

# User Manual

## dSCR Multiswitch TdSCR 504/508/512/516

Article		Article no.
<b>dSCR Multiswitch</b>	<b>TdSCR 504</b>	<b>318185</b>
	<b>TdSCR 508</b>	<b>318186</b>
	<b>TdSCR 512</b>	<b>318187</b>
	<b>TdSCR516</b>	<b>318188</b>
<b>Version D</b>	<b>Date</b>	<b>06/2020</b>
		<b>EN / DE</b>

## Product description

The product is designed to support a wide range of new and existing multiswitch installations. Each unit has:

- 4 cascadeable LNB inputs from 1 universal Quattro LNB (VL HL VH HH) or 2 Wideband LNB's (V & H)
  - 1 cascadeable terrestrial trunk input.
  - 1 level adjuster for terrestrial signals
  - 4, 8, 12 or 16 SCR/Legacy outputs
- 1 DC input (for switch, line and LNB powering).
  - Earth bars on the Subscriber outputs
  - 5 x Quick F connectors

Each output can support a wide variety of satellite receivers :

In legacy mode, the outputs can be used as a standard multiswitch.

In SCR mode, each output supports up to 16UBs with all versions of the single cable technology. This includes OLT, SCR, CSS, SKY UK, EN50494 and EN50607.

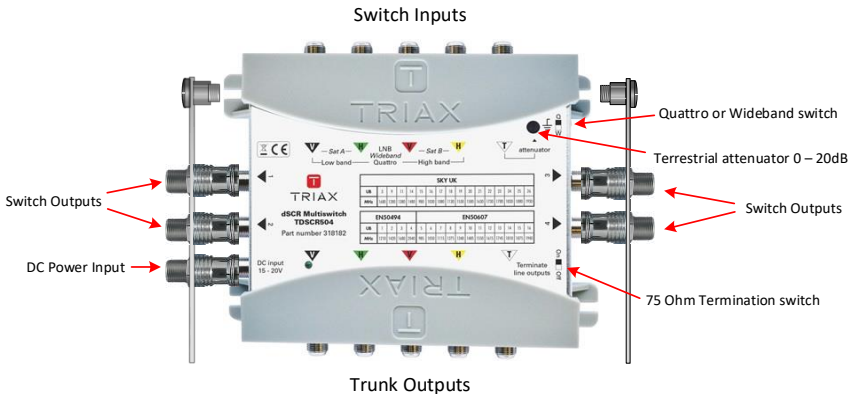
As all outputs are independent, the installation can be a mix of legacy and dSCR connections.

The terrestrial input supports any services that operate between 47 - 790MHz, which includes terrestrial TV, DAB and FM reception.

The trunk outputs allow the cascade of multiple switches, to support large installations.

The trunk outputs have a 75ohm self-termination toggle switch. If the Switch is the last in the cascade, or a standalone Switch, the toggle switch can terminate the trunk outputs without the need for 75ohm terminators.

The DC power can be inserted into the switch, on the F connector, or at any point in the system. In cascaded systems, multiple power supplies might be required.

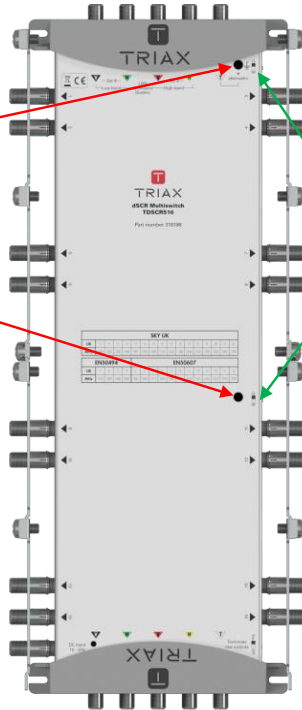


16 output switch TdSCR516 (318188)

Please note on the 16 output switch there are 2 x Terrestrial adjustments. The top potentiometer adjusts the terrestrial output level for subscriber outputs 1 – 8.

The potentiometer in the middle of the switch adjusts the terrestrial output level for subscriber outputs 9 - 16

On the 16 output switch there are 2 Quattro and Wideband switches. These must both be in the same mode. For example, if Quattro is selected on the first switch it must also be selected on the second switch



## Switch Installation

The equipment should be mounted in a well-ventilated area.

