamps	



Technical data on accessories

Type		Mast bracket straight	Kip bracket 34 cm	Phone mast bracket
Art. No.		140041	132020	130020
Mast diameter	mm	38	30-50	38 - 50
Material		Galv. steel	Galv. steel	Galv. steel
Weight	kg			
Packing QTY	pcs.	1	1	1
Remarks		- with 2 screws		



Technical data on accessories

Type		G-bolt 1/2”	G-bolt 1/2”
Art. No.		133090	133102
Diameter	mm	12	12
Length	mm	120	400
Material		Galv. steel	Galv. steel
Weight	kg		
Packing QTY	pcs.	1	1
Remarks		- incl. disc and nuts	- incl. disc and nuts


Technical data on accessories

Type		Botton clamp 30-50 mm	Mast bracket 15x15 - Ø60	Stay ring
Art. No.		**132015**	**133262**	**133010**
Mast diameter	mm	30-50	30-50	30-50
Material		Galv. steel	Steel	Galv. steel
Weight	kg			
Packing QTY	pcs.	1	1	1
Remarks			Tilt mast bracket aerials beam	3-point



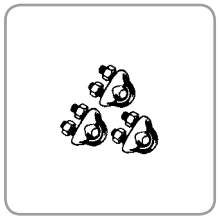
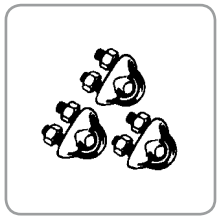
Technical data on galvanized steelwire

Type		Steel wire galvanized	Steel wire galvanized			Steel wire galvanized
Art. No.		**133007**	**133105**			**133002**
Diameter	mm	Ø 3	Ø 5			Ø 5
Material		Galv. steel	Galv. steel			Galv. steel
Weight	kg					
Packing QTY	pcs.	1	1			1
Remarks		Roll of 55 m or 220 m	Length of 3.6 m			- oilfree




Technical data on steelwire accessories

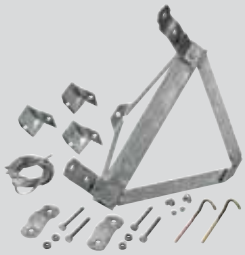
Type		Rigging screw	Wirelock	Wirelock	Thimble	Thimble
Art. No.		**133015**	**133025**	**133021**	**133009**	**133008**
Diameter	mm	1/4”	3	5	3	5
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Weight	kg					
Packing QTY	pcs.	1	1	1	1	1
Remarks			Fits 1/8” wire	Fits 3/16” wire	Fits 3 mm wire (1/8” wire)	Fits 5 mm wire (3/16” wire)

Chimney bracket sets

Single wireset

Single chimney bracket set



Double chimney bracket set

2-parts chimney bracket set

Single chimney bracket set w. mast

Technical data on accessories

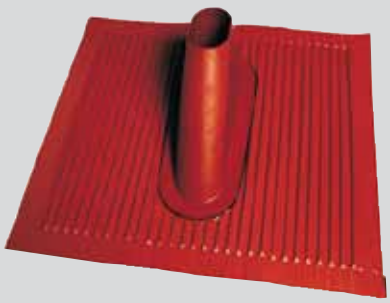
Type Art. No.		Single wireset - spare parts 130001	Single chimney bracket set 130002	Double chimney bracket set 130004	2-parts chimney bracket set 130000	2 m mast with chimney bracket 130006
Mast diameter	mm		38-50	38-50	38-50	38
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Weight	kg					
Packing QTY	pcs.	1	1	1	1	1
Sets consist of		1 x Wire Ø5 mm - lenght. 3.6 m 4 x Corner brackets 2 x J-bolts 2 x Wirelock	1 Chimney bracket 1 x Wire Ø5 mm - lenght. 3.6 m 3 x Corner brackets 2 x J-bolts 2 x Wirelock 2 x Clamps with bolts	1 Chimney bracket 2 x Wire Ø5 mm - lenght. 3.6 m 6 x Corner brackets 4 x J-bolts 4 x Wirelock 2 x Clamps with bolts	2 Chimney bracket 2 x Wire Ø5 mm - lenght. 3.6 m 6 x Corner brackets 4 x J-bolts 4 x Wirelock 2 x Clamps with bolts	1 x 2 m mast with chimney bracket 1 x Wire Ø5 mm - lenght. 3.6 m 3 x Corner brackets 2 x J-bolts 2 x Wirelock

Technical data on accessories

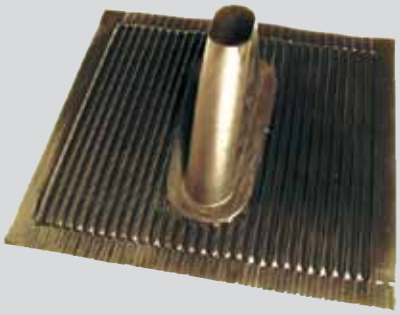
Type Art. No.		Chimney bracket 140032	Steel band 140034
Mast diameter	mm	38 - 50	
Material		Galv. steel	Galvanized
Weight	kg		
Packing QTY	pcs.	1	1
Remarks		Bracket with 2 x 5 m steel band	Roll with 10 m steel band

Roof covers for pitched roof

Triax's range of mounting accessories for perfect installations.



Roof cover - red



Roof cover - black

Technical data on roof covers

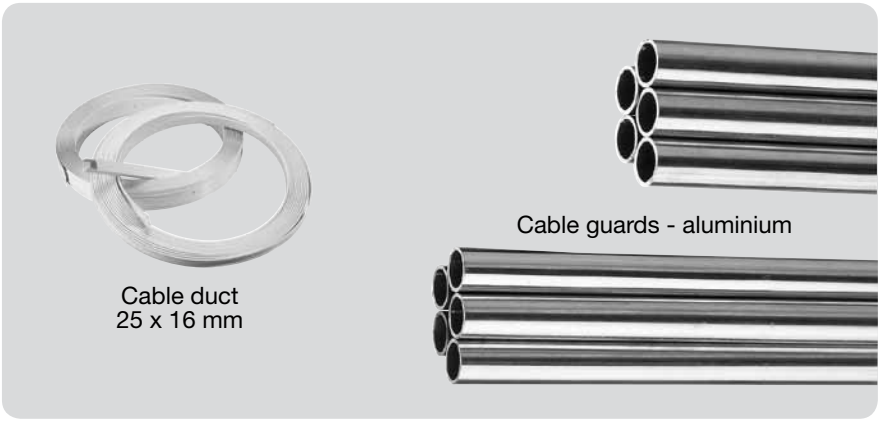
Type Art. No.		Roof cover Red - ral 8012 132202	Roof cover Black 132203
Size	mm	450 x 400	450 x 400
Mast diameter	mm	38-60	38-60
Material		Alu with polyester	Alu with polyester
Weight	kg		
Packing QTY	pcs.	1	1
Remarks		Weatherproof glue - leadfree roof cover	Weatherproof glue - leadfree roof cover

Technical data on clips and index

Type Art. No.		Clips large 133011	Index R76 big 132210	Index red 132212	Index black 132213
Diameter	mm	40 - 60	38 - 50	38 - 60	38 - 60
Material		Steel	Rubber	Rubber	Rubber
Weight	kg				
Packing QTY	pcs.	1	1	1	1
Remarks			- delivered with clips	- delivered with clips	- delivered with clips

Cable guards

Triax's range of mounting accessories for perfect installations.



Technical data on cable guards

Type			Cable duct White plast	Cable guards Alu	Cable guards Alu
Art. No.			153092	133053	133054
Size	Width	mm	25	Ø 10/Ø 12	Ø 10/Ø 12
	Lenght	mm	16	2375	5500
Material			White plastic	Aluminium	Aluminium
Weight		kg			
Packing QTY per box		pcs.	15	5	5
Remarks				Cable guard for 7 mm cable	Cable guard for 7 mm cable

Technical data on screws

Type			Screw	Screw	Screw	Expansion bolts	Expansion bolts
Art. No.			140340	140351	140360	140380	140370
Size	Diameter	mm	Ø 6	Ø 8	Ø 10	10	8
	Lenght	mm	50	80	50	80	100
Material/Surface treatment			Electro galv.	Electro galv.	Electro galv.	Electro galv.	Electro galv.
Weight		kg					
Packing QTY per box		pcs.	200	200	100	50	50
Remarks			-also available by the piece	-also available by the piece	-also available by the piece	-also available by the piece	-also available by the piece

Clips, screws and expansion bolts

Technical data on cable clips (natural)

Type Art. No.			Cable clips Natural 153013	Cable clips Natural 153001	Cable clips Natural 153003	Cable clips Natural 153004	Cable clips Natural 153008	Cable clips Natural 153010
Size	Diameter	mm	2 x 4	3 x 5	5/20	6/25	7/25	7/35
	Lenght	mm	20	20	20	25	25	35
Material			Plastic	Plastic	Plastic	Plastic	Plastic	Plastic
Weight		kg						
Packing QTY per box		pcs.	100	100	100	100	100	100
Remarks			Cartons of 10 boxes	Cartons of 10 boxes	Cartons of 10 boxes	Cartons of 10 boxes	Cartons of 10 boxes	Cartons of 10 boxes

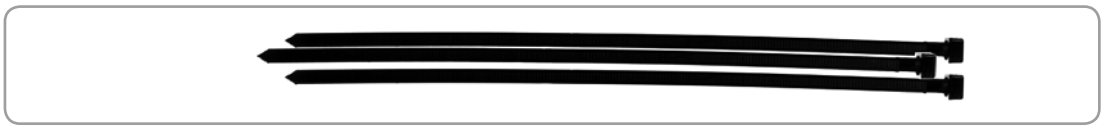
Technical data on cable clips (black)

Type Art. No.			Cable clips Black 153080	Cable clips Black 153081	Cable clips Black 153082	Cable clips Black 153084
Size	Diameter	mm	FC 7-9	FC 9-11	FC 11-13	FC 15-17
	Lenght	mm	20	25	25	35
Material			Plastic	Plastic	Plastic	Plastic
Weight		kg				
Packing QTY per box		pcs.	100	100	100	100
Remarks			Cartons of 10 boxes	Cartons of 10 boxes	Cartons of 10 boxes	Cartons of 10 boxes

Cable strips, tape, clips and stitcher

Technical data on cable strips

Type Art. No.			SST 21 Black 153065	PLT 2S Black 712290	PLT 2S Black 153067	PLT 4S Black 153066	PLT 3H Black 153068
Size	Diameter	mm	Ø 80	Ø 48	Ø 48	Ø 102	Ø 76
	Lenght	mm	290	188	188	368	290
	Height	mm	3.6	4.8	4.8	4.8	7.6
Material				SMO	SMO	SMO	SMO
Weight		kg					
Packing QTY per box		pcs.	100	1	100	100	100
Remarks							



Technical data on tape

Type Art. No.			Tape Grey 153060	Black self-vulcanized 153061	Cable grommet - Grey 760056	Cable grommet - Black 153057
Size	Width	mm	10	18		
	Lenght	mm				
Material			Plastic	Rubber	Rubber	Rubber
Weight		kg				
Packing QTY per box		pcs.	1	1	1	1
Remarks			Cartons of 10 rolls	Single pack	- for ALPS LNB units	Universal for F-con

Technical data on stitcher and clips

Type Art. No.			Arrow T25 Stitcher 153070	Clips 9/16" Galv. 153071	Clips 9/16" White 153069
Size	Width	mm		- for T25 stitcher	- for T25 stitcher
	Lenght	mm			
Material				Steel	Steel
Packing QTY per box		pcs.	1	1000	1000
Packing QTY per carton		pcs.	Single pack	10 boxes	10 boxes
Remarks				For indoor use only	For indoor use only

Satellite reception

Triax TDS steel dishes

TDS dishes

TDS dishes minimize problems of any kind. Long-term corrosion is prevented by an extremely thorough anti-corrosive process and polyester coating. A solid construction of all parts, including the non-slip mast brackets, ensures that the dish remains in its correct position, when other dishes are torn down or twisted by a heavy storm.

TD dishes are manufactured according to Triax's quality standards - with precision tools and robot technology ensuring absolute uniform and optimum geometry for perfect signal reception.

Technical data on TDS steel dishes

Type		TDS 54	TDS 64	TDS 78	TDS 88	TDS 110
Size		**50 x 56 cm**	**60 x 65 cm**	**70 x 78 cm**	**85 x 95 cm**	**100 x 105 cm**
Art. No. (Light grey)	Ral 7035	122515	122618	123718	122818	122908
(Anthracite)	Ral 7016	122512	122612	123712	122812	122912
(Red)	Ral 8012					122910
Frequency range	GHz	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75
Gain @ 11.7 GHz	dBi	34.2	35.8	37.1	38.8	40.2
G/T LNB 0.7 dB	dB/K	14.2	16.0	17.3	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27	> 27
Offset angle	degrees	26	26	26	26	26
Elevation range	degrees	10 - 50 45 - 80	10 - 50 45 - 80	10 - 60	10 - 60	10 - 60
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset	Offset
Beam width	degrees	3.7	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	323	445	619	902	1222
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Plastic LNB holder	mm	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25
Mast dimension	mm	Ø32 - 60	Ø32 - 60	Ø40 - 95	Ø40 - 95	Ø40 - 95
Wall bracket		- optional extra	- optional extra	- optional extra	- optional extra	- optional extra
Remarks		- some types available without Triax logo, please contact our sales department				

We can supply a wide range of different LNB brackets for the TD-series dishes

Duo-block bracket

Flexi-block bracket

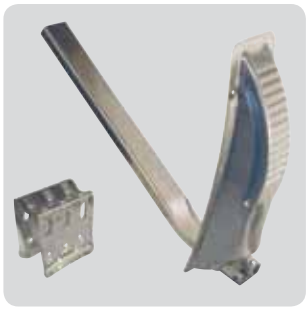
Multi-block bracket

Triax TDA aluminium dishes

A dish for any job

TD dishes are available in sizes, materials and colours for any job ranging from single to multiple user applications and any type of environment:

- 5 sizes ranging from 50 x 55 cm (34.2 dBi gain) to 100 x 105 cm (40.2 dBi gain)
- Delivered in aluminium or galvanized steel
- Available in a number of standard colours and any other colour and own label branding can be supplied against a minimum quantity
- Available in deluxe version with anti-corrosive coating also on the feedarm and the elevation and mast bracket
- Delivered in individual packaging, but also available in bulk packs minimizing costs of transportation and handling



On TDS and TDA dishes the mast bracket and back structures are unpainted.

Technical data on TDA-aluminium dishes

Type		TDA 78	TDA 88	TDA 110
Size		**70 x 78 cm**	**85 x 95 cm**	**100 x 105 cm**
Art. No. (Light grey)	Ral 7035	123718	123818	123908
(Anthracite)	Ral 7016		123812	
Frequency range	GHz	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75
Gain @ 11.7 GHz	dBi	37.1	38.8	40.2
G/T LNB 0.7 dB	dB/K	17.3	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27
Offset angle	degrees	26	26	26
Elevation range	degrees	10 - 60	10 - 60	10 - 60
Reflector type	F/D 0.6	Offset	Offset	Offset
Beam width	degrees	2.6	2.0	1.8
Windload @ 42 m/s	N	619	902	1222
Material		Aluminium	Aluminium	Aluminium
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat
Plastic LNB holder	mm	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25
Mast dimension	mm	Ø40 - 60	Ø40 - 60	Ø40 - 60
Wall bracket		- optional extra	- optional extra	- optional extra
Remarks		- some types available without Triax logo		

A wide range of different mounting brackets for the TD-series dishes is also available

J-bracket

S-bracket

Wall-bracket

Triax TDS Euroline steel dishes

TDS and TDA Euroline dishes

All Euroline dishes will be delivered with painted mast bracket and back structure with pre-mounted feedarm. They also have a deluxe version of wingnuts

Mounted and adjusted in two minutes

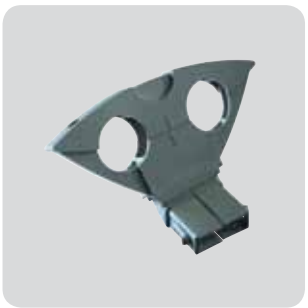
Saving trouble and money is not only a long-term consumer benefit. TD dishes allow a substantial reduction in time used for mounting and adjusting:

1. The elevation bracket is pre-mounted and is easily fixed to the mast with non-slip mast brackets
2. A setting scale on the elevation brackets facilitates precise adjustment to the required satellite
3. The pre-mounted feedarm just needs unfolding, and the LNB holder with the LNB is simply clicked on.

Technical data on TDS Euroline steel dishes

Type		TDS 64	TDS 78	TDS 88	TDS 110
Size		**60 x 65 cm**	**70 x 78 cm**	**85 x 95 cm**	**100 x 105 cm**
Art. No. (Light grey)	Ral 7035	121660	121760	121860	121960
(Anthracite)	Ral 7016	121661	121761	121861	121961
(Red)	Ral 8012	121662	121762	121862	121962
Frequency range	GHz	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75
Gain @ 11.7 GHz	dBi	35.8	37.1	38.8	40.2
G/T LNB 0.7 dB	dB/K	16.0	17.3	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27
Offset angle	degrees	26	26	26	26
Elevation range	degrees	10 - 50 45 - 80	10 - 60	10 - 60	10 - 60
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset
Beam width	degrees	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	445	619	902	1222
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Plastic LNB holder	mm	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25
Mast dimension	mm	Ø32 - 60	Ø40 - 60	Ø40 - 60	Ø40 - 60
Wall bracket		- optional extra	- optional extra	- optional extra	- optional extra
Remarks		- some types available without Triax logo, please contact our sales department			

We can supply a wide range of different LNB brackets for the TD-series dishes



Duo-block bracket

Flexi-block bracket

Multi-block bracket

Triax TDA Euroline aluminium dishes

TD dishes

Almost any dish can provide the signals needed to get a clear TV-picture. But will consumer satisfaction last, if signals deteriorate due to corrosion of the reflector or if the dish is damaged by a storm?
TD dishes minimize problems of any kind. Long-term corrosion is prevented by an extremely thorough anti-corrosive process and polyester coating. A solid construction of all parts, including the non-slip mast brackets, ensures that the dish remains in its correct position, when other dishes are torn down or twisted by a heavy storm.
TD dishes are of course manufactured according to Triax's quality standards - with precision tools and robots ensuring absolute uniform and optimum geometry for perfect signal reception.

Technical data on TDA Euroline aluminium dishes

Type		TDA 64	TDA 78	TDA 88	TDA 110
Size		**60 x 65 cm**	**70 x 78 cm**	**85 x 95 cm**	**100 x 105 cm**
Art. No. (Light grey)	Ral 7035	123660	123760	123860	123960
(Anthracite)	Ral 7016	123661	123761	123861	
(Red)	Ral 8012	123662	123762	123862	
Frequency range	GHz	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75
Gain @ 11.7 GHz	dBi	35.8	37.1	38.8	40.2
G/T LNB 0.7 dB	dB/K	16.0	17.3	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27
Offset angle	degrees	26	26	26	26
Elevation range	degrees	10 - 50 45 - 80	10 - 60	10 - 60	10 - 60
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset
Beam width	degrees	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	445	619	902	1222
Material		Aluminium	Aluminium	Aluminium	Aluminium
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Plastic LNB holder	mm	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25
Mast dimension	mm	Ø32 - 60	Ø40 - 60	Ø40 - 60	Ø40 - 60
Wall bracket		- optional extra	- optional extra	- optional extra	- optional extra
Remarks		- some types available without Triax logo, please contact our sales department			

A wide range of different mounting brackets for the TD-series dishes is also available

J-bracket

S-bracket

Wall-bracket

Triax TDS series of dishes with wall bracket

TDS dishes

- mounted and adjusted in two minutes

Saving trouble and money is not only a long-term consumer benefit. TD dishes allow a substantial reduction in time used for mounting and adjusting:

1. The elevation bracket is pre-mounted and is easily fixed to the mast with non-slip mast brackets
2. A setting scale on the elevation brackets facilitates precise adjustment to the required satellite
3. The pre-mounted feedarm just needs unfolding, and the LNB holder with the LNB is simply clicked on.

Technical data on TDS-steel dishes

Type		TDS 54	TDS 64	TDS 78	TDS 88	TDS 110
Size		**50 x 56 cm**	**60 x 65 cm**	**70 x 78 cm**	**85 x 95 cm**	**100 x 105 cm**
Art. No. (Light grey) (Red)	Ral 7035 Ral 8012	122501 122504	122601	122701	122801	122901
Frequency range	GHz	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75
Gain @ 11.7 GHz	dBi	34.2	35.8	37.1	38.8	40.2
G/T LNB 0.7 dB	dB/K	14.2	16.0	17.3	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27	> 27
Offset angle	degrees	26	26	26	26	26
Elevation range	degrees	10 - 50 45 - 80	10 - 50 45 - 80	10 - 60	10 - 60	10 - 60
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset	Offset
Beam width	degrees	3.7	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	323	445	619	902	1222
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel	Galv. steel
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Plastic LNB holder	mm	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25	Ø40 + Ø25
Mast dimension	mm	Ø32 - 60	Ø32 - 60	Ø40 - 60	Ø40 - 60	Ø40 - 60
Wall bracket		- included	- included	- included	- included	- optional extra

A wide range of different mounting brackets for the TD-series dishes is also available

J-bracket

S-bracket

Triax TD bulk packed dishes

Triax bulk solution
Bulk solutions reduce costs and contribute considerably to the protection of the environment due to the heavy reduction of packaging costs.

Mini-bulk with 3-5 dishes
Three or five complete satellite dishes packed in one carton box.

Bulk with 50, 100 or 200 dishes
Complete satellite dishes packed on a pallet with all the accessories packed in separate carton boxes or in scantainers with back bracket and arm, mast brackets, LNB-brackets and screw-sets in small bags.

TD bulk with single packed accessories

TD dishes - incl. Triax logo		
Art. No.	**TDS steel dishes**	
122567	TDS 54, Bulk w/single, Ral 7035	200 pcs/pll
122568	TDS 54, Bulk w/single, Ral 7016	200 pcs/pll
122569	TDS 54, Bulk w/single, Ral 8012	200 pcs/pll
122667	TDS 64, Bulk w/single, Ral 7035	100 pcs/pll
122668	TDS 64, Bulk w/single, Ral 7016	100 pcs/pll
122669	TDS 64, Bulk w/single, Ral 8012	100 pcs/pll
122672	TDS 64, Bulk w/single, Ral 7030	100 pcs/pll
122749	TDS 78, Bulk w/single, Ral 7035	100 pcs/pll
122754	TDS 78, Bulk w/single, Ral 7016	100 pcs/pll
122764	TDS 78, Bulk w/single, Ral 8012	100 pcs/pll
122737	TDS 78, Bulk w/single, Ral 7030	100 pcs/pll
122867	TDS 88, Bulk w/single, Ral 7035	100 pcs/pll
122868	TDS 88, Bulk w/single, Ral 7016	100 pcs/pll
122869	TDS 88, Bulk w/single, Ral 8012	100 pcs/pll
122823	TDS 88, Bulk w/single, Ral 7030	100 pcs/pll
122904	TDS 110, Bulk w/single, Ral 7035	50 pcs/pll
122924	TDS 110, Bulk w/single, Ral 7030	50 pcs/pll
122926	TDS 110, Bulk w/single, Ral 7016	50 pcs/pll
Art. No.	**TDA aluminium dishes**	
123666	TDA 64, Bulk w/single, Ral 7035	100 pcs/pll
123749	TDA 78, Bulk w/single, Ral 7035	100 pcs/pll
123754	TDA 78, Bulk w/single, Ral 7016	100 pcs/pll
123867	TDA 88, Bulk w/single, Ral 7035	100 pcs/pll
123868	TDA 88, Bulk w/single, Ral 7016	100 pcs/pll

TD bulk with single packed accessories

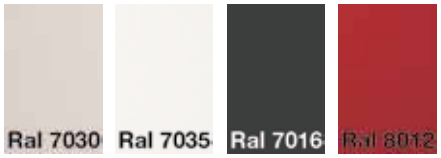
TD dishes - incl. Triax logo		
Art. No.	**TDS steel dishes**	
121695	TD 64 SP bulk, Ral 7035	25 pcs/pll
121795	TD 78 SP bulk, Ral 7035	25 pcs/pll
121696	TD 64 SP bulk, Ral 7016	25 pcs/pll
121796	TD 64 SP bulk, Ral 7016	25 pcs/pll

TMB mini-bulk dishes (excl. logo)

TMB dishes		
Art. No.	**TMB steel dishes**	
122627	TMB 64, Ral 7035	5 pcs. Carton box
122674	TMB 64, Ral 7016	5 pcs. Carton box
122236	TMB 78, Ral 7016	5 pcs. Carton box
122733	TMB 78, Ral 7035	5 pcs. Carton box
122831	TMB 88, Ral 7035	3 pcs. Carton box
122832	TMB 88, Ral 7016	3 pcs. Carton box
Art. No.	**TMB aluminium dishes**	
123731	TMB 78, Ral 7035	5 pcs. Carton box
123732	TMB 78, Ral 7016	5 pcs. Carton box

TD bulk dishes

TD dishes - incl. Triax logo		
Art. No.	**TDS steel dishes**	
122526	TDS 54 Bulk, Ral 7035	200 pcs/pll
122617	TDS 64 Bulk, Ral 7035	100 pcs/pll
122625	TDS 64 Bulk, Ral 7016	100 pcs/pll
122717	TDS 78 Bulk, Ral 7035	100 pcs/pll
122724	TDS 78 Bulk, Ral 7030	100 pcs/pll
122725	TDS 78 Bulk, Ral 7016	100 pcs/pll
122824	TDS 88 Bulk, Ral 7030	100 pcs/pll
122825	TDS 88 Bulk, Ral 7016	100 pcs/pll
122826	TDS 88 Bulk, Ral 7035	100 pcs/pll
122847	TDS 88 Bulk, Ral 8012	100 pcs/pll
Art. No.	**TDA aluminium dishes**	
123647	TDA 64 Bulk, Ral 8012	100 pcs/pll
123747	TDA 78 Bulk, Ral 8012	100 pcs/pll
123748	TDA 78 Bulk, Ral 7035	100 pcs/pll

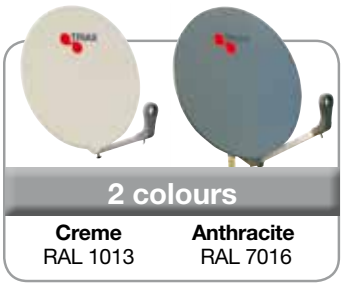


Triax DAP fibre glass dishes

Fibre glass dishes are the preferred choice in some markets
The most durable long-term solutions in difficult environments, for example in coastal areas or mountain regions. Triax fulfils the demand with a series of dishes combining the resistance of glass fibre with the optimum geometry that characterises all Triax dishes whilst ensuring perfect reception quality.

- Available in 60, 70, 80 and 90 cm sizes with gains from 35.5 dB to 39.0 dB
- Light grey and anthracite colour

The mast bracket and the LNB holder are both easy to mount and absolutely stable with strength and stability tested in ‘ wind-tunnels and through mechanical tests.



Technical data for DAP dishes

Type Size		DAP 610 DAP 611 56 x 61 cm	DAP 710 DAP 711 62.5 x 72 cm	DAP 910 DAP 911 86 x 94 cm
Art. No. DAP X10 = Creme DAP X11 = Anthracite	Ral 1013 Ral 7016	362610 362611	362710 362711	362910 362911
Frequency range	GHz	10.7 - 12.75	10.7 - 12.75	10.7 - 12.75
Gain @ 12.625 GHz	dBi	36.0	37.5	39.7
Noise temperature	°K	< 35	< 35	< 35
Effeciency	%	70	70	70
X-polarisation	dB	> 27	> 27	> 27
Offset angle	degrees	26	26	26
Elevation range	degrees	10 - 55	10 - 55	10 - 55
Reflector type	F/D 0.6	Offset	Offset	Offset
Windload @ 42 m/s	N	378	600	846
Material		Fibre glass	Fibre glass	Fibre glass
Finish		Alu. arm	Alu. arm	Alu. arm
Plastic LNB holder	mm	Ø40	Ø40	Ø40
Mast dimension	mm	Ø40 - 60	Ø40 - 60	Ø40 - 60
Wall bracket		- optional extra	- optional extra	- optional extra
Inox U-bolt		1 U-Bolt	1 U-Bolt	2 U-Bolt

MFD 850 DAP
Flexi-block

LNB brackets - multi satellite reception

Triax' range of LNB brackets and accessories for perfect installations.
Well-designed LNB bracket in UV-resistent plast and aluminium ensures stable and easy mounting, e.g.:

Duo-blocks
3° and 6° duo-blocks for Ø40 mm LNBs are an elegant solution for reception from two satellite positions: e.g. Eutelsat (Hotbird) and ASTRA.
Available in black and grey for the TDE, TD and Basic series.

Flexi-blocks
A 3° to 10° Flexi-block for two Ø40 mm LNBs is also available for all 3 series.

Multi-blocks
A 3° to 20° Multi-block for four Ø40 mm LNBs with min. 4° between the satellite positions is available for the TD- and Basic-series.

Duo- and flexi-block brackets for the TD-series

Type Art. No.		TD 3⁰ Duo-block 300716	TD 6⁰ Duo-block 300715	TD 6⁰ Duo-block 300717	TD 3⁰ - 10⁰ Flexi-block 300719
Colour		Black	Black	Grey	Black
LNB angle	degrees	3	6	6	3 - 10
LNB size	mm	Ø40	Ø40	Ø40	Ø40
Packing	type				
Remarks		Ø25 adaptor - optional extra	Ø25 adaptor - optional extra	Ø25 adaptor - optional extra	Ø25 adaptor - optional extra




Multi-block brackets for the TD-series

Type Art. No.		TD - 3 LNB Multi-block 300728	TD - 4 LNB Multi-block 300727	TD - 2 LNB Multi-block set 300730	TD - 4 LNB Multi-block set 300725
Colour		Black/alu	Black/alu	Black/alu	Black/alu
LNB angle	degrees	3 - 20	3 - 20	3 - 20	3 - 20
LNB size	mm	Ø40	Ø40	Ø40	Ø40
Packing	type				
Remarks		Ø25 adaptor - optional extra	Ø25 adaptor - optional extra	- incl. 2 LNB and DiSEqC switch	- incl. 4 LNB and DiSEqC switch



LNB brackets - multi satellite reception

TRIAX's brackets for all your needs

TRIAX has all kind of mounting brackets for dishes. You will also find a complete range of different accessories - everything for making a perfect mounting.

Para Protection will cover your LNB units

Mist, rain, snow, hoarfrost, road dust and pollen that lays on the LNBs, can make a reduction in quality of the TV- pictures. A bowed perspexsheet, held to the LNB-arm, gives the LNBs very effective protection against bad weather and climate. The result: The picture quality becomes considerably increased.

Multi- and flexi block for the Basic and DAP-series

Type Art. No.		Basic - 4 LNB Multi-block 300729	Basic 3⁰ - 10⁰ Flexi-block 300723	MFD 850 DAP Flexi-block 126309
Colour		Grey	Black	White/black
LNB angle	degrees	3 - 20	3 - 10	3 - 10
LNB size	mm	Ø40	Ø40	Ø40
Packing	type			
Remarks		Ø25 adaptor - optional extra		Ø25 adaptor - optional extra

Para-Protection to cover LNB-units on dishes

Type Size		Para Protection TD and Basic 300708	Para Protection Unique dish 300707	TD plastic Spareparts 129420	TD plastic Spareparts 129421	TD plastic Spareparts 129422
Material and finish		Perspex-sheet and painted metal holder	Perspex-sheet and painted metal holder	Plastic (Ral 7030)	Plastic (black)	Plastic (Ral 7035)
Arm dimension W x H max.	mm	76 x 45				
Packing	type	Single pcs.	Single pcs.	Single pcs.	Single pcs.	Single pcs.
Remarks		Fits on all Triax TD and Basic dishes	Fits on all Triax Unique dishes	All plastic spare parts - fit TD 54, 64, 78 and 88 dish		

Triax LNB units - the best choice

Complete range of LNB units,
adopting the latest cutting-edge RF technology

- Full Ku-band coverage for both analogue and digital reception
- Excellent noise figure and low phase noise
- High gain and excellent cross-pole isolation
- High output and low power consumption
- Gain flatness
- Supplied water stop
- Single packed in gift box

Technical data

Type			TSI 006 Single universal	TSI 007 Single universal	THSI 01 Single universal
Art. No. (Light grey) RAL 7035 **(Anthracite) RAL 7016**			**304432**	**304434**	**304480**
RF input					
Input frequency range	Low band	GHz	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7
Input frequency range	High band	GHz	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75
IF output					
Output frequency range	Low band	Mhz	950 ~ 1950	950 ~ 1950	950 ~ 1950
Output frequency range	High band	Mhz	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150
Local oscillator					
L.O. frequency range	Low band	GHz	9.75	9.75	9.75
L.O. frequency range	High band	GHz	10.6	10.6	10.6
Noise figure	(typ.)	dB	**0.3**	**0.3**	**0.3**
Conversion gain		dB	50 ~ 62	50 ~ 62	55 ~ 68
Number of outputs		pcs.	1	1	1
Cross polarization isolation		dB	25 Typ. (20 min.)	25 Typ. (20 min.)	25 Typ. (20 min.)
Supply voltage	Low/High	VDC	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0
Control signals/switching		kHz	0 and 22 / ± 4	0 and 22 / ± 4	0 and 22 / ± 4
DC current consumption (max)		mA	100	100	100
Output connector			F female	F female	F female
Output protection	(Water stop)		Supplied	Supplied	Supplied
Operating temperature		°C	-40 ~ +60	-40 ~ +60	-40 ~ +60
Feed diameter		mm	40	40	40
Weight		kg	0.120	0.120	0.120
Quantity per carton		pcs	50	50	50
Remarks					Hi Gain for Middle East

+ 5 dB gain

Universal LNB units

Complete range of LNB units,
adopting the latest cutting-edge RF technology

- Full Ku-band coverage for analogue and digital reception
- Excellent noise figure and low phase noise
- High gain and excellent cross-pole isolation
- High output and low power consumption
- Gain flatness
- For 2 or 4 set-top boxes
- Supplied sliding cover
- Available in 2 colours
- Single packed in gift box

Technical data

Type			**TTW 006** Twin universal	**TTW 007** Twin universal	**TQD 006** Quad universal	**TQD 007** Quad universal
Art. No. (Light grey) RAL 7035			**304436**		**304442**	
(Anthracite) RAL 7016				**304438**		**304444**
RF input						
Input frequency range	Low band	GHz	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7
Input frequency range	High band	GHz	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75
IF output						
Output frequency range	Low band	Mhz	950 ~ 1950	950 ~ 1950	950 ~ 1950	950 ~ 1950
Output frequency range	High band	Mhz	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150
Local oscillator						
L.O. frequency range	Low band	GHz	9.75	9.75	9.75	9.75
L.O. frequency range	High band	GHz	10.6	10.6	10.6	10.6
Noise figure	(typ.)	dB	**0.3**	**0.3**	**0.3**	**0.3**
Conversion gain		dB	50 ~ 64	50 ~ 64	50 ~ 64	50 ~ 64
Number of outputs		pcs.	2	2	4	4
Cross polarization isolation		dB				
Supply voltage	Low/High	VDC	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0
Control signals/switching		kHz	0 and 22 / ± 4	0 and 22 / ± 4	0 and 22 / ± 4	0 and 22 / ± 4
Power injection		kHz				
DC current consumption (max)		mA	170	170	180	180
Output connector			F female	F female	F female	F female
Output protection	(Water stop)		Sliding cover	Sliding cover	Sliding cover	Sliding cover
Operating temperature		°C	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Feed diameter		mm	40	40	40	40
Weight		kg	0.210	0.210	0.220	0.220
Quantity per carton		pcs	50	50	50	50
Remarks						

Triax LNB units - the best choice

**Complete range of LNB units,
adopting the latest cutting-edge RF technology**

- Full Ku-band coverage for analogue and digital reception
- Excellent noise figure and low phase noise
- High gain and excellent cross-pole isolation
- High output and low power consumption
- Gain flatness
- TQT for SMATV installation, 4 outputs: VH, VL, HH, HL
- OCTO for 8 set-top boxes
- Supplied sliding cover
- Available in 2 colours

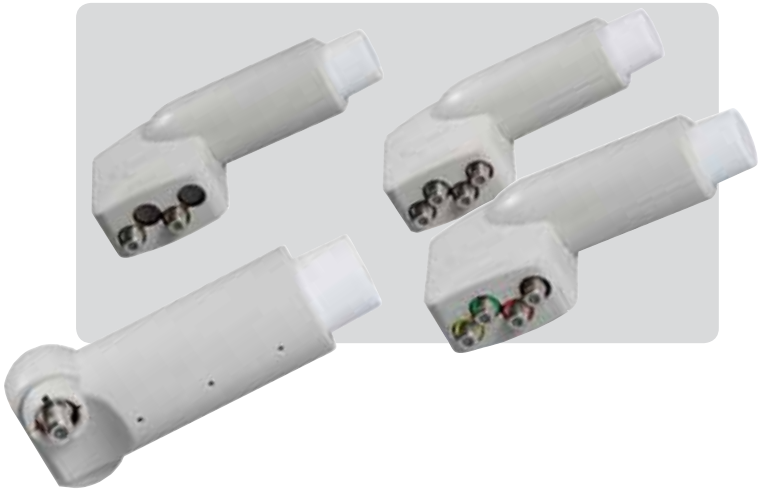
Technical data

Type			**TQT 006** Quattro universal	**TQT 007** Quattro universal	**TOT 002** OCTO universal	**TOT 003** OCTO universal
Art. No. (Light grey) **RAL 7035**			**304446**		**304418**	
(Anthracite) RAL 7016				**304449**		**304448**
RF input						
Input frequency range	Low band	GHz	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7
Input frequency range	High band	GHz	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75
IF output						
Output frequency range	Low band	Mhz	950 ~ 1950	950 ~ 1950	950 ~ 1950	950 ~ 1950
Output frequency range	High band	Mhz	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150
Local oscillator						
L.O. frequency range	Low band	GHz	9.75	9.75	9.75	9.75
L.O. frequency range	High band	GHz	10.6	10.6	10.6	10.6
Noise figure	(typ.)	dB	**0.3**	**0.3**	**0.3**	**0.3**
Conversion gain		dB	50 ~ 64	50 ~ 64	50 ~ 62	50 ~ 62
Number of outputs		pcs.	4: VH,VL,HH,HL	4: VH,VL,HH,HL	8	8
Cross polarization isolation		dB				
Supply voltage	Low/High	VDC	10.5~21.0	10.5~21.0	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0
Control signals/switching		kHz	0 and 22 / ± 4	0 and 22 / ± 4	0 and 22 / ± 4	0 and 22 / ± 4
Power injection		kHz	On any output	On any output	On any output	On any output
DC current consumption (max)		mA	190	190	180	180
Output connector			F female	F female	F female	F female
Output protection	(Water stop)		Sliding cover	Sliding cover	Sliding cover	Sliding cover
Operating temperature		°C	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Feed diameter		mm	40	40	40	40
Weight		kg	0.210	0.210	0.330	0.330
Quantity per carton		pcs	50	50	30	30
Remarks						

Slim Universal LNB units

Range of LNB units in slim line housing for reception of 4 satellite positions with only 3 degrees in between

- Full Ku-band coverage for analogue and digital reception
- Excellent noise figure and low phase noise
- High gain and excellent cross-pole isolation
- High output and low power consumption
- Single packed in gift box



Technical data

Type			**TISI 003** Single universal	**TITW 004** Twin universal	**TIQT 004** Quatro universal	**TIQD 004** Quad universal
Art. No. (Light grey) RAL 7035 (Anthracite) RAL 7016			**304474**	**304475**	**304476**	**304477**
RF input						
Input frequency range	Low band	GHz	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7
Input frequency range	High band	GHz	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75
IF output						
Output frequency range	Low band	Mhz	950 ~ 1950	950 ~ 1950	950 ~ 1950	950 ~ 1950
Output frequency range	High band	Mhz	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150
Local oscillator						
L.O. frequency range	Low band	GHz	9.75	9.75	9.75	9.75
L.O. frequency range	High band	GHz	10.6	10.6	10.6	10.6
Noise figure	(typ.)	dB	**0.3**	**0.3**	**0.3**	**0.3**
Conversion gain		dB	56	56	50 ~ 64	50 ~ 64
Number of outputs		pcs.	1	2	4	4
Cross polarization isolation		dB				
Supply voltage	Low/High	VDC	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0	10.5~21.0	10.5~14.5/ 15.5~21.0
Control signals/switching		kHz	0 and 22 / ± 4	0 and 22 / ± 4		0 and 22 / ± 4
Power injection		kHz				
DC current consumption (max)		mA	190	190	190	190
Output connector			F female	F female	F female	F female
Output protection	(Water stop)		Supplied	Sliding cover	Sliding cover	Sliding cover
Operating temperature		°C	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Feed diameter		mm	40	40	40	40
Weight		kg	0.210	0.210	0.220	0.220
Quantity per carton		pcs	50	50	50	50
Remarks						

Universal Monoblock 6° LNB units

Complete range of Monoblock 6° LNB units, using the latest cutting-edge RF technology

- For reception of 2 satellites with 6° between
  - TMB 002: Astra 19.2° received without DiSEqC info
  - TMB 003: Hotbird 13.0° received without DiSEqC info
- Embedded DiSEqC switch
- Excellent noise figure and low phase noise
- High gain and excellent cross-pole isolation
- High output and low power consumption
- Supplied water stop
- Single packed in gift box

Technical data

Type			**TMB 002** 6° Single Mono	**TMB 003** 6° Single Mono	**TMB 004** 6° Twin Mono
Art. No.			**300439**	**304430**	**304432**
Colour (light grey)			Ral 7035	Ral 7035	Ral 7035
RF input					
Input frequency range	Low band	GHz	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7
Input frequency range	High band	GHz	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75
IF output					
Output frequency range	Low band	Mhz	950 ~ 1950	950 ~ 1950	950 ~ 1950
Output frequency range	High band	Mhz	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150
Local oscillator					
L.O. frequency range	Low band	GHz	9.75	9.75	9.75
L.O. frequency range	High band	GHz	10.6	10.6	10.6
Noise figure	(typ.)	dB	**0.3**	**0.3**	**0.3**
Conversion gain		dB	50 ~ 62	50 ~ 62	50 ~ 62
Number of outputs		pcs.	1	1	1
Cross polarization isolation		dB			
Supply voltage	Low/High	VDC	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0
Control signals/switching		kHz	0 and 22 / ± 4	0 and 22 / ± 4	0 and 22 / ± 4
Power injection		kHz			
DC current consumption (max)		mA	110	110	110
Output connector			F female	F female	F female
Output protection	(Water stop)		Water stop	Water stop	Water stop
Operating temperature		°C	-40 ~ +60	-40 ~ +60	-40 ~ +60
Feed diameter		mm	40	40	40
Weight		kg	0.375	0.375	0.733
Quantity per carton		pcs	30	30	20
Remarks			Astra 19.2° default	Hotbird 13.0° default	

Universal Monoblock 4.3° LNB units

Complete range of Monoblock 4.3° LNB units, using the latest cutting-edge RF technology

- For reception of 2 satellites with 4.3° between
- Versions single, Twin and Quad output
- Embedded DiSEqC switch
- Excellent noise figure and low phase noise
- High gain and excellent cross-pole isolation
- High output and low power consumption
- Supplied water stop
- Single packed in gift box

Technical data

Type			**TOM 001** 4.3° Single Mono	**TMT 001** 4.3° Twin Mono	**TMQ 001** 4.3° Twin Mono
Art. No.			**304465**	**304466**	**304467**
Colour (light grey)			Ral 7035	Ral 7035	Ral 7035
RF input					
Input frequency range	Low band	GHz	10.7 ~ 11.7	10.7 ~ 11.7	10.7 ~ 11.7
Input frequency range	High band	GHz	11.7 ~ 12.75	11.7 ~ 12.75	11.7 ~ 12.75
IF output					
Output frequency range	Low band	Mhz	950 ~ 1950	950 ~ 1950	950 ~ 1950
Output frequency range	High band	Mhz	1100 ~ 2150	1100 ~ 2150	1100 ~ 2150
Local oscillator					
L.O. frequency range	Low band	GHz	9.75	9.75	9.75
L.O. frequency range	High band	GHz	10.6	10.6	10.6
Noise figure	(typ./max)	dB	**0.3** / 0.6	**0.3** / 0.6	**0.3** / 0.6
Conversion gain		dB	50 ~ 62	50 ~ 62	50 ~ 62
Number of outputs		pcs.	1	2	4
Cross polarization isolation		dB			
Supply voltage	Low/High	VDC	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0	10.5~14.5/ 15.5~21.0
Control signals/switching		kHz	0 and 22 / ± 4	0 and 22 / ± 4	0 and 22 / ± 4
Power injection		kHz			
DC current consumption (max)		mA	110	250	250
Output connector			F female	F female	F female
Output protection	(Water stop)		Water stop	Water stop	Water stop
Operating temperature		°C	-40 ~ +60	-40 ~ +60	-40 ~ +60
Feed diameter		mm	40	40	40
Weight		kg	0.330	0.570	0.570
Quantity per carton		pcs	30	20	20
Remarks			Astra 19.2° or Hotbird 13.0° default	Astra 19.2° or Hotbird 13.0° default	Astra 19.2° or Hotbird 13.0° default

Special Universal LNB units

Special LNB units,
adopting the latest cutting-edge RF technology

- Single Cable Router (SCR) LNB,
  Sky one-cable and NZ-LNB
- Excellent noise figure and low phase noise
- High gain and excellent cross-pole isolation
- High output and low power consumption
- Gain flatness
- Supplied sliding cover
- Available in 2 colours
- Single packed in gift box

Technical data

Type			**TSC 001** SCR LNB	**TOC 001** Sky one-cable	**TSI 010** NZ LNB
Art. No.			**304460**	**304410**	**304440**
Colour (light grey)			Ral 7035	Ral 7035	Ral 7035
RF input					
Input frequency range	Low band	GHz		10.7 ~ 11.7	
Input frequency range	High band	GHz	11.7 ~ 12.75		11.7 ~ 12.75
IF output					
Output SatCR channels		Mhz	1210,1420,1680,2040		
Output frequency range	Low band	Mhz		950 ~ 2150	
Output frequency range	High band	Mhz	950 ~ 2000		950 ~ 2000
Local oscillator					
L.O. frequency range	Low band	GHz		9.75	
L.O. frequency range	High band	GHz	10.75	10.6	10.75
Noise figure	(typ./max)	dB	**0.5** / 0.8	**0.3**	**0.3**
Conversion gain		dB	50 ~ 62	50 ~ 62	50 ~ 62
Number of outputs		pcs.	2	1	1
Polarisation / band selection			DiSEqC - ST		
Supply voltage	Low/High	VDC	10.5~14.5/ 15.5~21.0		
Control signals/switching		kHz	0 and 22 / ± 4		
Power injection		kHz			
DC current consumption (max)		mA	320		
Output connector			F female	F female	F female
Output protection	(Water stop)		Water stop	Water stop	Water stop
Operating temperature		°C	-30 ~ +60	-40 ~ +60	-40 ~ +60
Feed diameter		mm	40	40	40
Weight		kg	0.134	0.282	0.155
Quantity per carton		pcs	30	30	50
Remarks					

DiSEqC switches - multi satellite reception

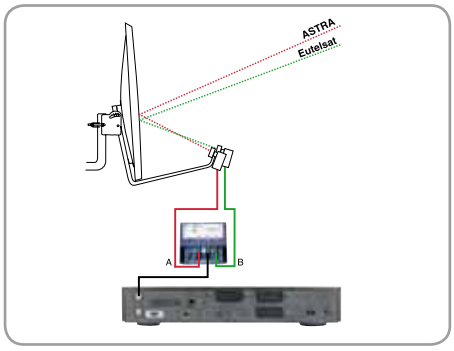
MFD DiSEqC switches for switching between 2 or 4 LNBs

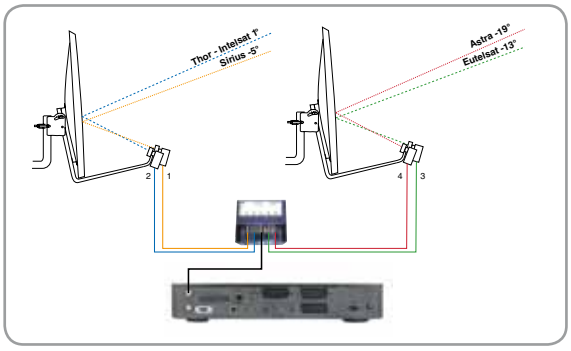
DiSEqC switches are used in multi satellite installations for switching between 2 or 4 LNBs each pointing at different satellites.

- High isolation ensures problem-free operation in multiuser installations
- Housed in fully shielded, waterproof mast box for outdoor installation
- Housing is compact and has snap lock lid
- Easy installation using F-connectors for cable mounting and a releasable strap for mast mounting
- Instructions enclosed in the housing
- Can be used with single, dual and quad LNBs.

Technical data on MFD high-end DiSEqC switches

Type **Art. No.**			**MFD 21R DiSEqC 2x1 300508**	**MFD 21D DiSEqC 2x1 300510**	**MFD 41D DiSEqC 4x1 300509**	**MFD 21D + Ter DiSEqC 3x1 300511**
Number of inputs (No. of positions)			2	2	4	3
Frequency range	SAT Ter	MHz MHz	950 - 2200	950 - 2200	950 - 2200	950 - 2200 47-862
Switch type			Relay	Diodes	Diodes	Diodes
DiSEqC control			DiSEqC 1.0 and tone burst	DiSEqC 1.0 and tone burst	DiSEqC 1.0	DiSEqC 1.0 and tone burst
Through loss		dB	1	1.5	2.5	3.0/1.0
Isolation input A-B		dB	> 25	> 40	> 30	> 35
Return loss		dB	> 10	> 10	> 8	> 10/> 10
Linearity		dB	± 1	± 1	± 1	± 1
Function(s)			Position/option/band	Position/option/band	Position/option	Position/option
Control LEDs		pcs	2	2	4	2
DC loop through		mA	500 max.	500 max.	500 max.	500 max.
Current consumption		mA	< 30	< 30	< 30	< 30
Temperature range		°C	-30....+60	-30....+60	-30....+60	-30....+60
Dimensions (H x D x W)		mm	106 x 43 x 120	106 x 43 x 120	106 x 43 x 120	106 x 43 x 120
Weight		kg	0.220	0.220	0.220	0.220
Remarks			Hi-end DiSEqC switch	Hi-end DiSEqC switch	Hi-end DiSEqC switch	Hi-end DiSEqC switch





DiSEqC switches - multi satellite reception

DiSEqC switch

DiSEqC switches are used in multi satellite installations for switching between 2 or 4 LNBs each pointing at different satellites.

Technical data on DiSEqC switches

Type Art. No.		DiSEqC 502 2x1 300502	DiSEqC 504 4x1 300504
Number of inputs outputs		2 1	4 1
Frequency range Sat Ter	MHz MHz	900 - 2150	900 - 2150
Switch type		Diode	Diode
DiSEqC control		DiSEqC 1.0	DiSEqC 1.0
Through loss	dB	typ. 1.5 (3.0)	typ. 1.5 (3.0)
Isolation input A/B	dB	> 25	> 25
Return loss	dB	> 8	> 8
DC loop through	mA	500	500
Temperature range	°C	-30....+60	-30....+60
Dimensions (H x D x W)	mm	81 x 35 x 81	98 x 35 x 115
Weight	kg	0.180	0.220
Remarks			

Mounting accessories for dishes

TRIAX's brackets for all your needs

TRIAX has all kind of mounting brackets for dishes. You will also find a complete range of different accessories - everything for making a perfect mounting.

Para Protection will cover your LNB units

Mist, rain, snow, hoarfrost, road dust and pollen that lays on the LNBs, can make a reduction in quality of the TV- pictures. A bowed perspexsheet, held to the LNB-arm, gives the LNBs very effective protection against bad weather and climate. The result: The picture quality becomes considerably increased.

Mounting accessories for dishes

Type Size		Triax 2561 Stand (Ø50) 127100	Type "J" 128050	Type "S" 128070	Universal roof/wall bracket 300709
Material		Galv. steel	Galv. steel	Galv. steel	Galv. steel
Tube dimension	mm	Ø50	Ø25	Ø25	Ø45
Weight	kg				
Packing QTY	type	1	1	1	1
Remarks		For mounting dish on earth	Incl. 2 plastic plugs	Incl. 2 plastic plugs	For mounting dish on roof/wall




Mounting accessories for dishes

Type Size		Bracket for Unique 140050	Bracket for TD 110 140051	EXA 192 Alu. 131092	EXA 194 Alu. 131094
Material		Galv. steel	Galv. steel	Aluminium	Aluminium
Tube dimension	mm	Ø60	Ø60	Ø 48	Ø 48
Plate dimension	mm			155 x 155 x 3	155 x 155 x 3
Clearance from wall	mm			250	450
Packing QTY	pcs.	1	1	10	10
Remarks		For mounting Unique on mast	For mounting Unique on mast		




TDX Cabinet - main unit for TDX range of modules

The TDX housing is designed to accommodate up to 16 frontend and 6 quad backend modules. Up to three TDX headends can be combined as one system of up to 48 input muxes and 72 output channels, either 72 PAL programs or 72 QAM/COFDM muxes or a mixture of these. The heart of the TDX is the TDX pool where services are available from all front end modules, whether terrestrial, satellite or AV encoder. From the pool, the services can be cherry-picked and distributed via the COFDM, QAM, PAL or IP backend modules. Any input can be connected to any output. Configuration of the TDX can either take place by using the TDX service tool or the web based configurator. Both the TDX service tool and the web configurator ensure that the COFDM or QAM muxes are created in a way where the maximum bandwidth is respected.
The TDX unit can be mounted in a 19" rack or mounted on the wall horizontally or vertically by using the wall brackets. Use the key to open the front lid and get access to the modules systems).

TDX Main unit (closed)

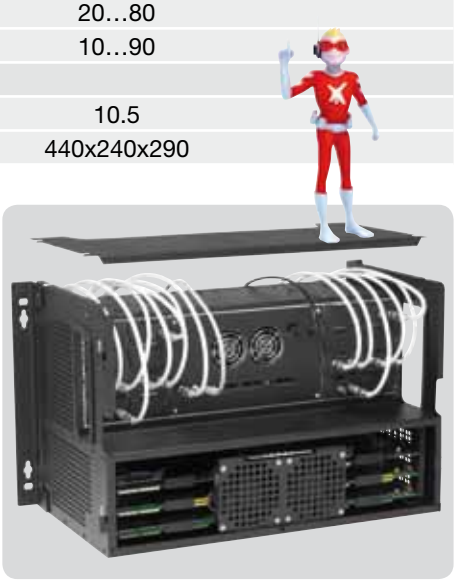
Technical data

Product **Art. No.**		**TDX Main unit cabinet** 492090
General		
Frequency range (RF OUT)	MHz	47-862
Impedance (RF OUT)	Ohm	75
Return loss (RF OUT)	dB	> 14 at 47MHz (-1.5dB/octave; Min. 10dB)
Testpoint	dB	-20
Output level max @ 60 dB IMD 24 combined channels	dBµV	103
Power Supply		
Operating voltage	VAC	190-260 50/60 Hz
Min. power consumption	W	20
Max. power consumption	W	280
Max. LNB control	mA	4 x 305
Connectors		
AC Power in (1,8m)		IEC320 (cable)
Ext. TV-OUT		F-con
Ext. testpoint		F-con
PC		RJ 45
SFP cage		4 x expansion
Environment		
Temperature, operating	°C	-10…+50
Temperature, storage	°C	-20…+70
Humidity, operating	%	20…80
Humidity, storage	%	10…90
Mechanical data		
Weight - net	kg	10.5
Dimensions product (L x W x H)	mm	440x240x290

After opening the lid, the top metal cover can be removed. The compartment under the cover serves as a cable guide, ensuring the connected cables are protected, orderly and easy to access at the headend.
Both frontend and backend modules are replaceable from the front side of the TDX without powering down the headend. The main PSU is also replaceable from the front side by disconnecting the mains power and using a Torx screw driver.
A fully loaded headend consumes only 0,2 kW. Coupled with intelligent cooling with four integral fans, this increases the life time of the equipment and makes the TDX a choice that takes care of the environment.

Features

- Better and stronger performance
- Energy-friendly and long-term reliability
- Compact housing, quick installation
- Cable management
- HOT SWAP Service
- Easy set-up with few modules



TDX Main unit (open)

DVB-T frontend module

The DVB-T frontend module is an input module for the reception of digital terrestrial signals, The module can receive a complete terrestrial MUX and send all services in the MUX to the TDX pool. The DVB-T frontend module includes a tuner, IF amplifier with channel filtering and a COFDM demodulator with serial transport stream input to the TDX system.
The DVB-T modules can be placed in any of the slots in the input section.
It is possible to remove an input module from a module slot without using any tools. Using your fingers, simply press the fastener downwards and then pull the module out of the module slot.

Features

- Antenna loop through.
- Software downloading through TDX system controller module.
- Preconfiguration from/to file through system controller module.
- Log to file/flash.
- Hot swap service in TDX system.
- All services will be transferred to the TDX pool.

Technical data DVB-T frontend module

Product		**DVB-T - COFDM**
Art. No.		492022
RF		
Frequency range - VHF III (channel center)	MHz	177.5 - 226.5
Frequency range - UHF (channel center)	MHz	474.0 - 858.0
Input sensitivity		
QPSK, FEC 2/3, guard interval 1/4	dBm	- 90.3... - 18
QAM16, FEC 2/3, guard interval 1/4	dBm	- 84.1... - 18
QAM64, FEC 2/3, guard interval 1/4	dBm	- 78.5... - 18
Input impedance	Ohm	75
Input return loss	dB	> 6.0
Loop through gain	dB	1...+ 3
Noise figure	dB	< 9.0
Bandwidth	MHz	7/8
Demodulator		
Type		COFDM
FFT mode		2K, 8K
Constallations		QPSK, 16QAM, 64QAM
Guard interval		Ľ, 1/8,1/16, 1/32
Power supply		
Voltage/current	V/mA	12 / 120
Environment		
Temperature, operating	°C	-10...+50
Temperature, storage	°C	-20...+70
Humidity, operating	%	20...80
Humidity, storage	%	10...90
Mechanical data		
Input connector		IEC - female
Output connector		IEC – male
Power supply/control connector	mm	Edge connector 2X18P
Weight	kg	0.060
Dimension (HxDxW)	mm	29 x 132 x 50

TDX - DVB-S/S2 frontend module

The DVB-S/S2 frontend module is an input module for the reception of digital satellite signals in a TDX headend system. The module can receive a complete transponder and all services on the chosen frequency can be transferred to the TDX pool. The DVB-S/S2 frontend module includes an IF tuner with antenna loop through and a QPSK/8PSK demodulator with serial transport stream input to the TDX headend system.

The DVB-S/S2 modules can be placed in any of the slots in the input section. For ease of use, each slot has been given a number and an overview of the slot numbers is placed on a sticker mounted on the inside of the door on the TDX frame. It is possible to remove an input module from a module slot without using any tools. Using your fingers, simply press the fastener downwards and then pull the module out of the module slot.

DVB-S/S2 frontend module

Technical data - DVB-S/S2 frontend module

Product		**DVB-S/S2**
Art. No.		492020
RF		
Frequency range	MHz	950-2150
Input level	dBm	-65..-25
Input impedance	Ohm	75
Input return loss	dB	>10.0
Loop through frequency range	MHz	950-2150
Loop through output return loss	dB	> 8.0
Loop through gain	dB	0...+6
Loop through RF input isolation	dB	> 24.0
LNB control		
V/H programmable	V/mA	< 2.4
LO/HI programmable	kHz	10 ±1
DiSEqC level		1.1
Power supply		
Voltage/current @ LNB supply OFF	V/mA	12 / 250 (typ)
Voltage/current @ LNB supply ON max	V/mA	12 / 550 (typ)
Environment		
Temperature, operating	°C	-10…+50
Temperature, storage	°C	-20…+70
Humidity, operating	%	20…80
Humidity, storage	%	10…90
Mechanical data		
Input connector		F-connector
Output connector		F-connector
Power supply/control connector	mm	Edge connector 2X18P
Weight	kg	0.080
Dimension (HxDxW)	mm	29 x 132 x 50
Remarks		
Configuration		Frequency, Polarity, Symbol rate, Update (search)

Features

- Antenna loop through
- Software downloading through TDX system controller module
- Preconfiguration from/to file through system controller module
- Log to file/flash
- DVB-S compliant, up to 45 MS/s
- DVB-S2 compliant, up to 37 MS/s
- Programmable LNB control: 0/14/18V - 0/22kHz
- Hot swap service in TDX system
- All services will be transferred to the TDX pool
- DiSEqC compliant (1.1)

AV encoder module
(Video/Audio stereo modulator)

The AV encoder module converts analogue video (CVBS) and audio signals from a set top box, a DVD player, a camera or other sources, into a MPEG2 or MPEG4 data stream. This data stream is then available in the TDX pool and can be sent out on all TDX output modules. Teletext and WSS in the analogue signal are also converted into the MPEG2/4 stream.
When configuring your system, it is optional in which slots you place the AV input modules in the input section. When servicing your system, it is possible to remove an input module from a module slot (HOTSWAP).
Just use your fingers to press the fastener downwards and then pull the module outwards to remove it.
A 15 pol Sub-D/3 x RCA cable used to connect the source to the AV module is also available.

Technical data - AV frontend encoder module

Product Art. No.		**AV Encoder module** 492080
Video input		1 x AV-signal
Audio/Video input connector		15 pol high density sub-D
Video level	Vpp	1.0
Video impedance	Ohm	75
Video S/N ratio	dB	> 53
Video input colour standards		PAL, Secam, NTSC
Return loss	dB	> 26
Physical interface		CVBS
Scan resolution	p	525, 625
VBI data slicer		Teletext
Accepted input aspect ratio		4:3, 16:9
Audio input		
Audio input level	Vpp	< 2.4
Audio impedance	kOhm	10 ±1
S/N ratio	dB	> 53
Input frequency range (- 3 dB)	Hz	50-20.000
Max. harmonic distorsion	%	< 1.0
Audio bitrate, fixed	kB	192
Output		
Output format		Serial MPEG transport stream (LVDS)
Video codec		MPEG-2, MPEG-4
Video codec settings (CBR)	Mbps	1, 2.5, 5.0, 10.0
Embedded audio - AAC, 48 kHz/MPEG2 (L1)		Stereo
Mechanical data		
Audio/Video input connector		D-Sub type 15p HD (DE15)
Working temperature	°C	-10 to +50
Weight (kg)	kg	0.5
Dimension (HxDxW)	mm	29 x 126 x 53
Remarks		15pol Sub-D/3xRCA cable - art. no. 300745 - length: 1.5 meter

Features
- Composite video input
- Stereo Audio input
- Teletext supported
- Colour standards: PAL, SECAM, (NTSC)
- Constant bit rate up to 10 Mb
- Hot swap service in TDX system
- Selectable encoder output bandwidth (TDX-GUI)
- Remote update via TDX system interface

TDX - Quad PAL backend modules - FTA or with 2 x CI slot

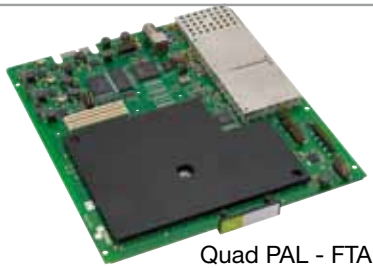
The TDX quad PAL backend is an output module that enables you to distribute up to 4 services/TV programs available in the TDX pool. The TV programs are chosen from the TDX pool either by the web configurator or the TDX service tool. The PAL output modules can be delivered in a free-to-air-version or with 2 CI slots for decryption.

Features:

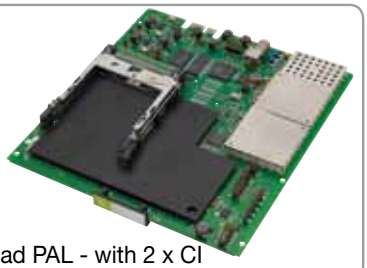
- Quad PAL backend module for FTA or for decrypting content/ services
- VBI-insert (VPS, WSS, Teletext)
- Teletext subtitles
- DVB-subtitling
- Video decoding: MPEG-2, main profile, main level - Video decoding: MPEG-4/ H.264 MP @ level 2.2
- Hot swap service in TDX system.
- Audio decoding: AAC, HE-AAC, MPEG 1 layer 1 and 2, MPEG2 part 3
- Analogue video encoding: PAL (B/G, L, D/K, I) and SECAM
- Audio encoding: NICAM,and A2 stereo, FM mono (PAL) and AM mono (SECAM).
- Supports decrypting via CI (492051)
- Decrypted outputs from the CA modules are transferred back to the TDX-pool.

Technical data - Quad PAL backend modules

Product Art. No.		**Quad PAL backend FTA** 492050	**Quad PAL backend CI** 492051
Modulator			
TV-norm PAL (B/G, L, D/K, I), SECAM		PAL (B/G, L, D/K, I), SECAM	
System		VSB VHF/UHF mono. A2, Nicam	
Output frequency range	MHz	47-862	47-862
Channel raster	MHz	7 / 8	7 / 8
Channel raster step	kHz	250	250
Picture carrier stability:	kHz	< ±30	< ±30
Spurious signals ref. picture carrier (24 ch.)	dB	< - 60	< - 60
Output level adjustment	dB	+ 3...- 17	+ 3...- 17
Output level in TDX system	dBµV	103.0	103.0
Output impedance	Ohm	75	75
Return loss output	dB	> 10	> 10
Differential gain	%	< 8	< 8
Differential phase	Deg.	< 8	< 8
Group delay	ns	< 80	< 80
Video carrier to noise ratio	dB	57	57
Sound sub carrier stability (NICAM)	kHz	± 1	± 1
Audio S/N ratio	dB	50	50
Sound sub carrier	MHz	5,5 / 5,74 / 5,85 / 6,0 / 6,5	5,5 / 5,74 / 5,85 / 6,0 / 6,5
Sound sub carrier stability (mono)	kHz	< ± 5	< ± 5
Sound sub carrier stability (A2)	kHz	< ± 1	< ± 1
CI slot	pcs	0	2
General			
Supply voltage	V	12.0 ±1	12.0 ±1
Max. supply current (FTA / CI)	A	1.6	1.8
Mechanical data			
RF connector		IEC - female	IEC - female
Power supply/control connector	mm	PCI Express Edge connector 36P	PCI Express Edge connector 36P
Weight	kg	0.430	0.460
Dimension (HxDxW)	mm	12 x 266 x 180	21 x 266 x 180



Quad PAL - FTA



Quad PAL - with 2 x CI

TDX - Quad PAL HD downscale - FTA or with 2 x CI slot

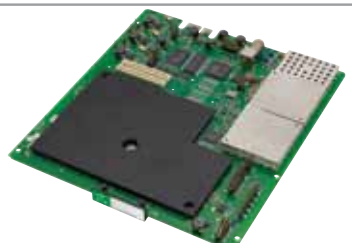
The TDX quad PAL HD downscale modules can take any HD service from the TDX pool, scale the service down to SD format, modulate it to a PAL signal and distribute it in a PAL network. You can distribute 4 PAL services / TV programs from each module, equal to 24 PAL services from one cabinet. The PAL HD downscale module comes in 2 versions, a Free-to-Air version and a CI version with 2 CI slots for decrypting of content/ services.

Features:

- Video downscaling from HD (in MPEG4 AVC/H.264 format and VC1 decode for single HD up to 720p and 1080i to SD
- Quad PAL backend module for FTA or for decrypting content/ services
- VBI-insert (VPS, WSS, Teletext)
- Teletext subtitles
- DVB-subtitling
- Video decoding: MPEG-2, main profile, main level - Video decoding: MPEG-4/ H.264 MP @ level 2.2
- Audio decoding: AAC, HE-AAC, MPEG 1 layer 1 and 2, MPEG2 part 3
- Analogue video encoding: PAL B/G, L, D/K, I) and SECAM
- Audio encoding: NICAM,and A2 stereo, FM mono (PAL), AM mono (SECAM) and dual sound.
- HOT SWAP Service in TDX system
- Supports decrypting via CAI(492053)
- Decrypted outputs from the CA modules are transferred back to the TDX-pool.

