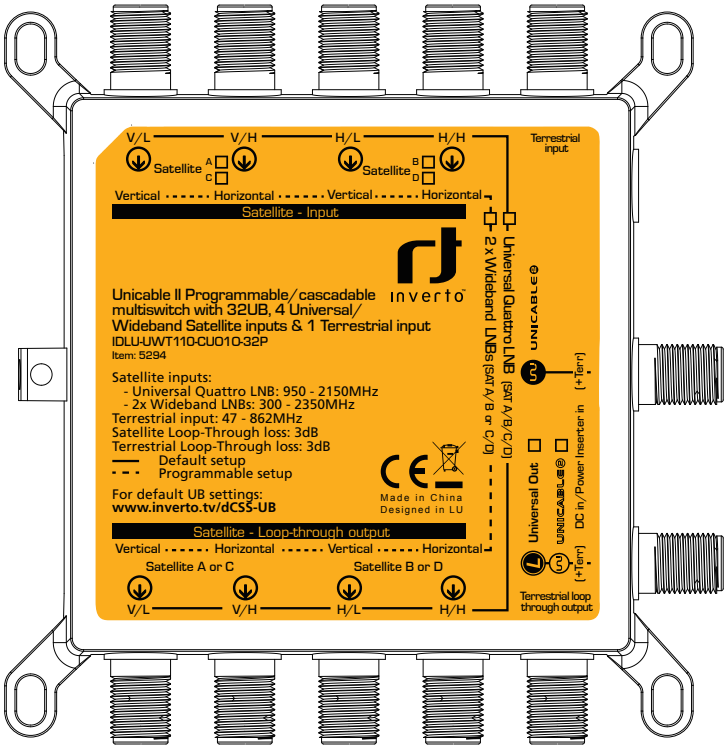



# Unicable™ II Multiswitch

Programmable/cascadable multiswitch with 32 User Bands,
4 Universal/Wideband Satellite inputs & 1 Terrestrial input

IDLU-UWT110-CUO1O-32P

Item: 5294

## 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

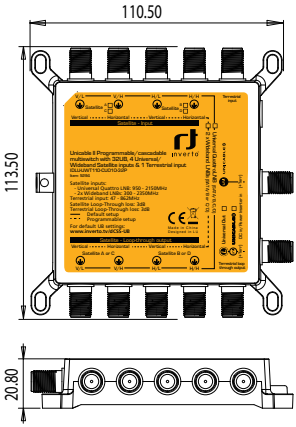
This Unicable II multiswitch is designed for the distribution of satellite and terrestrial television and radio signals in home installations. The warranty does not apply for products used for other purposes than those specified herein. The user/installer shall be responsible for any damage incurred 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/Wideband 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.

## Default product configuration

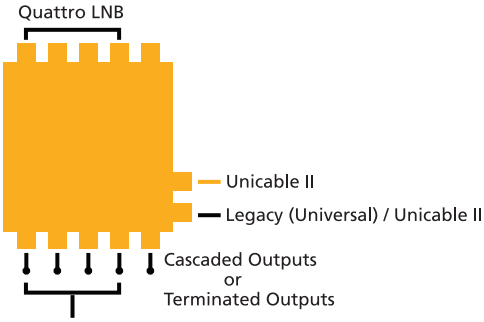
The satellite input ports of the Multiswitch are configured to support a universal Quattro LNB by default.

The default configuration of the output ports is as marked on the device's label. By default - (i) the Unicable II port operates in dynamic mode (compatible with EN50494/EN50607) and supports up to 32 User Bands. This allows to connect up to 32 receiver tuners - each to be assigned to one of the supported 32 User Bands. The list of the User Bands' parameters appears on the next page. (ii) upon power-on, the Universal port functions as a standard universal port allowing to connect a legacy receiver that is not supporting the Unicable/Unicable II (EN50494/EN50607) protocols, however it switches to operate in a Unicable II mode as soon as it receives a EN50494 or EN50607 DiSEqC command and the 32 User Bands will be shared over the two output ports ("shared User Bands" mode) and where each UB is only available at the output port through which it was activated.

