Whyte *SERIES* DRP

dSCR Multiswitch
INSTRUCTION MANUAL

WSCR504RP

Whyte
Technologies

www.whytetechnologies.com

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SAFETY

The Multiswitches are intended for indoor use only.
Do not install the Multiswitch in damp, humid, hot or dusty areas.

Switch off and remove the power supply when making connections to the Multiswitch to avoid damaging the unit.

Always earth bond the Multiswitch using the Earth Bonding Lug and/or the Earth Terminal Bars to a suitable earth bonding point using minimum 4mm² diameter earth cable.

PRECAUTIONS

To ensure trouble free operation:

Do not remove the cover of the Multiswitch or disassemble it as this will invalidate the guarantee.

The female F connectors on this unit were designed for use with '100' type coaxial cable with a centre core diameter of 1mm². When using larger CT125 or CT167 cables, you must ensure that suitable F connectors with reducing pins are used otherwise damage to the unit will occur which will invalidate the guarantee.

Do not over tighten the F connectors (finger tight only).

GUARANTEE

All Whyte products are guaranteed for a period of 4 years from the date of purchase against defects. Within this guarantee period, Whyte Technologies will repair or replace the faulty product. In the unlikely event, please return any faulty products to your dealer.

The Guarantee will be deemed as void if the serial number on the product is removed, damaged or illegible. The Guarantee excludes defects caused by incorrect use, accidental damage, disassembly, water/fire/lightning damage or lack of ventilation.

GENERAL DESCRIPTION

The Whyte WSCR504RP is a remote powered dSCR multiswitch designed specifically for installations where no landlords power is available. The WSCR504RP retains all the features and performance of the conventional Series D range of dSCR multiswitches. These performance features easily facilitate the cascading of several units due the low loss trunks, TERR gain control and Pro-Tap.

The Series D range can be directly conjoined with Series 5 conventional Multiswitches using the supplied F type couplers to seamlessly create Hybrid IRS Systems.

When used with the WPSU-SAP1/SAP2 Smart Apart PSU's from Whyte, customer support is reduced and customer satisfaction is increased as the IRS system will function correctly irrespective of building occupancy or type of set-top-box (if any) used by the resident.
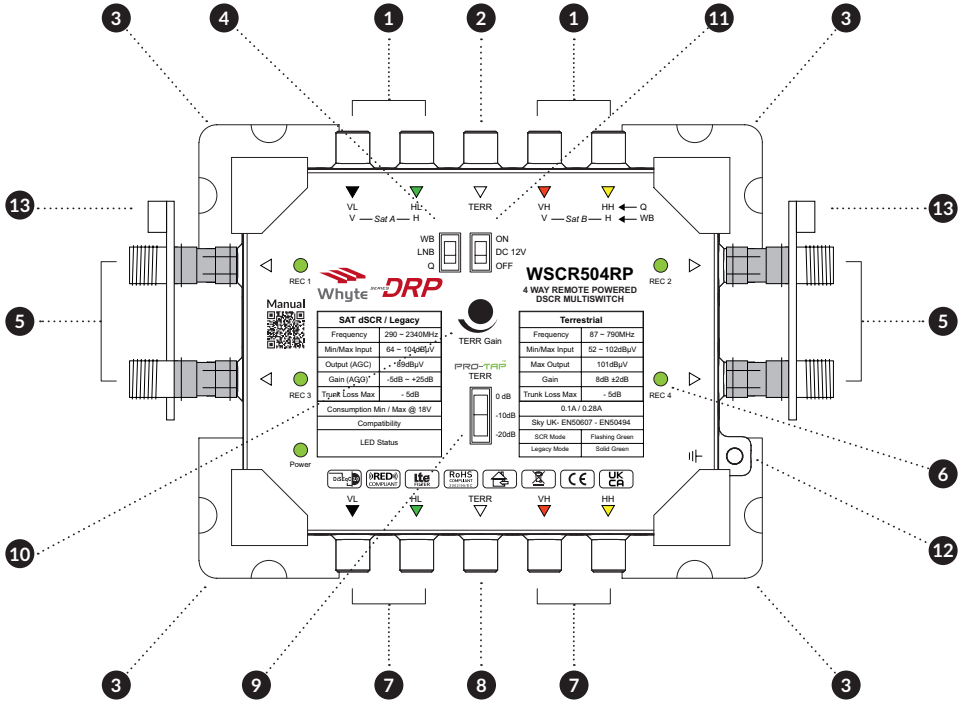
Each subscriber output provides SkyQ, Legacy SAT, TV and Radio Services. Satellite subscriber signal levels in both Legacy and dSCR mode are automatically set to 89dBμV via AGC.

