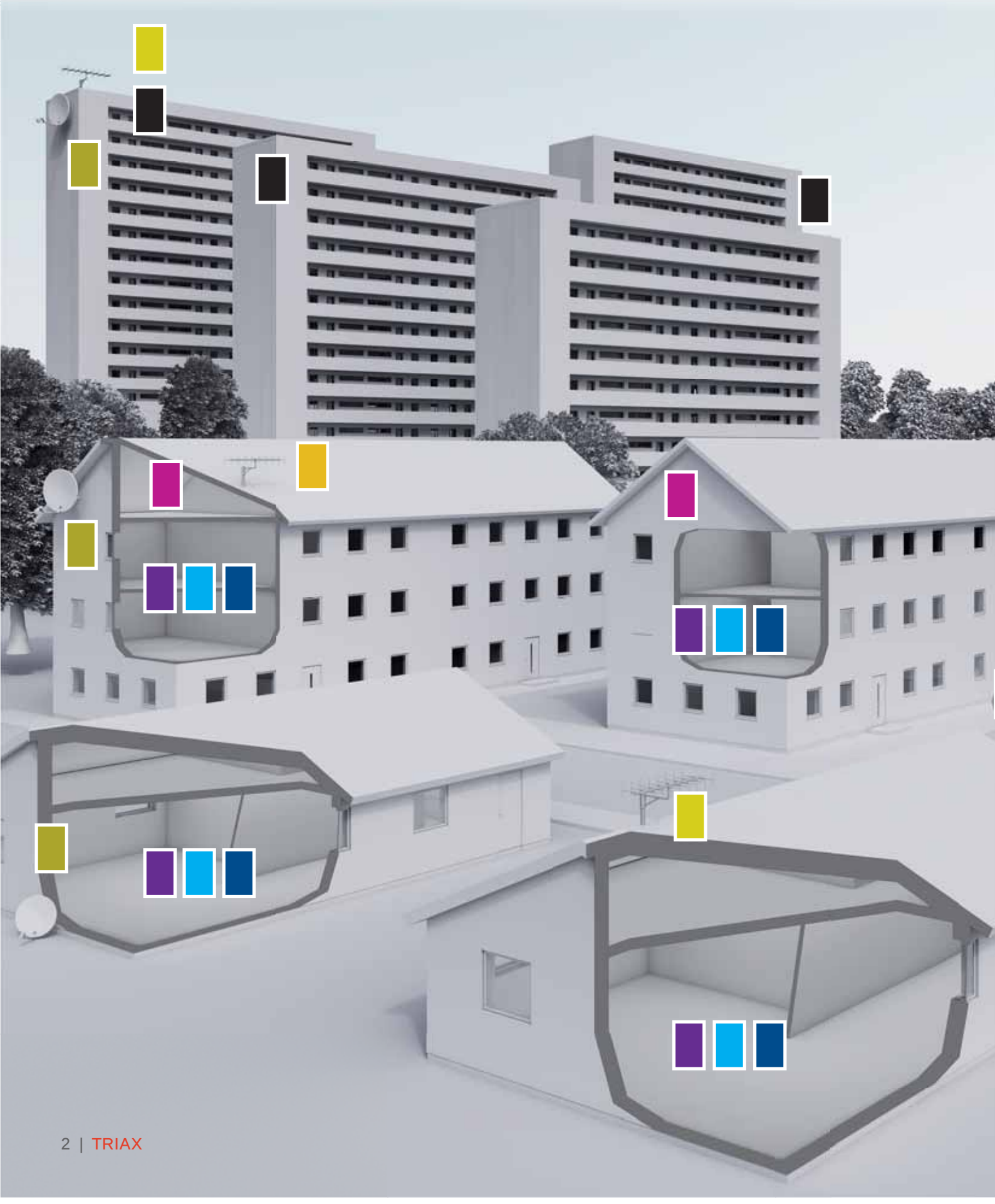
TRIAX

Main Catalogue

- your ultimate connection

Welcome to the Triax world

| for more than 60 years TRIAX has been a preferred business partner



Index

| Triax main catalogue

Today, Triax's product range covers all the way from reception to distribution, from satellite dishes over cabinets, over headends to outlets.

It is the philosophy of Triax to develop user-friendly, high-quality solutions and products which fulfill the needs of our customers – not more and not less. That is why we manufacture products and deliver end-to-end solutions that are tailor-made for individual clients.

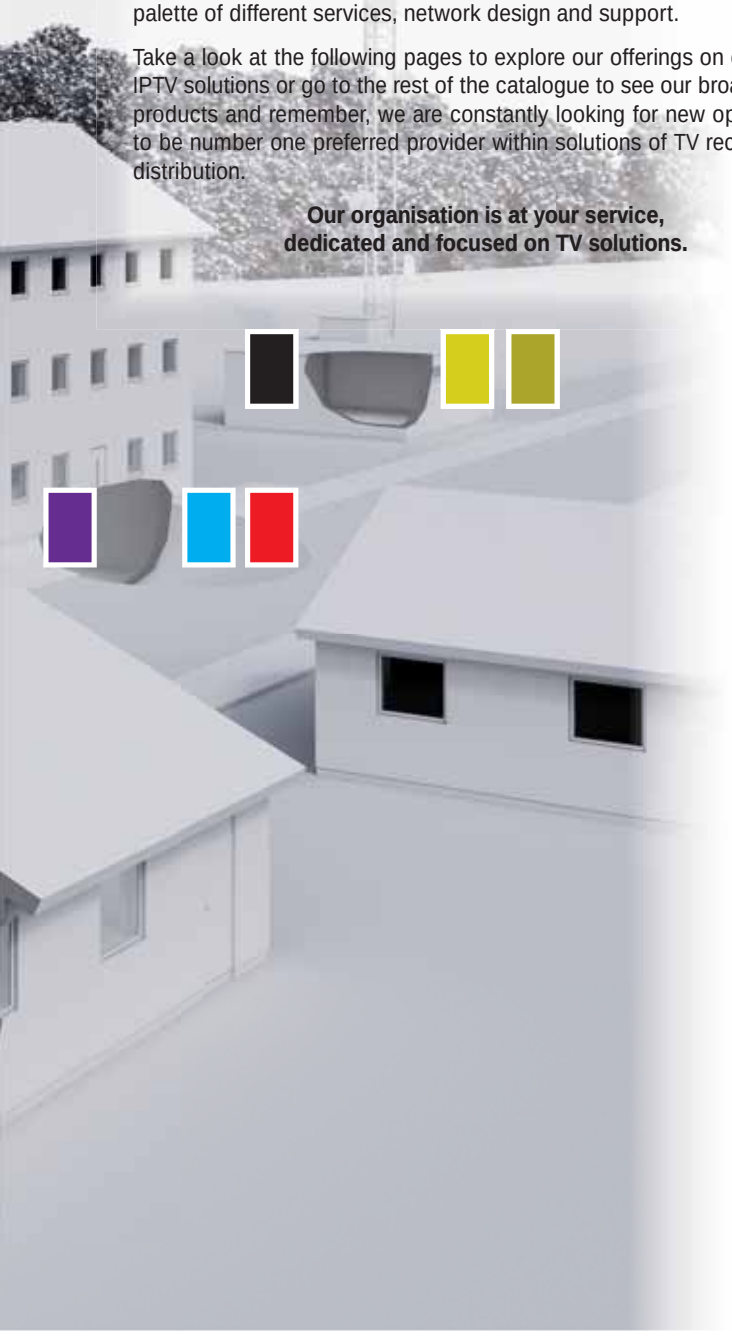
Easy to install - easy to use. These are key words in Triax, and they apply right from the design of the product itself to our customer service and support.

This is a customer-driven company which helps you as building or network owner to get fast and competent answers to your questions, or you as an installer before, under and after the installation. Our help and guidance is easy to understand, useful and competent.

Continuously, technology is changing and development leads us to enter into the new IPTV (Internet Protocol Television) world. Triax's TDX headend is the core of our IPTV solutions. Within IPTV we are able to provide an end-to-end solution which besides hardware and software also includes a palette of different services, network design and support.

Take a look at the following pages to explore our offerings on end-to-end IPTV solutions or go to the rest of the catalogue to see our broad range of products and remember, we are constantly looking for new opportunities to be number one preferred provider within solutions of TV reception and distribution.

Our organisation is at your service, dedicated and focused on TV solutions.



Triax Solutions
IP - switch
Middle ware — Solutions

Aerials - LTE aerials
Mast amplifiers & combiners
Mounting accessories — Terrestrial reception

Dishes - LNB units,
DiSEqC switches
Mounting accessories — Satellite reception

Optical transmitters - receiver nodes
LNB - converters - splitters - taps
Optical cables - Tools — Fibre optics

IP Headend - Headends
Multiband amplifiers and filters
Compact headend cabinets — Headends

Multiswitches 17 - 13 - 9 - 5 inputs
Taps, splitters, amplifiers
Power supplies, accessories — Multi switches

Outdoor- & indoor house amplifiers
Splitters - taps - attenuators
Link systems, home accessories — Distribution

InHouse connectivity
HDMI > CAT - SAT>IP units
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Meters
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General sales and
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Notes

| for your personal notes

Solutions

Triax IP-TV solutions

What is IPTV

Components typically used in Triax IPTV solutions

Examples

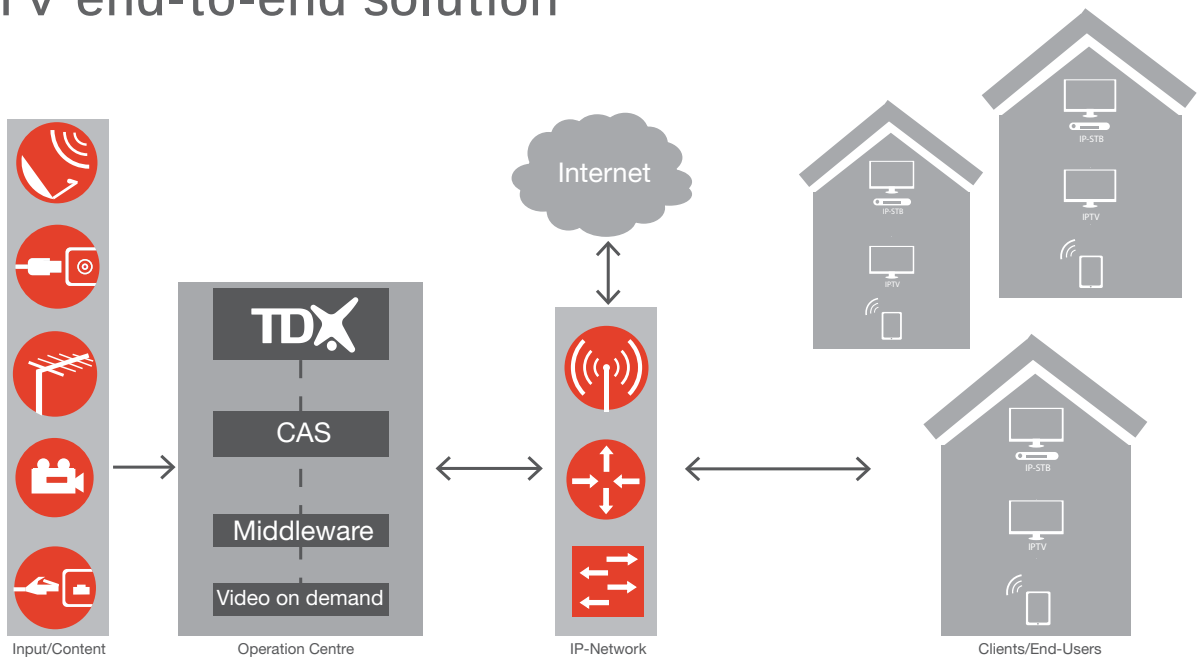
TRIAX IPTV solutions

Innovative thinking, service orientation, easy to use and advanced technology – these are key words in Triax IPTV solutions. We offer end-to-end IPTV solutions for many different applications like hospitals, corporate buildings, compounds, hotels etc. We can provide hardware, software products as well as a full IPTV solution that perfectly fits to our customer's needs.

What is IPTV

IPTV (Internet Protocol TV) systems offer customized features. Live TV channels can be viewed on TV, smart devices and computers. Clients can have access to valuable customized information, portals like Facebook, VoD, catchup TV, pause TV, messaging and much more.
IPTV brings a new level of control and flexibility to the TV distribution.

IPTV end-to-end solution



Components typically used in Triax IPTV solutions

Triax IPTV Gateway – TDX

Triax TDX headend/gateway is the core of our IPTV solution. With our own developed headend you are able to receive both DVB and IP inputs and on the output site you can freely choose the IP signal in combination with DVB signals, this gives you full freedom to combine an IPTV solution with a traditional DVB installation.
The Grafic User Interface of the headend helps to easy management of the channel lists, epg etc.
The IP output is distributed as a multicast stream into the IP network. Multicast management protocol ensures that streams which are not required on a particular network segment are not forwarded which maximizes the efficiency of the network.

Middleware

The middleware is the central software that defines user interfaces and set available services in an IPTV solution.
Triax can provide scalable solutions, typically a basic module with international TV & radio channels, language support, Information and messaging possibilities.
Additionally add-on modules can be provided as standard or customized solutions from small scale to high-end infotainment solutions.

Conditional Access System (CAS)

We work with partners specialized on high-end security solutions. Our CAS solutions enable content providers and broadcasters to feel secure! Our CAS solutions enable access for subscribed customers to view the services they pay for by smartcard or individual keys. But essential for the system is the ability to prevent unauthorized viewers to access the services.

IP Network

The performance of the IPTV solution is dependent on the IP network. We recommend to architect your network carefully and only to use recommended network components. Triax can provide network components for transporting streams from the headend to the end user.

Switch

The switch is the backbone of an IP network. A network switch is a computer networking device that links network “hosts” or network “users”. The switch can handle security, bandwidth, multicast, broadcast, Unicast, routing, even IP addresses (IP addresses are normally being handled by a router) and much more. Switches allow different users/devices of a network to communicate directly with one another in a smooth and efficient manner. Triax focus on Ethernet networks that use LAN switches. Switches that provide a separate connection for each user/device in an internal network are called LAN switches.

Wireless IP equipment

Wi-Fi is a wireless networking technology that uses radio waves to provide wireless network connections between a user/device and a Wireless Access Point (WAP or AP).
Multicast streaming video places a huge strain on Wi-Fi networks. With dynamic multicast optimization, our preferred hardware goes beyond “tagging” and forwarding video traffic to intelligently identify video requests and convert multicast traffic to unicast traffic destined to just those clients subscribed to a given feed.

Routers

A router’s main purpose is to divide two networks. The two networks could be an office network and the Internet or an “administration network” or a “guest network” in a company. A router is often referred to as a “gateway” – technically seen a gateway could also be a firewall, a switch, headend or similar equipment.

Firewall:

A Firewall is a unit that is very similar to a router in many ways. But a firewall has more features and is more intelligent than the router. The firewall is able to inspect the data sent though it and stops hackers, viruses and other destructive data from the Internet.

Cable

The optimal infrastructure for IPTV is Cat6 or above or FTTH (Fibre to the home), however many buildings are already installed with coax cables. Triax can provide solutions for IPTV over coax.
Triax manufacture all kinds of quality cables for IP and coax networks. In the cable section of this catalogue you can find a range of cables and connectors.

Multiscreen

With a multiscreen solution you get complete freedom to watch live TV any-where at any-time, not only on traditional TV sets but also on tablets and smart-phones. Our multiscreen solution is provided in our middleware solution as add-on feature.

IP Set Top Box

With the IP receiver the end-user gets access to the whole spectrum of possibilities the IPTV solution offers. In the middleware solution the services are made available for the viewer via the set top boxes.

Solutions

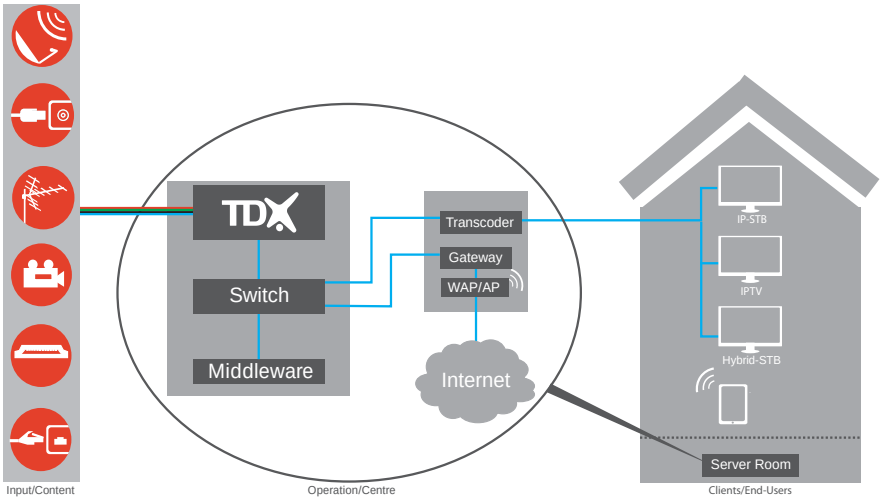
IPTV as a distribution technology

Full middleware solution

The combination of an IP headend and middleware addresses the fundamental needs of IPTV and Internet access for hotels, hospitals, cruise ships etc.
To increase the revenue per guest a vast range of options for the multi-media promotion of different products and services are readily available.
In cooperation with our partners we offer a wide range of IPTV solutions in this area.

Your benefits

- Tablet solution for remote control and live TV streaming
- Meeting / Conference room solution: Connect, present, browse, control!
- Hotel Info-Channel
- Time shift
- PVR – Personal Video Recorder
- Internet on TV



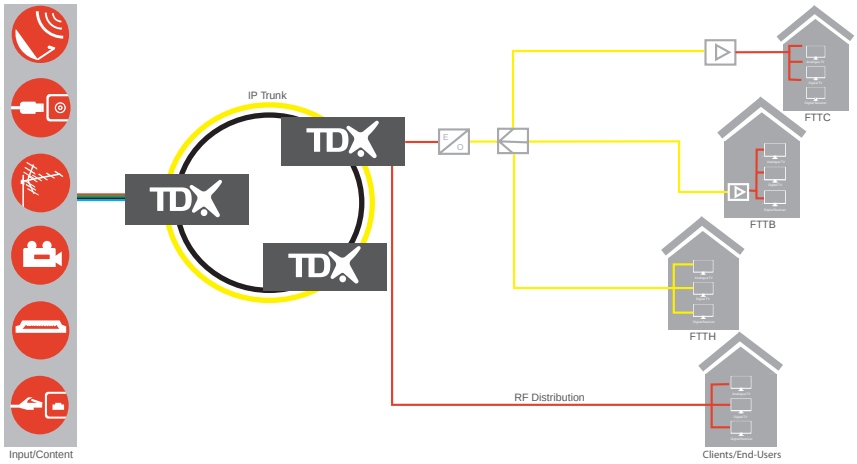
TDX as part of a fibre distribution

Increasingly, the existing optical CATV fibre networks (maybe in the past distributing analog modulated TV signals) are more and more used to transmit IP TV Services between the central headend and sub headend. Also the distribution cells in new system architectures are planned smaller. One reason for this is the feed-in of Internet services and providing bandwidth for Internet services to the end customer.

These distribution cells can be built up as an RF distribution network or as an optical distribution network. There are different technologies for building up the system in terms of optical distribution. FTTC (Fibre to the curb), the optical distribution ends at the street cabinet. FTTB (Fibre to the block), the fibre reaches the boundary of the building. FTTH (Fibre to the Home), the fibre reaches the living room.

Your benefits

- Easy signal handling and management
- Independent RF distribution per cell possible
- Smaller RF-distribution cells
- Redundancy systems with lower investments possible



- questions when create you own professional IPTV solution - just ask Triax

Aerials

Construction and type overview
BII (FM)
DAB
BIII (VHF)
BIV/V (UHF)
UFO
Combi
Indoor
GSM

Notes

| for your personal notes

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“.

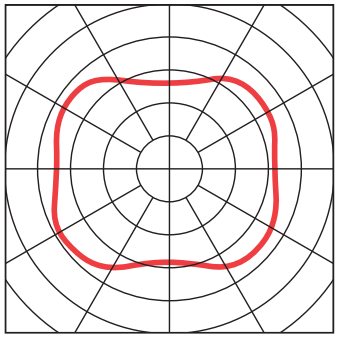
Terrestrial reception

| Introduction

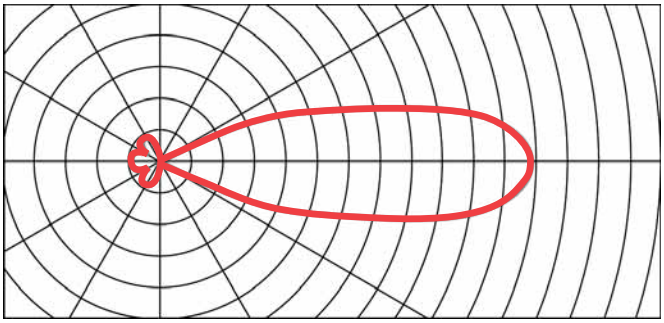
Radio antennas
Stereo signals can be received using any FM antenna. Because, however, a higher signal level and greater freedom from reflection are needed for clear stereo reception than for mono reception, it is usually necessary to use a directional antenna.

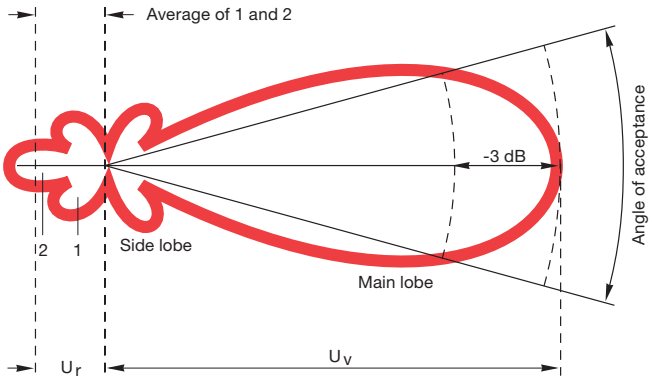
Television antennas for DVB-T
DVB-T reception is possible with any antenna that is suitable for the related frequency band and polarization. In the catalogue all antennas suitable for the reception of DVB-T signals in VHF III and UHF IV/V bands are marked with the DVB logo.

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 λ/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)

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:

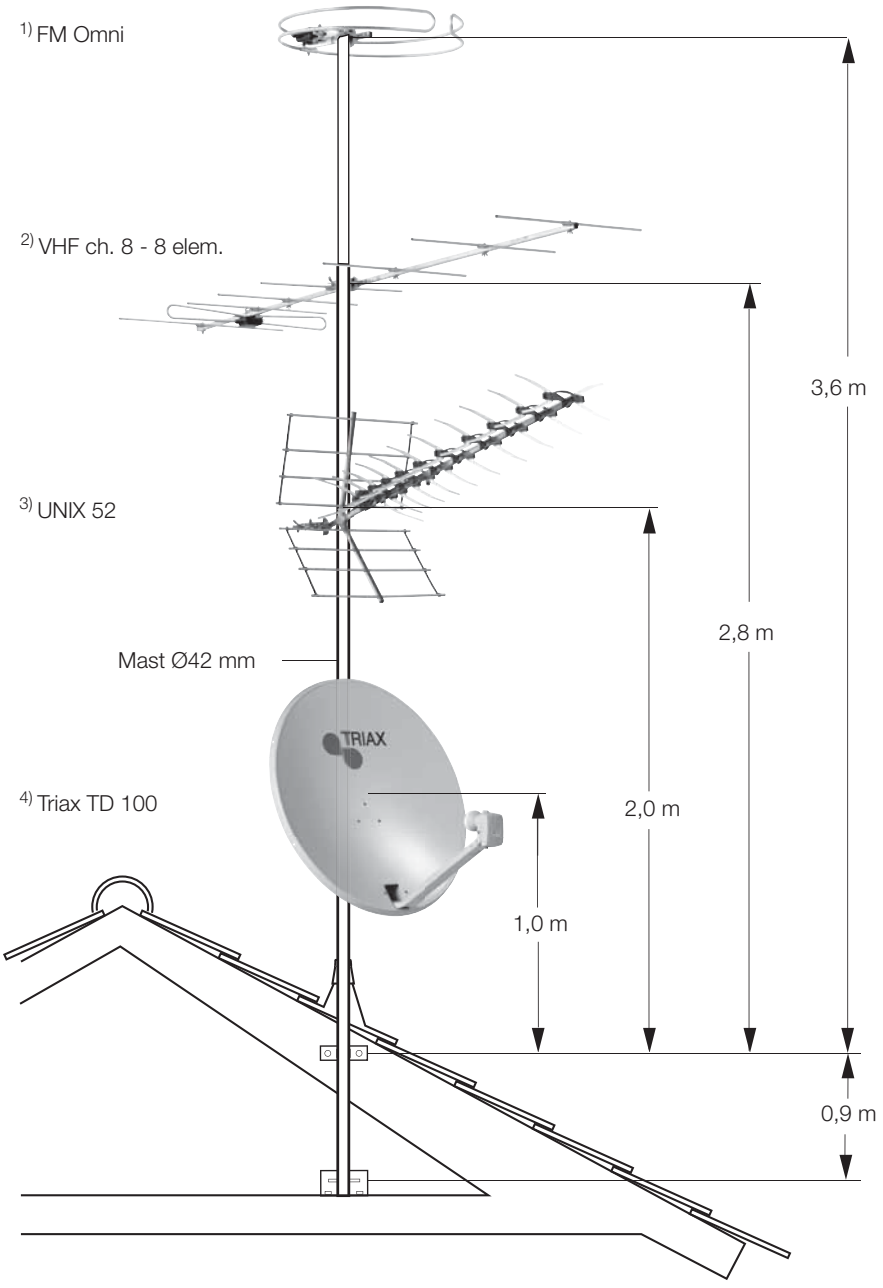
Wind load (N) x distance (m)
= bending moment (Nm)

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

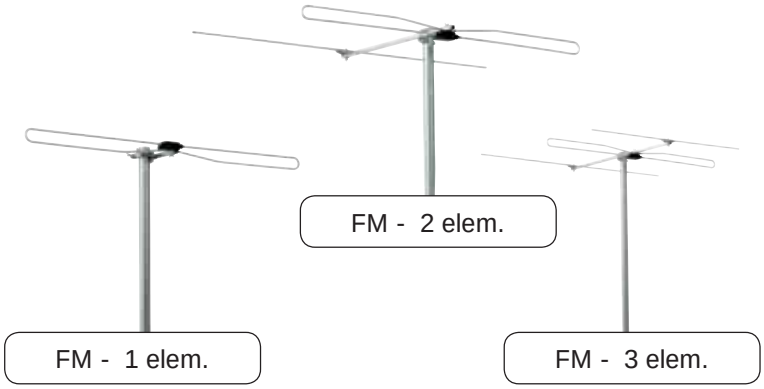
Aerials

| Band II (FM)

TRIAX band II aerials cover the frequency range 87.5-108 MHz.

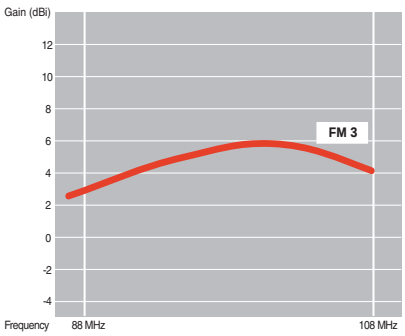
TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

All aerials are supplied with mounting brackets for aerial mast diameter up to 60 mm.

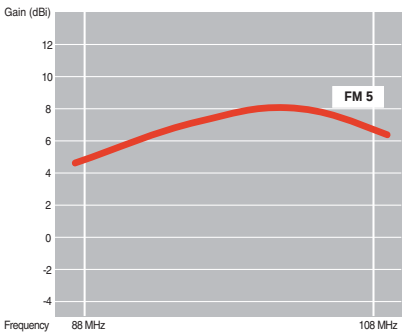


Technical data

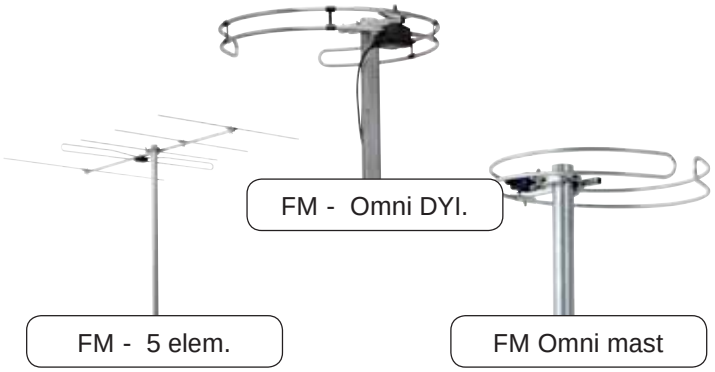
Type:		BII - FM 1	BII - FM 2	BII - FM 3	BII - FM 5
Art. Nr:		100160	100161	100162	100164
Frequency range					
Band		BII	BII	BII	BII
Frequency range	MHz	87.5-108	87.5-108	87.5-108	87.5-108
Elements		1	2	3	5
Gain	dBi	2.1	4.0	6.0	8.0
Front to back ratio - horisontal	dB	0	10	16	20
Beamwidth	degrees	± 90	± 37	± 35	± 27
Windload	N	28	40	56	80
Dimensions					
Length	mm	100	820	1188	1932
Width	mm	1500	1577	1577	1577
Weight	kg	0.3	1.1	1.3	1.7
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium
Connector		SC-type	SC-type	SC-type	SC-type
Construction type		MTH	MT	MT	MT



FM 3 elem.



FM 5 elem.



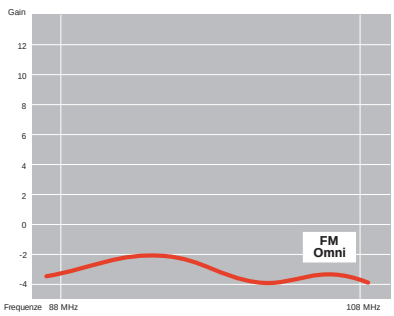
TRIAX band II aerials cover the frequency range 87.5-108 MHz.

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

All aerials are supplied with mounting brackets for aerial mast diameter up to 60 mm.

Technical data

Type:		BII - FM Omni - DYI	BII - FM Omni - M	BII - FM Omni - W	BII - FM Zigma
Art. Nr:		100150	100189	100192	100193
Frequency range					
Band		BII	BII	BII	BII
Frequency range	MHz	87.5-108	87.5-108	87.5-108	87.5-108
Elements		1	1	1	1
Gain	dBi	-4.0	-2.0	-2.0	- 1.0
Front to back ratio - horisontal	dB		0	0	0
Beamwidth	degrees	± 180	± 180	± 180	
Windload	N	22	16	16	31
Dimensions					
Length	mm				550
Width	mm	Ø 650	Ø 505	Ø 505	1140
Weight	kg		0.6	0.6	0.7
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium
Connector		F-type	SC-type	SC-type	SC-type
Construction type			MT	MTHV	MT



FM Omni-directional

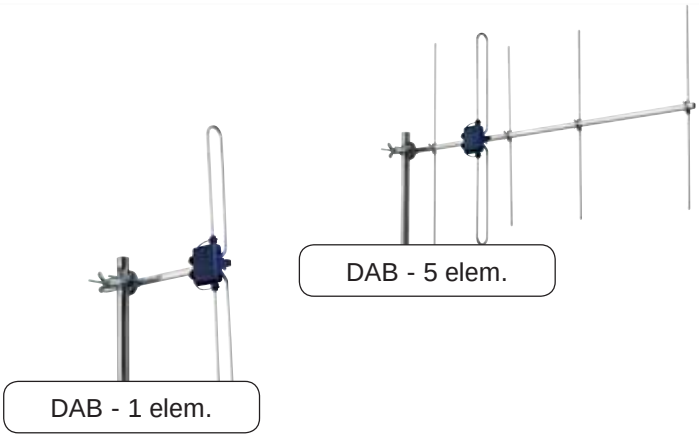
Aerials

| DAB (VHF)

TRIAX DAB aerials cover the frequency range 200-240 MHz.

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

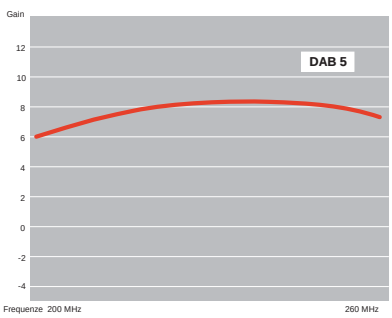


DAB - 5 elem.

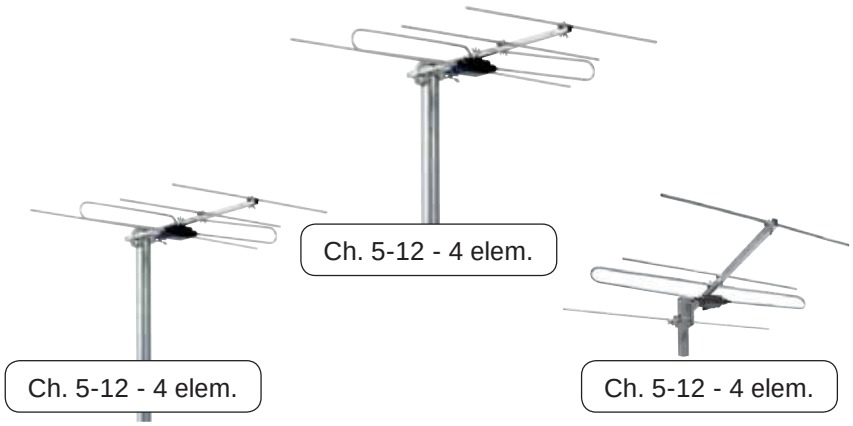
DAB - 1 elem.

Technical data

Type:		DAB Omni right	DAB 5 Element
Art. Nr:		100170	100171
Frequency range			
Channel		9-13	9-13
Band		BIII	BIII
Frequency range	MHz	200-240	200-240
Elements		1	5
Gain	dBi	2.2	8.0
Front to back ratio - horisontal	dB	0	> 12
Beamwidth	degrees	± 180	± 33-43
Windload	N	20	43
Dimensions			
Length	mm	400	1095
Width	mm	625	705
Weight	kg	0.45	0.75
Mechanical			
Impedance	Ohm	75	75
Material		Aluminium	Aluminium
Connector		SC-type	SC-type
Construction type		MTH	MTH



DAB 5



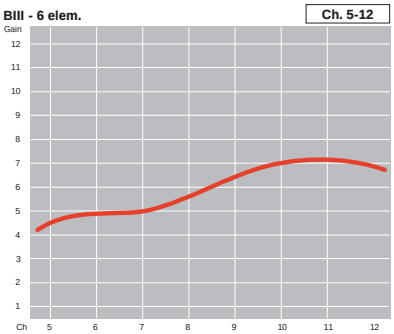
TRIAX band III aerials cover the frequency range 174-230 MHz (ch. 5-12).

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

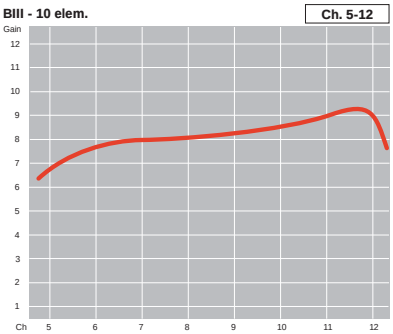
All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

Technical data

Type:		Channel 5-12, 4 El.	Channel 5-12, 4 El.	Channel 5-12, 4 El.	Channel 5-12, 6 El.
Art. Nr:		104663	106663	103861	103862
Frequency range					
Channels		5-12	5-12	5-12	5-12
Band		BIII	BIII	BIII	BIII
Frequency range	MHz	174-230	174-230	174-230	174-230
Elements	pcs.	4	4	4	6
Gain	dBi	5.0	5.0	5.0	7.5
Front to back ratio - horisontal	dB	14	14	14	16
Beamwidth	degrees	± 34	± 34	± 34	
Windload	N	34	34	34	48
Dimensions					
Length	mm	852	852	852	1410
Width	mm	800	800	800	800
Weight	kg	0.7	0.7	0.7	0.9
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium
Connector		SC-type	SC-type	F-type	F-type
Construction type		MTH	MTHV Vertical	MTHV	MTH



Ch. 5-12 6 elem.



Ch. 5-12 10 elem.

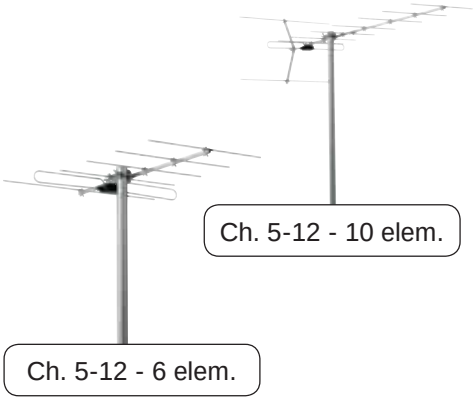
Aerials

| Band III (VHF)

TRIAX band III aerials cover the frequency range 174-230 MHz (ch. 5-12).

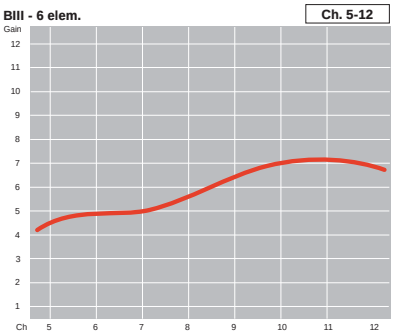
TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

All aerials are supplied with mounting brackets for aerial mast diameter up to 60 mm.

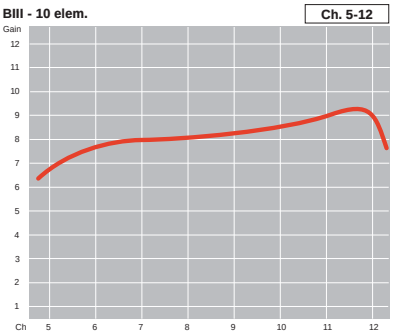


Technical data

Type:		Channel 5-12, 6 El.	Channel 5-12, 10 El.
Art. Nr:		103901	104579
Frequency range			
Channels		5-12	5-12
Band		BIII	BIII
Frequency range	MHz	174-230	174-230
Elements	pcs.	6	10
Gain	dBi	7.5	9.5
Front to back ratio - horisontal	dB	16	22
Beamwidth	degrees	± 26	± 23
Windload	N	34	78
Dimensions			
Length	mm	1410	1735
Width	mm	800	880
Weight	kg	0.9	1.3
Mechanical			
Impedance	Ohm	75	75
Material		Aluminium	Aluminium
Connector		F-type	SC-type
Construction type		MTHV	MTHD



Ch. 5-12 6 elem.



Ch. 5-12 10 elem.

| Band IV/V (UHF) - LTE Protected

Digi 6 elem.

Digi 10 elem.

The frequency range 790-862 MHz (ch. 61-69) is being discontinued for DTT use (Digital Terrestrial TV). Instead the frequency band is used for mobile broadband services using 4G/LTE (Long Term Evolution) and/or LTE Advanced technology.
4G/LTE technology operating in the 790-862 MHz raises challenges for DTT installations.
Triax has developed a range of antennas which reject the LTE/LTE Advanced signals in 790-862 MHz range. Look for the "LTE Protected - by Triax" logo to identify the product range.
For maximum aerial protection choose Triax "**A**ntenna **L**ow **P**ass **S**ystem" (ALPS) for the most advanced antennas with built-in filter functionality.

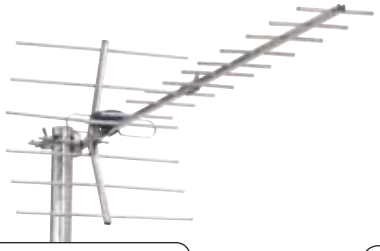
Technical data

Type:		Digi 6 ch. 21-60 ALPS	Digi 6 ch. 21-60 ALPS	Digi 10 ch. 21-60 ALPS	Digi 10 ch. 21-60 ALPS	Digi 14 ch. 21-60 ALPS
Art. Nr:		108380	108387	108381	108388	108382
Frequency range						
Channels		21-60	21-60	21-60	21-60	21-60
Band		BIV/V	BIV/V	BIV/V	BIV/V	BIV/V
Frequency range	MHz	470-790	470-790	470-790	470-790	470-790
Elements		6	6	10	10	14
Gain						
@ 474 MHz (Ch. 21)	dBi	5.0	5.0	6.5	6.5	7.5
@ 538 MHz (Ch. 29)	dBi	7.0	7.0	7.5	7.5	9.5
@ 602 MHz (Ch. 45)	dBi	9.0	9.0	10.0	10.0	12.0
@ 730 MHz (Ch. 53)	dBi	10.0	10.0	12.5	12.5	13.0
@ 786 MHz (Ch. 60)	dBi	10.0	10.0	13.0	13.0	13.5
Rejection						
@ 811 MHz (LTE D1)	dBi	5.0	5.0	5.0	5.0	5.0
@ 821 MHz (LTE D6)	dBi	10.0	10.0	11.0	11.0	11.0
@ 832 MHz (LTE U1)	dBi	12.0	12.0	11.0	11.0	11.0
@ 862 MHz (LTE U6)	dBi	10.0	10.0	8.0	8.0	8.0
Front to back ratio - hor.	dB	17	17	17	17	25
Beamwidth horisontal	deg.	± 25	± 25	± 25	± 25	± 21
Windload	N	14	14	22	22	54
Dimensions						
Length	mm	718 mm	718 mm	1015	1015	1015
Width	mm	330 mm	330 mm	330	330	420
Weight	kg	0.45	0.45	0.45	0.45	0.77
Packing						
Individual polybag		Yes		Yes		
Individual brown box			Yes		Yes	Yes
Mechanical						
Impedance	Ohm	75	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium	Material
Connector		F-female	F-female	F-con	F-con	F-con
Bracketry				Mast	Mast	Mast

Aerials

| Band IV/V (UHF) - LTE Protected

The frequency range 790-862 MHz (ch. 61-69) is being discontinued for DTT use (Digital Terrestrial TV). Instead the frequency band is used for mobile broadband services using 4G/LTE (Long Term Evolution) and/or LTE Advanced technology.
4G/LTE technology operating in the 790-862 MHz raises challenges for DTT installations.
Triax has developed a range of antennas which reject the LTE/LTE Advanced signals in 790-862 MHz range. Look for the “LTE Protected - by Triax” logo to identify the product range.
For maximum aerial protection choose Triax “**A**ntenna **L**ow **P**ass **S**ystem” (ALPS) for the most advanced antennas with built-in filter functionality.

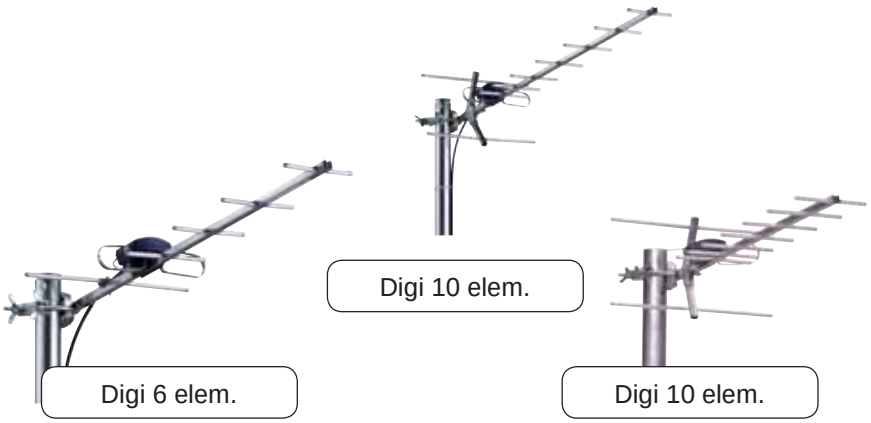


Digi 18 elem.

Digi 343

Technical data

Type:		Digi 18 ch. 21-60 ALPS	Unix 32 ch. 21-60 ALPS	Unix 52 ch. 21-60 ALPS	Digi 343 ch. 21-60
Art. Nr:		108383	108384	108385	108960
Frequency range					
Channels		21-60	21-60	21-60	21-60
Band		BIV/V	BIV/V	BIV/V	BIV/V
Frequency range	MHz	470-790	470-790	470-790	470-790
Elements		18	32	52	43
Gain					
@ 474 MHz (Ch. 21)	dBi	8.0	8.5	11.0	6.5
@ 538 MHz (Ch. 29)	dBi	10.0	11.0	11.0	7.5
@ 602 MHz (Ch. 45)	dBi	13.0	12.5	14.0	10.0
@ 730 MHz (Ch. 53)	dBi	14.5	12.5	14.5	12.5
@ 786 MHz (Ch. 60)	dBi	12.5	10.0	13.0	13.0
Rejection					
@ 811 MHz (LTE D1)	dBi	4.0	0.0	5.0	5.0
@ 821 MHz (LTE D6)	dBi	8.0	3.0	10.0	11.0
@ 832 MHz (LTE U1)	dBi	10.0	6.0	10.0	11.0
@ 862 MHz (LTE U6)	dBi	10.0	20.0	15.0	8.0
Front to back ratio - hor.	dB	25	24	25	20
Beamwidth horisontal	deg.	± 18	± 20	± 15	± 15
Windload	N	59	59	96	150
Dimensions					
Length	mm	1446	791	1297	1056
Width	mm	420	500	500	540
Weight	kg	1.05	1.45	1.63	1.6
Packing					
Individual polybag					
Individual brown box		Yes	Yes	Yes	
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium
Connector		F-female	F-female	F-con	F-con
Bracketry		Mast - backmounting	Mast - backmounting	Mast - backmounting	



Digi 6 elem.

Digi 10 elem.

Digi 10 elem.

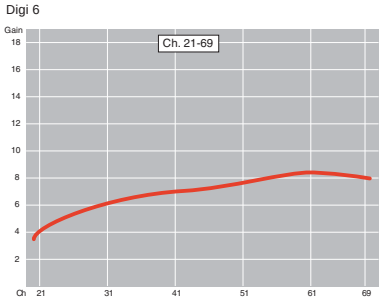
TRIAX band IV/V legacy aerials cover the frequency range 470-862 MHz (ch. 21-69) - legacy wide band UHF.

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

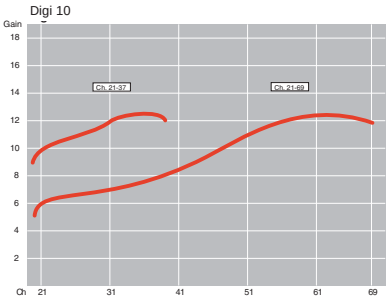
All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

Technical data

Type:		Digi 6W	Digi 6W - window bracket	Digi 10W	Digi 10W	Digi 10 - with VHF/ UHF filter
Art. Nr:		107205	108201	107317	108311	108808
Frequency range						
Channels		21-69	21-69	21-69	21-69	21-69
Band		BIV/V	BIV/V	BIV/V	BIV/V	BIV/V
Frequency range	MHz	470-862	470-862	470-862	470-862	470-862
Elements	pcs.	6	6	10	10	10
Gain	dBi	8.5	8.5	12.5	12.5	12.5
Front to back ratio - hor.	dB	17	17	21	21	21
Beamwidth horisontal	deg.	± 25	± 25	± 23	± 23	± 23
Windload	N	14	14	22	22	22
Dimensions						
Length	mm	718	718	975	975	975
Width	mm	260	260	350	350	350
Weight	kg	0.45	0.45	0.65	0.65	0.65
Mechanical						
Impedance	Ohm	75	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
Connector		F-type	SC-type	F-type	SC-type	SC-type
Construction type			w. window bracket			w. VHF/UHF filetr
Bracketry				Mast	Mast	Mast



Digi 6 - 6 elem.



Digi 10 - 10 elem.

Aerials

| Band IV/V (UHF) - legacy

TRIAX band IV/V legacy aerials cover the frequency range 470-862 MHz (ch. 21-69) - legacy wide band UHF.

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

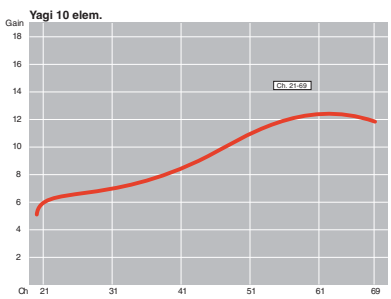
All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

Digi 10 elem.

Digi 10 elem.

Technical data

Type:		Digi 10 - window bracket	Digi 10W - pinpack	Digi 10 - Group A	Yagi 10 - Group W
Art. Nr:		107205	108201	107317	108311
Frequency range					
Channels		21-69	21-69	21-37	21-69
Band		BIV/V	BIV/V	BIV	Group W
Frequency range	MHz	470-862	470-862	470-606	470-862
Elements	pcs.	10	10	10	10
Gain	dBi	12.5	12.5	12.5	12.5
Front to back ratio - hor.	dB	21	21	21	21
Beamwidth horisontal	deg.	± 23	± 23	± 23	± 23
Windload	N	22	22	22	22
Dimensions					
Length	mm	975	975	975	975
Width	mm	350	350	350	350
Weight	kg	0.65	0.70	0.70	0.65
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium
Connector		SC-type	SC-type	SC-type	SC-type
Bracketry		Window bracket		Mast	Mast



Yagi 10 - 10 elem. wideband

TRIAX band IV/V legacy aerials cover the frequency range 470-862 MHz (ch. 21-69) - legacy wide band UHF.

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

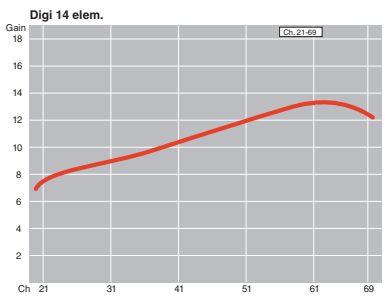
All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

Digi 14 elem.

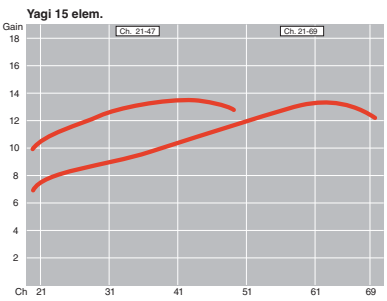
Yagi 15 elem.

Technical data

Type:		Digi 14W	Digi 14W - w. filter	Yagi 15 - Ch. 21-47	Yagi 15 - Ch. 36-69
Art. Nr:		108341	108612	107347	107349
Frequency range					
Channels		21-69	21-69	21-47	36-69
Band		BIV/V	BIV/V	Group A/B	Group B/C/D
Frequency range	MHz	470-862	470-862	470-686	590-862
Elements	pcs.	14	14	15	15
Gain	dBi	13.5	13.5	13.5	13.5
Front to back ratio - hor.	dB	25	25	25	25
Beamwidth horisontal	deg.	± 21	± 21	± 21	± 21
Windload	N	54	54	58	54
Dimensions					
Length	mm	967	967	1182	988
Width	mm	420	420	420	420
Weight	kg	0.77	0.77	0.80	0.77
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Material	Aluminium	Aluminium	Aluminium
Connector		SC-type	SC-type	F-type	F-type
Bracketry			w. VHF/UHF filetr		



Digi 14 elem.



Yagi 15 - 15 elem.

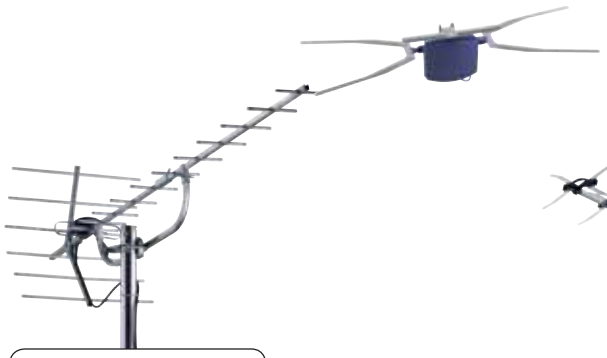
Aerials

| Band IV/V (UHF) - legacy

TRIAX band IV/V legacy aerials cover the frequency range 470-862 MHz (ch. 21-69) - legacy wide band UHF.

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

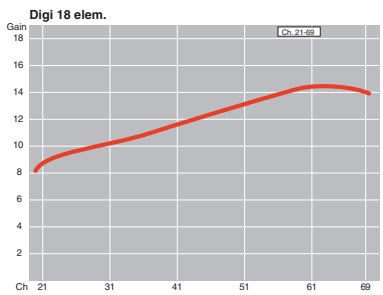


Digi 18 w. support boom

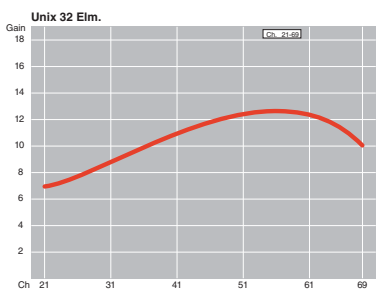
Unix 32 elem.

Technical data

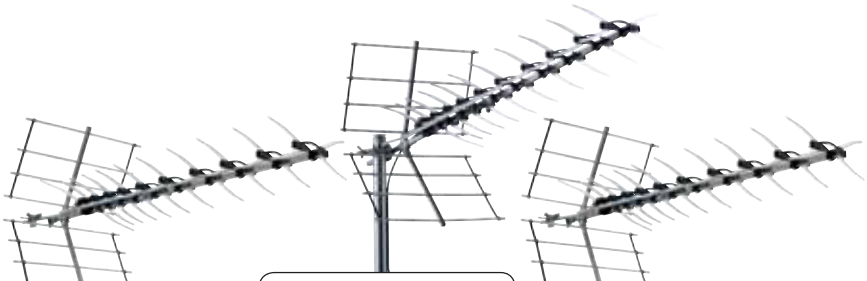
Type:		Digi 18W w. support boom	Digi 18W back-mounting	Dipol UNIX	Unix 32 Ch. 21-69
Art. Nr:		107205	108201	134150	107750
Frequency range					
Channels		21-69	21-69	21-69	21-69
Band		BIV/V	BIV/V	BIV/V	BIV/V
Frequency range	MHz	470-862	470-862	470-862	470-862
Elements	pcs.	18	18	1	32
Gain	dBi	14.5	14.5		12.5
Front to back ratio - hor.	dB	25	25		24
Beamwidth horisontal	deg.	± 18	± 18		± 20
Windload	N	59	59		54
Dimensions					
Length	mm	1446	1446		791
Width	mm	420	420		500
Weight	kg	1.05	1.05	0,0500	1.45
Mechanical					
Impedance	Ohm	75	75		75
Material		Aluminium	Aluminium		Aluminium/Plast
Connector		F-type	SC-type	F-type	F-type
Benchmark					3
Bracketry		Mast	Mast - backmounting		Mast



Digi 18 elem.



UNIX 32 elem.



Unix 52 elem.

TRIAX band IV/V legacy aerials cover the frequency range 470-862 MHz (ch. 21-69) - legacy wide band UHF.

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

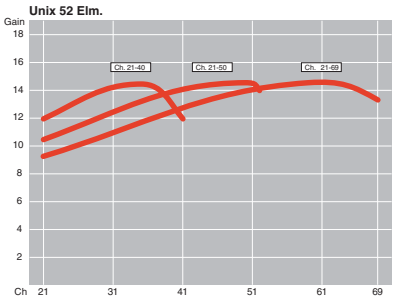
All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

Unix 52 elem.

Unix 52 elem.

Technical data

Type:		Unix 52 Ch. 21-40	UNIX 52 Ch. 21-69	Unix 52 Ch. 21-50	Unix 52 Ch. 21-69	Unix 52 Ch. 21-69
Art. Nr:		107770	107753	107766	107767	107776
Frequency range						
Channels		21-40	21-69	21-50	21-69	21-69
Band		BIV	BIV/V	BIV/V	BIV/V	BIV/V
Frequency range	MHz	470-630	470-862	470-710	470-862	470-862
Elements	pcs.	52	52	52	52	52
Gain	dBi	14.5	14.5	14.5	14.5	14.5
Front to back ratio - hor.	dB	25	25	25	25	25
Beamwidth horisontal	deg.	± 15	± 15	± 15	± 15	± 15
Windload	N	96	96	96	96	96
Dimensions						
Length	mm	1512	1410	1297	1297	1297
Width	mm	500	500	500	500	500
Weight	kg	1.72	1.68	1.63	1.63	1.63
Mechanical						
Impedance	Ohm	75	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
Connector		F-type	F-type	F-type	F-type	F-type
Benchmark						
Bracketry		Mast	Mast	Mast	Mast	Mast



UNIX 52 elem.

Aerials

| Band IV/V (UHF) - legacy

TRIAX band IV/V legacy aerials cover the frequency range 470-862 MHz (ch. 21-69) - legacy wide band UHF.

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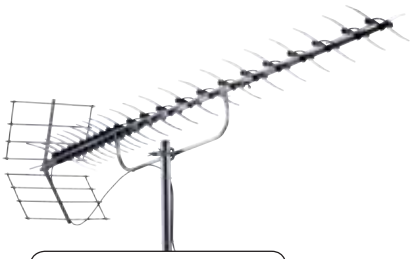
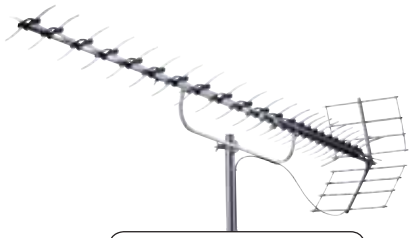


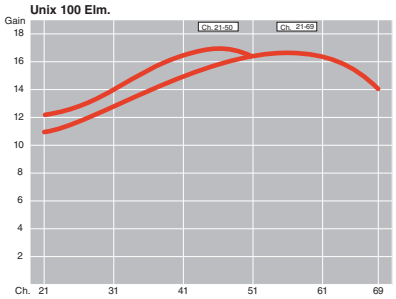
Unix 100 elem.



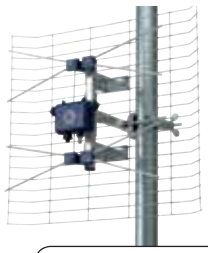
Unix 100 elem.

Technical data

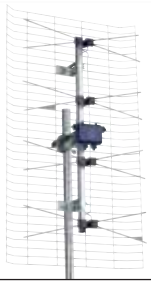
Type:		Unix 100 Ch. 21-50	Unix 100 Ch. 21-50	Unix 100 Ch. 21-69	Unix 100 Ch. 21-69	Unix 100 Ch. 21-69
Art. Nr:		107768	108755	107756	107769	108756
Frequency range						
Channels		21-50	21-50	21-69	21-69	21-69
Band		BIV	BIV	BIV/V	BIV/V	BIV/V
Frequency range	MHz	470-710	470-710	470-862	470-862	470-862
Elements	pcs.	100	100	100	100	100
Gain	dBi	17.0	17.0	17.0	17.0	17.0
Front to back ratio - hor.	dB	27	27	27	27	27
Beamwidth horisontal	deg.	± 11	± 11	± 11	± 11	± 11
Windload	N	152	152	152	152	152
Dimensions						
Length	mm	2332	2332	2257	2257	2257
Width	mm	500	500	500	500	500
Weight	kg	2.50	2.50	2.46	2.46	2.46
Mechanical						
Impedance	Ohm	75	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	Aluminium	Aluminium
Connector		F-type	SC-type	F-type	F-type	F-type
Benchmark						
Bracketry		Mast	Mast	Mast	Mast	Mast



UNIX 100 elem.



BB MIni Grid



BB Grid

Digi Grid

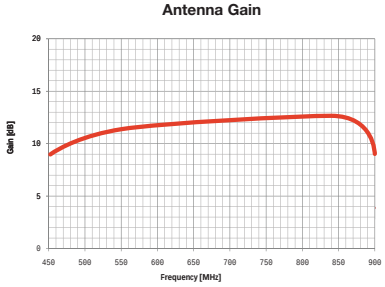
Triax Grid aerials have a large beamwidth, high gain and the excellent front/back ratio makes this the ideal aerial for receiving digital TV signals in regions with medium to high signal level.

The aerial is compact and very easy to install for anyone – Just slide it out and fasten the wingnuts.

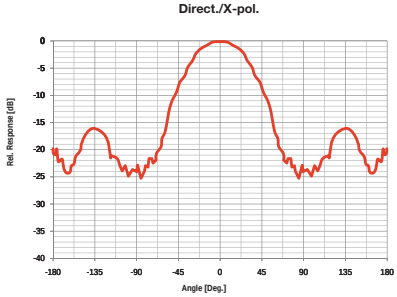
- Very easy installation
- F-connector and watercap
- Stable and strong construction
- All mounting with wing nuts
- Strong and stable packaging

Technical data

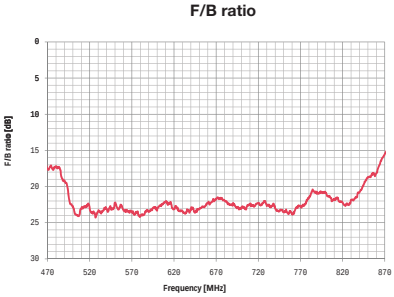
Type:		BB Mini Grid	BB Grid	BB Grid 2 pack	Digi Grid
Art. Nr:		108010	108011	108013	108015
Frequency range					
Channels		21-69	21-69	21-69	21-69
Band		BIV/V	BIV/V	BIV/V	BIV/V
Frequency range	MHz	470-862	470-862	470-862	470-862
Elements	pcs.	8	16	2 x 16	4
Gain	dBi	6.0	12.0	15.0	12.5
Front to back ratio - hor.	dB	28	20	25	22
Beamwidth horisontal	deg.	± 34	± 34	± 17	± 25
Beamwidth vertical	deg.	± 20	± 20	± 20	± 20
Windload	N	38	71	196	78
Dimensions					
Length	mm				
Width	mm	480	480	970	545
Height	mm	480	840	840	805
Weight	kg	1.25	2.20	7.6	1.65
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Alu/Galv. steel	Alu/Galv. steel	Alu/Galv. steel	Aluminium
Connector		SC-type	SC-type	SC-type	F-type
Benchmark					
Bracketry		Mast	Mast	Mast	Mast



BB Gain



BB Direct./X-pol



BB F/B ratio

Aerials

| Band IV/V (UHF) - legacy

TRIAX band IV/V legacy aerials cover the frequency range 470-862 MHz (ch. 21-69) - legacy wide band UHF.
TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.
All aerials are supplied with mounting brackets for aerial mast diameter up to Ø60 mm.

Technical data

Type:		Log-Periodic TL28F	Log-Periodic TL40F
Art. Nr:		108163	108164
Frequency range			
Channels		21-69	21-69
Band		BIV/V	BIV/V
Frequency range	MHz	470-862	470-862
Elements	pcs.	28	28
Gain	dBi	10.0	12.0
Front to back ratio - hor.	dB	> 22.0	> 25.0
Beamwidth horisontal	deg.	+/- 26	+/- 24
Windload	N	35	45
Dimensions			
Length	mm	1035	1285
Width	mm	320	330
Weight	kg	0.560	0.680
Mechanical			
Impedance	Ohm	75	75
Material		Aluminium	Aluminium
Connector		F-type	F-type
Benchmark			
Bracketry		Mast	Mast

UFO with universal mount

UFO with plastic base

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:		UFO 140 digital	UFO 100 digital	UFO 120 digital
Art. Nr:		109140	109100	109120
Frequency range				
Channels		FM/5-12/21-60	FM/5-12/21-69	FM/5-12/21-69
Band		FM / DAB / VHF / UHF	FM / VHF / UHF	FM / VHF / UHF
Frequency range FM	MHz	87.5-108	87.5-108	87.5-108
Frequency range DAB	MHz	200-240		
Frequency range VHF	MHz	174-230	174-230	174-230
Frequency range UHF	MHz	470-790	470-862	470-862
Elements	pcs.	1	1	1
Gain	dB	28.0	28.0	28.0
Power				
Noise figure	dB	< 2.5	< 2.5	< 2.5
Max. output level	dBµV	108	108	108
Supply voltage	V	5-24	5-24	5-24
Power consumption	mA	50	50	50
Beamwidth horisontal	degrees	360	360	360
Beamwidth vertical	degrees	90	90	90
Windload	N	5.5	5.5	5.5
Dimensions				
Length	mm	325	325	325
Width	mm	255	255	255
Height	mm	65	65	65
Mechanical				
Impedance	Ohm	75	75	75
Connector		F-type	F-type	F-type
Bracketry		Mast bracket/ Universal mount/Plastic base/ Centre mount	Mast bracket/Plastic base	Mast bracket/ Universal mount/Plastic base/ Centre mount

Accessories

IFP 502
Power supply
Art. No. 339502

IFP 529
Power inserter
Art. No. 339529

UFO Centre mount
Art. No. 133225

Aerials

| Combi (VHF/UHF) - legacy

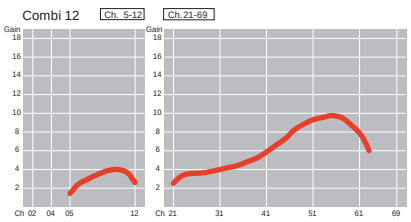
The combined aerials are designed for VHF/UHF reception and ensure perfect reception of the signals.
All types are made of high-quality material and are extremely resistant to sea fog and hostile weather conditions.
The aerials are provided with mast brackets designed for masts up to Ø60 mm.

- 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

Combi 12 Window

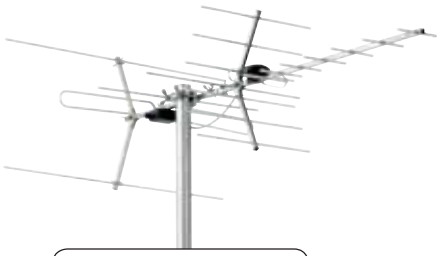
Technical data

Type:		Combi 12 window bracket	Combi 12 mast bracket
Art. Nr:		108937	108936
Frequency range			
Channels		5-12/21-69	5-12/21-69
Band		BIII/BIV-V	BIII/BIV-V
Frequency range VHF	MHz	174-230	174-230
Frequency range UHF	MHz	470-862	470-862
Elements		4/8	4/8
Gain - VHF	dBi	4.0	4.0
Gain - UHF	dBi	9.0	9.0
Front to back ratio - hor.	dB	12.0	12.0
Front to back ratio - vert.	dB	15.0	15.0
Beamwidth horisontal	degrees	± 32	± 32
Beamwidth vertical	degrees	± 15	± 15
Windload	N	34	34
Dimensions			
Length	mm	866	866
Width	mm	855	855
Weight	kg	1.5	1.5
Mechanical			
Impedance	Ohm	75	75
Material		Aluminium	Aluminium
Connector		SC-type	SC-type
Construction type		MTH	MTH



Combi 12

Combi 27 Window



Combi 20

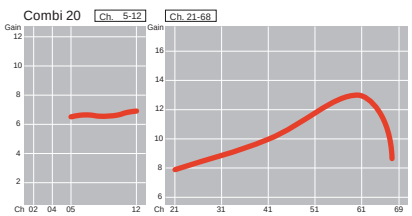
TRIAX Combi aerials (band III/IV-V) cover the frequency ranges 174-230 MHz (ch. E5-12) and 470-862 MHz (ch. 21-69).

TRIAX aerials are supplied with a light-alloy metal boom made of 18 x 18 mm square tubes.

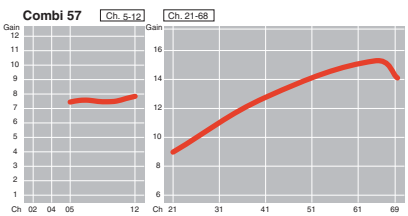
All aerials are supplied with mounting brackets for aerial mast diameter up to 60 mm.

Technical data

Type:		Combi 27 window bracket	Combi 27 mast bracket	Combi 20	Combi 57
Art. Nr:		108687	108688	108694	108696
Frequency range					
Channels		5-12/21-69	5-12/21-69	5-12/21-69	5-12/21-69
Band		BIII/BIV-V	BIII/BIV-V	BIII/BIV-V	BIII/BIV-V
Frequency range VHF	MHz	174-230	174-230	174-230	174-230
Frequency range UHF	MHz	470-862	470-862	470-862	470-862
Elements		4/23	4/23	5/15	5/52
Gain - VHF	dBi	7.0	7.0	6.0	8.0
Gain - UHF	dBi	13.0	13.0	11.5	14.5
Front to back ratio - hor.	dB	17.0	17.0	12.0	17.0
Front to back ratio - vert.	dB	25.0	25.0	17.0	25.0
Beamwidth horisontal	degrees	± 31	± 31	± 35	± 31
Beamwidth vertical	degrees	± 22	± 22	± 25	± 15
Windload	N	72	72	56	146
Dimensions					
Length	mm	490	490	815	1725
Width	mm	880	880	760	880
Weight	kg	1.8	1.8	1.0	2.9
Mechanical					
Impedance	Ohm	75	75	75	75
Material		Aluminium	Aluminium	Aluminium	
Connector		SC-type	SC-type	SC-type	SC-type
Construction type		MTH	MTH	MTH	MTH



Combi 20



Combi 57

Aerials

| Indoor (VHF/UHF)

Triax 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.

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

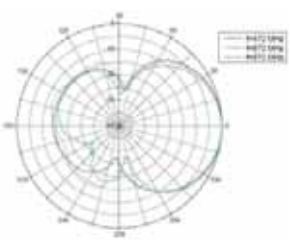
Digit 800 DVB-T aerial

Indoor aerial

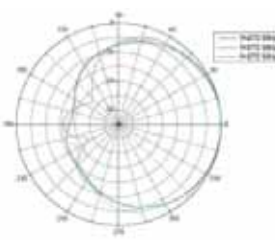
Active indoor aerial

Technical data

Type:		Digit 800 DVB-T active aerial	Indoor Aerial	DVB-T 300i active indoor aerial
Art. Nr:		109800	111000	111010
Frequency range				
Channels		5-12 + 21-69	2-12 + 21-69	5-12 + 21-69
Band		BIII+UHF	BI+BIII+UHF	BIII+UHF
Frequency range VHF	MHz	174-230	47-230	174-230
Frequency range UHF	MHz	470-862	470-860	470-862
Elements		1	1	1
Gain	dB	15.0		15.0
Power				
Noise figure VHF	dB	3.4		3.4
Noise figure UHF	dB	3.5		3.5
Max. output level	dBµV	93.0		93.0
Supply voltage		+ 4.5V via coax cable		+ 4.5V via coax cable
Front to back ratio - hor.	dB	> 25		> 25
Beamwidth	degrees	± 180	± 180	± 180
Dimensions				
Length	mm	145	1439	145
Width	mm	60	420	60
Weight	kg	0.125		0.125
Mechanical				
Impedance	Ohm	75		75
Material		Aluminium + White plastic	Plastic and aluminium	Aluminium + matt black plastic
Connector		IEC-type	IEC-type	IEC-type
Construction type		Indoor	Indoor	Indoor



Digit 800 - horizontal beam



Digit 800 - vertical beam

TRIAX GSM Yagi aerials cover the frequency range 872-960 MHz.

Triax aerials are supplied with light-alloy metal boom made of 18 x 18 mm square tubes.

All aerials are supplied with mounting brackets for aerial mast diameter up to 60 mm.

GSM 900 aerial

Technical data

Type:		GSM 900 mobile aerial
Art. Nr:		109812
Frequency range		
Channels		872-960
Band		GSM
VHF	MHz	
UHF	MHz	
Elements		6
Gain	dB	9.0
Front to back ratio - hor.	dB	> 15
Beamwidth	degrees	± 25
Windload	N	14
Dimensions		
Length	mm	145
Width	mm	60
Weight	kg	0.125
Mechanical		
Impedance	Ohm	50
Material		Aluminium
Connector		SC-type
Construction type		MT - window bracket

Notes

| for your personal notes

Electronics

- Mast amplifiers
- Mast combiners
- Band stop filters
- LTE filters
- Power supplies
- Power inserters

Mast electronics

| Mast amplifiers - Group

MFA mast amplifiers series

High-performance range of mast amplifiers with F-connector
F-connectors on all in- and outputs.
Simple and easy installation. Unique mounting system. 4-teminal waterproof masthousing.

Technical data

Type:		MFA 302 mast amplifier	MFA 312 mast amplifier	MFA 612 mast amplifier
Art. No		340302	340312	340612
Input 1				
- frequency	MHz	175-862	470-862/47-230	470-862
- band		UHF+BIII	UHF/BI+BIII	UHF
- channels		21-69/5-12	21-69/2-12	21-69
- gain	dB	20	25-35/15-25	12
Noise figure				
UHF	dB	3.0	4.5	1.9
VHF	dB	3.0	4.5	.
Output				
Return loss	dB			10/10
Max. output voltage @ 60 dB IMD	dBµV	103	103	105
Number of inputs	pcs.	1	1	1
Number of output	pcs.	1	1	1
Connectors		F-type	F-type	F-type
Electrical				
Voltage	V/DC	12-24	12-24	12-24
Power	mA	30	30	Yes
Dimensions				
Weight	kg	0.1970	0.230	0.205
Height	mm	150	108	115
Depth	mm	70	50	60
Width	mm	110	120	117

High performance multiband mast amplifiers

Multiband mast amplifiers with F-connector. Triax has devoted considerable resources to develop a complete amplifier range, that combines high gain and low noise figures.
So just choose one, if you want an easy-to-install amplifier with high output voltage.

