

Triax fibre optical accessories

- for building optical networks

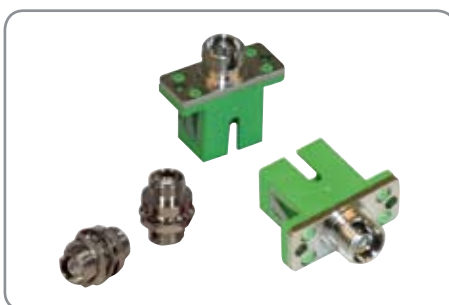
The Triax fibre optical TOS passive splitter/coupler units let you build passive optical networks (PON) in virtually any size and split ratio.

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. Using the TOS splitters in tandem with the optical LNB products the link budget allows splitting into 32 ways.

- ✓ Pre-connected cables for easy installation
- ✓ On-site-connectors for use with unterminated cables (No need for fusion-splicing)
- ✓ Barrel connectors allow components to be used with all products
- ✓ For singlemode use



Steel armored 3.0 fibre optic cable



Fit on site connector



Steel armored 3.0 fibre optic cable

Technical data

| Type | TFF 01 | TFF 001 | TFB 001 | TFB 002 |
|----------|-----------------------|-------------------|------------------------------------|-----------------------------------|
| | Fit-on-site connector | Optical test tool | FC/PC-FC/PC | FC/PC-SC/PC |
| Art. No. | 307680 | 307682 | 307684 | 307686 |
| Remarks | | | Barrel connector (Optical LNB use) | Barrel connector (HFC system use) |

Steel armored 3.0 fibre optic cable - G657A, LSZH

| Type | TFC 01 | TFC 03 | TFC 05 | TFC 10 | TFC 15 |
|---------------------------------|--------|--------|--------|--------|--------|
| Art. No. | 307661 | 307662 | 307663 | 307664 | 307665 |
| Pre-connected with (in and out) | FC/PC | FC/PC | FC/PC | FC/PC | FC/PC |
| Cable length | m 1 | 3 | 5 | 10 | 15 |



| Type | TFC 20 | TFC 30 | TFC 40 | TFC 50 | TFC 75 |
|---------------------------------|--------|--------|--------|--------|--------|
| Art. No. | 307666 | 307667 | 307668 | 307669 | 307670 |
| Pre-connected with (in and out) | FC/PC | FC/PC | FC/PC | FC/PC | FC/PC |
| Cable length | m 20 | 30 | 40 | 50 | 75 |



| Type | TFC 100 | TFC 200 | TFC 500 |
|---------------------------------|---------|---------|---------|
| Art. No. | 307671 | 307672 | 307675 |
| Pre-connected with (in and out) | FC/PC | FC/PC | none |
| Cable length | m 100 | 200 | 500 |

Triax fibre optical LNB

- a high quality, high performance universal LNB

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

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



TOL 32 optical LNB



TOL 32 optical LNB



TOL 32 optical LNB

Technical data

| Type | TOL 32 | |
|---|---------------------|-------------------------|
| Art. No. | 307610 | |
| Frequencies | | |
| Input frequency range | GHz | 10,7 – 12.75 |
| Band stacking, vertical | GHz | 0.950 – 3.0 |
| Band stacking, horizontal | GHz | 3.4 – 5.45 |
| Polarization | linear | Horizontal and vertical |
| Optical | | |
| Wavelength | nm | 1310 |
| Optical output power, (nominal@25 °C) | dBm | 7.0 |
| Variation, output power, (over full temperature range) | dBm | ± 0.2 |
| Equivalent split levels possible (max.) | ways | 32 |
| Total loss (nominal) | dB | 18.3 |
| Noise | | |
| Noise figure (typical@25°C/ max. @25°C) | dB | 0.5/1.1 |
| Noise figure (typ. over temperature/ max. over temperature) | dB | 0.7/1.3 |
| Gain | | |
| Conversion gain (min. at room temperature/ max.at room temperature) | dB | 72/62 |
| Gain variation (-30 to +60 °C) | dB | ± 2 |
| Gain flatness (0.95 to 5.45 GHz) | dB | 5 |
| Gain ripple (per 26MHz bandwidth segment) | dB | ≤0.5 |
| Local Oscillator (L.O.) | | |
| L.O. frequency, vertical/ horizontal | GHz | 9.75/ 7.3 |
| L.O. phase noise (offset frequency 1 kHz/ 10 kHz/ 100 kHz/ 1 MHz) | dBc/Hz | -55/ -80/ -100/ -110 |
| L.O. stability, initial setting | MHz | ± 1 |
| L.O. temperature drift (-40 °C to +60 °C) | MHz | ± 2 |
| L.O. aging and total drift (10 years) | MHz | ± 4 |
| Additional | | |
| Image rejection (min.) | dB | 40 |
| Cross polar isolation (typ./ min.) | dB | 30/25 |
| Spurious output - in band (950MHz-3GHz, 3.4GHz-5.45GHz) | dBc | -25 |
| LNB type | Universal Wholeband | |
| Supply voltage, nominal/ maximum survival voltage | VDC | 12/ 25 |
| Current consumption | mA | < 450 |
| DC-input | F-type, female | |
| Optical output | FC/PC | |
| Dimensions / temperature | | |
| Mounting dimensions / neck diameter | mm | 40 |
| Ambient operating temperature range | °C | -30 - +60 |

Example



Triax TMS 17xC multiswitches

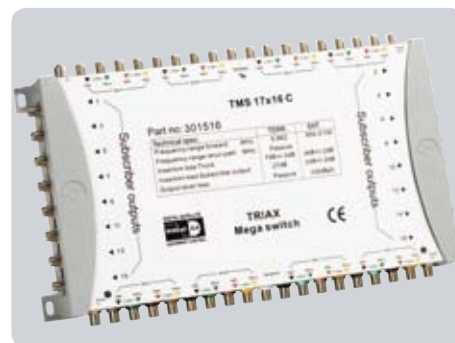


Fulfilling subscriber needs the most efficient way

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



TMS 17X8C



TMS 17X16C

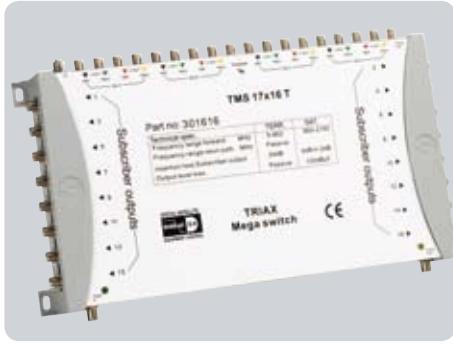
Technical data

Cascadable multiswitches with 16 polarities, 1 TER. input. External power supply

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



Triax TMS 17xT multiswitches



TMS 17X16T

TMS17xC and 17XT multiswitches

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



TMS 17X8T

Technical data

Terminated multiswitches with 16 polarities, 1 TER. input. External power

| TYPE Art. No. | | TMS 17x6T 301606 | TMS 17x8T 301608 | TMS 17x12T 301612 | TMS 17x16T 301616 |
|---|-------|--|--|--|--|
| Number of inputs | | 16 SAT, 1 TER | 16 SAT, 1 TER | 16 SAT, 1 TER | 16 SAT, 1 TER |
| Number of outputs | | 16 SAT, 1 TER | 16 SAT, 1 TER | 16 SAT, 1 TER | 16 SAT, 1 TER |
| Subscriber outputs | | 6 | 8 | 12 | 16 |
| Connectors | F-con | female | female | female | female |
| Frequency range SAT | MHz | 950-2150 (active) | 950-2150 (active) | 950-2150 (active) | 950-2150 (active) |
| Frequency range TER | MHz | 5-862 (passive) | 5-862 (passive) | 5-862 (passive) | 5-862 (passive) |
| Gain SAT | dB | -2 | 0 | -2 | 0 |
| Gain TER | dB | -21 | -22 | -24 | -24 |
| Isolation LNB to LNB | dB | 35 | 35 | 35 | 35 |
| Isolation TER to SAT | dB | 20 | 20 | 20 | 20 |
| Isolation SAT to TER | dB | 30 | 30 | 30 | 30 |
| Isolation cross polarisation H/V | dB | 28 | 28 | 28 | 28 |
| Isolation out - out TER | dB | 25 | 25 | 25 | 25 |
| Isolation out - out SAT | dB | 30 | 30 | 30 | 30 |
| Return loss SAT inputs | dB | 12 | 12 | 12 | 12 |
| Return loss SAT outputs | dB | 12 | 12 | 12 | 12 |
| Return loss TER inputs | dB | 8 | 8 | 8 | 8 |
| Return loss TER outputs | dB | 8 | 8 | 8 | 8 |
| Output level SAT (IMD ₃ - 35 dB) | dBμV | 100 | 100 | 100 | 100 |
| Impedance input/output | Ohm | 75 | 75 | 75 | 75 |
| Switching | VDC | 13 V - 18 V - 13 V/22 kHz 18 V/22 kHz - DiSEqC 2.0 Toneburst | | 13 V - 18 V - 13 V/22 kHz 18 V/22 kHz - DiSEqC 2.0 Toneburst | |
| Supply voltage | VDC | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) |
| Power supply | | External | External | External | External |
| LNB power supply max. | A | 1.3 | 1.3 | 1.3 | 1.3 |
| Power link (for amplifiers in the line) | | Yes | Yes | Yes | Yes |
| Control LEDs | | Green for power Yellow for power link | Green for power Yellow for power link | Green for power Yellow for power link | Green for power Yellow for power link |
| Colourcoding of IF and TER inputs | | Yes | Yes | Yes | Yes |
| Temperature range | °C | 0...+55 | 0...+55 | 0...+55 | 0...+55 |
| Dimensions (H x D x W) | mm | 125 x 55 x 355 | 125 x 55 x 355 | 215 x 55 x 355 | 215 x 55 x 355 |

Triax TMS 9xC multiswitches



Fulfilling subscriber needs the most efficient way

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



TMS 9X8C



TMS 9X12C

Technical data

Cascadable multiswitches with 8 polarities, 1 TER. input. External power supply

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



Triax TMP 9x multiswitches



TMP 9X32

TMP 9x series stand-alone multiswitch

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

Technical data

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

| TYPE Art. No. | | TMP 9x8 301630 | TMP 9x12 301632 | TMP 9x16 301634 | TMP 9x24 301636 | TMP 9x32 301638 |
|---|--------------|---|--------------------|--------------------|--------------------|--------------------|
| Number of inputs | | 8 SAT, 1 TER | 8 SAT, 1 TER | 8 SAT, 1 TER | 8 SAT, 1 TER | 8 SAT, 1 TER |
| Subscriber outputs | | 8 | 12 | 16 | 24 | 32 |
| Connectors | F-con | female | female | female | female | female |
| Frequency range - SAT | MHz | 950-2150 | 950-2150 | 950-2150 | 950-2150 | 950-2150 |
| Frequency range - Wideband | MHz | 47-862 | 47-862 | 47-862 | 47-862 | 47-862 |
| Insertion loss trunkline SAT | dB | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 |
| Insertion loss trunkline TER | dB | 3.0 | 3.0 | 3.0 | 0.0 | 2.0 |
| Input polarity gain control SAT | dB | 4 x 10 | 4 x 10 | 4 x 10 | 4 x 15 | 4 x 15 |
| Input polarity gain control TER | dB | 15 | 15 | 15 | 15 | 15 |
| TER slope control | dB | 10 | 10 | 10 | 10 | 10 |
| Output level control (4 outputs) | | | | | | |
| Long cable | dB | / | / | / | 0 | 0 |
| Medium cable | dB | / | / | / | 6 | 6 |
| Short cable | dB | / | / | / | 12 | 12 |
| Isolation TER to SAT | dB | 32 | 32 | 32 | 32 | 32 |
| Isolation SAT to TER | dB | 32 | 32 | 32 | 32 | 32 |
| Isolation cross polarisation H/V | dB | 30 | 30 | 30 | 30 | 30 |
| Isolation out - out TER | dB | 30 | 30 | 30 | 30 | 30 |
| Isolation out - out SAT | dB | 30 | 30 | 30 | 30 | 30 |
| Return loss SAT inputs | dB | 10 | 10 | 10 | 10 | 10 |
| Return loss SAT outputs | dB | 8 | 8 | 8 | 10 | 10 |
| Return loss TER inputs | dB | 10 | 10 | 10 | 12 | 12 |
| Return loss TER outputs | dB | 8 | 8 | 8 | 10 | 10 |
| Output level SAT (IMD ₃ - 35 dB) | dB μ V | 100 | 100 | 100 | 100 | 100 |
| Output level TER (IMD ₃ - 60 dB) | dB μ V | 95 | 95 | 95 | 95 | 95 |
| Line power Voltage (TER) | V | 12 | 12 | 12 | 12 | 12 |
| Current (TER) | mA | 50 | 50 | 50 | 50 | 50 |
| Switching commands | VDC/ kHz | 13V / 18V 13V - 22 kHz / 18 - 22 kHz, DiSEqC 2.0 | | | | |
| Supply voltage | VAC VDC/A | 180 - 264 18 / 1.5 (47 - 63 Hz) | | | | |
| LNB current, max. | mA | 600 | 600 | 600 | 600 | 600 |
| Colourcoding of inputs | | Yes | Yes | Yes | Yes | Yes |
| Temperature range | °C | 0...+55 | 0...+55 | 0...+55 | 0...+55 | 0...+55 |
| Dimensions (H x D x W) | mm | 157 x 51 x 190 | 157 x 51 x 240 | 157 x 51 x 240 | 157 x 51 x 340 | 157 x 51 x 340 |

Triax TMS 9xP multiswitches



TMS 9XP multiswitches

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



TMS 9X8P



TMS 9X4P



TMS 9X12P

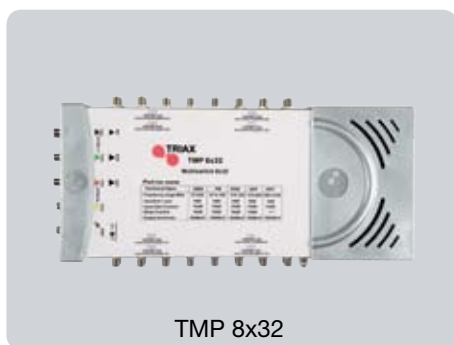
Technical data

Terminated multi switches with 8 polarities, 1 TER. input. With power supply

| TYPE | | TMS 9x4P | TMS 9x6P | TMS 9x8P | TMS 9x12P | TMS 9x16P |
|---|-------|--|----------------|----------------|----------------|----------------|
| Art. No. (EU plug) | | 300344 | 300346 | 300348 | 300342 | 300347 |
| Art. No. (UK plug) | | 300354 | 300356 | 300358 | 300352 | 300357 |
| Number of inputs | | 8 SAT, 1 TER | 8 SAT, 1 TER | 8 SAT, 1 TER | 8 SAT, 1 TER | 8 SAT, 1 TER |
| Subscriber outputs | | 4 | 6 | 8 | 12 | 16 |
| Connectors | F-con | female | female | female | female | female |
| Frequency range SAT | MHz | 950-2150 | 950-2150 | 950-2150 | 950-2150 | 950-2150 |
| Frequency range TER | MHz | 47-862 | 47-862 | 47-862 | 47-862 | 47-862 |
| Gain SAT | dB | 2 | 2 | 2 | 0 | 0 |
| Gain TER | dB | - 2 | - 2 | - 2 | 4 | 2 |
| Isolation LNB to LNB | dB | | | | | |
| Isolation TER to SAT | dB | 28 | 28 | 28 | 30 | 30 |
| Isolation SAT to TER | dB | 30 | 30 | 30 | 30 | 28 |
| Isolation cross polarisation H/V | dB | 28 | 28 | 28 | 25 | 25 |
| Isolation out - out TER | dB | 26 | 26 | 26 | 28 | 30 |
| Isolation out - out SAT | dB | 30 | 30 | 30 | 30 | 30 |
| Return loss SAT inputs | dB | 14 | 14 | 14 | 10 | 10 |
| Return loss SAT outputs | dB | 7 | 7 | 7 | 10 | 10 |
| Return loss TER inputs | dB | 11 | 11 | 11 | 12 | 12 |
| Return loss TER outputs | dB | 8 | 8 | 8 | 10 | 10 |
| Output level SAT (IMD ₃ - 35 dB) | dBμV | 100 | 100 | 100 | 100 | 100 |
| Output level TER (IMD ₃ - 60 dB) | dBμV | 85 | 85 | 85 | 83 | 82 |
| Impedance input/output | Ohm | 75 | 75 | 75 | 75 | 75 |
| Switching | VDC | 13 V - 18 V 13 V/22 kHz - 18 V/22 kHz DiSEqC 2.0 | | | | |
| Supply voltage | VDC | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) |
| Power supply | | Included | Included | Included | Included | Included |
| LNB power supply max. | mA | 1000 | 1000 | 1000 | 1000 | 1000 |
| Colourcoding of IF and TER inputs | | Yes | Yes | Yes | Yes | Yes |
| Temperature range | °C | 0...+55 | 0...+55 | 0...+55 | 0...+55 | 0...+55 |
| Dimensions (H x D x W) | mm | 103 x 71 x 359 | 103 x 71 x 359 | 103 x 71 x 359 | 103 x 71 x 459 | 103 x 71 x 559 |



Triax TMP 8x multiswitches



TMP 8x32

TMP 8x series for one satellite position

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

Technical data

Single multiswitches with 8 polarities, 1 TER. input. With power supply

| TYPE Art. No. | | TMP 8x24 301652 | TMP 8x32 301654 |
|---|--------------|---|--------------------|
| Number of inputs | | 4 SAT, 4 TER | 4 SAT, 4 TER |
| Subscriber outputs | | 24 | 32 |
| Connectors | F-con | female | female |
| Frequency range - SAT | MHz | 950-2150 | 950-2150 |
| Frequency range - FM | MHz | 87.5-108 | 87.5-108 |
| Frequency range - DAB | MHz | 215-230 | 215-230 |
| Frequency range - UHF | MHz | 470-862 | 470-862 |
| Frequency range - Wideband | MHz | 47-862 | 47-862 |
| Insertion loss - SAT | dB | 2.0 | 3.0 |
| Insertion loss - TER | dB | 0.0 | 0.0 |
| Input polarity gain control SAT | dB | 4 x 10 | 4 x 10 |
| Input polarity gain control TER | dB | 15 | 15 |
| TER slope control | dB | 10 | 10 |
| Output level control (4 outputs) | | | |
| Long cable | dB | 0 | 0 |
| Medium cable | dB | 6 | 6 |
| Short cable | dB | 12 | 12 |
| Isolation TER to SAT | dB | 32 | 32 |
| Isolation SAT to TER | dB | 32 | 32 |
| Isolation cross polarisation H/V | dB | 30 | 30 |
| Isolation out - out TER | dB | 30 | 30 |
| Isolation out - out SAT | dB | 30 | 30 |
| Return loss SAT inputs | dB | 10 | 10 |
| Return loss SAT outputs | dB | 8 | 8 |
| Return loss TER inputs | dB | 10 | 10 |
| Return loss TER outputs | dB | 8 | 8 |
| Output level SAT (IMD ₃ - 35 dB) | dB μ V | 100 | 100 |
| Output level TER (IMD ₃ - 60 dB) | dB μ V | 95 | 95 |
| Line power Voltage (TER) | V | 12 | 12 |
| Current (TER) | mA | 50 | 50 |
| Switching commands | VDC/ kHz | 13V / 18V 13V - 22 kHz / 18 - 22 kHz | |
| Supply voltage | VAC VDC/A | 180 - 264 18 / 1.5 (47 - 63 Hz) | |
| LNB current, max. | mA | 600 | 600 |
| Colourcoding of inputs | | Yes | Yes |
| Temperature range | °C | 0...+55 | 0...+55 |
| Dimensions (H x D x W) | mm | 157 x 51 x 340 | 157 x 51 x 340 |

Triax TMP 5x multiswitches



TMP 5x series for one satellite position

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



Technical data

Single multiswitches with 4 polarities, 1 TER. input. With power supply

| TYPE Art. No. | | TMP 5x8 301620 | TMP 5x12 301622 | TMP 5x16 301624 | TMP 5x24 301626 | TMP 5x32 301628 |
|---|--------------|-------------------|--------------------|---|--------------------|--------------------|
| Number of inputs | | 4 SAT, 1 TER | 4 SAT, 1 TER | 4 SAT, 1 TER | 4 SAT, 1 TER | 4 SAT, 1 TER |
| Subscriber outputs | | 8 | 12 | 16 | 24 | 32 |
| Connectors | F-con | female | female | female | female | female |
| Frequency range - SAT | MHz | 950-2150 | 950-2150 | 950-2150 | 950-2150 | 950-2150 |
| Frequency range - Wideband | MHz | 47-862 | 47-862 | 47-862 | 47-862 | 47-862 |
| Insertion loss - SAT | dB | 3.0 | 3.0 | 3.0 | 2.0 | 3.0 |
| Insertion loss - TER | dB | 3.0 | 3.0 | 3.0 | 0.0 | 0.0 |
| Input polarity gain control SAT | dB | 4 x 10 | 4 x 10 | 4 x 10 | 4 x 10 | 4 x 10 |
| Input polarity gain control TER | dB | 15 | 15 | 15 | 15 | 15 |
| TER slope control | dB | 10 | 10 | 10 | 10 | 10 |
| Output level control (4 outputs) | | | | | | |
| Long cable | dB | | | | 0 | 0 |
| Medium cable | dB | | | | 6 | 6 |
| Short cable | dB | | | | 12 | 12 |
| Isolation TER to SAT | dB | 32 | 32 | 32 | 32 | 32 |
| Isolation SAT to TER | dB | 32 | 32 | 32 | 32 | 32 |
| Isolation cross polarisation H/V | dB | 30 | 30 | 30 | 30 | 30 |
| Isolation out - out TER | dB | 30 | 30 | 30 | 30 | 30 |
| Isolation out - out SAT | dB | 30 | 30 | 30 | 30 | 30 |
| Return loss SAT inputs | dB | 10 | 10 | 10 | 10 | 12 |
| Return loss SAT outputs | dB | 8 | 8 | 8 | 8 | 10 |
| Return loss TER inputs | dB | 10 | 10 | 10 | 10 | 12 |
| Return loss TER outputs | dB | 8 | 8 | 8 | 8 | 10 |
| Output level SAT (IMD ₃ - 35 dB) | dBμV | 100 | 100 | 100 | 100 | 100 |
| Output level TER (IMD ₃ - 60 dB) | dBμV | 95 | 95 | 95 | 95 | 95 |
| Line power Voltage (TER) | V | 12 | 12 | 12 | 12 | 12 |
| Current (TER) | mA | 50 | 50 | 50 | 50 | 50 |
| Switching commands | VDC/ kHz | | | 13V / 18V 13V - 22 kHz / 18 - 22 kHz | | |
| Supply voltage | VAC VDC/A | | | 180 - 264 18 / 1.5 (47 - 63 Hz) | | |
| LNB current, max. | mA | 600 | 600 | 600 | 600 | 600 |
| Colourcoding of inputs | | Yes | Yes | Yes | Yes | Yes |
| Temperature range | °C | 0...+55 | 0...+55 | 0...+55 | 0...+55 | 0...+55 |
| Dimensions (H x D x W) | mm | 157 x 51 x 190 | 157 x 51 x 240 | 157 x 51 x 240 | 157 x 51 x 340 | 157 x 51 x 340 |

Triax TMPR 5x multiswitches



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

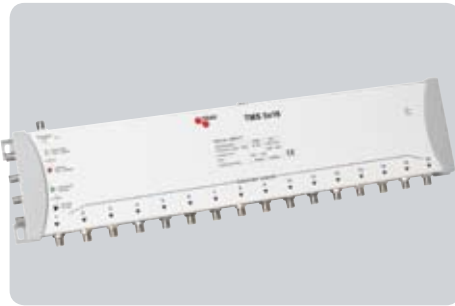
- Range of 8, 12 and 16 output multiswitches
- 4 x Satellite and 1 x TERrestrial Inputs
- Level adjustment on all inputs
- Slope adjustment on UHF Input
- Switchable Masthead amplifier power supply
- Powered from satellite receiver or external power supply
- Supplied with earth bonding bars

Technical data

Single multiswitches with 4 polarities, 1 TER. input. Receiver powered

| TYPE Art. No. | | TMPR 5x8 305297 | TMPR 5x12 305298 | TMPR 5x16 305299 |
|---|-------------|--------------------|---------------------|---|
| Number of inputs | | 4 SAT, 1 TER | 4 SAT, 1 TER | 4 SAT, 1 TER |
| Subscriber outputs | | 8 | 12 | 16 |
| Connectors | F-con | female | female | female |
| Frequency range - SAT | MHz | 950-2150 | 950-2150 | 950-2150 |
| Frequency range - Wideband | MHz | 47-862 | 47-862 | 47-862 |
| Insertion loss - SAT | dB | 2.0 | 2.0 | 2.0 |
| Insertion loss - TER | dB | 0 | 0 | 0 |
| Input polarity gain control - SAT | dB | 10 | 10 | 10 |
| Input polarity gain control - TER | dB | 15 | 15 | 15 |
| TER slope control | dB | 10 | 10 | 10 |
| Isolation TER to SAT | dB | 30 | 30 | 30 |
| Isolation SAT to TER | dB | 30 | 30 | 30 |
| Isolation cross polarisation H/V | dB | 30 | 30 | 30 |
| Isolation out - out TER | dB | 30 | 30 | 30 |
| Isolation out - out SAT | dB | 30 | 30 | 30 |
| Return loss SAT inputs | dB | 10 | 10 | 10 |
| Return loss SAT outputs | dB | 8 | 8 | 8 |
| Return loss TER inputs | dB | 10 | 10 | 10 |
| Return loss TER outputs | dB | 8 | 8 | 8 |
| Output level SAT (IMD ₃ - 35 dB) | dB μ V | 95 | 95 | 95 |
| Output level TER (IMD ₃ - 60 dB) | dB μ V | 88 | 88 | 88 |
| Switching commands | VDC/ kHz | | | 13V / 18V 13V - 22 kHz / 18 - 22 kHz |
| LNB current, max. | mA | 180 | 180 | 180 |
| Max. current to TER masthead amp. | mA | 50 | 50 | 50 |
| Colourcoding of inputs | | Yes | Yes | Yes |
| Temperature range | °C | 0...+55 | 0...+55 | 0...+55 |
| Dimensions (H x D x W) | mm | 147 x 56 x 170 | 197 x 56 x 170 | 197 x 56 x 170 |

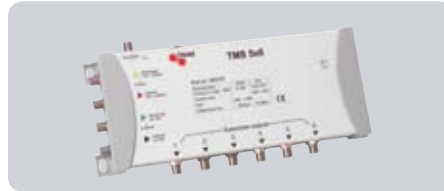
Triax TMS 5x multiswitches



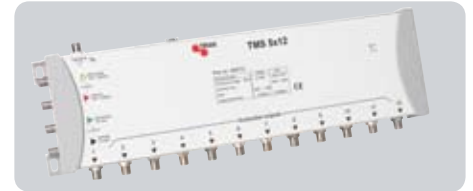
TMS 5X16

Standard 5x multiswitch

The TMS 5x series of our multiswitch systems offers unique subscriber benefits in terms of performance and individual freedom.



TMS 5x6



TMS 5X12

Technical data

Modular multiswitches with 4 polarities, 1 TER. input. External power supply

| TYPE Art. No. | | TMS 5x4 300314 | TMS 5x6 300316 | TMS 5x8 300318 | TMS 5x12 300312 | TMS 5x16 300317 |
|---|-------|-------------------|-------------------|---|--------------------|--------------------|
| Number of inputs | | 4 SAT, 1 TER | 4 SAT, 1 TER | 4 SAT, 1 TER | 4 SAT, 1 TER | 4 SAT, 1 TER |
| Subscriber outputs | | 4 | 6 | 8 | 12 | 16 |
| Connectors | F-con | female | female | female | female | female |
| Frequency range SAT | MHz | 950-2150 | 950-2150 | 950-2150 | 950-2150 | 950-2150 |
| Frequency range TER | MHz | 47-862 | 47-862 | 47-862 | 47-862 | 47-862 |
| Gain SAT | dB | - 6 | - 5 | - 5 | 0 | 0 |
| Gain TER | dB | 4 | 3 | 3 | 4 | 2 |
| Isolation TER to SAT | dB | 22 | 25 | 25 | 22 | 22 |
| Isolation SAT to TER | dB | 22 | 28 | 28 | 22 | 22 |
| Isolation cross polarisation H/V | dB | 25 | 28 | 28 | 25 | 25 |
| Isolation out - out TER | dB | 30 | 28 | 28 | 28 | 28 |
| Isolation out - out SAT | dB | 30 | 35 | 35 | 35 | 35 |
| Return loss SAT inputs | dB | 12 | 11 | 11 | 11 | 10 |
| Return loss SAT outputs | dB | 7 | 9 | 9 | 8 | 8 |
| Return loss TER inputs | dB | 11 | 11 | 11 | 11 | 10 |
| Return loss TER outputs | dB | 7 | 9 | 9 | 8 | 8 |
| Output level SAT (IMD ₃ - 35 dB) | dBμV | 100 | 101 | 101 | 100 | 100 |
| Output level TER (IMD ₃ - 60 dB) | dBμV | 88 | 85 | 85 | 85 | 85 |
| Impedance input/output | Ohm | 75 | 75 | 75 | 75 | 75 |
| Switching | VDC | | | 13 V - 18 V 13 V/22 kHz 18 V/22 kHz | | |
| Supply voltage | VDC | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) | 15 (± 0.5) |
| Power supply | | External PSU | External PSU | External PSU | External PSU | External PSU |
| LNB power supply max. | mA | 600 | 600 | 600 | 600 | 600 |
| Colourcoding of IF and TER Inputs | | Yes | Yes | Yes | Yes | Yes |
| Temperature range | °C | 0...+55 | 0...+55 | 0...+55 | 0...+55 | 0...+55 |
| Dimensions (H x D x W) | mm | 103 x 51 x 145 | 103 x 51 x 255 | 103 x 51 x 255 | 103 x 51 x 355 | 103 x 51 x 455 |

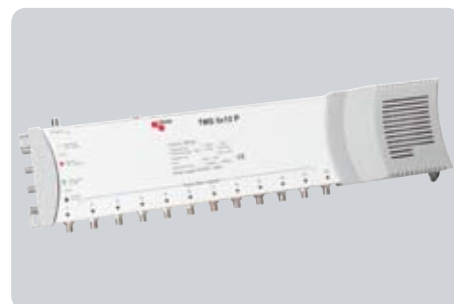


Triax TMS 5xP multiswitches

Fulfilling subscriber needs the most efficient way

The TMS 5x series of our multiswitch systems offers unique subscriber benefits in terms of performance and individual freedom.

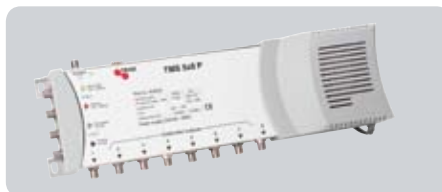
Advanced technology is used to provide these benefits, but is applied in a logical, modular way helping the professional installer save time.



TMS 5x12p



TMS 5x4p



TMS 5x8p

Technical data

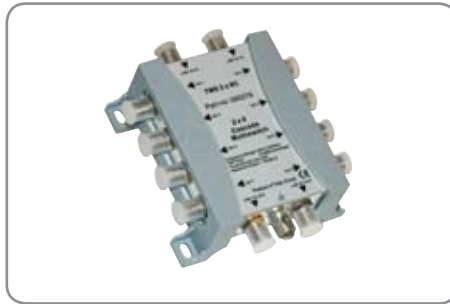
Single multiswitches with 4 polarities, 1 TER. input. With power supply

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

Triax TMS 2x multiswitches

1 position 2 polarity switch, many users and expandability

For systems with one satellite position - Simple, yet expandable. Easy to install.



TMS 2x8C



TMS 2x4C

Technical data

Cascadable multiswitches with 2 polarities. External power supply

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

Triax TMS and TMM IF taps and splitters

Expand the TMS 5x series into a cascadable system

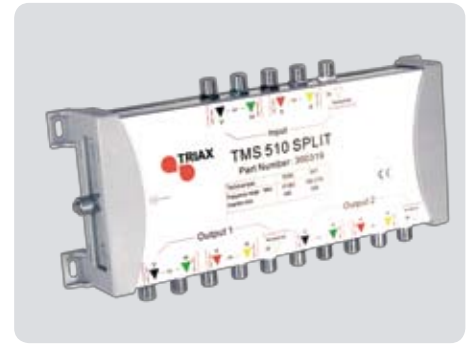
Using TMS 55 taps makes it possible to construct large cascadable systems.

Different tap-values allow fine-tuning of available signal levels.

By using splitters you can balance your distribution system the best possible way.



TMS 55-xx tap



TMS 510 splitter

Technical data TMS taps and splitter

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

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

TMM splitter



Triax THA 240E - TLA 240E IF-amplifiers

THA 240 E head/launch amplifier

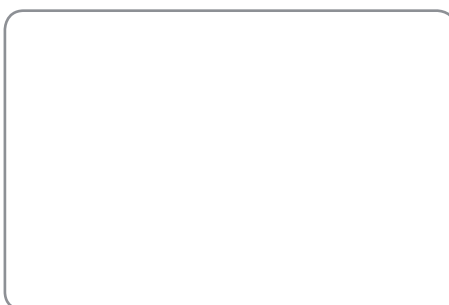
- 3 inputs, SAT1 and SAT2 independently amplified, plus a terrestrial unit
- Two outputs SAT1+Terr. SAT2+Terr.
- High gain (40-42 dB in SAT)
- High output level (124 dB μ V in SAT)
- Adjustable LNB power supply 0-13-18 vdc
- Generates tones 0-22 kHz

TLA 240 E line amplifier

- Designed to compensate losses in distribution network
- Two inputs SAT1+Terr.+SAT2 amplified independently
- Two outputs SAT1+Terr. - SAT2+Terr.
- GaAs FET amplification technology
- High gain (40-42 dB in SAT and 35 dB in Terr.)
- High output level (124 dB μ V in SAT and 120 dB μ V in terrestrial)



THA 240 E head/launch amplifier

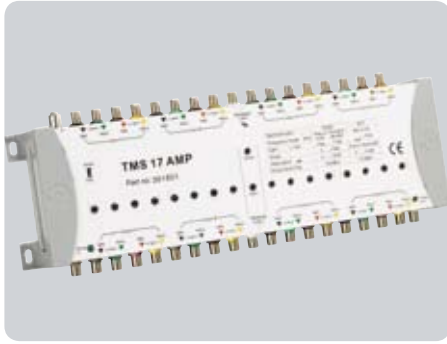


TLA 240 E line amplifier

Technical data

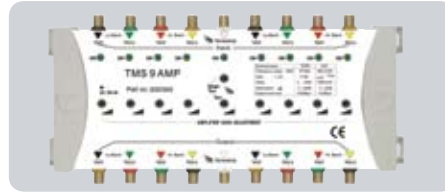
| Type | | THA 240E | TLA 240E |
|--------------------------|------------|--|------------------------------|
| Art. No. | | 300380 | 300382 |
| No of inputs *) | | 3 (Sat1/Terr./Sat2) | 2 (Sat1 + Terr. / Sat2) |
| No of outputs | | 2 (Sat1+Terr./ Sat2+Terr) | 2 (Sat1 + Terr. / Sat2+Terr) |
| SAT frequency | MHz | 950 – 2400 | 950 – 2400 |
| TER frequency | MHz | 5 – 862 | 47 – 862 |
| Return channel frequency | MHz | | 5 – 30 (passive) |
| SAT gain | dB | 40 – 42 | 40 – 42 |
| Terr gain | dB | -5 / 35 | 35 |
| Max. SAT output level | dB μ V | 124 | 124 |
| Max. terr. output level | dB μ V | | 120 |
| Attenuation | dB | 0...20 (for each SAT input) | 0...20 (for each input) |
| Equalisation | dB | 0...20 (for each SAT input) | 0...20 (for each input) |
| LNB power supply | VDC | 0/13/18 | |
| Switching | kHz | 0 – 22 | |
| Maximum LNB current | mA | 300 | |
| Power supply | VAC | 180...250 | 180...250 |
| Remarks | | *) Product is optimised for operation in Spain | |

Triax TMS 17 - 9 - 8 - 5 - 1 IF-amplifiers



TMS 17 AMP cascading amplifier

Boost your signal to get more mileage.
Using a TMS line amplifier you can compensate for the cable loss in your distribution system.