Terrestrial signal levels are controlled via a manual Gain Control knob and a selectable Protean Tap which permits a wide range of TERR input signal levels ranging from 50 to 108dBμV.

The reception of 2 satellites can easily be achieved by utilising 2 Wideband LNB's and switching the unit to Wideband LNB mode.

The power is provided remotely via the REC port which powers only that particular port, the trunk and any amplifier, legacy multiswitch or LNB connected. The WSCR504RP can not be powered via the trunk therefore any additional WSCR504RP's within the system will not be powered and added to the load. This ensures that no individual apartment will experience apartment PSU overload.

PRODUCT DESCRIPTION

1. Inputs Satellite
2. Input Terrestrial
3. Corner Mounting Brackets
4. LNB Selector Switch
5. Subscriber (REC) Outputs
6. Subscriber Output Status Indicator
7. Trunk Output SAT

8. Trunk Output TERR
9. TERR Protean Tap
10. TERR Gain Control
11. TERR 12V DC Switch
12. Earth Terminal
13. Earth Terminal Bar

TECHNICAL DESCRIPTION

DC POWERING

The power is provided remotely via the REC port which powers only that particular port, the trunk and any amplifier, legacy multiswitch or LNB connected. The WSCR504RP can not be powered via the trunk therefore any additional WSCR504RP's within the system will not be powered and added to the load. This ensures that no individual apartment will experience apartment PSU overload.

When used with the WPSU-SAP1/SAP2 Smart Apart PSU's from Whyte, customer support is reduced and customer satisfaction is increased as the IRS system will function correctly irrespective of building occupancy or type of set-top-box (if any) used by the resident.

A 12V DC switch is available to power a Mast Head Amplifier connected to the TERR input. If a Mast Amplifier is not being used this must be left in the OFF position.

SUBSCRIBER PORT MODE INDICATION

Each Subscriber Port has an LED indicator to confirm the mode status.

Legacy Mode: Solid Green   **dSCR Mode:**   Blinking Green

Legacy Mode:
This is the default mode of the Multiswitch. In this mode the Multiswitch functions like a conventional legacy Multiswitch.

dSCR Mode:
When a dSCR Set Top Box is connected, the corresponding port will acknowledge the dSCR DiSEqC commands and switch to dSCR mode. To revert back to legacy mode the power to the Subscriber Port needs to be interrupted momentarily. A reboot of the Multiswitch is NOT necessary to revert back to legacy mode.

CASCADE MODE

Multiple Whyte Series DRP WSCR504RP Multiswitches can be connected in cascade as each subscriber is providing power to their port on the Multiswitch. The system can be further extended with series 5 Legacy Multiswitches. Please note: Legacy Whyte Series 5 Multiswitches are not configure for remote power and will require a PSU.

When used with the WPSU-SAP1/SAP2 Smart Apartment PSU's from Whyte, customer support is reduced and customer satisfaction is increased as the IRS system will function correctly irrespective of building occupancy or type of set-top-box (if any) used by the resident.

Always terminate the SAT/TERR Trunk Outputs of the last Multiswitch in a cascade using 75Ω DC Blocked F-Type Terminators.

QUATTRO/WIDEBAND LNB SWITCH

The Series D range is compatible with both Quattro and Wideband LNB's. To enable compatibility with a Quattro LNB (5 Wire Trunk) place the switch in the position marked "Q". To enable compatibility with a Wideband LNB (3 Wire Trunk) place the switch in the position marked "WB". Note: when using wideband mode ensure that any amplifiers, taps or splitters that form part of a system are wideband compatible.

2 SAT RECEPTION

The reception of two satellites can be achieved via a 5 wire trunk by utilising 2 Wideband LNB's. The required satellite can then be selected by the STB using simple diseqc Satellite A and B commands.

