

Unicable II® Multiswitch

Cascadable Multiswitch with Terrestrial input
& 12 Sky dSCR / SatCR / Legacy + equalized Terrestrial outputs
ISKY-UST112-CU012-16S
Item:6563



Installation manual

Thank you for purchasing Inverto's advanced Unicable II multiswitch and we are certain it will meet your expectations. Before installing and operating the product, please read the following instructions and recommendations. We suggest that you keep this manual for future use.

Warranty

This Unicable II multiswitch is designed for the distribution of satellite and terrestrial television and radio signals in home installations. The warranty does not apply for products used for other purposes than those specified herein. The user/installer shall be responsible for any damage incurred as a result of not using the product according to the instructions in this manual.

Installation location

The product shall be installed on a wall or other hard inflammable surface. The product shall be in no case held only with the connected cables. Place the product in a dry environment where it is not exposed to rain or running water. Do not install the product close to heat sources or in places exposed to direct sunlight.

Product installation

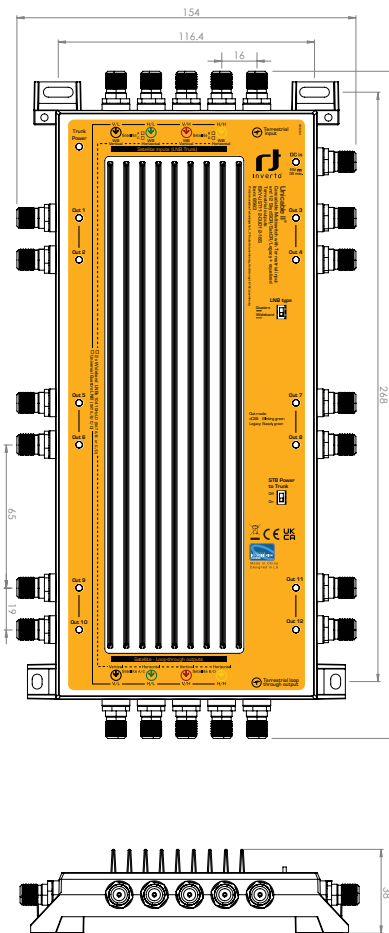
To distribute the best signal quality across your installation we recommend connecting the product inputs and outputs using high-quality coaxial cables and F-connectors designed for satellite TV distribution. Use a highly shielded coaxial cables with minimum shielding of 90dB. If you use wall sockets to loop-through the STB outputs, make sure the wall sockets were designed for satellite TV distribution allowing bidirectional signal propagation.

The satellite input ports can be connected directly to a Quattro/Wideband LNB (pay attention to the port designations and the correct position of the LNB type switch SW1) or cascade to another Multiswitch unit.

The DC-input port of the Multiswitch unit powers the satellite trunk lines to power the connected LNB. It also powers the unit's built-in Terrestrial amplifier as well as the Terrestrial amplifier of cascaded units. The Trunk Power LED / DC-in LED will turn Green when their DC level is higher than 11V DC, and will turn Amber if insufficient (<11V DC).

The output ports are powered by the connected STBs to enable super low power consumption of the unit and allow to power the maximum number of cascaded switches through a single power supply unit. If a connected STB is not able to power the port, a power inserter can be utilized*.

* Power Inserter and AC/DC power adapters are not included and can be purchased separately.