TMS 9 AMP cascading amplifier



TMS 55 AMP cascading amplifier



TMS 2 AMP cascading amplifier

Technical data IF amplifiers. External power supply

| TYPE | | TMS 17 Amp | TMS 9 Amp | TMS 55 Amp | TMS 8 AMPP | TMS 2 AMP |
|--|-------|---|---------------------------|------------------------|-------------------------|------------------------|
| Art. No. | | 301501 | 300365 | 300315 | 300425 | 300275 |
| Number of inputs | | 16 SAT, 1 TER + Power link | 8 SAT, 1 TER | 4 SAT, 1 TER | 8 SAT | 2 SAT |
| Number of outputs | | 16 SAT, 1 TER + Power link | 8 SAT, 1 TER | 4 SAT, 1 TER | 8 SAT | 2 SAT |
| Connectors | F-con | female | female | female | female | female |
| Frequency range SAT | MHz | 950-2150 | 950-2150 | 950-2150 | 950-2200 | 950-2150 |
| Frequency range TER | MHz | 5-862 | 47-862 | 47-862 | | |
| Return path TER | MHz | 5-65 (passive) | | | | |
| Gain SAT 950 - 2150 MHz | dB | 18...24 (± 2) | 14 (± 2) | 20...25 (± 2) | 32...36 (4 dB slope) | 30 |
| Gain TER forward | dB | 17 | 17 (± 2) | 17 (± 2) | | |
| Noise figur SAT | dB | < 8 | | | < 16.0 | ?? |
| Noise figur TER | dB | < 7 | | | | |
| Adjustable attenuator SAT | dB | 0...10 | 0...20 | 0...15 | 0 - 20 | 0 - 10 |
| Adjustable attenuator TER | dB | 0...10 | 0...20 | 0...17 | | |
| Equalizer SAT | dB | 0 or 6 (switch-able) | 5 (fixed) | 5 (fixed) | 0 - 10 | 0 - 8 |
| Equalizer TER | dB | 0...15 (adjustable) 2...15 (adjustable) 7...12 (adjustable) | | | | |
| Isolation SAT to SAT | dB | 30 | | | > 25 | |
| Isolation TER to SAT | dB | 22 | | | | |
| Max. output level SAT (IMD ₃ - 35 dB) | dBμV | 110 | 110 | 110 | 120 | 115 |
| Max. output level TER (IMD ₃ - 60 dB) | dBμV | 105 | 105 | 105 | | |
| Return loss | dB | 10 | 10 | 10 | 10 | 10 |
| Impedance input/output | Ohm | 75 | 75 | 75 | 75 | 75 |
| Supply voltage | VDC | 18 (via power link) | 18 (via DC plug or trunk) | | 15 (built in) | 18 (via DC plug) |
| Power supply | | External power adaptor | External power adaptor | External power adaptor | Internal | External power adaptor |
| Colourcoding of IF and TER inputs | | Yes | Yes | Yes | | |
| Temperature range | °C | 0...+55 | 0...+55 | 0...+55 | 0...+50 | 0...+50 |
| Dimensions (H x D x W) | mm | 152 x 51 x 355 | 152 x 51 x 253 | 105 x 43 x 196 | 140 x 121 x 250 | |

Triax TMM 5 - 4 - 1 and terrestrial amplifiers

Get a good head start!

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



SAT line amplifier



TMM 44 amplifier

Technical data

IF and TERrestrial amplifiers. External power supply

| TYPE | | | TMM 55AMP | TMM 44AMP | TMM TDA | TMM TER | Sat line |
|--|-----------------------|---------------|----------------------------------|----------------------------------|-------------------|-------------------|--------------|
| Art. No. | | | distribution | launch | TER. distr. | launch | amplifier |
| | | | 305335 | 305300 | 305306 | 305315 | 300401 |
| Frequency range | | MHz | 950-2150 | 950-2150 | 47-862 | 47-862 | 47-2300 |
| Input | TER | 47-862 MHz | 1 | | 1 | | |
| | BI/FM | 47-108 MHz | | | | 1 | |
| | BIII/DAB | 170-230 MHz | | | | 1 | |
| | UHF 1 | 470-108 MHz | | | | 1 | |
| | UHF 2 | 470-108 MHz | | | | 1 | |
| | SAT | 950-2150 MHz | 4 | 4 | | | 1 |
| Outputs | TER | 47-862 MHz | 1 | | 1 | 1 | |
| | SAT | 950-2150 MHz | 4 | 4 | | | 1 |
| Connectors | | | F-type | F-type | F-type | F-type | F-type |
| Gain | TER | 47-862 MHz | dB | 17 | 30 | | |
| | BI/FM | 47-108 MHz | dB | | | 40 | |
| | BIII/DAB | 170-230 MHz | dB | | | 40 | |
| | UHF 1 | 470-108 MHz | dB | | | 40 | |
| | UHF 2 | 470-108 MHz | dB | | | 40 | |
| | SAT | 950-2150 MHz | dB | 25 | 40 | | |
| Polarity gain control | TER | | dB | 20 | 0-20 | | |
| | BI/FM | | dB | | | 0 - 20 | |
| | BIII/DAB | | dB | | | 0 - 20 | |
| | UHF 1 | | dB | | | 0 - 20 | |
| | UHF 2 | | dB | | | 0 - 20 | |
| | SAT | | dB | 20 | 0-20 | | |
| Slope control | TER | | dB | 2-15 | 0-18 | | |
| | UHF 1 | | dB | | | | |
| | UHF 2 | | dB | | | 0-10 | |
| | SAT | | dB | 0-5 | 0-10 | 0-10 | |
| Isolation | Trunk - trunk | | dB | 32 | 35 | | |
| | Out/out - TER | | dB | | | | |
| | Out/out - SAT | | dB | | | | |
| Output return loss | TER | | dB | 10 | 10 | 10 | |
| | SAT | | dB | 10 | 10 | | 10 |
| Max. output level (IMA3 / -60 dB) | TER | | dB μ V | 105 | 118 | | |
| | BI/FM | | dB μ V | | | 118 | |
| | BIII/DAB | | dB μ V | | | 118 | |
| | UHF 1 | | dB μ V | | | 115 | |
| | UHF 2 | | dB μ V | | | 115 | |
| | SAT | | dB μ V | 110 | 115 | | 100 |
| LNB power supply max. | | VDC mA | 2 x 14/2 x 18 400 | 2 x 14/2 x 18 400 | | | |
| Line power supply - Horizontal - Vertical | | | 18V \pm 0.5V 13V \pm 0.5V | 18V \pm 0.5V 13V \pm 0.5V | | 12 50 | |
| | External power supply | VDC | 18 via 3.5 jack | 18 via 3.5 jack | 18 via 3.5 jack | 18 via 3.5 jack | 15 via trunk |
| TERrestrial through voltage | VDC | 12 \pm 0.5V | | | 12 \pm 0.5V | 12 \pm 0.5V | |
| Current | A | 1.5 | | | 1.5 | 1.5 | |
| Power consumption | mA | 350 | 390 | 200 | 320 | | |
| Line powering | | | via in- or output | via in- or output | via in- or output | via in- or output | |
| DC switch (for injecting DC) | | | | | Switchable | | |
| Masthead power supply (UHF 1) | VDC | | | | | 12 \pm 0.5 | |

Triax TMS/TMM power supplies and inserters



TMS 5 PSU



TMS 17 PSUMB w. mounting bracket



TMM PSI power inserter

TMS power supply/power inserter

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

Technical data - TMS power supply/power inserter

| TYPE | | TMS 17 PSU-MB 301504 | TMS 55 PSU 300310 | TMS 5 PSU 300309 300311 | TMS 55 PSI 300308 | TMM PSI inserter 305311 | TMM PSU 305340 305310 | TMS PSU 336195 336196 |
|------------------------------|-------|--|-------------------------|---|---------------------------|-------------------------------|--|-----------------------------|
| Number of inputs | | | | 4 SAT, 1 TER | | 4 SAT, 1 TER | | |
| Number of outputs | | 1 | 1 | 4 SAT, 1 TER | 1 | 4 SAT, 1 TER | 1 | 1 |
| Inputs (230V) | | 1 | 1 | PSU included | 1 | | 1 | 1 |
| Connectors | F-con | F-type | F-type | F-type | F-type | F-type | F-type | F-type |
| Input voltage | V/AC | 96 to 250 | 96 to 250 | 180 to 264 | 96 to 250 | | 96 to 250 | 96 to 250 |
| Frequency range | Hz | 47 - 63 | 47 - 63 | 47 - 63 | 47 - 63 | 47-2150 | 47 - 63 | 47 - 63 |
| Frequency range SAT | MHz | | | 950 - 2150 | | 950 - 2150 | | |
| Frequency range TER | MHz | | | DC to 862 | | | | |
| Insertion loss SAT | dB | | | 1 | | 2.5 | | |
| Insertion loss TER | dB | | | 1 | | 1.5 | | |
| Isolation Out/out - TER | dB | | | | | 35 | | |
| Isolation Out/out - SAT | dB | | | | | 35 | | |
| Output return loss - TER | dB | | | | | 11 | | |
| Output return loss - SAT | dB | | | | | 11 | | |
| Impedance input/output | Ohm | | | 75 | | | | |
| Supply direction switch TER. | | | | Up/down/ both | | | | |
| Max. current | A | 1 x 2.0 | 1 x 1.9 | | 1 x 1.9 | | 1 x 1.9 | 1 x 0.6 |
| Output voltage | VDC | 15 (± 0.5) | 18 | 3 x 14 2 x 18 | 18 | | 1 18 (± 0.5) | 15 (± 0.5) |
| LNB power supply / max. | V/mA | | | | | 18V-13V/500 | | |
| Supply power - horisontal | V | | | | | 18V ±0.5V | | |
| - vertical | V | | | | | 13V ±0.5V | | |
| Supply power | W | | | 26 | | 18 - 3.5 jack | | 12 |
| TERestrial through voltage | V/W | | | | | 12 ±0.5V/1.5 | | |
| Cable length from supply | mm | 1800 | 1800 | | 1800 | | 1800 | |
| Colourcoding of inputs | | | | Yes | | | | |
| Temperature range | °C | 0 - 50 | 0 - 50 | 0 - 50 | 0 - 50 | | 0 - 50 | 0 - 50 |
| Dimensions (H x D x W) | mm | 64x111x35 | 64x111x35 | | 64x111x35 | | 64x111x35 | |
| Remarks | | Incl. power cable, mounting bracket and 1800 mm power cable with F-male | | Power sup- ply unit integrated | Power inserter unit | | Incl. power cable, bracket and power cable with 3.5 mm mini jack | |

Triax TMM 4x series cascadable multiswitches



TMM 4x multiswitches

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



TMM 4x series

Technical data

Cascadable multiswitches with 4 satellite polarities. External power supply

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



Triax TMM 5x series cascadable multiswitches



TMM 5x series

TMM 5x multiswitches

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

Technical data

Cascadable multiswitches with 4 polarities and 1 terrestrial. Ext. power supply

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

Triax TMM accessories for multiswitches

Everything you need

- to make a professional installation



TMM 2B



TMM 3B



TMM 4B

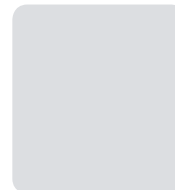


TMM 4/6/8 OUT

TMM 4/5 IN

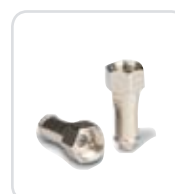
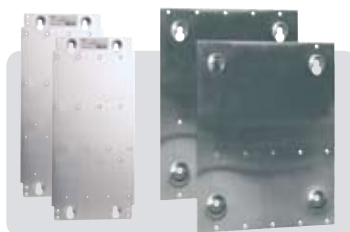
TMM accessories

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



TMM accessories

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



TMM accessories

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

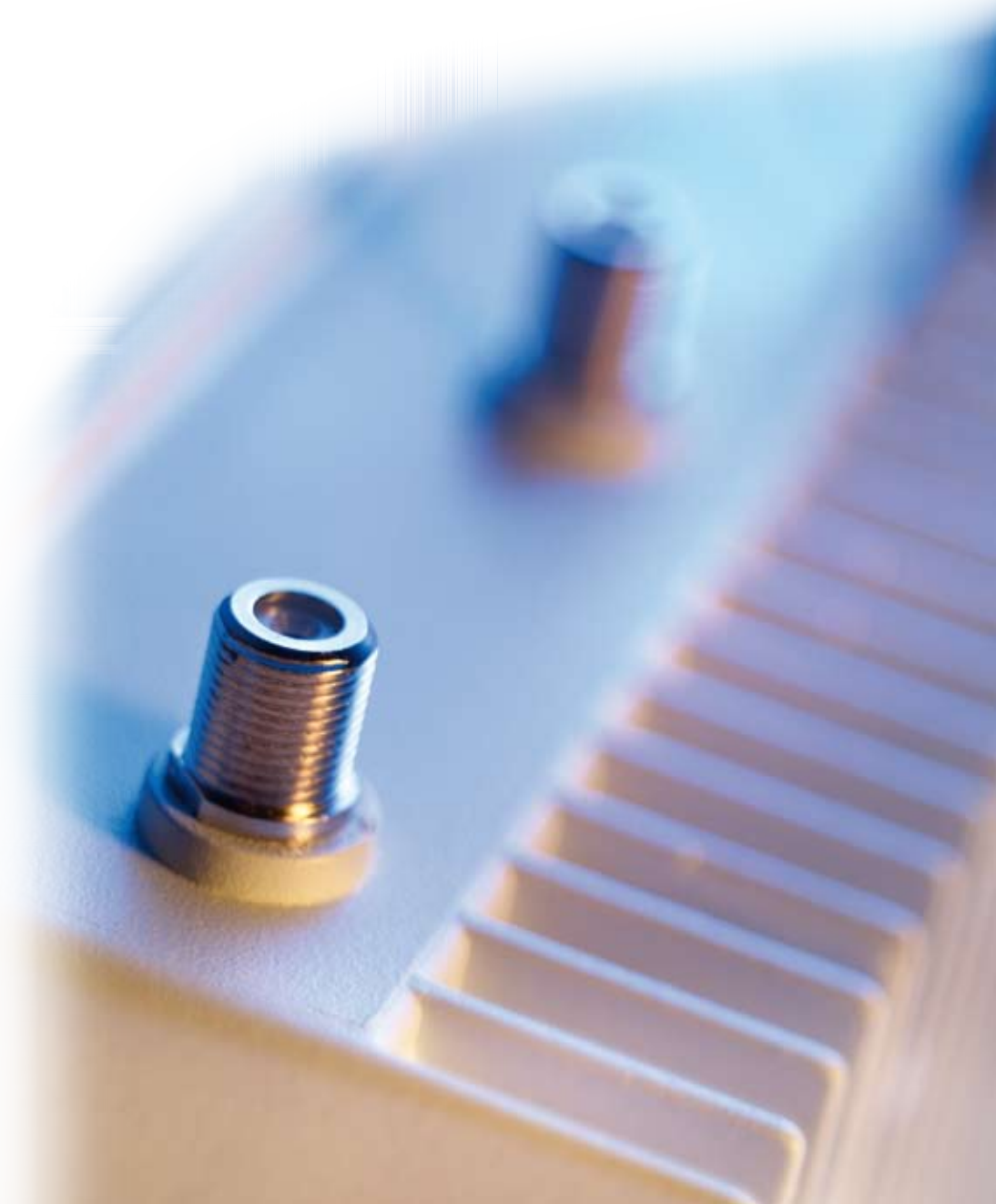
Triax Distribution amplifiers

Antenna systems >> Outdoor line amplifiers

| | |
|--------------|---------|
| - HFA series | 154-155 |
| - GPV series | 156-157 |
| - GLV series | 157 |

Antenna systems >> Indoor house amplifiers

| | |
|----------------------------|---------|
| - GHV series | 158-159 |
| - IFA series | 160-161 |
| - IFB series | 162 |
| - IIB series | 163 |
| - TA, Type 02, 2TV+ series | 164 |



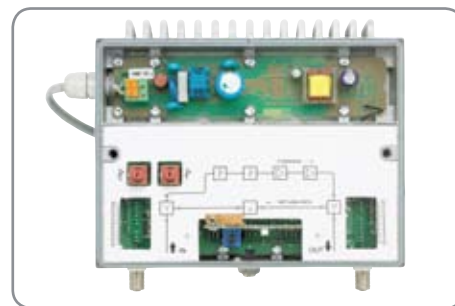
Triax distribution amplifiers

Powerful, reliable and easy to install HFA distribution amplifiers

With the HFA series of broadband distribution amplifiers, both the installer and the network operator obtain all the benefits of a quality product: Reliability and a long lifetime, quick installation, effective shielding and the option to use the network for all conceivable interactive services.



HFA 60x amplifier - closed



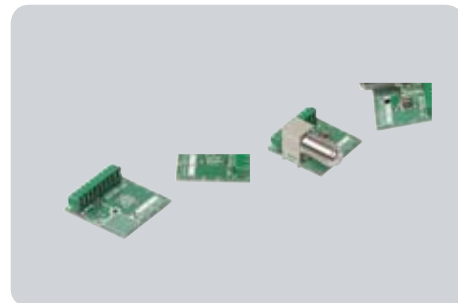
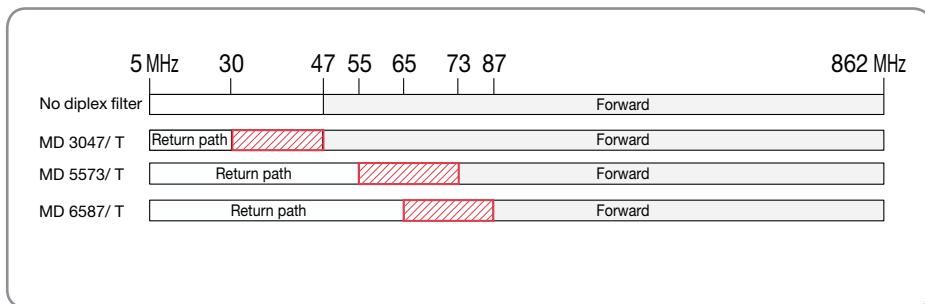
HFA 60x amplifier - open

Technical data on HFA distribution amplifier - mains powered

| TYPE Art. No. | | HFA 602 324602 | HFA 603 324603 | HFA 604 324604 |
|--|------|-----------------------------|-----------------------------|-----------------------------|
| Forward path | | | | |
| Frequency range (depending on module) | MHz | 47/73/87-862 | 47/73/87-862 | 47/73/87-862 |
| Gain adjustable | dB | 22 | 30 | 40 |
| Attenuation | dB | 0 - 20 | 0 - 20 | 0 - 20 |
| Noise figure | dB | < 8.5 (typical 7.5) | < 7.5 (typical 6.5) | < 7.0 (typical 6.0) |
| Linearity | dB | ± 1.0 | ± 1.0 | ± 1.0 |
| Equalization | dB | 0 - 18 | 0 - 18 | 0 - 18 |
| Output level | | | | |
| IMD 3 in acc. with EN 50083-3 | dBμV | 118 | 118 | 118 |
| IMD 2 in acc. with EN 50083-3 | dBμV | 112 | 112 | 112 |
| 60 dB CTB ¹⁾ | dBμV | 101 | 101 | 101 |
| 60 dB CSO ¹⁾ | dBμV | 101 | 101 | 101 |
| Return loss input (-1.5 dB/octave) | dB | >14 @ 40 MHz (min. 10) | >14 @ 40 MHz (min. 10) | >14 @ 40 MHz (min. 10) |
| Return loss output (-1.5 dB/octave) | dB | >14 @ 40 MHz (min. 10) | >14 @ 40 MHz (min. 10) | >14 @ 40 MHz (min. 10) |
| Return path | | | | |
| Frequency range (depending on module) | MHz | 5-30, 5-55 or 5-65 | 5-30, 5-55 or 5-65 | 5-30, 5-55 or 5-65 |
| Gain (adjustable) | dB | passive -1.0 active 17.0 | passive -1.0 active 17.0 | passive -1.0 active 17.0 |
| Linearity | dB | ± 1.0 | ± 1.0 | ± 1.0 |
| Return loss input (-1.5 dB/octave) | dB | > 14 @ 5 MHz to 65 MHz | > 14 @ 5 MHz to 65 MHz | > 14 @ 5 MHz to 65 MHz |
| Return loss output (-1.5 dB/octave) | dB | > 14 @ 5 MHz to 65 MHz | > 14 @ 5 MHz to 65 MHz | > 14 @ 5 MHz to 65 MHz |
| General | | | | |
| Power supply type | | Mains powered | Mains powered | Mains powered |
| Power supply | V/AC | 230 ± 10% | 230 ± 10% | 230 ± 10% |
| Power consumption | W | 7.5 | 7.5 | 7.5 |
| Shielding efficiency VHF | dB | 100 | 100 | 100 |
| Shielding efficiency UHF | dB | 90 | 90 | 90 |
| Housing - protection class | | IP65 | IP65 | IP65 |
| Connectors | | F-connectors | F-connectors | F-connectors |
| Certification | | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 |
| Operation temperature range | °C | 0...+55 | 0...+55 | 0...+55 |
| Weight | kg | 1.325 | 1.325 | 1.325 |
| Dimensions (h x d x w) | mm | 145 x 70 x 170 | 145 x 70 x 170 | 145 x 70 x 170 |

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

Triax - Accessories for HFA amplifiers



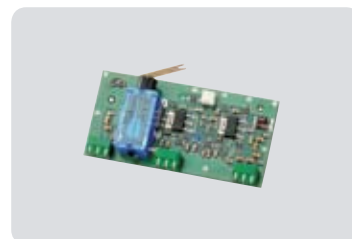
MD diplex modules

MD diplex filter modules

| TYPE | | MD 3047 | MD 3047T | MD 6587 | MD 6587T |
|--------------------------------|------|----------|----------|----------|----------|
| Art. No. | | 324681 | 324682 | 324683 | 324684 |
| Frequency range (return path) | MHz | 5 - 30 | 5 - 30 | 5 - 65 | 5 - 65 |
| Frequency range (forward path) | MHz | 47 - 862 | 47 - 862 | 87 - 862 | 87 - 862 |
| Test point | dB | - | - 20 | - | - 20 |
| Packing size | pcs. | 2 | 2 | 2 | 2 |

MA 617 return-path amplifier

| TYPE | | MA 617 |
|-----------------|------|--------|
| Art. No. | | 324617 |
| Frequency range | MHz | 5 - 65 |
| Gain | MHz | 17 |
| Attenuation | dB | 20 |
| Packing size | pcs. | 1 |



Line power supply

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



Power inserter with F-con

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



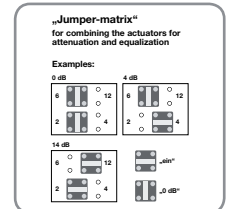
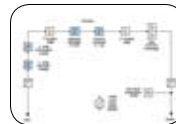
Triax distribution amplifiers



HEF amplifier housing

HEF amplifiers – Reliable, flexible for large multi-dwelling houses

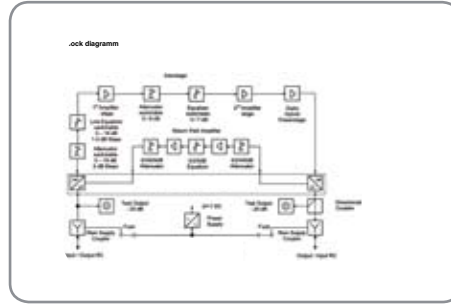
- ROB – “Return Path on Board” without any external modules or pads means more flexibility and lower efforts in installation and logistics
- Jumper matrixes to switch the fix elements for attenuation/equalization and to select return path or VHF I operation increase the reliability and reduce the logistics
- High gain at the return path meets also special requirements in multimedia networks
- For SMATV HEF 845 without return path and with spin potentiometers instead of jumper matrixes.



Technical data on GPV series

| Type Art. No. | | GPV 845 E 323068 | GPV 845 C1 323072 | GPV 845 CL 323075 |
|---|------|---|----------------------|----------------------|
| Frequency range | | | | |
| selected: VHF I „on“, RP „off“ | MHz | 40-862 | 40-862/85-862 | 40-862/85-862 |
| selected: VHF I „off“, RP „on“ | MHz | | 5-65 | 5-65 |
| Gain forward | | | | |
| Gain @ 862 MHz | dB | 36 | 38 | 38 |
| Attenuator at input (2 dB steps) | dB | 0-20 (pot) | 0-16 | 0-16 |
| Attenuator elements interstage | dB | 0/6 | 0/6 | 0/6 |
| Gain return path | | | | |
| Gain @ 60 MHz | dB | | 26 | 26 |
| Attenuator elements at input | dB | | 0-6/ 50 | 0-6/ 50 |
| Attenuator elements at output | dB | | 0/3/6/9 | 0/3/6/9 |
| Amplitude response forward | | | | |
| 40...862 MHz (VHF I: on) | dB | | 1.0 | 1.0 |
| Line equalizer at input | dB | 0-18 (pot) | 0-16 | 0-16 |
| Line equalizer (2...3 dB steps) | dB | | 0/7 | 0/7 |
| Slope interstage | dB | 0/7 | | |
| Amplitude response return path 5...60 MHz | dB | | 1.0 | 1.0 |
| Equalizer element interstage | dB | | 0/3/6 | 0/3/6 |
| Random noise | | | | |
| Forward (VHF I „on“) | dB | 5.0 | 5.5 | 5.5 |
| Return path (VHF I „off“) | dB | | 5.5 | 5.5 |
| Return loss @ 40 MHz, -1.5 dB/octave | dB | > 14 | > 14 | > 14 |
| Output level forward | | | | |
| IMD2/ IMD3 ≥ 60 dB | dBμV | 114/123 | 114/123 | 114/123 |
| CSO ≥ 60 dB, 42 ch. Slope 0/7 dB | dBμV | 109/111 | 109 | 109 |
| CTB ≥ 60 dB, 42 ch. Slope 0/7 dB | dBμV | 108/110 | 108 | 108 |
| Output level return path | | | | |
| IMD2/ IMD3 ≥ 60 dB | dBμV | | 104/115 | 104/115 |
| RF connectors (75 Ohm) | | | | |
| Input | | F-female | F-female | F-female |
| Output | | F-female | F-female | F-female |
| Test point input: bi-directional | dB | | -20 | -20 |
| Test point output: directional | dB | -20 (bi-dir) | -20 | -20 |
| Operating conditions | | | | |
| Max. RF level (EMC) | dBμV | 113 | 113 | 113 |
| Supply voltage (50-60 Hz) (DC) | V | 230 /±10% | 230 /±10% | 25-65 |
| Power consumption | W | 6 | 9 | 9 |
| Operating temperature | °C | -25...+55 | -25...+55 | -25...+55 |
| Protection class | | II, Protective | II | II |
| Housing protection degree | IP | 65 | 65 | 65 |
| Dimensions W x H x D | mm | 190 x 110 x 80 | 190 x 110 x 80 | 190 x 110 x 80 |
| Weight | kg | 2 | 2 | 2 |
| Packing unit | | 1 pcs. box | 1 pcs. box | 1 pcs. box |
| Reference standards | | | | |
| Product standards/safety/EMC RoHS 2002/95/EG compliant | | EN 50083-3 - Class 2 / EN 50083-1; EN 60065 / EN 50083-2 Yes | | |

Triax distribution amplifiers



Technical data on GPV series

| Type Art. No. | | GPV 851 C1 323104 | GLV 865 C1 323124 | GLV 865 CL 323126 |
|---|----------------------------------|--|----------------------|----------------------|
| Frequency range | selected: VHF I "on", RP "off" | MHz | 47/85-862 | 85-862 |
| | selected: VHF I "off", RP "on" | MHz | 5-65 | 5-65 |
| Gain forward | Gain @ 862 MHz | dB | 36/33 | 38/32 |
| | Attenuator at input (2 dB steps) | dB | 0-16 | 0-16 |
| | Attenuator elements interstage | dB | 0/6 | 0/6 |
| Gain return path | Gain @ 60 MHz | dB | 28 | 28 |
| | Attenuator elements at input | dB | 0-6/50 | 0-6 |
| | Attenuator elements at output | dB | 0/3/6/9 | 0/3/6/9 |
| Amplitude response forward | 40...862 MHz (VHF I: on) | dB | | |
| | Line equalizer at input | dB | | |
| | Line equalizer (2...3 dB steps) | dB | 0-16 | 0-16 |
| | Slope interstage | dB | 0/7 | 0/7 |
| Amplitude response return path 5...60 MHz | Equalizer element interstage | dB | 0/3/6 | 0/3/5 |
| | | dB | | |
| Random noise | Forward (VHF I „on“) | dB | 5.5 | 5.5 |
| | Return path (VHF I „off“) | dB | 6.0 | 5.5 |
| Return loss @ 40 MHz, -1.5 dB/octave | dB | 20 (> 18) | > 18 | > 18 |
| Output level forward | IMD2/ IMD3 ≥ 60 dB | dBμV | 117/126 | 117/126 |
| | CSO ≥ 60 dB, 42 ch. Slope 0/7 dB | dBμV | 112/114 | 112/114 |
| | CTB ≥ 60 dB, 42 ch. Slope 0/7 dB | dBμV | 112/114 | 112/114 |
| Output level return path | IMD2/ IMD3 ≥ 60 dB | dBμV | 104/115 | 104/115 |
| RF connectors (75 Ohm) | Input | | F-female | F-female |
| | Output | | F-female | F-female |
| | Test point input: bi-directional | dB | -20 | -20 |
| | Test point output: directional | dB | -20 | -20 |
| Operating conditions | | | | |
| Max. RF level (EMC) | dBμV | 115 | 115 | 115 |
| Supply voltage (50-60 Hz) (DC) | V | 230 /±10% | 230 /±10% | 32-65 |
| Power consumption | W | 9 | 13 | 13 |
| Operating temperature | °C | -25...+55 | -25...+55 | -25...+55 |
| Protection class | | II, Protective | II, Protective | II, Protective |
| Housing protection degree | IP | 65 | 65 | 65 |
| Dimensions W x H x D | mm | 190 x 110 x 80 | | 190 x 110 x 80 |
| Weight | kg | 2 | 2 | 2 |
| Packing unit | | 1 pcs. box | 1 pcs. box | 1 pcs. 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 distribution amplifiers

Reliable, flexible and cost-efficient for small and middle sized buildings

- ROB – “Return Path on Board” without any external modules or pads means more flexibility and lower efforts in installation and logistics
- High gain at the return path meets also requirements in multimedia networks
- A-type with potentiometer
- C-type with jumper matrixes to switch the fix elements for attenuation/ equalization and to select return path or VHF I operation increase the reliability and reduce the logistics
- Excellent electrical performance for low cost and low power consumption



IFE amplifier housing

Technical data on IFE series

| Type Art. No. | | GHV 820 A 323010 | GHV 820 C 323012 | GHV 830 A 323016 | GHV 830 C 323018 | GHV 834 C 323037 |
|---|------|--|---------------------|---------------------|---------------------|---------------------|
| Frequency rang | | | | | | |
| Forward path | MHz | 85-862 | 85-862 | 85-862 | 85-862 | 47-862/87-862 |
| Return path | MHz | 5-65 | 5-65 | 5-65 | 5-65 | 5-65 |
| Gain forward | | | | | | |
| Gain @ 862 MHz | dB | 21 | 21 | 30 | 30 | 34 |
| Attenuator at input (2 dB steps) | dB | 0-20 | 0-20 | 0-20 | 0-20 | 0-16 |
| Attenuator elements interstage | dB | | | | | |
| Gain return path | | | | | | |
| Gain @ 60 MHz | dB | 19 | 19 | 24 | 24 | 26 |
| Attenuator elements at input | dB | 0-20 | 0-20 | 0-20 | 0-20 | 0/3/6/9/ >50 |
| Attenuator elements at output | dB | 0/10 | 0/10 | 0/10 | 0/10 | 0/10 |
| Amplitude response forward | | | | | | |
| Line equalizer at input | dB | 0-18 | | 0-18 | | |
| Line equalizer (2-3 dB steps) | dB | | 0-16 | | 0-16 | 0-16 |
| Slope interstage | dB | | 0/7 | | 0/7 | 0/7 |
| Amplitude response return path 5-60 MHz | dB | | | | | |
| Equalizer element interstage | dB | ± 1.0 | ± 1.0 | ± 1.0 | ± 1.0 | ± 1.0 |
| Random noise | | | | | | |
| Forward (VHF I „on“) | dB | 6.0 | 6.0 | 6.0 | 6.0 | 5.5 |
| Return path (VHF I „off“) | dB | 6.0 | 6.0 | 6.0 | 6.0 | 5.5 |
| Return loss @ 40 MHz, -1.5 dB/octave | | | | | | |
| Forward | dB | > 14 | > 14 | > 14 | > 14 | > 14 |
| Return path | dB | > 17 | > 17 | > 17 | > 17 | > 17 |
| Output level forward | | | | | | |
| IMD2/ IMD3 ≥ 60 dB | dBμV | 100/107 | 100/107 | 105/109 | 105/109 | 112/118 |
| CSO/CTB ≥ 60 dB, 42 ch, flat | dBμV | 97/100 | 97/100 | 101/100 | 101/100 | 104/103 |
| CSO/CTB ≥ 60 dB, 42 ch. Slope 0/7 dB | dBμV | | | | | |
| Output level return path | | | | | | |
| IMD2/ IMD3 ≥ 60 dB | dBμV | 102/107 | 102/107 | 102/107 | 102/107 | 102/113 |
| RF connectors (75 Ohm) | | | | | | |
| Input | | F-female | F-female | F-female | F-female | F-female |
| Output | | F-female | F-female | F-female | F-female | F-female |
| Operating conditions | | | | | | |
| Max. RF level (EMC) | dBμV | 105 | 105 | 105 | 105 | 110 |
| Supply voltage | V | 230 /±10% | 230 /±10% | 230 /±10% | 230 /±10% | 230 /±10% |
| Power consumption | W | 5 | 5 | 6 | 6 | 7.5 |
| Operating temperature | °C | -25...+55 | -25...+55 | -25...+55 | -25...+55 | -25...+55 |
| Protection class | | II | II | II | II | II |
| Degree of protection | IP | 20 | 20 | 20 | 20 | 20 |
| Dimensions W x H x D | mm | 150 x 80 x 50 | 150 x 80 x 50 | 150 x 80 x 50 | 150 x 80 x 50 | 150 x 80 x 50 |
| Weight | kg | 0.65 | 0.65 | 0.65 | 0.65 | 0.68 |
| Packing unit | | 1 pcs. box | 1 pcs. box | 1 pcs. box | 1 pcs. box | 1 pcs. 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 distribution amplifiers



IFE amplifier housing

GHV amplifiers – for SMATV applications

- Excellent electrical performance for low cost and low power consumption
- Simple initiation because of reduced controller elements
- 20M/24M-types: apartment amplifiers with 4 outputs for simple home installations

