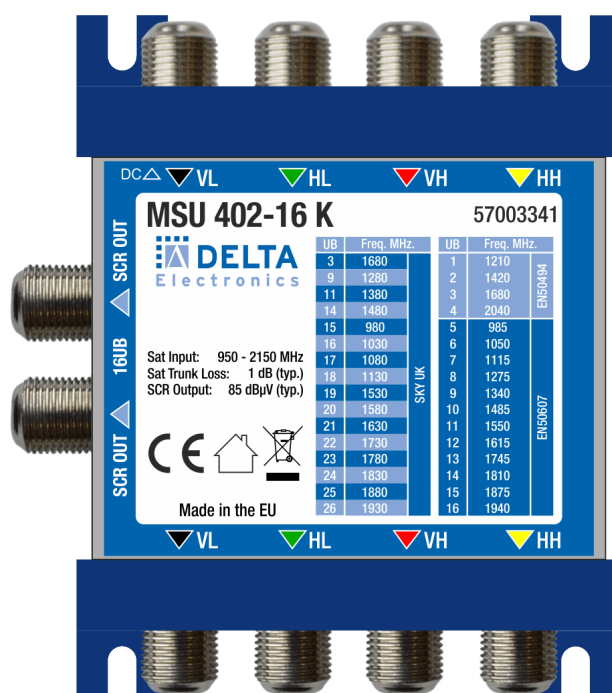


# User Manual

dCSS-/dSCR-Multi Switch

## MSU 402-16 K

Item No: 57003341



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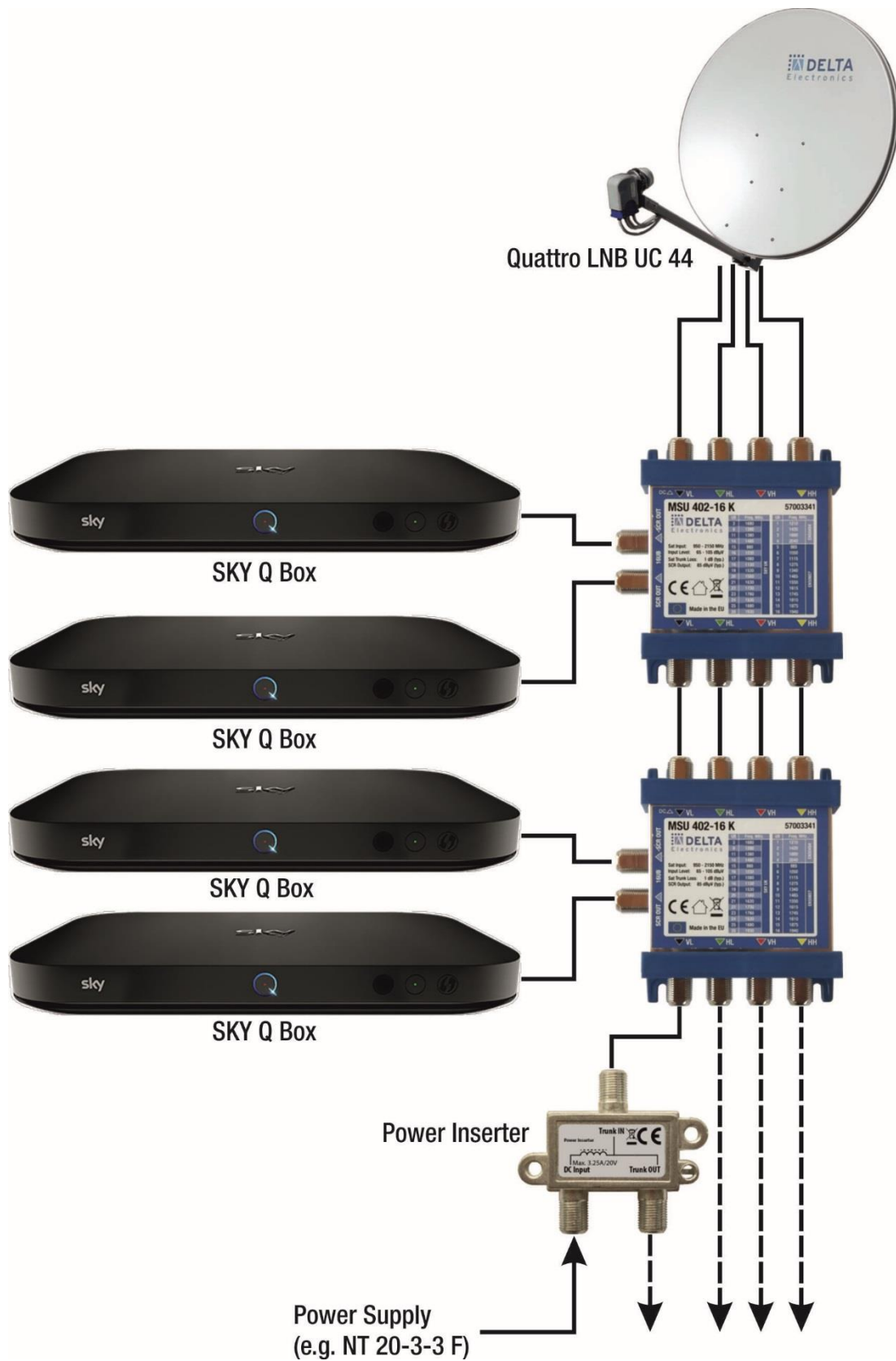
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DCT DELTA AG keeps the right to change the specification of hardware and/or software of the device described in this manual.