INSTALLATION INSTRUCTIONS

MOUNTING THE MULTISWITCH

Select a suitable location to install the Multiswitch. Do not install the Multiswitch in damp, humid, hot or dusty areas. Using the screw slots on the Corner Brackets, secure the Multiswitch using the appropriate fixing screws and wall plugs to suit the relevant wall surface or cabinet.

CONNECTING THE SAT & TERR INPUT AND OUTPUT TRUNK CABLES

Use a suitably sized Satellite Dish to provide adequate signal levels from the satellite being received. Ensure that the Satellite Drop Cables are connected correctly to the LNB's. Ensure that the F Connectors are properly sealed against water ingress. If a Composite Cable (multi core coaxial cable) has been used, ensure that the outer jacket is not facing upwards and cannot collect rain water.

Check the Terrestrial Drop Cable and ensure that this has also been sealed against water ingress. If a Triplexer has been used to combine FM and DAB aerials with the UHF Terrestrial Aerial, ensure that this is also water tight. Ensure that all drop cables have drip loops prior to their entering the building.

Connect the SAT and TERR drop cables to the corresponding Satellite and TERR Inputs on the Multiswitch. Connect any additional Multiswitches or Trunk Cables to the Satellite & TERR Trunk Outputs as applies. Ensure that you terminate the last Multiswitch in a cascade using 75Ω DC Blocked F-type Terminators.

EARTH BONDING

Earth bond the Multiswitch to the Earth Bonding Lug and/or the Earth Terminal Bars using minimum 4mm² Earth Bonding Cable. It is best practise to earth bond across all Multiswitches using a single unbroken Earth Bonding Wire. To achieve this, strip away 3cm of the insulation of a length of 4mm² Earth Bonding Wire. **See Figure 1.**

Unscrew the Earth Bolt on the Earth Terminal Bar to provide enough clearance to wrap the Earth Bonding Wire around the Earth Bolt. **See Figure 2.**

Tighten the Earth Bolt and route the Earth Bonding Wire to all other Earth Terminal Bars and terminate as detailed above. Make sure that the Earth Bonding Cable is connected directly to the building's PME.
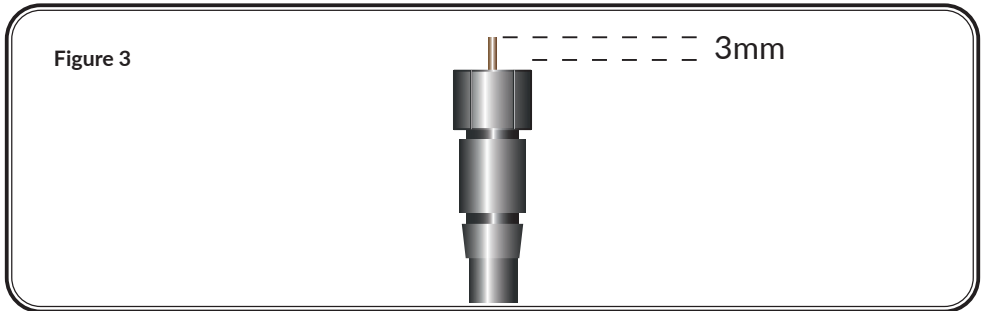
Figure 1

Figure 2

CONNECTING THE SUBSCRIBER CABLES

Terminate the Subscriber Cables with good quality F Connectors and connect to the Subscriber Outputs. The F Connectors should be fitted to the coaxial cable correctly, ensuring that the centre core protrudes 3mm above the F Connector body. **See figure 3.** Ensure that you do not exceed the bending radius of the Coaxial Cable being used.

Figure 3

3mm

CONNECTING TO REMOTE POWER

The power is provided remotely via the REC port which powers only that port, the trunk and any amplifier, legacy Multiswitch or LNB connected. The WSCR504RP cannot be powered via the trunk therefore any additional WSCR504RP's within the system will not be powered and added to the load. This ensures that no individual apartment will experience apartment PSU overload. For Sky Q set top boxes an appropriate DC inserter can be used for fixed voltage dSCR mode.

The ideal PSU for the WSCR504RP is the WPSU-SAP1 and WPSU-SAP2 are the world's first Smart Apt PSU's. Customer support is reduced, and customer satisfaction is increased as the IRS system will function correctly irrespective of building occupancy or type of set-top (if any) is used by the resident. A Smart Apt PSU must be fitted in to every apartment irrespective of whether satellite services are required or not.