Connect the power supply to the switch, this can be done via the DC input, or via the Trunk lines. When power is connected, a green LED on the front of the switch should be lit.

All four Satellite trunks have DC available on inputs and outputs, except if the switch is used as a terminated unit. There is no power on the Terrestrial trunk line. All unused dSCR/Legacy (Tap) outputs should be terminated with a 75-Ohm terminator to maintain good terrestrial signals.

When a Satellite receiver is connected to the switch, power will be drawn from the Satellite receiver. The amount of power drawn will depend on the type of receiver connected and the number of tuners selected.

All trunk outputs can be cascaded. If the switch serves as a terminated unit, turn on the switch marked "terminate line outputs".

## Configuration of the Switch

### Terrestrial amplifier

The Terrestrial trunk has an integrated amplifier, with unity gain on the dSCR output, that can be attenuated by up to 20dB.

### Satellite input

The Satellite input level to the switch, should be between 70dBuV and 100dBuV. There is no adjustment required, as the switch has Automatic Gain Control (AGC) within this dynamic range.

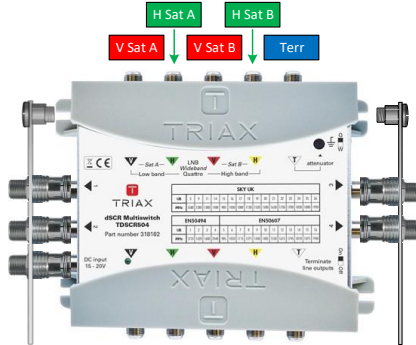
### Input Modes: Quattro and Wideband

The input connections on the product can be configured in either "Quattro mode" or "Wideband mode".

When using Quattro LNBS, the toggle switch on the top right hand side of each Switch should be set in the upper position (Quattro LNB). The Switch will then expect to receive, on each of the 4 inputs, a satellite signal from 950 to 2150MHz (Horizontal/Vertical High and Low band).

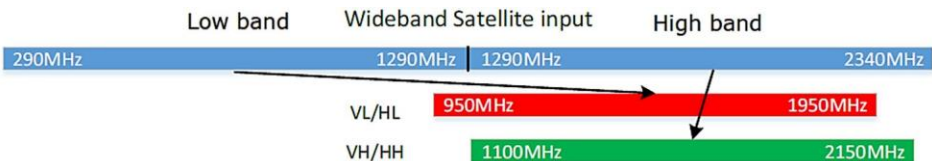
When using Wideband LNBS, the toggle switch, on the top right hand side of each Switch should be set in the lower position (Wideband LNB). In this case, Wideband satellite signals from 290 to 2340MHz should be used (Vertical and Horizontal).

In this mode, 2 Wideband LNBS can be connected, for signal reception from 2 orbital positions. The left Wideband inputs V - H are the DiSEqC position "LNB A", and the right V - H inputs are the DiSEqC position "LNB B".



**Note:** when using the product in wideband mode, the product will automatically make the translation between the input frequency and the output frequency. For example a STB tunes to Horizontal High band, the product will convert the incoming horizontal band 1290- 2340MHz into the output range between 1100-2150MHz.

The same is true when using the product as a Wideband dSCR multiswitch. If the STB tunes to a Vertical Low band channel, 1000MHz for example, the multiswitch will take the incoming vertical transponder at 340MHz and convert to Sat IF 1000MHz and output to one of the dSCR output user bands.



The diagram above shows the basic frequency relation between wideband satellite frequencies and the standard legacy satellite frequencies.

#### Output: Legacy and dSCR

Independent of the selected input mode, the outputs can support legacy and SCR/dSCR Set Top Boxes.

At start up, the Switch output works in Legacy mode and can be used as a universal, or a 2 x wideband multiswitch, depending on the position of the toggle switch.

When receiving the first dSCR command, the unit will automatically switch into dSCR mode and supports the following standards:

Sky UK standard for SkyQ STB's  
 SkyQ STB's support 16 userbands  
 EN50494/SCR standard (DiSEqC 1.0)  
 STB's that only support EN50494 will only be able to use the first 4 user bands.  
 EN50607/dCSS/dSCR standard (DiSEqC 2.0)  
 STBs that support the newer EN50607 will be able to use all user bands (UB1 through UB16). This is typical for new multi-tuner STBs.  
 To return back to legacy mode, the output has to be reset. This can be done by removing the power from the subscriber output, disconnecting the power from the STB.