Technical data on IFE series

| Type Art. No. | | GHV 20 E 323022 | GHV 30 E 323025 | GHV 20 M 323028 | GHV 24E 323031 | GHV 834 C 323037 |
|--|------|--|--------------------|--------------------|-------------------|---------------------|
| Frequency range | | | | | | |
| Forward path | MHz | 40-862 (1000) | 40-862 (1000) | 85-862 | 40-862 (1000) | 47-862/87-862 |
| Return path | MHz | | | 5-65 | | 5-65 |
| Gain forward | | | | | | |
| Gain @ 862 MHz out 1 | dB | 21 | 29 | 12 | 18 | 34 |
| Gain @ 862 MHz out 2-3-4 | dB | | | 10.5 | 17 | |
| Attenuator at input | dB | 0-20 | 0-20 | 0-20 | 0-20 | 0-16 |
| Gain return path | | | | | | |
| Gain @ 60 MHz | dB | | | 0 | | 26 |
| Attenuator elements at input | dB | | | | | |
| Attenuator elements at input (3 dB) | dB | | | | | 0/3/6/9/ >50 |
| Attenuator elements at output | dB | | | | | 0/10 |
| Amplitude response forward | | | | | | |
| 40-862 MHz (VHF I: on) | dB | 1.5 | 1.5 | 1.5 | 1.5 (3.5) | |
| Line equalizer (2-3 dB steps) | dB | | | +1 | +1 | 0-16 |
| Fix slope | | | | | | |
| Slope interstage (jumper) | | | | | | 0/7 |
| Amplitude response return path 5-60 MHz | dB | | | 1.0 | | |
| Equalizer element interstage | dB | | | | | ± 1.0 |
| Random noise | | | | | | |
| Noise figure - forward (VHF I „on“) | dB | 6.0 | 6.0 | 6.0 | 4.5 | 5.5 |
| Noise figure - return path (VHF I „off“) | dB | | | | | 5.5 |
| Return loss @ 40 MHz, -1.5 dB/octave | | | | | | |
| Forward | dB | > 16 | > 16 | > 16 | > 16 | > 14 |
| Return path | dB | | | > 17 | | |
| Output level forward | | | | | | |
| IMD2/ IMD3 ≥ 60 dB | dBμV | 100/107 | 105/109 | 90/97 | 92/103 | 112/118 |
| CSO/CTB ≥ 60 dB, 42 ch., Slope 0/7 | dBμV | 97/100 | 101/101 | 87/90 | 91/91 | 104/103 |
| Output level return path | | | | | | |
| IMD2/ IMD3 ≥ 60 dB | dBμV | | | passive | | 102/113 |
| RF connectors (75 Ohm) | | | | | | |
| Input | | F-female | F-female | F-female | F-female | F-female |
| Output | | F-female | F-female | F-female | F-female | F-female |
| Operating conditions | | | | | | |
| Max. RF level (EMC) | dBμV | 105 | 105 | 105 | 105 | 110 |
| Supply voltage | V | 230 /±10% | 230 /±10% | 230 /±10% | 230 /±10% | 230 / ±10% |
| Power consumption | W | 3 | 5 | 3 | 5 | 7.5 |
| Operating temperature | °C | -25...+55 | -25...+55 | -25...+55 | -25...+55 | -25...+55 |
| Protection class | | II | II | II | II | II |
| Degree of protection | IP | 20 | 20 | 20 | 20 | 20 |
| Dimensions W x H x D | mm | 150 x 80 x 50 | 150 x 80 x 50 | 150 x 80 x 50 | 150 x 80 x 50 | 150 x 80 x 50 |
| Weight | kg | 0.65 | 0.65 | 0.65 | 0.65 | 0.68 |
| Packing unit | | 1 pcs. box | 1 pcs. box | 1 pcs. box | 1 pcs. box | 1 pcs. 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 IFA indoor distribution amplifiers

IFA distribution amplifiers - without return path

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



IFA amplifier housing

Technical data on IFA distribution amplifiers

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

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

Triax IFA indoor distribution amplifiers



IFA amplifier housing

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

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

Technical data on IFA distribution amplifiers

| TYPE Art. No. | | IFA 212 339212 | IFA 213 339213 |
|-------------------------------|------------|-------------------------------|------------------------|
| Forward path | | | |
| Frequency range | MHz | 47 - 862 | 87 - 862 |
| Gain @ 47 or 87 MHz/@ 862 MHz | dB | 0-20 | 0-20 |
| Noise figure | dB | < 6.0 (typical 4.5) | < 6.0 (typical 5.5) |
| Linearity | dB | ± 1.5 | ± 1.5 |
| Slope | dB | | |
| Equalizer | dB | 0-18 | 0-18 |
| Outputs | pcs | 1 | 1 |
| Output level | | | |
| IMD 3 in acc. with EN 50083-3 | dB μ V | 112.0 | 112.0 |
| IMD 2 in acc. with EN 50083-3 | dB μ V | 104.0 | 104.0 |
| 60 dB CTB ¹⁾ | dB μ V | 96.0 | 96.0 |
| 60 dB CSO ¹⁾ | dB μ V | 96.0 | 96.0 |
| Return loss, -1.5 dB/octave | dB | > 14 @ 47 MHz > 12.3 @ 87 MHz | |
| Return path | | | |
| Frequency range | MHz | 5 - 30 | 5 - 65 |
| Through loss | dB | 1.0 | 1.0 |
| Linearity | dB | ± 1.0 | ± 1.0 |
| General | | | |
| Power supply | VDC | 230 ± 10% | 230 ± 10% |
| Power consumption | W | 3.0 | 3.0 |
| Shielding efficiency VHF | dB | 75 | 75 |
| Shielding efficiency UHF | dB | 65 | 65 |
| Connectors | | F-connector | F-connector |
| Certification | | CE | CE |
| Impedance | Ohm | 75 | 75 |
| Operation temperature range | °C | 0...+50 | 0...+50 |
| Weight | kg | 0.400 | 0.475 |
| Dimensions (h x d x w) | mm | 61 x 44 x 118 | 61 x 44 x 118 |

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

Triax IFB indoor booster amplifiers

IFB indoor amplifiers with F connectors

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



IFB booster amplifier housing

Technical data on IFB booster amplifiers

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

Triax IIB indoor booster amplifiers



IIB amplifier housing

IIB indoor amplifiers with IEC-connectors

- Booster amplifier for MATV
- IEC-connector
- Wide range with 1 and 2 outputs
- Separate adjustable gain on VHF and UHF
- Click-on wall mounting

Technical data on IIB booster amplifiers

| Type | | IIB 434 | IIB 435 | IIB 445 |
|-------------------------------|---------|---|---|---|
| Art. No. | | 339434 | 339435 | 339445 |
| Input 1 | Band | UHF/VHF | UHF/VHF | UHF/VHF |
| | Channel | 2-12/21-69 | 2-12/21-69 | 2-12/21-69 |
| | Gain | 6-16 | 10-20 | 15-25/15-25 |
| | | dB | | |
| Noise figure | UHF | < 5.0 | < 5.0 | < 5.0 |
| | VHF | < 5.0 | < 5.0 | < 5.0 |
| | | dB | | |
| Max. output voltage | | | | |
| IMD 3 in acc. with EN 50083-3 | | 2 x 105 | 108 | 2 x 105 |
| | | dB μ V | | |
| Numbers of in-/output | | 1/2 | 1/1 | 1/2 |
| Voltage | V/AC | 230 | 230 | 230 |
| Power consumption | W | 3 | 3 | 3 |
| Connector | type | IEC | IEC | IEC |
| Impedance | Ohm | 75 | 75 | 75 |
| Operation temperature range | °C | 0...+50 | 0...+50 | 0...+50 |
| Weight | kg | 0.400 | 0.400 | 0.400 |
| Dimensions (h x d x w) | mm | 61 x 44 x 118 | 61 x 44 x 118 | 61 x 44 x 118 |
| Remarks | | IEC connectors 1 female - 2 male 1 Attenuator | IEC connectors 1 female - 2 male 1 Attenuator | IEC connectors 1 female - 2 male 1 Attenuator |

Triax indoor booster amplifiers

Indoor amplifiers with saddle and clamp or IEC-connectors

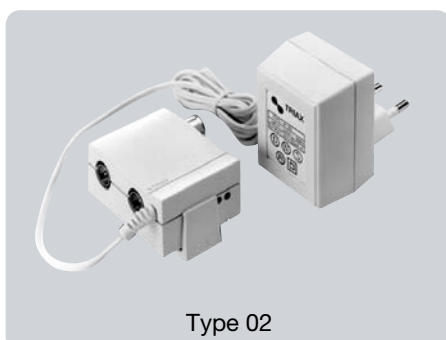
TRIAx TA distribution amplifiers are with saddle and clamp cable mounting, designed for indoor mounting and have built-in power supply. They are used primarily when signals are too weak for distribution to several outlets. Distribution amplifiers are available with 1 or 2 outputs.



TA 415-22

Technical data on indoor amplifiers

| Type | | TA 415-22 | TA 415-22R | Type 02 | 2TV plus 345111 |
|-------------------------------|---------------|------------|------------|------------------------|------------------------|
| Art. No. | | 330550 | 330551 | 345100 | |
| Input 1 | Band | UHF/VHF | UHF/VHF | UHF/VHF | UHF/VHF |
| | Channel | | | | 1 in ch. 30-40 |
| | Frequency | MHz | MHz | MHz | 47-862 |
| Gain | Out 1 | dB | 18.0 | 15.0 | 0 |
| | Out 2 | dB | 18.0 | 15.0 | 12.0 |
| Noise figure | | dB | 4.5 | 4.0 | 4.0 |
| | UHF/VHF | dB | 4.5 | 4.5 | 4.0 |
| Max. output voltage | | | | | |
| IMD 3 in acc. with EN 50083-3 | dB μ V | 2 x 101 | 2 x 101 | 2 x 103 | 2 x 101 |
| Max. output level | | | | | |
| | @ 10 channels | dB μ V | | | 78 |
| | @ 20 channels | dB μ V | | | 76 |
| | @ 30 channels | dB μ V | | | 75 |
| Numbers of in-/output | | 2 | 2 | 2 | 1 a+b |
| | | | | | 2 a+b |
| Voltage | V/AC | 230 | 230 | 230 | 230 |
| Power consumption | W | 1.2 | 1.2 | 3 | 3 |
| Connector | type | S&C | S&C | IEC | IEC |
| Impedance | Ohm | 75 | 75 | 75 | 75 |
| Operation temperature range | °C | 0...+50 | 0...+50 | 0...+50 | 0...+50 |
| Weight | kg | | | | |
| Dimensions (h x d x w) | mm | | | | |
| Remarks | | | | Power adaptor included | Power adaptor included |



Type 02



2TVplus amplifiers for mounting directly on the outlet box

Triax passive components

| | |
|---|---------|
| Antenna systems >> Splitters, taps and cables | |
| - A-TECH 5-1000 MHz | 166-171 |
| - H-TECH 5-1000 MHz | 172-178 |
| - S-TECH 5-2400 MHz | 179-183 |
| TDP delivery point | 184 |
| TLS range of outdoor splitters | 185 |
| TLT range of outdoor taps | 185-191 |
| Triax indoor splitters | 192-193 |
| Attenuators | 194 |
| Power inserters | 195 |
| Power supplies | 196-197 |
| Cables and tools | |
| - Indoor, outdoor | 198-203 |
| - Multi and Fly leads | 204-205 |
| - HDMI cables | 206 |
| - Tools and connectors | 207-210 |
| Adapters - terminators - isolators - electrical articles | 211-212 |



Triax splitters - ATS series [5-1000 MHz]

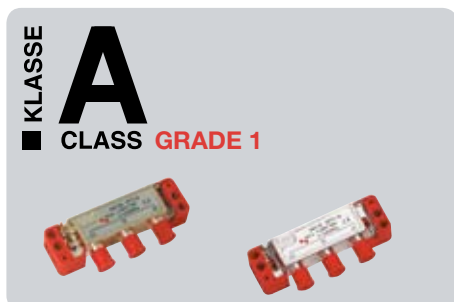


KLASSE
A
CLASS GRADE 1

Technical data 5-1000 MHz professional range in splitters

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

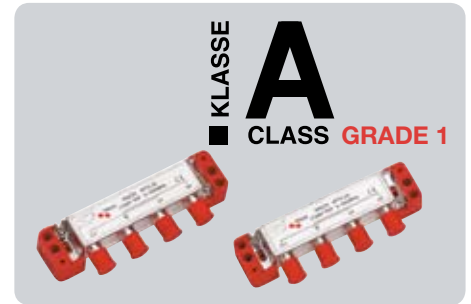
Triax taps - ATT series [5-1000 MHz]



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

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

Triax taps - ATT series [5-1000 MHz]



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

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

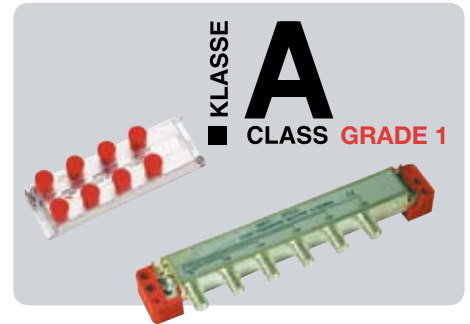
Triax taps - ATT series [5-1000 MHz]



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

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

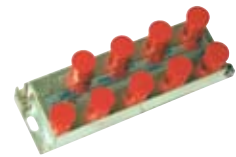
Triax taps - ATT series [5-1000 MHz]



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

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

Triax taps - ATM series [5-1000 MHz]



Technical data 5-1000 MHz professional multi taps

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

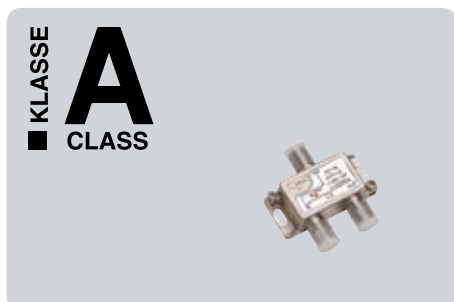
Triax splitter - HTS series [5-1000 MHz]



Technical data 5-1000 MHz standard range in splitters

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

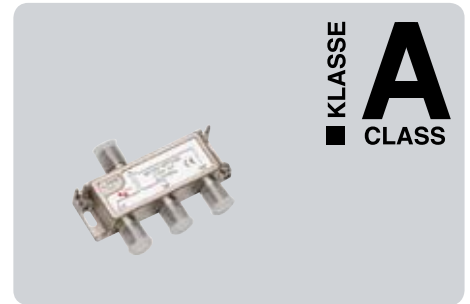
Triax taps - HTT series [5-1000 MHz]



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

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

Triax taps - HTT series [5-1000 MHz]



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

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

Triax taps - HTT series [5-1000 MHz]



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

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

Triax taps - HTT series [5-1000 MHz]



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

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

Triax taps - HTT series [5-1000 MHz]



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

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

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

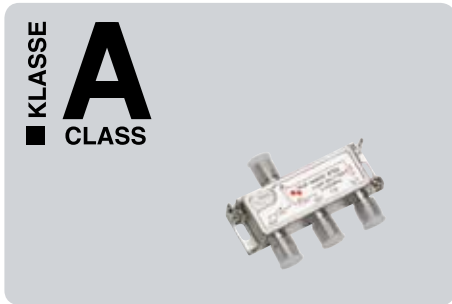


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Technical data 5-1000 MHz standard range in multi taps

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

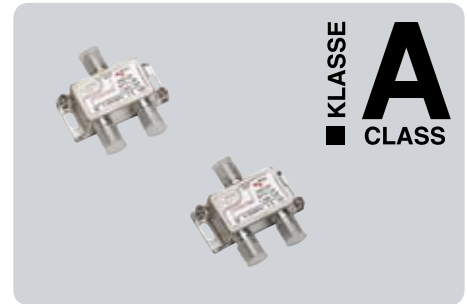
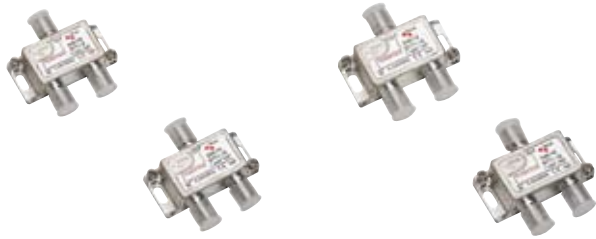
Triax splitter - STS series [5-2400 MHz]



Technical data 5-2400 MHz standard range in splitters

| TYPE Art. No. | | STS 2 348002 | STS 3 348003 | STS 4 348004 | STS 6 348006 | STS 8 348008 |
|------------------------------|-----|-----------------|-----------------|-----------------|-----------------|-----------------|
| 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 | < 7.2 | < 8.2 | < 11.2 | < 11.7 |
| 40 - 1000 MHz | dB | < 4.7 | < 7.7 | < 8.2 | < 11.7 | < 12.2 |
| 1000 - 1750 MHz | dB | < 6.2 | < 9.7 | < 10.2 | < 11.7 | < 15.2 |
| 1750 - 2150 MHz | dB | < 6.5 | < 10.7 | < 10.9 | < 16.7 | < 18.0 |
| 2150 - 2400 MHz | dB | < 6.7 | < 11.2 | < 12.5 | < 16.7 | < 18.2 |
| Return loss (in) | | | | | | |
| 5 - 40 MHz | dB | > 18.0 | > 14.0 | > 14.0 | > 14.0 | > 14.0 |
| 40 - 1000 MHz | dB | > 17.0 | > 18.0 | > 18.0 | > 14.0 | > 14.0 |
| 1000 - 1750 MHz | dB | > 15.0 | > 15.0 | > 15.0 | > 16.0 | > 16.0 |
| 1750 - 2150 MHz | dB | > 14.0 | > 15.0 | > 16.0 | > 15.0 | > 15.0 |
| 2150 - 2400 MHz | dB | > 15.0 | > 14.0 | > 16.0 | > 16.0 | > 15.0 |
| Return loss (out) | | | | | | |
| 5 - 40 MHz | dB | > 16.0 | > 18.0 | > 18.0 | > 18.0 | > 20.0 |
| 40 - 1000 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 1000 - 1750 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 1750 - 2150 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 2150 - 2400 MHz | dB | > 17.0 | > 17.0 | > 17.0 | > 17.0 | > 18.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 |
| Power pass | | All | All | All | All | All |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 |
| 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 | 60 x 16 x 117 | 60 x 16 x 117 |

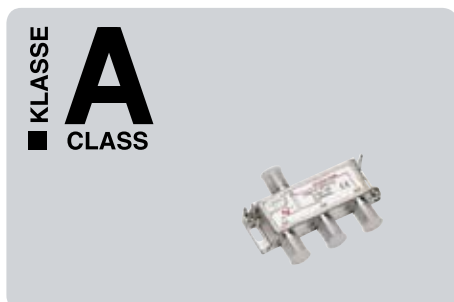
Triax taps - STT series (5-2400 MHz)



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

| TYPE Art. No. | | STT 1-8 348108 | STT 1-10 348110 | STT 1-12 348112 | STT 1-16 348116 | STT 1-20 348120 | STT 1-24 348124 |
|------------------------------|-----|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Frequency range | MHz | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 |
| Outputs | pcs | 1 | 1 | 1 | 1 | 1 | 1 |
| Insertion loss | | | | | | | |
| 5 - 40 MHz | dB | < 2.2 | < 1.7 | < 1.5 | < 1.2 | < 1.2 | < 1.2 |
| 40 - 1000 MHz | dB | < 2.2 | < 1.9 | < 1.7 | < 1.2 | < 1.2 | < 1.2 |
| 1000 - 1750 MHz | dB | < 3.2 | < 2.2 | < 2.2 | < 1.9 | < 1.9 | < 1.9 |
| 1750 - 2150 MHz | dB | < 4.7 | < 3.2 | < 2.7 | < 2.2 | < 2.2 | < 2.2 |
| 2150 - 2400 MHz | dB | < 5.0 | < 3.5 | < 3.2 | < 2.5 | < 2.5 | < 2.5 |
| Tap loss | | | | | | | |
| 5 - 40 MHz | dB | 8.5 (± 2.0) | 11.0 (± 2.0) | 12.0 (± 2.0) | 15.0 (± 2.0) | 20.0 (± 2.0) | 24.0 (± 2.0) |
| 40 - 1000 MHz | dB | 8.0 (± 1.5) | 10.0 (± 1.5) | 12.0 (± 1.5) | 15.0 (± 1.5) | 20.0 (± 1.5) | 24.0 (± 1.5) |
| 1000 - 1750 MHz | dB | 8.0 (± 1.5) | 10.0 (± 1.5) | 12.0 (± 1.5) | 15.0 (± 1.5) | 20.0 (± 1.5) | 24.0 (± 1.5) |
| 1750 - 2150 MHz | dB | 8.0 (± 2.0) | 10.0 (± 2.0) | 12.0 (± 2.0) | 15.0 (± 2.0) | 20.0 (± 2.0) | 24.0 (± 2.0) |
| 2150 - 2400 MHz | dB | 8.5 (± 2.0) | 10.5 (± 2.0) | 12.0 (± 2.0) | 15.0 (± 2.0) | 20.0 (± 2.0) | 24.0 (± 2.0) |
| Isolation | | | | | | | |
| 5 - 40 MHz | dB | > 18.0 | > 25.0 | > 28.0 | > 28.0 | > 32.0 | > 32.0 |
| 40 - 1000 MHz | dB | > 20.0 | > 22.0 | > 25.0 | > 25.0 | > 30.0 | > 30.0 |
| 1000 - 1750 MHz | dB | > 20.0 | > 22.0 | > 22.0 | > 25.0 | > 25.0 | > 25.0 |
| 1750 - 2150 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 22.0 | > 25.0 | > 25.0 |
| 2150 - 2400 MHz | dB | > 18.0 | > 18.0 | > 20.0 | > 22.0 | > 25.0 | > 25.0 |
| Return loss (in - out) | | | | | | | |
| 5 - 40 MHz | dB | > 14.0 | > 14.0 | > 14.0 | > 14.0 | > 14.0 | > 14.0 |
| 40 - 1000 MHz | dB | > 14.0 | > 14.0 | > 14.0 | > 14.0 | > 14.0 | > 14.0 |
| 1000 - 1750 MHz | dB | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 |
| 1750 - 2150 MHz | dB | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 |
| 2150 - 2400 MHz | dB | > 12.0 | > 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 | > 14.0 |
| 40 - 1000 MHz | dB | > 16.0 | > 16.0 | > 16.0 | > 16.0 | > 16.0 | > 16.0 |
| 1000 - 1750 MHz | dB | > 14.0 | > 14.0 | > 14.0 | > 14.0 | > 14.0 | > 14.0 |
| 1750 - 2150 MHz | dB | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 |
| 2150 - 2400 MHz | dB | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 | > 12.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 |
| Power pass | | In/Out | In/Out | In/Out | In/Out | In/Out | In/Out |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | 0.046 | 0.046 | 0.046 | 0.046 | 0.046 | 0.046 |
| Dimensions (h x d x w) | mm | 50 x 16 x 52 | 50 x 16 x 52 | 50 x 16 x 52 | 50 x 16 x 52 | 50 x 16 x 52 | 50 x 16 x 52 |

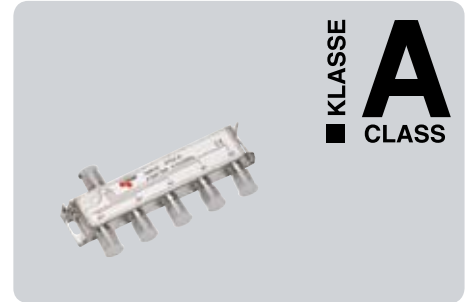
Triax taps - STT series [5-2400 MHz]



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

| TYPE Art. No. | | STT 2-10 348210 | STT 2-12 348212 | STT 2-16 348216 | STT 2-20 348220 |
|------------------------------|-----|--------------------|--------------------|--------------------|--------------------|
| Frequency range | MHz | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 |
| Outputs | pcs | 2 | 2 | 2 | 2 |
| Insertion loss | | | | | |
| 5 - 40 MHz | dB | < 4.2 | < 2.7 | < 2.7 | < 1.7 |
| 40 - 1000 MHz | dB | < 3.2 | < 2.7 | < 2.7 | < 1.7 |
| 1000 - 1750 MHz | dB | < 4.2 | < 3.2 | < 3.7 | < 2.7 |
| 1750 - 2150 MHz | dB | < 4.7 | < 4.2 | < 4.2 | < 3.2 |
| 2150 - 2400 MHz | dB | < 5.5 | < 4.7 | < 4.5 | < 4.0 |
| Tap loss | | | | | |
| 5 - 40 MHz | dB | 11.0 (± 2.0) | 12.0 (± 2.0) | 15.0 (± 2.0) | 20.0 (± 2.0) |
| 40 - 1000 MHz | dB | 10.5 (± 1.5) | 12.0 (± 1.5) | 15.0 (± 1.5) | 20.0 (± 1.5) |
| 1000 - 1750 MHz | dB | 10.5 (± 1.5) | 12.0 (± 1.5) | 15.0 (± 1.5) | 20.0 (± 1.5) |
| 1750 - 2150 MHz | dB | 10.5 (± 2.0) | 12.0 (± 2.0) | 15.0 (± 2.0) | 20.0 (± 2.0) |
| 2150 - 2400 MHz | dB | 10.5 (± 2.0) | 12.0 (± 2.5) | 15.0 (± 2.5) | 20.0 (± 2.5) |
| Isolation | | | | | |
| 5 - 40 MHz | dB | > 28.0 | > 28.0 | > 28.0 | > 28.0 |
| 40 - 1000 MHz | dB | > 28.0 | > 28.0 | > 28.0 | > 28.0 |
| 1000 - 1750 MHz | dB | > 28.0 | > 28.0 | > 28.0 | > 28.0 |
| 1750 - 2150 MHz | dB | > 28.0 | > 28.0 | > 28.0 | > 28.0 |
| 2150 - 2400 MHz | dB | > 28.0 | > 28.0 | > 28.0 | > 28.0 |
| Return loss (in - out) | | | | | |
| 5 - 40 MHz | dB | > 18.0 | > 22.0 | > 22.0 | > 23.0 |
| 40 - 1000 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 22.0 |
| 1000 - 1750 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 22.0 |
| 1750 - 2150 MHz | dB | > 16.0 | > 18.0 | > 20.0 | > 20.0 |
| 2150 - 2400 MHz | dB | > 16.0 | > 18.0 | > 20.0 | > 20.0 |
| Return loss (tap) | | | | | |
| 5 - 40 MHz | dB | > 30.0 | > 35.0 | > 35.0 | > 40.0 |
| 40 - 1000 MHz | dB | > 25.0 | > 25.0 | > 30.0 | > 32.0 |
| 1000 - 1750 MHz | dB | > 25.0 | > 25.0 | > 30.0 | > 30.0 |
| 1750 - 2150 MHz | dB | > 20.0 | > 22.0 | > 25.0 | > 25.0 |
| 2150 - 2400 MHz | dB | > 18.0 | > 20.0 | > 22.0 | > 22.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 |
| Power pass | | In/Out | In/Out | In/Out | In/Out |
| Connectors | | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 |
| Weight | kg | 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 |

Triax taps - STT series [5-2400 MHz]



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

| TYPE Art. No. | | STT 4-12 348412 | STT 4-16 348416 | STT 4-20 348420 | STT 4-24 348424 | STT 4-30 348430 |
|------------------------------|-----|--------------------|--------------------|--------------------|--------------------|--------------------|
| Frequency range | MHz | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 |
| Outputs | pcs | 4 | 4 | 4 | 4 | 4 |
| Insertion loss (in - out) | | | | | | |
| 5 - 40 MHz | dB | < 4.7 | < 2.7 | < 1.2 | < 2.7 | < 1.2 |
| 40 - 1000 MHz | dB | < 4.7 | < 3.2 | < 1.7 | < 3.2 | < 1.7 |
| 1000 - 1750 MHz | dB | < 5.2 | < 4.2 | < 2.2 | < 4.2 | < 2.2 |
| 1750 - 2150 MHz | dB | < 6.2 | < 5.2 | < 3.2 | < 5.2 | < 3.2 |
| 2150 - 2400 MHz | dB | < 7.0 | < 6.0 | < 4.0 | < 6.0 | < 4.0 |
| Tap loss | | | | | | |
| 5 - 40 MHz | dB | 12.0 (± 2.0) | 15.0 (± 1.5) | 20.0 (± 1.5) | 24.0 (± 1.5) | 30.0 (± 1.5) |
| 40 - 1000 MHz | dB | 12.0 (± 1.5) | 15.0 (± 1.5) | 20.0 (± 1.5) | 24.0 (± 1.5) | 30.0 (± 1.5) |
| 1000 - 1750 MHz | dB | 12.0 (± 1.5) | 15.0 (± 1.5) | 20.0 (± 1.5) | 24.0 (± 1.5) | 30.0 (± 1.5) |
| 1750 - 2150 MHz | dB | 13.0 (± 2.0) | 15.0 (± 2.0) | 20.5 (± 2.0) | 24.0 (± 2.0) | 30.0 (± 2.0) |
| 2150 - 2400 MHz | dB | 14.0 (± 2.5) | 16.0 (± 2.0) | 21.0 (± 2.0) | 24.0 (± 2.0) | 30.0 (± 2.0) |
| Isolation | | | | | | |
| 5 - 40 MHz | dB | > 21.0 | > 21.0 | > 21.0 | > 21.0 | > 21.0 |
| 40 - 1000 MHz | dB | > 21.0 | > 21.0 | > 21.0 | > 21.0 | > 21.0 |
| 1000 - 1750 MHz | dB | > 21.0 | > 21.0 | > 21.0 | > 21.0 | > 21.0 |
| 1750 - 2150 MHz | dB | > 21.0 | > 21.0 | > 21.0 | > 21.0 | > 21.0 |
| 2150 - 2400 MHz | dB | > 21.0 | > 21.0 | > 21.0 | > 21.0 | > 21.0 |
| Return loss (in - out) | | | | | | |
| 5 - 40 MHz | dB | > 20.0 | > 30.0 | > 35.0 | > 30.0 | > 35.0 |
| 40 - 1000 MHz | dB | > 23.0 | > 23.0 | > 25.0 | > 23.0 | > 25.0 |
| 1000 - 1750 MHz | dB | > 20.0 | > 22.0 | > 20.0 | > 22.0 | > 20.0 |
| 1750 - 2150 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 2150 - 2400 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| Return loss (tap) | | | | | | |
| 5 - 40 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| 40 - 1000 MHz | dB | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 1000 - 1750 MHz | dB | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 1750 - 2150 MHz | dB | > 18.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 2150 - 2400 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 |
| Power pass | | In/Out | In/Out | In/Out | In/Out | In/Out |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | 0.092 | 0.092 | 0.092 | 0.092 | 0.092 |
| Dimensions (h x d x w) | mm | 60 x 16 x 70 | 60 x 16 x 70 | 60 x 16 x 70 | 60 x 16 x 70 | 60 x 16 x 70 |

Triax taps - STT series [5-2400 MHz]



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

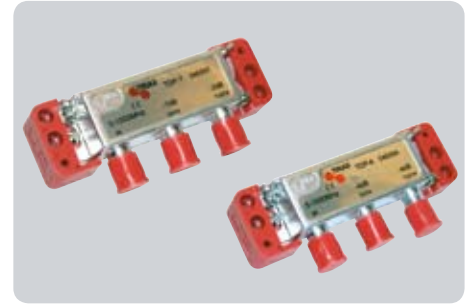
| TYPE Art. No. | | STT 6-16 348616 | STT 6-20 348620 | STT 6-24 348624 | STT 6-30 348630 | STT 8-16 348816 | STT 8-20 348820 |
|------------------------------|-----|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Frequency range | MHz | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 | 5 - 2400 |
| Outputs | pcs | 6 | 6 | 6 | 6 | 8 | 8 |
| Insertion loss (in - out) | | | | | | | |
| 5 - 40 MHz | dB | < 4.5 | < 2.5 | < 2.0 | < 2.0 | < 4.5 | < 2.5 |
| 40 - 1000 MHz | dB | < 5.0 | < 3.0 | < 3.0 | < 3.0 | < 5.0 | < 3.0 |
| 1000 - 1750 MHz | dB | < 6.0 | < 4.0 | < 4.0 | < 4.0 | < 6.0 | < 4.0 |
| 1750 - 2150 MHz | dB | < 7.0 | < 5.0 | < 5.0 | < 5.0 | < 7.0 | < 5.0 |
| 2150 - 2400 MHz | dB | < 8.0 | < 6.0 | < 6.0 | < 6.0 | < 8.0 | < 6.0 |
| Tap loss | | | | | | | |
| 5 - 40 MHz | dB | 16.0 (± 2.0) | 20.0 (± 2.0) | 25.0 (± 2.0) | 30.0 (± 2.0) | 16.0 (± 2.0) | 20.0 (± 2.0) |
| 40 - 1000 MHz | dB | 16.0 (± 2.0) | 20.5 (± 2.0) | 25.0 (± 2.0) | 30.0 (± 2.0) | 16.0 (± 2.0) | 20.5 (± 2.0) |
| 1000 - 1750 MHz | dB | 18.0 (± 2.0) | 21.0 (± 3.0) | 25.0 (± 3.0) | 30.0 (± 3.0) | 18.0 (± 2.0) | 21.0 (± 3.0) |
| 1750 - 2150 MHz | dB | 19.0 (± 3.0) | 21.5 (± 4.0) | 25.0 (± 4.0) | 30.0 (± 4.0) | 19.0 (± 3.0) | 21.5 (± 4.0) |
| 2150 - 2400 MHz | dB | 19.0 (± 3.0) | 21.5 (± 4.0) | 25.0 (± 4.0) | 30.0 (± 4.0) | 19.0 (± 3.0) | 21.5 (± 4.0) |
| Isolation | | | | | | | |
| 5 - 40 MHz | dB | > 16.0 | > 16.0 | > 16.0 | > 16.0 | > 12.0 | > 12.0 |
| 40 - 1000 MHz | dB | > 16.0 | > 16.0 | > 16.0 | > 16.0 | > 12.0 | > 12.0 |
| 1000 - 1750 MHz | dB | > 16.0 | > 16.0 | > 16.0 | > 16.0 | > 12.0 | > 12.0 |
| 1750 - 2150 MHz | dB | > 16.0 | > 16.0 | > 16.0 | > 16.0 | > 12.0 | > 12.0 |
| 2150 - 2400 MHz | dB | > 16.0 | > 16.0 | > 16.0 | > 16.0 | > 12.0 | > 12.0 |
| Return loss (in) | | | | | | | |
| 5 - 40 MHz | dB | > 25.0 | > 30.0 | > 30.0 | > 40.0 | > 25.0 | > 30.0 |
| 40 - 1000 MHz | dB | > 22.0 | > 20.0 | > 20.0 | > 20.0 | > 22.0 | > 20.0 |
| 1000 - 1750 MHz | dB | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 1750 - 2150 MHz | dB | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 2150 - 2400 MHz | dB | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| Return loss (out) | | | | | | | |
| 5 - 40 MHz | dB | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 40 - 1000 MHz | dB | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 | > 20.0 |
| 1000 - 1750 MHz | dB | > 17.0 | > 17.0 | > 17.0 | > 17.0 | > 17.0 | > 17.0 |
| 1750 - 2150 MHz | dB | > 15.0 | > 15.0 | > 15.0 | > 15.0 | > 15.0 | > 15.0 |
| 2150 - 2400 MHz | dB | > 15.0 | > 15.0 | > 15.0 | > 15.0 | > 15.0 | > 15.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 | ≥ 110.0 |
| Power pass | | In/Out | In/Out | In/Out | In/Out | In/Out | In/Out |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | 0.137 | 0.137 | 0.137 | 0.137 | 0.137 | 0.137 |
| Dimensions (h x d x w) | mm | 60 x 16 x 117 | 60 x 16 x 117 | 60 x 16 x 117 | 60 x 16 x 117 | 60 x 16 x 117 | 60 x 16 x 117 |

Triax TDP delivery point for TV/R and data

Triax delivery point for separating TV/R and data signals

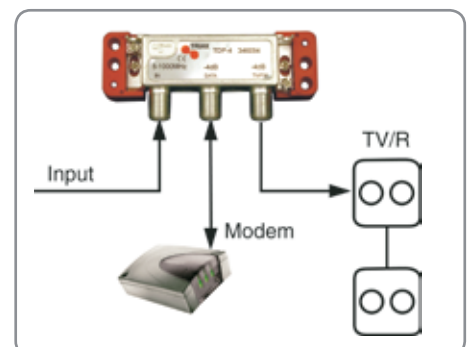
Mount a Triax TDP delivery point on the main connection cable to your SMATV system and get a stable and secure separation of your signal to your tv, radio and cable modem.