The WPSU-SAP will be available in 1 and 2 feed versions and are compatible with both legacy and dSCR Set Top Boxes. When connected to a legacy STB, voltage switching commands (13/18V) are relayed by the dynamic PSU. In the absence of STB LNB voltage, the Smart Apt PSU will provide 14V to maintain the IRS System functional in circumstances when the occupants require TERR services only. The Smart Apt PSU's can be set back locally near the TV or fitted discretely in an electrical cupboard.

USER BAND FREQUENCIES

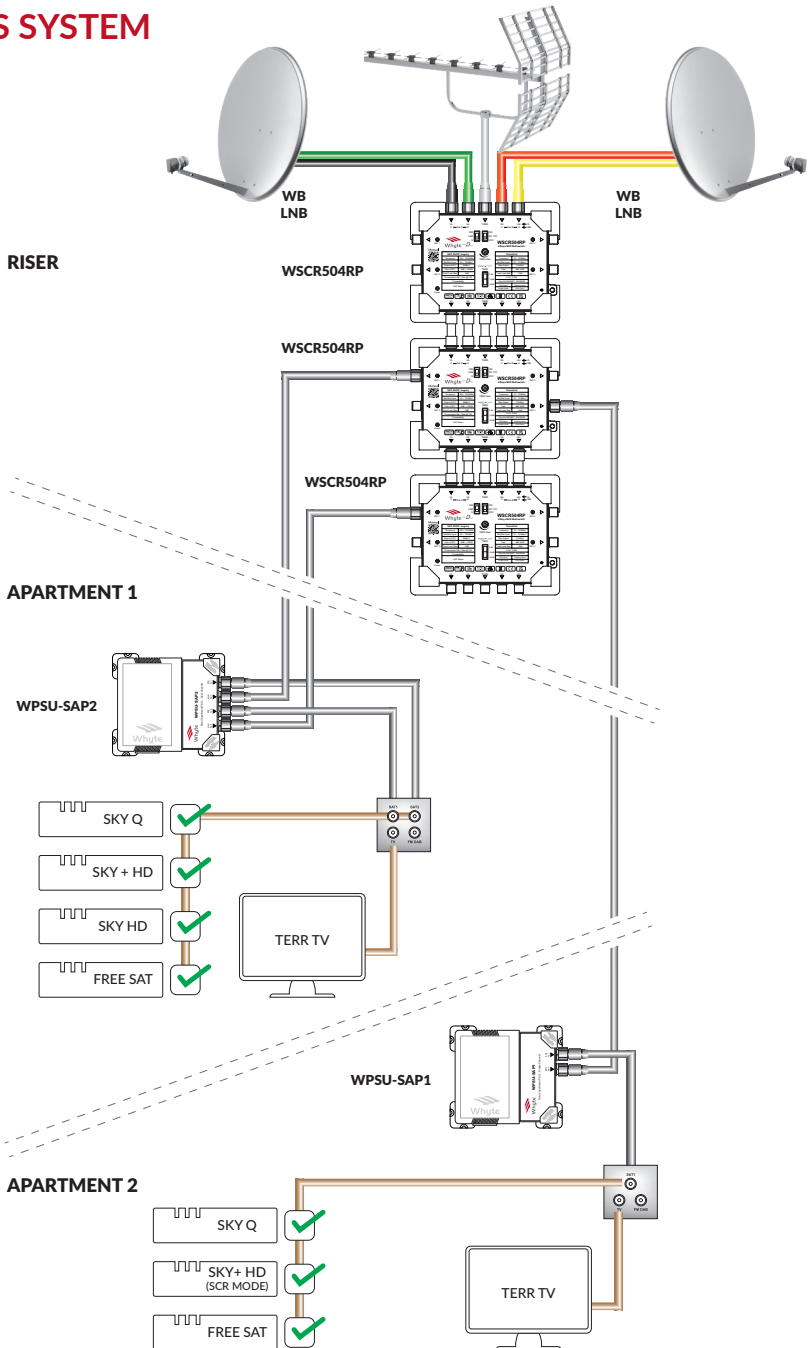| Sky UK		EN50607		EN50494	
UB	FREQ	UB	UB	UB	UB
3	1680	5	985	1	1210
9	1280	6	1050	2	1420
11	1380	7	1115	3	1680
14	1480	8	1275	4	2040
15	980	9	1340		
16	1030	10	1485		
17	1080	11	1550		
18	1130	12	1615		
19	1530	13	1745		
20	1580	14	1810		
21	1630	15	1875		
22	1730	16	1940		
23	1780				
24	1830				
25	1880				
26	1930				