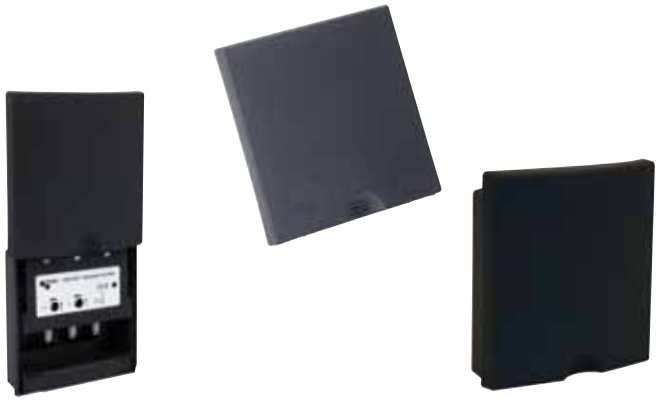
Technical data

Type:		MFA 621 mast amplifier	MFA 611 mast amplifier	MFA 651 mast amplifier	MFA 665 mast amplifier
Art. No:		340621	340611	340651	340665
Input 1					
- frequency	MHz	174-230/470-790	174-230/470-790	470-862	470-862
- band		UHF	UHF	UHF	UHF
- channels		5-12/21-60	5-12/21-60	21-69	21-69
- gain	dB	5-15/20-35	15-30/10-25	12	19-29
Input 2					
- frequency	MHz	87-108	87-108	470-862	470-862
- band		BII	BII	UHF	UHF
- channels		FM	FM	21-69	21-69
- gain	dB	5-15	5-15	12-22	12-22
Input 3					
- frequency				47-230	47-230
- band				VHF	VHF
- channels				2-12	2-12
- gain				13-23	13-23
Noise figure					
UHF 1	dB	2.5	3.5	1.8	3.8
UHF 2	dB			12.0	12.0
VHF	dB	2.5	2.5	4.5	4.5
DAB	dB	2.5	3.5		
Output					
Max. output voltage @ 60 dB IMD	dBµV	103	103	105	109
Number of inputs	pcs.	2	2	1	3
Number of output	pcs.	1	1	1	1
Connectors		F-type	F-type	F-type	F-type
Electrical					
Voltage	V/DC	12-24	12-24	5-12	12-24
LED indicator		Yes	Yes	Yes	Yes
Power	mA	55	55	65	82
Dimensions					
Weight	kg	0.205	0.205	0.230	0.205
Height	mm	115	115	108	115
Depth	mm	60	60	50	60
Width	mm	117	107	120	117

Mast electronics

| Mast amplifiers - Multiband

High performance multiband mast amplifiers
Multiband mast amplifiers with F-connector. Triax has devoted considerable resources to develop a complete amplifier range, that combines high gain and low noise figures. So just choose one, if you want an easy-to-install amplifier with high output voltage.



Technical data

Type:		MFA 641 mast amplifier	MFA 642 mast amplifier	MFA 645 mast amplifier
Art. Nr:		340641	340642	340645
Input 1				
- frequency	MHz	470-862	470-862	470-862
- band		UHF	UHF	UHF
- channels		21-69	21-69	21-69
- gain	dB	24-34	24-34	24-34
Input 2				
- frequency	MHz	87.5-108	87.5-108	174-230
- band		BII	BII	BIII/DAB
- channels		FM	FM	5-12
- gain	dB	14-24	- 2	14-24
Noise figure				
UHF 1	dB	2.5	2.5	2.5
VHF	dB	4.5		4.5
Output				
Max. output voltage @ 60 dB IMD	dBµV	105	105	105
Number of inputs	pcs.	2	2	2
Number of output	pcs.	1	1	1
Connectors		F-type	F-type	F-type
Electrical				
Voltage	V/DC	12-24	12-24	12-24
LED indicator		Yes	Yes	Yes
Power	mA	55	55	53
Dimensions				
Weight	kg	0.205	0.205	0.205
Height	mm	115	115	115
Depth	mm	60	60	60
Width	mm	117	117	117

High performance multiband mast amplifiers
Multiband mast amplifiers with F-connector. Triax has devoted considerable resources to develop a complete amplifier range, that combines high gain and low noise figures. So just choose one, if you want an easy-to-install amplifier with high output voltage.

Technical data

Type:		MFA 652 mast amplifier	MFA 655 mast amplifier	MFA 656 mast amplifier
Art. Nr:		340652	340655	340656
Input 1				
- frequency	MHz	470-862	470-862	470-790
- band		UHF	UHF	UHF
- channels		21-69	21-69	21-60
- gain	dB	13-23	13-23	20-35
Input 2				
- frequency	MHz	47-230	87.5-108	174-230
- band		VHF	BII	BIII
- channels		2-12	FM	DAB
- gain	dB	13-23	2-12	10-22
Input 3				
- frequency			174-230	87-108
- band			BIII/DAB	BII
- channels			5-12	FM
- gain			13-23	5-15
Noise figure				
UHF 1	dB	4.5	4.3	2.5
VHF	dB	4.0	6.5 / 3.5	4.5
DAB			3.5	2.5
Output				
Return loss			10/10	
Max. output voltage @ 60 dB IMD	dBµV	102	105	103
Number of inputs	pcs.	2	3	3
Number of output	pcs.	1	1	1
Connectors		F-type	F-type	F-type
Electrical				
Voltage	V/DC	12-24	12-24	12-24
LED indicator		Yes	Yes	Yes
Power	mA	44	43	55
Dimensions				
Weight	kg	0.205	0.205	0.230
Height	mm	115	115	115
Depth	mm	60	60	60
Width	mm	117	117	137

Mast electronics

| Mast amplifiers - Wideband

Multiband mast amplifiers with F-connector

High-performance range of Multiband Mast Amplifiers with F-connector. An outdoor mast amplifier is your first choice if you need a handy coax amplifier that fits directly onto the antenna mast on your roof.

Technical data

Type:		AFA Micro amplifier	MFA 325 mast amplifier	MFA 622 mast amplifier	MFA 624 mast amplifier	MFA 633 mast amplifier
Art. Nr:		340012	340325	340622	340624	340633
Input 1						
- frequency	MHz	470-862	470-862/47-230	470-862	470-862	470-862
- band		UHF	UHF/VHF	UHF	UHF	UHF
- channels		21-69	21-69/2-12	21-69	21-69	21-69
- gain	dB	12	25	20-30	25.0	24-34
Input 2						
- frequency				470-862	.	
- band				UHF		
- channels				21-69	.	
- gain				20-30	.	
Noise figure						
UHF	dB	2.3	2.2	6.5	2.5	2.5
VHF			2.2		.	
Output						
Return loss					.	
Max. output voltage @ 60 dB IMD	dBµV	95	105	105	105	105
Number of inputs	pcs.	1	1	2	1	1
Number of output	pcs.	1	1	2	1	1
Connectors		F-type	F-type	F-type	F-type	F-type
Electrical						
Voltage	V/DC	5-12	12-24	12-24	12-24	12-24
LED indicator				Yes - green		Yes
Power	mA	14-22	25	22	Yes	51
DC through					48	
Dimensions						
Weight	kg	0.100	0.230	0.230	0.205	0.205
Height	mm	45	108	115	115	115
Depth	mm		50	60	60	60
Width	mm	Ø 23	120	137	117	117

High-performance range of MFA mast amplifiers combined with the excellent IFP power supply in attractive modern housing, both equipped with F-connectors - packed in a coloured giftbox

Technical data

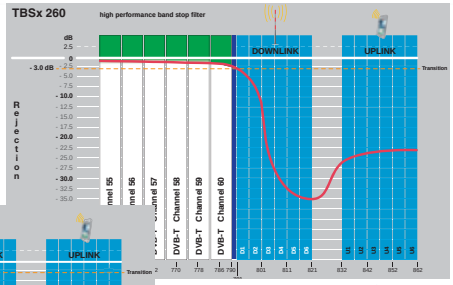
Type:		MFA 412 mast amplifier & power supply kit	MFA 420 mast amplifier & power supply kit
Art. No:		340412	340420
Set consists of:			
- amplifier		MFA 312	MFA 320
- power supply		+ IFP 502	+ IFP 502
Dimensions			
Weight	kg	0.645	0.645
Height	mm	170	170
Depth	mm	78	78
Width	mm	242	242

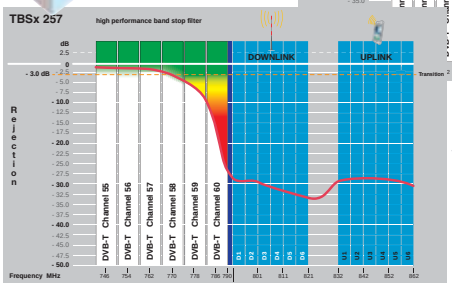
Mast filters and combiners

| 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 257 Band stop filter Indoor	TBSO 257 Band stop filter Outdoor	TBSI 259 Band stop filter Indoor	TBSO 259 Band stop filter Outdoor	TBSI 260 Band stop filter Indoor	TBSO 260 Band stop filter Outdoor
Art. No:			314074	314075	314070	314071	314072	314073
Numbers of in- and output			1/1	1/1	1/1	1/1	1/1	1/1
Input	Band		BI/BII/BIII (DAB)/UHF	BI/BII/BIII (DAB)/UHF	BI/BII/BIII (DAB)/BI/BII/BIII UHF	BI/BII/BIII (DAB)/BI/BII/BIII UHF	BI/BII/BIII (DAB)/BI/BII/BIII UHF	BI/BII/BIII (DAB)/BI/BII/BIII UHF
	Frequency	MHz	47-766	47-766	47-782	47-782	47-790	47-790
	Channel		2-57	2-57	2-59	2-59	2-60	2-60
Through loss/ Rejection	750 MHz (incl. E55)	dB	1.5	1.5	0.9	0.9	0.8	0.8
	758 MHz (incl. E56)	dB	1.8	1.8	1.0	1.0	0.9	0.9
	766 MHz (incl. E57)	dB	2.3	2.3	1.2	1.2	1.0	1.0
	774 MHz (incl. E58)	dB	< 3.8	< 3.8	1.4	1.4	1.4	1.4
	782 MHz (incl. E59)	dB	≥ 9.4	≥ 9.4	< 3.0	< 3.0	1.9	1.9
	790 MHz (incl. E60)	dB	≥ 25.5	≥ 25.5	≥ 8.0	≥ 8.0	< 3.0	< 3.0
	791 MHz	dB	≥ 28.2	≥ 28.2	≥ 10.0	≥ 10.0	≥ 3.3	≥ 3.3
	796 MHz	dB	≥ 29.7	≥ 29.7	≥ 22.0	≥ 22.0	≥ 7.0	≥ 7.0
	800 MHz	dB	≥ 29.0	≥ 29.0	≥ 20.0	≥ 20.0	≥ 18.0	≥ 18.0
	803 MHz	dB	≥ 29.9	≥ 29.9	≥ 25.0	≥ 25.0	≥ 25.0	≥ 25.0
	821 MHz	dB	≥ 33.1	≥ 33.1	≥ 28.0	≥ 28.0	≥ 30.0	≥ 30.0
	832 MHz	dB	≥ 28.4	≥ 28.4	≥ 21.0	≥ 21.0	≥ 24.0	≥ 24.0
	862 MHz	dB	≥ 30.2	≥ 30.2	≥ 23.0	≥ 23.0	≥ 22.0	≥ 22.0
Cross band with partly rejection		MHz	782-792	782-792	782-791	782-791	790-800	790-800
Return loss	47-766	MHz	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0
Impedance		Ohm	75	75	75	75	75	75
Shielding	efficiency	dB	≥ 75.0	≥ 75.0	≥ 75.0	≥ 75.0	≥ 75.0	≥ 75.0
Shielding measured according to EN 50083-2 & 60728-2 typical		dB	≥ 79.0	≥ 79.0	≥ 79.0	≥ 79.0	≥ 79.0	≥ 79.0
DC pass			Yes	Yes	Yes	Yes	Yes	Yes
Connectors			F-con	F-con	F-con	F-con	F-con	F-con
Weight		kg	0.150	0.175	0.150	0.175	0.150	0.175
Dimensions	H x D x W	mm	75 x 36 x 75	108 x 50 x 120	75 x 36 x 75	108 x 50 x 120	75 x 36 x 75	108 x 50 x 120

MFC filters

Mast filters and combiners

- With F-connector for any job.
- Unique mounting system.
- Switchable DC-through power.
- RF shielded

The majority of our filters and combiners, are in the same type of time-saving housing as our mast amplifiers.

Technical data

Type:		MFC 101 TV/SAT combiner	MFC 102 TV/SAT combiner	MFC 104 AM/FM/TV combiner	MFC 105 - VHF/UHF combiner	MFC 106 - TV/FM combiner	MFC 102 FM/TV/SAT blister
Art. No:		340101	340102	340104	340105	340106	340111
Input 1							
- band		SAT	SAT	UHF	UHF	VHF/UHF	FM/VHF/DAB
- channels		IF	IF	21-69	2-69	2-69	21-69
- frequency	MHz	950-2150	950-2150	470-862	47-862	47-862	47-230
- through loss	dB	3.0	3.0	2.0	4.0	1.0	5
Input 2							
- band		VHF/UHF	UHF	UHF	UHF	BII	UHF
- channels		2-69	21-69	5-12	2-69	FM	5-12
- frequency	MHz	47-862	470-862	175-230	47-862	87.5-108	470-762
- through loss	dB	2.0	2.0	1.5	4.0	1.0	2
Input 3							
- band			VHF	AM/FM	AM/FM		SAT
- channels			2-12	1-4	1-4		1-4
- frequency			47-230	0.15-108	0.15-108		950-2150
- through loss			1.5	1.0	1.0		3
Stop band attenuation							
VHF/BI	dB	> 20	> 20	> 20	> 20	> 20	> 20
FM	dB	> 20	> 20	> 20	> 20	> 20	> 20
BIII/DAB	dB	> 20	> 20	> 20	> 20	> 20	> 20
UHF	dB	> 20	> 20	> 20	> 20	> 20	> 20
SAT	dB	> 50	> 50	> 50	> 50		> 50
In-out-throughpower							
Number of inputs	pcs.	2	2	3	2	2	3
Number of output	pcs.	1	1	1	1	1	1
DC through power		SAT input	SAT input	UHF	Both inputs	VHF/UHF input	UHF
Connector		F-type	F-type	F-type	F-type	F-type	F-type
Dimensions							
Weight	kg	0.175	0.175	0.175	0.175	0.175	0.175
Height		117	117	117	117	117	117
Depth		50	50	50	50	50	50
Width		120	120	120	120	120	120

Mast filters and combiners

| Mast combiners - Multiband

Mast filters and combiners

- With F-connector for any job.
- Unique mounting system.
- Switchable DC-through power.
- RF shielded

The majority of our filters and combiners, are in the same type of time-saving housing as our mast amplifiers.

Technical data

Type:		MFC 130 - TV combiner	MFC 140 TV combiner	MFC 150 UHF/UHF combiner	MFC 151 TV/SAT combiner	Triax 110 TV/ SAT Diecast combiner
Art. No:		340130	340140	340150	340151	340110
Input 1						
- band		UHF	UHF	UHF	SAT	SAT
- channels		21-69	21-69	21-69	IF	IF
- frequency	MHz	470-862	470-862	470-862	950-2400	950-2400
- through loss	dB	1.0	1.0	4.5	2.0	2.0/3.0
Input 2						
- band		VHF	BIII	BIII	VHF/UHF	VHF/UHF
- channels		2-12	5-12	21-69	2-69	2-69
- frequency	MHz	47-230	174-230	470-862	47-862	47-862
- through loss	dB	1.0	1.0	4.5	1.0	2.0
Input 3						
- band			AM/BII	AM/BII		
- channels			AM/FM	AM/FM		
- frequency			2.5-108	2.5-108		
- through loss			3.5/1.0	3.5/1.0		
In-out-throughpower						
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
In-out-throughpower						
Number of inputs	pcs.	2	3	3	2	2
Number of output	pcs.	1	1	1	1	1
DC through power	V	5-24	UHF out 5-24	UHF	SAT input and 5V Ter.	SAT input
Connector		F-type	F-type	F-type	F-type	F-type
Dimensions						
Weight	kg	0.205	0.205	0.265	0.200	0.095
Height		115	115	115	117	38
Depth		60	60	60	50	16
Width		117	117	117	120	75

Triax Series 700 stacking combiners

Triax has stacking combiner filters in plast box for combining 2 or 4 UHF aerials (Ch. 21-69)

Technical data

Type:		UHF 741 stacking combiner 4 x UHF
Art. No:		315115
Input 1		
- band		UHF
- channels		21-69
- frequency	MHz	470-862
- through loss	dB	0.3
Input 2		
- band		UHF
- channels		21-69
- frequency	MHz	470-862
- through loss	dB	0.3
Input 3		
- band		UHF
- channels		21-69
- frequency	MHz	470-862
- through loss	dB	0.3
Input 4		
- band		UHF
- channels		21-69
- frequency	MHz	470-862
- through loss	dB	0.3
In-out-throughpower		
Number of inputs	pcs.	4
Number of output	pcs.	1
DC through power		Yes
Connector		SC-type
Dimensions		
Weight	kg	0.200
Height		90
Depth		48
Width		115

Power supplies and inserters

| Power supplies

Triax Power supplies
CE approved. Simple and easy installation. High output voltage.

Technical data

Type:		IFP 501 Power supply	IFP 502 Power supply	IFP 503 Power supply	IFP 504 Power supply	IFP 505 Power supply
Art. No:		339501	339502	339503	339504	339505
Input/Output						
Band		VHF/UHF	VHF/UHF	VHF/UHF	VHF/UHF	VHF/UHF
Channel		2-69	2-69	2-69	2-69	2-69
Frequency range	MHz	47-862	47-862	47-862	47-862	47-862
Through loss	dB	1.0	4.0	1.0	4.0	1.0
Input	pcs.	1	1	1	1	1
Output	pcs.	1	2	1	2	1
Power						
Max. power	mA	85	85	45	45	45
Main voltage	V/AC	230	230	230	230	230
Power consumption	watt	3.0	3.0	3.0	3.0	2.0
Supply voltage	V	+ 12	+ 12	+ 24	+ 24	+ 5
Impedance	Ohm	75	75	75	75	75
Mechanical						
Connector		F-type	F-type	F-type	F-type	F-type
Certification		CE	CE	CE	CE	CE
Dimensions						
Weight	kg	0.400	0.400	0.400	0.400	0.400
Height	mm	61	61	61	61	61
Depth	mm	44	44	44	44	44
Width	mm	118	118	118	118	118

Triax Power supplies
CE approved. Simple and easy installation. High output voltage.

Technical data

Type:		601/60B Power supply	602/60B Power supply
Art. No:		336106	336121
Input/Output			
Band		VHF/UHF	VHF/UHF
Channel		2-69	2-69
Frequency range	MHz	47-862	47-862
Through loss	dB	0.5	4.0
Input	pcs.	1	1
Output	pcs.	1	2
Power			
Max. power	mA	60	60
Main voltage	V/AC	230	230
Power consumption	watt	4.0	2.6
Supply voltage	V	+ 12	+ 24
Impedance	Ohm	75	75
Mechanical			
Connector		S&C-type	S&C-type
Certification		CE	CE
Dimensions			
Weight	kg	0.250	0.250
Height	mm	90	90
Depth	mm	48	48
Width	mm	115	115

Power supplies and inserters

| Power inserters

Triax batteri filter is intended to power an amplifier through the coax from a battery.

Technical data

Type:		IFP 529 Power inserter	TPI-01 Power inserter
Art. Nr:		339529	347001
Input/Output			
Band		VHF/UHF	TV/SAT
Channel		2-69	
Input	pcs.	1	
Frequency range	MHz	47-862	5-862/1000-2400
Output	pcs.	2	1
Through loss	dB	2 x 4.0	0.5/2.0
Power			
Supply voltage	V	12-24	
Fuse		Automatic	
DC throughpass	mA	max. 100	65V/2A
Impedance	Ohm	75	75
Mechanical			
Connector		F-type	F-type
Certification		CE	CE
Dimensions			
Weight	kg	0.400	
Height		61	
Depth		44	
Width		118	

Mechanical accessories

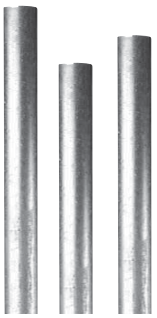
- Masts
- Window and wall brackets
- Mounting pipes
- Mounting clamps
- Wires and accessories
- Chimney bracket sets
- Roof covers
- Cable guards and ducts
- Screw, bolts, clips and strips

Terrestrial reception

| 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 of hot galvanized 38 mm steel masts

Type Art. No.		Mast 38 mm 140030	Mast 38 mm 140111	Mast 38 mm 140113	Mast 38 mm 140031	Mast 38 mm 140112	Mast 38 mm 140110
Diameter	mm	38	38	38	38	38	38
Length	m	1.5	2.0	3.0	3.0	4.0	6.0
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	2.0	2.8	4.0	4.0	5.2	8.0
Packing QTY	pcs.	10	10	1	10	1	1
Remarks			DIN 2394				DIN 2394

Technical data of hot galvanized 42 mm steel masts

Type Art. No.		Mast 42 mm 140025	Mast 42 mm 140115	Mast 42 mm 140114
Diameter	mm	50	50	50
Length	m	2.0	3.0	6.0
Thickness	mm	1.5	1.5	1.5
Max. bending moment	Nm	1250	1250	1250
Weight	kg	3.0	4.2	8.5
Packing QTY	pcs.	1	1	1
Remarks				DIN 2394

Technical data of 50 mm bottom steel masts

Type Art. No.		Mast 50 mm 140028	Mast 50 mm 140029	Mast 50 mm 140023	Mast 50 mm 140008	Mast 50 mm 140120	Mast 50 mm 140126
Diameter	mm	50	50	50	50	50	50
Length	m	2.0	3.0	3.0	4.0	6.0	3.0
Thickness	mm	2.0	2.0	2.0	2.0	2.0	2.0
Max. bending moment	Nm		1540	1540	1540	1540	1540
Weight	kg	3.2	4.5	4.5	6.4	9.0	4.5
Packing QTY	pcs.	10	1	1	1	1	1
Remarks		- for composition	- for composition	DIN 2394		DIN 2394	DIN 2394

Pipe holders for bottom pipe

Technical data of 50 mm bottom steel masts, pipe holders & mast tops

Type Art. No.		Mast 50 mm 140121	Mast 50 mm 140122	Pipe holders f. bottom pipe 140128	Mast top 38 mm 140213	Mast top 50 mm 140215
Diameter	mm	50	50	52	38	50
Length	m	3.0	6.0			
Thickness	mm	2.0	2.0			
Max. bending moment	Nm					
Weight	kg					
Packing QTY	pcs.	1	1	2	1	1
Remarks		- with holes for extention brackets		- for extention of bottom masts	Grey plast	Grey plast

Terrestrial reception

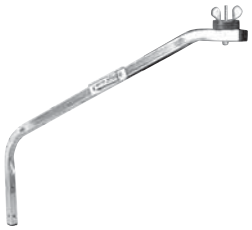
| Wall and window brackets

Triax's range of brackets for perfect installations.

Wall bracket with extra leg

3 legs wall bracket

Window bracket MT



Window bracket MT short

Technical data of wall and window brackets

Type Art. No.		Wall bracket 140044	Wall bracket 140045	Window bracket Type MT 130009	Window bracket Type MT short 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 of complete sets of wall brackets

Type Art. No.		Wall bracket 2 legs 7.5 cm 140036	Wall bracket 2 legs 25-50 cm 140037	Wall bracket 2+3 legs 25-50 cm 140047	Wall bracket 2+3 legs 25-50 cm 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 of 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 of 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

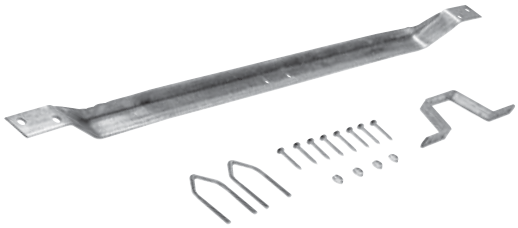
Technical data of hot galvanized wall brackets - 3 legs

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

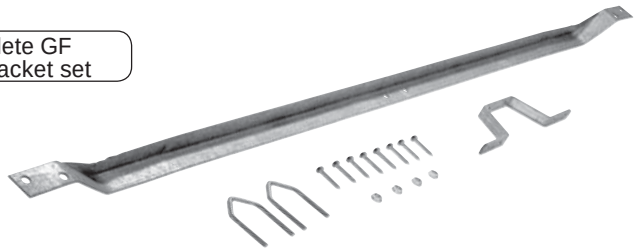
Terrestrial reception

| Wall bracket set

Triax's range of brackets for perfect installations.



Complete GF
- wall bracket set

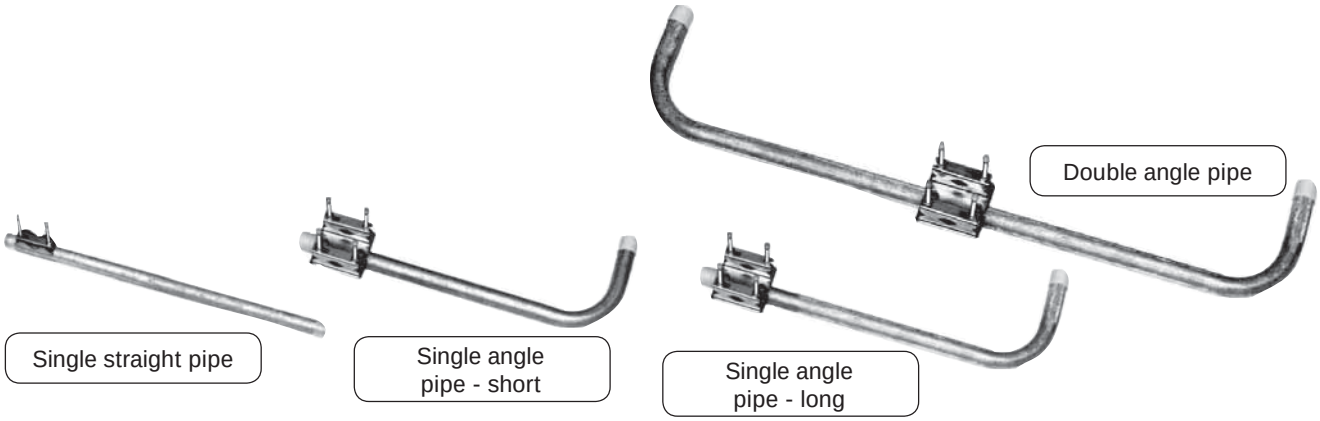


Technical data of wall brackets

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 of wall 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



Technical data of 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 of 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	

Terrestrial reception

| Mounting clamps





Technical data of accessories

Type Art. No.		Clamp 133107	U-clamp 140035	Double mast clamp 133245	Mast bracket straight 140041	Kip bracket 34 cm 132020
Mast diameter	mm	30-50		30-50	38	30-50
Material		Steel		Steel		
Surface tratment	mm	Galv.	Electro galv.	Galv.	Galv. steel	Galv. steel
Weight	kg					
Packing QTY	pcs.	1	2	1	1	1
Remarks			Galv. U-clamps		- with 2 screws	



Technical data of accessories

Type Art. No.		Phone mast bracket 130020	G-bolt 1/2” 133090	G-bolt 1/2” 133102
Diameter	mm	38 - 50	12	12
Length	mm		120	400
Material		Galv. steel	Galv. steel	Galv. steel
Weight	kg			
Packing QTY	pcs.	1	1	1
Remarks			- incl. disc and nuts	- incl. disc and nuts



Technical data of accessories

Type Art. No.		Botton clamp 30-50 mm 132015	Mast bracket 15x15 - Ø60 133262	Stay ring 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 of galvanized steelwire

Type Art. No.		Steel wire galvanized 133007	Steel wire galvanized 133105	Steel wire galvanized 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 of steelwire accessories

Type Art. No.		Rigging screw 133015	Wirelock 133025	Wirelock 133021	Thimble 133009	Thimble 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)

Terrestrial reception

| Chimney bracket sets

Triax's range of brackets for perfect installations.

Single wireset	Single chimney bracket set	Double chimney bracket set	2-parts chimney bracket set	Single chimney bracket set w. mast
				

Technical data of chimney brackets

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



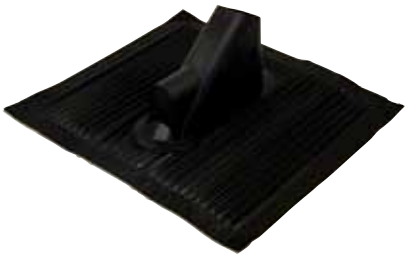
Technical data of chimney brackets

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

Triax's range of mounting accessories for perfect installations.

Roof cover - red

Roof cover - black



Technical data of 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 of 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

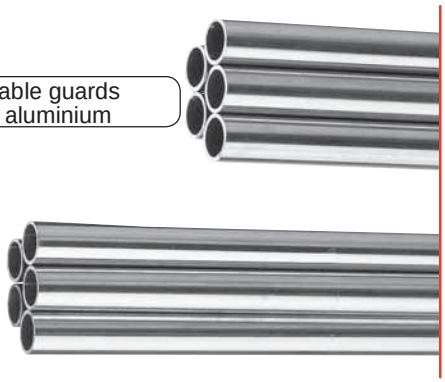
Terrestrial reception

| Cable guards

Triax's range of mounting accessories for perfect installations.

Cable duct
25 x 16 mm

Cable guards
- aluminium



Technical data of cable guards

Type Art. No.			Cable duct White plast 153092	Cable guards Alu 133053	Cable guards Alu 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 of screws

Type Art. No.			Screw 140340	Screw 140351	Screw 140360	Expansion bolts 140380	Expansion bolts 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

Technical data of cable clips (natural)

Type Art. No.			Cable clips Natural 153001	Cable clips Natural 153003	Cable clips Natural 153004	Cable clips Natural 153008	Cable clips Natural 153010
Size	Diameter	mm	3 x 5	5/20	6/25	7/25	7/35
	Lenght	mm	20	20	25	25	35
Material			Plastic	Plastic	Plastic	Plastic	Plastic
Weight		kg					
Packing QTY per box		pcs.	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

Technical data of 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

Terrestrial reception

| Cable strips, tape, clips and stitcher

Technical data of 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 of 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 of 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

| Dishes - LNB - Switches - Accessories

Dishes

TDS steel/TDA alu. series

TDS steel/TDA alu. euroline

TDS bulk pack

DAP series

LNB brackets

LNB units

Universal Single/Twin/Quad

Universal Quattro/ Octo

Universal monoblock

SCR LNB

DiSEqC switches

Mounting accessories

Dishes TD

| TDS single packed

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

Technical data

Type:		TDS 54	TDS 64	TDS 78	TDS 88	TDS 110
Art. no. / Colour						
Light grey - RAL 7035		122515**	122615	122718* 122715**	122818*	122915**
Grey - RAL 7030			122601* 122659**	122701* 122711**	122801*	122901*
Anthracite - RAL 7016		122512*	122612* 122675**	122712* 122775**	122812*	122912* 122914**
Brick red - RAL 8012						
Electrical						
Frequency range	GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz
Gain @ 11.7 GHz	dBi	34.2	35.8	37.1	38.8	40.2
G/T LNB 0.7	dB/K	14.2	16.0	16.0	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27	> 27
Mechanical						
Offset angle	degrees	26	26	26	26	26
Elevation range	degrees	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset	Offset
Beamwidth	degrees	3.7	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	323	445	619	902	1222
Dimensions (H x D x W)	mm	560 x 500	650 x 600	780 x 700	950 x 850	1050 x 1000
Material		High quality galv. steel	High quality galv. steel	High quality galv. steel	High quality galv. steel	High quality galv. steel
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Brackets						
Plastic LNB holder	mm	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25
Mast diameter	mm	Ø 32-60	Ø 32-60	Ø 32-60	Ø 32-60	Ø 32-60
Wall bracket		- optional extra	- optional extra	- optional extra	- optional extra	- optional extra
Remarks		*) = with Triax logo **) = without Triax logo Different mounting brackets available				

Dishes TD

| TDA single packed

- TD dishes allow a substantial reduction in time used for mounting and adjusting
- The elevation bracket is pre-mounted and is easily fixed to the mast with non-slip mast brackets.
- A setting scale on the elevation brackets facilitates precise adjustment to the required satellite.
- The pre-mounted feed arm just needs unfolding, and the LNB holder with the LNB is simply clicked on.

- Delivered in individual packaging, but also available in bulk packs minimizing costs of transportation and handling

Technical data

Type:		TDA 78 Triax logo	TDA 88 Triax logo	TDA 110 Triax logo
Art. no. / Colour				
Light grey - RAL 7035		123718	123818	
Grey - RAL 7030			123801	123901
Anthracite - RAL 7016			123812	123912
Brick red - RAL 8012				123914
Electrical				
Frequency range	GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz
Gain @ 11.7 GHz	dBi	37.1	38.8	40.2
G/T LNB 0.7	dB/K	17.3	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27
Mechanical				
Offset angle	degrees	26	26	26
Elevation range	degrees	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80
Reflector type	F/D 0.6	Offset	Offset	Offset
Beamwidth	degrees	2.6	2.0	1.8
Windload @ 42 m/s	N	619	902	1222
Dimensions (H x D x W)	mm	780 x 700	950 x 850	1050 x 1000
Material		High quality aluminium	High quality aluminium	High quality aluminium
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat
Brackets				
Plastic LNB holder	mm	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25
Mast diameter	mm	Ø 32-60	Ø 32-60	Ø 32-60
Wall bracket		- optional extra	- optional extra	- optional extra
Remarks		Different mounting brackets available	Different mounting brackets available	Different mounting brackets available

Dishes TD

| TDS Euroline, single packed

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:
>>>>

Technical data

Type:		TDS 64 Euroline w. logo	TDS 78 Euroline w. logo	TDS 88 Euroline w. logo	TDS 110 Euroline w. logo
Art. no. / Colour					
Light grey - RAL 7035		121660	121760	121860	121960
Grey - RAL 7030					
Anthracite - RAL 7016		121661	121761	121861	121961
Brick red - RAL 8012		121662	121762	121862	
Electrical					
Frequency range	GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz
Gain @ 11.7 GHz	dBi	35.8	37.1	38.8	40.2
G/T LNB 0.7	dB/K	16.0	17.3	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27
Mechanical					
Offset angle	degrees	26	26	26	26
Elevation range	degrees	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset
Beamwidth	degrees	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	445	619	902	1222
Dimensions (H x D x W)	mm	650 x 600	780 x 700	950 x 850	1050 x 1000
Material		High quality galv. steel	High quality galv. steel	High quality galv. steel	High quality galv. steel
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Brackets					
Plastic LNB holder	mm	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25
Mast diameter	mm	Ø 32-60	Ø 32-60	Ø 32-60	Ø 32-60
Wall bracket		- optional extra	- optional extra	- optional extra	- optional extra
Remarks		Different mounting brackets available	Different mounting brackets available	Different mounting brackets available	Different mounting brackets available

>>>>

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

Type:		TDA 64 Euroline w. logo	TDA 78 Euroline w. logo	TDA 88 Euroline w. logo	TDA 110 Euroline w. logo
Art. no. / Colour					
Light grey - RAL 7035		123660	123760	123860	123960
Grey - RAL 7030					
Anthracite - RAL 7016		123661	123761	123861	
Brick red - RAL 8012		123662	123762	123862	
Electrical					
Frequency range	GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz
Gain @ 11.7 GHz	dBi	35.8	37.1	38.8	40.2
G/T LNB 0.7	dB/K	16.0	16.0	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27
Mechanical					
Offset angle	degrees	26	26	26	26
Elevation range	degrees	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset
Beamwidth	degrees	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	445	619	902	1222
Dimensions (H x D x W)	mm	650 x 600	780 x 700	950 x 850	1050 x 1000
Material		High quality aluminium	High quality aluminium	High quality aluminium	High quality aluminium
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Brackets					
Plastic LNB holder	mm	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25
Mast diameter	mm	Ø 32-60	Ø 32-60	Ø 32-60	Ø 32-60
Wall bracket		- optional extra	- optional extra	- optional extra	- optional extra
Remarks		Different mounting brackets available	Different mounting brackets available	Different mounting brackets available	Different mounting brackets available

Dishes TD

| TDS 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

Type:		TDS 54 DL w. wall bracket	TDS 64 DL w. wall bracket	TDS 78 DL w. wall bracket	TDS 88 DL w. wall bracket	TDS 110 DL w. wall bracket
Art. no. / Colour Light grey - RAL 7035 Grey - RAL 7030 Anthracite - RAL 7016 Brick red - RAL 8012		122501	122601	122701	122801	122901
Electrical						
Frequency range	GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz
Gain @ 11.7 GHz	dBi	34.2	35.8	37.1	38.8	40.2
G/T LNB 0.7	dB/K	14.2	16.0	16.0	19.2	20.6
X-polarisation	dB	> 27	> 27	> 27	> 27	> 27
Mechanical						
Offset angle	degrees	26	26	26	26	26
Elevation range	degrees	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset	Offset
Beamwidth	degrees	3.7	3.1	2.6	2.0	1.8
Windload @ 42 m/s	N	323	445	619	902	1222
Dimensions (H x D x W)	mm	560 x 500	650 x 600	780 x 700	950 x 850	1050 x 1000
Material		High quality galv. steel	High quality galv. steel	High quality galv. steel	High quality galv. steel	High quality galv. steel
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Brackets						
Plastic LNB holder	mm	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25
Mast diameter	mm	Ø 32-60	Ø 32-60	Ø 32-60	Ø 32-60	Ø 32-60
Wall bracket		- included	- included	- included	- included	- included
Remarks						

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

Triax Mini-bulk consists of 3 or 5 complete satellite dishes (dish, back bracket, arm, mast bracket, LNB brackets and screws) packed in one carton box.

Technical data

Type:		TMB 64 Steel mini bulk	TMB 78 Steel mini bulk	TMB 88 Steel mini bulk	TMB 78 Alu mini bulk
Art. no. / Colour					
Light grey - RAL 7035 Grey - RAL 7030		122627	122733	122831	123731
Anthracite - RAL 7016 Brick red - RAL 8012		122674	122236	122832	123732
Electrical					
Frequency range	GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz	10.7 - 12.75 GHz
Gain @ 11.7 GHz	dBi	35.8	37.1	38.8	37.1
G/T LNB 0.7	dB/K	16.0	16.0	19.2	16.0
X-polarisation	dB	> 27	> 27	> 27	> 27
Mechanical					
Offset angle	degrees	26	26	26	26
Elevation range	degrees	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80	10-50 / 45-80
Reflector type	F/D 0.6	Offset	Offset	Offset	Offset
Beamwidth	degrees	3.1	2.6	2.0	2.6
Windload @ 42 m/s	N	445	619	902	619
Dimensions (H x D x W)	mm	650 x 600	780 x 700	950 x 850	780 x 700
Material		High quality steel	High quality steel	High quality steel	High quality aluminium
Finish		Polyester powder coat	Polyester powder coat	Polyester powder coat	Polyester powder coat
Brackets					
Plastic LNB holder	mm	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25	Ø 40 + Ø 25
Mast diameter	mm	Ø 32-60	Ø 32-60	Ø 32-60	Ø 32-60
Wall bracket		- optional extra	- optional extra	- optional extra	- optional extra
Remarks		Excl. logo 5 pcs. Carton box	Excl. logo 5 pcs. Carton box	Excl. logo 3 pcs. Carton box	Excl. logo 5 pcs. Carton box

Dishes TD

| 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

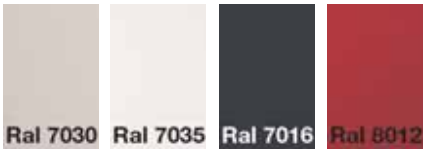
TD dishes	- incl. Triax logo	
Art. No.	TDS steel dishes	
122567	TDS 54, Bulk w/single, Ral 7035	200 pcs/pll
122568	TDS 54, Bulk w/single, Ral 7016	200 pcs/pll
122569	TDS 54, Bulk w/single, Ral 8012	200 pcs/pll
122667	TDS 64, Bulk w/single, Ral 7035	100 pcs/pll
122668	TDS 64, Bulk w/single, Ral 7016	100 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 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

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



Dishes Fibre glass

| DAP 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

		DAP 610	DAP 611	DAP 710	DAP 711	DAP 910	DAP 911
Art. no. / Colour							
Creme - RAL 1013		362610		362710		362910	
Anthracite - RAL 7016			362611		362711		362911
Electrical							
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	
Dimensions (H x D x W)	mm	560 x 610		625 x 720		860 x 940	
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	

LNB brackets

| TD-brackets

Triax LNB brackets
- multi satellite reception

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

Technical data

Type:		TD - 6° DuoBlock	TD - 3° DuoBlock	TD - 6° DuoBlock	TD - 3° - 10° Flexi-Block	TD - 3°-20° FlexiBlock - 4xLNB	TD - 3°-20° FlexiBlock - 3xLNB
Art. Nr:		300715	300716	300717	300719	300727	300728
Colour		Black	Black	Grey	Black	Black/Alu	Black/Alu
Material		Plastic	Plastic	Plastic			
LNB angle	degrees	6	3	6	3-10	3-20	3-20
LNB size	mm	Ø 40	Ø 40	Ø 40	Ø 40	Ø 40	Ø 40
Packing size	pcs.	1	1	1		Single pack	Single pack
Remarks		Ø 25 mm adaptor - optional extra	Ø 25 mm adaptor - optional extra	Ø 25 mm adaptor - optional extra	Ø 25 mm adaptor - optional extra	Ø 25 mm adaptor - optional extra	Ø 25 mm adaptor - optional extra

Triax LNB brackets
- multi satellite reception

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

DAP-brackets
Triax LNB brackets - multi satellite reception

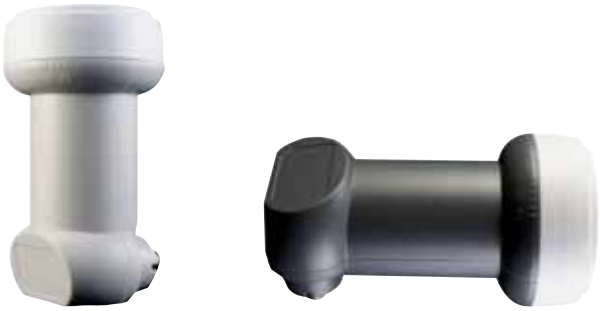
Technical data

Type:		TD multi-block with 4xLNB and switch	TD multi-block with 2xLNB and switch	Plastic parts for TD Ral 7030	Plastic parts for TD Black	Plastic parts for TD RAL 7035
Art. Nr:		300725	300730	129420	129421	129422
Colour		Black/Alu	Black/Alu	Ral 7030	Ral 7030	Ral 7035
Material				Plastic	Plastic	Plastic
LNB angle	degrees	3 - 20	3 - 20			
LNB size	mm	Ø 40	Ø 40			
Packing size		Single set pack	Single set pack	Single pack	Single pack	Single pack
Remarks		incl. 4xLNB and switch	incl. 2xLNB and switch	Fits TD54, TD64, TD78 and TD88	Fits TD54, TD64, TD78 and TD88	Fits TD54, TD64, TD78 and TD88

Type:		MFD 850 DAP multiblock
Art. Nr:		126309
Colour		Black/White
Material		
LNB angle	degrees	3 - 10
LNB size	mm	Ø 40
Packing size		Single set pack
Remarks		Ø25 adaptor optional extra

Notes

| for your personal notes



Full KU-band coverage for both digital and analogue reception.
Excellent noise figure and low phase noise. High gain and excellent cross-pole isolation. Waterproof. High output and low power consumption.
Gain flatness. For 1 set top box.
Weather boot protection included.

Colour options:
RAL 7035 Light grey or
RAL 7016 Anthracite grey.
Single packed in gift box.

Technical data

Type:		TSI 003 Universal Single	TSI 006 Universal Single	TSI 007 Universal Single	THSI 01 Universal Single High Gain +5 dB
Colour		RAL 7035	RAL 7016	RAL 7016	RAL 7035
Art. No.		300430	304432	304434	304480
RF input / IF output					
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75
Feedhorn F/D @ 11.7	GHz	0.615	0.615	0.615	0.615
Output frequency low band	MHz	950 - 1950	950 - 1950	950 - 1950	950 - 1950
Output frequency high band	MHz	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150
Connector type		F-con	F-con	F-con	F-con
Output VSWR					
Local oscillator / Electrical					
LO frequency low band	GHz	9.75	9.75	9.75	9.75
LO frequency high band	GHz	10.6	10.6	10.6	10.6
LO spurious		- 60	- 60	- 60	- 60
LO temperature drifting				± 1/± 3	
Frequency stability (-40 ~ +60 °C)	MHz	± 2.5:1	± 2.1:1	± 2.1:1	± 2.1:1
Phase noise @ room temp.-1 kHz	dBc/Hz	- 50	- 50	- 50	- 50
Phase noise @ room temp.-10 kHz	dBc/Hz	- 80	- 75	- 75	- 75
Phase noise @ room temp.-100 kHz	dBc/Hz	- 100	- 95	- 95	- 95
Conversion gain (typ.)	dB	62	62	62	68
Conversion gain (max.)	dB	56	50	50	55
Gain variation (operating band)	dB	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)
Gain flatness (across 26 MHz)	dB	± 0.5 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)
Spurious level	dBm	- 65 (max.)	- 60 (max.)	- 60 (max.)	- 60 (max.)
Noise figure typ.	dB	0.3	0.3	0.3	0.3
Noise figure max.	dB	0.6	0.6	0.6	0.6
Image rejection (min.)	dB	45	40	40	40
Cross polarization isolation	dB	25 typ.	25 typ.	25 typ.	25 typ.
DC power consumption (typ.)	mA	110	100	100	100
Operating voltage vertical	V/DC	10.5 ~ 14.5	15.5 ~ 21.0	15.5 ~ 21.0	15.5 ~ 21.0
Operating voltage horizontal	V/DC	15.5 ~ 21	10.5 ~ 14.5	10.5 ~ 14.5	10.5 ~ 14.5
Switching position			none	none	none
Switching low band/ high band	Hz	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Diameter		Ø 40	Ø 40	Ø 40	Ø 40
Dimension W x H x D	mm	59/59/112	59/137/97	59/137/97	59/137/97
Max. depth incl. feedhorn		112	135	135	135
Weight	kg	0.130	0.120	0.120	0.120
Packing size	pcs.	50	50	50	50

LNB

| Universal Single

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:		TMO 001 Universal Single, 4.3° Monoblock, RAL 7035	TISI 003 Universal Single Slim Line RAL 7035	TMB 002 Universal Single 6° Monoblock RAL 7035	TMB 003 Universal Single 6° Monoblock RAL 7035
Colour					
Art. No.		304465	304474	300439	304430
RF input / IF output					
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75
Feedhorn F/D @ 11.7	GHz	0.6	0.615	0.615	0.615
Output frequency low band	MHz	950 - 2150	950 - 1950	950 - 1950	950 - 1950
Output frequency high band	MHz	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150
Connector type		F-con	F-con	F-con	F-con
Output VSWR		2.0:1			
Local oscillator / Electrical					
LO frequency low band	GHz	9.75	9.75	9.75	9.75
LO frequency high band	GHz	10.6	10.6	10.6	10.6
LO spurious		- 60	- 60	- 60	- 60
LO temperature drifting		± 1/± 3			
Frequency stability (-40 ~ +60 °C)	MHz	± 2.0:1	± 2.1:1	± 2.0:1	± 2.0:1
Phase noise @ room temp.-1 kHz	dBc/Hz	- 60	- 50	- 60	- 60
Phase noise @ room temp.-10 kHz	dBc/Hz	- 80	- 75	- 80	- 80
Phase noise @ room temp.-100 kHz	dBc/Hz	- 100	- 95	- 100	- 100
Conversion gain (typ.)	dB	56	62	62	62
Conversion gain (max.)	dB	62	56	50	50
Gain variation (operating band)	dB	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)
Gain flatness (across 26 MHz)	dB	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)
Spurious level	dBm	- 60 (max.)	- 60 (max.)	- 60 (max.)	- 60 (max.)
Noise figure typ.	dB	0.6	0.3	0.3	0.3
Noise figure max.	dB	0.8	0.6	0.6	0.6
Image rejection (min.)	dB	40	40	40	40
Cross polarization isolation	dB	20/25 typ.	25 typ.	25 typ.	25 typ.
DC power consumption (typ.)	mA	90/110	190	110	110
Operating voltage vertical	V/DC	10.5 ~ 14.5	15.5 ~ 21.0	10.5 ~ 14.5	10.5 ~ 14.5
Operating voltage horizontal	V/DC	15.5 ~ 21.0	10.5 ~ 14.5	15.5 ~ 21	15.5 ~ 21
Switching position		DiSEqC 2.0	none	DiSEqC 2.0	DiSEqC 2.0
Switching low band/ high band	Hz	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Diameter		Ø 40	Ø 40	Ø 40	Ø 40
Dimension W x H x D	mm	116/100/86	59/137/97	140/137/97	140/137/97
Max. depth incl. feedhorn		145	135	0.375	0.375
Weight	kg	0.330	0.210	0.120	0.120
Packing size	pcs.	30	50	30	30

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- 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 003 Universal Twin	TTW 002 Universal Twin	TTW 006 Universal Twin	TTW 007 Universal Twin
Colour				RAL 7035	RAL 7016
Art. No.		300428	300435	304436	304438
RF input / IF output					
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75
Feedhorn F/D @ 11.7	GHz	0.615	0.615	0.615	0.615
Output frequency low band	MHz	950 - 1950	950 - 1950	950 - 1950	950 - 1950
Output frequency high band	MHz	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150
Connector type		2 x F-con	2 x F-con	2 x F-con	2 x F-con
Output VSWR					
Local oscillator / Electrical					
LO frequency low band	GHz	9.75	9.75	9.75	9.75
LO frequency high band		10.6	10.6	10.6	10.6
LO spurious	GHz	- 60	- 60	- 60	- 60
Frequency stability (-40 ~ +60 °C)		± 2.0:1	± 2.0:1	± 2.1:1	± 2.1:1
Phase noise @ room temp.-1 kHz		- 60	- 60	- 50	- 50
Phase noise @ room temp.-10 kHz	MHz	- 80	- 80	- 75	- 75
Phase noise @ room temp.-100 kHz	dBc/Hz	- 100	- 100	- 95	- 95
Conversion gain (typ.)	dB	62	62	64	64
Conversion gain (max.)	dB	50	50	50	50
Gain variation (operating band)	dB	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)
Gain flatness (across 26 MHz)	dB	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)
Spurious level	dBm	- 60 (max.)	- 60 (max.)	- 60 (max.)	- 60 (max.)
Noise figure typ.	dB	0.3	0.3	0.3	0.3
Noise figure max.	dB	0.6	0.6	0.3	0.3
Image rejection (min.)	dB	40	40	40	40
Cross polarization isolation	dB	25 typ.	25 typ.	25 typ.	25 typ.
DC power consumption (typ.)	mA	140	140	170	170
Operating voltage vertical	V/DC	10.5 ~ 14.5	10.5 ~ 14.5	15.5 ~ 21.0	15.5 ~ 21.0
Operating voltage horizontal	V/DC	15.5 ~ 21	15.5 ~ 21	10.5 ~ 14.5	10.5 ~ 14.5
Control signals					
Switching position		none	none	none	none
Switching low band/ high band	Hz	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Diameter		Ø 40	Ø 40	Ø 40	Ø 40
Dimension W x H x D	mm	59/137/97	59/137/97	59/137/97	59/137/97
Max. depth incl. feedhorn		145	145	135	135
Weight	kg	0.355	0.355	0.210	0.210
Packing size	pcs.	30	30	50	50

LNB

| Universal Twin

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:		TMT 001 Universal Twin 4.3° Monoblock RAL 7035	TITW 004 Universal Twin Slim Line RAL 7035	TMB 004 Universal Single 6° Monoblock RAL 7035
Colour				
Art. No.		304466	304475	304466
RF input / IF output				
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75
Feedhorn F/D @ 11.7	GHz	0.615	0.615	0.615
Output frequency low band	MHz	950 - 2150	950 - 1950	950 - 2150
Output frequency high band	MHz	1100 - 2150	1100 - 2150	1100 - 2150
Connector type		2 x F-con	2 x F-con	2 x F-con
Output VSWR		2.0:1		
Local oscillator / Electrical				
LO frequency low band	GHz	9.75	9.75	9.75
LO frequency high band		10.6	10.6	10.6
LO spurious	GHz	- 60	- 60	- 60
LO temperature drifting				
Frequency stability (-40 ~ +60 °C)		± 2.0:1	± 2.1:1	± 2.0:1
Phase noise @ room temp.-1 kHz		- 60	- 50	- 60
Phase noise @ room temp.-10 kHz	MHz	- 80	- 75	- 80
Phase noise @ room temp.-100 kHz	dBc/Hz	- 100	- 95	- 100
Conversion gain (typ.)	dB	56	62	56
Conversion gain (max.)	dB	62	56	62
Gain variation (operating band)	dB	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)
Gain flatness (across 26 MHz)	dB	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)
Spurious level	dBm	- 60 (max.)	- 60 (max.)	- 60 (max.)
Noise figure typ.	dB	0.6	0.3	0.6
Noise figure max.	dB	0.8	0.6	0.8
Image rejection (min.)	dB	40	40	40
Cross polarization isolation	dB	20/25 typ.	25 typ.	25 typ.
DC power consumption (typ.)	mA	180/250	190	180/250
Operating voltage vertical	V/DC	10.5 ~ 14.5	15.5 ~ 21.0	10.5 ~ 14.5
Operating voltage horizontal	V/DC	15.5 ~ 21.0	10.5 ~ 14.5	15.5 ~ 21.0
Switching position		DiSEqC 2.0	none	DiSEqC 2.0
Switching low band/ high band	Hz	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	-40 ~ +60
Diameter		Ø 40	Ø 40	Ø 40
Dimension W x H x D	mm	122/110/122	59/137/97	122/110/122
Max. depth incl. feedhorn		145	135	145
Weight	kg	0.570	0.210	0.570
Packing size	pcs	20	50	20

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:		TQD 003 Universal Quad	TQD 006 Universal Quad,	TQD 007 Universal Quad,	TMQ 001 Universal Quad, 4.3° Monoblock	TIQD 004 Universal Quad Slim Line
Colour		RAL 7035	RAL 7035	RAL 7016	RAL 7035	RAL 7035
Art. No.		300448	304442	304444	304467	304477
RF input / IF output						
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75
Feedhorn F/D @ 11.7	GHz	0.615	0.615	0.615	0.615	0.615
Output frequency low band	MHz	950 - 1950	950 - 1950	950 - 1950	950 - 2150	950 - 1950
Output frequency high band	MHz	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150
Connector type		4 x F-con	4 x F-con	4 x F-con	4 x F-con	4 x F-con
Output VSWR					2.0:1	
Local oscillator / Electrical						
LO frequency low band	GHz	9.75	9.75	9.75	9.75	9.75
LO frequency high band		10.6	10.6	10.6	10.6	10.6
LO spurious	GHz	- 60	- 60	- 60	- 60	- 60
LO temperature drifting					± 1/± 3	
Frequency stability (-40 ~ +60 °C)	MHz	± 2.0:1	± 2.1:1	± 2.1:1	± 2.0:1	± 2.1:1
Phase noise @ room temp.-1 kHz	dBc/Hz	- 60	- 50	- 50	- 60	- 50
Phase noise @ room temp.-10 kHz	dBc/Hz	- 80	- 75	- 75	- 80	- 75
Phase noise @ room temp.-100 kHz	dBc/Hz	- 100	- 95	- 95	- 100	- 95
Conversion gain (typ.)	dB	62	64	64	56	64
Conversion gain (max.)	dB	50	50	50	62	50
Gain variation (operating band)	dB	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)
Gain flatness (across 26 MHz)	dB	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)
Spurious level	dBm	- 60 (max.)	- 60 (max.)	- 60 (max.)	- 60 (max.)	- 60 (max.)
Noise figure typ.	dB	0.3	0.3	0.3	0.6	0.3
Noise figure max.	dB	0.6	0.3	0.3	0.8	0.6
Image rejection (min.)	dB	40	40	40	40	40
Cross polarization isolation	dB	25 typ.	25 typ.	25 typ.	20/25 typ.	25 typ.
DC power consumption (typ.)	mA	160	180	180	180/250	190
Operating voltage vertical	V/DC	10.5 ~ 14.5	15.5 ~ 21.0	15.5 ~ 21.0	10.5 ~ 14.5	15.5 ~ 21.0
Operating voltage horizontal	V/DC	15.5 ~ 21	10.5 ~ 14.5	10.5 ~ 14.5	15.5 ~ 21.0	10.5 ~ 14.5
Switching position		none	none	none	DiSEqC 2.0	none
Switching low band/ high band	Hz	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Diameter		Ø 40	Ø 40	Ø 40	Ø 40	Ø 40
Dimension W x H x D	mm	59/137/97	59/137/97	59/137/97	122/110/122	59/137/97
Max. depth incl. feedhorn		145	135	135	145	135
Weight	kg	0.365	0.220	0.220	0.570	0.220
Packing size	pcs.	30	50	50	20	50

LNB

| Universal Quattro

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 4 set-top boxes
- Supplied sliding cover
- Available in 2 colours
- Single packed in gift box

Technical data

Type: / Colour		TQT 002 Universal Quattro RAL 7035	TQT 006 Universal Quattro RAL 7035	TQT 007 Universal Quattro RAL 7016	TIQT 004 Universal Quattro Slim Line RAL 7035
Art. No.		300438	304446	304449	304476
RF input / IF output					
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75
Feedhorn F/D @ 11.7	GHz	0.615	0.615	0.615	0.615
Output frequency low band	MHz	950 - 2150	950 - 1950	950 - 2150	950 - 2150
Output frequency high band	MHz	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150
Connector type		4 x F-con	4 x F-con	4 x F-con	4 x F-con
Output VSWR					
Local oscillator / Electrical					
LO frequency low band	GHz	9.75	9.75	9.75	9.75
LO frequency high band		10.6	10.6	10.6	10.6
LO spurious	GHz	- 60	- 60	- 60	- 60
LO temperature drifting					
Frequency stability (-40 ~ +60 °C)		± 2.1:1	± 2.1:1	± 2.1:1	± 2.1:1
Phase noise @ room temp.-1 kHz		- 50	- 50	- 50	- 50
Phase noise @ room temp.-10 kHz	MHz	- 75	- 75	- 75	- 75
Phase noise @ room temp.-100 kHz	dBc/Hz	- 95	- 95	- 95	- 95
Conversion gain (typ.)	dB	62	64	64	64
Conversion gain (max.)	dB	50	50	50	50
Gain variation (operating band)	dB	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)	5 p-p (typ.)
Gain flatness (across 26 MHz)	dB	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)	± 1.0 (typ.)
Spurious level	dBm	- 60 (max.)	- 60 (max.)	- 60 (max.)	- 60 (max.)
Noise figure typ.	dB	0.3	0.3	0.3	0.3
Noise figure max.	dB	0.6	0.6	0.6	0.6
Image rejection (min.)	dB	40	40	40	40
Cross polarization isolation	dB	25 typ.	25 typ.	25 typ.	25 typ.
DC power consumption (typ.)	mA	140	190	190	190
Operating voltage vertical	V/DC	10.5 ~ 21.0	15.5 ~ 21.0	15.5 ~ 21.0	15.5 ~ 21.0
Operating voltage horizontal	V/DC	10.5 ~ 21.0	10.5 ~ 14.5	10.5 ~ 14.5	10.5 ~ 14.5
Switching position		none	none	none	none
Switching low band/ high band	Hz	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)	0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Diameter		Ø 40	Ø 40	Ø 40	Ø 40
Dimension W x H x D	mm	59/137/97	59/137/97	59/137/97	59/137/97
Max. depth incl. feedhorn		135	135	135	135
Weight	kg	0.365	0.210	0.210	0.220
Packing size	pcs.	30	50	50	50

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 c onsumption
- 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: / Colour		TOT 002 Universal OCTO RAL 7035	TOT 003 Universal OCTO RAL 7016
Art. No.		304418	304448
RF input / IF output			
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75
Feedhorn F/D @ 11.7	GHz	0.615	0.615
Output frequency low band	MHz	950 - 2150	950 - 1950
Output frequency high band	MHz	1100 - 2150	1100 - 2150
Connector type		8 x F-con	8 x F-con
Output VSWR			
Local oscillator / Electrical			
LO frequency low band	GHz	9.75	9.75
LO frequency high band		10.6	10.6
LO spurious	GHz	- 60	- 60
LO temperature drifting			
Frequency stability (-40 ~ +60 °C)		± 2.1:1	± 2.1:1
Phase noise @ room temp.-1 kHz		- 50	- 50
Phase noise @ room temp.-10 kHz	MHz	- 75	- 75
Phase noise @ room temp.-100 kHz	dBc/Hz	- 95	- 95
Conversion gain (typ.)	dB	62	64
Conversion gain (max.)	dB	50	50
Gain variation (operating band)	dB	5 p-p (typ.)	5 p-p (typ.)
Gain flatness (across 26 MHz)	dB	± 1.0 (typ.)	± 1.0 (typ.)
Spurious level	dBm	- 60 (max.)	- 60 (max.)
Noise figure typ.	dB	0.3	0.3
Noise figure max.	dB	0.6	0.6
Image rejection (min.)	dB	40	40
Cross polarization isolation	dB	25 typ.	25 typ.
DC power consumption (typ.)	mA	140	190
Operating voltage vertical	V/DC	10.5 ~ 21.0	15.5 ~ 21.0
Operating voltage horizontal	V/DC	10.5 ~ 21.0	10.5 ~ 14.5
Switching position		none	none
Switching low band/ high band	Hz	0.0 / 22 (± 4)	0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60
Diameter		Ø 40	Ø 40
Dimension W x H x D	mm	59/137/97	59/137/97
Max. depth incl. feedhorn		135	135
Weight	kg	0.365	0.210
Packing size	pcs.	30	50

LNB

| Alps LNBs

Available as single, dual and quad for 1, 2 or 4 set top boxes.
Also available in quattro version for multi switch systems.
Full Ku-band coverage for both digital and analogue reception.
Low noise figures (0.6 dB).
High cross polar isolation (typically >25 dB).

Technical data

Type:		Alps Universal Single RAL 7035	Alps Universal Twin RAL 7035	Alps Universal Single RAL 7035	Alps Universal Quad RAL 7035	Alps Quattro RAL 7035
Colour						
Art. No:		300424	300462	300464	300467	300468
RF input / IF output						
Input frequency low band	GHz	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7	10.7 - 11.7
Input frequency high band	GHz	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75	11.7 - 12.75
Output frequency low band	MHz	950 - 1950	950 - 1950	950 - 1950	950 - 1950	950 - 1950
Output frequency high band	MHz	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150	1100 - 2150
Connector type		1 x F-con	2 x F-con	1 x F-con	4 x F-con	4 x F-con
Local oscillator / Electrical						
Frequency low band	GHz	9.75 GHz	9.75 GHz	9.75 GHz	9.75 GHz	9.75 GHz
Frequency high band	GHz	10.6 GHz	10.6 GHz	10.6 GHz	10.6 GHz	10.6 GHz
Frequency stability (-40 ~ +60 °C)	MHz	± 3.0:1	± 3.0:1	± 3.0:1	± 3.0:1	± 3.0:1
Phase noise @ room temp.-1 kHz	dBc/Hz	- 50	- 50	- 50	- 50	- 50
Phase noise @ room temp.-10 kHz	dBc/Hz	- 80	- 80	- 80	- 80	- 80
Phase noise @ room temp.-100 kHz	dBc/Hz	- 100	- 100	- 100	- 100	- 100
Conversion gain (typ.)	dB	48	48	48	48	48
Conversion gain (max.)	dB	60	60	60	60	60
Spurious level	dBm	- 65 (max.)	- 65 (max.)	- 65 (max.)	- 65 (max.)	- 65 (max.)
Noise figure typ.	dB	0.6	0.6	0.6	0.6	0.6
Noise figure max.	dB	0.6	0.6	0.6	0.6	0.6
Image rejection (min.)	dB	40/80	40/80	40/80	40/80	40/80
Cross polarization isolation	dB	25 typ.	25 typ.	25 typ.	25 typ.	25 typ.
DC power consumption (typ.)	mA	115 (160 max.)	115 (160 max.)	115 (160 max.)	115 (160 max.)	115 (160 max.)
Operating voltage vertical	V/DC	11.5 ~ 14.0	11.5 ~ 14.0	11.5 ~ 14.0	11.5 ~ 14.0	11.5 ~ 14.0
Operating voltage horizontal	V/DC	16.0 ~ 19.0	16.0 ~ 19.0	16.0 ~ 19.0	16.0 ~ 19.0	16.0 ~ 19.0
Switching low band	Hz	0.0	0.0	0.0	0.0	0.0
Switching high band	kHz	22	22	22	22	22
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60	-40 ~ +60
Dimensions						
Diameter		Ø 40	Ø 40	Ø 40	Ø 40	Ø 40
Dimension W x H x D	mm	55/55/130	56/159/76	55/55/130	55/159/76	55/159/76
Max. depth incl. feedhorn		112	151	112	151	151
Weight	kg	0.125	0.350	0.125	0.350	0.350
Packing size	pcs.	1	1	1	1	1

New satellite reception and distribution technology introducing new standards for single cable distribution.

The new industry standard CENELEC EN50494 facilitates the delivery of broadcast programming over a single coaxial cable to multiple users, and hence helps to eliminate the numerous coaxial cables previously required to connect satellite PVRs and other high-end set top boxes to the satellite dish.

Technical data

Type: Colour		**TOC 001** **Single cable router** **(Sky one-cable)** **RAL 7035**	**TSI 010** **Single cable router** **(NZ - LNB)** **RAL 7035**	**TSC 001** **Single cable router** **RAL 7035**
Art. Nr:		304410	304440	304460
RF input				
Input frequency low band	GHz	10.7 ~ 11.7		
Input frequency high band	GHz		11.7 ~ 12.75	11.7 ~ 12.75
IF output				
Output SatCR channels	MHz			1210, 1420, 1680, 2040
Output frequency low band	MHz	950 ~ 2150		
Output frequency high band	MHz		950 ~ 2000	950 ~ 2000
Number of outputs		1	1	2
Connector type		F-con	F-con	1 x F-con
Local oscillator				
LO frequency low band	GHz	9.75	9.75	
LO frequency high band	GHz	10.6	10.75	
Electrical				
Conversion gain (typ.)	dB	50	50	
Conversion gain (max.)	dB	62	62	
Noise figure max.	dB	0.3	0.3	
Polarisation/band selection				DiSEqC - ST
Supply voltage (low/high)	VDC			10.5~14.5/ 15.5~21.0
Switching low band/ high band	Hz			0.0 / 22 (± 4)
Operation temperature	deg.	-40 ~ +60	-40 ~ +60	
Dimensions				
Colour		Ral 7035	Ral 7035	Ral 7035
Diameter	mm	Ø 40	Ø 40	Ø 40
Weight	kg	0.282	0.155	0.130
Packing size	pcs.	30	50	30

DiSEqC switches

| Triax DiSEqC switches

DiSEqC switch

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

DiSEqC 2x1 Pos - 300502

DiSEqC 4x1 Pos - 300504

Technical data

Type:		DiSEqC 502 2x1 switch	DiSEqC 504 4x1 switch	DiSEqC 502 - 2x1 switch	DiSEqC 504 - 4x1 switch
Art. No:		300502	300504	300513	300514
Number of inputs	pcs.	2	2	2	2
Number of positions	pcs.	2	2	2	2
Number of outputs	pcs.	1	1	1	1
Frequency range SAT	MHz	900 - 2150	900 - 2150	900 - 2150	900 - 2150
Switch Type		DiSEqC		DiSEqC	
Through loss	dB	1.5 (max 3.0)	1.5 (max 3.0)	1.5 (max 3.0)	1.5 (max 3.0)
Isolation input A-B	dB	> 25	> 25	> 25	> 25
Functions		Position/tone burst	Position/option	Position/tone burst	Position/option
Current consumption	mA	25	25	25	25
Temperature range	°C	-30...+60	-30...+60	-30...+60	-30...+60
Dimensions (H x D x W)	mm	60 x 12 x 60	60 x 12 x 125	60 x 12 x 60	60 x 12 x 125
Weight	kg	0.102	0.102	0.102	0.102

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

Available with 2 or 4 inputs for switching between 2 or 4 satellite positions.

High isolation ensures problem-free operation in multi user installations.

Available in diode or relay versions (relay: mechanical solution for extreme weather conditions).

Can be used with single, dual and quad LNBs.

Technical data

Type:		MFD 21R - 2x1 Relay switch	MFD 41D - 4x1 Diodes switch	MFD 21D - 2x1 Diodes switch
Art. No:		300508	300509	300510
Number of inputs	pcs.	2	2	2
Number of positions	pcs.	2	2	2
Number of outputs	pcs.	1	1	1
Frequency range SAT	MHz	950-2200	950-2200	950-2200
Switch Type		Relay	Diodes	Diodes
DiSEqC control		DiSEqC 1.0 and tone burst	DiSEqC 1.0 and tone burst	DiSEqC 1.0 and tone burst
Through loss	dB	1	2.5	1
Isolation input A-B	dB	> 25	> 30	> 25
Return loss	dB	> 10	> 8	> 10
Linearity	dB	± 1	± 1	± 1
Functions		Position/option/ band	Position/option	Position/option/ band
Control LEDs	pcs.	2	4	2
DC loop through (max.)	mA	500	500	500
Current consumption	mA	< 30	< 30	< 30
Temperature range	°C	-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
Weight	kg	0.220	0.220	0.220
Remarks		HiEnd DiSEqC switch	HiEnd DiSEqC switch	HiEnd DiSEqC switch

Mounting accessories

| Wall bracket

Triax has a wide range of mounting brackets for dishes.

You will also and a complete range of different accessories - everything for making a perfect mounting.

Satellite reception

Technical data

Type:		Triax 2561 stand	Wall bracket type “J”	Wall bracket type “S”	Universal roff/ wall bracket
Art. No:		127100	128050	128070	300709
Material		Galv. steel	Galv. steel	Galv. steel	RAL 7030
Mast diameter	mm	Ø 50	Ø 25	Ø 25	Ø 45
Clearence from wall	mm		250	250	450
Colour					Cool Grey 1C
Height	mm	950	270	500	500
Depth	mm		250	250	450
Width	mm	300			
Weight	kg	7.0	0.5	1.0	1.5
Packing size		Single pack	Single pack	Single pack	Single pack
Remarks		For mounting dish on earth	incl. 2 plastic plugs	incl. 2 plastic plugs	For mounting dish on roof/wall

Triax has a wide range of mounting brackets for dishes.

You will also and a complete range of different accessories - everything for making a perfect mounting.

Technical data

Type:		EXA 192 Wall bracket	EXA 194 Wall bracket
Art. Nr:		131092	131094
Material		Aluminium	Aluminium
Mast diameter	mm	Ø 48	Ø 48
Wall plate dimension		155 x 155 x 3	155 x 155 x 3
Clearence from wall	mm	250	450
Thickness	mm	2.5	2.5
Height	mm	250	300
Length	mm	250	450
Weight	kg	0.75	0.96
Packing size	pcs.	10	10

Mounting accessories

| Bracket

Triax supplies a range of brackets for mounting dishes on masts.

You will find a complete range of different accessories - everything for making a perfect mounting.

Technical data

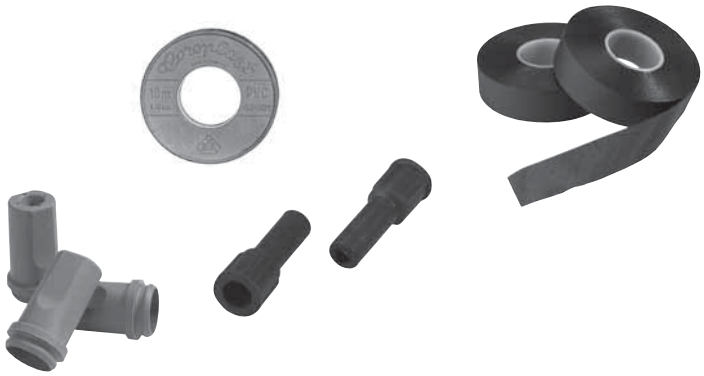
Type:		Mastbracket TD-serie	Mastbracket TD110 dish	Mastbracket Unique dish
Art. No:		129415	140051	140050
Material		Galv. steel	Galv. steel	Galv. steel
Tube dimension	mm	Ø60	Ø60	Ø60
Plate dimension	mm			
Clearance from wall	mm			
Packing QTY	pcs.	1	1	1
Remarks		Mast bracket - for TD serie 2 mm	Galv. steel. for mounting TD110 dish on mast.	Galv. steel. for mounting Unique dish on mast.

Technical data

Type:		Bracket and screws	Screw kit TD serie	Repair kit - Unique LNB holder
Art. No:		129400	129405	129419
Material		Galv. steel	Galv. steel	Galv. steel/plastic
Packing QTY	pcs.	1 bag	1 bag	1 bag
Remarks		Screws for mouting the dish	Screws for mouting the dish	Unique LNB holder

Mounting accessories

| Bracket



Triax supplies a range of brackets for mounting dishes on masts.

You will find a complete range of different accessories - everything for making a perfect mounting.

Technical data

Type Art. No.			Tape Grey 153060	Black self-vulcanized 153061	Cable grommet - Grey 760056	Cable grommet - Black 153057
Size	Width Lenght	mm mm	10 1000	18 1000		
Material			Plastic	Rubber	Rubber	Rubber
Weight		kg				
Packing QTY per box		pcs.	10 rolls	1	1	1
Remarks				Single pack	- for ALPS LNB units	Universal for F-con

Polarmount and SatSelect motor for the TD-series

Type Art. No.		Triax SatSelect 300053
DiSEqC level		**1.2**
Rotation angle	degrees	± 60
Rotation speed	degrees	1 per sec.
Power	Stand by Operat. Peak	50 mA 200 mA 350 mA
Voltage	VDC	13-18
Mast dimension	mm	Ø32-50
Weight	kg	
Packing	type	Single pcs.
Remarks		F-con connection

Notes

| for your personal notes

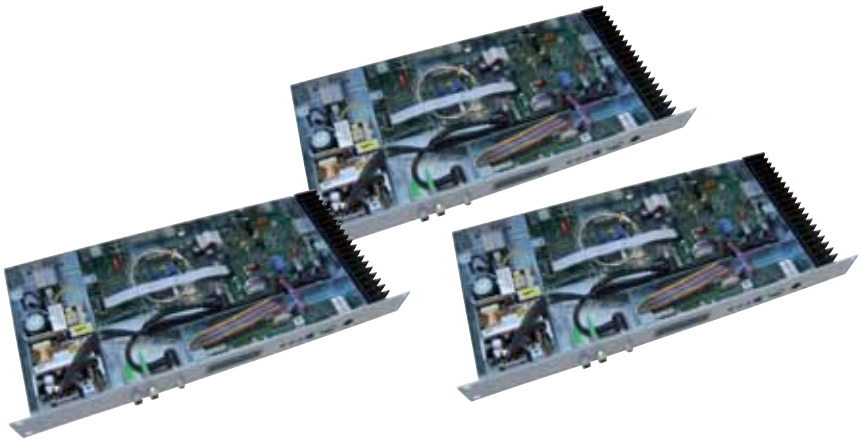
Fibre optical systems

Hybrid Fibre Coax optical transmitter (HFC)
Hybrid Fibre Coax reciever node (HFC)
Optical LNB
ODU kit
Virtual optical converters
Passive optical splitters
Passive optical taps
Optical cables
Accessories and tools

Optical transmitters

| Fibre optical transmitters

Triax Fibre optical transmitters Converts electrical CATV signals into intensity modulated optical signals a.k.a. Hybrid Fibre Coax solution – takes your MATV/ CATV headend system to the next level - combining several “islands” of MATV/ CATV coax installations into one large system, - easy to support and maintain.