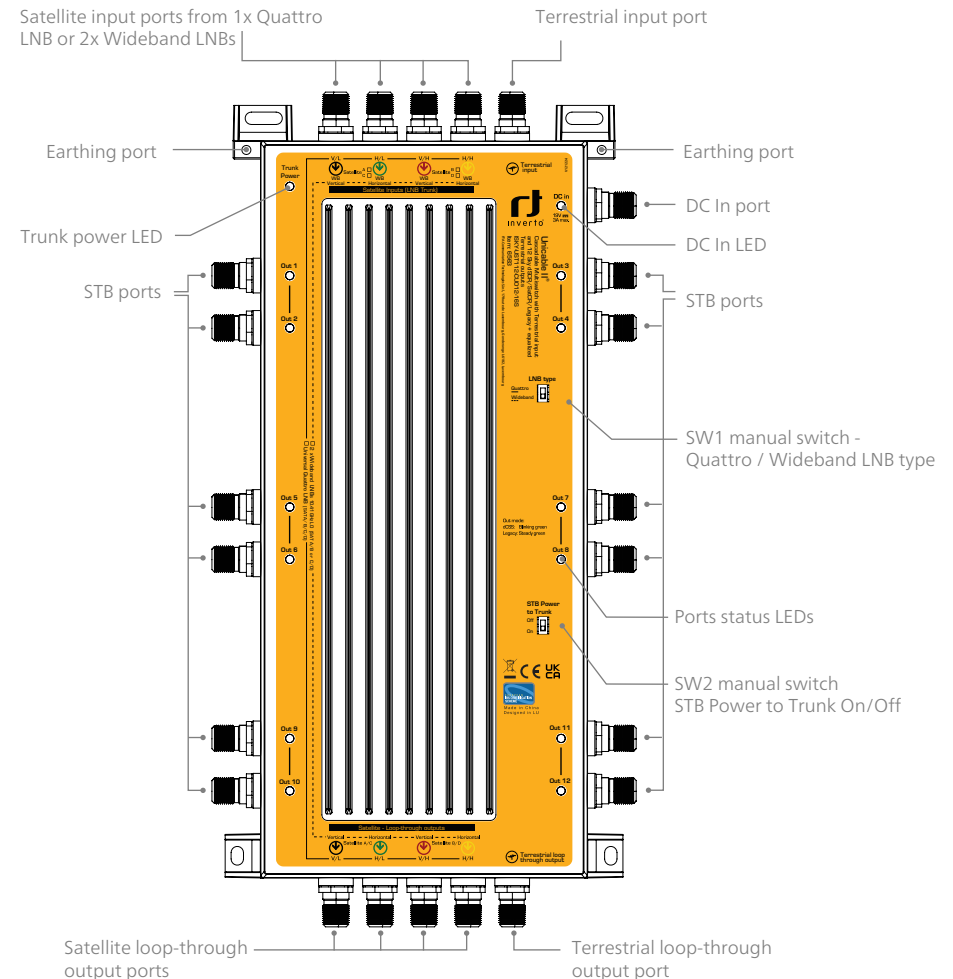


For optimal performances, unused trunk RF output ports used shall be terminated with a 75Ω DC-block termination.

Note: It is also recommended to terminate unused STB output ports with 75Ω terminating resistors.

The manual switch SW2 - STB Power to the Trunk On/Off - allows the trunk lines to be powered via the STB output ports by the connected STBs. If the connected STBs are not able to provide sufficient power, a power inserter can be utilized*. This is useful in installations having no power supply available next to the multiswitch unit in order to power its trunk lines and the connected LNB via the DC-in port.

IMPORTANT: Ground the multiswitch device using its earthing terminals.



Product configuration

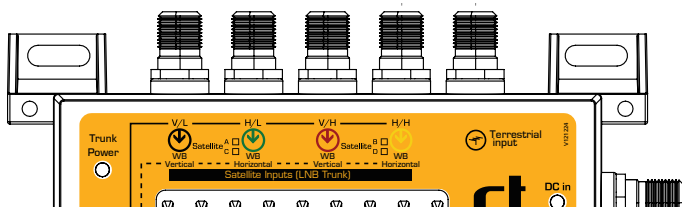
Each of the twelve STB output ports is compatible with either Sky Q, Sky+ HD or Sky + STB models and can detect automatically what type of STB is connected to each port. Each port supports 16 User Bands. The list of the User Bands' parameters appears on the next page.

