

# Unicable™ II Multiswitch

32 User Bands with Terrestrial input & 1 Legacy port  
 IDLU-UST110-CUO10-32P  
 Item: 5151



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.

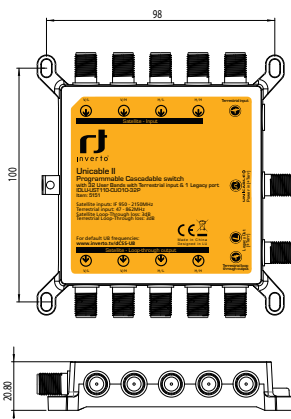
Do not install the product close to heat sources or in places exposed to direct sunlight.

## Product installation

The following diagram may assist you when drilling the holes:

To connect the product inputs and outputs use high-quality coaxial cables designed for satellite reception and F-connectors. Use a highly shielded coaxial cables with minimum shielding of 90dB. If you use wall sockets to loopthrough the Unicable II output, make sure the wall sockets were designed for satellite reception compatible with Unicable technology and allows bidirectional signal propagation.

The multiswitch can be powered over any of its output ports by any of the connected STBs if it is able to supply the necessary power to the switch and the Quattro LNB connected to it. If none of the connected STBs can supply sufficient power, the multiswitch shall be powered by the supplied AC/DC adapter and Power Inserter over its Unicable II port.



## Product default configuration

The factory default configuration of the output ports is as marked on the device's label. By default, the Unicable II port operates in dynamic mode (compatible with EN50494/EN50607) and supports up to 32 User Bands. The list of the User Bands' parameters appears on the next page.

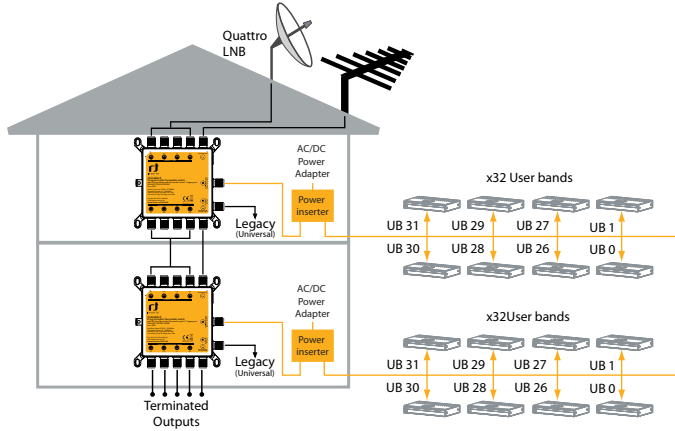
The default functionality of the output ports can be changed. The Legacy (Universal) port can be configured to function either as a Universal port (default) or as a Unicable II port. A Unicable II port can be configured to operate in dynamic or static mode.

Note: For optimal performances, the loop through outputs that are not used shall be terminated with 75ohm DC-decoupled terminating resistors.

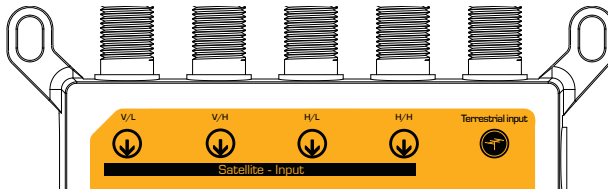
Note: The default configuration of the product, can be updated using Inverto's Programmer device (not supplied with the product and sold as a separate accessory) and PC Windows software that can be downloaded from [www.inverto.tv](http://www.inverto.tv).

Learn more about the Dynamic and Static operating modes on [www.inverto.tv](http://www.inverto.tv).

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



Connect the cables from the Quattro LNB to the input connectors marked with LNB V/L, V/H, H/L 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:



As noted earlier, there are two output ports, one configured by default to function as Legacy (Universal) and the second as Unicable II (as marked on the product's label).