- High isolation
- Low insertion loss
- Class A shielding



Technical data on TDP delivery points

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



Triax splitter - TLS/TLT series (outdoor)



Outdoor trunk splitter with frequency ranges from 5 to 1000 MHz

- All ports impedance: 75 Ohm
- In-out current passing: 10 A, 60 VAC
- The 100 dB RFI integrity is maintained by the use of tongue and groove design and with a stainless steel mesh RFI gasket
- Continual power through between input and output
- Aluminum housing is finished with a acrylic paint to protect from elements
- Neoprene sealed and nickel-plated brass for all 5/8" port entry and taps "F-(f)" port
- Provides uninTERupted power and RF service when the faceplate is removed

Technical data TLS series of 5-1000 MHz outdoor splitters and 1-tap

| TYPE Art. No. | | TLS 102 80225 | TLS 103 80226 | TLS 103 S 80263 | TLT 108 80236 | TLT 112 80237 | TLT 116 80238 |
|------------------------------|-------|------------------|------------------|--------------------|------------------|------------------|------------------|
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Inputs | pcs | 1 | 1 | 1 | 1 | 1 | 1 |
| Outputs | pcs | 2 | 3 | 3 | 2 | 2 | 2 |
| Insertion loss | | | | | | | |
| 5 - 40 MHz | dB | | | | < 2.4 | < 1.4 | < 1.4 |
| 40 - 470 MHz | dB | | | | < 2.7 | < 1.6 | < 1.6 |
| 470 - 750 MHz | dB | | | | < 3.3 | < 1.8 | < 1.8 |
| 750 - 862 MHz | dB | | | | < 3.8 | < 2.1 | < 2.1 |
| Tap loss - output 1 / 2 - 3 | | | | | | | |
| 5 - 40 MHz | dB | < 3.9 | < 3.9 / < 7.2 | < 5.7 / < 5.7 | 8.0 (± 1.0) | 12.0 (± 1.0) | 16.0 (± 1.0) |
| 40 - 470 MHz | dB | < 4.1 | < 4.2 / < 7.5 | < 6.1 / < 6.1 | 8.0 (± 1.0) | 12.0 (± 1.0) | 16.0 (± 1.0) |
| 470 - 750 MHz | dB | < 4.5 | < 4.5 / < 8.0 | < 6.6 / < 6.6 | 8.0 (± 1.0) | 12.0 (± 1.0) | 16.0 (± 1.0) |
| 750 - 862 MHz | dB | < 4.8 | < 4.6 / < 8.5 | < 7.5 / < 7.5 | 8.0 (± 1.5) | 12.0 (± 1.5) | 16.0 (± 1.0) |
| Isolation - out/tap | | | | | | | |
| 5 - 40 MHz | dB | > 22.0 | > 22.0 | > 25.0 | > 22.0 | > 24.0 | > 25.0 |
| 40 - 470 MHz | dB | > 27.0 | > 27.0 | > 27.0 | > 24.0 | > 24.0 | > 24.0 |
| 470 - 750 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 22.0 | > 23.0 | > 25.0 |
| 750 - 862 MHz | dB | > 25.0 | > 23.0 | > 22.0 | > 22.0 | > 23.0 | > 25.0 |
| Isolation - tap/tap | | | | | | | |
| 5 - 40 MHz | dB | | | | | | |
| 40 - 470 MHz | dB | | | | | | |
| 470 - 750 MHz | dB | | | | | | |
| 750 - 862 MHz | dB | | | | | | |
| Return loss (out) | | | | | | | |
| 5 - 40 MHz | dB | > 16.0 | > 18.0 | > 18.0 | > 16.0 | > 16.0 | > 18.0 |
| 40 - 470 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 16.0 | > 16.0 | > 18.0 |
| 470 - 750 MHz | dB | > 17.0 | > 18.0 | > 17.0 | > 16.0 | > 16.0 | > 16.0 |
| 750 - 862 MHz | dB | > 17.0 | > 18.0 | > 17.0 | > 16.0 | > 16.0 | > 16.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 |
| Hum modulation @ 10 A | dB | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 |
| Power pass connection | | In/out | In/out | In/out | In/out | In/out | In/out |
| DC-throughpass | A/VAC | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | | | | | |
| Dimensions (h x d x w) | mm | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 |

- Fix-TLD bracket for wall-mounting of splitters Art. No. 80262



Triax taps - TLT series (outdoor)

Outdoor trunk taps with frequency ranges from 5 to 1000 MHz

- All ports impedance: 75 Ohm
- In-out current passing: 10 A, 60 VAC
- The 100 dB RFI integrity is maintained by the use of tongue and groove design and with a stainless steel mesh RFI gasket
- Continual power through between input and output
- Aluminum alloy housing is finished with a baked acrylic paint to protect from elements
- Neoprene sealed and nickel-plated brass for all 5/8" port entry and taps "F-(f)" port
- Provides uninTERupted power and RF service when the faceplate is removed



Technical data TLT series of 5-1000 MHz outdoor 2-taps

| TYPE Art. No. | | TLT 204 80261 | TLT 208 80243 | TLT 211 80228 | TLT 214 80234 | TLT 217 80229 | TLT 220 80230 |
|------------------------------|-------|------------------|------------------|------------------|------------------|------------------|------------------|
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Inputs | pcs | 1 | 1 | 1 | 1 | 1 | 1 |
| Outputs | pcs | 2 | 2 | 2 | 2 | 2 | 2 |
| Insertion loss | | | | | | | |
| 5 - 40 MHz | dB | | < 3.2 | < 2.4 | < 1.4 | < 1.2 | < 0.8 |
| 40 - 470 MHz | dB | | < 4.0 | < 2.5 | < 1.8 | < 1.6 | < 1.3 |
| 470 - 750 MHz | dB | | < 5.0 | < 3.5 | < 2.3 | < 2.1 | < 1.8 |
| 750 - 862 MHz | dB | | < 5.0 | < 4.0 | < 3.0 | < 2.4 | < 2.2 |
| Tap loss - output | | | | | | | |
| 5 - 40 MHz | dB | 4.0 (± 1.0) | 8.0 (± 1.0) | 11.0 (± 1.0) | 14.0 (± 1.0) | 17.0 (± 1.0) | 20.0 (± 1.0) |
| 40 - 470 MHz | dB | 4.0 (± 1.0) | 8.0 (± 1.2) | 11.0 (± 1.0) | 14.0 (± 1.0) | 17.0 (± 1.0) | 20.0 (± 1.0) |
| 470 - 750 MHz | dB | 4.0 (± 1.0) | 8.0 (± 1.5) | 11.0 (± 1.5) | 14.0 (± 1.5) | 17.0 (± 1.5) | 20.0 (± 1.5) |
| 750 - 862 MHz | dB | 4.0 (± 1.0) | 8.0 (± 1.5) | 11.0 (± 1.5) | 14.0 (± 1.5) | 17.0 (± 1.5) | 20.0 (± 1.5) |
| Isolation - out/tap | | | | | | | |
| 5 - 40 MHz | dB | > 16.0 | > 15.0 | > 20.0 | > 25.0 | > 26.0 | > 26.0 |
| 40 - 470 MHz | dB | > 24.0 | > 22.0 | > 24.0 | > 24.0 | > 28.0 | > 28.0 |
| 470 - 750 MHz | dB | > 24.0 | > 20.0 | > 20.0 | > 25.0 | > 25.0 | > 25.0 |
| 750 - 862 MHz | dB | > 23.0 | > 18.0 | > 18.0 | > 25.0 | > 23.0 | > 23.0 |
| Isolation - tap/tap | | | | | | | |
| 5 - 40 MHz | dB | | > 16.0 | > 20.0 | > 25.0 | > 25.0 | > 25.0 |
| 40 - 470 MHz | dB | | > 24.0 | > 25.0 | > 24.0 | > 25.0 | > 25.0 |
| 470 - 750 MHz | dB | | > 24.0 | > 24.0 | > 25.0 | > 25.0 | > 25.0 |
| 750 - 862 MHz | dB | | > 23.0 | > 23.0 | > 25.0 | > 24.0 | > 24.0 |
| Return loss (out) | | | | | | | |
| 5 - 40 MHz | dB | > 15.0 | > 15.0 | > 16.0 | > 18.0 | > 17.0 | > 17.0 |
| 40 - 470 MHz | dB | > 17.0 | > 17.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| 470 - 750 MHz | dB | > 17.0 | > 17.0 | > 18.0 | > 16.0 | > 18.0 | > 18.0 |
| 750 - 862 MHz | dB | > 17.0 | > 17.0 | > 17.0 | > 16.0 | > 18.0 | > 18.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 |
| Hum modulation @ 10 A | dB | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 |
| Power pass connection | | In/out | In/out | In/out | In/out | In/out | In/out |
| DC-throughpass | A/VAC | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | | | | | |
| Dimensions (h x d x w) | mm | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 |

- Fix-TLD bracket for wall-mounting of splitters
Art. No. 80262

Triax taps - TLT series (outdoor)



Technical data TLT series of 5-1000 MHz outdoor 2-taps

| TYPE Art. No. | | TLT 223 80244 | TLT 226 80245 | TLT 229 80246 | TLT 232 80247 | TLT 235 80248 |
|------------------------------|-------|------------------|------------------|------------------|------------------|------------------|
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Inputs | pcs | 1 | 1 | 1 | 1 | 1 |
| Outputs | pcs | 2 | 2 | 2 | 2 | 2 |
| Insertion loss | | | | | | |
| 5 - 40 MHz | dB | < 0.8 | < 0.8 | < 0.8 | < 0.8 | < 0.8 |
| 40 - 470 MHz | dB | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
| 470 - 750 MHz | dB | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| 750 - 862 MHz | dB | < 2.2 | < 2.2 | < 2.2 | < 2.2 | < 2.2 |
| Tap loss - output | | | | | | |
| 5 - 40 MHz | dB | 23.0 (± 1.0) | 26.0 (± 1.0) | 29.0 (± 1.0) | 32.0 (± 1.0) | 35.0 (± 1.0) |
| 40 - 470 MHz | dB | 23.0 (± 1.0) | 26.0 (± 1.0) | 29.0 (± 1.0) | 32.0 (± 1.0) | 35.0 (± 1.0) |
| 470 - 750 MHz | dB | 23.0 (± 1.5) | 26.0 (± 1.5) | 29.0 (± 1.5) | 32.0 (± 1.5) | 35.0 (± 1.5) |
| 750 - 862 MHz | dB | 23.0 (± 1.5) | 26.0 (± 1.5) | 29.0 (± 1.5) | 32.0 (± 1.5) | 35.0 (± 1.5) |
| Isolation - out/tap | | | | | | |
| 5 - 40 MHz | dB | > 26.0 | > 26.0 | > 26.0 | > 26.0 | > 26.0 |
| 40 - 470 MHz | dB | > 28.0 | > 28.0 | > 28.0 | > 28.0 | > 28.0 |
| 470 - 750 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 25.0 | > 25.0 |
| 750 - 862 MHz | dB | > 23.0 | > 23.0 | > 23.0 | > 23.0 | > 23.0 |
| Isolation - tap/tap | | | | | | |
| 5 - 40 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 25.0 | > 25.0 |
| 40 - 470 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 25.0 | > 25.0 |
| 470 - 750 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 25.0 | > 25.0 |
| 750 - 862 MHz | dB | > 24.0 | > 24.0 | > 24.0 | > 24.0 | > 24.0 |
| Return loss (out) | | | | | | |
| 5 - 40 MHz | dB | > 17.0 | > 17.0 | > 17.0 | > 17.0 | > 17.0 |
| 40 - 470 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| 470 - 750 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| 750 - 862 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 |
| Hum modulation @ 10 A | dB | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 |
| Power pass connection | | In/out | In/out | In/out | In/out | In/out |
| DC-throughpass | A/VAC | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | | | | |
| Dimensions (h x d x w) | mm | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 |

- Fix-TLD bracket for wall-mounting of splitters
Art. No. 80262

Triax taps - TLT series (outdoor)

Outdoor trunk taps with frequency ranges from 5 to 1000 MHz

- All ports impedance: 75 Ohm
- In-out current passing: 10 A, 60 VAC
- The 100 dB RFI integrity is maintained by the use of tongue and groove design and with a stainless steel mesh RFI gasket
- Continual power through between input and output
- Aluminum alloy housing is finished with a baked acrylic paint to protect from elements
- Neoprene sealed and nickel-plated brass for all 5/8" port entry and taps "F-(f)" port
- Provides uninTERupted power and RF service when the faceplate is removed



Technical data TLT series of 5-1000 MHz outdoor 4-taps

| TYPE Art. No. | | TLT 408 80249 | TLT 411 80231 | TLT 414 80235 | TLT 417 80232 | TLT 420 80233 |
|------------------------------|-------|------------------|------------------|------------------|------------------|------------------|
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Inputs | pcs | 1 | 1 | 1 | 1 | 1 |
| Outputs | pcs | 4 | 4 | 4 | 4 | 4 |
| Insertion loss | | | | | | |
| 5 - 40 MHz | dB | | < 3.5 | < 2.5 | < 1.2 | < 1.0 |
| 40 - 470 MHz | dB | | < 4.1 | < 3.0 | < 1.8 | < 1.5 |
| 470 - 750 MHz | dB | | < 5.2 | < 4.5 | < 3.0 | < 2.3 |
| 750 - 862 MHz | dB | | < 5.4 | < 4.5 | < 3.0 | < 2.3 |
| Tap loss - output | | | | | | |
| 5 - 40 MHz | dB | 8.0 (± 1.0) | 11.0 (± 1.2) | 14.0 (± 1.2) | 17.0 (± 1.2) | 20.0 (± 1.2) |
| 40 - 470 MHz | dB | 8.0 (± 1.0) | 11.0 (± 1.2) | 14.0 (± 1.2) | 17.0 (± 1.2) | 20.0 (± 1.2) |
| 470 - 750 MHz | dB | 8.0 (± 1.0) | 11.0 (± 1.5) | 14.0 (± 1.5) | 17.0 (± 1.5) | 20.0 (± 1.5) |
| 750 - 862 MHz | dB | 8.0 (± 1.0) | 11.0 (± 1.5) | 14.0 (± 1.5) | 17.0 (± 1.5) | 20.0 (± 1.5) |
| Isolation - out/tap | | | | | | |
| 5 - 40 MHz | dB | | > 19.0 | > 25.0 | > 25.0 | > 30.0 |
| 40 - 470 MHz | dB | | > 25.0 | > 25.0 | > 25.0 | > 30.0 |
| 470 - 750 MHz | dB | | > 25.0 | > 25.0 | > 25.0 | > 30.0 |
| 750 - 862 MHz | dB | | > 25.0 | > 24.0 | > 25.0 | > 30.0 |
| Isolation - tap/tap | | | | | | |
| 5 - 40 MHz | dB | > 25.0 | > 20.0 | > 25.0 | > 25.0 | > 27.0 |
| 40 - 470 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 25.0 | > 27.0 |
| 470 - 750 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 25.0 | > 27.0 |
| 750 - 862 MHz | dB | > 25.0 | > 25.0 | > 25.0 | > 25.0 | > 27.0 |
| Return loss (out) | | | | | | |
| 5 - 40 MHz | dB | > 19.0 | > 20.0 | > 20.0 | > 18.0 | > 18.0 |
| 40 - 470 MHz | dB | > 19.0 | > 20.0 | > 20.0 | > 18.0 | > 20.0 |
| 470 - 750 MHz | dB | > 19.0 | > 18.0 | > 18.0 | > 18.0 | > 20.0 |
| 750 - 862 MHz | dB | > 19.0 | > 20.0 | > 20.0 | > 16.0 | > 20.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 |
| Hum modulation @ 10 A | dB | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 |
| Power pass connection | | In/out | In/out | In/out | In/out | In/out |
| DC-throughpass | A/VAC | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | | | | |
| Dimensions (h x d x w) | mm | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 |

Triax taps - TLT series (outdoor)



Technical data TLT series of 5-1000 MHz outdoor 4-taps

| TYPE Art. No. | | TLT 423 80251 | TLT 426 80252 | TLT 429 80253 | TLT 432 80254 | TLT 435 80255 |
|------------------------------|-------|------------------|------------------|------------------|------------------|------------------|
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Inputs | pcs | 1 | 1 | 1 | 1 | 1 |
| Outputs | pcs | 4 | 4 | 4 | 4 | 4 |
| Insertion loss | | | | | | |
| 5 - 40 MHz | dB | < 0.8 | < 0.8 | < 0.8 | < 0.8 | < 0.8 |
| 40 - 470 MHz | dB | < 1.3 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
| 470 - 750 MHz | dB | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 750 - 862 MHz | dB | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| Tap loss - output | | | | | | |
| 5 - 40 MHz | dB | 23.0 (± 1.2) | 26.0 (± 1.2) | 29.0 (± 1.2) | 32.0 (± 1.2) | 35.0 (± 1.2) |
| 40 - 470 MHz | dB | 23.0 (± 1.2) | 26.0 (± 1.2) | 29.0 (± 1.2) | 32.0 (± 1.2) | 35.0 (± 1.2) |
| 470 - 750 MHz | dB | 23.0 (± 1.5) | 26.0 (± 1.5) | 29.0 (± 1.5) | 32.0 (± 1.5) | 35.0 (± 1.5) |
| 750 - 862 MHz | dB | 23.0 (± 1.5) | 26.0 (± 1.5) | 29.0 (± 1.5) | 32.0 (± 1.5) | 35.0 (± 1.5) |
| Isolation - out/tap | | | | | | |
| 5 - 40 MHz | dB | > 27.0 | > 30.0 | > 30.0 | > 30.0 | > 30.0 |
| 40 - 470 MHz | dB | > 27.0 | > 30.0 | > 30.0 | > 30.0 | > 30.0 |
| 470 - 750 MHz | dB | > 27.0 | > 30.0 | > 30.0 | > 30.0 | > 30.0 |
| 750 - 862 MHz | dB | > 27.0 | > 30.0 | > 30.0 | > 30.0 | > 30.0 |
| Isolation - tap/tap | | | | | | |
| 5 - 40 MHz | dB | > 28.0 | > 27.0 | > 29.0 | > 30.0 | > 30.0 |
| 40 - 470 MHz | dB | > 28.0 | > 27.0 | > 29.0 | > 30.0 | > 30.0 |
| 470 - 750 MHz | dB | > 28.0 | > 27.0 | > 29.0 | > 30.0 | > 30.0 |
| 750 - 862 MHz | dB | > 28.0 | > 27.0 | > 29.0 | > 30.0 | > 30.0 |
| Return loss (out) | | | | | | |
| 5 - 40 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| 40 - 470 MHz | dB | > 19.0 | > 22.0 | > 22.0 | > 22.0 | > 22.0 |
| 470 - 750 MHz | dB | > 19.0 | > 22.0 | > 22.0 | > 22.0 | > 22.0 |
| 750 - 862 MHz | dB | > 19.0 | > 22.0 | > 22.0 | > 22.0 | > 22.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 |
| Hum modulation @ 10 A | dB | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 |
| Power pass connection | | In/out | In/out | In/out | In/out | In/out |
| DC-throughpass | A/VAC | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | | | | |
| Dimensions (h x d x w) | mm | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 |

Triax taps - TLT series (outdoor)

Outdoor trunk taps with frequency ranges from 5 to 1000 MHz

- All ports impedance: 75 Ohm
- In-out current passing: 10 A, 60 VAC
- The 100 dB RFI integrity is maintained by the use of tongue and groove design and with a stainless steel mesh RFI gasket
- Continual power through between input and output
- Aluminum alloy housing is finished with a baked acrylic paint to protect from elements
- Neoprene sealed and nickel-plated brass for all 5/8" port entry and taps "F-(f)" port
- Provides uninTERupted power and RF service when the faceplate is removed



Technical data TLT series of 5 - 1000 MHz outdoor 8-taps

| TYPE Art. No. | | TLT 811 80242 | TLT 814 80239 | TLT 817 80240 | TLT 820 80241 |
|------------------------------|-------|------------------|------------------|------------------|------------------|
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Inputs | pcs | 1 | 1 | 1 | 1 |
| Outputs | pcs | 8 | 8 | 8 | 8 |
| Insertion loss | | | | | |
| 5 - 40 MHz | dB | | < 3.4 | < 1.8 | < 1.2 |
| 40 - 470 MHz | dB | | < 3.4 | < 1.8 | < 1.2 |
| 470 - 750 MHz | dB | | < 4.5 | < 2.5 | < 2.5 |
| 750 - 862 MHz | dB | | < 4.5 | < 3.0 | < 2.5 |
| Tap loss - output | | | | | |
| 5 - 40 MHz | dB | 11.0 (± 1.0) | 14.0 (± 1.2) | 17.0 (± 1.2) | 20.0 (± 1.2) |
| 40 - 470 MHz | dB | 11.0 (± 1.0) | 14.0 (± 1.2) | 17.0 (± 1.2) | 20.0 (± 1.2) |
| 470 - 750 MHz | dB | 11.0 (± 1.0) | 14.0 (± 1.5) | 17.0 (± 1.5) | 20.0 (± 1.5) |
| 750 - 862 MHz | dB | 11.0 (± 1.0) | 14.0 (± 1.5) | 14.0 (± 1.5) | 20.0 (± 1.5) |
| Isolation - out/tap | | | | | |
| 5 - 40 MHz | dB | | > 23.0 | > 25.0 | > 27.0 |
| 40 - 470 MHz | dB | | > 25.0 | > 25.0 | > 27.0 |
| 470 - 750 MHz | dB | | > 25.0 | > 25.0 | > 27.0 |
| 750 - 862 MHz | dB | | > 25.0 | > 25.0 | > 27.0 |
| Isolation - tap/tap | | | | | |
| 5 - 40 MHz | dB | > 20.0 | > 25.0 | > 25.0 | > 28.0 |
| 40 - 470 MHz | dB | > 20.0 | > 25.0 | > 25.0 | > 28.0 |
| 470 - 750 MHz | dB | > 20.0 | > 25.0 | > 25.0 | > 28.0 |
| 750 - 862 MHz | dB | > 20.0 | > 25.0 | > 25.0 | > 28.0 |
| Return loss (out) | | | | | |
| 5 - 40 MHz | dB | > 16.0 | > 18.0 | > 18.0 | > 18.0 |
| 40 - 470 MHz | dB | > 16.0 | > 20.0 | > 20.0 | > 20.0 |
| 470 - 750 MHz | dB | > 14.0 | > 20.0 | > 20.0 | > 20.0 |
| 750 - 862 MHz | dB | > 14.0 | > 20.0 | > 20.0 | > 20.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 |
| Hum modulation @ 10 A | dB | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 |
| Power pass connection | | In/Out | In/Out | In/Out | In/Out |
| DC-throughpass | A/VAC | 10/60 | 10/60 | 10/60 | 10/60 |
| Connectors | | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 |
| Weight | kg | | | | |
| Dimensions (h x d x w) | mm | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 |

Triax taps - TLT series (outdoor)



Technical data TLT series of 5-1000 MHz outdoor 8-taps

| TYPE Art. No. | | TLT 823 80256 | TLT 826 80257 | TLT 829 80258 | TLT 832 80259 | TLT 835 80260 |
|------------------------------|-------|------------------|------------------|------------------|------------------|------------------|
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Inputs | pcs | 1 | 1 | 1 | 1 | 1 |
| Outputs | pcs | 8 | 8 | 8 | 8 | 8 |
| Insertion loss | | | | | | |
| 5 - 40 MHz | dB | < 1.5 | < 1.2 | < 1.2 | < 1.2 | < 1.2 |
| 40 - 470 MHz | dB | < 1.5 | < 1.3 | < 1.3 | < 1.3 | < 1.3 |
| 470 - 750 MHz | dB | < 2.2 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| 750 - 862 MHz | dB | < 2.5 | < 2.2 | < 2.2 | < 2.2 | < 2.2 |
| Tap loss - output 1 / 2 - 3 | | | | | | |
| 5 - 40 MHz | dB | 23.0 (± 1.2) | 26.0 (± 1.2) | 29.0 (± 1.2) | 32.0 (± 1.2) | 35.0 (± 1.2) |
| 40 - 470 MHz | dB | 23.0 (± 1.2) | 26.0 (± 1.2) | 29.0 (± 1.2) | 32.0 (± 1.2) | 35.0 (± 1.2) |
| 470 - 750 MHz | dB | 23.0 (± 1.5) | 26.0 (± 1.5) | 29.0 (± 1.5) | 32.0 (± 1.5) | 35.0 (± 1.5) |
| 750 - 862 MHz | dB | 23.0 (± 1.5) | 26.0 (± 1.5) | 29.0 (± 1.5) | 32.0 (± 1.5) | 35.0 (± 1.5) |
| Isolation - out/tap | | | | | | |
| 5 - 40 MHz | dB | > 32.0 | > 30.0 | > 30.0 | > 35.0 | > 35.0 |
| 40 - 470 MHz | dB | > 32.0 | > 30.0 | > 30.0 | > 35.0 | > 35.0 |
| 470 - 750 MHz | dB | > 32.0 | > 30.0 | > 30.0 | > 35.0 | > 35.0 |
| 750 - 862 MHz | dB | > 32.0 | > 30.0 | > 30.0 | > 35.0 | > 35.0 |
| Isolation - tap/tap | | | | | | |
| 5 - 40 MHz | dB | > 29.0 | > 29.0 | > 29.0 | > 30.0 | > 30.0 |
| 40 - 470 MHz | dB | > 29.0 | > 29.0 | > 29.0 | > 30.0 | > 30.0 |
| 470 - 750 MHz | dB | > 29.0 | > 29.0 | > 29.0 | > 30.0 | > 30.0 |
| 750 - 862 MHz | dB | > 29.0 | > 29.0 | > 29.0 | > 30.0 | > 30.0 |
| Return loss (out) | | | | | | |
| 5 - 40 MHz | dB | > 18.0 | > 18.0 | > 18.0 | > 18.0 | > 18.0 |
| 40 - 470 MHz | dB | > 20.0 | > 20.0 | > 22.0 | > 22.0 | > 22.0 |
| 470 - 750 MHz | dB | > 20.0 | > 20.0 | > 22.0 | > 22.0 | > 22.0 |
| 750 - 862 MHz | dB | > 20.0 | > 20.0 | > 22.0 | > 22.0 | > 22.0 |
| Shielding efficiency VHF/UHF | dB | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 | ≥ 100.0 |
| Hum modulation @ 10 A | dB | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 | ≥ 66 |
| Power pass connection | | In/Out | In/Out | In/Out | In/Out | In/Out |
| DC-throughpass | A/VAC | 10/60 | 10/60 | 10/60 | 10/60 | 10/60 |
| Connectors | | F-connector | F-connector | F-connector | F-connector | F-connector |
| Certification | | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | | | | |
| Dimensions (h x d x w) | mm | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 | 125 x 75 x 145 |

Triax splitters

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

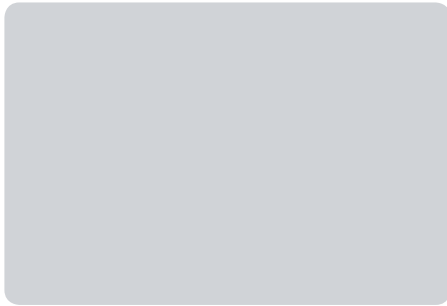
- TS and TFS are splitters in a plastic housing for indoor mounting.
- Different types with broadband input and one output for DAB and one for TV-FM - see the data below.
- The products are shielded and supplied with F-connectors.
- DC-through power to TV-FM output.
- The TFS 715 are normal indoor TV/FM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



Technical data on Triax splitters

| Type | TS 315-2 DC | | TFS 715-2 | TFS 715-3 | TFS 715-4 |
|-------------------|----------------|----------|---------------------------------------|---------------------------------------|---------------------------------------|
| Art. No. | 332323 | | 334202 | 334203 | 334204 |
| Input 1 | VHF/UHF | | VHF/UHF | VHF/UHF | VHF/UHF |
| Channel/band | 2-69 + FM | | 2-69 + FM | 2-69 + FM | 2-69 + FM |
| Frequency range | MHz | 47 - 862 | 47 - 862 | 47 - 862 | 47 - 862 |
| Splitter type | Inductive | | | | |
| Through loss | | | | | |
| VHF | dB | 4.0 | 4.0 | 6.0 | 8.0 |
| UHF | dB | 4.0 | 4.0 | 6.0 | 8.0 |
| Isolation | dB | 18 | 18 | 18 | 18 |
| TV-FM | dB | | | | |
| DAB | dB | | | | |
| Number of outputs | pcs | 2 | 2 | 3 | 4 |
| TV-FM | | | | | |
| DAB | | | | | |
| DC throughpower | | | | | |
| Output 1 | Switchable | | DC | DC | DC |
| Output 2 | Switchable | | DC | DC | DC |
| Output 3 | | | | DC | DC |
| Output 4 | | | | | DC |
| Connector | S&C | | F-con | F-con | F-con |
| Weight | kg | | | | |
| Dimensions | Height | mm | | | |
| | Depth | mm | | | |
| | Width | mm | | | |
| Remarks | | | DC pass can be removed by cutting PCB | DC pass can be removed by cutting PCB | DC pass can be removed by cutting PCB |

Triax splitters



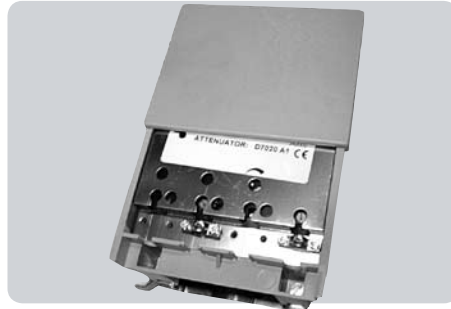
Technical data on Triax splitters

| Type | | 203 B 2-splitter 338106 | 309 3-splitter 338125 | 407 3-splitter 338130 | 102 FF/M 338365 | 102 MM/F 338366 |
|-------------------|-----|---|-----------------------------|-----------------------------|--------------------|--------------------|
| Art. No. | | | | | | |
| Input 1 | | VHF/UHF | VHF/UHF | VHF/UHF | VHF/UHF | VHF/UHF |
| Channel/band | | 2-69 + FM | 2-69 + FM | 2-69 + FM | 2-69 + FM | 2-69 + FM |
| Frequency range | MHz | 47 - 862 | 47 - 862 | 47 - 862 | 47 - 862 | 47 - 862 |
| Splitter type | | | | | | |
| Through loss | | | | | | |
| VHF | dB | 3.4 | 6.0 | 8.0 | 3.5 | 3.5 |
| UHF | dB | 3.8 | 6.0 | 9.0 | 3.5 | 3.5 |
| Isolation | | | | | | |
| TV-FM | dB | > 20 | > 20 | > 20 | | |
| DAB | dB | | | | | |
| Number of outputs | | | | | | |
| TV-FM | pcs | 2 | 3 | 4 | 2 | 2 |
| DAB | | | | | | |
| DC throughpower | | | | | | |
| Output 1 | | DC pass can be removed by cutting PCB | No | DC | DC | DC |
| Output 2 | | | No | DC | DC | DC |
| Output 3 | | | No | DC | | |
| Output 4 | | | | DC | | |
| Connector | | S&C | S&C | S&C | IEC | IEC |
| Weight | | kg | | | | |
| Dimensions | | mm | | | | |
| Height | | mm | | | | |
| Depth | | mm | | | | |
| Width | | mm | | | | |
| Remarks | | Indoor | Indoor | Indoor | IEC female | IEC male |

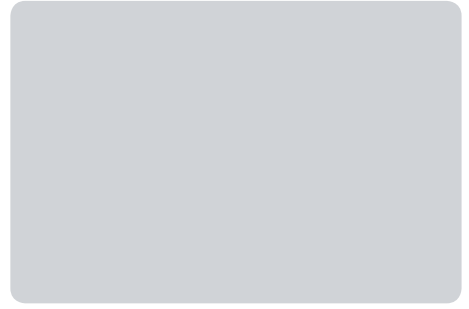
Triax attenuators

Variable attenuators (20 dB)

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



D7020 A1



Technical data on Triax attenuators

| Type | D7020 A1 | | VA 20 F |
|-------------------|-----------|----------|-----------|
| Art. No. | 342000 | | 153600 |
| Input 1 | VHF/UHF | | VHF/UHF |
| Channel/band | 2-69 + FM | | 2-69 + FM |
| Frequency range | MHz | 47 - 862 | 47 - 862 |
| Insertion loss | dB | 1.5-20 | 0-20 |
| Through loss | | | |
| VHF | dB | | |
| UHF | dB | | |
| Number of outputs | pcs | 1 | 1 |
| DC throughpower | Yes | | Yes |
| Connector | S&C | | F-con |
| Remarks | Outdoor | | Indoor |



Technical data on F-attenuator

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

Technical data on IEC-attenuator

| Type | IEC-att. 3 dB | | IEC-att. 6 dB | | IEC-att. 9 dB | | IEC-att. 12 dB | | IEC-att. 18 dB | | IEC-att. 24 dB | |
|-----------------|---------------|----------|---------------|----------|---------------|----------|----------------|----------|----------------|----------|----------------|----------|
| Art. No. | 153720 | | 153721 | | 153722 | | 153723 | | 153724 | | 153725 | |
| Frequency range | MHz | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 | 5 - 1000 |
| Attenuation | dB | 3 | 6 | 9 | 12 | 18 | 24 | | | | | |
| Packing size | pcs | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Triax power inserter



IFP 529

Battery filter

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

Technical data on battery filter/power inserter

| TYPE | | IFP 529 | TPI 01 DC | APS 007 |
|------------------------------|-------------|---|---------------|-------------------------------|
| Art. No. | | 339529 | 347001 | 336182 |
| Frequency range | MHz | 47-862 | 47-862 | |
| Inputs | pcs | 1 | 1 | |
| Outputs | pcs | 2 | 1 | |
| Insertion loss 47-852 | dB | 2 x 4.0 | | |
| 5 - 40 MHz | dB | | | |
| 40 - 470 MHz | dB | | | |
| 470 - 750 MHz | dB | | | |
| 750 - 862 MHz | dB | | | |
| Tap loss - output 47-852 | | 4.0 | | |
| 5 - 40 MHz | dB | | | |
| 40 - 470 MHz | dB | | | |
| 470 - 750 MHz | dB | | | |
| 750 - 862 MHz | dB | | | |
| Shielding efficiency VHF/UHF | dB | | | |
| Hum modulation @ 10 A | dB | | | |
| Power pass connection 5/8 | | | | |
| Supply voltage | V | 12-24 | 65 | |
| Fuse | | Automatic | | |
| DC-throughpass | A/VAC mA | max. 100 | 2.5 A | |
| Connectors | | F-con | F-con | |
| Certification | | CE | CE | |
| Impedance | Ohm | 75 | 75 | |
| Weight | kg | | | |
| Dimensions (h x d x w) | mm | | | |
| Remarks | | Power inserter incl. 1.2m cable with jackplug | | Power inserter for cameras |

Triax power supplies



NT 50/241

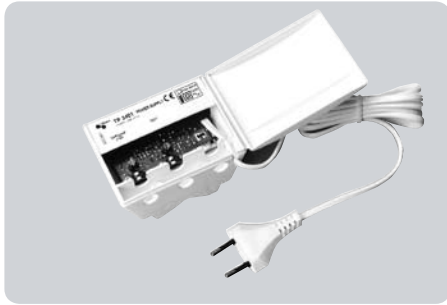


IFP 50x housing

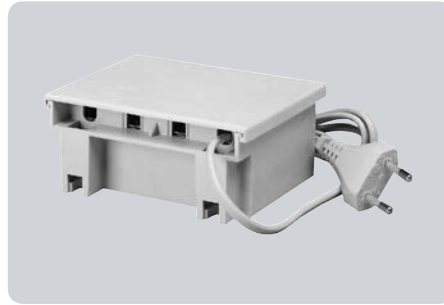
Technical data on Triax power supplies

| TYPE | | NT 50/241 | NT 130/241 | IFP 501 | IFP 502 | IFP 503 | IFP 504 | IFP 505 |
|------------------------|-------|-----------|------------|-----------|-----------|-----------|-----------|-----------|
| Art. No. | | 336150 | 336154 | 339501 | 339502 | 339503 | 339504 | 339505 |
| Band | | VHF/UHF | VHF/UHF | VHF/UHF | VHF/UHF | VHF/UHF | VHF/UHF | VHF/UHF |
| Frequency range | MHz | 47-862 | 47-862 | 47-862 | 47-862 | 47-862 | 47-862 | 47-862 |
| Inputs | pcs | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Outputs | pcs | 1 | 1 | 1 | 2 | 1 | 2 | 1 |
| Through loss | dB | 1.0 | 1.0 | 1.0 | 4.0 | 1.0 | 4.0 | 1.0 |
| Voltage | V/DC | + 24 | + 24 | + 12 | + 12 | + 24 | + 24 | + 5 |
| Max. power | mA/DC | 50 | 130 | 85 | 85 | 45 | 45 | 45 |
| Main voltage | V/AC | 230 | 230 | 230 | 230 | 230 | 230 | 230 |
| Power | W | 2 | 6 | 3 | 3 | 3 | 3 | 2 |
| Connectors | | IEC | IEC | F-con | F-con | F-con | F-con | F-con |
| Certification | | CE | CE | CE | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Dimensions (h x d x w) | mm | | | 61x44x118 | 61x44x118 | 61x44x118 | 61x44x118 | 61x44x118 |
| Remarks | | | | | | | | |

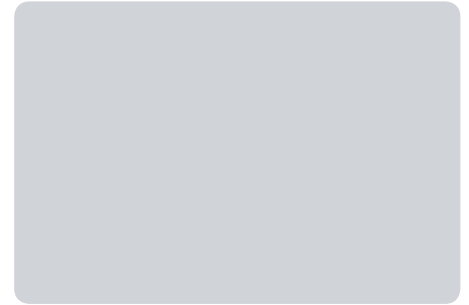
Triax power supplies



TP 3851



602/60



Technical data on Triax power supplies

| TYPE | | TP 3851 | TP 3852 | 601/60B | 602/60B |
|------------------------|-------|---------------|---------------|---------------|---------------|
| Art. No. | | 332303 | 332304 | 336106 | 336121 |
| Band | | VHF/UHF | VHF/UHF | VHF/UHF | VHF/UHF |
| Frequency range | MHz | 47-860 | 47-860 | 47-860 | 47-860 |
| Inputs | pcs | 1 | 1 | 1 | 1 |
| Outputs | pcs | 1 | 2 | 1 | 2 |
| Through loss | dB | 0.5 | 4.0 | 1.0 | 4.0 |
| Voltage | V/DC | + 12 | + 24 | + 24 | + 24 |
| Max. power | mA/DC | 85 | 85 | 60 | 60 |
| Main voltage | V/AC | 230 | 230 | 230 | 230 |
| Power | W | 2.6 | 2.6 | 4.0 | 4.0 |
| Connectors | | S&C | S&C | S&C | S&C |
| Certification | | CE | CE | CE | CE |
| Impedance | Ohm | 75 | 75 | 75 | 75 |
| Weight | kg | 0.2 | 0.2 | 0.25 | 0.25 |
| Dimensions (h x d x w) | mm | 69x55x94 | 69x55x94 | 90x48x115 | 90x48x115 |
| Remarks | | | | | |

Triax KOKA cable for indoor use

KOKA 100 is a HiQ universal coaxial cable for TV broadcast in-house cabling.

