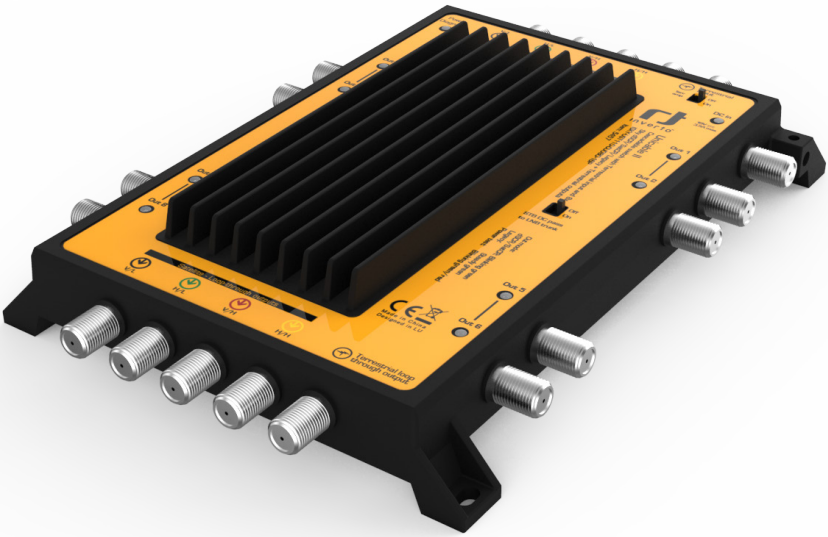


Unicable II™ Multiswitch

Unicable II Cascadable switch with Terrestrial input and 8x Sky dSCR/SatCR/Legacy + Terrestrial outputs

ISKY-UST110-CUO80-16P

Item: 5457

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

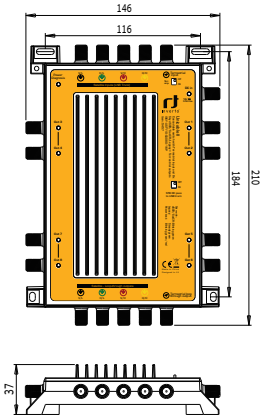
This Unicable II multiswitch is designed for the distribution of satellite and terrestrial television and radio signals in home installations. The warranty does not apply for products used for other purposes than those specified herein. The user/installer shall be responsible for any damage incurred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

Installation location

⚠ IMPORTANT: The Multiswitch unit shall be installed in vertical orientation to allow optimal heat dissipation through its cooling fins (see diagram on the right side below). 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, Ver/High Hor/Low, Hor/High) or cascade to another Multiswitch unit.

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

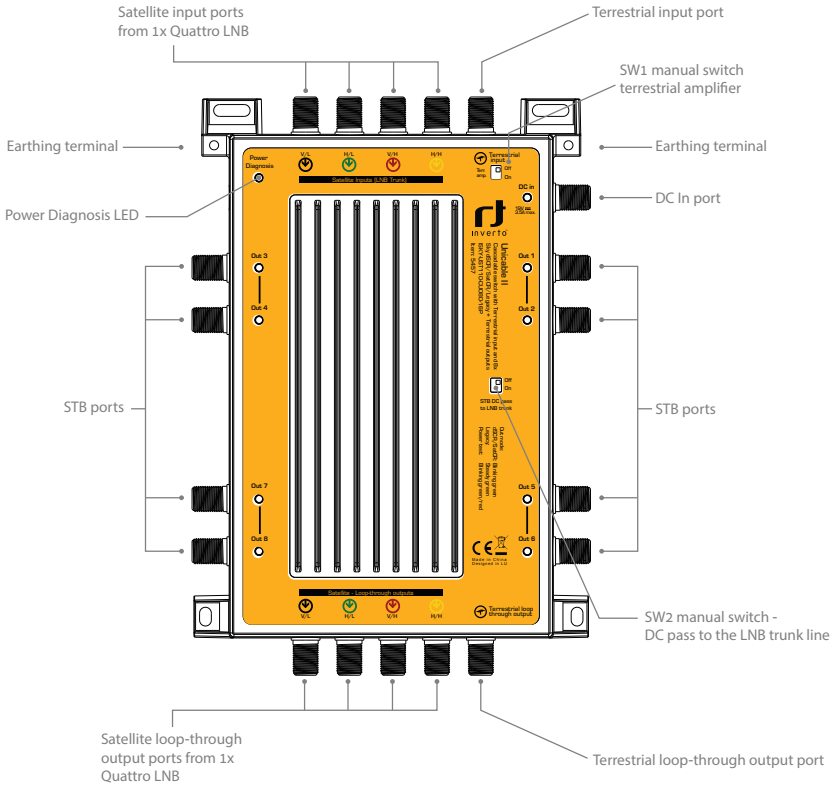
In installations that require only one Multiswitch unit, power supplied over the STB output ports can be passed on to power the LNB by setting the manual switch (SW2) to ON. The switch shall be set to OFF in cascade installations otherwise the connected STB will have to power all the units it cascades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

The Multiswitch features a TERRESTRIAL input with a built-in 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. 8 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).