Supported output User Bands and Frequencies.

### Supported output User Bands and Frequencies

Sky UK		EN50607		EN50494	
IF Freq (MHz)	User Bands	IF Freq (MHz)	User Bands	IF Freq (MHz)	User Bands
980	UB15	985	UB5	1210	UB1
1030	UB16	1050	UB6	1420	UB2
1080	UB17	1115	UB7	1680	UB3
1130	UB18	1275	UB8	2040	UB4
1280	UB9	1340	UB9		
1380	UB11	1485	UB10		
1480	UB14	1550	UB11		
1530	UB19	1615	UB12		
1580	UB20	1745	UB13		
1630	UB21	1810	UB14		
1680	UB3	1875	UB15		
1730	UB22	1940	UB16		
1780	UB23				
1830	UB24				
1880	UB25				
1930	UB26				

## Technical Specifications

<b>TdSCR504 – Triax Part No. 318185</b>	<b>Unit</b>	<b>Specification</b>
Inputs	-	4 SAT (1x quattro or 2 x wideband) + 1 TERR
User outputs	-	4 Outputs with 16 User bands
Impedance inputs- / outputs	Ohm	75
Frequency range SAT: dCcss, Legacy Wideband	MHz	950 – 2150 290 – 2340
Frequency range terr.	MHz	40-790, active
Input power / dCSS / Legacy	dBm	-38 to -8
Output power dCSS / Legacy	dBuV	<b>83 (-26dBm)/ 83 (-26dBm) +/-1dB with 2 carriers</b>
Insertion loss terr.	dB	<b>2 +/-2dB</b>
Attenuation terr.	dB	0 to 20
Max. Output power terr.	dBuV	90
Through loss SAT	dB	<b>-2.5 +/-2dB</b>
Through loss terr.	dB	<b>-3 +/-2dB</b>
Isolation H/V	dB	25
Return loss Inputs / Outputs	dB	10
User band frequencies	MHz	SKY UK, EN50607, EN50494 (automatic selection)
LNB supply voltage	V	15 – 20v
Max. LNB supply current	mA	1000
Current consumption	mA	40mA@18v
External PSU	V	Yes (15-20)
Dimension (LxBxH)	mm	191 x 136 x 52
Weight	g	520
Operating temperature range	°C	-20 to +50
DC connector type	-	F-Connector

<b>TdSCR508 – Triax Part No. 318186</b>	<b>Unit</b>	<b>Specification</b>
Inputs	-	4 SAT (1x quattro or 2 x wideband) + 1 TERR
User outputs	-	8 Outputs with 16 User bands
Impedance inputs- / outputs	Ohm	75
Frequency range SAT: dCss, Legacy Wideband	MHz	950 – 2150 290 – 2340
Frequency range terr.	MHz	40-790, active
Input power / dCSS / Legacy	dBm	-38 to -8
Output power dCSS / Legacy	dBuV	83 (-26dBm)/ 83 (-26dBm) +/- 1dB with 2 carriers
Insertion loss terr.	dB	4 +/-2dB
Attenuation terr.	dB	0 to 20
Max. Output power terr.	dBuV	90
Through loss SAT	dB	-4 +/-2dB
Through loss terr.	dB	-3 +/-2dB
Isolation H/V	dB	25
Return loss Inputs / Outputs	dB	10
User band frequencies	MHz	SKY UK, EN50607, EN50494 (automatic selection)
LNB supply voltage	V	15 – 20v
Max. LNB supply current	mA	1000
Current consumption	mA	70mA@18v (TBC)
External PSU	V	Yes (15-20)
Dimension (LxBxH)	mm	191 x 237 x 52
Weight	g	980
Operating temperature range	°C	-20 to +50
DC connector type	-	F-Connector