The low attenuation, the optimised shielding and the high return loss predestine the cable for use of both SAT-IF, SMATV and CATV with returnpath applications. Transfer impedance less than 5 mΩ/m 5-30 MHz.

KOKA 80 premium quality cable for SAT-IF, SMATV and CATV without returnpath applications (not recommended).



Technical data on KOKA 100 (HiQ) and 80 indoor cable

| TYPE | | KOKA 100 Double shielded | | KOKA 80 Double shielded | |
|-------------------------------------|------------------|-------------------------------|--------------|----------------------------|--------|
| Colour | | White PVC | Grey LSZH | White PVC | |
| Art. No. | Coil | 100 m | 150180 | | |
| | Reel | 100 m | 150181 | 150191 | 150161 |
| | Reel | 250 m | 150182 | | 150162 |
| | Drum | 500 m | | 150193 | |
| | Drum (1000 feet) | 305 m | | | |
| Centre conductor | Ø mm | 1.13 | | 1.02 | |
| Centre conductor material | | Cu blank | | Cu blank | |
| Isolation | Ø mm | 4.8 | | 4.8 | |
| Dielectric | | PE foamed | | PE foamed | |
| Screen | | AL/PET/ Copolymer 25/12/25 | | AL/P/AL | |
| | µm | | | 9/12/9 | |
| Braid | - material | 24x7x0.11 - CuSn | | 16x4x0.11 - CuSn | |
| | - construction | Ø mm | 5.4 | 5.4 | |
| | - coverage | % | 80.1 | > 38 | |
| Screening attenuation | dB | 105 | | 83 | |
| Anti migration foil | µm | 12 | | 12 | |
| Outer sheath | | PVC/LSZH | | PVC/LSZH | |
| Minimum bending radius | Ø mm | 35/70 | | 35/70 | |
| Diameter | Ø mm | 6.8 | | 6.8 | |
| Application | | Indoor | | Indoor | |
| Electrical data | | | | | |
| Impedance | Ohm | 75 | | 75 | |
| Capacitance | pF/m | 52 | | 52 | |
| Velocity ratio | % | 81 | | 81 | |
| Centre conductor dc resistance | Ohm/km | 17.5 | | 22.5 | |
| Outer conductor dc resistance | Ohm/km | 11.5 | | 19.8 | |
| Attenuation (at 20°C) | | | | | |
| @ 5 MHz | dB/100m | 1.4 | | 1.5 | |
| @ 50 MHz | dB/100m | 4.0 | | 4.6 | |
| @ 100 MHz | dB/100m | 5.8 | | 6.3 | |
| @ 200 MHz | dB/100m | 8.2 | | 9.0 | |
| @ 400 MHz | dB/100m | 11.7 | | 13.3 | |
| @ 800 MHz | dB/100m | 16.8 | | 18.8 | |
| @ 862 MHz | dB/100m | 17.7 | | 19.5 | |
| @ 1000 MHz | dB/100m | 19.0 | | 21.1 | |
| @ 1600 MHz | dB/100m | 24.5 | | 26.6 | |
| @ 2150 MHz | dB/100m | 29.0 | | 30.8 | |
| @ 2400 MHz | dB/100m | 30.7 | | 32.9 | |
| Structural Return Loss (SRL) | | | | | |
| @ 5-470 MHz | dB | > 35.0 | | > 33.0 | |
| @ 470-862 MHz | dB | > 28.0 | | > 26.0 | |
| @ 862-2400 MHz | dB | > 24.0 | | > 22.0 | |
| Approval | | | | | |
| EN 50117/CEI 46-1/CEI 12-15 | | Yes/Yes/Yes | | Yes/Yes/Yes | |

Triax KOKA cable for indoor use



KOKA 6/6 CCS is a low cost universal coaxial cable for TV broadcast in-house cabling

The low attenuation predestine the cable for use of SAT-IF especially and SMATV applications without any return path services as well.

Technical data on KOKA 6 and 6 CCS indoor cable

| TYPE | | KOKA 6 Double shielded | | KOKA 6 CCS Double shielded | |
|-------------------------------------|------------------|---------------------------|--------|-------------------------------|--------|
| Colour | | White PVC | | White PVC | |
| Art. No. | Coil | 100 m | 150120 | | |
| | Reel | 100 m | 150121 | | |
| | Reel | 250 m | 150122 | | |
| | Drum | 500 m | | | |
| | Drum (1000 feet) | 305 m | | | 150144 |
| Centre conductor | Ø mm | 1.02 | | 1.02 | |
| Centre conductor material | | Cu blank | | Cu clad steel | |
| Isolation | Ø mm | 4.8 | | 4.8 | |
| Dielectric | | PE foamed | | PE foamed | |
| Screen | | AL/P/AL | | TC/P/TC | |
| | µm | 9/12/9 | | 9/12/9 | |
| Braid | - material | 16x4x0.12 | | 16x4x0.12 - CuSn | |
| | - construction | Ø mm | AL 5.4 | 5.4 | |
| | - coverage | % | > 43 | > 40 | |
| Screening attenuation | dB | 85 | | 75-85 | |
| Anti migration foil | µm | 12 | | 12 | |
| Outer sheath | | PVC | | PVC | |
| Minimum bending radius | Ø mm | 35/70 | | 35/70 | |
| Diameter | Ø mm | 6.8 | | 6.8 | |
| Application | | Indoor | | Indoor | |
| Electrical data | | | | | |
| Impedance | Ohm | 75 | | 75 | |
| Capacitance | pF/m | 52 | | 52 | |
| Velocity ratio | % | 81 | | 84 | |
| Centre conductor dc resistance | Ohm/km | 22.4 | | | |
| Outer conductor dc resistance | Ohm/km | 35.5 | | | |
| Attenuation (at 20°C) | | | | | |
| @ 5 MHz | dB/100m | 1.5 | | 1.5 | |
| @ 50 MHz | dB/100m | 4.6 | | 4.6 | |
| @ 100 MHz | dB/100m | 6.3 | | | |
| @ 200 MHz | dB/100m | 9.0 | | 9.0 | |
| @ 400 MHz | dB/100m | 13.3 | | | |
| @ 800 MHz | dB/100m | 18.8 | | 18.8 | |
| @ 862 MHz | dB/100m | 19.5 | | | |
| @ 1000 MHz | dB/100m | 21.1 | | 21.1 | |
| @ 1600 MHz | dB/100m | 26.6 | | | |
| @ 2150 MHz | dB/100m | 30.8 | | 30.8 | |
| @ 2400 MHz | dB/100m | 32.9 | | 32.9 | |
| Structural Return Loss (SRL) | | | | | |
| @ 5-470 MHz | dB | > 28.0 | | > 28.0 | |
| @ 470-862 MHz | dB | > 25.0 | | > 25.0 | |
| @ 862-2400 MHz | dB | > 20.0 | | > 20.0 | |
| Approval | | | | | |
| EN 50117/CEI 46-1/CEI 12-15 | | Yes/Yes/Yes | | Yes/Yes/Yes | |

Triax QX cable for indoor use

Triax QX universal coaxial cable for TV broadcast in-house cabling

The good attenuation, shielding and return loss predestine the cable for use of both SAT-IF and SMATV applications



Technical data on QX double shielded indoor cable

| TYPE | | QX 4S Double shielded | | |
|-------------------------------------|----------------|--------------------------|-------------|--------------|
| Colour | | White PVC | Grey PVC | Black PVC |
| Art. No. | Cardboard roll | 100 m | | |
| | Cardboard roll | 200 m | 150022 | 150021 |
| | Plastic reel | 100 m | 150053 | 150054 |
| | Plastic reel | 250 m | | |
| | Plastic reel | 500 m | | |
| Centre conductor | Ø mm | 0.8 | | |
| Centre conductor material | | Cu blank | | |
| Isolation | Ø mm | 3.7 | | |
| Dielectric | | PE foamed | | |
| Screen | | AL/PET/AL | | |
| | µm | | | |
| Braid | - material | CuSn | | |
| | - construction | Ø mm | | |
| | - coverage | % | 56.0 | |
| Screening attenuation | dB | | | |
| Anti migration foil | µm | | | |
| Outer sheath | | PVC | | |
| Minimum bending radius | Ø mm | 35/70 | | |
| Diameter | Ø mm | 5.3 | | |
| Application | | Indoor | | |
| Electrical data | | | | |
| Impedance | Ohm | 75 | | |
| Capacitance | pF/m | 55 | | |
| Velocity ratio | % | 84 | | |
| Centre conductor dc resistance | Ohm/km | 38 | | |
| Outer conductor dc resistance | Ohm/km | 40 | | |
| Attenuation (at 20°C) | | | | |
| @ 5 MHz | dB/100m | 2.1 | | |
| @ 50 MHz | dB/100m | 6.0 | | |
| @ 200 MHz | dB/100m | 11.0 | | |
| @ 470 MHz | dB/100m | 17.5 | | |
| @ 600 MHz | dB/100m | 20.5 | | |
| @ 800 MHz | dB/100m | 23.1 | | |
| @ 1000 MHz | dB/100m | 26.2 | | |
| @ 1350 MHz | dB/100m | 31.9 | | |
| @ 1750 MHz | dB/100m | 35.8 | | |
| @ 2050 MHz | dB/100m | 38.7 | | |
| @ 2400 MHz | dB/100m | 41.9 | | |
| Structural Return Loss (SRL) | | | | |
| @ 5-470 MHz | dB | > 30.0 | | |
| @ 470-862 MHz | dB | > 25.0 | | |
| @ 862-2400 MHz | dB | > 18.0 | | |
| Approval | | | | |
| EN 50117/CEI 46-1/CEI 12-15 | | Yes/Yes/Yes | | |

Triax mini and multi cable for indoor use



Technical data on indoor mini cable and 18 multi 5 cable

| TYPE | | Mini cable Double shielded | | | 18 multi 5 cable Triple shielded | | |
|--------------------------------|----------------|-------------------------------|-------------|--------------|-------------------------------------|-------------|--------------|
| Colour | | White PVC | Grey PVC | Black PVC | White PVC | Grey PVC | Black PVC |
| Art. No. | Cardboard roll | 150000 | | | 150075 | | |
| | Cardboard roll | | | | on wood reel | | |
| | Plastic reel | | | | | | |
| | Plastic reel | | | | | | |
| | Plastic reel | | | | | | |
| Centre conductor | Ø mm | 0.41 | | | 1.02 | | |
| Centre conductor material | | Cu blank | | | Cu blank | | |
| Isolation | Ø mm | 1.9 | | | 4.8 | | |
| Dielectric | | PE foamed | | | PE foamed | | |
| Screen | | AL/PET | | | AL/PET/AL | | |
| | µm | | | | | | |
| Braid - material | | CuSn | | | CuSn | | |
| - construction | Ø mm | | | | | | |
| - coverage | % | 58.0 | | | 40 | | |
| Screening attenuation | dB | | | | | | |
| Anti migration foil | µm | | | | | | |
| Outer sheath | | PVC | | | PVC | | |
| Minimum bending radius | Ø mm | 20 | | | 100 | | |
| Diameter | Ø mm | 3.6 | | | 20.5 | | |
| Application | | Indoor | | | Indoor | | |
| Electrical data | | | | | | | |
| Impedance | Ohm | 75 | | | 75 | | |
| Capacitance | pF/m | 56 | | | 52 | | |
| Velocity ratio | % | 82 | | | 84 | | |
| Centre conductor dc resistance | Ohm/km | 32 | | | 22 | | |
| Outer conductor dc resistance | Ohm/km | 32 | | | 26 | | |
| Attenuation (at 20°C) | | | | | | | |
| @ 5 MHz | dB/100m | 1.5 | | | 1.5 | | |
| @ 50 MHz | dB/100m | 11.0 | | | 4.6 | | |
| @ 200 MHz | dB/100m | 21.0 | | | 9.0 | | |
| @ 470 MHz | dB/100m | 33.9 | | | 14.4 | | |
| @ 600 MHz | dB/100m | 37.1 | | | 16.3 | | |
| @ 800 MHz | dB/100m | 44.0 | | | 18.8 | | |
| @ 1000 MHz | dB/100m | 49.9 | | | 21.1 | | |
| @ 1350 MHz | dB/100m | 58.0 | | | 24.6 | | |
| @ 1750 MHz | dB/100m | 66.0 | | | 28.0 | | |
| @ 2050 MHz | dB/100m | 80.5 | | | 30.3 | | |
| @ 2400 MHz | dB/100m | 87.1 | | | 32.9 | | |
| Structural Return Loss (SRL) | | | | | | | |
| @ 5-470 MHz | dB | > 20.0 | | | > 30.0 | | |
| @ 470-862 MHz | dB | > 18.0 | | | > 25.0 | | |
| @ 862-2400 MHz | dB | > 16.0 | | | > 20.0 | | |
| Approval | | | | | | | |
| EN 50117/CEI 46-1/CEI 12-15 | | Yes/Yes/Yes | | | Yes/Yes/Yes | | |

Triax KOKA cable for outdoor use

KOKA 100 is a HiQ universal coaxial cable for TV broadcast in-house.

The low attenuation, the optimised shielding and the high return loss predestine the cable for use of both SAT-IF, SMATV and CATV with returnpath applications. Transfer impedance less than 5 mΩ/m 5-30 MHz



Technical data on KOKA 100 (HiQ), 80 and 6 CCS outdoor cable

| TYPE | | KOKA 100 Double shielded | | KOKA 80 Double shielded | | KOKA 6 CCS Double shielded | |
|--------------------------------|------------------|-----------------------------|--------|----------------------------|--|-------------------------------|--------|
| Colour | | Black PE | | Black PE | | Black PE | |
| Art. No. | Coil | 100 m | | | | | |
| | Reel | 100 m | 150186 | 150166 | | | |
| | Reel | 250 m | 150187 | 150167 | | | |
| | Drum | 500 m | | | | | |
| | Drum (1000 feet) | 305 m | | | | | 150149 |
| Centre conductor | Ø mm | 1.13 | | 1.02 | | 1.02 | |
| Centre conductor material | | Cu blank | | Cu blank | | Cu clad steel | |
| Isolation | Ø mm | 4.8 | | 4.8 | | 4.8 | |
| Dielectric | | PE foamed | | PE foamed | | PE foamed | |
| Screen | | AL/PET/ Copolymer | | AL/P/AL | | TC/P/TC | |
| | µm | 25/12/25 | | 9/12/9 | | 9/12/9 | |
| Braid | - material | 24x7x0.11 - | | 16x4x0.11 - | | 16x4x0.12 | |
| | - construction | CuSn 5.4 | | CuSn 5.4 | | AL 5.4 | |
| | - coverage | Ø mm | 80.1 | > 38 | | > 40 | |
| Screening attenuation | dB | 90-105 | | 75-90 | | 75-90 | |
| Anti migration foil | µm | 12 | | 12 | | 12 | |
| Outer sheath | | PE | | PE | | PE | |
| Minimum bending radius | Ø mm | 35/70 | | 35/70 | | 35/70 | |
| Diameter | Ø mm | 6.8 | | 6.8 | | 6.8 | |
| Application | | Outdoor | | Outdoor | | Outdoor | |
| Electrical data | | | | | | | |
| Impedance | Ohm | 75 | | 75 | | 75 | |
| Capacitance | pF/m | 52 | | 52 | | 52 | |
| Velocity ratio | % | 84 | | 84 | | 84 | |
| Centre conductor dc resistance | Ohm/km | 17.5 | | | | | |
| Outer conductor dc resistance | Ohm/km | 11.5 | | | | | |
| Attenuation (at 20°C) | | | | | | | |
| @ 5 MHz | dB/100m | 1.4 | | 1.5 | | 1.5 | |
| @ 50 MHz | dB/100m | 4.0 | | 4.6 | | 4.6 | |
| @ 100 MHz | dB/100m | 5.8 | | | | | |
| @ 200 MHz | dB/100m | 8.2 | | 9.0 | | 9.0 | |
| @ 400 MHz | dB/100m | 11.7 | | | | | |
| @ 800 MHz | dB/100m | 16.8 | | 18.8 | | 18.8 | |
| @ 862 MHz | dB/100m | 17.7 | | | | | |
| @ 1000 MHz | dB/100m | 19.0 | | 21.1 | | 21.1 | |
| @ 1600 MHz | dB/100m | 24.5 | | | | | |
| @ 2150 MHz | dB/100m | 29.0 | | 30.8 | | 30.8 | |
| @ 2400 MHz | dB/100m | 30.7 | | 32.8 | | 32.8 | |
| Structural Return Loss (SRL) | | | | | | | |
| @ 5-470 MHz | dB | > 35.0 | | > 33.0 | | > 28.0 | |
| @ 470-862 MHz | dB | > 28.0 | | > 26.0 | | > 25.0 | |
| @ 862-2400 MHz | dB | > 24.0 | | > 22.0 | | > 20.0 | |
| Approval | | | | | | | |
| EN 50117/CEI 46-1/CEI 12-15 | | Yes/Yes/Yes | | Yes/Yes/Yes | | Yes/Yes/Yes | |
| Burial | | Yes | | | | | |

Triax RG 11/Bedea cable for outdoor use



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

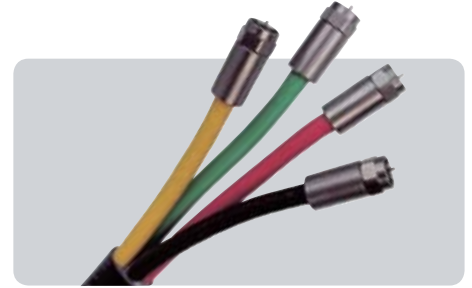
Technical data on RG 11 and Bedea 110 double shielded outdoor cable

| TYPE | | RG 11 Double shielded | | Bedea 110 KU (1.1/7.3) Double shielded | |
|--------------------------------|----------------|--------------------------|--------------|---|--------|
| Colour | | Black PE | White LZW | Black PE | |
| Art. No. | Cardboard roll | 100 m | | | |
| | Cardboard roll | 200 m | | | |
| | Plastic reel | 100 m | Wood | | 150030 |
| | Plastic reel | 250 m | drum | 150098 | |
| | Plastic reel | 500 m | 150062 | 150099 | 150031 |
| Centre conductor | Ø mm | 1.7 | | 1.1 | |
| Centre conductor material | | Cu blank | | Cu blank | |
| Isolation | Ø mm | 7.2 | | 4.9 | |
| Dielectric | | PE foamed | | PE foamed | |
| Screen | | Al/PET/Al | | Cu foil | |
| | µm | | | | |
| Braid | - material | CuSn | | Cu | |
| | - construction | Ø mm | | | |
| | - coverage | % | 56.0 | | |
| Screening attenuation | dB | | | | |
| Anti migration foil | µm | | | | |
| Outer sheath | | PE | | PE | |
| Minimum bending radius | Ø mm | 100/120 | | 70 | |
| Diameter | Ø mm | 10.25 | | 7.3 | |
| Application | | Outdoor | | Outdoor | |
| Electrical data | | | | | |
| Impedance | Ohm | 75 | | 75 | |
| Capacitance | pF/m | 53 | | 55 | |
| Velocity ratio | % | 84 | | 81 | |
| Centre conductor dc resistance | Ohm/km | 7.8 | | 18 | |
| Outer conductor dc resistance | Ohm/km | 9.7 | | 11 | |
| Attenuation (at 20°C) | | | | | |
| @ 5 MHz | dB/100m | 0.8 | | 1.3 | |
| @ 50 MHz | dB/100m | 2.6 | | 4.1 | |
| @ 200 MHz | dB/100m | 5.5 | | 8.2 | |
| @ 470 MHz | dB/100m | 8.9 | | 13.9 | |
| @ 600 MHz | dB/100m | 10.0 | | 15.7 | |
| @ 800 MHz | dB/100m | 11.4 | | 18.1 | |
| @ 1000 MHz | dB/100m | 13.5 | | 20.2 | |
| @ 1350 MHz | dB/100m | 15.6 | | 24.9 | |
| @ 1750 MHz | dB/100m | 18.6 | | 28.4 | |
| @ 2050 MHz | dB/100m | 20.5 | | 30.7 | |
| @ 2400 MHz | dB/100m | 22.7 | | 33.2 | |
| Structural Return Loss (SRL) | | | | | |
| @ 5-470 MHz | dB | > 30.0 | | > 30.0 | |
| @ 470-862 MHz | dB | > 25.0 | | > 25.0 | |
| @ 862-2400 MHz | dB | > 20.0 | | > 20.0 | |
| Approval | | | | | |
| EN 50117/CEI 46-1/CEI 12-15 | | Yes/Yes/Yes | | Yes/Yes/Yes | |
| Burial | | Yes (black) | | Yes | |

Triax multi cable for outdoor use

Multi cables for networks

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



Technical data on triple shielded outdoor multi cable

| TYPE | | 18 multi 4 cable Triple shielded | | 18 multi 9 cable Triple shielded | |
|--------------------------------|----------------|-------------------------------------|--------|-------------------------------------|--------|
| Colour | | Black PE | | White PVC | |
| Art. No. | Wood drum | 50 m | | | 150078 |
| | Wood drum | 100 m | 150074 | | 150079 |
| | Wood drum | 250 m | | | |
| | Wood drum | 500 m | | | |
| Centre conductor | Ø mm | 1.02 | | 1.02 | |
| Centre conductor material | | Cu blank | | Cu blank | |
| Isolation | Ø mm | 4.6 | | 4.6 | |
| Dielectric | | PE foamed | | PE foamed | |
| Screen | | Al/PET/Al | | Al/PET/Al | |
| | µm | | | | |
| Braid | - material | CuSn | | CuSn | |
| | - construction | Ø mm | | Ø mm | |
| | - coverage | % | 40.0 | % | 40.0 |
| Screening attenuation | dB | | | | |
| Anti migration foil | µm | | | | |
| Outer sheath | | PE | | PE | |
| Minimum bending radius | Ø mm | 100 | | 100 | |
| Diameter | Ø mm | 19.0 | | 25.0 | |
| Application | | Outdoor | | Outdoor | |
| Electrical data | | | | | |
| Impedance | Ohm | 75 | | 75 | |
| Capacitance | pF/m | 52 | | 52 | |
| Velocity ratio | % | 84 | | 84 | |
| Centre conductor dc resistance | Ohm/km | 22 | | 22 | |
| Outer conductor dc resistance | Ohm/km | 26 | | 26 | |
| Attenuation (at 20°C) | | | | | |
| @ 5 MHz | dB/100m | 1.5 | | 1.5 | |
| @ 50 MHz | dB/100m | 4.6 | | 4.6 | |
| @ 200 MHz | dB/100m | 9.0 | | 9.0 | |
| @ 470 MHz | dB/100m | 14.4 | | 14.4 | |
| @ 600 MHz | dB/100m | 16.3 | | 16.3 | |
| @ 800 MHz | dB/100m | 18.8 | | 18.8 | |
| @ 1000 MHz | dB/100m | 21.1 | | 21.1 | |
| @ 1350 MHz | dB/100m | 24.6 | | 24.6 | |
| @ 1750 MHz | dB/100m | 28.0 | | 28.0 | |
| @ 2050 MHz | dB/100m | 30.3 | | 30.3 | |
| @ 2400 MHz | dB/100m | 32.9 | | 32.9 | |
| Structural Return Loss (SRL) | | | | | |
| @ 5-470 MHz | dB | > 30.0 | | > 30.0 | |
| @ 470-862 MHz | dB | > 25.0 | | > 25.0 | |
| @ 862-2400 MHz | dB | > 20.0 | | > 20.0 | |
| Approval | | | | | |
| EN 50117/CEI 46-1/CEI 12-15 | | Yes/Yes/Yes | | Yes/Yes/Yes | |

Double screen fly leads



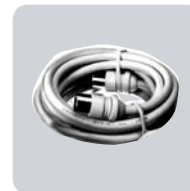
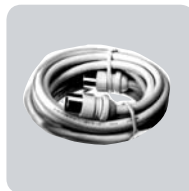
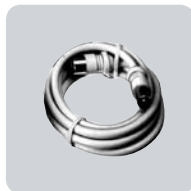
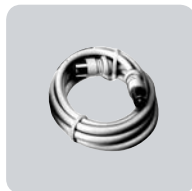
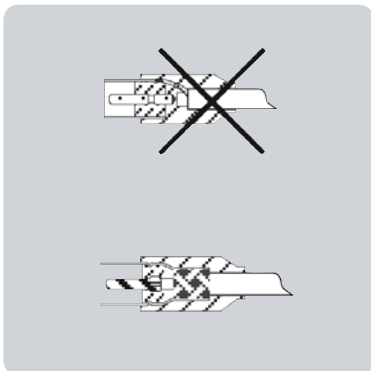
Fly leads for TV & radio

75 Ohm white double-screened cable with coax IEC male and female connectors.

The connectors are crimped to ensure screening better than 70 dB.

Technical data on quality double shielded fly leads

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



Cable stand

Art. No. 150110

Triax HDMI cable

- Professional grade HDMI cable for a perfect high definition connection.
- Sealed moulded diecast connectors.
- Gold plated contacts for quality transmission and tarnish resistance.
- EMI interference suppressed.
- Compatible with all HD resolutions.
- Ideal for connecting SkyHD boxes, DVD players and all other HDMI equipped AV equipment.



Technical data HDMI cable

| TYPE | | HDMI cable 2 m | |
|----------------------------------|----------|--------------------------|--|
| Art. No. | | 153411 | |
| Length | m | 2 | |
| Ferrite | | 2 | |
| Signal pairs | | Tinned copper | |
| - conductor | | 28 | |
| - conductor size | AWG | Foamed PE | |
| - insulation material | | White/Green | |
| - Insulation core colour | | White/Brown | |
| | | White/Blue | |
| | | White/Red | |
| | | White/Green | |
| Drain wire | | Tinned copper | |
| Drain wire size | AWG | 28 | |
| Shield | | AL/Mylar/Mylar | |
| Signal wire | | Tinned copper | |
| - conductor | | 28 | |
| - conductor size | AWG | HDPE | |
| - insulation material | | White | |
| - Insulation core colour | | Green | |
| | | Orange | |
| | | Yellow | |
| | | Red | |
| | | Purple | |
| Outer shield | | Aluminium mylar | |
| - conductor | shield 1 | Tinned copper (braiding) | |
| - conductor size | shield 2 | | |
| Outer shield | | Ø 7.3 | |
| - overall diameter | mm | PVC | |
| - material | | | |
| Electrical data | | | |
| Differential impedance | Ohm | 100 (± 10%) | |
| Max differential delay | ns/m | 5.05 | |
| Max intra - pair skew | ps | 151 | |
| Far-end crosstalk (@ 1-5000 MHz) | dB | - 26 | |
| Connector | | | |
| Pin | | 19 | |
| Metal shell | | Parl chrome plated | |
| Connector impedance | Ohm | 100 (± 15%) | |



Matching connectors and tools - for your RF cable



Reduces installation time as the connectors have no loose parts.
Designed for a very high degree of pull strength.

Suitable connector

| Type of cable | KOKA 100 | KOKA 80 | KOKA 6 |
|---------------------------------|-------------|------------|-----------|
| Crimp connector part no. | | | |
| 100 pcs. box ex. logo | 153200 | 153200 | 153200 |
| 100 pcs. box | 153201 | 153201 | 153201 |
| 100 pcs. box [EPA] | 153202 | 153202 | 153202 |
| 25 pcs. box [EPA] | | | |
| 50 pcs. box | | | |
| Compression connector | | | |
| 100 pcs. box | 153220 | 153220 | 153220 |
| 50 pcs. box | | | |
| 5 pcs. box | | | |
| 1 pcs. | | | |
| Twist-on connector | | | |
| 100 pcs. box | 153073 | 153073 | 153073 |
| 5 pcs. box | 153053 | 153053 | 153053 |
| 1 pcs. | | | |



Tools for professional cable installation

Suitable tooling

| Type of cable | KOKA 100 | KOKA 80 | KOKA 6 |
|-----------------------|-------------|------------|-----------|
| Stripping tool | | | |
| Type K - 153602 | X | X | X |
| Crimp tool | | | |
| Crimp connector | A | A | A |
| Compression connector | E | E | E |
| Twist-on connectors | | | |

F-connectors for drop cables

One-piece crimp connectors

Reduces installation time as the connectors have no loose parts.

Designed for a very high degree of pull strength

F-crimp connectors

| TYPE | | F-crimp 4.9/8.4 | F-crimp 4.9/8.4 | F-crimp 5.1/8.4 |
|----------|---------|--------------------------|--------------------|------------------------|
| Art. No. | 100 pcs | 153200 | 153201 | 153203 |
| Remarks | | Without logo for RG 6 | for RG 6 | For triple shielded |



| TYPE | | F-crimp 5.1/8.8 | F-crimp 5.3/8.4 | F-crimp 3.7/6.4 |
|----------|---------|-------------------------|--------------------|--------------------|
| Art. No. | 100 pcs | 153211 | 153240 | 153204 |
| Remarks | | for 110 KU (1.1/7.3) | for QX 5 | for QX 4 |



| TYPE | | RG11 7.6/11.7 |
|----------|------------------|------------------|
| Art. No. | 25 pcs 50 pcs | 153231 |
| Remarks | | for RG 11 |



Water resistant compression types for outdoor use:

The tight interface effectively seals the cable and prevents corrosion from damaging the RF shielding abilities. O-rings inside prevent moisture ingress through the interface part of the connector.

| TYPE | | F-compression CX3 - 4.9 | F-compression CX3 - 5.1 | F-compression CX3 - 7.5 |
|----------|---------|---|---|---|
| Art. No. | 100 pcs | 153220 | 153221 | 153222 |
| Remarks | | RG 6 cables - use together with tooling no. 153603 | RG 6 triple shielded - use together with tooling no. 153603 | RG 11 cables - use together with tooling no. 153603 |



Twist-on connectors

| TYPE | | F-con mini cable | F-con 5 mm | F-con 6.8 mm | F-con 7.2 mm |
|----------------------|------------------|---------------------|------------------|------------------|------------------|
| Art. No. | 5 pcs 100 pcs | 153049 | 153048 153072 | 153053 153073 | 153052 153074 |
| Outer cable diameter | mm | 3.6 | 5.2 | 6.8 | 7.2 |
| Remarks | | for mini cables | for QX 4 | for QX 5 | for 110 KU |



IEC crimp connectors

| TYPE | | IEC-crimp Male | IEC-crimp Female |
|----------|---------|--|--|
| Art. No. | 100 pcs | 153030 | 153031 |
| Remarks | | for RG 6 cables Crimp tooling no. 153607 | for RG 6 cables Crimp tooling no. 153607 |



F- grounding block

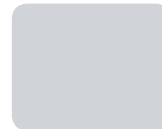
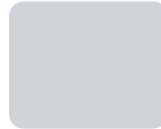
| TYPE | | F female - block | F female - HQ block |
|----------|-------|---------------------|------------------------|
| Art. No. | 1 pcs | 153597 | 153599 |



Triax adaptors

IEC coax connectors

| TYPE | | RZ 20 male White | RZ 20 female White |
|----------|-----------------|---------------------|-----------------------|
| Art. No. | 1 pcs 10 pcs | 153033 | 153038 |



IEC coax connectors (high shielded)

| TYPE | | Coax male Angle | Coax female Angle | F/IEC Male Angle | F/IEC Female Angle |
|----------|-----------------|--------------------|----------------------|---------------------|-----------------------|
| Art. No. | 1 pcs 10 pcs | 153100 | 153101 | 153550 | 153551 |



IEC adaptors

| TYPE | | IEC male to F-type male | IEC female to F-type male | F female to IEC male | F male to IEC female |
|----------|-------|----------------------------|------------------------------|-------------------------|-------------------------|
| Art. No. | 1 pcs | 153610 | 153611 | 153613 | 153614 |



F adaptors

| TYPE | | F female snap adaptor | F angle adaptor | F male - male | F female - female |
|----------|-------|--------------------------|--------------------|------------------|----------------------|
| Art. No. | 5 pcs | 153612 | 153592 | 153596 | 153593 |



F terminator

| TYPE | | F - R75 terminator | RTF 75-DC terminator |
|----------|--------|-----------------------|-------------------------|
| Art. No. | 10 pcs | 153054 | 364025 |
| Remarks | | | |



RF terminator

| TYPE | | R75 - 75Ω terminator | R1000 - 75Ω terminator |
|----------|-------|-------------------------|---------------------------|
| Art. No. | 5 pcs | 342503 | 342504 |
| Remarks | | TD-outlets | TOU-outlets |



Tools for professional cable mounting

Tools for stripping, crimping and mounting

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



Art. No. 153607

CRP 106H crimp tool

- is for .324" (8.2 mm) and .360" (9.2 mm) one-piece F-connectors and EPA typically used with RG 6 and QX 5 cables



Art. No. 153609

CRP 106F crimp tool

- is for .324" (8.2 mm) and .475" (11.9 mm) one-piece F-connectors typically used with RG 11 cables



Art. No. 153605

Crimp tool universal

- is for two-piece F-connectors.



Art. No. 153603

Compression tool universal RG 6/RG 11

is used for compression type F-connectors for outdoor use and ensures waTEResistant connections.



Art. No. 153602

Stripping tools:

With rotary cable strippers, preparation of cable is reduced to a single operation resulting in precise stripping in the dimensions matching exactly with the connector.