Technical data - Quad PAL HD downscale backend modules

Product		PAL HD downscale backend module - FTA	PAL HD downscale backend module - CI
Art. No.		492052	492053
Modulator			
TV-norm PAL (B/G, L, D/K, I), SECAM		PAL (B/G, L, D/K, I), SECAM	
System		VSB VHF/UHF mono. A2, Nicam	
Output frequency range	MHz	47-862	47-862
Channel raster	MHz	7 / 8	7 / 8
Channel raster step	kHz	250	250
Picture carrier stability:	kHz	< ±30	< ±30
Spurious signals ref. picture carrier (24 ch.)	dB	< - 60	< - 60
Output level adjustment	dB	+ 3...- 17	+ 3...- 17
Output level in TDX system	dBµV	103.0	103.0
Output impedance	Ohm	75	75
Return loss output	dB	> 10	> 10
Differential gain	%	< 8	< 8
Differential phase	Deg.	< 8	< 8
Group delay	ns	< 80	< 80
Video carrier to noise ratio	dB	57	57
Sound sub carrier stability (NICAM)	kHz	± 1	± 1
Audio S/N ratio	dB	50	50
Sound sub carrier	MHz	5,5 / 5,74 / 5,85 / 6,0 / 6,5	5,5 / 5,74 / 5,85 / 6,0 / 6,5
Sound sub carrier stability (mono)	kHz	< ± 5	< ± 5
Sound sub carrier stability (A2)	kHz	< ± 1	< ± 1
CI slot	pcs	0	2
General			
Supply voltage	V	12.0 ±1	12.0 ±1
Max. supply current (FTA / CI)	A	1.6	1.8
Mechanical data			
RF connector		IEC - female	IEC - female
Power supply/control connector	mm	PCI Express Edge connector 36P	PCI Express Edge connector 36P
Weight	kg	0.430	0.460
Dimension (HxDxW)	mm	12 x 266 x 180	21 x 266 x 180



Quad PAL HD backend - FTA

Quad PAL HD backend - with 2 x CI

TDX - Quad QAM backend module DVB-C in FTA or with 2 x CI slot

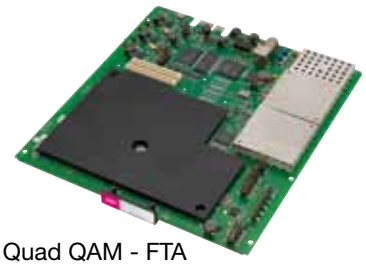
The TDX quad QAM backend modules are output modules that enable you to create up to 4 mux combinations of services/ TV programs which are available from the TDX pool. The services are distributed in a QAM data stream. The services can be combined so that the bandwidth of each output mux is used in an optimal way. Both the web configurator and the mux bandwidth monitor function in the TDX service tool ensure that you don't overload the bandwidth and cause problems with the transmission.
The QAM output modules can be delivered in a free-to-air version or with 2 CI slots for decryption.

Features:

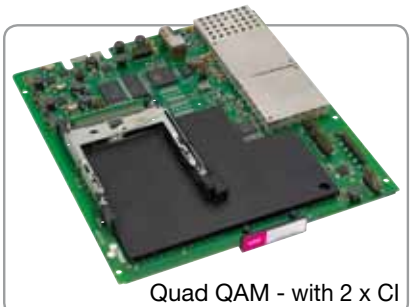
- Quad QAM DVB-C backend module for FTA or for decrypting content/ services
- NIT and stuffing
- Global and local NIT support
- NIT actual network & NIT other network
- SDT actual transport stream & SDT other transport stream
- Easy set-up
- Hot swap service in TDX system.
- Supports decrypting via CI (492056) - module adds stuffing bits
- Combine your QAM muxes as you want
- Decrypted outputs from the CA modules are transferred back to the TDX-pool.

Technical data - Quad QAM backend modules

Product Art. No.		**Quad QAM backend FTA** 492055	**Quad QAM backend CI** 492056
Modulator			
Output frequency range	MHz	50-858	50-858
Channel raster	MHz	7 / 8 / 8.5	7 / 8 / 8.5
Frequency step	kHz	250	250
Carrier to spurious ratio (module only)	dB	> 60	> 60
Output mode	QAM	16, 32, 64, 128, 256	16, 32, 64, 128, 256
Output spectrum		Normal	Normal
Output level adjustment	dB	+ 3...- 17	+ 3...- 17
Output level nominel in TDX system	dBµV	92.0	92.0
Output impedance	Ohm	75	75
Symbol rate	Mbaud	3.15 - 7.2	3.15 - 7.2
Roll off factor		0.15	0.15
Return loss output	dB	> 10	> 10
Modulation error ratio (MER) 16 QAM	dB	≥ 38.0	≥ 38.0
Modulation error ratio (MER) 64 QAM	dB	≥ 38.0	≥ 38.0
Modulation error ratio (MER) 256 QAM	dB	≥ 38.0	≥ 38.0
CI slots	pcs.	0	2
General			
Supply voltage	V	12.0 ±1	12.0 ±1
Max. supply current (FTA / CI)	A	0.7	0.9
Mechanical data			
RF connector		F-connector	F-connector
Power supply/control connector	mm	PCI Express Edge connector 36P	PCI Express Edge connector 36P
Weight	kg	0.410	0.440
Dimension (HxDxW)	mm	12 x 162 x 180	21 x 162 x 180



Quad QAM - FTA



Quad QAM - with 2 x CI

TDX - Quad backend module COFDM DVB-T in FTA or with 2 x CI

The TDX quad COFDM backend modules are output modules that enable you to create up to 4 muxes of services / TV programs which are available from the TDX pool. The services are distributed in a COFDM data stream.

The services can be combined so that the bandwidth of each output mux is used in an optimal way. Both the web configurator and the mux bandwidth monitor function in the TDX service tool ensure that you don't overload the bandwidth and cause problems with the transmission.

The COFDM output modules can be delivered in a free-to-air version or with 2 CI slots for decryption.

Features:

- Quad DVB-T backend module for FTA or for decrypting content/ services
- Easy set-up
- Hot swap service in TDX system.
- Supports decrypting via CI (492061)
- Combine your COFDM muxes as you want
- Decrypted outputs from the CA modules are transferred back to the TDX-pool.

Technical data - Quad COFDM backend modules

Product Art. No.		**Quad COFDM backend FTA** 492060	**Quad COFDM output CI** 492061
Modulator			
Output frequency range	MHz	50-858	50-858
Channel raster	MHz	7 / 8 / 8.5	7 / 8 / 8.5
Frequency step	kHz	250	250
Carrier to spurious ratio (module only)	dB	> 60	> 60
Carriers supported		2K	2K
Guard interval		1/32, 1/16, 1/8, 1/4	1/32, 1/16, 1/8, 1/4
FEC		1/2, 2/3, 3/4, 5/6, 7/8	1/2, 2/3, 3/4, 5/6, 7/8
Output mode		16QAM, 64QAM, QPSK	16QAM, 64QAM, QPSK
Output spectrum		Normal	Normal
Output level adjustment	dB	+ 3...- 17	+ 3...- 17
Output level nominel in TDX system	dBµV	92.0 (QAM 64)	92.0 (QAM 64)
Output impedance	Ohm	75	75
Return loss output	dB	> 10	> 10
Modulation error ratio (MER)	dB	≥ 36.0	≥ 36.0
CI slots	pcs.	0	2
General			
Supply voltage	V	12.0 ±1	12.0 ±1
Max. supply current (FTA / CI)	A	1.0	1.2
Mechanical data			
RF connector		F-connector	F-connector
Power supply/control connector	mm	PCI Express Edge connector 36P	PCI Express Edge connector 36P
Weight	kg	0.430	0.460
Dimension (HxDxW)	mm	12 x 162 x 180	21 x 162 x 180

Quad COFDM - FTA

Quad COFDM - with 2 x CI

TDX - 2 x CI output modules

The 2x CI backend module enables you to take several services depending on CAM module from the TDX pool, decrypt them and loop them back in decrypted form to the pool. The 2x CI backend module is cost efficient solution if the TDX is distributing in IP format or if CAMs for decryption of multiple services are not available.

Features:

- 2 conditional access (CA) slots for decoding content/ services.
- Card speed can be set up per slot to 50Mbit/s (default) or max 72Mbit/s
- Card function can be setup to either descramble transport stream services (default) or scramble services (using a PanAccess CA module).
- When descrambling, filter options per service can be set up to descramble non audio/video PIDs and/or descramble all audio PIDs.
- The number of services that can be descrambled is determined by how many PIDs the CA module can descramble.
- Decrypted outputs from the CA modules are transferred back to the TDX-poll.

Technical data

Product		2 x CI backend module
Art. No.		492070
General		
Supply voltage	V	12.0 ±1
Max. supply current (FTA / CI)	A	0.6 (typ)
Mechanical data		
Power supply/control connector	mm	PCI express edge connector 36P
Weight	kg	0.220
Dimension (HxDxW)	mm	18 x 180 x 162

Quad 2 x CI output module

Quad 2 x CI output module

TDX - IP output module

- STP (Shielded Twisted Pair) / SFP (Small Form factor Pluggable)

TDX – IP output functionality

You can create your own bouquets of services/TV programs from what is available in the TDX pool and distribute these on an IP data stream.

You can define your service bouquets in the TDX tool and in the TDX web configurator. No output module is needed, but you will need a license key which contains the rights to the number of services needed.

The license keys are available in packages of 12 IP services in each package.

When the services are distributed in IP format, you will also need an SFP transceiver and a corresponding fibre or RJ45 cable

IP output SFP

Product		IP Software start package	IP Software extended package
Art. No.		418040	418041
Type		Software	Software
IP-services	pcs	12	12
Remarks		Inform Triax of the serial number of the ID-no. of the TDX main unit	Inform Triax of the serial number of the ID-no. of the TDX main unit

Technical data

Product		EOLT - C12 - 02 Copper - STP	EOLS - 8512 MXX Fibre - SFP	EOLS - 1324-02XX Fibre - SFP
Art. No.		492086	492087	492088
Type		Copper STP (RJ45)	Fibre LC - 850 nm	Fibre LC - 1310 nm
Data rate	(MBps)	1.000	1.000	1.000
Reach	(m)	100	550	2.000
Packing size	(Pcs)	1	1	1
Application		Gigabit Ethernet over Cat 5 cable	Gigabit Ethernet over fibre	Gigabit Ethernet over fibre
Transport stream payload	max (MBps)	720		
Protocols		UDP with RTP optional		

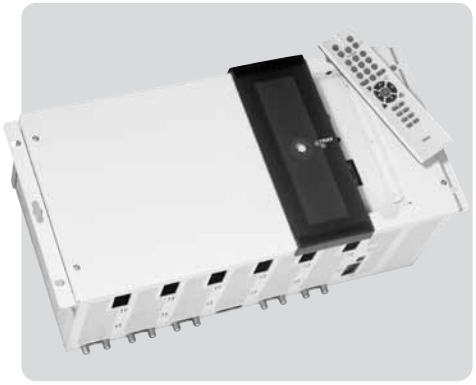
SFP
(LC duplex)

STP
(RJ45)

TDH 700 main and sub unit - digital

Triax digital headend - TDH 700

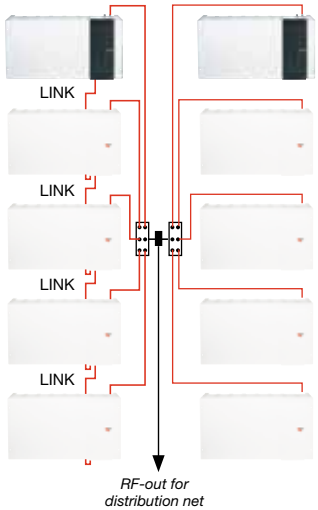
TDH 700 is a digital compact headend. Each basic unit holds up to six modules each carrying a satellite, cable, or terrestrial channel. A complete system is simply built with the main/sub unit system where 1 basic unit and 4 sub units can be coupled in cascade and operate as one integrated headend with 30 channels.
All communication between modules and the basic units is done via a high speed data-bus, and by means of this communication structure, important features like operating the system, software updates, and remote access have become extremely simple.
For maximum flexibility a one module basic TDH SA unit is also avaiable.



TDH 700 main unit

Technical data

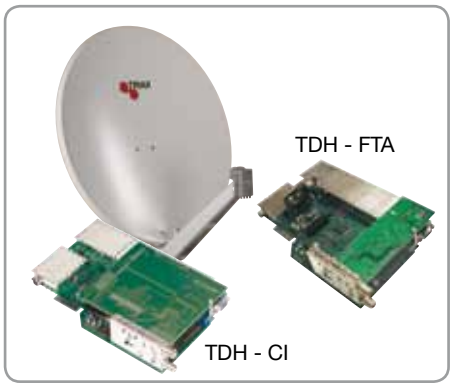
TYPE Art. No.		TDH 700 Main unit 490790	TDH 701 Sub unit 490791	TDH 700 SA-controller 301700
Number of channels	Pcs	6	6	
Output frequency range	MHz	47 - 862	47 - 862	
Max. output level - 6 combined ch. max. @ 60 dB IMD	dBµV	105	105	
Output level stability	dB	< 1	< 1	
Adjustment	dB	10	10	
Test point	dB	- 30	- 30	
Return loss output Tv in - tv out - module RF in	dB	≥ 10	≥ 10	
Impedance	Ohm	75	75	
Remote control		Yes		
PC-interface functions		Yes		
Software download	9 pin	RS 232 female		RS 232 female
Modem connector	9 pin	RS 232 male		RS 232 male
Main/sub unit connector		USB A/B cable	USB A/B cable	USB A/B cable
Wall/rack bracket		Yes	Yes	Yes
Operation voltage	V/AC	190 - 260	190 - 260	- from SA cabinet
Power consumption	W	120 max.	110 max.	8
Connector in - out		F female	F female	F female
Operation temperature range	°C	-10...+50	-10...+50	-10...+50
Weight	kg	5.8	5.8	2.2
Dimensions (H x D x W)	mm	223 x 160 x 440	223 x 160 x 440	198 x 141 x 44
Remarks				



TDH 701sub unit

TDH 700
SA-controller

TDH digital satellite modules QPSK-PAL



TDH DVB-S modules convert a coded or uncoded digital signal from a satellite to a modulated PAL/SECAM signal for distribution in a community cable system.

- Full-band high-quality modulator
- Conditional access via CI or Free To Air
- Advanced watchdog function
- Fully DVB S compatible
- Multi language menu
- MPEG transport stream available for slave modules
- Mono sound / A2 stereo / Nicam available

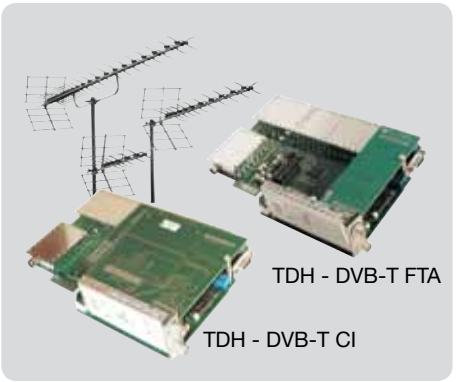
Technical data TDH - DVB-S master modules (VSB) VHF/UHF

TYPE		DVB-S master with CI	DVB-S master with CI		DVB-S master Free to air	DVB-S master Free to air	
	Norm	**Mono**	**A2 stereo**	**Nicam**	**Mono**	**A2 stereo**	**Nicam**
Art. No.	B/G	490742	490743	590743	490746	490747	590747
	D/K	490702	490703		490722	490723	
	Norm L	490702		590703	490722	490723	590723
	Pal I	490702			490722	490723	
Modulator type		VSB	VSB		VSB	VSB	
Input frequency range	MHz	920 - 2150	920 - 2150		920 - 2150	920 - 2150	
Input level *	dBµV	44....84	44....84		44....84	44....84	
IF bandwidth	MHz	36	36		36	36	
Output channel		2....69	2....69		2....69	2....69	
Output frequency range	MHz	47 - 862	47 - 862		47 - 862	47 - 862	
Output level SA modules **	dBµV	103	103		103	103	
Output level attenuator	dB	10	10		10	10	
Video S/N ratio	dB	> 54	> 54		> 54	> 54	
Differential phase	deg.	< 8	< 8		< 8	< 8	
Picture carrier stability	kHz	< +/- 70	< +/- 70		< +/- 70	< +/- 70	
Spurious signals ref pict. carrier C/N	dB	> - 60	> - 60		> - 60	> - 60	
Sound mode		**Mono**	**A2 stereo**	**Nicam**	**Mono**	**A2 stereo**	**Nicam**
Audio distortion @ 1 kHz	%	< 1	< 1		< 1	< 1	
Audio S/N ratio	dB	> 50	> 50		> 50	> 50	
Sound sub carrier stability	kHz	< +/- 5	< +/- 5		< +/- 5	< +/- 5	
LNB control 13/18 volt - 0/22 kHz	mA	200	200		200	200	
Conditional access	EN	50221	50221		FTA	FTA	
Teletext type		Reinserted in VBI	Reinserted in VBI		Reinserted in VBI	Reinserted in VBI	
Demultiplexer data rate	Mbps	< 65	< 65		< 65	< 65	
Video data rate	Mbps	< 15	< 15		< 15	< 15	
Viterbi rates	Mpps	1-30 (SCPC/MCPC)			1-30 (SCPC/MCPC)		
Impedance	Ohm	75	75		75	75	
Operation temperature range	°C	-10...+50	-10...+50		-10...+50	-10...+50	
Power supply - stand alone module	VAC	190 - 260	190 - 260		190 - 260	190 - 260	
Weight - standard module	kg	0.45	0.45		0.45	0.45	
Dimensions (H x D x W)	mm	150 x 230 x 50	150 x 230 x 50		150 x 230 x 50	150 x 230 x 50	
Remarks		* Digital measuring - DCP ** Mounted in stand-alone cabinet					

TDH digital terestrial - COFDM to PAL

TDH DVB-T modules convert a digtal terestrial coded or uncoded signal to a modulated signal for distribution in a community cable system.

- Full-band high-quality modulator
- Conditional access via common interface (CI) or free to air (FTA)
- Advanced watchdog function
- Fully DVB-T compatible
- Multi language menu
- MPEG transport stream available for slave modules
- Mono sound/A2 stereo/Nicam available

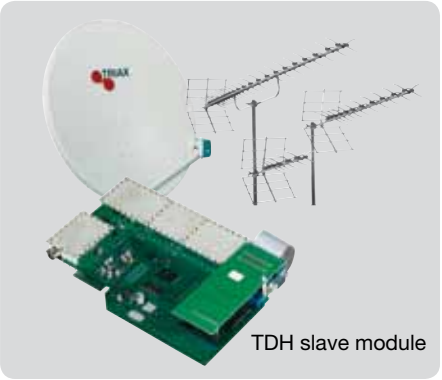

TDH - DVB-T FTA

TDH - DVB-T CI

Technical data TDH - DVB-T modules (VSB) VHF/UHF

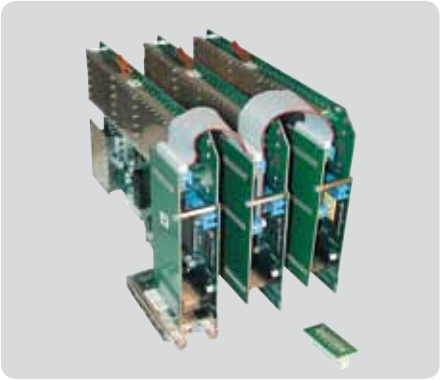
TYPE		DVB-T master with CI	DVB-T master with CI		DVB-T master Free to air	DVB-T master Free to air	
	Norm	Mono	A2 stereo	Nicam	Mono	A2 stereo	Nicam
Art. No.	B/G	490762	490763	590763	490764	490765	590765
	D/K		490713		490714	490715	
	Norm L				490714		
	Pal I				490714		
Input frequency range	MHz	177.5 - 858.0	177.5 - 858.0		177.5 - 858.0	177.5 - 858.0	
Input level *	dBµV	44....84	44....84		44....84	44....84	
Output frequency range	Ch. MHz	2....69 47 - 862	2....69 47 - 862		2....69 47 - 862	2....69 47 - 862	
Output level SA modules **	dBµV	103	103		103	103	
Output level attenuator	dB	10	10		10	10	
Video S/N ratio	dB	> 54	> 54		> 54	> 54	
Differential phase	deg.	< 8	< 8		< 8	< 8	
Picture carrier stability	kHz	< +/- 70	< +/- 70		< +/- 70	< +/- 70	
Spurious signals ref pict. carrier C/N	dB	> - 60	> - 60		> - 60	> - 60	
Sound mode		**Mono**	**A2 stereo**	**Nicam**	**Mono**	**A2 stereo**	**Nicam**
Audio distortion @ 1 kHz	%	< 1	< 1		< 1	< 1	
Audio S/N ratio	dB	> 50	> 50		> 50	> 50	
Sound sub carrier stability	kHz	< +/- 5	< +/- 5		< +/- 5	< +/- 5	
LNB control 13/18 volt - 0/22 kHz	mA	200	200		200	200	
Conditional access	EN	50221	50221		FTA	FTA	
Teletext type		Reinserted in VBI	Reinserted in VBI		Reinserted in VBI	Reinserted in VBI	
Demultiplexer data rate	Mbps	< 65	< 65		< 65	< 65	
Video data rate	Mbps	< 15	< 15		< 15	< 15	
Viterbi rates	Mpps	1-30 (SCPC/MCPC)	1-30 (SCPC/MCPC)		1-30 (SCPC/MCPC)	1-30 (SCPC/MCPC)	
FFT mode	Mpps	2K/8K	2K/8K		2K/8K	2K/8K	
Constellations		QPSK, 16QAM, 64QAM			QPSK, 16QAM, 64QAM		
Guard interval		1/4, 1/8, 1/16, 1/32			1/4, 1/8, 1/16, 1/32		
Viterbi decoder		1/2, 2/3, 3/4, 5/6, 7/8			1/2, 2/3, 3/4, 5/6, 7/8		
Reed Solomon decoder		204,188, t=8.			204,188, t=8.		
Impedance	Ohm	75	75		75	75	
Operation temperature range	°C	-10...+50	-10...+50		-10...+50	-10...+50	
Weight - standard module	kg	0.45	0.45		0.45	0.45	
Dimensions (H x D x W)	mm	150 x 230 x 50	150 x 230 x 50		150 x 230 x 50	150 x 230 x 50	
Remarks		* Digital measuring - DCP ** Mounted in stand-alone cabinet					

TDH digital slave modules - Sat/Ter


TDH slave module

Slave modules for DVB-S or DVB-T master modules

- Full-band high-quality modulator
- Mono sound/A2 stereo/ Nicam available



Technical data TDH - Slave modules (VSB) VHF/UHF

TYPE		TDH slave DVB-S/T	TDH slave DVB-S/T	
	Norm	**Mono**	**A2 stereo**	**Nicam**
Art. No.	B/G	490744	490745	590745
	D/K	490704	490705	
	Norm L	490704		
	Pal I	490704		
Modulator type		VSB	VSB	
Output frequency range	Ch. MHz	2....69 47 - 862	2....69 47 - 862	
Output level attenuator	dB	10	10	
Video S/N ratio	dB	> 54	> 54	
Differential phase	deg.	< 8	< 8	
Picture carrier stability	kHz	< +/- 70	< +/- 70	
Spurious signals ref pict. carrier C/N	dB	> - 60	> - 60	
Sound mode		**Mono**	**A2 stereo**	**Nicam**
Audio distortion @ 1 kHz	%	< 1	< 1	
Audio S/N ratio	dB	> 50	> 50	
Sound sub carrier stability	kHz	< +/- 5	< +/- 5	
Teletext type		Reinserted in VBI	Reinserted in VBI	
Demultiplexer data rate	Mbps	< 65	< 65	
Video data rate	Mbps	< 15	< 15	
Viterbi rates	Mpps	1-30 (SCPC/MCPC)	1-30 (SCPC/MCPC)	
Impedance	Ohm	75	75	
Operation temperature range	°C	-10...+50	-10...+50	
Weight - standard module	kg	0.30	0.30	
Dimensions (H x D x W)	mm	150 x 230 x 50	150 x 230 x 50	
Remarks				

TDH digital QAM - QPSK to QAM

TDH QPSK to QAM module receives a QPSK channel (TV-program package) located in the sat-IF band, and remodulates it in QAM format on a 5-9 MHz channel located within the RF frequency band.

- Output frequency ranges: 120-306 or 306-858 MHz
- Input frequency range: 950-2150 MHz
- Programmable LNB control on each module
- Modulation: 16, 32, 64, 128, 256 QAM
- Adjustable symbol rate (TDH 732 & TDH 733)
- Multi language menu

TDH QAM module

Technical data TDH - QPSK/QAM modules

TYPE		DVB-C master TDH 730C	DVB-C master TDH 731C	DVB-C master TDH 732C	DVB-C master TDH 733C
	Norm	**TDT**	**TDT**	**-adj. symbol rate**	**-adj. symbol rate**
Art. No.		490730	490731	490732	490733
Modulator type		QAM	QAM	QAM	QAM
Input frequency range	MHz	920 - 2150	920 - 2150	920 - 2150	920 - 2150
Input level *	dBµV	45....84	45....84	45....84	45....84
Return loss	dB	>10	>10	>10	>10
Aerial input	SAT	F	F	F	F
Aerial loop-through	SAT	Yes/F	Yes/F	Yes/F	Yes/F
Demolator					
Type		QPSK	QPSK	QPSK	QPSK
Symbol rate	Mbps	2-40 (SCPC/MCPC)	2-40 (SCPC/MCPC)	**Adjustable**	**Adjustable**
Viterbi decoder		1/2, 2/3, 3/4, 5/6, 7/8	1/2, 2/3, 3/4, 5/6, 7/8	1/2, 2/3, 3/4, 5/6, 7/8	1/2, 2/3, 3/4, 5/6, 7/8
Reed Solomon decoder		204, 188, t=8	204, 188, t=8	204, 188, t=8	204, 188, t=8
Modulator					
Output mode		QAM 16, 32, 64, 128, 256	QAM 16, 32, 64, 128, 256	QAM 16, 32, 64, 128, 256	QAM 16, 32, 64, 128, 256
Output control		Normal, inverted, random	Normal, inverted, random	Normal, inverted, random	Normal, inverted, random
Output frequency range	MHz	**306 - 858**	**120 - 306**	**306 - 858**	**120 - 306**
Output level	dBµV	97	97	97	97
LNB control 13/18 volt - 0/22 kHz	mA	200	200	200	200
Symbol rate	Mbaud	< 7.0	< 7.0	< 7.0	< 7.0
Roll-off factor	%	15	15	15	15
FEC block code		RS (204, 188)	RS (204, 188)	RS (204, 188)	RS (204, 188)
Scrambling		DVB ETS 300429	DVB ETS 300429	DVB ETS 300429	DVB ETS 300429
Interleaving		DVB ETS 300429	DVB ETS 300429	DVB ETS 300429	DVB ETS 300429
Carrier suppression	dB	>40	>40	>40	>40
C/N	dB	>38	>38	>38	>38
MER	dB	>35	>35	>35	>35
IQ imbalance	Dgr	<1	<1	<1	<1
Output impedance	Ohm	75	75	75	75
Return loss (MOD OUT)	dB	>10	>10	>10	>10
Temperature, operation	°C	-10..+50	-10..+50	-10..+50	-10..+50
Weight - standard module	kg	0.45	0.45	0.45	0.45
Dimensions (H x D x W)	mm	150 x 230 x 50	150 x 230 x 50	150 x 230 x 50	150 x 230 x 50
Remarks		* Digital measuring - DCP		With stuffing	With stuffing

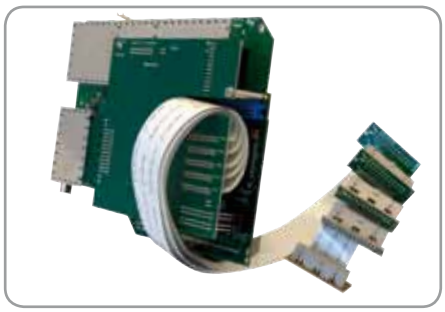
TDH digital 5 channel QAM MUX

The QAM muxing module will enable the TDH 700 to send out up to 5 input channels in the QAM format along with the analogue (PAL) format simultaneously. The customer will then experience broadcasted TV in the original high digital quality on his flat screen.

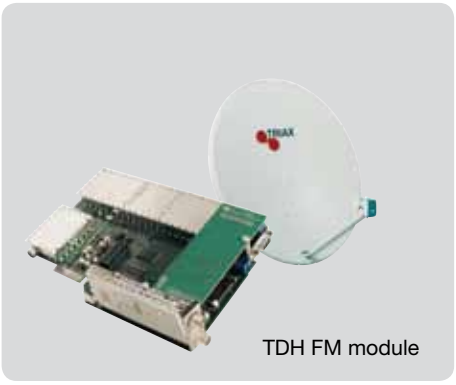
- Add-in slave module to TDH 700 as the 6th module
- Replicate up to 5 channels in digital QAM format.
- Accepts input channels from the TDH 700 DVB-T and DVB-S modules.
- Accepts Free-to-Air or encrypted channels.
- Easy installation into existing or new headend.
- QAM output channel setup via the TDH manager PC utility.

Technical data TDH - QAM MUX modules

Type		**TDH 780 QAM MUX**
Art. No.		490780
Number of transport streams (channel) inputs		5
TS input interface		Internally, Parallel LVDS signals
QAM output channels		1
QAM output symbol rate	MBaud	3.125 to 7.2 (Max. 57.6 Mbit/s)
QAM modes		16, 32, 64, 128 and 256
Output channels (VHF module)		S1 – S20
	MHz	107.5 – 296.5
Output channels (UHF module)		S21 – 69
	MHz	306 – 858
Temperature range, operating	°C	-10 – 50
Humidity, operating	% RH	20 – 80
Temperature range, storage	°C	-20 – 70
Humidity, storage	% RH	10 – 90
Connector		**F-con**
Remarks		



TDH digital QPSK - FM module


TDH FM module

TDH QPSK-FM module includes a receiver, demodulator, high quality FM stereo modulator, and the built-in amplifier secures the right level for directly supplying the SMATV network with high-quality FM programs.

- QPSK to FM stereo
- Available for FTA reception or with CI option
- Built-in LNB supply
- Master/slave system option for easy installation
- Parameter setting via TDH controller or remote
- High output level
- Can be mixed with other modules in the TDH range

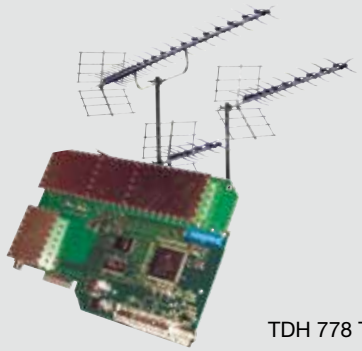
Technical data TDH - QPSK/FM module

TYPE		DVB-S/FM master TDH 737 FM	DVB-S/FM master TDH 738 FM	FM modulator TDH 736	DVB slave mod. TDH 739 FM
		Free to air	with CI		
Art. No.		490737	490738	490736	490739
Modulator type		QPSK - FM stereo	QPSK - FM stereo	FM stereo	FM stereo
Band		FM	FM	FM	FM
Input frequency range	kHz MHz	 920 - 2150	 920 - 2150	20 - 20.000	
Input level	dBµV	45....84	45....84		-
Modulation		FM	FM		FM
Output level max	dBµV	92	92	92	92
Output level attennuator	dB			10	
Input	Sat	F-female	F-female		
Loopthrough	Sat	Yes/F-female	Yes/F-female		-
Output frequency range	MHz	87.5 - 108.0	87.5 - 108.0	87.5 - 108.0	87.5 - 108.0
Spurious signals ref pict. carrier C/N	dB	> -60	> -60		> -60
Audio S/N ratio	dB	60	60		60
Audio distortion, 1 kHz	%	<1	<1		<1
Audio input level	V/RMS			0.5 V/RMS	
Audio input/output				15 pol SUB-D	
Return loss (MOD OUT)	dB	>10	>10		>10
Output impedance	Ohm	75	75		75
Temperature, operation	°C	-10...+50	-10...+50	-10...+50	-10...+50
Weight - standard module	kg	0.45	0.45	0.45	0.45
Dimensions (H x D x W)	mm	150 x 230 x 50	150 x 230 x 50	150 x 230 x 50	150 x 230 x 50
Remarks Video/audio cable [Phone - Sub-D]	 15 cm 150 cm	 Art. No. 300748 Art. No. 300745		 Art. No. 300748 Art. No. 300745	

TDH digital/analogue TV converters

TV channel converter modules in the TDH range is converting any TV channel in the VHF and UHF band to another frequency.
For optimized function and performance in handling analogue or digital signals, two different versions are available.

- Wide-range automatic gain control (AGC) secures right level into the distribution net
- High modulation error rate (MER) valued by means of SAW filter technology, secures best possible signal quality
- Full-range conversion
- DC supply for preamplifier

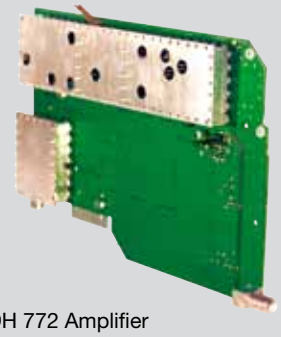


TDH 778 TV

Technical data TDH - TV converter modules

TYPE		TV converter TDH 776	TV converter TDH 775	TV converter TDH 778
	Norm	**Analogue**	**Analogue**	**Digital**
Art. No.	B/G		490775	490778
	D/K	490776		490778
	Norm L	490776		490778
	Pal I	490776		490778
Modulator type		I, L, D/K	B/G	
Input frequency range	MHz	45 - 862	45 - 862	50.5- 858
Input level	dBµV	60 - 90	60 - 90	45 - 90
Optimum input level	dBµV	55 - 80	55 - 80	55 - 80
Output frequency range	MHz	K 2....69	K 2....69	K 2....69
Output level max	dBµV	105	105	95
Output level attennuator	dB	0...10	0...10	0...10
Return loss (MOF in output)	dB	> 10	> 10	> 10
MER @ MER input signal > 36 dB	dB			> 30
TV carrier wave stability	kHz	< ± 25	< ± 25	< ± 25
Spurious signals ref pict. carrier C/N	dB	> -60	> -60	> -60
Antenna input		IEC female	IEC female	IEC female
Antenna output		IEC male	IEC male	IEC male
Temperature, operation	°C	-10...+50	-10...+50	-10...+50
Weight - standard module	kg	0.45	0.45	0.45
Dimensions (H x D x W)	mm	150 x 230 x 50	150 x 230 x 50	150 x 230 x 50
Remarks				

TDH FM amplifier module



TDH 772 Amplifier

Plug-in converter, modulator and amplifier module

The TDH 772 is e.g. a FM amplifier module for the TDH headend.
With this module it is possible to obtain the right professional insertion and amplification of the TERestrial FM signal in the distribution network.

Technical data TDH - FM amplifier module

TYPE		TDH 772 FM FM amplifier
Art. No.		490772
Modulator type		FM Stereo
Input frequency range	MHz	87.5 - 108.0
Gain	dB	9...44
Attenuation switchable in section	dB	10
Attenuation adjustable	dB	10
Notches adjustable (X 6)	dB	- 10
Noise figur	dB	< 6
Linearity	dB	+/- 1
Output frequency range	MHz	87.5 - 108.0
Output level max	dBµV	> 100
Return loss (MOF in output)	dB	> 10
Temperature, operation	°C	-10...+50
Weight - standard module	kg	0.45
Dimensions (H x D x W)	mm	150 x 230 x 50
Remarks		6 individual filters

TDH AV modules

TDH modulator modules convert an audio/video signal to a TV channel in the VHF/UHF band for distribution in a community cable system.

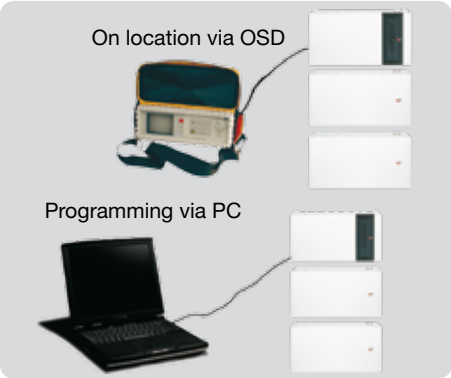
- Full-band high-quality modulator
- Adjacent channel operation
- Multi standard
- Mono sound / A2 stereo / Nicam available
- Multi language menu

TDH 725

Technical data TDH AV-modulator

TYPE		AV master VSB module	AV master VSB module	AV master VSB module
	Norm	**Mono**	**A2 stereo**	**Nicam**
Art. No.	B/G	490766	490767	590767
	D/K	490725	490726	
	Norm L	490725		590726
	Pal I	490725		
Modulator type		VSB	VSB	VSB
Input level	dBµV	-15.....-25	-15.....-25	-15.....-25
Audio mode		**Mono**	**A2 stereo**	**Nicam**
Output channel		K 2....69	K 2....69	K 2....69
frequency range	MHz	47-862	47-862	47-862
Output level max	dBµV	105	105	105
Output level attennuator	dB	10	10	10
Spurious signals ref pict. carrier C/N	dB	> -60	> -60	> -60
Video input CVBS niveau	Vpp	0.7 - 1.3	0.7 - 1.3	0.7 - 1.3
Audio input level	V/RMS	0.5 V/RMS	0.5 V/RMS	0.5 V/RMS
Video S/N ratio	dB	> 54	> 54	> 54
Audio input/output		15 pol SUB-D	15 pol SUB-D	15 pol SUB-D
Temperature, operation	°C	-10...+50	-10...+50	-10...+50
Weight - standard module	kg	0.45	0.45	0.45
Dimensions (H x D x W	mm	150 x 230 x 50	150 x 230 x 50	150 x 230 x 50
Remarks				
Video/audio cable	15 cm	Art. No. 300748	Art. No. 300748	Art. No. 300748
[Phone - Sub-D]	150 cm	Art. No. 300745	Art. No. 300745	Art. No. 300745

Controlling Triax TDH 700 headend



5 ways to control your TDH 700 headend
and free software for controlling available on www.triax.com

- Unique, simple operation via On Screen Display [OSD]
- Programming via PC
- Controll and install software via NBOX and TDH Manager [Internet]
- Controll and install software via GSM modem and TDH Manager
- Controll and install software via telephone modem and TDH Manager
  - please see the user manual to make the correct connection of the units and you can also read more on our website about the different solutions

Controlling accessories for TDH headend

Type Art. No.		N-port - for Internet 300766	GSM modem - for mobile phone 300765	Telephone modem - for access 300764
Packing QTY	pcs.	1	1	1
What you can do		**Get access via Internet** • Install software for NBOX and TDH manager. • Type in the IP address • Select one of the virtual ports • Start controlling the TDH	**Get access via GSM** • Install software for TDH manager. • Dial up via built-in modem or external standard telephone modem • Insert SIM data card in the GSM modem • Connect the GSM modem to TDH 700 modem port	**Get access via phone modem** • Install software for TDH manager. • Type in the telephone number • Dial up via built-in modem or external standard telephone modem • Connect the standard telephone modem to TDH 700 modem port
Remarks		Power supply included - see page 111 for connection cable	Power supply **not** included - see page 111 for connection cable	Power supply included - see page 111 for connection cable

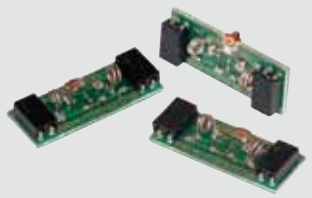

N-port connection


GSM connection


Telephone modem

Triax TDH channel filters

Channel filter option.
For all TDH modules with a modulator it is possible to improve the C/N in networks with high number of TV channels. This is done by means of adding a channel filter on each module.

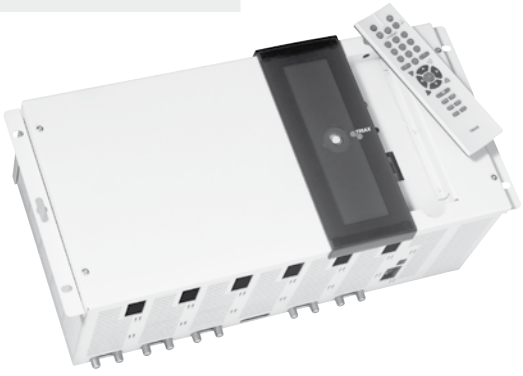


TDH channel filter

Technical data on TDH channel filters

Channel filter - VHF/S-channels	
Art. No.	**Type**
301371	S 1 - 2 TDH channel filter
301372	S 2 - 3 TDH channel filter
301373	S 4 - 5 TDH channel filter
301374	S 6 - 7 TDH channel filter
301375	S 8 - 9 TDH channel filter
301376	S 10 - Ch. 5 TDH channel filter
301377	Ch. 6 - 7 TDH channel filter
301378	Ch. 8 - 9 TDH channel filter
301379	Ch. 10 - 11 TDH channel filter
301380	Ch. 12 - S 11 TDH channel filter
301381	S 12 - 13 TDH channel filter
301382	S 14 - 15 TDH channel filter
301383	S 16 - 17 TDH channel filter
301384	S 18 - 19 TDH channel filter
301385	S 20 - 21 TDH channel filter
301386	S 22 - 23 TDH channel filter
301387	S 24 - 25 TDH channel filter
301388	S 26 - 27 TDH channel filter
301389	S 28 - 29 TDH channel filter
301390	S 30 - 31 TDH channel filter
301391	S 32 - 33 TDH channel filter
301392	S 34 - 35 TDH channel filter
301393	S 36 - 37 TDH channel filter
301394	S 38 - 39 TDH channel filter
301395	S 40 - 41 TDH channel filter

Channel filter - UHF-channels	
Art. No.	**Type**
301321	Ch. 21 - 22 TDH channel filter
301323	Ch. 23 - 24 TDH channel filter
301325	Ch. 25 - 26 TDH channel filter
301327	Ch. 27 - 28 TDH channel filter
301329	Ch. 29 - 30 TDH channel filter
301331	Ch. 31 - 32 TDH channel filter
301333	Ch. 33 - 34 TDH channel filter
301335	Ch. 35 - 36 TDH channel filter
301337	Ch. 37 - 38 TDH channel filter
301339	Ch. 39 - 40 TDH channel filter
301341	Ch. 41 - 42 TDH channel filter
301343	Ch. 43 - 44 TDH channel filter
301345	Ch. 45 - 46 TDH channel filter
301347	Ch. 47 - 48 TDH channel filter
301349	Ch. 49 - 50 TDH channel filter
301351	Ch. 51 - 52 TDH channel filter
301353	Ch. 53 - 54 TDH channel filter
301355	Ch. 55 - 56 TDH channel filter
301357	Ch. 57 - 58 TDH channel filter
301359	Ch. 59 - 60 TDH channel filter
301361	Ch. 61 - 62 TDH channel filter
301363	Ch. 63 - 64 TDH channel filter
301365	Ch. 65 - 66 TDH channel filter
301367	Ch. 67 - 68 TDH channel filter



Triax connection cables

Technical data on TDH connection cable

Type Art. No.		USB cable A to B 453160	USB cable A to B 453161	RF cable 20 cm 452090	RF cable 35 cm 452091
Lenght	cm	50	100	20	35
Packing QTY	pcs.	1	1	1	1
Remarks		A to B connection for TDH 701 sub	A to B connection for TDH 701 sub	Connection from splitter/multi switch to TDH modules	Connection from splitter/multi switch to TDH modules


USB cable - 50 cm


USB cable - 100 cm


RF cable - 20 cm


RF cable - 35 cm

Technical data on TDH connection cable

Type Art. No.		Video/audio 150 cm 300745	Video/audio 150 cm 300743	Video/audio 200 cm 300746
Lenght	cm	150	150	200
Packing QTY	pcs.	1	1	1
Remarks		150 cm cable fitted with 15 pol D-sub and 3 x phone male connector	150 cm cable fitted with 3 x phone male and Scart-connector	200 cm cable fitted with 3 x phone male and Scart-connector


Video/audio -150 cm


Modulator -150 cm


Video/audio -200 cm

Technical data on TDH connection cable

Type Art. No.		Decoder cable 150 cm 300742	Video/audio for Nicam 300738
Lenght	cm	150	100
Packing QTY	pcs.	1	1
Remarks		150 cm cable fitted with 15 pol D-sub to Scart-connector	Modulatorcable with scart and 3 phono connector for TCM08


Decoder cable


TCM 08 - Nicam

CSE 3300 digital main unit

CSE 3300 Base unit

CSE 3300 headend system

- Headend suitable for adjacent channels for master antenna systems
- Slots for 8 or 12 cassettes (up to 16 or 24 channels)
- Suitable for all analogue, digital TV and radio cassettes
- Max. output level 106 dBµV
- Simple software adaption for control unit (BE-REMOTE) possible via RS-232 socket
- Electronical software supported level adjustment via the control unit

Technical data

TYPE Art. No.		CSE 3312 Main unit 325100	CSE 3308 Main unit 325104	CSE 3301 for 1 cassettes 325103
No. of slots for cassettes 12	Pcs	**12**	**8**	**1**
Delivery status unloaded		Unloaded	Unloaded	Unloaded
Fit for adjacent channels		Yes	Yes	
Input/output impedance/ Programming		Integrated Control Unit 75Ω - BE-REMOTE	Integrated Control Unit 75Ω - BE-REMOTE	
S/N weighted	dB	55	55	
Input data				
Input frequency range	MHz	47 – 862, 950 – 2150	950 – 2150	
Input distributor		3 pieces each with 4 and 6 outputs	2 pieces with 4 and 6 outputs	
Power feed for LNB	V/mA	18 /1000	18 /1000	
Output data				
HF output level/HF level adjusting	dBµV	max. 106 / -31dB	max. 106 / -20dB	
Output frequency range - dependent upon cassettes	MHz	47 – 862	47 – 862	
Power supply				
Mains voltage/Frequency	Hz/V	50-60 / 195 – 260	50-60 / 195 – 260	50-60 / 100 – 260
Power consumption (fully loaded)	W	max. 210	max. 150	max. 150
Weight (fully loaded) approx.	kg	30	21	20
Dimensions (W x H x D)	mm	700 x 397 x 315 (19” x 9 HU)	483 x 397 x 302 (19” x 9 HU)	483 x 44.5 x 254 (19” x 1 HU)
Remarks				

CSE 3300 SAT & TER converter (Analogue)

Stereo Satellite Double Reception Cassette in CCIR standard

Each double cassette converts two SAT IF signals in one polarization plane into two selectable channels in the VHF/UHF band. A descrambler retrofit kit DNS universal can be retrofitted for each output channel.
Both output channels can be blanked (black picture – e.g. for hotel systems).

CSE 123x modules

Technical data

TYPE Art. No.		CCS 1231 Twin 325110	CCS 1233 Twin 325111	CCS 1234 Twin 325112	CCS 1235 Twin 325113
No. of inputs	Pcs	1	1	1	1
No. of converted channels	Pcs	2	2	2	2
Input frequency range	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150
Output channels		A: C 02 - C 04 B: S 03 - S 24 incl. C 05 - C 12	S 03 - S 24 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69

Stereo Terrestrial Double Reception Cassette in CCIR standard

Terrestrial cassettes for conversion of two analogue terrestrial signals into two selectable channels in the VHF/UHF band.

CSE 39x modules

Technical data

TYPE Art. No.		CCT 391 Twin 325115	CCT 393 Twin 325116	CCT 394 Twin 325117	CCT 395 Twin 325118
No. of inputs	Pcs	2	2	2	2
No. of converted channels	Pcs	2	2	2	2
Input frequency range	MHz	48.25 - 855.25	48.25 - 855.25	48.25 - 855.25	48.25 - 855.25
Output channels		A: C 02 - C 04 B: S 03 - S 24 incl. C 05 - C 12	S 03 - S 24 incl. C 05 - C 12	S 21 - S 41	C 21 - C 69

CCS 2380 modules

Stereo Satellite Double Reception Cassette from Digital SAT to PAL in CCIR standard (QPSK – PAL)

This double cassette transcodes two QPSK signals (SCPC or MCPC) to two selectable PAL channels in the frequency range 45 – 862 MHz. Up to two encrypted TV programs can also be converted with the appropriate CA module via the channel A common interface.
The WSS setting allows 16:9 channels to be viewed with the correct picture format. VPS and PDC signals and teletext information are also converted. DVB and teletext subtitles can be displayed. When radio stations are converted, the name of the radio station as well as the now and next information are displayed on the screen.

Technical data

TYPE		CCS 2380 Twin QPSK to PAL
Art. No.		325131
No. of inputs	Pcs	2
No. of converted channels	Pcs	2
Input frequency range	MHz	950 - 2150
Input symbol rate	Msymb/s	1 - 45
Software download	via	RS 232
Output channels		C 02 - C 69

CCSF 2360 modules

Stereo Satellite Double Reception Cassette from Digital SAT to FM (QPSK – FM)

This twin cassette converts two QPSK signals (SCPC or MCPC) into two selectable FM radio stations.

Technical data

TYPE		CCSF 2360 QPSK to FM
Art. No.		325175
No. of inputs	Pcs	2
No. of converted channels	Pcs	2
Input frequency range	MHz	950 - 2150
Input symbol rate	Msymb/s	1 - 45
Software download	via	RS 232
Output channels	MHz	87.5 - 107.9

CSE 3300 Terrestrial transcoding (Digital)

Double cassette transcodes two COFDM signals into two selectable PAL channels in the frequency range 45 – 862 MHz.

Encrypted TV channels can also be converted with the appropriate CA module via the common interface.
The WSS setting allows 16:9 channels to be viewed with the correct picture format. VPS and PDC signals and teletext information are also converted.

DVB and teletext subtitles can be displayed. When radio stations are converted, the name of the radio station as well as the now and next information are displayed on the screen.
Bandwidth 7/8 MHz switchable.

CCMT 2180 modules

Technical data

TYPE		**CCMT 2180** P CI
Art. No.		**325132**
No. of inputs	Pcs	2
No. of converted channels	Pcs	2
Input frequency range (VHF) (UHF)	MHz MHz	177.5 - 226.5 474.0 - 858.0
No. of carriers		2 k and 8 k
Input symbol rate	norm	EN 300 744
Output channels		C 02 - C 04 S 03 - S 41 C 05 - C 12 C 21 - C 69

CCMT 1290 twin DVB-T (COFDM-COFDM) reception module - with free selectable frequency

The CCMT 1290 twin DVB-T reception module converts two incoming COFDM-modulated signals into two outgoing COFDM-modulated signals with free selectable frequency. Individual stations can be deleted. The cassette has two DVB-T inputs and one HF output. The cassette is equipped with two channel strips (“A” and “B”). The channel strips consist of the DVB-T tuners, the digital signal preparation units and the output converter. The control of the cassette takes place via the control unit of the headend station. Two LEDs provide an indication of the input signal quality based on their colour and indicate if the respective channel strip is switched on (LED illuminates) or off.

CCMT 1290 modules

Technical data

TYPE		**CCMT 1290** Twin
Art. No.		**325138**
No. of inputs	Pcs	2
No. of loop-through outputs	Pcs	2
No. of converted channels	Pcs	2
Input frequency range	MHz	146.0 - 862.0
Output channels		C 05 - C 12 S 09 - S 16 C 21 - C 69

CSE 3300 Satellite transcoding (Digital)

CCS 485 modules

Digital SAT to Digital Cable (QPSK – QAM)
These cassettes transmodulate two different QPSK-modulated data streams (SCPC or MCPC) to two QAM modulated data streams. The output level can be set with an analogue antenna measuring instrument. The integrated TPS module serves for data processing of the demodulated transport stream. This allows service information to be changed (NIT – Network Information Table), data rates increased (stuffing) and individual programs to be deleted from the transport stream, whereby the remaining channels can then be transmitted with bandwidth optimization. Moreover, the Operator ID can be set.

Technical data

TYPE		**CCSM 500** QPSK-QAM	**CCS 510 CI** QPSK-QAM
Art. No.		**325140**	**325151**
No. of inputs	Pcs	2	2
No. of converted channels	Pcs	2	2
Input frequency range	MHz	950 - 2150	950 - 2150
Input symbol rate	Msymb/s	1 - 30	1 - 30
Output symbol rate	MBaud	1 - 7	1 - 7
Modulation schema		QAM 4, 16, 32, 64,128, 256	
Software download	via	RS 232	RS 232
Output frequency range	MHz	42 - 860	42 - 860

CSE 3300 Satellite transcoding (HDTV)

Conversion from HDTV digital to HDTV digital cable (DVB-S2 – QAM & DVB-S2 - COFDM)

The cassette mainly converts two digital HDTV satellite signals (DVB-S2) to two digital HDTV cable signals (QAM/COFDM). Moreover these are the interfaces which make this new cassette multifunctional and universal in a complete digital cable network. It commands an ASI input and an ASI output (ASI = Asynchronous serial interface acc. EN 50083-9) as well as a 100 MBit LAN interface (Ethernet). Therewith data streams of the digital signals can be collected or can be fed from external sources for supplying of cable networks.
Additionally there is a Common Interface (CI). With it encrypted signals (e.g. Pay TV) can be decoded. Up to 12 channels can be decoded with the smartcard of the provider depending on the Conditional Access Module (CAM). The integrated TPS module serves for data processing of the demodulated transport stream. This allows service information to be changed (NIT – Network Information Table) data rates increased (stuffing) and individual programs to be deleted from the transport stream. Moreover, the Operator ID can be set.

CCS-2 610 module

Technical data

TYPE		**CCS-2 610 CI** HDTV DVB-S2 - QAM	**CCS-2 1000** HDTV DVB-S2 - QAM	**CCS-2 1001** HDTV QPSK-COFDM
Art. No.		**325152**	**325153**	**325154**
No. of inputs	Pcs	2	2	2
No. of converted transponders	Pcs	2	2	2
Input frequency range	MHz	950 - 2150	950 - 2150	950 - 2150
DVB-S modes	QPSK	1/2, 2/3, 3/4, 5/6, 7/8		
DVB-S2 modes	QPSK	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10		
DVB-S2 modes	8PSK	3/5, 2/3, 3/4, 5/6, 8/9, 9/10		
Symbol rate DVB-S	QPSK	2 – 45	2 – 45	2 – 45
Symbol rate DVB-S2	QPSK	10 – 30	10 – 30	10 – 30
Symbol rate DVB-S2	8PSK	10 – 31	10 – 31	10 – 31
Output symbol rate	MBuad	1 – 7.5	1 – 7.5	1 – 7.5
Modulation scheme		QAM 4, 16, 32, 64,128, 256		
ASI in/ASI out interface		•	•	•
Ethernet interface		•	•	•
Common Interface		•	•	•
TPS module		•	•	•
Software download	via	RS-232	RS-232	RS-232
Output frequency range/ Channel infrequency	MHz	45 - 862	45 - 862	45 - 862

CCS-2 1000 module

CSE 3300 Satellite transcoding (HDTV)

CCS 1001 Q module

DVS-S/DVB-S2 to COFDM

The double transmodulator cassette is a converter, which converts all stations modulated according to DVS-S/DVB-S2 standard into two COFDM-modulated signals according to DIN EN 300744 for feeding into a cable network.

Technical data

TYPE		**CCS 1001 Q** HDTV modulator	**CCS 1001 T** HDTV modulator
Art. No.		**325196**	**325197**
No. of inputs	Pcs	2	2
Input level range	dBµV	60...80	60...80
Input frequency range	MHz	925-2150	925-2150
DVB-S modes	Q PSK	1/2, 2/3, 3/4, 5/6, 7/8	
DVB-S2 modes	QPSK	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	
DVB-S2 modes	8PSK	3/5, 2/3, 3/4, 5/6, 8/9, 9/10	
Symbol rate DVB-S	QPSK	2 – 45	2 – 45
Symbol rate DVB-S2	QPSK	10 – 30	10 – 30
Symbol rate DVB-S2	8PSK	10 – 31	10 – 31
HF output			
ASI in/ASI out interface		BNC connector	BNC connector
Output modulation		QAM 4, 16, 32, 64,128, 256	
Output channels		S21...C69	C05...C12, C21...C69
Output level	dBµV	97.0	97.0
Output impedance	Ω	75	75
Software download	via	RS-232	RS-232
Output frequency range/ Channel infrequency	MHz	42 - 860	42 - 860

CCS 1001 Q module

Terrestrial conversion (COFDM - QAM)

Conversion from digital terrestrial to digital cable (COFDM – QAM)

These cassettes transmodulate two different COFDM modulated data streams into two QAM modulated data streams. The output level can be set with an analogue antenna measuring instrument.

The TP module serves for data processing of the demodulated transport stream. This allows service information to be changed (NIT – Network Information Table) data rates increased (Stuffing) and individual programs to be deleted from the transport stream, whereby the remaining channels can then be transmitted with bandwidth optimisation. Moreover, the Operator ID (e.g. required for VisAvision) can be set.

CCT 485 module

Technical data

TYPE		**CCT 1001** COFDM-QAM
Art. No.		**325155**
No. of inputs	Pcs	2
No. of converted channels	Pcs	2
Input frequency range (VHF) (UHF)	MHz MHz	177.5 - 226.5 474.0 - 858.0
No. of carriers		2 k and 8 k
Input symbol rate	Msymb/s	acc. to EN 300 744
Output symbol rate	MBaud	1 - 7
Modulation scheme		QAM 4, 16, 32, 64,128, 256
Software download	via	RS 232
Output channels	MHz	S 21 - S 41

Multiplexing from Digital Terrestrial to Digital Cable (COFDM – QAM)

This cassette mainly converts two digital terrestrial signals (COFDM) into two freely selectable channels in the frequency range 42 - 860 MHz.
Moreover, these are the interface which makes this new cassette multifunctional and universal in a completely digital cable network.

CCT 1000 modules

Technical data

TYPE		**CCT 1000**	**CCT 1000T** COFDM-COFDM
Art. No.		**3251xx**	**325142**
No. of inputs	Pcs	2	2
No. of converted channels	Pcs	2	2
No. of multiplexes	Pcs	2	2
Input frequency range (VHF) (UHF)	MHz MHz	177.5 - 226.5 474.0 - 858.0	177.5 - 226.5 474.0 - 858.0
No. of carriers		2 k and 8 k	2 k, 4 k and 8 k
Input symbol rate	Msymb/s	acc. to EN 300 744	acc. to EN 300 744
Output symbol rate	MBaud	1 - 7	1 - 7
Modulation scheme		QAM 4, 16, 32, 64,128, 256	QPSK, 16-QAM and 64-QAM
Software download	via	RS 232	RS 232
Output channels	MHz	S 02 - S 21 incl. C 05 - C 12	C 02 - C 69

CCAV 30x module

AV Cassette

AV cassettes for input of AV signals via cinch sockets (e.g. video recorder, camera, DVD player).
Up to three modulators can be installed.

Technical data

TYPE		CCAV 300 AV 3 channel mono
Art. No.		**325129**
No. of inputs	Pcs	3 (per input) 1 x video, 2 x audio
Sound output		mono
Input frequency range	Hz/MHz	20 - 5
Output channels		S 03 - S 24 incl. C 05 - C12 (with CCM 313 modulator) S 21 - S 24 (with CCM 314 modulator) C21 - C69 (with CCM 315 modulator)
Delivery status		- without modulators

CCE 210 Encoder

CCE 210 Encoder - Analogue signals to MPEG2

The CCE 210 converts two analogue video and audio signals into two MPEG2 data streams. These data streams are outputted at the ASI interface or LAN (IPTV) interface. The analogue video signal can be fed in either via the video (yellow) cinch connectors (CVBS) or via the S-video connectors (Y/C). The stereo audio signals are fed in via the audio (red and white) cinch connectors. PAL BG (4.43 MHz) and PAL N (3.58 MHz) are supported.

Technical data

TYPE		CCE 210 twin encoder AV to ASI/IP
Art. No.		**325166**
ASI Interfaces:		
Asynchronous serial interface	Pcs	According to DIN EN 50083-9
Format	Pcs	MPEG ISO IEC 13 818-1 (Transport stream)
Advantage data rate	MBit/s	2 - 90 MBit/s
Connector		BNC fitting connector
Impedance	Msymb/s	75 Ohms
Interface level	MBaud	800 mVpp ± 10%
Rise/fall time		(20-80%) <1.2 ns
Return loss (ASI IN/OUT)	via	(5 MHz – 270 MHz) >17 dB
Firmware update	MHz	via RS-232

HDTV Satellite Conversion to IPTV

Transcoding from HDTV Digital SAT to IPTV (MPTS)

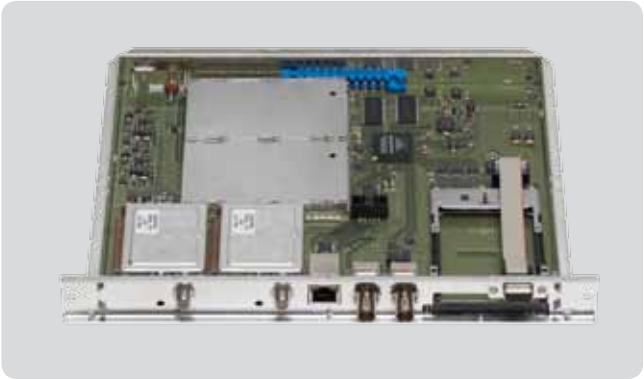
This cassette mainly converts two digital HDTV satellite signals (DVB-S2) to two multicast modulated data streams. Moreover these are the interfaces which make this new cassette multifunctional and universal. It commands an ASI input and an ASI output (ASI = Asynchronous Serial Interface acc. EN 50083-9) as well as a 100 MBit LAN interface (Ethernet). Therewith data streams of the digital signals can be collected or can be fed from external sources.

CCS 1000 module

Technical data

Type		**CCS 1000M DVB-S2 MPTS**	**CCS 1000 SS DVB-S2-SPST**
Art. No.		325190	325191
No. of inputs		2	2
No. of converted transponders		2	2
Input frequency range	MHz	950 – 2150	950 – 2150
DVB-S modes (QPSK)		1/2, 2/3, 3/4, 5/6, 7/8	1/2, 2/3, 3/4, 5/6, 7/8
DVB-S2 modes (QPSK)		1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
DVB-S2 modes (8PSK)		3/5, 2/3, 3/4, 5/6, 8/9, 9/10	3/5, 2/3, 3/4, 5/6, 8/9, 9/10
Symbol rate DVB-S (QPSK)	MSymb/s	1 – 45	1 – 45
Symbol rate DVB-S2 (QPSK)	MSymb/s	1 – 45	1 – 45
Symbol rate DVB-S2 (8PSK)	MSymb/s	1 – 45	1 – 45
Ethernet Interface			
Standard		100-BASE-T	100-BASE-T
Data rate	Mbit/s	≤ 80	≤ 80
Protocols		UDP (User Data Protocol) RTP (Real-Time Transport Protocol)	UDP (User Data Protocol) RTP (Real-Time Transport Protocol)
ASI in/ASI out interfaces		•	•
Common Interface		•	•
TPS module		•	•
Software download		via RS-232	via RS-232

IPTV Conversion to Digital Cable/Terrestrial



CCQ 1000MQ module

Transmodulation from IPTV to Digital Cable (QAM)

This cassette mainly converts two digital data streams (MPTS) to two digital cable signals (QAM). Moreover these are the interfaces which make this new cassette multifunctional and universal. It commands an ASI input and an ASI output (ASI = Asynchronous Serial Interface acc. EN 50083-9) as well as a 100 MBit LAN interface (Ethernet). Therewith data streams of the digital signals can be collected or can be fed from external sources.

Technical data

Type		CCQ 1000MQ MPTS - QAM	CCI 1000 MT MPTS-COFDM
Art. No.		325192	325193
No. of inputs		1	1
Ethernet Interface			
Standard		100-BASE-T	100-BASE-T
Data rate	Mbit/s	≤ 80 Mbit/s	≤ 80 Mbit/s
Protocols		UDP (User Data Protocol) RTP (Real-Time Transport Protocol)	UDP (User Data Protocol) RTP (Real-Time Transport Protocol)
Output symbol rate	MBaud	1 - 7.5 MBaud	2 k, 4 k and 8 k
Modulation scheme		QAM 4, 16, 32, 64, 128, 256	QPSK, 16-QAM or 64-QAM
			1/4, 1/8, 1/16 and 1/32
ASI in / ASI out interfaces		•	•
Common Interface		•	•
TPS module		•	•
Software download		via RS-232	via RS-232
Output frequency range	MHz	45 - 862	42 - 860 MHz

CCI 1000MT module

Transmodulation from IPTV to Digital Terrestrial (COFDM)

This cassette mainly converts two digital data streams (MPTS) to two digital terrestrial signals (COFDM). Moreover these are the interfaces which make this new cassette multifunctional and universal. It commands an ASI input and an ASI output (ASI = Asynchronous Serial Interface acc. EN 50083-9) as well as a 100 MBit LAN interface (Ethernet). Therewith data streams of the digital signals can be collected or can be fed from external sources.

Digital Terrestrial Conversion to IPTV

Transcoding from Digital Terrestrial to IPTV (MPTS)

This cassette mainly converts two digital terrestrial signals (DVB-T) to two multicast modulated data streams. These are the interfaces which make this new cassette multifunctional and universal. It commands an ASI input and an ASI output (ASI = Asynchronous Serial Interface acc. EN 50083-9) as well as a 100 MBit LAN interface (Ethernet). Therewith data streams of the digital signals can be collected or can be fed from external sources.
Additionally there is a Common Interface (CI). With it encrypted signals (e.g. Pay TV) can be decoded. Up to 12 channels can be decoded with the smartcard of the provider depending on the Conditional Access Module (CAM).

CCT 1000M module

Technical data

Type		CCT 1000M DVB-T - MPTS	CCT 1000 ST DVB-T - SPTS
Art. No.		325194	325195
No. of inputs		2	2
No. of converted transponders		2	2
Input frequency range	MHz MHz	177.5 - 226.5 MHz 474 - 858 MHz	177.5 - 226.5 MHz 474 - 858 MHz
DVB-S modes (QPSK)		2 k and 8 k	2 k and 8 k
DVB-S2 modes (QPSK)		according to EN 300 744	according to EN 300 744
Ethernet Interface			
Standard		100-BASE-T	100-BASE-T
Data rate		≤ 80 Mbit/s	≤ 80 Mbit/s
Protocols		UDP (User Data Protocol) RTP (Real-Time Transport Protocol)	UDP (User Data Protocol) RTP (Real-Time Transport Protocol)
ASI in / ASI out interfaces		•	•
Common Interface		•	•
TPS module		•	•
Software download		via RS-232	via RS-232

Transcoding from Digital Terrestrial to IPTV (SPTS)

This cassette mainly converts two digital terrestrial signals (DVB-T) to 16 x SPTS in unicast or multicast modulated data streams. Moreover these are the interfaces which make this new cassette multifunctional and universal. It commands an ASI input and an ASI output (ASI = Asynchronous Serial Interface acc. EN 50083-9) as well as a 100 MBit LAN interface (Ethernet). Therewith data streams of the digital signals can be collected or can be fed from external sources.
Additionally there is a Common Interface (CI). With it encrypted signals (e.g. Pay TV) can be decoded. Up to 12 channels can be decoded with the smartcard of the provider depending on the Conditional Access Module (CAM).

Multiplex for converting ASI transport streams

HADA 5100 SPTS module

Multiplexing from 5 ASI transport streams to IPTV HADA 5100 SPTS

This cassette converts 5 ASI signals to IPTV.
Either SPTS or MPTS is converted via the LAN interface dependent on the ASI data stream.
The data stream (SPTS / MPTS) includes every service ID which is necessary for the reception with an IPTV receiver.

The firmware update of this cassette can be done via the RS-232 interface.

Technical data

Type Art. No.		**CCS HADA 5100 SPTS** 325188	**CCS HADA 5100** 325189
LAN interface			
Standard		10-BASE-T, IEEE 802.3i 100-BASE-TX, IEEE 802.3u 1000-BASE-X, IEEE 802.3z	10-BASE-T, IEEE 802.3i 100-BASE-TX, IEEE 802.3u 1000-BASE-X, IEEE 802.3z
Data rate	MBit	</= 180	</= 180
Protocols		UDP (User Data Protocol) RTP (Real-Time Transport Protocol	UDP (User Data Protocol) RTP (Real-Time Transport Protocol
ASI interfaces			
Standard		DIN EN 50083-9	DIN EN 50083-9
Format		MPEG ISO IEC 13818-1	MPEG ISO IEC 13818-1
User data rate	Mbit/s	2-90	2-90
Impedance	Ω	75	75
Max. data rate	Mbit/s	180	180
Level (input/output)	mV_{pp}	800 ± 10%	800 ± 10%
Return loss (input)	dB	> 17 (5 - 270 MHz)	> 17 (5 - 270 MHz)
Connections			
LAN		1 RJ 45 socket	1 RJ 45 socket
ASI inputs		5 BNC sockets	5 BNC sockets
ASI output			1 BNC socket
Connection strip (10-pin)		for supply voltages and control circuits	
RS 232 socket		serial interface for software update	

HADA 5100 module

Multiplexing from 5 ASI transport streams to 1 ASI transport stream HADA 5100

This cassette is a 5 to 1 multiplexer. It converts 5 ASI/ SPTS/MPTS input channels to 1 ASI/MPTS output channel.
Every input channel is equipped (selectable) with an ASI input and a LAN interface (1 input (IPTV) address).
The inputted data streams are individually edited and are combined to one data stream with the TPS module.
The output of this data stream is at the ASI or LAN interface (1 output (IPTV) address). This cassette can be allocated an own hardware IP address for the operation in a LAN network.
Software update can be done via the RS-232 interface.

