

# Unicable™ II Multiswitch

Unicable II Cascadable switch with Terrestrial input and 4xSky dSCR/SatCR/Legacy + Terrestrial outputs  
ISKY-UST110-CUO40-16P  
Item: 5412



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

The following diagram may assist you when drilling the holes:

To connect the product inputs and outputs use 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 LNB (pay attention to the port designations - Ver/Low, Hor/Low, Ver/High, Hor/High) or cascade to another Multiswitch unit.

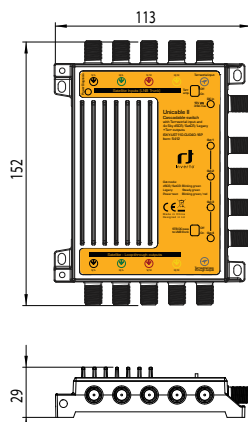
The multiswitch can be powered by STBs connected to its output ports. If the connected STB is not able to supply the required current, a power inserter\* can be used. Alternatively, the Multiswitch can be powered over its DC In port\* or over any of its output trunk lines (e.g. from a cascaded unit).

In installations that require only one Multiswitch unit, power supplied over the STB output ports can be passed on to power the LNB by setting the manual switch (SW2) to ON. The switch shall be set to OFF in cascade installations otherwise the connected STB will have to power all the units it cascades to.

The Multiswitch features a TERRESTRIAL input and a 12dB amplifier. The amplifier can be activated by setting the manual switch SW1 to ON and disabled when set to OFF. The amplifier amplifies the terrestrial signal that passes on to both the STB output ports and the terrestrial loop-through output port.

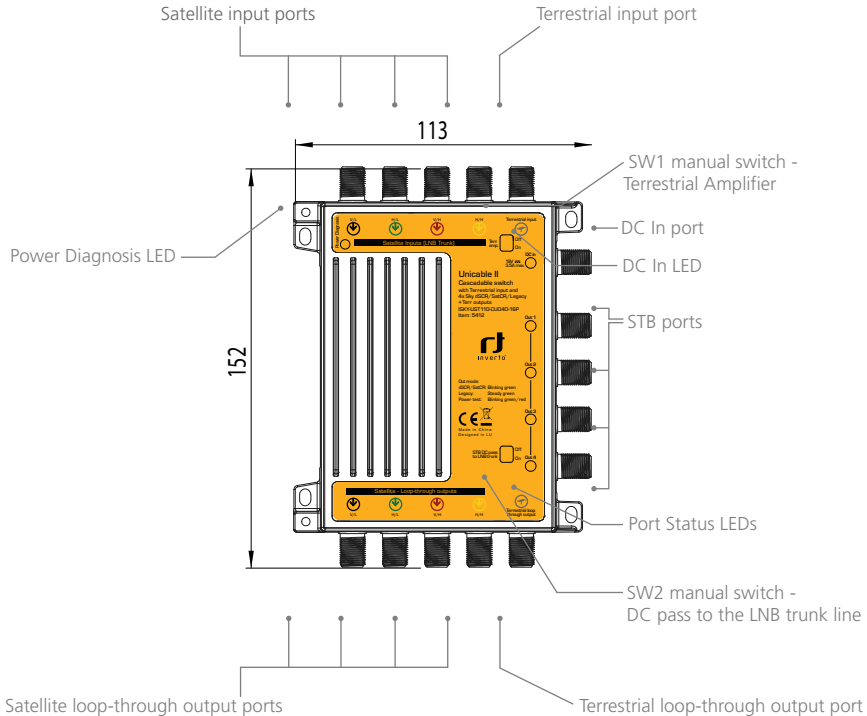
Upon power up and if power is supplied to the unit over its DC In port or any of its trunk output lines (i.e. no power is supplied to any of the STB ports), the unit will enter into a high-power test mode for 15 seconds. The power diagnosis LED will light green if the power supplied to the unit is sufficient to support a full load (i.e. 4 Qbox units + a Quattro LNB) and will turn orange if not (in this case, connect an AC/DC adapter to the DC In port of the unit).