The non-expensive stripping tools are pre-adjusted for RG 6 and RG 11 cables respectively.



Art. No. 153601



Art. No. 153633

Mounting tool for F-connectors:

The plastic handle gives you a good grip of the connector and is more convenient to work with than the metal types of mounting tools.

Especially for one-piece and compression type of F-connectors.



Art. No. 153634

Cable support tool:

While mounting the connector this unique rubber tool gives you a good grip of the cable, and with no risk of damaging the cable.

Support cables with dimensions 3-12 mm.



Art. No. 360919

Pocket crimp tool universal

- is for two-piece F-connectors.

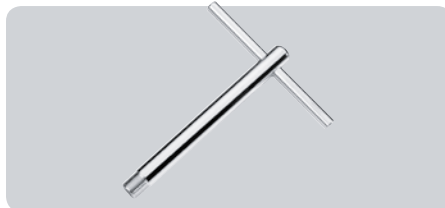


Art. No. 153632

Torque wrench spanner:

The spanner ensures a proper installation in accordance with SCTE standards, minimizing the risk of heavy screening leakage.

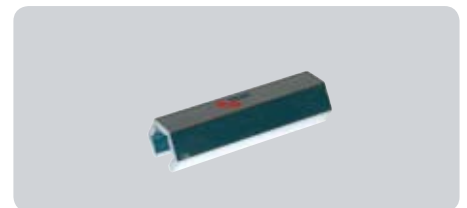
When using F- connectors outdoors SCTE recommends a torque of 3,4 - 5,6 Nm.



Art. No. 153606

Mounting T-tool:

With female thread. Efficient for two-piece and twist-on types of F-connectors.



Art. No. 153608

TRIAX F-key:

Indispensable to anyone working with F-connectors

Triax isolator (DC blocker) and couplings

Ground isolator (DC blocker)

| TYPE | | Ground Isolator - SAT | Ground Isolator - RF |
|------------------------------|-------|-----------------------|----------------------|
| Art. No. | 1 pcs | 153571 | 153572 |
| Insertion loss 5-470 MHz | dB | 1.0 | 1.0 |
| Insertion loss 470-1000 MHz | dB | 1.5 | 1.5 |
| Insertion loss 1000-1750 MHz | dB | 2.5 | |
| Insertion loss 1750-2400 MHz | dB | 3.5 | |



IEC coax gather

| TYPE | | Coax coupling Grey | Coax coupling White |
|----------|-------|--------------------|---------------------|
| Art. No. | 1 pcs | 153051 | 153055 |



Cable-Con cable assembly kit

| TYPE | | CC-SP 01 cable assembly kit | CC-SP 02 cable assembly kit | CC-SP 04 cable assembly kit |
|----------------|-------|---|---|---|
| Art. No. | 1 pcs | 153540 | 153542 | 153544 |
| Cable diameter | mm | 7 | 10 | 15 |
| Remarks | | Complete set with coupling and crimp flex | Complete set with coupling and crimp flex | Complete set with coupling and crimp flex |



Cable assembly kit

| TYPE | | Triatan 18-05 cable assembly kit | Triatan 18-10 cable assembly kit |
|----------------|-------|---|---|
| Art. No. | 1 pcs | 590205 | 153542 |
| Cable diameter | mm | 7 | 10 |
| Remarks | | Complete kit for coupling with mould and form | Complete kit for coupling with mould and form |



Power cable and electricity articles

Loudspeaker and power cable

| TYPE | | 2 x 0.5 □ grey loudspeaker cable | 2 x 0.5 □ white loudspeaker cable | 2 x 0.75 □ grey PKLF power cable | 2 x 0.75 □ white PKLF power cable | |
|----------|--------------|--|---|--|---|--------------|
| Art. No. | Plastic drum | 100 m | 152015 | 152010 | 152003 | 152004 |
| Remarks | | with marking | with marking | with marking | with marking | with marking |



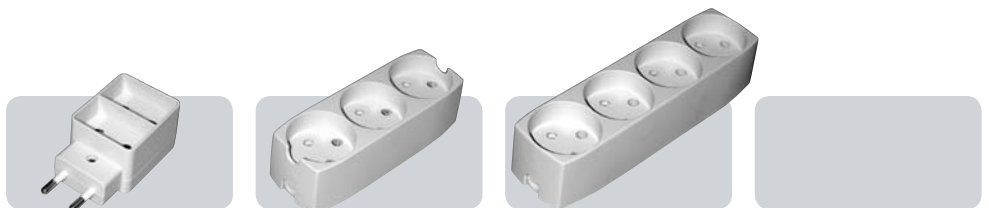
Power plug

| TYPE | | Male power plug Type 12 - grey | Female power plug Type 22 - grey | Power coupling C4012 (12 pcs.) |
|----------|-------|-----------------------------------|-------------------------------------|-----------------------------------|
| Art. No. | 1 pcs | 153300 | 153310 | 153616 |
| Remarks | | with pull relief | with pull relief | |



Power outlet point

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



Triax outlets

| | |
|---|---------|
| Antenna systems >> Outlets | |
| TRIAX series | |
| - standard, satellite, multimedia | 214-224 |
| GAD series | 225 |
| TOU series | |
| - standard, satellite, multimedia | 226-228 |
| FUGA series | |
| - standard, satellite, multimedia | 229-231 |
| - special TD-outlets | 232 |
| OPUS series | |
| - standard, satellite, multimedia | 233 |
| TOU (UK) series | |
| - diplexed, triplexed, quad, DDU | 234 |
| Accessories | |
| TRIAX covers, frames, terminators | 235 |
| TOU covers, frames, terminators | 236 |
| FUGA covers, frames, terminators | 237 |

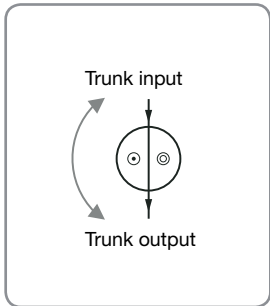


Triax outlets

Attenuation in outlets

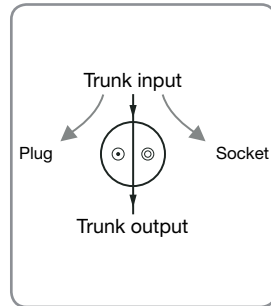
Throughpass attenuation

Attenuation between trunk input and trunk output



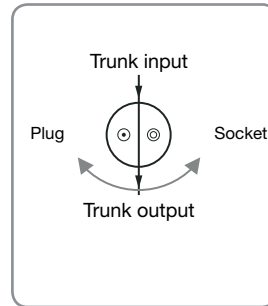
Connection attenuation

Attenuation between trunk input and plug or socket output



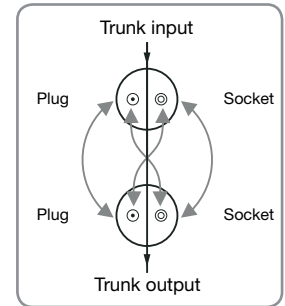
Internal coupling attenuation

Attenuation between plug input and socket output



EN coupling attenuation

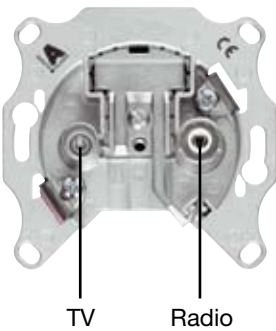
(2 outlet method)
Attenuation between the outputs of two antenna sockets



Socket types

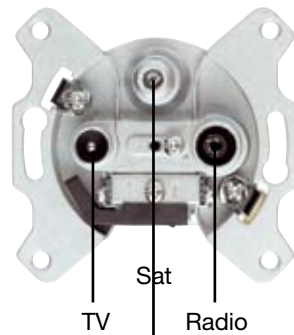
Double antenna outlet sockets

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



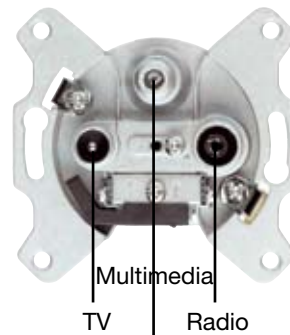
Triple antenna outlet sockets - sat

For individual satellite and SMATV installations.



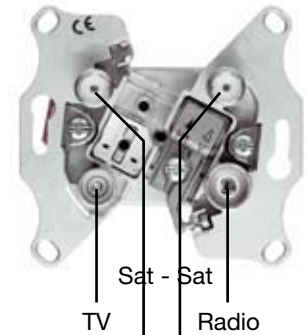
Triple antenna outlet sockets - multimedia

For individual multimedia and SMATV installations.

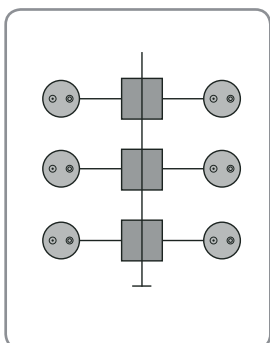


Quadro antenna outlet sockets

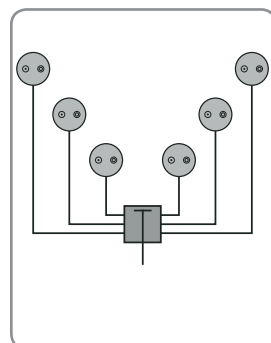
For use in some multiswitch installations (star or tree structure)



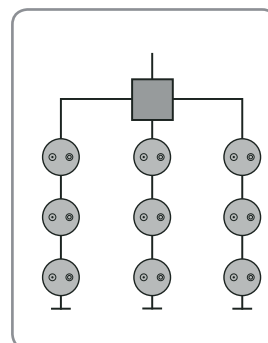
Network structures



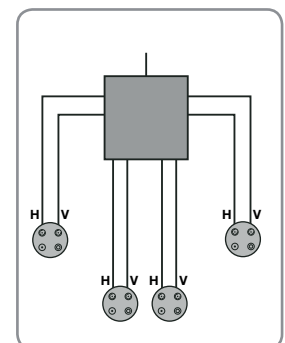
Floor star



Star network



Tree network



Tree and star network

The advantages of the new antenna outlet sockets generation:

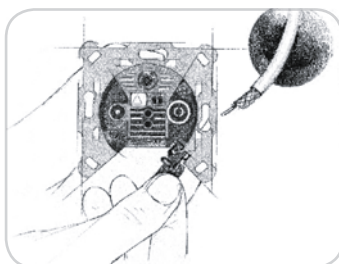
- **Third keyhole** – Improved fixing in hollow-wall flush-mounted socket box.
- **New retaining ring geometry** – Universal for renowned ranges of switches. For easy aligning and improved mold closure.
- **Reduced depth and diameter** – Easy to insert into flush-mounted socket box.
- **Push-lock terminal** – 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 center** – Facilitates the connection of short cable ends when socket boxes are replaced.

CE KLASSE CLASS

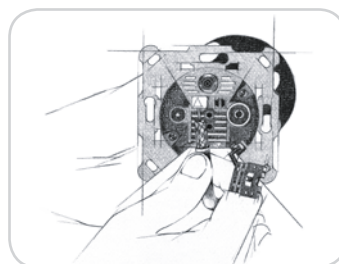
Range overview – the new socket inserts for size-55 flush-mounting

| Type | Universal | | Sat | | | CATV/MATV | | |
|----------------------------|---|---|--|---|--|---|---|------------------------------|
| Connectors | | | | | | | | |
| 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 | | | | | | | | |
| Terminal equipment | Tv-set FM radio DVB-C/-T receiver | Sat receiver Tv-set FM radio DVB-C/-T receiver | Sat receiver DVB-T receiver Tv-set | Twin sat receiver DVB-T receiver Tv-set | Sat receiver DVB-T receiver Tv-set | Tv-set FM radio Cable modem DVB-C receiver | Tv-set FM radio Cable modem DVB-C receiver | Tv-set FM radio |

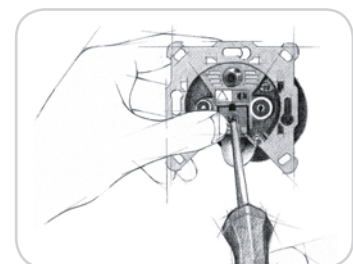
Mounting in detail



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



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

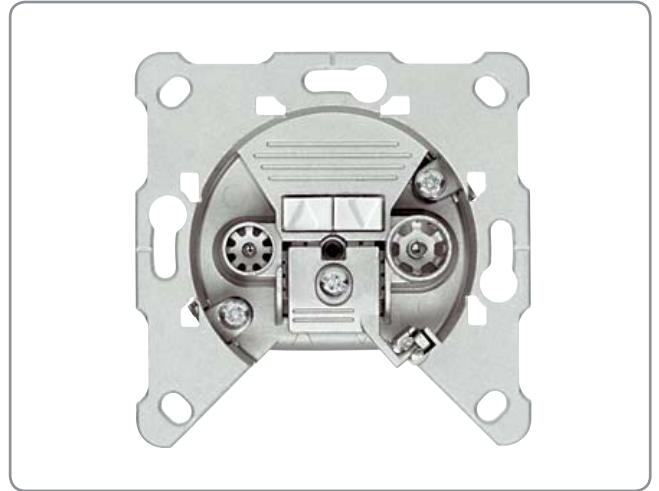


Close
Close the hinged clamp and screw it tight. Insert the socket body, align it using the straight edges and anchor it by tightening the claw screws. PZ 1 screws for cordless screwdriver.

Universal antenna outlets

2-outlet super wide-band sockets

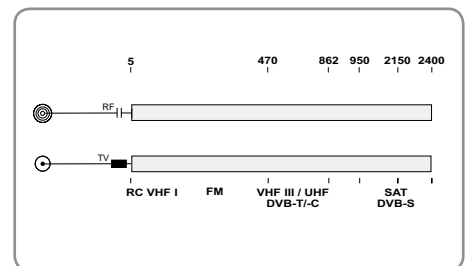
- Designed for CATV (cable TV) and Sat IF distribution.
- Manifold connection alternatives for the terminal equipment.
- Continuous CATV frequency ranges with reverse channel capability.
- Advantage: Flexible in application and storage.



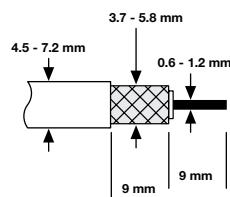
Technical data

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

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



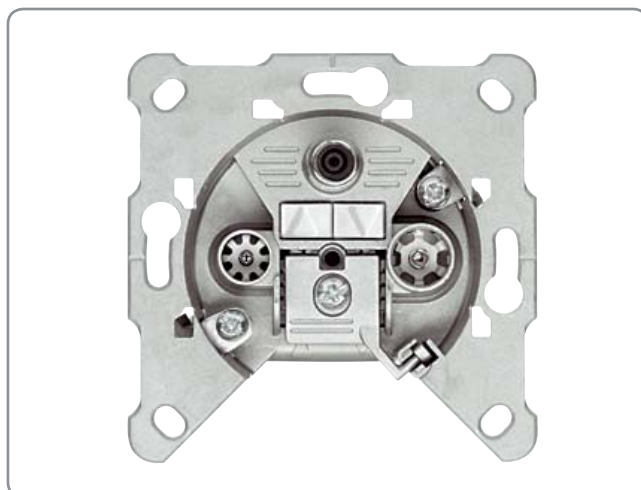
Recommended cable dimensions



Universal antenna outlets

3-outlet SAT/CATV combination sockets

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



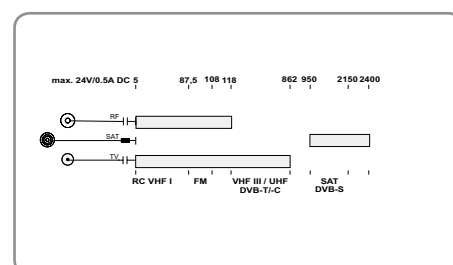
Technical data

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

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

*Note:

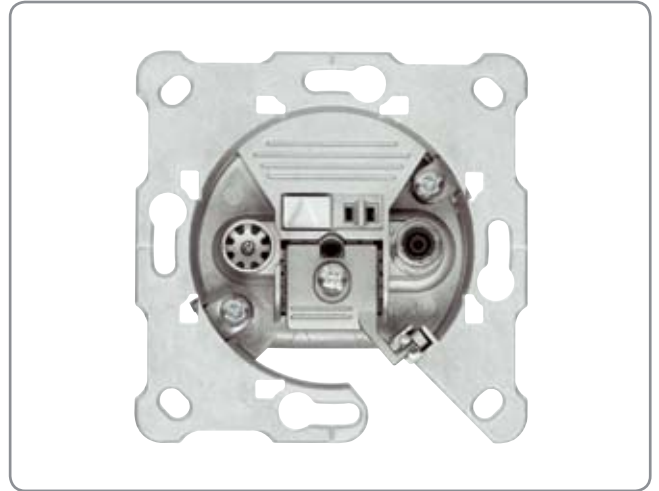
Only one sat receiver can be operated actively at the socket box chain in case of a cascade of pass-through sockets in multi-switch operation.



SAT antenna outlets

2-outlet SAT filter sockets

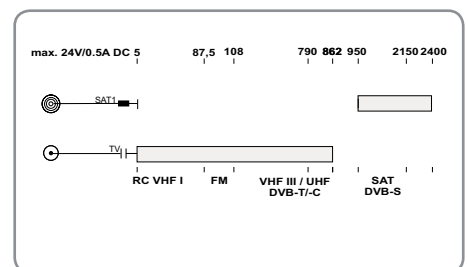
- Special SAT antenna outlets for sat IF distribution networks (multi-switch systems or single-cable solution) as well as single satellite systems.
- F connector for SAT IF range. Additional connection of terrestrial receiving devices such as DVB-T receiver possible via IEC connectors.
- Selective splitting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



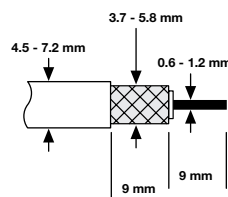
Technical data

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

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



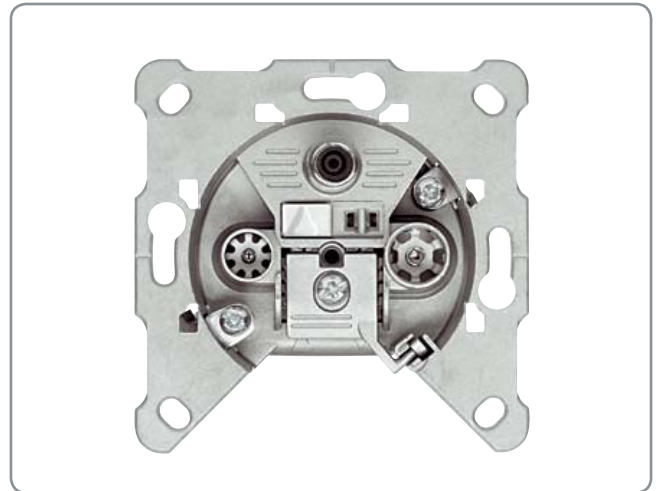
Recommended cable dimensions



SAT antenna outlets

3-outlet SAT filter sockets

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



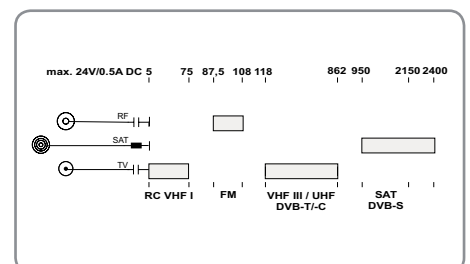
Technical data

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

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

***Note:**

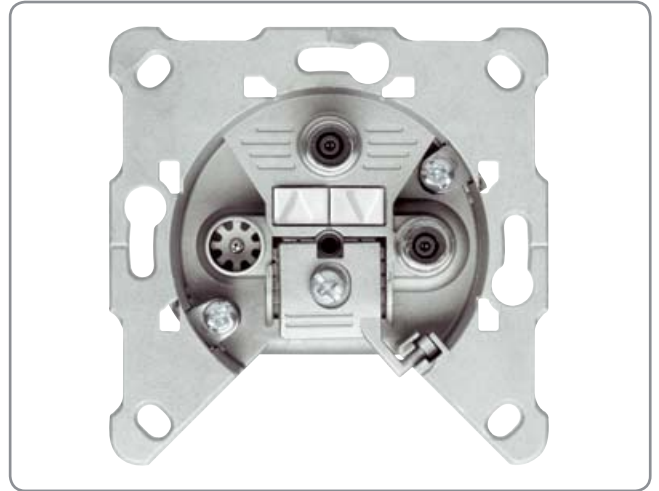
Only one sat receiver can be operated actively at the socket box chain in case of a cascade of pass-through-sockets in multi-switch operation.



SAT antenna outlets

3-outlet TWIN SAT sockets

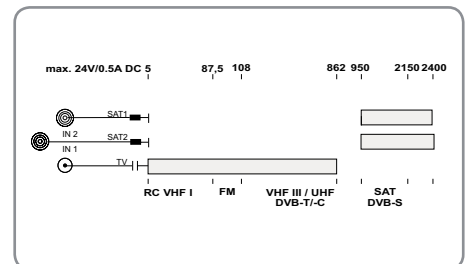
- Special sat antenna outlets for sat IF distribution networks (multi-switch systems or single-cable solution) as well as single satellite systems.
- F connector for sat IF range. Additional connection of terrestrial receiving devices such as DVB-T receiver possible via IEC connectors.
- Selective splitting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



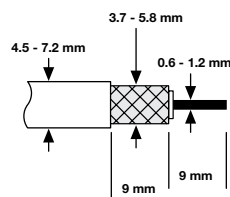
Technical data

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

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



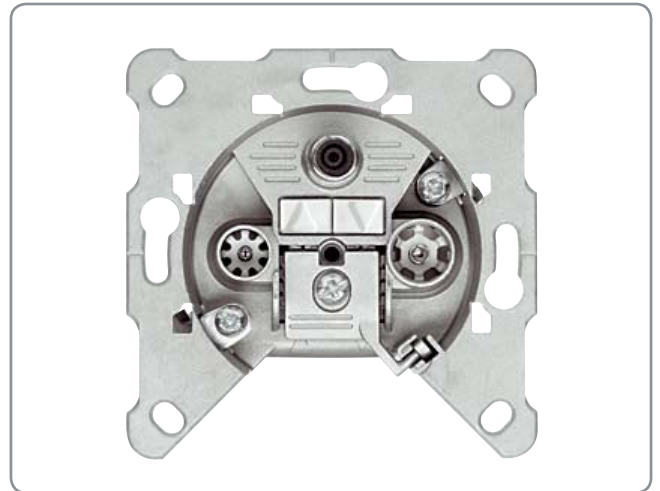
Recommended cable dimensions



CATV antenna outlets

3-outlet modem sockets

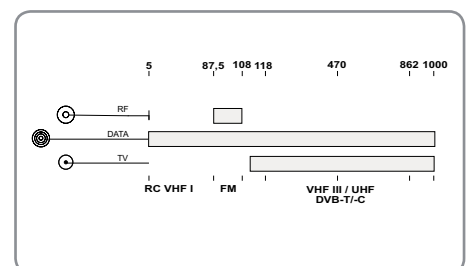
- Special antenna outlet sockets for connecting to cable TV networks (CATV) or common antenna networks (MATV/SMATV) up to 1 GHz.
- Special outlets designs for different electrical requirements (further special antenna outlets on request).
- Advantage: Optimal electrical characteristics for the respective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



Technical data

| Type | | EDM 304 | GDM 310 | GDM 315 |
|----------------------|------------------------|---------------|---------------------|-------------|
| Art. No. | | 306171 | 306271 | 306272 |
| Design | | Single socket | Pass-through-socket | |
| Attenuation | Frequency range | | | |
| IN - OUT | 5 - 1000 MHz | - | 2.5 dB | 1.6 dB |
| IN - TV (IEC male) | (111) 118 - 1000 MHz | (6.0) 4.3 dB | (13) 11 dB | (17) 15 dB |
| IN - RF (IEC female) | 87 - 108 MHz | 6.0 dB | 14 dB | 18 dB |
| IN - DATA (F female) | 5 - 1000 MHz | 3.5 dB | 10 dB | 15 dB |
| Isolation | | | | |
| OUT - TV/RF | 5 - 65 MHz/VHF/UHF | - | 65/34/30 dB | 65/34/30 dB |
| OUT - DATA | 5 - 65 MHz/VHF/UHF | - | 32/38/34 dB | 35/35/35 dB |
| DATA - TV/RF | 5 - 65 MHz/VHF/UHF | 70/30/30 dB | 70/40/36 dB | 70/40/38 dB |

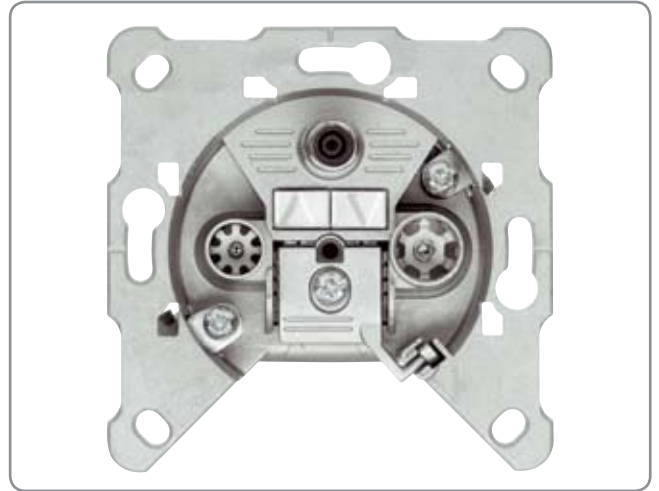
- For interactive multimedia CATV networks with cable modem operation
- Reverse channel range (F female) is decoupled by approx. 70 dB against TV outlet in order to avoid incorrect images during cable modem operation



CATV antenna outlets

3-outlet modem sockets (with FM)

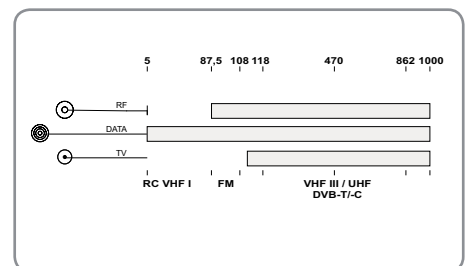
- Special antenna outlet sockets for connecting to cable TV networks (CATV) or common antenna networks (MATV/SMATV) up to 1 GHz.
- Special outlets designs for different electrical requirements (further special antenna outlets on request).
- Advantage: Optimal electrical characteristics for the respective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



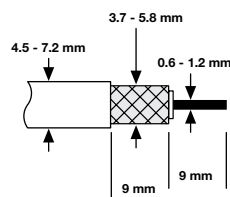
Technical data

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

- > 4 MHz min. 30 dB, -1.5 dB/octave acc. EN 50083-4, 40-230 MHz min. 30 dB acc. EN 50083-7
- For interactive multimedia CATV networks with cable modem operation
- Reverse channel range (F female) is decoupled by approx. 70 dB against TV outlet in order to avoid incorrect images during cable modem operation



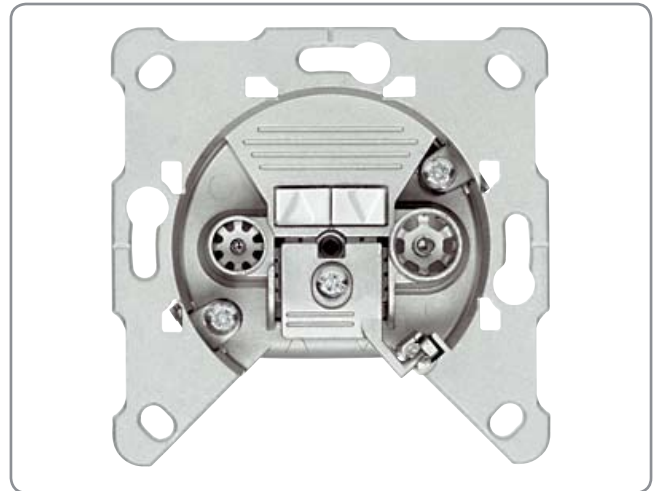
Recommended cable dimensions



CATV antenna outlets

2-outlet MATV filter sockets

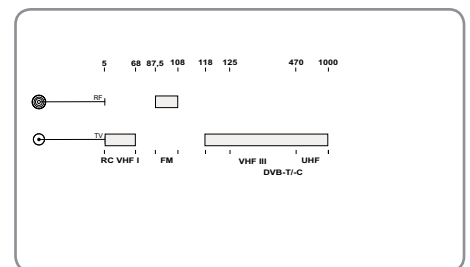
- Special antenna outlet sockets for connecting to cable TV networks (CATV) or common antenna networks (MATV/SMATV) up to 1 GHz.
- Special outlets designs for different electrical requirements (further special antenna outlets on request).
- Advantage: Optimal electrical characteristics for the respective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



Technical data

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

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



CATV antenna outlets

2-outlet CATV special socket with electrical isolation

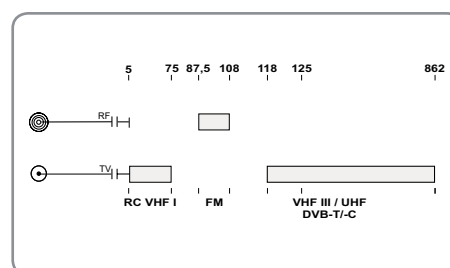
- For interactive multimedia CATV networks with cable modem operation
- Reverse channel range (F female) is decoupled by approx. 70 dB against TV outlet in order to avoid incorrect images during cable modem operation



Technical data

| Type | | EDC 01 NL | EDC 1000 |
|----------------------|------------------------|----------------------------|---------------|
| Art. No. | | 306181 | 306182 |
| Design | | Single socket | Single socket |
| Attenuation | Frequency range | | |
| IN - TV (IEC male) | 5 - 75/118 - 862 MHz | 1.8 / 0.8 dB | 0.5 / 0.5 dB |
| IN - RF (IEC female) | 87,5 - 108 MHz | 1.8 dB | 1.2 dB |
| Isolation | | | |
| TV - RF | 5 - 862 MHz | 12 - 30 dB | 24/18/30 dB |
| DC circuit | Inner conductor TV/RF | capacitive isolated (2 kV) | |

- For CATV networks in the Netherlands and Belgium.



Triax GAD series of tv/radio outlets

3/4 outlet filter socket for wall mounting

GAD 269 - 3 outlet socket

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

GAD 274 - 4 outlet socket

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



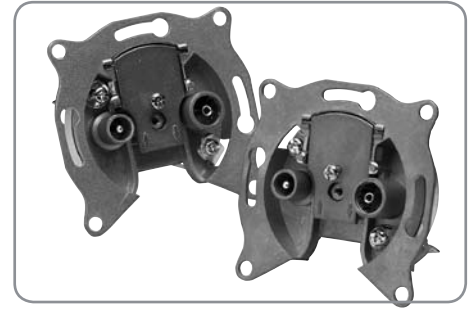
Technical data GAD outlets

| TYPE Art. No. - excl. cover and frame | 1 pcs | GAD 269 terminated 023269 | GAD 274 terminated 023274 |
|---|-------|---------------------------------|---------------------------------|
| Outputs | | TV-radio/DAB SAT | TV-radio/DAB 2 x SAT |
| Frequency range | | | |
| TV | MHz | 47-68/125-450 | 47-68/125-450 |
| Radio | MHz | 87.5 - 108 | 87.5 - 108 |
| DAB | MHz | 111-125 | 111-125 |
| SAT | MHz | 950-2150 | 950-2150 |
| Tap loss | | | |
| TV | dB | 2.5/1.8-3.0 | 2.0/1.5 |
| Radio | dB | 1.8 | 1.5 |
| DAB | dB | 1.8 | 1.5 |
| SAT | dB | 3.0 | 2.0 |
| Connectors | | | |
| TV | | IEC-male | IEC-male |
| Radio | | IEC-female | IEC-female |
| SAT | | F-female | F-female |
| Impedance | Ohm | 75 | 75 |
| Weight | kg | | |
| Dimensions (mechanical) | mm | Ø60 | Ø60 |
| Remarks | | - excl. cover and frame | |

Triax TOU tv/radio outlets

Triax TOU standard tv/radio high-quality outlets

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



TOU tv/radio outlet housing

Technical data 5-862 MHz standard outlets

| TYPE | | | TOU - 1DC terminated | TOU - 1 terminated | TOU - 1FI terminated | TOU - 1FB terminated | TOU - 4 loop through | |
|--------------------------|------------|----|---|-----------------------|-------------------------|-------------------------|-------------------------|--|
| Art. No. | | | | | | | | |
| - incl. cover and frame | 1 pcs | | | | | | | |
| - excl. cover and frame | 1 pcs | | 303620 | 303621 | 303619 | 303664 | 303624 | |
| Outputs | | | TV - Radio | TV - Radio | TV - Radio | TV - Radio | TV - Radio | |
| Frequency range | | | | | | | | |
| TV | MHz | | 5 - 74/120 - 862 | 5 - 74/120 - 862 | 5 - 74/120 - 2150 | 5 - 74/120 - 2150 | 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 | |
| Radio | dB | | | | | | 4.0 | |
| Tap loss | | | | | | | | |
| TV | dB | | 1.5 | 1.5 | 2.0 | 2.0 | 4.5 | |
| Radio | dB | | 2.0 | 2.0 | 2.5 | 2.5 | 5.5 | |
| Isolation | | | | | | | | |
| TV-radio | dB | | >10.0 | >10.0 | >15.0 | >15.0 | > 10.0 | |
| Out-TV | dB | | | | | | > 15.0 | |
| Out-Radio | dB | | | | | | > 20.0 | |
| Return loss *) | | | | | | | | |
| TV | EN 50083-4 | dB | Cat. C | Cat. C | Cat. C | Cat. C | Cat. C | |
| Radio | EN 50083-4 | dB | Cat. D | Cat. D | Cat. D | Cat. D | Cat. D | |
| Shielding factor | | | | | | | | |
| VHF | dB | | > 85.0 | > 85.0 | > 85.0 | > 85.0 | > 85.0 | |
| UHF | dB | | > 75.0 | > 75.0 | > 75.0 | > 75.0 | > 75.0 | |
| Connectors | | | | | | | | |
| TV | | | IEC-male | IEC-male | IEC-male | IEC-male | IEC-male | |
| Radio | | | IEC-female | IEC-female | IEC-female | IEC-female | IEC-female | |
| DC through | | | TV | No | TV | ??? | No | |
| Standards CE | | | EN 50083-4 | EN 50083-4 | EN 50083-4 | EN 50083-4 | EN 50083-4 | |
| Impedance | Ohm | | 75 | 75 | 75 | 75 | 75 | |
| Weight | kg | | 0.146 | 0.146 | 0.146 | 0.146 | 0.146 | |
| Dimensions (mechanical) | mm | | Ø60 | Ø60 | Ø60 | Ø60 | Ø60 | |
| *) According to CENELEC: | | | B: 5-40 MHz > 18 dB, 40-862 MHz min. 18 dB - 1.5/oct. | | | | | |
| | | | C: 5-40 MHz > 14 dB, 40-862 MHz min. 14 dB - 1.5/oct. | | | | | |
| | | | D: 5-862 MHz > 10 dB | | | | | |