DCT DELTA AG cannot be made responsible for damages caused by the usage of this device. All information are subject to change.

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## 1. INSTALLATION OF THE MSU 402-16 K



## 2. CONFIGURATION OF THE DEVICE

### Installation Mode

To check the device functionality and installation, it starts in the so-called installation mode. In this mode the automatic gain control (AGC) is switched on. It is necessary to receive Unicable (DiSEqC) commands to switch the multi switch to SCR/CSS mode.

To activate one or several user bands the device needs to receive the correct DiSEqC command.

The installation mode starts with two active transponders (both output signals have a fixed gain):

- Transponder 58 (Frequency: 11880 Vertical) output on IF 1281 MHz.
- Transponder 101 (Frequency: 12731 Horizontal) output on IF 2131 MHz.

### CSS Mode

#### ONLY EN50494/SCR-Standard

For installations with Legacy-STB and PVR/MySKYHD SCR compatible:

- Max. 4 user bands (UB1 to UB4) available
- Control signals DiSEqC 1.0

#### ONLY EN50607/dCSS-Standard

For NEW Home Media Gateway installations:

- 12 user bands for HMG (UB5 to UB16)
- Control signals DiSEqC 1.0 or 2.0

#### SIMULTANEOUS EN50494-/EN50607-Standards

For existing MULTIVISION installations (Legacy STB / PVR SCR-compatible), where the main STP is equipped according to Next Gen PVR / HMG.

- Max. 4 user bands (UB1 to UB4) available for actual STB / PVR
- 12 user bands for HMG (UB5 to UB16)
- DiSEqC 1.0 + DiSEqC 2.0 commands in the same cable from multi switch to the apartment.

#### SKY UK Standard

For installations with SKY Q-Box:

- 16 user bands in SCR mode
- DiSEqC 1.0 or 2.0 commands

### 3. TECHNICAL SPECIFICATION

MSU 402-16 K	
Trunk inputs	4
Trunk outputs	4
Frequency (MHz)	950 – 2150
Trunk line attenuation	3 dB
dCSS/dSCR outputs	2
Connectors	75 Ohm F female
dCSS/dSCR user bands	16
dCSS/dSCR output level	85 dB $\mu$ V
Return loss	$\geq 8$ dB (typ. 12 dB)
Tap loss	Not measureable, AGC (Automatic Gain Control)
Band and Polarity selection	DiSEqC 1.0 (unidirectional) DiSEqC 2.0 (bidirectional) Standard EN 50494 (SCD) Standard EN 50607 (SCD2) SKY UK Standard
Max. DC power	< 300mA @ 13 Volt
Power supply	From Set-Top-Box, power inserter or trunk line (VL)
Optional Power supply: NT 20-3.3 F Item No.: 57003401	max. 3.3A, 20V