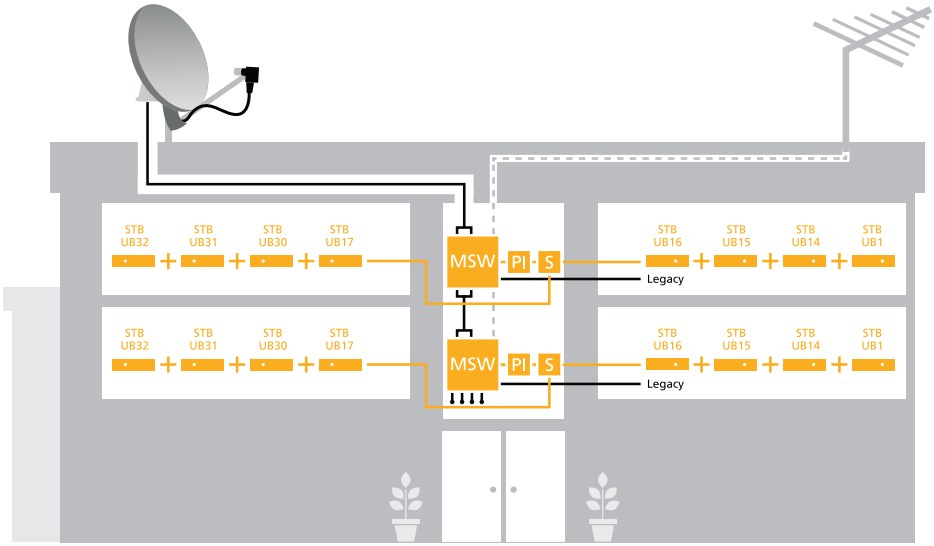
Note: The default configuration of the product, can be updated using Inverto's Programmer device (not supplied with the product and sold as a separate accessory) and PC Windows software that can be downloaded from www.inverto.tv.

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

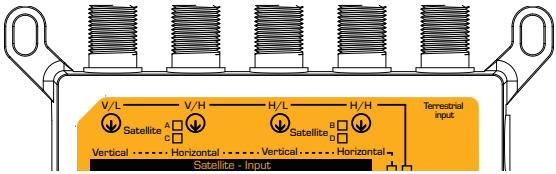
The following diagram describes a single satellite reception installation based on the default configuration of the product:




MSW= Unicable II Multiswitch
PI = Unicable II Power Inserter
S = Unicable II Splitter
STB = Unicable I/II Setop box (EN50494/EN50607)



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:

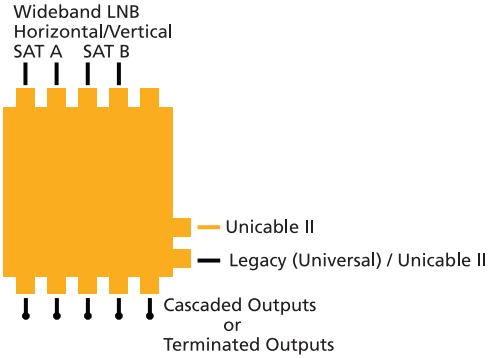



The default frequencies, supported protocols and PINs of the User Bands are listed below (default UB bandwidth = 30MHz):