Digital satellite/IP to FM

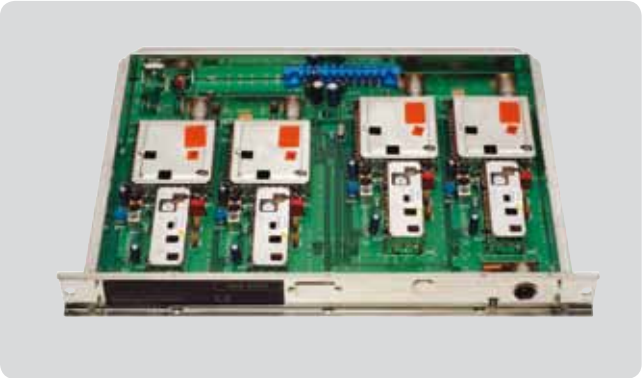
DVB-S2 / FM audio data streams from two DVB-S2 transponders

These cassettes convert audio data streams from two DVB-S2 transponders to 12 FM stations. Encrypted channels can be converted with the help of a CAM which can be connected in the Common Interface.
The RDS broadcast identification is automatically taken over from the broadcast name in the data stream.
The RDS information also can be manually edited. The operation is done via the control unit of the headend.
The quality of the input signal can be monitored via two LEDs.
The cassettes can be updated via the RS-232 interface.

CCSF 1000 module

Technical data

Type		CCSF 1000 DVB-S2-FM	CCIF 1000 IP-FM
Art. No.		325173	325174
HF Input / LAN interface			
Frequency range	MHz	925 - 2150	
Standard			100-BASE-T
Level range	dBµV	60 - 80	
Data rate			≤ 80
DVB-S modes		QPSK 1/2, 2/3, 3/4, 5/6, 7/8	
DVB-S2 modes		QPSK 1/2, 2/3, 3/4, 5/6, 7/8, 8/9, 9/10 8PSK 3/5, 2/3, 3/4, 5/6, 8/9, 9/10	
Protocols			UDP (User Data Protocol) RTP (Real-Time Transport Protocol)
Symbol rate DVB-S		QPSK: 2 - 45	
Symbol rate DVB-S2	MSymb/s MSymb/s	QPSK: 10 - 30 8PSK: 10 - 31	
HF output			
Frequency range	MHz	87.5 - 108.00	87.5 - 108.00
Tuning steps	kHz	50	50
Type of modulation		FM	FM
Return loss	dB	8	8
Output level	dBµV	93	93
Signal-to-harmonics ratio	dB	> 60	> 60
External voltage difference			
Mono	dB	66.0	66.0
Stereo	dB	53.0	53.0
Non-linear distortion factor			
Mono	%	0.06	0.06
Stereo	%	0.6 %	0.6 %
Overall output frq deviation	kHz	75	75
FM modulator			
Number of available services		12	12
RDS signal processing	kHz	57	57
Pilot signal	kHz	19	19
Preemphasis	µs	50	50
ASI			
Standard		DIN EN 50083-9	
Format		MPEG ISO IEC 13818-1	
Impedance	Ω	75	
User data rate	Mbit/s	2 - 90	
Level	mVpp	800	
Return loss	dB	> 17 (5 - 270 MHz)	
Connections			
LAN input			1 RJ45 socket
SAT input		2 F-socket	
HF output		1 IEC-socket	1 IEC-female
ASI input		1 BNC-socket	
Remotely controllable/- update		Yes/Yes	Yes/Yes



CCTF 326 module

Terrestrial FM Cassette

Terrestrial FM cassette for conversion of four freely selectable FM stations to the 87.5 – 108 MHz frequency range.

Technical data

TYPE		CCTF 326
Art. No.		**325176**
No. of inputs	Pcs	1
No. of FM converter	Pcs	4
Input level range	dBµV	10 - 95
Input frequency range	MHz	87.5 - 108
Output frequency range	MHz	87.5 - 108
Min. channel grid between converted FM stations	kHz	300

CGA module

Terrestrial FM Amplifier

FM signals can be supplied to the cable network over the FM amplifiers CGA 225 and CGA 325

FM amplifier for wideband amplification of 87.5 – 108 MHz FM range.

Six manually adjustable attenuator filters provide for attenuation of strong FM stations.

Technical data

TYPE		CGA 225	CGA 325
Art. No.		**325030**	**325177**
No. of inputs	Pcs	1	1
Frequency range	MHz	87.5 - 108	87.5 - 108
Gain	dB	17...37	43
Noise figure	dB	6 - 9	6 - 9
No. of adjustable filters		6	6
FM transmitter reduction per filter	dB	10 typ.	14 - 17

CSE 3300 additional modules

Monitoring Cassette CCMC 6000

The frequency range from 47 – 862 MHz can be monitored in the wideband system with the CCMC 6000 monitoring cassette. The following parameters are checked: Analogue TV video carrier (AM), analogue TV audio carrier (FM), analogue radio audio carrier (FM) as well as the digital QAM signal. The level as well as the synchronising pulse is evaluated for the analogue TV video carrier; the station idents. can be read out via the VPS signal. Stations without Idents. can be edited subsequently on a PC. This also applies for corresponding radio stations. The analogue TV video carrier is checked continuously by means of level evaluation. In the radio range, in addition to level monitoring, the station names can also be evaluated using the RDS Ident. Stations without RDS Ident. can also be edited subsequently. The level, as well the bit rate error, is measured for digital TV output signals in order to obtain error-free indication of a signal failure. All DC voltages from the power supply are also measured and evaluated. A search function also allows access to all station parameters for every TV viewer via an info channel. This can also be fed into the system over an integrated FM modulator.

CCMC 6000 module

The CCMC 6000 has the following interfaces:
Signal input, measuring output for connection of a measuring instrument, emergency power supply input, RS-232 interface as well as one audio and video output.

Technical data

TYPE	CCMC 6000
Art. No.	325178

Management Unit CCRC 8 incl. PC Software PSW 1000

The CCRC 8 allows connection of 1 PC, 1 analogue or GSM modem as well as 8 headend or 7 headend systems and 1 monitoring cassette CCMC 6000.
The system allows remote configuration via the analogue or GSM modem. The service data reported in combination with the CCMC 6000 monitoring unit is provided automatically by the RCU 8 management unit as SMS or facsimile.
The PSW 1000 software also supplied requires the following system conditions for the PC: 486, 5 MB capacity on hard disk, operating system Windows 95/98/ME/XP/2000. With this software, the headend systems CSE 3312, CSE 3308 and CSE 3319 can be preprogrammed using the RS-232 interface contained in the control unit. This can also be accomplished from a remote location using an analogue or GSM modem. Moreover, errors reported by the CCMC 6000 monitoring cassette are displayed.

CCRC 8 module

Technical data

TYPE	CCRC 8
Art. No.	325179

CCRS 1000 Remote and control software

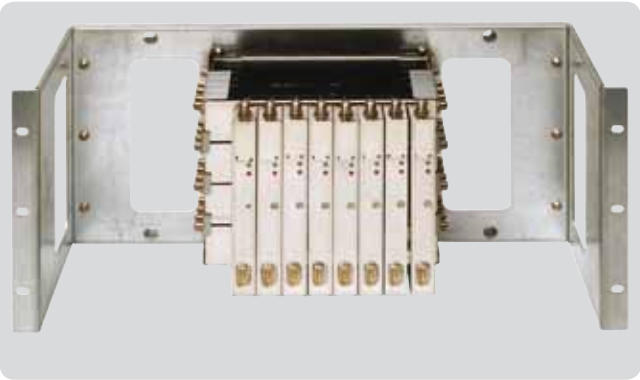
Art. No. 325182

This software allows the headend systems STC 332, STC 316, STC 1200 and STR 19-8 to be pre-programmed via the RS-232 interface contained in the control stage. This can also be accomplished from another location with an analogue or GSM modem. The set also includes a special control unit required for operation of the software.

System conditions PC: 486, 5 MB space on hard disk, operating system Windows 95/98/ME/XP/2000.

CCLA adaptor for CCRC 8 to LAN

Art. No. 325180



CCB 16/8 backup system

Backup System CCB 16/8

Art. No. 325181

The backup system is suitable for control of backup cassettes, which can be switched on in the system. With the backup system, up to 16 different satellite levels can be switched on, on up to 8 different backup cassettes.
This is required when a cassette in use fails and requires temporary replacement by a backup cassette. With this system, only one backup cassette is required per type.

This system is controlled by the PRCU 8 remote control unit. The system includes one mounting bracket suitable for 19” rack as well as wall installation, one data cable for connection to the PRCU 8 and the backup system with 16 inputs with 16 loop outputs for transfer of the signals to the headend systems and 8 switchable outputs to the backup cassettes. The CCB 16/8 is 4 HU high.

CSE 2800 digital main unit

CSE 2800 Headend system

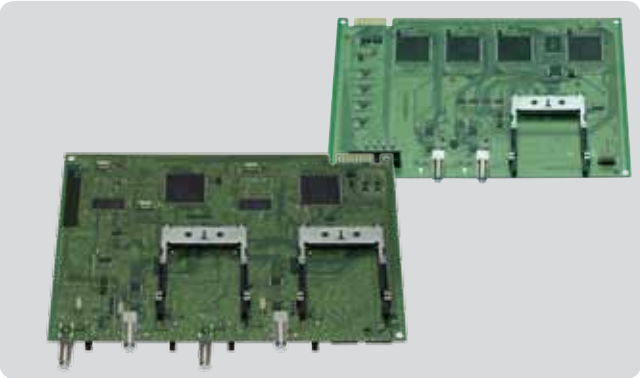
The digital headend system CSE 2800 provides reception and conversion of digital satellite TV channels and radio stations. It features a flexible module design.
The CSE 2800 allows conversion of up to 16 TV channels because of the quad module design. The output modulators are suitable for adjacent channels but you are not forced to adjust adjacent channels. The output channel range covers the complete needed spectrum of channel 02 up to channel 69 including special channels S 03 up to S 20 and the hyperband range of channels S 21 up to S 41. Decoding of encrypted channels can be done via the Common Interface. The supplied fixing brackets are suitable either for wall mounting of the CSE 2800 or for fixing it in a 19” rack.

CSE 3300 Base unit

Technical data

TYPE **Art. No.**		**CSE 2800** **Main unit** **325001**
Conversion	Pcs	**16 x digital SAT**
Suitable for adjacent channels		Yes
Input/output impedance/ Programming		Integrated Control Unit 75Ω
Software update	via	RS-232 interface
External AV connection		4 x via every modulator module with CGV 160 AV
Input data		
Input frequency range	MHz MHz MHz	177.5 - 226.5 474 – 858 950 – 2150
Power feed for LNB (max.)	V/mA	12 /350
Output data		
HF output level/HF level adjusting	dBµV	max. 102
Output frequency range	MHz	47 – 862
Power supply		
Mains voltage/Frequency	Hz/V	50-60 / 180 – 265
Power consumption	W	210
Weight (fully loaded) approx.	kg	20
Dimensions (H x D x W)	mm	355 x 228 x 443 (8 HU - 19”)

CSE 2800 QPSK to AV / COFDM to AV



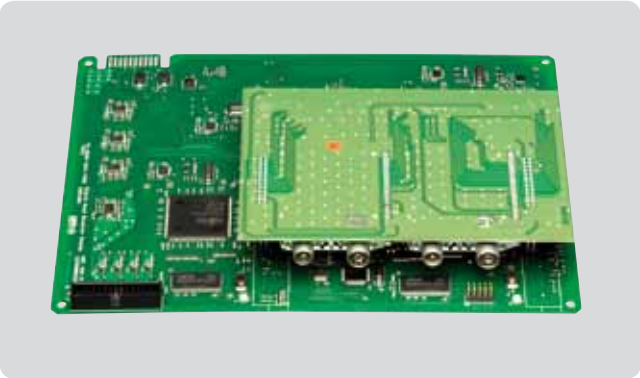
CGS 470 CI and CGS 480 CI QPSK/AV modules

Quad QPSK-AV-Transcoder

The Quad QPSK-AV-transcoder converts four TV channels out of two transponders. The CGS 480 CI AV converts four channels into AV of four different QPSK transponders.
The number of converted TV channels via the corresponding tuner can be programmed via the integrated control unit.
3 TV channels of tuner 1 and 1 TV channel of tuner 2 or 2 TV channels of tuner 1 and 2 TV channels of tuner 2 can be converted. This ensures a maximum of flexibility.
The module consists of two or four Common Interface slots for the decoding of one channel each in connection with a CAM and a smartcard of the broadcaster.

Technical data

TYPE		**CGS 470 CI Quad** QPSK /AV	**CGS 480 CI Quad** QPSK /AV
Art. No.		**325010**	**325016**
No. of input tuners	Pcs	2	4
No. of AV outputs	Pcs	4	4
Input frequency range	MHz	950 - 2150	950 - 2150
Symbol rate	Msymb/s	1 - 45	1 - 45
No. of converted TV channels	Pcs	4	4
Common interface		Up to 2 channels via tuner 1	1 for each of the 4 tuners
Power feed for LNB (max.)	V/mA	12 / 350	



CGT 46x AV Quad module

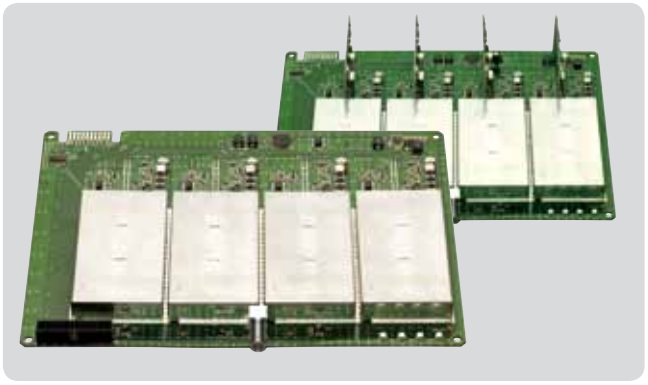
Technical data

TYPE		**CGT 460 AV** Quad	**CGT 461 AV** Quad
Art. No.		**325011**	**325012**
No. of input tuners	Pcs	2	1
No. of AV outputs	Pcs	4	4
Input frequency range (VHF) (UHF)	MHz MHz	177.5 - 226.5 474.0 - 858.0	177.5 - 226.5 474.0 - 858.0
No. of carriers		2 k and 8 k	2 k and 8 k
Symbol rate	Msymb/s	acc. to EN 300 744	acc. to EN 300 744
No. of converted TV channels	Pcs	4	4

CSE 2800 Quad AV modulators

Quad AV modulator

The modulator modules of the CSE 2800 are designed in single-sideband technology. Therefore they are suitable for adjacent channels. Up to 4 AV signals can be fed in.
Each module is equipped with four independent modulators which can be set freely. You are not forced to adjust adjacent channels. This means a maximum flexibility in projecting cable networks. The module CGFM converts the 4 AV signals into 4 free selectable FM frequencies.



CGMM 470 and CGMS 470 modules

Technical data

TYPE		CGMM 480 Mono	CGMS 480 Stereo	CGFM 470 Stereo
Art. No.		**325018**	**325019**	**325015**
Input signals	Pcs	4 x AV	4 x AV	4 x AV
Channel grid	kHz	Suitable for adjacent channels		300
Sound output		Mono	Stereo	Stereo
Standard		B/G, CCIR	B/G, CCIR	FM
Output channels	MHz	C 02 - C 69 incl. S 03 - S 14 S 16 - S 41	S 03 - S 14 S 16 - S 41	87.5 - 108

Conversion from Digital Terrestrial to Digital Terrestrial (COFDM – COFDM)

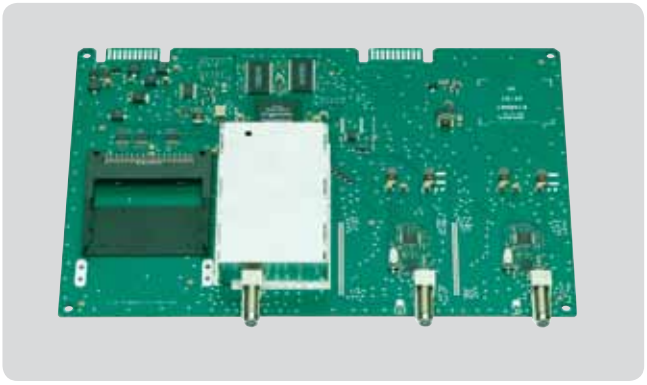
Terrestrial modules for conversion of two terrestrial digital signals into two freely selectable channels in the VHF/UHF band. The carriers can be switched off separately.
Bandwidth 7/8 MHz switchable.

CGT 26x module

Technical data

TYPE		CGT 263	CGT 265
Art. No.		**325020**	**325021**
No. of inputs	Pcs	2	2
No. of loop-through outputs	Pcs	2	2
No. of converted channels	Pcs	2	2
Input frequency range	MHz	146 - 862	146 - 862
Output channels	MHz	C 05 - C 12 S 09 - S 16	C 21 - C 69

CSE 2800 digital SAT to digital cable (HDTV)



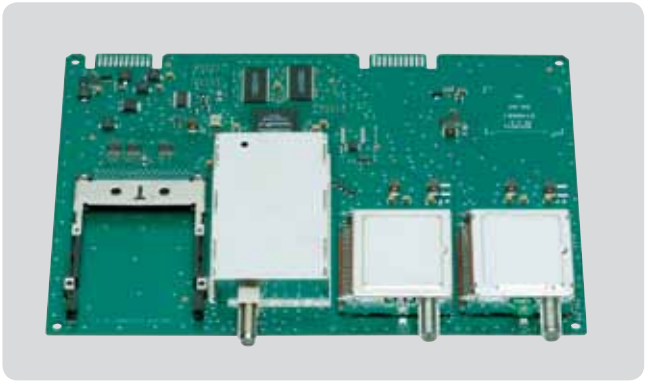
CGS 660 CI module

Transmodulation from Digital SAT to Digital Cable (DVB-S – QAM and DVB-S2 – QAM)

These modules transmodulate two different DVB-S2 resp. DVB-S modulated data streams (SCPC or MCPC) to two QAM-modulated data streams. The integrated TPS module serves for data processing of the demodulated transport stream: This allows service information to be changed (NIT – Network Information Table), data rates increased (stuffing) and individual programs to be deleted from the transport stream, whereby the remaining channels can then be transmitted with bandwidth optimization. Moreover, the operator ID can be set. With the models, up to 12 channels can be decoded of the transport stream via the Common Interface which is fed in tuner A.

Technical data

TYPE **Art. No.**		**CGT 660 CI** COFDM - QAM **325022**	**CGS 660 CI** QPSK - QAM **325025**	**CGS-2 660** DVB S2 - QAM **325026**	**CGS 660 Twin** QPSK - COFDM **325027**
No. of inputs	Pcs	2	2	2	2
No. of converted transponders	Pcs	2	2	2	2
Input frequency range	MHz	950 - 2150	950 - 2150	950 - 2150	950 - 2150
DVB-S modes	QPSK				
DVB-S2 modes	QPSK				
DVB-S2 modes	8PSK				
Symbol rate DVB-S	QPSK	1 – 45	1 – 45	2 – 45	1 – 45
Symbol rate DVB-S2	QPSK			10 - 30	
Symbol rate DVB-S2	8PSK			10 - 31	
Output symbol rate	MBuad	1 – 7.5	1 – 7.5	1 – 7.5	
Modulation scheme			QAM 4, 16, 32, 64,128, 256		QPSK 16 and 64 QAM
TPS module		•	•	•	•
Software download	via	RS-232	RS-232	RS-232	•
Output frequency range/ Channel infrequency	MHz	45 - 862	45 - 862	45 - 862	42 - 862



CGS 2- 660 module

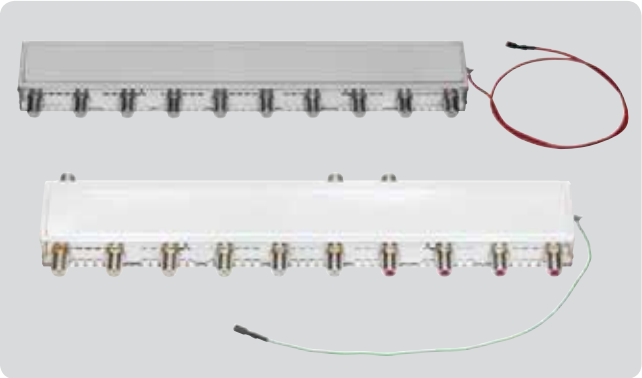
CSE 2800 additional modules

CGSI 160 - Input distributor with LNB supply

The SAT IF distributor has 1 SAT IF input with 9 outputs. The connected LNB can be supplied with 12 V and a maximum current of 800 mA. It is ideal for distribution of SAT IF signals because of its high isolation.
There are included 8 HF cables in the delivery.

CGSD 162 - Input distributor with LNB supply

The SAT IF distributor has 1 SAT IF input with 6 outputs and 1 SAT IF input with 4 outputs. These outputs are able to be cascaded for having 1 level with 10 outputs. The connected LNB can be supplied with 12 V and a maximum current of 800 mA. It is ideal suitable for the distribution of SAT IF signals because of its high isolation.
There are included 8 HF cables in the delivery.



CGSI and CGSD input distributor modules

Technical data

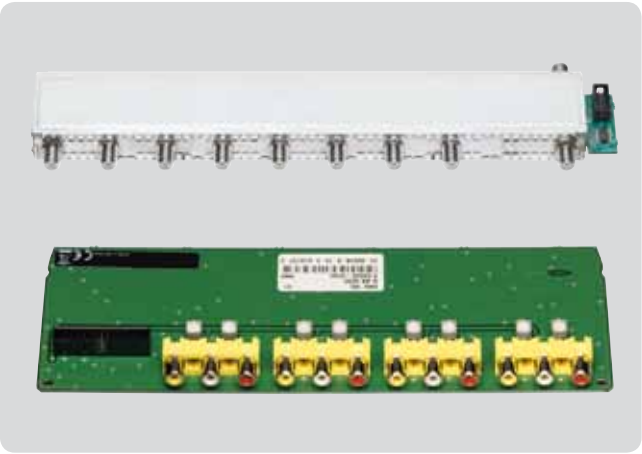
TYPE	CGSI 160	CGSD 162
Art. No.	325032	325033

CGOC 168 - Output collector

The output collector CGOC 168 has 8 inputs, 1 output with max. 101 dBµV and 1 measuring output which is attenuated by 20 dB.

CGV 160 AV - Quad AV Adapter board

The quadruple AV adapter is necessary for feeding in of external AV signals via cinch connectors with the quadruple modulators CGMM 470 and CGMS 470.

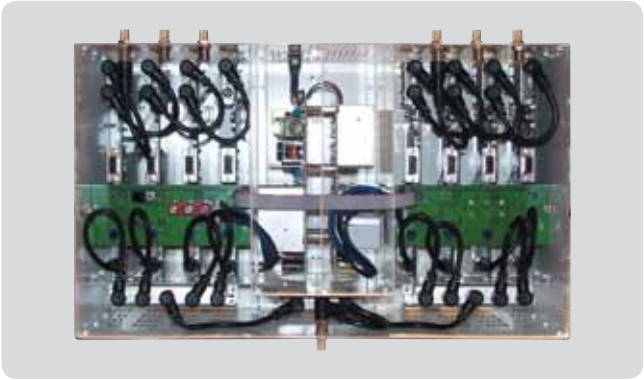


CGSI and CGSD input distributor modules

Technical data

TYPE	CGOC 168	CGV 160 AV
Art. No.	325035	325031

CSE 6, 8 & 12 - DVB-T Compact Headend



CSE headend - open

CSE 6, 8 & 12 - DVB-T

With the pending ground-breaking digital switch over, lots of small to medium hotels and guest houses will see their analogue TV services switched off. Predominantely it was common place to have single channel amplifiers or cluster equalisers feeding the launch amplifier to provide the standard analogue “Off Air” channels.

The CSE compact headend system has been designed to update and replace the existing filtering with a one box solution to convert digital signals to analogue channels which enables the hotel or guest house to use existing TV reception equipment.

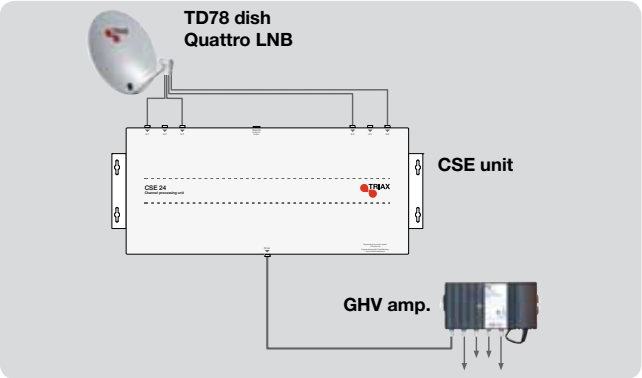
Technical data

Type		CSE 0601	CSE 0801	CSE 1201
Art. No.		324949	324950	324951
Input		DVB-T PAL	DVB-T PAL	DVB-T PAL
Frequency	MHz	470-862	470-862	470-862
TV standard			PAL I, B/G, DK, Secam L	
Audio mode			Single mono modulator	
Channels (fully agile)		21-68	21-68	21-68
Modulator type		DSB	DSB	DSB
Output level	dBµV	85	85	85
Level adjustment	dB	0-15	0-15	0-15
No. of channels	Pcs.	6	8	12
Loop through		No	No	No
Line power		12V DC	12VDC	12VDC
Connections			F-Type	
Input voltage	Hz/VAC		AC 90-264 / 50/60 Hz	
Dimensions H mm W mm D mm		253 300 200	253 428 200	253 567 200
Weight	Kg	5.5	8.8	11.5

CSE 6, 8, 12, 16 & 24 - DVB-S Headend

CSE 6, 8, 12, 16 and 24 - DVB-S

The CSE compact headend has been designed to update small to medium installations at an affordable cost without upgrading the whole system. It is available in 2 versions COFDM - PAL (DVB-T) or QPSK - PAL (DVB-S) which can produce either 6, 8 or 12 PAL output channels. The CSE range has no loop through facility which ensures an excellent C/N and removes unwanted analogue and digital signals from the spectrum making channel planning easier. This new headend also offers the unique option of adding a video/audio source to a PAL output just by adding a RX and a 300745 A/V lead without the need for additional modules.



CSE headend example

Technical data

Type		CSE 0611	CSE 0811	CSE 1211	CSE 1601 Twin	CSE 2401 Twin
Art. No.		324952	324953	324954	324980	324981
Input		DVB-S PAL	DVB-S PAL	DVB-S PAL	DVB-S PAL	DVB-S PAL
Frequency	MHz	950-2150	950-2150	950-2150	950-2150	950-2150
TV standard		PAL I, B/G, DK, Secam L			PAL I, B/G, DK, Secam L	
Audio mode		Single mono modulator			Single mono modulator	
Channels (fully agile)		21-68	21-68	21-68	21-68	21-68
Modulator type		DSB	DSB	DSB	VSB	VSB
Output level	dBµV	85	85	85	85	85
Level adjustment	dB	0-15	0-15	0-15	0-15	0-15
No. of channels	Pcs.	6	8	12	16	24
Loop through		No	No	No	No	No
Line power		0/14V	0/14V	0/14V	0/14V	0/14V
		Quattro LNB required			Quattro LNB required	
Connections		F-con			F-con	
Input voltage	Hz/VAC	50/60 - 90-264			50/60 - 90-264	
Dimensions H mm		253	253	253	253	253
W mm		300	428	567	428	567
D mm		200	200	200	200	200
Weight	Kg	5.5	8.8	11.5	8.8	11.5

Accessories

TNH 021

AV Lead
Art. No. 300742
150 cm cable fitted with 15 pol D-Sub to SCART

CHF 125

A/V + Data Cable
Art. No. 324904
Audio/Video and data cable

CHF 126

RS 232
Art. No. 300769
Data cable

TNH - The digital processing unit

- processes and distributes FTA (Free To Air) programmes

TNH headend

The digital processing unit TNH processes and distributes FTA (Free-To-Air) digital programmes in the SMATV networks. The TNH station is fully compatible with DVB-S and DVB-T signals.

Depending on the model, the signal can be modulated in the network to standard B, G or L with audio processing in mono or Nicam stereo (digital sound).

The fully modular TNH station adapts to the number of programmes to be distributed by simply adding modules. A power supply supplies up to 6 processing modules.

- Modular system
- COFDM and QPSK single and twin modules
- VHF and UHF output modules
- DSB and VSB modulation
- Nicam digital sound modules
- Mono analogue sound modules
- Power supply capacity: 6 modules
- Easy on-rail and wall installation
- Programming by remote control
- Intuitive OSD in 6 languages (English, French, German, Danish, Swedish or Spannish)
- In/out connection leads provided
- Input loop-through

Power supply units

This power supply enables 6 modules in the TNH range to be supplied with the voltages they require to operate correctly. It is installed on the 3 or 6 module frames or is mounted on a flat surface e.g. a wall.

The materials and components used enable optimum operation and excellent heat dissipation. Male/female Sub-D9 leads, delivered with the process modules, are used for the module connections.

Technical data

TYPE		TNH 006	TNH 106
Art. No.		324900	324901
Power consumption	W	50	70
Input voltage	VAC/Hz	90 - 264 / 50 - 60	90 - 264 / 50 - 60
Output voltage	VDC/A VDC/A VDC/A VDC/A	30 / 0.1 15 / 1.0 5.0 / 4.0 3.3 / 4.0	30 / 0.1 15 / 1.0 5.0 / 4.0 3.3 / 4.0
Connectors		6 x female Sub-D9	6 x female Sub-D9

DVB-S modules

SAT-QPSK

QPSK/RF cross-modulation lines transfer an FTA (“Free-To-Air”) programme, resulting from a QPSK satellite transponder, into an RF analogue channel.
Sound can be processed in mono or Nicam stereo digital mode.
They allow FTA programmes to be broadcasted in a traditional cable television network.

- Infrared receiver integrated
- Power from TSH power supply unit
- Active loop-trough (input signal)

Technical data

Type		TNH 150 SAT-QPSK VHF module	TNH 151 SAT-QPSK UHF module	TNH 154 SAT-QPSK VHF module	TNH 155 SAT-QPSK UHF module	TNH 170 SAT-QPSK VHF/UHF	TNH 172 SAT-QPSK UHF module
Art. No.		**324910**	**324911**	**324914**	**324915**	**324916**	**324918**
Input frequencies	MHz	950 -2150	950 -2150	950 -2150	950 -2150	950 -2150	950 -2150
Output frequencies	MHz	175-300	470-862	175-300	470-862	47 - 862	47 - 862
Output channel		E5-E12 S11-S20	CH 21-CH 69	E5-E12 S11-S20	CH 21-CH 69	E2- CH 69	E2- CH 69
Output level	dBµV	93	93	93	93	93	93
Level adjustment	dB	15	15	15	15	15	15
Modulator type		MA / DSB	MA / DSB	MA / DSB	MA / DSB	VSB	VSB
TV standard		B/G, L	B/G, L, I	B/G, L	B/G, L, I	B/G, L, I	B/G, L, I
Audio mode		Mono	Mono	Stereo	Stereo	Mono	Stereo
Input connectors		F-female	F-female	F-female	F-female	F-female	F-female
Loop-through connectors		F-female	F-female	F-female	F-female	F-female	F-female
Output connectors		F-female	F-female	F-female	F-female	F-female	F-female
LNB voltage	V/DC	14	14	14	14	14	14
Power supply		from PSU	from PSU	from PSU	from PSU	from PSU	from PSU
Infrared remote eye		Built-in	Built-in	Built-in	Built-in	Built-in	Built-in
Dimension (HxDxW)	mm	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35
Weight	kg	1.5	1.5	1.5	1.5	1.5	1.5

Output multiplexer

DVB-S - Twin modules

SAT-QPSK

QPSK/RF cross-modulation lines transfer an FTA (“Free-To-Air”) programme, resulting from a QPSK satellite transponder, into an RF analogue channel.
Sound can be processed in mono or Nicam stereo digital mode.

- Master-slave system
- Transform 2 channels from one transponder
- Level separately adjustable
- Slave also as AV-module useable

Technical data

Type		TNH 250 QPSK twin VHF module	TNH 251 QPSK twin UHF module	TNH 254 QPSK twin VHF module	TNH 255 QPSK twin UHF module
Art. No.		**324920**	**324921**	**324924**	**324925**
Input frequencies	MHz	950 -2150	950 -2150	950 -2150	950 -2150
Output frequencies	MHz	174-300	470-862	174-300	470-862
Output channel		E5-E12 S11-S20	CH 21-CH 69	E5-E12 S11-S20	CH 21-CH 69
Output level	dBµV	95	95	95	95
Level adjustment	dB	15	15	15	15
Modulator type		MA / DSB	MA / DSB	MA / DSB	MA / DSB
TV standard		B/G, L	B/G, L, I	B/G, L	B/G, L, I
Audio mode		Mono	Mono	Stereo	Stereo
Input connectors		F-female	F-female	F-female	F-female
Loop-through connectors		F-female	F-female	F-female	F-female
Output connectors		F-female	F-female	F-female	F-female
LNB voltage	V/DC	14	14	14	14
Power supply		from PSU	from PSU	from PSU	from PSU
Infrared remote eye		Built-in	Built-in	Built-in	Built-in
Dimension (HxDxW)	mm	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35
Weight	kg	1.5	1.5	1.5	1.5

DVB-T modules

TER - COFDM

COFDM/RF cross-modulation lines transfer an FTA (“Free-To-Air”) programme resulting from a COFDM land multiplex into an HF analogue channel.
Sound can be processed in mono or Nicam stereo digital mode.
They allow FTA programmes to be broadcasted in a traditional cable television network.

- Infrared receiver integrated
- Power from TSH power supply unit
- Active loop-trough (input signal)

Technical data

Type		TNH 100 COFDM-PAL VHF module	TNH 101 COFDM-PAL UHF module	TNH 104 COFDM-PAL VHF module	TNH 105 COFDM-PAL UHF module	TNH 121 COFDM-PAL VHF / UHF	TNH 122 COFDM-PAL VHF / UHF
Art. No.		**324930**	**324931**	**324934**	**324935**	**324937**	**324938**
Input frequencies	MHz	50.5-858	50.5-858	50.5-858	50.5-858	50.5-858	50.5-858
Output frequencies	MHz	174-300	470-862	174-300	470-862	47-862	47-862
Output channel		E5-E12 S11-S20	CH 21-CH 69	E5-E12 S11-S20	CH 21-CH 69	E2-CH 69	E2-CH 69
Output level	dBµV	93	93	93	93	93	93
Level adjustment	dB	15	15	15	15	15	15
Modulator type		MA / DSB	MA / DSB	MA / DSB	MA / DSB	VSB	VSB
TV standard		B/G, L	B/G, L, I	B/G, L	B/G, L, I	B/G, L, I	B/G, L, I
Audio mode		Mono	Mono	Stereo	Stereo	Mono	Stereo
Input connectors		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
Loop-through connectors		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
Output connectors		F-female	F-female	F-female	F-female	F-female	F-female
LNB voltage	V/DC	14	14	14	14	14	14
Power supply		from PSU	from PSU	from PSU	from PSU	from PSU	from PSU
Infrared remote eye		Built-in	Built-in	Built-in	Built-in	Built-in	Built-in
Dimension (HxDxW)	mm	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35
Weight	kg	1.5	1.5	1.5	1.5	1.5	1.5

DVB-T TWIN modules

TER-COFDM

COFDM/RF cross-modulation lines transfer an FTA (“Free-To-Air”) programme resulting from a COFDM land multiplex into an HF analogue channel.
Sound can be processed in mono or Nicam stereo digital mode.

- Master-slave system
- Transform 2 channels from one transponder
- Level separately adjustable
- Slave also as AV-module useable

Technical data

Type		TNH 200 COFDM-PAL VHF module	TNH 201 COFDM-PAL UHF module	TNH 204 COFDM-PAL VHF module	TNH 205 COFDM-PAL UHF module	TNH 221 COFDM-PAL VHF / UHF	TNH 222 COFDM-PAL VHF / UHF
Art. No.		**324940**	**324941**	**324944**	**324945**	**324947**	**324948**
Input frequencies	MHz	50.5-858	50.5-858	50.5-858	50.5-858	50.5-858	50.5-858
Output frequencies	MHz	174-300	470-862	174-300	470-862	47-862	47-862
Output channel		E5-E12 S11-S20	CH 21-CH 69	E5-E12 S11-S20	CH 21-CH 69	E2-E12 S11-S20 CH 21-CH 69	E2-E12 S11-S20 CH 21-CH 69
Output level	dBµV	95	95	95	95	95	95
Level adjustment	dB	15	15	15	15	15	15
Modulator type		MA / DSB	MA / DSB	MA / DSB	MA / DSB	VSB	VSB
TV standard		B/G, L	B/G, L, I	B/G, L	B/G, L, I	B/G, L, I	B/G, L, I
Audio mode		Mono	Mono	Stereo	Stereo	Mono	Stereo
Input connectors		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
Loop-through connectors		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
Output connectors		F-female	F-female	F-female	F-female	F-female	F-female
LNB voltage	V/DC	14	14	14	14	14	14
Power supply		from PSU	from PSU	from PSU	from PSU	from PSU	from PSU
Infrared remote eye		Built-in	Built-in	Built-in	Built-in	Built-in	Built-in
Dimension (HxDxW)	mm	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35
Weight	kg	1.5	1.5	1.5	1.5	1.5	1.5

QPSK-QAM and QPSK-COFDM modules

With our TNH product range it is now possible to receive satellite programs and transmodulate the data stream into a QAM modulated or a COFDM modulated data stream

- Easy to install via OSD
- Easy to programme
- Can be used as standalone modules

Technical data

Type		TNH 185 TWIN QPSK - COFDM VHF / UHF	TNH 186 TWIN QPSK - COFDM VHF / UHF	TNH 184 TWIN QPSK - QAM VHF / UHF
Art. No.		324963	324964	324962
Input frequency	MHz	950-2150	950-2150	950-2150
Input level	dBµV	40-74	40-74	40-74
Input SAT		F-norm	F-norm	F-norm
Symbol rates	Mbps	1-45	1-45	1-45
Viterbi-decoder		1/2, 2/3, 3/4, 5/6, 7/8	1/2, 2/3, 3/4, 5/6, 7/8	1/2, 2/3, 3/4, 5/6, 7/8
Modulator				
Modulation		COFDM	COFDM	QAM
Output mode		QPSK, QAM 16, 64 / 2k, 8k	QPSK, QAM 16, 64 / 2k	QAM 16, 32, 64, 128, 254
Spectrum inversion		Normal, Inverted	Normal, Inverted	Normal, Inverted
No. of outputs		1	2 adj. channel	1
Output channel		E 02 - C69	E 02 - C69 adj. channel	E 02 - C69
Output level	dBµV	93	93	90-100
Symbol rate	ms	4-30	4-30	4-30
MER	dB	> 32	> 32	> 32
Impedance	ohm	75	75	75
Working temperature (°C)	kg	-10 to +50	-10 to +50	-10 to +50
Weight (kg)		1.5	1.5	1.5
Dimension (HxDxW) (mm)		231 x 148 x 35	231 x 148 x 35	231 x 148 x 35

Twin AV Encoder modules

AV-COFDM and AV-QAM

These modules permit distribution of 2 audio video sources (DVD, camera etc..) in the COFDM or QAM formats in an HF network. The signals can then be received by TVs with integrated DVB-T or DVB-C tuners, as well as DVB-T or DVB-C receivers (SD or HD).

Input:
- Two AV inputs (video: CVBS, audio: stereo)
- PAL, PAL 60, SECAM, NTSC switchable
- Program name and provider name adjustable

Output:
- 3 quality modes preset
- Output channel E 02-69
- VSB modulator
- Output modulation mode 2K, 4K, 8K

Technical data

Type		TNH 115 AV/COFDM	TNH 116 AV/QAM
Art. No.		324997	324998
Input		2 x AV-signal	2 x AV-signal
Input connector		15 Sub-D	15 Sub-D
Modulator			
Modulation		COFDM	QAM
Output mode		QPSK, QAM 16, 64 / 2k, 8k	QAM 16, 32, 64, 128, 254
Spectrum inversion		Normal, Inverted	Normal, Inverted
No. of outputs		1	1
Output channel		E 02 - C69	E 02 - C69
Output level	dBµV	93	93
Output attenuation	dBµV	0-15	0-15
Symbol rate		4-30 Mbps (SCPC/ MCPC)	4-30 Mbps (SCPC/ MCPC)
MER (dB)	dB	> 32	> 32
Impedance	Ohm	75	75
Working temperature	°C	-10 to +50	-10 to +50
Weight (kg)	kg	1.5	1.5
Dimension (HxDxW)	mm	321 x 148 x 35	321 x 148 x 35
Remarks		External sources are connected to the modules via a 15pol Sub-D/3xRCA cable - art. no. 300745 - length: 1.5 meter	

TNH 010 remote
(Art. No. 324909)

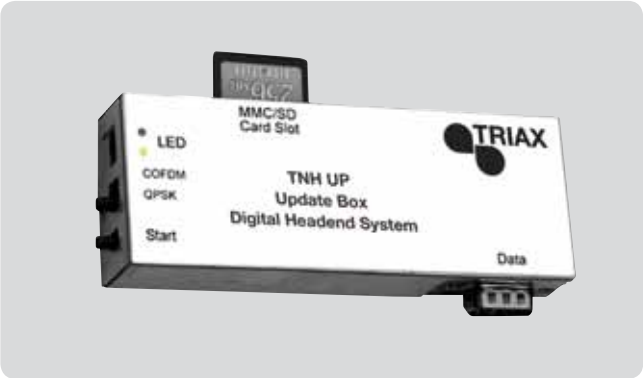
15pol Sub-D/3xRCA cable
(Art. No. 300745)

TNH accessories

TNH 011 software update box

- Sub-D data connector
- MMC/SD card slot
- COFDM/QPSK switch
- Software download from internet

Art. No. 324903



TNH accessories

TNH 600

6-module frame
Art. No. 324908
Frame for 6 modules and power supply

TNH 300

3-module frame
Art. No. 324907
Frame for 3 modules and power supply

TNH 010

Remote control
Art. No. 324909
Remote control for programming the modules

SUBD 15/Scart cable

Connection cables
Art. No. 300742
To view OSD when programming

TNH 020

75 Ohm HF lead
Art. No. 324905
Fitted with F quick-connector male - straight plug. L: 20 cm.

TNH 021

75 Ohm HF lead
Art. No. 324906
Fitted with IEC (9.52 mm) male and female - straight plug. L: 20 cm.

TCH 600 headend for analogue TV-FM

TCH 600

Triax TCH 600 compact headend

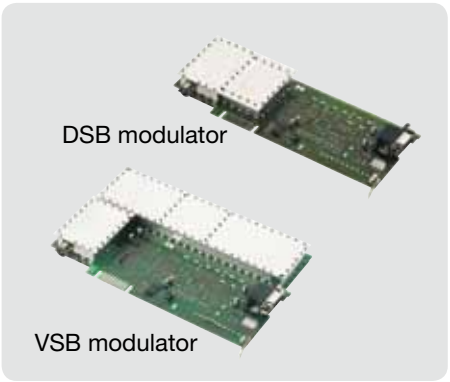
TCH 600 is an analogue, compact headend with a high level of flexibility. The basic unit holds up to 8 analogue modulators each carrying one VHF, UHF or FM channel. Several basic units can be cascaded in order to reach the number of channels required.

- Flexible - configuration can be changed according to changing needs
- Quick and easy programming
- Analogue satellite modules available in DSB
- Modulator modules available in DSB and VSB
- Individual adjustment of output levels.

Technical data TCH 600 basic unit

TYPE Art. No.		TCH 600 basic unit 490600
Number of inputs		1
Number of combined outputs		1
Number of module space		8 analogue
Frequency range TV in - TV out - module RF in	MHz	47 - 862
Output level - 8 combined channels max. @ 54 dB IMD max. @ 60 dB IMD	dBµV dBµV	100 90
Return loss TV in - TV out - module RF in	dB	> 10
Through loss - TV in - TV out	dB	4
Impedance	Ohm	75
Operation voltage	V/AC	190 - 260
Power consumption	W	65 max.
Connector in - out		F female
Operation temperature range	°C	0...+50
Weight	kg	4.1
Dimensions (H x D x W)	mm	200 x 130 x 440

TCH modulator and converter modules



Plug-in modulator modules for TCH 600 headend


TV converter

Technical data TCMA-modulator modules (VSB) VHF/UHF

TYPE Art. No.		TCMA 673 modulator 490673	TCMA 674 modulator 490674
Modulator type		VSB	VSB
Band		VHF/UHF	VHF/UHF
TV standard system		B/G, I, L, D/K	B/G, I, L, D/K
Output channel		2....69	2....69
Output level	dBµV	90 - 100	90 - 100
Output level attenuator	dB	0 - 10	0 - 10
Video S/N ratio	dB	> 54	> 54
Sound mode		**Mono**	**A2 stereo**
Video input CVBS-level	Vpp	0.7 - 1.3	0.7 - 1.3
Audio input level	V RMS	0.5	0.5
Input connector		15 pol SUB-D	15 pol SUB-D
Impedance	Ohm	75	75
Operation temperature range	°C	0...+50	0...+50
Weight	kg	0.350	0.350
Dimensions (H x D x W)	mm	120 x 190 x 45	120 x 190 x 45

Technical data TCCC and TCFC converters

TYPE Art. No.		TCCC 677 TV converter 490677	TCCC 678 TV converter 490678
TV standard system		I, L, D/K	B/G
Input frequency range	MHz	47 - 862	47 - 862
Input level	dBµV	65 - 90	65 - 90
Output frequency range	MHz	47 - 862	47 - 862
Output channel bandwidth	MHz	8	7
Output level	dBµV	90 - 100	90 - 100
Output level attenuator	dB	0 - 10	0 - 10
Impedance	Ohm	75	75
Temperature range	°C	0...+50	0...+50
Weight	kg	0.377	0.377
Dimensions (H x D x W)	mm	120 x 190 x 45	120 x 190 x 45

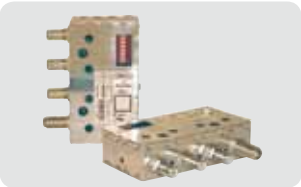
Triax TCM 08 - modulator headend

TCM 08

TCM-08 8 modulator unit

The modular design makes it easy to adapt the system to the required number of programmes.

VHF modules for TCM 08



UHF modules for TCM 08

Technical data

TYPE Art. No.		TCM-08 basic unit 300110	TCM-08A basic unit 300111	CM 02V VHF mod. 490898	CM 02U UHF mod. 490899	Nicam encoder 490884
TV system				(B-D-I-L)+(AU/NZ)	(G-K-I-L)+(AU/NZ)	BG
Output frequency range	MHz	47 - 862	47 - 862	**175-342**	**470 - 862**	
Picture carrier stability	kHz			< +/-70	< +/-70	
Spurious ref. picture carrier	dB			> - 60	> - 60	
Output level max (IMD @ 60 dB)	dBµV	**80 (8 ch.)**	**105 (8 ch.)**	95 +/- 2,5	95 +/- 2.5	
Return loss	dB	>14 @ 47 MHz - min. 10	>14 @ 47 MHz - min. 10	> 10	> 10	
Differentiel gain	%			< 8	< 8	
Differentiel phase	Deg.			< 8	< 8	
Crominance/luminance delay	nS			< 80	< 80	
Luminance non-linearity	%			< 8	< 8	
Video S/N ratio	dB			> 55	> 52	
Sound sub carrier	MHz			5.5 / 6.0 / 6.5	5.5 / 6.0 / 6.5	
Sound sub carrier stability	kHz			< +/-5	< +/-5	
Audio distortion, 1 KHz	%			< 1	< 1	
Audio S/N ratio	dB			> 55	> 55	
Video: - Input level - Input impedance	Vpp Ohm			0.8-1.3 75	0.8-1.3 75	
Audio: - Input level - Input impedance	Vrms kOhm			0.5-1.0 10	0.5-1.0 10	0.2 > 10
Power supply - Voltage Power consumption	DC - mA W			12/117 1.4	12/110 1.5	12/135
Connectors - RF output, OUT - Audio/Video input - Power supply				1 x F 3 x RCA -via RF output	1 x F 3 x RCA -via RF output	 4 x RCA 1 x F
Input voltage	V-ac	190 - 260	190 - 260			
Power consumption (8 moduls)	W	17	20			
Temperature, operation	°C	0..+50	0..+50	0..+50	0..+50	0..+50
Weight	kg	4.4	4.6	0.1	0.1	0.1
Dimensions L x B x H	mm	180 x 440 x 130	180 x 440 x 130	96 x 25 x 67	96 x 25 x 67	96 x 25 x 67

Video/audio cable for Nicam

Modulator cable with scart and 3 phono connector - 100 cm
Art. No. 300738

Video/audio cable

Modulator cable with scart and 3 phone connectors - 150 cm
Art. No. 300743

Spare RF connection cable

Length 20 cm Art. No. 452090
Length 35 cm Art. No. 452091

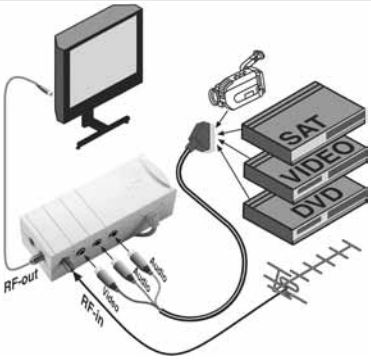
Triax stand-alone modulator

CM 01V

CM 01U

CM 01 single channel stand-alone modulator units

CM 01U + amp.



Technical data - 1 channel modulator

TYPE		CM 01V type VHF	CM 01U type UHF	CM 01U + amp.
Art. No.	Pal	300101	300102	300116
Number of inputs	Pcs.	1	1	1
Number of outputs	Pcs.	**1**	**1**	**2**
Number of channels	Pcs.	1	1	1
Modulator	Type	DSB Double side band	DSB Double side band	DSB Double side band
Frequency range TV FM	MHz MHz	**175 - 335**	**470 - 860**	**470 - 860**
TV standard		Pal-B	Pal-G	Pal-G
Input level	dBµV			max. 70
Gain from RF in to RF out 1 to RF out 2	dB dB			**2** **10**
Output level out 1 out 2	dBµV dBµV	Max. 80	Max. 80	72 82
Output attenuation	dB	0....10	0....10	0....10
Through loss	MHz	4.0	4.0	
Video Input CVBS-level	Vpp	1	1	0.8....1.0
Audio input level	V RMS	0.5	0.5	0.5....1.0
Power consumption	W	3	3	
Connectors		F-female	F-female	F-female
Impedance	Ohm	75	75	75
Operation voltage	V/AC	230	230	230
Operation temperature range	°C	0 to +50	0 to +50	0 to +50
Dimensions (h x d x w)	mm	75 x 54 x 174	75 x 54 x 174	75 x 54 x 174
Remarks		Use scart cable 300743	Use scart cable 300743	Use scart cable 300743

CM 01 cable
Art. No. 300743

Modulator cable with scart (1.5 m) connector and 3 phone connectors (1 video/2 audio)

TMB multiband amplifiers

TMB 10

Triax TMB programmable multi band amplifier has all the features needed for amplifying and distributing a high number of signals into a network.

- High flexibility
- 10 highly selective and adjustable filters in the UHF frequency range secure high flexibility. Each of these clusters can have 1-7 channels (56 MHz) bandwidth.
- Switchable input amplifier stage
- 6 inputs: FM/DAB/VHF/UHF and 3 UHF inputs split over 10 UHF programmable clusters
- Automatic or manual leveling of the signal
- Easy programming - Designed for both digital and analogue operation

Technical data - TMB multiband amplifiers with adjustable filters

TYPE Art. No.		TMB 6 324571	TMB 10A 324575	TMB 10B 324576	TMB 10C 324578	TMB 10S 324577
Numbers of inputs	pcs	5	5	6	6	8
Numbers of outputs	pcs	1	1	1	1	2
Numbers of channel filters		6	6	10	10	10
Test point		no	Yes (- 20 dB)	Yes (- 20 dB)	Yes (- 20 dB)	Yes (- 20 dB)
Gain						
Input BI/FM	dB	24	48	48	48	43
Input BIII/DAB	dB	35	48	48	48	43
Input VHF and UHF (aux)	dB		39	39	39	33
Input UHF 1	dB	48	55	37/55	37/45	32/50
Input UHF 2	dB	42	55	37/55	37/45	32/50
Input UHF 3	dB	30		37/55	37/45	32/50
Input satellite 1	dB					40 sloped
Input satellite 2	dB					40 sloped
Attenuation	dB	0-20	0-20	0-20	0-20	0-20
Selectivity	dB/MHz		16 / 16	16 / 16	16 / 16	16 /16, 40@862
Noise figure						
BI/FM	dB	9.0/3.0	5.0	5.0	5.0	5.0
BIII/DAB	dB		5.0	5.0	5.0	5.0
VHF and UHF (aux)	dB		10.0	10.0	10.0	10.0
UHF	dB	3.0/5.0/5.0	9.0	9.0	9.0	9.0
Satellite	dB					6.0
Output level (IMD3 /-60 dB/3rd order)						
BI	dBµV	103	122	122	122	116
BIII	dBµV	108	122	122	122	116
VHF/UHF (aux)	dBµV		124	124	124	120
UHF	dBµV	112/115/112	124	124	124	120
SAT (-35 dB)	dBµV					120
DC power for preamplifier	V/mA	12/50	12 or 24/55	12 or 24/55	12 or 24/55	12 or 24/55
LNB supply	V/mA kHz				0, 13, 17/300 0-22	0, 13, 17/300 0-22
Power supply	VAC/Hz	230/50 Hz	230/50 Hz	230/50 Hz	230/50 Hz	230/50 Hz
Connectors		F-female	F-female	F-female	F-female	F-female
Impedance	Ohm	75	75	75	75	75
Temperature, operation	°C	- 10 to + 50	- 5...+ 50	- 5...+ 50	- 5...+ 50	- 5...+ 50
Dimensions (L x H x D)	mm	230 x 130 x 50	290 x 225 x 50	290 x 225 x 50	290 x 225 x 50	290 x 225 x 50

TPF programmable filters

Triax TPF programmable filters have all the features needed to filtering out a high number of signals before amplifying and distributing a high number of signals into a network.

- High flexibility
- 6 or 10 highly selective and adjustable filters in the UHF frequency range
- Bandwidth of 1 to 7 channels per cluster (8 to 56 MHz)
- Manual leveling of the signal
- Easy programming

Technical data - TPF programmable filters

TYPE Art. No.		TPF 206 363025	TPF 210 363024
Numbers of inputs	pcs	2	3
Numbers of outputs	pcs	2	1
Numbers of channel filters		6	10
Test point		1	1
Gain			
Input UHF 1	dB	0 / -15	0 / -15
Input UHF 2	dB	0 / -15	0 / -15
Input UHF 3	dB		
Attenuation	dB	0-20	0-20
Selectivity	dB/MHz	16	16
Input level			
UHF (input stage ON/OFF)	dBµV	75 / 95	75 / 95
Output level - IMD3 /-54 dB/3rd order (Din45009K BG)			
UHF	dBµV	86	86
DC power for preamplifier	V/mA	0-12-24/50	0-12-24/50
Consumption	A/W	2/24	2/24
Power supply	VAC/Hz	230/50 Hz	230/50 Hz
Connectors		F-female	F-female
Impedance	Ohm	75	75
Temperature, operation	°C	0....50	0....50
Dimensions (L x H x D)	mm	216 x 200 x 50	216 x 200 x 50
Weight	kg	0.85	0.85

ARM multiband amplifiers

ARM multiband amplifiers
ARM are a series of multiband amplifiers with up to 5 separate adjustable inputs, one for each band.

Technical data - ARM multiband amplifiers

TYPE		ARM 404	ARM 455	ARM 486
Art. No.		**324121**	**324122**	**324123**
Number of inputs		**4**	**5**	**6**
Input 1 - Frequency range	MHz	47 - 68 + 87.5 - 108	47 - 68 + 87.5 - 108	87.5 - 108
Input 1 - Gain	dB	17-32	14-34	16-36
Input 1 - Noise figure	dB	5.0	5.0	8.0
Input 2 - Frequency range	MHz	174 - 230	174 - 230	47 - 68 + 470 - 862
Input 2 - Gain	dB	17-32	14-34	16-36
Input 2 - Noise figure	dB	5.0	5.0	8.0
Input 3 - Frequency range	MHz	470 - 862	470 - 862	174 - 230
Input 3 - Gain	dB	25-40	27-47	16-36
Input 3 - Noise figure	dB	8.0	5.0	7.0
Input 4 - Frequency range	MHz	470 - 862	470 - 862	470 - 862
Input 4 - Gain	dB	25-40	20-40	24-44
Input 4 - Noise figure	dB	8.0	9.0	5.0
Input 5 - Frequency range	MHz		470 - 862	470 - 862
Input 5 - Gain	dB		20-40	24-44
Input 5 - Noise figure	dB		9.0	9.0
Input 6 - Frequency range	MHz			470 - 862
Input 6 - Gain	dB			27-47
Input 6 - Noise figure	dB			9.0
Output level 3.order - VHF @ 60 dB IMD - UHF	dBµV dBµV	117.0 117.0	117.0 117.0	121.0 121.0
Connectors		F	F	F
Impedance	Ohm	75	75	75
Power consumption	W	7	7.5	11.3
Remote supply	V/mA	12/100	12/100	12/60
Operation voltage	V/AC	185 - 265	185 - 265	185 - 265
Operation temperature range	°C	0...+50	0...+50	0...+50
Weight	kg	1.250	1.250	1.250
Dimensions (H x D x W)	mm	122 x 70 x 210	122 x 70 x 210	122 x 70 x 210

Triax IFM indoor multiband amplifiers

Low noise multi-range amplifiers with digital capability

- 4 highly selective range inputs and one output
- You can select operation range by use of integrated jumper
- Level controller 0...-20 dB at each input
- Low power consumption
- Low-noise inputs for DVB-T
- Die-cast housing with cooling fins for reducing temperature
- F-connectors

IFM amplifier housing

Technical data on IFM series

Type		IFM 120	IFM 130	IFM 135
Art. No.		**339120**	**339130**	**339135**
Frequency range				
Input 1 - UHF (1)	MHz	470-862	470-862	470-862
Input 2 - VHF III	MHz	174-230	174-230	174-230
Input 3 - VHF I	MHz	-	47-68	-
- UHF (2)	MHz	-	-	470-862
Input 4 - FM	MHz	87.5-108 and	87.5-108	87.5-108 and
- VHF I	MHz	47-68	-	47-68
Input 1 + 2				
Combined with jumpers	MHz	470-862 and	470-862 and	470-862 and
	MHz	174-230	174-230	174-230
Gain (w. level controller 0 dB)				
Input 1 - UHF (1)	dB	22	31	35
Input 2 - VHF III	dB	20	30	34
Input 3 - VHF I	dB	-	30	-
- UHF (2)	dB	-	-	35
Input 4 - FM - VHF I	dB	20	30	34
Level controller at all inputs	dB	0...-20	0...-20	0...-20
Noise figure (w. level controller 0 dB)				
Input 1 - UHF (1)	dB	4	4	7
Input 2 - VHF III	dB	4	4	5
Input 3 - VHF I	dB	-	-	-
- UHF (2)	dB	-	-	7
Input 4 - FM - VHF I	dB	4	4	5
Output level				
IMA3 ≥ 60 dB acc. EN 500873-5	dBµV	113	115	121
IMA2 ≥ 60 dB acc. EN 500873-3	dBµV	102	105	110
RF connectors (75 Ohm)				
Input / Output		F-female	F-female	F-female
Operating conditions acc. EN 60065				
Supply voltage	V	230 / ±10%	230 / ±10%	230 / ±10%
Power consumption	W	3.5	6	7.5
Operating temperature	°C	-25...+55	-25...+55	-25...+55
Protection class		II	II	II
Degree of protection	IP	20	20	20
Screening acc. EN 50083-2		class A	class A	class A
Dimensions W x H x D	mm	150 x 80 x 50	150 x 80 x 50	150 x 80 x 50
Weight	kg	0.68	0.68	0.68
Packing unit		1 pcs. carton box	1 pcs. carton box	1 pcs. carton box
Reference standards				
Product standards/safety/EMC		EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2		
RoHS 2002/95/EG compliant		Yes		

Triax multiband amplifiers

IFM 103

IFM 104

IFM indoor multiband amplifier with F-connectors

- Attractive housing design
- F-connectors
- Separate adjustable gain on VHF and UHF
- Built-in power supply
- New click-on wall mounting

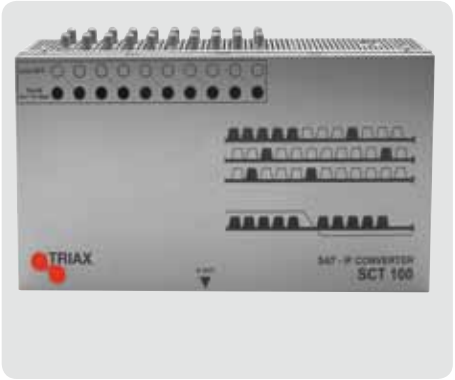
Technical data on IFM multiband amplifiers

Type			IFM 102	IFM 103	IFM 104
Art. No.			**339102**	**339103**	**339104**
Input 1	Band		UHF	UHF	UHF
	Channel		21-69	21-69	21-69
	Gain	dB	20-30	12-22	25-35
Input 2	Band		VHF	BIII	BIII
	Channel		2-12	5-12	5-12
	Gain	dB	12-22	12-22	15-25
Input 3	Band			BI + FM	BI + FM
	Channel				
	Gain	dB		2-12	15-25
Noise figure					
	UHF	dB	5.0	4.0	4.5
	VHF	dB	3.0	4.0	4.0
Max. output voltage @ -60 dB IMA3		dBµV	103	105	103
Number of in-/output			2/1	3/1	3/1
Operation voltage		V/AC	230	230	230
Power consumption		W	2	3	3
Connector		type	F	F	F
Impedance		Ohm	75	75	75
Operation temperature range		°C	0...+50	0...+50	0...+50
Weight		kg	0.400	0.400	0.400
Dimensions (h x d x w)		mm	61 x 44 x 118	61 x 44 x 118	65 x 50 x 173
Remarks				Automatic DC-pass to UHF input	

Triax SCT 100 - IF/IF converter

SCT 100 is a compact SAT-IF-channel converter for 10 channels, which makes it practicable to convert analogue and digital transponders from different satellites. SCT 100 converts any required SAT-IF transponders from its origin position into a free choosen frequency, in the SAT-IF range. The SCT 10 SAT-IF unit can be inserted into existing tree-distribution networks (if the existing cable is suitable for up to 2150 MHz). The splitters, taps and outlets of the distribution system must support the SAT-IF range.

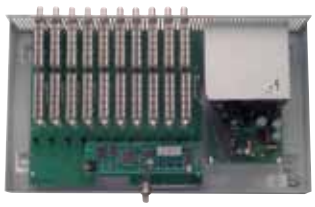
- Programmable SAT-IF transponders processing system for 10 digital and analogue transponders
- LNB remote feed voltage on each input
- Integrated power supply and programming unit
- Output level separately adjustable for each channel



SCT 100 IF/IF converter

Technical data - SCT 100 - IF/IF converter

TYPE		**SCT 100**
Art. No.		**364100**
Numbers of inputs		10
Input requency range	MHz	950 - 2150
Input level	dBµV	52 - 75
Frequency steps	MHz	1
LNB feeding voltage	V/mA	12 / 250 per input (max. 500 mA total)
Spurious emission	dBm	- 63
Intermediate frequency	MHz	480
Line output	MHz	950 - 2150
Line output attenuation	dB	max. - 3.0
Connections		F-con
Impedance	Ohm	75
Output basic unit		
Output frequency range	MHz	1000 - 2150
Frequency steps	MHz	1 MHz
Oscillator suppression	dB	> 20
Spurious emission	dB	± 26
Variable attenuator	dB	- 20
Output level - typ.	dBµV	85
General data		
Power consumption	W	max. 40
Operation voltage	V/AC	190 - 260
Operation temperature range	°C	0 to +50
Weight	kg	3.0
Dimensions (H x D x W)	mm	195 x 80 x 280

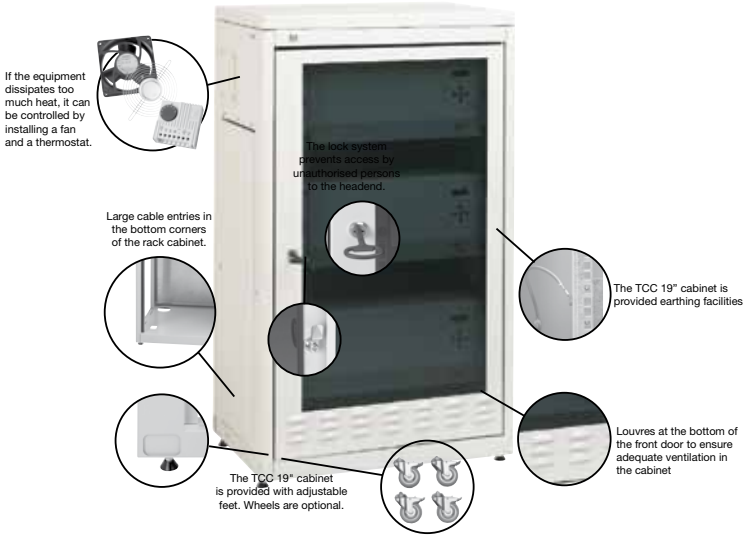


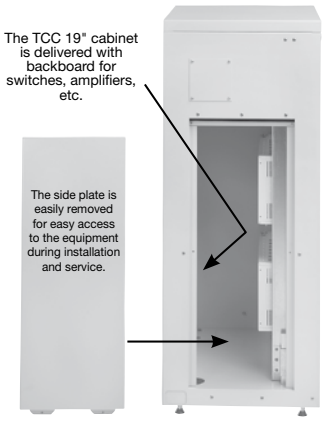
Triax TCC 19" compact cabinet

19” swing rack cabinet providing easy access and excellent overview
If more basic units are built together, they can conveniently be inserted in Triax’s 19” swing rack providing an excellent overview and easy access to all connections and programming units.

Technical data - TCC 19” compact cabinet

TYPE Art. No.		TCC 19” cabinet with glass door 251493
Colour		Grey (Ral 7030)
Height (outer)	mm	1100
Width (outer)	mm	650
Depth (outer)	mm	450
Backboard dimension (H x W x D)	mm	940 x 550 x 16
Units in mountring frame	pcs.	21
Remarks		Backboard included





Accessories

TYPE Art. No.		Fan 230V 708020	Protection grid 708017	Thermostat 708028	4 Wheels with lock 737030
Dimension (H x W x D)	mm	120 x 120 x 38	Ø 115	70 x 70 x30	Ø 74 on wheels
Outer pack	pcs.	1	1	1	1
Remarks					4 in a set

Triax mounting frame TMF 512

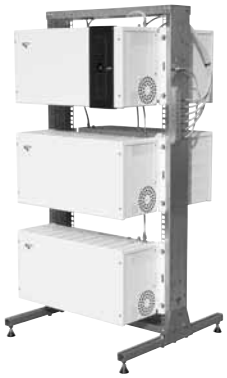
Use the possibilities of an open 19” mounting frame providing easy access and excellent overview

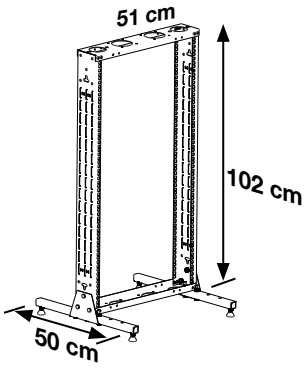
With the open 19” mounting frame Triax offers you a quite new and functional mounting solution for your headend if more units are built together.