Technical data

Type:		OTXS 06 - Optical transmitter	OTXS 08 - Optical transmitter	OTXS 10 - Optical transmitter
Art. Nr:		307506	307508	307510
Transmitter - Input				
Number of receivers	pcs.	1	1	1
Input connectors (RF)		F-type	F-type	F-type
Output connectors (for Fibre)		SC/APC	SC/APC	SC/APC
Transmitter - RF input				
Frequency range	MHz	47-862	47-862	47-862
RF-output level (@42 ch. CENELEC)		85 ±3	85 ±3	85 ±3
Adjustable offset	dB	± 3.0	± 3.0	± 3.0
Linearity	dB	± 1.5	± 1.5	± 1.5
Return loss	dB	> 18	> 18	> 18
CTB - non linear distortion (Popt in=4dBm, OMI=4%)	dB	> 65	> 65	> 65
CSO - non linear distortion (Popt in=4dBm, OMI=4%)	dB	> 60	> 60	> 60
Relative intensity noise	dBc/Hz	< -155	< -155	< -155
Carrier to noise (Popt in=4dBm, OMI=4%)	dB	> 50	> 50	> 50
Test point [F-con]	dB	- 20	- 20	- 20
Optical system				
Laser type		DBF, cooled	DBF, cooled	DBF, cooled
Optical output power		6.0 mW / 8.0 dBm	8.0 mW / 9.0 dBm	10.0 mW / 10.0 dBm
Additional				
Control unit		3 buttons, LCD 2-lines/16 character	3 buttons, LCD 2-lines/16 character	3 buttons, LCD 2-lines/16 character
Remote control		RJ45, TCP/IP, SNMP r/o	RJ45, TCP/IP, SNMP r/o	RJ45, TCP/IP, SNMP r/o
Cascade [ORxR] extra upstream rec.		Via RJ11	Via RJ11	Via RJ11
Software update		RS232, 9-pin	RS232, 9-pin	RS232, 9-pin
Housing		19<0x0022>, 1HU	19<0x0022>, 1HU	19<0x0022>, 1HU
Power supply	V	180-253	180-253	180-253
Dimensions				
Weight	kg	3.200	3.200	3.200
Height		43	43	43
Depth		205	205	205
Width		480	480	480

Technical data

Type:		OTXS 12 - Optical transmitter	OTXS 16 - Optical transmitter	OTXS 20 - Optical transmitter
Art. Nr:		307512	307516	307520
Transmitter - Input				
Number of receivers	pcs.	1	1	1
Input connectors (RF)		F-type	F-type	F-type
Output connectors (for Fibre)		SC/APC	SC/APC	SC/APC
Transmitter - RF input				
Frequency range	MHz	47-862	47-862	47-862
RF-output level (@42 ch. CENELEC)		85 ±3	85 ±3	85 ±3
Adjustable offset	dB	± 3.0	± 3.0	± 3.0
Linearity	dB	± 1.5	± 1.5	± 1.5
Return loss	dB	> 18	> 18	> 18
CTB - non linear distortion (Popt in=4dBm, OMI=4%)	dB	> 65	> 65	> 65
CSO - non linear distortion (Popt in=4dBm, OMI=4%)	dB	> 60	> 60	> 60
Relative intensity noise	dBc/Hz	< -155	< -155	< -155
Carrier to noise (Popt in=4dBm, OMI=4%)	dB	> 50	> 50	> 50
Test point [F-con]	dB	- 20	- 20	- 20
Optical system				
Laser type		DBF, cooled	DBF, cooled	DBF, cooled
Optical output power		12.0 mW / 11.0 dBm	16.0 mW / 12.0 dBm	20.0 mW / 13.0 dBm
Additional				
Control unit		3 buttons, LCD 2-lines/16 character	3 buttons, LCD 2-lines/16 character	3 buttons, LCD 2-lines/16 character
Remote control		RJ45, TCP/IP, SNMP r/o	RJ45, TCP/IP, SNMP r/o	RJ45, TCP/IP, SNMP r/o
Cascade [ORxR] extra upstream rec.		Via RJ11	Via RJ11	Via RJ11
Software update		RS232, 9-pin	RS232, 9-pin	RS232, 9-pin
Housing		19<0x0022>, 1HU	19<0x0022>, 1HU	19<0x0022>, 1HU
Power supply	V	180-253	180-253	180-253
Dimensions				
Weight	kg	3.200	3.200	3.200
Height		43	43	43
Depth		205	205	205
Width		480	480	480

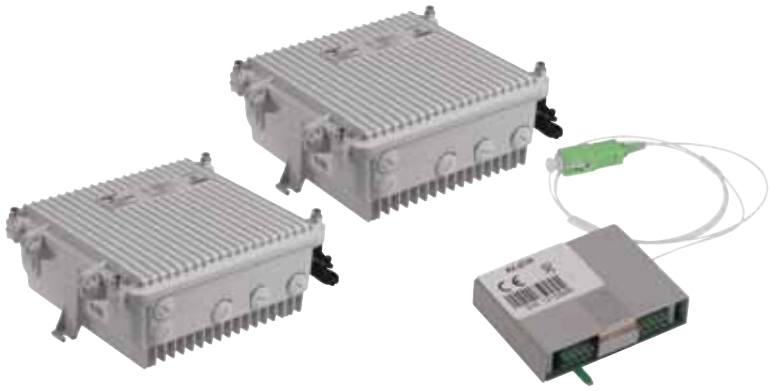
Optical receivers and nodes

| Fibre Optic Nodes (w/RC)

Triax Hybrid Fibre Coax (HFC/FTTH) and RFoG Fibre Optical Nodes (with Return Channel)
The Triax ORB/ORC-series are compact fibre optic nodes designed to work in tandem with any Triax (or existing) Fibre Optical Transmitter as an optical-to-coax Receiver unit. All units support a modular optical Return Path that can be realized using either 1310nm or 1550nm wavelength, FP or DFB lasers and in CWDM configurations.

Technical data

Type:		ORB 911 - optical node	ORB 1823 - Optical node	ORB 1923 - Optical node	ORC 1629/M - FTTB/RFoG Optical node	ORC 1629/L - FTTB/RFoG Optical node
Art. Nr:		307572	307716	307717	307800	307803
Optical input						
Number of receivers	pcs.	1	1	1	1	1
Input connectors		SC/APC	SC/APC	SC/APC	SC/APC	SC/APC
Output connectors (for RF)		F-female type	F-female type	F-female type	F-female type	F-female type
Optical input power	dBm	-8.0 ... +3.0	-9.0 ... +1.0	-9.0 ... +1.0	-9.0 ... +2.0 mm	-9.0 ... +2.0
Frequency range	MHz	47-862	47-862	47-862	47-1002	47-1002
Reception wavelength	nm	1290-1600	1100-1650	1100-1650	1100-1650	1100-1650
Frequency response	dB	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0
Return loss	dB	> 18	> 18	> 18	> 18	> 18
RF output						
Frequency range	MHz	47-862	47-862	47-862	47-1002	47-1002
Frequency response	dB	± 1.0	± 1.0	± 1.0	± 1.0	± 1.0
RF-output level (@42 ch.)	dBµV	104	109	109	109	109
Return loss	dB	> 18	> 18	> 18	> 18	> 18
C/N (Popt, in = - 2 dBm)	dB	52				
C/N (Popt, in = - 8 dBm)	dB	45				
Connector type		F-connector	F-connector	F-connector	F-connector	F-connector
Return Channel						
Freq. range (dep. on mod.)	MHz	5-65	5-65	5-65	5-65	5-65
Frequency response (return)	dB	± 2.0				
Optical output power	dB	0.0				
Optical output connector		SC/APC	SC/APC	SC/APC	SC/APC	SC/APC
Wavelength [Optical]	nm	1550	1310/1550/CWDM	1310/1550/CWDM	1310/1550/CWDM	1310/1550/CWDM
RF input	dBµV	85				
IMD2/3 (2 ch, OMI= 5%)	dB	35				
Operating conditions						
Supply voltage	V	230 ± 10%	180...253	180...253	180...253	50...60
Power consumption	watt	9	9	9	15	15
Operation temperature	°C	-25 ... +55	-29 ... +60	-29 ... +60	-20 ... +60	-20 ... +60
Protection class		II, Protective				
Housing protection class	IP	65	IP 64	IP 64	IP 67	IP 67
Dimensions						
Weight	kg	2.0	2.0	2.0	2.0	2.0
Height/Depth/Width	mm	110/80/190	110/80/190	110/80/190	110/80/190	110/80/190



Triax Optical Nodes offer a wide spectrum of RF Output Levels, Redundancy/Segmentation configurations, SNMP alarms and managebility via Ethernet or over DOCSIS protocol which are amongst the large array of optional modules for individual configuration and solutions.

Technical data

Type:		ORC 2729/M - Redundancy/ segmentation Optical node	ORC 2729/L - Redundancy/ segmentation Optical node	ORC 2731/L - Redundancy/ segmentation Optical node - DOCSIS	ORC 2731/M - Redundancy/ segmentation Optical node - DOCSIS
Art. Nr:		307840	307843	307847	307849
Optical input					
Number of receivers	pcs.	2	2	2	2
Input connectors (from transmitter)		SC/APC	SC/APC	SC/APC	SC/APC
Output connectors (for RF)		F-female type	F-female type	F-female type	F-female type
Optical input power	dBm	-7.0 ... +2.0	-7.0 ... +2.0	-7.0 ... +2.0	-7.0 ... +2.0
Frequency range	MHz	47-1002	47-1002	47-1002	47-1002
Reception wavelength	nm	1100-1650	1100-1650	1100-1650	1100-1650
Frequency response	dB	± 1.0	± 1.0	± 1.0	± 1.0
Return loss	dB	> 18	> 18	> 18	> 18
RF output					
Frequency range	MHz	47-1002	47-1002	47-1002	47-1002
Frequency response	dB	± 1.0	± 1.0	± 1.0	± 1.0
RF-output level (@42 ch.)	dBµV	2 x 114	2 x 114	2 x 116	2 x 116
Return loss	dB	> 18	> 18	> 18	> 18
Connector type		F-connector	F-connector	F-connector	F-connector
Return Channel					
Freq. range (dep. on mod.)	MHz	5-65	5-65	5-65	5-65
Optical output connector		SC/APC	SC/APC	SC/APC	SC/APC
Wavelength [Optical]		1310/1550/CWDM	1310/1550/CWDM	1310/1550/CWDM	1310/1550/CWDM
Operating conditions					
Supply voltage	V	180...253	50...60	50...60	180...253
Power consumption	watt	<34	<34	<34	<34
Operation temperature	°C	-20 ... +60	-20 ... +60	-20 ... +60	-20 ... +60
Housing protection class		IP 64	IP 64	IP 64	IP 64
Dimensions					
Weight	kg	2.0	2.0	2.0	2.0
Height/Depth/Width	mm	110/80/190	110/80/190	110/80/190	110/80/190

Optical receivers and nodes

| Fibre Optic Receivers (one way)

Triax Hybrid Fibre Coax (HFC/FTTH)
Fibre Optical Receivers (one way)
The Triax ORB-series are compact fibre optic receivers designed to work in tandem with any Triax (or existing) Fibre Optical Transmitter as an optical-to-coax Receiver unit.

Triax Optical Recivers offer a wide spectrum of RF Output Levels and some even include a solution for SNMP Alarms and manageability via Ethernet.

Technical data

Type:		ORB 823 - optical receiver	ORB 923 - optical receiver	ORH 100 - optical FTTH receiver	ORB 829 - optical receiver	ORB 901 - optical receiver
Art. Nr:		307562	307563	307565	307567	307570
Optical input						
Number of receivers	pcs.	1	1	1	1	1
Input connectors (from transmitter)		SC/APC	SC/APC	SC/APC	SC/APC	SC/APC
Output connectors (for RF)		F-female type	F-female type	F-female type	F-female type	F-female type
Optical input power				-10.0 ... +1.0		-8.0 ... +3.0
Frequency range	MHz	47-862	47-862	47-862	47-862	47-862
Reception wavelength	nm	1100-1650	1100-1650	1100-1650	1100-1650	1290-1600
Frequency response				± 1.0		± 1.0
Return loss	dB	> 18	> 18		> 18	> 18
RF output						
Frequency range	MHz	47-862	47-862	47-862	47-862	47-862
Frequency response				± 1.0		± 1.0
RF-output level (@42 ch. CENELEC)	dBµV	110	110	80	114	104
Return loss	dB	> 18	> 18		> 18	> 18
Carrier to noise (Popt, in = - 2 dBm)	dB					52
Carrier to noise (Popt, in = - 8 dBm)	dB					45
Connector type		F-connector	F-connector	F-connector	F-connector	F-connector
Operating conditions						
Supply voltage				9/150		230 ± 10%
Power consumption	watt	5.5	5.5		13	9
Operation temperature	°C	-20 ... +55	-20 ... +55	-20 ... +55	-20 ... +55	-25 ... +55
Protection class		IP 40	IP 40		IP 64	II, Protective
Housing protection class				40		65
Dimensions						
Weight	kg	0.76	0.76	2.000	1.1	2.000
Height		155	155	110	107	110
Depth		56	56	80	75	80
Width		96	96	190	155	190

Technical data

Type:		ORB 929 - optical receiver	ORB 729/1 - optical receiver	ORB 729/2 - optical receiver	OTRB, RC TX, 1310nm
Art. Nr:		307568	307700	307703	307574
Optical input					
Number of receivers	pcs.	1	1	2	
Input connectors (from transmitter)		SC/APC	SC/APC	SC/APC	
Output connectors (for RF)		F-female type	2 x F-female	2 x F-female	
Frequency range	MHz	47-862	47-862	47-862	
Reception wavelength	nm	1100-1650	1100-1650	1100-1650	
Return loss	dB	> 18	> 18	> 18	
RF output					
Frequency range	MHz	47-862	47-862	47-862	
RF-output level (@42 ch. CENELEC)	dBµV	114	114	114	
Return loss	dB	> 18	> 18	> 18	
Connector type		F-connector	F-connector	F-connector	
Operating conditions					
Power consumption	watt	13	13.5	13.5	
Operation temperature	°C	-20 ... +55	-20 ... +55	-20 ... +55	
Protection class		IP 64	IP 24	IP 24	
Dimensions					
Weight	kg	1.1	1.1	1.1	
Height		107	107	107	
Depth		75	75	75	
Width		155	155	155	

Optical LNB units

| Optical LNB units

Triax fibre optical LNB units

High quality, high performance universal LNBs for various applications:

The Triax TOL32 is a one position optical Ku-Band LNB that provides a 1310 nm wideband optical output where all four satellite polarities are stacked into one frequency range (950-5450 MHz) for distribution through one single fibre optical cable. Provides a Link Budget equivalent to 32 ways of splitting.

The Triax TOU232 is a one satellite optical Ku-Band LNB that provides a 1310 nm and 1550nm wideband optical output where all four satellite polarities and a TER signal (DAB/DTT/FM) are stacked into one frequency range (950-5450 MHz) for distribution through one single fibre optical cable. Provides a Link Budget equivalent to 2x32 = 64 ways of splitting.

Technical data

Type:		**TOL 32 - Universal LNB**
Art. Nr:		307610
Frequencies		
Input frequency range	GHz	10.7 - 12.75
Band stacking, vertical/ horisontal	GHz	0.950-3.0/3.4-5.45
Polarization		Horizontal and vertical
Optical		
Wavelength [Optical]	nm	1310
Optical 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/max. @ 25ºC)	dB	0.5/1.1
Noise figure (typical/max. over temperature)	dB	0.7/1.3
Gain		
Conversion gain (min./max. @ room temperature)	dB	72/62
Gain variation (-30 ~ +60 °C)	dB	± 2.0
Gain flatness (0.95 to 5.45 GHz)	dB	5
Gain ripple (per 26 MHz bandwidth segment)	dB	< 0.5
Local Oscillator		
Frequency, vertical/horisontal	GHz	9.75/7.3
Phase noise (Offset frequency 1/10/100/1000 kHz)	dBc/Hz	- 55/-80/-100/-110
Stability, initial setting		± 1.0
Temperature drift (-40°C to +60°C)		± 2.0
Aging and total drift (10 years)	MHz	± 4.0
Additional		
Image rejection (min.)	dB	40
Cross polarization (typ./min.)	dB	30/25
Spurious outp.-in band (950 MHz-3 GHz, 3.4 GHz-5.45 GHz)	dBc	- 25
Supply voltage, nominal/ maximum survival voltage	V/DC	12/25
Current consumption	mA	< 450
DC input connector		F-female type
Optical output connector		FC/PC
Dimensions/Temperature		
Diameter		Ø 40
Operating temperature range	°C	- 30 ... + 60

The Triax TDOU216 is a one satellite position optical Ku-Band LNB system that provides a 1310 nm and 1550nm wideband optical output where all eight satellite polarities and a TER signal (DAB/DTT/FM) are stacked into one frequency range (950-5450 MHz) for distribution through one single fibre optical cable. Provides a Link Budget equivalent to 2x16 = 32 ways of splitting.

The Triax TQSS64 is a one satellite position optical system that takes its input from any standard QUATTRO LNB via a coax input and provides a 1530 nm and 1550nm wideband optical output where all four satellite polarities and a TER signal (DAB/DTT/FM) are stacked into one frequency range (950-5450 MHz) for distribution through one single fibre optical cable. Provides a Link Budget equivalent to 2x32 = 64 ways of splitting. Link Budget can be extended using EDFA technology.

Technical data

Type:		**TOU 232 - Universal LNB Kit**
Art. Nr:		307614
Frequencies		
Input frequency range	GHz	10.7 - 12.75
Optical		
Wavelength [Optical]	nm	1310
Optical power, (nominal @ 25°C)	dBm	7.0
Noise		
Noise figure (typical/max. @ 25ºC)	dB	0.5/1.1
Noise figure (typical/max over temperature)	dB	0.7/1.3
Gain		
Conversion gain (min./max. at room temperature)	dB	72/62
Gain flatness (0.95 to 5.45 GHz)	dB	5
Gain ripple (per 26 MHz bandwidth segment)	dB	< 0.5
Local Oscillator		
Stability, initial setting	MHz	± 1.0
Temperature drift (-40°C to +60°C)	MHz	± 2.0
Aging and total drift (10 years)	MHz	± 4.0
Additional		
Image rejection (min.)	dB	40
Cross polarization (typ.)	dB	30
Cross polarization (min.)	dB	25
Spurious output - in band (950 MHz-3 GHz, 3.4 GHz-5.45 GHz)	dBc	- 25
LNB type		Universal wholeband
Supply voltage, nominal/maximum survival voltage	V/DC	12/25
Current consumption	mA	< 450
DC input connector		F-female type
Optical output connector		FC/PC
Dimensions/Temperature		
Diameter		Ø 40
Operating temperature range	°C	- 30 ... + 60

Dual SAT position, Outdoor Units

| 16 ways of optical splitting

The TDUO216-kit is fully weatherproofed and designed for attachment on the antenna/ dish location. It provides everything required for 2 x (Duo) SAT+TER outdoor installation. The TDUO216-kit accepts and combines signals from two KU-Wholeband LNBs (size and form factor similar to TOL32 Optical LNB) and from terrestrial antennas (DTT, DAB and FM). The SAT and TER input signals are combined and optically modulated onto two individual wavelength lasers, then combined onto two FC/PC optical outputs.
The optical signals are identical on both FC/PC output connectors, allowing a total of 16 (2 x 8) optical splitting paths through a passive optical network (PON).
Optical Converter/ Receivers, QUAD (TVCD05) or QUATTRO (TVQD05) can be attached to any of the 16 optical end points. Maximum distance is 1 kilometer.

- Note 1: DAB level needs to be set 12dB below DTT level, FM level needs to be same as DTT level.
- The TDUO216-Kit comprises: 1 x TDOU216 Outdoor unit, 1xPSU, 2 x Wholeband LNBs, 2 x TUC002 HF-Connector cables wITH N-connectors, Mounting brackets.

This product requires and only functions with Optical Virtual Converters/Receivers type QUAD (TVCD05) or QUATTRO (TVQD05).

Technical data

Type:		TDOU 216 - Universal LNB Kit	
Art. Nr:		307618	
Satellite 1+2 (Electrical) - Parameter		Min.	Max
RF Frequency Range - Vertical polarization (V pol.)	GHz	0.95	3.0
RF Frequency Range - Horisontal polarization (H pol.)	GHz	3.4	5.45
Nominal impedance	Ω	50	50
Return loss	dB	9	
Gain variation across: V pol.	dB		4
Gain variation across: H pol. (has a 3dB upward slope)	dB		7
AGC adjustment range	dB	15	
Noise figure @ max. gain	dB		15
217-862MHz rejection	dB	20	
FM, DAB & DTT (Electrical)			
RF Frequency Range - DTT	MHz	470	854
RF Frequency Range - DAB	MHz	217	230
RF Frequency Range - FM	MHz	88	108
Nominal impedance	Ω	75	75
Return loss	dB	10	
Input level range (Note 1)	dBµV	67	97
Recommended DTT input (for 6 digital multiplexes)	dBµV	80	80
Gain variation across band	dB		4
Gain ripple (linearity) across 8MHz in DTT	dB		0.5
AGC adjustment range	dB	30	
Noise figure @ max. gain	dB		10
950-2150 MHz rejection	dB	15	
Laser optical wavelength (SAT1)	nm	1310 ±20	1310 ±20
Laser optical wavelength (SAT2)	nm	1550 ±20	1550 ±20
Laser optical wavelength (DTT)	nm	1310 ±20	1310 ±20
Laser optical power (SAT1 + DTT)	dBm	6.4	7.0
Laser optical power (SAT2)	dBm	7.2	7.8
Power supply voltage (supplied on TER port)	VDC	20 ±0.5	20 ±0.5
LNB supply voltage (fed through satellite inputs)	VDC	6.2 ±0.2	6.2 ±0.2
Current consumption (including Wholeband LNBs)	mA	<600	<600
Fibre optical outputs		2 x FC/UPC-female	2 x FC/UPC-female
Satellite inputs		2 x N-female	2 x N-female
DTT, DAB, FM, DC voltage inputs		1 x F-female	1 x F-female
Operating temperature	°C	-30	60
Storage temperature	°C	-10	50

Optical splitters

| Passive optical splitters

Passive optical splitters
The Triax fibre optical TOS passive splitter/coupler units let you build passive optical networks (PON) in virtually any size and split ratio. Using any combination of the 2, 4 and 8-way optical splitters, passive optical networks can be realized that satisfy almost any requirement for network coverage.

Technical data

Type:		TOS 02	TOS 03	TOS 04	TOS 08
Art. Nr:		307632	307633	307634	307638
Splitter data					
Insertion Loss (typ.)	dBm	3.8	3.8	6.8	10.6
Coupling Ratio	%	50/50	50/50/50	25/25/25/25	8 x 12.5
Wavelength	nm	1310/1550	1310/1550	1310/1550	1310/1550
Wavelength bandwidth	nm	± 40	± 40	± 40	± 40
Splitter mechanical					
Number of outputs	pcs.	2	3	4	8
Number of inputs	pcs.	1	1	1	1
Pre-connected with (in and out)		FC/PC	FC/PC	FC/PC	FC/PC
Cable length		1000	1000	1000	1000
Dimensions					
Weight	kg	0.100	0.100	0.200	0.400
Height		25	25	80	100
Depth		15	15	15	15
Width		100	100	100	100

Optical splitters

| Passive optical splitters

Passive optical splitters
The Triax fibre optical dual window TOS passive splitter/coupler units let you build passive optical networks (PON) in virtually any size and split ratio. Using any combination of the 2, 4 and 8-way optical splitters, passive optical networks can be realized that satisfy almost any requirement for network coverage.

Technical data

Type:		TOS 04D	TOS 02D	TOS 03D	TOS 08D
Art. Nr:		307635	307636	307637	307639
Splitter data					
Insertion Loss (typ.)	dBm	7.0	4.0	5.5	10.1
Coupling Ratio	%	25.0/25.0	50/50	33.3/33.3	12.5/12.5
Wavelength	nm	1310/1550	1310/1550	1310/1550	1310/1550
Wavelength bandwidth	nm	± 40	± 40	± 40	± 40
Splitter mechanical					
Number of outputs	pcs.	4	2	3	8
Number of inputs	pcs.	1	1	1	1
FC/PC connectors		Build-in	Build-in	Build-in	Build-in
Pre-connected with (in and out)					
Cable length					
Dimensions					
Weight	kg	0.225	0.200	0.200	0.250
Height	mm	100	100	100	100
Depth	mm	25	25	25	25
Width	mm	100	100	100	100

Technical data

Type:		TOS 02D - 1090	TOS 02D - 2080	TOS 02D - 3070	TOS 02D - 4060
Art. Nr:		307730	307731	307732	307733
Splitter data					
Insertion Loss (typ.)	dBm	4.0	4.0	4.0	4.0
Coupling Ratio	%	50/50	50/50	50/50	50/50
Wavelength	nm	1310/1550	1310/1550	1310/1550	1310/1550
Wavelength bandwidth	nm	± 40	± 40	± 40	± 40
Splitter mechanical					
Number of outputs	pcs.	2	2	2	2
Number of inputs	pcs.	1	1	1	1
FC/PC connectors		Build-in	Build-in	Build-in	Build-in
Dimensions					
Weight	kg	0.200	0.200	0.200	0.200
Height	mm	100	100	100	100
Depth	mm	25	25	25	25
Width	mm	100	100	100	100

Optical virtual converters

| Virtual converters/receivers

Technical data

Type:		TVC 04 - Virtual QUAD converter	TVQ 04 - Virtual QUAT-TRO converter
Art. Nr:		307622	307624
Input parameters			
RF frequency range, horizontal/vertical polarities	GHz	0.950-3.0/ 3.4-5.450	0.950-3.0/ 3.4-5.450
Optical			
Optical RLR (min.)	dB	20	20
Optical power, small PON setting (min.)/(max.)	dBm	- 13.0/0.0	- 13.0/0.0
Optical power, large PON setting (min.)/(max.)	dBm	- 18.0/-14.0	- 18.0/-14.0
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			
Vertical low/high band (converted from 0.95 to 1.95 GHz)	MHz	950-1950/1100-2150	950-1950/1100-2150
Horisontal low/high band (converted from 3.4 to 4.4 GHz)	MHz	950-1950/1100-2150	950-1950/1100-2150
Return loss (min.)	dB	10	10
Gain ripple across band (max.)/30MHz (max.)	dB	4.0/1.0	4.0/1.0
Nominal output level (per. transponder)	dBm	- 65 (min.) ... -25 (max.)	- 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 °RMS	4 °RMS
Output frequency stability/accuracy (max.)	kHz	320	320
Output connectors		4 x F-female type	4 x F-female type
Power			
Power consumption (@ 12 VDC)	mA	< 300	< 300
Power supply		From Set-top box	External PSU
Power input (Plug to optionally supply converter externally)			+ 20
Level switch			
Passive optic network size switch (levels of splitting)		STD/SML	STD/SML
Passive optic network size switch (SML position)	dBm	> -14	> -14
Passive optic network size switch (STD position)	dBm	< -14	< -14
Dimensions			
Weight	kg	0.550	0.550
Height/Depth/Width	mm	155/30/145	155/30/145

Virtual converters
Optical receivers for QUAD and QUATTRO use.

The TLC05 Virtual QUAD optical receiver is an optical-to-coax converter, that converts the frequency stacked optical signal from a TOL32 LNB, or a TOU232-KIT sidecar unit, into 4 x traditional universal single coax signals for 4 STBs. It also provides a combined coax DTT/DAB/FM signal.

The TLQ05 Virtual QUATTRO optical receiver 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 4 polarity universal single coax signal for use in a multi switch. It also provides a coax DTT/DAB/FM signal output.

Technical data

Type:		TLC 05 - Virtual QUAD + TER converter	TLQ 05 - Virtual QUAT-TRO + TER converter
Art. Nr:		307626	307628
Input parameters			
RF frequency range, horizontal/vertical polarities	GHz	0.950-3.0/3.4-5.450	0.950-3.0/ 3.4-5.450
Optical			
Optical RLR (min.)	dB	20	20
Optical power, small PON setting (min.)/(max.)	dBm	- 13.0/0.0	- 13.0/0.0
Optical power, large PON setting (min.)/(max.)	dBm	- 18.0/-14.0	- 18.0/-14.0
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			
Vertical low/high band (converted from 0.95 to 1.95 GHz)	MHz	950-1950/1100-2150	950-1950/1100-2150
Horisontal low/high band (converted from 3.4 to 4.4 GHz)	MHz	950-1950/ 1100-2150	950-1950/1100-2150
Return loss (min.)	dB	10	10
Gain ripple across band (max.)/30MHz (max.)	dB	4.0/1.0	4.0/1.0
Nominal output level (per. transponder)	dBm	- 65 (min.) ... -25 (max.)	- 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 °RMS	4 °RMS
Output frequency stability/accuracy (max.)	kHz	320	320
Output connectors		4 x F-female type	4 x F-female type
Power			
Power consumption (@ 12 VDC)	mA	< 300	< 300
Power supply		External PSU	External PSU
Power input (Plug to optionally supply converter externally)		+ 20	+ 20
Level switch			
Passive optic network size switch (levels of splitting)		STD/SML	STD/SML
Passive optic network size switch (SML position)	dBm	> -14	> -14
Passive optic network size switch (STD position)	dBm	< -14	< -14
Dimensions			
Weight	kg	0.550	0.550
Height/Depth/Width	mm	155/30/145	155/30/145

Optical cables

| Optical cables

Optical cables
Steel armored, pre-connectored (FC/PC)
3.0mm fibre optic cable

Technical data

Type:		Patch	Patch	Patch	Patch
Art. Nr:		307577	307578	307579	307580
Optical cable					
Pre-connected with (in and out)		FC/PC	FC/PC	FC/PC	FC/PC
Cable length	m	1 m	1 m	1 m	2 m
Remarks		Pre-connected on in- and output	Pre-connected on in- and output	Pre-connected on in- and output	steel armoured fiber optic

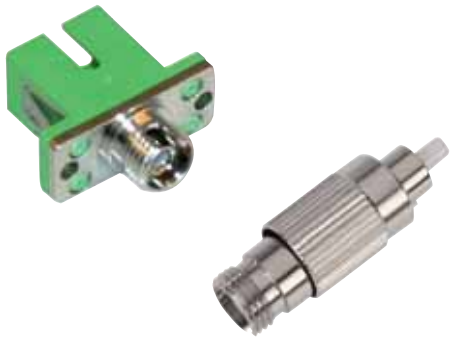
Technical data

Type:		FC / PC pigtal cable 3 mm	TSF002 FC/UPC - SC/APC cable
Art. Nr:		307581	307582
Optical cable			
Pre-connected with (in and out)		FC/PC	FC/UPC
Cable length	m	1 m	2 m
Remarks		Armored fiber optic	Armoured fiber optic

Optical accessories

| Adaptors & Attenuators

Adaptors & Attenuators
Triax fibre optic accessories- for building optical networks.
Adaptors allow the interconnection between different types of cables. Attenuators are available in different variants for compensating and balancing Optical distribution networks.



Technical data

Type:	TFA 005 - Optical attenuator	TFA 010 - Optical attenuator	TFA 015 - Optical attenuator	TFA 020 - Optical attenuator
Art. Nr:	307688	307690	307692	307693
Accessories				
Connector	FC/PC - FC/FC	FC/PC - FC/FC	FC/PC - FC/FC	FC/PC - FC/FC
Remarks	Optical attenuator	Optical attenuator	Optical attenuator	Optical attenuator

Type:	TFB 001 - Barrel adaptor	TFB 002 - Barrel adaptor	TOT 002 Optical Terminator
Art. Nr:	307684	307686	307644
Accessories			
Connector	FC/PC - FC/PC	FC/PC - SC/FC	FC/PC
Remarks	1 req. per connector joint excl. LNB and converters	to convert pre-made cables to other acc.	Optical terminator

Fibre optical - Cleaning & Tools
Even if installing pre-connectored FC/PC optical cables are extremely easy and can be done with only a minimum of skills, keeping all connections free from dust and dirt at still very important and should be first priority for every installer. Triax provides all the tools you need to make sure the installation works at peak performance.

Technical data

Type:	TFT 001 - Optical test tool	TFS 001 - Fibre Scope	TCW 001 Cleaning Wipes
Art. Nr:	307682	307683	307750
Accessories			
Remarks	Test tool for “Fit-on-site” connectors	Fibre scope - visible filed inspection	50 pcs box

Type:	One-click cleaner SC	TSP 001 - Fibre solvent pen	TSC 001 - Fibre swabs
Art. Nr:	307752	307654	307656
Accessories			
Remarks	CLN-Mini (SC, FC, ST)	Fibre solvent pen	2.5 mm Foam swabs

Notes

| for your personal notes

Headends

- quite simply a revolution

Headends

TDX headend

TDH 700

CSE 3300

CSE 2800

CSE 6, 8, 12, 16 and 24

TNH - FTA headend

TCM 08 modulator headend

CM 01 single modulator

TMB multiband amplifier

TPF programmable filters

ARM multiband amplifier

IFM multiband amplifier

SCT IF/IF converter

Headend mounting accessories

TCC 19” compact cabinets

TMF frame system

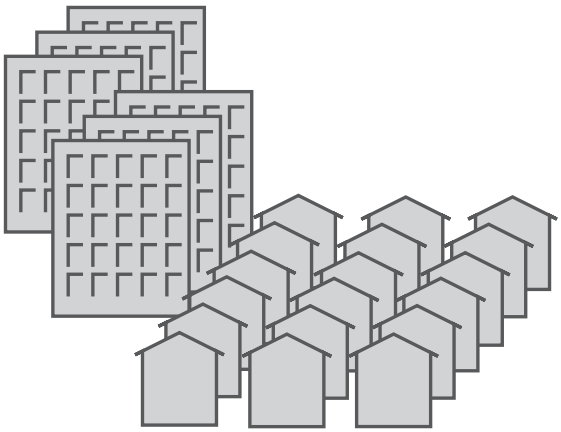
TRIAX headends

Overview of our headend system

TDX, CSE 3300

For up to approx. 20,000 subscribers

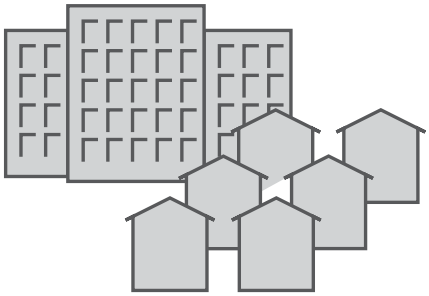
- Medium-sized CATV-systems
- Parts of towns
- Small towns



TDH 700, CSE 2800

For up to approx. 2,000 subscribers

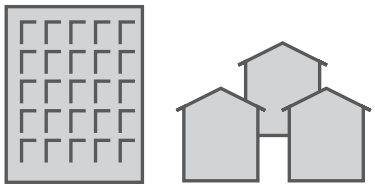
- Hotels
- Large multi-dwelling units
- Small compounds
- CATV islands
- Ad-on programs
- Fields of application



CSE 06 / 16 / 24

For up to approx. 200 subscribers

- Small hotels
- Pensions
- Retirement homes
- Multi-dwelling units
- Terraced houses



TDX headends

Technology that turns everything on its head

TDX headend - quite simply a revolution

Forget everything you know about headends. With TRIAX TDX you move into a completely new world. TRIAX's revolutionary IP Pool technology simplifies the setting up and handling of headends. This technology makes the input and output modules mutually independent. All input signals, regardless of whether they are received via satellite, terrestrial, cable, audio/video or via the Internet, can be flexibly and independently distributed from a "pool" to each and every output module. Each of these input signals can be converted to any output signal: PAL, QAM, COFDM or IP, and because the input signals are not fixed to any particular outputs, an input signal can be assigned to several output modules. It's that simple.

Energy friendly - long-term reliability

- 16 tuners full loaded 280 W power consumption
- Intelligent cooling system with integrated fans - increases the life of the equipment - and allows installation in 19" cabinets

Better and stronger performance

- Up to three headends can be combined in a multi unit system
- Up to 72 PAL, QAM or COFDM channels

Easier service handling

- HOT SWAP service
- Fewer modules - allows easy spare part handling
- Log file on all TDX activity
- Remote access to the TDX for the installer and/or the Triax support

Easy setup and configuration

- HTML based user interface means no special software for managing the system
- Mux bandwidth monitor to ensure that the mux is not overloaded
- The respective four adjacent output channels can be freely selected across the full frequency range
- LED to indicate operation and errors on each module
- Intuitive and easy configuration where you are led through the configuration step by step

A true IP headend

- Muxing technology
- IP in to any output
- IP out from any input
- Future proof with full compatibility with CAS systems, middleware, PMS, VOD services,EPG server, etc.

Easy installation

- Input modules are independent of output modules which gives fewer modules in total
- Faster installation
- DiSEqC 1.1 functionality
- The housing is designed to accommodate up to 16 input and 6 quad output modules, the output modules provides the possibility to support 12 CAM modules
- Can easily be installed on a wall or a 19" cabinet
- All inputs and outputs as well as all modules and cables can be accessed and operated easily from the front
- The 22 modules are numbered so their respective allocations are always immediately clear
- Cabinet lock system
- Cable management on top, left and right

TDX headend cabinet

Main unit for TDX range of modules

Forget everything you know about head-ends. With TRIAX TDX you move into a completely new world. TRIAX's revolu-tionary IP pool technology simplifies the setting up and handling of headends. This technology makes the input and output modules mutually independent.

All input signals, regardless of whether they are received via satellite, terrestrial, cable, audio/video or via the internet, are flexibly and independently distributed from an IP pool to each and every module. Each of these input signals can be converted to any output signal: PAL, QAM, COFDM and IP, and because the input signals are not fixed to any particular outputs, an input signal can be assigned to several output modules. It's that simple.

Get the TDX configurator application: http://tdx.triax.com/tdx.web.configurator/#Login

TDX Main unit (closed)

Technical data

Type		TDX Main unit cabinet
Art. No.		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	440 x 240 x 290


TDX Main unit (open)

DVB-T/T2 & DVB-T frontend module

DVB-T2 frontend module

DVB-T frontend module

The DVB-T2 and DVB-T frontend module is an input module for the reception of both T and T2 digital terrestrial signals. The module can receive a complete terrestrial MUX and send all services in the MUX to the TDX pool.

Technical data

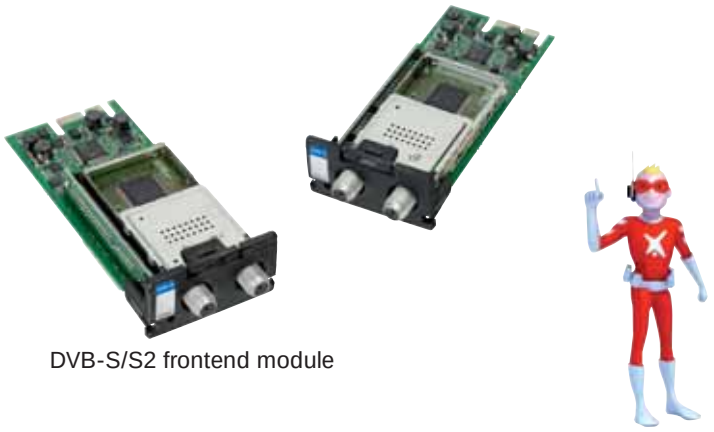
Type Art. No.		DVB-T/T2 COFDM input demodulator 492023	DVB-T COFDM input demodulator 492022
General			
Frequency range - VHF III	MHz	177.5 - 226.5	177.5 - 226.5
Frequency range - UHF	MHz	474.0 - 858.0	474.0 - 858.0
Input sensitivity			
QPSK, 8K, FEC 2/3, guard interval 1/4	dBm	- 91.3... - 23	- 90.3... - 18
QAM16, 8K, FEC 2/3, guard interval 1/4	dBm	- 85.1... - 23	- 84.1... - 18
QAM64, 8K, FEC 2/3, guard interval 1/4	dBm	- 80.0... - 23	- 78.5... - 18
Input impedance	Ohm	75	75
Input return loss	dB	> 7.0	> 6.0
Loop through gain	dB		1…+ 3
Noise figure	dB	< 7.0	< 9.0
Bandwidth	MHz	7/8	7/8
Demodulator			
Type		COFDM	COFDM
FFT mode	DVB-T DVB-T2	2K, 8K 1K, 2K, 4K, 8K, 16K, 32K	2K, 8K
Constallations	DVB-T DVB-T2	QPSK, 16QAM, 64QAM QPSK,16QAM,64QAM, 256QAM	QPSK, 16QAM, 64QAM
Code rates	DVB-T DVB-T2	1/2, 2/3, 3/4, 5/6 and 7/8 1/2, 2/3, 3/4, 5/6	
Guard interval	DVB-T DVB-T2	1/4, 1/8, 1/16, 1/32 1/4, 1/8, 1/16, 1/32, 1/128	¼, 1/8,1/16, 1/32
Power supply/ Environment			
Voltage/current	V/mA	12 / 275	12 / 120
Temperature, operating	°C	-10…+50	-10…+50
Temperature, storage	°C	-20…+70	-20…+70
Humidity, operating	%	20…80	20…80
Humidity, storage	%	10…90	10…90
Mechanical data			
Input connector		F - female	IEC - female
Output connector			IEC – male
Power supply/control connector		Edge connector 2X18P	Edge connector 2X18P
Weight	kg	0.060	0.060
Dimension (HxDxW)	mm	29 x 132 x 50	29 x 132 x 50

TDX headends

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.

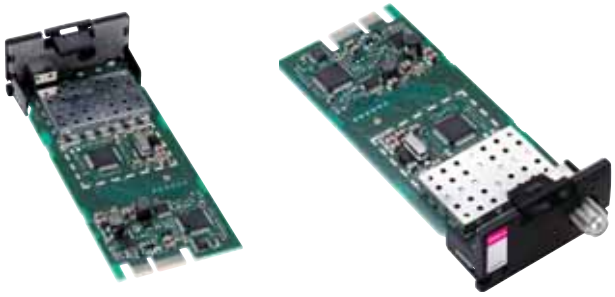


DVB-S/S2 frontend module

Technical data

Type:		DVB-S/S2 frontend module
Art. No:		492020
General		
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 (not yet implemented)
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		Edge connector 2X18P
Weight	kg	0.080
Dimension (HxDxW)	mm	29 x 132 x 50
Remarks		
Configuration		Frequency, Polarity, Symbol rate, Update (search)

DVB-C input demodulator module



DVB-C frontend module

The DVB-C frontend is an input QAM demodulator module for the reception of digital cable signals.
The module can receive a complete cable MUX and send all services in the MUX to the TDX pool. The DVB-C frontend module includes a tuner, with integrated gain control and channel filtering, and a QAM demodulatorwith serial transport stream input to the TDX system.

Technical data

Type:			**DVB-C input demodulator**
Art. No:			492024
General			
Frequency range -	(channel center)	MHz	114 - 858
Input sensitivity			
QAM256		dBm	- 61... - 31
QAM64		dBm	- 65... - 35
Input impedance		Ohm	75
Input return loss		dB	> 7.0
Noise figure		dB	< 7.0
Bandwidth		MHz	8
Demodulator			
Type			QAM
QAM mode			16QAM, 64QAM 128QAM, 256QAM
Symbol rates supported		Msym/s	1.8 to 7.2
Power supply			
Voltage/current		V/mA	12 / 150
Environment			
Temperature, operating		°C	-10…+50
Temperature, storage		°C	-20…+70
Humidity, operating		%	20…80
Humidity, storage		%	10…90
Mechanical data			
Input connector			F - female
Power supply/control connector			Edge connector 2X18P
Weight		kg	0.060
Dimension (HxDxW)		mm	29 x 132 x 50

TDX headends

AV ans HDMI frontend encoder module

The AV encoder module converts analogue video (CVBS) and the HDMI encoder module converts digital 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.
A 15 pol Sub-D or HDMI cable can be used to connect the source to the AV- or HDMI module is also available.

AV encoder module
(Video/Audio stereo modulator)

HDMI encoder module
(Video/Audio stereo modulator)

Technical data

Type:		AV Encoder module (Video/Audio stereo modulator)	HDMI Encoder module
Art. No:		492080	492030
General			
Input		1 x AV-signal	1 x HDMI-signal
input connector		15 pol high density sub-D	HDMI female (Type A)
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	> 55	
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)	Serial MPEG transport stream (LVDS)
Embedded audio - AAC, 48 kHz/MPEG2 (L1)		Stereo	Stereo or AC3 pass through
Video codec		MPEG-2, MPEG-4	MPEG-4
Video codec settings (CBR)	Mbps	1, 2.5, 5.0, 10.0	< 11.0
Mechanical data			
Audio/Video input connector		15 pol high density sub-D	HDMI female (Type A)
Working temperature	°C	-10 to +50	-10 to +50
Weight (kg)	kg	0.5	0.5
Dimension (HxDxW)	mm	29 x 126 x 53	29 x 126 x 53
Remarks		15pol Sub-D/3xRCA cable - art. no. 300745 - length: 1.5 meter	Use high quality 3D HDMI cable only - art. no. 153420 HDMI cable - 2m

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

Quad PAL - FTA

Quad PAL - with 2 x CI

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.

Technical data

Type:		Quad PAL backend FTA	Quad PAL backend CI
Art. No:		492050	492051
Modulator			
TV-norm		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
Power supply			
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		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

TDX headends

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.

Quad PAL HD backend - FTA

Quad PAL HD backend - with 2 x CI

Technical data

Type:		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	
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
Power supply			
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		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 QAM backend module DVB-C in FTA or with 2 x CI slot

Quad QAM - FTA

Quad QAM - with 2 x CI

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.

Technical data

Type:		Quad QAM backend FTA	Quad QAM backend CI
Art. No:		492055	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
Power supply			
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		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

TDX headends

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.

Quad COFDM - FTA

Quad COFDM - with 2 x CI

Technical data

Type:		Quad COFDM backend FTA	Quad COFDM output CI
Art. No:		492060	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
Power supply			
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		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

2 x CI output modules

Quad 2 x CI output module

Quad 2 x CI output module

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.

Technical data

Type:		**2 x CI backend module**
Art. No:		492070
CI slots	pcs.	2
Power supply		
Supply voltage	V	12.0 ±1
Max. supply current (FTA / CI)	A	0.6 (typ)
Mechanical data		
RF connector		F-connector
Power supply/control connector	mm	PCI Express Edge connector 36P
Weight	kg	0.220
Dimension (HxDxW)	mm	12 x 162 x 180

TDX headends

Software and IP output module

TDX – Software
IP output/input 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

Technical data

Type:		IPTV out 12 services start package	IPTV out 12 services ext. package	IPTV in 12 services start package	IPTV in 12 services ext. package
Art. No:		418040	418041	418045	418046
Type		Software	Software	Software	Software
IP-services	pcs	12	12	12	12
Activation		Inform Triax of the serial number of the ID-no. of the TDX main unit			
Remarks					

SFP
(LC duplex)

STP
(RJ45)

Technical data

Type:		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	MBps	max. 720		
Protocols		UDP with RTP optional		

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.

Technical data

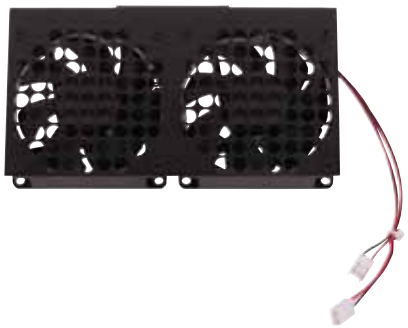
Type:	TDX SD-card
Art. No:	492084
Type	SD-HC card
Size	4 GB

Technical data

Type:	TDX power supply
Art. No:	492005
Type	PSU
Remarks	Sparepart for the TDX headend

Technical data

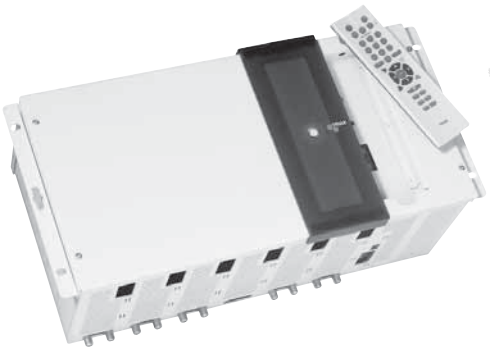
Type:	TDX fan kit
Art. No:	775276
Type	Double fan
Remarks	Sparepart for the TDX headend



TDH 700 headends

Main and sub unit

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.



TDH 700 main unit

TDH 701sub unit

Technical data

Type:		TDH 700 Main unit	TDH 701 Sub unit
Art. No:		490790	490791
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	
Modem connector	9 pin	RS 232 male	
Main/sub unit connector		USB A/B cable	USB A/B cable
Wall/rack bracket		Yes	Yes
Operation voltage	V/AC	190 - 260	190 - 260
Power consumption	W	120 max.	110 max.
Connector in - out		F female	F female
Operation temperature range	oC	-10...+50	-10...+50
Weight	kg	5.8	5.8
Dimensions (H x D x W)	mm	223 x 160 x 440	223 x 160 x 440
Remarks			

TDH 700 headends

digital satellite modules QPSK-PAL

TDH - FTA

TDH - CI

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

Type:		TDH 700 DVB-S master with CI	TDH 700 DVB-S master FTA	TDH 700 DVB-S master FTA
Art. No:	B/G	590743	490746	
	D/K		490722	490723
	Norm L		490722	490723
	Pal I		490722	490723
Norm		Nicam	Mono	A2 stereo
Modulator type		VSB	VSB	VSB
Input frequency range	MHz	920 - 2150	920 - 2150	920 - 2150
Input level *	dBµV	44....84	44....84	44....84
IF bandwidth	MHz	36	36	36
Output channel		2....69	2....69	2....69
frequency range	MHz	47 - 862	47 - 862	47 - 862
Output level	dBµV	103	103	103
Output level attenuator	dB	10	10	10
Video S/N ratio	dB	> 54	> 54	> 54
Differential phase	deg.	< 8	< 8	< 8
Picture carrier stability	kHz	< +/- 70	< +/- 70	< +/- 70
Spurious signals ref pict. carrier C/N	dB	> - 60	> - 60	> - 60
Sound mode		Nicam	Mono	A2 stereo
Audio distortion @ 1 kHz	%	< 1	< 1	< 1
Audio S/N ratio	dB	> 50	> 50	> 50
Sound sub carrier stability	kHz	< +/- 5	< +/- 5	< +/- 5
LNB control 13/18 volt - 0/22 kHz	mA	200	200	200
Conditional access	EN	50221	FTA	FTA
Teletext type		Reinserted in VBI	Reinserted in VBI	Reinserted in VBI
Demultiplexer data rate	Mbps	< 65	< 65	< 65
Video data rate	Mbps	< 15	< 15	< 15
Viterbi rates	Mpps		1-30 (SCPC/MCPC)	
Impedance	Ohm	75	75	75
Operation temperature range	oC	-10...+50	-10...+50	-10...+50
Power supply - stand alone module	VAC	190 - 260	190 - 260	190 - 260
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 700 headends

digital terestrial - COFDM to PAL - master and slave

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
- Nicam available
- Slave modules for DVB-S or DVB-T master modules with Nicam

TDH - DVB-T FTA

TDH slave module

Technical data

Type:		TDH 700 DVB-T master Free to air	TDH 700 DVB-S/T slave module
Art. No:		590765	590745
Norm		Nicam	Nicam
Modulator type			VSB
Input frequency range	MHz	177.5 - 858.0	
Input level	dBµV	44....84	44....84
Output frequency range	Ch. MHz	2....69 47 - 862	2....69 47 - 862
Output level modules	dBµV	103	
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		A2 stereo	Nicam
Audio distortion @ 1 kHz	%	< 1	< 1
Audio S/N ratio	dB	> 50	> 50
Sound sub carrier stability	kHz	< +/- 5	< +/- 5
LNB control 13/18 volt - 0/22 kHz	mA	200	
Conditional access	EN	FTA	
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)
FFT mode	Mpps	2K/8K	
Constellations		QPSK, 16QAM, 64QAM	
Guard interval		1/4, 1/8, 1/16, 1/32	
Viterbi decoder		1/2, 2/3, 3/4, 5/6, 7/8	
Reed Solomon decoder		204,188, t=8.	
Impedance	Ohm	75	75
Operation temperature range	oC	-10...+50	-10...+50
Weight - standard module	kg	0.45	0.30
Dimensions (H x D x W)	mm	150 x 230 x 50	150 x 230 x 50
Remarks			

TDH 700 headends

digital QAM - QPSK to QAM

TDH QAM module

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

Technical data

Type:		TDH 730C DVB-C master	TDH 731C DVB-C master	TDH 732C DVB-C master	TDH 733C DVB-C master
Art. No:		490730	490731	490732	490733
Norm		TDT	TDT	-adj. symbol rate	-adj. symbol rate
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, 7/81/2, 2/3, 3/4, 5/6, 7/81/2, 2/3, 3/4, 5/6, 7/81/2, 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	^{o}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 700 headends

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

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

TDH 725

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

Technical data

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

TDH 700 headends

controlling the 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 or look on our website about the different solutions

On location via OSD

Programming via PC

Technical data

Type:		N-port - for Internet	GSM modem - for mobile phone	Telephone modem - for access
Art. No:		300766	300765	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

CSE 3300 headends

digital main unit

CSE 3300 Base unit

CSE 3301

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		CSE 3312 Main unit 325100	CSE 3308 Main unit 325104	CSE 3301 for 1 cassettes 325103
Art. No.		325100	325104	**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 headends

SAT transcoding & conversion

CCS 2380 modules
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.

CCS 2380 modules

CCSF 1000 module

Technical data

TYPE		CCS 2380 Twin QPSK to PAL	CCSF 1000 QPSK to FM
Art. No.		325131	325173
HF Input / LAN interface			
Frequency range	MHz	925 - 2150	925 - 2150
Level range	dBµV		60 - 80
Data rate			
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
Symbol rate DVB-S	Msymb/s	1 - 45	QPSK: 2 - 45
Symbol rate DVB-S2	MSymb/s		QPSK: 10 - 30/8PSK: 10 - 31
HF output			
Frequency range	MHz		87.5 - 108.00
Output channels	Ch.	C 02 - C 04/C 05 - C 12 S 09 - S 16/C 21 - C 69	
Tuning steps	kHz		50
Type of modulation		Stereo	FM
Return loss	dB		8
Output level	dBµV		93
Signal-to-harmonics ratio	dB		> 60
FM modulator			
Number of available services			12
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			
SAT input		2 F-socket	2 F-socket
HF output			1 IEC-socket
ASI input			1 BNC-socket
Remotely controllable/- update			Yes/Yes

CCSM 500 modules

CCS 510 modules

CCSM 500 / CCS 510 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	QAM 4, 16, 32, 64,128, 256
Software download	via	RS 232	RS 232
Output frequency range	MHz	42 - 860	42 - 860

CSE 3300 headends

DVB-T (COFDM- COFDM) Terrestrial transcoding (Digital)

CCMT 2180
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 1290
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.

CCMT 1290 modules

CCMT 2180 modules

Technical data

TYPE		CCMT 2180 P CI	CCMT 1290 Twin
Art. No.		325139	325138
No. of inputs	Pcs	2	2
No. of converted channels	Pcs	2	2
Input frequency range (VHF)	MHz	177.5 - 226.5	177.5 - 226.5
(UHF)	MHz	474.0 - 858.0	474.0 - 858.0
No. of carriers		2 k and 8 k	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	C 05 - C 12 S 09 - S 16 C 21 - C 69

CCT 1000T modules

CCT 1000T modules
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.

Technical data

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

CSE 3300 headends

Terrestrial conversion (COFDM - QAM)

CCT 1001 (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.

CCT 1000
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

CCT 1001 modules

Technical data

TYPE		CCT 1000	CCT 1001 COFDM-QAM
Art. No.		325156	325198
No. of inputs	Pcs	2	2
No. of converted channels	Pcs	2	2
No. of multiplexes	Pcs	2	
Input frequency range (VHF)	MHz	177.5 - 226.5	177.5 - 226.5
(UHF)	MHz	474.0 - 858.0	474.0 - 858.0
No. of carriers		2 k and 8 k	2 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	QAM 4, 16, 32, 64,128, 256
Software download	via	RS 232	RS 232
Output channels	MHz	S 02 - S 21 incl. C 05 - C 12	S 21 - S 41

Cable- or terrestrial conversion (QAM/COFDM - QAM)

CCC 1000C modules

CCCF 1000 FM modules

CCC 1000C modules
The module uses two digital cable (DVB-C), or terrestrial signals (DVB-T) in two digital cable signals (QAM) to. additional interfaces make the module universal and versatile used in all-digital cable networks. It has an ASI input and ASI output and a 100 MBit LAN interface (Ethernet). This means that the streams of digital signals for further collected or from external sources for QAM modulation and subsequent dissemination be fed in the cable network. Depending on the CI CAM module provides the interface. Decoding of up to 12 of encrypted signals the QAM modulation is between 4, 16, 32, 64, 128 and 256 QAM adjustable. The TPS module serves for data processing the demodulated transport stream.

CCCF 1000 FM modules - QAM / COFDM - 12 x FM
CCCF 1000 FM uses 12 digital radio channels two digital cable (DVB-C), terrestrial or signals (DVB-T) in 12 FM modulated FM radio stations to.

Technical data

TYPE		CCC 1000 C QAM/COFDM - QAM	CCCF 1000 FM QAM/COFDM - 12 x FM
Art. No.		325144	325163
No. of inputs	Pcs	2	
No. of converted channels	Pcs		
No. of multiplexes	Pcs	2	
Input frequency range (VHF/UHF)	MHz	47-862	
No. of carriers			
Input symbol rate	DVB-T DVB-C	acc. to EN 300 744 acc. to EN 300 429	
Output symbol rate	MBaud	1 - 7.5	1 - 7.5
Modulation scheme	QAM	4, 16, 32, 64, 128, 256	FM
Software download	via	RS 232	
No. of outputs	Pcs	2 x QAM	12 x FM
Output frequency range (VHF/UHF)	MHz	45-862	87.5 - 108
Output channels	MHz		

CSE 3300 headends

Satellite transcoding (HDTV)

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

CCS-2 1000 module

Technical data

TYPE		CCS-2 610 CI	CCS-2 1000	CCS-2 1001
		HDTV DVB-S2 - QAM	HDTV DVB-S2 - QAM	HDTV QPSK-COFDM
Art. No.		325152	325153	325196
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 1001 module

CCS 1001 T 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-2 1001 DVB-S2/COFDM	CCS-2 1002 QPSK/COFDM	CCS 1001 T HDTV modulator
Art. No.		325154	325154	325197
No. of inputs	Pcs	2	2	2
No. of converted transponders	Pcs	2	2	2
Input level range	dBµV	60...80	60...80	60...80
Input frequency range	MHz	925-2150	925-2150	925-2150
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	1 – 45		1 – 45
Symbol rate DVB-S2	QPSK	1 – 45		1 – 45
Symbol rate DVB-S2	8PSK	1 – 45		1 – 45
Guard interval		1/4, 1/8, 1/16, 1/32		
Output modulation		QAM 4, 16, 32, 64,128, 256		
Output frequency range	MHz	45 - 862		45 - 862
Output level	dBµV	97.0		97.0
Output impedance	W	75		75
Software download	via	RS-232		RS-232

CSE 3300 headends

AV signal conversion

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.

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

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.

CCAV 300 module

CCTF 326 module

Technical data

TYPE		CCAV 300 AV 3 channel mono	CCTF 326	CGA 325
Art. No.		325129	325176	325177
No. of inputs	Pcs	3	1	1
No. of AV inputs	Pcs	3 (per input) 1 x video, 2 x audio	2	
Input frequency range	Hz/MHz	20 - 5000	87.5 - 108	87.5 - 108
Input level range	dBµV	10-95	10-95	
No. of FM converter	Pcs		4	
Sound output		stereo		
Min. channel grid between converted FM stations	kHz		300	
FM transmitter reduction per filter	dB			14 - 17
Gain	dB			43
Noise figure	dB			6 - 9
No. of adjustable filters	dB			6
Output frequency range/ Channel infrequency	MHz	C 02 - C 04 C 05 - C 12 S 3 - S 41 C21 - C69	87.5 - 108	45 - 862
Delivery status		- without modulators		

CGA module

CCE 210
Encoder

CCE400
MPEG4 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.

CCE 400 Encoder - MPEG4
CCE 400 MPEG4 encoder for converting HD-/SD Video- and audio signal into an MPEG-4 data stream by ASI, LAN interface and output to the COFDM and QAM modulator

Technical data

TYPE Art. No.		CCE 210 twin encoder AV to ASI/IP 325166	CCE 400 MPEG4 encoder HD-/SD to ASI/IP 325164
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	BNC fitting connector
Audio connectors		RCA phono	RCA phono
Impedance	Msymb/s	75 Ohms	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	via RS-232

CSE 3300 headends

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.

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.

CCS 1000 module

Technical data

TYPE		CCS 1000M DVB-S2 MPTS	CCS 1000 SS DVB-S2-SPST	CCT 1000 ST DVB-T - SPTS	CCT 1000M DVB-T - MPTS
Art. No.		325190	325191	325195	325194
No. of inputs		2	2	2	2
No. of converted transponders		2	2	2	2
Input frequency range	MHz	950 – 2150	950 – 2150	177.5 - 226.5 MHz 474 - 858 MHz	
DVB-S modes (QPSK)		1/2, 2/3, 3/4, 5/6, 7/8		2 k and 8 k	
DVB-S2 modes (QPSK)		1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10		according to EN 300 744	
DVB-S2 modes (8PSK)		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	100-BASE-T	100-BASE-T
Data rate	Mbit/s	≤ 80	≤ 80	≤ 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	via RS-232	via RS-232

CSE 3300 headends

IPTV Conversion to Digital Cable/Terrestrial

CCQ 1000MQ module

CCI 1000MT 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.

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.

Technical data

TYPE		CCQ 1000MQ MPTS - QAM	CCI 1000 MT MPTS-COFDM	CCIF 1000 IP
Art. No.		325192	325193	325174
No. of inputs		1	1	1
No. of multiplexes		2 x QAM	2 x COFDM	
Output symbol rate	MBaud	1 - 7.5	2 k, 4 k and 8 k	1 - 7.5
Modulation scheme		QAM 4, 16, 32, 64, 128, 256	QPSK, 16-QAM or 64-QAM	FM
HF output				
Output frequency range	MHz	45 - 862	42 - 860	87.5-108
Frequency range	MHz			50
Tuning steps	kHz			FM
Type of modulation				8
Return loss	dB			93
Output level	dBµV			> 60
External voltage difference				
Mono	dB			66.0
Stereo	dB			53.0
Non-linear distortion factor				
Mono	%			0.06
Stereo	%			0.6 %
Overall output frq deviation	kHz			75
FM modulator				
Number of available services				12 x FM
RDS signal processing	kHz			57
Pilot signal	kHz			19
Preemphasis	µs			50
Connections				
LAN input				1 RJ45 socket
HF output				1 IEC-female
Standard		100-BASE-T	100-BASE-T	100-BASE-T
Data rate	Mbit/s	≤ 80 Mbit/s	≤ 80 Mbit/s	≤ 80 Mbit/s
Protocols		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	via RS-232

CCI 1000 ST module
This cassette mainly converts SPTS digital data streams to COFDM.

CCI 1000 SQ module
This cassette mainly converts SPTS digital data streams to QAM.

CCI 1000 ST module

CCI 1000 SQ module

Technical data

TYPE		CCI 1000 ST SPTS - COFDM	CCI 1000 SQ SPTS - QAM
Art. No.		325169	325168
No. of inputs			
No. of multiplexes			
Output symbol rate	MBaud		
Modulation scheme			
HF output			
Output frequency range	MHz		
Frequency range	MHz		
Tuning steps	kHz		
Type of modulation			
Return loss	dB		
Output level	dBµV		
External voltage difference			
Mono	dB		
Stereo	dB		
Non-linear distortion factor			
Mono	%		
Stereo	%		
Overall output frq deviation	kHz		
FM modulator			
Number of available services			
RDS signal processing	kHz		
Pilot signal	kHz		
Preemphasis	µs		
Connections			
LAN input			
HF output			
Standard			
Data rate	Mbit/s		
Protocols			
ASI in / ASI out interfaces			
Common Interface			
TPS module			
Software download			

CSE 3300 headends

Multiplex for converting ASI transport streams

HADA 5100
SPTS module

HADA 5100
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.

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).
Software update can be done via the RS-232 interface.

Technical data

TYPE		CCS HADA 5100 SPTS	CCS HADA 5100	CCA 1001
Art. No.		325188	325189	325199
ASI no. of inputs		5	5	2
Input format		SPTS/MPTS	SPTS/MPTS	
LAN interface				
Standard		10-BASE-T, IEEE 802.3i 100-BASE-TX, IEEE 802.3u 1000-BASE-X, IEEE 802.3z		
Data rate	MBit	</= 180	</= 180	
Common interface				
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	75
Max. data rate	Mbit/s	180	180	2...90
Level (input/output)	mV_{pp}	800 ± 10%	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	BNC socket
ASI output			1 BNC socket	BNC socket
Connection strip (10-pin)		for supply voltages and control circuits		
RS 232 socket		serial interface for software update		

CSE 3300 headends

accessories

TYPE	CCRS 1000 Remote and control software
Art. No.	325182
Description	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.

CCRS 1000
remote module

TYPE	CCRC 1 Remote
Art. No.	325185
Description	Remote for CSE 3300

CCRC 1
remote module

TYPE	CCP Power Supply
Art. No.	325184
Description	Power supply for CSE 3300 headend system

CCP
power supply

TYPE	CCP adaptor
Art. No.	325186
Description	

CCP adaptor

CCP adaptor

TYPE	CCAB adaptor plate
Art. No.	325183
Description	Adapter plate to fit the headends CSE 3200, CSE 3100 or CSE 3000 with the control panel CCRC 1 needs.

CCMC 6000

TYPE	CCMC 6000 monitoring unit
Art. No.	325178
Description	CCMC 6000 with the monitoring module, the frequency range of 47 - 862 MHz CATV system can be monitored. The following parameters are checked: analogue TV video carrier (AM), analog TV carrier (FM), analog broadcasting-carrier (FM) and the digital QAM signal. In analog TV video carrier level and the synchronizing pulse is evaluated; over the VPS signal, the station IDs are read. For stations that have no identification, it can be edited subsequently on a PC. This also applies to radio programs. The analogue TV video carrier is checked continuously by the level evaluation. In Hörfunkbe range of levels can be monitored and the station name of the RDS identifier. With digital TV output signals of both the level and the bit error rate can be measured, just to get an accurate indication of a signal failure. All DC voltages from the power supply are measured and evaluated. A search function allows to make an information channel to all channels available to viewers each parameter. An integrated UHF modulator, this can be fed into the system.

CCRC 2

TYPE	SNMP management system CCRC 2
Art. No.	325187
Description	About the management unit, two devices (loading serves hurry and the monitoring module CCMC be connected to a 6000 system. In monitoring station by the CCMC 6000 in case of a fault several alerts are sent by email as the management unit CCRC second The configuration of the system, either directly by connecting to a PC via LAN to the management unit CCRC 2 or via a connected network. To configure the setting of the head-end software CCRS 1000 is required graphical web interface optimized for PDAs. Time-controlled activation and deactivation of modules

CSE 3300 headends

accessories

TYPE	Managementeinheit CCRC 8 inkl. PC-Software CCRS 1000
Art. No.	325179
Description	The CCRC 8 to 1 PC, 1 analog or GSM modem headends and 8 or 7 head stations and 1 monitoring CCMC be angschlossen 6000th Via the analog or GSM modem, the system allows remote configuration. The service data that are reported in combination with the supervi-sor-ungseinheit CCMC 6000, transmitted the management unit CCRC 8 automati-cally as SMS or facsimile. The included software CCRS 1000 requires the following PC requirements: 486.5 MB free capacity and an operating system Windows XP/2000 / Vista. With this software, the head stations CSE 3300 Base 12, Base 8/19 or CSE 3301 are contained in the control through the RS 232 interface of pre-programmed. Via an analog or GSM modem can also perform this from a different place. In addition to the errors that are reported by the monitoring module CCMC 6000, appears.

CCRC 8

TYPE	Backup System CCB 16/8
Art. No.	325181
Description	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.

CCB 16/8 backup system

CSE 2800 headends

digital main unit

CSE 2800 Base 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.

Technical data

TYPE Art. No.		CSE 2800 base unit 325001
Conversion	Pcs	**16 x digital SAT**
Suitable for adjacent channels		Yes
Input/output/programming		Integrated Control Unit
Impedance		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 headends

QPSK to AV / COFDM to AV

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.

CGS 470 CI module

CGS 480 CI QPSK/AV module

Technical data

TYPE		CGS 470 CI **Quad** QPSK /AV	CGS 480 CI **Quad** QPSK /AV	CGT 460 AV/Quad	CGT 460 AV/Quad
Art. No.		325010	325016	325011	325012
No. of input tuners	Pcs	2	4	2	1
No. of AV outputs	Pcs	4	4	4	4
Input frequency range	MHz	950 - 2150	950 - 2150	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	1 - 45	1 - 45	acc. to EN 300 744	acc. to EN 300 744
No. of converted TV channels	Pcs	4	4	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

CGMM 470 module

CGMS 470 module

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.

Technical data

TYPE		CGMM 470 Mono	CGMS 470 Stereo	CGFM 470 Stereo	CGMM 480 Mono	CGMS 480 Stereo
Art. No.		325013	325014	325015	325018	325019
Input signals	Pcs	4 x AV	4 x AV	4 x AV	4 x AV	4 x AV
Channel grid	kHz	Suitable for adjacent channels		300	Suitable for adjacent channels	
Sound output		Mono	Stereo	Stereo	Mono	Stereo
Standard		B/G, CCIR	B/G, CCIR	FM	B/G, CCIR	B/G, CCIR
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	C 02 - C 69 incl. S 03 - S 14 S 16 - S 41	S 03 - S 14 S 16 - S 41

CSE 2800 headends

COFDM to COFDM

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

CGS 660 CI module

CGS 2- 660 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 TPS COFDM - QAM 325022	CGS 660 CI QPSK - QAM 325025	CGS-2 660 DVB S2 - QAM 325026
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			
DVB-S2 modes	QPSK			
DVB-S2 modes	8PSK			
Symbol rate DVB-S	QPSK	1 – 45	1 – 45	2 – 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	
TPS module		•	•	•
Software download	via	RS-232	RS-232	RS-232
Output frequency range/ Channel infrequency	MHz	45 - 862	45 - 862	45 - 862

CSE 2800 headends

digital SAT to QAM

CGS-2 764 C:
Digital Quadruple Module (DVB-S2 - QAM) with modulator and integrated Double Common Interface, 2 inputs and 4 tuners, NIT conversion for up to 32 transponders, Stuffing, Filtering of transport streams and bandwidth optimized transmodulation, adjusting of an Operator ID, for the transmodulation of 4 transponders, 4 output channels in the range 42 - 868 MHz.

CGS-2 760 Twin module

CGS-2 760 Twin module

Technical data

TYPE Art. No.		CGS-2 760 CI TPS DVB S2 - QAM 325028	CGS-2 764 C Quad DVB S2 - QAM 325029
No. of inputs	Pcs	2	2
No. of converted transponders	Pcs	2	2
Input frequency range	MHz	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
Symbol rate DVB-S2	QPSK		
Symbol rate DVB-S2	8PSK		
Output symbol rate	MBuad	1 – 7,5	1 – 7,5
Modulation scheme		4, 16, 32, 64, 128, 256	4, 16, 32, 64, 128, 256
TPS module		•	•
Software download	via	RS 232	RS 232
Output frequency range/ Channel infrequency	MHz	45 - 862	45 - 862

CGS 660T module

CGS-2 764 T module

CGS 660 T:
CGS 660 T module converts two different QPSK-modulated data streams (SCPC or MCPC) into two COFDM modulated data streams. It allows service information to be changed (NIT) 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.

CGS-2 764 T:
Digital Quadruple Module (DVB-S2 - COFDM) with modulator and integrated Double Common Interface, 2 inputs and 4 tuners, NIT conversion for up to 32 transponders, Stuffing, Filtering of transport streams and bandwidth optimized transmodulation, adjusting of an Operator ID, for the transmodulation of 4 transponders, 4 output channels in the range 42 - 860 MHz.

Technical data

TYPE		CGS 660 T QPSK - COFDM	CGS-2 764 T DVB S2 - COFDM
Art. No.		325027	325024
No. of inputs	Pcs	2	2
No. of converted transponders	Pcs	2	4
No. of carriers		2 k and 8 k	2 k
Input frequency range	MHz	910 – 2150	910 – 2150
DVB-S modes	QPSK	1 – 45	1 – 45
DVB-S2 modes	QPSK		4,5 - 45
DVB-S2 modes	8PSK		4,5 - 45
Symbol rate DVB-S	QPSK		
Symbol rate DVB-S2	QPSK		
Symbol rate DVB-S2	8PSK		
Output symbol rate	MBuad		
Modulation scheme		QPSK, QAM 16, QAM 64	QPSK, QAM 16, QAM 64
Guard Intervall		1/4, 1/8, 1/16, 1/32	1/4, 1/8, 1/16, 1/32
TPS module			
Software download	via	RS 232	RS 232
Output frequency range/ Channel infrequency	MHz	45 - 860	42 - 868

CSE 2800 headends

additional modules

TYPE	CGA 225 FM amplifier
Art. No.	325030
Description	FM amplifier for amplifying the FM range 87.5-108 MHz. Six manually adjustable attenuator filters provide for attenuation of strong FM stations of 14-17 dB.