Technical support, help for your installations and general information about Unicable you can find at our website:



[www.unicable-hilfe.de](http://www.unicable-hilfe.de)

UB-Index	UB Center Frequency (MHz)	UB Standard Bandwidth (MHz)		Usage
1	1210	46	EN50494	Compatibel with Legacy STB and PVR SCR
2	1420	46	EN50494	
3	1680	46	EN50494	
4	2040	46	EN50494	
5	985	46	EN50607	Home Media Gateway (HMG) 12 Tuner
6	1050	46	EN50607	
7	1115	46	EN50607	
8	1275	46	EN50607	
9	1340	46	EN50607	
10	1485	46	EN50607	
11	1550	46	EN50607	
12	1615	46	EN50607	
13	1745	46	EN50607	
14	1810	46	EN50607	
15	1875	46	EN50607	
16	1940	46	EN50607	

UB-Index	UB Center Frequency (MHz)	UB-Standard BW (MHz)	
3	1680	46	SKY UK
9	1280	46	SKY UK
11	1380	46	SKY UK
14	1480	46	SKY UK
15	980	46	SKY UK
16	1030	46	SKY UK
17	1080	46	SKY UK
18	1130	46	SKY UK
19	1530	46	SKY UK
20	1580	46	SKY UK
21	1630	46	SKY UK
22	1730	46	SKY UK
23	1780	46	SKY UK
24	1830	46	SKY UK
25	1880	46	SKY UK
26	1930	46	SKY UK

## 4. SAFETY INSTRUCTIONS



**Please read the instruction carefully before you connect the device**



To avoid fire, shortage and electric shocks:

- Never expose the device to rain or humidity.
- Install the device in a dry place without the danger of humidity or condensation.
- Protect the device against dripping and splashing water.
- Don't place any with liquids filled containers onto the device.
- If liquids run into the device, please pull the power plug immediately.



To avoid overheating:

- Install the device in a well ventilated location. To ensure a good ventilation make sure to keep a minimum distance of at least 10 cm to other devices or walls.
- Don't put any things onto the device, that could block the ventilation holes (newspaper, table cloth, curtains, ...).
- Never place open flames like burning candles onto the device.
- Install the device in a dust free environment.
- Use the device only in environments with moderate humidity.
- Die minimum and maximum operating temperatures need to be maintained in every season.



To avoid electric shock:

- Connect the device only properly grounded.
- The power plug needs to be easily accessible at all time.
- Pull out the power plug before you make any changes on the installation.
- Under no circumstances open the device as long as it is powered.



### Maintenance and care



Only use dry and soft cloth to clean the device



Don't use any solvents



For repair and maintenance please contact qualified installers.



**Disposal according to local regulations**

## 5. TERMS OF GUARANTEE

DCT DELTA AG guarantees for a period of 24 months after the purchase, that the device is free of material and production defects.

Should the product show any material or production defects during normal application within the guarantee period, DCT DELTA AG will replace or repair the product at its own discretion. Please bring or send the defect device back to your dealer.

**The guarantee is only valid for material and production defects and does not cover defects caused by:**

- Abuse or usage of the product outside its specification.
- Installation or usage which is not compliant to the local safety regulations
- Usage of unsuitable accessories (Power Supplies, Adaptors, ...).
- Installation in a not proper environment.
- External sources outside the influence of DCT DELTA AG, like e.g. drop, accident, stroke of lightning, water, fire, insufficient ventilation ...

**The guarantee commitment ends even ahead of time if:**

- The production date or serial number is not readable anymore or has been changed, deleted, removed or in any other way manipulated.
- The device has been opened or repaired by unauthorized people.

Hereby DCT DELTA AG declares that the radio equipment type multi switch MSU 402-16 K is in compliance with directive 2014/53/EU. The complete text of the EU declaration of conformity is available at the following internet address:

[www.dct-delta.de/service/](http://www.dct-delta.de/service/)



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