* AC/DC power adapter and Power Inserter 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.
IMPORTANT: Ground the multiswitch device using its two earthing terminals.



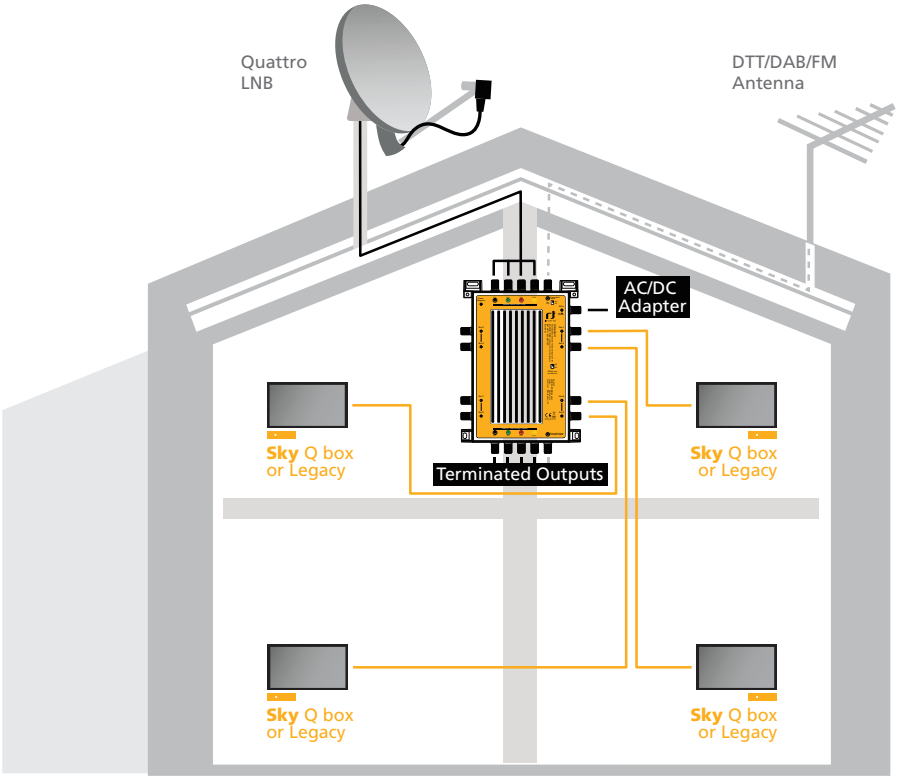
Product configuration and default parameters

Each of the eight 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.

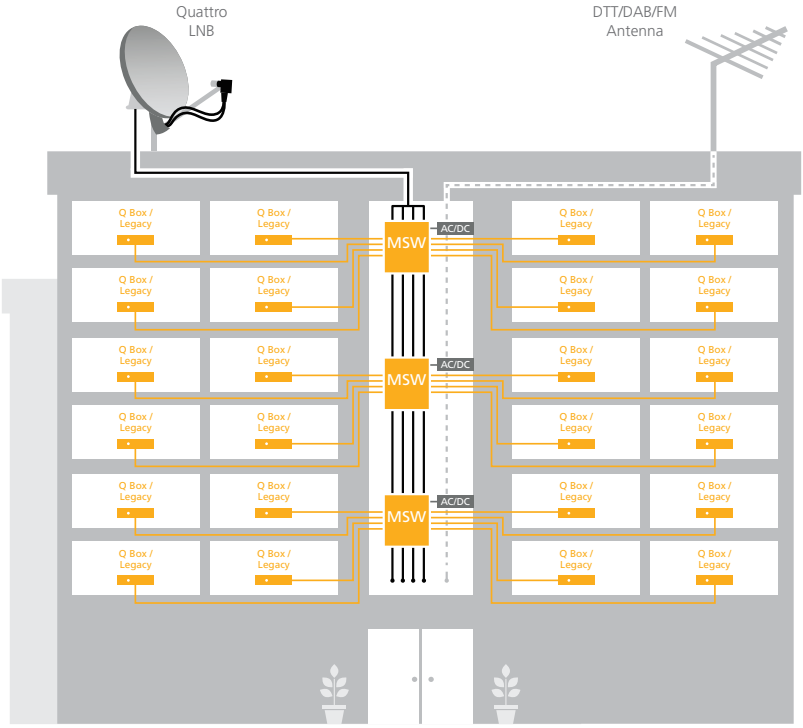
The Multiswitch unit has a Port Status LED next to each of the eight STB ports.
The status LED identifies the mode of the port:
- solid green = Legacy mode (e.g. Sky+ STB)
- blinking green = dSCR or SatCR mode (e.g. Sky Q or Sky+ HD STBs)
- blinking red/green = power diagnosis mode
- off = no voltage detected on the port (only terrestrial signal available on the port)