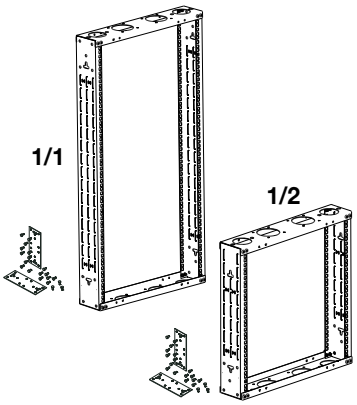
Complete TMF 512 pack

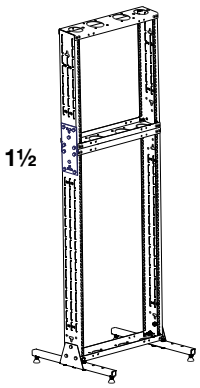
Technical data - TMF 512 mounting frame

TYPE Art. No.		TMF 512 19” basic frame 251512	1/1 - 19” frame with fittings 251513	1/2 - 19” frame with fittings 251514
Colour		Galv. steel	Galv. steel	Galv. steel
Height (outer)	mm	1020	1020	510
Width (outer)	mm	510	510	510
Depth (outer)	mm	500	500	500
Units in mountring frame	pcs.	21	21	10
Remarks		Wheels as option	Fittings included	Fittings included









Accessories

TYPE Art. No.		Set of screws 737040	4 Wheels with lock 737030	19" Shelf 251496
Dimension (H x W x D)	mm		Ø 74 on wheels	81 x 44.45 x 270
Outer pack	pcs.	1	1	1
Remarks		10 nut bushings 10 M6x8 screws 10 plastic washers	4 in a set	19“ shelf for satellite receiver for use together with e.g. the TCM 08 or TCH modulator modules

Fibre optics

Triax hybrid coax optical transmitter

The Triax OTXS-xx optical transmitter converts electrical CATV signals into intensity modulated optical signals for transmission via optical fibre cables.
The transmitter is built into a 19”/1 HU cabinet.
Optical output, RF test point, interfaces for RS232 and Ethernet are located on the front panel. The RF input and input for main power supply are on the rear panel.
The transmitter can be remote controlled via ethernet. SNMP monitoring read only is implemented.
The modulation of the laser diode is gain controlled depending on the number of channels. Additionally the transmitter owns the facility to adapt the modulation manually or via remote control.

Technical data

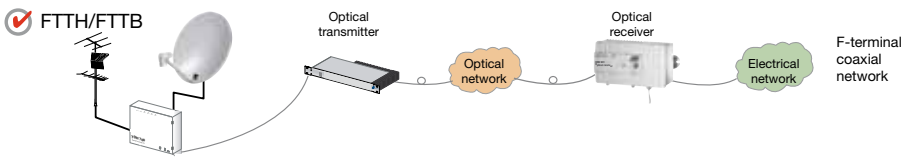
Type		OTXS 06	OTXS 08	OTXS 10	OTXS 12	OTXS 16	OTXS 20
Art. No.		**307506**	**307508**	**307510**	**307512**	**307516**	**307520**
Number of transmitters		1	1	1	1	1	1
Input connectors (for RF)		F-connector					
Output connectors (for fibre optic cable)		SC/APC					
RF input							
Frequency range	MHz	47 - 862	47 - 862	47 - 862	47 - 862	47 - 862	47 - 862
Level (OMI = 5% @ 42 ch. CENELEC)	dBµV	85 ±3	85 ±3	85 ±3	85 ±3	85 ±3	85 ±3
Adjustable offset	dB	±3	±3	±3	±3	±3	±3
Linearity	dB	±1.5	±1.5	±1.5	±1.5	±1.5	±1.5
Return loss	dB	>18	>18	>18	>18	>18	>18
CTB (Non linear distortion) (Popt in=4dBm, OMI=4%)	dB	>65	>65	>65	>65	>65	>65
CSO -“-	dB	>60	>60	>60	>60	>60	>60
Relative intensity noise	dB/Hz	<-155	<-155	<-155	<-155	<-155	<-155
Carrier to noise (Popt in=4dBm, OMI=4%, B=5MHz)	dB	>50	>50	>50	>50	>50	>50
Test point (F-connector, front)	dB	-20	-20	-20	-20	-20	-20
Optical System							
Laser type		DBF, cooled					
Optical output power	mW	6.0	8.0	10.0	12.0	16.0	20.0
Optical output power	dBm	8.0	9.0	10.0	11.0	12.0	13.0
Additional							
Control unit		3 buttons, LCD 2-lines/16 char.					
Remote control		RJ45, TCP/IP, SNMP r/o					
Cascade (for extra upstream receivers (ORxR)		Via RJ11					
Software update		RS232, 9-pin					
Housing		19”, 1 HU					
Power supply	VAC	180 – 253					
Dimensions (w x h x d)	mm	480 x 43 x 205					

Triax fibre optical receiver node

The Triax ORB 901 is a compact fibre optical receiver node product designed to work in tandem with the OTXS-xx fibre optical transmitter product.
The Triax ORB 901 converts the fibre optical transmission signal back to a traditional coax based RF signal.
An optional return channel board is available for a later upgrade, or at delivery under the type ORB 911.
The relatively wide sensitivity range of the unit means that it can be placed in many different places as 'islands' of CATV installations without too much focus on distance from the fibre optical transmitter.
The ALC ensures a uniform output level independent upon input signal.

Technical data

Type		ORB 901	ORB 911
Art. No.		307570	307572
Input parameters			
Number of receivers		1	1
Input connectors (from transmitter)	GHz	SC/APC	SC/APC
Output connectors (for RF)	db	F-female	F-female
Optical input power	dBm	-8 - +3	-8 - +3
Reception wavelength	nm	1290 - 1600	1290 - 1600
Frequency range	MHz	47 – 862	86 – 862
RF-output level (OMI= 5%@42 ch. CENELEC)	dBµV	104	104
Frequency response	dB	± 1	± 1
Return loss	dBm	>18	>18
Carrier to noise (Popt, in = - 2 dBm)	dB	52	52
Carrier to noise (Popt, in = - 8 dBm)	dB	45	45
Return Channel			
Frequency range	MHz		5 - 65
Frequency response	dB		± 2
Optical output power	dBm		0
Output connector (for fibre optic cable)	MHz		SC/APC
Wavelength	nm		1310
RF input	dBµV		85
Intermodulation (2nd and 3rd order, 2ch, OMI=5%)	dB		35
Reception wavelength	nm		1200 - 1600
Additional			
Power supply	VAC	180 - 253	180 - 253



Triax fibre optical LNB

- a high quality, high performance universal LNB

The Triax TOL32 optical LNB provides a 1310 nm wideband optical output where all four satellite polarities are stacked into one frequency range (950-5450 MHz). Using modern laser technology this frequency range can be transmitted via a single laser over a very large distance, and can sustain splitting into 32 ways. This allows a system setup that can drive a fairly large passive optical network (PON) before the signal is finally fed into a number of virtual converters for traditional coax distribution.

- Universal LNB with fibre optical output for long range coverage
- Minimizes losses on long distances (max. 0.3dB/km versus 32dB/100m on coax)
- 7dBm optical link output supports up to 32 way splitting
- Uses 1310 nm technology

TOL 32 optical LNB

Technical data

Type		TOL 32
Art. No.		**307610**
LNB type		Universal wholeband
Frequencies		
Input frequency range	GHz	10,7 – 12.75
Band stacking, vertical	GHz	0.950 – 3.0
Band stacking, horisontal	GHz	3.4 – 5.45
Polarization	linear	Horizontal and vertical
Optical		
Wavelength	nm	1310
Optical output power, (nominal@25 °C)	dBm	7.0
Variation, output power, (over full temperature range)	dBm	± 0.2
Equivalent split levels possible (max.)	ways	32
Total loss (nominal)	dB	18.3
Noise		
Noise figure (typical@25°C/ max. @25°C)	dB	0.5/1.1
Noise figure (typ. over temperature/ max. over temperature)	dB	0.7/1.3
Gain		
Conversion gain (min. at room temperature/ max.at room temperature)	dB	72/62
Gain variation (-30 to +60 °C)	dB	± 2
Gain flatness (0.95 to 5.45 GHz)	dB	5
Gain ripple (per 26MHz bandwidth segment)	dB	≤0.5
Local Oscillator (L.O.)		
L.O. stability, initial setting	MHz	± 1
L.O. temperature drift (-40 °C to +60 °C)	MHz	± 2
L.O. aging and total drift (10 years)	MHz	± 4
Additional		
Image rejection (min.)	dB	40
Cross polar isolation (typ./ min.)	dB	30/25
Spurious output - in band (950MHz-3GHz, 3.4GHz-5.45GHz)	dBc	-25
Supply voltage, nominal/ maximum survival voltage	VDC	12/ 25
Current consumption	mA	< 450
DC-input		F-type, female
Optical output		FC/PC
Dimensions / temperature		
Mounting dimensions / neck diameter	mm	40
Ambient operating temperature range	°C	-30 - +60

Triax fibre optical LNB kit

- a high quality, high performance universal LNB

A Triax TOU232-Kit is everything needed outdoor to realize a universal single Ku-Band LNB with a fibre optical 1310/1550nm output providing both a SAT-IF and a DTT/DAB signal.
The LNB constantly receives all 4 Ku-Band polarities, and uses a frequency stacking technique to put all four SAT-IF polarities into one large broadband frequency range of 950 to 5450 MHz. This signal is transmitted via a 2 meter high quality RF-cable to a second unit (called a sidecar) where a 1310nm laser puts all 4 polarities on two standard singlemode fibre optical cable outputs.
The Sidecar furthermore provides one input for a digital DTT/DAB signal that is transmitted via a 1550nm laser over the same optical outputs, and a PSU input to power both sidecar electronics and LNB. All units are for outdoor use, mounting brackets are provided in kit.

Technical data

Type		TOU 232 - kit
Art. No.		**307614**
LNB type		Universal wholeband
Frequencies		
Input frequency range	GHz	10.7 – 12.75
Output frequency range	MHz	950 – 5450
Sidecar input		
TER/DAB	MHz	213 - 230
TER/DTT	MHz	470-854
Optical		
Wavelength SAT	nm	1310
Wavelength TER	nm	1550
Optical output power, (nominal@25 °C)	dBm	7.0 ± 0.2
Noise		
Noise figure (typical@25°C/ max. @25°C)	dB	0.5/1.1
Gain		
Conversion gain (Max./Min.) ± variation	dB	72/62 ± 2
Gain flatness (0.95 to 5.45 GHz)	dB	5
Gain ripple (per 26MHz bandwidth segment)	dB	< ± 0.5
Phase Noise		
- offset 1 kHz	dBc/Hz	- 55.0
- offset 10 kHz	dBc/Hz	- 80.0
- offset 100 kHz	dBc/Hz	- 100.0
- offset 1 MHz	dBc/Hz	- 110.0
Local Oscillator		
L.O. stability, initial setting	MHz	± 1
L.O. temperature drift (-40 °C to +60 °C)	MHz	± 2
L.O. aging and total drift (10 years)	MHz	± 4
Additional		
Image rejection (min.)	dB	40
Cross polar isolation (typ./ min.)	dB	30/25
Spurious output - in band (950MHz-3GHz, 3.4GHz-5.45GHz)	dBc	-25
Supply voltage, nominal/ maximum survival voltage	VDC	12/ 25
Current consumption	mA	< 450
DC-input		F-type, female
Optical output		FC/PC
Dimensions / temperature		
Mounting dimensions / neck diameter	mm	40
Ambient operating temperature range	°C	-30 - +60

Triax virtual optical converter

- IF receiver nodes for QUAD and QUATTRO use

The virtual converter receives an optical signal via a passive optical network (PON) from the optical LNB. It then performs a de-stacking frequency conversion, and outputs two or four universal lines for driving two or four individual set top boxes. A QUATTRO version presents the four individual polarities on separate coax outputs and is suited to drive a normal multi switch system. This effectively eliminates the limitations on cable lengths and number of users everyone has had to live with from the birth of satellite reception.

TVC 04 TVQ 04

- Converts optical SAT-IF signals into IF
- Solutions for both direct STB connection and multi switch use.
- Supports from single direct connection and up to a 32 way passive optical network
- 4 polarities in one single fibre optical cable.

Technical data

Type		TVC 04	TVQ 04
Art. No.		**307622**	**307624**
Input parameters			
RF frequency range, vertical polarities	GHz	0.95 – 3.0	0.95 – 3.0
RF frequency range, horizontal polarities	GHz	3.4 – 5.45	3.4 – 5.45
Optical			
Optical RLR (min.)	db	20	20
Optical power, small PON setting (min.)/(max.)	dBm	-13/0	-13/0
Optical power, large PON setting (min.)/(max.)	dBm	-18/-14	-18/-14
Aggregate equivalent RF power (min.)/(max.)	dBm	-60/-20	-60/-20
Nominal satellite transponder levels (min.)/(max.)	dBm	-80/-40	-80/-40
Satellite transponders		120	120
Input connector		FC/PC	FC/PC
RF Frequency Range (Output Parameters)			
Horisontal high band (converted from 4.4 to 5.45 GHz)	MHz	1100-2150	1100-2150
Vertical high band (converted from 1.95 to 3.0 GHz)	MHz	1100-2150	1100-2150
Horisontal low band (converted from 3.4 to 4.4 GHz)	MHz	950-1950	950-1950
Vertical high band (converted from 0.95 to 1.95 GHz)	MHz	950-1950	950-1950
Return loss (min.)	dB	10	10
Gain ripple across band (max.)	dB	4	4
Gain ripple across 30MHz (max.)	dB	1	1
Nominal output level (per. transponder)	dBm	-65 (min.), -25 (max.)	
OIP3 (min.)	dBm	+10	+10
Isolation (unwanted path to selected path)	dB	30	30
In band spurious power (min.)	dBc	-25	-25
Out of band spurious power (max.)	dBm	-60	-60
LO power (max.)	dBm	-60	-60
Integrated phase noise (integrated from 1kHz to 13MHz)	°RMS	4	4
Output frequency stability/accuracy (max.)	kHz	320	320
Output connectors		2x and 4 x F-female	
Others			
Power consumption (at 12 VDC)	mA	<300	<300
Power supply (QUAD and TWIN versions)		From STB	From STB
Power supply (QUATTRO versions)		External PSU	External PSU
Power input (plug to optionally supply converter externally)	VDC	+20	+20
Level switch			
Passive optical network size switch (levels of splitting)		STD / SML	STD / SML

Triax virtual optical converter

- IF receiver nodes for QUAD and QUATTRO use

The TLC05 virtual QUAD optical receiver node is an optical-to-coax converter, that converts the frequency stacked optical signal from a TOL32 LNB, or a TOU232-KIT sidecar unit, into a traditional universal single coax signal also provides a coax DTT/FM/DAB signal.

The TLQ05 Virtual QUATTRO optical receiver node is an optical-to-coax converter, that converts the frequency stacked optical signal from a TOL32 LNB, or a TOU232-KIT sidecar unit into a 4 polarity output coax signal, as known from a normal universal QUATTRO LNB.

Both units can also alternatively be powered via an external power supply (optionally, not included).

- Converts optical SAT-IF signals into IF
- Solutions for both direct STB connection and multi switch use.

Technical data

Type		TLC 05 Quad	TLQ 05 Quattro
Art. No.		**307626**	**307628**
Input parameters			
Optical wavelength	nm	1310/1550	1310/1550
Optical return loss	dB	40/45	40/45
Optical input power	dBm	-15 / 0	-15 / 0
Total RF input power	dBm	-50 / -20	-50 / -20
Nom. sat transponder levels	dBm	-72 / -42	-72 / -42
Nom. DTT multiplex levels	dBm	-65 / -35	-65 / -35
Nom. DAB multiplex levels	dBm	-79 / - 49	-79 / - 49
Frequency range DTT/FM/DAB/SAT-IF	MHz	87-108/213-230/ 470 - 854/ 950 - 5450	87-108/213-230/ 470 - 854/ 950 - 5450
Satellite fixed outputs			
Horizontal high band (F-connector marked yellow)	MHz	18.0 + 22kHz	1099 - 2149
Vertical high band (F-connector marked red)	MHz	13.0 + 22kHz	1100 - 2150
Horizontal low band (F-connector marked green)	MHz	18.0	949 - 1949
Vertical low band (F-connector marked black)	MHz	13.0	950 - 2150
Nominal impedance	Ohms	75	75
Gain @ 2.15 GHz	dB	39	39
Gain slope 0.95-2.15 GHz	dB	2	2
Gain adjustment range	dB	35	35
Satellite @ 2.15 GHz	dB	-35	-35
Satellite @ 1 GHz	dB	-37	-37
Gain @ 854 with max. gain / min. gain	dB	29 / - 6	29 / - 6
Gain slope (470-854 MHz)	dB	2	2
Gain adjustment range	dBm	35	35
DTT @ 854 MHz	dBm	-39	-39
DTT @ 470 MHz	dBc	-41	-41
DAB		-53	-53
470 – 860 MHz	dB	- 10 / 0	- 10 / 0
213 – 230 MHz	dB	- 10 / 0	- 10 / 0
In band spurious power		30	30
Others			
Operating temperature range	°C	50	50
Power consumption	mA	800	800
Power supply voltage	VDC	6	6
Optical connector		FC/PC	FC/PC
RF output connectors		5 x F-female	5 x F-female
Enclosure dimensions		165 x 155 x 30	165 x 155 x 30

Triax passive optical splitter

- for building passive optical networks

The Triax fibre optical TOS passive splitter/coupler units

Build passive optical networks (PON) in virtually any size and split ratio. Using any combination of the 2, 3, 4 and 8-way optical splitters, passive optical networks can be realized that satisfy almost any requirement for network coverage.
Using the TOS splitters in tandem with the optical LNB products the link budget allows splitting into 32 ways.

- For singlemode systems
- Dual window use (1310nm/1550nm)
- Uniform splitting ratio (1x2: 50/50%)
- Excellent environmental & mechanical stability
- Low insertion loss
- With 1 meter cables, FC/PC pre-connected or built-in

Technical data - passive optical splitter, with cable and FC/PC connectors

Type		TOS 02	TOS 34	TOS 04	TOS 08
Art. No.		**307632**	**307633**	**307634**	**307638**
Number of inputs		1	1	1	1
Number of output		2	3	4	8
Pre-connected with (in and out)		FC/PC	FC/PC	FC/PC	FC/PC
Cable length	m	1	1	1	1
Coupling ratio	%	2 x 50	3 x 33.3	4 x 25	8 x 12.5
Insertion loss (typ.)	dBm	3.8	5.5	6.8	10.6
Wavelength	nm	1310/1550	1310/1550	1310/1550	1310/1550
Wavelength bandwidth	nm	± 40	± 40	± 40	± 40

Technical data - passive optical splitter, with built-in FC/PC connectors

Type		TOS 02D	TOS 03D	TOS 04D	TOS 08D
Art. No.		**307636**	**307637**	**307635**	**307639**
Number of inputs		1	1	1	1
Number of output		2	3	4	8
Connector (FC/PC)		Built-in	Built-in	Built-in	Built-in
Coupling ratio	%	2 x 50	3 x 33.3	4 x 25	8 x 12.5
Insertion loss (typ.)	dBm	4.0	5.5	7.0	10.1
Wavelength	nm	1310/1550	1310/1550	1310/1550	1310/1550
Wavelength bandwidth	nm	± 40	± 40	± 40	± 40
Weight	kg	0.200	0.210	0.225	0.250
Dimension H x D x W	mm	100 x 25 x 100	100 x 25 x 100	100 x 25 x 100	100 x 25 x 100

Triax passive optical taps

- for building passive optical networks

The Triax fibre optical TOS passive splitter/coupler units

Build passive optical networks (PON) in virtually any size and split ratio. Using any combination of the 2-way optical taps, passive optical networks can be realized that satisfy almost any requirement for network coverage. Using TOS 02D taps with an optical LNB and subsequent optical splitters provides endless possibilities for building the fibre network

- For singlemode systems
- 4 different coupling ratios available
- Excellent environmental & mechanical stability
- Low insertion loss
- FC/PC connector built-in

Technical data - passive optical taps

Type		TOS 02D-1090	TOS 02D-2080	TOS 02D-3070	TOS 02D-4060
Art. No.		**307730**	**307731**	**307732**	**307733**
Number of inputs		1	1	1	1
Number of output		2	2	2	2
Connector (FC/PC)		Built-in	Built-in	Built-in	Built-in
Coupling ratio - A	%	89 - 91	79 - 81	69 - 71	59 - 61
Coupling ratio - B	%	9 - 11	19 - 21	29 - 31	39 - 41
Insertion loss - A	dBm	1.06	1.57	2.16	2.84
Insertion loss - B	dBm	11.01	7.76	5.93	4.64
Wavelength	nm	1310/1550	1310/1550	1310/1550	1310/1550
Wavelength bandwidth	nm	± 40	± 40	± 40	± 40
Weight	kg	0.200	0.200	0.200	0.200
Dimension H x D x W	mm	100 x 25 x 100	100 x 25 x 100	100 x 25 x 100	100 x 25 x 100

Triax fibre optical cables

- Pre-connected cables for easy installation
- For singlemode use

Patch cables - preconnected

Type		Patch cables	Patch cables	Patch cables	Patch cables	Patch cables
Art. No.		**307577**	**307578**	**307579**	**307580**	**307582**
Pre-connected with - A		SC/APC	FC/PC	FC/PC	SC/APC	FC/APC
Pre-connected with - B		SC/UPC	SC/UPC	SC/APC	SC/APC	SC/APC
Type		LSZH / yellow	LSZH / yellow	LSZH / yellow	LSZH / grey	LSZH / grey
Cable length	m	1	1	1	2	2

Steel armored 3.0 fibre optical cable - G657A, LSZH

Type		TFC 01	TFC 03	TFC 05	TFC 10
Art. No.		**307661**	**307662**	**307663**	**307664**
Pre-connected with (in and out)		FC/PC	FC/PC	FC/PC	FC/PC
Cable length	m	1	3	5	10

Type		TFC 15	TFC 20	TFC 30	TFC 40	TFC 50
Art. No.		**307665**	**307666**	**307667**	**307668**	**307669**
Pre-connected with (in and out)		FC/PC	FC/PC	FC/PC	FC/PC	FC/PC
Cable length	m	15	20	30	40	50

Type		TFC 75	TFC 100	TFC 200	TFC 500
Art. No.		**307670**	**307671**	**307672**	**307675**
Pre-connected with (in and out)		FC/PC	FC/PC	FC/PC	FC/PC
Cable length	m	75	100	200	500

Triax fibre optical cables

- Pre-connected cables for easy installation
- For singlemode use

Pig tail cables - preconnected

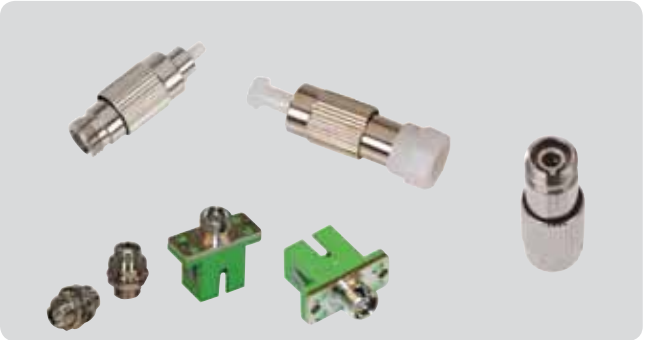
Type		Pig tail cables
Art. No.		**307581**
Pre-connected with - A		FC/PC
Pre-connected with - B		
Type		Steel armored/grey
Cable length	m	1

Direct turial cables - twin core, 5mm Ø

Type		TDB 50	TDB 100	TDB 200	TDB 500
Art. No.		**307676**	**307677**	**307678**	**307679**
Pre-connected with (in and out)		2 x FC/PC	2 x FC/PC	2 x FC/PC	2 x FC/PC
Cable length	m	50	100	200	500

Triax fibre adaptors and attenuators

- Adaptors for adding cables together
- Adaptors for using different termination connectors



Barrel adaptors

Type		TFB 001 FC/PC-FC/PC	TFB 002 FC/PC-SC/PC
Art. No.		**307684**	**307686**
Connected - A		FC/PC	FC/PC
Connected - B		FC/PC	SC/PC
Packing size	pcs	5	5

Fibre attenuators

Type		TFA 005	TFA 10	TFA 15	TFA 20
Art. No.		**307688**	**307690**	**307692**	**307693**
Connected - A		FC/PC	FC/PC	FC/PC	FC/PC
Connected - B		FC/PC	FC/PC	FC/PC	FC/PC
Attenuation	dBm	5.0	10.0	15.0	20.0
Packing size	pcs	1	1	1	1

Fibre attenuators

Type		TOA 005	TOA 10
Art. No.		**389009**	**389010**
Connected - A		SC/APC	SC/APC
Connected - B		SC/APC	SC/APC
Attenuation	dBm	5.0	10.0
Packing size	pcs	1	1

Tools for professional installation

- Tools for professional, preparation, cleaning and installation of Triax fibre optical products

Mechanical tools

Art. No. 307642
TFR 006
Fibre rods for pulling
Packing size: **6 pcs.**

Art. No. 307648
TST 001
Stripper tool
Packing size: **1 pcs.**

Art. No. 307649
TSR 001
Steel remover
Packing size: **1 pcs.**

Art. No. 307650
TKS 002
Kevlar scissors
Packing size: **1 pcs.**

Art. No. 307681
TSU 001
Mech. field splice
Packing size: **5 pcs.**

Art. No. 307682
TFT 001
Optical test tool
Packing size: **1 pcs.**

Art. No. 307683
TFS 001
Fibre scope
Packing size: **1 pcs.**

Art. No. 307697
TOM 011
Power meter
Packing size: **1 pcs.**

Cleaning tools

Art. No. 307652
TCC 001
Cleaning cube
Packing size: **1 pcs.**

Art. No. 307654
TSP 001
Solvent pen
Packing size: **1 pcs.**

Art. No. 307656
TSO 001
Swaps
Packing size: **1 pcs.**

Art. No. 307752
TCP 001
Cleaning pen
Packing size: **1 pcs.**

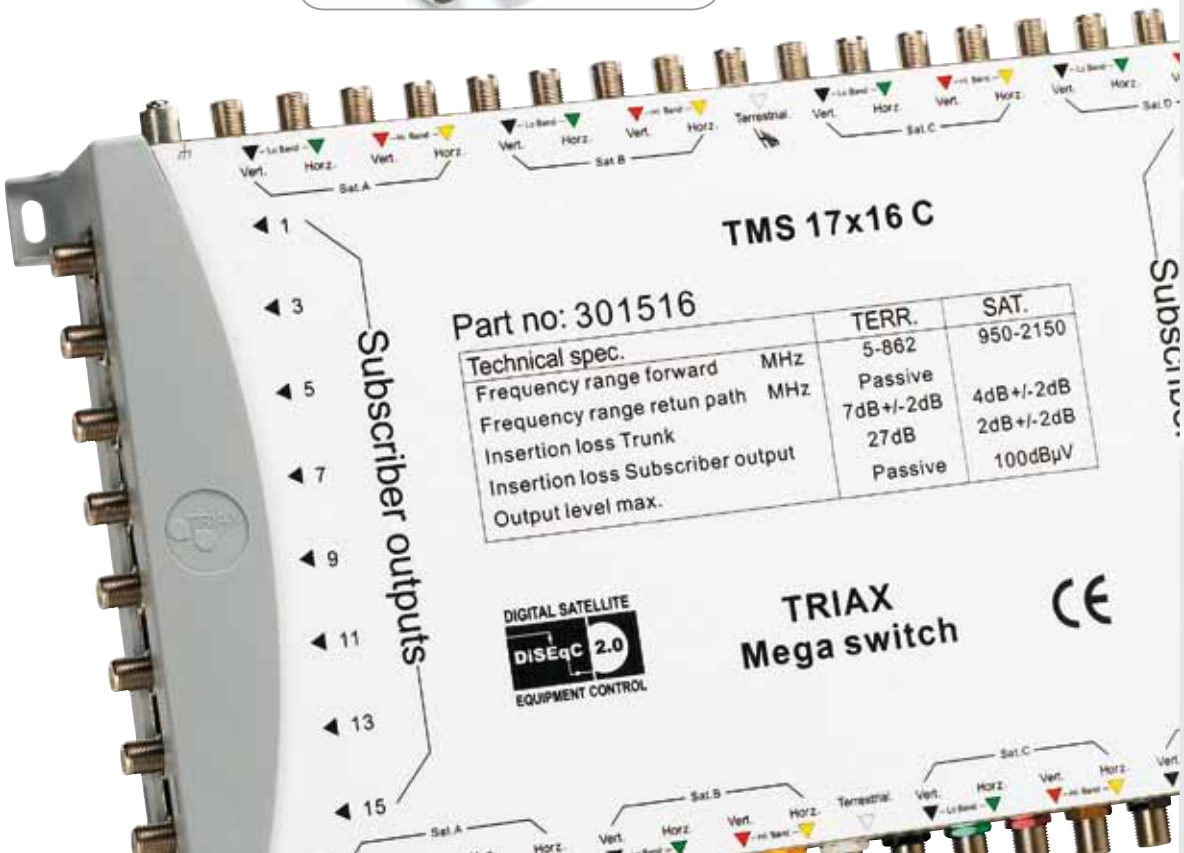
Art. No. 307750
TCW 001
Wipes
Packing size: **50 pcs.**

Art. No. 307754
TFC 01
Cleaning cartridge
Packing size: **1 pcs.**

Art. No. 307755
TFCR 01
Refill for TFC 01
Packing size: **1 pcs.**

Notes

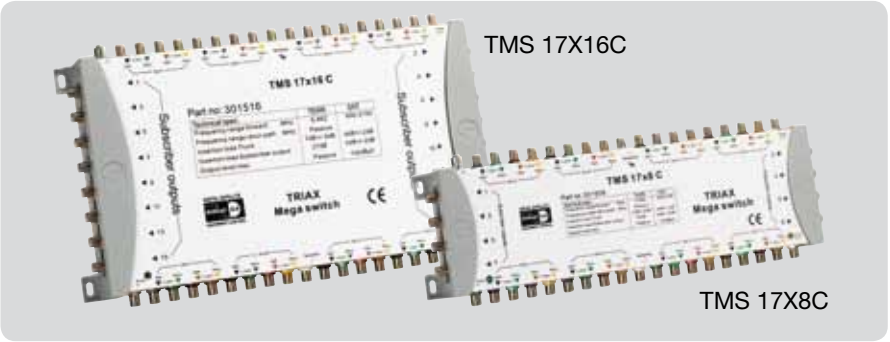
Triax TMS multiswitches



Triax TMS 17xC multiswitches

Fulfilling subscriber needs the most efficient way

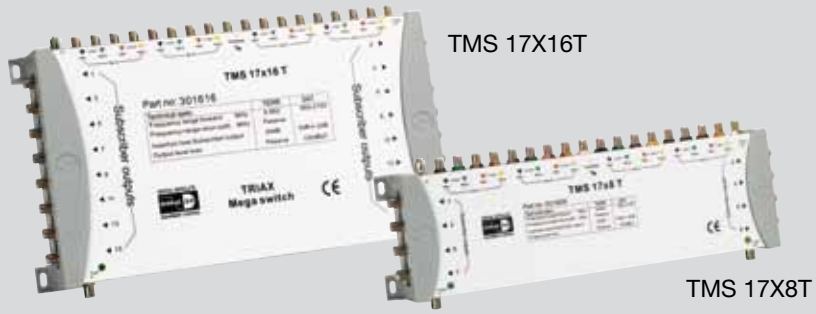
Each of our multiswitch systems offers unique subscriber benefits in terms of performance and individual freedom.
Advanced technology is used to provide these benefits, but is applied in a logical, modular way helping the professional installer save time.



Technical data - Cascadable - 16 polarities, 1 TER. input. External power supply

TYPE Art. No.		TMS 17x6C 301506	TMS 17x8C 301508	TMS 17x12C 301512	TMS 17x16C 301516
Number of inputs		16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Number of outputs		16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Subscriber outputs		**6**	**8**	**12**	**16**
Connectors	F-con	female	female	female	female
Frequency range SAT	MHz	950-2150 (active)	950-2150 (active)	950-2150 (active)	950-2150 (active)
Frequency range TER	MHz	5-862 (passive)	5-862 (passive)	5-862 (passive)	5-862 (passive)
Gain SAT	dB	0	0	-2	-2
Gain TER	dB	-24	-24	-27	-27
Insertion loss trunkline SAT	dB	3	3	4	4
Insertion loss trunkline TER	dB	4	4	4	4
Isolation LNB to LNB	dB	35	30	35	35
Isolation TER to SAT	dB	20	20	20	20
Isolation SAT to TER	dB	30	30	30	30
Isolation cross polarisation H/V	dB	28	28	28	28
Isolation out - out TER	dB	25	25	25	25
Isolation out - out SAT	dB	30	30	30	30
Return loss SAT inputs	dB	12	12	12	12
Return loss SAT outputs	dB	12	12	12	12
Return loss TER inputs	dB	8	8	8	8
Return loss TER outputs	dB	8	8	8	8
Output level SAT (IMD_3 - 35 dB)	dBµV	100	100	100	100
Impedance input/output	Ohm	75	75	75	75
Switching	VDC	13 V - 18 V - 13 V/22 kHz 18 V/22 kHz - DiSEqC 2.0 Toneburst		13 V - 18 V - 13 V/22 kHz 18 V/22 kHz - DiSEqC 2.0 Toneburst	
Supply voltage	VDC	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)
Power supply		External	External	External	External
LNB power supply max.	A	1.3	1.3	1.3	1.3
Power link (for amplifiers in the line)		Yes	Yes	Yes	Yes
Control LEDs		Green for power Yellow for power link	Green for power Yellow for power link	Green for power Yellow for power link	Green for power Yellow for power link
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes
Temperature range	ºC	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	125 x 55 x 355	125 x 55 x 355	215 x 55 x 355	215 x 55 x 355

Triax TMS 17xT multiswitches



TMS17xC and 17XT multiswitches

- are rational solutions for building 4 satellite position systems for many subscribers using relatively few components. The cascadable systems can easily be extended for more subscribers.

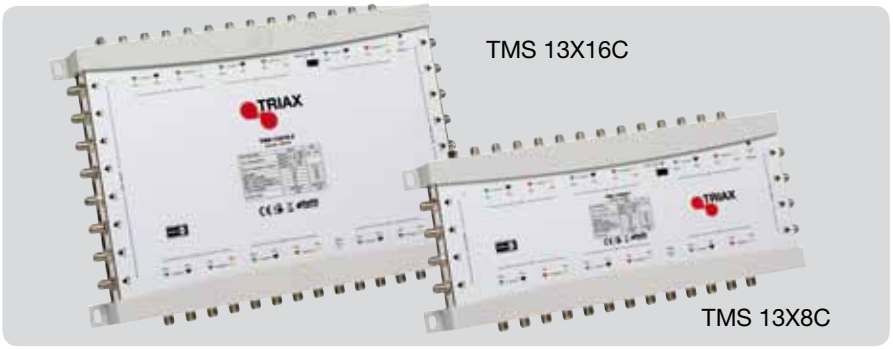
Technical data - Terminated - 16 polarities, 1 TER. input. External power

TYPE Art. No.		TMS 17x6T 301606	TMS 17x8T 301608	TMS 17x12T 301612	TMS 17x16T 301616
Number of inputs		16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Number of outputs		16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Subscriber outputs		**6**	**8**	**12**	**16**
Connectors	F-con	female	female	female	female
Frequency range SAT	MHz	950-2150 (active)	950-2150 (active)	950-2150 (active)	950-2150 (active)
Frequency range TER	MHz	5-862 (passive)	5-862 (passive)	5-862 (passive)	5-862 (passive)
Gain SAT	dB	-2	0	-2	0
Gain TER	dB	-21	-22	-24	-24
Isolation LNB to LNB	dB	35	35	35	35
Isolation TER to SAT	dB	20	20	20	20
Isolation SAT to TER	dB	30	30	30	30
Isolation cross polarisation H/V	dB	28	28	28	28
Isolation out - out TER	dB	25	25	25	25
Isolation out - out SAT	dB	30	30	30	30
Return loss SAT inputs	dB	12	12	12	12
Return loss SAT outputs	dB	12	12	12	12
Return loss TER inputs	dB	8	8	8	8
Return loss TER outputs	dB	8	8	8	8
Output level SAT (IMD_3 - 35 dB)	dBµV	100	100	100	100
Impedance input/output	Ohm	75	75	75	75
Switching	VDC	13 V - 18 V - 13 V/22 kHz 18 V/22 kHz - DiSEqC 2.0 Toneburst		13 V - 18 V - 13 V/22 kHz 18 V/22 kHz - DiSEqC 2.0 Toneburst	
Supply voltage	VDC	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)
Power supply		External	External	External	External
LNB power supply max.	A	1.3	1.3	1.3	1.3
Power link (for amplifiers in the line)		Yes	Yes	Yes	Yes
Control LEDs		Green for power Yellow for power link	Green for power Yellow for power link	Green for power Yellow for power link	Green for power Yellow for power link
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	125 x 55 x 355	125 x 55 x 355	215 x 55 x 355	215 x 55 x 355

Triax TMS 13xC multiswitches

Cascadable TMS 13xC multiswitch for 3 satellite positions and terrestrial signal with external power supply.

- Active and cascadable SAT-IF
- Switchable between full wideband or with a 5-65MHz passive return path
- Use only Universal Quattro LNBs
- Colour coded inputs.
- Connects for 8 to 24 individual subscriber satellite receivers
- Switching voltage 13/18 VDC, 0/22 kHz and DiSEqC).
- Ext. DC power supply input



Technical data - Cascadable - 12 polarities, 1 TER. input. External power supply

TYPE Art. No.		TMS 13x8C 307408	TMS 13x12C 307412	TMS 13x16C 307416	TMS 13x24C 307424
Number of inputs		12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER
Subscriber outputs		**8**	**12**	**16**	**24**
Connectors	F-con	female	female	female	female
Frequency range SAT	MHz	950-2150 (active)	950-2150 (active)	950-2150 (active)	950-2150 (active)
Frequency range TER	MHz	5-862	5-862	5-862	5-862
Return path TER (switchable)	MHz	5-65 (passive)	5-65 (passive)	5-65 (passive)	5-65 (passive)
Insertion loss trunkline SAT	dB	4.0	6.0	6.0	10.0
Insertion loss trunkline TER	dB	4.0	7.0	7.0	10.0
Gain SAT	dB	-2...+4	-2...+4	-2...+4	-4...+4
Gain TER	dB	-2...+4	-2...+4	-2...+4	-4...+4
Noise figure SAT	dB				
Noise figure TER	dB				
Attenuation SAT	dB				
Attenuation TER	dB				
Equalizer SAT	dB				
Equalizer TER	dB				
Isolation cross polarisation H/V	dB	> 28	> 28	> 28	> 28
Isolation out - out SAT	dB	> 30	> 30	> 30	> 30
Return loss SAT inputs	dB	> 10	> 10	> 10	> 10
Return loss SAT outputs	dB	> 10	> 10	> 10	> 10
Return loss TER inputs	dB	> 10	> 10	> 10	> 10
Return loss TER outputs	dB	> 10	> 10	> 10	> 10
Output level SAT (IMD_3 - 35 dB)	dBµV	95	95	95	95
Output level TER (IMD_3 - 60 dB)	dBµV	85	85	85	85
Line power Voltage (TER) Current (TER)	V mA	12 50	12 50	12 50	12 50
Switching commands	VDC	13V / 17.5V	13V / 17.5V	13V / 17.5V	13V / 17.5V
External supply voltage	VDC/mA	18.0/1600	18.0/1600	18.0/1600	18.0/1600
LNB current, max.	mA				
Colourcoding of inputs		Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	157 x 51 x 1xx	157 x 51 x 1xx	157 x 51 x 1xx	157 x 51 x 1xx

TMS 9X12C

TMS 9X8C

Fulfilling subscriber needs the most efficient way

The TMS 9xC series of our multi-switch systems offers unique subscriber benefits in terms of performance and individual freedom. Advanced technology is used to provide these benefits, but is applied in a logical, modular way helping the professional installer save time.

Technical data - Cascadable - 8 polarities, 1 TER. input. External power supply

TYPE Art. No.		TMS 9x4C 300364	TMS 9x6C 300366	TMS 9x8C 300368	TMS 9x12C 300372	TMS 9x16C 300376
Number of inputs		8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Number of outputs		8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Subscriber outputs		**4**	**6**	**8**	**12**	**16**
Connectors	F-con	female	female	female	female	female
Frequency range SAT	MHz	950-2150 (act.)	950-2150 (act.)	950-2150 (act.)	950-2150 (act.)	950-2150 (act.)
Frequency range TER	MHz	5-862 (active)	5-862 (active)	5-862 (active)	5-862 (active)	5-862 (active)
Return path TER	MHz	5-65 (passive)	5-65 (passive)	5-65 (passive)	5-65 (passive)	5-65 (passive)
Gain SAT (with 5 dB slope)	dB	- 3 to 2 (± 1.0)	- 3 to 2 (± 1.0)	- 3 to 2 (± 1.0)	- 3	- 3
Gain TER	dB	- 9	- 9	- 9	- 9	- 9
Insertion loss trunkline SAT	dB	2 (± 2.0)	3 (± 2.0)	4 (± 2.0)	4 (± 2.0)	4 (± 2.0)
Insertion loss trunkline TER	dB	4 (± 1.0)	4 (± 1.0)	5 (± 1.0)	5 (± 1.0)	5 (± 1.0)
Isolation LNB to LNB	dB	35	35	35	35	35
Isolation TER to SAT	dB	23	23	23	23	23
Isolation SAT to TER	dB	28	28	28	28	28
Isolation cross polarisation H/V	dB	28	28	28	28	28
Isolation out - out TER	dB	28	28	28	28	28
Isolation out - out SAT	dB	30	30	30	30	30
Return loss SAT inputs	dB	13	13	13	13	13
Return loss SAT outputs	dB	8	8	8	8	8
Return loss TER inputs	dB	11	11	11	11	11
Return loss TER outputs	dB	8	8	8	8	8
Output level SAT (IMD_3 - 35 dB)	dBµV	100	100	100	100	100
Output level TER (IMD_3 - 60 dB)	dBµV	88	88	88	88	88
Impedance input/output	Ohm	75	75	75	75	75
Switching	VDC	14 V - 18 V 14 V/22 kHz - 18 V/22 kHz - DiSEqC 2.0				
Supply voltage	VDC	15 (± 1.0)	15 (± 1.0)	15 (± 1.0)	15 (± 1.0)	15 (± 1.0)
Power supply		External PSU	External PSU	External PSU	External PSU	External PSU
Max. current pass per F-connector	mA	500	500	500	500	500
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	124 x 51 x 253	124 x 51 x 253	152 x 51 x 253	210 x 51 x 257	210 x 51 x 257

Triax TMP 9x multiswitches

TMP 9x series stand-alone switch

- 8 satellite polarities and 1 terrestrial input, combined output.
- Versions for 8, 12, 16, 24 and 32 subscriber outputs
- Adjustable attenuator (0-15 dB)
- Slide switch for long, medium and short subscriber cable runs (0, 6 and 12 dB)
- Low power consumption
- Small footprint, compact design, fits into tight spaces
- Switchable DC supply into terrestrial input (for mast amplifier)

TMP 9X32

Technical data - Stand-alone with 8 polarities, 1 TER. input. With power supply

TYPE Art. No.		TMP 9x8 301630	TMP 9x12 301632	TMP 9x16 301634	TMP 9x24 301636	TMP 9x32 301638
Number of inputs		8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Subscriber outputs		**8**	**12**	**16**	**24**	**32**
Connectors	F-con	female	female	female	female	female
Frequency range - SAT	MHz	950-2150	950-2150	950-2150	950-2150	950-2150
Frequency range - Wideband	MHz	47-862	47-862	47-862	47-862	47-862
Insertion loss trunkline SAT	dB	3.0	3.0	3.0	2.0	2.0
Insertion loss trunkline TER	dB	3.0	3.0	3.0	0.0	2.0
Input polarity gain control SAT	dB	4 x 10	4 x 10	4 x 10	4 x 15	4 x 15
Input polarity gain control TER	dB	15	15	15	15	15
TER slope control	dB	10	10	10	10	10
Output level control (4 outputs)						
Long cable	dB	/	/	/	0	0
Medium cable	dB	/	/	/	6	6
Short cable	dB	/	/	/	12	12
Isolation TER to SAT	dB	32	32	32	32	32
Isolation SAT to TER	dB	32	32	32	32	32
Isolation cross polarisation H/V	dB	30	30	30	30	30
Isolation out - out TER	dB	30	30	30	30	30
Isolation out - out SAT	dB	30	30	30	30	30
Return loss SAT inputs	dB	10	10	10	10	10
Return loss SAT outputs	dB	8	8	8	10	10
Return loss TER inputs	dB	10	10	10	12	12
Return loss TER outputs	dB	8	8	8	10	10
Output level SAT (IMD_3 - 35 dB)	dBµV	100	100	100	100	100
Output level TER (IMD_3 - 60 dB)	dBµV	95	95	95	95	95
Line power Voltage (TER)	V	12	12	12	12	12
Current (TER)	mA	50	50	50	50	50
Switching commands	VDC/ kHz		13V / 18V 13V - 22 kHz / 18 - 22 kHz, DiSEqC 2.0			
Supply voltage	VAC VDC/A		180 - 264 18 / 1.5 (47 - 63 Hz)			
LNB current, max.	mA	600	600	600	600	600
Colourcoding of inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	157 x 51 x 190	157 x 51 x 240	157 x 51 x 240	157 x 51 x 340	157 x 51 x 340

Triax TMS 9xP multiswitches

TMS 9XP multiswitches

- offer a flexible and cost efficient system for providing two position satellite distribution in small and medium sized networks.
The system's uniqueness in design and performance makes community networks attractive even in buildings with only 2 or 3 households.

Technical data - Terminated with 8 polarities, 1 TER. input. With power supply

TYPE Art. No. (EU plug) Art. No. (UK plug)		TMS 9x4P 300344 300354	TMS 9x6P 300346 300356	TMS 9x8P 300348 300358	TMS 9x12P 300342 300352	TMS 9x16P 300347 300357
Number of inputs		8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Subscriber outputs		**4**	**6**	**8**	**12**	**16**
Connectors	F-con	female	female	female	female	female
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862	47-862	47-862
Gain SAT	dB	2	2	2	0	0
Gain TER	dB	- 2	- 2	- 2	4	2
Isolation LNB to LNB	dB					
Isolation TER to SAT	dB	28	28	28	30	30
Isolation SAT to TER	dB	30	30	30	30	28
Isolation cross polarisation H/V	dB	28	28	28	25	25
Isolation out - out TER	dB	26	26	26	28	30
Isolation out - out SAT	dB	30	30	30	30	30
Return loss SAT inputs	dB	14	14	14	10	10
Return loss SAT outputs	dB	7	7	7	10	10
Return loss TER inputs	dB	11	11	11	12	12
Return loss TER outputs	dB	8	8	8	10	10
Output level SAT (IMD_3 - 35 dB)	dBµV	100	100	100	100	100
Output level TER (IMD_3 - 60 dB)	dBµV	85	85	85	83	82
Impedance input/output	Ohm	75	75	75	75	75
Switching	VDC			13 V - 18 V 13 V/22 kHz - 18 V/22 kHz DiSEqC 2.0		
Supply voltage	VDC	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)
Power supply		Included	Included	Included	Included	Included
LNB power supply max.	mA	1000	1000	1000	1000	1000
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	103 x 71 x 359	103 x 71 x 359	103 x 71 x 359	103 x 71 x 459	103 x 71 x 559

Triax TMP 5x multiswitches

TMP 5x series for one satellite position

- 4 satellite polarities and 1 terrestrial input, combined output.
- Versions for 8, 12, 16, 24 and 32 subscriber outputs
- Adjustable attenuator per polarity (0-15 dB)
- Slide switch for long, medium and short subscriber cable runs (0, 6 and 12 dB)
- Low power consumption
- Small footprint, compact design, fits into tight spaces
- Switchable DC supply into terrestrial input (for mast amplifier)

Technical data - Single with 4 polarities, 1 TER. input. With power supply

TYPE Art. No.		TMP 5x8 301620	TMP 5x12 301622	TMP 5x16 301624	TMP 5x24 301626	TMP 5x32 301628
Number of inputs		4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Subscriber outputs		**8**	**12**	**16**	**24**	**32**
Connectors	F-con	female	female	female	female	female
Frequency range - SAT	MHz	950-2150	950-2150	950-2150	950-2150	950-2150
Frequency range - Wideband	MHz	47-862	47-862	47-862	47-862	47-862
Insertion loss - SAT	dB	3.0	3.0	3.0	2.0	3.0
Insertion loss - TER	dB	3.0	3.0	3.0	0.0	0.0
Input polarity gain control SAT	dB	4 x 10	4 x 10	4 x 10	4 x 10	4 x 10
Input polarity gain control TER	dB	15	15	15	15	15
TER slope control	dB	10	10	10	10	10
Output level control (4 outputs)						
Long cable	dB				0	0
Medium cable	dB				6	6
Short cable	dB				12	12
Isolation TER to SAT	dB	32	32	32	32	32
Isolation SAT to TER	dB	32	32	32	32	32
Isolation cross polarisation H/V	dB	30	30	30	30	30
Isolation out - out TER	dB	30	30	30	30	30
Isolation out - out SAT	dB	30	30	30	30	30
Return loss SAT inputs	dB	10	10	10	10	12
Return loss SAT outputs	dB	8	8	8	8	10
Return loss TER inputs	dB	10	10	10	10	12
Return loss TER outputs	dB	8	8	8	8	10
Output level SAT (IMD_3 - 35 dB)	dBµV	100	100	100	100	100
Output level TER (IMD_3 - 60 dB)	dBµV	95	95	95	95	95
Line power Voltage (TER)	V	12	12	12	12	12
Current (TER)	mA	50	50	50	50	50
Switching commands	VDC/ kHz	13V / 18V 13V - 22 kHz / 18 - 22 kHz				
Supply voltage	VAC VDC/A	180 - 264 18 / 1.5 (47 - 63 Hz)				
LNB current, max.	mA	600	600	600	600	600
Colourcoding of inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	157 x 51 x 190	157 x 51 x 240	157 x 51 x 240	157 x 51 x 340	157 x 51 x 340

Triax TMPR 5x multiswitches

These remote powered, stand alone multiswitches are designed to be installed where no landlord supply exists.

- Range of 8, 12 and 16 output multiswitches
- 4 x satellite and 1 x terrestrial inputs
- Level adjustment on all inputs
- Slope adjustment on UHF input
- Switchable masthead amplifier power supply
- Powered from satellite receiver or external power supply
- Supplied with earth bonding bars

Technical data - Single with 4 polarities, 1 TER. input. Receiver powered

TYPE Art. No.		TMPR 5x8 305297	TMPR 5x12 305298	TMPR 5x16 305299
Number of inputs		4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Subscriber outputs		**8**	**12**	**16**
Connectors	F-con	female	female	female
Frequency range - SAT	MHz	950-2150	950-2150	950-2150
Frequency range - Wideband	MHz	47-862	47-862	47-862
Insertion loss - SAT	dB	2.0	2.0	2.0
Insertion loss - TER	dB	0	0	0
Input polarity gain control - SAT	dB	10	10	10
Input polarity gain control - TER	dB	15	15	15
TER slope control	dB	10	10	10
Isolation TER to SAT	dB	30	30	30
Isolation SAT to TER	dB	30	30	30
Isolation cross polarisation H/V	dB	30	30	30
Isolation out - out TER	dB	30	30	30
Isolation out - out SAT	dB	30	30	30
Return loss SAT inputs	dB	10	10	10
Return loss SAT outputs	dB	8	8	8
Return loss TER inputs	dB	10	10	10
Return loss TER outputs	dB	8	8	8
Output level SAT (IMD_3 - 35 dB)	dBµV	95	95	95
Output level TER (IMD_3 - 60 dB)	dBµV	88	88	88
Switching commands	VDC/ kHz			13V / 18V 13V - 22 kHz / 18 - 22 kHz
LNB current, max.	mA	180	180	180
Max. current to TER masthead amp.	mA	50	50	50
Colourcoding of inputs		Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	147 x 56 x 170	197 x 56 x 170	197 x 56 x 170

Triax TMS 5xC multiswitches

Triax cascadable multi switch for 1 satellite position (4 x SAT polarities) and terrestrial signal.

- Two versions with 6 and 8 subscriber outputs
- Suitable for both analogue and digital reception
- The TMS5xC series has TER switchable between full wideband, or with a 5-65MHz passsive return path
- Input level attenuator per IF polarity and TER (via 0, 6 and 12dB point switch or 0…12dB potentiometer)
- For use with Universal Quattro or QUAD type LNBs
- Colour coded inputs and 22kHz on high band

Technical data - Cascadable - 4 polarities, 1 TER. input. External power supply

TYPE Art. No.		TMS 5x6C 307456	TMS 5x8C 307458
Number of inputs		4 SAT, 1 TER	4 SAT, 1 TER
Subscriber outputs		**6**	**8**
Connectors	F-con	female	female
Frequency range SAT	MHz	950-2150 (active)	950-2150 (active)
Frequency range TER	MHz	5-862 (pos. full)	5-862 (pos. full)
Return path TER (switchable)	MHz	5-65 (passive)	5-65 (passive)
Insertion loss trunkline SAT	dB	4.0 ±1	6.0 ±1
Insertion loss trunkline TER	dB	4.0 ±1	7.0 ±2
Gain SAT	dB	-2...+4	-2...+4
Gain TER	dB	-2...+4	-2...+4
Noise figure SAT	dB		
Noise figure TER	dB		
Attenuation SAT/TER switch	dB	0, 6, 12	0, 6, 12
Attenuation SAT/TER pot.	dB	0...12	0...12
Equalizer SAT	dB		
Equalizer TER	dB		
Isolation cross polarisation H/V	dB	> 28	> 28
Isolation out - out SAT	dB	> 30	> 30
Return loss SAT inputs	dB	> 10	> 10
Return loss SAT outputs	dB	> 10	> 10
Return loss TER inputs	dB	> 10	> 10
Return loss TER outputs	dB	> 10	> 10
Output level SAT (IMD_3 - 35 dB)	dBµV	95	95
Output level TER (IMD_3 - 60 dB)	dBµV	85	85
Line power Voltage (TER) Current (TER)	V mA	12 50	12 50
Switching commands	VDC	13V / 17.5V	13V / 17.5V
External supply voltage	VDC	18.0	18.0
Max. current consumption	mA	350	350
Colourcoding of inputs		Yes	Yes
Temperature range	°C	0...+55	0...+55
Dimensions (H x D x W)	mm	182 x 45 x 150	182 x 45 x 150

Triax TMS 5xP multiswitches

Fulfilling subscriber needs the most efficient way

The TMS 5x series of our multi-switch systems offers unique subscriber benefits in terms of performance and individual freedom. Advanced technology is used to provide these benefits, but is applied in a logical, modular way helping the professional installer save time.

Technical data - Single - 4 polarities, 1 TER. input. With power supply

TYPE Art. No. (EU plug) Art. No. (UK plug)		TMS 5x4P 300324 300334	TMS 5x6P 300326 300336	TMS 5x8P 300328 300338	TMS 5x12P 300322 300332	TMS 5x16P 300327 300337
Number of inputs		4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Subscriber outputs		4	6	8	12	16
Connectors	F-con	female	female	female	female	female
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862	47-862	47-862
Gain SAT	dB	- 6	- 5	- 5	- 5	- 3
Gain TER	dB	4	3	3	0	4
Isolation TER to SAT	dB	22	25	25	22	22
Isolation SAT to TER	dB	22	28	28	22	22
Isolation cross polarisation H/V	dB	25	28	28	25	25
Isolation out - out TER	dB	30	28	28	28	28
Isolation out - out SAT	dB	30	35	35	35	35
Return loss SAT inputs	dB	12	11	11	11	10
Return loss SAT outputs	dB	7	9	9	8	8
Return loss TER inputs	dB	11	11	11	11	10
Return loss TER outputs	dB	7	9	9	8	8
Output level SAT (IMD_3 - 35 dB)	dBµV	100	101	101	100	100
Output level TER (IMD_3 - 60 dB)	dBµV	88	85	85	85	85
Impedance input/output	Ohm	75	75	75	75	75
Switching	VDC	13 V - 18 V 13 V/22 kHz 18 V/22 kHz	13 V - 18 V 13 V/22 kHz 18 V/22 kHz	13 V - 18 V 13 V/22 kHz 18 V/22 kHz	13 V - 18 V 13 V/22 kHz 18 V/22 kHz	13 V - 18 V 13 V/22 kHz 18 V/22 kHz
Supply voltage	VDC	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)	15 (± 0.5)
Power supply		Included	Included	Included	Included	Included
LNB power supply max.	mA	600	600	600	600	600
Colourcoding of IF and TER Inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	103 x 71 x 249	103 x 71 x 359	103 x 71 x 359	103 x 71 x 459	103 x 71 x 559

Triax TMS 2x, 3x and 4x multiswitches

1 position 2 polarity switch, many users and expandability

For systems with one satellite position

- Simple, yet expandable.
- Easy to install.

TMS 2x8C

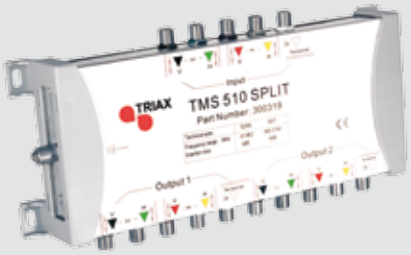
TMS 2x4C

Technical data - Cascadable - with 2 polarities. External power supply

TYPE Art. No.		TMS 2x4C 300274	TMS 2x8C 300278	TMS 3x4C 3002xx	TMS 4x4C 3002xx
Number of inputs		2 SAT	2 SAT	2 SAT, 1 TER	4 SAT
Subscriber outputs		**4**	**8**	**4**	**4**
Connectors	F-con	female	female	female	female
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150
Gain SAT	dB	- 2	- 2	- 2	- 2
Noise figure	dB	6	6	6	6
Insertion loss trunkline SAT	dB	3.5	4.0	3.5	4.0
Isolation trunk to trunk	dB	40	40	40	40
Isolation LNB to LNB	dB	30	30	30	30
Isolation cross polarisation H/V	dB	30	30	30	30
Return loss SAT inputs	dB	12	12	12	12
Return loss SAT outputs	dB	12	12	12	12
Return loss TAP outputs	dB	10	10	10	10
Output level (IMD_3 - 35 dB)	dBµV	100	100	100	100
Input level (IMD_3 - 35 dB)	dBµV	40-90	40-90	40-90	40-90
Impedance input/output	Ohm	75	75	75	75
Supply voltage from receiver via subscriber ports	V	10 - 18	10 - 18	10 - 18	10 - 18
Max. current @ 13 V/18 V	mA	< 80	< 80	< 80	< 80
Max. current to each H/V LNB	mA	< 500	< 500	< 500	< 500
Temperature range	°C	-20...+60	-20...+60	-20...+60	-20...+60
Dimensions (H x D x W)	mm				

Triax TMS and TMM IF taps and splitters

TMS 55-xx tap



TMS 510 splitter

Expand the TMS 5x series into a cascadable system

Using TMS 55 taps makes it possible to construct large cascadable systems.

Different tap-values allow fine-tuning of available signal levels.
By using splitters you can balance your distribution system the best possible way.

Technical data - TMS taps and splitters

TYPE Art. No.		TMS 55-12 tap 300313	TMS 55-15 tap 300333	TMS 55-20 tap 300343	TMS 55-24 tap 300353	TMS 55-6S splitter 300363	TMS 510 splitter 300319
Number of inputs		4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER
Number of outputs		4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER	**8 SAT 2 TER**	**8 SAT 2 TER**
Number of taps		4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER	4 SAT 1 TER		
Connectors	F-con	female	female	female	female	female	female
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862	47-862		47-862
Through loss SAT	dB	1.2 ± 1	1.2 ± 1	1.2 ± 1	1.2 ± 1	1.2 ± 1	4 ± 1
Through loss TER	dB	2.5 ± 1.5	2.5 ± 1.5	2.5 ± 1.5	2.5 ± 1.5		6 ± 1
Tap loss SAT	dB	12.5	15	20	24	6.0	
Tap loss TER	dB	12.5	15	20	24		
Isolation trunkline	dB	> 30	> 30	> 30	> 30	> 30	> 30
Temperature range	°C	0...+55	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	145 x 42 x 119	145 x 42 x 119	145 x 42 x 119	145 x 42 x 119	145 x 42 x 119	145 x 42 x 255

TYPE Art. No.		TMM 5x10 splitter 305319	TMM 4x10 splitter 305320
Number of inputs		4 SAT 1 TER	4 SAT 1 TER
Number of outputs		**2x4 SAT 2x1 TER**	**2x4 SAT 2x1 TER**
Connectors	F-con	female	female
Frequency range	MHz	47-2150	47-2150
Through loss SAT	dB	4.5	4.5
Through loss TER	dB	4.3	4.3
Output return loss SAT	dB	In 15/ out 15	In 15/ out 15
Output return loss TER	dB	In 15/ out 15	In 15/ out 15
Isolation - Out/out SAT - Out/out TER	dB	> 20 > 22	> 20 > 22
Temperature range	°C	0...+55	0...+55
Dimensions (H x D x W)	mm		

TMM splitter

Triax THA 340E - TLA 340E IF-amplifiers

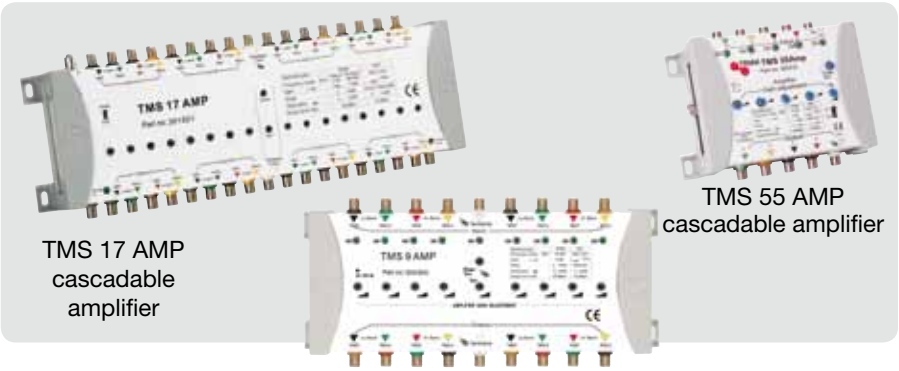
THA 340E head and
TLA 340E launch amplifier

- 2 x satellite IF polarities each combined with same TER (with return path)
- Passive TER combiner in THA340E amplifier with return path (5-30 MHz)
- LNB power DC and high/low band switch for each polarity on THA 340E amplifier
- Both products has individual attenuator and slope adjustment for SAT-IF
- Active bi-directional TER path in TLA 340E with forward attenuator and slope adjustment.

Technical data

TYPE Art. No.		THA 340E 300384	TLA 340E 300386
Number of inputs		2 SAT, 1 TER	2 SAT
Distribution outputs (SAT + Ter)		**2**	**2**
Test outputs (SAT + Ter) - 30 dB		**2**	**2**
Connectors	F-con	female	female
Frequency range SAT	MHz	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862
Return path TER (switchable)	MHz	5-30	5-30
Gain SAT	dB	40.0	40.0
Gain TER	dB	- 8.0	38.0
Gain Return path	dB	- 8.0	- 3.0
Noise figure SAT	dB	10.0	8.0
Noise figure TER	dB		6.0
Attenuation 2 x SAT	dB	0...20	0...20
Attenuation 2 x TER	dB		
Slope adjustment 2 x SAT	dB		0...15
Equalizer SAT	dB		
Equalizer TER	dB		
Isolation cross polarisation H/V	dB	> 45	> 45
Isolation out - out SAT	dB	> 45	> 50
Isolation out - out TER	dB		> 25
Return loss SAT inputs	dB	10	10
Return loss SAT outputs	dB	8	8
Return loss TER inputs	dB	10	8
Return loss TER outputs	dB	8	8
Output level SAT (IMD_3 - 35 dB)	dBµV	120	120
Output level TER (IMD_3 - 60 dB)	dBµV		116
Power supply	VDC VDC/A	180-240 13 VDC/1 18 VDC/2	180-240 13 VDC/1 18 VDC/2
Switching commands	kHz/VDC	0/22 - 0/13/18	0/22 - 0/13/18
Power consumption per SAT-IF	mA	300 max.	300 max.
Temperature range	°C	0...+55	0...+55
Dimensions (H x D x W)	mm	182 x 45 x 150	182 x 45 x 150

Triax TMS 17 - 13 - 9 - 5 IF-amplifiers



TMS 17 AMP cascadable amplifier

TMS 55 AMP cascadable amplifier

TMS 9 AMP cascadable amplifier

Boost your signal to get more mileage.

Using a TMS line amplifier you can compensate for the cable loss in your distribution system.

Technical data - IF amplifiers

TYPE		TMS 17 Amp	TMS 13 Amp	TMS 9 Amp	TMS 8 Amp
Art. No.		**301501**	**307415**	**300365**	**300425**
Number of inputs		16 SAT, 1 TER + Power link	12 SAT, 1 TER	8 SAT, 1 TER	8 SAT
Number of outputs		16 SAT, 1 TER + Power link	12 SAT, 1 TER	8 SAT, 1 TER	8 SAT
Connectors	F-con	female	female	female	female
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150
Frequency range TER	MHz	5-862	5-862	47-862	
Return path TER	MHz	5-65 (passive)	5-65 (passive)		
Gain SAT 950 - 2150 MHz	dB	18....24 (± 2)	18....24 (± 2)	14 (± 2)	32...36 (4 dB Slope)
Gain TER forward	dB	17	17 (± 2)	17 (± 2)	
Noise figur SAT	dB	< 8	< 8		< 16
Noise figur TER	dB	< 7	< 5		
Adjustable attenuator SAT	dB	0...10	0...10	0...20	0...20
Adjustable attenuator TER	dB	0...10	0...10	0...20	
Equalizer SAT	dB	0 or 6 (switchable)	0 or 6 (switchable)	5 (fixed)	0...10
Equalizer TER	dB	0...15 (adjustable)	0...15 (adjustable)	2...15 (adjustable)	
Isolation SAT to SAT	dB	30	30		> 25
Isolation TER to SAT	dB	22	28		
Max. output level SAT (IMD_3 - 35 dB)	dBµV	110	110	110	120
Max. output level TER (IMD_3 - 60 dB)	dBµV	105	105	105	
Return loss	dB	10	10	10	10
Impedance input/output	Ohm	75	75	75	75
Supply voltage	VDC	18 (via power link)	18 (via DC plug or trunk)		1 (build in)
Power supply		External power adaptor	External power adaptor	External power adaptor	Internal
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes
Temperature range	°C	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)	mm	152 x 51 x 355		152 x 51 x 253	140 x 121 x 250

Triax TMS 55 - 33 - 2 - 1 IF-amplifiers

Boost your signal to get more mileage.

Using a TMS line amplifier you can compensate for the cable loss in your distribution system.

TMS 55 AMP cascadable amplifier

TMS 33 AMP cascadable amplifier

SAT line amplifier

TMS 2 AMP

Technical data - IF amplifiers

TYPE		TMS 55 Amp	TMS 2 AMP	Sat line amplifier
Art. No.		**300315**	**300275**	**300401**
Number of inputs		4 SAT, 1 TER	2 SAT	1
Number of outputs		4 SAT, 1 TER	2 SAT	1
Connectors	F-con	female	female	female
Frequency range SAT	MHz	950-2150	950-2150	47-2300
Frequency range TER	MHz	47-862		
Return path TER	MHz			
Gain SAT 950 - 2150 MHz	dB	20...25 (± 2)	30	16-20
Gain TER forward	dB	17 (± 2)		
Noise figur SAT	dB		??	
Noise figur TER	dB			
Adjustable attenuator SAT	dB	0...15	0 - 10	
Adjustable attenuator TER	dB	0...17		
Equalizer SAT	dB	5 (fixed)	0 - 8	
Equalizer TER	dB	7...12 (adjustable)		
Isolation SAT to SAT	dB			
Isolation TER to SAT	dB			
Max. output level SAT (IMD_3 - 35 dB)	dBµV	110	115	100
Max. output level TER (IMD_3 - 60 dB)	dBµV	105		
Return loss	dB	10	10	10
Impedance input/output	Ohm	75	75	
Supply voltage	VDC		18 (via DC plug)	15 via trunk
Power supply		External power adaptor	External power adaptor	
Colourcoding of IF and TER inputs		Yes		
Temperature range	°C	0...+55	0...+50	
Dimensions (H x D x W)	mm	105 x 43 x 196		

Triax TMM 5 - 4 IF and terrestrial amplifiers

TMM 44 amplifier

Get a good head start!

- with TMM add-on launch and distribution amplifier parts for one to four satellite positions or a TMS launch amplifier you can ensure you will get as much as possible out through/of your cables.