CGA 225 FM amplifier module

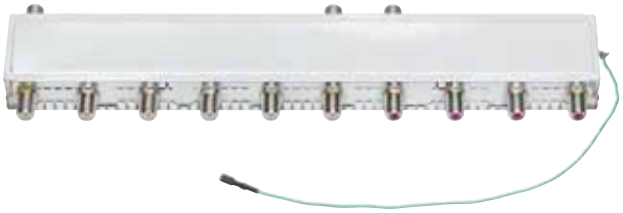
CGSI 160 - Input distributor with LNB supply

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.

CGSI 160 module

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.



CGS 162 module

TYPE		CGSI 160	CGSD 162
Art. No.		325032	325033
No. of SAT inputs		1	2
No. of outputs		9	1 x 6 / 1 x 4 / pass through
Attenuation	dB		9 -14 / 9 - 12 / 5
LNB supply	V/mA	12/800	12/800
Remarks		8 RF cable included	8 RF cable included

CGOC 168 - Output collector

The active output collector CGOC 168 has 8 inputs and 1 output. In addition, 168 CGOC has 1 output with max. 101 dBµV and 1 measuring output which is attenuated by 20 dB. The gain is typically 18 dB at a maximum output level. 101 dBuV. Setting the electronic level control is 0 .. 31dB.

TYPE		CGOC 168
Art. No.		325035
No. of outputs		9
HF output level/HF level adjusting	dBµV	max. 101.0
Test point	dB	- 20
Remarks		

CGV 160 AV
adaptor module

TYPE	CGV 160 AV adaptor board
Art. No.	325031
Description	**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.

CNT 160
Power supply

TYPE	CNT 160 power supply
Art. No.	325090
Description	Power supply for use in CSE 2800

CCRS 160

TYPE	CCRS 160 remote control software
Art. No.	325034
Description	With the remote control software settings of a complete head CSE 2800 can be read or individual modules and transfer it to other stations. When using QAM modules, the NIT can be read. To expand a head station from another manufacturer, the frequencies of the station in the NIT, the CSE can be added 2800th. DVB-C programs can be a Logical Channel Number (LCN) are assigned.

CRCU 160

SNMP management interface
CRCU 160: SNMP-compliant management interface, connect to a wireless dial-up router via DSL as standard. Query and control the most important parameters and data devices by remote control via the graphical user interface of the head-end software CCRS 160
CRCA 162 expansion unit for adapter to mount a second CSE 2800 headend built on the SNMP management system CCRS 160
LAN interface on the cover

TYPE	CRCU 160	CRCU 162
Art. No.	325036	325037
Remarks		

CSE 6, 8, 12, 16 & 24 headends

DVB-S Compact 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 1601
Basic unit

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
Connections			F-con			F-con	
Input voltage		Hz/VAC	50/60 - 90-264			50/60 - 90-264	
Dimensions	Hight	mm	253	253	253	253	253
	Width	mm	300	428	567	428	567
	Depth	mm	200	200	200	200	200
Weight		Kg	5.5	8.8	11.5	8.8	11.5
Remarks			Quattro LNB required				

CSE 0601 & 1201 headends

DVB-T Compact Headend

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 1201	TDM 2 AV-C stand alone
Art. No.			324949	324951	324750
Input			DVB-T PAL	DVB-T PAL	2 x AV
Frequency		MHz	470-862	470-862	
TV standard			PAL I, B/G, DK, Secam L		
Audio mode			Single mono modulator		
Modulation					AV - COFDM
Channels (fully agile)			21-68	21-68	
Modulator type			DSB	DSB	
Output level		dBµV	85	85	
Level adjustment		dB	0-15	0-15	
No. of channels		Pcs.	6	12	1
Loop through			No	No	No
Line power			12V DC	12VDC	
Connections			F-type	F-type	F-type
Input voltage		Hz/VAC	AC 90-264 / 50/60 Hz		
Dimensions	Hight	mm	253	253	
	Width	mm	300	567	
	Depth	mm	200	200	
Weight		Kg	5.5	11.5	
Remarks					Standalone Twin AV - COFDM modulator

CSE 1, 6, 8 & 12 cabinets

cabinets incl. power supply, remote, cobbiner & cable

CSE 1, 6, 16 and 24 cabinet

Base unit and the compact headend modules are also available separately - variable in the application, freely configurable: Suitable for wall mounting with the supplied brackets, CSE 16 assembly in 19 “rack. To accommodate Twin or Quattro modules, power supply and control with IR remote control

CSE 1 as a standalone shell for a module slot
CSE 06 with 6 module slots
CSE 16 with 8 module slots
CSE 24 with 12 module slots

CSE 24

CSE 1

Technical data

TYPE		CSE 1	CSE 06	CSE 16	CSE 24
Art. No.		324707	324988	324986	324956
Input		1	4	6	6
Modul slots	pcs	1	6	8	12
Connections		F-con	F-con	F-con	F-con
Level adjustment	dB	0-15	0-15	0-15	0-15
Loop through		No	No	No	No
Input voltage	VAC	90-264	90-264	90-264	90-264
Mounting		Wall	Wall	Wall or 19” rack	Wall
Dimensions Hight	mm		253	253	253
Width	mm		301	427	567
Depth	mm		215	215	215
WeigProgramming		Infrared remote	Infrared remote	Infrared remote	Infrared remote
LEDs		Signal/infrared/Power			
Operating temperature	°C	-10...50	-10...50	-10...50	-10...50
OSD language		German, English, French, Spanish, Danish, Swedish			

RC 16/24

TYPE	Remote control
Art. No.	324909
Description	Remote control for CSE 16/24

CSE 1, 6, 8 & 12 headends

Twin modules for Compact Headend

CSE 273 module

Twin-modules of the compact headend are also available separately - variable in the application.

A twin-module (master / slave) includes a tuner and 2 modulators for the treatment of 2 PAL programs from a QPSK or COFDM transponders, each output frequency is selectable, no compulsion occupancy

CSE 273: twin module, QPSK to PAL, master-slave, stereo, VHF / UHF, adjacent channel operation
CSE 262: twin module QPSK to PAL, mono
CSE 222: twin module, COFDM to PAL, master-slave, stereo, VHF / UHF, adjacent channel operation

Technical data

TYPE		CSE 273	CSE 262	CSE 222
Art. No.		324972	324973	324966
Modultype		Twin, Master-Slave, QPSK-PAL, VHF/UHF, Stereo	Twin, Master-Slave, QPSK-PAL, VHF/UHF, Mono	Twin, Master-Slave, COFDM-PAL, VHF/UHF, Stereo
Input frequency range	MHz	950-2150	950-2150	146-862
Input level	dBµV	40...74	40...74	40...74
AFC	kHz	± 500	± 500	± 100
Datarate	Mbit/s	45	45	31,6
Output frequency range	MHz	47-862	470-862	47-862
Output channels		C2 - C69	C21 - C69	C2 - C69
Output level	dBµV	90	90	90 dBµV
Signal noise	dB	typ. 54	typ. 54	typ. 54
Level adjustment pr. channel	dB	15	15	15
Modulatortype		VSB	DSB	VSB
Connections		F-con	F-con	IEC-con, IEC-plug
Norm			B/G, L, I	
Audio		Mono/Stereo	Mono	Mono/Stereo
LNB voltage	Volt	0/14	0/14	0
Voltage			from power supply	
Power consumption	W		9	
Betriebstemperatur	°C		-10 bis 50	
Dimension H x B x D	mm		ca. 210 x 145 x 30	
OSD language			German, English, French, Spanish, Danish, Swedish	

CSE 1, 6, 8 & 12 headends

Quattro modules for Compact Headend

The Quattro modules CSE 484 seat four to QPSK-/8PSK modulated DVB-S (2)-modulated signals in four DVB-C QAM output channels.

CSE 2AV-Q is a twin-module with Audio-/Video-inputs HDTV and SDTV-compatible. Adjacent channels, output channels to choose. The Quattro modules include two tuners and 4 QAM modulators for the treatment of 8 transponders and up to 20 digital channels
CSE 484 CI with additional CI interface in first channel max. 4 modules CSE 484/484 CI with base unit CSE 06 and max. 4 modules CSE 484/484 CI per side at the base unit CSE 16/24. CSE 2AV-Q employs two analog audio and video signals into QAM

CSE 484 CI module

Technical data

TYPE		CSE 484	CSE 484 CI	CSE 184
Art. No.		324977	324978	324974
Modultype		Quattro QPSK/8PSK-		
TV norm		DVB-S / DVB-S2		
Input frequency range	MHz	950-2150		
Input level	dBµV	40...85		
Modulation		QAM		
Constellations	QAM	16, 32, 64, 128, 256		
Output frequency range	MHz	47-862		
Output channels		C2 - C69		
Output level	dBµV	94		
MER	dB	typ. 39		
Symbol rate	MSymb/s	4-50 (SCPC/MCPC)		4 - 30
Level adjustment pr. channel	dB			
Decoder interface			1 common interface	
Inpedance		75	75	75
Connections		F-con	F-con	F-con
Audio		Mono/Stereo	Mono	Mono
LNB voltage	Volt	0/14	0/14	0/14
Voltage			from power supply	
Power consumption	W		9	
Betriebstemperatur	°C	0 ... 45	0 ... 45	-10 ... 55
Dimension H x B x D	mm		ca. 210 x 145 x 30	

CSE 273 module

Twin-modules of the compact headend are also available separately - variable in the application.

A twin-module (master / slave) includes a tuner and 2 modulators for the treatment of 2 PAL programs from a QPSK or COFDM transponders, each output frequency is selectable, no compulsion occupancy

CSE 273: twin module, QPSK to PAL, master-slave, stereo, VHF / UHF, adjacent channel operation
CSE 262: twin module QPSK to PAL, mono
CSE 222: twin module, COFDM to PAL, master-slave, stereo, VHF / UHF, adjacent channel operation

Technical data

TYPE		CSE 1 AV-C	CSE 2 AV-C	CSE 1 AV-Q	CSE 2 AV-Q	CSE 2 AV-C
Art. No.		324703	324704	324705	324706	324720
Modultype		1 x AV	2 x AV	1 x AV	2 x AV	2 x AV
TV norm						
Input frequency range	MHz					
Input level	dBµV					
Modulation		AV - COFDM	AV - COFDM	AV - QAM	AV - QAM	AV - COFDM
Constellations	QAM					
Output frequency range	MHz					
Output channels		E2 - C 69	E2 - C 69	E2 - C 69	E2 - C 69	E2 - C 69
Output level	dBµV	93	93	93	93	93
MER	dB					
Symbol rate	MSymb/s					
Level adjustment pr. channel	dB					
Decoder interface						
Inpedance		75	75	75	75	75
Connections		F-con, 2 x 15 Sub-D				
Audio		Mono/Stereo				
Voltage		from power supply				
Power consumption	W	9				9
Betriebstemperatur	°C	-10 ... 55				-10 ... 55
Dimension H x B x D	mm	210 x 145 x 30	210 x 145 x 30	210 x 145 x 30	210 x 145 x 30	210 x 145 x 30

TNH headends

Headend systems

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.

TNH headend

Technical data

TYPE			TNH 600V	TNH 652
Art. No.			324990	324971
Input			DVB-T	DVB-S
Frequency		MHz	47-860	950-2150
TV standard			PAL I, B/G, L	
Audio mode			Nicam sound	Nicam sound
Channels (fully agile)			21-68	21-68
Modulator type			DSB	DSB
Output level		dBµV	see modules	see modules
Level adjustment		dB	on modules	on modules
No. of channels		Pcs.	6	6
Loop through			No	No
Line power				0/14V
Connections			F-con	F-con
Input voltage		Hz/VAC		90-264
Power consumsion				
Dimensions	Hight	mm		
	Width	mm		
	Depth	mm		
Weight		Kg	5.5	8.8
Remarks			Complete set with 6 modules	

TNH 006
power supply

TNH 106
power supply

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	30 / 0.1	30 / 0.1
	VDC/A	15 / 1.0	15 / 1.0
	VDC/A	5.0 / 4.0	5.0 / 4.0
	VDC/A	3.3 / 4.0	3.3 / 4.0
Connectors		6 x female Sub-D9	6 x female Sub-D9

TNH headends

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)

TNH DVB-S modules

Technical data

TYPE		TNH 150 SAT-QPSK VHF module	TNH 151 SAT-QPSK UHF module	TNH 152 SAT-QPSK VHF module	TNH 153 SAT-QPSK UHF module	TNH 154 SAT-QPSK VHF module
Art. No.		324910	324911	324912	324913	324914
Input frequencies	MHz	950 -2150	950 -2150	950 -2150	950 -2150	950 -2150
Output frequencies	MHz	175-300	470-862	175-300	470-862	175-300
Output channel		E5-E12 S11-S20	CH 21-CH 69	E5-E12 S11-S20	CH 21-CH 69	E5-E12 S11-S20
Output level	dBµV	93	93	93	93	93
Level adjustment	dB	15	15	15	15	15
Modulator type		MA / DSB	MA / DSB	MA / DSB	MA / DSB	MA / DSB
TV standard		B/G, L	B/G, L, I	B/G, L	B/G, L	B/G, L
Audio mode		Mono	Mono	Nicam	Nicam	Stereo
Input connectors		F-female	F-female	F-female	F-female	F-female
Loop-through connectors		F-female	F-female	F-female	F-female	F-female
Output connectors		F-female	F-female	F-female	F-female	F-female
LNB voltage	V/DC	14	14	14	14	14
Power supply		from PSU	from PSU	from PSU	from PSU	from PSU
Infrared remote eye		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
Weight	kg	1.5	1.5	1.5	1.5	1.5

DVB-S modules - SAT-QPSK

TNH DVB-S modules

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 155 SAT-QPSK UHF module	TNH 170 SAT-QPSK VHF/UHF	TNH 171 SAT-QPSK UHF module	TNH 172 SAT-QPSK UHF module
Art. No.		324915	324916	324917	324918
Input frequencies	MHz	950 -2150	950 -2150	950 -2150	950 -2150
Output frequencies	MHz	470-862	47 - 862	47 - 862	47 - 862
Output channel		CH 21-CH 69	E2-CH 69	E2-CH 69	E2-CH 69
Output level	dBµV	93	93	93	93
Level adjustment	dB	15	15	15	15
Modulator type		MA / DSB	VSB	VSB	VSB
TV standard		B/G, L, I	B/G, L, I	B/G, L, I	B/G, L, I
Audio mode		Stereo	Mono	Nicam	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

TNH headends

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

TNH DVB-S twinmodules

Technical data

TYPE		TNH 250 QPSK twin VHF module	TNH 251 QPSK twin UHF module	TNH 253 QPSK twin UHF module	TNH 270 QPSK twin VHF module	TNH 271 QPSK twin UHF module
Art. No.		324920	324921	324923	324926	324927
Input frequencies	MHz	950 -2150	950 -2150	950 -2150	950 -2150	950 -2150
Output frequencies	MHz	174-300	470-862	470-862	174-300	470-862
Output channel		E5-E12 S11-S20	CH 21-CH 69	CH 21-CH 69	E5-E12 S11-S20	CH 21-CH 69
Output level	dBµV	95	95	95	95	95
Level adjustment	dB	15	15	15	15	15
Modulator type		MA / DSB	MA / DSB	MA / DSB	MA / DSB	MA / DSB
TV standard		B/G, L	B/G, L, I	B/G, L, I	B/G, L	B/G, L, I
Audio mode		Mono	Mono	Nicam	Mono	Nicam
Input connectors		F-female	F-female	F-female	F-female	F-female
Loop-through connectors		F-female	F-female	F-female	F-female	F-female
Output connectors		F-female	F-female	F-female	F-female	F-female
LNB voltage	V/DC	14	14	14	14	14
Power supply		from PSU	from PSU	from PSU	from PSU	from PSU
Infrared remote eye		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
Weight	kg	1.5	1.5	1.5	1.5	1.5

TNH DVB-S modules

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 102 COFDM-PAL VHF module	TNH 105 COFDM-PAL UHF module
Art. No.		324930	324931	324932	324935
Input frequencies	MHz	50.5-858	50.5-858	50.5-858	50.5-858
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	93	93	93	93
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	Nicam	Stereo
Input connectors		IEC-female	IEC-female	IEC-female	IEC-female
Loop-through connectors		IEC-female	IEC-female	IEC-female	IEC-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

TNH headends

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)

TNH DVB-S modules

Technical data

TYPE		TNH 120 COFDM-PAL VHF / UHF	TNH 121 COFDM-PAL VHF / UHF	TNH 122 COFDM-PAL VHF / UHF
Art. No.		324936	324937	324938
Input frequencies	MHz	50.5-858	50.5-858	50.5-858
Output frequencies	MHz	47-862	47-862	47-862
Output channel		E2-CH 69	E2-CH 69	E2-CH 69
Output level	dBµV	93	93	93
Level adjustment	dB	15	15	15
Modulator type		VSB	VSB	VSB
TV standard		B/G, L, I	B/G, L, I	B/G, L, I
Audio mode		Mono	Nicam	Stereo
Input connectors		IEC-female	IEC-female	IEC-female
Loop-through connectors		IEC-female	IEC-female	IEC-female
Output connectors		F-female	F-female	F-female
LNB voltage	V/DC	14	14	14
Power supply		from PSU	from PSU	from PSU
Infrared remote eye		Built-in	Built-in	Built-in
Dimension (HxDxW)	mm	231 x 148 x 35	231 x 148 x 35	231 x 148 x 35
Weight	kg	1.5	1.5	1.5

TNH DVB-S
Twin modules

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 200 COFDM-PAL VHF module	TNH 201 COFDM-PAL UHF module	TNH 203 COFDM-PAL UHF module	TNH 220 COFDM-PAL VHF / UHF	TNH 222 COFDM-PAL VHF / UHF
Art. No.		324940	324941	324943	324946	324948
Input frequencies	MHz	50.5-858	50.5-858	50.5-858	50.5-858	50.5-858
Output frequencies	MHz	174-300	470-862	174-300	47-862	47-862
Output channel		E5-E12 S11-S20	CH 21-CH 69	E5-E12 S11-S20	E2-E12 S11-S20 CH 21-CH 69	E2-E12 S11-S20 CH 21-CH 69
Output level	dBµV	95	95	95	95	95
Level adjustment	dB	15	15	15	15	15
Modulator type		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
Audio mode		Mono	Mono	Nicam	Mono	Stereo
Input connectors		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
Loop-through connectors		IEC-female	IEC-female	IEC-female	IEC-female	IEC-female
Output connectors		F-female	F-female	F-female	F-female	F-female
LNB voltage	V/DC	14	14	14	14	14
Power supply		from PSU	from PSU	from PSU	from PSU	from PSU
Infrared remote eye		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
Weight	kg	1.5	1.5	1.5	1.5	1.5

TNH headends

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

TNH DVB-S modules

Technical data

TYPE		TNH 184 TWIN QPSK - QAM VHF / UHF	TNH 185 TWIN QPSK - COFDM VHF / UHF	TNH 186 TWIN QPSK - COFDM VHF / UHF
Art. No.		324962	324963	324964
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		QAM	COFDM	COFDM
Output mode		QAM 16, 32, 64, 128, 254	QPSK, QAM 16, 64 / 2k, 8k	QPSK, QAM 16, 64 / 2k
Spectrum inversion		Normal, Inverted	Normal, Inverted	Normal, Inverted
No. of outputs		1	1	2 adj. channel
Output channel		E 02 - C69	E 02 - C69	E 02 - C69 adj. channel
Output level	dBµV	90-100	93	93
Symbol rate	ms	4-30	4-30	4-30
MER	dB	> 32	> 32	> 32
Impedance	ohm	75	75	75
Working temperature	°C	-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

TNH AV modules

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 050 AV/COFDM	TNH 051 AV/COFDM	TNH 056 AV/COFDM
Art. No.		324991	324992	324993
Input		2 x AV-signal	2 x AV-signal	2 x AV-signal
Input connector		15 Sub-D	15 Sub-D	15 Sub-D
Modulator				
Modulation		DSB	DSB	VSB
Output mode		QPSK, QAM 16, 64 / 2k, 8k	QPSK, QAM 16, 64 / 2k, 8k	QPSK, QAM 16, 64 / 2k, 8k
Spectrum inversion		Normal, Inverted	Normal, Inverted	Normal, Inverted
No. of outputs		1	1	1
Audio mode		Mono	Mono	Stereo
Output frequencies	MHz	174-300	174-300	47-862
Output channel		E5-E12 S11-S20	E5-E12 S11-S20	E2-E12 S11-S20 CH 21-CH 69
Output channel		E 02 - C69	E 02 - C69	E 02 - C69
Output level	dBµV	93	93	93
Output attenuation	dBµV	0-15	0-15	0-15
Symbol rate		4-30 Mbps (SCPC/MCPC)	4-30 Mbps (SCPC/MCPC)	4-30 Mbps (SCPC/MCPC)
MER (dB)	dB	> 32	> 32	> 32
Impedance	Ohm	75	75	75
Working temperature	°C	-10 to +50	-10 to +50	-10 to +50
Weight	kg	1.5	1.5	1.5
Dimension (HxDxW)	mm	321 x 148 x 35	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 headends

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

TNH AV modules

Technical data

TYPE		TNH 057 AV/USB	TNH 115 AV/COFDM	TNH 116 AV/QAM
Art. No.		324957	324997	324998
Input		1 x AV-signal	2 x AV-signal	2 x AV-signal
Input connector		15 Sub-D	15 Sub-D	15 Sub-D
Modulator				
Modulation		DSB	VSB	QAM
Output mode		QPSK, QAM 16, 64 / 2k, 8k	QPSK, QAM 16, 64 / 2k, 8k	QAM 16, 32, 64, 128, 254
Spectrum inversion		Normal, Inverted	Normal, Inverted	Normal, Inverted
No. of outputs		1	1	1
Audio mode		Mono	Stereo	
Output frequencies	MHz	112.25 - 168.25		
Output channel				
Output channel			E 02 - C69	E 02 - C69
Output level	dBµV	93	93	93
Output attenuation	dBµV	0-15	0-15	0-15
Symbol rate		4-30 Mbps (SCPC/MCPC)	4-30 Mbps (SCPC/MCPC)	4-30 Mbps (SCPC/MCPC)
MER (dB)	dB	> 32	> 32	> 32
Impedance	Ohm	75	75	75
Working temperature	°C	-10 to +50	-10 to +50	-10 to +50
Weight (kg)	kg	1.5	1.5	1.5
Dimension (HxDxW)	mm	321 x 148 x 35	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		

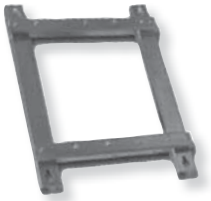
TNH headends

aditional modules & accessories

Software box

TYPE	TNH 011 software update box
Art. No.	324903
Description	• Sub-D data connector • MMC/SD card slot • COFDM/QPSK switch • Software download from internet

TNH 300 frame



TYPE	TNH 300 / 3-module frame
Art. No.	324907
Description	Frame for 3 modules and power supply

TNH 600 frame

TYPE	TNH 600 / 6-module frame
Art. No.	324908
Description	Frame for 6 modules and power supply

TNH 020 connection cable

TYPE	TNH 020 HF-lead
Art. No.	324905
Description	Fitted with F quick-connector male - straight plug. L: 20 cm.

TNH 020 connection cable

TYPE	TNH 021 HF-lead
Art. No.	324906
Description	Fitted with IEC (9.52 mm) male and female - straight plug. L: 20 cm.

TNH 010 remote

TYPE	TNH 010 Remote control
Art. No.	324909
Description	Remote control for programming the modules

Sub-D 15 - Scart cable

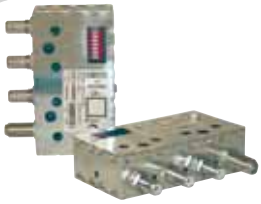
TYPE	Sub-D 15/Scart connection cable
Art. No.	324742
Description	To view OSD when programming

TCM 08

modulator headend

TCM-08 8 modulator unit
The modular design makes it easy to adapt the system to the required number of programmes.

TCM 08 modulator headend



VHF modules for TCM 08

UHF modules for TCM 08

Technical data

TYPE		TCM-08 basic unit	TCM-08A basic unit	CM 02V VHF mod.	CM 02U UHF mod.	Nicam encoder
Art. No.		300110	300111	490898	490899	490884
TV system				(B-D-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	Vpp			0.8-1.3	0.8-1.3	
- Input impedance	Ohm			75	75	
Audio: - Input level	Vrms			0.5-1.0	0.5-1.0	0.2
- Input impedance	kOhm			10	10	> 10
Power supply - Voltage	DC - mA			12/117	12/110	12/135
Power consumption	W			1.4	1.5	
Connectors - RF output, OUT				1 x F	1 x F	
- Audio/Video input				3 x RCA	3 x RCA	4 x RCA
- Power supply				-via RF output	-via RF output	1 x F
Input voltage	V-ac	190 - 260	190 - 260			
Power consumption (8 moduls)	W	17	20			
Temperature, operation	oC	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

CM 01V

CM 01U + amp.

CM 01U

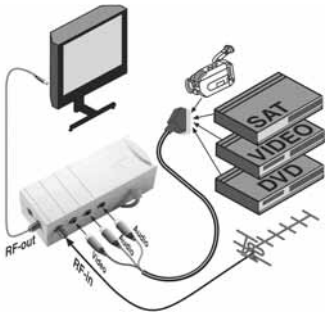
These modules permit distribution of 2 audio video sources (DVD, camera etc..) in the COFDM or QAM formats in an HF network. The signals can then be received by TVs with integrated DVB-T or DVB-C tuners, as well as DVB-T or DVB-C receivers (SD or HD).

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		CM 01V type VHF	CM 01U type UHF	CM 01U + amp.
Art. No.		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	MHz	175 - 335	470 - 860	470 - 860
FM	MHz			
TV standard		Pal-B	Pal-G	Pal-G
Input level	dBµV			max. 70
Gain from RF in to RF out 1	dB			**2**
to RF out 2	dB			**10**
Output level out 1	dBµV	Max. 80	Max. 80	72
out 2	dBµV			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	oC	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



TPF 200

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

TPF 206
unit

TPF 210
unit

Technical data

TYPE		TPF 206	TPF 210
Art. No.		363025	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	ºC	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

TMB 6 & 10

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

TYPE		TMB 6	TMB 10A	TMB 10B	TMB 10C	TMB 10S
Art. No.		324571	324575	324576	324578	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	ºC	- 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

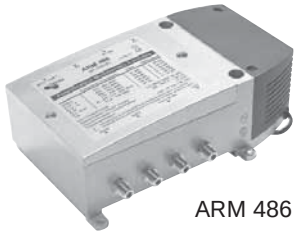
TPF 200

programmable filters

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


ARM 404


ARM 455


ARM 486

Technical data

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	dBµV	117.0	117.0	121.0
@ 60 dB IMD - UHF	dBµV	117.0	117.0	121.0
Connectors		F-female	F-female	F-female
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	oC	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

IFM amplifier housing

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

Technical data

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
Input / Output RF connectors (75 Ohm)		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 IFM series

multiband amplifiers

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

IFM 103

IFM 104

Technical data

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		oC	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

Technical data

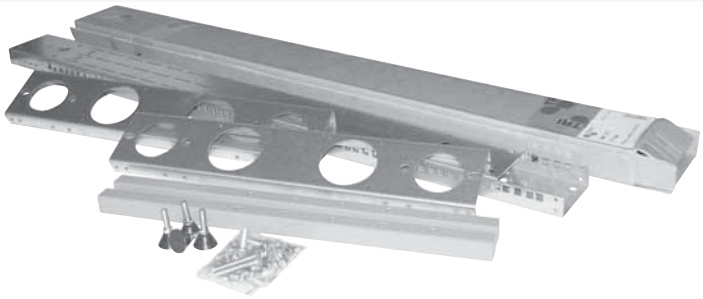
TYPE		SCT 100
Art. No.		364100
Numbers of inputs		10
Input requency range	MHz	950 - 2150
Input level	dBµV	52 - 75
Frequency steps	MHz	1
LNB feeding voltage	V/mA	12 / 250 per input (max. 500 mA total)
Spurious emission	dBm	- 63
Intermediate frequency	MHz	480
Line output	MHz	950 - 2150
Line output attenuation	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	oC	0 to +50
Weight	kg	3.0
Dimensions (H x D x W)	mm	195 x 80 x 280

Triax TMF 512

mounting frame

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

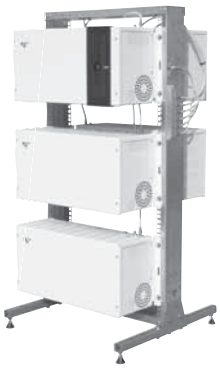
With the open 19” mounting frame Triax offers you a quite new and functional mounting solution for your headend if more units are built together.

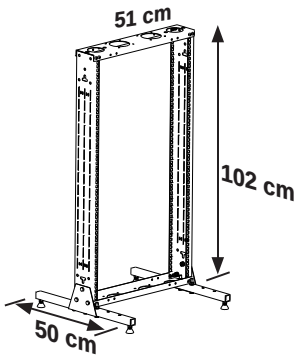


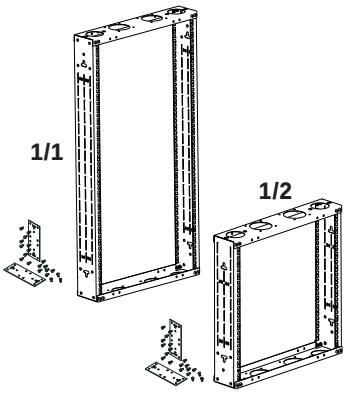
Complete TMF 512 pack

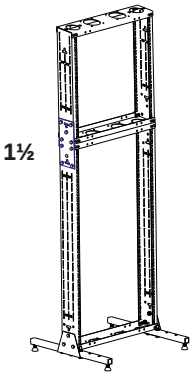
Technical data

TYPE		TMF 512 19” basic frame	1/1 - 19” frame with fittings	1/2 - 19” frame with fittings
Art. No.		251512	251513	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









Triax TCC 19”

compact cabinet

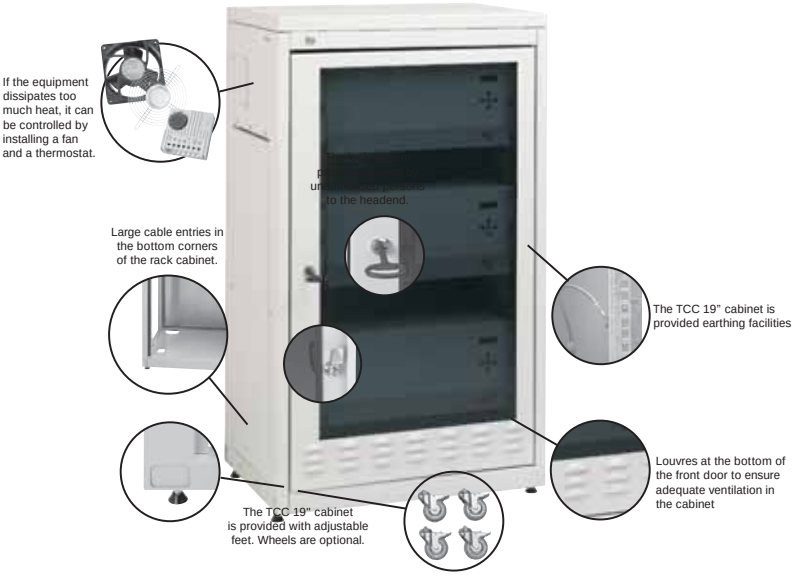
Complete TCC 19” cabinet

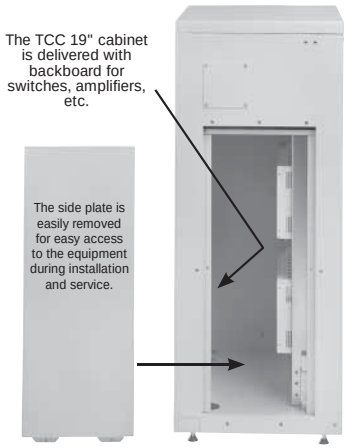
19” swing rack cabinet providing easy access and excellent overview

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

TYPE		TCC 19” cabinet with glass door
Art. No.		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





Triax TCC 19” & TMF 512

accessories

TYPE		Fan 230V	Protection grid
Art. No.		708020	708017
Dimension (H x W x D)	mm	120 x 120 x 38	Ø 115
Outer pack	pcs.	1	1

Fan and protection grid

TYPE		Thermostat
Art. No.		708028
Dimension (H x W x D)	mm	70 x 70 x30
Outer pack	pcs.	1

Thermostat

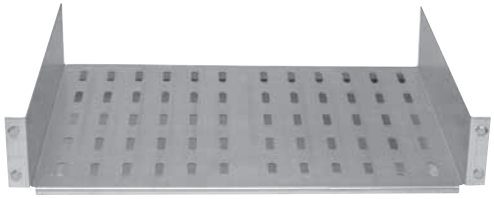
TYPE		4 Wheels with lock
Art. No.		737030
Dimension (H x W x D)	mm	Ø 74 on wheels
Outer pack	pcs.	1
Remarks		4 in a set

Set of wheels

TYPE		Set of screws
Art. No.		737040
Dimension (H x W x D)	mm	
Outer pack	pcs.	1
Remarks		10 nut bushings 10 M6x8 screws 10 plastic washers

Set of screews

TYPE		19” Shelf
Art. No.		251496
Dimension (H x W x D)	mm	
Outer pack	pcs.	1
Remarks		19“ shelf for satellite receiver for use together with e.g. the TCM 08 or TCH modulator modules



19” shelf

Multiswitches

TMU Unicable series
TMS 17xC and 17xT series
TMS 13xC and 13xT series
TMS 9xC series
TMS 5xC series
TMS 2xC/ TMS 5x series
TMM 5x cascadable
TMM 5x terminated
TMM 4x cascadable
TMS 9xP series
TMS 5xP series
TMP 9x series
TMP 5x series
TMPR 5 seriesx
TMS 55 tap/TMM splitter
TMS amplifiers
TMM launch amplifiers
THA 340E/TLA 340E amplifiers
TMS power supplies
TMM/TMS accessories

Multiswitches

| TMU Unicable Cascade

The Unicable multiswitch is cascadable and suitable for all common Quatro LNBs and secures unlimited reception of programs transmitted by a satellite. Moreover, there is a second output for connection of an additional receiver in standard LNB mode.

- Feeding of all existing satellite transponders including not yet occupied frequencies.
- Cascadable and HDTV-compatible
- Complies with the Unicable standard
- 4 SAT inputs + one terrestrial input
- Extra output for connection of an additional receiver in standard mode.
- SAT range with 10 dB gain.
- Superflat housing
- Power supply included

TMU 518

TMU 918

Technical data

Type:		TMU 518 Unicable	TMU 918 Unicable
Art. No:		307330	389049
Number of inputs		4 SAT, 1 TER	8 SAT, 1 TER
Insertion loss - trunkline TER	dB	3.0	3.0
Insertion loss - trunkline SAT	dB	3.0	3.0
Frequency range SAT	MHz	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862
Slope control TER	dB	10.0	10.0
Input level	dBµV	64-94	64-94
Gain SAT	dB	10.0	10.0
Isolation SAT to TER	dB	30	30
Isolation TER to SAT	dB	32	32
Isolation cross polarisation H/V	dB	30	30
Converted frequencies			
- Output 1 / 2 / 3 / 4		1076/1178/1280/1382	1076/1178/1280/1382
- Output 5 / 6 / 7 / 8			1484/1586/1688/1790
Outputs			
- Loopthrough Unicable SAT		4 x	8 x
- Loopthrough Unicable terr.		1 x	1 x
- Legacy - Standard-Receiver		1 x	2 x
- Unicable output SAT/terr. for 4/8 receivers		1 x	1 x
Output level SAT @ -35 dB IMD3	dBµV	100	100
Output level TER @ 60dB IMD3	dBµV	95	95
LNB current max.	mA	600	600
Line power voltage (TER)	V	12.0	12.0
Line power current (TER)	mA	50.0	50.0
Switch commands	V/kHz	13V/18V - 13V/22 kHz - 18V/22 kHz	13V/18V - 13V/22 kHz - 18V/22 kHz
Supply voltage	V/DC	20.0	20.0
Power supply	VAC	90-264	90-264
Power supply current	mA	600	940
Connectors		F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes
Temperature range	degrees	-20...+60	-20...+60
Dimensions (H x D x W)		203 x 19 x 139	196 x 47 x 163

Triax TMS 17x series is an easy-to-install multiswitch system for use where 4 satellite positions are required. A terrestrial input is available to allow terrestrial as well as satellite signals to be available on all subscriber outputs. TMS 17x has an active satellite signal path and a passive terrestrial signal path allowing a terrestrial return path if needed. Satellite position switching is done via DiSEqC signals from the subscriber set-top box.

Technical data

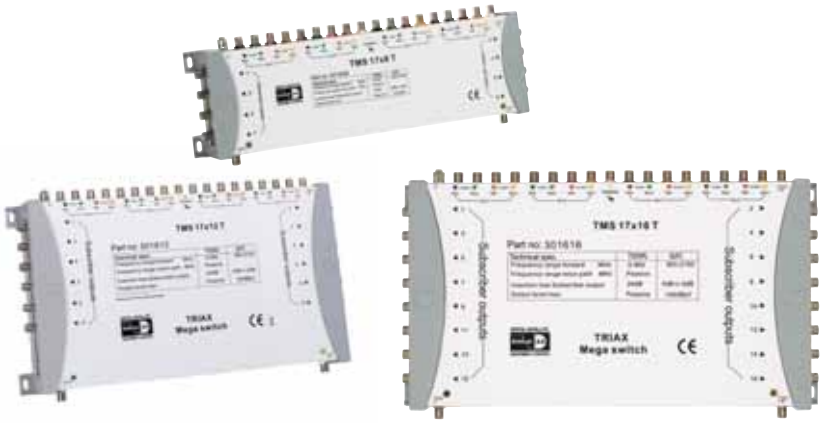
Type:		TMS 17x6C Cascadable	TMS 17x8C Cascadable	TMS 17x12C Cascadable	TMS 17x16C Cascadable
Art. No:		301506	301508	301512	301516
Number of inputs	pcs.	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Insertion loss - trunkline TER	dB	4.0	4.0	4.0	4.0
Insertion loss - trunkline SAT	dB	3.0	3.0	4.0	4.0
Number of outputs	pcs.	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Subscriber outputs	pcs.	6	8	12	16
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 [950-2150 MHz]	dB	0.0	0.0	- 2.0	- 2.0
Gain - TER [47-862 MHz]	dB	- 24.0	- 24.0	- 27.0	- 27.0
Isolation LNB to LNB	dB	35.0	30.0	35.0	35.0
Isolation SAT to TER	dB	30.0	30.0	30.0	30.0
Isolation TER to SAT	dB	20.0	20.0	20.0	20.0
Isolation cross polarisation H/V	dB	28.0	28.0	28.0	28.0
Isolation out-out SAT	dB	30.0	30.0	30.0	30.0
Isolation out-out TER	dB	25.0	25.0	25.0	25.0
Return loss SAT inputs	dB	12.0	12.0	12.0	12.0
Return loss SAT outputs	dB	12.0	12.0	12.0	12.0
Return loss TER inputs	dB	8.0	8.0	8.0	8.0
Return loss TER outputs	dB	8.0	8.0	8.0	8.0
Output level SAT @ -35 dB IMD3	dBµV	100	100	100	100
LNB power supply max.	A	1.3	1.3	1.3	1.3
Impedance input/output	Ohm	75	75	75	75
Switching voltage		13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst	13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst	13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst	13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst
Supply voltage	V/DC	15.0 (± 0.5)	15.0 (± 0.5)	15.0 (± 0.5)	15.0 (± 0.5)
Power supply		External	External	External	External
Power link (for amplifiers in line)		Yes	Yes	Yes	Yes
Connectors		F-female	F-female	F-female	F-female
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 - IF and TER inputs			Yes	Yes	Yes
Temperature range	degrees		0...+55	0...+55	0...+55
Dimensions (H x D x W)		125 x 55 x 355	125 x 55 x 355	215 x 55 x 355	215 x 55 x 355

Multiswitches

| TMS 17xT Terminated

Triax TMS 17x Multiswitches -
16 polarities (4 positions + 1 ter.)

Triax TMS 17x series is an easy-to-install multiswitch system for use where 4 satellite positions are required. A terrestrial input is available to allow terrestrial as well as satellite signals to be available on all subscriber outputs. TMS 17x has an active satellite signal path and a passive terrestrial signal path allowing a terrestrial return path if needed. Satellite position switching is done via DiSEqC signals from the subscriber set-top box.



Technical data

Type:		TMS 17x6T Terminated	TMS 17x8T Terminated	TMS 17x12T Terminated	TMS 17x16T Terminated
Art. No:		301606	301608	301612	301616
Number of inputs	pcs.	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Number of outputs	pcs.	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER	16 SAT, 1 TER
Subscriber outputs	pcs.	6	8	12	16
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 [950-2150 MHz]	dB	- 2.0	0.0	- 2.0	0.0
Gain - TER [47-862 MHz]	dB	- 21.0	- 22.0	- 24.0	- 24.0
Isolation LNB to LNB	dB	35.0	35.0	35.0	35.0
Isolation SAT to TER	dB	30.0	30.0	30.0	30.0
Isolation TER to SAT	dB	20.0	20.0	20.0	20.0
Isolation cross polarisation H/V	dB	28.0	28.0	28.0	28.0
Isolation out-out SAT	dB	30.0	30.0	30.0	30.0
Isolation out-out TER	dB	25.0	25.0	25.0	25.0
Return loss SAT inputs	dB	12.0	12.0	12.0	12.0
Return loss SAT outputs	dB	12.0	12.0	12.0	12.0
Return loss TER inputs	dB	8.0	8.0	8.0	8.0
Return loss TER outputs	dB	8.0	8.0	8.0	8.0
Output level SAT @ -35 dB IMD3	dBµV	100	100	100	100
LNB power supply max.	A	1.3	1.3	1.3	1.3
Impedance input/output	Ohm	75	75	75	75
Switching voltage		13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst	13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst	13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst	13V-18V - 13V/22kHz 18V/22kHz DiSEqC 2.0 Toneburst
Supply voltage	V/DC	15.0 (± 0.5)	15.0 (± 0.5)	15.0 (± 0.5)	15.0 (± 0.5)
Power supply		External	External	External	External
Power link (for amplifiers in line)		Yes	Yes	Yes	Yes
Connectors		F-female	F-female	F-female	F-female
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 - IF and TER inputs		Yes	Yes	Yes	Yes
Temperature range	degrees	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)		125 x 55 x 355	125 x 55 x 355	215 x 55 x 355	215 x 55 x 355

Triax TMS 13x Multiswitches - 12 polarities (3 positions + 1 ter.)

Triax TMS 13x series is an active and cascadable SAT-IF multi switch series for 3 SAT positions (12 SAT polarities + terrestrial) in versions with 8 to 24 subscriber outputs.Suitable for analogue and digital reception.

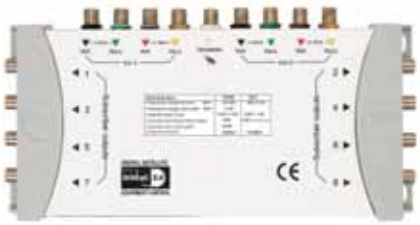
Technical data

Type:		TMS 13x8C Cascadable	TMS 13x12C Cascadable	TMS 13x16C Cascadable	TMS 13x24C Cascadable	TMS 13Term terminator
Art. No:		307408	307412	307416	307424	307417
Number of inputs	pcs.	12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER
Insertion loss - trunkline TER	dB	6.0 (± 1.0)	6.0 (± 1.0)	6.0 (± 1.0)	10.0 (± 1.0)	
Insertion loss - trunkline SAT	dB	7.0 (± 2.0)	7.0 (± 2.0)	7.0 (± 2.0)	10.0 (± 1.0)	
Number of outputs	pcs.	12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER	12 SAT, 1 TER
Subscriber outputs	pcs.	12	12	16	24	
Frequency range SAT	MHz	950-2150 (active)	950-2150 (active)	950-2150 (active)	950-2150 (active)	
Frequency range TER	MHz	5-862 (85 to 862 MHz with active return path)	5-862 (85 to 862 MHz with active return path)	5-862 (85 to 862 MHz with active return path)	5-862 (85 to 862 MHz with active return path)	
Return path TER	MHz	5 to 65 (switchable on/off)	5 to 65 (switchable on/off)	5 to 65 (switchable on/off)	5 to 65 (switchable on/off)	
Gain - SAT [950-2150 MHz]	dB	- 2.0 ... + 4.0	- 2.0 ... + 4.0	- 2.0 ... + 4.0	- 4.0 ... + 4.0	
Gain - TER [47-862 MHz]	dB	- 2.0 ... + 4.0	- 2.0 ... + 4.0	- 2.0 ... + 4.0	- 4.0 ... + 4.0	
Attenuation SAT						
Attenuation TER						
Equalization SAT						
Equalization TER						
Noise figure SAT						
Noise figure TER						
Isolation cross polarisation H/V	dB	> 28.0	> 28.0	> 28.0	> 28.0	
Isolation out-out SAT	dB	> 30.0	> 30.0	> 30.0	> 30.0	
Return loss	dB	> 10.0 (all ports)	> 10.0 (all ports)	> 10.0 (all ports)	> 10.0 (all ports)	
Output level SAT @ -35 dB IMD3	dBµV	95	95	95	95	
Output level TER @ 60dB IMD3	dBµV	85	85	85	85	
Impedance input/output	Ohm	75	75	75	75	75
Switching voltage	V/DC	Ver. 13.0/ Hor. 17.5 (± 1.0)	Ver. 13.0/ Hor. 17.5 (± 1.0)	Ver. 13.0/ Hor. 17.5 (± 1.0)	Ver. 13.0/ Hor. 17.5 (± 1.0)	
Supply voltage	V/DC	18.0 (± 0.5)	18.0 (± 0.5)	18.0 (± 0.5)	18.0 (± 0.5)	
Power supply		External	External	External	External	
Power supply current	mA	1600	1600	1600	1600	
Connectors		F-female	F-female	F-female	F-female	F-female
Colourcoding - IF and TER inputs		Yes	Yes	Yes	Yes	
Temperature range	deg.	0...+55	0...+55	0...+55	0...+55	
Dimensions (H x D x W)		202 x 53 x 334	202 x 53 x 334	246 x 53 x 334	340 x 53 x 334	53 x 53 x 334

Multiswitches

| TMS 9xC Cascade

Triax TMS 9x Multiswitches -
8 polarities (2 positions + 1 ter.)
For two satellite positions in smaller networks the Triax TMS 9X series is the right choice. For easy installation all inputs are coloured identical to Triax multicable colours. All multiswitches have integrated loop-in of VHF/UHF.



Technical data

Type:		TMS 9x4C Cascadable	TMS 9x6C Cascadable	TMS 9x8C Cascadable	TMS 9x12C Cascadable	TMS 9x16C Cascadable
Art. No:		300364	300366	300368	300372	300376
Number of inputs	pcs.	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Insertion loss - trunkline TER	dB	4.0 (± 1.0)	4.0 (± 1.0)	5.0 (± 1.0)	5.0 (± 1.0)	5.0 (± 1.0)
Insertion loss - trunkline SAT	dB	2.0 (± 2.0)	3.0 (± 2.0)	4.0 (± 2.0)	4.0 (± 2.0)	4.0 (± 2.0)
Number of outputs	pcs.	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Subscriber outputs	pcs.	4	6	8	8	16
Frequency range SAT	MHz	950-2150 (active)	950-2150 (active)	950-2150 (active)	950-2150 (active)	950-2150 (active)
Frequency range TER	MHz	5-862 (active)	5-862 (active)	5-862 (active)	5-862 (active)	5-862 (active)
Return path TER			5-65 (passive)	5-65 (passive)	5-65 (passive)	5-65 (passive)
Gain - SAT (with 5 dB slope)	dB	-3.0 to 2.0 (± 1.0)	-3.0 to 2.0 (± 1.0)	-3.0 to 2.0 (± 1.0)	-3.0	-3.0
Gain - TER (47-862 MHz)	dB	- 9.0	- 9.0	- 9.0	- 9.0	- 9.0
Isolation LNB to LNB	dB	35	35	35	35	35
Isolation SAT to TER	dB	28	28	28	28	28
Isolation TER to SAT	dB	23	23	23	23	23
Isolation cross polarisation H/V	dB	28	28	28	28	28
Isolation out-out SAT	dB	30	30	30	30	30
Isolation out-out TER	dB	28	28	28	28	28
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 @ -35 dB IMD3	dBµV	100	100	100	100	100
Output level TER @ 60dB IMD3	dBµV	88	88	88	88	88
Impedance input/output	Ohm	75	75	75	75	75
Switching	V/DC	14V/18V 14V/22kHz 18V/22kHz DiSEqC 2.0	14V/18V 14V/22kHz 18V/22kHz DiSEqC 2.0	14V/18V 14V/22kHz 18V/22kHz DiSEqC 2.0	14V/18V 14V/22kHz 18V/22kHz DiSEqC 2.0	14V/18V 14V/22kHz 18V/22kHz DiSEqC 2.0
Supply voltage	V/DC	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)
Power supply		External	External	External	External	External
Max. current pass per F-con.	mA	500	500	500	500	500
Connectors		F-female	F-female	F-female	F-female	F-female
Colourcoding - IF and TER inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	deg.	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)		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 TMS 5x Multiswitches -
4 polarities (2 positions + 1 ter.)
Suitable for building custom cascade system using TMS 55 TAP units and external power supply.

Technical data

Type:		TMS 5X6 Cascadable	TMS 5X8 Cascadable
Art. No:		307456	307458
Number of inputs	pcs.	4 SAT, 1 TER	4 SAT, 1 TER
Subscriber outputs	pcs.	6	8
Frequency range SAT	MHz	950-2150	950-2150
Frequency range TER	MHz	5-862 / 85 to 862MHz with passive return path	5-862 / 85 to 862MHz with passive return path
Return path TER	MHz	5-65	5-65
Through loss - Trunk SAT		4.0 (± 1.0)	7.0 (± 1.0)
Through loss - Trunk TER		4.0 (± 1.0)	6.0 (± 1.0)
Gain - SAT [950-2150 MHz]	dB	-2.0 ... +4.0	-2.0 ... +4.0
Gain - TER [47-862 MHz]	dB	-2.0 ... +4.0	-2.0 ... +4.0
Input polarity gain control SAT	dB	0, 6, 12 or 6...12	0, 6, 12 or 6...12
Isolation cross polarisation H/V	dB	> 28.0	> 28.0
Isolation out-out SAT	dB	> 30.0	> 30.0
Return loss SAT inputs	dB	> 10.0	> 10.0
Return loss SAT outputs	dB	> 10.0	> 10.0
Return loss TER inputs	dB	> 10.0	> 10.0
Return loss TER outputs	dB	> 10.0	> 10.0
Return loss TAP outputs	dB	> 10.0	> 10.0
Impedance input/output	Ohm	75	75
Switching	V/DC	13V (± 1.0)/ 17.5V (± 1.0)	13V (± 1.0)/ 17.5V (± 1.0)
Supply voltage	V/DC	18.0 (± 1.0)	18.0 (± 1.0)
Max. current	mA	350	350
Connectors		F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes
Temperature range	degrees	0...+55	0...+55
Dimensions (H x D x W)		150 x 45 x 182	150 x 45 x 182

Multiswitches

| TMS 2xC Cascade & TMS 5x Single, ext. PSU

TMS 2x Multiswitches
2 polarities (1 SAT position), no TER.
Cascadable system for many users. Simple and easy to install. For external power supply.

Triax TMS 5x Multiswitches
4 polarities (2 positions + 1 ter.)
Suitable for building custom cascade system using TMS 55 TAP units and external power supply.

Technical data

Type:		TMS 2X4C Cascadable	TMS 2X8C Cascadable	TMS 5X4 Single
Art. No:		300274	300278	300314
Number of inputs	pcs.	2 SAT	2 SAT	4 SAT, 1 TER
Insertion loss - trunkline SAT	dB	3.5	4.0	
Subscriber outputs	pcs.	4	8	4
Frequency range SAT	MHz	950-2150	950-2150	950-2150
Frequency range TER	MHz			47-862
Gain - SAT [950-2150 MHz]	dB	- 2.0	- 2.0	- 6.0
Gain - TER [47-862 MHz]	dB			4.0
Noise figure SAT	dB	6.0	6.0	
Isolation LNB to LNB	dB	30	30	
Isolation trunk to trunk	dB	40	40	
Isolation SAT to TER	dB			22
Isolation TER to SAT	dB			22
Isolation cross polarisation H/V	dB	30	30	25
Isolation out-out SAT	dB			30
Isolation out-out TER	dB			30
Return loss SAT inputs	dB	12	12	12
Return loss SAT outputs	dB	12	12	7
Return loss TER inputs	dB			11
Return loss TER outputs	dB			7
Return loss TAP outputs	dB	10	10	
Output level SAT @ -35 dB IMD3	dBµV	100	100	100
Output level TER @ 60dB IMD3	dBµV			88
Impedance input/output	Ohm	75	75	75
Switching	V/DC	13V/18V - 13V/22kHz 18V/22kHz	13V/18V - 13V/22kHz 18V/22kHz	13V/18V - 13V/22kHz 18V/22kHz
Supply voltage	V/DC	10.0 - 18.0	10.0 - 18.0	15.0 (± 1.0)
Power supply		External	External	External
Max. current @ 13 V/18V	kg	< 80	< 80	
Max. current to each H/V LNB	mA	< 500	< 500	
Max. current pass per F-connector	mA			600
Input voltage	dBµV	40-90	40-90	
Connectors		F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes
Temperature range	degrees	-20...+60	-20...+60	0...+55
Dimensions (H x D x W)		90 x 51 x 80	90 x 51 x 80	103 x 51 x 145

TMM 5x cascadable multiswitches - few to many users.
4 satellite polarities and 1 TERrestrial input, combined output. Wide range of launch and line amplifiers available

Technical data

Type:		TMM 5x4 Cascadable	TMM 5x8 Cascadable	TMM 5x12 Cascadable	TMM 5x16 Cascadable
Art. No:		305314	305318	305312	305316
Number of inputs	pcs.	4 x SAT, 1 x TERR	4 x SAT, 1 x TERR	4 x SAT, 1 x TERR	4 x SAT, 1 x TERR
Max. input level - SAT (IMD3 - 35dB)	dBµV	117.0	117.0	119.0	119.0
Max. input level - TER (IMD3 - 60dB)	dBµV	110.0	107.0	109.0	109.0
Number of outputs	pcs.	4 x SAT, 1 x TERR	4 x SAT, 1 x TERR	4 x SAT, 1 x TERR	4 x SAT, 1 x TERR
Subscriber outputs	pcs.	4	8	12	16
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150
Tap loss SAT	dB	10.0	10.0	12.0	12.0
Tap loss TER	dB	10.0	10.0	12.0	12.0
Through loss - Trunk SAT	dB	1.5	2.5	2.5	2.5
Through loss - Trunk TER	dB	1.5	2.5	3.0	3.0
Input polarity gain control SAT	dB	4 x 12.0	4 x 12.0	4 x 12.0	4 x 12.0
Input polarity gain control TER	dB	1 x 12.0	1 x 12.0	1 x 12.0	1 x 12.0
Noise figure SAT	dB	< 8.0	< 8.0	< 8.0	< 8.0
Isolation SAT to TER	dB	35.0	35.0	30.0	30.0
Isolation TER to SAT	dB	35.0	35.0	30.0	30.0
Isolation cross polarisation H/V	dB	30.0	30.0	28.0	28.0
Isolation out-out SAT	dB	30.0	30.0	30.0	30.0
Isolation out-out TER	dB	30.0	30.0	30.0	30.0
Return loss SAT inputs	dB	12.0	12.0	12.0	12.0
Return loss SAT outputs	dB	12.0	12.0	12.0	12.0
Return loss TER inputs	dB	12.0	12.0	12.0	12.0
Return loss TER outputs	dB	12.0	12.0	12.0	12.0
Return loss switch out - SAT	dB	10.0	10.0	10.0	10.0
Return loss switch out - TER	dB	10.0	10.0	10.0	10.0
Output level SAT @ -35 dB IMD3	dBµV	95.0	95.0	95.0	95.0
Output level TER @ 60dB IMD3	dBµV	88.0	88.0	88.0	88.0
Line power voltage (TER)	V/mA	12.0/50.0	12.0/50.0	12.0/50.0	12.0/50.0
Switch commands		13V/18V - 13V-22kHz - 18V-22kHz - DiSEqC 2.0			
Supply voltage	V/DC	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)
Power supply current	mA	< 15.0	< 15.0	< 15.0	< 15.0
Power connector		2 x 1.3	2 x 1.3	2 x 1.3	2 x 1.3
Max. current - each output	mA	< 150.0	< 150.0	< 150.0	< 150.0
Connectors		F-female	F-female	F-female	F-female
Through voltage TER	mA	50	50	50	50
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes
Temperature range	deg.	0...50	0...50	0...50	0...50
Dimensions (H x D x W)		130 x 140 x 38	220 x 140 x 38	220 x 140 x 38	220 x 140 x 38

Multiswitches

| TMM 5x Terminated

TMM 5x cascadable multiswitches - few to many users.
4 satellite polarities and 1 TERrestrial input, combined output. Wide range of launch and line amplifiers available

Technical data

Type:		TMM 5x12 Terminated
Art. No:		305317
Number of inputs	pcs.	4 x SAT, 1 x TERR
Max. input level - SAT (IMD3 - 35dB)	dBµV	119.0
Max. input level - TER (IMD3 - 60dB)	dBµV	109.0
Number of outputs	pcs.	4 x SAT, 1 x TERR
Subscriber outputs	pcs.	12
Frequency range SAT	MHz	950-2150
Tap loss SAT	dB	12.0
Tap loss TER	dB	12.0
Through loss - Trunk SAT	dB	2.5
Through loss - Trunk TER	dB	3.0
Input polarity gain control SAT	dB	4 x 12.0
Input polarity gain control TER	dB	1 x 12.0
Noise figure SAT	dB	< 8.0
Isolation SAT to TER	dB	30.0
Isolation TER to SAT	dB	30.0
Isolation cross polarisation H/V	dB	28.0
Isolation out-out SAT	dB	30.0
Isolation out-out TER	dB	30.0
Return loss SAT inputs	dB	12.0
Return loss SAT outputs	dB	12.0
Return loss TER inputs	dB	12.0
Return loss TER outputs	dB	12.0
Return loss switch out - SAT	dB	10.0
Return loss switch out - TER	dB	10.0
Output level SAT @ -35 dB IMD3	dBµV	95.0
Output level TER @ 60dB IMD3	dBµV	88.0
Line power voltage (TER)	V/mA	12.0/50.0
Switch commands		13V/18V - 13V-22kHz - 18V-22kHz - DiSEqC 2.0
Supply voltage	V/DC	15.0 (± 1.0)
Power supply current	mA	< 15.0
Power connector		2 x 1.3
Max. current - each output	mA	< 150.0
Connectors		F-female
Through voltage TER	mA	50
Colourcoding of IF and TER inputs		Yes
Temperature range	deg.	0...50
Dimensions (H x D x W)		220 x 140 x 38

TMM 5x cascadable multiswitches - few to many users.
4 satellite polarities, 1 SAT position. Versions for 8, 12 and 16 subscriber outputs. Adjustable attenuator per polarity (0-12 dB). L
ow power consumption. Small footprint, compact design, fits into tight spaces. 2-, 3- and 4-way DiSEqC bridger units with TER loop-through available to expand a one-position TMM system into a full 2-, 3-, or 4-satellite position reception system. Wide range of launch and line amplifiers available

Technical data

Type:		TMM 4x4 Cascadable	TMM 4x8 Cascadable	TMM 4x12 Cascadable	TMM 4x16 Cascadable
Art. No:		305324	305328	305322	305326
Number of inputs	pcs.	4 x SAT	4 x SAT	4 x SAT	4 x SAT
Max. input level - SAT (IMD3 - 35dB)	dBµV	117.0	117.0	119.0	119.0
Insertion loss - trunkline SAT	dB	1.5	2.5	2.5	2.5
Number of outputs	pcs.	4 x SAT	4 x SAT	4 x SAT	4 x SAT
Subscriber outputs	pcs.	4	8	12	16
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150
Tap loss SAT	dB	10.0	10.0	12.0	12.0
Input polarity gain control SAT	dB	4 x 12.0	4 x 12.0	4 x 12.0	4 x 12.0
Noise figure SAT	dB	< 8.0	< 8.0	< 8.0	< 8.0
Isolation cross polarisation H/V	dB	30.0	30.0	30.0	30.0
Isolation out-out SAT	dB	30.0	30.0	30.0	30.0
Return loss SAT inputs	dB	12.0	12.0	12.0	12.0
Return loss SAT outputs	dB	12.0	12.0	12.0	12.0
Return loss TAP outputs	dB	10.0	10.0	10.0	10.0
Output level SAT @ -35 dB IMD3	dBµV	95.0	95.0	95.0	95.0
Switch commands		13V/18V - 13V-22 kHz - 18V-22 kHz		13V/18V - 13V-22 kHz - 18V-22 kHz	
Switching voltage	V	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)
Supply voltage	V/DC	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)
Supply voltage from receiver	mA	< 90.0	< 90.0	< 90.0	< 90.0
Power supply current	mA	< 15.0	< 15.0	< 15.0	< 15.0
Power connector		2 x 1.3	2 x 1.3	2 x 1.3	2 x 1.3
External power supply		NO (DC on all 4 trunk lines via power inserter or amplifier)			
Max. current to each output (supplied by set top box)	mA	< 150.0	< 150.0	< 150.0	< 150.0
Connectors		F-female	F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes
Temperature range	deg.	0...50	0...50	0...50	0...50
Dimensions (H x D x W)		220 x 140 x 38	220 x 140 x 38	220 x 140 x 38	220 x 140 x 38

Multiswitches

| TMS 9xP Single w/PSU

TMS single/stand alone multi switch solutions - 4 to 16 users
- offer a flexible and cost efficient system for providing one or two position satellite reception and distribution in small and medium sized networks. Low power consumption.

Technical data

Type:		TMS 9x4P Stand alone	TMS 9x6P Stand alone	TMS 9x8P Stand alone	TMS 9x12P Stand alone	TMS 9x16P Stand alone
Art. No:		300344	300346	300348	300342	300347
Number of inputs	pcs.	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Number of outputs	pcs.	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Subscriber outputs	pcs.	4	6	8	12	16
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 [950-2150 MHz]	dB	2.0	2.0	2.0	0.0	0.0
Gain - TER [47-862 MHz]	dB	- 2.0	- 2.0	- 2.0	4.0	2.0
Isolation SAT to TER	dB	30	30	30	30	28
Isolation TER to SAT	dB	28	28	28	30	30
Isolation cross polarisation H/V	dB	28	28	28	25	25
Isolation out-out SAT	dB	30	30	30	30	30
Isolation out-out TER	dB	26	26	26	28	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 @ -35 dB IMD3	dBµV	100	100	100	100	100
Output level TER @ 60dB IMD3	dBµV	85	85	85	83	82
Impedance input/output	Ohm	75	75	75	75	75
Switching	V/DC	13V/18V - 13V/22kHz - 18V/22kHz - DiSEqC 2.0				
Supply voltage	V/DC	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)
Power supply		Included	Included	Included	Included	Included
Max. current pass per F-connector	mA	1000	1000	1000	1000	1000
Connectors		F-female	F-female	F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	deg.	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)		103 x 71x 359	103 x 71x 359	103 x 71x 359	103 x 71x 459	103 x 71x 559

TMS single/stand alone multi switch solutions - 4 to 16 users
- offer a flexible and cost efficient system for providing one or two position satellite reception and distribution in small and medium sized networks. Low power consumption.

Technical data

Type:		TMS 5x4P Stand alone	TMS 5x6P Stand alone	TMS 5x8P Stand alone	TMS 5x12P Stand alone	TMS 5x16P Stand alone
Art. No:		300324	300326	300328	300322	300327
Number of inputs	pcs.	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Number of outputs	pcs.	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Subscriber outputs	pcs.	4	6	8	12	16
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 [950-2150 MHz]	dB	- 6.0	- 5.0	- 5.0	- 5.0	- 3.0
Gain - TER [47-862 MHz]	dB	4.0	3.0	3.0	0.0	4.0
Isolation SAT to TER	dB	22	28	28	22	22
Isolation TER to SAT	dB	22	25	25	22	22
Isolation cross polarisation H/V	dB	25	28	28	25	25
Isolation out-out SAT	dB	30	35	35	35	35
Isolation out-out TER	dB	30	28	28	28	28
Return loss SAT inputs	dB	12	12	12	11	10
Return loss SAT outputs	dB	7	7	7	8	8
Return loss TER inputs	dB	11	11	11	11	10
Return loss TER outputs	dB	7	7	7	8	8
Output level SAT @ -35 dB IMD3	dBµV	100	100	100	100	100
Output level TER @ 60dB IMD3	dBµV	88	85	85	85	85
Impedance input/output	Ohm	75	75	75	75	75
Switching	V/DC	13V/18V - 13V/22kHz - 18V/22kHz				
Supply voltage	V/DC	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)	15.0 (± 1.0)
Power supply		Included	Included	Included	Included	Included
Max. current pass per F-connector	mA	600	600	600	600	600
Connectors		F-female	F-female	F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes	Yes
Temperature range	deg.	0...+55	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)		103 x 71x 249	103 x 71x 359	103 x 71x 359	103 x 71x 459	103 x 71x 559

Multiswitches

| TMP 9x Single w/PSU

Triax TMP 9x is an is an excellent solution to the dilemma in many stand-alone multi switch installations: The more subscribers you want to supply from one multi switch, the longer and different the cables will be. Using traditional multi switches this will present subscribers with very different signal levels, and can cause all kind of problems.
With adjustable attenuator per polarity (0-15 dB). Slide switch for long, medium and short subscriber cable runs (0, 6 and 12 dB). 8 satellite polarities and 1 terrestrial input, combined output. Integrated switch mode power supply. Versions for 4 to 32 subscriber outputs per unit.

Technical data

Type:		TMP 9X8 Stand alone	TMP 9X12 Stand alone	TMP 9X16 Stand alone
Art. No: (EU plug)		301630	301632	301634
Art. No: (UK plug)		305380	305382	305384
Number of inputs		8 SAT, 1 TER	8 SAT, 1 TER	8 SAT, 1 TER
Insertion loss - trunkline TER	dB	3.0	3.0	3.0
Insertion loss - trunkline SAT	dB	3.0	3.0	3.0
Subscriber outputs	pcs.	8	12	16
Frequency range SAT	MHz	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862
Slope control TER	dB	10.0	10.0	10.0
Input polarity gain control SAT	dB	4 x 10.0	4 x 10.0	4 x 10.0
Input polarity gain control TER	dB	15.0	15.0	15.0
Isolation SAT to TER	dB	32	32	32
Isolation TER to SAT	dB	32	32	32
Isolation cross polarisation H/V	dB	30	30	30
Isolation out-out SAT	dB	30	30	30
Isolation out-out TER	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 @ -35 dB IMD3	dBµV	100	100	100
Output level TER @ 60dB IMD3	dBµV	95	95	95
Output level control - long cable	dB	-	-	-
Output level control - med. cable	dB	-	-	-
Output level control - short cable	dB	-	-	-
LNB current max.	mA	600	600	600
Line power voltage (TER)	V	12.0	12.0	12.0
Line power current (TER)	mA	50	50	50
Switch commands		13V/18V - 13V /22 kHz - 18V /22 kHz - DiSEqC 2.0		
Supply voltage	V/DC	18.0	18.0	18.0
Power supply	VAC	180-264	180-264	180-264
Power supply current	A	1.5 (47-63 HZ)	1.5 (47-63 HZ)	1.5 (47-63 HZ)
Connectors		F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes
Temperature range	deg.	0...+55	0...+55	0...+55
Dimensions (H x D x W)		157 x 51 x 190	157 x 51 x 240	157 x 51 x 240

Triax TMP 9x is an is an excellent solution to the dilemma in many stand-alone multi switch installations: The more subscribers you want to supply from one multi switch, the longer and different the cables will be. Using traditional multi switches this will present subscribers with very different signal levels, and can cause all kind of problems.
With adjustable attenuator per polarity (0-15 dB). Slide switch for long, medium and short subscriber cable runs (0, 6 and 12 dB). 8 satellite polarities and 1 terrestrial input, combined output. Integrated switch mode power supply. Versions for 4 to 32 subscriber outputs per unit.

Technical data

Type:		TMP 9X24 Stand alone	TMP 9X32 Stand alone
Art. No: (EU plug)		301636	301638
Art. No: (UK plug)		305386	305388
Number of inputs		8 SAT, 1 TER	8 SAT, 1 TER
Insertion loss - trunkline TER	dB	0.0	0.0
Insertion loss - trunkline SAT	dB	2.0	2.0
Subscriber outputs	pcs.	24	32
Frequency range SAT	MHz	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862
Slope control TER	dB	10.0	10.0
Input polarity gain control SAT	dB	4 X 15.0	4 X 15.0
Input polarity gain control TER	dB	15.0	15.0
Isolation SAT to TER	dB	32	32
Isolation TER to SAT	dB	32	32
Isolation cross polarisation H/V	dB	30	30
Isolation out-out SAT	dB	30	30
Isolation out-out TER	dB	30	30
Return loss SAT inputs	dB	10	10
Return loss SAT outputs	dB	10	10
Return loss TER inputs	dB	12	12
Return loss TER outputs	dB	10	10
Output level SAT @ -35 dB IMD3	dBµV	100	100
Output level TER @ 60dB IMD3	dBµV	95	95
Output level control - long cable	dB	0.0	0.0
Output level control - med. cable	dB	6.0	6.0
Output level control - short cable	dB	12.0	12.0
LNB current max.	mA	600	600
Line power voltage (TER)	V	12.0	12.0
Line power current (TER)	mA	50	50
Switch commands		13V/18V - 13V /22 kHz - 18V /22 kHz - DiSEqC 2.0	
Supply voltage	V/DC	18.0	18.0
Power supply	VAC	180-264	180-264
Power supply current	A	1.5 (47-63 HZ)	1.5 (47-63 HZ)
Connectors		F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes
Temperature range	deg.	0...+55	0...+55
Dimensions (H x D x W)		157 x 51 x 340	157 x 51 x 340

Multiswitches

| TMP 5x Single w/PSU

Triax TMP 5x is an is an excellent solution to the dilemma in many stand-alone multi switch installations: The more subscribers you want to supply from one multi switch, the longer and different the cables will be. Using traditional multi switches this will present subscribers with very different signal levels, and can cause all kind of problems.
With adjustable attenuator per polarity (0-15 dB). Slide switch for long, medium and short subscriber cable runs (0, 6 and 12 dB). 4 satellite polarities and 1 terrestrial input, combined output. Integrated switch mode power supply. Versions for 4 to 32 subscriber outputs per unit.

Technical data

Type:		TMP 5X6 Stand alone	TMP 5X8 Stand alone	TMP 5X12 Stand alone
Art. No: (EU plug)		301643	301620	301622
Art. No: (UK plug)			305370	305372
Number of inputs		4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Insertion loss - trunkline TER	dB	3.0	3.0	3.0
Insertion loss - trunkline SAT	dB	3.0	3.0	3.0
Subscriber outputs	pcs.	6	8	12
Frequency range SAT	MHz	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862
Slope control TER	dB	10.0	10.0	10.0
Input polarity gain control SAT	dB	4 X 10.0	4 X 10.0	4 X 10.0
Input polarity gain control TER	dB	15.0	15.0	15.0
Isolation SAT to TER	dB	32	32	32
Isolation TER to SAT	dB	32	32	32
Isolation cross polarisation H/V	dB	30	30	30
Isolation out-out SAT	dB	30	30	30
Isolation out-out TER	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 @ -35 dB IMD3	dBµV	100	100	100
Output level TER @ 60dB IMD3	dBµV	95	95	95
Output level control - long cable	dB	-	-	-
Output level control - med. cable	dB	-	-	-
Output level control - short cable	dB	-	-	-
LNB current max.	mA	600	600	600
Line power voltage (TER)	V	12.0	12.0	12.0
Line power current (TER)	mA	50.0	50.0	50.0
Switch commands			13V/18V - 13V/22 kHz - 18V/22 kHz	
Supply voltage	V/DC	18.0	18.0	18.0
Power supply	VAC	180-264	180-264	180-264
Power supply current	A	1.5 (47-63 HZ)	1.5 (47-63 HZ)	1.5 (47-63 HZ)
Connectors		F-female	F-female	F-female
Colourcoding of IF and TER inputs		Ja	Yes	Yes
Temperature range	deg.	0...+55	0...+55	0...+55
Dimensions (H x D x W)		157 x 51 x 190	157 x 51 x 190	157 x 51 x 240

| TMP 5x Single w/PSU

Triax TMP 5x is an is an excellent solution to the dilemma in many stand-alone multi switch installations: The more subscribers you want to supply from one multi switch, the longer and different the cables will be. Using traditional multi switches this will present subscribers with very different signal levels, and can cause all kind of problems.
With adjustable attenuator per polarity (0-15 dB). Slide switch for long, medium and short subscriber cable runs (0, 6 and 12 dB). 4 satellite polarities and 1 terrestrial input, combined output. Integrated switch mode power supply. Versions for 4 to 32 subscriber outputs per unit.