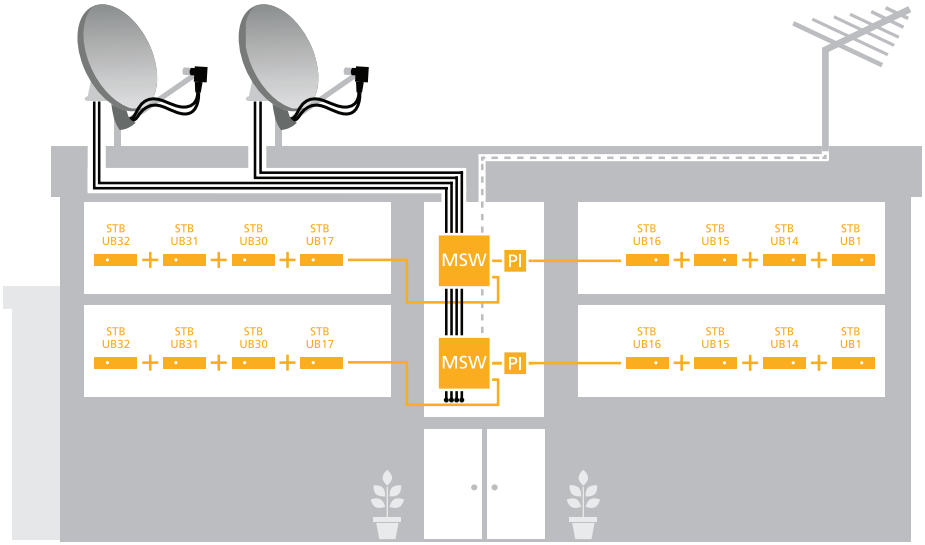
CH1: 1210MHz (EN50494+EN50607, PIN=37)
CH2: 1420MHz (EN50494+EN50607, PIN=18)
CH3: 1680MHz (EN50494+EN50607, PIN=251)
CH4: 2040MHz (EN50494+EN50607, PIN=131)
CH5: 984MHz (EN50494+EN50607, PIN=48)
CH6: 1020MHz (EN50494+EN50607, PIN=23)
CH7: 1056MHz (EN50494+EN50607, PIN=88)
CH8: 1092MHz (EN50494+EN50607, PIN=204)
CH9: 1128MHz (EN50607, PIN=194)
CH10: 1164MHz (EN50607, PIN=89)
CH11: 1256MHz (EN50607, PIN=157)
CH12: 1292MHz (EN50607, PIN=136)
CH13: 1328MHz (EN50607, PIN=13)
CH14: 1364MHz (EN50607, PIN=91)
CH15: 1458MHz (EN50607, PIN=23)
CH16: 1494MHz (EN50607, PIN=179)
CH17: 1530MHz (EN50607, PIN=235)
CH18: 1566MHz (EN50607, PIN=97)
CH19: 1602MHz (EN50607, PIN=101)
CH20: 1638MHz (EN50607, PIN=198)
CH21: 1716MHz (EN50607, PIN=223)
CH22: 1752MHz (EN50607, PIN=7)
CH23: 1788MHz (EN50607, PIN=39)
CH24: 1824MHz (EN50607, PIN=43)
CH25: 1860MHz (EN50607, PIN=209)
CH26: 1896MHz (EN50607, PIN=38)
CH27: 1932MHz (EN50607, PIN=133)
CH28: 1968MHz (EN50607, PIN=57)
CH29: 2004MHz (EN50607, PIN=182)
CH30: 2076MHz (EN50607, PIN=189)
CH31: 2112MHz (EN50607, PIN=213)
CH32: 2148MHz (EN50607, PIN=67)

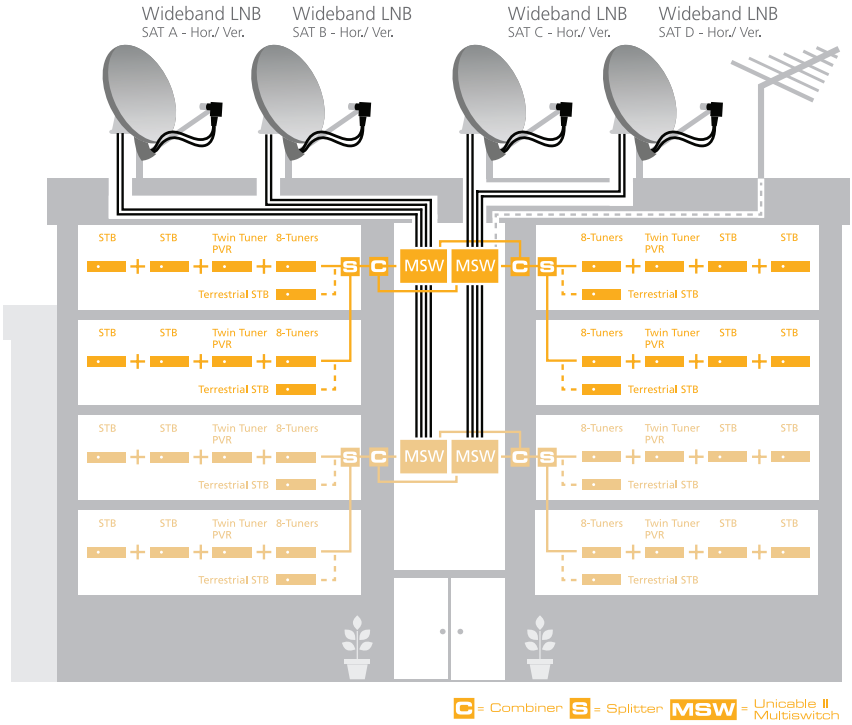
## Programmable configurations using Inverto's programmer and PC software

The following diagrams describe installation receiving two and four satellites using satellites over two wideband LNBs:




MSW= Unicable II Multiswitch
PI = Unicable II Power Inserter
STB = Unicable I/II Setop box (EN50494/EN50607)