Technical data - IF and Terrestrial amplifiers. External power supply

TYPE Art. No.				TMM 55AMP distribution 305335	TMM 44AMP launch 305300	TMM TDA TER. distr. 305306	TMM TER launch 305315
Frequency range			MHz	950-2150	950-2150	47-862	47-862
Input	TER	47-862 MHz		1		1	
	BI/FM	47-108 MHz					1
	BIII/DAB	170-230 MHz					1
	UHF 1	470-108 MHz					1
	UHF 2	470-108 MHz					1
	SAT	950-2150 MHz		4	4		
Outputs	TER	47-862 MHz		**1**		**1**	**1**
	SAT	950-2150 MHz		**4**	**4**		
Connectors				F-type	F-type	F-type	F-type
Gain	TER	47-862 MHz	dB	17		30	
	BI/FM	47-108 MHz	dB				40
	BIII/DAB	170-230 MHz	dB				40
	UHF 1	470-108 MHz	dB				40
	UHF 2	470-108 MHz	dB				40
	SAT	950-2150 MHz	dB	25	40		
Polarity gain control		TER	dB	20		0-20	
		BI/FM	dB				0 - 20
		BIII/DAB	dB				0 - 20
		UHF 1	dB				0 - 20
		UHF 2	dB				0 - 20
		SAT	dB	20	0-20		
Slope control		TER	dB	2-15		0-18	
		UHF 1	dB				
		UHF 2	dB				0-10
		SAT	dB	0-5	0-10		0-10
Isolation	Trunk - trunk		dB	32	35		
	Out/out - TER		dB				
	Out/out - SAT		dB				
Output return loss		TER	dB	10		10	10
		SAT	dB	10	10		
Max. output level		TER	dBµV	105		118	
(IMA3 / -60 dB)		BI/FM	dBµV				118
		BIII/DAB	dBµV				118
		UHF 1	dBµV				115
		UHF 2	dBµV				115
(IMA3 / -35 dB)		SAT	dBµV	110	115		
LNB power supply			VDC	2 x 14/2 x 18	2 x 14/2 x 18		
max.			mA	400	400		
Line power supply - Horisontal				18V ±0.5V	18V ±0.5V		12
- Vertical				13V ±0.5V	13V ±0.5V		50
External power supply			VDC	18 via 3.5 jack	18 via 3.5 jack	18 via 3.5 jack	18 via 3.5 jack
Terrestrial through voltage			VDC	12 ±0.5V		12 ±0.5V	12 ±0.5V
Current			A	1.5		1.5	1.5
Power consumption			mA	350	390	200	320
Line powering				via in- or output	via in- or output	via in- or output	via in- or output
DC switch (for injecting DC)						Switchable	
Masthead power supply (UHF 1)			VDC				12 ±0.5

Triax TMS/TMM power supplies and inserters

TMS power supply/power inserter

Triax TMS 5 PSU is an easy-to-install power supply/power inserter to be used with the TMS 5x series products.

TMS 17 PSUMB w. mounting bracket

TMM PSI power inserter

Technical data - TMS power supply/power inserter

TYPE Art. No. (EU plug) Art. No. (UK plug)		TMS 17 PSU-MB 301504	TMS 1820 SMPSU 307410 307411	TMM PSI inserter 305311	TMM PSU 305340 305310	TMS PSU 336195 336196
Number of inputs				4 SAT, 1 TER		
Number of outputs		1	1	4 SAT, 1 TER	1	1
Inputs (230V)		1	1		1	1
Connectors	F-con	F-type	F-type	F-type	F-type	F-type
Input voltage	V/AC	96 to 250	100 to 240		96 to 250	96 to 250
Frequency range	Hz			47-2150	47 - 63	47 - 63
Frequency range SAT	MHz			950 - 2150		
Frequency range TER	MHz					
Insertion loss SAT	dB			2.5		
Insertion loss TER	dB			1.5		
Isolation out/out - TER	dB			35		
Isolation out/out - SAT	dB			35		
Output return loss - TER	dB			11		
Output return loss - SAT	dB			11		
Impedance input/output	Ohm					
Supply direction switch TER.						
Max. current	A	1 x 2.0	1 x 2.0		1 x 1.9	1 x 0.6
Output voltage	VDC	15 (± 0.5)	15 (± 0.5)		1 18 (± 0.5)	15 (± 0.5)
LNB power supply / max.	V/mA			18V-13V/500		
Supply power - horisontal - vertical	V V			18V ±0.5V 13V ±0.5V		
Supply power	W			18 - 3.5 jack		12
Terrestrial through voltage	V/W			12 ±0.5V/1.5		
Cable length from supply	mm	1800	1800		1800	
Colourcoding of inputs						
Temperature range	°C	0 - 50	0 - 50		0 - 50	0 - 50
Dimensions (H x D x W)	mm	64x111x35			64x111x35	
Remarks		Incl. power cable, mounting bracket and 1800 mm power cable with F-male			Incl. power cable, bracket and power cable with 3.5 mm mini jack	

Triax TMM 4x series
cascadable multiswitches

TMM 4x series

TMM 4x multiswitches

- 4 satellite polarities, SAT outputs.
- Versions for 8, 12 and 16 subscriber outputs
- Adjustable attenuator per polarity (0-12 dB)
- Low power consumption
- Small footprint, compact design, fits into tight spaces
- 2-, 3- and 4-way DiSEqC bridger units with TER loop-through
- Wide range of launch and line amplifiers available

Technical data - Cascadable - 4 satellite polarities. External power supply

TYPE		TMM 4x4	TMM 4x8	TMM 4x12	TMM 4x16
Art. No.		**305324**	**305328**	**305322**	**305326**
Number of inputs		4 x SAT	4 x SAT	4 x SAT	4 x SAT
Number of outputs		4 x SAT	4 x SAT	4 x SAT	4 x SAT
Subscriber outputs		**4**	**8**	**12**	**16**
Connectors	F-con	F-female	F-female	F-female	F-female
Frequency range	MHz	950-2150	950-2150	950-2150	950-2150
Through loss (trunk cascade)	dB	1.5	2.5	2.5	2.5
Tap loss - SAT	dB	10	10	12	12
Input polarity gain control	dB	4 x 12	4 x 12	4 x 12	4 x 12
Isolation cross polarisation H/V	dB	30	30	28	28
Isolation out - out SAT	dB	30	30	30	30
Return loss SAT inputs	dB	12	12	12	12
Return loss SAT outputs	dB	12	12	12	12
Return loss TAP outputs	dB	10	10	10	10
Max. input level (IMA3 / -35 dB)	dBµV	117	117	119	119
Max. output level (IMA3 / -35 dB)	dBµV	95	95	95	95
Noise figure	dB	≤ 8	≤ 8	≤ 8	≤ 8
Power consumption from receiver	mA	≤ 90	≤ 90	≤ 90	≤ 90
Power supply voltage	VDC	15 ± 1	15 ± 1	15 ± 1	15 ± 1
Power supply current	mA	≤ 15	≤ 15	≤ 15	≤ 15
Power connector	mm	2 x 1.3	2 x 1.3	2 x 1.3	2 x 1.3
Switching commands	VDC/ kHz	13V / 18V 13V - 22 kHz / 18 - 22 kHz			
Switching voltage	V	15 /±1V	15 /±1V	15 /±1V	15 /±1V
External power supply		**NO** (DC on all 4 trunk lines via power inserter or amplifier)			
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes
Max. current of each output (supplied by satellite receiver)	mA	< 150	< 150	< 150	< 150
Temperature range	°C	0 - 50	0 - 50	0 - 50	0 - 50

Triax TMM 5x series
cascadable multiswitches

TMM 5x multiswitches

- 4 satellite polarities and 1 terestrial input, combined output.
- Versions for 8, 12 and 16 subscriber outputs
- Adjustable attenuator per polarity (0-12 dB)
- Low power consumption
- Small footprint, compact design, fits into tight spaces
- 2-, 3- and 4-way DiSEqC bridger units with TER loop-through
- Wide range of launch and line amplifiers available

TMM 5x series

Technical data - Cascadable - 4 polarities and 1 terrestrial. Ext. power supply

TYPE		TMM 5x4	TMM 5x8	TMM 5x12	TMM 5x16	TMM 5x12T
Art. No.		**305314**	**305318**	**305312**	**305316**	**305317**
Number of inputs		4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Number of trunk outputs		4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Subscriber outputs		**4**	**8**	**12**	**16**	**12**
Connectors	F-con	F-female	F-female	F-female	F-female	F-female
Frequency range	MHz	950-2150	950-2150	950-2150	950-2150	950-2150
Through loss (trunk TER)	dB	1.5	2.5	3.0	3.0	
Through loss (trunk SAT)	dB	1.5	2.5	2.5	2.5	
Tap loss - TER	dB	10	10	12	12	5
Tap loss - SAT	dB	10	10	12	12	5
Input polarity gain control - TER	dB	12	12	12	12	12
Input polarity gain control - SAT	dB	4 x 12	4 x 12	4 x 12	4 x 12	4 x 12
Isolation TER to SAT	dB	35	35	30	30	30
Isolation SAT to TER	dB	35	35	30	30	30
Isolation cross polarisation H/V	dB	30	30	28	28	28
Isolation out - out TER	dB	30	30	30	30	30
Isolation out - out SAT	dB	30	30	30	30	30
Return loss TER inputs	dB	12	12	12	12	12
Return loss TER outputs	dB	12	12	12	12	
Return loss SAT inputs	dB	12	12	12	12	12
Return loss SAT outputs	dB	12	12	12	12	
Return loss switch out - TER	dB	10	10	10	10	12
Return loss switch out - SAT	dB	10	10	10	10	12
Max. input level						
TER (IMA3 / -60 dB)	dBµV	110	107	109	109	102
SAT (IMA3 / -35 dB)	dBµV	117	117	119	119	112
Max. output level						
TER (IMA3 / -60 dB)	dBµV	88	88	88	88	88
SAT (IMA3 / -35 dB)	dBµV	95	95	95	95	95
Line power						
Voltage (Switched TER)	V	12	12	12	12	12
Current (Switched TER)	mA	50	50	50	50	50
Switching commands	VDC/ kHz			13V / 18V 13V - 22 kHz / 18 - 22 kHz, DiSEqC 2.0		
Switching voltage	V	15 /±1V	15 /±1V	15 /±1V	15 /±1V	15 /±1V
TER current (supplied from TER trunkline)	mA	50	50	50	50	50
Max. current of each output (supplied by satellite receiver)	mA	< 150	< 150	< 150	< 150	< 150
Temperature range	°C	0 - 50	0 - 50	0 - 50	0 - 50	0 - 50

Triax TMM accessories for multiswitches

TMM 2B

TMM 3B

TMM 4B

Everything you need
- to make a professional installation

TMM 4/6/8 OUT

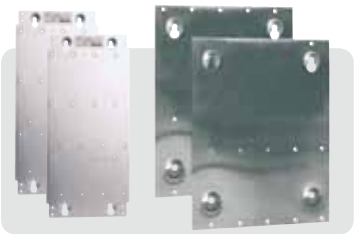
TMM 4/5 IN

TMM accessories

TYPE Art. No.		TMM 2B 305352	TMM 3B 305353	TMM 4B 305354	TMM 4/5 IN 4 in 305344 5 in 305345	TMM 4/6/8 out 4 out 305346 6 out 305347 8 out 305348 13 out 307417
Description		2x1 DiSEqC bridger unit	3x1 DiSEqC bridger unit	4x1 DiSEqC bridger unit	Push-on earth bond ears	Push-on earth bond ears
Number of connectors	In/out	2/1	3/1	4/1	4/5 + ground	4/6/8 + ground
A/B switch on pos. 1/2		Yes	Yes	Yes		
Connectors	F-con	male/female	male/female	male/female	female to male	female to male

TMM accessories

TYPE Art. No.		TMM Link 305303	TMM CL 305308	TMM LK 305309	TMM DCL-DC 305307	TMM RPL 305350
Description		Fixed link conn. (5 pack)	Long connection lead	Connection lead (5 pack)	Link lead	Remote power lead
Number of connectors		2		2		
Connectors	F-con	male		male		



TMM accessories

TYPE Art. No.		TMM 4 way 305301	TMM 6 way 305302	TMM 305304	TMM 75 ohm 305349	TMM F-F male 370009
Description		Mounting plate	Mounting plate	Mounting frame coupler, 2-pack	Terminator	Quick connector
Number of connectors					1	2
Connectors	F-con				female	male to male

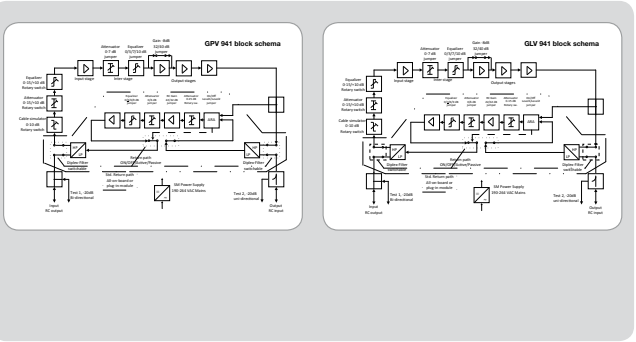
Notes

Triax Distribution

Triax line amplifiers

GLV/GPV 941-series are low noise coaxial distribution amplifiers, for use in medium to large CATV distribution networks in multi dwelling houses with PG11 or F-connectors.

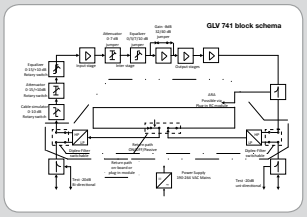
- Optimised 1 GHz technology
- Downstream 41 dB amplification / high output level
- Adjustable attenuation and equalization settings in 1dB steps using rotary switches and jumpers.
- Switchable VHF band I or 5-65 MHz return path
- Selectable return path: On/Off
- Upstream 22/32 dB amplification / high output level
- PG11 connectors (F-connector on GPV 941)
- - 20dB input- and output- test connectors
- Low power consumption

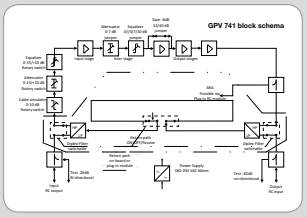


Technical data on GLV series

Type Art No.			GLV 941 323174	GLV 941L 323178	GPV 941 323170
Frequency range					
Forward path/Forward path w. return on		MHz	47-1006/85-1006	47-1006/85-1006	47-1006/85-1006
Return path		MHz	5-65	5-65	5-65
Gain forward					
Gain @ 1006 MHz		dB	41.0	41.0	41.0
Input attenuator - 1dB step	(rotary switch)	dB	0...15	0...15	0...15
Input equalizer - 1dB step	(rotary switch)	dB	0...15	0...15	0...15
Interstage attenuator	(jumper)	dB	0/3/7/10	0/3/7/10	0/3/7/10
Interstage equalizer	(jumper)	dB	0/7	0/7	0/7
Gain return path					
Gain @ 60 MHz		dB	22/32	22/32	22/32
Input attenuator		dB	0...15	0...15	0...15
Interstage attenuator	(jumper)	dB	0/6	0/6	0/6
Interstage equalizer	(4 steps/jumper)	dB	0/3/6/9	0/3/6/9	0/3/6/9
Linearity frequency response					
@ 47...1006 MHz		dB	± 1.5	± 1.5	± 1.5
@ 85...1006 MHz		dB	± 1.0	± 1.0	± 1.0
@ 5.....65 MHz (return)		db	± 1.0	± 1.0	± 1.0
Noise figure					
Forward	(VHF I „on“)	dB	< 5.5	< 5.5	< 7.0
Return path	(RP „active“)	dB	< 5.5	< 5.5	< 7.0
Return loss (@ 40 MHz, -1.5 dB/octave min. 12 dB)					
Forward		dB	> 18	> 18	> 18
Return path		dB	> 18	> 18	> 18
Output level forward					
CSO Cenelec 42 ch. 862 MHz		dBµV	111	111	111
CTB Cenelec 42 ch. 862 MHz		dBµV	111	111	111
Output level return path					
IMR2 acc EN 50083-3		dBµV	104	104	104
IMR3 acc EN 50083-3		dBµV	115	115	115
RF connectors (75 Ohm)					
Ports		pcs	PG11	PG11	F-con
Input / Output			PG-11 female	PG-11 female	F-female
Test point in-/output:	uni-directional	dB	-20	-20	-20
Test point return path:	bi-directional	dB	-20	-20	-20
Operating conditions					
Supply voltage (50-60 Hz)		V	190-264	32...65 / 5A	190-264
Power consumption		W	< 13	< 13	< 13
Operating temperature		°C	-25...+55	-25...+55	-25...+55
Protection class			II	II	II
Housing protection degree		IP	65	65	65
Dimensions W x H x D		mm			
Weight		kg			
Reference standards					
Product standards/safety/EMC			EN 50083-3 -Class 2/EN 50083-1; EN 60065/EN 50083-2		
RoHS 2002/95/EG compliant			Yes		

Triax distribution amplifiers





GLV/GPV 741 -series is low noise coaxial distribution amplifier, for use in medium to large CATV distribution networks in multi dwelling houses with PG11 or F-connectors.

- Passive return path version of GLV/GPV 941 series
- Optimised 1 GHz technology
- Downstream 41 dB amplification / high output level
- Adjustable attenuation and equalization settings in 1dB steps using rotary switches and jumpers.
- Switchable VHF band I or 5-65 MHz return path
- Selectable return path: On/Off
- PG11 connectors (F-connector on GPV 941)
- - 20dB input- and output- test connectors
- Low power consumption

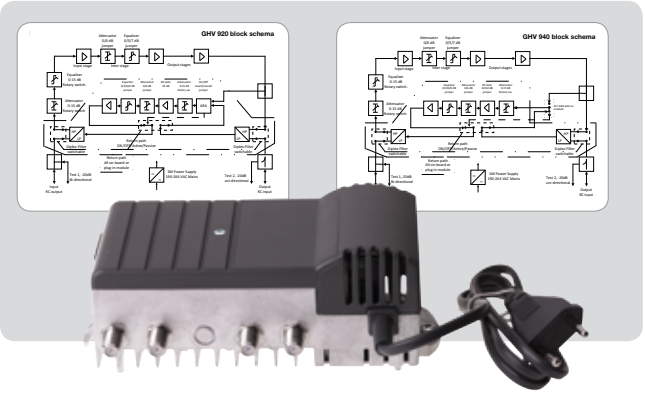
Technical data on GLV series

Type Art No.		GLV 741 323172	GLV 741L 32317x	GPV 741 323168
Frequency range				
Forward path/Forward path w. return on	MHz	47-1006/85-1006	47-1006/85-1006	47-1006/85-1006
Return path	MHz	5-65	5-65	5-65
Gain forward				
Gain @ 1006 MHz	dB	41.0	41.0	41.0
Input attenuator - 1dB step (rotary switch)	dB	0...15	0...15	0...15
Input equalizer - 1dB step (rotary switch)	dB	0...15	0...15	0...15
Interstage attenuator (jumper)	dB	0/3/7/10	0/3/7/10	0/3/7/10
Interstage equalizer (jumper)	dB	0/7	0/7	0/7
Gain return path				
Gain @ 60 MHz (passive)	dB	< -5.0	< -5.0	< -5.0
Linearity frequency response				
@ 47...1006 MHz	dB	± 1.5	± 1.5	± 1.5
@ 85...1006 MHz	dB	± 1.0	± 1.0	± 1.0
@ 5.....65 MHz (return)	db	± 1.0	± 1.0	± 1.0
Noise figure				
Forward (VHF I „on“)	dB	< 5.5)	< 5.5)	< 5.5)
Return loss (@ 40 MHz, -1.5 dB/octave min. 12 dB)				
Forward	dB	> 18	> 18	> 18
Return path	dB	> 18	> 18	> 18
Output level forward				
CSO Cenelec 42 ch.	dBµV	111	111	111
CTB Cenelec 42 ch.	dBµV	111	111	111
Output level return path				
IMR2 acc EN 50083-3	dBµV	104	104	104
IMR3 acc EN 50083-3	dBµV	115	115	115
RF connectors (75 Ohm)				
Ports	pcs	PG11	PG11	F-con
Input / Output		PG-11 female	PG-11 female	F-female
Test point in-/output: uni-directional	dB	-20	-20	-20
Test point return path: bi-directional	dB	-20	-20	-20
Operating conditions				
Supply voltage (50-60 Hz)	V	190-264	32...65 / 5A	190-264
Power consumption	W	< 13	< 13	< 13
Operating temperature	°C	-25...+55	-25...+55	-25...+55
Protection class		II	II	II
Housing protection degree	IP	65	65	65
Dimensions W x H x D	mm			
Weight	kg			
Reference standards				
Product standards/safety/EMC		EN 50083-3 -Class 2/EN 50083-1; EN 60065/EN 50083-2		
RoHS 2002/95/EG compliant		Yes		

Triax distribution amplifiers

Triax GHV 900-series is a low noise coaxial house distribution amplifier, for use in smaller CATV distribution networks in multi dwelling houses.

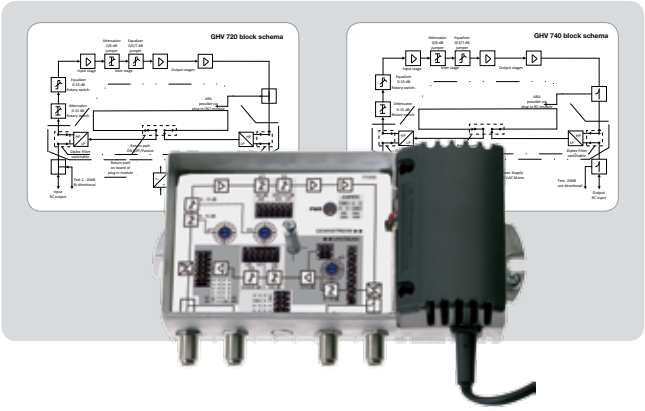
- Optimised 1 GHz technology
- Downstream 20/30/35/40 dB amplification/high output level
- Adjustable attenuation and equalization settings in 1dB steps using rotary switches and jumpers.
- Switchable VHF band I or 5-65 MHz return path
- Selectable return path: On/Off
- Upstream 25 - 22/32 dB amplification/high output level
- All connectors are F-connector female
- Extensive ESD- and surge-protection
- Low power consumption



Technical data on GHV series

Type Art No.			GHV 920 323150	GHV 930 323158	GHV 935 323162	GHV 940 323166
Frequency range						
Forward path/Forward path w. return on		MHz	47-1006/85-1006	47-1006/85-1006	47-1006/85-1006	47-1006/85-1006
Return path		MHz	5-65	5-65	5-65	5-65
Gain forward						
Gain @ 1006 MHz		dB	20	30	35	40
Input attenuator - 1dB step	(rotary switch)	dB	0-15	0-15	0-15	0-15
Input equalizer - 1dB step	(rotary switch)	dB	0-15	0-15	0-15	0-15
Interstage attenuator	(jumper)	dB	0/3/7	0/3/7	0/3/7	0/3/7
Interstage equalizer	(jumper)	dB	0/6	0/6	0/6	0/6
Gain return path						
Gain @ 60 MHz		dB	22/32	22/32	22/32	22/32
Interstage attenuator	(jumper)	dB	0/6	0/6	0/6	0/6
Interstage equalizer	(4 steps/jumper)	dB	0/3/6/9	0/3/6/9	0/3/6/9	0/3/6/9
Linearity frequency response						
@ 47...1006 MHz		dB	± 1.5	± 1.5	± 1.5	± 1.5
@ 85...1006 MHz		dB	± 1.0	± 1.0	± 1.0	± 1.0
@ 5.....65 MHz (return)		db	± 1.0	± 1.0	± 1.0	± 1.0
Noise figure						
Forward	(VHF I „on“)	dB	< 7.0	< 7.0	< 7.0	< 7.0
Return path	(RP „active“)	dB	5.5/7.5	5.5/7.5	5.5/7.5	5.5/7.5
Return loss @ 40 MHz, -1.5 dB/octave min. Cat C						
Forward		dB	> 18	> 18	> 18	> 18
Return path		dB	> 18	> 18	> 18	> 18
Output level forward						
CSO Cenelec 42 ch. 862 MHz, Slope 0/7 dB		dBµV	100	101	103	108
CTB Cenelec 42 ch. 862 MHz, Slope 0/7 dB		dBµV	100	101	103	108
Output level return path						
IMR2 acc EN 50083-3		dBµV	104	104	104	104
IMR3 acc EN 50083-3		dBµV	107	107	107	107
RF connectors (75 Ohm)						
Ports		pcs	F-con	F-con	F-con	F-con
Input / Output			F-female	F-female	F-female	F-female
Test point in-/output:	uni-directional	dB	-20	-20	-20	-20
Test point return path:	bi-directional	dB	-20	-20	-20	-20
Operating conditions						
Power supply voltage (50-60 Hz)		V	190-264	190-264	190-264	190-264
Power consumption		W	< 9	< 9	< 9	< 9
Operating temperature		°C	-25...+55	-25...+55	-25...+55	-25...+55
Protection class			II	II	II	II
Housing protection degree		IP	20	20	20	20
Dimensions W x H x D		mm	170 x 100 x 65	170 x 100 x 65	170 x 100 x 65	170 x 100 x 65
Weight		kg	2.0	2.0	2.0	2.0
Reference standards						
Product standards/safety/EMC			EN 50083-3 - Class 2/EN 50083-1; EN 60065/EN 50083-2			
RoHS 2002/95/EG compliant			Yes			

Triax distribution amplifiers



Triax GHV 700-series is a low noise coaxial house distribution amplifier, for use in smaller CATV distribution networks in multi dwelling houses.

- Passive return path version of GHV 900 series
- Field upgradable via return path module to GHV 900 series
- Optimised 1 GHz technology
- Downstream 20/30/35/40 dB amplification/high output level
- Adjustable attenuation and equalization settings in 1dB steps using rotary switches and jumpers.
- Selectable return path: On/Off
- All connectors are F-connector female
- Extensive ESD- and surge-protection
- Low power consumption

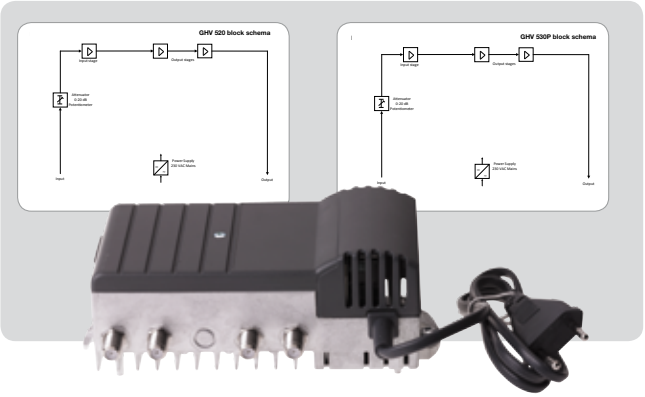
Technical data on GPV series

Type Art No.		GHV 720 323148	GHV 730 323156	GHV 735 323160	GHV 740 323164
Frequency range					
Forward path/Forward path w. return on	MHz	47-1006/85-1006	47-1006/85-1006	47-1006/85-1006	47-1006/85-1006
Return path	MHz	5-65	5-65	5-65	5-65
Gain forward					
Gain @ 1006 MHz	dB	21	33	35	40
Gain low/hi jumper	dB				
Input attenuator - 1dB step (rotary switch)	dB	0-15	0-15	0-15	0-15
Input equalizer - 1dB step (rotary switch)	dB	0-15	0-15	0-15	0-15
Interstage attenuator (jumper)	dB	0/3/7	0/3/7	0/3/7	0/3/7
Interstage equalizer (jumper)	dB	0/6	0/6	0/6	0/6
Gain return path					
Gain @ 60 MHz	dB	< -5.0	< -5.0	< -5.0	< -5.0
Linearity frequency response					
@ 47...1006 MHz	dB	± 1.5	± 1.5	± 1.5	± 1.5
@ 85...1006 MHz	dB	± 1.0	± 1.0	± 1.0	± 1.0
@ 5.....65 MHz (return)	db	± 1.0	± 1.0	± 1.0	± 1.0
Noise figure					
Forward (VHF I „on“)	dB	5.5	5.5	5.5	5.5
Return path (RP „active“)	dB		(active 5.5)	(active 5.5)	(active 5.5)
Return loss @ 40 MHz, -1.5 dB/octave min. Cat C					
Forward	dB	> 18	> 18	> 18	> 18
Return path	dB	> 18	> 18	> 18	> 18
Output level forward					
CSO Cenelec 42 ch.	dBµV	100	101	103	108
CTB Cenelec 42 ch.	dBµV	100	101	103	108
RF connectors (75 Ohm)					
Ports	pcs	F-con	F-con	F-con	F-con
Input / Output		F-female	F-female	F-female	F-female
Test point in-/output: uni-directional	dB	-20	-20	-20	-20
Test point return path: bi-directional	dB	-20	-20	-20	-20
Operating conditions					
Power supply voltage (50-60 Hz)	V	190-264	190-264	190-264	190-264
Power consumption	W	< 9	< 9	< 9	< 9
Operating temperature	°C	-25...+55	-25...+55	-25...+55	-25...+55
Protection class		II	II	II	II
Housing protection degree	IP	20	20	20	20
Dimensions W x H x D	mm	170 x 100 x 65	170 x 100 x 65	170 x 100 x 65	170 x 100 x 65
Weight	kg	2.0	2.0	2.0	2.0
Reference standards					
Product standards/safety/EMC		EN 50083-3 - Class 2/EN 50083-1; EN 60065/EN 50083-2			
RoHS 2002/95/EG compliant		Yes			

Triax distribution amplifiers

Triax GHV 500-series is a low noise coaxial house distribution amplifier, for use in small CATV distribution networks in small building units.

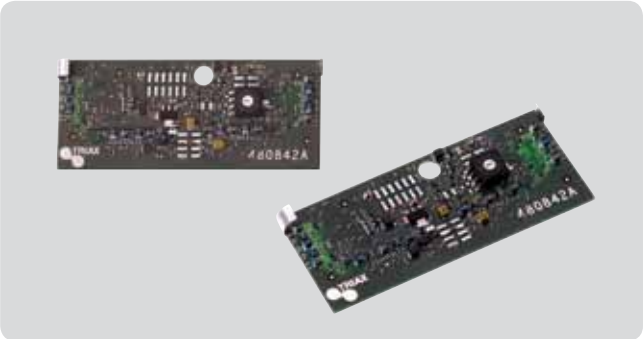
- Optimised 1 GHz technology
- Downstream 20/30 dB amplification/high output level
- Adjustable potentiometer or click attenuation
- All connectors are F-connector female
- Without return path possibility
- Extensive ESD- and surge-protection
- Low power consumption



Technical data on GHV series

Type Art No.		GHV 520P 323138	GHV 530P 323142
Frequency range Forward path	MHz	40-862	40-862
Gain forward Gain @ 1006 MHz Gain low/hi jumper Input attenuator - 1dB step (rotary switch)	dB dB dB	21 0-20 (pot.)	30 0-20 (pot.)
Linearity frequency response @ 47...1006 MH	dB	± 1.0	± 1.0
Noise figure Forward	dB	< 7.0	< 7.0
Return loss (@ 40 MHz, -1.5 dB/octave min. 12 dB) Forward	dB	> 18	> 18
Output level forward CSO Cenelec 42 ch. CTB Cenelec 42 ch.	dBµV dBµV	101 101	101 101
RF connectors (75 Ohm) Ports Input / Output Test point in-/output: uni-directional Test point return path: bi-directional	pcs dB dB	F-con F-female -20	F-con F-female -20
Operating conditions			
Power supply voltage (50-60 Hz)	V	230	230
Power consumption	W	< 3	< 3
Operating temperature	°C	-25...+55	-25...+55
Protection class		II	II
Housing protection degree	IP	20	20
Dimensions W x H x D	mm	170 x 100 x 65	170 x 100 x 65
Weight	kg	2.0	2.0
Reference standards			
Product standards/safety/EMC		EN 50083-3 - Class 2/EN 50083-1; EN 60065/EN 50083-2	
RoHS 2002/95/EG compliant		Yes	

Triax distribution amplifiers



Triax return path module 0565 is a upstream add-on module for the GHV/GPV/GLV low noise coaxial house distribution amplifier series.

- The 0565 RP module is an add-on for the return path all-on-board features of GHV/GPV/GLV series in case of malfunction or need for upgrade.
- Upstream 22/32 dB amplification/high output level
- Adjustable attenuation and equalization settings in 1dB steps using rotary switches and jumpers
- Upgrades a GHV 7XX series amplifier to be functionally equivalent to the corresponding GHV 9XX type.
- Low power consumption

Technical data on return path module

Type **Art No.**			**0565 RP amp** **323184**
Frequency range			
Forward path/Forward path w. return on		MHz	
Return path		MHz	5-65
Gain return path			
Gain @ 60 MHz		dB	22/32
Input attenuator		dB	0...15
Interstage attenuator	(jumper)	dB	0/3/6/9
Interstage equalizer	(4 steps/jumper)	dB	0/6
Linearity frequency response			
@ 5.....65 MHz (return)		dB	± 1.0
Noise figure			
Return path		dB	< 5.5
Return loss			
Return path		dB	> 18
Output level return path			
IMR2 acc EN 50083-3		dBµV	104
IMR3 acc EN 50083-3		dBµV	107
Operating conditions			
Power supply voltage (50-60 Hz)		V	internal
Operating temperature		°C	-25...+55
Protection class			II
Housing protection degree		IP	20
Dimensions W x H x D		mm	
Weight		kg	
Reference standards			

Amplifier accessories

Line power supply

TYPE **Art. No.**		**TRP** **416014**
Power input	V/AC	230 ± 10%
Power output	V/AC	48
Max. current	A	1.25
Dimensions (height x diameter)	mm	60 x 100

Power inserter with F-con

TYPE **Art. No.**		**TPI - 01** **347001**
Frequency range	MHz	5 - 2400
Through loss		
- 5-862 MHz	dB	≥ 0.5
-1000-2150 MHz	dB	≥ 1.5
Max. current	A	2.5
Power	V/AC	65

Triax IFA indoor distribution amplifiers

IFA distribution amplifiers - without return path

- Compact indoor distribution amplifier in a modern white shielded plastic housing for indoor use only.
- Recommended for low channel density (MATV).

IFA amplifier housing

Technical data on IFA distribution amplifiers

TYPE Art. No.		IFA 218 339218	IFA 219 339219	IFA 220 339220
Forward path				
Frequency range	MHz	47 - 862	47 - 862	47 - 862
Gain 47-862 MHz	dB	11	0-20	0-17
Noise figure	dB	< 5.5	< 6.0	< 6.0
Linearity	dB	± 1.0	± 1.5	± 1.5
Slope	dB			
Equalizer	dB		0-18	0-18
Outputs	pcs	**1**	**1**	**2**
Output level				
IMD 3 in acc. with EN 50083-3	dBµV	114.0	112.0	108.0
IMD 2 in acc. with EN 50083-3	dBµV	104.0	104.0	100.0
60 dB CTB [1)]	dBµV	96.0	96.0	92.0
60 dB CSO [1)]	dBµV	96.0	96.0	92.0
Return loss @ 47 MHz, -1.5 dB/octave	dB	> 14	> 14	> 14
Return path				
Frequency range	MHz			
Through loss	dB			
General				
Power supply	VDC	230 ± 10%	230 ± 10%	230 ± 10%
Power consumption	W	3.0	3.0	3.0
Shielding efficiency VHF	dB	75	75	75
Shielding efficiency UHF	dB	65	65	65
Connectors		F-female	F-female	F-female
Certification		CE	CE	CE
Impedance	Ohm	75	75	75
Operation temperature range	°C	0...+50	0...+50	0...+50
Weight	kg	0.400	0.400	0.400
Dimensions (h x d x w)	mm	61 x 44 x 118	61 x 44 x 118	61 x 44 x 118

1) EN 50083 Part 3 CTB (Composite triple beat) @ 60 dB IMR, CENELEC-raster 42 channels

Triax IFA indoor distribution amplifiers

IFA amplifier housing

IFA distribution amplifiers - with return path

- Compact indoor distribution amplifier in a modern white shielded plastic housing for indoor use only.
- Recommended for low channel density (MATV).

IFA 284/288 distribution amplifiers - with return path

- The Triax IFA 284/288 is an indoor CATV distribution amplifier suitable for smaller to medium house installations with a need for distribution to up to 4 (IFA 284) or 8 (IFA 288) outlet sockets.
- All 4/8 signal outputs are fitted with self-terminating connectors that will secure an optimal termination of all outputs at all times.

Technical data on IFA distribution amplifiers

TYPE Art. No.		IFA 212 339212	IFA 213 339213	IFA 284 339284	IFA 288 339288
Forward path					
Inputs	pcs	1	1	1	1
Frequency range	MHz	47 - 862	87 - 862	87 - 1000	87 - 1000
Input level (typ.)	dBµV			60-78	60-78
Gain @ 47 or 87 MHz/@ 862/1000 MHz	dB	0-20	0-20	12.0	12.0
Noise figure	dB	< 6.0 (typical 4.5)	< 6.0 (typical 5.5)	< 7.0	< 7.0
Linearity	dB	± 1.5	± 1.5	± 1.5	± 1.5
Attenuation	dB			0/6/12	0/6/12
Equalizer	dB	0-18	0-18	0/6/12	0/6/12
Isolation	pcs			> 40.0	> 40.0
Return loss					
5-40 MHz	dB			> 18.0	> 18.0
40-1000 MHz - 1.5 dB/octave	dB	> 14 @ 47 MHz	> 12.3 @ 87 MHz	> 18.0	> 18.0
Outputs	pcs	1	1	4	8
Output level					
IMD 3 in acc. with EN 50083-3	dBµV	112.0	112.0	92.0	92.0
IMD 2 in acc. with EN 50083-3	dBµV	104.0	104.0		
60 dB CTB [1)]	dBµV	96.0	96.0		
60 dB CSO [1)]	dBµV	96.0	96.0		
Return path					
Frequency range	MHz	5 - 30	5 - 65	5 - 65	5 - 65
Through loss	dB	1.0	1.0	- 1.0	- 1.0
Linearity	dB	± 1.0	± 1.0	± 1.0	± 1.0
General					
Power supply	VDC	230 ± 10%	230 ± 10%	100-240 ± 10%	100-240 ± 10%
Power consumption	W	3.0	3.0		
Shielding efficiency VHF	dB	75	75		
Shielding efficiency UHF	dB	65	65		
Connectors		F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE
Impedance	Ohm	75	75	75	75
Operation temperature range	°C	0...+50	0...+50	0...+50	0...+50
Weight	kg	0.400	0.475		
Dimensions (h x d x w)	mm	61 x 44 x 118	61 x 44 x 118		

1) EN 50083 Part 3 CTB (Composite triple beat) @ 60 dB IMR, CENELEC-raster 42 channels

Triax IFB/IIB indoor booster amplifiers

IFB indoor amplifiers with F connectors

- Booster amplifier for MATV
- F-connector
- Wide range with 2 outputs
- Separate adjustable gain on VHF and UHF
- Click-on wall mounting

IIB indoor amplifiers with IEC-connectors

- IEC-connector
- Wide range with 1 and 2 outputs

Technical data on IFB booster amplifiers

Type Art. No.		IFB 402 339402	IFB 403 339403	IFB 404 339404	IFB 405 339405	IIB 445 339445
Input 1						UHF/VHF
Channel/Band		UHF/VHF	UHF/VHF	UHF/VHF	UHF/VHF	2-12/21-69
Gain	dB	6-16/0-10	6-16/6-16	7-17	15-25/15-25	15-25/15-25
Noise figure						
UHF	dB	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
VHF	dB	< 4.0	< 4.0	< 4.0	< 4.0	< 5.0
Max. output voltage IMD 3 in acc. with EN 50083-3	dBµV	2 x 107	2 x 107	2 x 107	2 x 105	2 x 105
Numbers of in-/output		1/2	1/2	1/2	1/2	1/2
Voltage	V/AC	230	230	230	230	230
Power consumption	W	3	3	3	3	3
Connector		F-female	F-female	F-female	F-female	IEC
Impedance	Ohm	75	75	75	75	75
Operation temperature range	°C	0...+50	0...+50	0...+50	0...+50	0...+50
Weight	kg	0.400	0.400	0.400	0.400	0.400
Dimensions (h x d x w)	mm	61 x 44 x 118	61 x 44 x 118	61 x 44 x 118	61 x 44 x 118	61 x 44 x 118
Remarks		2 separate UHF and VHF attenuator	2 separate UHF and VHF attenuator	1 attenuator	2 separate UHF and VHF attenuator	IEC connectors 1 female - 2 male 1 attenuator

Triax indoor booster amplifiers

Type 02

Indoor amplifiers with IEC-connectors

Easy plug-in amplifier for IEC outlet sockets
Power supply included

Technical data on indoor amplifiers

Type			**Type 02**
Art. No.			**345100**
Input 1	Band Channel Frequency	 MHz	UHF/VHF 47-862
Gain	Out 1 Out 2	dB dB	15.0 15.0
Noise figure	UHF/VHF	dB	4.0
Max. output voltage IMD 3 in acc. with EN 50083-3		dBµV	2 x 103
Max. output level	@ 10 channels @ 20 channels @ 30 channels	dBµV dBµV dBµV	
Number of in-/outputs			2
Voltage		V/AC	230
Power consumption		W	3
Connector		type	IEC
Impedance		Ohm	75
Operation temperature range		°C	0...+50
Weight		kg	
Dimensions (h x d x w)		mm	
Remarks			Power adaptor included

Notes

Triax passive components

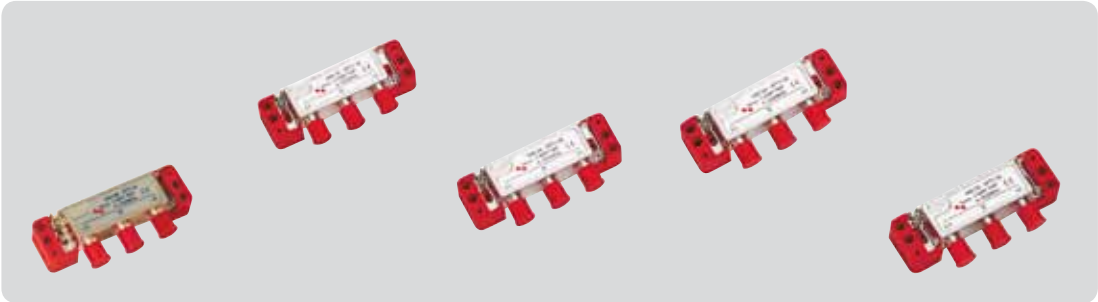
Triax splitters - ATS series [5-1000 MHz]

KLASSE **A** CLASS **GRADE 1**

Technical data 5-1000 MHz professional range in splitters

TYPE Art. No.		ATS 2 346002	ATS 3 346003	ATS 4 346004	ATS 6 346006
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**2**	**3**	**4**	**6**
Insertion loss (in - out)					
5 - 40 MHz	dB	< 3.6	< 5.4	< 7.2	< 9.4
40 - 470 MHz	dB	< 3.8	< 5.8	< 7.4	< 9.8
470 - 750 MHz	dB	< 3.9	< 6.2	< 7.6	< 10.2
750 - 860 MHz	dB	< 4.0	< 6.5	< 7.8	< 10.5
860 - 1000 MHz	dB	< 4.2	< 6.8	< 8.2	< 10.8
Isolation					
5 - 40 MHz	dB	> 28.0	> 23.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 26.0	> 25.0	> 25.0	> 25.0
470 - 750 MHz	dB	> 26.0	> 25.0	> 25.0	> 25.0
750 - 860 MHz	dB	> 25.0	> 24.0	> 24.0	> 24.0
860 - 1000 MHz	dB	> 25.0	> 24.0	> 24.0	> 22.0
Return loss (in)					
5 - 40 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0
470 - 750 MHz	dB	> 19.0	> 22.0	> 19.0	> 18.0
750 - 860 MHz	dB	> 19.0	> 19.0	> 19.0	> 17.0
860 - 1000 MHz	dB	> 19.0	> 19.0	> 18.0	> 17.0
Return loss (out)					
5 - 40 MHz	dB	> 22.0	> 22.0	> 22.0	> 20.0
40 - 470 MHz	dB	> 22.0	> 20.0	> 20.0	> 18.0
470 - 750 MHz	dB	> 20.0	> 18.0	> 18.0	> 18.0
750 - 860 MHz	dB	> 20.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 19.0	> 18.0	> 18.0	> 18.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No
Connectors		F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE
Impedance	Ohm	75	75	75	75
Weight	kg	0.070	0.085	0.106	0.138
Dimensions (h x d x w)	mm	38 x 16 x 74	38 x 16 x 96	38 x 16 x 118	38 x 16 x 161

Triax taps - ATT series [5-1000 MHz]



KLASSE A CLASS GRADE 1

Technical data 5-1000 MHz professional range in 1-way taps

TYPE Art. No.		ATT 1-6 346106	ATT 1-8 346108	ATT 1-12 346112	ATT 1-16 346116	ATT 1-20 346120	ATT 1-24 346124	ATT 1-30 346130
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**1**	**1**	**1**	**1**	**1**	**1**	**1**
Insertion loss (in - out)								
5 - 40 MHz	dB	< 2.4	< 2.1	< 0.9	< 0.8	< 0.7	< 0.7	< 0.7
40 - 470 MHz	dB	< 2.7	< 2.2	< 1.1	< 0.9	< 0.8	< 0.8	< 0.8
470 - 750 MHz	dB	< 3.0	< 2.4	< 1.2	< 1.0	< 1.0	< 1.0	< 1.0
750 - 860 MHz	dB	< 3.2	< 2.5	< 1.3	< 1.1	< 1.1	< 1.1	< 1.1
860 - 1000 MHz	dB	< 3.4	< 2.7	< 1.5	< 1.2	< 1.2	< 1.2	< 1.2
Tap loss (in - tap)								
5 - 40 MHz	dB	6.0 (± 1.5)	8.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)	30.0 (± 1.0)
40 - 470 MHz	dB	6.0 (± 1.5)	8.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)	30.0 (± 1.0)
470 - 750 MHz	dB	6.0 (± 1.5)	8.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)	30.0 (± 1.0)
750 - 860 MHz	dB	6.0 (± 1.5)	8.0 (± 1.2)	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.2)	24.0 (± 1.2)	30.0 (± 1.2)
860 - 1000 MHz	dB	6.0 (± 2.0)	8.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)	30.0 (± 1.5)
Isolation (out - tap)								
5 - 40 MHz	dB	> 25.0	> 24.0	> 24.0	> 28.0	> 32.0	> 36.0	> 36.0
40 - 470 MHz	dB	> 28.0	> 28.0	> 28.0	> 30.0	> 32.0	> 34.0	> 34.0
470 - 750 MHz	dB	> 25.0	> 25.0	> 25.0	> 28.0	> 30.0	> 33.0	> 33.0
750 - 860 MHz	dB	> 24.0	> 25.0	> 26.0	> 28.0	> 30.0	> 32.0	> 32.0
860 - 1000 MHz	dB	> 23.0	> 24.0	> 25.0	> 27.0	> 29.0	> 31.0	> 31.0
Return loss (in - out)								
5 - 40 MHz	dB	> 21.0	> 19.0	> 21.0	> 21.0	> 22.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 22.0	> 22.0	> 22.0
470 - 750 MHz	dB	> 19.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
Return loss (tap)								
5 - 40 MHz	dB	> 18.0	> 18.0	> 19.0	> 22.0	> 22.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 22.0	> 22.0	> 22.0
470 - 750 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 20.0	> 20.0	> 20.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No	No	No	No
Connectors		F-female	F-female	F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75	75	75
Weight	kg	0.070	0.070	0.070	0.070	0.070	0.070	0.070
Dimensions (h x d x w)	mm	38 x 16 x 74	38 x 16 x 74	38 x 16 x 74	38 x 16 x 74	38 x 16 x 74	38 x 16 x 74	38 x 16 x 74

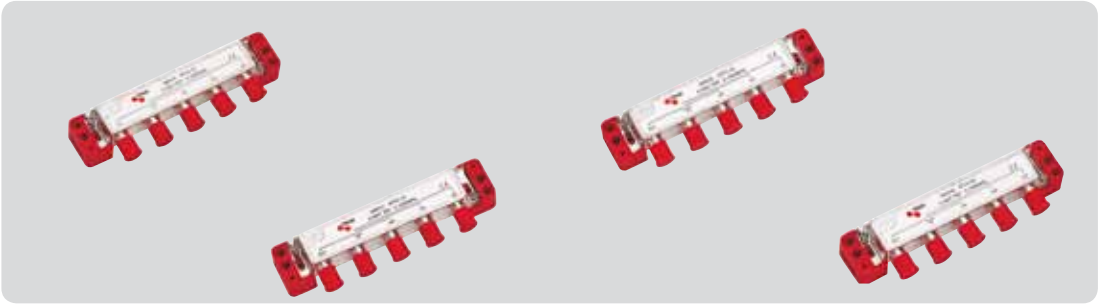
Triax taps - ATT series [5-1000 MHz]

KLASSE **A** CLASS **GRADE 1**

Technical data 5-1000 MHz professional series in 2-way taps

TYPE Art. No.		ATT 2-8 346208	ATT 2-10 346210	ATT 2-12 346212	ATT 2-16 346216	ATT 2-20 346220	ATT 2-24 346224
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**2**	**2**	**2**	**2**	**2**	**2**
Insertion loss (in -out)							
5 - 40 MHz	dB	< 3.6	< 2.5	< 2.2	< 1.0	< 0.7	< 0.7
40 - 470 MHz	dB	< 3.7	< 2.8	< 2.5	< 1.2	< 0.8	< 0.8
470 - 750 MHz	dB	< 3.9	< 3.0	< 2.8	< 1.3	< 0.9	< 0.9
750 - 860 MHz	dB	< 4.1	< 3.2	< 3.0	< 1.5	< 1.1	< 1.1
860 - 1000 MHz	dB	< 4.3	< 3.5	< 3.2	< 1.8	< 1.5	< 1.5
Tap loss (in - tap)							
5 - 40 MHz	dB	8.0 (± 1.0)	10.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)
40 - 470 MHz	dB	8.0 (± 1.0)	10.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)
470 - 750 MHz	dB	8.0 (± 1.2)	10.0 (± 1.2)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)
750 - 860 MHz	dB	8.0 (± 1.2)	10.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.2)	20.0 (± 1.2)	24.0 (± 1.2)
860 - 1000 MHz	dB	8.0 (± 1.5)	10.0 (± 2.0)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
Isolation (tap - tap)							
5 - 40 MHz	dB	> 22.0	> 22.0	> 24.0	> 24.0	> 24.0	> 24.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
470 - 750 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
750 - 860 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
860 - 1000 MHz	dB	> 23.0	> 23.0	> 23.0	> 23.0	> 23.0	> 23.0
Isolation (out - tap)							
5 - 40 MHz	dB	> 26.0	> 30.0	> 30.0	> 28.0	> 32.0	> 32.0
40 - 470 MHz	dB	> 25.0	> 27.0	> 30.0	> 30.0	> 30.0	> 30.0
470 - 750 MHz	dB	> 22.0	> 25.0	> 28.0	> 28.0	> 28.0	> 28.0
750 - 860 MHz	dB	> 21.0	> 25.0	> 25.0	> 25.0	> 26.0	> 26.0
860 - 1000 MHz	dB	> 20.0	> 24.0	> 25.0	> 25.0	> 26.0	> 26.0
Return loss (in - out)							
5 - 40 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
470 - 750 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 17.0	> 17.0	> 18.0	> 18.0	> 18.0	> 18.0
Return loss (tap)							
5 - 40 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
470 - 750 MHz	dB	> 17.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
750 - 860 MHz	dB	> 17.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 17.0	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No	No	No
Connectors		F-female	F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75	75
Weight	kg	0.085	0.085	0.085	0.085	0.085	0.085
Dimensions (h x d x w)	mm	38 x 16 x 96	38 x 16 x 96	38 x 16 x 96	38 x 16 x 96	38 x 16 x 96	38 x 16 x 96

Triax taps - ATT series [5-1000 MHz]



KLASSE A CLASS GRADE 1

Technical data 5-1000 MHz professional series in 3-way taps

TYPE Art. No.		ATT 3-10 346310	ATT 3-12 346312	ATT 3-16 346316	ATT 3-20 346320
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**3**	**3**	**3**	**3**
Insertion loss (in - out)					
5 - 40 MHz	dB	< 3.9	< 2.3	< 1.1	< 0.9
40 - 470 MHz	dB	< 4.0	< 2.4	< 1.3	< 1.0
470 - 750 MHz	dB	< 4.2	< 2.6	< 1.5	< 1.1
750 - 860 MHz	dB	< 4.4	< 2.8	< 1.7	< 1.3
860 - 1000 MHz	dB	< 4.6	< 3.0	< 2.0	< 1.5
Tap loss (in - tap)					
5 - 40 MHz	dB	10.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)
40 - 470 MHz	dB	10.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)
470 - 750 MHz	dB	10.0 (± 1.0)	12.0 (± 1.2)	16.0 (± 1.0)	20.0 (± 1.0)
750 - 860 MHz	dB	10.0 (± 1.2)	12.0 (± 1.5)	16.0 (± 1.2)	20.0 (± 1.2)
860 - 1000 MHz	dB	10.0 (± 1.5)	12.0 (± 2.0)	16.0 (± 1.5)	20.0 (± 1.5)
Isolation (tap - tap)					
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 26.0	> 26.0	> 26.0	> 26.0
470 - 750 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
750 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
860 - 1000 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0
Isolation (out - tap)					
5 - 40 MHz	dB	> 30.0	> 35.0	> 30.0	> 34.0
40 - 470 MHz	dB	> 26.0	> 28.0	> 30.0	> 32.0
470 - 750 MHz	dB	> 25.0	> 26.0	> 28.0	> 30.0
750 - 860 MHz	dB	> 23.0	> 25.0	> 26.0	> 27.0
860 - 1000 MHz	dB	> 23.0	> 24.0	> 25.0	> 26.0
Return loss (in - out)					
5 - 40 MHz	dB	> 22.0	> 20.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 18.0	> 20.0	> 22.0	> 22.0
470 - 750 MHz	dB	> 18.0	> 18.0	> 18.0	> 20.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 17.0	> 17.0	> 17.0	> 17.0
Return loss (tap)					
5 - 40 MHz	dB	> 22.0	> 20.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 20.0	> 20.0	> 18.0	> 18.0
470 - 750 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 16.0	> 16.0	> 16.0	> 16.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No
Connectors		F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE
Impedance	Ohm	75	75	75	75
Weight	kg	0.106	0.106	0.106	0.106
Dimensions (h x d x w)	mm	38 x 16 x 118	38 x 16 x 118	38 x 16 x 118	38 x 16 x 118

Triax taps - ATT series [5-1000 MHz]

KLASSE A
CLASS GRADE 1

Technical data 5-1000 MHz professional series in 4-, 5- and 6 ways taps

TYPE Art. No.		ATT 4-12 346412	ATT 4-16 346416	ATT 4-20 346420	ATT 5-12 346512	ATT 6-16 346616
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**4**	**4**	**4**	**5**	**6**
Insertion loss (in - out)						
5 - 40 MHz	dB	< 3.6	< 2.2	< 0.9	< 3.6	< 2.3
40 - 470 MHz	dB	< 3.7	< 2.3	< 1.0	< 3.7	< 2.5
470 - 750 MHz	dB	< 3.8	< 2.5	< 1.1	< 3.8	< 2.7
750 - 860 MHz	dB	< 4.0	< 2.7	< 1.3	< 4.0	< 2.9
860 - 1000 MHz	dB	< 4.2	< 3.0	< 1.5	< 4.2	< 3.0
Tap loss (in - tap)						
5 - 40 MHz	dB	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.5)
40 - 470 MHz	dB	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.5)
470 - 750 MHz	dB	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.0)	12.0 (± 1.2)	16.0 (± 1.5)
750 - 860 MHz	dB	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.2)	12.0 (± 1.5)	16.0 (± 1.5)
860 - 1000 MHz	dB	12.0 (± 2.0)	16.0 (± 2.0)	20.0 (± 1.5)	12.0 (± 2.0)	16.0 (± 2.0)
Isolation (tap - tap)						
5 - 40 MHz	dB	> 26.0	> 26.0	> 26.0	> 26.0	> 26.0
40 - 470 MHz	dB	> 26.0	> 26.0	> 26.0	> 26.0	> 26.0
470 - 750 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
750 - 860 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
860 - 1000 MHz	dB	> 23.0	> 23.0	> 23.0	> 23.0	> 23.0
Isolation (out - tap)						
5 - 40 MHz	dB	> 28.0	> 30.0	> 32.0	> 28.0	> 36.0
40 - 470 MHz	dB	> 28.0	> 30.0	> 32.0	> 28.0	> 30.0
470 - 750 MHz	dB	> 26.0	> 28.0	> 30.0	> 26.0	> 25.0
750 - 860 MHz	dB	> 25.0	> 26.0	> 28.0	> 25.0	> 24.0
860 - 1000 MHz	dB	> 23.0	> 25.0	> 27.0	> 23.0	> 24.0
Return loss (in - out)						
5 - 40 MHz	dB	> 22.0	> 20.0	> 22.0	> 22.0	> 21.0
40 - 470 MHz	dB	> 20.0	> 20.0	> 22.0	> 20.0	> 20.0
470 - 750 MHz	dB	> 18.0	> 20.0	> 20.0	> 18.0	> 18.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 17.0
860 - 1000 MHz	dB	> 17.0	> 18.0	> 18.0	> 17.0	> 16.0
Return loss (tap)						
5 - 40 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 19.0
40 - 470 MHz	dB	> 22.0	> 20.0	> 22.0	> 22.0	> 20.0
470 - 750 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 18.0	> 18.0	> 18.0	> 18.0	> 17.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No	No
Connectors		F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.138	0.138	0.138	0.138	0.131
Dimensions (h x d x w)	mm	38 x 16 x 161	38 x 16 x 161	38 x 16 x 161	38 x 16 x 161	36 x 28 x 115

Triax taps - ATM series [5-1000 MHz]

KLASSE A
CLASS GRADE 1

Technical data 5-1000 MHz professional multi taps

TYPE Art. No.		ATM 4-12T 346413	ATM 6-12T 346617	ATM 8-12T 346812
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**4**	**6**	**8**
Tap loss (In - Tap 1-2)				
5 - 40 MHz	dB	12.5 (± 1.0)	12.5 (± 1.0)	12.5 (± 1.0)
40 - 470 MHz	dB	12.5 (± 1.0)	12.5 (± 1.0)	12.5 (± 1.0)
470 - 750 MHz	dB	12.5 (± 1.2)	12.5 (± 1.2)	12.5 (± 1.2)
750 - 860 MHz	dB	12.5 (± 1.5)	12.5 (± 1.5)	12.5 (± 1.5)
860 - 1000 MHz	dB	12.5 (± 1.5)	12.5 (± 1.5)	12.5 (± 1.5)
Tap loss (In - Tap 3-4)				
5 - 40 MHz	dB	12.0 (± 1.0)	13.5 (± 1.2)	13.5 (± 1.2)
40 - 470 MHz	dB	12.0 (± 1.0)	13.5 (± 1.2)	13.5 (± 1.2)
470 - 750 MHz	dB	12.0 (± 1.2)	13.5 (± 1.5)	13.5 (± 1.2)
750 - 860 MHz	dB	12.0 (± 1.5)	13.5 (± 2.0)	13.5 (± 1.5)
860 - 1000 MHz	dB	12.0 (± 2.0)	13.5 (± 2.0)	13.5 (± 1.5)
Tap loss (In - Tap 5-6)				
5 - 40 MHz	dB		14.5 (± 1.2)	14.5 (± 1.2)
40 - 470 MHz	dB		14.5 (± 1.2)	14.5 (± 1.2)
470 - 750 MHz	dB		14.5 (± 1.5)	14.5 (± 1.5)
750 - 860 MHz	dB		14.5 (± 2.0)	14.5 (± 2.0)
860 - 1000 MHz	dB		14.5 (± 2.5)	14.5 (± 2.0)
Tap loss (In - Tap 7-8)				
5 - 40 MHz	dB			15.5 (± 1.5)
40 - 470 MHz	dB			15.5 (± 1.5)
470 - 750 MHz	dB			15.5 (± 2.0)
750 - 860 MHz	dB			15.5 (± 2.5)
860 - 1000 MHz	dB			15.5 (± 2.5)
Isolation (Tap - Tap)				
5 - 40 MHz	dB	> 32.0	> 32.0	> 32.0
40 - 470 MHz	dB	> 30.0	> 30.0	> 30.0
470 - 750 MHz	dB	> 28.0	> 28.0	> 28.0
750 - 860 MHz	dB	> 28.0	> 28.0	> 28.0
860 - 1000 MHz	dB	> 28.0	> 28.0	> 28.0
Return loss (In - Tap)				
5 - 40 MHz	dB	> 22.0	> 22.0	> 22.0
40 - 470 MHz	dB	> 20.0	> 20.0	> 20.0
470 - 750 MHz	dB	> 18.0	> 18.0	> 18.0
750 - 860 MHz	dB	> 18.0	> 18.0	> 18.0
860 - 1000 MHz	dB	> 18.0	> 18.0	> 18.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No
Connectors		F-female	F-female	F-female
Certification		CE	CE	CE
Impedance	Ohm	75	75	75
Weight	kg	0.138	0.138	0.135
Dimensions (h x d x w)	mm	38 x 16 x 161	38 x 16 x 161	36 x 28 x 115

Triax splitter - HTS series [5-1000 MHz]

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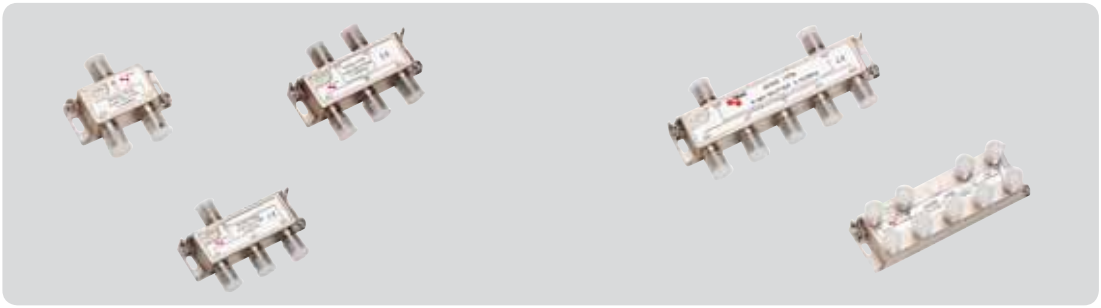
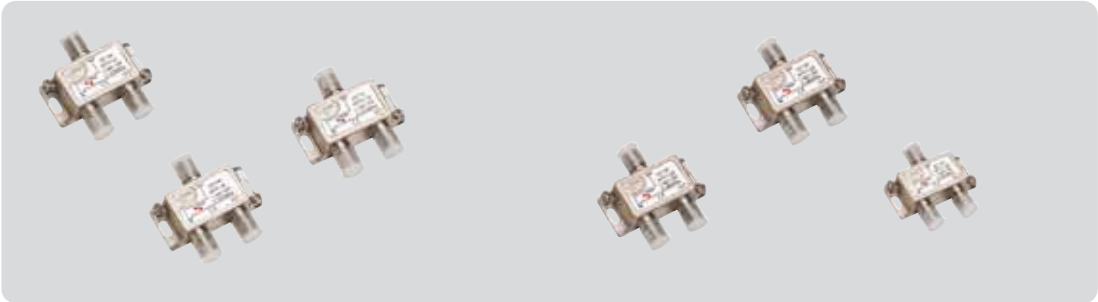


Technical data 5-1000 MHz standard range in splitters

TYPE Art. No. Art. No. with DC pass		HTS 2 347002 347012	HTS 3 347003 347013	HTS 4 347004 347014	HTS 6 347006 347016	HTS 8 347008 347018	HTS 12 347912	HTS 16 347916
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**2**	**3**	**4**	**6**	**8**	**12**	**16**
Insertion loss (in - out)								
5 - 40 MHz	dB	< 3.2	< 5.7	< 6.7	< 9.7	< 10.2	12.0	13.2
40 - 470 MHz	dB	< 3.5	< 5.8	< 6.7	< 10.2	< 10.2	13.0	13.2
470 - 860 MHz	dB	< 3.7	< 6.2	< 7.9	< 10.7	< 12.2	13.5	14.2
Isolation								
5 - 40 MHz	dB	> 28.0	> 25.0	> 25.0	> 25.0	> 25.0	>30	>30
40 - 470 MHz	dB	> 28.0	> 25.0	> 28.0	> 25.0	> 25.0	>30	>30
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	>30	>30
Return loss (in)								
5 - 40 MHz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0	>18	>18
40 - 470 MHz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0	>18	>18
470 - 860 MHz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0	>18	>18
Return loss (out)								
5 - 40 MHz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0	>18	>18
40 - 470 MHz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0	>18	>18
470 - 860 MHz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0	>18	>18
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No	No	No	No
Connectors		F-female	F-female	F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE	W	CE
Impedance	Ohm	75	75	75	75	75	75	75
Weight	kg	0.046	0.063	0.069	0.130	0.137	6.595	0.615
Dimensions (h x d x w)	mm	50 x 16 x 52	50 x 16 x 74	50 x 16 x 74	60 x 16 x 117	60 x 16 x 117	78 x 44 x 242	78 x 44 x 242

Triax taps - HTT series [5-1000 MHz]



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Technical data 5-1000 MHz standard range in 1-way taps

TYPE Art. No.		HTT 1-6 347106	HTT 1-8 347108	HTT 1-12 347112	HTT 1-16 347116	HTT 1-20 347120	HTT 1-24 347124
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**1**	**1**	**1**	**1**	**1**	**1**
Insertion loss (in - out)							
5 - 40 MHz	dB	< 2.5	< 1.5	< 0.9	< 0.7	< 0.7	< 0.7
40 - 470 MHz	dB	< 2.5	< 1.7	< 0.9	< 0.7	< 0.7	< 0.7
470 - 860 MHz	dB	< 2.7	< 2.2	< 1.2	< 0.9	< 0.9	< 0.9
Tap loss (in - tap)							
5 - 40 MHz	dB	6.5 (± 1.0)	8.5 (± 1.0)	12.5 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)
40 - 470 MHz	dB	6.0 (± 1.0)	8.5 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)
470 - 860 MHz	dB	6.0 (± 1.2)	8.8 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
Isolation (tap - tap)							
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
Isolation (out - tap)							
5 - 40 MHz	dB	> 20.0	> 25.0	> 30.0	> 32.0	> 35.0	> 35.0
40 - 470 MHz	dB	> 22.0	> 25.0	> 28.0	> 28.0	> 32.0	> 32.0
470 - 860 MHz	dB	> 20.0	> 22.0	> 25.0	> 30.0	> 30.0	> 30.0
Return loss (in - out)							
5 - 40 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
40 - 470 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
470 - 860 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
Return loss (tap)							
5 - 40 MHz	dB	> 15.0	> 15.0	> 15.0	> 15.0	> 15.0	> 15.0
40 - 470 MHz	dB	> 15.0	> 15.0	> 15.0	> 15.0	> 15.0	> 15.0
470 - 860 MHz	dB	> 15.0	> 15.0	> 15.0	> 15.0	> 15.0	> 15.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No	No	No
Connectors		F-female	F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75	75
Weight	kg	0.046	0.046	0.046	0.046	0.046	0.046
Dimensions (h x d x w)	mm	50 x 16 x 52	50 x 16 x 52	50 x 16 x 52	50 x 16 x 52	50 x 16 x 52	50 x 16 x 52

Triax taps - HTT series [5-1000 MHz]

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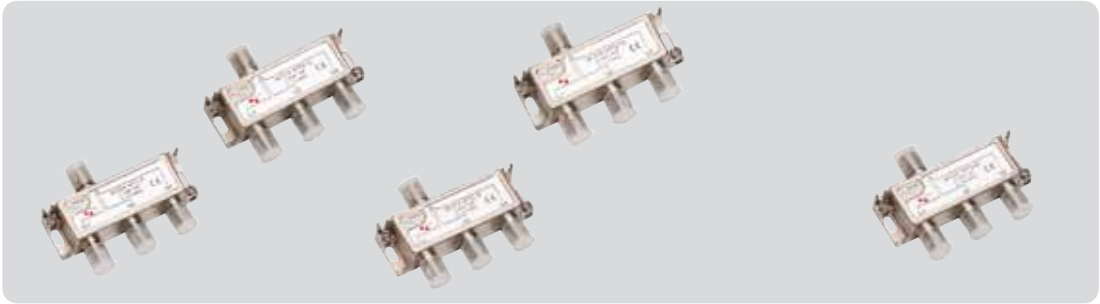
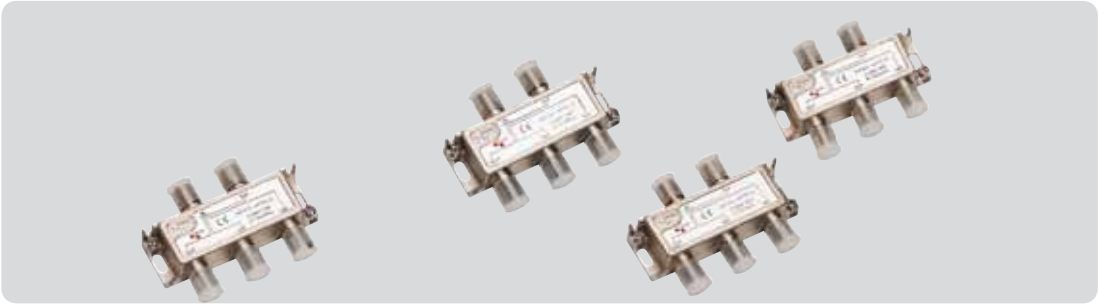