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



## Notes:

For optimal performances, satellite loop-through outputs that are not used shall be terminated with 75ohm DC-block terminating resistors. The Terrestrial loop-through output port shall be terminated with a 75ohm terminating resistor. It is also recommended to terminate unused STB output ports with 75ohm terminating resistors.



## Product configuration

Each of the four 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.

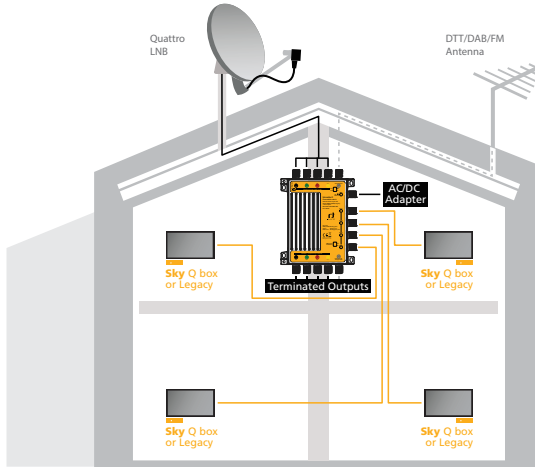
The Multiswitch unit has a Port Status LED next to each of the four STB ports.

The status LED 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).
- blinking red/green - power diagnosis mode.
- off = no voltage detected on the port (only terrestrial signal available on the port)

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

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

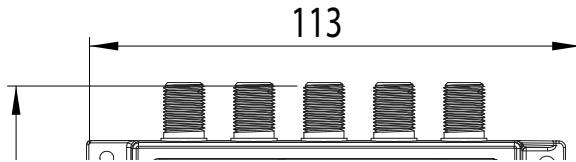


The following diagram illustrate a typical MDU/building installation:



MSW = Multiswitch

Connect the cables from the Quattro LNB to the input connectors marked with LNB V/L, H/L, V/H and H/H inputs (pay attention to identification of the Quattro LNB connectors). The multiswitch is equipped with Terrestrial input. Connect the Terrestrial antenna to this input:



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

### Technical parameters

Inputs	4 x Satellite IF inputs from Quattro LNB 1 x DTT/DAB/FM input from Terrestrial antenna
Outputs	4 x loop-through satellite IF outputs 1 x loop-through terrestrial output 4 x Sky dSCR (16UBs) / SatCR / Legacy auto-detect ports with combined Terrestrial signal
Frequency range	Satellite: 950-2150MHz Terrestrial: VHF: 174-230 MHz, UHF: 470-790 MHz
Loop-through loss	Satellite: 4dB max. (loss) Terrestrial: VHF: 6 dB max., UHF: 8 dB max.
Gain (without AGC)	Satellite (Trunk to Tap, outside of AGC): 25dB min. Terrestrial (TERR in to Tap): Amp=OFF VHF: -16 dB ±2dB, UHF: -18 dB ±2dB Amp=ON VHF: +4 dB ±2dB, UHF: +2 dB ±2dB
Max input signal level	Satellite: 0 dBm (108 dBµV) max. Terrestrial: -20 dBm (88 dBµV) 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	500-1100mA @10~20VDC
Power supply to LNB	500mA max., 18VDC
Dimensions (W x H x D mm)	W=110.24 H=151.86 D=26.00
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-EPM Item no.: 5582	Input voltage: 100-240VAC, 50/60Hz Output voltage: 19VDC Output current: 3.42A Short circuit protection: Yes
Unit AC/DC power adapter (UK plug) Model no.: MSA-C1000IS19.0-24K-GB Item no.: 5638	Input voltage: 100-240VAC, 50/60Hz Output voltage: 19VDC Output current: 940mA Short circuit protection: Yes
Power Inserter 5-2400MHz, 1000mA max Model no.: IDLU-PINS03-00000-OBT Item no.: 5958	

## 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.

\*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.



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