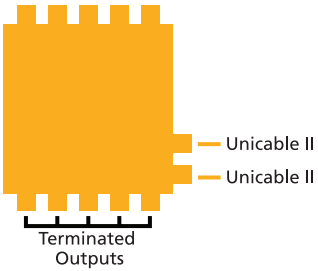




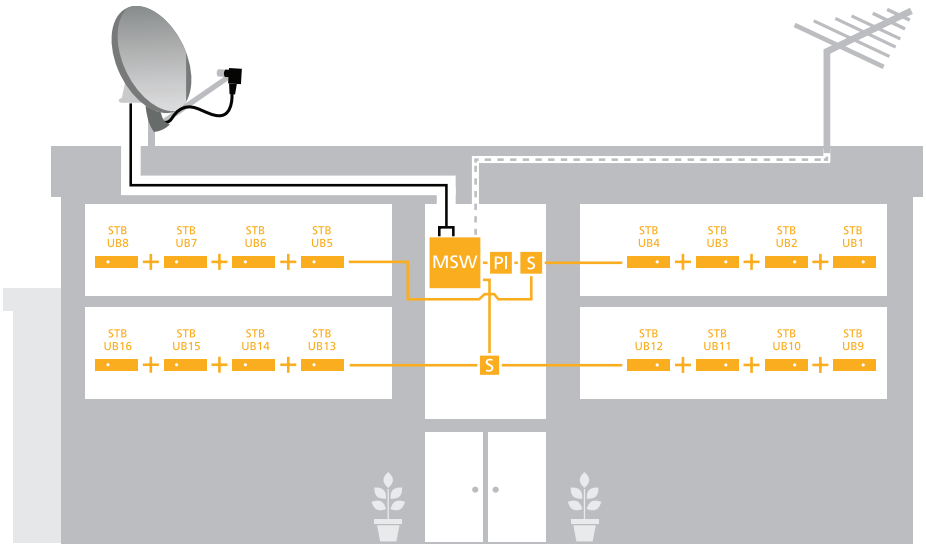

Connect the cables from the Wideband LNBs to the input connectors marked with Sat A/C Vertical and Horizontal and Sat B/D Vertical and Horizontal (pay attention to identification of the Wideband LNB connectors).

Note: The four satellite installation requires the output ports of the two Multiswitch units to be connected to an external combiner as shown in the diagram (to provide for DiSEqC 2.0 communication, the combiner should support bidirectional pass through for DC and 22kHz signals).

The following diagram describes reception of a single satellite feed by up to 16 Unicable (EN50494) receivers:




MSW= Unicable II Multiswitch
PI = Unicable II Power Inserter
S = Unicable II Splitter
STB = Unicable I/II Setop box (EN50494)




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 farest 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 loopthrough outputs that are not used shall be terminated with 75ohm DC de-coupled terminating resistors.

## Technical parameters

| | |
|---|---|
| Inputs | 4 x IF inputs:<br>- From 1x Quattro LNB (default)<br>- From 2x Wideband LNBs<br>1 x UHF/VHF input from Terrestrial antenna |
| Outputs | 4 x Loopthrough satellite IF outputs<br>1 x Loopthrough terrestrial output<br>1 x Unicable II (dCSS/EN50607) output, dynamic mode by default, supporting up to 32 UBs. With combined terrestrial signal.<br>1 x Universal (Legacy) by default upon power up, auto switch to Unicable II upon receiving EN50494/ EN50607 command. With combined terrestrial signal |
| Frequency range | Satellite:<br>- Quattro LNB: 950-2150MHz (default)<br>- Wideband LNB: 300-2350MHz<br>Terrestrial: 47-862MHz |
| Loopthrough loss | Satellite: max 4dB<br>Terrestrial: max 4dB |
| Gain (without AGC) | Satellite: Unicable II (dCSS): min. 25dB<br>Legacy (Universal): min. 10dB<br>Terrestrial: no amplification, typ. -15dB |
| Input power level | -50dBm ~ -15dBm |
| Output power level (AGC controlled) | -25dBm (default) |
| Isolation | Satellite-Satellite outputs: min 25dB<br>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<br>Output voltage: 19VDC<br>Output current: 940mA<br>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 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.

**FTA Communication Technologies S.a r.l.**

18 Duchscherstrooss, L-6868 Wecker, Luxembourg
Tel: +352 264 367 1, Fax: +352 264 313 68
info@inverto.tv www.inverto.tv

V250116