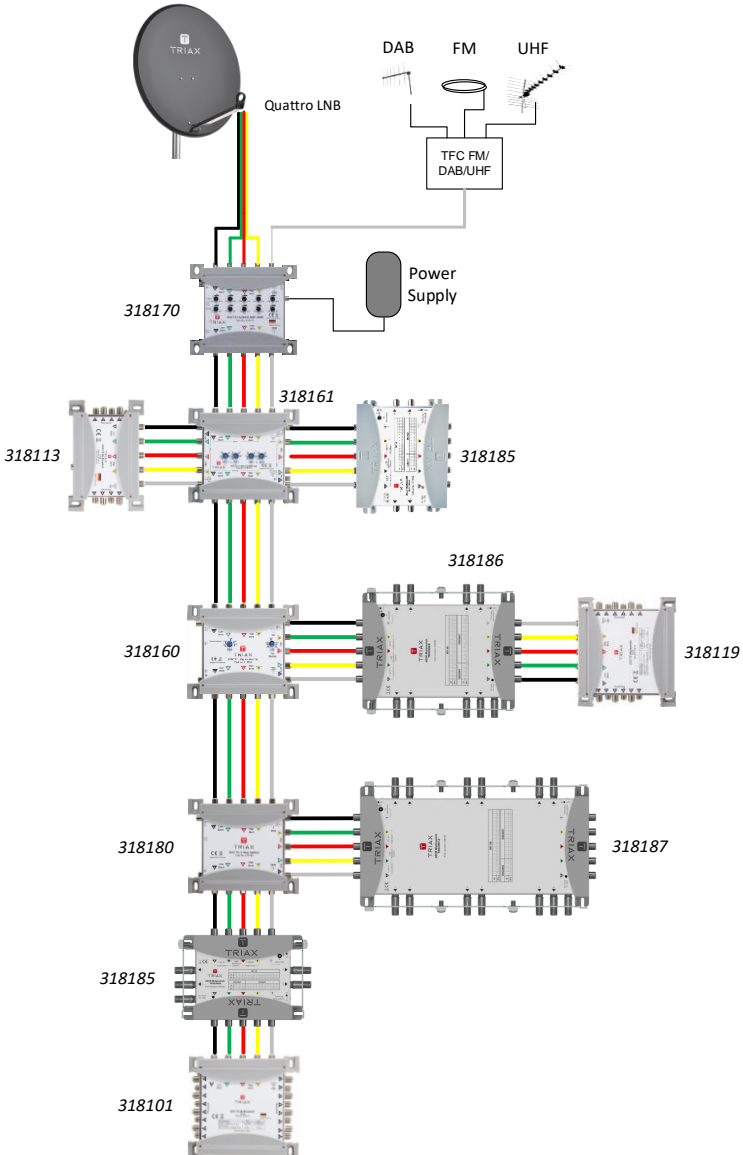


<b>TdSCR512 – Triax Part No. 318187</b>	<b>Unit</b>	<b>Specification</b>
Inputs	-	4 SAT (1x quattro or 2 x wideband) + 1 TERR
User outputs	-	12 Outputs with 16 User bands
Impedance inputs- / outputs	Ohm	75
Frequency range SAT: dCcss, Legacy Wideband	MHz	950 – 2150 290 – 2340
Frequency range terr.	MHz	40-790, active
Input power / dCSS / Legacy	dBm	-38 to -8
Output power dCSS / Legacy	dBuV	83 (-26dBm)/ 83 (-26dBm) +/- 1dB with 2 carriers
Insertion loss terr.	dB	4 +/-4dB
Attenuation terr.	dB	0 to 20
Max. Output power terr.	dBuV	90
Through loss SAT	dB	-5.5 +/-2dB
Through loss terr.	dB	-4 +/-2dB
Isolation H/V	dB	25
Return loss Inputs / Outputs	dB	10
User band frequencies	MHz	SKY UK, EN50607, EN50494 (automatic selection)
LNB supply voltage	V	15 – 20v
Max. LNB supply current	mA	1000
Current consumption	mA	100mA@18v
External PSU	V	Yes (15-20)
Dimension (LxBxH)	mm	191 x 335 x 52
Weight	g	1440
Operating temperature range	°C	-20 to +50
DC connector type	-	F-Connector