Technical data 5-1000 MHz standard range in 2-way taps

TYPE Art. No.		HTT 2-8 347208	HTT 2-10 347210	HTT 2-12 347212	HTT 2-16 347216	HTT 2-20 347220
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**2**	**2**	**2**	**2**	**2**
Insertion loss (in - out)						
5 - 40 MHz	dB	< 3.3	< 2.5	< 1.7	< 0.9	< 0.7
40 - 470 MHz	dB	< 3.5	< 2.5	< 1.7	< 0.9	< 0.7
470 - 860 MHz	dB	< 4.2	< 3.2	< 2.2	< 1.2	< 0.9
Tap loss (in - tap)						
5 - 40 MHz	dB	8.0 (± 1.0)	10.0 (± 1.0)	12.5 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)
40 - 470 MHz	dB	8.0 (± 1.0)	10.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.5)
470 - 860 MHz	dB	8.0 (± 1.2)	10.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)
Isolation (tap - tap)						
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
Isolation (out - tap)						
5 - 40 MHz	dB	>30.0	> 25.0	> 28.0	> 32.0	> 40.0
40 - 470 MHz	dB	> 27.0	> 25.0	> 26.0	> 30.0	> 35.0
470 - 860 MHz	dB	> 25.0	> 22.0	> 25.0	> 25.0	> 30.0
Return loss (in - out)						
5 - 40 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
40 - 470 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
470 - 860 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
Return loss (tap)						
5 - 40 MHz	dB	>25.0	> 25.0	> 25.0	> 26.0	> 26.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 23.0	> 25.0	> 25.0	> 25.0	> 25.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No	No
Connectors		F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.063	0.063	0.063	0.063	0.063
Dimensions (h x d x w)	mm	50 x 16 x 74	50 x 16 x 74	50 x 16 x 74	50 x 16 x 74	50 x 16 x 74

Triax taps - HTT series [5-1000 MHz]



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Technical data 5-1000 MHz standard range in 3-way taps

TYPE Art. No.		HTT 3-10 347310	HTT 3-12 347312	HTT 3-16 347316	HTT 3-20 347320
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**3**	**3**	**3**	**3**
Insertion loss (in - out)					
5 - 40 MHz	dB	< 2.7	< 2.7	< 1.7	< 0.9
40 - 470 MHz	dB	< 2.9	< 2.9	< 1.7	< 0.9
470 - 860 MHz	dB	< 3.9	< 3.9	< 2.2	< 1.2
Tap loss (in - tap)					
5 - 40 MHz	dB	10.0 (± 1.5)	12.5 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)
40 - 470 MHz	dB	10.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)
470 - 860 MHz	dB	10.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)
Isolation (tap - tap)					
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
Isolation (out - tap)					
5 - 40 MHz	dB	> 25.0	> 25.0	> 32.0	> 32.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 30.0	> 30.0
470 - 860 MHz	dB	> 22.0	> 22.0	> 28.0	> 28.0
Return loss (in - out)					
5 - 40 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0
40 - 470 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0
470 - 860 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0
Return loss (tap)					
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No
Connectors		F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE
Impedance	Ohm	75	75	75	75
Weight	kg	0.069	0.069	0.069	0.069
Dimensions (h x d x w)	mm	50 x 16 x 74	50 x 16 x 74	50 x 16 x 74	50 x 16 x 74

Triax taps - HTT series [5-1000 MHz]

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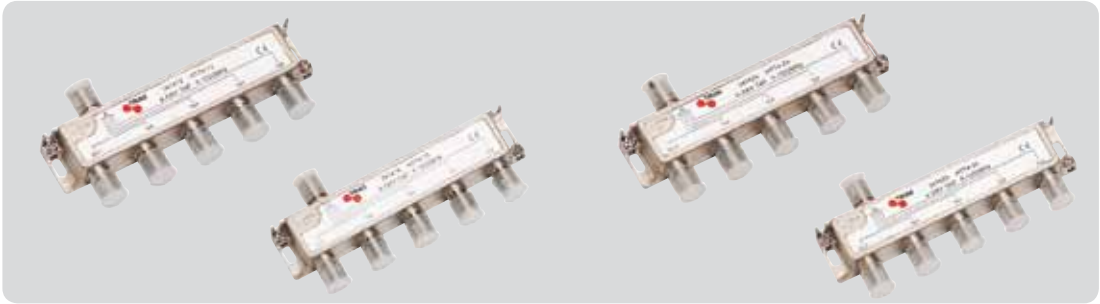

Technical data 5-1000 MHz standard range in 4-way taps

TYPE Art. No.		HTT 4-12 347412	HTT 4-16 347416	HTT 4-20 347420	HTT 4-24 347424
Frequency range	MHz	5 - 862	5 - 862	5 - 862	5 - 862
Outputs	pcs	**4**	**4**	**4**	**4**
Insertion loss (in - out)					
5 - 40 MHz	dB	< 2.9	< 1.5	< 0.7	< 0.7
40 - 470 MHz	dB	< 3.2	< 1.7	< 0.7	< 0.7
470 - 860 MHz	dB	< 3.7	< 2.1	< 1.2	< 1.2
Tap loss (in - tap)					
5 - 40 MHz	dB	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)
40 - 470 MHz	dB	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
470 - 860 MHz	dB	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
Isolation (tap - tap)					
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
Isolation (out - tap)					
5 - 40 MHz	dB	> 25.0	> 35.0	> 40.0	> 40.0
40 - 470 MHz	dB	> 25.0	> 30.0	> 35.0	> 35.0
470 - 860 MHz	dB	> 22.0	> 28.0	> 30.0	> 30.0
Return loss (in - out)					
5 - 40 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0
40 - 470 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0
470 - 860 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0
Return loss (tap)					
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No
Connectors		F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE
Impedance	Ohm	75	75	75	75
Weight	kg	0.092	0.092	0.092	0.092
Dimensions (h x d x w)	mm	60 x 16 x 70	60 x 16 x 70	60 x 16 x 70	60 x 16 x 70

Triax taps - HTT series [5-1000 MHz]

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Technical data 5-1000 MHz standard range in 6-way and 8-ways taps

TYPE Art. No.		HTT 6-16 347616	HTT 6-20 347620	HTT 6-24 347624	HTT 8-16 347816	HTT 8-20 347820	HTT 8-24 347824
Frequency range	MHz	5 - 862	5 - 862	5 - 862	5 - 1000	5 - 1000	5 - 1000
Outputs	pcs	**6**	**6**	**6**	**8**	**8**	**8**
Insertion loss (in - out)							
5 - 40 MHz	dB	< 2.0	< 1.2	< 1.2	< 2.5	< 1.2	< 1.2
40 - 470 MHz	dB	< 2.5	< 1.2	< 1.2	< 2.5	< 1.2	< 1.2
470 - 860 MHz	dB	< 2.9	< 2.2	< 2.2	< 2.9	< 1.9	< 1.9
Tap loss (Iin - tap)							
5 - 40 MHz	dB	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)	16.0 (± 1.5)	20.0 (± 1.0)	24.0 (± 1.0)
40 - 470 MHz	dB	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.0)	24.0 (± 1.0)
470 - 860 MHz	dB	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)	16.0 (± 2.0)	20.0 (± 1.8)	24.0 (± 1.8)
Isolation (tap - tap)							
5 - 40 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
40 - 470 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
Isolation (Oout - tap)							
5 - 40 MHz	dB	> 25.0	> 30.0	> 30.0	> 27.0	> 30.0	> 30.0
40 - 470 MHz	dB	> 25.0	> 30.0	> 30.0	> 25.0	> 30.0	> 30.0
470 - 860 MHz	dB	> 25.0	> 28.0	> 28.0	> 28.0	> 25.0	> 25.0
Return loss (in - out)							
5 - 40 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
40 - 470 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
470 - 860 MHz	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
Return loss (tap)							
5 - 40 MHz	dB	> 23.0	> 23.0	> 23.0	> 24.0	> 24.0	> 24.0
40 - 470 MHz	dB	> 24.0	> 24.0	> 24.0	> 25.0	> 25.0	> 25.0
470 - 860 MHz	dB	> 20.0	> 21.0	> 21.0	> 22.0	> 22.0	> 22.0
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		No	No	No	No	No	No
Connectors		F-female	F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75	75
Weight	kg	0.134	0.134	0.134	0.137	0.137	0.137
Dimensions (h x d x w)	mm	60 x 16 x 117	60 x 16 x 117	60 x 16 x 117	60 x 16 x 117	60 x 16 x 117	60 x 16 x 117

Triax multitaps - HTM/TTM series [5-1000 MHz]

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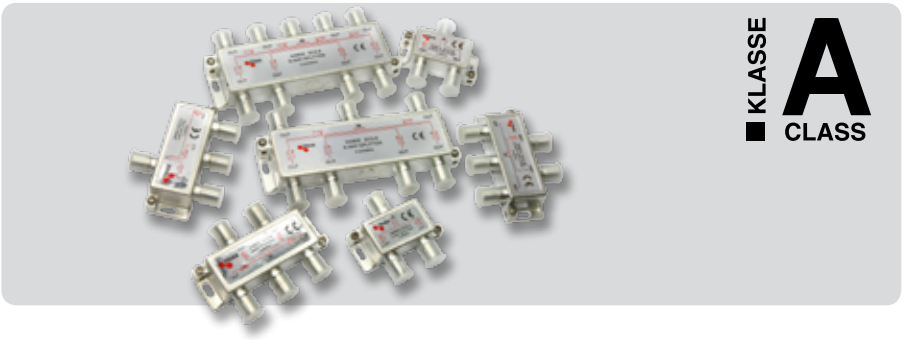
Technical data 5-1000 MHz standard range in multi taps

TYPE Art. No.		HTM 4-12T 347413	HTM 6-12T 347617	HTM 8-12T 347810
Frequency range	MHz	5 - 862	5 - 862	5 - 862
Outputs	pcs	**4**	**6**	**8**
Insertion loss (in - out)				
5 - 40 MHz	dB	4.0 (± 1.5)	6.0 (± 1.5)	8.0 (± 1.5)
40 - 470 MHz	dB	4.0 (± 1.5)	6.0 (± 1.5)	8.0 (± 1.5)
470 - 860 MHz	dB	4.0 (± 1.5)	6.0 (± 1.5)	8.0 (± 1.5)
Tap loss (in - tap)		(± 1.5)	(± 1.5)	(± 1.5)
5 - 860 MHz tap 1-4	dB	13.0/13.5/14.5/15.5	13.0/13.5/15.5/14.5	13.0/14.0/15.0/16.0
5 - 860 MHz tap 5-8	dB		16.5/17.5	17.0/18.0/19.0/20.0
5 - 860 MHz tap 9-12	dB			
5 - 860 MHz tap 13-16	dB			
Isolation (tap - tap)				
5 - 40 MHz	dB	> 32.0	> 32.0	> 30.0
40 - 470 MHz	dB	> 32.0	> 32.0	> 30.0
470 - 860 MHz	dB	> 30.0	> 30.0	> 30.0
Isolation (out - tap)				
5 - 40 MHz	dB	> 26.0	> 26.0	> 20.0
40 - 470 MHz	dB	> 26.0	> 26.0	> 20.0
470 - 860 MHz	dB	> 22.0	> 22.0	> 20.0
Return loss (tap)				
5 - 40 MHz	dB	> 32.0	> 32.0	> 30.0
40 - 470 MHz	dB	> 32.0	> 32.0	> 30.0
470 - 860 MHz	dB	> 30.0	> 30.0	> 30.0
Shielding efficiency VHF/ UHF	dB	≥ 75.0	≥ 75.0	≥ 75.0
Power pass		Yes	Yes	Yes
Connectors		F-female	F-female	F-female
Certification		CE	CE	CE
Impedance	Ohm	75	75	75
Weight	kg	0.183	0.183	0.205
Dimensions (h x d x w)	mm	54 x 42 x 84	54 x 42 x 84	54 x 42 x 107

Triax splitters - SCS series [5-2400 MHz]



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High quality SCS splitters for your system

- A complete range of high quality satellite splitters (5-2400 MHz)
- For SAT-IF/ SMATV installations
- Low insertion loss
- High isolation and return loss
- Shielding > 110 dB - Class A

Technical data 5-2400 MHz standard range in splitters

Type		SCS 2	SCS 3	SCS 4	SCS 6	SCS 8
Art. No. (DC all outputs)		**349802**	**349803**	**349804**	**349806**	**349808**
Art. No. (DC output 1 only)		**349812**		**349814**		
Frequency range	MHz	5 - 2400	5 - 2400	5 - 2400	5 - 2400	5 - 2400
Outputs	pcs	2	3	4	6	8
Insertion loss (in – out)						
5-40 MHz	dB	≤ 4.5	≤ 6.3	≤ 7.7	≤ 10.6	≤ 11.6
40-1000 MHz	dB	≤ 4.5	≤ 7.5	≤ 8.5	≤ 11.2	≤ 12.7
1000-1750 MHz	dB	≤.0 5	≤ 8.6	≤ 9.8	≤ 12.7	≤ 14.7
1750-2150 MHz	dB	≤ 5.5	≤ 9.7	≤ 10.8	≤ 14.9	≤ 15.8
2150-2400 MHz	dB	≤ 6.0	≤ 10	≤ 11.2	≤ 15.8	≤ 17.0
Return loss (in)						
5-40 MHz	dB	≥ 12	≥ 13	≥ 13	≥ 10	≥ 10
40-1000 MHz	dB	≥ 16	≥ 16	≥ 13	≥ 14	≥ 12
1000-1750 MHz	dB	≥ 12	≥ 14	≥ 14	≥ 12	≥ 12
1750-2150 MHz	dB	≥ 14	≥ 14	≥ 14	≥ 12	≥ 12
2150-2400 MHz	dB	≥ 12	≥ 15	≥ 11	≥ 13	≥ 12
Return loss (out)						
5-40 MHz	dB	≥ 12	≥ 12	≥ 11	≥10	≥12
40-1000 MHz	dB	≥ 16	≥ 14	≥ 15	≥13	≥13
1000-1750 MHz	dB	≥ 12	≥ 14	≥ 14	≥13	≥13
1750-2150 MHz	dB	≥ 14	≥ 20	≥ 14	≥12	≥12
2150-2400 MHz	dB	≥ 12	≥ 19	≥ 13	≥12	≥12
Isolation (out – out)						
5-40 MHz	dB	≥ 20	≥ 25	≥ 26	≥ 25	≥ 25
40-1000 MHz	dB	≥ 25	≥ 23	≥ 21	≥ 25	≥ 23
1000-1750 MHz	dB	≥ 25	≥ 26	≥ 22	≥ 25	≥ 25
1750-2150 MHz	dB	≥ 26	≥ 24	≥ 25	≥ 25	≥ 25
2150-2400 MHz	dB	≥ 22	≥ 23	≥ 23	≥ 24	≥ 24
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		in/out	in/out	in/out	in/out	in/out
Connectors		F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.037	0.055	0.062	0.117	0.125
Dimensions (h x d x w)	mm	52x16x53	56x16x74	56x16x74	65x16x119	65x16x119

Brackets for extra height from ground when mounting splitters and taps

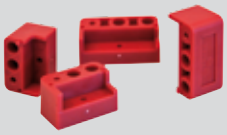
Art. No.	Type	Remarks
342100	BS - Brackets Small 1-4, T&S	10 sets incl. screws
342102	BL- Brackets Large 6-8, T&S	10 sets incl. screws

Triax taps - SCT series [5-2400 MHz]

High quality range 1-way taps for your system

- A complete range of high quality satellite taps (5-2400 MHz)
- For SAT-IF/ SMATV installations
- Low insertion loss
- High isolation and return loss
- Shielding > 110 dB - Class A

KLASSE A CLASS



Technical data 5-2400 MHz standard range 1-way taps

Type		SCT 1-8	SCT 1-10	SCT 1-12	SCT 1-16	SCT 1-20	SCT 1-24
Art. No. (DC all outputs)		**342108**	**342110**	**342112**	**342116**	**342120**	**342124**
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400	5-2400	5-2400
Tap loss	dB	8	10	12	16	20	24
Insertion loss							
5-40MHz	dB	≤ 2.5	≤ 2.2	≤ 1.2	≤ 1.5	≤ 1.0	≤ 1.0
40-1000MHz	dB	≤ 3.0	≤ 2.2	≤ 2.0	≤ 1.5	≤ 1.5	≤ 1.5
1000-1750MHz	dB	≤ 3.6	≤ 3.0	≤ 2.5	≤ 2.0	≤ 2.0	≤ 2.0
1750-2150MHz	dB	≤ 4.2	≤ 3.2	≤ 2.8	≤ 2.5	≤ 2.0	≤ 2.0
2150-2400MHz	dB	≤ 4.7	≤ 3.2	≤ 2.8	≤ 2.5	≤ 2.2	≤ 2.2
Tap loss							
5-40MHz	dB	8.0 ±1.0	10.0 ±1.5	12.0 ±1.0	16.0 ±1.2	20.0 ±1.0	24.0 ±1.0
40-1000MHz	dB	8.0 ±1.0	10.0 ±1.5	12.0 ±1.0	16.0±1.2	20.0 ±1.0	24.0 ±1.0
1000-1750MHz	dB	8.0 ±1.5	10.0 ±1.5	12.0 ±1.5	16.0 ±1.5	20.0 ±1.5	24.0 ±1.5
1750-2150MHz	dB	8.0 ±1.5	10.0 ±1.5	12.0 ±1.5	16.0 ±1.5	20.0 ±1.5	24.0 ±1.5
2150-2400MHz	dB	8.0 ±1.5	10.0 ±1.5	12.0 ±1.5	16.0 ±1.5	20.0 ±1.5	24.0 ±1.5
Isolation [OUT-TAP]							
5-40MHz	dB	≥ 21	≥ 25	≥ 26	≥ 35	≥ 40	≥ 40
40-1000MHz	dB	≥ 22	≥ 24	≥ 26	≥ 27	≥ 30	≥ 32
1000-1750MHz	dB	≥ 22	≥ 22	≥ 25	≥ 25	≥ 26	≥ 30
1750-2150MHz	dB	≥ 22	≥ 22	≥ 24	≥ 24	≥ 25	≥ 28
2150-2400MHz	dB	≥ 22	≥ 22	≥ 22	≥ 24	≥ 25	≥ 26
Return loss [IN-OUT]							
5-40MHz	dB	≥ 12	≥ 12	≥ 14	≥ 14	≥ 15	≥ 15
40-1000MHz	dB	≥ 12	≥ 13	≥ 14	≥ 14	≥ 14	≥ 14
1000-1750MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
1750-2150MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
2150-2400MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
Return loss [TAP]							
5-40MHz	dB	≥ 18	≥ 14	≥ 14	≥ 14	≥ 14	≥ 14
40-1000MHz	dB	≥ 15	≥ 15	≥ 14	≥ 14	≥ 15	≥ 15
1000-1750MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
1750-2150MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
2150-2400MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		in/out	in/out	in/out	in/out	in/out	in/out
Connectors		F-female	F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75	75
Weight	kg	0.037	0.037	0.037	0.037	0.037	0.037
Dimensions (h x d x w)	mm	52x16x53	52x16x53	52x16x53	52x16x53	52x16x53	52x16x53

Brackets for extra height from ground when mounting splitters and taps

Art. No.	Type	Remarks
342100	BS - Brackets Small 1-4, T&S	10 sets incl. screws
342102	BL- Brackets Large 6-8, T&S	10 sets incl. screws

Triax taps - SCT series [5-2400 MHz]

High quality range 2-way taps for your system

- A complete range of high quality satellite taps (5-2400 MHz)
- For SAT-IF/ SMATV installations
- Low insertion loss
- High isolation and return loss
- Shielding > 110 dB - Class A
- Brackets see SCS 2 page

Technical data 5-2400 MHz standard range 2-way taps

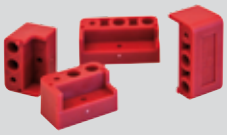
Type		SCT 2-10	SCT 2-12	SCT 2-16	SCT 2-20
Art. No. (DC all outputs)		**342210**	**342212**	**342216**	**342220**
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400
Tap loss	dB	10	12	16	20
Insertion loss					
5-40MHz	dB	≤ 4.0	≤ 3.2	≤ 2.5	≤ 2.0
40-1000MHz	dB	≤ 3.5	≤ 3.2	≤ 2.5	≤ 2.0
1000-1750MHz	dB	≤ 4.2	≤ 4.0	≤ 4.0	≤ 2.8
1750-2150MHz	dB	≤ 4.8	≤ 4.3	≤ 4.0	≤ 3.5
2150-2400MHz	dB	≤ 5.0	≤ 4.7	≤ 4.2	≤ 4.2
Tap loss					
5-40MHz	dB	10.0 ±2.0	12.0 ±1.2	16.0 ±1.2	20.0 ±1.5
40-1000MHz	dB	10.0 ±1.5	12.0 ±1.2	16.0 ±1.2	20.0 ±1.5
1000-1750MHz	dB	10.0 ±2.0	12.0 ±1.5	16.0 ±1.5	20.0 ±1.5
1750-2150MHz	dB	10.0 ±2.0	12.0 ±1.5	16.0 ±2.0	20.0 ±1.5
2150-2400MHz	dB	10.0 ±2.0	12.0 ±2.0	16.0 ±2.0	20.0 ±2.0
Isolation [TAP-TAP]					
5-40MHz	dB	≥ 22	≥ 35	≥ 38	≥ 38
40-1000MHz	dB	≥ 27	≥ 30	≥ 35	≥ 35
1000-1750MHz	dB	≥ 28	≥ 28	≥ 32	≥ 32
1750-2150MHz	dB	≥ 26	≥ 26	≥ 30	≥ 32
2150-2400MHz	dB	≥ 24	≥ 26	≥ 28	≥ 30
Isolation [OUT-TAP]					
5-40MHz	dB	≥ 22	≥ 25	≥ 25	≥ 30
40-1000MHz	dB	≥ 22	≥ 22	≥ 25	≥ 24
1000-1750MHz	dB	≥ 20	≥ 20	≥ 22	≥ 23
1750-2150MHz	dB	≥ 20	≥ 20	≥ 22	≥ 22
2150-2400MHz	dB	≥ 18	≥ 18	≥ 21	≥ 22
Return loss [IN-OUT]					
5-40MHz	dB	≥ 10	≥ 9	≥ 10	≥ 10
40-1000MHz	dB	≥ 12	≥ 11	≥ 12	≥ 12
1000-1750MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12
1750-2150MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12
2150-2400MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12
Return loss [TAP]					
5-40MHz	dB	≥ 10	≥ 10	≥ 10	≥ 10
40-1000MHz	dB	≥ 12	≥ 12	≥ 12	≥ 14
1000-1750MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12
1750-2150MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12
2150-2400MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		in/out	in/out	in/out	in/out
Connectors		F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE
Impedance	Ohm	75	75	75	75
Weight	kg	0.055	0.055	0.055	0.055
Dimensions (h x d x w)	mm	57x16x74	57x16x74	57x16x74	57x16x74

Triax taps - SCT series [5-2400 MHz]

High quality range 4-way taps for your system

- A complete range of high quality satellite taps (5-2400 MHz)
- For SAT-IF/ SMATV installations
- Low insertion loss
- High isolation and return loss
- Shielding > 110 dB - Class A
- Brackets see SCS 2 page

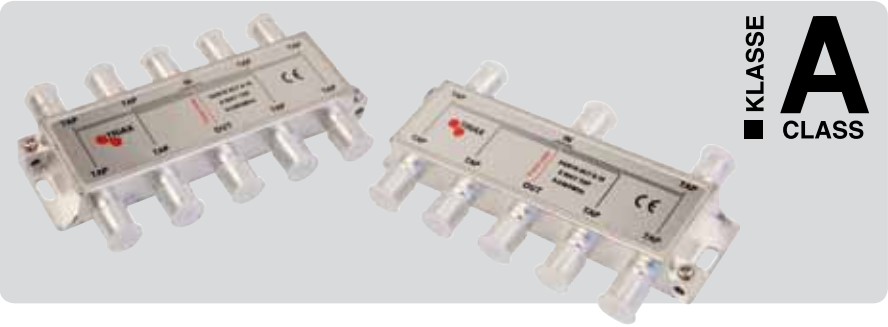
KLASSE A CLASS



Technical data 5-2400 MHz standard range 4-way taps

Type		SCT 4-12	SCT 4-16	SCT 4-20	SCT 4-24	SCT 4-30
Art. No. (DC all outputs)		**342412**	**342416**	**342420**	**342424**	**342430**
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400	5-2400
Tap loss	dB	10	16	20	24	30
Insertion loss						
5-40MHz	dB	≤ 4.2	≤ 2.8	≤ 1.8	≤ 1.0	≤ 1.0
40-1000MHz	dB	≤ 4.8	≤ 2.8	≤ 1.5	≤ 1.5	≤ 1.3
1000-1750MHz	dB	≤ 5.2	≤ 3.5	≤ 2.0	≤ 1.8	≤ 1.5
1750-2150MHz	dB	≤ 5.5	≤ 4.0	≤ 2.3	≤ 2.5	≤ 2.0
2150-2400MHz	dB	≤ 6.5	≤ 5.0	≤ 3.2	≤ 2.5	≤ 2.0
Tap loss						
5-40MHz	dB	12.0 ±1.2	16.0 ±1.2	20.0 ±1.2	24.0 ±1.2	30.0 ±1.2
40-1000MHz	dB	12.0 ±1.2	16.0 ±1.2	20.0 ±1.2	24.0 ±1.2	30.0 ±1.2
1000-1750MHz	dB	12.0 ±1.5	16.0 ±1.5	20.0 ±1.5	24.0 ±1.5	30.0 ±1.5
1750-2150MHz	dB	14.0 ±2.0	16.0 ±2.0	20.0 ±2.0	24.0 ±2.0	30.0 ±2.0
2150-2400MHz	dB	14.0 ±2.5	16.0 ±2.0	20.0 ±2.0	24.0 ±2.0	30.0 ±2.0
Isolation [TAP-TAP]						
5-40MHz	dB	≥ 23	≥ 25	≥ 25	≥ 25	≥ 25
40-1000MHz	dB	≥ 22	≥ 23	≥ 22	≥ 23	≥ 23
1000-1750MHz	dB	≥ 21	≥ 21	≥ 21	≥ 21	≥ 21
1750-2150MHz	dB	≥ 21	≥ 21	≥ 21	≥ 21	≥ 21
2150-2400MHz	dB	≥ 21	≥ 21	≥ 21	≥ 21	≥ 21
Isolation [OUT-TAP]						
5-40MHz	dB	≥ 25	≥ 25	≥ 25	≥ 30	≥ 35
40-1000MHz	dB	≥ 25	≥ 24	≥ 24	≥ 25	≥ 30
1000-1750MHz	dB	≥ 23	≥ 22	≥ 22	≥ 25	≥ 23
1750-2150MHz	dB	≥ 23	≥ 22	≥ 22	≥ 22	≥ 23
2150-2400MHz	dB	≥ 23	≥ 22	≥ 22	≥ 22	≥ 22
Return loss [IN-OUT]						
5-40MHz	dB	≥ 10	≥ 12	≥ 12	≥ 14	≥ 14
40-1000MHz	dB	≥ 12	≥ 12	≥ 12	≥ 14	≥ 14
1000-1750MHz	dB	≥ 12	≥ 11	≥ 11	≥ 14	≥ 11
1750-2150MHz	dB	≥ 12	≥ 11	≥ 11	≥ 11	≥ 11
2150-2400MHz	dB	≥ 12	≥ 11	≥ 11	≥ 11	≥ 11
Return loss [TAP]						
5-40MHz	dB	≥ 10	≥ 12	≥ 12	≥ 12	≥ 14
40-1000MHz	dB	≥ 10	≥ 12	≥ 12	≥ 14	≥ 14
1000-1750MHz	dB	≥ 12	≥ 11	≥ 11	≥ 11	≥ 11
1750-2150MHz	dB	≥ 12	≥ 11	≥ 11	≥ 11	≥ 11
2150-2400MHz	dB	≥ 12	≥ 11	≥ 11	≥ 11	≥ 11
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		in/out	in/out	in/out	in/out	in/out
Connectors		F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.062	0.062	0.062	0.062	0.062
Dimensions (h x d x w)	mm	57x16x74	57x16x74	57x16x74	57x16x74	57x16x74

Triax taps - SCT series [5-2400 MHz]



High quality range 6-way and 8-ways taps for your system

- A complete range of high quality satellite taps (5-2400 MHz)
- For SAT-IF/ SMATV installations
- Low insertion loss
- High isolation and return loss
- Shielding > 110 dB - Class A
- Brackets see SCS 2 page

Technical data 5-2400 MHz standard range 6-way & 8-way taps

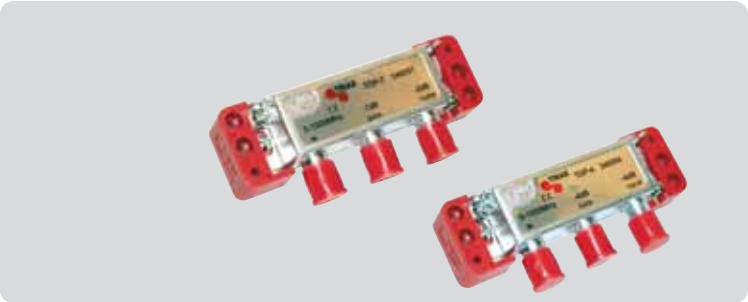
Type		SCT 6-16	SCT 6-20	SCT 6-24	SCT 6-30	SCT 8-16	SCT 8-20
Art. No. (DC all outputs)		**342616**	**342620**	**342624**	**342630**	**342816**	**342820**
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400	5-2400	5-2400
Tap loss	dB	16	20	24	30	16	20
Insertion loss							
5-40MHz	dB	≤ 4.2	≤ 2.5	≤ 2.5	≤ 2.5	≤ 4.5	≤ 2.5
40-1000MHz	dB	≤ 5.3	≤ 2.8	≤ 2.5	≤ 2.8	≤ 5.5	≤ 3.0
1000-1750MHz	dB	≤ 5.5	≤ 3.5	≤ 2.8	≤ 4.0	≤ 6.0	≤ 4.2
1750-2150MHz	dB	≤ 6.0	≤ 4.2	≤ 3.0	≤ 5.0	≤ 6.0	≤ 5.0
2150-2400MHz	dB	≤ 7.0	≤ 5.2	≤ 4.0	≤ 6.0	≤ 6.8	≤ 5.8
Tap loss							
5-40MHz	dB	16.0 ±1.5	20.0 ±1.5	24.0 ±2.0	30.0 ±1.5	16.0 ±1.5	20.0 ±1.5
40-1000MHz	dB	16.0 ±1.5	20.0 ±1.5	24.0 ±2.0	30.0 ±2.0	16.0 ±1.5	20.0 ±1.5
1000-1750MHz	dB	16.0 ±1.5	22.0 ±1.5	24.0 ±1.5	30.0 ±2.0	18.0 ±1.5	22.0 ±1.5
1750-2150MHz	dB	16.0 ±2.0	22.0 ±2.0	24.0 ±2.0	30.0 ±2.0	18.0 ±2.0	22.0 ±2.0
2150-2400MHz	dB	16.0 ±2.0	22.0 ±2.5	24.0 ±2.5	30.0 ±2.5	18.0 ±2.5	22.0 ±2.5
Isolation [TAP-TAP]							
5-40MHz	dB	≥ 22	≥ 25	≥ 25	≥ 25	≥ 22	≥ 28
40-1000MHz	dB	≥ 20	≥ 22	≥ 25	≥ 25	≥ 22	≥ 24
1000-1750MHz	dB	≥ 20	≥ 20	≥ 25	≥ 24	≥ 20	≥ 24
1750-2150MHz	dB	≥ 20	≥ 20	≥ 20	≥ 22	≥ 20	≥ 20
2150-2400MHz	dB	≥ 20	≥ 20	≥ 20	≥ 21	≥ 20	≥ 20
Isolation [OUT-TAP]							
5-40MHz	dB	≥ 25	≥ 25	≥ 28	≥ 35	≥ 25	≥ 28
40-1000MHz	dB	≥ 25	≥ 25	≥ 26	≥ 30	≥ 25	≥ 25
1000-1750MHz	dB	≥ 22	≥ 25	≥ 24	≥ 27	≥ 22	≥ 24
1750-2150MHz	dB	≥ 22	≥ 22	≥ 22	≥ 26	≥ 20	≥ 22
2150-2400MHz	dB	≥ 20	≥ 22	≥ 22	≥ 24	≥ 20	≥ 22
Return loss [IN-OUT]							
5-40MHz	dB	≥ 10	≥ 10	≥ 10	≥ 10	≥ 10	≥ 10
40-1000MHz	dB	≥ 11	≥ 12	≥ 12	≥ 12	≥ 10	≥ 10
1000-1750MHz	dB	≥ 11	≥ 11	≥ 11	≥ 11	≥ 10	≥ 10
1750-2150MHz	dB	≥ 11	≥ 11	≥ 10	≥ 11	≥ 10	≥ 10
2150-2400MHz	dB	≥ 11	≥ 10	≥ 10	≥ 11	≥ 10	≥ 10
Return loss [TAP]							
5-40MHz	dB	≥ 10	≥ 10	≥ 10	≥ 10	≥ 12	≥ 10
40-1000MHz	dB	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12	≥ 12
1000-1750MHz	dB	≥ 11	≥ 11	≥ 10	≥ 11	≥ 10	≥ 10
1750-2150MHz	dB	≥ 11	≥ 11	≥ 10	≥ 11	≥ 10	≥ 10
2150-2400MHz	dB	≥ 11	≥ 11	≥ 11	≥ 10	≥ 10	≥ 10
Shielding efficiency VHF/UHF	dB	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0	≥ 110.0
Power pass		in/out	in/out	in/out	in/out	in/out	in/out
Connectors		F-female	F-female	F-female	F-female	F-female	F-female
Certification		CE	CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75	75
Weight	kg	0.117	0.117	0.117	0.117	0.125	0.125
Dimensions (h x d x w)	mm	65x17x119	65x17x119	65x17x119	65x17x119	65x17x119	65x17x119

Triax TDP delivery point for TV/R and data

Triax delivery point for separating TV/R and data signals

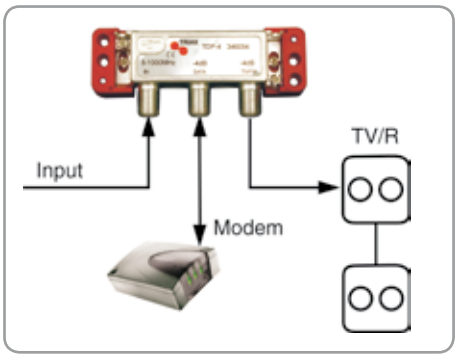
Mount a Triax TDP delivery point on the main connection cable to your SMATV system and get a stable and secure separation of your signal to your tv, radio and cable modem.

- High isolation
- Low insertion loss
- Class A shielding



Technical data on TDP delivery points

TYPE Art. No.		TDP-4 346094	TDP-7 346097
Frequency range	MHz	5 - 1000	5 - 1000
Outputs	pcs	**TV/R/Data**	**TV/R/Data**
Insertion loss			
5 - 40 MHz	dB	4.0	
40 - 1000 MHz	dB	4.0	
Tap loss			
5 - 40 MHz	dB		2.0
40 - 1000 MHz	dB		7.0
Isolation			
5 - 40 MHz	dB	> 50.0	> 50.0
40 - 1000 MHz	dB	> 50.0	> 50.0
Return loss (-1.5 dB/octav)			
5 - 40 MHz	dB	> 20.0	> 20.0
40 - 1000 MHz	dB	> 20.0	> 20.0
Shielding efficiency	dB	Class A (≥ 100.0)	Class A (≥ 100.0)
Power pass		No	No
Connectors		F-female	F-female
Certification		CE	CE
Impedance	Ohm	75	75
Weight	kg	0.063	0.063
Dimensions (h x d x w)	mm	50 x 16 x 74	50 x 16 x 74



Indoor splitters with F-connectors in a shielded housing with white plastic cover and only for indoor use.

- TS and TFS are splitters in a plastic housing for indoor mounting.
- Different types with broadband input and one output for DAB and one for TV-FM - see the data below.
- The products are shielded and supplied with F-connectors.
- DC-through power to TV-FM output.
- The TFS 715 are normal indoor TV/FM splitters to be mounted on a wall.

Technical data on Triax splitters

Type		TS 315-2 DC	TFS 715-2	TFS 715-3	102 FF/M	102 MM/F
Art. No.		**332323**	**334202**	**334203**	**338365**	**338366**
Input 1		VHF/UHF	VHF/UHF	VHF/UHF	VHF/UHF	VHF/UHF
Channel/band		2-69 + FM	2-69 + FM	2-69 + FM	2-69 + FM	2-69 + FM
Frequency range	MHz	47 - 862	47 - 862	47 - 862	47 - 862	47 - 862
Splitter type		Inductive				
Through loss						
VHF	dB	4.0	4.0	6.0	3.5	3.5
UHF	dB	4.0	4.0	6.0	3.5	3.5
Isolation	dB	18	18	18		
TV-FM	dB					
DAB	dB					
Number of outputs	pcs	**2**	**2**	**3**	**2**	**2**
TV-FM						
DAB						
DC throughpower						
Output 1		Switchable	DC	DC	DC	DC
Output 2		Switchable	DC	DC	DC	DC
Output 3				DC		
Output 4						
Connector		S&C	F-female	F-female	IEC	IEC
Weight	kg					
Dimensions Height	mm					
Depth	mm					
Width	mm					
Remarks			DC pass can be removed by cutting PCB	DC pass can be removed by cutting PCB	IEC female	IEC male

Triax attenuators

Variable attenuators (20 dB)

TRIAX variable attenuators are available in types for indoor as well as outdoor mounting.

Technical data on Triax attenuators

Type		VA 20 F
Art. No.		**153600**
Input 1		VHF/UHF
Channel/band		2-69 + FM
Frequency range	MHz	47 - 862
Insertion loss	dB	0-20
Through loss		
VHF	dB	
UHF	dB	
Number of outputs	pcs	**1**
DC throughpower		Yes
Connector		F-female
Remarks		Indoor

Technical data on F-attenuator

Type		F-att. 3 dB	F-att. 6 dB	F-att. 10 dB	F-att. 20 dB
Art. No.		**153710**	**153711**	**153712**	**153713**
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Attenuation	dB	3	6	10	20
Packing size	pcs	1	1	1	1

Technical data on IEC-attenuator

Type		IEC-att. 3 dB	IEC-att. 6 dB	IEC-att. 9 dB	IEC-att. 12 dB	IEC-att. 18 dB
Art. No.		**153720**	**153721**	**153722**	**153723**	**153724**
Frequency range	MHz	5 - 1000	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Attenuation	dB	3	6	9	12	18
Packing size	pcs	1	1	1	1	1

Triax power inserter

IFP 529

Battery filter

TRIAX battery filter is intended to power an amplifier through the coax cable from a battery.

Technical data on battery filter/power inserter

TYPE		**IFP 529**
Art. No.		**339529**
Frequency range	MHz	47-862
Inputs	pcs	1
Outputs	pcs	**2**
Insertion loss 47-852	dB	2 x 4.0
5 - 40 MHz	dB	
40 - 470 MHz	dB	
470 - 750 MHz	dB	
750 - 862 MHz	dB	
Tap loss - output 47-852		4.0
5 - 40 MHz	dB	
40 - 470 MHz	dB	
470 - 750 MHz	dB	
750 - 862 MHz	dB	
Shielding efficiency VHF/UHF	dB	
Hum modulation @ 10 A	dB	
Power pass connection 5/8		
Supply voltage	V	12-24
Fuse		Automatic
DC-throughpass	A/VAC mA	 max. 100
Connectors		F-female
Certification		CE
Impedance	Ohm	75
Weight	kg	
Dimensions (h x d x w)	mm	
Remarks		Power inserter incl. 1.2m cable with jackplug

Triax power supplies

IFP 50x housing

602/60

Technical data on Triax power supplies

TYPE		IFP 501	IFP 502	IFP 503	IFP 504	IFP 505
Art. No.		**339501**	**339502**	**339503**	**339504**	**339505**
Band		VHF/UHF	VHF/UHF	VHF/UHF	VHF/UHF	VHF/UHF
Frequency range	MHz	47-862	47-862	47-862	47-862	47-862
Inputs	pcs	1	1	1	1	1
Outputs	pcs	**1**	**2**	**1**	**2**	**1**
Through loss	dB	1.0	4.0	1.0	4.0	1.0
Voltage	V/DC	+ 12	+ 12	+ 24	+ 24	**+ 5**
Max. power	mA/DC	85	85	45	45	45
Main voltage	V/AC	230	230	230	230	230
Power	W	3	3	3	3	2
Connectors		F-con	F-con	F-con	F-con	F-con
Certification		CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.4	0.4	0.4	0.4	0.4
Dimensions (h x d x w)	mm	61x44x118	61x44x118	61x44x118	61x44x118	61x44x118

Technical data on Triax power supplies

TYPE		601/60B	602/60B
Art. No.		**336106**	**336121**
Band		VHF/UHF	VHF/UHF
Frequency range	MHz	47-860	47-860
Inputs	pcs	1	1
Outputs	pcs	**1**	**2**
Through loss	dB	1.0	4.0
Voltage	V/DC	+ 24	+ 24
Max. power	mA/DC	60	60
Main voltage	V/AC	230	230
Power	W	4.0	4.0
Connectors		S&C	S&C
Certification		CE	CE
Impedance	Ohm	75	75
Weight	kg	0.25	0.25
Dimensions (h x d x w)	mm	90x48x115	90x48x115

Triax home accessories

Triax TRE series - IR remote extender set

General applications:

- Remote control your TV set, VCR, STB, PVR and other audio/video and Hi-Fi equipment from another room via existing coax cables
- Uses existing wall sockets and coax installation to transmit IR signal
- Very easy installation. Just plug into wall socket in both rooms (both wall sockets must be interconnected, and support 11 MHz, to work)
- Receiver and re-transmitter IR-eyes with 2 meter cable each
- Unit has very low insertion loss from wall outlet.

Technical data - Triax digital links

TYPE		TRE 270 T/R	TRE 272 T
Art. No.		**300675**	**300677**
Re-emitter			
VHF/UHF attenuation	dB	0.5	
Control signals :			
Infrared frequency input	kHz	35-41	
Modulation level	dBm	0 (0-10 adjustable)	
Connectors			
on back, for outlet	IEC	male	
on front, for TV/radio	IEC	female	
Dimension			
Size	mm	70 x 38 x 23	
Weight	g	120	
Remote-eye cable length	m	2.0	
Receiver			
VHF/UHF attenuation	dB	0.5	0.5
Control signals :			
Input	MHz	11 (ASK)	11 (ASK)
Minimum level	dBµV	< 50	< 50
Infrared output	kHz	37 ±1	37 ±1
Connectors			
on back, for outlet	IEC	male	male
on front, for TV/radio	IEC	female	female
Dimension			
Size	mm	70 x 38 x 23	70 x 38 x 23
Weight	g	130	130
Remote-eye cable length	m	2.0	2.0
Included in carton:			
2 x Power supply		230 VAC to 12 VDC, 100 mA	
1 x Re-emitter, 1 x receiver		See specifications above	
2 x Fasten strips		For fastening IR-remote eyes in a good position	
1 x User guide			

Also available:
300677 TRE 272 R set with 2 x receiver units. Allows you to install receivers in more rooms.
Requires one TRE 270 T/R to be installed.

NOTE:
The TRE 270 T/R converts the 38 kHz IR signals from the remote control(s) into an 11MHz signal, that can be transmitted over the coax cabling in your house. It is important to note that for this to work there must be no obstructions in the coax cable signal path between the two ends, such as amplifiers and/or outlet sockets with blocking filters in the 11 MHz range. TRE 270 T/R only transmits IR signals. The A/V signals (picture and sound) has to be 'transferred' by other means such as cables, modulated signals or via wireless units.

Triax TWS - 2.4 GHz wireless A/V system

General applications:

- Watch the movie you rent on any TV in house without moving your DVD, VCR, PVR player or running messy cables.
- Watch cable or satellite programs on any TV in the house.
- Listen to stereo-quality music from your receiver on any powered speakers inside or outside the house.
- Use multi-receivers for broadcasting to numerous TV sets in other rooms.
- Show computer images or MediaCenter PC output on a remote TV. (Requires TV-out on PC graphic card)
- And many more uses!

Technical data - Triax digital links

TYPE		TWS 220 T/R	TWR 221
Art. No.		**305390**	**305391**
Transmitter :			
Operating frequency band	GHz	2,400 – 2,483.5	
Transmit power output	dBm	10	
Modulation (video and audio)		FM	
Video input level	Vpp @ 75 Ohm	1	
Audio input level (stereo)	Vpp @ 600 Ohm	1	
Antenna		External, omnidirectional	
IR-remote IR output		940 nm with on/off keying	
Power consumption	VDC/mA	7.5 / 300	
Dimensions	mm	90 x 74 x 20	
Weight	g	110	
Receiver :			
Operating frequency band	GHz	2.400 - 2.4835	2.400 - 2.4835
Sensitivity	dBm	-80	-80
Video output level	Vpp @ 75 Ohm	1 ±0.2	1 ±0.2
Audio output level (stereo)	Vpp @ 600 Ohm	1 ± 0.2	1 ± 0.2
Antenna		External, omnidirectional	External, omnidirectional
IR-remote modulation		ASK	ASK
IR transmit frequency	MHz	433,92	433,92
IR frequency Input	kHz	32 - 38	32 - 38
Power consumption	VDC/mA	7.5 / 300	7.5 / 300
Dimensions	mm	90 x 74 x 20	90 x 74 x 20
Weight	g	110	110
System :			
Channel customize switch (4 channels available)	MHz	2414, 2432, 2450, 2464	2414, 2432, 2450, 2464
Operational range (outdoor free field line of sight)	m	Up to 100	Up to 100
Operational range (typical indoor)	m	10-30	10-30
Remote control range (outdoor free fline of sight)	m	Up to 50	Up to 50
Operational temperature	°C	10 - 50	10 - 50
Colour		Silver/Black	Silver/Black
Minimum distance to other transmitters	m	3	3
Included in carton:			
2 x Power supply		230 VAC to 7.5 VDC, 300 mA	
1 x transmitter, 1 x receiver		See specifications above	
1 x IR extender cable for transmitter		For IR remote control (3 IR ‘eyes’)	
2 x 3.5 mm minijack to R+L-audio+video		From transmitter and receiver	
2 x RCA to SCART		For transmitter and receiver cable to SCART	
1 x 3.5 mm minijack to RCA phono		For use with PC audio output	

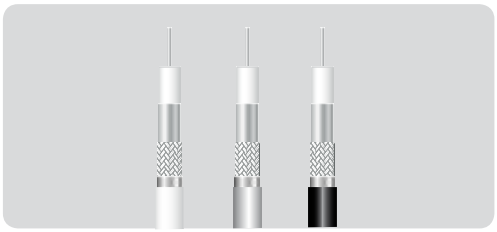
NOTE: Operational range of a 2.4 GHz transmitter is always dependent upon and may be limited by building walls, concrete walls, in-house obstacles, other transmitting sources and electrical radiation from home appliances. You should observe a minimum distance of 3 meters to other transmitters (wireless router, etc.)

Notes

Triax cables & connectors

Triax KOKA 30 and KOKA 50 cable

Triax KOKA 30 and KOKA 50 standard coaxial cable
- for TV-broadcast in-house cabling at short distances.



Technical data of KOKA 30 and KOKA 50 indoor cable

Type		KOKA 30 PVC Cu - CuSn	KOKA 50 PVC Cu - CuSn		KOKA 50 LSZH
Colour		White	White	Grey	White LSZH
Art. No.					
Coil	40 m				
Coil	100 m				
Plastic reel	100 m	150001	150151	150156	150158
Plastic reel	250 m	150002	150152	150157	150159
Plastic reel (1000 feet)	305 m				
Drum	500 m				
Geometry:					
Inner conductor	Ø mm	0.41 ± 0.02	0.80 ± 0.02		
Dielectric (foam)	Ø mm	1.90 ± 0.10	3.50 ± 0.10		
First shield (foil 1)	µ	20 % overlap	20 % overlap		
Second shield (braid)	Ø mm	16 x 3 x 0.10	16 x 3 x 0.12		
Third shield (foil 2)					
Jacket	Ø mm	3.6 ± 0.10	5.0 ± 0.10		
Material:					
Inner conductor		Copper (Cu)	Copper (Cu)		
Dielectric (foam)		PE gas injected	PE gas injected		
First shield (foil 1)		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded		
Second shield (braid)		Tinned copper wire (CuSn)	Tinned copper wire (CuSn)		
Coverage	%	> 58	> 45		
Third shield (foil 2)		no	no		
Jacket		PVC	PVC/LSZH		
Anti migration film		PE polyester tape	PE polyester tape		
Minimum bending radius (mm)					
Single		25	25		
Repeated		50	50		
Screening attenuation (SA)					
30-1000 MHz	dB	> 75	> 75		
1000-2000 MHz	dB	> 75	> 85		
2000-3000 MHZ	dB	> 75	> 80		
Atennuation:		dB/100mt	dB/100mt		
5 MHz	dB/100m	3.9	2.50		
50 MHz	dB/100m	11.40	6.10		
200 MHz	dB/100m	21.40	11.20		
470 MHz	dB/100m	33.50	17.50		
862 MHz	dB/100m	46.50	23.90		
1000 MHz	dB/100m	50.60	25.90		
1350 MHz	dB/100m	59.60	30.40		
1750 MHz	dB/100m	66.50	34.80		
2150 MHz	dB/100m	72.00	39.00		
2400 MHz	dB/100m	78.80	41.00		
3000 MHz	dB/100m	\	46.50		
Structural return loss:					
5-470 MHz	dB	> 21	> 22		
470-1000 MHz	dB	> 20	> 20		
1000-2000 MHz	dB	> 18	> 18		
2000-3000 MHz	dB	> 16	> 16		
Transfer impedance					
5-30 MHz	mΩ/m	< 15	< 15		
Electrical data					
Impedance	Ω	75 ± 3	75 ± 3		
Capacitance	pF/m	52 ± 1	52 ± 1		
Velocity ration	%	85	85		
Inner DC resistance	Ω/km	< 35	< 35		
Outer DC resistance	Ω/km	< 50	< 50		
Class - EN 50117-2-4		B	B		

Triax KOKA 6 cable

Triax KOKA 6 coaxial drop cable for indoor use
- is a low cost universal cable for TV broadcast in-house cabling.

For outdoor installations we highly recommend the version with jacket of PE, it is simply more resistant against weather conditions.

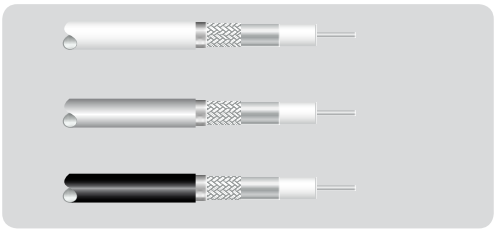
Technical data of KOKA 6 cable

Type		KOKA 6 PVC Cu - Al	KOKA 6 PVC Cu - Al	KOKA 6 PVC CCS - CuSn	KOKA 6 PE CCS - CuSn
Colour		White	Black	White	Black
Art. No.					
Coil	40 m	485674			
Coil	100 m	150120			
Plastic reel	100 m	150121			
Plastic reel	250 m	150122			
Plastic reel (1000 feet)	305 m	150129	150130	150144	150149
Drum	500 m				
Geometry:					
Inner conductor	Ø mm	1.02 mm ± 0.02		1.02 mm ± 0.02	1.02 mm ± 0.02
Dielectric (foam)	Ø mm	4.80 ± 0.10		4.80 ± 0.10	4.80 ± 0.10
First shield (foil 1)	µ	20 % overlap		20 % overlap	20 % overlap
Second shield (braid)	Ø mm	16 x 3.5 x 0.12		16 x 3.5 x 0.12	16 x 3.5 x 0.12
Third shield (foil 2)					
Jacket	Ø mm	6.8 mm ± 0.10		6.8 mm ± 0.10	6.8 mm ± 0.10
Material:					
Inner conductor		Copper (Cu)		CCS	CCS
Dielectric (foam)		PE gas injected		PE gas injected	PE gas injected
First shield (foil 1)		Al/Pet/Al tape - unbonded		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield (braid)		Aluminium alloy wire		Tinned copper wire (CuSn)	Tinned copper wire (CuSn)
Coverage	%	> 43		> 40	> 43
Third shield (foil 2)					
Jacket		PVC		PVC	PE
Anti migration film		PE polyester tape		PE polyester tape	PE polyester tape
Minimum bending radius (mm)					
Single		35		35	35
Repeated		70		70	70
Screening attenuation (SA)					
30-1000 MHz	dB	> 75		> 75	> 75
1000-2000 MHz	dB	> 65		> 70	> 70
2000-3000 MHZ	dB	> 55		> 70	> 70
Atennuation:					
5 MHz	dB/100m	1.90		2.10	2.10
50 MHz	dB/100m	5.00		5.00	5.00
200 MHz	dB/100m	9.63		9.00	9.00
470 MHz	dB/100m	13.50		13.50	13.50
862 MHz	dB/100m	20.01		20.01	20.01
1000 MHz	dB/100m	21.49		21.10	21.10
1350 MHz	dB/100m	23.50		23.00	23.00
1750 MHz	dB/100m	26.50		26.30	26.30
2150 MHz	dB/100m	31.20		30.80	30.80
2400 MHz	dB/100m	33.10		32.90	32.90
3000 MHz	dB/100m	38.00		39.00	39.00
Structural return loss:					
5-470 MHz	dB	> 21		> 21	> 21
470-1000 MHz	dB	> 20		> 20	> 20
1000-2000 MHz	dB	> 18		> 18	> 18
2000-3000 MHz	dB	> 16		> 16	> 16
Transfer impedance					
5-30 MHz	mΩ/m	< 15		< 15	< 15
Electrical data					
Impedance	Ω	75 ± 3		75 ± 3	75 ± 3
Capacitance	pF/m	52 ± 1		52 ± 1	52 ± 1
Velocity ration	%	82		84	84
Inner DC resistance	Ω/km	< 22		> 102	> 102
Outer DC resistance	Ω/km	< 65		> 60	> 60
Class - EN 50117-2-4		B		B	B

Triax RG6 cable

Triax RG 6 coaxial drop cable
- is a low cost universal cable for TV broadcast in-house cabling.

For outdoor installations we highly recommend the version with jacket of PE, it is simply more resistant against weather conditions.



Technical data of RG 6 cable

Type		RG 6 PVC CCS - Al		RG 6 PE CCS - Al	
Colour		White	Black	Black	
Art. No.					
Coil	40 m	150239		150226	
Coil	70 m	150339		150326	
Plastic reel	100 m	150038			
Plastic reel	250 m				
Plastic reel (1000 feet)	305 m	150039	150036	150026	
Drum	500 m				
Geometry:					
Inner conductor	Ø mm	1.02 mm ± 0.01		1.02 mm ± 0.01	
Dielectric (foam)	Ø mm	4.57 ± 0.05		4.57 ± 0.05	
First shield (foil 1)	µ	20 % overlap		20 % overlap	
Second shield (braid)	Ø mm	16 x 4 x 0.16		16 x 4 x 0.16	
Third shield (foil 2)					
Jacket	Ø mm	6.86 mm ± 0.10		6.86 mm ± 0.10	
Material:					
Inner conductor		CCS		CCS	
Dielectric (foam)		PE gas injected		PE gas injected	
First shield (foil 1)		Al/Pet/Al tape - unbonded		Al/Pet/Al tape - unbonded	
Second shield (braid)		Aluminium alloy wire		Aluminium alloy wire	
Coverage	%	> 60		> 60	
Third shield (foil 2)					
Jacket		PVC - UV resistant		PE black - UV resistant	
Anti migration film		PE polyester tape		PE polyester tape	
Minimum bending radius (mm)					
Single		35		35	
Repeated		70		70	
Screening attenuation (SA)					
30-1000 MHz	dB	> 75		> 75	
1000-2000 MHz	dB	> 65		> 65	
2000-3000 MHZ	dB	> 55		> 55	
Atennuation:					
5 MHz	dB/100m	2.10		2.10	
50 MHz	dB/100m	5.00		5.00	
200 MHz	dB/100m	9.00		9.00	
470 MHz	dB/100m	15.20		13.50	
862 MHz	dB/100m	19.50		20.01	
1000 MHz	dB/100m	21.50		21.10	
1350 MHz	dB/100m	24.00		23.00	
1750 MHz	dB/100m	28.40		26.30	
2150 MHz	dB/100m	30.80		30.80	
2400 MHz	dB/100m	32.90		32.90	
3000 MHz	dB/100m	39.00		39.00	
Structural return loss:					
5-470 MHz	dB	> 21		> 21	
470-1000 MHz	dB	> 20		> 20	
1000-2000 MHz	dB	>18		> 18	
2000-3000 MHz	dB	>16		> 16	
Transfer impedance					
5-30 MHz	mΩ/m	< 15		< 15	
Electrical data					
Impedance	Ω	75 ± 3		75 ± 3	
Capacitance	pF/m	52 ± 1		52 ± 1	
Velocity ration	%	5		5	
Inner DC resistance	Ω/km	> 102		> 102	
Outer DC resistance	Ω/km	60		60	
Class - EN 50117-2-4		B		B	

Triax KOKA 80 cable

Triax KOKA 80 is a premium quality cable
- for SAT-IF, SMATV and CATV without returnpath.

For outdoor installations we highly recommend the version with jacket of PE, it is simply more resistant against weather conditions.

Cables with LSZH (Low smoke zero halogen) jacket is preferable where fire resistance is a requirement.

Technical data of KOKA 80 double shielded cable

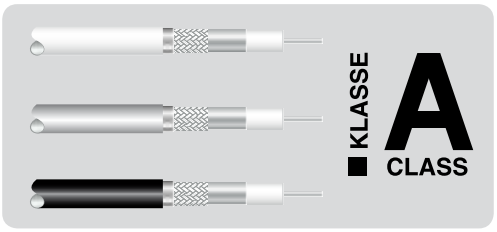
Type		KOKA 80 PVC Cu - CuSn	KOKA 80 PE Cu - CuSn	KOKA 80 LSZH
Colour		White	Black	White
Art. No.				
Coil	40 m			
Coil	100 m			
Plastic reel	100 m	150161	150166	150171
Plastic reel	250 m	150162	150167	150172
Plastic reel (1000 feet)	305 m			
Drum	500 m			150173
Geometry:				
Inner conductor	Ø mm	1.02 mm ± 0.02		1.02 mm ± 0.02
Dielectric (foam)	Ø mm	4.8 ± 0.1		4.8 ± 0.1
First shield (foil 1)	µ	9/12/9		9/12/9
Second shield (braid)	Ø mm	16 x 4 x 0.11		5.4 (16 x 4 x 0.11)
Third shield (foil 2)				
Jacket	Ø mm	6.8 mm ± 0.10		6.8 mm ± 0.10
Material:				
Inner conductor		Cu blank		Cu blank
Dielectric (foam)		PE gas injected		PE gas injected
First shield (foil 1)		Al/Pet/Al		Al/Pet/Al
Second shield (braid)		CuSn		CuSn
Coverage	%	> 40		> 40
Third shield (foil 2)				
Jacket		PVC white/PE black		LSZH
Anti migration film		PET transparent		PET transparent
Minimum bending radius (mm)				
Single		35		35
Repeated		70		70
Screening attenuation (SA)				
30-1000 MHz	dB	> 85		> 85
1000-2000 MHz	dB	> 90		> 90
2000-3000 MHZ	dB	> 75		> 75
Atennuation:				
5 MHz	dB/100m	1.50		1.50
50 MHz	dB/100m	4.60		4.60
100 MHz	dB/100m	6.30		6.30
200 MHz	dB/100m	9.00		9.00
400 MHz	dB/100m	13.3		13.3
800 MHz	dB/100m	18.8		18.8
860 MHz	dB/100m	19.6		19.6
1000 MHz	dB/100m	21.1		21.1
1600 MHz	dB/100m	26.6		26.6
2150 MHz	dB/100m	30.8		30.8
2400 MHz	dB/100m	32.8		32.8
Structural return loss:				
5-470 MHz	dB	> 23		> 23
470-1000 MHz	dB	> 20		> 20
1000-2000 MHz	dB	> 18		> 18
2000-3000 MHz	dB	> 16		> 16
Transfer impedance:				
5-30 MHz	mΩ/m	< 10		< 15
Electrical data				
Impedance	Ω	75 ± 3		75 ± 3
Capacitance	pF/m	52 ± 1		52 ± 1
Velocity ration	%	84		84
Inner DC resistance	Ω/km			
Outer DC resistance	Ω/km			
Class - EN 50117-2-4				

Triax KOKA 110 cable

Triax KOKA 110 HD is a high class universal cable - Class A

- the low attenuation, the optimised shielding and the high return loss predestine the cable for use of both Sat-IF and CATV applications.

The high screening protects your installation against disturbances by signals from the LTE band.



Technical data of KOKA 110 HD double shielded cable

Type		KOKA 110 HD PVC	KOKA 110 HD PE	KOKA 110 HD LSZH
Colour		White	Black	Grey
Art. No.				
Coil	40 m			
Coil	100 m	940502100		
Plastic reel	100 m	940502110	940502113	940502115
Plastic reel	250 m	940502210		
Plastic reel (1000 feet)	305 m			
Drum	500 m	940502500		
Geometry:				
Inner conductor	Ø mm	1.13 mm ± 0.02		1.13 mm ± 0.02
Dielectric (foam)	Ø mm	4.8 ± 0.15		4.8 ± 0.15
First shield (foil 1)	µ	25/12/25		25/12/25
Second shield (braid)	Ø mm			
Third shield (foil 2)				
Jacket	Ø mm	6.8 mm ± 0.10		6.8 mm ± 0.10
Material:				
Inner conductor		Cu blank		Cu blank
Dielectric (foam)		PE gas injected		PE gas injected
First shield (foil 1)		Al/Pet/copolymer bonded		Al/Pet bonded
Second shield (braid)		CuSn		CuSn
Coverage	%	> 78		> 78
Third shield (foil 2)				
Jacket		PVC white/PE black		LSZH
Anti migration film				
Minimum bending radius (mm)				
Single		35		35
Repeated		70		70
Screening attenuation (SA)				
30-1000 MHz	dB	> 100-110		> 100-110
1000-2000 MHz	dB	> 110		> 110
2000-3000 MHZ	dB	> 110		> 110
Atennuation:				
5 MHz	dB/100m	1.40		1.40
50 MHz	dB/100m	4.00		4.00
100 MHz	dB/100m	5.70		5.70
200 MHz	dB/100m	8.10		8.10
400 MHz	dB/100m	11.7		11.7
800 MHz	dB/100m	16.8		16.8
860 MHz	dB/100m	17.7		17.7
1000 MHz	dB/100m	19.0		19.0
1600 MHz	dB/100m	24.6		24.6
2150 MHz	dB/100m	29.0		29.0
2400 MHz	dB/100m	30.7		30.7
Structural return loss:				
5-470 MHz	dB	> 35		> 35
470-1000 MHz	dB	> 28		> 28
1000-2000 MHz	dB	> 24		> 24
2000-3000 MHz	dB			
Transfer impedance:				
5-30 MHz	mΩ/m	< 4		< 4
Electrical data				
Impedance	Ω	75 ± 3		75 ± 3
Capacitance	pF/m	52 ± 3		52 ± 1
Velocity ration	%	84		84
Inner DC resistance	Ω/km	17.5		17.5
Outer DC resistance	Ω/km	11.5		11.5
Class - EN 50117-2 indoor		A		A

Triax RG59 cable

Triax RG 59 coaxial drop cable for indoor use

- is a low cost universal cable for TV broadcast in-house cabling.

For outdoor installations we highly recommend the version with jacket of PE, it is simply more resistant against weather conditions.

Technical data of RG59 double shielded cable

Type		RG59 PVC Cu - Al	RG59 PVC CCS - Al
Colour		White	White
Art. No.			
Coil	40 m		
Coil	100 m		
Plastic reel	100 m		
Plastic reel	250 m		
Plastic reel (1000 feet)	305 m	150071	150072
Drum	500 m		
Geometry:			
Inner conductor	Ø mm	0.81 ± 0.01	
Dielectric (foam)	Ø mm	3.66 ± 0.01	
First shield (foil 1)	µ		
Second shield (braid)	Ø mm	16 x 5 x 0.12	
Third shield (foil 2)			
Jacket	Ø mm	6.1 ± 0.15	
Material:			
Inner conductor		Copper (Cu)	CCS
Dielectric (foam)		PE	
First shield (foil 1)		Al/Pet bonded	
Second shield (braid)		Al alloy wire	
Coverage	%	> 67	
Third shield (foil 2)			
Jacket		PVC white	
Anti migration film			
Minimum bending radius (mm)			
Single		30	
Repeated		60	
Screening attenuation (SA)			
30-1000 MHz	dB	> 85	
1000-2000 MHz	dB	> 85	
2000-3000 MHZ	dB	> 85	
Atennuation:			
5 MHz	dB/100m		
50 MHz	dB/100m	5.9	6.0
100 MHz	dB/100m		
200 MHz	dB/100m	10.8	11.6
400 MHz	dB/100m		
800 MHz	dB/100m	23.0	23.7
860 MHz	dB/100m		
1000 MHz	dB/100m	26.0	26.6
1600 MHz	dB/100m		
2150 MHz	dB/100m	33.0	34.0
2400 MHz	dB/100m	36.0	38.0
Structural return loss:			
5-470 MHz	dB	> 24	> 23
470-1000 MHz	dB	> 24	> 23
1000-2000 MHz	dB	> 20	> 20
2000-3000 MHz	dB		
Transfer impedance:			
5-30 MHz	MHz	< 15	
Electrical data			
Impedance	Ω	75 ± 2	
Capacitance	pF/m	53	
Velocity ration	%	82	
Inner DC resistance	Ω/km		
Outer DC resistance	Ω/km		
Class - EN 50117-2-4			

Triax RG11 cable

Triax RG 11 coaxial drop cable

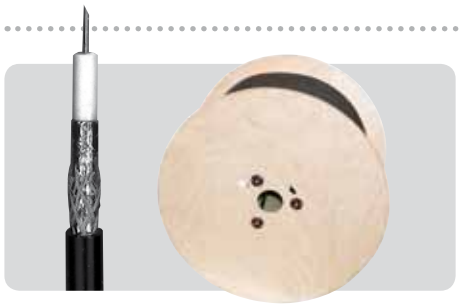
- is a universal cable for TV broadcast cabling.
For outdoor installations we highly recommend the version with jacket of PE, it issimply more resistant against weather conditions.
Cables with LSZH (Low smoke zero halogen) jacket is preferable where fire resistance is a requirement.

KLASSE A CLASS

Technical data of RG11 cable

Type		RG11 PE Cu - CuSn	RG11 PE CCS - CuSn	RG11 - LSZH
Colour		Black	Black	White
Art. No.				
Coil	40 m			
Coil	100 m			
Plastic reel	100 m			
Plastic reel	250 m			
Plastic reel (1000 feet)	305 m			
Drum	500 m	150115	150116	150099
Geometry:				
Inner conductor	Ø mm	1.63 mm ± 0.02		1.70
Dielectric (foam)	Ø mm	7.2 ± 0.15		7.20
First shield (foil 1)	µ	9/23/9		
Second shield (braid)	Ø mm	16 x 3.5 x 0.12		CuSn
Third shield (foil 2)				
Jacket	Ø mm	10.3 mm ± 0.10		10.25
Material:				
Inner conductor		Cu	CCS	Cu blank
Dielectric (foam)		PE gas injected		PE foamed
First shield (foil 1)		Al/Pe/Al - unbonded		Al/Pet/Al
Second shield (braid)		Al/Pet		Cu blank
Coverage	%	> 65		> 56
Third shield (foil 2)				
Jacket		PE black		PE
Anti migration film				
Minimum bending radius (mm)				
Single				100
Repeated				120
Screening attenuation (SA)				
30-1000 MHz	dB	> 85		> 90
1000-2000 MHz	dB	> 80		> 85
2000-3000 MHZ	dB	> 75		> 80
Atennuation:				
5 MHz	dB/100m	0.70		0.80
50 MHz	dB/100m	2.60		2.60
100 MHz	dB/100m	3.80		
200 MHz	dB/100m	5.40		5.50
400 MHz	dB/100m	8.10		8.90
800 MHz	dB/100m	11.5		11.4
860 MHz	dB/100m	12.0		
1000 MHz	dB/100m	13.0		13.5
1600 MHz	dB/100m	16.5		18.0
2150 MHz	dB/100m	19.2		
2400 MHz	dB/100m	20.3		22.7
Structural return loss:				
5-470 MHz	dB	> 30		> 30
470-1000 MHz	dB	> 28		> 25
1000-2000 MHz	dB	> 26		> 20
2000-3000 MHz	dB			
Transfer impedance:				
5-30 MHz	MHz	< 5		< 30
Electrical data				
Impedance	Ω	75 ± 3		75 ± 3
Capacitance	pF/m	53 ± 1		53
Velocity ration	%	84		84
Inner DC resistance	Ω/km	8		< 7.8
Outer DC resistance	Ω/km	9		< 9.7
Class - EN 50117-2		A		

Triax 110KU cable



KLASSE A CLASS

Triax 110KU coaxial earth cable

- is a durable and effectively shielded, quality cables offering high stability in many years to come. With meter marking and physical foam dielectric. All cables meet European standard EN 500117. Outdoor cables must be unbroken, and cables under ground must be a least 45 cm below the surface.