Technical data

Type:		TMP 5x16 Stand alone	TMP 5X24 Stand alone	TMP 5X32 Stand alone
Art. No: (EU plug)		301624	301626	301628
Art. No: (UK plug)		305374	305376	305378
Number of inputs		4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Insertion loss - trunkline TER	dB	0.0	0.0	0.0
Insertion loss - trunkline SAT	dB	3.0	2.0	3.0
Subscriber outputs		16	24	32
Frequency range SAT	MHz	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862
Slope control TER	dB	10.0	10.0	10.0
Input polarity gain control SAT	dB	4 x 10.0	4 X 10.0	4 x 10.0
Input polarity gain control TER	dB	15.0	15.0	15.0
Isolation SAT to TER	dB	32	32	32
Isolation TER to SAT	dB	32	32	32
Isolation cross polarisation H/V	dB	30	30	30
Isolation out-out SAT	dB	30	30	30
Isolation out-out TER	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 @ -35 dB IMD3	dBµV	100	100	100
Output level TER @ 60dB IMD3	dBµV	95	95	95
Output level control - long cable	dB	-	0	0
Output level control - med. cable	dB	-	6	6
Output level control - short cable	dB	-	12	12
LNB current max.	mA	600	600	600
Line power voltage (TER)	V	12.0	12.0	12.0
Line power current (TER)	mA	50.0	50.0	50.0
Switch commands		13V/18V - 13V/22 kHz - 18V/22 kHz		
Supply voltage	V/DC	18.0	18.0	18.0
Power supply	VAC	180-264	180-264	180-264
Power supply current	A	1.5 (47-63 HZ)	1.5 (47-63 HZ)	1.5 (47-63 HZ)
Connectors		F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes
Temperature range	deg.	0...+55	0...+55	0...+55
Dimensions (H x D x W)		157 x 51 x 240	157 x 51 x 340	157 x 51 x 340

Multiswitches

| TMPR 5x Single, STB powered

Triax TMPR 5x multiswitches
These STB remote powered, stand alone multiswitches are designed to be installed where no landlord supply exists.

Technical data

Type:		TMPR 5X8 Remote powered	TMPR 5X12 Remote powered	TMPR 5X16 Remote powered
Art. No:		305297	305298	305299
Number of inputs	pcs.	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Insertion loss - TER	dB	0.0	0.0	0.0
Insertion loss - SAT	dB	2.0	2.0	2.0
Subscriber outputs	pcs.	8	12	16
Frequency range SAT	MHz	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862
Slope control TER	dB	10.0	10.0	10.0
Input polarity gain control SAT	dB	10.0	10.0	10.0
Input polarity gain control TER	dB	15.0	15.0	15.0
Isolation SAT to TER	dB	30	30	30
Isolation TER to SAT	dB	30	30	30
Isolation cross polarisation H/V	dB	30	30	30
Isolation out-out SAT	dB	30	30	30
Isolation out-out TER	dB	30	30	30
Return loss SAT inputs	dB	10.0	10.0	10.0
Return loss SAT outputs	dB	8.0	8.0	8.0
Return loss TER inputs	dB	10.0	10.0	10.0
Return loss TER outputs	dB	8.0	8.0	8.0
Output level SAT @ -35 dB IMD3	dBµV	101	101	101
Output level TER @ 60dB IMD3	dBµV	85	85	85
Impedance input/output	Ohm	75	75	75
Switching	V/DC	13V/18V - 13V/22kHz - 18V/22kHz		
Power supply		Remote power from set-top box		
Max. current pass per F-connector	mA	600	600	600
Connectors		F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes
Temperature range	deg.	0...+55	0...+55	0...+55
Dimensions (H x D x W)		147 x 56 x 170	197 x 56 x 170	197 x 56 x 170

Taps and Splitters
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. The MultiTAP product allows you to extend any cascade into very large systems using a passive TAP technique in the trunk, and 3 active TAPs on each level.

Technical data

Type:		TMS 55-12 TAP	TMS 55-15 TAP	TMS 55-20 TAP	TMS 55-24 TAP
Art. No:		300313	300333	300343	300353
Number of inputs	pcs.	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Number of outputs	pcs.	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Number of taps	pcs.	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2150
Frequency range TER	MHz	47-862	47-862	47-862	47-862
Tap loss SAT	dB	12.5	15.0	20.0	24.0
Tap loss TER	dB	12.5	15.0	20.0	24.0
Through loss SAT	dB	1.2 ±1.0	1.2 ±1.0	1.2 ±1.0	1.2 ±1.0
Through loss TER	dB	1.5 ±1.5	1.5 ±1.5	1.5 ±1.5	1.5 ±1.5
Isolation trunkline	dB	> 30.0	> 30.0	> 30.0	> 30.0
Connectors		F-female	F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes	Yes
Temperature range	degrees	0...+55	0...+55	0...+55	0...+55
Dimensions (H x D x W)		145 x 42 x 119	145 x 42 x 119	145 x 42 x 119	145 x 42 x 119

Multiswitches

| Trunk TAPs and splitters

Taps and Splitters
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The MultiTAP product allows you to extend any cascade into very large systems using a passive TAP technique in the trunk, and 3 active TAPs on each level.

Technical data

Type:		TMT 553 MultiTAP	TMS 510 Splitter	TMM 5x10 Splitter	TMM 4x10 Splitter
Art. No:		307450	300319	305319	305320
Number of inputs	F-con	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER	4 SAT, 1 TER
Number of trunk inputs		5			
Insertion loss - TER	dB	< 2			
Insertion loss - SAT	dB	< 2			
Insertion loss - trunkline TER	dB	Typ. +1...-3			
Insertion loss - trunkline SAT	dB	Typ. -4...0			
Number of outputs	F-con	4 SAT, 1 TER	8 SAT, 2 TER	2x4 SAT, 2x1 TER	2x4 SAT, 2x1 TER
Number of trunk outputs		5			
Number of taps		3			
Frequency range				47-2150	47-2150
Frequency range SAT	MHz	950-2150	950-2150		
Frequency range TER	MHz	5-862	47-862		
Through loss SAT			4.0 ±1.0	4.5	4.5
Through loss TER			6.0 ±1.0	4.3	4.3
Adjustable attenuator SAT	dB	0...15			
Adjustable attenuator TER	dB	0...15			
Isolation trunkline			> 30.0		
Isolation out-out SAT	dB			> 20.0	> 20.0
Isolation out-out TER	dB			> 22.0	> 22.0
Return loss SAT inputs	dB	10			
Return loss SAT outputs	dB	10		In 15.0/out 15.0	In 15.0/out 15.0
Return loss TER inputs	dB	10			
Return loss TER outputs	dB	10		In 15.0/out 15.0	In 15.0/out 15.0
Return loss switch out - SAT	dB	10			
Return loss switch out - TER	dB	10			
Impedance input/output	Ohm	75			
External power supply	V/DC	18			
Connectors		F-female	F-female	F-female	F-female
Colourcoding of IF and TER inputs			Yes	Yes	Yes
Temperature range			0...+55	0...+55	0...+55
Dimensions (H x D x W)		195 x 183 x 50	145 x 42 x 255		

A launch amplifier is the first amplifier in a multi switch installation, typically near the LNB and dish installation. It is designed to boost your signal to get more mileage in a long cascaded installation.
Using a line amplifier you can compensate for the cable losses further down the trunk lines of your satellite distribution system.
REMEMBER:
Due to the laws of physics there are limits to how many line amplifiers you can add into a multi switch cascade before your signal quality deterioates beyond practical use. You may want to check out the TMS 553 MultiTAP too.

Technical data

Type:		**TMS 2 IF-amplifier**	**TMS 55 IF-amplifier**	**TMS 55 IF-amplifier - UK**	**TMS 8 IF-amplifier**
Art. No:		300275	300315	300360	300425
Number of inputs	pcs.	2 SAT	4 SAT, 1 TER	4 SAT, 1 TER	8 SAT
Number of outputs	pcs.	2 SAT	4 SAT, 1 TER	4 SAT, 1 TER	8 SAT
Frequency range SAT	MHz	950-2150	950-2150	950-2150	950-2200
Frequency range TER			47-862	47-862	
Gain - SAT [950-2150 MHz]	dB	30.0	20-25 (± 2)	20-25 (± 2)	32-36 (4dB slope)
Gain - TER [47-862 MHz]			17 (± 2)	17 (± 2)	17 (± 2)
Adjustable attenuator SAT	dB	0-10	0-15	0-15	0-20
Adjustable attenuator TER			0-17	0-17	
Equalization SAT	dB	0-8	5 (fixed)	5 (fixed)	0-10
Equalization TER			7-12 (adjustable)	7-12 (adjustable)	
Noise figure SAT	dB	< 12.0	< 12.0	< 12.0	< 16.0
Isolation SAT to SAT					> 25
Return loss SAT	dB	10.0	10.0	10.0	10.0
Output level SAT @ -35 dB IMD3	dBµV	115	110	110	120
Output level TER - 47-862 MHz			105	105	
Impedance input/output	Ohm	75	75	75	75
Supply voltage	V/DC	18 (via DC plug)	18 (via DC plug or trunk)	18 (via DC plug or trunk)	15
Power supply		External power adaptor	External power adaptor	External power adaptor	Internal power supply
Connectors		F-female	F-female	F-female	F-female
DC input connector		F-female	Phone	Phone	
Control LEDs		2 x red			
Colourcoding of IF and TER inputs			Yes	Yes	Yes
Temperature range	degrees	0...+50	0...+50	0...+50	0...+50
Dimensions (H x D x W)			105 x 43 x 196	105 x 43 x 196	140 x 121 x 250

Multiswitches

| Trunk Launch- and Line- Amplifiers

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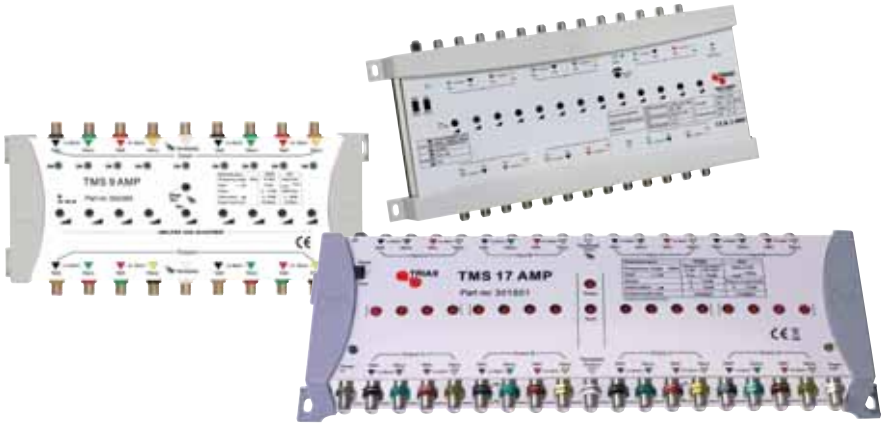

Technical data

Type:		TMS 9 IF-amplifier	TMS 13 IF-amplifier	TMS 17 IF-amplifier
Art. No:		300365	307415	301501
Number of inputs	pcs.	8 SAT, 1 TER	12 SAT, 1 TER	16 SAT, 1 TER + power link
Number of outputs	pcs.	8 SAT, 1 TER	12 SAT, 1 TER	16 SAT, 1 TER + power link
Frequency range SAT	MHz	950-2150	950-2150 (active)	950-2150
Frequency range TER	MHz	47-862	5-862 (85 to 862 MHz with active return path)	5-862
Return path TER	MHz		5 to 65 (switchable on/off)	5-65 (passive)
Gain - SAT [950-2150 MHz]	dB	14 (± 2)	18.0...24.0 (± 2.0)	18-24 (± 2)
Gain - TER [47-862 MHz]	dB	17 (± 2)	17.0 (± 2.0)	17
Attenuation SAT			0 - 10.0	
Attenuation TER			0 - 10.0	
Adjustable attenuator SAT	dB	0-20		0-10
Adjustable attenuator TER	dB	0-20		0-10
Equalization SAT	dB	5.0 (fixed)	0 - 6,0 (switchable)	0 or 6.0 (switchable)
Equalization TER	dB	2-15.0 (adjustable)	0 - 15.0	0-15.0 (adjustable)
Noise figure SAT			< 8.0	< 8.0
Noise figure TER			< 5.0	< 7.0
Isolation SAT to SAT				30.0
Isolation TER to SAT				22.0
Isolation cross polarisation H/V			> 28.0	
Isolation out-out SAT			> 30.0	
Return loss			> 10.0 (all ports)	
Return loss SAT	dB	10.0		10.0
Output level SAT @ -35 dB IMD3	dBµV	110	110	110
Output level TER @ 60dB IMD3			105	
Output level TER - 47-862 MHz	dBµV	105		105
Impedance input/output	Ohm	75	75	75
Switching voltage			Ver. 13.0/Hor. 17.5 (± 1.0)	
Supply voltage	V/DC	18	18.0 (± 0.5)	18 (via power link)
Power supply		External power adaptor	External	External power adaptor
Power supply current			1600	
Connectors		F-female	F-female	F-female
Colourcoding of IF and TER inputs		Yes	Yes	Yes
Temperature range	degrees	0...+50	0...+55	0...+55
Dimensions (H x D x W)		152 x 51 x 253	163 x 53 x 334	152 x 51 x 355

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Technical data

Type:		SAT Line amplifier	TMM 44 IF-launch amplifier	TMM TDA Terr. dist. amplifier	TMM TER Launch amplifier	TMM 55 IF-launch amplifier
Art. No:		300401	305300	305306	305315	305335
Input - TER [47-860 MHz]	pcs.			1		1
Input - BI/FM [47-108 MHz]	pcs.				1	
Input - BIII/DAB [170-230 MHz]	pcs.				1	
Input - UHF 1 [470-860 MHz]	pcs.				1	
Input - UHF 2 [470-860 MHz]	pcs.				1	
Input - SAT [950-2150 MHz]	pcs.	1	4			4
Number of outputs		1 SAT	4 SAT	1 TERR.	1 TERR.	4 SAT, 1 TERR.
Frequency range	MHz	47-2300				
Frequency range TER				47-862	47-862	47-862
Frequency range SAT			950-2150			950-2150
Gain - TER [47-862 MHz]	dB			30.0	40.0	17.0
Gain - SAT [950-2150 MHz]	dB	16-20	40.0			25.0
Slope control TER	dB			0-18		2-15
Slope control UHF 2	dB				0-10	
Slope control SAT	dB		0-10	0-5	0-10	0-5
Polarity gain control TER	dB			0-20	0-20	20
Polarity gain control SAT	dB		0-20			20
Isolation trunk to trunk	dB		35			32
Return loss TER	dB			10.0	10.0	10.0
Return loss SAT	dB	10.0	10.0	10.0	10.0	10.0
Output level TER @ 60dB IMD3	dBµV			118.0	118.0	105
Output level SAT @ -35 dB IMD3	dBµV	100	115			110.0
LNB power supply max.			2x14 / 2x18			2x14 / 2x18
LNB current max.			400			400
Impedance input/output	Ohm	75	75	75	75	75
Supply voltage	V				12/50	
Power consumption	mA		390	200	200	350
Line powering via in- or output			18/13 (± 0.5)			18/13 (± 0.5)
External power supply	V/DC	15V (via trunk)	18 (via 3.5 jack)	18 (via 3.5 jack)	18 (via 3.5 jack)	18 (via 3.5 jack)
Max. current to mast amplifier					12 (± 0.5)	
Connectors		F-female	F-female	F-female	F-female	F-female
DC switch (for injecting DC)			Switchable	Switchable	Switchable	Switchable
Through voltage TER				12 (± 0.5)	12 (± 0.5)	12 (± 0.5)
Temperature range			0...+55	0...+55	0...+55	0...+55

Multiswitches

| Trunk Launch- and Line- Amplifiers

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Technical data

Type:		THA 340E Launch IF-amplifier	TLA 340E Line IF-amplifier
Art. No:		300384	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
Adjustable attenuator SAT	dB	0-20 (on each sat input)	0-20 (on each sat input)
Slope adjustment SAT	dB		0...15
Equalizer SAT	dB	0-20 (on each sat input)	0-20 (on each sat input)
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 (IMD3 - 35 dB)	dBµV	120	120
Output level TER (IMD3 - 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

Power supply for your multi switch installation comes in many different falvours in terms of voltage,current supply and connector. Observe that the DC output connector may be different in different switch series. Make sure you get the one that fits the multi switch you are installing.

Technical data

Type:		TMS PSU Power supply	TMS 17 Power supply	TMS 1820 SM Power supply	TMM PSU Power supply	TMM PSI Power inserter
Art. No: (EU plug) Art. No: (UK plug)		336195	301504	307410 307411	305340 305310	305311
Number of inputs			4 SAT, 1 TERR.			4 SAT, 1 TERR.
Insertion loss - TER	dB					1.5
Insertion loss - SAT	dB					2.5
Number of outputs	pcs.	1	1	1	1	4 SAT, 1 TERR.
Frequency range	MHz	47-63	47-63		47-63	47-63
Frequency range SAT	MHz					47-2150
Isolation out-out SAT	dB					35
Isolation out-out TER	dB					35
Return loss SAT outputs	dB					11.0
Return loss TER outputs	dB					11.0
Output voltage	V/DC	15 (± 0.5)	15 (± 0.5)	18 (± 0.5)	18 (± 0.5)	3 x 14 / 2 x 18
LNB power supply max.						13V - 18V /500
Impedance input/output	Ohm	75	75	75	75	75
Supply voltage	V					18 (3.5 jack)
Power supply current	watt	12				
Cable lenght from supply	mm	1800	1800	1800	1800	
Max. current	A	1 x 0.6	1 x 2.0	1 x 2.0	1 x 1.9	
Input voltage	VAC	96 - 250	96 - 250	100-240	96 - 250	
Inputs (230V)	pcs.	1	1	1	1	
Connectors		RCA/phone plug	F-female	F-female	3,5mm DC plug	F-female
Through voltage TER	V					12.0 ± 0.5V /1.5
Colourcoding of IF and TER inputs		Yes	Yes		Yes	Yes
Temperature range	deg.	0...+50	0...+50	0...+50	0...+50	0...+50
Dimensions (H x D x W)		64 x 111 x 35	64 x 111 x 35		64 x 111 x 35	
Remarks			Incl. power cable, mounting bracket and power cable with F-male connector		Incl. power cable, mounting bracket and power cable with 3.5 mm mini jack	Power supply unit integrated

TMM-TMS accessories for multiswittches
Everything you need to make a professional installation.

Technical data

Type:		TMM LK Connection lead	TMM 75 ohm terminator	TMM RPL Power lead
Art. No:		305309	305349	305350
Connectors		F-male to F-male	F-female	
Remarks	pcs.	5 pack		1

Type:	TMS 5 Terminator Block	TMM F_F male quick connector	TMM earth bond bar 4 in
Art. No:	307452	370009	305344
Connectors	5 x female to male	F-male to F-male	4 + ground female to male
Remarks	Push-on terminator block		Push-on earth bond bar

TMM-TMS accessories for multiswittches
Everything you need to make a professional installation.

Technical data

Type:		TMM 2B - 2x1 DiSEqC bridge switch	TMM 3B - 3x1 DiSEqC bridge switch	TMM 4B - 4x1 DiSEqC bridge switch
Art. No:		305352	305353	305354
Number of Input	pcs.	2	3	4
Number of outputs	pcs.	1	1	1
Return loss	dB	> 10.0	> 10.0	> 10.0
Connectors		F-con (male/female)	F-con (male/female)	F-con (male/female)
Temperature range	°C	-30 ... +60	-30 ... +60	-30 ... +60
Dimensions (H x D x W)		66 x 22 x 80	66 x 22 x 113	66 x 22 x 149
Remarks		DiSEqC switch	DiSEqC switch	DiSEqC switch

Notes

| for your personal notes

Outdoor line amplifiers

HFA series

GLV 865 series

Indoor house amplifiers

GHV 900 series

GHV 500 series

IFA series

IFB series

IIB series

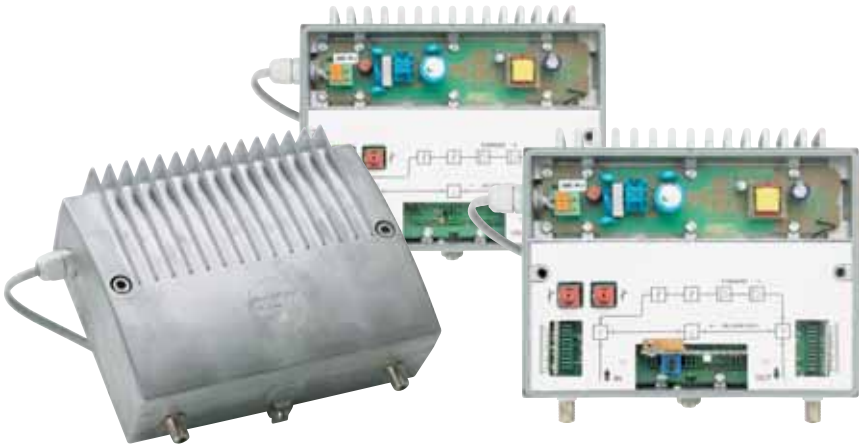
Type 02

Distribution Amplifiers

| HFA House Amplifier Series

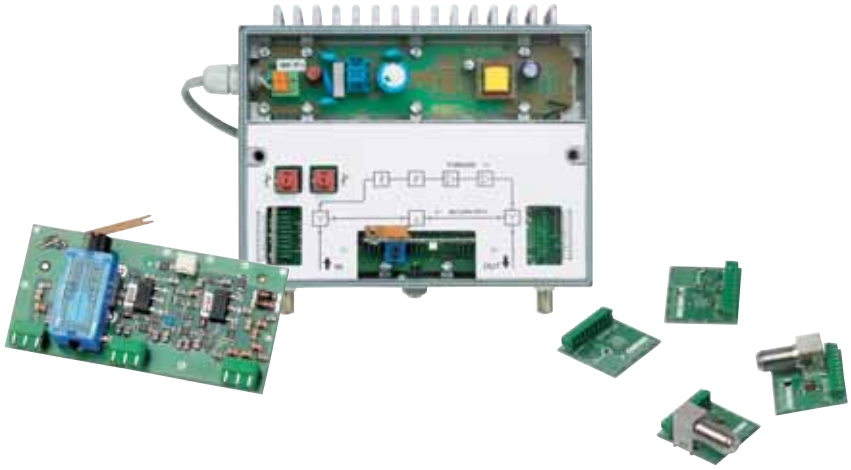
HFA Series, base units
Triax HFA mains powered amplifier
- different return path modules available, please order separately (see page 221).

More and more communal aerialsystems are being upgraded tofull service systems which besides TV and radio programmes also can transmit interactiveservices like e.g. quick internet via cable modem, multimedia dialogue services and cabletelephony.



Technical data

Type:		HFA 602 amplifier	HFA 603 amplifier	HFA 604 amplifier
Art. No:		324602	324603	324604
Frequency range - forward (depending on diplexmodules)	MHz	47/87-862	47/87-862	47/87-862
Frequency range - return path (depending on diplexmodules)	MHz	5-30/65	5-30/65	5-30/65
Gain	dB	22	30	40
Gain adjustable	dB	0 - 20	0 - 20	0 - 20
Gain return path	dB	passive -1.0/active 17.0	passive -1.0/active 17.0	passive -1.0/active 17.0
Number of inputs	pcs.	1	1	1
Number of outputs	pcs.	1	1	1
Noise figure	dB	< 8.5 (Typ. 7.5)	< 7.5 (Typ. 6.5)	< 7.0 (Typ. 6.0)
Equalization	dB	0-18	0-18	0-18
Linearity	dB	± 1.0	± 1.0	± 1.0
Linearity - return	dB	± 1.0	± 1.0	± 1.0
Return loss input (-1.5 dB/oct.)	dB	> 14.0 @ 40 MHz (min. 10)	> 14.0 @ 40 MHz (min. 10)	> 14.0 @ 40 MHz (min. 10)
Return loss output (-1.5 dB/oct.)	dB	> 14.0 @ 40 MHz (min. 10)	> 14.0 @ 40 MHz (min. 10)	> 14.0 @ 40 MHz (min. 10)
Return loss output return path	dB	> 14.0 @ 5 - 65 MHz	> 14.0 @ 5 - 65 MHz	> 14.0 @ 5 - 65 MHz
Impedance	Ohm	75	75	75
Output level IMD 2, EN 50083-3	dBµV	112.0	112.0	112.0
Output level IMD 3, EN 50083-5	dBµV	118.0	118.0	118.0
Output level CSO @ 60 dB IMD	dBµV	101.0 (1)	101.0 (1)	101.0 (1)
Output level CTB @ 60 dB IMD	dBµV	101.0 (1)	101.0 (1)	101.0 (1)
Shielding efficiency VHF	dB	100.0	100.0	100.0
Shielding efficiency UHF	dB	90.0	90.0	90.0
RF connector - input		F-con	F-con	F-con
RF connector - output		F-con	F-con	F-con
Power supply	VAC	230 ± 10%	230 ± 10%	230 ± 10%
Power supply type		Mains powered	Mains powered	Mains powered
Power consumption	W	7.5	7.5	7.5
Operation temperature	degrees	0...+55.0	0...+55.0	0...+55.0
Housing protection class	IP	65	65	65
Dimension accessories (H x D x W)	mm	145 x 70 x 170	145 x 70 x 170	145 x 70 x 170
Weight	kg	1.325	1.325	1.325
Certification		CE	CE	CE
Remarks		(1) EN 50083 Part 3 CTB (Composite triple beat) @ 60 dB IMD, CENELEC-raster 42 channels		



HFA Series - return path modules.

Selection of the frequency ramps by diplex filters MPxx.

Realization of return path gain by return path amplifier MA 617.

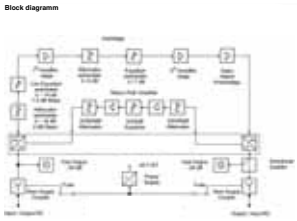
Technical data

Type:		MA 617 - return path amplifier	MP 6587 diplex filter	MP 6587T diplex filter	MD 3047T - diplex filter
Art. No:		324617	324683	324684	324682
Frequency range	MHz	5-65	5-65	5-65	5-30
Frequency range - forward	MHz		87-862	87-862	47-862
Gain	dB	17.0			
Attenuation - adjustable	dB	0-20			
RF connector - output				F-con	F-con
Test point	dB			-20	-20
Weight	kg		0.03	0.05	0.05
Packing size	pcs.	1	2	2	2

Distribution Amplifiers

| GLV Line and Distribution Amplifier series

GLV Line and Distribution amplifier
Reliable and flexibel for multi-dwelling systems (NE4 Networks).
Mains Power and line feeding.
PG11 connectors
Developed to comply with German cable operator specification requirements



Technical data

Type:		GLV 865 C1 Power amplifier	GLV 865 CL Power amplifier
Art. No:		323124	323126
Frequency range - forward (VHF I “on”/ RP “on”)	MHz	47/85-862	47/85-862
Frequency range - return (VHF I “off”, RP “on”)	MHz	5-65	5-65
Gain forward @ 862 MHz	dB	38/32	38/32
Gain forward - attenuator at input (2 dB step)	dB	0-16	0-16
Gain forward - interstage	dB	0/6	0/6
Gain return @ 60 MHz	dB	28	28
Attenuation return - at input	dB	0-6	0-6
Attenuation return - at output	dB	0/3/6/9	0/3/6/9
Attenuator forward - at input 1 (2 dB steps)	dB	0-16	0-16
Line equalizer forward - (2...3 dB steps)	dB	0-16	0-16
Slope interstage	dB	0/7	0/7
Line equalizer interstage	dB	0/3/5	0/3/5
Noise figure - forward (VHF I “on”)	dB	5.5	5.5
Noise figure - return (VHF I “off”)	dB	5.5	5.5
Return loss @ 40 MHz (-1.5 dB/octave)	dB	> 18	> 18
Output level IMR 2/IMR 3 @ 60 dB	dBµV	117/126	117/126
Output level CSO @ 60 dB (42 ch) Slope 0/7 dB	dBµV	112/114	112/114
Output level CTB @ 60 dB (42 ch) Slope0/7 dB	dBµV	112/114	112/114
Output level return IMR 2/IMR 3 @ 60 dB	dBµV	104/115	104/115
RF connector - input/output		PG 11	PG 11
RF connector - Test point input: bi-directional (F-type)	dB	-20	-20
RF connector - Test point output: directional (F-type)	dB	-20	-20
Supply voltage (50-60 Hz) (DC)	V V	230 /±10%	 32-65
Power consumption	W	13	13
Operation temperature	°C	-25...+55	-25...+55
Protection class		II, Protective	II, Protective
Housing protection class	IP	65	65
Dimension accessories (H x D x W)	mm	190 x 110 x 80	190 x 110 x 80
Weight	kg	2	2
Packing size	pcs.	1	1
Reference standards		EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2	
RoHS 2002/95/EG compliant		Yes	

GHV High-performance amplifier for small to mid-sized buildings with active/passive return path

The GHV 900 amplifier series features a 1 GHz downstream platform with a switchable active/passive return path.

16 step rotary switches and jumpers enable the reliable, uninterruptible and reproduceable setting of attenuation, equalization and cable simulation. Measurement ports at input and output also help to level out the forward path.

Technical data

Type:		GHV 920 amplifier w/return path	GHV 930 amplifier w/return path
Art. No:		323150	323158
Frequency range forward path (switchable)	MHz	47-1006 85-1006	47-1006 85-1006
Return path (switchable)	MHz	5-65	5-65
Gain forward path @ 1006 MHz	dB	20	30
Attenuation low/high jumper	dB	0-15	0-15
Input attenuator - 1dB step (rotary switch)	dB	0-15	0-15
Input equalizer - 1dB step (rotary switch)	dB	0-15	0-15
Interstage attenuator (jumper)	dB	0/6	0/6
Interstage equalizer/slope (jumper)	dB	0/3/7/10	0/3/7/10
Gain return path @ 60 MHz (jumper)	dB	20	22/28
Input attenuation - return path (rotary switch)	dB	0-15	0-15
Interstage equalizer/slope - return path (jumper)	dB	0/3/6/9	0/3/6/9
Linearity frequency response @ 47...1006 MHz	dB	± 1.0	± 1.0
Linearity frequency response@ 5.....65 MHz (return)	dB	± 1.0	± 1.0
Noise figure - forward (VHF I „on“)	dB	6.5	6.5
Noise figure - Return path (RP „active“)	dB	5.0	5.0
Forward - return loss @ 40 MHz, -1.5 dB/octave min.	dB	> 18	> 18
Return path - return loss @ 40 MHz, -1.5 dB/octave min.	dB	> 18	> 18
Output level forward - CSO (42 ch. 862 MHz) Slope 0/7 dB	dBµV	98/100	103/105
Output level forward - CTB Cenelec 42 ch. 862 MHz, Slope 0/7 dB	dBµV	98/100	103/105
Output level return path - 16 QAM (KDG1TS140 - C)	dBµV	120	120
Output level return path - 16 QAM (KDG1TS140 - D)	dBµV	-	-
RF connector - in-/output		F-female	F-female
RF connector - Test point input: bi-directional	dB	-20	-20
RF connector - Test point output: directional	dB	-20	-20
Power supply voltage (50-60 Hz)	V	190-264	190-264
Power consumption	W	< 5	< 7
Operating temperature	°C	-25...+55	
ESD / snuge protection	kV	10/1	
Protection class		II	
Housing protection degree	IP	20	
Dimensions W x H x D	mm	170 x 90 x 65	
Weight	kg	0.75	
Packing unit		1 pcs. carton box	
Product standards/safety/EMC		EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2	
RoHS 2002/95/EG compliant		Yes	

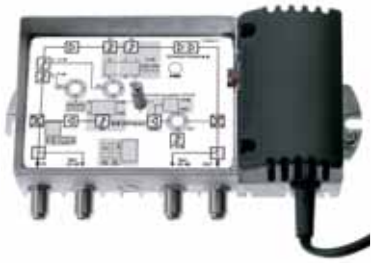
Distribution Amplifiers

| GHV Amplifier Series

GHV High-performance amplifier for small to mid-sized buildings with active/passive return path

The GHV 900 amplifier series features a 1 GHz downstream platform with a switchable active/passive return path.

16 step rotary switches and jumpers enable the reliable, uninterruptible and reproduceable setting of attenuation, equalization and cable simulation. Measurement ports at input and output also help to level out the forward path.



Technical data

Type:		GHV 935 amplifier w/return path	GHV 940 amplifier w/return path
Art. No:		323162	323166
Frequency range forward path (switchable)	MHz	47-1006 85-1006	47-1006 85-1006
Return path (switchable)	MHz	5-65	5-65
Gain forward path @ 1006 MHz	dB	35	40
Attenuation low/high jumper	dB	0-15	0-15
Input attenuator - 1dB step (rotary switch)	dB	0-15	0-15
Input equalizer - 1dB step (rotary switch)	dB	0-15	0-15
Interstage attenuator (jumper)	dB	0/6	0/6
Interstage equalizer/slope (jumper)	dB	0/3/7/10	0/3/7/10
Gain return path @ 60 MHz (jumper)	dB	24/30	26/32
Input attenuation - return path (rotary switch)	dB	0-15	0-15
Interstage equalizer/slope - return path (jumper)	dB	0/3/6/9	0/3/6/9
Linearity frequency response @ 47...1006 MHz	dB	± 1.0	± 1.0
Linearity frequency response@ 5.....65 MHz (return)	dB	± 1.0	± 1.0
Noise figure - forward (VHF I „on“)	dB	6.5	6.5
Noise figure - Return path (RP „active“)	dB	5.0	5.0
Forward - return loss @ 40 MHz, -1.5 dB/octave min.	dB	> 18	> 18
Return path - return loss @ 40 MHz, -1.5 dB/octave min.	dB	> 18	> 18
Output level forward - CSO (42 ch. 862 MHz) Slope 0/7 dB	dBµV	103/105	107/109
Output level forward - CTB Cenelec 42 ch. 862 MHz, Slope 0/7 dB	dBµV	103/105	107/109
Output level return path - 16 QAM (KDG1TS140 - C)	dBµV	120	-
Output level return path - 16 QAM (KDG1TS140 - D)	dBµV	-	120
RF connector - in-/output		F-female	F-female
RF connector - Test point input: bi-directional	dB	-20	-20
RF connector - Test point output: directional	dB	-20	-20
Power supply voltage (50-60 Hz)	V	190-264	190-264
Power consumption	W	< 9	< 11
Operating temperature	°C	-25...+55	
ESD / snuge protection	kV	10/1	
Protection class		II	
Housing protection degree	IP	20	
Dimensions W x H x D		170 x 90 x 65	
Weight	mm	0.75	
Packing unit	kg	1 pcs. carton box	
Product standards/safety/EMC		EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2	
RoHS 2002/95/EG compliant		Yes	

GHV High-performance amplifier for small to mid-sized buildings - only for downstream.

The GHV 500 amplifier series features a 1 GHz downstream platform for MATV and SMATV applications.

16 step rotary switch for setting of attenuation. Measurement ports at input and output.

Technical data

Type:		GHV 520 amplifier no return path	GHV 530 amplifier no return path
Art. No:		323138	323142
Frequency range forward path (switchable)	MHz	47-1006	47-1006
Gain forward path @ 1006 MHz	dB	21	30
Input attenuator - 1dB step (rotary switch)	dB	0-15	0-22.5
Interstage equalizer/slope (jumper)	dB	3 fix	3 fix
Linearity frequency response @ 47...1006 MHz	dB	± 1.0	± 1.0
Noise figure - forward	dB	5.5	4.5
Forward - return loss @ 40 MHz, -1.5 dB/octave min.	dB	> 18	> 18
Output level forward - CSO (42 ch. 862 MHz)	dBµV	101	102
Output level forward - CTB Cenelec 42 ch. 862 MHz, Slope 0/7 dB	dBµV	104	105
Output level return path - 16 QAM (KDG1TS140 - C)	dBµV	-	-
Output level return path - 16 QAM (KDG1TS140 - D)	dBµV	-	-
RF connector - in-/output		F-female	F-female
RF connector - Test point input: bi-directional	dB	-20	-20
RF connector - Test point output: directional	dB	-20	-20
Power supply voltage (50-60 Hz)	V	190-264	190-264
Power consumption	W	< 3	< 3
Operating temperature	°C	-25...+55	
Protection class		II	
Housing protection degree	IP	20	
Dimensions W x H x D	mm	170 x 90 x 65	
Weight	kg	0.75	
Packing unit		1 pcs. carton box	
Product standards/safety/EMC		EN 60728-3 Class 2 / EN 607728-11, EN 60065 / EN 50083-2	
RoHS 2002/95/EG compliant		Yes	

Distribution Amplifiers

| GHV Apartment Amplifier Series

GHV, Apartment Distribution Amplifier Series

All on board! Easy. Powerful. Economical.
- 4 output Apartment amplifier
- GHV 20M with return path
- GHV 24E without return path

Technical data

Type:		GHV 20 M amplifier 4 out / 1 return path	GHV 24 E amplifier 4 out / no return path
Art. No:		323028	323031
Frequency range	MHz	85-862	40-862 (1000)
Frequency range - return path	MHz	5-65	
Gain (1006MHz)	dB		
Gain @ 862 MHz output 1	dB	12.0	18.0
Gain @ 862 MHz output 2, 3, 4,	dB	10.5	17.0
Gain return @ 60 MHz on output 1 only	dB	- 1.0	
Attenuation	dB	0...20	0...20
Linearity forward - 40...862 MHz)	dB	1.5	1.5 (3.5)
Slope	dB	+ 1.0	+ 1.0
Noise figure	dB	6.0	4.5
Return loss @ 40 MHz (-1.5 dB/octave)	dB	> 14.0	> 14.0
Output level CSO @ 60 dB IMD	dBµV	87	91
Output level CTB @ 60 dB IMD	dBµV	90	91
Output level return path	dBµV	passive	
RF connector - input		F-female	F-female
RF connector - output		F-female	F-female
Power supply (50-60 Hz)	V	230 /± 10%	230 /± 10%
Power consumption	W	3.0	5.0
Operation temperature	°C	-25...+55	-25...+55
Protection class		II	II
Housing protection degree	IP	20	20
Dimension accessories (H x D x W)	mm	80 x 50 x 150	80 x 50 x 150
Weight	kg	0.650	0.650
Remarks		4 out - 1 return	4 outputs
Product standards/safety/EMC		EN 60728-3 Class 2 / EN 607728-11, EN 60065 / EN 50083-2	
RoHS 2002/95/EG compliant		Yes	

Distribution Amplifiers

| IFA indoor CATV distribution amplifiers

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) Radio/TV outlet sockets.
The amplifier supports community installations where the return path (upstream) is used for triple-play (TV, telephony, Internet). The cable modem required for this can be connected to any of the amplifier outputs.
All 4/8 signal outputs are fitted with self-terminating connectors that will secure an optimal termination of all outputs at all times. This means a perfect installation is possible even when installed by end-user.

Technical data

Type: Art. Nr:		**IFA 284 amplifier** 339284	**IFA 288 amplifier** 339288
Frequency range - forward (VHF I “off”, RP “on”)	MHz	87-1006	87-1006
Frequency range - forward (VHF I “on”, RP “off”)	MHz	-	-
Frequency range - return path	MHz	5-65	5-65
Number of inputs	pcs.	1	1
Number of outputs	pcs.	4	8
Gain (1006MHz)	dB	12.0	12.0
Gain return path	dB	- 1.0	- 1.0
Gain return @ 60 MHz	dB	26/32	26/32
Attenuation (3-step click)	dB	0/6/12	0/6/12
Tilt (3-step click)	dB	0/6/12	0/6/12
Liniarity	dB	± 1.0	± 1.0
Noise figure	dB	< 7.0	< 7.0
Return loss	dB	> 18.0	> 18.0
Max. input level	dBµV	60-78	60-78
Output level	dBµV	92.0	92.0
Output level CTB @ 60 dB IMD	dBµV	105/107	108/109
Output level return path	dBµV	104/107	104/107
Isolation (out/out)	dB	> 40.0	> 40.0
Impedance	Ohm	75	75
RF connector - input		F-female	F-female
RF connector - output		F-female	F-female
Power supply (50-60 Hz)	V	100-240 / 50-60	100-240 / 50-60
Power consumption	W	3.1	3.1
Operation temperature	°C	-25...+55	-25...+55
Protection class		II	II
Housing protection class		IP20	IP20
Dimension accessories (H x D x W)	mm	255 x 53 x 110	255 x 53 x 110
Weight	kg	0.650	0.650
Reference standards			

Distribution Amplifiers

| IFA indoor distribution amplifiers

IFA distribution amplifiers
- with 5-30 and 5-65 MHz return path

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

Technical data

Type:		IFA 212 amplifier w. return path	IFA 213 amplifier w. return path	IFA 218 amplifier	IFA 219 amplifier	IFA 220 amplifier w. 2 output
Art. No:		339212	339213	339218	339219	339220
Frequency range - forward	MHz	47-862	87-862	47-862	47-862	47-862
Frequency range - return path	MHz	5-30	5-65			
Gain @ 862 MHz	dB	0-20	0-20	11	0-20	0-17
Number of inputs	pcs.	1	1	1	1	1
Number of outputs	pcs.	1	1	1	1	2
Noise figure	dB	< 6.0 (typ. 4.5)	< 6.0 (typ. 5.5)	< 5.5	< 6.0	< 6.0
Equalization	dB	0-18	0-18		0-18	0-18
Linearity	dB	± 1.5	± 1.5	± 1.0	± 1.5	± 1.5
Linearity - return	dB	± 1.0	± 1.0			
Through loss return	dB	1.0	1.0			
Return loss input (-1.5 dB/octave)	dB	> 14.0 @ 47 MHz	> 12.3 @ 87 MHz	> 14.0 @ 47 MHz	> 14.0 @ 47 MHz	> 14.0 @ 47 MHz
Impedance	Ohm	75	75	75	75	75
Output level IMD 2, EN 50083-3	dBµV	104.0	104.0	104.0	104.0	100.0
Output level IMD 3, EN 50083-5	dBµV	112.0	112.0	114.0	112.0	108.0
Output level CSO @ 60 dB IMD	dBµV	96.0	96.0	96.0	96.0	92.0
Output level CTB @ 60 dB IMD	dBµV	96.0	96.0	96.0	96.0	92.0
Shielding efficiency VHF	dB	75	75	75	75	75
Shielding efficiency UHF	dB	65	65	65	65	65
RF connector - input		F-female	F-female	F-female	F-female	F-female
RF connector - output		F-female	F-female	F-female	F-female	F-female
Power supply	VAC	230 /± 10%	230 /± 10%	230 /± 10%	230 /± 10%	230 /± 10%
Power consumption	W	3.0	3.0	3.0	3.0	3.0
Operation temperature	deg.	0...+50	0...+50	0...+50	0...+50	0...+50
Dimension (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
Weight	kg	0.400	0.475	0.400	0.400	0.400
Certification		CE	CE	CE	CE	CE
Remarks		EN 50083 Part 3 CTB (Composite triple beat) @ 60 dB IMR, CENELEC-raster 42 channels				

IFB indoor amplifiers with F-connectors
IIB indoor amplifiers with IEC-connectors

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

Technical data

Type:		IFB 402 Indoor booster amplifier	IFB 403 Indoor booster amplifier	IFB 404 Indoor booster amplifier	IFB 405 Indoor booster amplifier
Art. Nr:		339402	339403	339404	339405
Frequency range		UHF/VHF	UHF/VHF	UHF/VHF	UHF/VHF
Gain	dB	6-16/0-10	6-16/6-16	7-17	15-25/15-25
Number of inputs	pcs.	1	1	1	1
Number of outputs	pcs.	2	2	2	2
Noise figure VHF	dB	< 4.0	< 4.0	< 4.0	< 4.0
Noise figure UHF	dB	< 5.0	< 5.0	< 5.0	< 5.0
Impedance	Ohm	75	75	75	75
Output level IMD 3, EN 50083-5	dBµV	2 X 107.0	2 X 107.0	2 X 107.0	2 X 105.0
RF connector - input		F-female	F-female	F-female	F-female
RF connector - output		F-female	F-female	F-female	F-female
Power supply	V	230	230	230	230
Power consumption	W	3	3	3	3
Operation temperature	degrees	0...+50	0...+50	0...+50	0...+50
Dimension (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
Weight	kg	0.400	0.400	0.400	0.400
Certification		CE	CE	CE	
Remarks		2 separat UHF and VHF attenuator	2 separat UHF and VHF attenuator	1 attenuator	2 separat UHF and VHF attenuator

Distribution Amplifiers

| IFB/IIB indoor booster amplifiers

IFB indoor amplifiers with F-connectors
IIB indoor amplifiers with IEC-connectors

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

Technical data

Type:		IIB 434 Indoor booster amplifier	Type 02 Indoor booster amplifier
Art. Nr:		339434	345100
Frequency range		VHF/UHF	VHF 2-12/UHF 21-69
Frequency	MHz	2-12 / 21-69	2-12 / 21-69
Gain	dB	6-16	
Gain - out 1/2	dB		15.0 / 15.0
Number of inputs	pcs.	1	1
Number of outputs	pcs.	2	2
Noise figure	dB	< 5.0	4.0
Impedance	Ohm	75	75
Output level IMD 3, EN 50083-5	dBµV	2 X 105.0	2 X 103.0
RF connector - input		IEC-female connector	IEC-female connector
RF connector - output		IEC-male connector	IEC-male connector
Power supply	V	230	230
Power consumption	W	3	3
Operation temperature	degrees	0...+50	0...+50
Dimension accessories (H x D x W)		61 x 44 x 118	
Weight	kg	0.400	0.300
Certification		CE	CE
Remarks		1 attenuator	Power adaptor included

Splitters, taps - power units

HTS/HTT/HTM - series 5-1000 MHz

ATS/ATT/ATM - series 5-1000 MHz

SCS/SCT/SCM - series 5-2400 MHz

ESS - series 5-2400 MHz

TFS - series 47-862 MHz

TDP - delivery point

Attenuators

Ground isolator

Line power supply

Taps and splitters

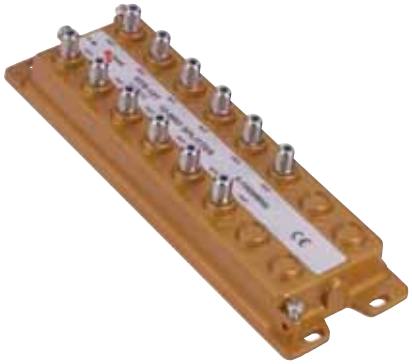
| H-tech - Splitters 5-1000 MHz

Triax splitters
HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTS 2 2 way splitter	HTS 3 3 way splitter	HTS 4 4 way splitter	HTS 6 6 way splitter
Art. No:		347002	347003	347004	347006
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	< 3.3	< 5.2	< 6.8	< 8.5
40-470 MHz	dB	< 3.3	< 5.5	< 7.0	< 9.0
470-860 MHz	dB	< 3.9	< 6.0	< 7.5	< 10.0
860-1000 MHz	dB	< 4.1	< 6.5	< 8.0	< 10.5
Isolation (tap-tap)					
5-40 Mhz	dB	> 28.0	> 26.0	> 26.0	> 26.0
40-470 MHz	dB	> 28.0	> 28.0	> 28.0	> 28.0
470-860 MHz	dB	> 25.0	> 24.0	> 24.0	> 24.0
860-1000 MHz	dB	> 25.0	> 24.0	> 24.0	> 24.0
Return loss (in-out)					
5-40 Mhz	dB	> 24.0 / > 24.0	> 24.0 / > 24.0	> 20.0 / > 22.0	> 22.0 / > 20.0
40-470 MHz	dB	> 22.0 / > 22.0	> 22.0 / > 22.0	> 20.0 / > 22.0	> 20.0 / > 20.0
470-860 MHz	dB	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0
860-1000 MHz	dB	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0
Shielding-power-dimensions					
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No
Connectors		F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75
Certification		CE	CE	CE	CE
Weight	kg	0.046	0.063	0.069	0.130
Dimensions (H x D x W)	mm	50 x 16 x 52	50 x 16 x 74	50 x 16 x 74	50 x 16 x 117



Triax splitters
HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTS 8 8 way splitter	HTS 12 12 way splitter	HTS 16 16 way splitter
Art. No:		347008	347912	347916
Frequency range	MHz	5-1000	5-1000	5-1000
Outputs	pcs.	8	12	16
Insertion loss (in-out)				
5-40 Mhz	dB	< 10.2	< 12.3	< 14.5
40-470 MHz	dB	< 10.6	< 12.5	< 14.5
470-860 MHz	dB	< 11.5	< 14.5	< 16.0
860-1000 MHz	dB	< 12.0	< 14.5	< 16.0
Isolation (tap-tap)				
5-40 Mhz	dB	> 26.0	> 26.0	> 26.0
40-470 MHz	dB	> 28.0	> 26.0	> 26.0
470-860 MHz	dB	> 24.0	> 23.0	> 23.0
860-1000 MHz	dB	> 24.0	> 23.0	> 23.0
Return loss (in-out)				
5-40 Mhz	dB	> 20.0 / > 20.0	> 17.0 / > 17.0	> 17.0 / > 17.0
40-470 MHz	dB	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0
470-860 MHz	dB	> 20.0 / > 20.0	> 17.0 / > 17.0	> 17.0 / > 17.0
860-1000 MHz	dB	> 20.0 / > 20.0	> 17.0 / > 17.0	> 17.0 / > 17.0
Shielding-power-dimensions				
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0
Power pass		No	No	No
Connectors		F-con	F-con	F-con
Impedance	Ohm	75	75	75
Certification		CE	CE	CE
Weight	kg	0.137	0.615	0.615
Dimensions (H x D x W)	mm	50 x 16 x 117	50 x 44 x 242	50 x 44 x 242

Taps and splitters

| H-tech - Splitters 5-1000 MHz

Triax splitters
HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTS 2DC 2 way splitter	HTS 3DC 3 way splitter	HTS 4DC 4 way splitter	HTS 6DC 6 way splitter	HTS 8DC 8 way splitter
Art. No:		347012	347013	347014	347016	347018
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs	pcs.	2	3	4	6	8
Insertion loss (in-out)						
5-40 Mhz	dB	< 3.3	< 5.2	< 6.8	< 8.5	< 10.2
40-470 MHz	dB	< 3.3	< 5.5	< 7.0	< 9.0	< 10.6
470-860 MHz	dB	< 3.9	< 6.0	< 7.5	< 10.0	< 11.5
860-1000 MHz	dB	< 4.1	< 6.5	< 8.0	< 10.5	< 12.0
Isolation (tap-tap)						
5-40 Mhz	dB	> 28.0	> 26.0	> 26.0	> 26.0	> 26.0
40-470 MHz	dB	> 28.0	> 28.0	> 28.0	> 28.0	> 28.0
470-860 MHz	dB	> 25.0	> 24.0	> 24.0	> 24.0	> 24.0
860-1000 MHz	dB	> 25.0	> 24.0	> 24.0	> 24.0	> 24.0
Return loss (in-out)						
5-40 Mhz	dB	> 24.0 / > 24.0	> 24.0 / > 24.0	> 20.0 / > 22.0	> 22.0 / > 20.0	> 20.0 / > 20.0
40-470 MHz	dB	> 22.0 / > 22.0	> 22.0 / > 22.0	> 20.0 / > 22.0	> 20.0 / > 20.0	> 20.0 / > 20.0
470-860 MHz	dB	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0
860-1000 MHz	dB	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0	> 20.0 / > 20.0
Shielding-power-dimensions						
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		DC-pass	DC-pass	DC-pass	DC-pass	DC-pass
Connectors		F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75
Certification		CE	CE	CE	CE	CE
Weight	kg	0.046	0.063	0.069	0.130	0.137
Dimensions (H x D x W)	mm	50 x 16 x 52	50 x 16 x 74	50 x 16 x 74	50 x 16 x 117	60 x 16 x 117

Triax taps - HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTT 1-6 1 tap	HTT 1-8 1 tap	HTT 1-12 1 tap	HTT 1-16 1 tap	HTT 1-20 1 tap	HTT 1-24 1 tap
Art. No:		347106	347108	347112	347116	347120	347124
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs		1	1	1	1	1	1
Insertion loss (in-out)							
5-40 Mhz	dB	< 2.2	< 1.8	< 1.0	< 0.6	< 0.6	< 0.6
40-470 MHz	dB	< 2.5	< 1.8	< 1.0	< 0.6	< 0.6	< 0.6
470-860 MHz	dB	< 2.8	< 2.4	< 1.2	< 1.0	< 1.0	< 1.0
860-1000 MHz	dB	< 3.0	< 2.6	< 1.5	< 1.2	< 1.1	< 1.1
Tap loss (in-tap)							
5-40 Mhz	dB	6.0 (± 1.2)	8.0 (± 0.75)	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)	24.0 (± 0.75)
40-470 MHz	dB	6.0 (± 1.0)	8.0 (± 0.75)	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)	24.0 (± 0.75)
470-860 MHz	dB	6.0 (± 1.0)	8.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)
860-1000 MHz	dB	6.0 (± 1.2)	8.0 (± 1.2)	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.2)	24.0 (± 1.2)
Isolation (out-tap)							
5-40 Mhz	dB	> 30.0	> 30.0	> 28.0	> 32.0	> 36.0	> 40.0
40-470 MHz	dB	> 28.0	> 30.0	> 30.0	> 30.0	> 35.0	> 35.0
470-860 MHz	dB	> 25.0	> 25.0	> 25.0	> 28.0	> 28.0	> 30.0
860-1000 MHz	dB	> 25.0	> 25.0	> 25.0	> 26.0	> 28.0	> 28.0
Return loss (in-out)							
5-40 Mhz	dB	> 22.0	> 22.0	> 22.0	> 24.0	> 24.0	> 24.0
40-470 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)							
5-40 Mhz	dB	> 20.0	> 20.0	> 22.0	> 24.0	> 24.0	> 24.0
40-470 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions							
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No	No	No
Connectors		F-con	F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75	75
Certification		CE	CE	CE	CE	CE	CE
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

Taps and splitters

| H-tech - Taps 5-1000 MHz

Triax taps - HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTT 2-8 2 tap	HTT 2-10 2 tap	HTT 2-12 2 tap	HTT 2-16 2 tap	HTT 2-20 2 tap
Art. No:		347208	347210	347212	347216	347220
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs		2	2	2	2	2
Insertion loss (in-out)						
5-40 Mhz	dB	< 3.3	< 2.2	< 2.0	< 0.8	< 0.6
40-470 MHz	dB	< 3.5	< 2.4	< 2.2	< 0.8	< 0.6
470-860 MHz	dB	< 3.8	< 2.8	< 2.6	< 1.0	< 0.8
860-1000 MHz	dB	< 4.0	< 3.0	< 2.8	< 1.2	< 1.0
Tap loss (in-tap)						
5-40 Mhz	dB	8.0 (± 1.0)	10.0 (± 0.75)	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)
40-470 MHz	dB	8.0 (± 1.0)	10.0 (± 0.75)	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)
470-860 MHz	dB	8.0 (± 1.0)	10.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)
860-1000 MHz	dB	8.0 (± 1.5)	10.0 (± 1.2)	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.2)
Isolation (tap-tap)						
5-40 Mhz	dB	> 25.0	> 30.0	> 25.0	> 25.0	> 28.0
40-470 MHz	dB	> 28.0	> 30.0	> 30.0	> 30.0	> 30.0
470-860 MHz	dB	> 25.0	> 26.0	> 26.0	> 26.0	> 26.0
860-1000 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
Isolation (out-tap)						
5-40 Mhz	dB	> 28.0	> 25.0	> 32.0	> 32.0	> 40.0
40-470 MHz	dB	> 28.0	> 30.0	> 32.0	> 32.0	> 32.0
470-860 MHz	dB	> 25.0	> 26.0	> 28.0	> 26.0	> 26.0
860-1000 MHz	dB	> 25.0	> 25.0	> 26.0	> 25.0	> 26.0
Return loss (in-out)						
5-40 Mhz	dB	> 24.0	> 22.0	> 22.0	> 22.0	> 24.0
40-470 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)						
5-40 Mhz	dB	> 24.0	> 22.0	> 22.0	> 22.0	> 24.0
40-470 MHz	dB	> 24.0	> 22.0	> 22.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions						
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No	No
Connectors		F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75
Certification		CE	CE	CE	CE	CE
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 - HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTT 3-10 3 tap	HTT 3-12 3 tap	HTT 3-16 3 tap	HTT 3-20 3 tap
Art. No:		347310	347312	347316	347320
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000
Outputs		3	3	3	3
Insertion loss (in-out)					
5-40 Mhz	dB	< 3.3	< 2.2	< 0.8	< 0.6
40-470 MHz	dB	< 3.5	< 2.5	< 1.1	< 0.8
470-860 MHz	dB	< 3.9	< 2.8	< 1.8	< 1.0
860-1000 MHz	dB	< 4.0	< 3.2	< 2.2	< 1.2
Tap loss (in-tap)					
5-40 Mhz	dB	10.0 (± 0.75)	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)
40-470 MHz	dB	10.0 (± 0.75)	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)
470-860 MHz	dB	10.0 (± 1.2)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)
860-1000 MHz	dB	10.0 (± 1.8)	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.2)
Isolation (tap-tap)					
5-40 Mhz	dB	> 28.0	> 28.0	> 28.0	> 28.0
40-470 MHz	dB	> 30.0	> 28.0	> 28.0	> 28.0
470-860 MHz	dB	> 26.0	> 26.0	> 26.0	> 26.0
860-1000 MHz	dB	> 25.0	> 25.0	> 25.0	> 25.0
Isolation (out-tap)					
5-40 Mhz	dB	> 32.0	> 35.0	> 32.0	> 36.0
40-470 MHz	dB	> 30.0	> 30.0	> 30.0	> 32.0
470-860 MHz	dB	> 25.0	> 28.0	> 28.0	> 30.0
860-1000 MHz	dB	> 25.0	> 25.0	> 26.0	> 28.0
Return loss (in-out)					
5-40 Mhz	dB	> 22.0	> 22.0	> 22.0	> 22.0
40-470 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)					
5-40 Mhz	dB	> 24.0	> 22.0	> 22.0	> 22.0
40-470 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions					
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No
Connectors		F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75
Certification		CE	CE	CE	CE
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

Taps and splitters

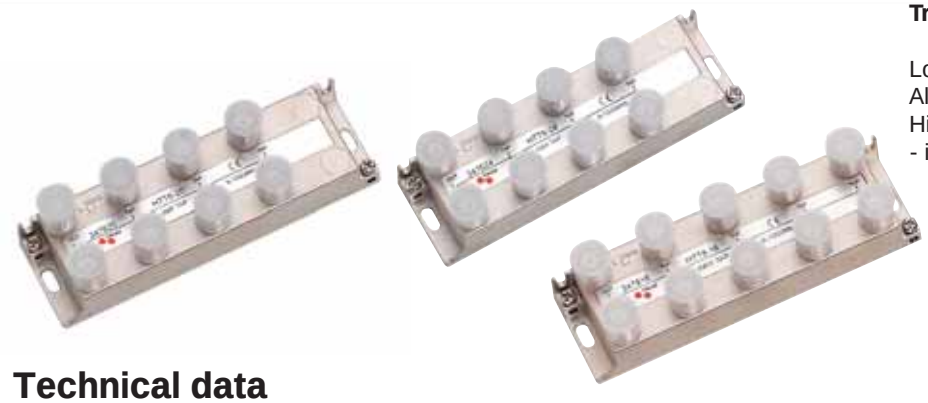
| H-tech - Taps 5-1000 MHz

Triax taps - HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTT 4-12 4 tap	HTT 4-16 4 tap	HTT 4-20 4 tap	HTT 4-24 4 tap	HTT 6-16 6 tap
Art. No:		347412	347416	347420	347424	347616
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs		4	4	4	4	6
Insertion loss (in-out)						
5-40 Mhz	dB	< 3.3	< 2.0	< 0.6	< 0.5	< 2.2
40-470 MHz	dB	< 3.5	< 2.2	< 0.8	< 0.6	< 2.4
470-860 MHz	dB	< 3.9	< 2.5	< 1.2	< 1.0	< 2.7
860-1000 MHz	dB	< 4.1	< 2.8	< 1.4	< 1.1	< 2.8
Tap loss (in-tap)						
5-40 Mhz	dB	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)	24.0 (± 0.75)	16.0 (± 1.0)
40-470 MHz	dB	12.0 (± 0.75)	16.0 (± 0.75)	20.0 (± 0.75)	24.0 (± 0.75)	16.0 (± 1.0)
470-860 MHz	dB	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)	16.0 (± 1.2)
860-1000 MHz	dB	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.2)	24.0 (± 1.2)	16.0 (± 1.5)
Isolation (tap-tap)						
5-40 Mhz	dB	> 28.0	> 30.0	> 30.0	> 30.0	> 28.0
40-470 MHz	dB	> 30.0	> 30.0	> 30.0	> 30.0	> 30.0
470-860 MHz	dB	> 26.0	> 28.0	> 28.0	> 28.0	> 26.0
860-1000 MHz	dB	> 24.0	> 26.0	> 26.0	> 26.0	> 25.0
Isolation (out-tap)						
5-40 Mhz	dB	> 30.0	> 35.0	> 35.0	> 40.0	> 40.0
40-470 MHz	dB	> 32.0	> 32.0	> 35.0	> 35.0	> 32.0
470-860 MHz	dB	> 28.0	> 28.0	> 30.0	> 30.0	> 26.0
860-1000 MHz	dB	> 26.0	> 26.0	> 28.0	> 30.0	> 26.0
Return loss (in-out)						
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 20.0
40-470 MHz	dB	> 22.0	> 24.0	> 24.0	> 24.0	> 20.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)						
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 20.0
40-470 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions						
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No	No
Connectors		F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75
Certification		CE	CE	CE	CE	CE
Weight	kg	0.092	0.092	0.092	0.092	0.134
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	60 x 16 x 70



Triax taps - HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTT 6-20 6 tap	HTT 6-24 6 tap	HTT 8-16 8 tap	HTT 8-20 8 tap	HTT 8-24 8 tap
Art. No:		347620	347624	347816	347820	347824
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs		6	6	8	8	8
Insertion loss (in-out)						
5-40 Mhz	dB	< 1.0	< 0.6	< 2.2	< 1.2	< 0.9
40-470 MHz	dB	< 1.2	< 0.8	< 2.5	< 1.4	< 1.0
470-860 MHz	dB	< 1.6	< 1.0	< 3.0	< 1.8	< 1.2
860-1000 MHz	dB	< 1.8	< 1.1	< 3.2	< 2.1	< 1.3
Tap loss (in-tap)						
5-40 Mhz	dB	20.0 (± 0.75)	24.0 (± 0.75)	16.0 (± 1.5)	20.0 (± 0.75)	24.0 (± 0.75)
40-470 MHz	dB	20.0 (± 0.75)	24.0 (± 0.75)	16.0 (± 1.0)	20.0 (± 0.75)	24.0 (± 0.75)
470-860 MHz	dB	20.0 (± 1.0)	24.0 (± 1.0)	16.0 (± 1.5)	20.0 (± 1.2)	24.0 (± 1.2)
860-1000 MHz	dB	20.0 (± 1.2)	24.0 (± 1.2)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
Isolation (tap-tap)						
5-40 Mhz	dB	> 28.0	> 28.0	> 28.0	> 28.0	> 28.0
40-470 MHz	dB	> 30.0	> 30.0	> 30.0	> 30.0	> 30.0
470-860 MHz	dB	> 26.0	> 26.0	> 26.0	> 26.0	> 26.0
860-1000 MHz	dB	> 25.0	> 25.0	> 26.0	> 26.0	> 26.0
Isolation (out-tap)						
5-40 Mhz	dB	> 42.0	> 45.0	> 40.0	> 40.0	> 40.0
40-470 MHz	dB	> 35.0	> 36.0	> 32.0	> 35.0	> 36.0
470-860 MHz	dB	> 28.0	> 30.0	> 28.0	> 30.0	> 30.0
860-1000 MHz	dB	> 28.0	> 30.0	> 28.0	> 30.0	> 30.0
Return loss (in-out)						
5-40 Mhz	dB	> 24.0	> 24.0	> 20.0	> 20.0	> 20.0
40-470 MHz	dB	> 22.0	> 24.0	> 20.0	> 22.0	> 22.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)						
5-40 Mhz	dB	> 24.0	> 24.0	> 20.0	> 20.0	> 20.0
40-470 MHz	dB	> 24.0	> 24.0	> 22.0	> 24.0	> 24.0
470-860 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
860-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions						
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No	No
Connectors		F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75
Certification		CE	CE	CE	CE	CE
Weight	kg	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

Taps and splitters

| H-tech - Multitaps 5-1000 MHz

Triax multitaps
HTS series [5-1000 MHz]

Low insertion loss.
All ports impedance 75 Ohm.
High isolation. Class A shielding
- ideel for your TV system.

Technical data

Type:		HTM 4-12T 4 tap	HTM 6-12T 6 tap	HTM 8-12T 8 tap
Art. No:		347413	347617	347810
Frequency range	MHz	5-1000	5-1000	5-1000
Outputs		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)
860-1000 MHz	dB			
Tap loss (in-tap)				
(in-tap 1-4) 5-860 MHz	dB	13.0/13.5/14.5/15.5 (± 1.5)	13.0/13.5/14.5/15.5 (± 1.5)	13.0/14.0/15.0/16.0 (± 1.5)
(in-tap 5-8) 5-860 MHz	dB		16.5/17.5 (± 1.5)	17.0/18.0/19.0/20.0 (± 1.5)
(in-tap 9-12) 5-860 MHz				
(in-tap 13-16) 5-860 MHz				
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
860-1000 MHz	dB			
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
860-1000 MHz	dB			
Return loss (in-out)				
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
860-1000 MHz	dB			
Shielding-power-dimensions				
Shielding effeciency	dB	> 75.0	> 75.0	> 75.0
Power pass		Yes	Yes	Yes
Connectors		F-con	F-con	F-con
Impedance	Ohm	75	75	75
Certification		CE	CE	CE
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

Professional range in splitters.
A-tech Splitters 5-1000 MHz.

Low insertion loss.
All ports impedance 75 Ohm.
High isolation.
Class A - Grade 1 shielding - ideel for your SMATV system.

Technical data

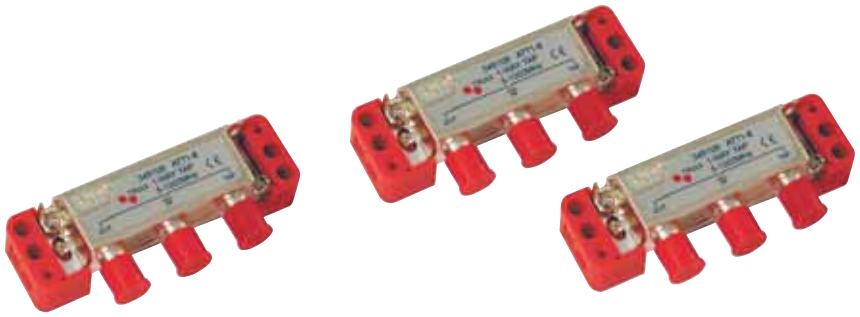
Type:		ATS 2 2 way splitter	ATS 3 3 way splitter	ATS 33 3 way splitter	ATS 4 4 way splitter	ATS 6 6 way splitter	ATS 8 8 way splitter
Art. No:		346002	346003	346010	346004	346006	346008
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs	pcs.	2	3	3 (Out 1/Out 2+3)	4	6	8
Insertion loss (in-out)							
5-40 Mhz	dB	< 3.3	< 5.1	< 3.3 / < 6.6	< 6.9	< 8.8	< 10.3
40-80 MHz	dB	< 3.4	< 5.2	< 3.5 / < 7.0	< 7.2	< 9.4	< 10.3
80-320 MHz	dB	< 3.6	< 5.5	< 3.6 / < 7.2	< 7.4	< 9.6	< 10.5
320-640 MHz	dB	< 3.8	< 5.8	< 3.7 / < 7.4	< 7.7	< 10.0	< 11.5
640-1000 MHz	dB	< 4.0	< 6.2	< 4.0 / < 8.0	< 8.0	< 10,2	< 12.0
Isolation (tap-tap)							
5-40 Mhz	dB	> 30.0	> 30.0	> 28.0/> 28.0	> 30.0	> 32.0	> 28.0
40-80 MHz	dB	> 28.0	> 26.0	> 28.0/> 28.0	> 26.0	> 27.0	> 28.0
80-320 MHz	dB	> 28.0	> 26.0	> 28.0/> 28.0	> 26.0	> 27.0	> 26.0
320-640 MHz	dB	> 28.0	> 26.0	> 28.0/> 28.0	> 26.0	> 27.0	> 26.0
640-1000 MHz	dB	> 28.0	> 26.0	> 26.0/> 26.0	> 26.0	> 27.0	> 25.0
Return loss (in-out)							
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0/> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0/> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0/> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0/> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0/> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions							
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No	No	No
Connectors		F-con	F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75	75
Certification		CE	CE	CE	CE	CE	CE
Weight	kg	0.070	0.085	0.085	0.106	0.138	0.135
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

SMATV - Taps and splitters

| A-tech - Taps 5-1000 MHz

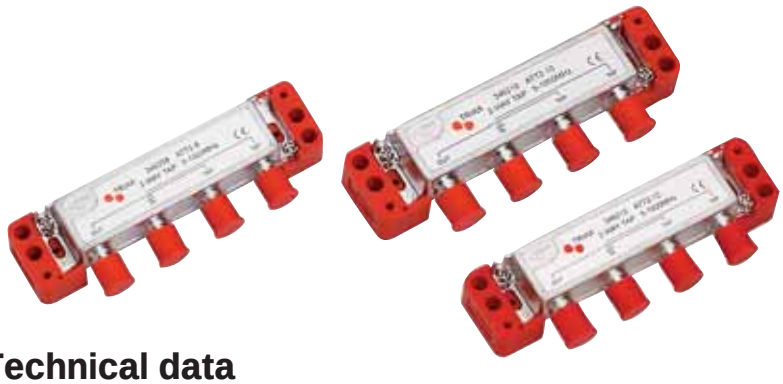
Professional range in taps.
A-tech taps 5-1000 MHz.

Low insertion loss.
All ports impedance 75 Ohm.
High isolation.
Class A - Grade 1 shielding
- ideel for your SMATV system.



Technical data

Type:		ATT 1-6 1 tap	ATT 1-8 1 tap	ATT 1-12 1 tap	ATT 1-16 1 tap	ATT 1-20 1 tap	ATT 1-24 1 tap	ATT 1-30 1 tap
Art. No:		346106	346108	346112	346116	346120	346124	346130
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs		1	1	1	1	1	1	1
Insertion loss (in-out)								
5-40 Mhz	dB	< 2.2	< 1.8	< 0.7	< 0.6	< 0.5	< 0.5	< 0.5
40-80 MHz	dB	< 2.4	< 1.9	< 0.8	< 0.7	< 0.6	< 0.6	< 0.6
80-320 MHz	dB	< 2.5	< 2.2	< 0.9	< 0.8	< 0.7	< 0.7	< 0.7
320-640 MHz	dB	< 2.6	< 2.3	< 1.0	< 0.9	< 0.8	< 0.8	< 0.8
640-1000 MHz	dB	< 2.7	< 2.4	< 1.1	< 1.0	< 0.9	< 0.9	< 0.9
Tap loss (in-tap)								
5-40 Mhz	dB	6.0 (± 1.2)	8.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	24.0 (± 0.5)	30.0 (± 0.5)
40-80 MHz	dB	6.0 (± 1.2)	8.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	24.0 (± 0.5)	30.0 (± 0.5)
80-320 MHz	dB	6.0 (± 1.2)	8.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	24.0 (± 0.5)	30.0 (± 0.5)
320-640 MHz	dB	6.0 (± 1.2)	8.0 (± 0.7)	12.0 (± 0.7)	16.0 (± 0.7)	20.0 (± 0.7)	24.0 (± 0.7)	30.0 (± 0.7)
640-1000 MHz	dB	6.0 (± 1.2)	8.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	24.0 (± 1.0)	30.0 (± 1.0)
Isolation (out-tap)								
5-40 Mhz	dB	> 28.0	> 28.0	> 28.0	> 32.0	> 36.0	> 42.0	> 48.0
40-80 MHz	dB	> 30.0	> 32.0	> 32.0	> 38.0	> 44.0	> 47.0	> 53.0
80-320 MHz	dB	> 29.0	> 30.0	> 30.0	> 35.0	> 41.0	> 44.0	> 50.0
320-640 MHz	dB	> 28.0	> 29.0	> 29.0	> 34.0	> 40.0	> 43.0	> 49.0
640-1000 MHz	dB	> 28.0	> 28.0	> 28.0	> 33.0	> 38.0	> 42.0	> 48.0
Return loss (in-out)								
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)								
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions								
Shielding effeciency	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-con	F-con	F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75	75	75
Certification		CE	CE	CE	CE	CE	CE	CE
Weight	kg	0.070	0.070	0.070	0.070	0.070	0.070	0.070
Dim. (H x D x W)	mm	38x16x74	38x16x74	38x16x74	38x16x74	38x16x74	38x16x74	38x16x74



Professional range in taps.
A-tech taps 5-1000 MHz.

Low insertion loss.
All ports impedance 75 Ohm.
High isolation.
Class A - Grade 1 shielding
- ideel for your SMATV system.