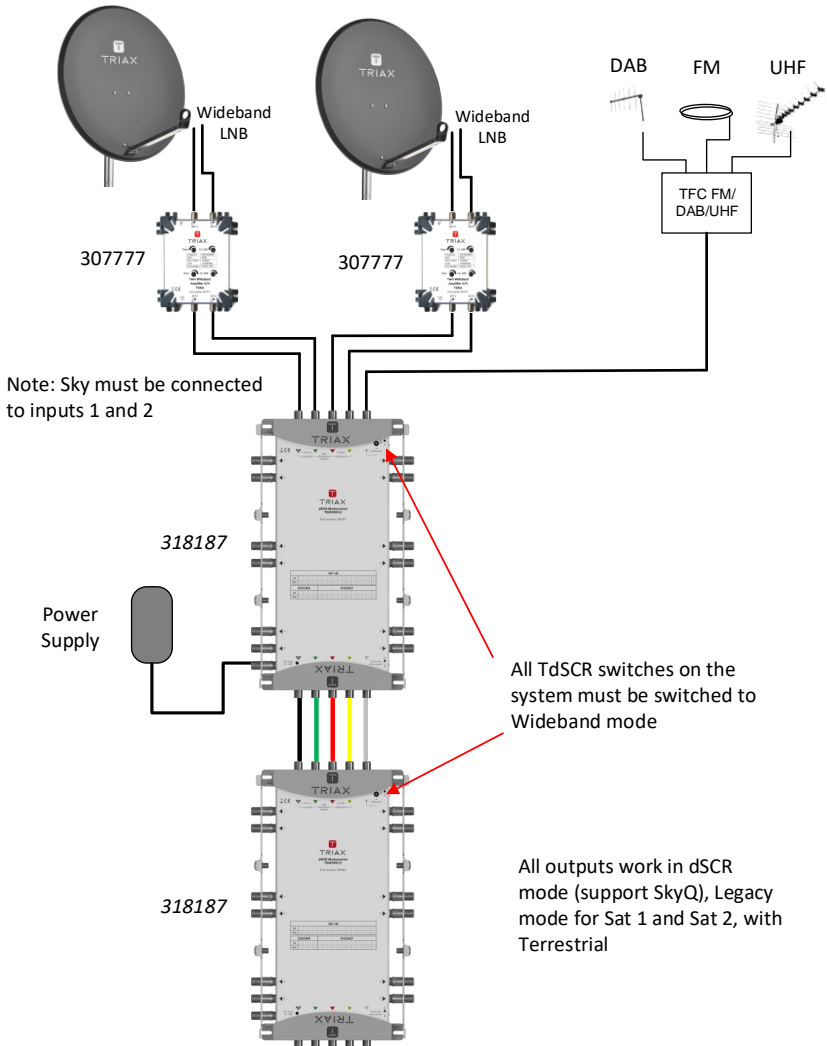
<b>TdSCR516 – Triax Part No. 318188</b>	<b>Unit</b>	<b>Specification</b>
Inputs	-	4 SAT (1x quattro or 2 x wideband) + 1 TERR
User outputs	-	16 Outputs with 16 User bands
Impedance inputs- / outputs	Ohm	75
Frequency range SAT: dCss, Legacy Wideband	MHz	950 – 2150 290 – 2340
Frequency range terr.	MHz	40-790, active
Input power / dCSS / Legacy	dBm	-38 to -8
Output power dCSS / Legacy	dBuV	<b>83 (-26dBm)/ 83 (-26dBm) +/-1dB with 2 carriers</b>
Insertion loss terr.	dB	<b>1 +/-5dB</b>
Attenuation terr.	dB	0 to 20
Max. Output power terr.	dBuV	90
Through loss SAT	dB	<b>-9 +/-5dB</b>
Through loss terr.	dB	<b>-7 +/-2dB</b>
Isolation H/V	dB	25
Return loss Inputs / Outputs	dB	10
User band frequencies	MHz	SKY UK, EN50607, EN50494 (automatic selection)
LNB supply voltage	V	15 – 20v
Max. LNB supply current	mA	1000
Current consumption	mA	160mA@18v
External PSU	V	Yes (15-20)
Dimension (LxBxH)	mm	191 x 446 x 52
Weight	g	1980
Operating temperature range	°C	-20 to +50
DC connector type	-	F-Connector

# Design Examples

### Hybrid system using dSCR and legacy Switches



### 2 Satellite system using dSCR Switches in Wideband mode







## Information and manuals:

Information og brugervejledninger: Information och  
manualer:

Information und Bedienungsanleitungen:

Informations et modes d'emploi: Información y  
manuales:

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