The Multiswitch unit has a Port Status LED next to each of the twelve STB ports. The status LED (turns Green if the DC level is >11V DC) identifies the mode of the port:

- Solid Green = Legacy mode (e.g. Sky+ STB).
- Blinking Green = dSCR or SatCR mode (e.g. Sky Q or Sky+ HD STBs).
- Off = no voltage detected on the port (only terrestrial signal available on the port)

All the twelve STB output ports combine the Terrestrial input signal.

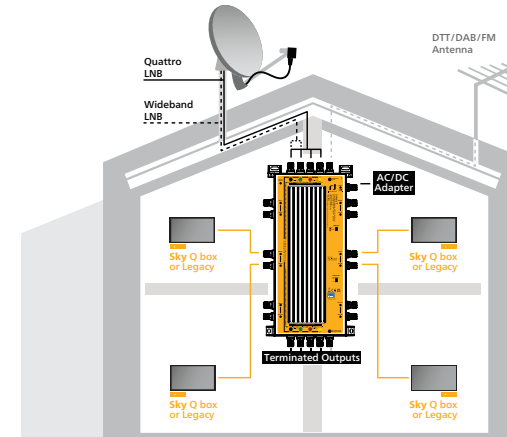
Connect the cables from the Quattro/Wideband LNB to the input connectors (pay attention to identification of the connectors and the correct position of the LNB type switch) and connect the Terrestrial antenna to Terrestrial input port:



The number and frequency of the 16 User Bands available over each STB output port are the following:

| User Bands - Sky UK | | User Bands - EN50494/EN50607 | |
|---------------------|--------------|------------------------------|--------------|
| 3 : 1680MHz | 19 : 1530MHz | 1 : 1210MHz | 9 : 1340MHz |
| 9 : 1280MHz | 20 : 1580MHz | 2 : 1420MHz | 10 : 1485MHz |
| 11 : 1380MHz | 21 : 1630MHz | 3 : 1680MHz | 11 : 1550MHz |
| 14 : 1480MHz | 22 : 1730MHz | 4 : 2040MHz | 12 : 1615MHz |
| 15 : 980MHz | 23 : 1780MHz | 5 : 985MHz | 13 : 1745MHz |
| 16 : 1030MHz | 24 : 1830MHz | 6 : 1050MHz | 14 : 1810MHz |
| 17 : 1080MHz | 25 : 1880MHz | 7 : 1115MHz | 15 : 1875MHz |
| 18 : 1130MHz | 26 : 1930MHz | 8 : 1275MHz | 16 : 1940MHz |

The following diagram describes a typical single household installation of the product:



The following diagram illustrates a typical MDU/building installation with two Wideband LNBs receiving two satellites:



MSW = Multiswitch

* If Sky service is required to be distributed, it should be connected over the SAT A position

Technical parameters

| | |
|--------------------------------|---|
| Inputs | 4 x Satellite IF inputs: - From 1x Quattro LNB - From 2x Wideband LNBs 1 x DTT/DAB/FM input from Terrestrial antenna |
| Outputs | 4 x loop-through satellite IF outputs 1 x loop-through terrestrial output 12 x Sky dSCR (16UBs) / SatCR / Legacy auto-detect ports with combined Terrestrial signal |
| Frequency range | Satellite: - Quattro LNB: 950-2150MHz - Wideband LNB: 290-2340MHz (LO=10.41 GHz) Terrestrial: VHF 174-230 MHz / UHF 470-790 MHz |
| Loop-through loss | Satellite: 6dB max. (loss) Terrestrial: 0 +/-1dB |
| Gain (without AGC) | Satellite (Trunk to Tap, outside of AGC): 25dB min. Terrestrial (TERR in to Tap): 0 +/-2dB |
| Input power level (aggregated) | Satellite AGC: -32dBm to -4dBm (76dBuV to 104 dBuV) Terrestrial: 100dBuV max. |
| Output power level | Satellite (AGC output): -25dBm (83dBuV) |
| Isolation | Trunk satellite/satellite (input): >30dB Trunk satellite/terrestrial (input): >30dB Trunk satellite (input) / Tap (output): >26dB |
| Control protocol | Sky dSCR (Sky Q), SatCR (Sky+ HD), Legacy 13/18V + 0/22kHz (Sky+), DiSEqC1.x/DiSEqC2.0, EN50494, EN50607 |
| Power consumption | Output port: 300mA (12 UBs) / 365mA (32UBs) max. @11-20V DC, (supplied by the connected STB) DC in port (no LNB load): 100mA max. @18V DC |
| Power supply to LNB | 500mA max., 18VDC |
| Dimensions (W x H x D mm) | W=154 H=303 D=38 |
| Temperature range | -20°C ~ +50°C |
| Ingress Protection | IP54 |