Technical data of 110KU outdoor cable

Type		110 KU Earth cable
Colour		Black
Art. No.		
Coil	40 m	
Coil	100 m	150030
Plastic reel	100 m	
Plastic reel	250 m	
Plastic reel (1000 feet)	305 m	
Drum	500 m	150031
Geometry:		
Inner conductor	Ø mm	1.12
Dielectric (foam)	Ø mm	4.90
First shield (foil 1)	µ	
Second shield (braid)	Ø mm	
Third shield (foil 2)		
Jacket	Ø mm	7.30
Material:		
Inner conductor		Copper (Cu)
Dielectric (foam)		PE
First shield (foil 1)		Cu foil
Second shield (braid)		Cu blank
Coverage	%	> 66
Third shield (foil 2)		
Jacket		PE
Anti migration film		
Minimum bending radius (mm)		
Single		35
Repeated		70
Screening attenuation (SA)		
30-1000 MHz	dB	> 90
1000-2000 MHz	dB	> 85
2000-3000 MHZ	dB	> 80
Atennuation:		
5 MHz	dB/100m	1.30
50 MHz	dB/100m	4.00
100 MHz	dB/100m	5.70
200 MHz	dB/100m	8.10
400 MHz	dB/100m	
800 MHz	dB/100m	16.6
860 MHz	dB/100m	
1000 MHz	dB/100m	18.2
1750 MHz	dB/100m	25.1
2150 MHz	dB/100m	
2400 MHz	dB/100m	29.8
3000 MHz	dB/100m	33.7
Structural return loss:		
5-470 MHz	dB	> 28
470-1000 MHz	dB	> 26
1000-2000 MHz	dB	> 23
2000-3000 MHz	dB	> 20
Transfer impedance:		
5-30 MHz	MHz	
Electrical data		
Impedance	Ω	75 ± 3
Capacitance	pF/m	53
Velocity ration	%	85
Inner DC resistance	Ω/km	< 18.1
Outer DC resistance	Ω/km	< 10
Class - EN 50117-2		A+

Triax multi colour cable

Multi cables for networks

Triple shielded RG 6 multi cables where individual cable colours can be used through the whole system to facilitate proper connection.

Technical data of multi colour indoor cable

Type Colour		Multi 4 cable Triple shielded Black - outdoor	Multi 5 cable Triple shielded White - indoor	Multi 9 cable Triple shielded Black - outdoor
Art. No.				
Coil	40 m			
Coil	100 m			
Plastic reel	100 m			
Drum	50 m			150078
Drum	100 m	150074	150075	150079
Drum	500 m			
Geometry:				
Inner conductor	Ø mm	1.02 mm ± 0.02	1.02 mm ± 0.02	1.02 mm ± 0.02
Dielectric (foam)	Ø mm	4.8 ± 0.15	4.8 ± 0.15	4.6 ± 0.15
First shield (foil 1)	µ			
Second shield (braid)	Ø mm			
Third shield (foil 2)				
Jacket	Ø mm	19.0 mm ± 0.30	20.5 mm ± 0.40	25.0 mm ± 0.40
Material:				
Inner conductor		Cu	Cu	Cu
Dielectric (foam)		PE foamed	PE foamed	PE foamed
First shield (foil 1)		Al/Pet/Al	Al/Pet/Al	Al/Pet/Al
Second shield (braid)		CuSn	CuSn	CuSn
Coverage	%	> 40	> 40	> 40
Third shield (foil 2)				
Jacket		PE black	PE black	PE black
Anti migration film				
Minimum bending radius (mm)				
Single	mm	100	100	100
Repeated				
Screening attenuation (SA)				
30-1000 MHz	dB			
1000-2000 MHz	dB			
2000-3000 MHZ	dB			
Atennuation:				
5 MHz	dB/100m	1.60	1.50	1.50
50 MHz	dB/100m	4.60	4.60	4.60
100 MHz	dB/100m			
200 MHz	dB/100m	8.60	9.00	9.00
400 MHz	dB/100m	13.5	14.0	14.0
800 MHz	dB/100m	18.0	18.8	18.8
860 MHz	dB/100m			
1000 MHz	dB/100m	20.3	21.1	21.1
1600 MHz	dB/100m	27.5	27.5	27.5
2150 MHz	dB/100m	30.0	30.0	30.0
2400 MHz	dB/100m	32.9	32.9	32.9
Structural return loss:				
5-470 MHz	dB	> 26	> 30	> 30
470-1000 MHz	dB	> 23	> 25	> 25
1000-2000 MHz	dB	> 18	> 20	> 20
2000-3000 MHz	dB			
Transfer impedance:				
5-30 MHz	mΩ/m	< 15	< 15	< 15
Electrical data				
Impedance	Ω	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52 ± 1	52 ± 1	52 ± 1
Velocity ration	%	85	85	85
Inner DC resistance	Ω/km	< 22.5	< 22.5	< 22.5
Outer DC resistance	Ω/km	< 25.0	< 25.0	< 25.0
Class - EN 50117-2				

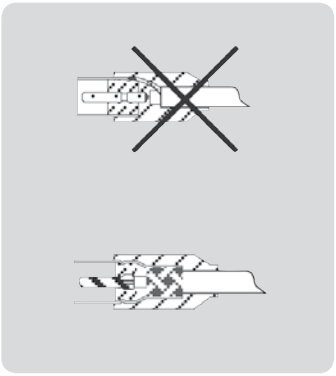
Double screen fly leads

Fly leads for TV & radio

75 Ohm white double-screened cable with coax IEC male and female connectors.
The connectors are crimped to ensure screening better than 70 dB.

Technical data of quality double shielded fly leads

TYPE Art. No.		RF 1.5 IEC male/female 153400	RF 2.5 IEC male/female 153401	RF 5.0 IEC male/female 153402	RF 7.5 IEC male/female 153403	RF 10.0 IEC male/female 153404
Inner conductor	mm	0.8	0.8	0.8	0.8	0.8
Dielectric		PE	PE	PE	PE	PE
Outer sheath	mm	5.8	5.8	5.8	5.8	5.8
Min. bending radius	mm	60	60	60	60	60
Colour sheath		White	White	White	White	White
Attenuation at 100 m 50 MHz 2150 MHz	 dB dB	 5.5 42.0	 5.5 42.0	 5.5 42.0	 5.5 42.0	 5.5 42.0
Standards		CE	CE	CE	CE	CE
Impedance	Ohm	75	75	75	75	75
Weight	kg					
Length	cm	150	250	500	750	1000
Remarks		Single pieces in plastic bag	Single pieces in plastic bag	Single pieces in plastic bag	Single pieces in plastic bag	Single pieces in plastic bag



Cable stand Art. No. 150110

Triax HDMI, high and standard speed cables
- with Ethernet

- Professional grade, high quality 3D HDMI cable fully shielded for a perfect high definition connection
- High speed HDMI with Ethernet (1.5, 2, 3, 5m)
- Standard speed HDMI with Ethernet (10, 15, 20m)
- 24K gold plated connectors, 4K resolution support
- Compatible with all HD resolutions including 720p, 1080i and 1080
- For connecting HD set top boxes, DVD players, games consoles and all other HDMI AV equipment

Technical data HDMI cable

TYPE		HDMI high speed cable with Ethernet	HDMI standard speed cable with Ethernet
Art. No. length	1.5 m	370715	153410
	2.0 m	370716/ 153420	
	3.0 m	370717	
	5.0 m	370718	
	10.0 m		370719
	15.0 m		370720
	20.0 m		370721
Ferrite		2	2
Signal pairs			
- conductor		Tinned copper	Tinned copper
- conductor size	AWG	28	28
- insulation material		Foamed PE	Foamed PE
- Insulation core colour		White/Green	White/Green
		White/Brown	White/Brown
		White/Blue	White/Blue
		White/Red	White/Red
		White/Green	White/Green
- drain wire		Tinned Copper	Tinned Copper
- drain wire size	AWG	28	28/26
- shield		AL/Mylar/Mylar	AL/Mylar/Mylar
Signal wire			
- conductor		Tinned copper	Tinned copper
- conductor size	AWG	28	28/26
- insulation material		HDPE	HDPE
- Insulation core colour		White	White
		Green	Green
		Orange	Orange
		Yellow	Yellow
		Red	Red
		Purple	Purple
Outer shield			
- conductor	shield 1	Aluminium mylar	Aluminium mylar
- conductor size	shield 2	Tinned copper (braiding)	Tinned copper (braiding)
- overall diameter	Ø mm	7.3	7.3
- material		PVC	PVC
Electrical data			
Differential impedance	Ohm	100 (± 10%)	100 (± 10%)
Max differential delay	ns/m	5.05	5.05
Max intra - pair skew	ps	151	151
Far-end crosstalk (@ 1-5000 MHz)	dB	- 26	- 26
Connector			
Pin		19	19
Metal shell		Parl chrome plated	Parl chrome plated
Connector impedance	Ohm	100 (± 15%)	100 (± 15%)

Tools for professional cable installation

Tools for stripping, crimping, compressing and mounting

The most efficient and stable connection between cable and connector is obtained, when crimping is done in one, swift operation (no re-crimping) and with a tool in the exact, right size. Triax's range of F-connector tools is easy to use and reduces stripping, crimping and mounting to a few, quick and precise operations.

Art. No. 153607
CRP 106H crimp tool
- is for .324" (8.2 mm) and .360" (9.2 mm) one-piece F-connectors and EPA typically used with RG 6 and KOKA 50/80/110/125 cables

Art. No. 153609
CRP 106F crimp tool
- is for .324" (8.2 mm) and .475" (11.9 mm) one-piece F-connectors typically used with RG 11 cables

Art. No. 360919
Pocket compression tool

Art. No. 360920
Compression tool universal:
is used for compression type F-connectors for outdoor use and ensures waterresistant connections

Art. No. 153633
Mounting tool for F-connectors:
The plastic handle gives you a good grip of the connector and is more convenient to work with than the metal types of mounting tools. Especially for one-piece and compression type of F-connectors.

Art. No. 153634
Cable support tool:
While mounting the connector this unique rubber tool gives you a good grip of the cable, and with no risk of damaging the cable. Support cables with dimensions 3-12 mm.

Art. No. 153602 - RG6/RG59 cable

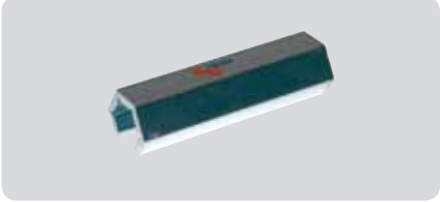
Art. No. 153601 - RG11 cable

Art. No. 153637 - RG 6/59 - KOKA 6/80/110

Stripping tools:
With rotary cable strippers, preparation of cable is reduced to a single operation resulting in precise stripping in the dimensions matching exactly with the connector. The non-expensive stripping tools are pre-adjusted for RG 6 and RG 11 cables respectively.

Art. No. 153636
Cable cutter tool:
Gives you a nice clean cut of all kind of Coax cables

Art. No. 360921
Mounting T-tool:
With female thread. Efficient for two-piece and twist-on types of F-connectors.



Art. No. 153608
TRIAX F-key:
Indispensable to anyone working with F-connectors

High quality range of F-connectors
- for making the professional installation of your TV system

F-connectors for drop cables

F-compression connectors

TYPE	Packing	F-compress 3.8/5.2	F-compress 3.9/6.4	F-compression CX3 - 5.1	F-compress 5.1/6.8	F-compress 4.9/6.8	F-compress 7.5/11.5
Cable type		KOKA 50	RG59	KOKA 80/6	KOKA 100/80/6	RG6	RG11
Art. No.	1/25 pcs						
	50 pcs						
	100 pcs	153225	153228	153221	153224	360913	153227
Tool		360919/360920	360919/360920	153603	360919/360920		360919/360920

F-crimp connectors

TYPE	Packing	F-crimp 3.7/6.4	F-crimp 5.1/8.4	F-crimp 5.1/8.4	F-crimp 4.9/8.4	F-crimp 5.1/8.8	F-crimp RG11
Cable type		KOKA 50	KOKA 80/6	KOKA 80/6	RG6	KOKA/110 KU	RG11
Art. No.	1/25 pcs						
	50 pcs						153231/153232
	100 pcs	153204/153214	153203	153213	153212	153211/153217	
Tool		153607	153607	153607	153607	153607	153609

F-push-on self install connectors

TYPE	Packing	F-push on 5.1/6.8	F-self-install 5.1 - blue
Cable type		KOKA 80/6	KOKA 80/6
Art. No.	1/25 pcs		
	50 pcs		
	100 pcs	153250	153264
Tool		no tool	no tool

High quality range of F-connectors
- for making the professional installation of your TV system

Tools for stripping, crimping and mounting

The most efficient and stable connection between cable and connector is obtained, when crimping is done in one, swift operation (no re-crimping) and with a tool in the exact, right size. Triax's range of F-connector tools is easy to use and reduces stripping, crimping and mounting to a few, quick and precise operations.

F - twist on connectors

TYPE	Packing	F-twist 1.9/3.6	F-twist 3.5/5.0	F-twist 3.5/5.0	F-twist 4.9/6.8
Cable type		KOKA 30	KOKA 50	KOKA 50	KOKA 80/6
Art. No.	1/25 pcs				
	50 pcs				
	100 pcs	153049	153048	153072	153053
Tool		no tool	no tool	no tool	no tool




F - twist on connectors

TYPE	Packing	F-twist 4.9/6.8	F-twist RG 6	F-twist 4.9/7.3	F-twist 4.9/7.3
Cable type		KOKA 80/6		110 KU	110 KU
Art. No.	1/25 pcs				
	50 pcs				
	100 pcs	153073	153078	153052	153074
Tool		no tool	no tool	no tool	no tool

IEC coax connectors

TYPE	Packing	KOSWI IEC angle male	KOKWI IEC angle female	KOS IEC male	KOS IEC female	RZ 20 male	RZ 20 female
Cable type							
Art. No.	1 pcs						
Single bag	50 pcs	153110	153111	153120	153121	153033	153038
	100 pcs						




High quality range of adaptors
- for the professional installation of TV systems

Simplicity and support are key words for us.
Our products offer more in performance and simplifying logic,
and in our support customers have easy access to understandable,
useful and competent answers - just ask...

F <> IEC adaptors

TYPE	Packing	IEC male to F-male	IEC female to F-male	IEC male to F-female	IEC female to F-male	IEC male to F-female	IEC female to F-female
Art. No.	1 pcs	153610	153611	153613	153614	153550	153551
	50 pcs						
	100 pcs						
Tool							

F <> F adaptors

TYPE	Packing	F-female to F-female	F-female to F-male	F-female to F-male w.nuts	F-male to F-male	F-female to F-male quick	F-female to F-female
Art. No.	5 pcs			153593		153612	
	50 pcs						
	100 pcs	153076	153592		153596		153095
Tool							

F-terminator, RF-terminator and grounding blocks

TYPE	Packing	F - R75 terminator	R75 - 75Ω terminator
Art. No.	1 pcs		
	5 pcs	153054	342503
	100 pcs		
Tool			

Triax connection cables

Connections cable

Type		USB cable A to B	USB cable A to B	RF cable	RF cable
Art. No.	1 pcs	453160	453161	452090	452090
Lenght	cm	50	100	20	20
Remarks		A to B connection TDH 701 sub	A to B connection TDH 701 sub	RF cable with F quick connectors	RF cable with F quick connectors




Connections cable

Type		Video/audio 150 cm	Decoder cable 150 cm	Video/audio 150 cm	Video/audio 200 cm
Art. No.	1 pcs	300745	300742	300743	300746
Lenght	cm	100		20	35
Remarks		150 cm 15 pol D-sub and 3 phone male	150 cm 15 pol D-sub to Scart	150 cm cable with 3 x phone male / Scart	200 cm cable with 3 x phone male / Scart




Connections cable

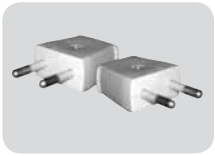
Type		Video/audio for Nicam	CHF 125 A/V + Data	TNH 020 RF cable	TNH 021 RF cable
Art. No.	1 pcs	300738	324904	324905	324905
Lenght	cm	100		20	20
Remarks		Modulator cable Scart / 3phono (TCM08)	Audio/Video and data cable	RF cable with F-angle quick male/male con	RF cable with F-straight quick male/female con




Power cable and electricity articles
- Triax isolator (DC blocker) and assembly kit

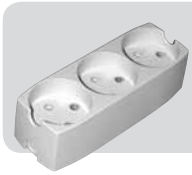
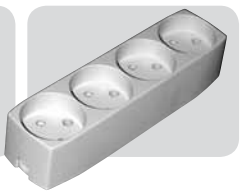
Power cable and power plug

TYPE		2 x 0.75 ❑ white PKLF power cable		Male power plug Type 12 - white	Female power plug Type 22 - white
Art. No.				153300	153310
Plastic drum	100 m	152004			
Remarks		**with marking**		with pull relief	with pull relief


Power outlet point

TYPE		2-way point Type 43 - grey	3-way point Type 74 - grey	4-way point Type 71 - grey
Art. No.	1 pcs	153320	153322	153340
Remarks			for 3 round plugs - with pull relief	for 4 round plugs - with pull relief

Ground isolator (DC blocker)

TYPE		Ground Isolator - RF
Art. No.	1 pcs	153572
Insertion loss 5-470 MHz	dB	1.0
Insertion loss 470-1000 MHz	dB	1.5

Cable-Con cable assembly kit

TYPE		CC-SP 01 cable assembly kit	CC-SP 02 cable assembly kit
Art. No.	1 pcs	153540	153542
Cable diameter	mm	7	10
Remarks		Complete set with coupling and crimp flex	Complete set with coupling and crimp flex

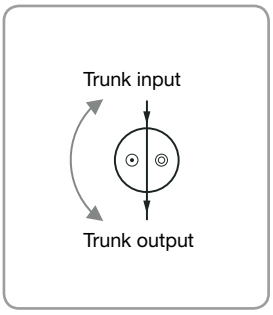

Triax outlets

Triax outlets

Attenuation in outlets

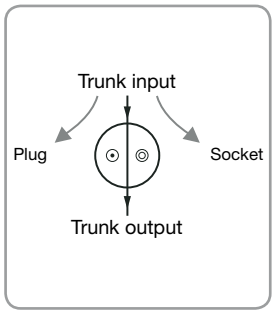
Throughpass attenuation

Attenuation between trunk input and trunk output



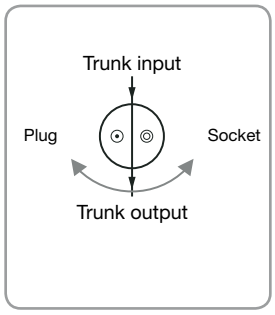
Connection attenuation

Attenuation between trunk input and plug or socket output



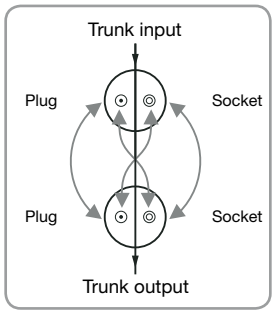
Internal coupling attenuation

Attenuation between plug output and socket output



EN coupling attenuation

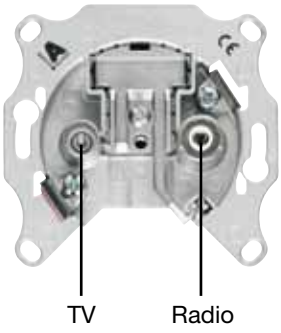
(2 outlet method)
Attenuation between the outputs of two antenna sockets



Socket types

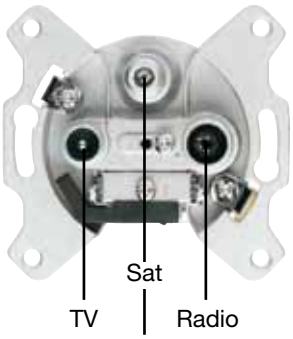
Double antenna outlet sockets

Universal sockets, suitable for satellite, TERestrial and broadband cable/CATV



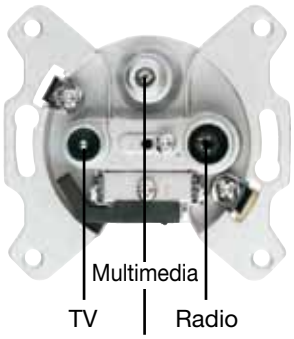
Triple antenna outlet sockets - sat

For individual satellite and SMATV installations.



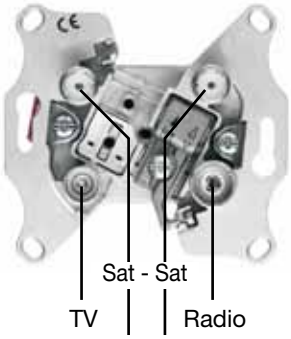
Triple antenna outlet sockets - multimedia

For individual multimedia and SMATV installations.

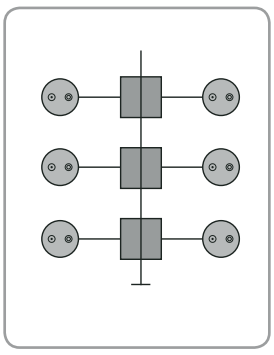


Quadro antenna outlet sockets

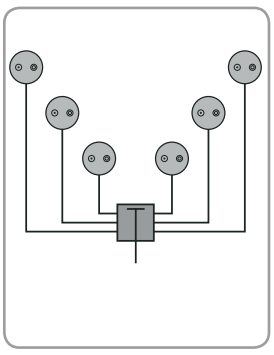
For use in some multiswitch installations
(star or tree structure)



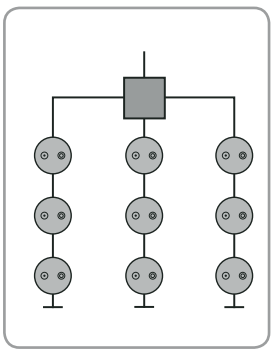
Network structures



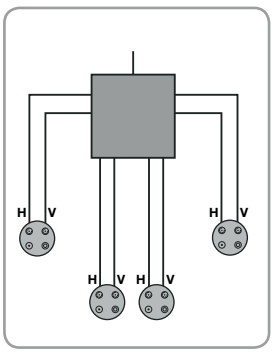
Floor star



Star network



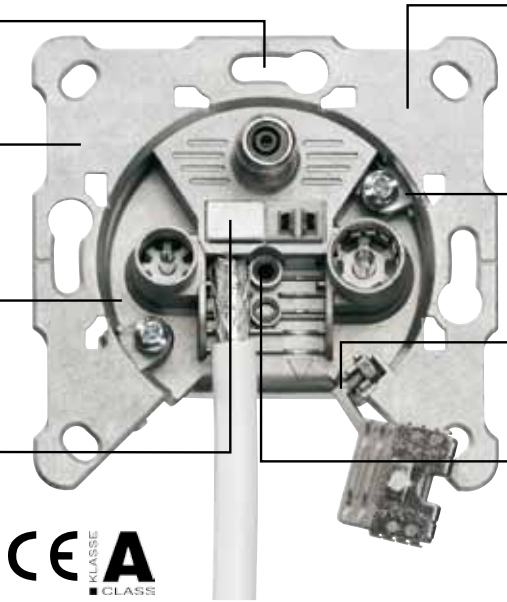
Tree network



Tree and star network

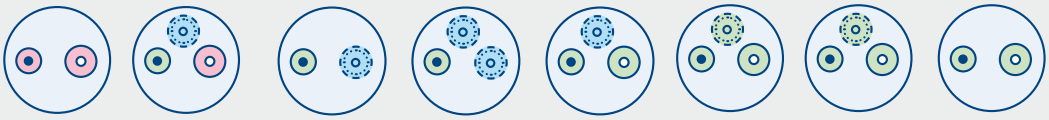
The advantages of the new antenna outlet sockets generation:

- **Third keyhole –** Improved fixing in hollow-wall flush-mounted socket box.
- **New retaining ring geometry –** Universal for renowned ranges of switches. For easy aligning and improved mold closure.
- **Reduced depth and diameter** Easy to insert into flush-mounted socket box.
- **Push-lock terminal –** Rapid mounting. Firmly secured. Released at the press of a button.

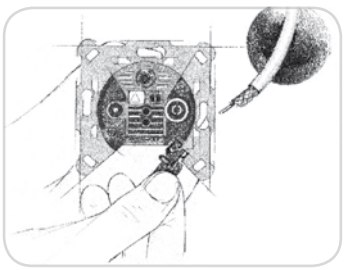


- **Waste edges at frame corners –** Well equipped for ranges of round switches (Brake off if necessary).
- **Novel claw fastening and close-fitting claw form –** Trouble-free installation in and removal from flush-mounted socket box also with cordless screwdriver (PZ 1-bolt).
- **Lockable hinged clamp –** Comfortable in all mounting positions.
- **Inner conductor terminal in box centre** Facilitates the connection of short cable ends when socket boxes are replaced.

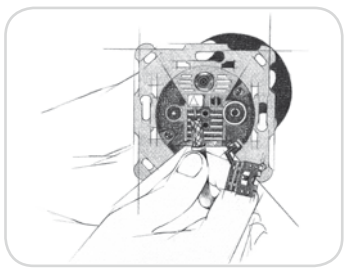
Range overview – the new socket inserts for size-55 flush-mounting

Type	Universal		Sat			CATV/MATV		
Connectors IEC male tv IEC female radio F female sat/data								
Antenna outlet type	Super wide-band	Sat/CATV combination	Sat filter	TWIN sat	Sat filter	CATV modem	CATV modem	CATV filter (DC/AC isolated)
Single type	EDU 04F GAD 204F	EDA 302F	EDS 01	EDS 322	FS 302 F	EDM 306	EDM 304	EDC 01 NL
Pass-through type	GEDU 10, 15, 20 GAD 210, 214, 220	GDA 313 F GAD 313 F	GDS 08, 11			GDM 312 GDM 316	GDM 310 GDM 315	
Frequency ranges Tv Radio Sat/data								
Terminal equipment	Tv-set FM radio DVB-C/-T receiver	Sat receiver Tv-set FM radio DVB-C/-T receiver	Sat receiver DVB-T receive Tv-set	Twin sat receiver DVB-T receiver Tv-set	Sat receiver DVB-T receive Tv-set	Tv-set FM radio Cable modem DVB-C receiver	Tv-set FM radio Cable modem DVB-C receiver	Tv-set FM radio

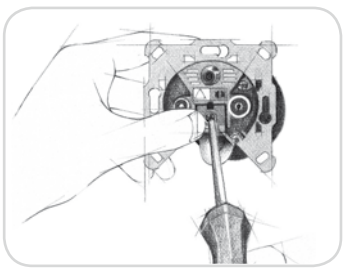
Mounting in detail



Open
Opened simply. Use a screwdriver to lever out the hinged clamp at the recess.
In order to allow free mounting position tilt hinged clamp into fixing position.



Insert
The new technology for inner conductor contacting. Simply insert the stripped coaxial cable into the spring contact until it stops – it is held securely.
In order to remove the cable press the button and remove the cable.

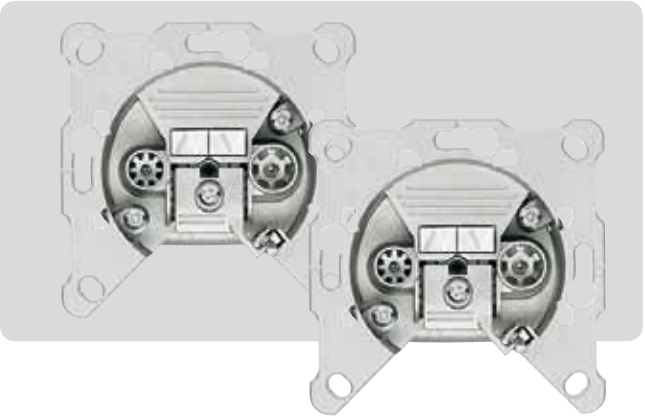


Close
Close the hinged clamp and screw it tight. Insert the socket body, align it using the straight edges and anchor it by tightening the claw screws.
PZ 1 screws for cordless screwdriver.

Universal antenna outlets

2-outlet super wide-band sockets

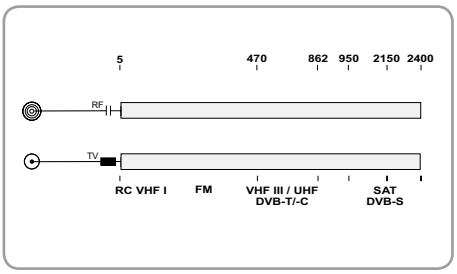
- Designed for CATV (cable TV) and Sat IF distribution.
- Manifold connection alternatives for the terminal equipment.
- Continuous CATV frequency ranges with reverse channel capability.
- Advantage: Flexible in application and storage.



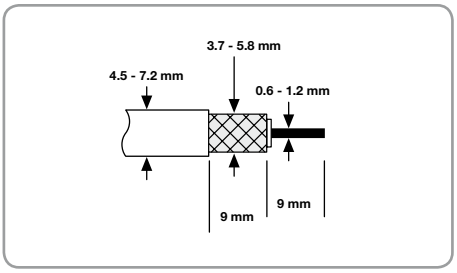
Technical data

Type		EDU 04 F	GEDU 10	GEDU 15	GEDU 20
Art. No.		306111	306211	306212	306213
Design		Single socket		Pass-through-socket	
Attenuation	**Frequency range**				
IN - OUT (pass-through)	5 to 2150 (2400) MHz	-	2.5 dB	1.0 dB	0.8 dB
IN - TV (IEC male)	5 to 2150 (2400) MHz	4.0 dB	10 dB	15 dB	20 dB
IN - RF (IEC female)	5 to 2150 (2400) MHz	4.0 dB	10 dB	15 dB	20 dB
Isolation					
OUT - TV/RF	VHF, UHF / SAT	-	35/20 dB	38/30 dB	40/30 dB
TV - RF	VHF, UHF / SAT	20/20 dB	38/30 dB	24/24 dB	24/22 dB
DC circuit	13/18V, 22 kHz; max. +24V/0.5 A	TV-IN (IEC-connector)	no	no	no

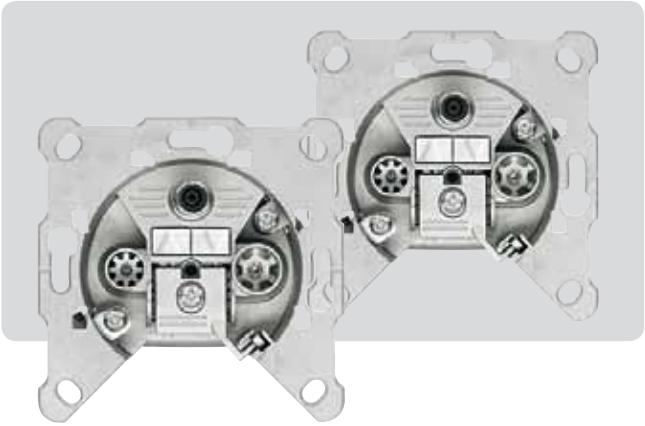
- Wideband socket box with Sat IF range
- Continuous frequency ranges 5 to 2,400 MHz on both outlets (universal socket box)
- **Advantage:** Upgrading or retrofitting of the wideband house network with direct satellite reception always possible



Recommended cable dimensions



Universal antenna outlets



3-outlet SAT/CATV combination sockets

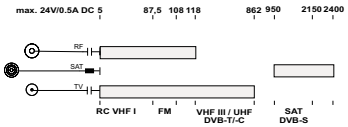
- Designed for CATV (cable TV) and Sat IF distribution.
- Manifold connection alternatives for the terminal equipment.
- Continuous CATV frequency ranges with reverse channel capability.
- Advantage: Flexible in application and storage.

Technical data

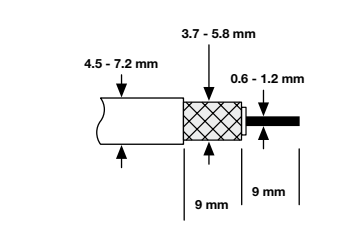
Type		EDA 302 F	GDA 313 F
Art. No.		306121	306221
Design		Single socket	Pass-through-socket*
Attenuation	**Frequency range**		
IN - OUT (pass-through)	5 to 2150 (2400) MHz	-	1.0-2.0 (2.8) dB
IN - TV (IEC male)	5 to 862 MHz	2.5 dB	13 dB
IN - RF (IEC female)	5 to 118 MHz	6.5 dB	17 dB
IN - SAT (F female)	950 - 2150 (2400) MHz	2.2 dB	12 (13.5) dB
Isolation			
OUT - TV/RF	VHF, UHF	-	28 dB
OUT - SAT	SAT	-	18 dB
TV - SAT	VHF, UHF / SAT	20/20 dB	20/20 dB
RF- SAT	VHF / SAT	35/30 dB	35/30 dB
TV - RF	VHF, UHF	20 dB	20 dB
DC circuit	13/18V, 22 kHz; max. +24V/0.5 A	SAT-IN (F socket)	SAT -> IN; IN-OUT - circuit

- Sat IF socket box with reverse-channel capable wide-band MATV/CATV outlets (splitter-filter combination)
- GDA 313 F pass-through-socket with diode-decoupled DC circuit (13/18V, 22 kHz) for single-cable solution and satellite sub-distributions* in the residential unit
- **Advantage:** In addition to Sat IF operation, connection options to CATV cable network or terrestrial antenna systems (all-round antenna outlet socket).

***Note:**
Only one sat receiver can be operated actively at the socket box chain in case of a cascade of pass-through sockets in multi-switch operation.



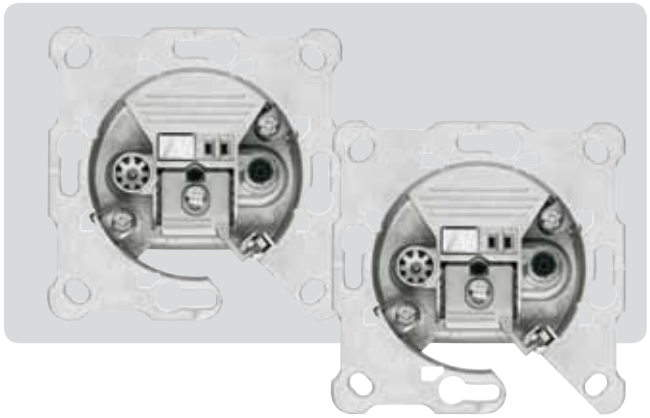
Recommended cable dimensions



SAT antenna outlets

2-outlet SAT filter sockets

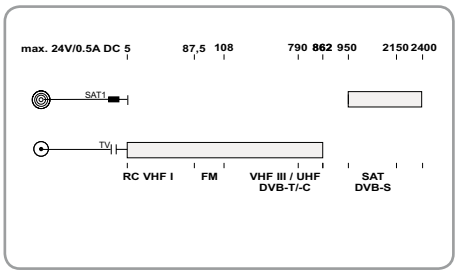
- Special SAT antenna outlets for sat IF distribution networks (multi-switch systems or single-cable solution) as well as single satellite systems.
- F-connector for SAT IF range. Additional connection of terrestrial receiving devices such as DVB-T receiver possible via IEC connectors.
- Selective splitting of the frequency bands via filters with extremely low distribution operating loss.
- Advantages:
  Direct F-connection for SAT receiver. Cost-efficient.



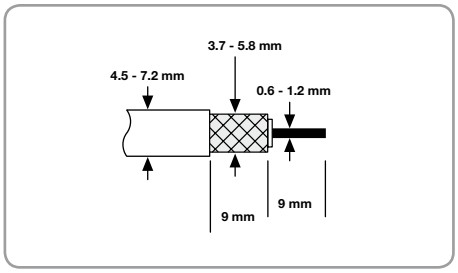
Technical data

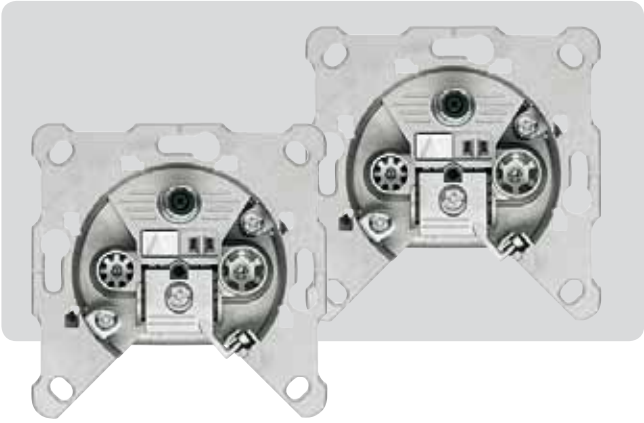
Type		EDS 01 F	GDS 08 F	GDS 11 F
Art. No.		306131	306231	306232
Design		Single socket	Pass-through-socket*	
Attenuation	**Frequency range**			
IN - OUT	5 - 2150 (2400) MHz	-	2.4 - 3.2 (4.0) dB	1.0 - 1.8 (2.6) dB
IN - TV (IEC male)	5 - 862 MHz	1.0 dB	8.0 dB	11 dB
IN - SAT (F female)	950 - 2150 (2400) MHz	1.2 dB	8.0 dB	11.5 dB
Isolation				
OUT - TV/SAT	VHF, UHF / SAT	-	30/20 dB	30/20 dB
TV - RF	VHF, UHF / SAT	25/18 dB	25/18 dB	25/18 dB
DC circuit	13/18V, 22 kHz; max. +24V/0.5 A	SAT-IN (F socket)	SAT -> IN; IN-OUT - circuit	

- Conceived specially for SAT IF systems with optional DVB-T operation



Recommended cable dimensions





3-outlet SAT filter sockets

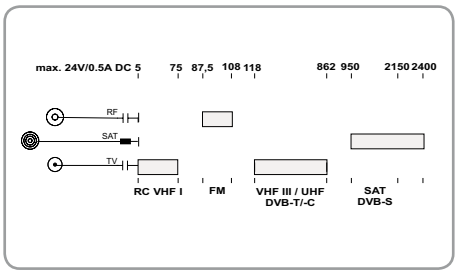
- Special SAT antenna outlets for sat IF distribution networks (multi-switch systems or single-cable solution) as well as single satellite systems.
- F-connector for SAT IF range. Additional connection of terrestrial receiving devices such as DVB-T receiver possible via IEC connectors.
- Selective splitting of the frequency bands via filters with extremely low distribution operating loss.
- Advantages:
  Direct F-connection for SAT receiver. Cost-efficient.

Technical data

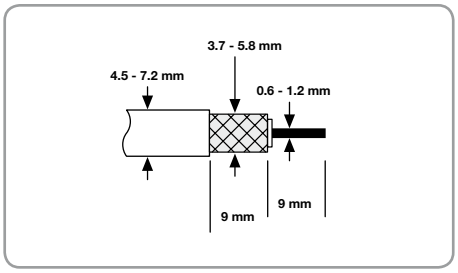
Type		**FS 302 F**
Art. No.		306151
Design		Single socket
Attenuation	**Frequency range**	
IN - TV (IEC male)	5 - 75/118…862 MHz	1.5 dB
IN - RF (IEC female)	87 - 108 MHz	1.5 dB
IN - SAT (F female)	950 - 2150 (2400) MHz	2.0 (3.0) dB
Isolation		
TV/RF - SAT	VHF / SAT	30/20 dB
TV - RF	VHF, UHF	20 dB
DC circuit	13/18V, 22 kHz; max. +24V/0.5 A	SAT-IN (F female)

- For sat IF systems (SMATV) with connection options for terrestrial terminal equipment such as FM radio and DVB-T television

* **Note:**
Only one sat receiver can be operated actively at the socket box chain in case of a cascade of pass-through-sockets in multi-switch operation.



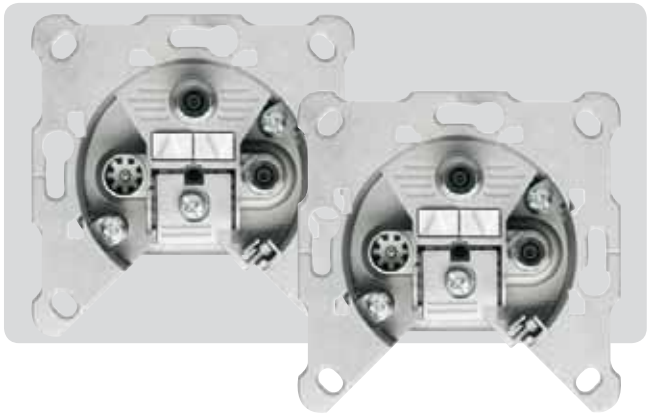
Recommended cable dimensions



SAT antenna outlets

3-outlet TWIN SAT sockets

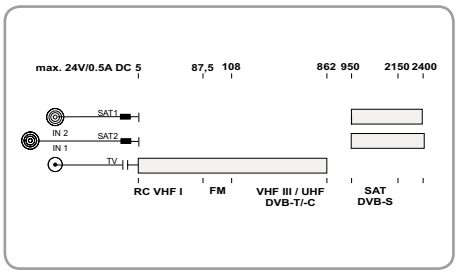
- Special sat antenna outlets for sat IF distribution networks (multi-switch systems or single-cable solution) as well as single satellite systems.
- F connector for sat IF range. Additional connection of terrestrial receiving devices such as DVB-T receiver possible via IEC connectors.
- Selective splitting of the frequency bands via filters with extremely low distribution operating loss.
- Advantages:
  Direct F-connection for SAT receiver. Cost-efficient.



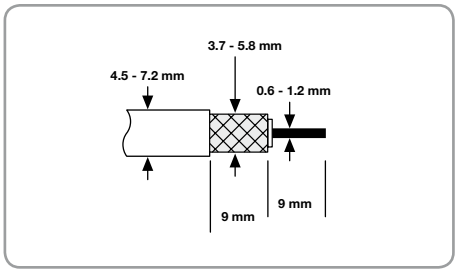
Technical data

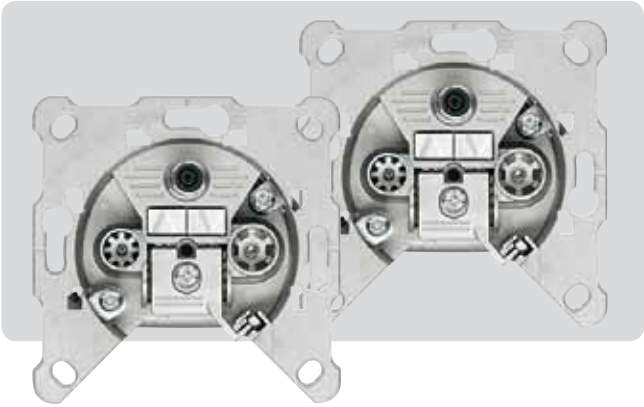
Type		EDS 322 F
Art. No.		306141
Design		Single socket
Attenuation	**Frequency range**	
IN1 - TV (IEC male)	5 - 862 MHz	1.0 dB
IN1 - SAT1 (F female)	950 - 2400 MHz	1.2 dB
IN2 - SAT2 (F female)	5 - 2400 MHz	1.2 dB
Isolation		
OUT - TV/SAT	VHF, UHF / SAT	20/20 dB
DC circuit	13/18V, 22 kHz; max. +24V/0.5 A	SAT-IN (F female)

- Two independent inputs and F outlets for TWIN-sat receiver operation with connection option for DVB-T receiver or, via adapter coupling, for FM radio



Recommended cable dimensions





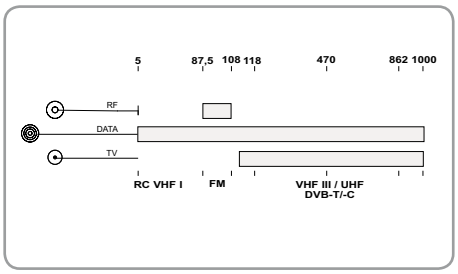
3-outlet modem sockets

- Special antenna outlet sockets for connecting to cable TV networks (CATV) or common antenna networks (MATV/SMATV) up to 1 GHz.
- Special outlets designs for different electrical requirements (further special antenna outlets on request).
- Advantage: Optimal electrical characteristics for the respective application.

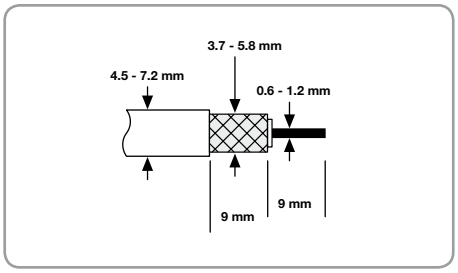
Technical data

Type		EDM 304	GDM 310	GDM 315
Art. No.		306901	306902	306903
Design		Single socket	Pass-through-socket	
Attenuation	**Frequency range**			
IN - OUT	5 - 1000 MHz	-	2.5 dB	1.6 dB
IN - TV (IEC male)	(111) 118 - 1000 MHz	(6.0) 4.3 dB	(13) 11 dB	(17) 15 dB
IN - RF (IEC female)	87 - 108 MHz	6.0 dB	14 dB	18 dB
IN - DATA (F female)	5 - 1000 MHz	3.5 dB	10 dB	15 dB
Isolation				
OUT - TV/RF	5 - 65 MHz/VHF/UHF	-	65/34/30 dB	65/34/30 dB
OUT - DATA	5 - 65 MHz/VHF/UHF	-	32/38/34 dB	35/35/35 dB
DATA - TV/RF	5 - 65 MHz/VHF/UHF	70/30/30 dB	70/40/36 dB	70/40/38 dB

- For interactive multimedia CATV networks with cable modem operation
- Reverse channel range (F female) is decoupled by approx. 70 dB against TV outlet in order to avoid incorrect images during cable modem operation



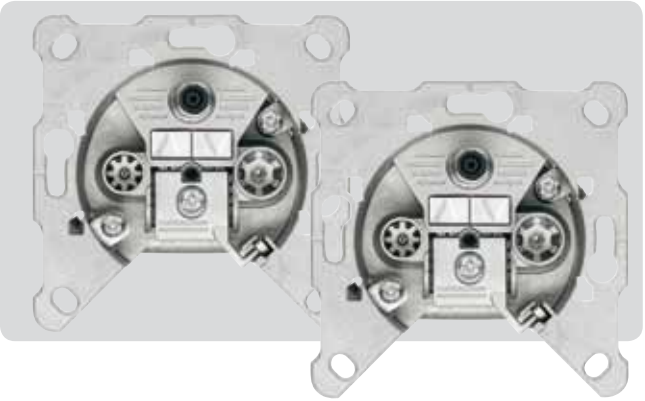
Recommended cable dimensions



CATV antenna outlets

3-outlet modem sockets (with FM)

- Special antenna outlet sockets for connecting to cable TV networks (CATV) or common antenna networks (MATV/SMATV) up to 1 GHz.
- Special outlets designs for different electrical requirements (further special antenna outlets on request).
- Advantage: Optimal electrical characteristics for the respective application.

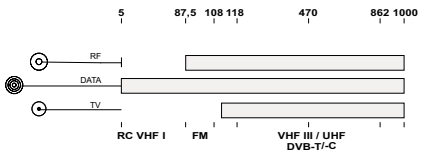


Technical data

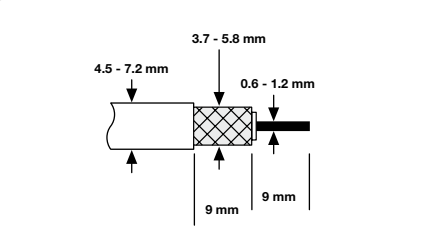
Type		EDM 306	GDM 312	GDM 316	GDM 320
Art. No.		306161	306261	306262	306263
Design		Single socket		Pass-through-socket	
Attenuation	**Frequency range**				
IN - OUT	5 - 1000 MHz	-	2.5 dB	(2.0) 2.5 dB	2.0 dB
IN - TV (IEC male)	(109) 118 - 1000 MHz	6.0 dB	12.5 dB	15.5 dB	20.0 dB
IN - RF (IEC female)	87 - 1000 MHz	6.0 dB	12.5 dB	15.5 dB	20.0 dB
IN - DATA (F female)	5 - 1000 MHz	7.8 dB	12.5 dB	15.5 dB	20.0 dB
Isolation					
OUT - TV/RF	5 - 65 MHz/VHF/UHF	-	*)	*)	75/30/30 dB
OUT - DATA	5 - 65 MHz/VHF/UHF	-	*)	*)	75/30/30 dB
DATA - TV/RF	5 - 65 MHz/VHF/UHF	70/34/30 dB	*)	*)	75/40/36 dB

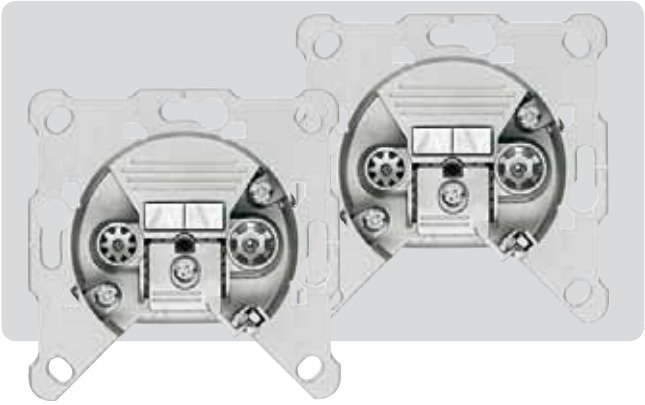
- > 4 MHz min. 30 dB, -1.5 dB/octave acc. EN 50083-4, 40-230 MHz min. 30 dB acc. EN 50083-7

- For interactive multimedia CATV networks with cable modem operation
- Reverse channel range (F female) is decoupled by approx. 70 dB against TV outlet in order to avoid incorrect images during cable modem operation



Recommended cable dimensions





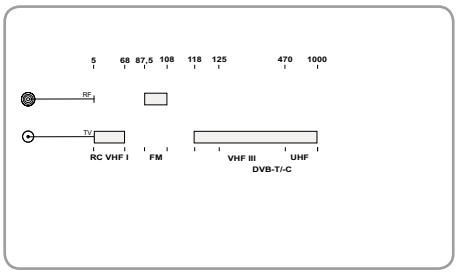
2-outlet MATV filter sockets

- Special antenna outlet sockets for connecting to cable TV networks (CATV) or common antenna networks (MATV/SMATV) up to 1 GHz.
- Special outlets designs for different electrical requirements (further special antenna outlets on request).
- Advantage: Optimal electrical characteristics for the respective application.

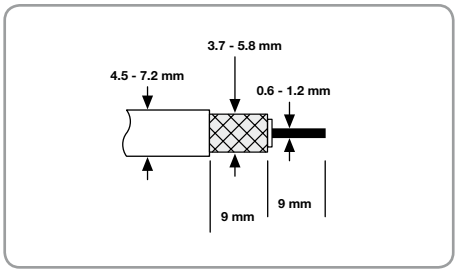
Technical data

Type		FS 01	FS 07	FS 12
Art. No.		306191	306291	306292
Design		Single socket	Pass-through-socket	
Attenuation	**Frequency range**			
IN - OUT	5 - 1000 MHz	-	2.4 dB	1.0 dB
IN - TV (IEC male)	5 - 68/118 to 1000 MHz	0.8 / 0.7 dB	8.0 / 8.0 dB	11 dB
IN - RF (IEC female)	87 - 108 MHz	1.0 dB	9.0 dB	12 dB
Isolation				
OUT - TV/RF	40 - 1000 MHz	-	30 dB -1,5 dB / Octave	

- For wideband community networks (MATV, SMATV) or single terrestrial systems



Recommended cable dimensions



Triax TOU TV/radio outlets

Triax TOU standard tv/radio high-quality outlets

The Triax TOU series of outlets is made of diecast aluminium, the coax IEC connectors comply with DIN 45325 and IEC 169 standards.
The outlets can be built into a Ø60 mm round wall box or surface mounted by means of a TOU frame.

TOU tv/radio outlet housing

Technical data 5-862 MHz standard outlets

TYPE Art. No. - incl. cover and frame - excl. cover and frame			TOU - 1 terminated 1 pcs 1 pcs 303621	TOU - 1FI terminated 303619	TOU - 1FB terminated 303664	TOU - 4 loop through 303624	TOU - 7 loop through 303627
RAL colour							
Outputs			TV - Radio	TV - Radio	TV - Radio	TV - Radio	TV - Radio
Frequency range							
TV		MHz	5 - 74/120 - 862	5 - 74/120 - 2150	5 - 74/120 - 2150	5 - 74/120 - 862	5 - 74/120 - 862
Radio		MHz	87.5 - 108	87.5 - 108	87.5 - 108	87.5 - 108	87.5 - 108
Through loss							
TV		dB				4.0	2.5
Radio		dB				4.0	2.5
Tap loss							
TV		dB	1.5	2.0	2.0	4.5	7.5
Radio		dB	2.0	2.5	2.5	5.5	7.5
Isolation							
TV-radio		dB	>10.0	>15.0	>15.0	> 10.0	> 10.0
Out-TV		dB				> 15.0	> 18.0
Out-Radio		dB				> 20.0	> 30.0
Return loss *)							
TV	EN 50083-4	dB	Cat. C	Cat. C	Cat. C	Cat. C	Cat. C
Radio	EN 50083-4	dB	Cat. D	Cat. D	Cat. D	Cat. D	Cat. D
Shielding factor							
VHF		dB	> 85.0	> 85.0	> 85.0	> 85.0	> 85.0
UHF		dB	> 75.0	> 75.0	> 75.0	> 75.0	> 75.0
Connectors							
TV			IEC-male	IEC-male	IEC-male	IEC-male	IEC-male
Radio			IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
DC through			No	TV		No	No
Standards CE			EN 50083-4	EN 50083-4	EN 50083-4	EN 50083-4	EN 50083-4
Impedance		Ohm	75	75	75	75	75
Weight		kg	0.146	0.146	0.146	0.146	0.146
Dimensions (mechanical)		mm	Ø60	Ø60	Ø60	Ø60	Ø60
*) According to CENELEC:			B: 5-40 MHz > 18 dB, 40-862 MHz min. 18 dB - 1.5/oct. C: 5-40 MHz > 14 dB, 40-862 MHz min. 14 dB - 1.5/oct. D: 5-862 MHz > 10 dB				

Triax TOU TV/radio outlets

TOU tv/radio outlet housing

Triax TOU standard tv/radio high-quality outlets

The Triax TOU series of outlets is made of diecast aluminium, the coax IEC connectors comply with DIN 45325 and IEC 169 standards.
The outlets can be built into a Ø60 mm round wall box or surface mounted by means of a TOU frame.

Technical data 5-862 MHz standard outlets

TYPE Art. No. - incl. cover and frame 1 pcs - excl. cover and frame 1 pcs		TOU - 10 loop through 303630	TOU - 14 loop through 303614	TOU - 17 loop through 303617	TOU - 20 loop through 303629	TOU - 23 loop through 303623
RAL colour						
Outputs		TV - Radio	TV - Radio	TV - Radio	TV - Radio	TV - Radio
Frequency range						
TV	MHz	5 - 74/120 - 862	5 - 74/120 - 862	5 - 74/120 - 862	5 - 74/120 - 862	5 - 74/120 - 862
Radio	MHz	87.5 - 108	87.5 - 108	87.5 - 108	87.5 - 108	87.5 - 108
Through loss						
TV	dB	1.5	1.5	1.5	1.0	1.0
Radio	dB	1.5	1.5	1.5	1.0	1.0
Tap loss						
TV	dB	10.0	14.0	17.0	20.0	23.0
Radio	dB	11.0	15.0	18.0	20.0	23.0
Isolation						
TV-radio	dB	> 10.0	> 10.0	> 10.0	> 10.0	> 10.0
TV-out	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
Radio-out	dB	> 30.0	> 30.0	> 30.0	> 30.0	> 30.0
Return loss *)						
TV EN 50083-4	dB	Cat. C	Cat. C	Cat. C	Cat. C	Cat. C
Radio EN 50083-4	dB	Cat. D	Cat. D	Cat. D	Cat. D	Cat. D
Shielding factor						
VHF	dB	> 85.0	> 85.0	> 85.0	> 85.0	> 85.0
UHF	dB	> 75.0	> 75.0	> 75.0	> 75.0	> 75.0
Connectors						
TV		IEC-male	IEC-male	IEC-male	IEC-male	IEC-male
Radio		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
DC through		No	No	No	No	No
Standards CE		EN 50083-4	EN 50083-4	EN 50083-4	EN 50083-4	EN 50083-4
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.146	0.146	0.146	0.146	0.146
Dimensions (mechanical)	mm	Ø60	Ø60	Ø60	Ø60	Ø60
*) According to CENELEC:		B: 5-40 MHz > 18 dB, 40-862 MHz min. 18 dB - 1.5/oct. C: 5-40 MHz > 14 dB, 40-862 MHz min. 14 dB - 1.5/oct. D: 5-862 MHz > 10 dB				

Triax TOU satellite, TV & radio outlets

Triax TOU terminated satellite, tv/radio high-quality outlets

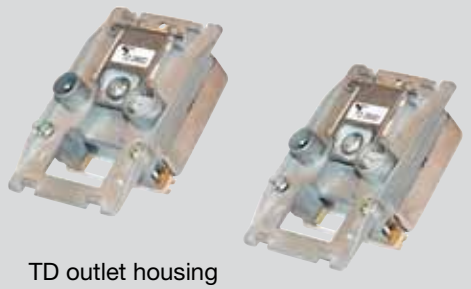
The Triax TOU series of outlets is made of diecast aluminium, the coax IEC connectors comply with DIN 45325 and IEC 169 standards.
The outlets can be built into a Ø60 mm round wall box or surface mounted by means of a TOU frame.

TOU satellite outlet housing

Technical data SAT outlets - 5-2200 MHz

TYPE		TOU - 01S terminated	TOU - 10S loop through	TOU - 14S loop through
Art. No. incl. cover (White)		303661	303694	303674
Art. No. excl. cover		303693		
RAL colour				
Outputs		TV - Radio SAT	TV - Radio SAT	TV - Radio SAT
Frequency range				
TV	MHz	5 - 74/120 - 862	5 - 74/120 - 862	5 - 74/120 - 862
Radio	MHz	87.5 - 108	87.5 - 108	87.5 - 108
SAT	MHz	950 - 2250	950 - 2250	950 - 2250
Through loss				
TV	dB		1.5	2.0
Radio	dB		1.5	2.0
SAT	dB		3.5	3.5
Tap loss				
TV	dB	2.0	10.0	14.0
Radio	dB	1.5	10.0	14.0
SAT	dB	2.0	10.0	14.0
Isolation				
TV-Radio	dB	> 15	> 20	> 20
TV-SAT	dB		> 25	> 25
Radio-SAT	dB		> 30	> 30
Out-Radio	dB			
Out-TV	dB	> 10	> 10	> 10
Out-SAT	dB			
Return loss *)				
TV EN 50083-4	dB	Cat. C	Cat. C	Cat. C
Radio EN 50083-4	dB	Cat. D	Cat. D	Cat. D
SAT	dB			
Shielding factor				
VHF	dB	> 85.0	> 85.0	> 85.0
UHF	dB	> 75.0	> 75.0	> 75.0
SAT	dB			
Connectors				
TV		IEC-male	IEC-male	IEC-male
Radio		IEC-female	IEC-female	IEC-female
SAT		F-female	F-female	F-female
DC through (In-SAT)	V/mA	20/500	20/500	20/500
Standards CE		EN 50083-4	EN 50083-4	EN 50083-4
Impedance	Ohm	75	75	75
Weight	kg	0.156	0.156	0.156
Dimensions (mechanical)	mm	Ø60	Ø60	Ø60
*) According to CENELEC:		C: 5-40 MHz > 14 dB, 40-862 MHz min. 14 dB - 1.5/oct. D: 5-862 MHz > 10 dB		

Triax FUGA TV/radio outlets



TD outlet housing

Triax FUGA high-quality outlets

Triax's FUGA TV/radio outlets have improved shielding factor and are much faster to mount. The design, where backplate and terminals are die cast in one piece sets new standards to shielding and mechanical stability.

- High HF-tightness
- Simple and quick mounting
- Solid mechanical quality
- Fulfil modern-day's technical multimedia requirements

Technical data FUGA-outlets - 5-862 MHz

TYPE Art. No. (White) in box		TD 260D terminated 302560	TD 263D loop through 302561	TD 212D loop through 302562
RAL colour				
Outputs		TV - Radio	TV - Radio	TV - Radio
Frequency range				
TV	MHz	5-68/132-862	47-68/132-862	47-68/132-862
Radio	MHz	87.5 - 108	87.5 - 108	87.5 - 108
DAB	MHz			
Through loss				
TV	dB		4.5	0.8
Radio	dB		4.5	1.0
DAB	dB			
Tap loss				
TV	dB	1.0	4.5	13.0
Radio	dB	1.5	4.5	13.0
DAB	dB			
Linearity	dB	± 1	± 1	± 1
Isolation				
TV - radio	dB	≥ 12	>12	>12
TV-out	dB		>20 db @ 40 MHz	>31 db @ 40 MHz
Radio-out	dB			
TV - DAB/ DAB-radio	dB		-1,5 dB/octave	-1,5 dB/octave
Return loss				
TV EN 50083-4	dB	> 14	> 14	> 14
Radio EN 50083-4	dB	> 10	> 10	> 10
Shielding factor				
VHF 5-300/300-470	dB	> 85/> 80	> 85/> 80	> 85/> 80
UHF 470-862	dB	> 75	> 75	> 75
Connectors				
TV		IEC-male	IEC-male	IEC-male
Radio		IEC-female	IEC-female	IEC-female
DAB				
DC through	mA	max. 100	max. 100	
Standards CE		EN 50083-2 EN 50083-4	EN 50083-2 EN 50083-4	EN 50083-2 EN 50083-4
Impedance	Ohm	75	75	75
Weight	kg	0.115	0.115	0.117
Dimensions (w x h x d)	mm	50 x 77 x 29	50 x 77 x 29	50 x 77 x 29
Replacing		TD 260C	TD 263C	TD 212C

Triax FUGA satellite, return, TV & radio outlets

Triax FUGA high-quality outlets

Triax's FUGA TV/radio outlets have improved shielding factor and are much faster to mount. The design, where backplate and terminals are die cast in one piece sets new standards to shielding and mechanical stability.

- High HF-tightness
- Simple and quick mounting
- Solid mechanical quality
- Fulfil modern-day's technical multimedia requirements

Technical data FUGA outlets - 5-2200 MHz

TYPE Art. No. (white) in box		TD 253 SAT/return 302566	TD 254 SAT/DAB 302567
RAL colour			
Outputs		TV - Radio SAT - return	TV - Radio SAT - DAB
Frequency range			
TV	MHz	47-68/132-862	47-68/132-862
Radio	MHz	87.5-108	87.5-108
SAT	MHz	950-2150	950-2150
Returnpath	MHz	0-2150	47-862
Through loss			
Return	dB	1.0	1.0
TV	dB		
Radio	dB		
SAT	dB		
Tap loss			
TV	dB	1.0/1.0	4.5/4.5
Radio	dB	1.0	5.5
SAT	dB	2.0	2.0
Returnpath	dB		4.5
Linearitet TV/radio/SAT	dB	± 1	± 1
Isolation			
TV - FM	dB	> 12	> 12
TV - SAT	dB	> 18	> 18
TV - data/DAB	dB		> 15
Return loss			
TV EN 50083-4	dB	> 14	> 14
Radio EN 50083-4	dB	> 10	> 10
Shielding factor			
VHF 5-300/300-470	dB	> 85/> 80	> 85/> 80
UHF 470-862	dB	> 75	> 75
SAT/return 950-2150	dB	> 55	> 55
Connectors			
Return		F-female	F-female
TV		IEC-male	IEC-male
Radio		IEC-female	IEC-female
SAT		F-female	F-female
DC through	mA	max. 100	max. 100
Impedance	Ohm	75	75
Weight	kg	0.122	0.122
Dimensions (w x h x d)	mm	50 x 77 x 37	50 x 77 x 37
Replaces type		TD 250	TD 252

Triax FUGA multimedia, TV & radio outlets

TD multimedia outlet housing

Triax FUGA high-quality outlets

Triax's FUGA multimedia,TV/radio outlets have improved shielding factor and are much faster to mount. The design, where backplate and terminals are die cast in one piece sets new standards to shielding and mechanical stability.

- High HF-tightness
- Simple and quick mounting
- Solid mechanical quality
- Fulfil modern-day's technical multimedia requirements

Technical data FUGA multimedia outlets - Data 5-65 or 5-42 MHz

TYPE Art. No. (white) in box		TD 272D Terminated 302572
RAL colour		
Outputs		TV - Radio Data
Frequency range		
TV	MHz	139-862
Radio (FM)	MHz	87.5 - 108
Data	MHz	5-862
Returnpath	MHz	5-65
Through loss		
TV	dB	
Radio (FM)	dB	
Data	dB	
Tap loss		
TV	dB	4.5
Radio (FM)	dB	5.5
Data	dB	4.5
Returnpath	dB	1.0
Liniaritet TV/radio	dB	± 1
Isolation		
TV-radio	dB	> 12
TV-out	dB	
TV-data 5-65/139-862	dB	> 55/> 20
Radio-out	dB	
Radio-data 5-65/139-862	dB	> 55/> 30
Shielding factor		
VHF 5-300/300-470	dB	> 85
UHF 470-862	dB	> 80
Data 5-65	dB	> 75
Connectors		
TV		IEC-male
Radio (FM)		IEC-female
Data		F-female
DC through	mA	max. 100
CE standard		EN 50083-2 EN 50083-4
Impedance	Ohm	75
Weight	kg	0.100
Dimensions (w x h x d)	mm	50 x 77 x 26
Replaces type		TD 272C

Triax - FUGA special outlets

Triax FUGA special outlets

TRIAX has a range of special outlets in FUGA design for e.g. loudspeaker and F-connectors.

- High HF-tightness
- Simple and quick mounting
- Solid mechanical quality

TD 201T FV 01 outlet FV 02 outlet

Technical data FUGA special outlets

TYPE			TD 201T terminated	FV 01	FV 02
Art. No. (white) in box			303456	303481	303482
RAL colour					
Inputs Outputs			1 x TV	F-connector	F-connector
Frequency range					
TV		MHz	47-862		
Radio		MHz			
SAT		MHz			
Tap loss					
TV	VHF	dB	0.2		
TV	UHF	dB	0.5		
Radio		dB			
Connectors					
TV			IEC-male	F-con	F-con
Radio					
Radio (loudspeakers)					
SAT					
Outlet connection				F-angle connector	F-angle connector
DC through		mA	Yes		
CE standard					
Impedance		Ohm	75		
Weight		kg	0.125	0.125	0.165
Dimensions (w x h x d)		mm	50 x 50 x 26	50 x 50 x 26	50 x 77 x 26

Triax OPUS TV/radio outlets

OPUS outlet housing

Triax OPUS high-quality outlets

Triax's range of OPUS TV/radio outlets have improved shielding factor and are much faster to mount.
The design, where backplate and terminals are die cast in one piece sets new standards to shielding and mechanical stability.