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

The following diagram describes a typical single household installation based on the default configuration of the product

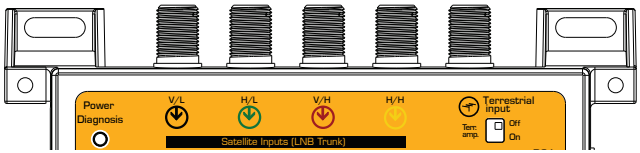


The following diagram illustrates a typical MDU/building installation:



MSW=Multiswitch

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



Technical parameters

Frequency range: satellite	950 MHz ~ 2150 MHz
Frequency range: terrestrial	VHF: 174-230 MHz, UHF: 470-790 MHz
Inputs	4 x Satellite IF inputs from Quattro LNB 1 x DTT/DAB/FM input from Terrestrial antenna
Outputs	4 x loopthrough satellite IF outputs* 1 x loopthrough terrestrial output 8 x Sky dSCR (16 UBs) / SatCR / Legacy auto-detect ports with combined Terrestrial signal
Max input signal level	Satellite: 0dBm (108dBuV) Terrestrial: -20dBm (88dBµV)
Output signal level (Satellite, AGC)	-25 dBm (83 dBuV)
RF isolation: Trunk satellite/satellite (input)	30 dB min.
RF isolation: Trunk satellite/terrestrial (input)	30 dB min.
RF isolation: Trunk satellite (input) /Tap (output):	26 dB min.
Loop-through loss: satellite	4 dB max.
Loop-through loss: terrestrial	Amp=OFF: VHF -8 dB max. UHF -12 dB max.
Gain: Unicable II™ (dCSS) output (out of AGC)	25 dB min
Gain: terrestrial signal	Amp=OFF VHF: -18 dB ±2dB UHF: -20 dB ±4dB Amp=ON VHF: +2 dB ±2dB UHF: 0 dB±4dB
Integrated phase noise	1.5 degrees max.
Control protocols	Sky dSCR (Sky Q), SatCR (Sky+), Legacy 13 V/18 V + 0 kHz/22 kHz, DiSEqC1.x/ DiSEqC2.0, EN50494/EN50607
Legacy port switching	V/L => 13 V/0 kHz , V/H =>13 V/22 kHz H/L => 18 V/0 kHz , H/H => 18 V/22 kHz
Input/Output impedance	75 Ω (F-type)

Input/Output VSWR	2.5 : 1
LNB power supply	500 mA max. @ 18 VDC
Power consumption	1200 mA @ 19 VDC (no load)
Working temperature	-20 °C ~ +50 °C
IP protection	IP54
Product dimensions (H x W x D)	21 cm x 14.6 cm x 3.7 cm
Weight	500 g

Unicable II™ (dCSS) port specifications

User band (channel) bandwidth	46 MHz
User band (channel) gain ripple	3 dB max.
User band (channel) frequencies:	

Sky UK (dSCR) User Bands	EN50494/EN50607 User Bands
CH3: 1680 MHz	CH 1: 1210 MHz (EN 50494)
CH9: 1280 MHz	CH 2: 1420 MHz (EN 50494)
CH11: 1380 MHz	CH 3: 1680 MHz (EN 50494)
CH14: 1480 MHz	CH 4: 2040 MHz (EN 50494)
CH15: 980 MHz	CH 5: 985 MHz (EN 50607)
CH16: 1030 MHz	CH 6: 1050 MHz (EN 50607)
CH17: 1080 MHz	CH 7: 1115 MHz (EN 50607)
CH18: 1130 MHz	CH 8: 1275 MHz (EN 50607)
CH19: 1530 MHz	CH 9: 1340 MHz (EN 50607)
CH20: 1580 MHz	CH 10: 1485 MHz (EN 50607)
CH21: 1630 MHz	CH 11: 1550 MHz (EN 50607)
CH22: 1730 MHz	CH 12: 1615 MHz (EN 50607)
CH23: 1780 MHz	CH 13: 1745 MHz (EN 50607)
CH24: 1830 MHz	CH 14: 1810 MHz (EN 50607)
CH25: 1880 MHz	CH 15: 1875 MHz (EN 50607)
CH 26: 930 MHz	CH 16: 1940 MHz (EN 50607)

* Unused ports need to be terminated by 75 Ohm DC-blocked terminators

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

Safety

The device shall be properly grounded for safety reasons. Use the earthing terminals (identified on the drawing on page 3) to ground the multiswitch. Consult a qualified electrician if you have any doubt on proper grounding.

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 over-voltage over the product's metallic/conductive parts.

Make sure the local electricity network corresponds to the operating voltage of the AC/DC adapter. 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 wore 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.

Notes

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