Triax TOU tv/radio outlets



TOU tv/radio outlet housing

Triax TOU standard tv/radio high-quality outlets

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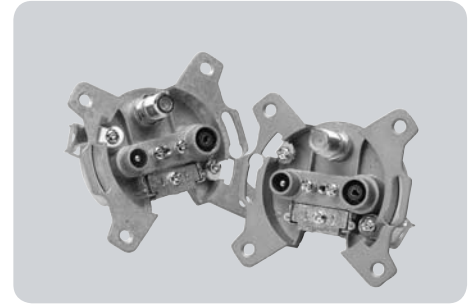
Technical data 5-862 MHz standard outlets

| TYPE | | | TOU - 7 | TOU - 10 | TOU - 14 | TOU - 20 | TOU - 23 |
|--------------------------|------------|----|--|------------------|------------------|------------------|------------------|
| Art. No. | | | loop through | loop through | loop through | loop through | loop through |
| - incl. cover and frame | 1 pcs | | | | | | |
| - excl. cover and frame | 1 pcs | | 303627 | 303630 | 303614 | 303629 | 303323 |
| Outputs | | | TV - Radio | TV - Radio | TV - Radio | TV - Radio | TV - Radio |
| Frequency range | | | | | | | |
| TV | MHz | | 5 - 74/120 - 862 | 5 - 74/120 - 862 | 5 - 74/120 - 862 | 5 - 74/120 - 862 | 5 - 74/120 - 862 |
| Radio | MHz | | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 |
| Through loss | | | | | | | |
| TV | dB | | 2.5 | 1.5 | 1.5 | 1.0 | 1.0 |
| Radio | dB | | 2.5 | 1.5 | 1.5 | 1.0 | 1.0 |
| Tap loss | | | | | | | |
| TV | dB | | 7.5 | 10.0 | 14.0 | 20.0 | 23.0 |
| Radio | dB | | 7.5 | 11.0 | 15.0 | 20.0 | 23.0 |
| Isolation | | | | | | | |
| TV-radio | dB | | > 10.0 | > 10.0 | > 10.0 | > 10.0 | > 10.0 |
| TV-out | dB | | > 18.0 | > 25.0 | > 25.0 | > 25.0 | > 25.0 |
| Radio-out | dB | | > 30.0 | > 30.0 | > 30.0 | > 30.0 | > 30.0 |
| Return loss *) | | | | | | | |
| TV | EN 50083-4 | dB | Cat. C | Cat. C | Cat. C | Cat. C | Cat. C |
| Radio | EN 50083-4 | dB | Cat. D | Cat. D | Cat. D | Cat. D | Cat. D |
| Shielding factor | | | | | | | |
| VHF | dB | | > 85.0 | > 85.0 | > 85.0 | > 85.0 | > 85.0 |
| UHF | dB | | > 75.0 | > 75.0 | > 75.0 | > 75.0 | > 75.0 |
| Connectors | | | | | | | |
| TV | | | IEC-male | IEC-male | IEC-male | IEC-male | IEC-male |
| Radio | | | IEC-female | IEC-female | IEC-female | IEC-female | IEC-female |
| DC through | | | No | No | No | No | No |
| Standards CE | | | EN 50083-4 | EN 50083-4 | EN 50083-4 | EN 50083-4 | EN 50083-4 |
| Impedance | Ohm | | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | | 0.146 | 0.146 | 0.146 | 0.146 | 0.146 |
| Dimensions (mechanical) | mm | | Ø60 | Ø60 | Ø60 | Ø60 | Ø60 |
| *) According to CENELEC: | | | B: 5-40 MHz > 18 dB, 40-862 MHz min. 18 dB - 1.5/oct. C: 5-40 MHz > 14 dB, 40-862 MHz min. 14 dB - 1.5/oct. D: 5-862 MHz > 10 dB | | | | |

Triax TOU satellite, tv & radio outlets

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

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

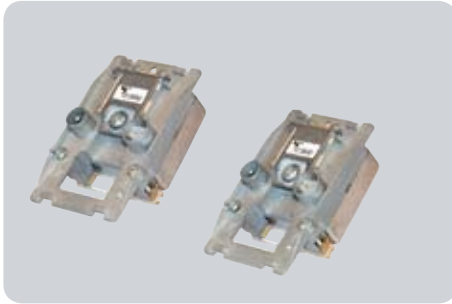


TOU satellite outlet housing

Technical data SAT outlets - 5-2200 MHz

| TYPE | | TOU - 01S terminated | TOU - 10S loop through | TOU - 14S loop through |
|------------------------------|------------|---|---------------------------|---------------------------|
| Art. No. incl. cover (White) | | 303661 | 303670 | 303674 |
| Art. No. excl. cover | | 303662 | | 303675 |
| Outputs | | TV - Radio SAT | TV - Radio SAT | TV - Radio SAT |
| Frequency range | | | | |
| TV | MHz | 5 - 74/120 - 862 | 5 - 74/120 - 862 | 5 - 74/120 - 862 |
| Radio | MHz | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 |
| SAT | MHz | 950 - 2250 | 950 - 2250 | 950 - 2250 |
| Through loss | | | | |
| TV | dB | | 1.5 | 2.0 |
| Radio | dB | | 1.5 | 2.0 |
| SAT | dB | | 3.5 | 3.5 |
| Tap loss | | | | |
| TV | dB | 2.0 | 10.0 | 14.0 |
| Radio | dB | 1.5 | 10.0 | 14.0 |
| SAT | dB | 2.0 | 10.0 | 14.0 |
| Isolation | | | | |
| TV-Radio | dB | > 15 | > 20 | > 20 |
| TV-SAT | dB | | > 25 | > 25 |
| Radio-SAT | dB | | > 30 | > 30 |
| Out-Radio | dB | | | |
| Out-TV | dB | > 10 | > 10 | > 10 |
| Out-SAT | dB | | | |
| Return loss *) | | | | |
| TV | EN 50083-4 | dB | Cat. C | Cat. C |
| Radio | EN 50083-4 | dB | Cat. D | Cat. D |
| SAT | | dB | | |
| Shielding factor | | | | |
| VHF | dB | > 85.0 | > 85.0 | > 85.0 |
| UHF | dB | > 75.0 | > 75.0 | > 75.0 |
| SAT | dB | | | |
| Connectors | | | | |
| TV | | IEC-male | IEC-male | IEC-male |
| Radio | | IEC-female | IEC-female | IEC-female |
| SAT | | F-female | F-female | F-female |
| DC through (In-SAT) | V/mA | 20/500 | 20/500 | 20/500 |
| Standards CE | | EN 50083-4 | EN 50083-4 | EN 50083-4 |
| Impedance | Ohm | 75 | 75 | 75 |
| Weight | kg | 0.156 | 0.156 | 0.156 |
| Dimensions (mechanical) | mm | Ø60 | Ø60 | Ø60 |
| *) According to CENELEC: | | C: 5-40 MHz > 14 dB, 40-862 MHz min. 14 dB - 1.5/oct. D: 5-862 MHz > 10 dB | | |

Triax FUGA tv/radio outlets



TD outlet housing

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

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

Technical data FUGA-outlets - 5-862 MHz

| TYPE | | TD 260D terminated | TD 263D loop through | TD 212D loop through |
|-------------------------|---------------------|-----------------------|--------------------------|--------------------------|
| Art. No. (White) in box | | 302560 | 302561 | 302562 |
| Art. No. (Grey) in box | | 303560 | 303561 | 303562 |
| Outputs | | TV - Radio | TV - Radio | TV - Radio |
| Frequency range | | | | |
| TV | MHz | 5-68/132-862 | 47-68/132-862 | 47-68/132-862 |
| Radio | MHz | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 |
| DAB | MHz | | | |
| Through loss | | | | |
| TV | dB | | 4.5 | 0.8 |
| Radio | dB | | 4.5 | 1.0 |
| DAB | dB | | | |
| Tap loss | | | | |
| TV | dB | 1.0 | 4.5 | 13.0 |
| Radio | dB | 1.5 | 4.5 | 13.0 |
| DAB | dB | | | |
| Linearity | | dB | ± 1 | ± 1 |
| Isolation | | | | |
| TV - radio | dB | ≥ 12 | >12 | >12 |
| TV-out | dB | | >20 db @ 40 MHz | >31 db @ 40 MHz |
| Radio-out | dB | | -1,5 dB/octave | -1,5 dB/octave |
| TV - DAB/ DAB-radio | dB | | | |
| Return loss | | | | |
| TV | EN 50083-4 dB | > 14 | > 14 | > 14 |
| Radio | EN 50083-4 dB | > 10 | > 10 | > 10 |
| Shielding factor | | | | |
| VHF | 5-300/300-470 dB | > 85/> 80 | > 85/> 80 | > 85/> 80 |
| UHF | 470-862 dB | > 75 | > 75 | > 75 |
| Connectors | | | | |
| TV | | IEC-male | IEC-male | IEC-male |
| Radio | | IEC-female | IEC-female | IEC-female |
| DAB | | | | |
| DC through | | mA | max. 100 | max. 100 |
| Standards CE | | | EN 50083-2 EN 50083-4 | EN 50083-2 EN 50083-4 |
| Impedance | | Ohm | 75 | 75 |
| Weight | | kg | 0.115 | 0.117 |
| Dimensions (w x h x d) | | mm | 50 x 77 x 29 | 50 x 77 x 29 |
| Replacing | | | TD 260C | TD 212C |

Triax FUGA satellite, return, tv & radio 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 FUGA outlets - 5-2200 MHz

| TYPE | | TD 253 SAT/return | TD 254 SAT/DAB |
|-------------------------|-----|----------------------------|-------------------------|
| Art. No. (white) in box | | 302566 | 302567 |
| Art. No. (grey) in box | | 303566 | 303567 |
| Outputs | | TV - Radio SAT - return | TV - Radio SAT - DAB |
| Frequency range | | | |
| TV | MHz | 47-68/132-862 | 47-68/132-862 |
| Radio | MHz | 87.5-108 | 87.5-108 |
| SAT | MHz | 950-2150 | 950-2150 |
| Returnpath | MHz | 0-2150 | 47-862 |
| Through loss | | | |
| Return | dB | 1.0 | 1.0 |
| TV | dB | | |
| Radio | dB | | |
| SAT | dB | | |
| Tap loss | | | |
| TV | dB | 1.0/1.0 | 4.5/4.5 |
| Radio | dB | 1.0 | 5.5 |
| SAT | dB | 2.0 | 2.0 |
| Returnpath | dB | | 4.5 |
| Linearity TV/radio/SAT | dB | ± 1 | ± 1 |
| Isolation | | | |
| TV - FM | dB | > 12 | > 12 |
| TV - SAT | dB | > 18 | > 18 |
| TV - data/DAB | dB | | > 15 |
| Return loss | | | |
| TV EN 50083-4 | dB | > 14 | > 14 |
| Radio EN 50083-4 | dB | > 10 | > 10 |
| Shielding factor | | | |
| VHF 5-300/300-470 | dB | > 85/> 80 | > 85/> 80 |
| UHF 470-862 | dB | > 75 | > 75 |
| SAT/return 950-2150 | dB | > 55 | > 55 |
| Connectors | | | |
| Return | | F-female | F-female |
| TV | | IEC-male | IEC-male |
| Radio | | IEC-female | IEC-female |
| SAT | | F-female | F-female |
| DC through | mA | max. 100 | max. 100 |
| Impedance | Ohm | 75 | 75 |
| Weight | kg | 0.122 | 0.122 |
| Dimensions (w x h x d) | mm | 50 x 77 x 37 | 50 x 77 x 37 |
| Replaces type | | TD 250 | TD 252 |

Triax FUGA multimedia, tv & radio outlets



TD multimedia outlet housing

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

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

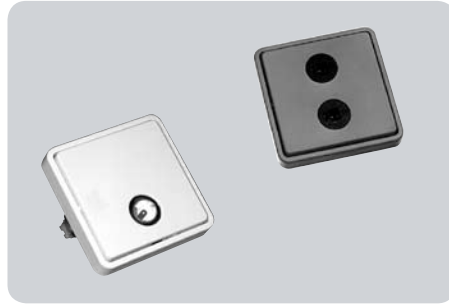
Technical data FUGA multimedia outlets - Data 5-65 or 5-42 MHz

| TYPE | | TD 272D Terminated | TD 278 Loop through |
|-------------------------|-----|--------------------------|--------------------------|
| Art. No. (white) in box | | 302572 | 302428 |
| Art. No. (grey) in box | | 303572 | 303428 |
| Outputs | | TV - Radio Data | TV - Radio Data |
| Frequency range | | | |
| TV | MHz | 139-862 | 47-862 |
| Radio (FM) | MHz | 87.5 - 108 | 87.5 - 108 |
| Data | MHz | 5-862 | 132-862 |
| Returnpath | MHz | 5-65 | 5-65 |
| Through loss | | | 4.0 |
| TV | dB | | 4.0 |
| Radio (FM) | dB | | 4.0 |
| Data | dB | | 4.0 |
| Tap loss | | | |
| TV | dB | 4.5 | 8.5 |
| Radio (FM) | dB | 5.5 | 10.0 |
| Data | dB | 4.5 | 8.5 |
| Returnpath | dB | 1.0 | 4.5 |
| Linariitet TV/radio | dB | ± 1 | ± 1 |
| Isolation | | | |
| TV-radio | dB | > 12 | > 12 |
| TV-out | dB | | |
| TV-data 5-65/139-862 | dB | > 55/> 20 | > 55/> 18 |
| Radio-out | dB | | |
| Radio-data 5-65/139-862 | dB | > 55/> 30 | > 55/> 18 |
| Shielding factor | | | |
| VHF 5-300/300-470 | dB | > 85 | > 85 |
| UHF 470-862 | dB | > 80 | > 80 |
| Data 5-65 | dB | > 75 | > 75 |
| Connectors | | | |
| TV | | IEC-male | IEC-male |
| Radio (FM) | | IEC-female | IEC-female |
| Data | | F-female | F-female |
| DC through | mA | max. 100 | max. 100 |
| CE standard | | EN 50083-2 EN 50083-4 | EN 50083-2 EN 50083-4 |
| Impedance | Ohm | 75 | 75 |
| Weight | kg | 0.100 | 0.100 |
| Dimensions (w x h x d) | mm | 50 x 77 x 26 | 50 x 77 x 26 |
| Replaces type | | TD 272C | |

Triax - FUGA special outlets

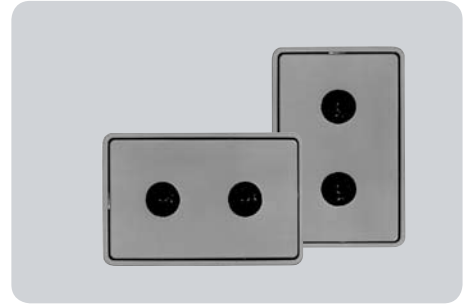
TRIAX FUGA special outlets

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



TD 201T

HT - 02



HT - 03

Technical data FUGA special outlets

| TYPE | | TD 201T terminated | HT 02 | HT 03 | FV 01 | FV 02 |
|-------------------------|-----|-----------------------|--|--|----------------------|----------------------|
| Art. No. (white) in box | | 303456 | 303492 | 303493 | 303481 | 303482 |
| Art. No. (grey) in box | | | 303492 | 303493 | 303481 | 303482 |
| Inputs | | | | | | |
| Outputs | | 1 x TV | Loudspeakers 2 x 2 pol. connectors | Loudspeakers 2 x 2 pol. connectors | F-connector | F-connector |
| Frequency range | | | | | | |
| TV | MHz | 47-862 | | | | |
| Radio | MHz | | | | | |
| SAT | MHz | | | | | |
| Tap loss | | | | | | |
| TV | VHF | dB | 0.2 | | | |
| TV | UHF | dB | 0.5 | | | |
| Radio | | dB | | | | |
| Connectors | | | | | | |
| TV | | IEC-male | | | F-con | F-con |
| Radio | | | | | | |
| Radio (loudspeakers) | | | Din | Din | | |
| SAT | | | | | | |
| Outlet connection | | | Screw | Screw | F-angle connector | F-angle connector |
| DC through | mA | Yes | | | | |
| CE standard | | | | | | |
| Impedance | Ohm | 75 | | | | |
| Weight | kg | 0.125 | 0.125 | 0.165 | 0.125 | 0.165 |
| Dimensions (w x h x d) | mm | 50 x 50 x 26 | 50 x 50 x 26 | 50 x 77 x 26 | 50 x 50 x 26 | 50 x 77 x 26 |



FV 01 outlet

FV 02 outlet

Triax OPUS tv/radio outlets

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



OPUS outlet housing

Technical data OPUS outlets - 5-862 MHz

| TYPE | | TD 301 terminated | TD 304 loop through | TD 312 loop through | TD 352 sat | TD 372 multimedia |
|--------------------------|------------------|----------------------|------------------------|------------------------|-----------------|----------------------|
| Art. No. (white) in bag | | 302131 | 302134 | 302132 | 302152 | 302172 |
| Art. No. (grey) in bag | | 303131 | 303134 | 303132 | 303152 | 303172 |
| Outputs | | TV-radio | TV-radio | TV-radio | TV-radio SAT | TV-radio data |
| Frequency range | | | | | | |
| TV | MHz | 5-68/132-862 | 5-68/132-862 | 5-68/132-862 | 5-68/132-862 | 139-862 |
| Radio | MHz | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 | 87.5 - 108 |
| SAT/data | MHz | | | | 950-2150 | 5-862 |
| Return path | MHz | | | | | 5-65 |
| Through loss | | | | | | |
| TV | dB | | 4.5 | 0.8 | | |
| Radio | dB | | 4.5 | 0.8 | | |
| SAT | dB | | | | | |
| Tap loss | | | | | | |
| TV | dB | 1.0 | 4.5 | 12.0 | 1.0 | 4.5 |
| Radio | dB | 1.5 | 4.5 | 12.0 | 1.0 | 5.5 |
| SAT | dB | | | | 1.0 | 4.5 |
| Data | dB | | | | | 1.0 |
| Linearity TV/radio/SAT | dB | ± 1 | ± 1 | ± 1 | ± 1 | ± 1 |
| Isolation | | | | | | |
| TV-radio | dB | ≥ 12 | >12 | >12 | | |
| TV-out | dB | | >20 db @ 40 MHz | >20 db @ 40 MHz | > 15 | |
| TV-SAT/data 5-65/139-862 | dB | | -1.5 dB/octave | -1.5 dB/octave | | > 55/> 20 |
| Radio-out | dB | | | | > 12 | > 12 |
| Radio-SAT/data | dB | | | | | > 55/> 30 |
| Return loss *) | | | | | | |
| TV | EN 50083-4 dB | | | | | |
| Radio | EN 50083-4 dB | | | | | |
| SAT | EN 50083-4 dB | | | | | |
| Shielding factor | | | | | | |
| VHF / UHF | dB | > 85/> 80 | > 85/> 80 | > 85/> 80 | > 85/> 80 | > 85/> 80 |
| SAT/data | dB | | | | > 75 | > 75 |
| Connectors | | | | | | |
| TV | | IEC-male | IEC-male | IEC-male | IEC-male | IEC-male |
| Radio | | IEC-female | IEC-female | IEC-female | IEC-female | IEC-female |
| SAT | | | | | F-female | F-female |
| DC through | mA | on TV | on TV | on TV | max. 250 | max. 100 |
| Max. outlets per string | | | 1 | 3 | | |
| Impedance | Ohm | 75 | 75 | 75 | 75 | 75 |
| Weight | kg | 0.225 | 0.225 | 0.225 | 0.225 | 0.225 |
| Dimensions (w x h x d) | mm | 66 x 25 x 66 | 66 x 25 x 66 | 66 x 25 x 66 | 66 x 25 x 66 | 66 x 25 x 66 |

Triax UK-style in SAT, TV/radio outlets



UK-style outlet housing

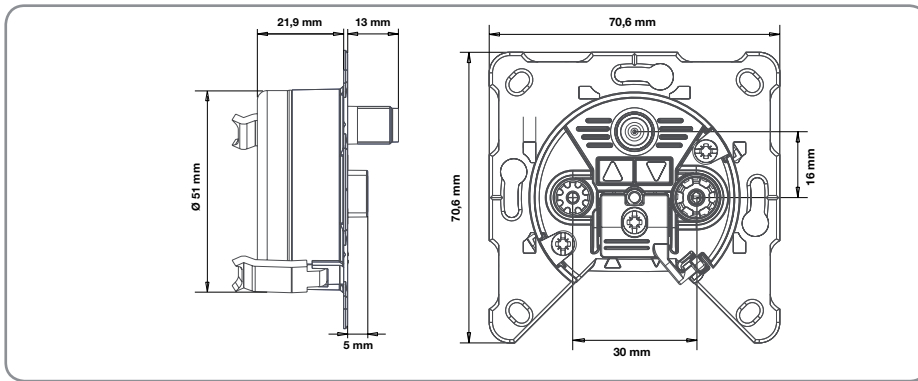
Triax comprehensive series for domestic and system applications

- Fully screened
- Die-cast housing
- DAB compatible
- Output for SAT and return path
- DDU outlet designed for installations using Domestic Distribution Unit

Technical data UK-style outlets

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

Accessories for TRIAX outlets



Cover for TRIAX outlets

| TYPE | AD 23 cover white | AD 23 cover Ivory |
|--------------|----------------------|----------------------|
| Art. No. | 302060 | 302061 |
| Size mm | 81 x 81 | 81 x 81 |
| Packing size | 10 pcs. | 10 pcs. |



Surface-mounted frame for TRIAX outlets

| TYPE | AD 23 frame white | AD 23 frame Ivory |
|--------------|----------------------|----------------------|
| Art. No. | 302062 | 302063 |
| Size mm | 81 x 81 | 81 x 81 |
| Packing size | 10 pcs. | 10 pcs. |



RF terminating resistor

| TYPE | R 75 - 75Ω terminator | R 77 - 75Ω terminator | R 77 DBC- 75Ω terminator |
|----------|--------------------------|--------------------------|-----------------------------|
| Art. No. | 342503 | 302065 | 302066 |
| | 5 pcs 100 pcs | | |
| Remarks | Std. outlets | GDM, GEDU,FS | GDA, GDS |



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



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



Accessories for TOU outlets

Covers for TOU standard outlets - 2 holes

| TYPE Art. No. | Cover - white 303680 | Cover - off white 303681 | Cover - UK white 303690 |
|------------------|-------------------------|-----------------------------|----------------------------|
| Size mm | 76 x 76 | 76 x 76 | 86 x 86 |
| Packing size | 10 pcs. | 10 pcs. | 10 pcs. |



UK design

Covers for TOU multimedia outlets - 3 holes

| TYPE Art. No. | Cover - white 303685 | Cover - off-white 303686 |
|------------------|-------------------------|-----------------------------|
| Size mm | 76 x 76 | 76 x 76 |
| Packing size | 10 pcs. | 10 pcs. |



Covers for TOU satellite outlets - 3 holes

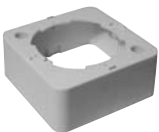
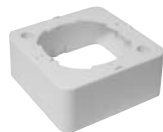
| TYPE Art. No. | Cover - white 303682 | Cover - off-white 303683 | Cover - UK white 303692 |
|------------------|-------------------------|-----------------------------|----------------------------|
| Size mm | 76 x 76 | 76 x 76 | 86 x 86 |
| Packing size | 10 pcs. | 10 pcs. | 10 pcs. |



UK design

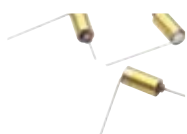
Surface mount for all TOU outlets

| TYPE Art. No. | Frame - white 303698 | Frame - off white 303699 |
|------------------|-------------------------|-----------------------------|
| Size mm | 76 x 76 | 76 x 76 |
| Packing size | 10 pcs. | 10 pcs. |



RF terminator

| TYPE | R75 - 75Ω terminator | R1000 - 75Ω terminator |
|----------|----------------------|------------------------|
| Art. No. | 5 pcs 342503 | 342504 |
| Remarks | TD-outlets | TOU-outlets |



Accessories for TD outlets

Covers for TD outlets

| TYPE | 0 holes cover 50 x 50 mm | 2 holes cover 50 x 77 mm | 3 holes cover 50 x 77 mm |
|-----------------------|-----------------------------|-----------------------------|-----------------------------|
| Art. No. (white) | 485968 | 302012 | 302013 |
| Art. No. (grey) | 485994 | 303012 | 303013 |
| Art. No. (anthracite) | | 304012 | 304013 |
| Size mm | 50 x 50 | 50 x 77 | 50 x 77 |
| Packing size | 10 pcs. | 10 pcs. | 10 pcs. |
| Remarks | TD 200 | TD 26x | TD 2xx |



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. (white) | 302025 | 302026 | 302036 |
| Art. No. (grey) | 303025 | 303026 | 303036 |
| Art. No. (metalic) | 304025 | 304026 | |
| 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. (white) | 302045 | 302046 |
| Art. No. (grey) | 303045 | 303046 |
| Art. No. (anthracite) | | |
| Size mm | 50 x 25 x 50 | 50 x 25 x 77 |
| Packing size | 10 pcs. | 10 pcs. |
| Remarks | TD 200 | TD 26x |

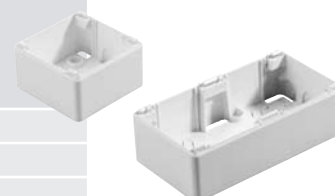


Frames for OPUS 66 outlets

| TYPE | OPUS 66 132 x 66 mm | OPUS 66 132 x 66 mm |
|------------------|------------------------|------------------------|
| Art. No. (white) | 153147 | 153145 |
| Art. No. (grey) | 153146 | 153144 |
| Size mm | 132 x 25 x 66 | 132 x 25 x 66 |
| Packing size | 10 pcs. | 10 pcs. |
| Remarks | horisontal mounting | vertical mounting |

Surface mount for OPUS outlets

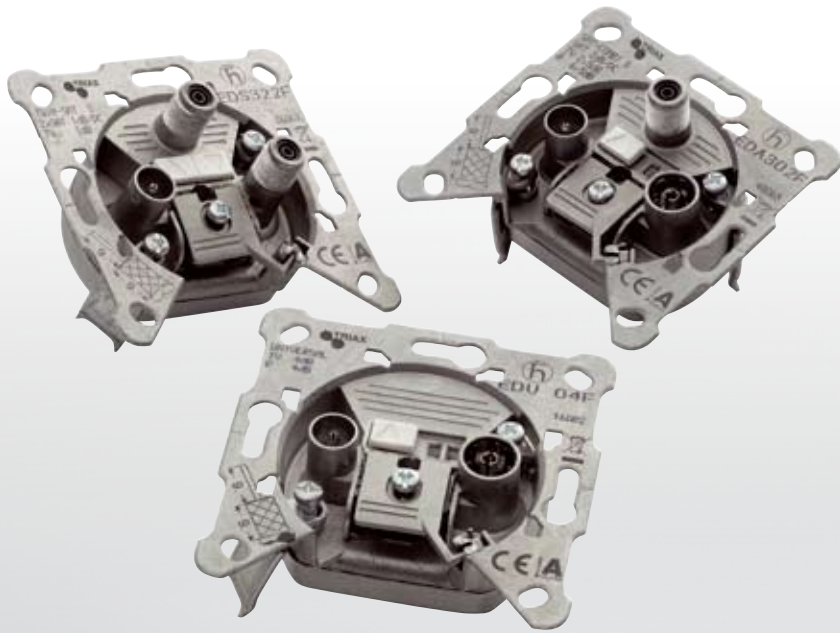
| TYPE | OPUS 66 66 x 66 mm | OPUS 66 132 x 66 mm |
|------------------|-----------------------|------------------------|
| Art. No. (white) | 153141 | 153143 |
| Art. No. (grey) | 153140 | 153142 |
| Size mm | 66 x 25 x 66 | 132 x 25 x 66 |
| Packing size | 10 pcs. | 10 pcs. |
| Remarks | single OPUS | double OPUS |



OPUS telephone connection

| TYPE | OPUS phone 66 x 66 mm |
|------------------|--------------------------|
| Art. No. (white) | 302780 |
| Art. No. (grey) | 303780 |
| Size mm | 66 x 66 |
| Packing size | 1 pcs. |





Triax home accessories

Antenna systems >> Camera/Link systems

| | |
|---------------------------|---------|
| Camera systems | 240-241 |
| TRE - remote extender | 242 |
| TWS - wireless A/V system | 243 |
| Digital links | 244 |



Triax camera systems - black/white

Features:

- Solid aluminium housing
- Weather resistant camera for indoor or outdoor use
- Camera has built-in microphone for audio monitoring
- Easy plug-and-play installation takes only minutes
- Modulator cameras available in PAL I and PAL G



Camera system housing

Technical specifications for black/white cameras

| TYPE | | TCB 003 | TCB 015 |
|--------------------------------|----------------|--|--|
| Art. No. | | 364003 | 364015 |
| Type | | B/W | B/W |
| TV system | | PAL-I | PAL-G |
| Modulator type | | DSB-UHF | DSB-UHF |
| UHF output channel | Ch. | 21-69 ¹⁾ | 21-69 ¹⁾ |
| UHF output level | dB μ V | 85 \pm 5 | 85 \pm 5 |
| Output power | dBm | NA | NA |
| Modulation | | NA | NA |
| Receiver sensitivity | dBm | NA | NA |
| Receiver noise figure | dB | NA | NA |
| Output frequency range | MHz | 470-862 | 470-862 |
| Transmission frequency | GHz | NA | NA |
| Operational range (free field) | m | NA | NA |
| Audio carrier | MHz | 6.5 | 5.5 |
| Integrated mic. | | Yes | Yes |
| S/N ratio | dB | > 48 | > 48 |
| Image sensor | | 1/4 inch CMOS | 1/4 inch CMOS |
| Lens | | F 2.0/3.6 mm 90 ⁰ wide angle | F 2.0/3.6 mm 90 ⁰ wide angle |
| Resolution | lines | 260 | 260 |
| Number of pixels | pixels | 352 x 288 | 352 x 288 |
| Min. illumination | LUX | 0.5 | 0.5 |
| Built-in light | | 11 IR Leds | 11 IR leds |
| Auto iris electronics | sec | 1/60 ~ 1/6000 | 1/60 ~ 1/6000 |
| Operation conditions | | Weatherproof outdoor (aluminium housing) | |
| Power consumption | mA | 250 | 250 |
| Operating voltage | VDC | 12 | 12 |
| Power inserter/supply incl. | | Yes | Yes |
| Power inserter | | | |
| Insertion loss | VHF/UHF in/out | dB | 4 |
| | VHF/UHF+in/out | dB | 20 |
| | In/out | dB | 0.1 |
| Max. current | A | 0.8 | 0.8 |
| Dimensions (camera only) | mm | 105 x 50 x 115 | 105 x 50 x 115 |

1) Modulator UHF channel settable via 2 digit rotary switch (channels 21 to 69)

Triax camera systems - colour



Camera system housing

Technical specifications for colour cameras

| TYPE | | TCB 007 | TCB 008 | TCB 017 | |
|--------------------------------|----------------|--|--|--|----|
| Art. No. | | 364007 | 364008 | 364017 | |
| Type | | Colour | Colour | Colour | |
| TV system | | PAL-G | PAL-I | A/V ¹⁾ | |
| Modulator type | | DSB-UHF | DSB-UHF | NA | |
| UHF output channel | | 21-69 ²⁾ | 21-69 ²⁾ | NA | |
| UHF output level | dB μ V | 85 \pm 5 | 85 \pm 5 | NA | |
| Output power | dBm | NA | NA | NA | |
| Modulation | | NA | NA | NA | |
| Receiver sensitivity | dBm | NA | NA | NA | |
| Receiver noise figure | dB | NA | NA | NA | |
| Output frequency range | MHz | 470-862 | 470-862 | NA | |
| Transmission frequency | GHz | NA | NA | NA | |
| Operational range (free field) | m | NA | NA | NA | |
| Audio carrier | MHz | 5.5 | 6.5 | NA | |
| Integrated mic. | | Yes | Yes | Yes | |
| S/N ratio | dB | > 48 | > 48 | > 48 | |
| Image sensor | | 1/3 inch CMOS | 1/3 inch CMOS | 1/3 inch CMOS | |
| Lens | | F 1.8/6.0 mm 64 ⁰ wide angle | F 1.8/6.0 mm 64 ⁰ wide angle | F 1.8/6.0 mm 64 ⁰ wide angle | |
| Resolution | lines | 380 | 380 | 380 | |
| Number of pixels | pixels | 628 x 582 | 628 x 582 | 628 x 582 | |
| Min. illumination | LUX | 3 | 3 | 3 | |
| Built-in light | | NA | NA | NA | |
| Auto iris electronics | sec | 1/60 ~ 1/5000 | 1/60 ~ 1/5000 | 1/60 ~ 1/5000 | |
| Operation conditions | | Weatherproof outdoor (aluminium housing) | | | |
| Power consumption | mA | 120 | 120 | 120 | |
| Operating voltage | VDC | 12 | 12 | 12 | |
| Power inserter/supply incl. | | Yes | Yes | Yes | |
| Power inserter | | | | | |
| Insertion loss | VHF/UHF in/out | dB | 4 | 4 | NA |
| | VHF/UHF+in/out | dB | 20 | 20 | NA |
| | In/out | dB | 0.1 | 0.1 | NA |
| Max. current | A | 0.8 | 0.8 | NA | |
| Dimensions (camera only) | mm | 105 x 50 x 115 | 105 x 50 x 115 | 105 x 50 x 115 | |

1) A/V = Audio/video via RCA/phono cable (included)

2) Modulator UHF channel settable via 2 digit rotary switch (channels 21 to 69)

Triax TRE series - IR remote extender set

General Applications:

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



Technical data - Triax digital links

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

Also available:

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

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 kHz range. TRE 270 T/R only transmits IR signals. The A/V signals (picture and sound) has to be 'transferred' by other means such as cables, modulated signals or via wireless units.

Triax TWS - 2.4 GHz Wireless A/V System

General Applications:

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



Technical data - Triax digital links

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

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

Triax digital links

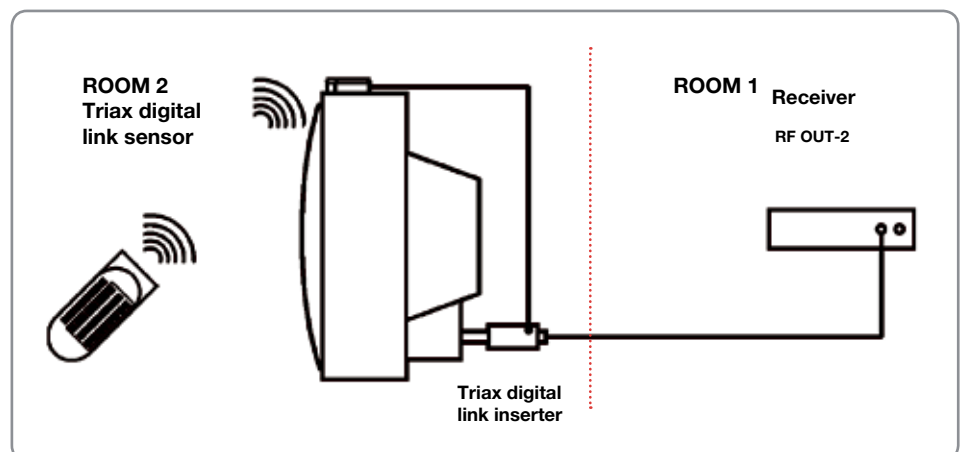
The Triax digital link is compatible with many different digital satellite receivers with an output marked RF-OUT 2 that provides a second TV output together with a 9 volt DC supply. The Triax digital link will allow control of your digital satellite receiver whilst viewing in other rooms in the home.

- Silver and anthracite colour styles
- Competitive pricing
- Attractive design
- Easy to install



Technical data - Triax digital links

| | | |
|---|--------|---------------------|
| TYPE | | Digital link |
| Art. No. (silver w. blue lens) | | 339690 |
| Art. No. (anthracite w. blue lens) | | 339691 |
| Input signal frequency carrier | kHz | 37.9 |
| Output signal frequency carrier | kHz | On - off keyed |
| Line power requirement | VDC/mA | 9 / 10 |
| Sensor lead | cm | 100 |
| Connectors | | |
| - output | | IEC male |
| - input | | IEC female |
| Temperature range | °C | 0...+40 |



Technical appendix

| | |
|--|---------|
| Antenna systems >> Technical appendix | |
| Terrestrial antennas | 246-247 |
| Basic technical requirements | 248 |
| Technical data in the catalogue | 249 |
| Planning and installation | 250-251 |
| Earthing and equipotential | 252 |
| Frequency range of waves | 252 |
| TV standards | 252 |
| Channels and frequencies | 253-254 |
| Colour and broadcasting | 255 |
| Signal level: mV to dB μ V | 256 |
| Frequency for radio/TV channels | 256 |



Terrestrial antennas

Introduction

Radio antennas

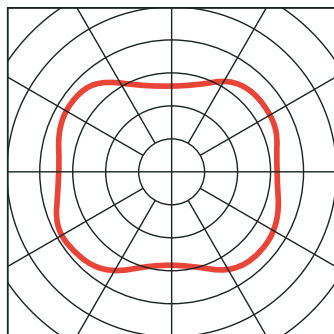
Stereo signals can be received using any FM antenna. Because, however, a higher signal level and greater freedom from reflection are needed for clear stereo reception than for mono reception, it is usually necessary to use a directional antenna.