Technical data

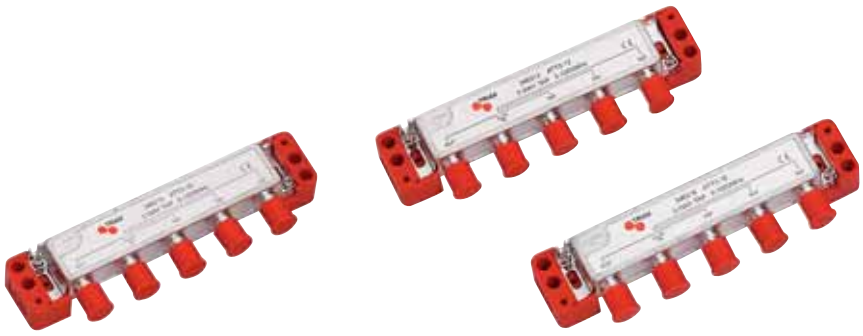
Type:		ATT 2-8 2 tap	ATT 2-10 2 tap	ATT 2-12 2 tap	ATT 2-16 2 tap	ATT 2-20 2 tap	ATT 2-24 2 tap
Art. No:		346208	346210	346212	346216	346220	346224
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs		2	2	2	2	2	2
Insertion loss (in-out)							
5-40 Mhz	dB	< 3.3	< 2.2	< 1.8	< 0.8	< 0.6	< 0.5
40-80 MHz	dB	< 3.5	< 2.4	< 2.0	< 0.9	< 0.7	< 0.6
80-320 MHz	dB	< 3.7	< 2.6	< 2.2	< 1.1	< 0.8	< 0.7
320-640 MHz	dB	< 3.9	< 2.8	< 2.4	< 1.3	< 1.0	< 0.8
640-1000 MHz	dB	< 4.0	< 2.9	< 2.6	< 1.4	< 1.1	< 0.9
Tap loss (in-tap)							
5-40 Mhz	dB	8.0 (± 0.5)	10.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	24.0 (± 0.5)
40-80 MHz	dB	8.0 (± 0.5)	10.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	24.0 (± 0.5)
80-320 MHz	dB	8.0 (± 0.5)	10.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	24.0 (± 0.5)
320-640 MHz	dB	8.0 (± 0.7)	10.0 (± 0.7)	12.0 (± 0.7)	16.0 (± 0.7)	20.0 (± 0.7)	24.0 (± 0.7)
640-1000 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)
Isolation (out-tap)							
5-40 Mhz	dB	> 29.0	> 33.0	> 34.0	> 32.0	> 36.0	> 40.0
40-80 MHz	dB	> 29.0	> 31.0	> 34.0	> 38.0	> 42.0	> 46.0
80-320 MHz	dB	> 28.0	> 29.0	> 32.0	> 35.0	> 39.0	> 43.0
320-640 MHz	dB	> 28.0	> 29.0	> 30.0	> 34.0	> 38.0	> 42.0
640-1000 MHz	dB	> 28.0	> 28.0	> 29.0	> 33.0	> 37.0	> 41.0
Return loss (in-out)							
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)							
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions							
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No	No	No
Connectors		F-con	F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75	75
Certification		CE	CE	CE	CE	CE	CE
Weight	kg	0.085	0.085	0.085	0.085	0.085	0.085
Dim. (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

SMATV - Taps and splitters

| A-tech - Taps 5-1000 MHz

Professional range in taps.
A-tech taps 5-1000 MHz.

Low insertion loss.
All ports impedance 75 Ohm.
High isolation.
Class A - Grade 1 shielding
- ideel for your SMATV system.



Technical data

Type:		ATT 3-10 3 tap	ATT 3-12 3 tap	ATT 3-16 3 tap	ATT 3-20 3 tap
Art. No:		346310	346312	346316	346320
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000
Outputs		3	3	3	3
Insertion loss (in-out)					
5-40 Mhz	dB	< 3.3	< 2.2	< 0.9	< 0.6
40-80 MHz	dB	< 3.5	< 2.3	< 1.0	< 0.8
80-320 MHz	dB	< 3.6	< 2.5	< 1.2	< 0.9
320-640 MHz	dB	< 3.8	< 2.7	< 1.4	< 1.0
640-1000 MHz	dB	< 3.9	< 2.8	< 1.6	< 1.2
Tap loss (in-tap)					
5-40 Mhz	dB	10.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)
40-80 MHz	dB	10.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)
80-320 MHz	dB	10.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)
320-640 MHz	dB	10.0 (± 0.7)	12.0 (± 0.7)	16.0 (± 0.7)	20.0 (± 0.7)
640-1000 MHz	dB	10.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)
Isolation (out-tap)					
5-40 Mhz	dB	> 33.0	> 38.0	> 34.0	> 38.0
40-80 MHz	dB	> 31.0	> 35.0	> 38.0	> 42.0
80-320 MHz	dB	> 29.0	> 32.0	> 35.0	> 39.0
320-640 MHz	dB	> 29.0	> 30.0	> 34.0	> 38.0
640-1000 MHz	dB	> 28.0	> 29.0	> 33.0	> 37.0
Return loss (in-out)					
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)					
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions					
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No
Connectors		F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75
Certification		CE	CE	CE	CE
Weight	kg	0.106	0.106	0.106	0.106
Dim. (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

Professional range in taps.
A-tech taps 5-1000 MHz.

Low insertion loss.
All ports impedance 75 Ohm.
High isolation.
Class A - Grade 1 shielding
- ideel for your SMATV system.

Technical data

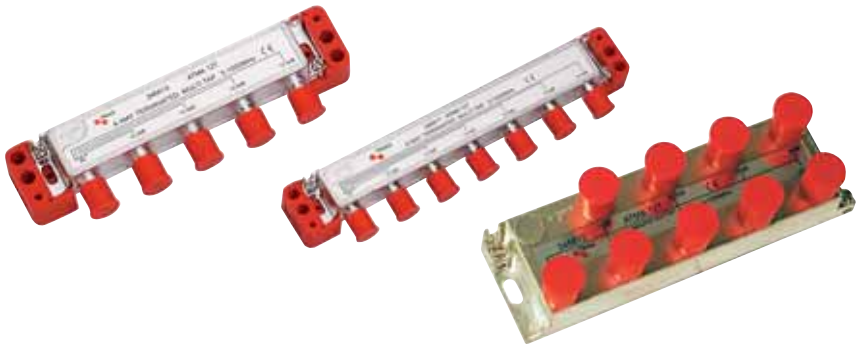
Type:		ATT 4-12 4 tap	ATT 4-16 4 tap	ATT 4-20 4 tap	ATT 5-12 5 tap	ATT 6-16 6 tap
Art. No:		346412	346416	346420	346512	346616
Frequency range	MHz	5-1000	5-1000	5-1000	5-1000	5-1000
Outputs		4	4	4	4	4
Insertion loss (in-out)						
5-40 Mhz	dB	< 3.3	< 1.9	< 0.6	< 3.6	< 2.1
40-80 MHz	dB	< 3.4	< 2.0	< 0.8	< 3.7	< 2.2
80-320 MHz	dB	< 3.6	< 2.2	< 0.9	< 3.8	< 2.4
320-640 MHz	dB	< 3.8	< 2.4	< 1.0	< 4.0	< 2.6
640-1000 MHz	dB	< 4.0	< 2.6	< 1.2	< 4.2	< 2.8
Tap loss (in-tap)						
5-40 Mhz	dB	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 1.0)
40-80 MHz	dB	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 1.0)
80-320 MHz	dB	12.0 (± 0.5)	16.0 (± 0.5)	20.0 (± 0.5)	12.0 (± 0.5)	16.0 (± 1.0)
320-640 MHz	dB	12.0 (± 0.7)	16.0 (± 0.7)	20.0 (± 0.7)	12.0 (± 1.0)	16.0 (± 1.0)
640-1000 MHz	dB	12.0 (± 1.0)	16.0 (± 1.0)	20.0 (± 1.0)	12.0 (± 1.0)	16.0 (± 1.2)
Isolation (out-tap)						
5-40 Mhz	dB	> 34.0	> 34.0	> 38.0	> 28.0	> 40.0
40-80 MHz	dB	> 35.0	> 38.0	> 42.0	> 28.0	> 38.0
80-320 MHz	dB	> 32.0	> 35.0	> 39.0	> 26.0	> 35.0
320-640 MHz	dB	> 30.0	> 34.0	> 38.0	> 25.0	> 34.0
640-1000 MHz	dB	> 29.0	> 33.0	> 37.0	> 23.0	> 33.0
Return loss (in-out)						
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (tap)						
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 22.0	> 22.0	> 22.0	> 22.0	> 22.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions						
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		No	No	No	No	No
Connectors		F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75
Certification		CE	CE	CE	CE	CE
Weight	kg	0.138	0.138	0.138	0.138	0.131
Dim. (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

SMATV - Taps and splitters

| A-tech - Multitaps 5-1000 MHz

Professional range in taps.
A-tech taps 5-1000 MHz.

Low insertion loss.
All ports impedance 75 Ohm.
High isolation.
Class A - Grade 1 shielding
- ideel for your SMATV system.



Technical data

Type:		ATM 4-12T 4 tap	ATM 6-12T 6 tap	ATM 8-12T 8 tap
Art. No:		346413	346617	346812
Frequency range	MHz	5-1000	5-1000	5-1000
Outputs		4	6	8
Tap loss (in-tap 1-2) / (in-tap 3-4)				
5-40 Mhz	dB	12.5 (± 1.0) / 12.5 (± 1.0)	12.5 (± 1.0) / 13.5 (± 1.0)	12.5 (± 1.0) / 13.5 (± 1.0)
40-80 MHz	dB	12.5 (± 1.0) / 12.5 (± 1.0)	12.5 (± 1.0) / 13.5 (± 1.0)	12.5 (± 1.0) / 13.5 (± 1.0)
80-320 MHz	dB	12.5 (± 1.0) / 12.5 (± 1.0)	12.5 (± 1.0) / 13.5 (± 1.0)	12.5 (± 1.0) / 13.5 (± 1.0)
320-640 MHz	dB	12.5 (± 1.2) / 12.5 (± 1.2)	12.5 (± 1.2) / 13.5 (± 1.5)	12.5 (± 1.2) / 13.5 (± 1.5)
640-1000 MHz	dB	12.5 (± 1.2) / 12.5 (± 1.5)	12.5 (± 1.2) / 13.5 (± 1.5)	12.5 (± 1.2) / 13.5 (± 1.5)
Tap loss (in-tap 5-6) / (in-tap 7-8)				
5-40 Mhz	dB		14.5 (± 1.0)	14.5 (± 1.0) / 15.5 (± 1.0)
40-80 MHz	dB		14.5 (± 1.0)	14.5 (± 1.0) / 15.5 (± 1.2)
80-320 MHz	dB		14.5 (± 1.0)	14.5 (± 1.0) / 15.5 (± 1.2)
320-640 MHz	dB		14.5 (± 1.5)	14.5 (± 1.5) / 15.5 (± 1.5)
640-1000 MHz	dB		14.5 (± 1.5)	14.5 (± 1.5) / 15.5 (± 1.5)
Isolation (tap-tap)				
5-40 Mhz	dB	> 36.0	> 36.0	> 34.0
40-80 MHz	dB	> 36.0	> 36.0	> 32.0
80-320 MHz	dB	> 36.0	> 36.0	> 30.0
320-640 MHz	dB	> 32.0	> 32.0	> 30.0
640-1000 MHz	dB	> 32.0	> 32.0	> 30.0
Return loss (tap)				
5-40 Mhz	dB	> 24.0	> 24.0	> 24.0
40-80 MHz	dB	> 24.0	> 24.0	> 24.0
80-320 MHz	dB	> 21.0	> 21.0	> 20.0
320-640 MHz	dB	> 20.0	> 20.0	> 20.0
640-1000 MHz	dB	> 20.0	> 20.0	> 20.0
Shielding-power-dimensions				
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0
Power pass		No	No	No
Connectors		F-con	F-con	F-con
Impedance	Ohm	75	75	75
Certification		CE	CE	CE
Weight	kg	0.138	0.138	0.138
Dim. (H x D x W)	mm	38 x 16 x 161	38 x 16 x 161	36 x 28 x 115

SCS-tech - Splitters 5-2400 MHz

SCS series of high quality splitters for your satellite system.

Technical data

Type:		SCS 2 2 way splitter	SCS 2B 2 way splitter	SCS 3 3 way splitter	SCS 4 4 way splitter	SCS 4B 4 way splitter	SCS 6 6 way splitter	SCS 8 8 way splitter
Art. No:		349802	349812	349803	349804	349814	349806	349808
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400	5-2400	5-2400	5-2400
Outputs		2	2	3	4	4	6	8
Insertion loss (in-out)								
5-40 Mhz	dB	< 4.5	< 4.5	< 6.3	< 7.7	< 7.7	< 10.6	< 11.6
40-1000 Mhz	dB	< 4.5	< 4.5	< 7.5	< 8.5	< 8.5	< 11.2	< 12.7
1000-1750 Mhz	dB	< 5.0	< 5.0	< 8.6	< 9.8	< 9.8	< 12.7	< 14.7
1750-2150 Mhz	dB	< 5.5	< 5.5	< 9.7	< 10.8	< 10.8	< 14.9	< 15.8
2150-2400 Mhz	dB	< 6.0	< 6.0	< 10.0	< 11.2	< 11.2	< 15.8	< 17.0
Isolation (tap-tap)								
5-40 Mhz	dB	> 20.0	> 20.0	> 25.0	> 26.0	> 26.0	> 25.0	> 25.0
40-1000 Mhz	dB	> 25.0	> 25.0	> 23.0	> 21.0	> 21.0	> 25.0	> 23.0
1000-1750 Mhz	dB	> 26.0	> 26.0	> 26.0	> 22.0	> 22.0	> 25.0	> 25.0
1750-2150 Mhz	dB	> 26.0	> 26.0	> 24.0	> 25.0	> 25.0	> 25.0	> 25.0
2150-2400 Mhz	dB	> 22.0	> 22.0	> 23.0	> 23.0	> 23.0	> 24.0	> 24.0
Return loss (in-out)								
5-40 Mhz	dB	> 12.0/> 12.0	> 12.0/> 12.0	> 13.0/> 12.0	> 13.0/> 11.0	> 13.0/> 11.0	> 10.0/> 10.0	> 10.0/> 12.0
40-1000 Mhz	dB	> 16.0/> 16.0	> 16.0/> 16.0	> 16.0/> 14.0	> 13.0/> 15.0	> 13.0/> 15.0	> 14.0/> 13.0	> 12.0/> 13.0
1000-1750 Mhz	dB	> 12.0/> 12.0	> 12.0/> 12.0	> 14.0/> 14.0	> 14.0/> 14.0	> 14.0/> 14.0	> 12.0/> 13.0	> 12.0/> 13.0
1750-2150 Mhz	dB	> 14.0/> 14.0	> 14.0/> 14.0	> 14.0/> 20.0	> 14.0/> 14.0	> 14.0/> 14.0	> 12.0/> 12.0	> 12.0/> 12.0
2150-2400 Mhz	dB	> 12.0/> 12.0	> 12.0/> 12.0	> 15.0/> 19.0	> 11.0/> 13.0	> 11.0/> 13.0	> 13.0/> 12.0	> 12.0/> 12.0
Shielding-power-dimensions								
Shielding effeciency	dB	> 110	> 110	> 110	> 110	> 110	> 110	> 110
Power pass		DC all outputs	DC output 1 only, bi-directional	DC all outputs	DC all outputs	DC output 1 only, bi-directional	DC all outputs	DC all outputs
Connectors		F-con	F-con	F-con	F-con	F-con	F-con	F-con
Impedance	Ohm	75	75	75	75	75	75	75
Certification		CE	CE	CE	CE	CE	CE	CE
Weight	kg	0.046	0.046	0.062	0.068	0.068	0.123	0.126
Dim. (H x D x W)	mm	52x17x52	52x17x52	52x17x52	52x17x52	52x17x52	52x17x120	52x17x120

SAT - Taps and splitters

| SCS-tech - Taps 5-2400 MHz

SCS-tech - Taps 5-2400 MHz

High quality range 1-8 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

Technical data

Type:		SCT 1-10	SCT 1-12	SCT 1-16	SCT 1-20	SCT 1-24
Art. No:		342110	342112	342116	342120	342124
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400	5-2400
Outputs		1	1	1	1	1
Insertion loss (in-out)						
5-40 Mhz	dB	< 2.2	< 1.2	< 1.5	< 1.0	< 1.0
40-1000 Mhz	dB	< 2.2	< 2.0	< 1.5	< 1.5	< 1.5
1000-1750 Mhz	dB	< 3.0	< 2.5	< 2.0	< 2.0	< 2.0
1750-2150 Mhz	dB	< 3.2	< 2.8	< 2.5	< 2.0	< 2.0
2150-2400 Mhz	dB	< 3.2	< 2.8	< 2.5	< 2.2	< 2.2
Tap loss (in-tap)						
5-40 Mhz	dB	10.0 (± 1.5)	12.0 (± 1.0)	16.0 (± 1.2)	20.0 (± 1.0)	24.0 (± 1.0)
40-1000 Mhz	dB	10.0 (± 1.5)	12.0 (± 1.0)	16.0 (± 1.2)	20.0 (± 1.0)	24.0 (± 1.0)
1000-1750 Mhz	dB	10.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
1750-2150 Mhz	dB	10.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
2150-2400 Mhz	dB	10.0 (± 1.5)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)
Isolation (out-tap)						
5-40 Mhz	dB	> 25.0	> 26.0	> 35.0	> 40.0	> 40.0
40-1000 Mhz	dB	> 24.0	> 26.0	> 27.0	> 30.0	> 32.0
1000-1750 Mhz	dB	> 22.0	> 25.0	> 25.0	> 26.0	> 30.0
1750-2150 Mhz	dB	> 22.0	> 24.0	> 24.0	> 25.0	> 28.0
2150-2400 Mhz	dB	> 22.0	> 22.0	> 24.0	> 25.0	> 26.0
Return loss (in-out)						
5-40 Mhz	dB	> 12.0	> 14.0	> 14.0	> 15.0	> 15.0
40-1000 Mhz	dB	> 13.0	> 14.0	> 14.0	> 14.0	> 14.0
1000-1750 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0
1750-2150 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0
2150-2400 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0
Return loss (tap)						
5-40 Mhz	dB	> 14.0	> 14.0	> 14.0	> 14.0	> 14.0
40-1000 Mhz	dB	> 15.0	> 14.0	> 14.0	> 15.0	> 15.0
1000-1750 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0
1750-2150 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0
2150-2400 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0	> 12.0
Shielding-power-dimensions						
Shielding effeciency	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-con	F-con	F-con	F-con	F-con
Certification		CE	CE	CE	CE	CE
Weight	kg	0.037	0.037	0.037	0.037	0.037
Dim. (H x D x W)	mm	38x16x53	38x16x53	38x16x53	38x16x53	38x16x53

SCS-tech - Taps 5-2400 MHz

High quality range 1-8 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

Technical data

Type:		SCT 2-10	SCT 2-12	SCT 2-16	SCT 2-20
Art. No:		342210	342212	342216	342220
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400
Outputs		2	2	2	2
Insertion loss (in-out)					
5-40 Mhz	dB	< 4.0	< 3.2	< 2.5	< 2.0
40-1000 Mhz	dB	< 3.5	< 3.2	< 2.5	< 2.0
1000-1750 Mhz	dB	< 4.2	< 4.0	< 4.0	< 2.8
1750-2150 Mhz	dB	< 4.8	< 4.3	< 4.0	< 3.5
2150-2400 Mhz	dB	< 5.0	< 4.7	< 4.2	< 4.2
Tap loss (in-tap)					
5-40 Mhz	dB	10.0 (± 2.0)	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.5)
40-1000 Mhz	dB	10.0 (± 1.5)	12.0 (± 1.2)	16.0 (± 1.2)	20.0 (± 1.5)
1000-1750 Mhz	dB	10.0 (± 2.0)	12.0 (± 1.5)	16.0 (± 1.5)	20.0 (± 1.5)
1750-2150 Mhz	dB	10.0 (± 2.0)	12.0 (± 1.5)	16.0 (± 2.0)	20.0 (± 1.5)
2150-2400 Mhz	dB	10.0 (± 2.0)	12.0 (± 2.0)	16.0 (± 2.0)	20.0 (± 2.0)
Isolation (out-tap)					
5-40 Mhz	dB	> 22.0	> 25.0	> 25.0	> 30.0
40-1000 Mhz	dB	> 22.0	> 22.0	> 25.0	> 24.0
1000-1750 Mhz	dB	> 20.0	> 20.0	> 22.0	> 23.0
1750-2150 Mhz	dB	> 22.0	> 20.0	> 22.0	> 22.0
2150-2400 Mhz	dB	> 18.0	> 18.0	> 21.0	> 22.0
Return loss (in-out)					
5-40 Mhz	dB	> 10.0	> 9.0	> 10.0	> 10.0
40-1000 Mhz	dB	> 12.0	> 11.0	> 12.0	> 12.0
1000-1750 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0
1750-2150 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0
2150-2400 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0
Return loss (tap)					
5-40 Mhz	dB	> 10.0	> 10.0	> 10.0	> 10.0
40-1000 Mhz	dB	> 12.0	> 12.0	> 12.0	> 14.0
1000-1750 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0
1750-2150 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0
2150-2400 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0
Shielding-power-dimensions					
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		In/Out	In/Out	In/Out	In/Out
Connectors		F-con	F-con	F-con	F-con
Certification		CE	CE	CE	CE
Weight	kg	0.055	0.055	0.055	0.055
Dim. (H x D x W)	mm	38x16x74	38x16x74	38x16x74	38x16x74

SAT - Taps and splitters

| SCS-tech - Taps 5-2400 MHz

SCS-tech - Taps 5-2400 MHz

High quality range 1-8 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

Technical data

Type:		SCT 4-20	SCT 4-24	SCT 4-30
Art. No:		342420	342424	342430
Frequency range	MHz	5-2400	5-2400	5-2400
Outputs		4	4	4
Insertion loss (in-out)				
5-40 Mhz	dB	< 1.8	< 1.0	< 1.0
40-1000 Mhz	dB	< 1.5	< 1.5	< 1.3
1000-1750 Mhz	dB	< 2.0	< 1.8	< 1.5
1750-2150 Mhz	dB	< 2.3	< 2.5	< 2.0
2150-2400 Mhz	dB	< 3.2	< 2.5	< 2.0
Tap loss (in-tap)				
5-40 Mhz	dB	20.0 (± 1.2)	24.0 (± 1.2)	30.0 (± 1.2)
40-1000 Mhz	dB	20.0 (± 1.2)	24.0 (± 1.2)	30.0 (± 1.2)
1000-1750 Mhz	dB	20.0 (± 1.5)	24.0 (± 1.5)	30.0 (± 1.5)
1750-2150 Mhz	dB	20.0 (± 2.0)	24.0 (± 2.0)	30.0 (± 2.0)
2150-2400 Mhz	dB	20.0 (± 2.0)	24.0 (± 2.0)	30.0 (± 2.0)
Isolation (out-tap)				
5-40 Mhz	dB	> 25.0	> 30.0	> 35.0
40-1000 Mhz	dB	> 24.0	> 25.0	> 30.0
1000-1750 Mhz	dB	> 22.0	> 25.0	> 23.0
1750-2150 Mhz	dB	> 22.0	> 22.0	> 23.0
2150-2400 Mhz	dB	> 22.0	> 22.0	> 22.0
Return loss (in-out)				
5-40 Mhz	dB	> 12.0	> 14.0	> 14.0
40-1000 Mhz	dB	> 12.0	> 14.0	> 14.0
1000-1750 Mhz	dB	> 11.0	> 14.0	> 11.0
1750-2150 Mhz	dB	> 11.0	> 11.0	> 11.0
2150-2400 Mhz	dB	> 11.0	> 11.0	> 11.0
Return loss (tap)				
5-40 Mhz	dB	> 12.0	> 12.0	> 14.0
40-1000 Mhz	dB	> 12.0	> 14.0	> 14.0
1000-1750 Mhz	dB	> 11.0	> 11.0	> 11.0
1750-2150 Mhz	dB	> 11.0	> 11.0	> 11.0
2150-2400 Mhz	dB	> 11.0	> 11.0	> 11.0
Shielding-power-dimensions				
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0
Power pass		In/Out	In/Out	In/Out
Connectors		F-con	F-con	F-con
Certification		CE	CE	CE
Weight	kg	0.062	0.062	0.062
Dim. (H x D x W)	mm	38x16x74	38x16x74	38x16x74

SCS-tech - Taps 5-2400 MHz

High quality range 1-8 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

Technical data

Type:		SCT 6-16	SCT 6-20	SCT 6-24	SCT 6-30
Art. No:		342616	342620	342624	342630
Frequency range	MHz	5-2400	5-2400	5-2400	5-2400
Outputs		6	6	6	6
Insertion loss (in-out)					
5-40 Mhz	dB	< 4.2	< 2.5	< 2.5	< 2.5
40-1000 Mhz	dB	< 5.3	< 2.8	< 2.5	< 2.8
1000-1750 Mhz	dB	< 5.5	< 3.5	< 2.8	< 4.0
1750-2150 Mhz	dB	< 6.0	< 4.2	< 3.0	< 5.0
2150-2400 Mhz	dB	< 7.0	< 5.2	< 4.0	< 6.0
Tap loss (in-tap)					
5-40 Mhz	dB	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 2.0)	30.0 (± 1.5)
40-1000 Mhz	dB	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 2.0)	30.0 (± 2.0)
1000-1750 Mhz	dB	16.0 (± 1.5)	20.0 (± 1.5)	24.0 (± 1.5)	30.0 (± 2.0)
1750-2150 Mhz	dB	16.0 (± 2.0)	20.0 (± 2.0)	24.0 (± 2.0)	30.0 (± 2.0)
2150-2400 Mhz	dB	16.0 (± 2.0)	20.0 (± 2.5)	24.0 (± 2.5)	30.0 (± 2.5)
Isolation (out-tap)					
5-40 Mhz	dB	> 25.0	> 25.0	> 28.0	> 35.0
40-1000 Mhz	dB	> 25.0	> 25.0	> 26.0	> 30.0
1000-1750 Mhz	dB	> 22.0	> 25.0	> 24.0	> 27.0
1750-2150 Mhz	dB	> 22.0	> 22.0	> 22.0	> 26.0
2150-2400 Mhz	dB	> 20.0	> 22.0	> 22.0	> 24.0
Return loss (in-out)					
5-40 Mhz	dB	> 10.0	> 10.0	> 10.0	> 10.0
40-1000 Mhz	dB	> 11.0	> 12.0	> 12.0	> 12.0
1000-1750 Mhz	dB	> 11.0	> 11.0	> 11.0	> 11.0
1750-2150 Mhz	dB	> 11.0	> 11.0	> 10.0	> 11.0
2150-2400 Mhz	dB	> 11.0	> 10.0	> 10.0	> 11.0
Return loss (tap)					
5-40 Mhz	dB	> 10.0	> 10.0	> 10.0	> 10.0
40-1000 Mhz	dB	> 12.0	> 12.0	> 12.0	> 12.0
1000-1750 Mhz	dB	> 11.0	> 11.0	> 10.0	> 11.0
1750-2150 Mhz	dB	> 11.0	> 11.0	> 10.0	> 11.0
2150-2400 Mhz	dB	> 11.0	> 11.0	> 11.0	> 10.0
Shielding-power-dimensions					
Shielding effeciency	dB	> 110.0	> 110.0	> 110.0	> 110.0
Power pass		In/Out	In/Out	In/Out	In/Out
Connectors		F-con	F-con	F-con	F-con
Certification		CE	CE	CE	CE
Weight	kg	0.117	0.117	0.117	0.117
Dim. (H x D x W)	mm	38x16x119	38x16x119	38x16x119	38x16x119

SAT - Taps and splitters

| SCT series

SCS-tech - Taps 5-2400 MHz

High quality range 1-8 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

Technical data

Type:		SCT 8-16	SCT 8-20	Bracket small	Bracket large
Art. No:		342816	342820	342100	342102
Frequency range	MHz	5-2400	5-2400		
Outputs		8	8		
Insertion loss (in-out)					
5-40 Mhz	dB	< 4.5	< 2.5		
40-1000 Mhz	dB	< 5.5	< 3.0		
1000-1750 Mhz	dB	< 6.0	< 4.2		
1750-2150 Mhz	dB	< 6.0	< 5.0		
2150-2400 Mhz	dB	< 6.8	< 5.8		
Tap loss (in-tap)					
5-40 Mhz	dB	16.0 (± 1.5)	20.0 (± 1.5)		
40-1000 Mhz	dB	16.0 (± 1.5)	20.0 (± 1.5)		
1000-1750 Mhz	dB	18.0 (± 1.5)	22.0 (± 1.5)		
1750-2150 Mhz	dB	18.0 (± 2.0)	22.0 (± 2.0)		
2150-2400 Mhz	dB	18.0 (± 2.5)	22.0 (± 2.5)		
Isolation (out-tap)					
5-40 Mhz	dB	> 25.0	> 28.0		
40-1000 Mhz	dB	> 25.0	> 25.0		
1000-1750 Mhz	dB	> 22.0	> 24.0		
1750-2150 Mhz	dB	> 20.0	> 22.0		
2150-2400 Mhz	dB	> 20.0	> 22.0		
Return loss (in-out)					
5-40 Mhz	dB	> 10.0	> 10.0		
40-1000 Mhz	dB	> 10.0	> 10.0		
1000-1750 Mhz	dB	> 10.0	> 10.0		
1750-2150 Mhz	dB	> 10.0	> 10.0		
2150-2400 Mhz	dB	> 10.0	> 10.0		
Return loss (tap)					
5-40 Mhz	dB	> 12.0	> 10.0		
40-1000 Mhz	dB	> 12.0	> 12.0		
1000-1750 Mhz	dB	> 10.0	> 10.0		
1750-2150 Mhz	dB	> 10.0	> 10.0		
2150-2400 Mhz	dB	> 10.0	> 10.0		
Shielding-power-dimensions					
Shielding effeciency	dB	> 110.0	> 110.0		
Power pass		In/Out	In/Out		
Connectors		F-con	F-con		
Certification		CE	CE		
Weight	kg	0.125	0.125		
Dim. (H x D x W)	mm	38x16x119	38x16x119		

Triax Splitter ESS series [5-2400 MHz]

Zinc die cast housing, Light weight and compact size. All ports connector with saddle & clamp; clamp,75Ω.
Low insertion loss, high return loss and isolation for MATV/SMATV.
High shielding efficiency.
Single directional DC pass from all output ports to input port: max. 1A, 30V.

Technical data

Type:		ESS 2 2 way splitter	ESS 3 3 way splitter	ESS 4 4 way splitter	ESS 6 6 way splitter	ESS 8 8 way splitter
Art. No:		349502	349503	349504	349506	349508
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	< 4.2	< 7.5	< 8.5	< 11.5	< 12.0
40-1000 Mhz	dB	< 4.8	< 8.0	< 9.0	< 12.5	< 13.0
1000-1750 Mhz	dB	< 5.5	< 10.0	< 10.5	< 14.0	< 15.5
1750-2150 Mhz	dB	< 6.2	< 11.0	< 11.5	< 16.5	< 18.0
2150-2400 Mhz	dB	< 7.0	< 11.5	< 12.0	< 17.5	< 18.5
Isolation (tap-tap)						
5-40 Mhz	dB	> 18.0	> 20.0	> 20.0	> 20.0	> 20.0
40-1000 Mhz	dB	> 21.0	> 21.0	> 21.0	> 21.0	> 21.0
1000-1750 Mhz	dB	> 21.0	> 20.0	> 20.0	> 20.0	> 20.0
1750-2150 Mhz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
2150-2400 Mhz	dB	> 20.0	> 20.0	> 20.0	> 20.0	> 20.0
Return loss (in-out)						
5-40 Mhz	dB	> 12.0 / > 12.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
40-1000 Mhz	dB	> 11.0 / > 11.0	> 11.0 / > 11.0	> 11.0 / > 11.0	> 10.0 / > 10.0	> 10.0 / > 11.0
1000-1750 Mhz	dB	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
1750-2150 Mhz	dB	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
2150-2400 Mhz	dB	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
Return loss (out)						
5-40 Mhz	dB	> 12.0 / > 12.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
40-1000 Mhz	dB	> 11.0 / > 11.0	> 11.0 / > 11.0	> 11.0 / > 11.0	> 10.0 / > 10.0	> 10.0 / > 11.0
1000-1750 Mhz	dB	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
1750-2150 Mhz	dB	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
2150-2400 Mhz	dB	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0	> 10.0 / > 10.0
Shielding-power-dimensions						
Shielding effeciency	dB	> 85.0	> 85.0	> 85.0	> 85.0	> 85.0
Power pass		All	All	All	All	All
Connectors		S/C -type	S/C -type	S/C -type	S/C -type	S/C -type
Impedance	Ohm	75	75	75	75	75
Certification		CE	CE	CE	CE	CE
Weight	kg	0.080	0.082	0.089	0.142	0.148
Dimensions (H x D x W)	mm	30 x 19 x 82	30 x 19 x 82	30 x 19 x 82	40 x 19 x 124	40 x 19 x 124

Taps and splitters

| Indoor splitters with F-connector

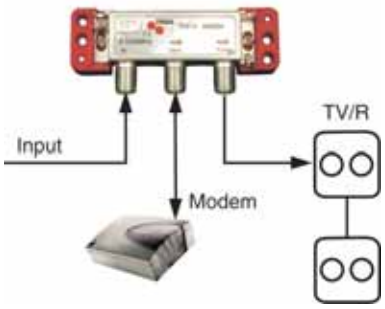
Splitters with F-connector

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

Type:		TFS 715 2-way splitter	TFS 715 3-way splitter	TFS 715 4-way splitter
Art. No:		334202	334203	334204
Frequency range	MHz	47-862	47-862	47-862
Outputs	pcs.	2	3	4
Insertion loss (in-out)				
40-470 MHz	dB	4.0	6.0	8.0
470-860 MHz	dB	4.0	6.0	8.0
Isolation (out-tap)				
40-470 MHz	dB	18.0	18.0	18.0
470-860 MHz	dB	18.0	18.0	18.0
Shielding-power-dimensions				
Power pass		All	All	All
Connectors		F-con	F-con	F-con
Impedance	Ohm	75	75	75
Weight	kg	0,125	0,125	0,125
Dimensions (H x D x W)	mm	65 x 20 x 65	65 x 20 x 65	65 x 20 x 65

Type:		102 FF/M 2-way splitter	102 MM/F 2-way splitter
Art. Nr:		338365	338366
Frequency range	MHz	47-862	47-862
Outputs		2	2
Insertion loss (in-out)			
40-470 MHz	dB	3.5	3.5
470-860 MHz	dB	3.5	3.5



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

Type:		TDP-4 delivery point	TDP-7 delivery point
Art. No:		346094	346097
Frequency range	MHz	5-1000	5-1000
Output 1		TV/R	TV/R
Output 2		Data	Data
Insertion loss			
5-65 MHz (in-out)	dB	> 43 (TV)/ 4.0 (Data)	> 43 (TV)/ 7.0 (Data)
65-87 MHz (in-out)	dB	4.0 (Data)	7.0 (Data)
87-1000 MHz (in-out)	dB	4.0 (TV)/ 4.0 (Data)	2.8 (TV)/ 7.0 (Data)
Isolation			
5-65 MHz	dB	47.0	47.0
87-1000 MHz	dB	23	23
Return loss			
IN (5-40 MHz)	dB	> 22.0	> 23.0
IN (40-1000 MHz)	dB	> 20.0	> 20.0
Data (5-40 MHz)	dB	> 24.0	> 20.0
Data (40-1000 MHz)	dB	> 23.0	> 20.0
TV/R (87-1000 MHz)	dB	> 18.0	> 18.0
Shielding-power-dimensions			
Shielding effeciency	dB	Class A (≥ 100.0)	Class A (≥ 100.0)
Power pass		No	No
Connectors		F-con	F-con
Impedance	Ohm	75	75
Certification		CE	CE
Weight	kg	0.063	0.063
Dimensions (H x D x W)	mm	50 x 16 x 74	50 x 16 x 74

Triax accessories

| Attenuators, ground isolator & line power supply

Variable- & F- attenuators

TRIAX variable 0-20 dB attenuators are available in a type for indoor use

Technical data

Type:		VA 20 F	F-att. - 3 dB	F-att. - 6 dB	F-att. - 10 dB	F-att. - 20 dB
Art. No:		153600	153710	153711	153712	153713
Input		VHF/UHF				
Channel/band		2-69 + FM				
Frequency range	MHz	47 - 862	5 - 1000	5 - 1000	5 - 1000	5 - 1000
Attenuation	dB	0-20	3	6	10	20
Number of inputs	pcs	**1**	**1**	**1**	**1**	**1**
Number of outputs	pcs	**1**	**1**	**1**	**1**	**1**
DC throughpower		Yes				
Connector		F-female	F-female	F-female	F-female	F-female
Remarks		Indoor	Indoor	Indoor	Indoor	Indoor

Distribution

Technical data

Type:		Ground isolator - RF
Art. No:		153572
Frequency range	MHz	5 - 1000
Insertion loss		
5-470 MHz	dB	1.0
470-1000 MHz	dB	1.0
Number of inputs	pcs	**1**
Number of outputs	pcs	**1**
Connector		F-female
Remarks		DC blocker

Technical data

Type:		TRP - Line power supply
Art. No:		416014
Power input	V/AC	230 ±10%
Power output	V/DC	48.0
Max. current	A	1.25
Connector		F-female
Dimensions (H x D x W)	mm	60 x 100

Indoor home accessories

TRE - remote extender 210
TWS - wireless A/V system 211

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

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	kg	0.130	0.130
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 series

| 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

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	kg	0.110	0.110
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	ºC	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

| for your personal notes

HD Distribution

HDMI distribution and control

HDMI Transmitter, Receiver

HDMI Matrix-switch

HDMI Extender Set

Active HDMI distribution

HDMI Accessories

HDMI Tools, connectors and cables

HDMI Test tools

catTV - Panel

catTV - Balun

SAT>IP converter

SAT>IP receiver

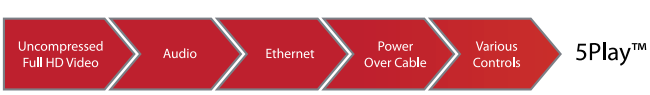
HD Distribution and Control Made Easy

As market leaders in the multimedia sector we offer the ultimate in HD connectivity and long distance signal management for professional installers.

5 Play and HDBaseT

Our new HD Distribution Range features the latest HD distribution technology with impressive features including 5Play and HDBaseT convergence.

The range includes 4x4, 4x8 and 8x8 5Play HDBaseT matrix solutions offering the ultimate in multi-room distribution of HDMI, Ethernet and Control Signals.



HDBaseT Lite

Our HDBaseT Lite range meets the needs of installers requiring only select HDBaseT functionality at distances less than 70m.

This solution compliments standard HDBaseT technology, enabling single cable transmission of uncompressed HD video, audio and various controls through a single Cat5e/ Cat6 cable.

The range includes a 4x4 matrix kit and point to point extender set.

Control using iPhone, iPad and iPod Touch

Our solutions can be controlled via iPhone, iPad and iPod Touch. Triax command sets can be downloaded from Demopad and are compatible with leading 3rd Party Control Systems.

Your one stop shop for AV installation requirements

Together with our point to point HDBaseT solution, HDMI distribution amplifiers, splitter, scaler, equaliser, analyser and complete range of cable and accessories, Triax is your essential ‘one stop shop’ for AV installation requirements.

What is HDBaseT and 5Play Convergence?

The growth of HD connectivity has resulted in consumers looking for better ways to provide point-to-point connectivity and multimedia distribution in home and commercial entertainment environments.

HDBaseT technology is the new digital standard for high-definition multimedia content, allowing users to get connected through an all-in-one solution.

HDBaseT technology provides users with an easy to install, easy to use, cost effective and consistent solution to connect displays in multiple locations with their entertainment devices (for example, digital video recorders (DVR), blu-ray disc players, games consoles, PCs and mobile devices) for in-home converged distribution of HD multimedia content. For instance, a DVR can be connected to several TVs throughout the home allowing users an independent yet fully compatible experience.

InHouse connectivity

| what we offer

Consumer electronics devices (both domestic and commercial) currently require multiple cables connected to multiple connectors to enable 5Play convergence – uncompressed full HD digital video, audio, ethernet, power over cable and various control signals. This can prove costly for end users.

HDBaseT technology enables a single LAN cable to replace multiple cables and connectors. It is optimised for video application and can connect all the entertainment devices in home and commercial environments by providing 5Play convergence.

HDBaseT uses low-cost Cat 5e/6 cable which has high levels of reliability and can connect equipment up to 100m apart.

HDBaseT LAN-based technology makes it possible to cut the assortment of cables for audio, video, CE device connectors and even the power source. This form of networking, whether it is done point-to-point, by daisy chaining devices or through star topology, can be applied in both the consumer home and in B2B cases such as digital signage networking.

An All-in-One Solution – single cable / connector for multimedia distribution:

- No more cable clutter – fewer cables and less mess
- Distance no longer an issue – connect equipment up to 100m apart with Cat 6 cable. HDBaseT provides point-to-point connectivity and full- multimedia distribution with higher reliability, longer distance and lower cost
- Quality cable supports HD and 3D
- Power over cable - HDBaseT sends 100W of power simultaneously through the 5Play feature set
- Support for various controls while ensuring reliability and low latency
- Low cost installations - installation requires single, low-cost LAN cables with standard RJ-45 connectors, already installed in many homes

The compelling features of HDBaseT technology include:

- Uncompressed video/audio up to 10.2 Gbps
- Maximum cable length of 100m, including support of multiple hops, up to 8 x 100m
- Low cost standard Cat5e/6 LAN cable
- Utilizes a standard RJ-45 connector
- Supplies up to 100W of power Support for 100Mbps Ethernet
- Easy installation utilising existing in-wall Ethernet connectivity
- USB support
- Supports HDCP
- Networking support including extended-range daisy chain and star topologies

Video and audio:

HDBaseT supports TV and PC video formats including standard, enhanced, high-definition and 3D video, and also supports all standard audio formats.

HDBaseT delivers Full HD/3D and 2K/4K uncompressed video to a network of devices or as a point-to-point connection. Uncompressed content supports all video sources, including legacy products, accurately renders gaming graphics and features such as electronic program guides (EPGs), and does not degrade video quality or add latency.

100BaseT Ethernet:

HDBaseT supports 100Mb Ethernet capabilities, enabling televisions, hi-fi equipment, computers and other CE devices to communicate with each other and access multimedia content, including video, pictures and music stored around the house.

Power over cable:

Sending power over the same CAT5e/6 cable gives people the option to forego plugging devices into the wall outlet for power, allowing greater mobility. For example, this can be used to power our receiver units.

Various control signals:

HDBaseT delivers different types of control signals for different purposes, starting from CEC, to RS232/USB and IR that operate remote equipment even when located in a different room.

The Technology:

HDBaseT uses an asymmetric method, sending video, audio, Ethernet and controls from source to sink, but only 100Mb are transferred back (Ethernet and controls). Unlike conventional data communication which is a symmetrical application by nature, with required a bit error rate (BER) of at least 10 to the minus 12, the asymmetric nature of HDBaseT is based on an innovative DSP engine and an AFE (Application Front End) architecture.

A special line coding scheme was developed to provide a better transfer quality to some kinds of data (audio, controls, Ethernet) without the need to ‘pay’ the protecting overhead for the video content which consumes most of the bandwidth.

Compatible with leading 3rd Party Control Systems

ControlFX Home Control Solutions

CRESTRON

Control4 Better. Together.

AMX

InHouse connectivity

| Transmitter and receiver with 5PlayTM

The HTX 1V, HRX 2V transmitter and HRX 1V receiver enable the transmission of uncompressed HDMI signals and IP data over a cat5e/6/7-Kabel at a distance of up to 100m.

HTX 1V

HTX 2V

HRX 1V

HTX 1V

Applications:

- Household entertainment sharing and control
- Lecture room display and control
- Showroom display and control
- Meeting room presentation and control
- Classroom display and control
- Used in conjunction with HDA 1x2S + HDA 1x8S

System requirements:

Input HDMI source equipment such as DVD/Blu-Ray player and output display with HDMI input socket.

Features:

- HDMI 1.4 with 3D, 4k x 2k support, HDCP & DVI Compliant
- Supports HDCP repeater and CEC function
- Simultaneously uncompressed data sending over a single 100m/328ft with CAT6 cable or 80m/262ft with CAT5e cable Uncompressed video 1080p, 60Hz, 48bits
- Audio support up to LCPM 7.1CH & Dolby TrueHD, DTS-HD 5PlayTM convergence: HDMI, LAN, POE & Control (IR & RS232) Bi-directional Internet
- Installation Friendly

HDBT® 5Play™

HTX 2V

Applications:

- Household entertainment sharing and control
- Lecture room display and control
- Showroom display and control
- Meeting room presentation and control
- Classroom display and control

System requirements:

Input HDMI source equipment such as DVD/Blu-Ray player and output display with HDMI input socket.

HDMI over CAT5e/6/7 receivers with industry CAT5e/6/7 cables

Features:

- HDMI 1.4 with 3D, 4k x 2k support, HDCP & DVI Compliant
- Supports HDCP repeater and CEC function
- HDMI Loop-through
- 2 x RJ45 Outputs
- Simultaneously uncompressed data sending over a single 100m/328ft with CAT6 cable or 80m/262ft with CAT5e cable Uncompressed video 1080p, 60Hz, 48bits
- Audio support up to LCPM 7.1CH & Dolby TrueHD, DTS-HD 5PlayTM convergence: HDMI, LAN, POE & Control (IR & RS232) Bi-directional Internet
- Installation Friendly

HTX 1V - transmitter - Front View

HRX 1V - receiver - Front View

HTX 2V - transmitter - Front View

HTX 1V - transmitter - Rear View

HRX 1V - receiver - Rear View

HTX 2V - transmitter - Rear View

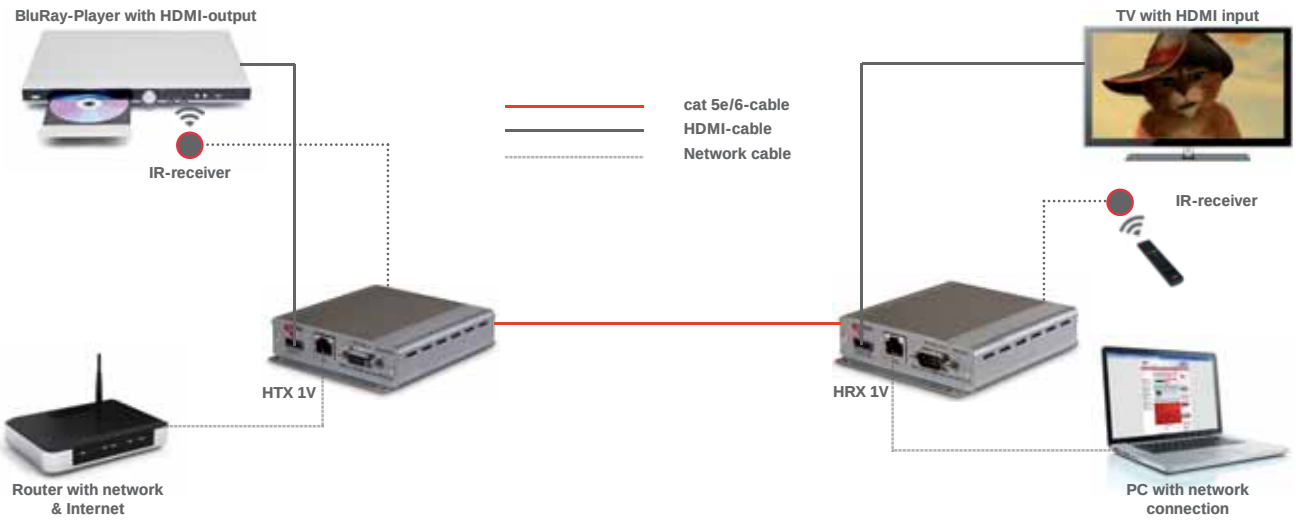
Technical data

Type:		HTX 1V Transmitter	HTX 2V Transmitter	HRX 1V Receiver
Art. No.		310001	310024	310002
Video Bandwidth	Mb/s Gb/s		300 10.2	
Inputs		1 x HDMI 1 x IR Extender 1 x IR Blaster 1 x RS-232 1 x LAN	1 x Female HDMI type A 2 x 3.5mm RS232 2 x IR Digital Eyes 1 x LAN (Ethernet) 1 x USB (Service Only)	1 x CAT5e/6 1 x IR Extender 1 x IR Blaster 1 x LAN
Output		1x cat5e/6/7	1 x HDMI 2 x CAT5e/6/7 2 x IR Emitters,	1x HDMI 1x RS-232
Resolution			Up to 4Kx2K	
Videoformat			Uncompressed Full-HD (1080p) 60 Hz, 48 bits	
Audioformat			Dolby True HD Dolby Digital Plus DTS-HD LCPM 7.1 CH	
ESD Protection			Human Body Model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)	
IR Frequency	Hz	20 ~ 60		20 ~ 60
Chassis			Aluminium, Silver RAL 9007	
Power Supply			24V / 2.7A DC (US/EU standards, CE/FCC/UL certified)	
Power Consumption	W	6.0	64.0	8.0
Operating Temperature	°C	0 ~ 40	0 ~ 40	0 ~ 40
Storage Temperature	°C	-20 ~ - 60	-20 ~ - 60	-20 ~ - 60
Dimension W x H x D	mm	102 x 115 x 25	145 x 178 x 30	102 x 115 x 25
Weight	kg	0.252	0.528	0.256
Packing size	pcs.	1	1	1
Remarks				

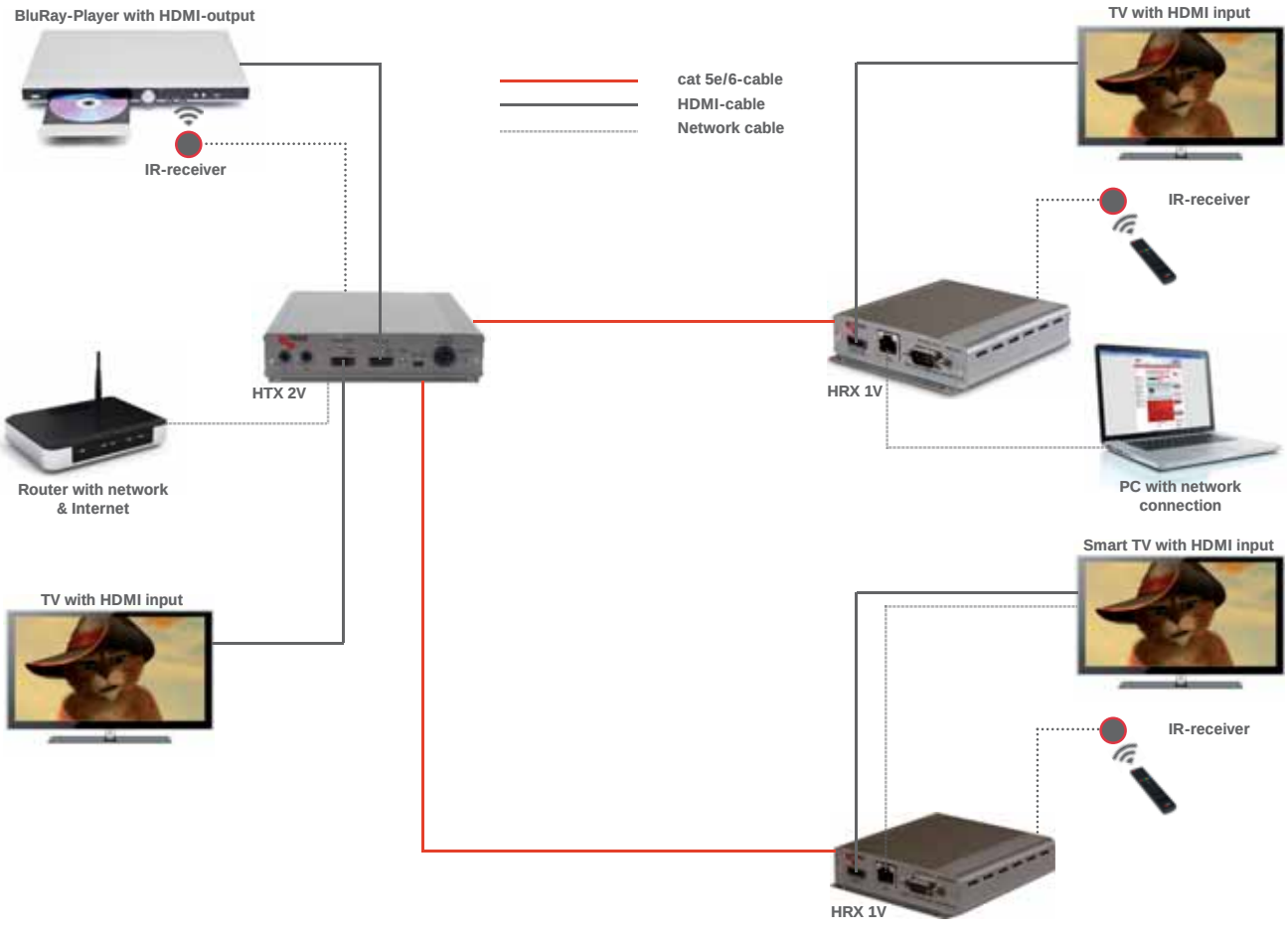
InHouse connectivity

| Transmitter and receiver - system example

Examples with HTX 1V and HRX 1V



Examples with HTX 2V and 2x HRX 1V



| Receiver Outlet Plate with HDBaseT 5Play

ORX 1V Outlet plate - Front View

The ORX 1V allows uncompressed HDMI signals and IP data to be transmitted over a Single CAT5e/6 cable. This solution has the added features of RS-232, 2-way IR control functionality and bi-directional internet over the same CAT5e/6 cable.
These combined HDMI and control signals can be transmitted up to lengths of 100m on Cat6 cable.
White colour matches outlet which offers full 5Play functionality and fits a standard 2 gang 35mm patress box making it a perfect solution for both new and retrofit installations.
Compatible with the complete range of Triax 4x4, 4x8 and 8x8 HDBaseT 5Play Matrixes and point to point solutions.
The ORX 1V outlet gives installers a choice of receiver styles depending on the installation.

Applications:

- Household entertainment sharing and control
- Lecture room display and control
- Showroom display and control
- Meeting room presentation and control
- Classroom display and control
- Used in conjunction with HDA 1x2S + HDA 1x8S

Features:

- HDMI 1.4 with 3D, 4k x 2k support, HDCP & DVI Compliant
- Supports HDCP repeater and CEC function
- Simultaneously uncompressed data sending over a single 100m/328ft with CAT6 cable or 80m/262ft with CAT5e cable Uncompressed video 1080p, 60Hz, 48bits
- Audio support up to LCPM 7.1CH & Dolby TrueHD, DTS-HD 5PlayTM convergence: HDMI, LAN, POE & Control (IR & RS232) Bi-directional Internet
- Installation Friendly

Technical data

Type:		**ORX 1V Receiver outlet plate**
Art. No.		310005
Video Bandwidth	Mb/s Gb/s	
Inputs		1 x CAT5e/6 1 x IR Extender 1 x IR Blaster 1 x LAN (Ethernet)
Output		1 x HDMI 1 x RS-232
ESD Protection		Human Body Model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)
IR Frequency	Hz	20 ~ 60
Chassis		PC White w black printing
Power Supply		
Power Consumption	W	8.0
Operating Temperature	°C	0 ~ 40
Storage Temperature	°C	-20 ~ - 60
Dimension W x H x D	mm	102 x 115 x 25
Weight	kg	0.252
Packing size	pcs.	1
Remarks		

InHouse connectivity

| Matrix-switch with 5PlayTM and 3Play

Matrix distribution allow the transfer of the contents of up to 4/8 HDMI sources via a cat5e/6-cable up to 4/8 HRX 1V HDMI receiver.

HMX 4x8V and 8x8V

The HMX 4X8V and HMX 8X8V is a 4 by 8 and 8 by 8 HDMI Matrix switch that converts the HDMI source signals to CAT5e/6/7.
With resolutions up to 1080p Full HD, 1920x1200@60Hz and multichannel digital audio supplied by up to four High-definition sources to any of the eight CAT5e/6/7 outputs. It supports digital audio formats such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD. The HMX 4X8V and HMX 8X8V is also compatible with 3D content and can be displayed on a 3DTV, a 3D Source will be required.

The HMX 4X8V and HMX 8X8V allows four and eight HDMI sources to be independently controlled and distributed to eight Sink (TV's) displays up to 100 meters away along with IR signals and POE to power the Receivers and Ethernet (Internet).

Applications:

- HDMI System Controls
- Video/TV wall display and control
- Security surveillance and control
- Commercial Signage advertising, display and control
- Superstores, Supermarket Signage and CEC control

System requirements:

- Input source equipment with HDMI connection
- CAT6 250MHz minimum is recommended for future proofing, backward compatible CAT5e cable
- Output display or audio receiver equipment with HDMI connection cables
- HRX 1V HDMI Receivers required 1 for each zone.

Features:

- HDMI, HDCP1.1 and DVI compliant
- Supports HDMI 3D features
- Supports resolutions to VGA ~ WUXGA and 480i~1080p follow by output display's EDID
- Supports extension up to 100 meters through CAT5e/6/7
- Supports HDMI input up to 15 meters with 8bits resolution or 10 meters with 12bits resolution
- Supports IR in/out from input and output side
- Supports RS-232, remote control and on panel control
- 2U size design, Desk mount or Rack mount
- Supports external and internal EDID setting
- Supports LPCM 7.1CH, Dolby TrueHD, Dolby digital Plus and DTS-HD Master Audio transmission

Note: The PoE function is not designed for powering other non-family type devices.

HMX 4x4K and 4x4L

The HMX 4X4K and HMX 4x4L is 4 by 4 HDMI Matrix switch that converts the HDMI source signals to CAT5e/6/7. With resolutions up to 1080p Full HD, 1920x1200@60Hz and multichannel digital audio supplied by up to four High-definition sources to any of the four CAT5e/6/7 outputs. It supports digital audio formats such as LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD.

The HMX 4X4K and HMX 4x4L is compatible with 3D content and can be displayed on a 3DTV, a 3D Source will be required. The HMX 4X4K and HMX 4x4L allows four HDMI sources to be independently controlled and distributed to four Sink (TV's) displays up to 100 meters away along with IR signals and POE to power the Receivers and Ethernet (Internet).

Applications:

- HDMI System controls
- Video/TV wall display and control
- Security surveillance and control
- Commercial signage advertising, displaying and control
- Lecture room display and control
- Superstores, supermarkets signage and CEC control
- Residential Markets

Features:

- HDMI, HDCP1.1 and DVI compliant
- Supports HDMI 3D features
- Supports resolutions to VGA ~ WUXGA and 480i~1080p follow by output display's EDID
- Supports extension up to 100 meters through CAT5e/6/7
- Supports POE (Power On Ethernet) TRIAX receivers only
- Supports HDMI input up to 15 meters with 8bits resolution or 10 meters with 12bits resolution
- Supports IR in/out from input and output side
- Supports RS-232, remote control and on panel control
- 1U size design, Desk mount or Rack mount
- Supports external and internal EDID setting
- Supports LPCM 7.1CH, Dolby TrueHD, Dolby digital Plus and DTS-HD Master Audio transmission

Kit Contains:

1 x HMX 4x4K Switch	1 x HMX 4x4L Switch
4 x IR Emitter	4 x IR Emitter
1 x 24V/6.25A DC adaptor	5 x 24V/6.25A DC adaptor
	4 x USB power cable
1 x Remote control	1 x Remote control
4 x HRX 1V HDMI Receivers (1 for each zone)	
User manual	User manual

HMX 4x4L

HMX 4x8V

HMX 4x4K

HMX 8x8V

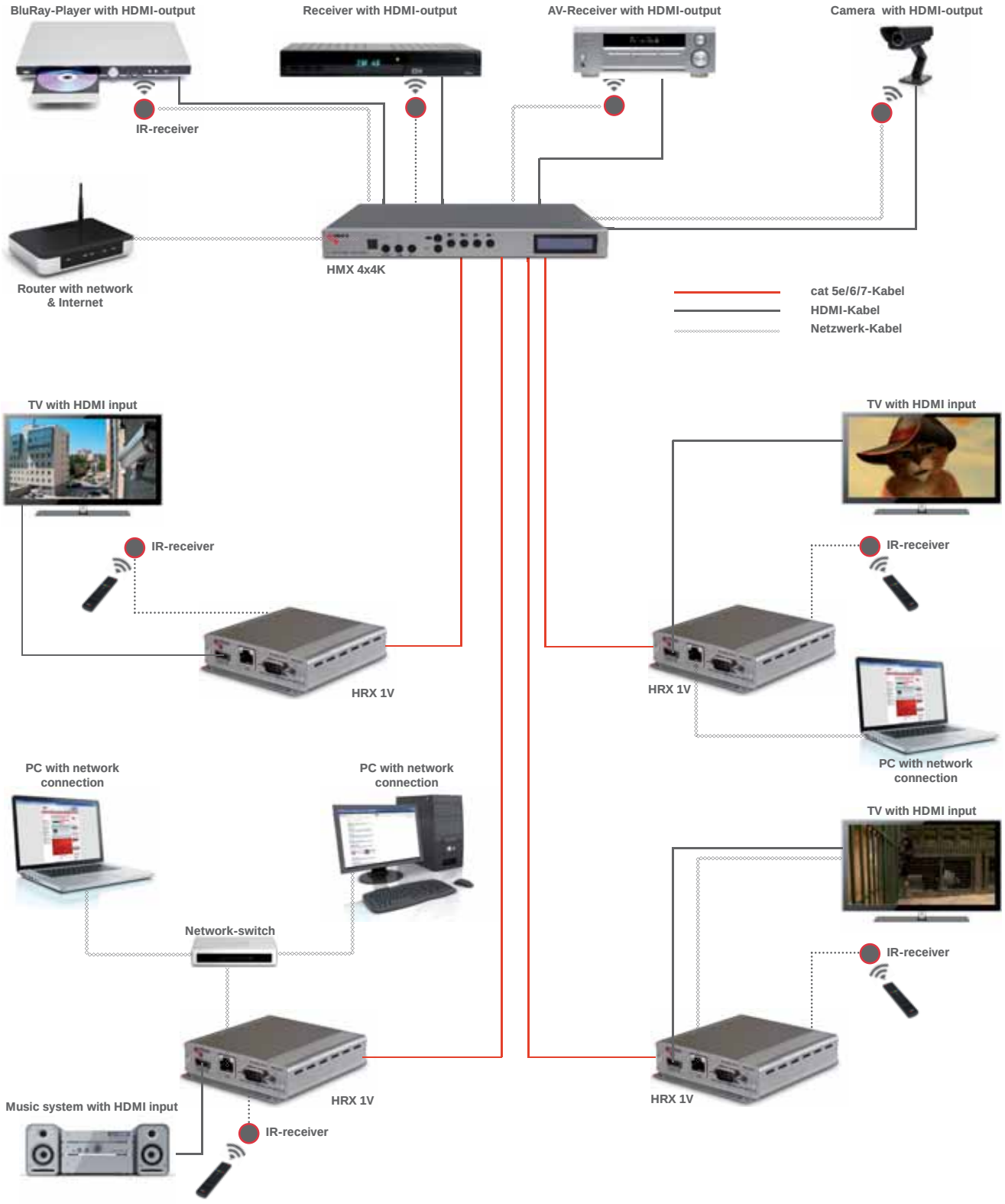
Technical data

Type:		HMX 4x8V 4 Source, 8 Sink Matrix	HMX 8x8V 8 Source, 8 Sink Matrix	HMX 4x4K 4 Source, 4 Matrix	HMX 4x4L 4 Source, 4 Matrix
Art. No.		310008	310003	310004	310020
Max. TMDS bandwidth	Gb/s	6.75	6.75	6.75	6.75
Input Ports		4 x HDMI 1 x LAN (Ethernet) 9 x IR Extender 1 x RS-232 1 x Mini USB B -type 9 (service)	8 x HDMI 1 x LAN (Ethernet) 9 x IR Extender 1 x RS-232 1 x Mini USB B -type 9 (service)	4x HDMI 1 x LAN (Ethernet) 1x RS-232 5x IR-receiver 1x Mini-USB (Service) 2x power supply	4x HDMI 1x RS-232 5x IR-receiver 1x Mini-USB (Service) 2x power supply
Output Ports		8 x CAT5e/6/7 9 x IR Blaster	8 x CAT5e/6/7 9 x IR Blaster	4 x CAT5e/6/7 4 x IR Blaster	4 x CAT5e/6/7 4 x IR Blaster
Videoformat (TV)		Uncompressed Full-HD (1080p) 60 Hz, 48 bits		Uncompressed Full-HD (1080p) 60 Hz, 48 bits	
Videoformat (PC)		VGA - WUXGA with 480i to 1080p		VGA - WUXGA with 480i to 1080p	
Audioformat		Dolby True HD / Dolby Digital Plus DTS-HD / LCPM 7.1 CH		Dolby True HD / Dolby Digital Plus DTS-HD / LCPM 7.1 CH	
ESD Protection		Human Body Model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)		Human Body Model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)	
IR Frequency	Hz	20 ~ 60		20 ~ 60	
Chassis		Steel - RAL 9007 + RAL 7016		Steel - RAL 9007 + RAL 7016	
Power Supply		24V / 2.7A DC (US/EU standards, CE/FCC/UL certified)		24V / 2.7A DC (US/EU standards, CE/FCC/UL certified)	
Power Consumption	W	64		64	31
Operating Temperature	°C	0 ~ 40		0 ~ 40	
Storage Temperature	°C	-20 ~ - 60		-20 ~ - 60	
Dimension W x H x D	mm	438 x 93 x 255	438 x 93 x 255	438 x 45 x 255	438 x 45 x 255
Weight	kg	4.458	4.458	3.300	3.300
Packing size	pcs.	1	1	1	1
Remarks		(2U Design)		incl. 4x HRX 1V receiver (1U Design)	

InHouse connectivity

| HDMI distribution - system example

Example with HMX 4x4K



The HDMI/DVI over single CAT5e/6 with IR & RS-232 transmitter and receiver set can make your home or office set-up more efficient and easy to use.

Uncompressed video and audio can be transmitted up to 60 meters with the added benefit of controls through the built-in IR ports (HDMI only). This family design of HDBaseT™ technology allows a full usage of HDMI and controls over CAT5e/6 cable.

Features:

- HDMI 1.4 with 3D, 4K x 2K support, HDCP and DVI compliant
- Complies with the HDBaseT-Lite class
- Enables HDMI 1.4 (including HDCP), over a single CAT5e/6 up to 60m
- Full HD support: 1080p@60Hz@36 b/pixels, 3D over 60m and 4Kx2K over 40m with CAT5e/6 cable
- HDMI input up to 15 meters with 8bits resolution or 10 meters with 12bits resolution
- HDMI output up to 15 meters with 8/12bits resolution
- Supports HDCP repeater and CEC bypass
- Supports uncompressed video 1080p, 60Hz, 36bits
- Audio supports LPCM 7.1CH, Dolby TrueHD, Dolby digital Plus and DTS-HD Mater Audio transmission
- Compact size with stylish design

Kit Contains:

- 1 x (TX) HDMI/DVI to CAT5e/6 with IR
- 1 x (RX) CAT5e/6 to HDMI with IR
- 1 x Emitter / 1 x IR Digital Eye / 1 x USB Power Cable
- 2 x 5V 2.6A DC Power Adaptor
- User Manual

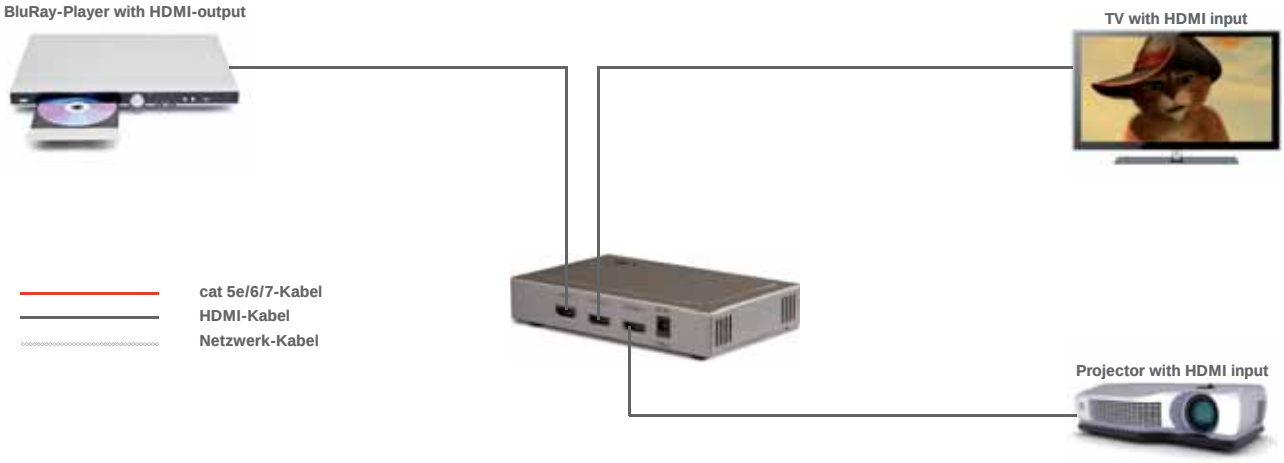
Technical data

Type:		HES Lite Extender set	
Art. No.		310021	
Units		Transmitter	Receiver
Video Bandwidth	Gb/s	9.0	
Inputs		1 x HDMI 1 x Power	1 x RJ45 1 x IR Digital Eyes
Output		1 x RJ45 1 x IR Digital Eyes	1 x HDMI 1 x Power
Videoformat		Uncompressed Full-HD (1080p) 60 Hz, 48 bits	
Audioformat		Dolby True HD / Dolby Digital Plus DTS-HD / LCPM 7.1 CH	
ESD Protection		Human Body Model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)	
IR Frequency	Hz	20 ~ 60	20 ~ 60
Chassis		White PC plastic	
Power Supply		2 x 5V/2.6A DC for Transmitter and Receiver (US/EU standards, CE/FCC/UL certified)	
Power Consumption	W	3W / TX HDMI) 3W / TX (DVI)	5.5W / RX HDMI) 5.0W / RX (DVI)
Operating Temperature	°C	0 ~ 40	0 ~ 40
Storage Temperature	°C	-20 ~ - 60	-20 ~ - 60
Dimension W x H x D	mm	55 x 22.5 x 82	60 x 22.5 x 82
Weight	kg	0.056	0.064

InHouse connectivity

| Active HDMI distribution - system example

Example HDA 1x2S



Example HDA 1x8S with cascade

HDA 1x2S

HDA 1x8S

Note: The detection priority is v1.3 HDMI > v1.2 HDMI > DVI On output1

The active HDMI distribution 1x2s HDA and HDA 1x8S allow the distribution of an HDMI signal source to simultaneously up to 2 or 8 HDMI receiver via HDMI cable.

Features:

- v1.3 HDMI, HDCP 1.1 and DVI 1.0 compliant.
- Supports 'Deep Colour' (10 and 12 bit).
- One HDMI source can connect to two or eight HDMI displays simultaneously.
- HDCP keysets allows each output to work independently when connecting to a HDMI display.
- Supports DVI source and DVI display by using HDMI to/ from DVI adaptor cable.
- Supports LPCM 7.1CH, Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio transmissions
- Supports a wide range of PC and HDTV resolutions from VGA to UXGA and 480i to 1080p.
- Supports EDID functionality.

Technical data

Type:		HDA 1 x 2S Distribution amp.	HDA 1 x 8S Distribution amp.
Art. No.		310006	310007
Frequency bandwidth	Gb/s	2.25 (single link)	2.25 (single link)
Input Port		1 x HDMI Female Port (Type A)	1 x HDMI Female Port (Type A)
HDCP Version		V1.1	V1.1
Output Port		2 x HDMI Female Port (Type A)	8 x HDMI Female Port (Type A)
HDMI Specification		V1.3	V1.3
Videoformat (TV)		480i - 1080p (Full-HD) with Deep Color (10/12 Bit), 3D-support	
Videoformat (PC)		VGA - WUXGA with 480i to 1080p	
Audioformat		Dolby True HD / Dolby Digital Plus / DTS-HD / LCPM 7.1 CH	
ESD Protection		Human Body Model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)	
IR Frequency	Hz	20 ~ 60	20 ~ 60
Chassis Material		Metal	Metal
Chassis Colour		Anthracite RAL 7016	Anthracite RAL 7016
Power Supply		5V/ 1.2A DC (US/EU standards, CE/FCC/UL Certified)	
Power Consumption	W		
Operating Temperature	°C	0 ~ 40	0 ~ 40
Storage Temperature	°C	-20 ~ - 60	-20 ~ - 60
Dimension W x H x D	mm	100 x 25 x 147	240 x 24 x 103
Weight	kg	0.300	1.000
Packing size	pcs.	1	1

Power supply

Type:		5V - 1.2A Power Supply	5V - 3.0A Power Supply
Art. No.		310018	310019
- for use together with		HDA 1x2S	HDA 1x8S
Weight	kg	0.150	0.150
Packing size	pcs.	1	1

HSS 3x1 HDMI switch

The HSS 3x1 is a HDMI Source Selector which has 3 inputs and a single output with “IR” control. The device is a Mini HDMI Selector (Model HSS 3x1) is a high performance HDMI switcher. It allows you to select individual sources up to 3 and feed them into a TV or monitor that only has 1 or 2 HDMI inputs.

- Automatic switchover on the active source or manually by pressing a button on the unit or via supplied remote control conveniently
- Input and Output cable length: Up to 10 and 20 meter 1080p max. (HDMI cable OD 26AWG).
- Plug and play
- Supports HDMI1.1, 1.2a, 1.3a, HDCP 1.1 and DVI 1.0
- Supports high resolution inputs:
  PC: VGA, SVGA, SXVGA (1280x1024)
  UXGA (1600×1200, 1920x1200)
  HDTV: 480p, 720p, 1080i and 1080p
  HDCP compliant.

Technical data

Type:		HSS 3 x 1 - HDMI Source Selector
Art. No.		310015
Frequency bandwidth	Gb/s	2.25
Input Port		3 x HDMI / 1x IR-receiver
Output Port		1 x HDMI
Videoformat (TV)		480p - 1080p (Full-HD)
Videoformat (PC)		VGA - UXGA
IR Frequency	Hz	20 ~ 60
Chassis Material		Plastic
Power Consumption	W	2.7
Dimension W x H x D	mm	114 x 26 x 65
Weight	kg	0.078

HDA - 1EQ - HDMI-HDMI Equaliser

The HDA Equaliser is designed to transmit digital audio and video signals and extend the distance that these signals can travel by equalizing and re-clocking the CDR (Clock Data Recovery). The HDA 1EQ can transmit and receive 2.25Gbps bandwidth rate with video resolution up to 1080p@60Hz.