Optional accessories (not supplied, sold separately):

| | |
|---|---|
| MDU AC/DC power adapter (UK plug) Model no.: IDLU-ADPT04-19342-UPM Item no.: 5581 | Input voltage: 100-240VAC, 50/60Hz Output power: 19VDC, 3.42A Short circuit protection: Yes |
|---|---|

| | |
|--|---|
| Unit AC/DC power adapter (UK plug) Model no.: IDLU-ADPT01-19WOO-UPM Item no.: 5638 | Input voltage: 100-240VAC, 50/60Hz Output power: 19VDC, 940mA Short circuit protection: Yes |
|--|---|

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|--|
| Power Inserter 5-2400MHz, 1000mA max Model no.: IDLU-PINS03-OOOOO-OBT Item no.: 5958 |
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Safety

- Never open a powered product. This may result in electrical hazard.
- Never work on the product, TV set or other powered devices during or before a storm. A lightning strike into the antenna may cause dangerous overvoltage over the product's metallic/conductive parts.
- Make sure the local electricity network corresponds to the operating voltage of the AC/DC adaptor. If the products gets into contact with liquid it must be disconnected from the main power.
- It is recommended to disconnect the product from the main power if it is not used for long periods of time.
- When disconnecting the product don't pull the cable but the plug to prevent damage of the cable (wobbly plugs and outlets result in fire risk).
- The product shall be serviced by qualified experts only.

Troubleshooting

Make sure the satellite antenna and LNB are properly fixed, connected and adjusted and that the satellite receivers are installed, connected and switched on according to available instructions. Ensure there is no short circuit on the product inputs. This will prevent power to the LNB. If this is the case, disconnect the product from the main power, and then find and remove the short circuit on the product inputs. Then re-connect the multiswitch to the main power. Frequent defects are in connector joints i.e. if the central conductor is too short and fails to make contact in the connector. Also the shielding braid should make proper contact with the connector coat. Sometimes a reset to the multiswitch microprocessor is sufficient to remove a fault: simply disconnect the multiswitch from main power for 30 seconds and then reconnect again. If you are unable to remove the fault yourself, please contact your distributor.

Disposal

Following relevant EU directives, this device shall not be disposed of together with municipal waste. Use local waste collection and recycling systems to dispose worn out products.

Compliance

FTA Communication Technologies S.á r.l declares that the Multiswitch product is in compliance with Directive 2014/53/EU (RED). The full text of the EU declaration of conformity is available at: www.inverto.tv/support_dc



FTA Communication Technologies S.á r.l declares that the radio equipment type LNB is in compliance with the UK Radio Equipment Regulations 2017, Electrical Equipment (Safety) Regulations 2016 & Electromagnetic Compatibility Regulations 2016.
Designated standards: EN303372-2, EN55032, EN55035, EN 62368

The full text of the UKCA declaration of conformity is available at: www.inverto.tv/support_dc



*DiSEqC™ is a registered trademark of Eutelsat



For purpose of brevity, some product descriptions in this sheet remain at platform level and may not be referred to as detailed data sheets of the products. Inverto Digital Labs reserves the right to amend, omit or add products, product-lines, and / or features without notice. As product specifications may change without notice, always contact Inverto to obtain the latest product specification sheets.

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