Television antennas for DVB-T

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

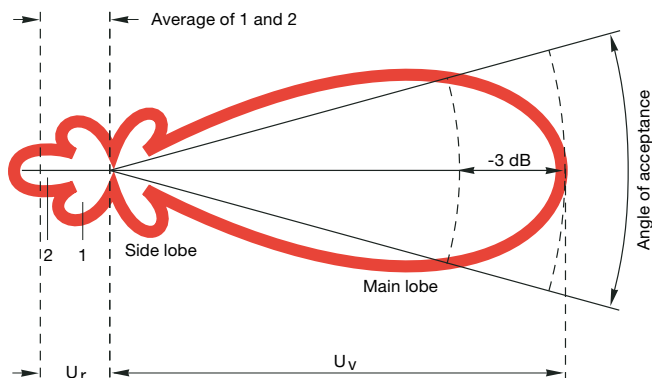
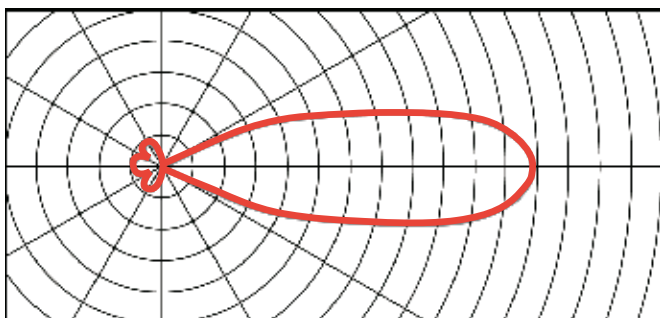
Omnidirectional reception

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



Directional reception

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



Radiation pattern – The most important terms

Gain

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

Angle of acceptance

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

Major lobe

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

Side lobe

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

Front to back ratio*

Ratio of the voltage U_v in the main receiving direction to an average U_r 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



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

Mast calculation

The conditions detailed in the DE/EN 60728-11 must be observed when mounting antennas 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:

$$\text{Wind load (N)} \times \text{distance (m)} = \text{bending moment (Nm)}$$

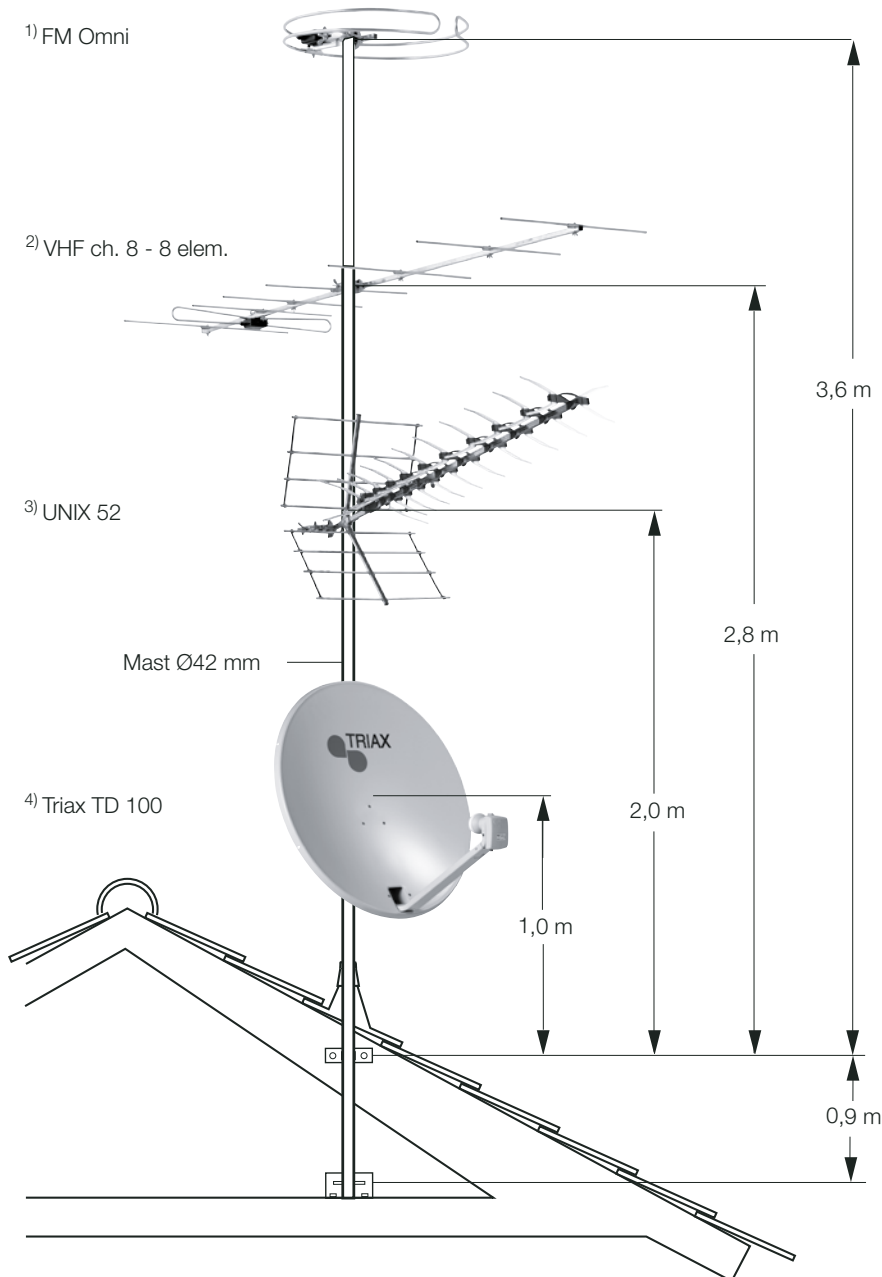
The distance and bending moment refer to the top clamping point. Bending moments in excess of 1650 Nm require proof of structural stability.

| 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

Technical appendix

1. Basic technical requirements

All equipment and components in this catalogue meet, unless otherwise stated, the European standards for “Cable networks for television signals, sound signals and interactive services” from the standardization organization CENELEC, which have been adopted in national versions.

- EN 50083-1** Safety requirements
- EN 50083-1/A1**
- EN 50083-1/A2**
- EN 50083-2** Electromagnetic compatibility (EMC) of equipment

The equipment conforms to the uniform European “EMC directive” in accordance with legal requirements. For the majority of the product groups in this catalogue, EN 50083-2 is relevant. In relation to the “Low voltage directive”, EN 60065 is the basis to which reference is made in EN 50083-1 “Safety requirements”.

The CE marking for products in relation to EMC and the low voltage directive is based on these standards.

In addition, CENELEC committee TC 209 has ratified European standards for equipment and system requirements for “Cable networks for television signals, sound signals and interactive services”.

- EN 50083-3** Active broadband equipment for coaxial cable networks
- EN 50083-4** Passive broadband equipment for coaxial cable networks
- EN 50083-5** Headend equipment
- EN 50083-6** Optical equipment
- EN 50083-7** System requirements
- EN 50083-8** Electromagnetic compatibility of cable networks
- EN 50083-9** Interfaces for CATV/SMATV headends and similar professional equipment for DVB/MPEG-2 transport streams
- EN 50083-10** System performance for return paths

The system and equipment requirements are matched to each other in such a way that the minimum requirements for signal quality at the subscriber’s outlet can be met with a minimum of technical effort. In addition, requirements that result from use of both analogue and digital signal transmission have also been taken into account. The EN 50083 standards provide the network operator, planner and installer with concrete guidelines for network design and selection of appropriate network components. Hirschmann 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.

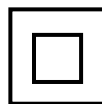
To prevent interference between TV cable networks and radio services, it is necessary to use components with sufficient shielding. Due to the varying conditions in the European countries, the shielding rate was defined in the European standard EN 50083-2 in two stages, the high quality class A and class B with reduced shielding rate values.



For example, the high radio density present in many parts of the world makes the usage of class A equipment necessary to prevent interactions, particularly with safety-relevant radio services such as air traffic control. As a differentiation in the appearance of the equipment for trade and installers is not possible, Triax and the other companies in the Fachverband Empfangsantennen- und Breitbandverteilterchnik im Zentralverband Elektrotechnik- und Elektroindustrie (ZVEI) e. V. mark the products with the protected trademark-symbol shown. In this way the higher quality of the equipment is made clear.

(See 3.3 Shielding rate)

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 $-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$.

The mains-operated units meet the requirements of the EN 60065 standard within the temperature range from $-20\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$.

Operability of these units is nevertheless also maintained fully in the temperature range from $-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$.

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 $230\text{ V} \sim +6\% / -10\%$.

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, $q = 800\text{ N/m}^2$, and $q = 1100\text{ N/m}^2$ respectively.

The wind load values (horizontal and vertical) specified in this catalogue were determined using a dynamic pressure of $q = 800\text{ N/m}^2$. If a value for $q = 1100\text{ N/m}^2$ 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 $\text{CTB/CSO} \geq 66\text{ dB}$.

This means that the required signal quality ($\text{CTB/CSO} \geq 57\text{ dB}$ 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 $< 606\text{ MHz}$ 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,

| 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

IMR3) is the permissible output level (dB(μV)) for a signal-to-interference ratio of IMD=60 dB.

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) 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 Δ a dB, the permissible output level is reduced by Δ a/2 dB.

Example figures for HEF 845 with the CENELEC spacing

n_{a1} = output level in dB(μV) for CSO = 60 dB = 110 dB(μV)

n_{a2} = output level in dB(μV) for CSO = 69 dB = 101 dB(μV)

n_{a3} = output level in dB(μV) for CTB = 60 dB = 110 dB(μV)

n_{a4} = output level in dB(μV) for CTB = 72 dB = 104 dB(μV)

In total for CSO = 69 dB and CTB = 72 dB a permissible output level of 101 dB(μV) is to be observed.

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 catalog 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.



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
- 21 dB
- 7 dB
- 2 dBμV
- 64 dB

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 |

Technical appendix

4. Earthing and equipotential bonding cables

EN 50083-1 specifies the following earthing and equipotential 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 band- width (MHz) | Video/audio seperation (MHz) | Vestigial side- band (MHz) | Video modulation | Audio modulation |
|-------------------|--------------|------------------------|-------------------------------|------------------------------------|----------------------------------|---------------------|---------------------|
| B (CCIR) | 625 | 7 | 5 | + 5.5 (+5.742) | 0.75 | negative | FM, FM ¹ |
| D (OIRT) | 625 | 8 | 6 | + 6.5 | 0.75 | negative | FM |
| G (CCIR) | 625 | 8 | 5 | + 5.5 (+5.742) | 0.75 | negative | FM, FM ¹ |
| H (B) | 625 | 8 | 5 | + 5.5 | 1.25 | negative | FM |
| I (GB) | 625 | 8 | 5.5 | + 6.0 | 1.25 | negative | FM |
| K (OIRT) | 625 | 8 | 6 | + 6.5 | 0.75 | negative | FM |
| K1 (CCIR) | 625 | 8 | 6 | + 6.5 | 1.25 | negative | FM |
| L (F) | 625 | 8 | 6 | + 6.5 | 1.25 | positive | AM |
| M (FCC) | 525 | 6 | 4.2 | + 4.5 | 0.75 | negative | FM |
| N (South America) | 625 | 6 | 4.2 | + 4.5 | 0.75 | negative | FM |

¹⁾ Second audio carrier for dual or stereo operation

6. Frequency ranges and channel allocation

| | Channel MHz | Frequency wave - MHz | Picture carrier MHz | 1st sound |
|---------------------------|--------------|----------------------|---------------------|-----------|
| Return/data communication | | 4 to 30 | | |
| Return-TV | R 1 | 14,75-21,75 | | |
| | R 2 | 21,75-28,75 | | |
| Band I | 2 | 47 to 54 | 48,25 | 53,75 |
| | 3 | 54 to 61 | 55,25 | 60,75 |
| | 4 | 61 to 68 | 62,25 | 67,75 |
| | Data channel | 70 to 75 | | |
| Pilot frequency | | 80,15 | | |
| Band II | 2-70 | 87,5 - 108 | | |
| Digital-sound 1st channel | S 2 | 111 - 118 | | |
| | S 3 | 118 - 125 | | |
| Lower S-channels | S 4 | 125 - 132 | 126,25 | 131,75 |
| | S 5 | 132 - 139 | 133,25 | 138,75 |
| | S 6 | 139 - 146 | 140,25 | 145,75 |
| | S 7 | 146 - 153 | 147,25 | 152,75 |
| USB | S 8 | 153 - 160 | 154,25 | 159,75 |
| | S 9 | 160 - 167 | 161,25 | 166,75 |
| | S 10 | 167 - 174 | 168,25 | 173,75 |
| | Band III | 5 | 174 - 181 | 175,25 |
| | 6 | 181 - 188 | 182,25 | 187,75 |
| | 7 | 188 - 195 | 189,25 | 194,75 |
| | 8 | 195 - 202 | 196,25 | 201,75 |
| | 9 | 202 - 209 | 203,25 | 208,75 |
| | 10 | 209 - 216 | 203,25 | 208,75 |
| | 11 | 216 - 223 | 217,25 | 222,75 |
| | 12 | 223 - 230 | 224,25 | 229,75 |
| Upper S-channels | S 11 | 230 - 237 | 231,25 | 236,75 |
| | S 12 | 237 - 244 | 238,25 | 243,75 |
| | S 13 | 244 - 251 | 245,25 | 250,75 |
| | S 14 | 251 - 258 | 252,25 | 257,75 |
| | S 15 | 258 - 265 | 259,25 | 264,75 |
| | S 16 | 265 - 272 | 266,25 | 271,75 |
| Pilot frequency | S 17 | 272 - 279 | 273,25 | 278,75 |
| | S 18 | 279 - 286 | | |
| | S 19 | 286 - 293 | 287,25 | |
| | S 20 | 293 - 300 | 294,25 | 299,75 |
| S-channels | S 21 | 302 - 310 | 303,25 | 308,75 |
| | S 22 | 310 - 318 | 311,25 | 316,75 |
| | S 23 | 318 - 326 | 319,25 | 324,75 |
| | S 24 | 326 - 334 | 327,25 | 332,75 |
| | 8 MHz | S 25 | 334 - 342 | 335,25 |
| S 26 | | 342 - 350 | 343,25 | 348,75 |
| S 27 | | 350 - 358 | 351,25 | 356,75 |
| S 28 | | 358 - 366 | 359,25 | 364,75 |
| S 29 | | 366 - 374 | 367,25 | 372,75 |
| S 30 | | 374 - 382 | 375,25 | 380,75 |
| S 31 | | 382 - 390 | 383,25 | 388,75 |
| S 32 | | 390 - 398 | 391,25 | 396,75 |
| S 33 | | 398 - 406 | 399,25 | 404,75 |
| S 34 | | 406 - 414 | 407,25 | 412,75 |
| S 35 | | 414 - 422 | 415,25 | 420,75 |
| S 36 | | 422 - 430 | 423,25 | 428,75 |
| S 37 | | 430 - 438 | 431,25 | 436,75 |
| S 38 | | 438 - 446 | 439,25 | 444,75 |

| | Channel MHz | Frequency wave - MHz | Picture carrier MHz | 1st sound |
|---------------------|-------------|----------------------|----------------------|-----------|
| Band | 21 | 470 - 478 | 471,25 | 476,75 |
| F IV | 22 | 478 - 486 | 476,25 | 484,75 |
| | 23 | 486 - 494 | 487,25 | 492,75 |
| | 24 | 494 - 502 | 495,25 | 500,75 |
| | 25 | 502 - 510 | 503,25 | 508,75 |
| | 26 | 510 - 518 | 511,25 | 516,75 |
| | 27 | 518 - 526 | 519,25 | 524,75 |
| | 28 | 526 - 534 | 527,25 | 532,75 |
| | 29 | 534 - 542 | 535,25 | 540,75 |
| | 30 | 542 - 550 | 543,25 | 548,75 |
| | 31 | 550 - 558 | 551,25 | 556,75 |
| | 32 | 558 - 566 | 559,25 | 564,75 |
| | 33 | 566 - 574 | 567,25 | 572,75 |
| | 34 | 574 - 582 | 575,25 | 580,75 |
| | 35 | 582 - 590 | 583,25 | 588,75 |
| | 36 | 590 - 598 | 591,25 | 596,75 |
| | 37 | 598 - 606 | 599,25 | 604,75 |
| | 38 | 606 - 614 | 607,25 | 612,75 |
| | 39 | 614 - 622 | 615,25 | 618,75 |
| | F V | 40 | 622 - 630 | 623,25 |
| 41 | | 630 - 638 | 631,25 | 636,75 |
| 42 | | 638 - 646 | 639,25 | 644,75 |
| 43 | | 646 - 654 | 647,25 | 652,75 |
| 44 | | 654 - 662 | 655,25 | 660,75 |
| 45 | | 662 - 670 | 663,25 | 668,75 |
| 46 | | 670 - 678 | 671,25 | 676,75 |
| 47 | | 678 - 686 | 679,25 | 684,75 |
| 48 | | 686 - 694 | 687,25 | 692,75 |
| 49 | | 694 - 702 | 695,25 | 700,25 |
| 50 | | 702 - 710 | 703,25 | 708,75 |
| 51 | | 710 - 718 | 711,25 | 716,75 |
| 52 | | 718 - 726 | 719,25 | 724,75 |
| 53 | | 726 - 734 | 727,25 | 732,75 |
| 54 | | 734 - 742 | 735,25 | 740,75 |
| 55 | | 742 - 750 | 743,25 | 748,75 |
| 56 | | 750 - 758 | 751,25 | 756,75 |
| 57 | | 758 - 766 | 759,25 | 764,75 |
| 58 | | 766 - 774 | 767,25 | 772,75 |
| 59 | 774 - 782 | 775,25 | 780,75 | |
| 60 | 782 - 790 | 783,25 | 788,75 | |
| 61 | 790 - 798 | 791,25 | 796,75 | |
| 62 | 798 - 806 | 799,25 | 804,75 | |
| 63 | 806 - 814 | 807,25 | 812,75 | |
| 64 | 814 - 822 | 815,25 | 820,75 | |
| 65 | 822 - 830 | 823,25 | 828,75 | |
| 66 | 830 - 838 | 831,25 | 836,75 | |
| 67 | 838 - 846 | 839,25 | 844,75 | |
| 68 | 846 - 854 | 847,25 | 852,75 | |
| 69 | 854 - 862 | 855,25 | 860,75 | |
| Digital-TV | | | Channel centre (MHz) | |
| | S 21 D | 302 - 310 | D 306 | |
| S-channel range | S 22 D | 310 - 318 | D 314 | |
| | S 23 D | 318 - 326 | D 322 | |
| | S 24 D | 326 - 334 | D 330 | |
| | S 25 D | 334 - 342 | D 338 | |
| Channel width 8 MHz | S 26 D | 342 - 350 | D 346 | |
| | S 27 D | 350 - 358 | D 354 | |
| | S 28 D | 358 - 366 | D 362 | |
| | S 29 D | 366 - 374 | D 370 | |
| | S 30 D | 374 - 382 | D 378 | |
| | S 31 D | 382 - 390 | D 386 | |
| | S 32 D | 390 - 398 | D 394 | |
| | S 33 D | 398 - 406 | D 402 | |
| | S 34 D | 406 - 414 | D 410 | |
| | S 35 D | 414 - 422 | D 418 | |
| | S 36 D | 422 - 430 | D 426 | |
| | S 37 D | 430 - 438 | D 434 | |
| | S 38 D | 438 - 446 | D 442 | |

Technical appendix

6. Channels and frequencies

| Channel | Channel limits (MHz) | Video carrier (MHz) | Audio carrier (MHz) |
|--------------------------|----------------------|---------------------|---------------------|
| Standard B, Italy | | | |
| VHF I A | 52.5-59.5 | 53.75 | 59.25 |
| B | 61-68 | 62.25 | 67.75 |
| VHF II C | 81-88 | 82.25 | 87.75 |
| VHF III D | 174-181 | 175.25 | 180.75 |
| E | 182.5- 189.5 | 183.75 | 189.25 |
| F | 191-198 | 192.25 | 197.75 |
| G | 200-207 | 201.25 | 206.75 |
| H | 209-216 | 210.25 | 215.75 |
| H 1 | 216-223 | 217.25 | 222.75 |
| H 2 | 223-230 | 224.25 | 229.75 |
| Standard D, OIRT | | | |
| VHF I R I | 48.5-56.5 | 49.75 | 56.25 |
| R II | 58-66 | 59.25 | 65.75 |
| R III | 76-84 | 77.25 | 83.75 |
| (VHF II) R IV | 84-92 | 85.25 | 91.75 |
| R V | 92-100 | 93.25 | 99.75 |
| s1 | 110-118 | 111.25 | 117.75 |
| s2 | 118-126 | 119.23 | 125.75 |
| s3 | 126-134 | 127.25 | 133.75 |
| s4 | 134-142 | 135.25 | 141.75 |
| s5 | 142-150 | 143.25 | 149.75 |
| s6 | 150-158 | 151.25 | 157.75 |
| s7 | 158-166 | 159.25 | 165.75 |
| s8 | 166-174 | 167.25 | 173.75 |
| (VHF III) R VI | 174-182 | 175.25 | 181.75 |
| R VII | 182-190 | 183.25 | 189.75 |
| R VIII | 190-198 | 191.25 | 197.75 |
| R IX | 198-206 | 199.25 | 205.75 |
| R X | 206-214 | 207.25 | 213.75 |
| R XI | 214-222 | 215.25 | 221.75 |
| R XII | 222-230 | 223.25 | 229.75 |
| s9 | 230-238 | 231.25 | 237.75 |
| s10 | 238-246 | 239.25 | 245.75 |
| s11 | 246-254 | 247.25 | 253.75 |
| s12 | 254-262 | 255.25 | 261.75 |
| s13 | 262-270 | 263.25 | 269.75 |
| s14 | 270-278 | 271.25 | 277.75 |
| s15 | 278-286 | 279.25 | 285.75 |
| s16 | 286-294 | 287.25 | 293.75 |
| s17 | 294-302 | 295.25 | 301.75 |
| s18 | 302-310 | 303.25 | 309.75 |
| s19 | 310-318 | 311.25 | 317.75 |
| s20 | 318-326 | 319.25 | 325.75 |
| s21 | 326-334 | 327.25 | 333.75 |
| s22 | 334-342 | 335.25 | 341.75 |
| s23 | 342-350 | 343.25 | 349.75 |
| .. | | | |
| ... | | | |
| s38 | 462-470 | 463.25 | 469.75 |

Spec. channel

Spec. channel

| 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 IA | 44.5-52.5 | 45.75 | 51.75 |
| IB | 52.5-60.5 | 53.75 | 59.75 |
| IC | 60.5-68, 5 | 61.75 | 67.75 |
| VHF III ID | 174-182 | 175.25 | 181.25 |
| IE | 182-190 | 183.25 | 189.25 |
| IF | 190-198 | 191.25 | 197.25 |
| IG | 198-206 | 199.25 | 205.25 |
| IH | 206-214 | 207.25 | 213.25 |
| IJ | 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. 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 | | |
| Czechoslovakia | 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 | | |
| Philippines | 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 | | |

Technical appendix

8. Signal level - mV to dB μ V

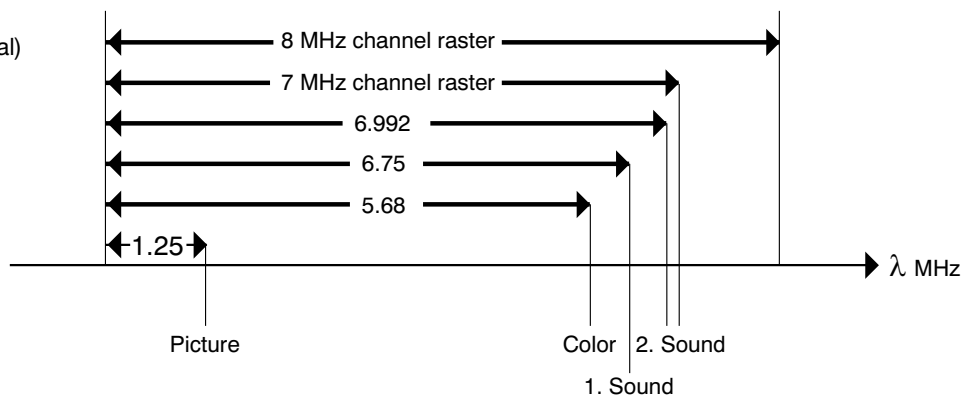
| Signal level - mV to dB μ V | | | | | | Voltage ratio in dB | | | Voltage ratio in dB | | |
|---------------------------------|------------|------------------|------------|------------------|------------|---------------------|-----|---------------|---------------------|----|---------------|
| mV v/75 Ω | dB μ V | mV v/75 Ω | dB μ V | mV v/75 Ω | dB μ V | *) Factor -dB | dB | *) Factor +dB | *) Factor -dB | dB | *) Factor +dB |
| 0,100 | 40 | 3,55 | 71 | 125 | 102 | 1,0 | 0,0 | 1,0 | 0,125 | 18 | 8,0 |
| 0,112 | 41 | 4,00 | 72 | 140 | 103 | 0,95 | 0,5 | 1,06 | 0,11 | 19 | 8,9 |
| 0,125 | 42 | 4,50 | 73 | 160 | 104 | 0,89 | 1,0 | 1,12 | 0,10 | 20 | 10,0 |
| 0,140 | 43 | 5,00 | 74 | 180 | 105 | 0,84 | 1,5 | 1,19 | 0,089 | 21 | 10,0 |
| 0,160 | 44 | 5,60 | 75 | 200 | 106 | 0,8 | 2,0 | 1,25 | 0,08 | 22 | 12,5 |
| 0,180 | 45 | 6,30 | 76 | 225 | 107 | 0,75 | 2,5 | 1,33 | 0,071 | 23 | 14,1 |
| 0,200 | 46 | 7,00 | 77 | 250 | 108 | 0,71 | 3,0 | 1,41 | 0,063 | 24 | 16,0 |
| 0,225 | 47 | 8,00 | 78 | 280 | 109 | 0,67 | 3,5 | 1,5 | 0,056 | 25 | 17,8 |
| 0,250 | 48 | 9,00 | 79 | 315 | 110 | 0,63 | 4,0 | 1,6 | 0,050 | 26 | 20,0 |
| 0,280 | 49 | 10,0 | 80 | 355 | 111 | 0,60 | 4,5 | 1,67 | 0,045 | 27 | 22,4 |
| 0,315 | 50 | 11,2 | 81 | 400 | 112 | 0,56 | 5,0 | 1,78 | 0,04 | 28 | 25,0 |
| 0,355 | 51 | 12,5 | 82 | 450 | 113 | 0,53 | 5,5 | 1,88 | 0,035 | 29 | 28,2 |
| 0,400 | 52 | 14,0 | 83 | 500 | 114 | 0,50 | 6,0 | 2,0 | 0,032 | 30 | 31,6 |
| 0,450 | 53 | 16,0 | 84 | 560 | 115 | 0,47 | 6,5 | 2,12 | 0,028 | 31 | 35,5 |
| 0,500 | 54 | 18,0 | 85 | 630 | 116 | 0,45 | 7,0 | 2,24 | 0,025 | 32 | 40 |
| 0,560 | 55 | 20,0 | 86 | 700 | 117 | 0,42 | 7,5 | 2,37 | 0,022 | 33 | 45 |
| 0,630 | 56 | 22,5 | 87 | 800 | 118 | 0,4 | 8,0 | 2,5 | 0,020 | 34 | 50 |
| 0,700 | 57 | 25,0 | 88 | 900 | 119 | 0,38 | 8,5 | 2,66 | 0,018 | 35 | 56 |
| 0,800 | 58 | 28,0 | 89 | 1000 | 120 | 0,35 | 9,0 | 2,82 | 0,016 | 36 | 63 |
| 0,900 | 59 | 31,5 | 90 | 1120 | 121 | 0,33 | 9,5 | 3,00 | 0,014 | 37 | 71 |
| 1,00 | 60 | 35,5 | 91 | 1250 | 122 | 0,32 | 10 | 3,16 | 0,0125 | 38 | 80 |
| 1,12 | 61 | 40,0 | 92 | 1400 | 123 | 0,28 | 11 | 3,55 | 0,011 | 39 | 89 |
| 1,25 | 62 | 45,0 | 93 | 1600 | 124 | 0,25 | 12 | 4,00 | 0,01 | 40 | 100 |
| 1,40 | 63 | 50,0 | 94 | 1800 | 125 | 0,22 | 13 | 4,5 | 0,0056 | 45 | 178 |
| 1,60 | 64 | 56,0 | 95 | 2000 | 126 | 0,2 | 14 | 5,00 | 0,0032 | 50 | 316 |
| 1,80 | 65 | 63,0 | 96 | 2250 | 127 | 0,18 | 15 | 5,62 | 0,0018 | 55 | 562 |
| 2,00 | 66 | 70,0 | 97 | 2500 | 128 | 0,16 | 16 | 6,3 | 0,001 | 60 | 1000 |
| 2,25 | 67 | 80,0 | 98 | 2800 | 129 | 0,14 | 17 | 7,1 | - | - | - |
| 2,50 | 68 | 90,0 | 99 | | | | | | | | |
| 2,80 | 69 | 100 | 100 | | | | | | | | |
| 3,15 | 70 | 112 | 101 | | | | | | | | |

*) **The numbers are dB value calculated to times.**
Signal level is often stated in dB μ V which is to be understood as the number of dB the signal exceeds 1 μ V.

9. 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



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General sales and delivery conditions

1. APPLICATION

All sales of the seller's products are made according to the following conditions which have preference to any stipulations laid down in the buyer's order/ acceptance, including buyer's general conditions, unless otherwise stated in a written agreement, and in that case with an exact indication of the points from which these sales and delivery conditions are deviating.

2. QUOTATION AND ORDER CONFIRMATION

Quotations made by the seller are open for 30 days from the date of the offer, unless otherwise specified.

3. PRODUCT INFORMATION

Information and Technical data on seller's products stated in catalogues, leaflets and other written material are only to be considered as approxIMDte 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 approx imdte 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 packing materials.

9. TOOLS

Applied tools which have been debited to the buyer wholly or in part, according to agreement, remain in the seller's warehouse, but are not delivered. The seller takes care of the proper maintenance of these tools. If such tools are not used for 3 years, the seller is no longer bound to keep and maintain them.

No liability rests with the seller for tools lent by the buyer, if they have not been used for 2 years and not been demanded by then.

10. PROPERTY/INCORPOREAL RIGHTS

The buyer does not acquire property and/or inventor's rights / other incorporeal rights to any computer programmes used for the product, nor any drawings, design, technical solutions etc. whether individually made for the buyer on his account or not, since the buyer is only entitled to use such material in relation to the agreed application of the product.

11. RESPONSIBILITY FOR VIOLATION OF PATENT AND OTHER INCORPOREAL RIGHTS

If there should be a risk, or if it is asserted that the product infringes a patent or another incorporeal right, the buyer accepts that, at his own option, the seller is either allowed by the proper party to continued use or he changes or replaces the product, so that it no longer gives rise to an infringement.

If none of these alternatives can be achieved on terms that the seller finds reasonable, he can claim that the buyer refrains from using the product against an allowance from the seller corresponding to the value of the product after depreciation with equal amounts every year compared to the technical and economical life of the product.

The size of such an allowance is not dependent on the question whether the product is integrated into another product or a building etc., and it is not influenced by the loss which it and/or discontinuance of use might cause the buyer.

In case of resale of the product, the buyer is liable to include an identical stipulation in the agreement between buyer and buyer's customer, including instruct the customer to include an identical stipulation for the customer's possible resale.

The seller's maximum responsibilities as to any potential infringement of the patent or another incorporeal right are defined above.

General sales and delivery conditions

12. COMPLAINTS

Immediately on receipt and prior to taking the products into use, the buyer should inspect the goods supplied to ensure that there are no shortcomings and that the correct quantity has been supplied.

Complaints of defects which have been found or should have been found at a general inspection must be made at once and not later than 8 days after receipt of the products. If the complaint is not made within the time limit stated, the buyer loses his right to put forward a claim.

Complaints of discrepancies in quantity and damages to the product should be made immediately to the carrier, if any, and to the seller. Otherwise, the buyer loses his right to complain of such faults.

13. RESPONSIBILITY FOR SHORTCOMINGS

Provided that the agreed terms of payment are kept, and that complaints are made in due time, the seller will remedy any shortcomings that turn up during a period from 12 months from the delivery date. The responsibility does not comprise deficiencies caused by factors arisen after the risk has passed over to the buyer.

Remedy is only made by adjustment, repair or replacement of (parts of) the product or its components according to the seller's option. Wages paid for dismounting and mounting will not be refunded. If dismounting and mounting should affect more than the product, such work and costs are irrelevant to the seller as well.

The buyer has to send the seller a written complaint with details of the deficiency without undue delay. The complaint should be made immediately, if there is reason to believe that damages might be involved. If the buyer does not advise the seller of a deficiency within the time limit stated, the buyer will lose his right to make a claim.

Return of repaired parts or return of the product is paid by the seller who takes over replaced parts, if any. Unless otherwise agreed, the buyer will pay such additional costs that may arise if the product is situated at another place than the destination stated in the agreement, or, failing such information, the place of delivery.

If the product has been changed or someone else than the seller or a repair man appointed by the seller has tried to repair the product, or if the product has been subject to damages or used for unfit purposes, or if installation, operation and maintenance are not in compliance with the seller's stipulations, the seller can refuse to remedy the deficiency free of charge.

Deficiencies caused by conditions for which the buyer or someone else is responsible, or which are not announced until after expiration of the remedying period, are not the seller's business.

The seller's responsibility does not include deficiencies arisen in materials provided by the customer or by a co-producer/supplier appointed by the customer or in constructions ordered or specified by him. If the seller does not meet his obligations within a reasonable time, the buyer can claim a proportional reduction of the purchase sum, but not more than 15% of the agreed purchase sum. In case of a vital deficiency, the buyer can cancel the agreement by a written notice to the seller, at the same time demanding compensation for his loss, i.e. max. 15% of the agreed purchase sum.

Above conditions are the seller's maximum obligations concerning shortcomings. So the seller is neither responsible for direct nor indirect losses, including operational losses, loss of profit as well as costs or damages etc.

14. LIABILITY FOR CAUSING DAMAGES (PRODUCT LIABILITY)

The seller is responsible for personal injuries according to the legislation concerning product liability.

The seller is not responsible for damages to real and personal property which occurs while the product is in the buyer's possession. Nor is the seller responsible for damages to products made by the buyer or products comprising such parts. Furthermore, the seller is only responsible for damages to real and personal property, if it can be proved that the damage is caused by mistakes or negligence made by the seller or others whom the seller is responsible for.

The seller is not responsible for operational losses, loss of profit or other indirect losses.

If a product liability towards a third party has been imposed on the seller, the buyer is committed to indemnify the seller to the same degree as the seller's responsibility stated in the three previous paragraphs.

These limitations of the seller's responsibility are not valid, if the seller has shown gross negligence.

If the third party claims compensation from one of the parties in accordance with this point, he should advise the other party immediately.

The buyer is bound to let the court or arbitration tribunal bring an action against him which deals with claims made against the seller for damages assertedly caused by the product.

15. FORCE MAJEURE

The seller's obligations are suspended and can be dropped when missing fulfilment is owing to conditions beyond the seller's control.

16. CONSUMERS' PURCHASES IN DENMARK

For consumers' purchases in Denmark the stipulations laid down in the Sale of Goods Act take precedence over these sales and delivery terms.

17. VENUE AND LAW

Any dispute arising out of the contract shall be settled before a Danish court. The venue is „SØ- og Handelsretten“ in Copenhagen. However, the seller is entitled to demand arbitration according to the general rules of the Danish court. The Court of Arbitration is set up in Copenhagen. Settlement through arbitration does not exclude the possibility of an injunction or that other preliminary remedies can be carried through at the relevant revenue.

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