- Built-in TMDS equaliser and CDR for long cable support
- Support video resolutions upto 1080p@60Hz
- Line powered from source equipment <2W power consumption

Technical data

Type:		HDA 1EQ HDMI HDMI-HDMI Equaliser
Art. No.		310011
Frequency bandwidth	Gb/s	2.25
Input Port		1 x HDMI (female type A)
Output Port		1 x HDMI (female type A)
Videoformat (TV)		480p - 1080p (Full-HD)
Videoformat (PC)		VGA - UXGA
Input cable distance	m	15 m / 8 or 12bits
Chassis Material		Aluminium, Silver RAL 9007
Power Consumption	W	20 (max)
Dimension W x H x D	mm	65 x 10 x 24
Weight	kg	0.030

HMX - HDMI-HDMI Resolution Scaler

The HMX Scaler is designed to display your HD pictures on a HDTV. It can upscale the HDMI input sources to HDMI output for a wide-range of HD resolutions (supported resolutions: XGA/UXGA/720p/1080p/1366 x 768/1440 x 900/1400 x 1050).

The unit provides the user with a variety of output resolutions in order to give you the best picture quality. Move over, with built-in hot-key OSD function and display it helps the user to view and select the desired resolution instantly.

Technical data

Type:		HMX - HDMI-HDMI Resolution Scaler
Art. No.		310010
TMDS Clock Frequency	MHz	225
Input Port		1 x HDMI
Output Port		1 x HDMI
Videoformat (TV)		480p, 720p, 1080p, VGA-WSXGA, WUXGA, 1366x768, 1440x900, 1400x1050
IR Frequency	Hz	20 ~ 60
Chassis Material / Silkscreen Colour		Plastic / Black
Power Supply		5V/1A DC (US/EU standards, CE/FCC/UL Certified)
Power Consumption	W	2.7
Dimension W x H x D	mm	114 x 26 x 65
Weight	kg	0.078

HMX Analyser - 3D HDMI mini analyser

The 3D mini HDMI Analyzer is a tool for checking both source and display devices. With touch button control and built-in OLED (Organic Light Emitting Diode) it can show status of both input and output device. The major purpose is to analyze input source info-frame and output sink EDID. Another purpose is to use built-in pattern to test output device.

- Apparatus testing & Equipment adjustment
- EDID checking & HDCP verification
- Production testing & R&D design

Technical data

Type:		HMX Analyser - 3D HDMI mini analyser
Art. No.		310012
Input Port		1 x HDMI (female type A)
Output Port		1x HDMI 1x Power 1x RS-232 (via 3.5mm jack)
Videoformat		480i - 1080p (Full-HD), 3DTV, VGA - WUXGA
Audioformat		LPCM 2CH, LPCM 5.1CH, LPCM 7.1CH
Chassis Material		Aluminium, Silver RAL 9007
Power Consumption	W	20 (max)
Dimension W x H x D	mm	119.5 x 25 x 70
Weight	kg	0.128

InHouse connectivity

| Infrared transmitters and receivers, remote controls and PSU

Digital Link Eye - 3.5mm Stereo Jack

The Digital Link Eye is positioned near the TV 'Sink device' for it to accept the IR commands from the Source equipment's RCU. These command signals are sent back through the CAT5e/CAT6 cabling infrastructure.

Digital Link Eye (transmitter)

Emitter - IR 1.5m Single IR Emitter

Once the 'IR' command information is received it is relayed from the cabling infrastructure and re-coded via the Emitter fixed to the front of the Source equipment to control it.

Emitter (receiver)

Technical data

Type:		Digital Link Eye (transmitter) 3.5mm Stereo Jack	IR Emitter (receiver)
Art. No.		310014	310013
Input Carrier Frequency	Gb/s	30 to 60 KHz	
IR Output Signal Type		Modulated Output Signal	
Peak Wave Length (p)	nm	940	940
IR Receiver Angle	deg	± 45	40
Supply Input Voltage	VDC	2.5....5.5	
Cable Length (L)	m	2.0	1.5
Connector type		3.5 mm Plug	3.5 mm Plug
Operating Temperature	°C	-25 to +85	-25 to +85
IR Receiver/Lens dimensions (LxWxH)	mm	33 x 19 x 24	12.5 x 5 x 12.5
Weight	kg	0.040	0.009

| Remote controls and power supplies

Remote control for convenient operation

- HDMI matrix solutions such as the assignment of HDMI sources to HDMI receivers

Power Supply units

- Power supply for transmitter, receiver and Matrix solutions

HMX 1RCU

24V 6.25A PSU

Technical data

Type:	HMX 1 RUC	HMX RCU Lite	24V 6.25A PSU	24V 1.25A PSU	5V 2.6A PSU	24V 2.7A PSU
Art. No.	310009	310022	310016	310017	310023	310025
For use with	HMX 4x4K HMX 4x8V HMX 8x8V	HMX 4x4L	HMX 4x4K HMX 4x8V HMX 8x8V	HTX 1V	HES Lite	HMX 4x4L

RJ45 Crimp Tool

CAT Cable Stripper

IDC Tool

Working with the right tools facilitates in any job.

For working with cables and connectors Triax supplies a small set of practical and economic tools that saves time and also ensures the quality and stability of connections.

Technical data

Type:		RJ 45 Crimp Tool	IDC Tool	CAT6 Cable Stripper
Art. No:		157007	157008	157009
Cable connector size	mm			
Packaging		1 pcs.	1 pcs.	1 pcs.
Remarks		Crimp Tool and Cutter		Rotary cable stripper for precise stripping of the cable

CAT6 Plugs

Patch Panel - 24 Port

Technical data

Type:	CAT6 Plugs Unshielded Plugs 8P8C	Patch Panel 24 Port
Art. No:	156001	157006
Packaging	100 pcs. bags	1 pcs.
Remarks	Suitable for 23 AWG	24 Port CAT6 Patch Panel 1U High

CAT 6 Patch Leads

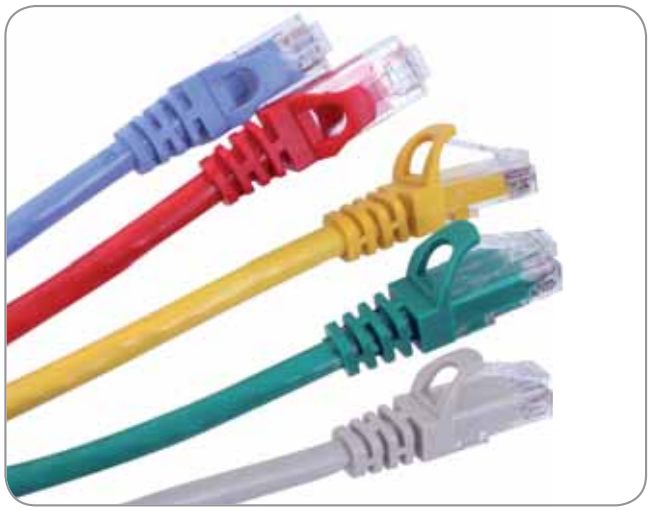
250 MHz Stranded Copper 23 AWG

These 4 twisted pair 23 AWG Cat 6 cables are used in data communication networks for transmission of telephone, internet and video/TV signals.

In the creation of high quality networks the Cat 6 cables are ideal where your installation require high bandwidth.
The bandwidth limit is 250 MHz.

Allowing 10/100/1000 use with up to 100 meter cable length, supporting speeds up to 10 gigabits per second over shorter distances.

- 23 AWG Solid Bare Copper
- High speed gigabit Ethernet
- Superior performance and quality



CAT6 Patch Leads

Art. No.	Type:	Lenght - m
157001	GREY	0.5 m
157002	GREY	1.0 m
157003	GREY	1.5 m
157004	GREY	2.0 m
157005	GREY	3.0 m
157021	RED	0.5 m
157022	RED	1.0 m
157023	RED	1.5 m
157024	RED	2.0 m
157025	RED	3.0 m
157031	BLUE	0.5 m
157032	BLUE	1.0 m
157033	BLUE	1.5 m
157034	BLUE	2.0 m
157035	BLUE	3.0 m
157041	GREEN	0.5 m
157042	GREEN	1.0 m
157043	GREEN	1.5 m
157044	GREEN	2.0 m
157045	GREEN	3.0 m
157051	YELLOW	0.5 m
157052	YELLOW	1.0 m
157053	YELLOW	1.5 m
157054	YELLOW	2.0 m
157055	YELLOW	3.0 m

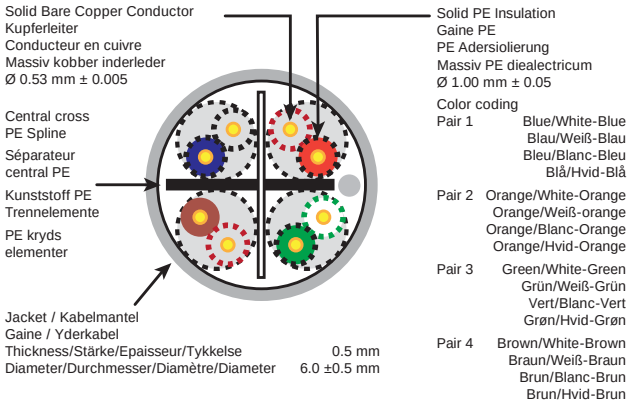
CAT6 UTP Cable (Drum & Polly Box)

Art. No.	Type:	Lenght - m
155001	CAT6 PVC grey	305 m Pully Box
155002	CAT6 LSZH purple	305 m Pully Box
155005	CAT6 LSZH grey	305 m Pully Box
155003	CAT6 PE black	100 m Drum
155004	CAT6 PE brown	100 m Drum

Cable Clips (6.0 mm)

Art. No.	Type:	For use on:
153004	Clips - Natural	All CAT6 cable
370023	Clips - Black	Black CAT6 cable
370024	Clips - Brown	Brown CAT6 cable

Dimensions / Abmessungen
Dimensions / Dimension



CAT 6 UTP Cable

These 4 twisted pair 23 AWG Cat 6 cables are used in data communication networks for transmission of telephone, internet and video/TV signals.

In the creation of high quality networks the Cat 6 cables are ideal where your installation require high bandwidth.
The bandwidth limit is 250 MHz.

Allowing 10/100/1000 use with up to 100 meter cable length, supporting speeds up to 10 gigabits per second over shorter distances.

- 23 AWG Solid Bare Copper
- High speed gigabit Ethernet
- Superior performance and quality

Technical data

Nr.	Item		Specification	Unit
1	Inner conductor	Material	Solid Bare Copper	
		Dimension	0.53 ± 0.005	mm
2	Insulation	Material	Solid PE	
		Diameter	1.00 ± 0.05	mm
	Colour code	Pair 1	Blue / White-Blue	
		Pair 2	Orange / White-Orange	
		Pair 3	Green / White-Green	
		Pair 4	Brown / White-Brown	
3	Central cross	Material	PE Spline	
4	Jacket	Material	PVC / PE / LSZH	
		Thickness	0.5	mm
		Diameter	6.00 ± 0.50	mm
		Colour	Grey / Purple / Black / Brown	

Electrical				
Characteristic Impedance	from 1 to 100 MHz	100 ± 15		Ω
	from 100 to 250 MHz	100 ± 20		Ω
Conductor DC Resistance	@ 20 ^{O}C	< 95		Ω/km
Mutual Capacity	@ 1 KHz	< 1500		pF/m
Attenuation at 20°C / Next	dB/100m	Attenuation	Next	Return loss
	1 MHz	2.00	74.30	20.00
	4 MHz	3.80	65.30	23.00
	10 MHz	6.00	59.30	25.00
	16 MHz	7.60	56.20	25.00
	25 MHz	9.50	53.30	24.30
	31.25 MHz	10.70	51.90	23.60
	100 MHz	19.80	44.30	20.10
	200 MHz	29.00	39.80	18.00
	250 MHz	32.80	38.30	17.30

CE RoHS compliant

InHouse connectivity

| Test tools for CAT6 & LAN network cables

CAT6 Cable Tester

LAN Network Tester

CAT6 Cable Tester set

Art. No.	Type:
157010	Master Unit and Remote Receiving Unit

The CAT5e/6 cable tester provides a simple method of checking the correct pin configuration of 10Base-T cable, 10Base-2 cable, RJ45/RJ11 modular cables, 258A, TIA-568A/568B and Token Ring cables.

It comprises of a Master Unit and a separate Remote Receiving Unit. The LED indicators on the master and remote units can then be used to determine the status of the cable under test. The Master unit can be used on its own, e.g. for testing short cables at one location, or with the Remote Unit for testing longer cables or pre-installed cables.

As the Remote Receiver is separate to the Master Unit, it does not matter whether the cable under test is long, short, on a wall plate or patch panel. The tester can be used to check for cable continuity, open circuit, short circuit or a cross connected cable.

Features:

- Versatile and simple to use
- Can be used to check the pin configuration of 10Base-T, 10Base-2 Ethernet cable, RJ45 /RJ11 modular cables, 258A, TIA-568A/568B and Token Ring cable
- Easy to read LED indicators on the Master and Remote Units showing the cable status
- Can be used to verify cable continuity, open circuit, short circuit and cross wiring
- The separate remote receiving unit can be used to test cables whether long, short on a wall plate or patch panel
- Can be used to test grounding
- Selectable auto or manual scan

LAN Network Tester

Art. No.	Type:
157011	Testing and Problem Solving Installations

- Help prevent and solve network cable installation problems
- Check telephony and data cable installations
- Carry out a number of tests such as cable connection sequence, length, user jumper, cable connection continuity and can detect open circuits, short circuits, jumper or cross-talk interference
- Reduce cable installation cost and save cable installation time

Features:

- Only requires one person to complete cable continuity checks
- Checks for wiring errors in CAT 5e / 6 cable, coaxial cable and telephone lines
- Errors such as open circuit, short circuit, jumper wire, reverse connection or cross-talk interference can be detected
- Locates the wiring or connection error
- Measures the cable length and estimates the distance to the open circuit or short circuit fault
- Dynamically calibrates cable length and carries out cable length measurement to an accuracy of 97%
- Simple and easy to use. The large LCD screen clearly displays the test results
- Portable unit with long battery life
- Automatically switches off if left unused for 30 minutes
- Measures length and pair with or without far-end recogniser
- Locates cables. There can be up to 8 far-end passive test jacks (ID No: ID 1-ID8)
- Self-checking function and automatic compensation for any change in battery capacity or ambient temperature.

CAT6 Cable Tester

LAN Network Tester

LAN Cable Identifier

Type:		LAN Cable Identifier
Art. No.		157012
Signal Transmission Format		Multi-Frequency Impulse
Signal Transmission Distance	km	≥ 3
Electrical Signal Output Status	V p-p	8
Max Current		
- Emitter	mA	≤ 10
- Receiver	mA	≤ 30
Power Supply	DC	9V Battery
Dimensions (mm)		
- Emitter	mm	140 x 75 x 30
- Receiver	mm	220 x 48 x 32
- Kit	mm	143 x 50 x 262
Weight		
- Emitter	kg	0.110
- Receiver	kg	0.140
- Kit	kg	0.400

LAN Cable Identifier Kit Contents

Description	Quantity
Emitter Unit	1
Receiver Unit	1
Headphones	1
RJ11 to RJ11 Telephone Cable	1
RJ45 to RJ45 Network Cable	1
RJ11 to Crocodile Clip Cable	1
User Manual	1
Storage Bag	1

HDMI Cable Tester

Type:	Cable Tester
Art. No.	157013
	Continuity and Sweep Tester

- The HDMI Cable Tester enables you to perform continuity and sweep tests on HDMI Cable.

InHouse connectivity

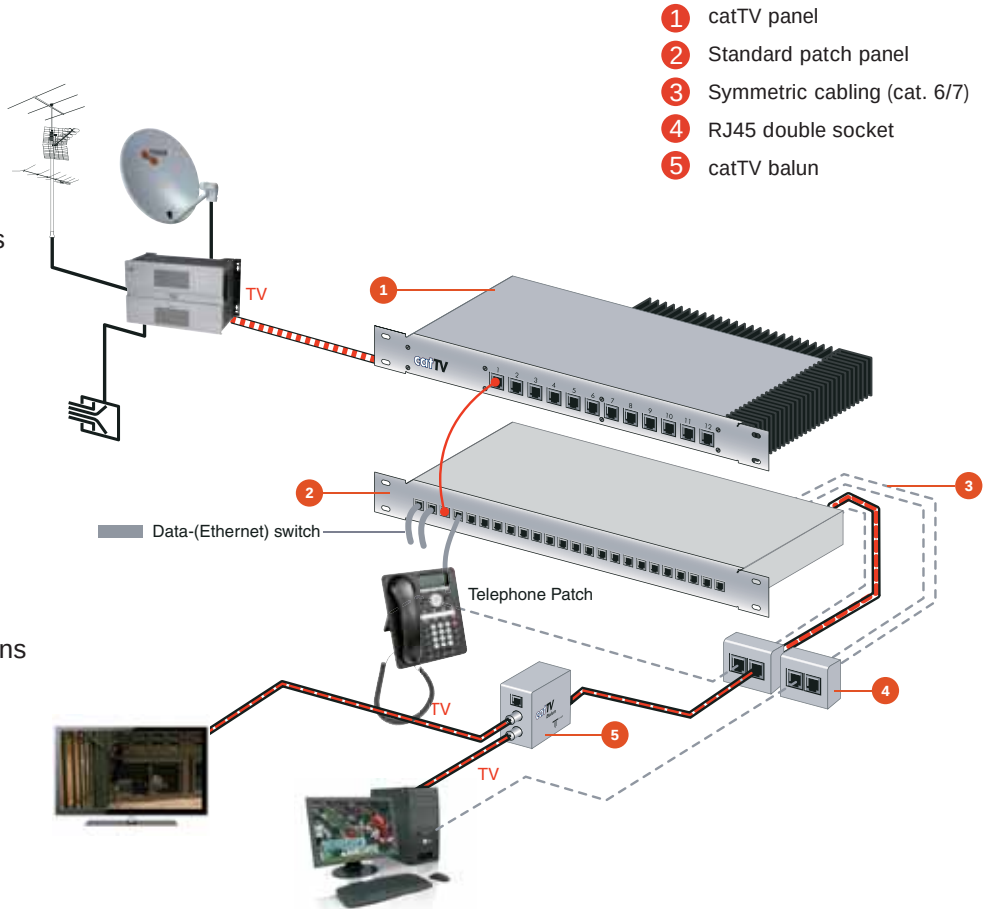
| catTV: TV over symmetric data cable

The catTV technique was developed to transfer over the previously used only for telephone and Internet data network and radio, television and value-added services. Thus, the additional coaxial cabling for television reception is unnecessary. TV reception can be at any point in the data network realized.

- catTV technology from Hirschmann was developed to enable transmission of radio, television, and value-added services via the data network that formerly was used only for telephone and Internet. Thus additional coax cabling can be dispensed with for television reception. Television reception can then be implemented at any point of the data network.
- Multimedia application (radio, TV) directly via the existing 100 Ohm application-neutral building cabling = "structured cabling" (symmetric cabling in accordance with category 6/7)
- With the double-active catTV systems (distribution panel and Balun) link attenuation of up to 50 dB can be compensated. This also means that the maximum structured cabling length of (90 m) can be bridged.
- The service can be fed individually to each subscriber via star-shaped "structured cabling"
- Cost-effective extensions and supplemental integration of additional subscribers are possible without installation expenses - additional calibration is not required
- Installation of an additional coax network is not required for the TV multimedia application
- All TV channels offered from 45 (85) to 862 MHz can be transmitted
- Return channel enabled, optionally available with active or passive return channel (5-30 MHz or 5-65 MHz)
- Plug and play system. Adjustment of attenuation and slope to the existing cable length merely requires a changeover switch (in 3 steps) on the balun.

| Applications in / to

- Office and industrial buildings
- Clinics and hospitals
- Rehabilitation centres
- Banks, savings institutions
- Stock exchange workstations
- Brokerage firms
- Insurance buildings
- Airports
- TV stations and television studios
- Municiple buildings
- Hotels, vacation resorts
- Housing estates
- Athletic arenas
- Correspondent workstations



NPN and NPO catTV panels for television and radio reception at any point in the data network without additional installation of coaxial cable.
The panel with electric NPN input (coaxial/75 ohms), or NPO with optical input (single mode) converts the input signal into a balanced signal (sym./100 ohms) to it via the patch (patch panel) of the building wiring intrude subscriber line.

- Super low noise push-pull technology
- Attenuator + equaliser on the input
- Input measuring socket
- Amplification through GaAs- hybrids
- Conversion of 75 W(coaxial) to 100 W(symmetric), RJ 45
- Paired cable configuration (HF 1,2; remote feed/RC 7, 8)
- TV signals are only actively switched when balun is connected
- Standard RC module active and passive can be retrofitted (see p. 60)
- Static switch-off of individual ports is possible
- External power supply

NPN 3412

NPO 3412

Technical data

Type:		NPN 3412 catTV-panel	NPO 3412 catTV-panel
Art. No.		350663	350664
Optical part			
Optical input			SC/APC
Input Power	dBm		-2...-10
Wavelength	nm		1280...1610
Return Loss	dB		45
Bandwidth	MHz		47...862
Output level (-5 dBm, OMI = 4%)	dBµV		88
Electrical output			F-female
Electrical Section			
Input frequency	MHz	45-862, optional return channel	45-862
Input level	dBµV	60-83	-
Level control	dB	0-20	0-20
Equalizer	dB	0-18	0-18
Noise	dB	7	7
Amplification	dB	34	34
Precorrection	dB	15	15
Operating level (Normal-/Special operating*)			
42 channels (@60 dB CSO/CTB)	dBµV	94 [1] /104 [2]	94 [1] /104 [2]
Testpoint	dBµV	70 [1] / 80 [2]	70 [1] / 80 [2]
Input measuring socket		F-female	F-female
Outputs		RJ 45, 8-pole, 100 Ω	RJ 45, 8-pole, 100 Ω
Controls		Sub-D connector, 15pole	Sub-D connector, 15pole
Power Supply	V DC/A	28 ±5% / max. 1,9	28 ±5% / max. 1,9
Current consumption	mA	930 - without Balun	930 - without Balun
Power Supply unit		External, protection class 2 short circuit protected,	External, protection class 2 short circuit protected,
Operating Temperature	°C	0...+50	0...+50
Dimension W x H x D	mm	483 x 42 x 180 (19", 1 HE)	483 x 42 x 180 (19", 1 HE)
Weight	kg	2.8	2.8

1) Normal mode. Maximum bridgeable cable attenuation 40 dB. Externally connected passive network components must have minimum shielding of 75 dB.
2) Special mode. Maximum bridgeable cable attenuation 50 dB. Externally connected passive network components must have minimum shielding of 85 dB.

InHouse connectivity

| catTV Balun

The balun (balanced - unbalanced) converts the panel from catTV transmitted over the generic cabling symmetrical signal (100 ohms) to be processed in one of the devices (eg TV and radio) coaxial signal (75 ohm).

- The catTV balun is plugged in via a patch cable to the RJ45 socket participants.
- Audio input signals via RJ 45
- Back conversion of 100 W into 75 W
- Amplification of the HF signal
- Allocation of the signals to the outputs
- 3 variants without RK, RK 5-30 MHz, RK 5-65 MHz
- Slope and attenuation of max. 50 dB are compensated
- Plug and play, 3 switch settings for easy adjustment to different cable lengths

NBL 0200

Technical data

Type:		NBL 0200 Balun	NBL 0265 Balun
Art. No.		350661	350662
Input frequency	MHz	45-862	80-862
Return frequency	MHz		5-65
Input level	dBµV	54-90	54-90
Gain	dB	6/-7/-20	6/-7/-20
Pre-equalisation	dB	18/10/0	18/10/0
Output level	dBµV	60-77	60-77
Input		RJ 45, 8-pole, 100 Ω symmetric	RJ 45, 8-pole, 100 Ω symmetric
Outputs			
TV		IEC male connector, 75 Ω	IEC male connector, 75 Ω
RF		IEC female, 75 Ω	-
DATA		-	F-female, 75 Ω
Phone		RJ 45, 8-pole, 100 Ω symmetric	RJ 45, 8-pole, 100 Ω symmetric
Power Supply	V DC/A	10	10
Current Consumption	mA	70	70
Operating Temperature	°C	0 - 50	0-50 °C
Dimension W x H x D	mm	81 x 35 x 59	81 x 35 x 50
Weight	kg	0.112	0.112

Satellite TV for smart-phones, tablets etc.

The SAT>IP products from Triax makes it possible to distribute satellite TV over cable connected (LAN, Power LAN) or cableless networks (WLAN). SAT>IP-compatible units such as TV sets, receivers, PCs, smartphones, tablets and other mobile units can thus be provided with all free available TV and radio programmes.

Features of SAT>IP

- Reception of all free available TV and radio programmes via satellite
- SAT-distribution via cable connected and cableless networks
- Digital picture and audio quality – even in high-resolution HD-format
- All digital additional options such as EPG, recording function and time shift can be used in the unit provided the unit supports the function

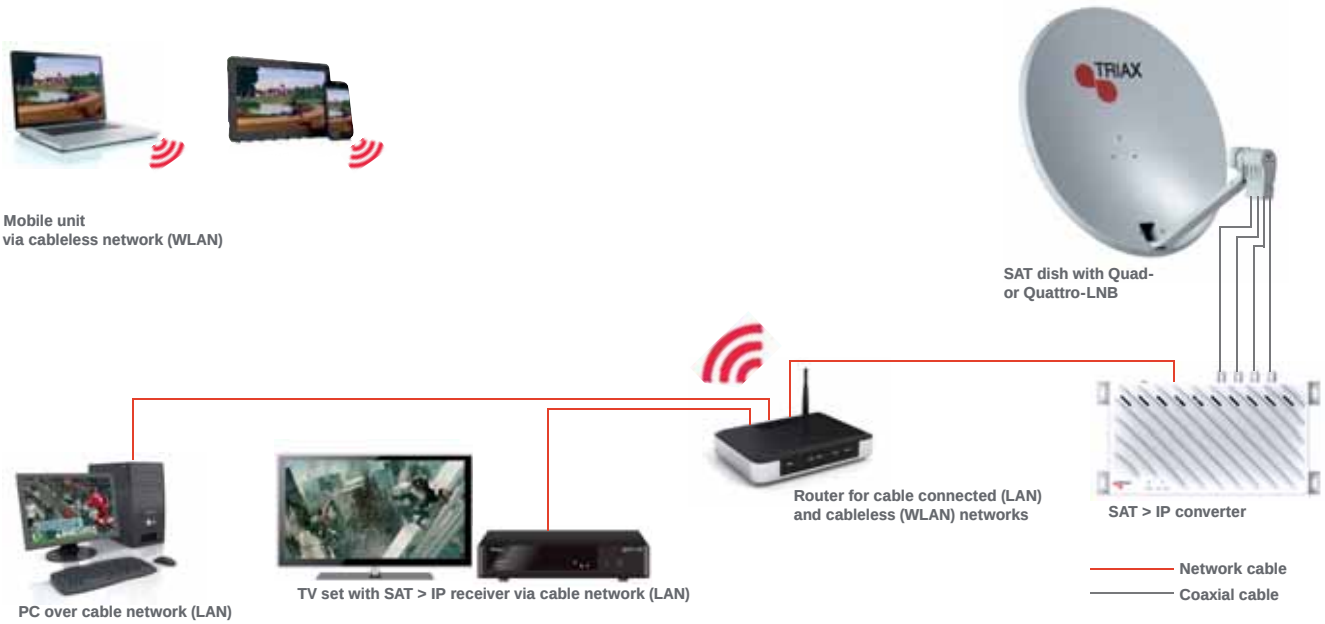
SAT>IP compatible devices

- Up to 4 units can access different TV programmes at the same time
- Compatible with all SAT > IP-compatible units such as
- SAT>IP receiver
- Tablets and smartphones PCs and laptops

Easy set-up

- Supports Quad- and Quattro-LNBs, optical LNBs with converter and Unicable-LNBs
- Easy installation and control via the web-based configurator
- Software update by USB
- Compatible with 100/1.000 Megbit networks

Application in practice: SAT > IP receiver and server



InHouse connectivity

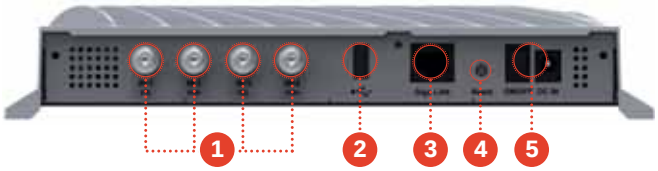
| TSS 400 SAT>IP Converter

The TSS 400 SAT> IP Converter classic receives satellite signals, converts them and puts them up to four different devices in the IP network.

Plug-and-play commissioning can take place without further knowledge. Simply SAT> IP Converter connected to the LNB and the home network.

Supports Quad or Quattro LNB, optical LNB with quad or quattro LNB converters and unicable

Connections



1. F-connectors for LNB input
2. USB 2.0 interface
3. Network interface
4. Reset button
5. On/off switch and power supply

Technical data

Type:		TSS 400 SAT>IP Converter
Art. No.		310101
Tuner		DVB-S | DVB-S2 (HDTV)
Number of tuners (different units))		4
Supported LNBs		Quad LNB Quattro LNB, LNB unicable, Optical LNB Quad or Quattro reconverter Single LNB Twin LNB or (limited to 1 or 2 students)
Plug & Play		Yes
Unicable capable		Yes
Updates via Web configurator | via USB interface		Yes | Yes
Supported protocols		SAT>IP Protocoll Version 1.1 Unicast via HTTP 1.0/1.1 Multicast via UDP/RTP
Connections - DVB-S/S2 input		4x F-female, Ethernet 100/1000 MBit/s, USB 2.0
Colour		White
Operating Temperature	°C	0 ... +40
Dimension W x H x D	mm	250 x 126 x 35
Weight	kg	0.75
Box contains		Converter | Power Supply | Quick Start Guide

Display of SAT>IP signals etc. on the TV

The TRIAX IP-100 SAT>IP receiver makes it possible to display SAT>IP signals on the TV and thereby offer access to all free available TV and radio programmes in the home network. Additional features like EPG, video text and subtitles ensure you the full benefit of TV watching, and the possibility to record programmes on external storage media makes the picture complete. Thanks to the Android 2.2 OS many different apps can be played on the unit and make this receiver a true allrounder.

Features

- Display of SAT>IP signals on the TV
- Recording function on external storage media such as USB can be upgraded by software update.
- 14 days electronic program guide (EPG).
- Videotext and subtitles.
- Mediaplayer for access to photos, music and films via the home network (UpnP) or USB.

Many additional functions

- Internet-based additional services via HbbTV
- TRIAX SmartTV portal with many apps
- Free internet browsing for display of websites on the TV
- Access to many broadcasts from the past 7 days via the media libraries of the program providers

Technical data

Type:		IP-100 SAT>IP Receiver
Art. No.		305250
Tuner		SAT>IP
Plug & Play Installation assistant		Yes
Menu languages		10
Additional functions		EPG, Videotext, Untertitel
Software updates		via USB interface
SmartTV (internet-based additional services)		HbbTV, Media libraries, adv. Videotext, adv. EPG, free internet browsing
Recording and playback function via USB		Update via software
Mediaplayer via		USB, UPnP
Video-output		HDMI, Cinch
Audio-output		Cinch
Network connection		10/100/1000 MBit/s - WLAN ready viaUSB
USB-interface		1x USB 2.0 (Front), 2x USB 2.0 (Back)
Colour		Black
Power Supply		Yes
Current Consumption | Stand-by	W	5.0 | < 1.0
Operating Temperature	°C	+5 ... +50
Dimension W x H x D	mm	145 x 30 x 100
Weight	kg	0.500
Box contains		STB | Remote control | 2x AAA Batteries | Operation manual

Notes

| for your personal notes

Cables, connectors and tools

Indoor
Outdoor
Fly leads
HDMI
CAT
F -/IEC connectors
F -/IEC adaptors
F - terminator
Connection cables
Power cables and electricity articles

Coax Cables - Indoor

| 3 mm types

Triax KOKA 30
- is a universal coaxial cable for TV broadcast in-house cabling.

Technical data

Type: Art. No: 100 m plastic reel 250 m plastic reel		KOKA 30 - PVC white Cu - 3.6mm cable 150001	KOKA 30 - PVC white Cu - 3.6mm cable 150002
Colour		White	White
Construction			
Inner conductor - dimension		0.41 ± 0.02	0.41 ± 0.02
Inner conductor - material		Cu	Cu
Dielectric - dimension	Ø mm	1.9 ± 0.1	1.9 ± 0.1
Dielectric - material		PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		CuSn	CuSn
Second shield – braid coverage	%	58	≥ 58
Anti migration foil - material		PE tape	PE tape
Jacket – dimension		3.6 ± 0.1	3.6 ± 0.1
Jacket – material		PVC	PVC
Minimum bending radius - single/repeated	mm	25/50 mm	25/50 mm
Electrical			
Impedance	Ohm	75 ± 3	75 ± 3
Capacitance	pF/m	55 ± 1	55 ± 1
Velocity ratio	%	82	82
Inner DC resistance	Ω/km	130	130
Outer DC resistance	Ω/km	40	40
Attenuation (at 20°C)			
@ 5 MHz	dB/100 m	3.9	3.9
@ 50 MHz	dB/100 m	11.4	11.4
@ 200 MHz	dB/100 m	21.4	21.4
@ 470 MHz	dB/100 m	33.5	33.5
@ 862 MHz	dB/100 m	46.5	46.5
@ 1000 MHz	dB/100 m	50.6	50.6
@ 1350 MHz	dB/100 m	59.6	59.6
@ 1750 MHz	dB/100 m	66.5	66.5
@ 2150 MHz	dB/100 m	72.0	72.0
@ 2400 MHz	dB/100 m	78.8	78.8
Transfer impedance			
@ 5-30 MHz	dB	≤ 15	≤ 15
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
Screening attenuation			
30-1000 MHz	dB	≥ 75	≥ 75
1000-2000 MHz	dB	≥ 85	≥ 85
2000-3000 MHz	dB	≥ 75	≥ 75
Class (according to EN 50117-2-4)		B	B
Remarks			Not in stock

Triax KOKA 50
- is a universal coaxial cable for TV broadcast in-house cabling.

Technical data

Type:		KOKA 50 - PVC white Cu - 5.0mm cable	KOKA 50 - PVC grey Cu - 5.0mm cable	KOKA 50 - LSZH white Cu - 5.0mm cable
Art. No: 100 m plastic reel		150151	150156	150158
250 m plastic reel		150152	150157	150159
Colour		White	Grey	White
Construction				
Inner conductor - dimension		0.8 ± 0.02	0.8 ± 0.02	0.8 ± 0.02
Inner conductor - material		Cu	Cu	Cu
Dielectric - dimension		3.5 ± 0.1	3.5 ± 0.1	3.5 ± 0.1
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		CuSn	CuSn	CuSn
Second shield – braid coverage	%	> 45	> 45	> 45
Anti migration foil - material		PE tape	PE tape	PE tape
Jacket – dimension		5.0 ± 0.15	5.0 ± 0.15	5.0 ± 0.15
Jacket – material		PVC	PVC	LSZH
Minimum bending radius - single/repeated		25/50	25/50	25/50
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Capacitance		52 ± 1	52 ± 1	52 ± 1
Velocity ratio	%	85	85	85
Inner DC resistance	Ω/km	25	25	25
Outer DC resistance	Ω/km	50	50	50
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	2.5	2.5	2.5
@ 50 MHz	dB/100 m	6.1	6.1	6.1
@ 200 MHz	dB/100 m	11.2	11.2	11.2
@ 470 MHz	dB/100 m	17.5	17.5	17.5
@ 862 MHz	dB/100 m	23.9	23.9	23.9
@ 1000 MHz	dB/100 m	25.9	25.9	25.9
@ 1350 MHz	dB/100 m	30.4	30.4	30.4
@ 1750 MHz	dB/100 m	34.8	34.8	34.8
@ 2150 MHz	dB/100 m	39.0	39.0	39.0
@ 2400 MHz	dB/100 m	41.0	41.0	41.0
@ 3000 MHz	dB/100 m	46.5	46.5	46.5
Transfer impedance				
@ 5-30 MHz	dB	≥ 15	≥ 15	≥ 15
Structural Return Loss				
@ 5-470 MHz	dB	≥ 26	≥ 26	≥ 26
@ 470-1000 MHz	dB	≥ 23	≥ 23	≥ 23
@ 1000-2000 MHz	dB	≥ 18	≥ 18	≥ 18
@ 2000-3000 MHz	dB	≥ 16	≥ 16	≥ 16
Screening attenuation				
30-1000 MHz	dB	≥ 75	≥ 75	≥ 75
1000-2000 MHz	dB	≥ 85	≥ 85	≥ 85
2000-3000 MHz	dB	≥ 80	≥ 80	≥ 80
Class (according to EN 50117-2-4)		B	B	B
Remarks		- / -	- / Not in stock	Not in stock/Not in stock

Coax Cables - Indoor

| 7 mm types - RG6

Technical data

Type:		KOKA 6 - PVC white Cu - 6.8mm cable	KOKA 6 - PVC white Cu - 6.8mm cable	KOKA 6 - PVC white Cu - 6.8mm cable
Art. No:		150120	150121	150122
Colour		White	White	White
Length		Coil 100m	Reel 100m	Reel 250m
Construction				
Inner conductor - dimension		1.02 ± 0.02	1.02 ± 0.02	1.02 ± 0.02
Inner conductor - material		Cu	Cu	Cu
Dielectric - dimension		4.8 ± 0.1	4.8 ± 0.1	4.8 ± 010
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		Alu	Alu	Alu
Second shield – braid coverage	%	43	43	43
Anti migration foil - material		PE tape	PE tape	
Jacket – dimension		6.8 ± 0.1	6.8± 0.1	6.8 ± 0.10
Jacket – material		PVC	PVC	PVC
Minimum bending radius - single/repeated		35/70	35/70	35/70 mm
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Capacitance		52	52	52
Velocity ratio	%	82	82	82
Inner DC resistance	Ω/km	< 22	< 22	22
Outer DC resistance	Ω/km	< 65	< 65	65
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.9	1.9	1.9
@ 50 MHz	dB/100 m	5.0	5.0	5
@ 200 MHz	dB/100 m	9.63	9.63	9.63
@ 470 MHz	dB/100 m	13.5	13.5	13.5
@ 862 MHz	dB/100 m	20.0	20.0	
@ 1000 MHz	dB/100 m	21.49	21.49	21.49
@ 1350 MHz	dB/100 m	23.5	23.5	23.5
@ 1750 MHz	dB/100 m	26.5	26.5	26.5
@ 2150 MHz	dB/100 m	31.2	31.2	31.20
@ 2400 MHz	dB/100 m	33.1	33.1	33.1
@ 3000 MHz	dB/100 m	38.0	38.0	38
Transfer impedance				
@ 5-30 MHz	dB	≥ 15	≥ 15	≥ 15
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
Screening attenuation				
30-1000 MHz	dB	≥ 75	≥ 75	≥ 75
1000-2000 MHz	dB	≥ 65	≥ 65	≥ 65
2000-3000 MHz	dB	≥ 55	≥ 55	≥ 55
Class (according to EN 50117-2-4)		B	B	B
Remarks		Stock Dubai		

Technical data

Type:		KOKA 6 - PVC white Cu - 6.8mm cable	KOKA 6 - PVC black Cu - 6.8mm cable	KOKA 6 - PVC white CCS - 6.8mm cable
Art. No:		150129	150130	150144
Colour		White	Black	White
Length		Reel 305m	Reel 305m	Reel 305m
Construction				
Inner conductor - dimension		1.02 ± 0.02 mm	1.02 ± 0.02	1.02 ± 0.02
Inner conductor - material		Cu	Cu	CCS
Dielectric - dimension		4.80± 0.10	4.80 ± 0.10	4.80 ± 0.10
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		Alu	Alu	CuSn
Second shield – braid coverage	%	43	43	40
Anti migration foil - material		yes	Yes	Yes
Jacket – dimension		6.8 ± 0.10	6.8 ± 0.10	6.8 ± 0.10
Jacket – material		PVC	PVC	PVC
Minimum bending radius - single/repeated		35/70 mm	35/70 mm	35/70 mm
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Capacitance		52	52	52
Velocity ratio	%	82	82	84
Inner DC resistance	Ω/km	22	22	102
Outer DC resistance	Ω/km	65	65	30
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.9	1.9	2.2
@ 50 MHz	dB/100 m	5.0	5.0	4.6
@ 200 MHz	dB/100 m	9.63	9.63	9.0
@ 470 MHz	dB/100 m	13.50	13.50	12.87
@ 862 MHz	dB/100 m			
@ 1000 MHz	dB/100 m	21.49	21.49	21.1
@ 1350 MHz	dB/100 m	23.50	23.50	22.72
@ 1750 MHz	dB/100 m	26.50	26.50	26.25
@ 2150 MHz	dB/100 m	31.20	31.20	30.8
@ 2400 MHz	dB/100 m	33.10	33.10	32.9
@ 3000 MHz	dB/100 m	38	38	39
Transfer impedance				
@ 5-30 MHz	dB	≥ 15	≥ 15	≥ 15
Structural Return Loss				
@ 5-470 MHz	dB	≥ 21	≥ 21	≥ 23
@ 470-1000 MHz	dB	≥ 20	≥ 20	≥ 20
@ 1000-2000 MHz	dB	≥ 18	≥ 18	≥ 18
@ 2000-3000 MHz	dB	≥ 16	≥ 16	≥ 16
Screening attenuation				
30-1000 MHz	dB	≥ 75	≥ 75	≥ 80
1000-2000 MHz	dB	≥ 65	≥ 65	≥ 80
2000-3000 MHz	dB	≥ 55	≥ 55	≥ 70
Class (according to EN 50117-2-4)		B	B	B
Remarks		Not in stock	Not in stock	Stock Dubai

Coax Cables - Indoor

| 7 mm types - RG6

Technical data

Type:		KOKA 500 - LSZH Cu - 6.8mm cable	KOKA 500 - LSZH Cu - 6.8mm cable	RG 6 - PVC CCS - 6.86mm cable
Art. No:		150561	150562	150239
Colour		White	White	White
Length		Plastic reel 100m	Plastic reel 250m	Coil 40m
Construction				
Inner conductor - dimension	mm	1.13 ± 0.02 mm	1.13 ± 0.02 mm	1.02 ± 0.01
Inner conductor - material		Cu	Cu	CCS
Dielectric - dimension	mm	4.8 ± 0.1 mm	4.8 ± 0.1 mm	4.57 ± 0.05
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		CuSn	CuSn	Alu
Second shield – braid coverage	%	77	77	60
Anti migration foil - material				Yes
Jacket – dimension	mm	6.8 ± 0.1 mm	6.8 ± 0.1 mm	6.86 ± 0.1
Jacket – material		LSZH	LSZH	PVC
Minimum bending radius - single/repeated		35/70	35/70	35/70
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Capacitance				53 ± 1
Velocity ratio	%	85	85	85
Inner DC resistance	Ω/km			102
Outer DC resistance	Ω/km			60
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.6	1.6	2.1
@ 50 MHz	dB/100 m	4.2	4.2	5.0
@ 200 MHz	dB/100 m	8.2	8.2	9.0
@ 470 MHz	dB/100 m	12.8	12.8	15.2
@ 862 MHz	dB/100 m	17.0	17.0	19.5
@ 1000 MHz	dB/100 m	18.9	18.9	21.5
@ 1350 MHz	dB/100 m	22.4	22.4	24.0
@ 1750 MHz	dB/100 m	25.5	25.5	28.4
@ 2150 MHz	dB/100 m	28.7	28.7	30.8
@ 2400 MHz	dB/100 m	30.5	30.5	32.8
@ 3000 MHz	dB/100 m	34.5	34.5	39.0
Transfer impedance				
@ 5-30 MHz	dB	< 5	< 5	≤ 15
Structural Return Loss				
@ 5-470 MHz	dB	> 26	> 26	≥ 21
@ 470-1000 MHz	dB	> 23	> 23	≥ 20
@ 1000-2000 MHz	dB	> 20	> 20	≥ 18
@ 2000-3000 MHz	dB	> 20	> 20	≥ 16
Screening attenuation				
30-1000 MHz	dB	≥ 85	≥ 85	≥ 75
1000-2000 MHz	dB	≥ 90	≥ 90	≥ 65
2000-3000 MHz	dB	≥ 80	≥ 80	≥ 55
Class (according to EN 50117-2-4)		A	A	B
Remarks				Stock Dubai

Technical data

Type:		RG 6 - PVC CCS - 6.86mm cable	RG 6 - PVC white CCS - 6.86mm cable	RG 6 - PVC white CCS - 6.8mm cable
Art. No:		150339	150038	150039
Colour		White	White	White
Length		Coil 70m	Coil 100m	Plastic reel 305m
Construction				
Inner conductor - dimension	mm	1.02 ± 0.01	1.02 ±0.02	1.02 ± 0.03
Inner conductor - material		CCS	CCS	CCS
Dielectric - dimension	mm	4.57 ± 0.05	4.80 ± 0.10	4.80 ± 0.10
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		Alu	CuSn	Al
Second shield – braid coverage	%	60	40	60
Anti migration foil - material		yes	Yes	
Jacket – dimension	mm	6.86 ± 0.1	6.80 ± 0.10	6.8 ± 0.2
Jacket – material		PVC	PVC	PVC
Minimum bending radius - single/repeated		35/70	35/70 mm	23/70 mm
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75± 3
Capacitance		53 ± 1	52	53
Velocity ratio	%	85	84	81
Inner DC resistance	Ω/km	102	102	< 101
Outer DC resistance	Ω/km	60	30	< 38
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	2.1	2.2	2.1
@ 50 MHz	dB/100 m	5.0	4.6	5.0
@ 200 MHz	dB/100 m	9.0	9.0	9.0
@ 470 MHz	dB/100 m	15.2	12.87	15.2
@ 862 MHz	dB/100 m	19.5		
@ 1000 MHz	dB/100 m	21.5	21.10	21.5
@ 1350 MHz	dB/100 m	24.0	22.72	25.33
@ 1750 MHz	dB/100 m	28.4	26.25	28.4
@ 2150 MHz	dB/100 m	30.8	30.80	30.8
@ 2400 MHz	dB/100 m	32.8	32.90	32.9
@ 3000 MHz	dB/100 m	39.0	39.0	39.0
Transfer impedance				
@ 5-30 MHz	dB	≤ 15	≤ 15	≤15
Structural Return Loss				
@ 5-470 MHz	dB	≥ 21	≥ 23	≥ 23
@ 470-1000 MHz	dB	≥ 20	≥ 20	≥ 21
@ 1000-2000 MHz	dB	≥ 18	≥ 18	≥ 18
@ 2000-3000 MHz	dB	≥ 16	≥ 16	≥ 16
Screening attenuation				
30-1000 MHz	dB	≥ 75	≥ 80	≥ 75
1000-2000 MHz	dB	≥ 65	≥ 80	≥ 65
2000-3000 MHz	dB	≥ 55	≥ 70	≥ 55
Class (according to EN 50117-2-4)		B	B	B
Remarks		Stock Dubai	Stock Dubai	Stock Dubai

Coax Cables - Indoor

| 7 mm types - RG6

Technical data

Type:		KOKA 80 - PVC Cu - 6.8mm cable	KOKA 80 - PVC Cu - 6.8mm cable
Art. No:		150161	150162
Colour		White	White
Length		Plastic reel 100m	Plastic reel 250m
Construction			
Inner conductor - dimension	mm	1.02 ± 0.02 mm	1.02 ± 0.02 mm
Inner conductor - material		Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.1 mm	4.8 ± 0.1 mm
Dielectric - material		PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid dimension			16 x 4 x 0.12
Second shield – braid material		CuSn	CuSn
Second shield – braid coverage	%	> 40	> 40
Anti migration foil - material		PET transparent	PET transparent
Jacket – dimension	mm	6.80± 0.15 mm	6.80 ± 0.15 mm
Jacket – material		PVC	PVC
Minimum bending radius - single/repeated	mm	35/70 mm	35/70 mm
Electrical			
Impedance	Ohm	75 ± 3	75 ± 3
Capacitance	pF/m	52± 1	52 ± 1
Velocity ratio	%	84	84
Inner DC resistance	Ω/km	21.5	21.5
Outer DC resistance	Ω/km	21	21
Attenuation (at 20°C)			
@ 5 MHz	dB/100 m	1.5	1.5
@ 50 MHz	dB/100 m	4.6	4.6
@ 200 MHz	dB/100 m	9.0	9.0
@ 470 MHz	dB/100 m	13.4	13.4
@ 862 MHz	dB/100 m	19.6	19.6
@ 1000 MHz	dB/100 m	21.1	21.1
@ 1350 MHz	dB/100 m	23.5	23.5
@ 1750 MHz	dB/100 m	27.2	27.2
@ 2150 MHz	dB/100 m	30.8	30.8
@ 2400 MHz	dB/100 m	32.8	32.8
@ 3000 MHz	dB/100 m	36.7	36.7
Transfer impedance			
@ 5-30 MHz	dB	≤ 15	≤ 15
Structural Return Loss			
@ 5-470 MHz	dB	33	33
@ 470-1000 MHz	dB	26	26
@ 1000-2000 MHz	dB	22	22
@ 2000-3000 MHz	dB	18	18
Screening attenuation			
30-1000 MHz	dB	≥ 80	≥ 80
1000-2000 MHz	dB	≥ 95	≥ 95
2000-3000 MHz	dB	≥ 85	≥ 85
Class (according to EN 50117-2-4)		B	B

Technical data

Type:		KOKA 80 - LSZH Cu - 6.8mm cable	KOKA 80 - LSZH Cu - 6.8mm cable	KOKA 80 - LSZH Cu - 6.8mm cable
Art. No:		150171	150172	150173
Colour		White	White	White
Length		Plastic reel 100m	Plastic reel 250m	Plastic reel 500m
Construction				
Inner conductor - dimension	mm	1.02 ± 0.02 mm	1.02 ± 0.02	1.02 ± 0.02 mm
Inner conductor - material		Cu	Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.1 mm	4.8± 0.1	4.8 ± 0.1 mm
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid dimension				
Second shield – braid material		CuSn	CuSn	CuSn
Second shield – braid coverage	%	> 40	> 40	> 40
Anti migration foil - material		PET transparent	PET transparent	PET transparent
Jacket – dimension	mm	6.80 ± 0.15 mm	6.80 ± 0.15	6.80 ± 0.15 mm
Jacket – material		LSZH	LSZH	LSZH
Minimum bending radius - single/repeated	mm	35/70 mm	35/70	35/70 mm
Electrical				
Impedance	Ohm	75± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52 ± 1	52 ± 1	52 ± 1
Velocity ratio	%	84	84	84
Inner DC resistance	Ω/km	21.5	21.5	21.5
Outer DC resistance	Ω/km	21	21	21
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.5	1.5	1.5
@ 50 MHz	dB/100 m	4.6	4.6	4.6
@ 200 MHz	dB/100 m	9.0	9.0	9.0
@ 470 MHz	dB/100 m	13.4	13.4	13.4
@ 862 MHz	dB/100 m	19.6	19.6	19.6
@ 1000 MHz	dB/100 m	21.1	21.1	21.1
@ 1350 MHz	dB/100 m	23.5	23.5	23.5
@ 1750 MHz	dB/100 m	27.2	27.2	27.2
@ 2150 MHz	dB/100 m	30.8	30.8	30.8
@ 2400 MHz	dB/100 m	32.8	32.8	32.8
@ 3000 MHz	dB/100 m	36.7	36.7	36.7
Transfer impedance				
@ 5-30 MHz	dB	≤ 15	≤ 15	≤ 15
Structural Return Loss				
@ 5-470 MHz	dB	33	33	33
@ 470-1000 MHz	dB	26	26	26
@ 1000-2000 MHz	dB	22	22	22
@ 2000-3000 MHz	dB	18	18	18
Screening attenuation				
30-1000 MHz	dB	≥ 80	≥ 80	≥ 80
1000-2000 MHz	dB	≥ 95	≥ 95	≥ 95
2000-3000 MHz	dB	≥ 85	≥ 85	≥ 85
Class (according to EN 50117-2-4)		B	B	B

Coax Cables - Indoor

| 7 mm types - RG6

Technical data

Type:		KOKA 110HD - PVC Cu - 6.8mm cable	KOKA 110HD - PVC Cu - 6.8mm cable	KOKA 110HD - PVC Cu - 6.8mm cable
Art. No:		150610	150610	150612
Colour		White	White	White
Length		Coil 100m	Coil 100m	Reel 250m
Construction				
Inner conductor - dimension	mm	1.13 ± 0.02 mm	1.13 ± 0.02 mm	1.13 ± 0.02 mm
Inner conductor - material		Cu	Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	mm	2 mm	2 mm	2 mm
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		CuSn	CuSn	CuSn
Second shield – braid coverage	%	78	78	78
Anti migration foil - material		Yes	Yes	Yes
Jacket – dimension	mm	6.8 ± 0.2 mm	6.8 ± 0.2 mm	6.8 ± 0.2 mm
Jacket – material		PVC	PVC	PVC
Minimum bending radius - single/repeated	mm	35/70 mm	35/70 mm	35/70 mm
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52±3	52±3	52±3
Velocity ratio	%	84 ± 1	84 ± 1	84 ± 1
Inner DC resistance	Ω/km	≤18	≤18	≤18
Outer DC resistance	Ω/km	≤ 12,5	≤ 12,5	≤ 12.5
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.5	1.5	1.5
@ 50 MHz	dB/100 m	4.1	4.1	4.1
@ 100 MHz	dB/100 m	5.8	5.8	5.8
@ 200 MHz	dB/100 m	8.2	8.2	8.2
@ 862 MHz	dB/100 m	18.1	18.1	18.1
@ 1000 MHz	dB/100 m	19.3	19.3	19.3
@ 1600 MHz	dB/100 m	24.9	24.9	24.9
@ 2150 MHz	dB/100 m	29.5	29.5	29.5
@ 2400 MHz	dB/100 m	31.2	31.2	31.2
Transfer impedance				
@ 5-30 MHz	dB	< 5	< 5	< 5
Structural Return Loss				
@ 5-470 MHz	dB	> 23	> 23	> 23
@ 470-1000 MHz	dB	> 20	> 20	> 20
@ 1000-2400 MHz	dB	>18	>18	> 18
Screening attenuation				
30-1000 MHz	dB	≥ 95	≥ 95	≥ 95
1000-2000 MHz	dB	≥ 95	≥ 95	≥ 95
2000-3000 MHz	dB	≥ 95	≥ 95	≥ 95
Class (according to EN 50117-2-4)		A	A	A

Technical data

Type:		KOKA 110HD - LSZH Cu - 6.8mm cable	KOKA 110HD - LSZH Cu - 6.8mm cable
Art. No:		150615	150616
Colour		Grey	Grey
Length		Wood drum 500m	Reel 100m
Construction			
Inner conductor - dimension	mm	1.13 ± 0.02 mm	1.13 ± 0.02 mm
Inner conductor - material		Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm
Dielectric - material		PE gas injected	PE gas injected
First shield – foil 1 – overlap	mm	2 mm	2 mm
First shield – foil 1 – material		Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		CuSn	CuSn
Second shield – braid coverage	%	78	78
Anti migration foil - material		Yes	Yes
Jacket – dimension	mm	6.8 ± 0.2 mm	6.8 ± 0.2 mm
Jacket – material		LSZH	LSZH
Minimum bending radius - single/repeated	mm	35/70 mm	35/70 mm
Electrical			
Impedance	Ohm	75 ± 3	75 ± 3
Capacitance	pF/m	52±3	52±3
Velocity ratio	%	84 ± 1	84 ± 1
Inner DC resistance	Ω/km	≤18	≤18
Outer DC resistance	Ω/km	≤ 12.5	≤ 12.5
Attenuation (at 20°C)			
@ 5 MHz	dB/100 m	1.5	1.5
@ 50 MHz	dB/100 m	4.1	4.1
@ 100 MHz	dB/100 m	5.8	5.8
@ 200 MHz	dB/100 m	8.2	8.2
@ 862 MHz	dB/100 m	18.1	18.1
@ 1000 MHz	dB/100 m	19.3	19.3
@ 1600 MHz	dB/100 m	24.9	24.9
@ 2150 MHz	dB/100 m	29.5	29.5
@ 2400 MHz	dB/100 m	31.2	31.2
Transfer impedance			
@ 5-30 MHz	dB	< 5	< 5
Structural Return Loss			
@ 5-470 MHz	dB	> 23	> 23
@ 470-1000 MHz	dB	> 20	> 20
@ 1000-2400 MHz	dB	> 18	> 18
Screening attenuation			
30-1000 MHz	dB	≥ 95	≥ 95
1000-2000 MHz	dB	≥ 95	≥ 95
2000-3000 MHz	dB	≥ 95	≥ 95
Class (according to EN 50117-2-4)		A	A

Coax Cables - Indoor

| 7 mm types - RG6

Technical data

Type:		KOKA 125HD - PVC Cu - 6.8mm cable	KOKA 125HD - PVC Cu - 6.8mm cable	KOKA 125HD - PVC Cu - 6.8mm cable
Art. No:		150620	150621	150625
Colour		White	White	White
Length		Coil 100m	Reel 100m	Wood drum 500m
Construction				
Inner conductor - dimension	mm	1.13 ± 0.02 mm	1.13 ± 0.02 mm	1.13 ± 0.02 mm
Inner conductor - material		Cu	Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	mm	2 mm	2 mm	2 mm
First shield – foil 1 – material		Al/Pet/Copolymer bonded	Al/Pet/Copolymer bonded	Al/Pet/Copolymer bonded
Second shield – braid material		CuSn	CuSn	CuSn
Second shield – braid coverage	%	60	60	60
Third shield – foil 2 – material		AL/Pet bonded	AL/Pet bonded	AL/Pet bonded
Anti migration foil - material		None	None	None
Jacket – dimension	mm	6.8 ± 0.2 mm	6.8 ± 0.2 mm	6.8 ± 0.2 mm
Jacket – material		PVC	PVC	PVC
Minimum bending radius - single/repeated	mm	35/70 mm	35/70 mm	35/70 mm
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52±3	52±3	52±3
Velocity ratio	%	84 ± 1	84 ± 1	84 ± 1
Inner DC resistance	Ω/km	≤18	≤18	≤18
Outer DC resistance	Ω/km	≤ 15	≤ 15	≤ 15
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.5	1.5	1.5
@ 50 MHz	dB/100 m	4.1	4.1	4.1
@ 100 MHz	dB/100 m	5.8	5.8	5.8
@ 200 MHz	dB/100 m	8.2	8.2	8.2
@ 862 MHz	dB/100 m	18.1	18.1	18.1
@ 1000 MHz	dB/100 m	19.3	19.3	19.3
@ 1600 MHz	dB/100 m	24.9	24.9	24.9
@ 2150 MHz	dB/100 m	29.5	29.5	29.5
@ 2400 MHz	dB/100 m	31.2	31.2	31.2
Transfer impedance				
@ 5-30 MHz	dB	≤ 4	≤ 4	≤ 4
Structural Return Loss				
@ 5-470 MHz	dB	> 23	> 23	> 23
@ 470-1000 MHz	dB	> 20	> 20	> 20
@ 1000-2400 MHz	dB	> 18	> 18	> 18
Screening attenuation				
30-1000 MHz	dB	≥ 110	≥ 110	≥ 110
1000-2000 MHz	dB	≥ 110	≥ 110	≥ 110
2000-3000 MHz	dB	≥ 110	≥ 110	≥ 110
Class (according to EN 50117-2-4)		A+	A+	A+

Technical data

Type:		KOKA 125HD - LSZH Cu - 6.8mm cable	KOKA 125HD - LSZH Cu - 6.8mm cable
Art. No:		150626	150627
Colour		Grey	Grey
Length		Reel 100m	Wood drum 500m
Construction			
Inner conductor - dimension	mm	1.13 ± 0.02 mm	1.13 ± 0.02 mm
Inner conductor - material		Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm
Dielectric - material		PE gas injected	PE gas injected
First shield – foil 1 – overlap	mm	2 mm	2 mm
First shield – foil 1 – material		Al/Pet/Copolymer bonded	Al/Pet/Copolymer bonded
Second shield – braid material		CuSn	CuSn
Second shield – braid coverage	%	60	60
Third shield – foil 2 – material		AL/Pet bonded	AL/Pet bonded
Anti migration foil - material		None	None
Jacket – dimension	mm	6.8 ± 0.2 mm	6.8 ± 0.2 mm
Jacket – material		LSZH	LSZH
Minimum bending radius - single/repeated	mm	35/70 mm	35/70 mm
Electrical			
Impedance	Ohm	75 ± 3	75 ± 3
Capacitance	pF/m	52±3	52±3
Velocity ratio	%	84 ± 1	84 ± 1
Inner DC resistance	Ω/km	≤18	≤18
Outer DC resistance	Ω/km	≤ 15	≤ 15
Attenuation (at 20°C)			
@ 5 MHz	dB/100 m	1.5	1.5
@ 50 MHz	dB/100 m	4.1	4.1
@ 100 MHz	dB/100 m	5.8	5.8
@ 200 MHz	dB/100 m	8.2	8.2
@ 862 MHz	dB/100 m	18.1	18.1
@ 1000 MHz	dB/100 m	19.3	19.3
@ 1600 MHz	dB/100 m	24.9	24.9
@ 2150 MHz	dB/100 m	29.5	29.5
@ 2400 MHz	dB/100 m	31.2	31.2
Transfer impedance			
@ 5-30 MHz	dB	≤ 4	≤ 4
Structural Return Loss			
@ 5-470 MHz	dB	> 23	> 23
@ 470-1000 MHz	dB	> 20	> 20
@ 1000-2400 MHz	dB	> 18	> 18
Screening attenuation			
30-1000 MHz	dB	≥ 110	≥ 110
1000-2000 MHz	dB	≥ 110	≥ 110
2000-3000 MHz	dB	≥ 110	≥ 110
Class (according to EN 50117-2-4)		A+	A+

Coax Cables - Indoor

| 7 mm types - RG6

Technical data

Type:		KOKA 99HD Cu - 7.1mm	KOKA 99HD Cu - 7.1mm	KOKA 99HD Cu - 7.1mm	KOKA 99HD Cu - 7.1mm
Art. No:		150600	150601	150602	150605
Colour		White	White	White	White
Length		Coil 100m	Reel 100m	Reel 250m	Wood drum 500m
Construction					
Inner conductor - dimension	mm	1.0 ± 0.02	1.0 ± 0.02	1.0 ± 0.02	1.0 ± 0.02
Inner conductor - material		Cu	Cu	Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm	4.8 ± 0.2 mm
Dielectric - material		PE gas injected	PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	mm	≥ 1.0 mm	≥ 1.0 mm	≥ 1.0 mm	≥ 1.0 mm
First shield – foil 1 – material		Al/Pet/Copolymer bonded	Al/Pet/Copolymer bonded	Al/Pet/Copolymer bonded	Al/Pet/Copolymer bonded
Second shield – braid material		Al	Al	Al	Al
Second shield – braid coverage	%	77	77	77	77
Third shield – foil 2 – material		Al/Pet/Al unbonded	Al/Pet/Al unbonded	Al/Pet/Al unbonded	Al/Pet/Al unbonded
Anti migration foil - material		None	None	None	None
Jacket – dimension	mm	7.10 ± 0.15 mm	7,10 ± 0.15 mm	7,10 ± 0,15 mm	7.10 ± 0.15 mm
Jacket – material		PVC	PVC	PVC	PVC
Min bending radius - single/repeated	mm	35/70 mm	35/70 mm	35/70 mm	35/70 mm
Electrical					
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52 ± 3	52 ± 3	52 ± 3	52 ± 3
Velocity ratio	%	84	84	84	84
Inner DC resistance	Ω/km	≤ 22	≤ 22	≤ 22	≤ 22
Outer DC resistance	Ω/km	≤ 16	≤ 16	≤ 16	≤ 16
Attenuation (at 20°C)					
@ 5 MHz	dB/100 m	2.0	2.0	2.0	2.0
@ 50 MHz	dB/100 m	4.7	4.7	4.7	4.7
@ 100 MHz	dB/100 m	6.8	6.8	6.8	6.8
@ 200 MHz	dB/100 m	8.9	8.9	8.9	8.9
@ 400 MHz	dB/100 m	13.7	13.7	13.7	13.7
@ 800 MHz	dB/100 m	18.4	18.4	18.4	18.4
@ 862 MHz	dB/100 m	19.5	19.5	19.5	19.5
@ 1000 MHz	dB/100 m	21.0	21.0	21.0	21.0
@ 1600 MHz	dB/100 m	27.3	27.3	27.3	27.3
@ 2150 MHz	dB/100 m	32.6	32.6	32.6	32.6
@ 2400 MHz	dB/100 m	34.9	34.9	34.9	34.9
Transfer impedance					
@ 5-30 MHz	dB	≤ 5	≤ 5	≤ 5	≤ 5
Structural Return Loss					
@ 5-470 MHz	dB	> 20	> 20	> 20	> 20
@ 470-1000 MHz	dB	> 18	> 18	> 18	> 18
@ 1000-2400 MHz	dB	> 16	> 16	> 16	> 16
Screening attenuation					
30-1000 MHz	dB	≥ 90	≥ 90	≥ 90	≥ 90
1000-2000 MHz	dB	≥ 90	≥ 90	≥ 90	≥ 90
2000-3000 MHz	dB	≥ 90	≥ 90	≥ 90	≥ 90
Class (acc. to EN 50117-2-4)		A	A	A	A

Technical data

Type:		Multi 5 color cable RG6, PVC white	Multi 5 color cable RG6, PVC black	Multi 9 color cable RG6, PVC black	Multi 9 color cable RG6, PE black
Art. No:		150075	150074	150078	150079
Colour		White	Black	Black	Black
Length		Wood drum 100m	Wood drum 100m	Wood drum 50m	Wood drum 100m
Construction					
Inner conductor - dimension	mm	1.02 ± 0.02 mm	1.02 ± 0.02 mm	1.02 ± 0.02 mm	1.02 ± 0.02 mm
Inner conductor - material		Cu	Cu	Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.15 mm	4.8 ± 0.15 mm	4.8 ± 0.15 mm	4.8 ± 0.15 mm
Dielectric - material		PE gas injected	PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – material		Al/Pet/Al	Al/Pet/Al	Al/Pet/Al	Al/Pet/Al
Second shield – braid material		CuSn	CuSn	CuSn	CuSn
Second shield – braid coverage	%	38	38	38	38
Third shield – foil 2 – material		Al/Pet	Al/Pet	Al/Pet	Al/Pet
Jacket – dimension	mm	6.7 ± 0.1 mm	6.7 ± 0.1 mm	6.7 ± 0.1 mm	6.7 ± 0.1 mm
Jacket – material		PE	PVC	PVC	PVC
Min bending radius - single/repeated	mm	35/70 mm	35/70 mm	35/70 mm	35/70 mm
Electrical					
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	52±1	52±1	52±1	52±1
Velocity ratio	%	85	85	85	85
Inner DC resistance	Ω/km	≤ 22.5	≤ 22.5	≤ 22.5	≤ 22.5
Outer DC resistance	Ω/km	≤ 25	≤ 25	≤ 25	≤ 25
Attenuation (at 20°C)					
@ 5 MHz	dB/100 m	1.6	1.6	1.6	1.6
@ 50 MHz	dB/100 m	4.6	4.6	4.6	4.6
@ 200 MHz	dB/100 m	8.6	8.6	8.6	8.6
@ 470 MHz	dB/100 m	13.5	13.5	13.5	13.5
@ 800 MHz	dB/100 m	18.0	18.0	18.0	18.0
@ 1000 MHz	dB/100 m	20.3	20.3	20.3	20.3
@ 1350 MHz	dB/100 m	23.8	23.8	23.8	23.8
@ 1750 MHz	dB/100 m	27.5	27.5	27.5	27.5
@ 2150 MHz	dB/100 m	30.8	30.8	30.8	30.8
@ 2400 MHz	dB/100 m	32.8	32.8	32.8	32.8
@ 3000 MHz	dB/100 m	37.5	37.5	37.5	37.5
Transfer impedance					
@ 5-30 MHz	dB	< 15	< 15	< 15	< 15
Structural Return Loss					
@ 5-470 MHz	dB	> 26	> 26	> 26	> 26
@ 470-1000 MHz	dB	> 23	> 23	> 23	> 23
@ 1000-2400 MHz	dB	> 18	> 18	> 18	> 18
Screening attenuation					
30-1000 MHz	dB	≥ 85	≥ 85	≥ 85	≥ 85
1000-2000 MHz	dB	≥ 75	≥ 75	≥ 75	≥ 75
Class (acc. to EN 50117-2-4)		B	B	B	B

Coax Cables - Indoor/Outdoor

| 10 mm types - RG 11

Triax RG 11 types are ideal for entry point feed systems running to a building and applications to each floor of residential buildings. The RG 11 types are durable quality cables offering high stability in many years to come. To protect the signals from interferences, the cables are engineered with a high shielding efficiency - class A according to EN 50117.
The Low Smoke Zero Halogen jacket is ideal where fire resistance is a requirement.

Technical data

Type:		RG 11-LSZH white Cu -10.2mm cable	RG 11-PE black Cu -10.2mm cable	RG 11-PE black Cu-10.16mm cable
Art. No:		150099	150062	150115
Colour		white	black	black
Length		Wood drum 500m	Wood drum 500m	Wood drum 500m
Construction				
Inner conductor - dimension	mm	1.7 ± 0.02 mm	1.7 ± 0.02 mm	1.63 ± 0.02 mm
Inner conductor - material		Cu	Cu	Cu
Dielectric - dimension	mm	7.2± 0.15 mm	7.2± 0.15 mm	7.2± 0.15 mm
Dielectric - material		Pee/PH	Pee/PH	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet/Al tape	Al/Pet/Al tape	Al/Pet/Al - unbonded
Second shield – braid material		CuSn	CuSn	CuSn
Second shield – braid coverage	%	56	56	65
Third shield – foil 2 – material			Al/Pet	
Jacket – dimension	mm	10.2 ± 0.2	10.2 ± 0.2 mm	10.1 ± 0.2 mm
Jacket – material		LSZH	PE	PE
Minimum bending radius - single/repeated	mm	115	115 mm	70/140 mm
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Velocity ratio	%	85	85	84
Inner DC resistance	Ω/km	< 9	< 9	< 8
Outer DC resistance	Ω/km	< 11	< 11	< 9
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	0.9	0.9	0.7
@ 50 MHz	dB/100 m	2.9	2.9	2.6
@ 200 MHz	dB/100 m	5.6	5.6	5.4
@ 400 MHz	dB/100 m			8.1
@ 470 MHz	dB/100 m	8.8	8.8	
@ 862 MHz	dB/100 m	11.5	12.0	12
@ 1000 MHz	dB/100 m	13.2	13.2	13.0
@ 1350 MHz	dB/100 m	15.6	15.6	
@ 1600 MHz	dB/100 m			16.5
@ 1750 MHz	dB/100 m	17.9	17.9	
@ 2150 MHz	dB/100 m	20.0	20.0	19.2
@ 2400 MHz	dB/100 m	21.4	21.4	20.3
@ 3000 MHz	dB/100 m	24.2	24.2	
Transfer impedance				
@ 5-30 MHz	dB	< 15	< 5	< 5
Structural Return Loss				
@ 5-470 MHz	dB	> 26	> 26	> 26
@ 470-1000 MHz	dB	> 23	> 23	> 23
@ 1000-2000 MHz	dB	> 16	> 16	> 18
@ 2000-3000 MHz	dB	> 16	> 16	
Screening attenuation				
30-1000 MHz	dB	> 85	> 85	> 80
1000-2000 MHz	dB	> 75	> 75	> 75
2000-3000 MHz	dB	> 75	> 75	> 65
Class (according to EN 50117-2-4)			A	A
Remarks				Stock Dubai



Triax RG 11 types are ideal for entry point feed systems running to a building and applications to each floor of residential buildings. The RG 11 types are durable quality cables offering high stability in many years to come. To protect the signals from interferences, the cables are engineered with a high shielding efficiency - class A according to EN 50117.

Technical data

Type:		RG 11-PE black CCS-10.16mm cable	RG 11-PE black Cu-10.16mm cable	RG 11-PE black Cu-10.16mm cable
Art. No:		150116	150117	150118
Colour		black	black	black
Length		Wood drum 500m	Wood drum 305m	Wood drum 305m
Construction				
Inner conductor - dimension	mm	1.63 ± 0.01 mm	1.63 ± 0.01 mm	1.63 ± 0.01 mm
Inner conductor - material		CCS	Cu	CCS
Dielectric - dimension	mm	7.2± 0.15 mm	7.2± 0.15 mm	7.2± 0.15 mm
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20
First shield – foil 1 – material		Al/Pet tape - bonded	Al/Pet tape - bonded	Al/Pet tape - bonded
Second shield – braid material		CuSn	CuSn	CuSn
Second shield – braid coverage	%	75	75	75
Third shield – foil 2 – material		Al/Pet/Al tape	Al/Pet/Al tape	Al/Pet/Al tape
Jacket – dimension	mm	10.16 ± 0.15 mm	10.16 ± 0.15 mm	10.16 ± 0.15 mm
Jacket – material		PE	PE	PE
Minimum bending radius - single/repeated	mm	38/100 mm	38/100 mm	38/100 mm
Electrical				
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3
Velocity ratio	%	83	83	83
Inner DC resistance	Ω/km	< 40	< 9	< 40
Outer DC resistance	Ω/km	< 12	< 12	< 12
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.25	1.25	1.25
@ 50 MHz	dB/100 m	2.85	2.85	2.85
@ 200 MHz	dB/100 m	5.84	5.84	5.84
@ 400 MHz	dB/100 m			
@ 470 MHz	dB/100 m	9.31	9.31	9.31
@ 862 MHz	dB/100 m	13.15	13.15	13.15
@ 1000 MHz	dB/100 m	14.27	14.27	14.27
@ 1350 MHz	dB/100 m	16.99	16.99	16.99
@ 1600 MHz	dB/100 m			
@ 1750 MHz	dB/100 m	19.8	19.8	19.8
@ 2150 MHz	dB/100 m	22.4	22.4	22.4
@ 2400 MHz	dB/100 m	23.95	23.95	23.95
@ 3000 MHz	dB/100 m	27.50	27.46	27.50
Transfer impedance				
@ 5-30 MHz	dB	< 5	< 5	< 5
Structural Return Loss				
@ 5-470 MHz	dB	> 20	> 20	> 20
@ 470-1000 MHz	dB	> 18	> 18	> 18
@ 1000-2000 MHz	dB	> 16	> 16	> 16
@ 2000-3000 MHz	dB	> 15	> 15	> 15
Screening attenuation				
30-1000 MHz	dB	> 90	> 90	> 90
1000-2000 MHz	dB	> 75	> 75	> 75
2000-3000 MHz	dB	> 65	> 65	> 65
Class (according to EN 50117-2-4)		A	A	A
Remarks		Stock Dubai	Stock Dubai	Stock Dubai

Coax Cables - Outdoor

| 7 mm types - RG6

KOKA outdoor cable
The Triax outdoor KOKA is premium quality cable. Due to low attenuation and high shielding at the higher frequences, this cable is excellent for SMATV applications.
For outdoor installations, we highly recommend one of the versions with PE jacket, it simply is more resistant against weather conditions.