- High HF-tightness
- Simple and quick mounting
- Solid mechanical quality
- Fulfil modern-day's technical multimedia requirements

Technical data OPUS outlets - 5-862 MHz

TYPE Art. No. (white) in bag		TD 301 terminated 302131	TD 304 loop through 302134	TD 312 loop through 302132	TD 352 sat 302152	TD 372 multimedia 302172
RAL colour						
Outputs		TV-radio	TV-radio	TV-radio	TV-radio SAT	TV-radio data
Frequency range						
TV	MHz	5-68/132-862	5-68/132-862	5-68/132-862	5-68/132-862	139-862
Radio	MHz	87.5 - 108	87.5 - 108	87.5 - 108	87.5 - 108	87.5 - 108
SAT/data	MHz				950-2150	5-862
Return path	MHz					5-65
Through loss						
TV	dB		4.5	0.8		
Radio	dB		4.5	0.8		
SAT	dB					
Tap loss						
TV	dB	1.0	4.5	12.0	1.0	4.5
Radio	dB	1.5	4.5	12.0	1.0	5.5
SAT	dB				1.0	4.5
Data	dB					1.0
Liniarity TV/radio/SAT	dB	± 1	± 1	± 1	± 1	± 1
Isolation						
TV-radio	dB	≥ 12	>12	>12		
TV-out	dB		>20 db @ 40	>20 db @ 40	> 15	
TV-SAT/data 5-65/139-862	dB		MHz	MHz		> 55/> 20
Radio-out	dB		-1.5 dB/octave	-1.5 dB/octave	> 12	> 12
Radio-SAT/data	dB					> 55/> 30
Return loss *)						
TV EN 50083-4	dB					
Radio EN 50083-4	dB					
SAT EN 50083-4	dB					
Shielding factor						
VHF / UHF	dB	> 85/> 80	> 85/> 80	> 85/> 80	> 85/> 80	> 85/> 80
SAT/data	dB				> 75	> 75
Connectors						
TV		IEC-male	IEC-male	IEC-male	IEC-male	IEC-male
Radio		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
SAT					F-female	F-female
DC through	mA	on TV	on TV	on TV	max. 250	max. 100
Max. outlets per string			1	3		
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.225	0.225	0.225	0.225	0.225
Dimensions (w x h x d)	mm	66 x 25 x 66	66 x 25 x 66	66 x 25 x 66	66 x 25 x 66	66 x 25 x 66

Triax UK-style in SAT, TV/radio outlets

Triax comprehensive series for domestic and system applications

- Fully screened
- Die-cast housing
- DAB compatible
- Output for SAT and return path
- DDU outlet designed for installations using **D**omestic **D**istribution **U**nit

UK-style outlet housing

Technical data UK-style outlets

TYPE Art. No. incl. cover (White)		TOU diplexed (2-way) 304101	TOU - DC diplexed (2-way) 304118	TOU triplexed (3-way) 304102	TOU quad (4-way) 304109	TOU DDU (4-way) 304115
RAL colour						
Outputs		TV - Radio	TV - Radio	TV - Radio SAT	TV - Radio SAT / Return	TV - Radio SAT / Return
Frequency range						
TV	MHz	47-68/254-862	47-68/254-862	47-68/254-862	47-68/254-862	
Radio	MHz	87.5 - 230	87.5 - 230	87.5 - 230	87.5 - 230	
SAT I / II	MHz			950-2150/ -	950-2150	
Return	MHz				- DC - 2150	
Tap loss						
TV	dB	< 1.5	< 1.5	< 1.5	< 1.5	< 3.5
Radio	dB	< 2.5	< 2.5	< 2.5	< 2.5	< 3.0
SAT I / II	dB			< 3.0	< 3.0	< 3.5/< 4.0
Return	dB				< 2.0	< 4.0
Connectors						
TV		IEC-male	IEC-male	IEC-male	IEC-male	IEC-male
Radio		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
SAT				F-female	F-female	2 x F-female
Return					F-female	IEC-female
DC through (In-SAT)	V/mA		on TV			
Standards CE		EN 50083-4	EN 50083-4	EN 50083-4	EN 50083-4	EN 50083-4
Impedance	Ohm	75	75	75	75	75
Weight	kg	0.250	0.250	0.250	0.250	0.250
Dimensions (w x h x d)	mm	86 x 31 x 86	86 x 31 x 86	86 x 31 x 86	86 x 31 x 86	146 x 37 x 86
Remarks						

Triax GAD series of TV/radio outlets

3/4 outlet filter socket for wall mounting

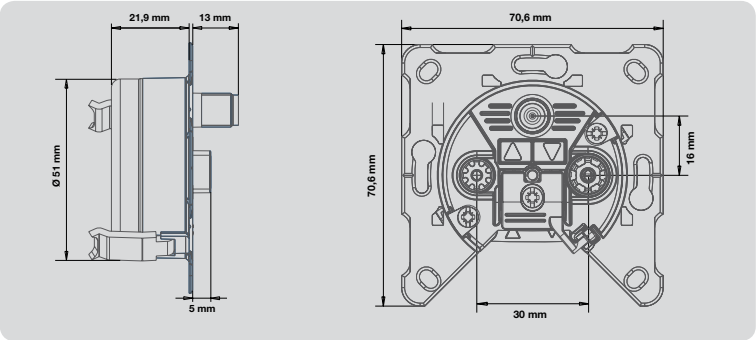
GAD 269 - 3 outlet socket
socket outlet for application in DVB-T, USW and DVB-S networks

GAD 274 - 4 outlet socket
socket outlet for application in DVB-T, USW and DVB-S networks, as well as a SAT connector

Technical data GAD outlets

TYPE **Art. No.** **- excl. cover and frame**	**1 pcs**	**GAD 269** **terminated** **023269**	**GAD 274** **terminated** **023274**
Outputs		TV-radio/DAB SAT	TV-radio/DAB 2 x SAT
Frequency range			
TV	MHz	5-68/174-862	5-68/174-862
Radio	MHz	87.5 - 108	87.5 - 108
DAB	MHz	111-125	111-125
SAT	MHz	950-2150	950-2150
Tap loss			
TV	dB	1.5/1.0...2.0	1.5/1.0...2.0
Radio	dB	2.0	2.0
DAB	dB	2.0	2.0
SAT	dB	2.0	2.0
Connectors			
TV		IEC-male	IEC-male
Radio		IEC-female	IEC-female
SAT		F-female	F-female
Impedance	Ohm	75	75
Weight	kg		
Dimensions (mechanical)	mm	Ø60	Ø60
Remarks		- excl. cover and frame	

Accessories for TRIAX outlets



Cover for TRIAX outlets

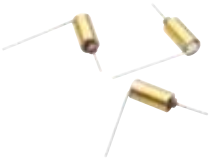
TYPE Art. No.	AD 23 cover pure white 302060	AD 23 cover Oyster white 302061
RAL colour	RAL 9010	RAL 1013
Size mm	81 x 81	81 x 81
Packing size	10 pcs.	10 pcs.

Surface-mounted frame for TRIAX outlets

TYPE Art. No.	AD 20 frame pure white 302062	AD 20 frame Oyster white 302063
RAL colour	RAL 9010	RAL 1013
Size mm	81 x 81	81 x 81
Packing size	10 pcs.	10 pcs.

RF terminating resistor

TYPE		R 75 - 75Ω terminator	R 77 DBC- 75Ω terminator
Art. No.	5 pcs 100 pcs	342503	302066
Remarks		Std. outlets	GDA, GDS



- 75 Ohm for low-reflection terminating of the last pass-through-socket as of the type GDM, GEDU, FS 07, FS 12
- Frequency range 0 - 2400 MHz

- 75 Ohm with capacitive isolation for low-reflection termination of the last pass-through-socket as of type GDA, GDS with DC operation
- Frequency range 10 - 2400 MHz

Accessories for TOU outlets

Covers for TOU standard outlets - 2 holes

TYPE Art. No.	Cover - pure white 303680	Cover - Traffic white 303681	Cover - Oyster white 303690
RAL colour	RAL 9010	RAL 9016	RAL 1013
Size mm	76 x 76	76 x 76	86 x 86
Packing size	10 pcs.	10 pcs.	10 pcs.




UK design

Covers for TOU multimedia outlets - 3 holes

TYPE Art. No.	Cover - pure white 303685	Cover - Traffic white 303686
RAL colour	RAL 9010	RAL 9016
Size mm	76 x 76	76 x 76
Packing size	10 pcs.	10 pcs.


Covers for TOU satellite outlets - 3 holes

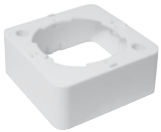
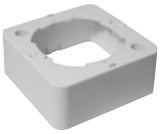
TYPE Art. No.	Cover - pure white 303695	Cover - Traffic white 303696	Cover - Oyster white 303697
RAL colour	RAL 9010	RAL 9016	RAL 1013
Size mm	76 x 76	76 x 76	86 x 86
Packing size	10 pcs.	10 pcs.	10 pcs.




UK design

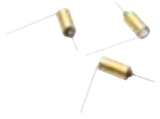
Surface mount for all TOU outlets

TYPE Art. No.	Frame - pure white 303698	Frame - Traffic white 303699
RAL colour	RAL 9010	RAL 9016
Size mm	76 x 76	76 x 76
Packing size	10 pcs.	10 pcs.

RF terminator

TYPE		R75 - 75Ω terminator
Art. No.	5 pcs	342503
Remarks		TD-outlets



Accessories for TD outlets

Covers for TD outlets

TYPE	0 holes cover 50 x 50 mm
Art. No. (pure white)	485968
Art. No. (grey)	485994
Art. No. (anthracite)	
RAL colour	
Size mm	50 x 50
Packing size	10 pcs.
Remarks	TD 200

Frames for TD outlets

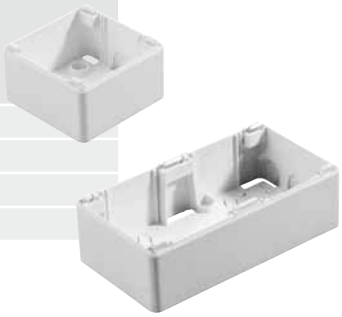
TYPE	Frame 50 50 x 50 mm	Frame 50 50 x 77 mm	Frame 63 63 x 90 mm
Art. No. (pure white)	302025	302026	302036
Art. No. (grey)	303025	303026	303036
Art. No. (metalic)		304026	
RAL colour			
Size mm	50 x 5 x 50	50 x 5 x 77	50 x 5 x 77
Packing size	10 pcs.	10 pcs.	10 pcs.
Remarks	TD 200	TD 26x	TD 2xx

Surface mount for TD outlets

TYPE	Frame 50 50 x 50 mm	Frame 50 50 x 77 mm
Art. No. (pure white)	302045	302046
Art. No. (grey)	303045	303046
Art. No. (anthracite)		
RAL colour		
Size mm	50 x 25 x 50	50 x 25 x 77
Packing size	10 pcs.	10 pcs.
Remarks	TD 200	TD 26x

Surface mount for OPUS outlets

TYPE	OPUS 66 66 x 66 mm	OPUS 66 132 x 66 mm
Art. No. (pure white)		153143
Art. No. (grey)	153140	
RAL colour		
Size mm	66 x 25 x 66	132 x 25 x 66
Packing size	10 pcs.	10 pcs.
Remarks	single OPUS	double OPUS



Measurement instruments

Measurement instruments

The demand for antenna measurement technology is constantly growing in the age of increasing digitisation. Professional equipment is required today for the tasks and technologies of tomorrow.

We aim to have a range of instruments that makes it easy to offer the best solutions for your customers.

PROF TIP
In digital systems the antenna needs to be perfectly adjusted to show a picture on the televison - a reliable measurement instrument is therefore always required!

Technical data

Product		SPM 700 HD	SPM 1200 HD
Art. No.		304531	304532
Type		Mobile SAT-level meter - Economy	Mobile SAT-level metere - Business
Description		• Plug and play with pre-installed transponder • Big display • Optical and acoustic guidance • DVB-S picture and sound generation • Automatic SAT-identification (NIT-search) • Suitable for unicable • Supports DiSEqC 1.0, 1.1, 1.2, auto • Practical wristband included	• Plug and play with pre-installed transponder • Big display • Optical and acoustic guidance • DVB-S picture and sound generation • Automatic SAT-identification (NIT-search) • Suitable for unicable • Supports DiSEqC 1.0, 1.1, 1.2, auto • Practical wristband included • LNB testfunction • Numeric key-pad for easy use
Connections	RF-input / IEC connector	✔ (75 Ohm)	✔ (75 Ohm)
	Input/Output - ASI	-	-
	Scart output	-	-
	Video-/Audio output RCA/DVI out	✔ / -	✔ / -
	USB data storage - output	✔	✔
	Interface for SW update/remote control	- / -	✔ / -
Measurement	DVB-S / DVB-S2 / DVB-T / DVB-C	✔ / ✔ / - / -	✔ / ✔ /- /-
	Return channel	-	-
	Spectrum display/Level indicator/ Signal indicator	✔ / ✔ / ✔	✔ / ✔ / ✔
	MER/BER	✔ / -	✔ / -
	Constellation diagram	-	✔
	S/N-display / S/N-display with scope	✔ / -	- / -
	SI-NIT-evaluation / SI-Nicam-evaluation	- / -	- / -
Accessories	Bag	✔	✔
	Cable IEC-IEC	-	-
	Other	Pocket compass, 12V - charging cable	Remote control, pocket compass, 12V-charging cable
Technical Data	Display	LCD 3” 16:9-Display	LCD 3” 16:9-Display
	Frequency	950 - 2400	950 - 2400
	Power Supply	100-120 VAC, 200-240 VAC or LI-ION-battery (approx 4 h)	100-120 VAC, 200-240 VAC or LI-ION-battery (approx 4 h)
	Weight	0.45 kg	0.45 kg
	Dimension	102mm x 34mm x 180mm	102mm x 34mm x 180mm

SPM 1600 HD	UPM 2300	UPM 3500
389050	940 528-001	940 473-001
Mobile SAT-level metere - Premium	Universal level meter - Business	Universal level meter - Premium
• Extra big display • DVB-S picture and sound generation • Automatic SAT-identification (NIT-search) • Suitable for unicable • Supports DiSEqC 1.0, 1.1, 1.2, auto • Practical wristband included • CI-slot • Numeric key-pad for easy use • MPEG 2/4 combi decoder • Stable transport bag	• DVB-S picture and sound generation • Automatic SAT-identification (NIT-search) • Suitable for unicable • Supports DiSEqC 1.0, 1.1, 1.2, auto • High-pass filter for measurement of special channels 2/3 • CI-slot • Rotary potentiometer for easy regulation **OPTIONAL:** • UPM 2300 kit with DVB-S2 frontend and MPEG 2/4 combi decoder (Item no. 940 529-001)	• DVB-S picture and sound generation • Automatic SAT-identification (NIT-search) • Suitable for unicable • Supports DiSEqC 1.0, 1.1, 1.2, auto • High-pass filter for measurement of special channels 2/3 • CI-slot • Numeric key-pad for easy use • Videotext function **OPTIONAL:** • UPM 3500 kit with DVB-S2 frontend and MPEG 2/4 combi decoder, ASI-interface, DOCSIS-analysis, NIT-evaluation (Item no. 940 473-201)
✔ (75 Ohm)	✔ (75 Ohm)	✔ (75 Ohm)
-	-	optional
-	✔	✔
✔ / ✔	- / ✔	- / ✔
✔	✔	External memory
✔ / -	-	- / ✔
✔ / ✔ /- /-	✔ / optional / ✔ / ✔	✔ / optional / ✔ / ✔
-	✔	✔
✔ / ✔ /✔	✔ / ✔/ ✔	✔ / ✔/ ✔
✔ / ✔	✔ / ✔	✔ / ✔
-	-	✔
✔ / -	✔ / -	✔ / optional
- / -	- / -	✔ / ✔
optional (item no. 389058)	✔	✔
✔	✔	✔
Remote control, USB-flash 12 V-charging cable	-	USB-flash
LCD 5.7” 4:3-Display	LCD 5” 16:9 Display	LCD 5,7 “ 4:3 Display
910 - 2150	5-2150 MHz	5 - 2150 MHz
200-240 VAC or 7.2 V LI-ION-battery (approx 3 h)	100-120 VAC, 200-240 VAC or NiMH-battery (approx 2 h)	100-120 VAC, 200-240 VAC or LI-ION-battery (approx 4 h)
1.3 kg	4.8 kg	6.1 kg
266mm x 164mm x 70mm	252 x 135 x 272	360 x 160 x 300

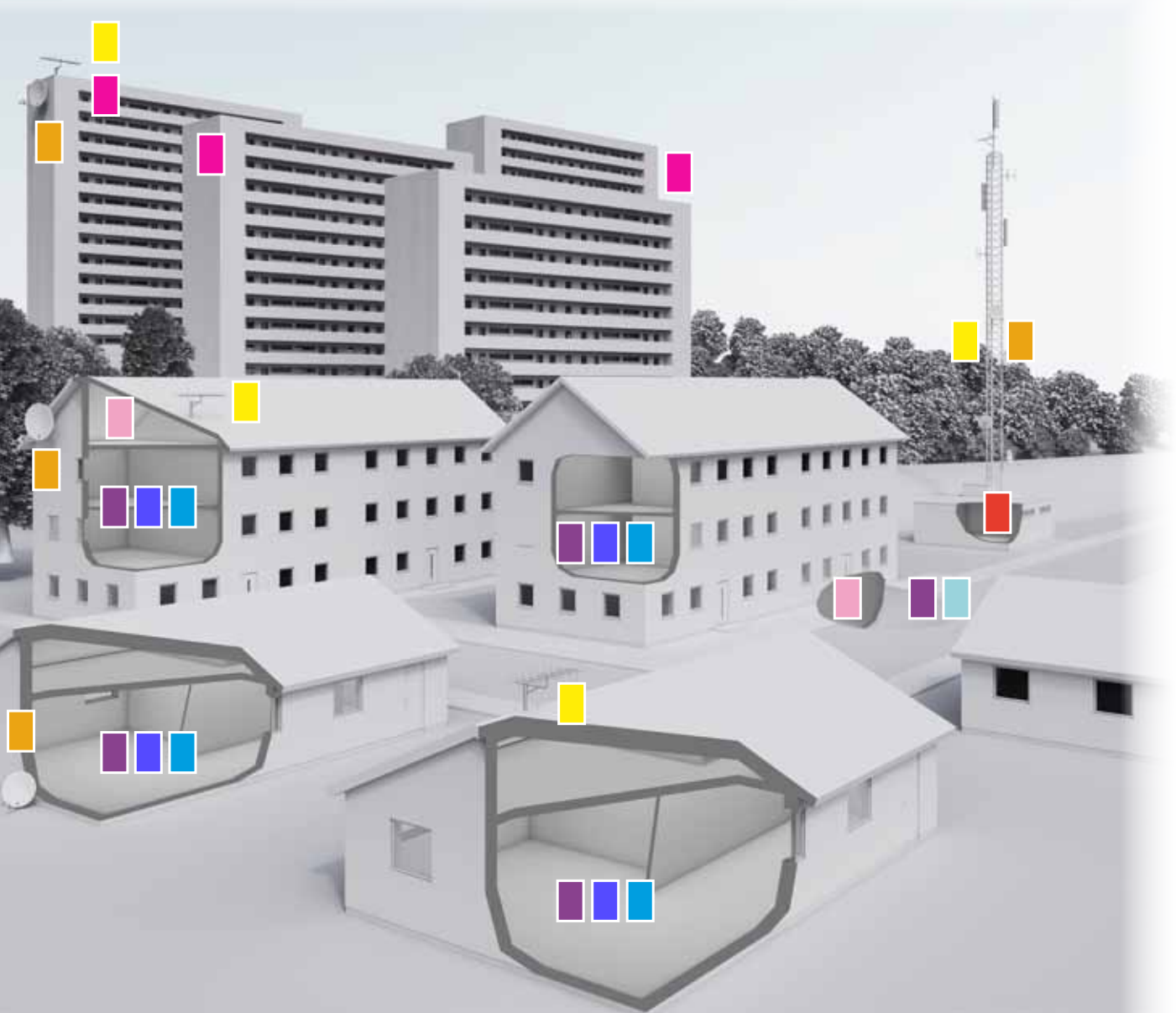
Measurement instruments

Fibre optical power metre

Art. No. 307697
TOM 011
Power meter
Packing size: **1 pcs.**

Product		TOM 011
Art. No.		307697
Type		Fibre optical power meter
Wavelength	nm	800 ~1700
Detector type		InGaAs
Detector size	mm	Ø 1.0
Measurement range	dBm	-50 ~ +30
Uncertainty		+/- 5%
Calibrated wavelength	nm	850, 1300, 1310, 1490, 1550, 1625
Resolution	dBV	0.01
Optical connector		FC/PC and SC/APC
Power Supply		Alkaline Battery(3 AA 1.5V) AC Adaptor(9V)
Battery Operating Time		140 h with 1.5V battery (3 pcs)
Operating Temperatrue	C°	-10 ~ +60
Storage Temperatrue	C°	-25 ~ +70
Relative Humidity	%	0...95 (non-condensing)
Dimension	mm	190 X 100 X 50
Weight		0.370 kg

Technical appendix



1. Basic technical requirements

All equipment and components in this catalogue meet. unless otherwise stated. the European standards for “Cable networks for television signals. sound signals and interactive services” from the standardization organization CENELEC. which have been adopted in national versions.

EN 50083-1 Safety requirements
EN 50083-1/A1
EN 50083-1/A2
EN 50083-2 Electromagnetic compatibility (EMC) of equipment

The equipment conforms to the uniform European “EMC directive” in accordance with legal requirements. For the majority of the product groups in this catalogue. EN 50083-2 is relevant. In relation to the “Low voltage directive”. EN 60065 is the basis to which reference is made in EN 50083-1 “Safety requirements”.
The CE marking for products in relation to EMC and the low voltage directive is based on these standards.

In addition. CENELEC committee TC 209 has ratified European standards for equipment and system requirements for “Cable networks for television signals. sound signals and interactive services”.

EN 50083-3 Active broadband equipment for coaxial cable networks
EN 50083-4 Passive broadband equipment for coaxial cable networks
EN 50083-5 Headend equipment
EN 50083-6 Optical equipment
EN 50083-7 System requirements
EN 50083-8 Electromagnetic compatibility of cable networks
EN 50083-9 Interfaces for CATV/SMATV headends and similar professional equipment for DVB/MPEG-2 transport streams
EN 50083-10 System performance for return paths

The system and equipment requirements are matched to each other in such a way that the minimum requirements for signal quality at the subscriber’s outlet can be met with a minimum of technical effort. In addition. requirements that result from use of both analogue and digital signal transmission have also been taken into account. The EN 50083 standards provide the network operator. planner and installer with concrete guidelines for network design and selection of appropriate network components. Triax network components are developed to these standards and are marked in the catalogue by the relevant EN standard. The equipment standards (EN 50083 Parts 3...6) include fulfillment of the safety and EMC requirements (EN 50083 Parts 1 + 2).
The legally required CE marking for antenna and telecommunication products refers to adherence to electromagnetic compatibility (EMC) limits and. from 1 Jan. 1997. to adherence to the low voltage directive.

The CE marking does thus not imply fulfilment of the product and system requirements according to EN 50083- 3...-10. For this reason Triax indicates compliance with these basic requirements on equipment (EN 50083-3...6) by explicitly noting the corresponding EN standard in the catalogue and in the operating instructions.

1.1 Marking of components for TV cable networks

With the CE marking Triax confirms the compliance of its products with the applicable EU directives (currently EMC and low voltage directives) as well as with the standards EN 50083-1. EN 50083-2 and EN 60065. For receivers the standards EN 55013. EN 55020 and EN 61000 are applied. The CE marking is placed on the product. on the packaging and/or included in the operating instructions.

To prevent interference between TV cable networks and radio services. it is necessary to use components with sufficient shielding. Due to the varying conditions in the European countries. the shielding rate was defined in the European standard EN 50083-2 in two stages. the high quality class A and class B with reduced shielding rate values.

For compliance with the legal EMC requirements for TV cable networks. we expressly recommend the usage of class A components. including connecting cables so marked for terminal equipment.

Protection class 2 according to IEC 60417-5172 for components with power connection 230 V ~.

2. Technical data in the catalogue

2.1. Characteristic impedance

Unless otherwise expressly mentioned. all technical data in the catalogue refer to a 75Ω impedance for the RF connections.

2.2. Operating temperature

All passive units in the catalogue can be used within an operating temperature range of – 20 °C to + 60 °C.
The mains-operated units meet the requirements of the EN 60065 standard within the temperature range from – 20 °C to + 50 °C.
Operability of these units is nevertheless also maintained fully in the temperature range from –20 °C to + 60 °C.
Individual units that deviate with regard to the above operating temperature range are specifically mentioned.

2.3. Mains voltage

All mains-operated units in the catalogue already meet the requirements of the IEC 60038 standard. with a rated voltage of 230 V~ +6% /–10%.

2.4. Wind load

For antenna locations. safety regulations according to EN 50083-1 differentiate between two heights above ground (up to 20 m and above 20 m).
They specify different dynamic pressure values for each height. q = 800 N/m^2. and q = 1100 N/m^2 respectively.
The wind load values (horizontal and vertical) specified in this catalogue were determined using a dynamic pressure of q = 800 N/m2. If a value for q = 1100 N/m2 is needed. the value in the catalogue has to be multiplied by 1.37.

2.5. Permissible output level for active electronic equipment

Specification of the permissible output level is made according to EN 50083-3 “Active broadband equipment for coaxial cable networks” for a signal-to-noise ratio of:

- IMD = 60 dB for amplifiers for AM. QAM and FM signals (in SMATV/MATV. broadband cable. CATV installations)
- IMD = 35 dB for amplifiers for FM signals only (satellite IF transmission)

Now that this measurement method is standard throughout Europe. this important parameter has become transparent and comparable. With the aid of this information. the network planner and installer are able to determine the optimum amplifier gain (refer also to the planning instructions) to maintain the required minimum signal-to-noise ratios for a given number of channels.
This procedure provides considerable advantages wherever new networks with a minimum number of amplifiers (cost advantage) are planned or where overriding regulations apply for certain parts of the network.

For example the permissible output level for a house connection amplifier to a house connection point is explicitly specified at CTB/CSO ≥ 66 dB.
This means that the required signal quality (CTB/CSO ≥ 57 dB according to EN 50083-7) can be maintained up to the subscriber’s connection. Other permissible output levels are also given on the one hand for the CENELEC spacing (EN 50083-3) and on the other hand for full adjacent channel load of TV bands.

Maintaining the latter control limits allows for any channel load with analogue and digital TV signals (worst case: complete channel load with analogue and digital TV channels). Assigning only digital TV channels in the frequency range < 606 MHz makes it possible to raise the output level of the house connection amplifier by up to 2 dB.

3. Planning and installation instructions

3.1. Permissible output level for house connection amplifiers. multiple band amplifiers. and postamplifiers

It is always recommended to carry out these calculations on a Windows PC using:

- AND by CDS Germany (www.cdsgmbh.de)
- CACAO by PTE-software (www.ptesoftware.dk)

The following explanations can be an additional help for solving problems and for understanding the underlying relationships.

The permissible output level is dependent on:

- The required signal-to-noise ratio CTB. CSO
- The number of TV channels to be transmitted
- The frequency distribution of the channels

The signals of the FM radio band can be treated as a single TV channel. if their levels are 6-8 dB below the level of the TV channels. The 1st selection criterion is the number of TV channels to be transmitted.

3.1.1 Maximum number of TV channels: 10 (MATV systems)

- Determine the permissible output level from the technical data: for IMD2 (60dB 2nd order intermodulation products acc. to EN 50083-5). for IMR3 (60dB 3rd order intermodulation products acc. to EN 50083-5)
- Reduce the IMR3 value according to the number of channels

The smaller of the two output levels (with respect to IMD2. IMR3) is the permissible output level (dB(µV)) for a signal-to-interference ratio of IMD=60 dB.

Number of channel loads	Correction to the catalog value in dB
2	0
3	– 2
4	– 3
5	– 4
6	– 5
7	– 5.5
8	– 6
10	– 7

Table1: Level reduction as a function of the number of channels loaded

3.1.2 More than 10 TV channels (broadband cable. MATV. CATV)

In order to obtain optimal gain from amplifiers with many channels loaded. it is necessary to use the permissible output levels specifically defined for each such case (for a CSO and CTB ratio of 60 dB) and a channel raster as close as possible to a defined one.

3.1.3 Approximate calculation for the permissible output level:

a) Permissible output level dependent on required CSO and CTB values that are different from catalogue values:

CSO

Question: “How high is the permissible output level for a CSO value Δ a dB above the catalogue value (CSO = 60 dB)?”
n_{a1} = output level in dB(µV) for CSO = 60 dB (catalogue value)
n_{a2} = output level in dB(µV) for CSO = (60 + Δ a) dB

$$\mathbf{n_{a2} = n_{a1} - \Delta\, a}$$

i. e. on an increase in the CSO requirement by Δ a dB. the permissible output level is reduced by Δ a dB.

CTB

Question: “How high is the permissible output level for a CTB value Δ a dB above the catalogue value (CTB = 60 dB)?”
n_{a3} = output level in dB(µV) for CTB = 60 dB (catalogue value)
n_{a4} = output level in dB(µV) for CTB = (60 + Δ) dB

$$\mathbf{n_{a4} = n_{a3} - \Delta\, a/2}$$

i. e. on an increase in the CTB requirement by d a dB. the permissible output level is reduced by Δ a/2 dB.

b) Permissible output level for channel loads deviating from catalogue specifications

The individual Triax operating instructions list the maximum permissible output level for a signal-to-interference ratio of 60 dB for three different channel spacings:

- up to 450 MHz: 36 TV + 24 FM channels.
- up to 606 MHz: 29 TV channels (“CENELEC raster“)
- up to 862 MHz: 42 TV channels (“CENELEC raster“)

Refer to “Channel spacing” table

These conditions are very critical with respect to the development of non-linear distortion (CTB. CSO). For small deviations of the actual channel spacing from the standard ones. it is not necessary to reduce the output level shown in the operating instructions. For larger deviations. the following rules of thumb can help to obtain a rough approximation for the adjustment:

1. Select the catalog values corresponding to the highest channel frequency.
2. For a channel pattern with twice the number of channels specified in the catalog. reduce the output level by **about 3 dB.**

3. Planning and installation instructions

- continued from last page

If the frequency band contains only **one half of the number of channels** (with constant channel spacing). it is possible to raise the output level by 3 dB. If the configuration lies somewhere in between these extremes. it is possible to make a rough interpolation.

c) ***Maximum output level for frequency pre-compensation (line equalizer)***

A frequency pre-compensation value for example of 10 dB using a line equalizer permits driving the amplifier approximately 2 dB higher. This value can also be treated as output reserve. It should be noted. however. that the signal-to-interference ratio at low frequencies will deteriorate by the amount of the compensation attenuation. For extreme cases optimization by a planning specialist is therefore required.

d) ***Permissible output level when cascading amplifiers***

For cascades. reduce the output level by 3 dB each time you double the number of cascaded amplifiers.

3.2. Radiated interference power and max. operating level

The radiated interference power of an antenna system according to EN 50083-2 may not exceed:

- 20 dB(pW) = 39 dB(µV) at 75Ω in the frequency range 30-950 MHz
- 43 dB(pW) = 62 dB(µV) at 75Ω in the frequency range 950-2500 MHz

Thus. in conjunction with the shielding rate specified for the equipment. the maximum operating level is as follows:
Maximum operating level =

- Shielding rate+ 39 dB(µV) (in the 30-950 MHz frequency range)
- Shielding rate + 62 dB(µV) (in the 950-2500 MHz frequency range)

3.3. Shielding rate

The passive Triax components in this catalogue meet as a minimum the shielding rates required by EN 50083-2. class B:

- 5-470 MHz 75 dB min
- 470-950 MHz 65 dB min
- 950-3000 MHz 50 dB min

Class A components meet the increased requirements of EN 50083-2

- 5-300 MHz 85 dB min
- 300-470 MHz 80 dB min
- 470-950 MHz 75 dB min
- 950-3000 MHz 55 dB min

For active units. the class A marking also documents compliance with EN 50083-2.

KLASSE A CLASS

3.4. Signal-to-noise ratio. noise factor

The signal-to-noise ratio is the ratio of the used signal power to the noise power expressed in decibels. The noise factor defines by how much the signal-to noise ratio at the output of an active unit (e. g. amplifier) is less than the signal-to-noise ratio at the input.

The thermal noise level on a 75 Ω resistor amounts
- for a bandwidth of 5 MHz (TV channel) and
- for a temperature of 293 K to approximately 2 dB(µV).

The signal-to-noise ratio of the received signal is the decisive factor for the video quality of a TV set (see below).
The signal-to-noise ratio at the output of an individual amplifier (for ideal. i.e. noise-free input signal) can be determined as follows:

Operating level at the output
- gain
- noise factor
- noise level

Example:
An amplifier with the following output parameters:
94 dB(µV) operating level. 21 dB gain. and 7 dB noise factor.
The signal-to-noise ratio at the output of an individual amplifier would then be:

94	dBµV	operating level
– 21	dB	set gain
– 7	dB	noise figure
– 2	dBµV	noise level
= 64	dB	s/n out

3.5. Signal-to-noise ratio. noise. picture quality

Signal-to-noise ratio	Noise	Picture quality
> 46 dB	invisible	very good
37 dB	visible. but not interfering	good
30 dB	clearly visible. interfering	unsatisfactory
< 26 dB	dominant compared to required signal	unusable

4. Earthing and equipotential bonding cables

EN 50083-1 specifies the following earthing and equipential bonding cables for antenna systems:

Earthing cables:

Material	Cross-section	Ø	Condition	Example
Copper	> 16 mm²	> 4.6 mm	bare or insulated	Koka
Aluminium	> 25 mm²	> 5.7 mm	bare (indoors only) or insulated	
Aluminium	> 50 mm²	> 8.0 mm	(wrought) alloy	
Steel wire	-	8.0 mm	galvanized	-
Steel strip	2.5 x 20 mm	-	galvanized	-
Cable types: single conductor or multi-conductor. but no fine wires				

Equipotential bonding cables:

Material	Cross-section	Ø	Condition	Example
Copper	4 mm²	2.3 mm	bare or insulated	Koka

Frequency ranges of radio waves

Frequency range	Int. abb.	Abb.	Modulation Picture/ sound	Channel width	Channels	Frequency	Wave-length	Polarisation
Long wave	LF	L	AM	9 kHz	2-4	150 - 285 kHz	2000 - 1050 m	V
Medium wave	MF	M	AM	9 kHz		510 - 1605 kHz	590 - 187 m	V
Short wave	HF	K	AM	9 kHz		3.95 - 26.1 MHz	76 - 11.5 m	V
Band I	VHF	F I	AM FM	7 MHz	2-4	47 - 68 MHz	6.35 - 4.4 m	H/V
Band II (radio)	VHF	UKW	FM	300 kHz	2-70	87.5 - 108 MHz	3.4 - 2.8 m	H
S-channels	VHF	USB	AM FM	7 MHz	S2 - S10	111 - 174 MHz	2.7 - 1.7 m	-[1)]
Band III	VHF	F III	AM FM	7 MHz	5-12	174 - 230 MHz	1.7 - 1.3 m	H/V
S-channels	VHF	OSB	AM FM	7 MHz	S11 - S20	230 - 300 MHz	1.3 - 1.0 m	-[1)]
S-channels	UHF	ESB	AM FM	8 MHz	S21 - S38	302 - 446 MHz	99 - 68 cm	-[1)]
Band IV	UHF	F IV	AM FM	8 MHz	21-39	470 - 622 MHz	64 - 68 cm	H/V
Band V	UHF	F V	AM FM	8 MHz	40-60	622 - 790 MHz	48 - 38 cm	H/V

1) in wideband installation

5. TV standards

Standard	No. of lines	Channel width (MHz)	Video band-width (MHz)	Video/audio seperation (MHz)	Vestigial side-band (MHz)	Video modulation	Audio modulation
B (CCIR)	625	7	5	+ 5.5 (+5.742)	0.75	negative	FM. FM[1]
D (OIRT)	625	8	6	+ 6.5	0.75	negative	FM
G (CCIR)	625	8	5	+ 5.5 (+5.742)	0.75	negative	FM. FM[1]
H (B)	625	8	5	+ 5.5	1.25	negative	FM
I (GB)	625	8	5.5	+ 6.0	1.25	negative	FM
K (OIRT)	625	8	6	+ 6.5	0.75	negative	FM
K1 (CCIR)	625	8	6	+ 6.5	1.25	negative	FM
L (F)	625	8	6	+ 6.5	1.25	positive	AM
M (FCC)	525	6	4.2	+ 4.5	0.75	negative	FM
N (South America)	625	6	4.2	+ 4.5	0.75	negative	FM

1) Second audio carrier for dual or stereo operation

6. Frequency ranges and channel allocation

	Channel number	Frequency range	Channel centre	Picture carrier	1st sound
Unit		MHz	MHz	MHz	
Return/data communication		4 - 30			
Return/data communication		5 - 65			
Return-TV	R 1	14.75-21.75			
	R 2	21.75-28.75			
Band I	2	47 - 54	50.50	48.25	53.75
	3	54 - 61	57.50	55.25	60.75
	4	61 - 68	64.50	62.25	67.75
Data channel		70 - 75			
Band II / FM	2 - 70	87.5 - 108			
Digital-sound	S 2	111 - 118			
1st channel	S 3	118 - 125			
	S 4	125 - 132	128.50	126.25	131.75
Lower	S 5	132 - 139	135.50	133.25	138.75
S-channels	S 6	139 - 146	142.50	140.25	145.75
	S 7	146 - 153	149.50	147.25	152.75
USB	S 8	153 - 160	156.50	154.25	159.75
	S 9	160 - 167	163.50	161.25	166.75
	S10	167 - 174	170.50	168.25	173.75
	5	174 - 181	177.50	175.25	180.75
Band III	6	181 - 188	184.50	182.25	187.75
TV/DAB	7	188 - 195	191.50	189.25	194.75
	8	195 - 202	198.50	196.25	201.75
	9	202 - 209	205.50	203.25	208.75
	10	209 - 216	212.50	203.25	208.75
	11	216 - 223	219.50	217.25	222.75
	12	223 - 230	226.50	224.25	229.75
	S 11	230 - 237	233.50	231.25	236.75
Upper	S 12	237 - 244	240.50	238.25	243.75
S-channels	S 13	244 - 251	247.50	245.25	250.75
	S 14	251 - 258	254.50	252.25	257.75
	S 15	258 - 265	261.50	259.25	264.75
	S 16	265 - 272	268.50	266.25	271.75
	S 17	272 - 279	275.50	273.25	278.75
	S 18	279 - 286	282.50		
	S 19	286 - 293	289.50	287.25	
	S 20	293 - 300	296.50	294.25	299.75
S-channels	S 21	302 - 310	306.00	303.25	308.75
	S 22	310 - 318	314.00	311.25	316.75
	S 23	318 - 326	322.00	319.25	324.75
	S 24	326 - 334	330.00	327.25	332.75
	S 25	334 - 342	338.00	335.25	340.75
	S 26	342 - 350	346.00	343.25	348.75
	S 27	350 - 358	354.00	351.25	356.75
	S 28	358 - 366	362.00	359.25	364.75
	S 29	366 - 374	370.00	367.25	372.75
	S 30	374 - 382	378.00	375.25	380.75
	S 31	382 - 390	386.00	383.25	388.75
	S 32	390 - 398	394.00	391.25	396.75
	S 33	398 - 406	402.00	399.25	404.75
	S 34	406 - 414	410.00	407.25	412.75
	S 35	414 - 422	418.00	415.25	420.75
	S 36	422 - 430	426.00	423.25	428.75
	S 37	430 - 438	434.00	431.25	436.75
	S 38	438 - 446	442.00	439.25	444.75

	Channel number	Frequency range	Channel centre	Picture carrier	1st sound
Unit		MHz	MHz	MHz	
Band IV	21	470 - 478	474.00	471.25	476.75
	22	478 - 486	482.00	476.25	484.75
	23	486 - 494	490.00	487.25	492.75
	24	494 - 502	498.00	495.25	500.75
	25	502 - 510	506.00	503.25	508.75
	26	510 - 518	514.00	511.25	516.75
	27	518 - 526	522.00	519.25	524.75
	28	526 - 534	530.00	527.25	532.75
	29	534 - 542	538.00	535.25	540.75
	30	542 - 550	546.00	543.25	548.75
	31	550 - 558	554.00	551.25	556.75
	32	558 - 566	562.00	559.25	564.75
	33	566 - 574	570.00	567.25	572.75
	34	574 - 582	578.00	575.25	580.75
	35	582 - 590	586.00	583.25	588.75
	36	590 - 598	594.00	591.25	596.75
	37	598 - 606	602.00	599.25	604.75
	38	606 - 614	610.00	607.25	612.75
	39	614 - 622	618.00	615.25	618.75
Band V	40	622 - 630	626.00	623.25	626.75
	41	630 - 638	634.00	631.25	636.75
	42	638 - 646	642.00	639.25	644.75
	43	646 - 654	650.00	647.25	652.75
	44	654 - 662	658.00	655.25	660.75
	45	662 - 670	666.00	663.25	668.75
	46	670 - 678	674.00	671.25	676.75
	47	678 - 686	682.00	679.25	684.75
	48	686 - 694	690.00	687.25	692.75
	49	694 - 702	698.00	695.25	700.25
	50	702 - 710	706.00	703.25	708.75
	51	710 - 718	714.00	711.25	716.75
	52	718 - 726	722.00	719.25	724.75
	53	726 - 734	730.00	727.25	732.75
	54	734 - 742	738.00	735.25	740.75
	55	742 - 750	746.00	743.25	748.75
	56	750 - 758	754.00	751.25	756.75
	57	758 - 766	762.00	759.25	764.75
	58	766 - 744	770.00	767.25	772.75
	59	774 - 782	778.00	775.25	780.75
	60	782 - 790	786.00	783.25	788.75
ECN/LTE/	61	790 - 798	794.00	791.25	796.75
Band V	62	798 - 806	802.00	799.25	804.75
	63	806 - 814	810.00	807.25	812.75
	64	814 - 822	818.00	815.25	820.75
	65	822 - 830	826.00	823.25	828.75
	66	830 - 838	834.00	831.25	836.75
	67	838 - 846	842.00	839.25	844.75
	68	846 - 854	850.00	847.25	852.75
	69	854 - 862	858.00	855.25	860.75

6. Channels and frequencies

Channel		Channel limits (MHz)	Video carrier (MHz)	Audio carrier (MHz)
Standard B. Italy				
VHF I	A	52.5-59.5	53.75	59.25
	B	61-68	62.25	67.75
VHF II	C	81-88	82.25	87.75
VHF III	D	174-181	175.25	180.75
	E	182.5- 189.5	183.75	189.25
	F	191-198	192.25	197.75
	G	200-207	201.25	206.75
	H	209-216	210.25	215.75
	H 1	216-223	217.25	222.75
	H 2	223-230	224.25	229.75
Standard D. OIRT				
VHF I	R I	48.5-56.5	49.75	56.25
	R II	58-66	59.25	65.75
	R III	76-84	77.25	83.75
(VHF II)	R IV	84-92	85.25	91.75
	R V	92-100	93.25	99.75
	s1	110-118	111.25	117.75
	s2	118-126	119.23	125.75
	s3	126-134	127.25	133.75
	s4	134-142	135.25	141.75
	s5	142-150	143.25	149.75
	s6	150-158	151.25	157.75
	s7	158-166	159.25	165.75
	s8	166-174	167.25	173.75
(VHF III)	R VI	174-182	175.25	181.75
	R VII	182-190	183.25	189.75
	R VIII	190-198	191.25	197.75
	R IX	198-206	199.25	205.75
	R X	206-214	207.25	213.75
	R XI	214-222	215.25	221.75
	R XII	222-230	223.25	229.75
	s9	230-238	231.25	237.75
	s10	238-246	239.25	245.75
	s11	246-254	247.25	253.75
	s12	254-262	255.25	261.75
	s13	262-270	263.25	269.75
	s14	270-278	271.25	277.75
	s15	278-286	279.25	285.75
	s16	286-294	287.25	293.75
	s17	294-302	295.25	301.75
	s18	302-310	303.25	309.75
	s19	310-318	311.25	317.75
	s20	318-326	319.25	325.75
	s21	326-334	327.25	333.75
	s22	334-342	335.25	341.75
	s23	342-350	343.25	349.75
	..	.....	.....	.....
	...	.....	.....	.....
	s38	462-470	463.25	469.75

Spec. chanel

Spec. chanel

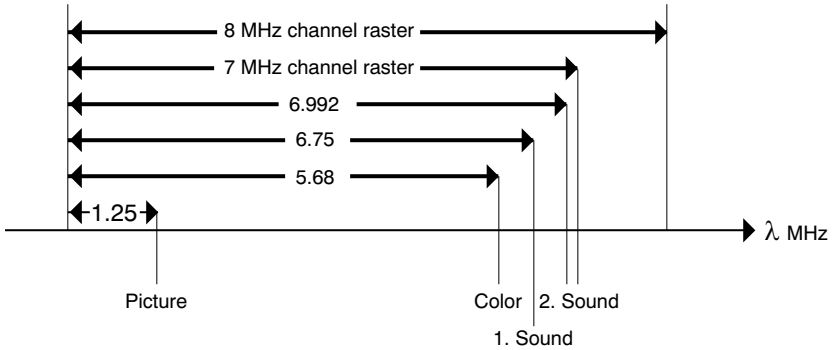
Channel		Channel limits (MHz)	Video carrier (MHz)	Audio carrier (MHz)
Standard D. China				
VHF I	1	48.5-56.5	49.75	56.25
	2	56.5-64.5	57.75	64.25
	3	64.5-72.5	65.75	72.25
	4	76.0-84.0	77.25	83.75
	5	84.0-92.0	85.25	91.75
VHF III	6	167-175	168.25	174.75
	7	175-183	176.25	182.75
	8	183-191	184.25	190.75
	9	191-199	192.25	198.75
	10	199-207	200.25	206.75
	11	207-215	208.25	214.75
	12	215-223	216.25	222.75
Standard I. Ireland				
VHF I	I A	44.5-52.5	45.75	51.75
	I B	52.5-60.5	53.75	59.75
	I C	60.5-68. 5	61.75	67.75
VHF III	I D	174-182	175.25	181.25
	I E	182-190	183.25	189.25
	I F	190-198	191.25	197.25
	I G	198-206	199.25	205.25
	I H	206-214	207.25	213.25
	I J	214-222	215.25	221.25
Standard L. France				
VHF I	A	41.00-49.00	47.75	41.25
	B	49.00-57.00	55.75	49.25
	C	57.00-65.00	63.75	57.25
	C 1	53.75-61.75	60.50	54.00
VHF III	5	174.75-182.75	176.00	182.50
	6	182.75-190.75	184.00	190.50
	7	190.75-198.75	192.00	198.50
	8	198.75-206.75	200.00	206.50
	9	206.75-214.75	208.00	214.50
	10	214.75-222.75	216.00	222.50
Standard K1. (France)				
VHF III	4	174-182	175.25	181.75
	5	182-190	183.25	189.75
	6	190-198	191.25	197.75
	7	198-206	199.25	205.75
	8	206-214	207.25	213.75
	9	214-222	215.25	221.75

7. Carrier frequencies for radio and TV channels

Frequencies of a TV-signal
(Norm B. G/Pal)

7 MHz raster:
FI. USB. F III. OSB

8 MHz raster:
ESB. F IV. F V



8. Analogue colour and broadcasting systems by country

Country	TV	Colour system	Stereo	Subtitles
Albania	B/G	PAL		
Argentina	N	PAL-N		
Australia	B/G	PAL	FM-FM	Teletext
Austria	B/G	PAL	FM-FM	Teletext
Azores (Portugal)	B	PAL		
Bahamas	M	NTSC		
Bahrain	B	PAL		
Barbados	M	NTSC		
Belgium	B/G	PAL	Nicam	Teletext
Bermuda	M	NTSC		
Brazil	M	PAL-M	MTS	
Bulgaria	D	SECAM		
Canada	M	NTSC	MTS	CC
Canary Is	B	PAL		
China	D	PAL		
Colombia	M	NTSC		
Cyprus	B	PAL		
Czechsolvakia	D/K	SECAM/PAL		
Denmark	B	PAL	Nicam	Teletext
Egypt	B	SECAM		
Faroe Islands (DK)	B	PAL		
Finland	B/G	PAL	Nicam	Teletext
France	E/L	SECAM		Teletext
Gambia	I	PAL		
Germany	B/G	PAL	FM-FM	Teletext
Germany (prev East)	B/G	SECAM/PAL		
Gibraltar	B	PAL		
Greece	B/G	PAL		
Hong Kong	I	PAL	Nicam	
Hungary	B/G & D/K	PAL	Nicam (Budapest)	
Iceland	B	PAL		
India	B	PAL		
Indonesia	B	PAL		
Iran	H	SECAM		
Ireland	I	PAL	Nicam	Teletext
Israel	B/G	PAL	Nicam	Teletext
Italy	B/G	PAL	FM/FM	Teletext
Jamaica	N	SECAM		
Japan	M	NTSC	Matrix	
Jordan	B	PAL		
Kenya	B	PAL		
Korea	M	NTSC		
Luxembourg	B/G	PAL	NICAM	Teletext
Madeira	B	PAL		
Madagascar	B	SECAM		
Malaysia	B	PAL		
Malta	B/G	PAL		
Mauritius	B	SECAM		
Mexico	M	NTSC	MTS	CC
Monaco	L/G	SECAM/PAL		
Morocco	B	SECAM		

Country	TV	Colour system	Stereo	Subtitles
Netherlands	B/G	PAL	FM-FM	Teletext
New Zealand	B/G	PAL	Nicam	Teletext
North Korea	D/K	SECAM		
Norway	B/G	PAL	Nicam	
Pakistan	B	PAL		
Paraguay	N	PAL		
Peru	M	NTSC		
Philipines	M	NTSC		
Poland	D/K	PAL		Teletext
Portugal	B/G	PAL	Nicam	Teletext
Romania	G	PAL		
Russia	D/K	SECAM		
Saudi Arabia	B	SECAM		
Seychelles	I	PAL		
Singapore	B	PAL		
South Africa	I	PAL		
South Korea	M	NTSC		
Spain	B/G	PAL	Nicam	Teletext
Sri Lanka	B/G	PAL		
Sweden	B/G	PAL	Nicam	Teletext
Switzerland	B/G	PAL	FM-FM	Teletext
Tahiti	KI	SECAM		
Taiwan	M	NTSC		
Thailand	B	PAL		
Trinidad	M	NTSC		
Tunisia	B	SECAM		
Turkey	B	PAL	-	Teletext
United Arab Emirates	B/G	PAL		
United Kingdom	I	PAL	Nicam	Teletext
Uruguay	N	PAL	MTS	
USA	M	NTSC	MTS	CC
Venezuela	M	NTSC		
Yugoslavia	B/H	PAL		
Zimbabwe	B	PAL		

9. Signal level - mV to dBµV

Signal level - mV to dBµV

mV v/75 Ω	dBµV
0.100	40
0.112	41
0.125	42
0.140	43
0.160	44
0.180	45
0.200	46
0.225	47
0.250	48
0.280	49
0.315	50
0.355	51
0.400	52
0.450	53
0.500	54
0.560	55
0.630	56
0.700	57
0.800	58
0.900	59
1.00	60
1.12	61
1.25	62
1.40	63
1.60	64
1.80	65
2.00	66
2.25	67
2.50	68
2.80	69
3.15	70
3.55	71
4.00	72
4.50	73
5.00	74
5.60	75
6.30	76
7.00	77
8.00	78
9.00	79
10.0	80
11.2	81
12.5	82
14.0	83
16.0	84
18.0	85

mV v/75 Ω	dBµV
20.0	86
22.5	87
25.0	88
28.0	89
31.5	90
35.5	91
40.0	92
45.0	93
50.0	94
56.0	95
63.0	96
70.0	97
80.0	98
90.0	99
100	100
112	101
125	102
140	103
160	104
180	105
200	106
225	107
250	108
280	109
315	110
355	111
400	112
450	113
500	114
560	115
630	116
700	117
800	118
900	119
1000	120
1120	121
1250	122
1400	123
1600	124
1800	125
2000	126
2250	127
2500	128
2800	129

*) ***The numbers are dB value calculated to times.***
Signal level is often stated in dBµV which is to be understood as the number of dB the signal exceeds 1µV.

Voltage ratio in dB

*) Factor -dB	dB	*) Factor +dB
1.0	0.0	1.0
0.95	0.5	1.06
0.89	1.0	1.12
0.84	1.5	1.19
0.8	2.0	1.25
0.75	2.5	1.33
0.71	3.0	1.41
0.67	3.5	1.5
0.63	4.0	1.6
0.60	4.5	1.67
0.56	5.0	1.78
0.53	5.5	1.88
0.50	6.0	2.0
0.47	6.5	2.12
0.45	7.0	2.24
0.42	7.5	2.37
0.4	8.0	2.5
0.38	8.5	2.66
0.35	9.0	2.82
0.33	9.5	3.00
0.32	10	3.16
0.28	11	3.55
0.25	12	4.00
0.22	13	4.5
0.2	14	5.00
0.18	15	5.62
0.16	16	6.3
0.14	17	7.1
0.125	18	8.0
0.11	19	8.9
0.10	20	10.0
0.089	21	10.0
0.08	22	12.5
0.071	23	14.1
0.063	24	16.0
0.056	25	17.8
0.050	26	20.0
0.045	27	22.4
0.04	28	25.0
0.035	29	28.2
0.032	30	31.6
0.028	31	35.5
0.025	32	40
0.022	33	45
0.020	34	50
0.018	35	56
0.016	36	63
0.014	37	71
0.0125	38	80
0.011	39	89
0.01	40	100
0.0056	45	178
0.0032	50	316
0.0018	55	562
0.001	60	1000

10. Power level
dBm to mW to dBm

dBm	mW
-20	0,01
-19	0,01
-18	0,02
-17	0,02
-16	0,03
-15	0,03
-14	0,04
-13	0,05
-12	0,06
-11	0,08
-10	0,10
-9	0,13
-8	0,16
-7	0,20
-6	0,25
-5	0,32
-4	0,40
-3	0,50
-2	0,63
-1	0,79
0	1,00
1	1,26
2	1,58
3	2,00
4	2,51
5	3,16
6	3,98
7	5,01
8	6,31
9	7,94
10	10,00
11	12,59
12	15,85
13	19,95
14	25,12
15	31,62
16	39,81
17	50,12
18	63,10
19	79,43
20	100,00
21	125,89
22	158,49
23	199,53
24	251,19
25	316,23
26	398,11
27	501,19

dBm	mW
-20,00	0,01
-16,99	0,02
-15,23	0,03
-13,98	0,04
-13,01	0,05
-12,22	0,06
-11,55	0,07
-10,97	0,08
-10,46	0,09
-10,00	0,1
-6,99	0,2
-5,23	0,3
-3,98	0,4
-3,01	0,5
-2,22	0,6
-1,55	0,7
-0,97	0,8
-0,46	0,9
-0,00	1
3,01	2
4,77	3
6,02	4
6,99	5
7,78	6
8,45	7
9,03	8
9,54	9
10,00	10
10,41	11
10,79	12
11,14	13
11,46	14
11,76	15
12,04	16
12,30	17
12,55	18
12,79	19
13,01	20
13,22	21
13,42	22
13,62	23
13,80	24
13,98	25
14,15	26
14,31	27
14,47	28
14,62	29
14,77	30

General sales and delivery conditions

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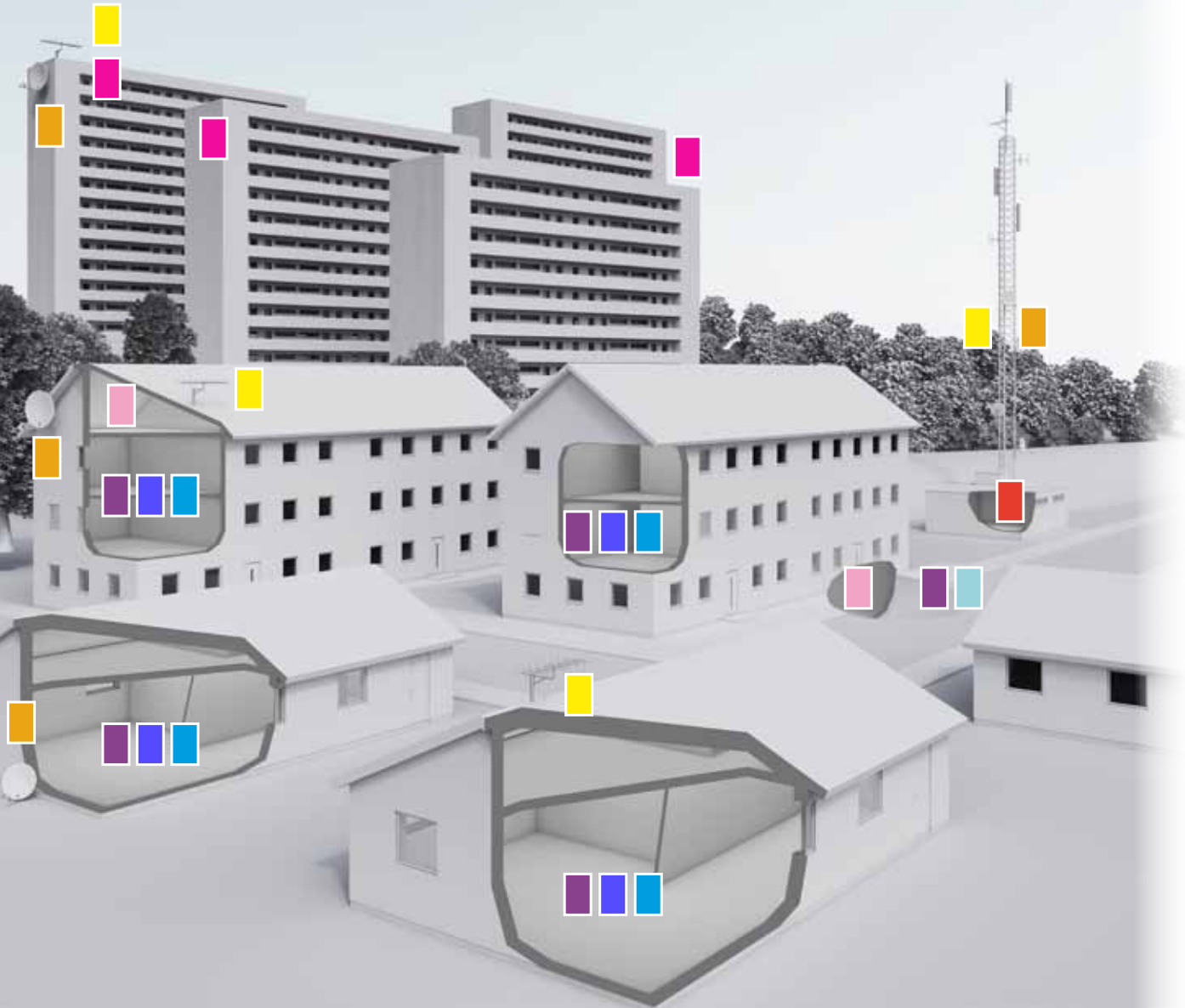

General sales and delivery conditions

1. **APPLICATION**
All sales of the seller's products are made according to the following conditions which have preference to any stipulations laid down in the buyer's order / acceptance, including buyer's general conditions, unless otherwise stated in a written agreement, and in that case with an exact indication of the points from which these sales and delivery conditions are deviating.

2. **QUOTATION AND ORDER CONFIRMATION**
Quotations made by the seller are open for 30 days from the date of the offer, unless otherwise specified.

3. **PRODUCT INFORMATION**
Information and technical data on seller's products stated in catalogues, leaflets and other written material are only to be considered as approximate and not binding on seller, unless a written agreement explicitly states otherwise. All drawings and technical specifications handed over to buyer prior to or after entering into an agreement remain seller's property. No material must be used or copied by the buyer without the seller's written permission, neither must it be reproduced, handed over nor brought to the knowledge of a third party for another purpose than the performance of the agreement made. Failing an agreement, all documentation handed over should be returned to seller, and also in that case no copying or general use of the material can be made, nor must it be brought to the knowledge of a third party. The seller is not responsible for the buyer's selection of the product, including compatibility of the product, its use and results, unless the contract explicitly refers to these. The seller undertakes no responsibility for the buyer's selection of potential supplementary equipment and service requested for use with the product as well as application and results of same. The seller reserves the right to modify his products without notice as far as such modifications do not cause major restrictions of the applications.

4. **PRICE ALTERATIONS** The seller reserves the right to alter prices in case of major changes of rates of exchange, increased prices for raw materials, political events or other conditions which the seller cannot control, unless a written agreement states that the seller is not entitled to make such reservation.

5. **PASSING THE RISK**
The risk for the product is passed upon delivery, unless otherwise agreed in writing. Such agreements are made in accordance with Incoterms 90 terminology.

6. **TIME OF DELIVERY; DELAYS**
The agreed time of delivery is only approximate and subject to full approval of the contents of the agreement, for instance accepted drawings. The seller is never responsible for delays, unless such delays are owing to gross negligence on his part. The seller is never responsible for operational losses, loss of profit, loss on goods kept in stock, loss caused by delayed building activities or other contract work or any other direct or indirect loss or direct or indirect costs caused by delayed deliveries. If delays should occur, and if, at the buyer's request, the seller cannot state a delivery period, the buyer has the right to cancel the order and demand reimbursement of potential (pre)payment, provided that the products have not been made especially to the customer's specifications. Above statement defines the seller's maximum responsibility in relation to delays.

7. **PAYMENT, RETENTION OF OWNERSHIP UNTIL PAYMENT IS MADE**
The seller reserves for himself the right of ownership until the agreed price has been paid. In that case it is the buyer's duty to take out an insurance on the goods against any damage from the date of the passing of the risk until the agreed price has been paid. The insurance should cover full and new value of the goods in question. Until close to the date of delivery, the seller has a right to demand, and the customer is bound to give a banker's guarantee payable on demand in an acknowledged bank for the total purchase sum including costs and outlays.
As far as mounting and servicing is concerned, the seller is justified to demand at any time, and the buyer is liable to give a banker's guarantee payable on demand in an acknowledged bank for the agreed payment or partial payment, including costs and outlays, if any. For delivery of products that should form part of another product, the seller is entitled to demand at any time, and the buyer is liable to give a banker's guarantee payable on demand in an acknowledged bank for an amount corresponding to the purchase sum for the parts entered at the time in question, but not yet paid. If the buyer does not give such a banker's guarantee on request, the seller is entitled to consider the agreement(s) non-fulfilled, wholly or partly, and the seller is entitled to claim delivery of products that have not been used and not paid. The buyer is thus unable to work with or otherwise use such products. Payment has to be made at the time stated in the quotation or the order confirmation. If the buyer does not pay in due time, the seller reserves for himself the right to charge 2% interest on late payments for each new month. The same interest is charged if a respite has been granted. The buyer is not entitled to keep back payments or to set off against asserted claims that have not been accepted by the seller. If the buyer does not want to receive the lot at the time agreed, he is obliged to pay as if delivery had been made according to the agreement.

8. **PACKING**
Disposable packing has been included in the price and will not be refunded in case of a possible returning. Multi-way packing will be charged and credited to the customer in case of prompt and safe return, carriage-paid. The buyer shall reimburse the seller for any costs or charges for which the seller becomes legally liable in respect of the removal and disposal of packaging materials.

9. **TOOLS**
Applied tools which have been debited to the buyer wholly or in part, according to agreement, remain in the seller's warehouse, but are not delivered. The seller takes care of the proper maintenance of these tools. If such tools are not used for 3 years, the seller is no longer bound to keep and maintain them. No liability rests with the seller for tools lent by the buyer, if they have not been used for 2 years and not been demanded by then.

10. **PROPERTY/INCORPOREAL RIGHTS**
The buyer does not acquire property and/or inventor's rights/ other incorporeal rights to any computer programmes used for the product, nor any drawings, design, technical solutions etc. whether individually made for the buyer on his account or not, since the buyer is only entitled to use such material in relation to the agreed application of the product.

11. **RESPONSIBILITY FOR VIOLATION OF PATENT AND OTHER INCORPOREAL RIGHTS**
If there should be a risk, or if it is asserted that the product infringes a patent or another incorporeal right, the buyer accepts that, at his own option, the seller is either allowed by the proper party to continued use or he changes or replaces the product, so that it no longer gives rise to an infringement. If none of these alternatives can be achieved on terms that the seller finds reasonable, he can claim that the buyer refrains from using the product against an allowance from the seller corresponding to the value of the product after depreciation with equal amounts every year compared to the technical and economical life of the product. The size of such an allowance is not dependent on the question whether the product is integrated into another product or a building etc., and it is not influenced by the loss which it and / or discontinuance of use might cause the buyer. In case of resale of the product, the buyer is liable to include an identical stipulation in the agreement between buyer and buyer's customer, including instruct the customer to include an identical stipulation for the customer's possible resale. The seller's maximum responsibilities as to any potential infringement of the patent or another incorporeal right are defined above.

General sales and delivery conditions

12. **COMPLAINTS**
Immediately on receipt and prior to taking the products into use, the buyer should inspect the goods supplied to ensure that there are no shortcomings and that the correct quantity has been supplied. Complaints of defects which have been found or should have been found at a general inspection must be made at once and not later than 8 days after receipt of the products. If the complaint is not made within the time limit stated, the buyer loses his right to put forward a claim. Complaints of discrepancies in quantity and damages to the product should be made immediately to the carrier, if any, and to the seller. Otherwise, the buyer loses his right to complain of such faults.

13. **RESPONSIBILITY FOR SHORTCOMINGS**
Provided that the agreed terms of payment are kept, and that complaints are made in due time, the seller will remedy any shortcomings that turn up during a period from 12 months from the delivery date. The responsibility does not comprise deficiencies caused by factors arisen after the risk has passed over to the buyer. Remedy is only made by adjustment, repair or replacement of (parts of) the product or its components according to the seller's option. Wages paid for dismounting and mounting will not be refunded. If dismounting and mounting should affect more than the product, such work and costs are irrelevant to the seller as well. The buyer has to send the seller a written complaint with details of the deficiency without undue delay. The complaint should be made immediately, if there is reason to believe that damages might be involved. If the buyer does not advise the seller of a deficiency within the time limit stated, the buyer will lose his right to make a claim. Return of repaired parts or return of the product is paid by the seller who takes over replaced parts, if any. Unless otherwise agreed, the buyer will pay such additional costs that may arise if the product is situated at another place than the destination stated in the agreement, or, failing such information, the place of delivery. If the product has been changed or someone else than the seller or a repair man appointed by the seller has tried to repair the product, or if the product has been subject to damages or used for unfit purposes, or if installation, operation and maintenance are not in compliance with the seller's stipulations, the seller can refuse to remedy the deficiency free of charge. Deficiencies caused by conditions for which the buyer or someone else is responsible, or which are not announced until after expiration of the remedying period, are not the seller's business. The seller's responsibility does not include deficiencies arisen in materials provided by the customer or by a co-producer/supplier appointed by the customer or in constructions ordered or specified by him. If the seller does not meet his obligations within a reasonable time, the buyer can claim a proportional reduction of the purchase sum, but not more than 15% of the agreed purchase sum. In case of a vital deficiency, the buyer can cancel the agreement by a written notice to the seller, at the same time demanding compensation for his loss, i.e. max. 15% of the agreed purchase sum. Above conditions are the seller's maximum obligations concerning shortcomings.
So the seller is neither responsible for direct nor indirect losses, including operational losses, loss of profit as well as costs or damages etc.

14. **LIABILITY FOR CAUSING DAMAGES (PRODUCT LIABILITY)**
The seller is responsible for personal injuries according to the legislation concerning product liability. The seller is not responsible for damages to real and personal property which occurs while the product is in the buyer's possession. Nor is the seller responsible for damages to products made by the buyer or products comprising such parts. Furthermore, the seller is only responsible for damages to real and personal property, if it can be proved that the damage is caused by mistakes or negligence made by the seller or others whom the seller is responsible for. The seller is not responsible for operational losses, loss of profit or other indirect losses.
If a product liability towards a third party has been imposed on the seller, the buyer is committed to indemnify the seller to the same degree as the seller's responsibility stated in the three previous paragraphs. These limitations of the seller's responsibility are not valid, if the seller has shown gross negligence. If the third party claims compensation from one of the parties in accordance with this point, he should advise the other party immediately. The buyer is bound to let the court or arbitration tribunal bring an action against him which deals with claims made against the seller for damages assertedly caused by the product.

15. **FORCE MAJEURE**
The seller's obligations are suspended and can be dropped when missing fulfilment is owing to conditions beyond the seller's control.

16. **CONSUMERS' PURCHASES IN DENMARK**
For consumers' purchases in Denmark the stipulations laid down in the Sale of Goods Act take precedence over these sales and delivery terms.

17. **VENUE AND LAW**
Any dispute arising out of the contract shall be settled before a Danish court. The venue is "SØ- og Handelsretten" in Copenhagen.
However, the seller is entitled to demand arbitration according to the general rules of the Danish court.
The Court of Arbitration is set up in Copenhagen. Settlement through arbitration does not exclude the possibility of an injunction or that other preliminary remedies can be carried through at the relevant revenue.

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