COMMISSIONING THE MULTISWITCH

See Figure 4:

1. Connect a spectrum analyser to any Subscriber Output of the first Multiswitch

2. Set the TERR Pro-Tap to -20dB

3. Set the Spectrum Analyser to Terrestrial. Using the TERR Gain Control adjust the Terrestrial signal to the required digital channel power level. If the signal cannot reach the required level, set the TERR Pro-Tap to -10dB and readjust the TERR Gain Control. If required, set the Pro-Tap to -0dB and readjust the Gain Control.

4. Check the SAT signal levels in Legacy and dSCR mode. These will not require adjustment as they are self-commissioned using Automatic Gain Control.

5. Repeat the above for all other Multiswitches in the IRS System as applies.

EXAMPLE CONFIGURATION

HYBRID IRS

Figure 4

RISER

WSCR504RP

WSCR504RP

WM508

APARTMENT 1

WPSU-SAP2

SKY Q ✓

SKY + HD ✓

SKY HD ✓

FREE SAT ✓

TERR TV

WPSU-SAP1

APARTMENT 2

SKY Q ✓

SKY+ HD (SCR MODE) ✓

FREE SAT ✓

TERR TV

EXAMPLE CONFIGURATION

2 SAT IRS SYSTEM

WB
LNB

WB
LNB

RISER

WSCR504RP

WSCR504RP

WSCR504RP

APARTMENT 1

WPSU-SAP2

SKY Q ✓

SKY + HD ✓

SKY HD ✓

FREE SAT ✓

TERR TV

WPSU-SAP1

APARTMENT 2

SKY Q ✓

SKY+ HD
(SCR MODE) ✓

FREE SAT ✓

TERR TV

SPECIFICATIONS

WSCR504RP

- 4 Years Warranty
- Small Form Factor
- Features Trunk EQ
- Comes complete with Earth Bars
- Remote Powered dSCR Multiswitch
- 2 SAT Reception using 2x WB LNB's
- Switchable 12V supply on TERR input
- Compatible with Quattro and WB LNB's
- High Output Power 89dBµV (AGC) for Legacy / dSCR
- High Gain TERR with Gain Control & Pro-Tap™ Attenuation Switch

TRUNK EQ **PRO-TAP** **(((RED)))** COMPLIANT

MODEL	WSCR504RP
Freq. Range SAT Quattro / WB	950 ~ 2150 / 290 ~ 2340MHz
Freq. Range TERR	87~790MHz
Dual Satellite Reception (2x WB LNB)	YES
Trunk Inputs /Outputs (F-Type Female)	4 SAT + 1 TERR
Tap Outputs (F-Type Female)	4
Gain SAT	-5dB ~ +25dB (AGC)
Gain TERR	8dB±2dB
Gain Control TERR / SAT	15dB / AGC
Input Levels Min / Max ~ SAT / TERR	64 ~ 104dBµV / 52 ~ 102dBµV
Trunk Through Loss SAT / TERR	<-5dB
Max Output Level SAT / TERR	89dBµV (AGC) / 101dBµV
Protean Tap™ (TERR Attenuation Switch)	0 / -10 / -20dB
Impedance	75Ω
Compatibility (Auto Switching)	Legacy / Sky UK /EN50607 / EN50494
dSCR User Bands Per Port	16
Masthead Supply (switchable)	12V DC 100mA
Power Consumption Min / Max @ 18V	0.1A / 0.28A
Supply voltage	18V DC
Power via Apartment / Via Trunk	Yes / No

In the interest of continuous improvement, all specifications of products are subject to change without notice.

The EU Declaration of Conformity can be viewed at www.whytetechnologies.com.

Unit 1, Watermill Business Centre. Edison Road, Enfield. EN3 7XF

Tel: 0330 999 1980 | info@whytetechnologies.com | www.whytetechnologies.com