Technical data

Type:		KOKA 110HD - PE Cu - 6.8mm cable	KOKA 80 - PE Cu - 6.8mm cabe	KOKA 80 - PE Cu - 6.8mm cable
Art. Nr:		150613	150166	150167
Colour		Black	Black	Black
Length		Reel 100m	Plastic reel 100m	Plastic reel 250m
Construction				
Inner conductor - dimension	mm	1.13 ± 0.02 mm	1.02 ± 0.02	1.02 ± 0.02
Inner conductor - material		Cu	Cu	Cu
Dielectric - dimension	mm	4.8 ± 0.2 mm	4.8 ± 0.1	4.8 ± 0.1
Dielectric - material		PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	mm	2 mm	20	20
First shield – foil 1 – material		Al/Pet/Copolymer bonded	Al/Pet/Al tape - unbonded	Al/Pet/Al tape - unbonded
Second shield – braid material		CuSn	CuSn	CuSn
Second shield – braid coverage	%	78	> 40	> 40
Anti migration foil - material		Yes	12.0	12.0
Jacket – dimension	mm	6.8 ± 0.2 mm	6.8 ± 0.15	6.8 ± 0.15
Jacket – material		PE	PE	PE
Minimum bending radius - single/repeated	mm	35/70 mm	35/70	35/70
Electrical				
Impedance	Ohm	75 ± 3	75	75
Capacitance	pF/m	52±3	52 ± 1	52 ± 1
Velocity ratio	%	84 ± 1	84	84
Inner DC resistance	W/km	≤18	21.5	21.5
Outer DC resistance	W/km	≤ 12,5	21	21
Attenuation (at 20°C)				
@ 5 MHz	dB/100 m	1.5	1.5	1.5
@ 50 MHz	dB/100 m	4.1	4.6	4.6
@ 100 MHz	dB/100 m	5.8	6.3	6.3
@ 200 MHz	dB/100 m	8.2	9.0	9.0
@ 470 MHz	dB/100 m		13.4	13.4
@ 862 MHz	dB/100 m	18.1	19.6	19.6
@ 1000 MHz	dB/100 m	19.3	21.1	21.1
@ 1350 MHz	dB/100 m		23.5	23.5
@ 1600 MHz	dB/100 m	24.9	26.6	26.6
@ 1750 MHz	dB/100 m		27.2	27.2
@ 2150 MHz	dB/100 m	29.5	30.8	30.8
@ 2400 MHz	dB/100 m	31.2	32.8	32.8
@ 3000 MHz	dB/100 m		36.7	36.7
Transfer impedance				
@ 5-30 MHz	dB	< 5		
Structural Return Loss				
@ 5-470 MHz	dB	> 23	> 33.0	> 33.0
@ 470-862 MHz			> 26.0	> 26.0
@ 470-1000 MHz	dB	> 20		
@ 862-2400 MHz			> 22.0	> 22.0
@ 2000-3000 MHz			> 18	> 18
@ 1000-2400 MHz	dB	>18		
Screening attenuation				
30-1000 MHz	dB	≥ 95		
1000-2000 MHz	dB	≥ 95		
2000-3000 MHz	dB	≥ 95	≥ 85	≥ 85
Class (according to EN 50117-2-5)		A		

KOKA outdoor cable
The Triax outdoor KOKA is premium quality cable. Due to low attenuation and high shielding at the higher frequences, this cable is excellent for SMATV applications.
For outdoor installations, we highly recommend one of the versions with PE jacket, it simply is more resistant against weather conditions.

Technical data

Type:		RG6 - PE CCS - 6.86 mm	RG6 - PE CCS - 6.86 mm	RG6 - PE CCS - 6.86 mm	110 KU, PE Cu - 7,3mm
Art. Nr:		150226	150326	150026	150031
Colour		Black	Black	Black	Black
Length		Coil 40m	Coil 70m	Plastic reel 305m	Wood drum 500m
Construction					
Inner conductor - dimension	mm	1.02 ± 0.01 mm	1.02 ± 0.01 mm	1.02 ± 0.02 mm	1.12 mm
Inner conductor - material		CCS	CCS	CCS	Cu
Dielectric - dimension	mm	4.57 ± 0.05 mm	4.57 ± 0.05 mm	4.8 ± 0.1 mm	4.9 mm
Dielectric - material		PE gas injected	PE gas injected	PE gas injected	PE gas injected
First shield – foil 1 – overlap	%	20	20	20	Yes
First shield – foil 1 – material		Al/Pet tape bonded	Al/Pet tape bonded	Al/Pet/Al unbonded	Cu
Second shield – braid material		Al	Al	CuSn	Cu
Second shield – braid coverage	%	> 60	> 60	> 40	66
Third shield – foil 2 – material					Cu
Anti migration foil - material		yes	yes	yes	
Jacket – dimension	mm	6.86 ± 0.1 mm	6.86 ± 0.1 mm	6.8 ± 0.1 mm	7.3 mm
Jacket – material		PE	PE	PE	PE
Minimum bending radius - single/repeated		35/70	35/70	35/70	70 mm
Electrical					
Impedance	Ohm	75 ± 3	75 ± 3	75 ± 3	75 ± 3
Capacitance	pF/m	53 ± 1	53 ± 1	52	53
Velocity ratio	%	85	85	84	
Inner DC resistance	W/km	102	102	102	≤ 18.1
Outer DC resistance	W/km	60	60	30	≤ 10
Attenuation (at 20°C)					
@ 5 MHz	dB/100 m	2.1	2.1	2.2	1.3
@ 50 MHz	dB/100 m	5.0	5.0	4.6	4
@ 100 MHz	dB/100 m				5.7
@ 200 MHz	dB/100 m	9.0	9.0	9.0	8.1
@ 470 MHz	dB/100 m	15.2	15.2	12.87	
@ 800 MHz	dB/100 m				16.6
@ 862 MHz	dB/100 m	19.5	19.5	19.5	
@ 1000 MHz	dB/100 m	21.5	21.5	21.1	
@ 1350 MHz	dB/100 m	24	24	22.72	
@ 1750 MHz	dB/100 m	28.4	28.4	26.25	25.1
@ 2150 MHz	dB/100 m	30.8	30.8	30.8	
@ 2400 MHz	dB/100 m	32.8	32.8	32.9	29.8
@ 3000 MHz	dB/100 m	39	39	39	33.7
Transfer impedance					
@ 5-30 MHz	dB	≤ 15	≤ 15	≤ 15	
Structural Return Loss					
@ 5-470 MHz	dB	≥ 21	≥ 21	≥ 23	
@ 470-1000 MHz	dB	≥ 20	≥ 20	≥ 20	> 26
@ 1000-2000 MHz	dB	≥ 18	≥ 18	≥ 18	> 23
@ 2000-3000 MHz	dB	≥ 16	≥ 16	≥ 16	> 20
Screening attenuation					
30-1000 MHz	dB	≥ 75	≥ 75	≥ 80	≥ 95
1000-2000 MHz	dB	≥ 65	≥ 65	≥ 80	≥ 85
2000-3000 MHz	dB	≥ 55	≥ 55	≥ 70	≥ 80
Class (acc. to EN 50117-2-4/50117-2-5)		B	B	B	A+
Remarks		Stock Dubai	Stock Dubai	Stock Dubai	

Connectors

| F-compression

F-compression types

Below you will find a selection of F-compression connectors suitable for Triax cable portfolio.

Technical data

Type:		F-compression connector CX3 - 5.1 short	F-compression connector 5.1/6.8	F-compression connector 3.8/5.2	F-compression connector 4.9/6.8
Art. No:		153221	153224	153225	360913
Basics					
Cable type		KOKA 500 KOKA 80 KOKA 6	KOKA 500 KOKA 80 KOKA 6	KOKA 50 5 mm	RG 6
Tool		153603	360920	360919/360920	360920
Packaging		100 pcs. bag	100 pcs. bag	100 pcs. bag	100 pcs. bag
Colour		Blue	red	Purple	
Electrical					
Frequency range	MHz	0.3 - 3000	0.3 - 3000	0.3 - 3000	
Impedance	Ohm	75	75	75	
Transfer impedance		< 5.0 mΩ/m @ 5-30 MHz			
Shielding effectiveness					
@ 1 GHz			> 115	120	

F-compression types

Below you will find a selection of F-compression connectors suitable for Triax cable portfolio.

Technical data

Type:		F-crimp connector ALM 5.1/8.4	F-crimp connector ALM 3.7/6.4	F-crimp connector UNIV 5.1/8.8	F-crimp connector 4.9/8.4 Triax
Art. No:		153203	153204	153211	153212
Basics					
Cable type		KOKA 500 KOKA 80 KOKA 6	KOKA 50 5 mm		RG 6
Tool		153607	153607	153607	153607
Packaging		100 pcs. bag	100 pcs. bag	100 pcs. box	100 pcs. bag
Colour					
Electrical					
Frequency range	MHz				
Impedance	Ohm		75	75	
Transfer impedance					
Shielding effectiveness					
@ 30-862 MHz				104	

Cables

Connectors

| F-crimp

F-compression types

Below you will find a selection of F-compression connectors suitable for Triax cable portfolio.

Technical data

Type:		F-crimp connector 5.1/8.4	F-crimp connector 3.7/6.4	F-crimp connector 4.9/8.4	F-crimp connector 5.1/8.8
Art. No:		153213	153214	153215	153217
Basics					
Cable type		KOKA 500 KOKA 80 KOKA 6	KOKA 50 5 mm	RG 6	110 KU-RG6
Tool		153607	153607	153607	153607
Packaging		100 pcs. bag	100 pcs. bag	100 pcs. box	100 pcs. bag
Colour					
Electrical					
Frequency range	MHz				
Impedance	Ohm				
Transfer impedance					
Shielding effectiveness					
@ 1 GHz					

F-compression types

Below you will find a selection of F-compression connectors suitable for Triax cable portfolio.

Technical data

Type:		F-crimp ALM 7.6/11.7	F-crimp RG11	F-crimp EPA 7.6/11,5 106F
Art. No:		153231	153232	153230
Basics				
Cable type		RG 11	RG 11	RG 11
Tool		153609	153609	
Packaging		50 pcs. bag	50 pcs. box	50 pcs. box
Electrical				
Frequency range	MHz	0.3 - 3000		
Impedance	Ohm	75	75	75
Transfer impedance	MHz	0.3 - 3000		
Shielding effectiveness				
@ 1 GHz	Ohm	75	75	75

Connectors

| F-self install

F-self install types

Below you will find a selection of F-self install connectors suitable for Triax cable portfolio.

Technical data

Type:	F-Push-On connector 5.1/6.8	F-Self-install connector 5.1 blue	F-Self-install F-56 5.1 Tool Kit
Art. No:	153250	153264	153266
Basics			
Cable type	KOKA 500 KOKA 80 KOKA 6	KOKA 500 KOKA 80 KOKA 6	KOKA 500 KOKA 80 KOKA 6
Tool	No tool required	No tool required	
Packaging	100 pcs. in multicolor box	100 pcs. in white box	
Electrical			
Impedance	75	75	
Shielding effectiveness			
@ 30-862 MHz	> 110	> 110	
@ 862-3000 MHz	> 100	> 100	

F-twist on types

Below you will find a selection of F-twist on connectors suitable for Triax cable portfolio.

Technical data

Type:		F-twist on 3.5/5.0	F-twist on 1.9/3.5	F-twist on 4.9/7.3	F-twist on 4.9/6.8
Art. No:		153048	153049	153052	153053
Basics					
Cable type		5 mm - KOKA 50	KOKA 30	110 KU	KOKA 500 KOKA 80 KOKA 6
Tool		No tool required		No tool required	No tool required
Packaging		5 pcs. bag	5 pcs. bag	5 pcs.	5 pcs. bag
Electrical					
Impedance	Ohm	75	75	75	75

Cables

Technical data

Type:		F-twist on 3.5/5.0	F-twist on 4.9/6.8	F-twist on 4.9/7.3	F-twist on RG6
Art. No:		153072	153073	153074	153078
Basics					
Cable type		KOKA 50 5 mm	KOKA 500 KOKA 80 KOKA 6	110 KU	RG6
Tool		No tool required	No tool required	No tool required	No tools required
Packaging		100 pcs. bag	100 pcs. bag	100 pcs. bag	100 pcs. box
Electrical					
Impedance	Ohm	75	75	75	75

Cable adaptors

Below you will find a selection of cable adaptors F <> IEC and F <> F

Technical data

Type:		F-female to F-female	F-female to F-female - A+	F-angle adapter	F-con female to female
Art. No:		153076	153095	153592	153593
Basics					
Packaging		100 pcs.	100 pcs		
Electrical					
Impedance	Ohm	75	75		

Technical data

Type:	F-con male to male	F-female snap	F-female to F-female adaptor with nut 5mm
Art. No:	153596	153612	153617
Basics			
Packaging			100 pcs.
Electrical			
Impedance			75

Technical data

Type:		IEC-male to F-female angled	IEC-female to F-female adaptor angled	IEC-female to F-male adaptor
Art. No:		153550	153551	153611
Basics				
Packaging		1 pcs.	1 pcs.	1 pcs,
Electrical				
Impedance	Ohm	75	75	75

Cable connectors

Below you will find a selection of IEC coax plugs:

Technical data

Type:		KOSWI 3 IEC coax angled - male	KOKWI 3 IEC coax angled - female	KOS 3 IEC coax male	KOK 3 IEC coax female	IEC-con. straight/ Tool Kit
Art. No:		153110	153111	153120	153121	153267
Basics						
Packaging		1 pcs. bag	1 pcs. bag	1 pcs. bag	1 pcs. bag	1 pcs. blister
Electrical						
Impedance	Ohm	75	75	75	75	

Connectors

| Termination

Below you will find a selection of IEC coax plugs:

Technical data

Type:		F-male R75 terminator	FM-13 konnektor 22/99, 220KU	Grounding block F-female/F-female
Art. No:		153054	153585	153597
Basics				
Packaging		5 pcs.		
Electrical				
Impedance	Ohm	75	75	75

Tools for connectors and cables

| Tools facilitates in any job

Working with the right tools facilitates in any job.

For working with cables and connectors Triax supplies a small set of practical and economic tools that saves time and also ensures the quality and stability of connections.

Technical data

Type:		CRP 106H Crimp Tool	CRP 106F Crimp Tool	Mounting tool for F-connectors
Art. No:		153607	153609	153633
Basics				
Cable connector size	mm mm	8.2 9.2	8.2 11.9	
Colour & Packing				
Packaging		1 pcs.	1 pcs.	1 pcs.
Colour		Blue handle	Blue handle	Blue handle
Remarks		Typically used with RG 6 and KOKA 50/80/110/125 cables	Typically used with RG 11 cables	Especially for one-piece and compression type of F-connectors.

Technical data

Type:		Universal Cable Cutter	Pocket Installer Cabel stripper with HEX wrench	Pocket compression tool
Art. No:		153636	153637	360919
Basics				
Cable connector size	mm		11	
Colour & Packing				
Packaging		1 pcs.	1 pcs.	1 pcs.
Colour		Blue	Blue	
Remarks		Gives you a nice clean cut of all kind of Coax cables	With rotary cable strippers, preparation of cable is reduced to a single operation	

Tools for connectors and cables

| Tools facilitates in any job

Working with the right tools facilitates in any job.

For working with cables and connectors Triax supplies a small set of practical and economic tools that saves time and also ensures the quality and stability of connections.

Technical data

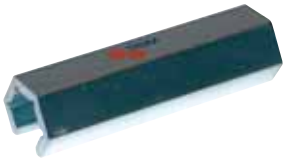
Type:		Universal Compression Tool	Mounting T-tool	Pocket Compression Tool (Cablecon)
Art. No:		360920	360921	370030
Basics				
Cable connector size	mm mm			
Colour & Packing				
Packaging		1 pcs.	1 pcs.	1 pcs.
Colour		Blue handle	Blue handle	Blue handle
Remarks		Used for compression type F-connectors for outdoor use and ensures waterresistant connections	With female thread. Efficient for two-piece and twist-on types of F-connectors.	

Technical data

Type:		Cable stripper RG11 cable types	Cable Stripper RG6 cable types
Art. No:		153601	153602
Basics			
Cable connector size	mm		11
Colour & Packing			
Packaging		1 pcs.	1 pcs.
Colour		Blue	Blue
Remarks		With rotary cable strippers, preparation of cable is reduced to a single operation	

Working with the right tools facilitates in any job.

For working with cables and connectors Triax supplies a small set of practical and economic tools that saves time and also ensures the quality and stability of connections.



Technical data

Type:		Cable Support Tool	Cable Support Tool - F-key
Art. No:		153634	153608
Basics			
Cable connector size	mm mm		
Colour & Packing			
Packaging		1 pcs.	1 pcs.
Colour		Blue handle	Blue handle
Remarks		While mounting the connector this unique rubber tool gives you a good grip of the cable	Indispensable to anyone working with F-connectors

Connection cables

| RF Cables

Triax selection of High grade RF-cables

Below you will find a selection of Triax RF coaxcables. These cables are typically used between antenna outlet and TV, in headend installations etc.

Technical data

Type:		RF-Cable 1.5 m IEC male/female - polybag	RF-Cable 2.5 m IEC male/female - polybag	RF-Cable 5.0 m IEC male/female - polybag
Art. No:		153400	153401	153402
Basics				
Cable length	m	1.5	2.5	5.0
Connector - left		1 x IEC male plug	1 x IEC male plug	1 x IEC male plug
Connector - right		1 x IEC female plug	1 x IEC female plug	1 x IEC female plug
Jacket – material				
Colour & Packing				
Packaging		polybag	polybag	polybag
Colour		white	white	white

Technical data

Type:		RF-Cable 7.5 m IEC male/female - polybag	RF-Cable 10.0 m IEC male/female - polybag
Art. No:		153403	153404
Basics			
Cable length	m	7.5	10.0
Connector - left		1 x IEC male plug	1 x IEC male plug
Connector - right		1 x IEC female plug	1 x IEC female plug
Jacket – material			
Colour & Packing			
Packaging		polybag	polybag
Colour		white	white

Triax selection of High grade RF-cables

Below you will find a selection of Triax RF coaxcables. These cables are typically used between antenna outlet and TV, in headend installations etc.

Technical data

Type:		High Grade RF-Cable 1.5 m IEC male/female	High Grade RF-Cable 3.0 m IEC male/female
Art. No:		153430	153431
Basics			
Cable length	m	1.5	3.0
Connector - left		1 x IEC male plug	1 x IEC male plug
Connector - right		1 x IEC female plug	1 x IEC female plug
Jacket – material			
Colour & Packing			
Packaging		polybag	polybag
Colour		white	white
Remarks		Ferrit shielded	Ferrit shielded

Technical data

Type:		High Grade RF-Cable 7.5 m IEC male/female	High Grade RF-Cable 10.0 m IEC male/female
Art. No:		153432	153434
Basics			
Cable length	m	7.5	10.0
Connector - left		1 x IEC male plug	1 x IEC male plug
Connector - right		1 x IEC female plug	1 x IEC female plug
Jacket – material			
Colour & Packing			
Packaging		polybag	polybag
Colour		white	white
Remarks		Ferrit shielded	Ferrit shielded

Connection cables

| RF Cables

Triax selection of RF- & USB-cables

Below you will find a selection of Triax RF coaxcables. These cables are typically used between antenna outlet and TV, in headend installations etc.

Technical data

Type:		RF cable 0.20 m IEC connector	RF cable 0.20 m 2 x F-con. male quick	RF cable 0.35 m 2 x F-con. male quick
Art. No:		324906	452090	452091
Basics				
Cable length	m	0.2	0.2	0.3
Connector - left		1 x IEC male plug	1 x IEC male plug	1 x IEC male plug
Connector - right		1 x IEC female plug	1 x IEC female plug	1 x IEC female plug
Jacket – material		PVC	PVC	PVC
Colour & Packing				
Packaging		1 pcs.	1 pcs.	1 pcs.
Colour		white	white	white
Remarks				

Cables

Technical data

Type:		USB cable 1.0 m
Art. No:		153403
Basics		
Interface	m	USB 2.0
Cable length	m	1.0
Signal wire - conductor size		28
Jacket – material		PVC
Connectors		
Pin		4
Connector - left		1 x 4-PIN USB type A - male
Connector - right		1 x 4-PIN USB type A - male
Colour & Packing		
Packaging	pcs.	1
Colour		
Remarks		

Triax selection of AV-cables

Below you will find a selection of Triax AV-cables

Technical data

Type:		AV cable 15 pol D-sub 3 x Phono male	AV cable 1.5 m 3 x 3xRCA/Scart	AV cable 1.5 m, 15 pol D-sub/Scart
Art. No:		300748	300738	300742
Basics				
Interface	m	Video/audio cable	Video/audio cable	Video/audio cable
Cable length	m	0.15	1.5	1.5
Characteristic		Decoder cable	Decoder cable	Decoder cable
Jacket – material		PVC		
Connectors				
Connector - left		1 x D-sub		
Connector - right		3 x Phone		
Colour & Packing				
Packaging	pcs.	1	1	1
Colour				
Remarks				

Technical data

Type:		AV cable 1.5 m 3 x RCA/Scart	AV cable 1.5 m 15 pol D-Sub/3 x RCA	AV cable 2.0 m 3 x RCA/Scart
Art. No:		300743	300745	300746
Basics				
Interface	m	Video/audio cable	Video/audio cable	Video/audio cable
Cable length	m	0.15	1.5	2.0
Characteristic		Modulator cable		Modulator cable
Jacket – material		PVC	PVC	PVC
Connectors				
Connector - left		1 x Scart		1 x Scart
Connector - right		3 x Phone male		3 x Phone male
Colour & Packing				
Packaging	pcs.	1	1	1
Colour				
Remarks				

Connection cables

| HDMI cables

Triax selection of HDMI-cables

Choose the right connection cable for your headend, receiver or TV.

Technical data

Type:		High Speed HDMI cable with Ethernet 2 m	High Speed HDMI cable with Ethernet 1.5 m	High Speed HDMI cable with Ethernet 2.0m	High Speed HDMI cable with Ethernet 3.0m
Art. No:		153420	370715	370716	370717
Basics					
Cable length	m	2.0	1.5	2.0	3.0
Ferrite	pcs.	2			
Connector - left		1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male
Connector - right		1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male
Jacket – material		PVC	PVC	PVC	PVC
Colour & Packing					
Packaging		1 x Single blister	1 x Single blister	1 x Single blister	1 x Single blister
Colour		Light gray	Light gray	Light gray	Light gray
Remarks					

Triax selection of HDMI-cables

Choose the right connection cable for your headend, receiver or TV.

Technical data

Type:		High Speed HDMI cable with Ethernet 5.0 m	High Speed HDMI cable with Ethernet 10.0 m	High Speed HDMI cable with Ethernet 15.0 m	High Speed HDMI cable with Ethernet 20.0 m
Art. No:		370718	370719	370720	370721
Basics					
Cable length	m	2.0	1.5	2.0	3.0
Ferrite	pcs.	2			
Connector - left		1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male
Connector - right		1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male	1 x 19-pin HDMI gold plate - male
Jacket – material		PVC	PVC	PVC	PVC
Colour & Packing					
Packaging		1 x Single blister	1 x Single blister	1 x Single blister	1 x Single blister
Colour		Light gray	Light gray	Light gray	Light gray
Remarks					

Power cable and electricity articles

| Triax power cable, plug and outlet point

Triax selection of HDMI-cables

Choose the right connection cable for your headend, receiver or TV.






Technical data

Type:		2 x 0.75 ❑ white PKLF power cable	Male power plug Type 12 - white	Female power plug Type 22 - white
Art. No:		152004	153300	153310
Length	m	100		
Colour & Packing				
Packaging		1 pcs.	1 pcs.	1 pcs.
Colour		White	White	White
Remarks		Plastic drum		

Technical data

Type:	2-way power outlet point Type 43 - grey	3-way power outlet point Type 74 - grey	4-way power outlet point Type 71 - grey
Art. No:	152004	153300	153310
Colour & Packing			
Packaging	1 pcs.	1 pcs.	1 pcs.
Colour	Grey	Grey	Grey
Remarks		for 3 round plugs - with pull relief	for 4 round plugs - with pull relief

Technical data

Type:	Cable stand
Art. No:	150110
Basics	
Packaging	1 pcs.

Triax outlets

Outlets

TRIAX - standard, satellite, multimedia

TOU - standard, satellite, multimedia

FUGA - standard, satellite, multimedia
- special TD-outlets

OPUS - standard, satellite, multimedia

TOU (UK) - diplexed, triplexed, quad, DDU

GAD (DE) series

Accessories

TRIAX covers, frames, terminators

TOU covers, frames, terminators

FUGA covers, frames, terminators

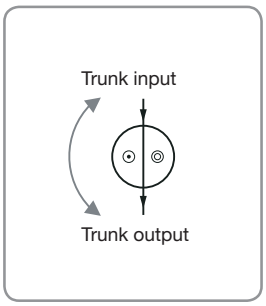
Triax outlets

| standard, satellite, multimedia, etc.

Attenuation in outlets

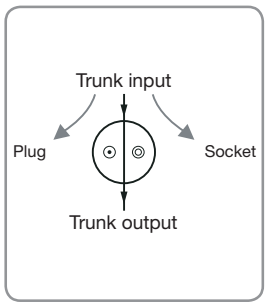
Throughpass attenuation

Attenuation between trunk input and trunk output



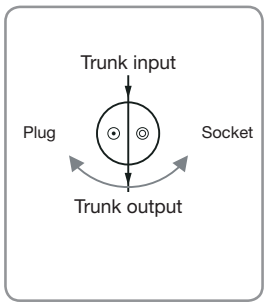
Connection attenuation

Attenuation between trunk input and plug or socket output



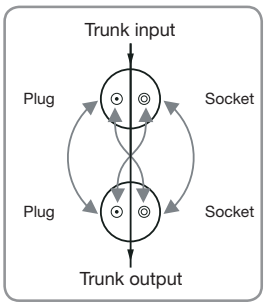
Internal coupling attenuation

Attenuation between plug output and socket output



EN coupling attenuation

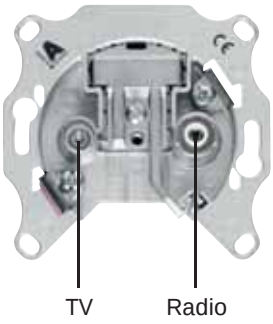
(2 outlet method)
Attenuation between the outputs of two antenna sockets



Socket types

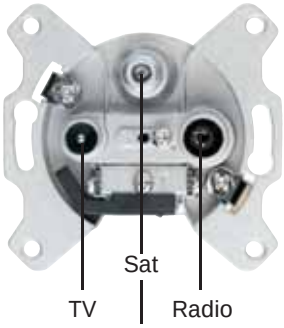
Double antenna outlet sockets

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



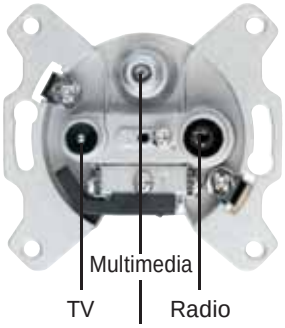
Triple antenna outlet sockets - sat

For individual satellite and SMATV installations.



Triple antenna outlet sockets - multimedia

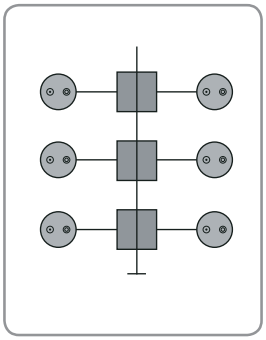
For individual multimedia and SMATV installations.



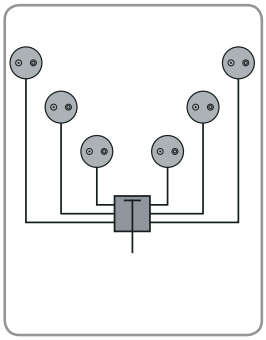
Quadro antenna outlet sockets

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

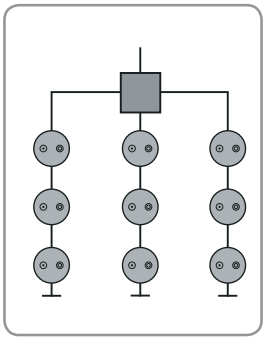
Network structures



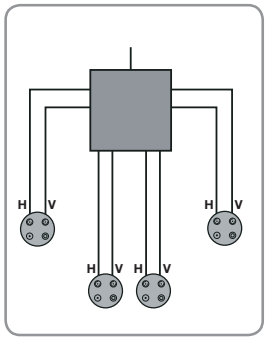
Floor star



Star network



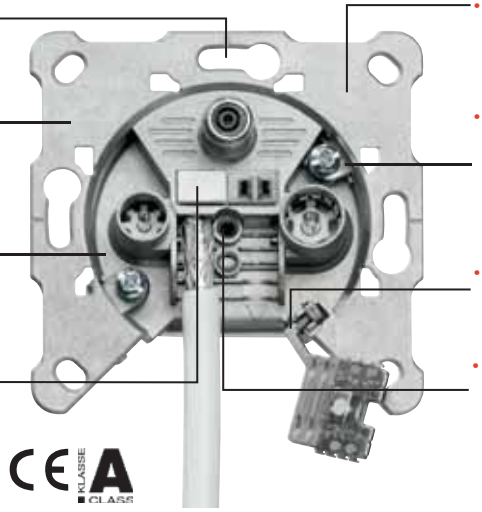
Tree network



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.



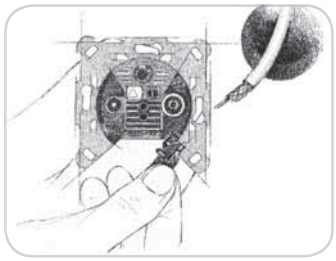
- **Waste edges at frame corners –** Well equipped for ranges of round switches (Brake off if necessary).
- **Novel claw fastening and close-fitting claw form –** Trouble-free installation in and removal from flush-mounted socket box also with cordless screwdriver (PZ 1-bolt).
- **Lockable hinged clamp –** 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

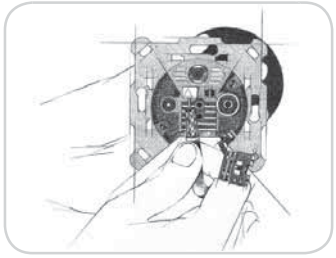
Type	Universal		Sat			CATV/MATV		
Connectors								
IEC male tv								
IEC female radio								
F female sat/data								
Antenna outlet type	Super wide-band	Sat/CATV combination	Sat filter	TWIN sat	Sat filter	CATV modem	CATV modem	CATV filter (DC/AC isolated)
Single type	EDU 04F GAD 204F	EDA 302F	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

Outlets

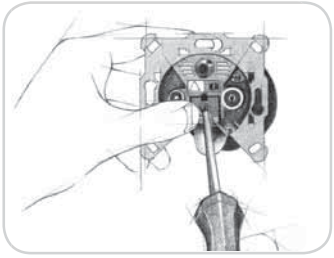
Mounting in detail



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.

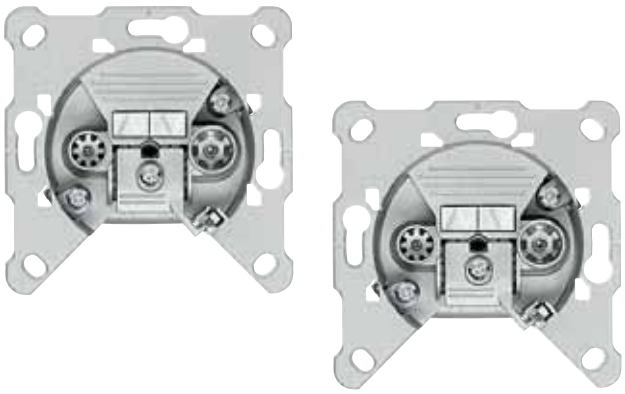


Close
Close the hinged clamp and screw it tight. Insert the socket body, align it using the straight edges and anchor it by tightening the claw screws.
PZ 1 screws for cordless screwdriver.

Triax Series

| Super broadband sockets

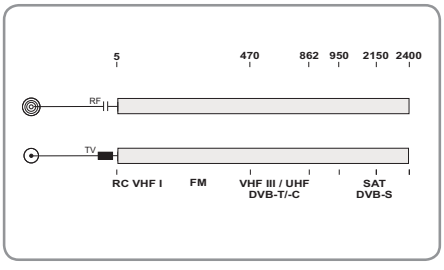
2-hole universal socket with pass-through frequency ranges for RADIO/TV and SAT, thus flexible and future proof. Suitable for CATV and SAT IF domestic distribution installations2 equal outlets for various end devicesSuitable for return channelRemote DC-feed via TV socket (only EDU 04 F)



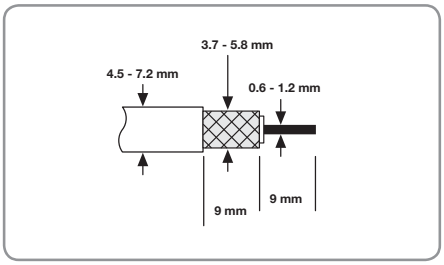
Technical data

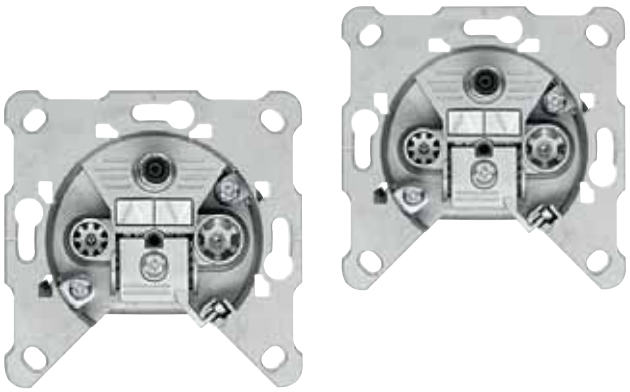
Type:		EDU 04 F	GEDU 10	GEDU 15	GEDU 20
Art. No:		306111	306211	306212	306213
Design		Single socket	Pass-through-socket		
Attenuation	**Frequency range**				
IN - OUT (pass-through)	5 to 2150 (2400) MHz	-	2.5 dB	1.0 dB	0.8 dB
IN - TV (IEC male)	5 to 2150 (2400) MHz	4.0 dB	10 dB	15 dB	20 dB
IN - RF (IEC 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





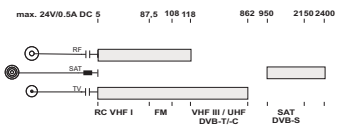
3-hole all-round antenna socket with interconnected frequency bands, thus flexible and future proof.
Suitable for CATV and SAT IF domestic distribution installations Seamless CATV and SAT ranges and low distribution attenuation thanks to combined filter-tap structure.Suitable for return channel
Remote DC-feed via SAT outlet

Technical data

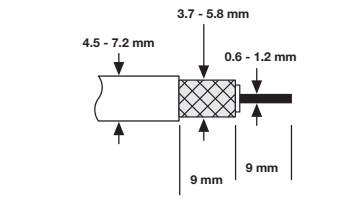
Type:		EDA 302 F	GDA 313 F
Art. No:		306121	306221
Design		Single socket	Pass-through-socket*
Attenuation	**Frequency range**		
IN - OUT (pass-through)	5 to 2150 (2400) MHz	-	1.0-2.0 (2.8) dB
IN - TV (IEC male)	5 to 862 MHz	2.5 dB	13 dB
IN - RF (IEC female)	5 to 118 MHz	6.5 dB	17 dB
IN - SAT (F female)	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



Outlets

2-outlet SAT filter sockets

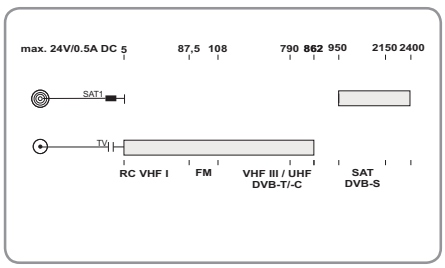
- Special SAT antenna outlets for sat IF distribution networks (multi-switch systems or single-cable solution) as well as single satellite systems.
- F-connector for SAT IF range. Additional connection of terrestrial receiving devices such as DVB-T receiver possible via IEC connectors.
- Selective splitting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

Technical data

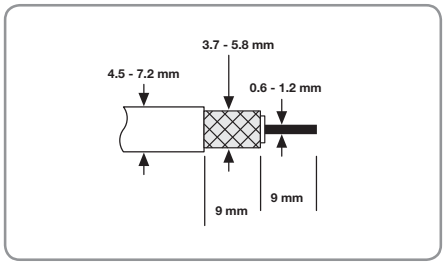
Type:		EDS 01 F	GDS 08 F	GDS 11 F
Art. No:		306131	306231	306232
Design		Single socket	Pass-through-socket*	
Attenuation	Frequency range			
IN - OUT	5 - 2150 (2400) MHz	-	2.4 - 3.2 (4.0) dB	1.0 - 1.8 (2.6) dB
IN - TV (IEC male)	5 - 862 MHz	1.0 dB	8.0 dB	11 dB
IN - SAT (F female)	950 - 2150 (2400) MHz	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	

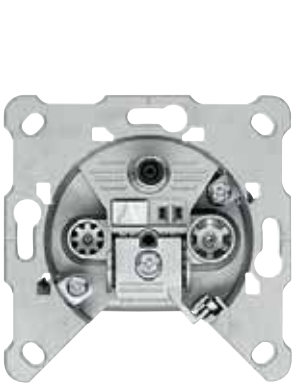
Outlets

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



Recommended cable dimensions





3 -outlet SAT & 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.

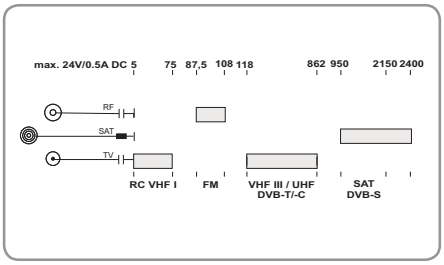
Technical data

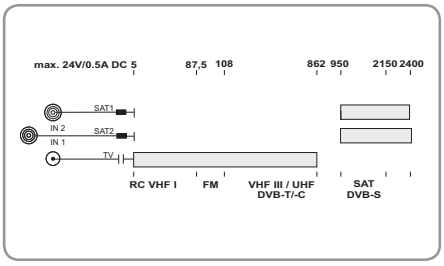
Type:		FS 302 F	EDS 322 F
Art. No:		306151	306141
Design		Single socket	Single socket
Attenuation	**Frequency range**		
IN - TV (IEC male)	5 - 75/118…862 MHz	1.5 dB	
IN1 - TV (IEC male)	5 - 862 MHz		1.0 dB
IN - RF (IEC female)	87 - 108 MHz	1.5 dB	
IN - SAT (F female)	950 - 2150 (2400) MHz	2.0 (3.0) dB	
IN1 - SAT1 (F female)	950 - 2400 MHz		1.2 dB
IN2 - SAT2 (F female)	5 - 2400 MHz		1.2 dB
Isolation			
TV/RF - SAT	VHF / SAT	30/20 dB	
TV - RF	VHF, UHF	20 dB	
OUT - TV/SAT	VHF, UHF / SAT		20/20 dB
DC circuit	13/18V, 22 kHz; max. +24V/0.5 A	SAT-IN (F female)	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.

- 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



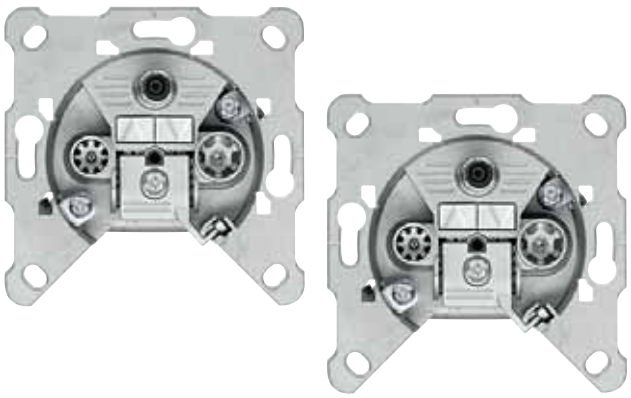


Triax Series

| CATV antenna sockets

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.

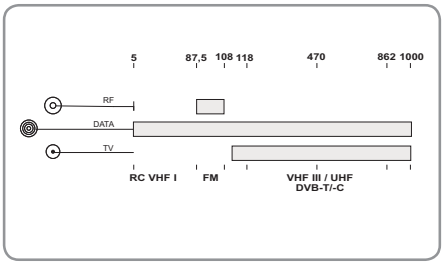


Technical data

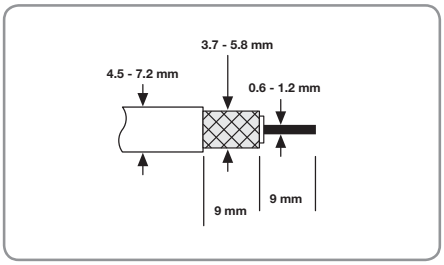
Type:		EDM 304	GDM 310	GDM 315
Art. No:		306901	306902	306903
Design		Single socket	Pass-through-socket	
Attenuation	**Frequency range**			
IN - OUT	5 - 1000 MHz	-	2.5 dB	1.6 dB
IN - TV (IEC male)	(111) 118 - 1000 MHz	(6.0) 4.3 dB	(13) 11 dB	(17) 15 dB
IN - RF (IEC female)	87 - 108 MHz	6.0 dB	14 dB	18 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

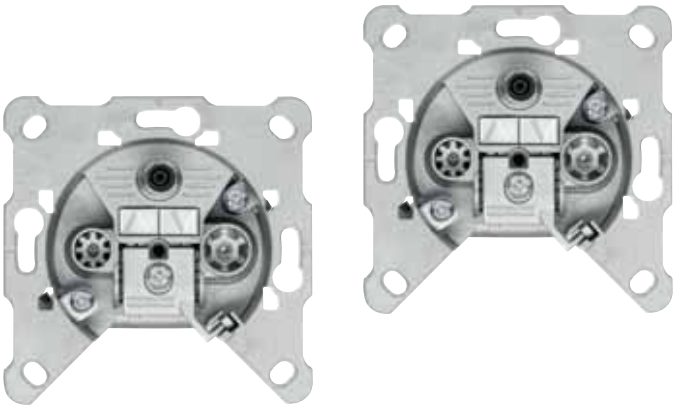
Outlets

- 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





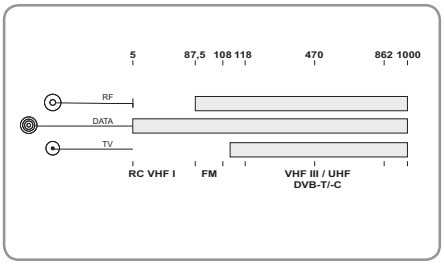
3-outlet modem sockets (with FM)

- 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.

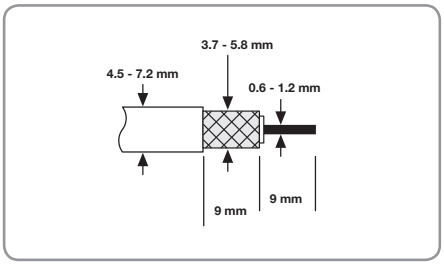
Technical data

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

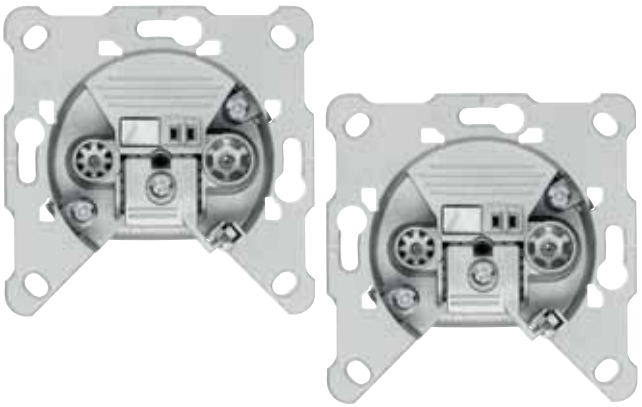


Recommended cable dimensions



2-outlet 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.

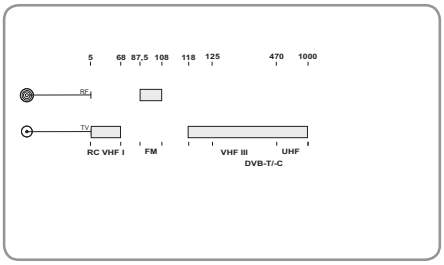


Technical data

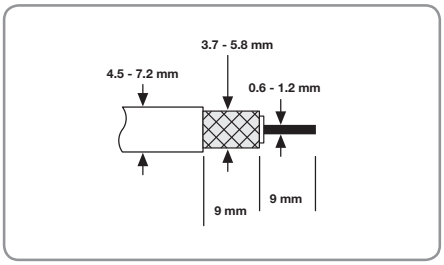
Type:		FS 01	FS 07	FS 12
Art. No:		306191	306291	306292
Design		Single socket	Pass-through-socket	
Attenuation	**Frequency range**			
IN - OUT	5 - 1000 MHz	-	2.4 dB	1.0 dB
IN - TV (IEC male)	(111) 118 - 1000 MHz	0.8 / 0.7 dB	8.0 / 8.0 dB	11.0 dB
IN - RF (IEC female)	87 - 108 MHz	1.0 dB	9.0 dB	12.0 dB
Isolation				
OUT - TV/RF	40-1000 MHz	-	30 dB -1,5 dB / Octave	

Outlets

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



Recommended cable dimensions



TOU satellite outlet housing

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.

Technical data

Type:			TOU - 01S terminated	TOU - 10S pass through	TOU - 14S pass through
Art. No. incl. cover (White)			303661	303694	303674
Art. No. excl. cover			303693		
Design			Single socket	Pass-through-socket	
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 (EN 50083-4)					
	- TV	dB	Cat. C	Cat. C	Cat. C
	- Radio	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 TOU Series

| 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

Type:			TOU - 1 terminated	TOU - 1FI terminated	TOU - 1FB terminated	TOU - 4 pass through	TOU - 7 pass through
Art. No. - incl. cover & frame							
- excl. cover & frame			303621	303619	303664	303624	303627
Design			Single socket	Single socket	Single socket	Pass-through	Pass-through
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
	- Radio-SAT	dB				> 15.0	> 18.0
	- Out-TV	dB				> 20.0	> 30.0
Return loss (EN 50083-4)							
	- TV	dB	Cat. C	Cat. C	Cat. C	Cat. C	Cat. C
	- Radio	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	(In-SAT)	V/mA	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 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

Type:			TOU - 10 pass through	TOU - 14 pass through	TOU - 17 pass through	TOU - 20 pass through	TOU - 23 pass through
Art. No. - incl. cover & frame							
- excl. cover & frame			303630	303614	303617	303629	303623
Design			Single socket	Single socket	Single socket	Pass-through	Pass-through
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	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
	- Radio-SAT	dB	> 25.0	> 25.0	> 25.0	> 25.0	> 25.0
	- Out-TV	dB	> 30.0	> 30.0	> 30.0	> 30.0	> 30.0
Return loss (EN 50083-4)							
	- TV	dB	Cat. C	Cat. C	Cat. C	Cat. C	Cat. C
	- Radio	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	(In-SAT)	V/mA	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 FUGA Series

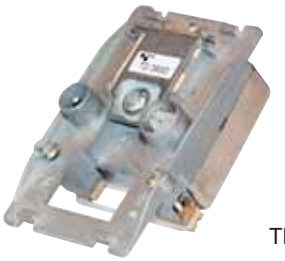
| TV & radio outlets

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

TD outlet housing



TD outlet housing

Technical data

Type:			TD 260D terminated	TD 263D pass through	TD 212D pass through
Art. No. - White in box			302560	302561	302562
Design			Single socket	Pass-through-socket	
Outputs			TV - Radio	TV - Radio	TV - Radio
Frequency range	- TV	MHz	5-68/132-862	5 - 74/120 - 862	5 - 74/120 - 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 -1,5 dB/octave	>20 db @ 40 MHz -1,5 dB/octave
	- Radio-out	dB		> 30	> 30
	- TV-DAB	dB			
Return loss (EN 50083-4)					
	- TV	dB	> 14	> 14	> 14
	- Radio	dB	> 10	> 10	> 10
Shielding factor	- 5-300 MHz	dB	> 85.0	> 85.0	> 85.0
	- 300-470 MHz	dB	> 80.0	> 80.0	> 80.0
	- 470-862 MHz	dB	> 75.0	> 75.0	> 75.0
Connectors	- TV		IEC-male	IEC-male	IEC-male
	- Radio		IEC-female	IEC-female	IEC-female
	- DAB				
DC through		V/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	0.156	0.156	0.156
Dimensions (mechanical)		mm	Ø60	Ø60	Ø60
Replacing			TD 260C	TD 263C	TD 212C

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

Type:			TD 253 SAT/return	TD 254 SAT/DAB	TD 272D Multimedia
Art. No. - White in box			302566	302567	302572
Design			Single socket	Single socket	
Outputs			TV - Radio - SAT - return	TV - Radio - SAT - DAB	TV - Radio - Data
Frequency range	- TV	MHz	47 - 68/132 - 862	47 - 68/132 - 862	139 - 862
	- Radio	MHz	87.5 - 108	87.5 - 108	87.5 - 108
	- SAT/Data	MHz	950 - 2150 / -	950 - 2150 / -	- / 5 - 862
	- Return path	MHz	0 - 2150	47 - 862	5 - 65
Through loss	- TV	dB			
	- Radio	dB			
	- SAT	dB			
	- Return path	dB	1.0	1.0	1.0
Tap loss	- TV	dB	1.0/1.0	4.5/4.5	4.5
	- Radio	dB	1.0	5.5	5.5
	- SAT	dB	2.0	2.0	4.5
	- Return path			4.5	1.0
Linearity		dB	± 1	± 1	± 1
Isolation	- TV - Radio	dB	≥ 12	≥ 12	≥ 12
	- TV - SAT	dB	≥ 18	≥ 18	
	- Radio - Data	dB			≥ 55 / ≥ 20
	- TV-data/DAB	dB		≥ 15	≥ 55 / ≥ 30
Return loss	- TV	dB	> 14	> 14	> 14
(EN 50083-4)	- Radio	dB	> 10	> 10	> 10
Shielding factor	- 5-300 MHz	dB	> 85.0	> 85.0	> 85.0
	- 300-470 MHz	dB	> 80.0	> 80.0	> 80.0
	- 470-862 MHz	dB	> 75.0	> 75.0	> 75.0
	- 950-2150 MHz	dB	> 55.0	> 55.0	
Connectors	- TV		IEC-male	IEC-male	IEC-male
	- Radio		IEC-female	IEC-female	IEC-female
	- SAT / Data		F-female	F-female	F-female
	- Return path		F-female	F-female	
DC through		V/mA	max. 100	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	0.122	0.122	0.100
Dimensions (w x h x d)		mm	50 x 77 x 37	50 x 77 x 37	50 x 77 x 26
Replacing			TD 250	TD 252	TD 272C

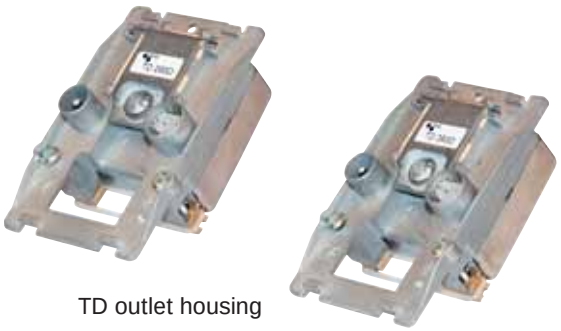
Triax FUGA Series

| 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



TD outlet housing

Technical data

Type:			TD 260D terminated	TD 263D pass through	TD 212D pass through
Art. No. - White in box			302560	302561	302562
Design			Single socket	Pass-through-socket	
Outputs			TV - Radio	TV - Radio	TV - Radio
Frequency range	- TV	MHz	5-68/132-862	5 - 74/120 - 862	5 - 74/120 - 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 -1,5 dB/octave	>20 db @ 40 MHz -1,5 dB/octave
	- Radio-out	dB		> 30	> 30
	- TV-DAB	dB			
Return loss (EN 50083-4)					
	- TV	dB	> 14	> 14	> 14
	- Radio	dB	> 10	> 10	> 10
Shielding factor	- 5-300 MHz	dB	> 85.0	> 85.0	> 85.0
	- 300-470 MHz	dB	> 80.0	> 80.0	> 80.0
	- 470-862 MHz	dB	> 75.0	> 75.0	> 75.0
Connectors	- TV		IEC-male	IEC-male	IEC-male
	- Radio		IEC-female	IEC-female	IEC-female
	- DAB				
DC through		V/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	0.156	0.156	0.156
Dimensions (w x h x d)		mm	50 x 77 x 37	50 x 77 x 37	50 x 77 x 37
Replacing			TD 260C	TD 263C	TD 212C

TD 201T

FV 01 outlet

FV 02 outlet

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

Type:			TD 201T terminated	FV 01	FV 02
Art. No. - White in box			303456	303481	303482
Design			Single socket	Single socket	Single socket
Outputs			1 x TV	1 x F-connector	1 x F-connector
Frequency range - TV		MHz	47 - 862		
	- Radio	MHz			
	- DAB	MHz			
Tap loss	- VHF	dB	0.2	4.5	13.0
	- UHF	dB	0.5	4.5	13.0
	- DAB	dB			
Outlet connection			IEC-male	F-angle connector	F-angle connector
DC through			Yes		
CE standard					
Impedance		Ohm	75	75	75
Weight		kg	0.156	0.156	0.156
Dimensions (w x h x d)		mm	50 x 77 x 37	50 x 50 x 26	50 x 77 x 26
Replacing					

Triax OPUS Series

| TV & radio outlets

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

OPUS outlet housing

Technical data

Type:			TD 301 terminated	TD 304 pass through	TD 312 pass through
Art. No. - White in box			302131	302134	302132
Design			Single socket	Pass-through-socket	
Outputs			TV - Radio	TV - Radio	TV - Radio
Frequency range	- TV	MHz	5 - 68 / 132 - 862	5 - 68 / 132 - 862	5 - 68 / 132 - 862
	- Radio	MHz	87.5 - 108	87.5 - 108	87.5 - 108
	- Return path	MHz			
Through loss	- TV	dB		4.5	0.8
	- Radio	dB		4.5	0.8
	- Return path	dB			
Tap loss	- TV	dB	1.0	4.5	12.0
	- Radio	dB	1.5	4.5	12.0
	- Return path				1.0
Linearity		dB	± 1	± 1	± 1
Isolation	- TV - Radio	dB	≥ 12	≥ 12	≥ 12
	- TV - out	dB		>20 db @ 40 MHz -1.5 dB/octave	>20 db @ 40 MHz -1.5 dB/octave
Return loss	(EN 50083-4)	dB			
	- TV	dB			
	- Radio	dB			
	- Return path	dB			
Shielding factor	- 5-300 MHz	dB	> 85.0	> 85.0	> 85.0
	- 300-470 MHz	dB	> 85.0	> 85.0	> 85.0
	- 470-862 MHz	dB	> 80.0	> 80.0	> 80.0
	- 950-2150 MHz	dB	> 55.0	> 55.0	> 55.0
Connectors	- TV		IEC-male	IEC-male	IEC-male
	- Radio		IEC-female	IEC-female	IEC-female
	- Return path				
Max. outlets per string			1	1	3
DC through		V/mA	on TV	on TV	on TV
Standards CE					
Impedance		Ohm	75	75	75
Weight		kg	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

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

Type:			TD 352 SAT	TD 372 multimedia
Art. No. - White in box			302152	302172
Design			Single socket	Single socket
Outputs			TV - Radio - SAT	TV - Radio - data
Frequency range	- TV	MHz	5 - 68 / 132 - 862	132 - 862
	- Radio	MHz	87.5 - 108	87.5 - 108
	- SAT/Data	MHz	950-2150	5-862
	- Return path	MHz		5 - 65
Through loss	- TV	dB		
	- Radio	dB		
	- SAT	dB		
	- Return path	dB		
Tap loss	- TV	dB	1.0	4.5
	- Radio	dB	1.0	5.5
	- SAT	dB	1.0	4.5
	- Return path			1.0
Linearity		dB	± 1	± 1
Isolation	- TV - Radio	dB	≥ 15	
	- TV - SAT	dB		> 55/> 20
	- Radio - out	dB	≥ 12	> 12
	- TV-data/DAB	dB		> 55/> 30
Return loss	- TV	dB		
(EN 50083-4)	- Radio	dB		
Shielding factor	- 5-300 MHz	dB	> 85.0	> 85.0
	- 300-470 MHz	dB	> 80.0	> 80.0
	- 470-862 MHz	dB	> 75.0	> 75.0
	- 950-2150 MHz	dB	> 55.0	> 55.0
Connectors	- TV		IEC-male	IEC-male
	- Radio		IEC-female	IEC-female
	- SAT / Data		F-female	F-female
	- Return path		F-female	F-female
DC through		V/mA	max. 250	max. 100
Standards CE				
Impedance		Ohm	75	75
Weight		kg	0.225	0.225
Dimensions (w x h x d)		mm	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 Domestic Distribution Unit

UK-style outlet housing

Technical data

Type:			TOU diplexed (2-way)	TOU - DC diplexed (2-way)	TOU diplexed (3-way)	TOU guad (4-way)	TOU DDU (4-way)
Art. No. - White in box			304101	304118	304102	304109	304115
Design			Single socket	Single socket	Single socket	Single socket	Single socket
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	47-68/254-862
	- Radio	MHz	87.5 - 230	87.5 - 230	87.5 - 230	87.5 - 230	87.5 - 230
	- SAT I / II	MHz			950-2150	950-2150	950-2150
	- Return path	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	< 3.5
	- SAT I / II	dB			< 3.0	< 3.0	< 3.5/< 4.0
	- Return path					< 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 path					F-female	IEC-female
DC through		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

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

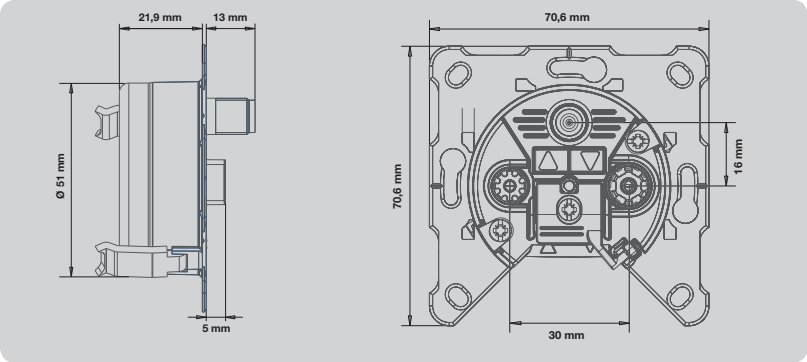
GAD 274 - 4 outlet socket
socket outlet for application in DVB-T, USW and DVB-S networks, as well as a SAT connector

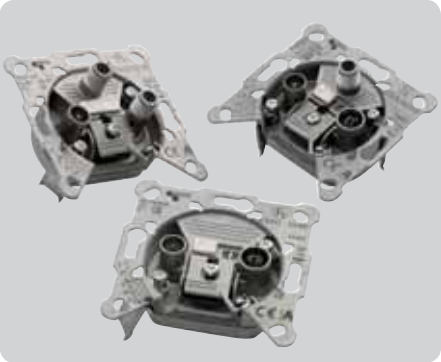
Technical data

Type:			GAD 269 terminated	GAD 274 terminated
Art. No. - White in box			023269	023274
Design			Single socket	Single socket
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		2.0	2.0
Connectors	- TV		IEC-male	IEC-male
	- Radio		IEC-female	IEC-female
	- DAB			
	- SAT		F-female	F-female
DC through		V/mA		
Standards CE				
Impedance		Ohm	75	75
Weight		kg	0.225	0.225
Dimensions (w x h x d)		mm	Ø60	Ø60
Remarks			- excl. cover and frame	- excl. cover and frame

Accessories

| for TRIAX outlets





Cover for TRIAX outlets

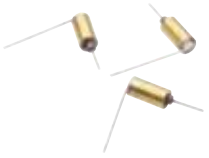
Type:	AD 23 cover pure white	AD 23 cover Oyster white
Art. No.	302060	302061
RAL colour	RAL 9010	RAL 1013
Size mm	81 x 81	81 x 81
Packing size	10 pcs.	10 pcs.

Surface-mounted frame for TRIAX outlets

Type:	AD 20 frame pure white	AD 20 frame Oyster white
Art. No.	302062	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	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

Covers for TOU standard outlets - 2 holes

Type:	Cover pure white	Cover Traffic white	Cover Oyster white
Art. No.	303680	303681	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:	Cover pure white	Cover Traffic white
Art. No.	303685	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

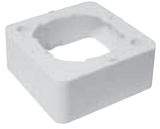
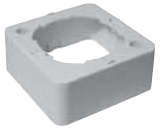
Type:	Cover pure white	Cover Traffic white	Cover Oyster white
Art. No.	303695	303696	303697
RAL colour	RAL 9010	RAL 9016	RAL 1013
Size mm	76 x 76	76 x 76	86 x 86
Packing size	10 pcs.	10 pcs.	10 pcs.




UK design

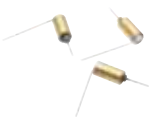
Surface mount for all TOU outlets

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

RF terminating resistor

Type:		R 75 75Ω terminator
Art. No.	5 pcs	342503
Remarks		TD-outlets



Accessories

| for TRIAX TD-outlets

Cover for TD-outlets

Type:	0 hole 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

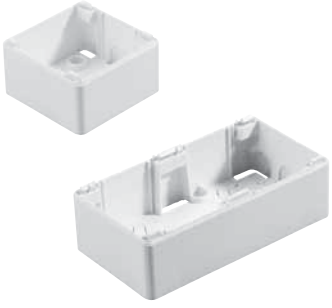
Type:	Frame 50 50 x 50 mm	Frame 50 50 x 77 mm	Frame 63 63 x 90 mm
Art. No. (pure white)	302025	302026	302036
Art. No. (grey)	303025	303026	303036
Art. No. (anthracite)		304026	
RAL colour			
Size mm	50 x 5 x 50	50 x 5 x 77	50 x 5 x 77
Packing size	10 pcs.	10 pcs.	10 pcs.
Remarks	TD 200	TD 26x	TD 2xx

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 5 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	
Art. No. (anthracite)		
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



Instruments

Satellite, Terrestrial, Cable

Fibre optical

Meters

| 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!

SPM 700 HD

SPM 1200 HD

Product		SPM 700 HD	SPM 1200 HD
Art. No.		304531	304532
Type		Mobile SAT-level meter - Economy	Mobile SAT-level meter - 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

SPM 1600 HD 389050	UPM 2300 940 528-001	UPM 3500 940 473-001
Mobile SAT-level meter - 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

Meters

| Fibre optical power meter

An optical power meter is an indispensable tool for any installer running fibre optical cables of any sort.

Only by actually measuring the result and quality of the installed cable immediately upon installing it can you be certain that it will work as expected when powering on the system.

Reduces post-installation fault finding to a minimum.

TOM 011

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	Co	-10 ~ +60
Storage temperatrue	Co	-25 ~ +70
Relative humidity	%	0...95 (non-condensing)
Dimension	mm	190 X 100 X 50
Weight		0.370 kg
Packing size	pcs	1

Technical appendix

Basic technical requirements
Technical data in the catalogue
Planning and installation
Earthing and equipotential
Frequency range of waves
TV standards
Frequency range and channels
Channels and frequencies
Carrier frequencies
Analogue colour and broadcasting
Signal level: mV to dBµV
Signal level: dBm to mW to dBm

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

$$n_{a2} = n_{a1} - \Delta a$$

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

$$n_{a4} = n_{a3} - \Delta a/2$$

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.

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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 mm^2	> 4.6 mm	bare or insulated	Koka
Aluminium	> 25 mm^2	> 5.7 mm	bare (indoors only) or insulated	
Aluminium	> 50 mm^2	> 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 mm^2	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 bandwidth (MHz)	Video/audio seperation (MHz)	Vestigial sideband (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

6. Frequency ranges and channel allocation

Unit	Channel number	Frequency range MHz	Channel centre MHz	Picture carrier MHz	1st sound
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			
Lower	S 4	125 - 132	128.50	126.25	131.75
S-channels	S 5	132 - 139	135.50	133.25	138.75
	S 6	139 - 146	142.50	140.25	145.75
USB	S 7	146 - 153	149.50	147.25	152.75
	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
Band III	5	174 - 181	177.50	175.25	180.75
TV/DAB	6	181 - 188	184.50	182.25	187.75
	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
Upper	S 11	230 - 237	233.50	231.25	236.75
S-channels	S 12	237 - 244	240.50	238.25	243.75
	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

Unit	Channel number	Frequency range MHz	Channel centre MHz	Picture carrier MHz	1st sound
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
Spec. chanel	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
Spec. chanel	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

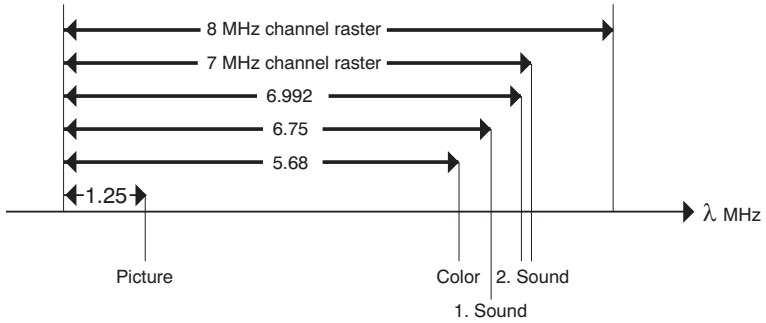
	Channel	Channel limits (MHz)	Video carrier (MHz)	Audio carrier (MHz)
Standard D. China				
VHF I	1	48.5-56.5	49.75	56.25
	2	56.5-64.5	57.75	64.25
	3	64.5-72.5	65.75	72.25
	4	76.0-84.0	77.25	83.75
	5	84.0-92.0	85.25	91.75
VHF III	6	167-175	168.25	174.75
	7	175-183	176.25	182.75
	8	183-191	184.25	190.75
	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	mV v/75 Ω	dBµV
0.100	40	20.0	86
0.112	41	22.5	87
0.125	42	25.0	88
0.140	43	28.0	89
0.160	44	31.5	90
0.180	45	35.5	91
0.200	46	40.0	92
0.225	47	45.0	93
0.250	48	50.0	94
0.280	49	56.0	95
0.315	50	63.0	96
0.355	51	70.0	97
0.400	52	80.0	98
0.450	53	90.0	99
0.500	54	100	100
0.560	55	112	101
0.630	56	125	102
0.700	57	140	103
0.800	58	160	104
0.900	59	180	105
1.00	60	200	106
1.12	61	225	107
1.25	62	250	108
1.40	63	280	109
1.60	64	315	110
1.80	65	355	111
2.00	66	400	112
2.25	67	450	113
2.50	68	500	114
2.80	69	560	115
3.15	70	630	116
3.55	71	700	117
4.00	72	800	118
4.50	73	900	119
5.00	74	1000	120
5.60	75	1120	121
6.30	76	1250	122
7.00	77	1400	123
8.00	78	1600	124
9.00	79	1800	125
10.0	80	2000	126
11.2	81	2250	127
12.5	82	2500	128
14.0	83	2800	129
16.0	84		
18.0	85		

) 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 mV to dBm

dBm	mW	dBm	mW
-20	0,01	-20,00	0,01
-19	0,01	-16,99	0,02
-18	0,02	-15,23	0,03
-17	0,02	-13,98	0,04
-16	0,03	-13,01	0,05
-15	0,03	-12,22	0,06
-14	0,04	-11,55	0,07
-13	0,05	-10,97	0,08
-12	0,06	-10,46	0,09
-11	0,08	-10,00	0,1
-10	0,10	-6,99	0,2
-9	0,13	-5,23	0,3
-8	0,16	-3,98	0,4
-7	0,20	-3,01	0,5
-6	0,25	-2,22	0,6
-5	0,32	-1,55	0,7
-4	0,40	-0,97	0,8
-3	0,50	-0,46	0,9
-2	0,63	-0,00	1
-1	0,79	3,01	2
0	1,00	4,77	3
1	1,26	6,02	4
2	1,58	6,99	5
3	2,00	7,78	6
4	2,51	8,45	7
5	3,16	9,03	8
6	3,98	9,54	9
7	5,01	10,00	10
8	6,31	10,41	11
9	7,94	10,79	12
10	10,00	11,14	13
11	12,59	11,46	14
12	15,85	11,76	15
13	19,95	12,04	16
14	25,12	12,30	17
15	31,62	12,55	18
16	39,81	12,79	19
17	50,12	13,01	20
18	63,10	13,22	21
19	79,43	13,42	22
20	100,00	13,62	23
21	125,89	13,80	24
22	158,49	13,98	25
23	199,53	14,15	26
24	251,19	14,31	27
25	316,23	14,47	28
26	398,11	14,62	29
27	501,19	14,77	30

General sales and delivery conditions

| Certificates

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General sales and delivery conditions

ISO 9001 certificate

ISO 14001 certificate

ROHS certificate

Triax is of course ISO 9001 certified and our products comply with all acknowledged local and international standards.

You can find the different certificates according to the list above

General sales and delivery conditions

| Triax Group

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.

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.

The information contained in this catalogue was to the best of the knowledge of Triax, correct at the time of publication.
Triax reserves the right, without prior notice, to discontinue products or to make design changes as part of its continuous programme of product improvement.
Triax will not accept responsability for damage, injury, loss or expense resulting from any error or omissions.

Certificates

| ISO 9001

BUREAU VERITAS
Certification

Certification

Awarded to

Triax A/S,

Bjørnkærvej 3, 8783 Hornsyld, Denmark

part of Certificate no.: 11000680A

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below.

STANDARD

ISO 9001:2008

SCOPE OF SUPPLY

Development, production and marketing of aerial systems.

Original approval date: 17-12-1993

Subject to the continued satisfactory operation of the organization's Management System, this certificate is valid until: 27-11-2014

Approval date: 28-11-2011
Last expiry date: 21-11-2011
Date of last recertification audit: 25-10-2011

To check the validity of this certificate please call: (+45) 77 311 000.
Further clarification regarding the scope of this certificate and the applicability of the system requirements may be obtained by consulting the organisation
Certificate Number: DNKFRC11000680A-18735 *Date:* 28-11-2011

Managing office: Oldenborggade 1B, DK-7000 Fredericia, Denmark
Certification office: Oldenborggade 1B, DK-7000 Fredericia, Denmark

UKAS MANAGEMENT SYSTEMS
008

Sales & delivery

BUREAU VERITAS
Certification

Certification

Awarded to

Triax A/S

Bjørnkærvej 3, 8783 Hornsyld, Denmark
part of Certificate no.: 11000686B

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below.

STANDARD

ISO 14001:2004

SCOPE OF SUPPLY

Development, production and marketing of aerial systems.

Original approval date: 03-05-2006

Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: 24-11-2014

Approval date: 25-11-2011
Last expiry date: 21-11-2011
Date of last recertification audit: 25-10-2011

To check the validity of this certificate please call: (+45) 77 311 000.
Further clarification regarding the scope of this certificate and the applicability of the system requirements may be obtained by consulting the organisation
Certificate Number: DNKFRC11000686B-18741 *Date:* 25-11-2011

Managing office: Oldenborggade 131, DK-7000 Fredericia, Denmark
Certification office: Oldenborggade 131, DK-7000 Fredericia, Denmark

UKAS MANAGEMENT SYSTEMS
008

Sales & delivery

Certificates

| ROHS

Triax is certified according to DS-EN/ISO 9001 and 14001

Both externally and internally we conduct audits to make sure that we always work in accordance with our procedures, and we constantly look for ways to improve our efforts to extend our environmental policy.

At Triax we know our obligations and act according to EU directives.

RoHS II:

We do not use products in our production which contain restricted substances, and we demand that our suppliers also fulfil the directive. We are constantly in dialogue with our suppliers to ensure this.

REACH:

In relation to the REACH directive we belong to the group of companies which are called “Downstream Users”.

We do not produce chemicals ourselves.
We do not buy chemicals outside the EU.
We do not trade chemicals for business.

This means that we are not obliged to be registered according to the demands in REACH.

To ensure that our suppliers are working according to the directive we have pinpoint selected suppliers with whom we constantly work in order to ensure that they fulfil their obligations.

WEEE:

Triax is a member of Elretur which is a private organisation established by the “Brancheorganisationen for Elektronik og Hvidevarer“ (trade association of electronics and applicances). Elretur helps their members to fulfil their obligations in connection with “Electronic and Electrical Equipment“ waste.

We have pinpointed the products according to the specifications in the WEEE directive and register the annual sales to “Elretur” in accordance with our obligations.

Triax A/S

Quality Manager
Svend Kristiansen

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TRIAX - your ultimate connection

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