The Legacy (Universal) output is a standard Universal switching output that allows to connect a legacy receiver that is not supporting the Unicable/Unicable II(EN50494/EN50607) protocol. The Unicable II output allows to connect up to 32 receiver tuners – each needs to be allocated one of the 32 user bands supported by the multiswitch. Each receiver tuner is assigned with 1 out of 32 communication channel frequencies (user band).

The frequencies of the User Bands are listed below:

**User Bands (default user band bandwidth 30MHz):**

CH0: 1210MHz (EN50494+EN50607)	CH11: 1292MHz (EN50607)	CH22: 1788MHz (EN50607)
CH1: 1420MHz (EN50494+EN50607)	CH12: 1328MHz (EN50607)	CH23: 1824MHz (EN50607)
CH2: 1680MHz (EN50494+EN50607)	CH13: 1364MHz (EN50607)	CH24: 1860MHz (EN50607)
CH3: 2040MHz (EN50494+EN50607)	CH14: 1458MHz (EN50607)	CH25: 1896MHz (EN50607)
CH4: 984MHz (EN50494+EN50607)	CH15: 1494MHz (EN50607)	CH26: 1932MHz (EN50607)
CH5: 1020MHz (EN50494+EN50607)	CH16: 1530MHz (EN50607)	CH27: 1968MHz (EN50607)
CH6: 1056MHz (EN50494+EN50607)	CH17: 1566MHz (EN50607)	CH28: 2004MHz (EN50607)
CH7: 1092MHz (EN50494+EN50607)	CH18: 1602MHz (EN50607)	CH29: 2076MHz (EN50607)
CH8: 1128MHz (EN50607)	CH19: 1638MHz (EN50607)	CH30: 2112MHz (EN50607)
CH9: 1164MHz (EN50607)	CH20: 1716MHz (EN50607)	CH31: 2148MHz (EN50607)
CH10: 1256MHz (EN50607)	CH21: 1752MHz (EN50607)	

For optimized performance, please follow the recommendations below:

1. Use the highest frequency for a wall socket located the nearest to the multiswitch and use the lowest frequency for wall socket located farthest to the multiswitch.
2. If you install less than 32 receiver tuners, use the lowest frequencies first. We also recommend to keep record of the user bands allocated to the different connections as these user bands will then have to be set in the receiver. The satellite receivers connected to the Unicable II output should be Unicable compatible (ie EN50494 and/or EN50607 compatible).

Note: For optimal performances, the loophrough outputs that are not used shall be terminated with 75ohm DC de-coupled terminating resistors.

## Technical parameters

Inputs	4 x IF inputs from Quattro LNB 1 x UHF/VHF input from Terrestrial antenna
Outputs	4 x Loophrough satellite IF outputs 1 x Loophrough terrestrial output 1 x default Legacy (Universal) output to connect to legacy receiver with combined terrestrial signal 1 x default Unicable II (dCSS) output to connect up to 32 receivers with combined terrestrial signal
Frequency range	Satellite: 950-2150MHz Terrestrial: 47-862MHz
Loophrough loss	Satellite: max 4dB Terrestrial: max 4dB
Gain (without AGC)	Satellite: Unicable II (dCSS): min. 25dB Legacy (Universal): -1 ~ 8dB Terrestrial: no amplification, typ. -15dB
Input power level	-50dBm ~ -15dBm
Output power level (AGC controlled)	-25dBm (default)
Isolation	Satellite-Satellite outputs: min 25dB Satellite-Terrestrial : min 25dB
Control protocol	DiSEqC™ commands extension according to CENELEC EN50494 and/or EN50607
Power consumption	500mA max. @13VDC
Dimensions (W x H x D mm)	W=110.50 H=113.50 D=20.80 mm
Temperature range	-20C - +60C
AC/DC adaptor	Input voltage: 100-240VAC, 50/60Hz Output voltage: 19VDC Output current: 940mA Short circuit protection: Yes

## 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 product 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.