Whyte SERIES 5

5 WIRE MULTISWITCH
INSTRUCTION MANUAL

MODELS:

WM508

WM512

WM516

WM524

WM532

CE

CONTENTS

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.

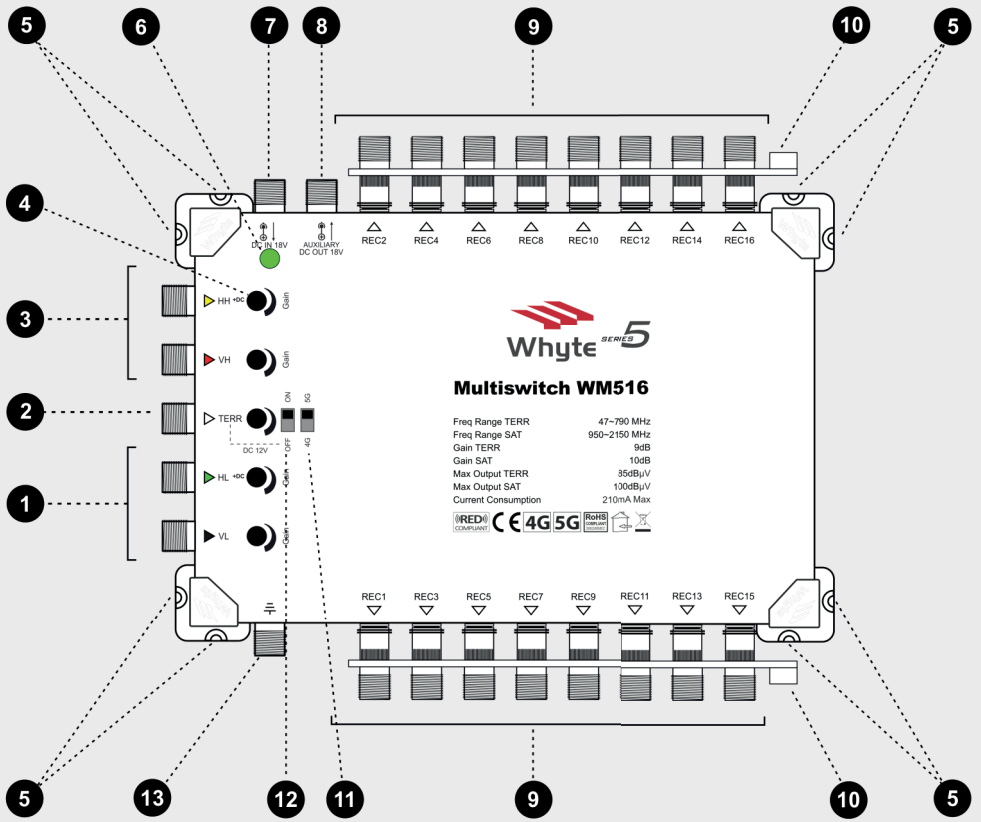
GENERAL DESCRIPTION

Whyte Series 5 Multiswitches are high gain, universally flexible and are designed to be used in small, medium and large Integrated Reception Systems (IRS).

The Multiswitches come fitted with a 4G/5G selection switch for rejection of LTE interference and are compliant with the RED Directive. Series 5 Multiswitches are line powered but can also be used as Standalone Multiswitches when powered directly via the18V Auxiliary Input.

Large scale Integrated Reception Systems can easily be created by using Series 5 Amplifiers, Taps and Splitters.

PRODUCT DESCRIPTION



1. Inputs SAT VL and HL
2. Input Terrestrial (TV/Radio)
3. Inputs SAT VH and HH
4. SAT & TERR Gain Controls
5. Corner Mounting Brackets
6. LED Power Indicator
7. DC Input 18V
8. Auxiliary DC Output 18V
9. Subscriber (REC) Outputs
10. Earth Terminal Bar
11. 4G/5G TERR Filter selector switch
12. 12V DC to TERR input ON/OFF switch
13. Earth Lug

TECHNICAL DESCRIPTION

GENERAL

The Series 5 is a 5 Wire End of Line Multiswitch range. A large number of Multiswitches can be configured to create large IRS systems when used in conjunction with Launch Amplifiers, Taps and Splitters from the Whyte Series 5 range.

The Multiswitches have been designed for ease of installation. The subscriber ports are orientated single file and the switch has adequate stand-off to provide finger space for easy termination and servicing.

GAIN

The Series 5 range of Multiswitches provide a gain of 10dB for SAT and 9dB for TERR. All inputs come fitted with an individual Gain Control.

4G & 5G FILTERING

The range comes fitted with high rejection 4G/5G filters that are selectable via a switch. The correct filter should be selected depending on the LTE transmissions present within the installation area. 5G filtering can be selected for use in 4G areas where terrestrial channels above Ch48 are not used. This will provide ultra high rejection of 4G interference as well as providing future proofing for eventual 5G transmissions.

DC POWERING

The Series 5 range are Line Powered via the HL and HH input ports. The Multiswitches come fitted with a DC Input which enables the Multiswitch to be used in Standalone Mode when fitted with a Whyte PSU. This will power the Multiswitch as well as provide voltage to the HL & HH input ports to power an LNB and any other connected Whyte Line Powered Multiswitches or Amplifiers.

An Auxiliary DC Output is also provided. This can be used to power additional devices for example, Add On Multiswitches or non line powered Amplifiers and

Multiswitches. The Auxiliary DC Output port is active whether the Multiswitch is being Line Powered or powered directly.

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.

Care must be taken to select the appropriate type and number of PSU's required depending on the current requirements of the system as a whole.

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 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 in the corresponding order with respect to the LNB and the Multiswitch SAT inputs (Quattro LNB only). 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 & TERR Inputs of the Multiswitch.

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 the Earth Bars of all components within a single IRS System 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

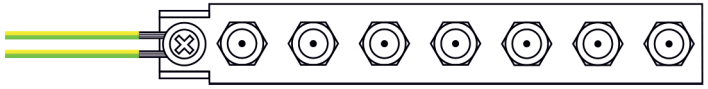


Figure 2

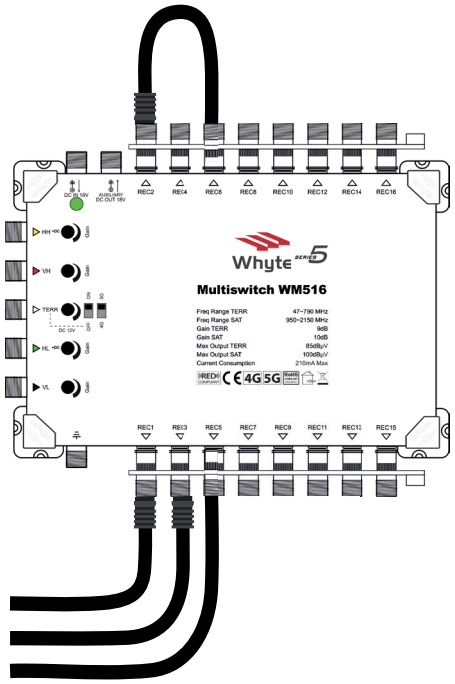


Figure 4

Figure 3

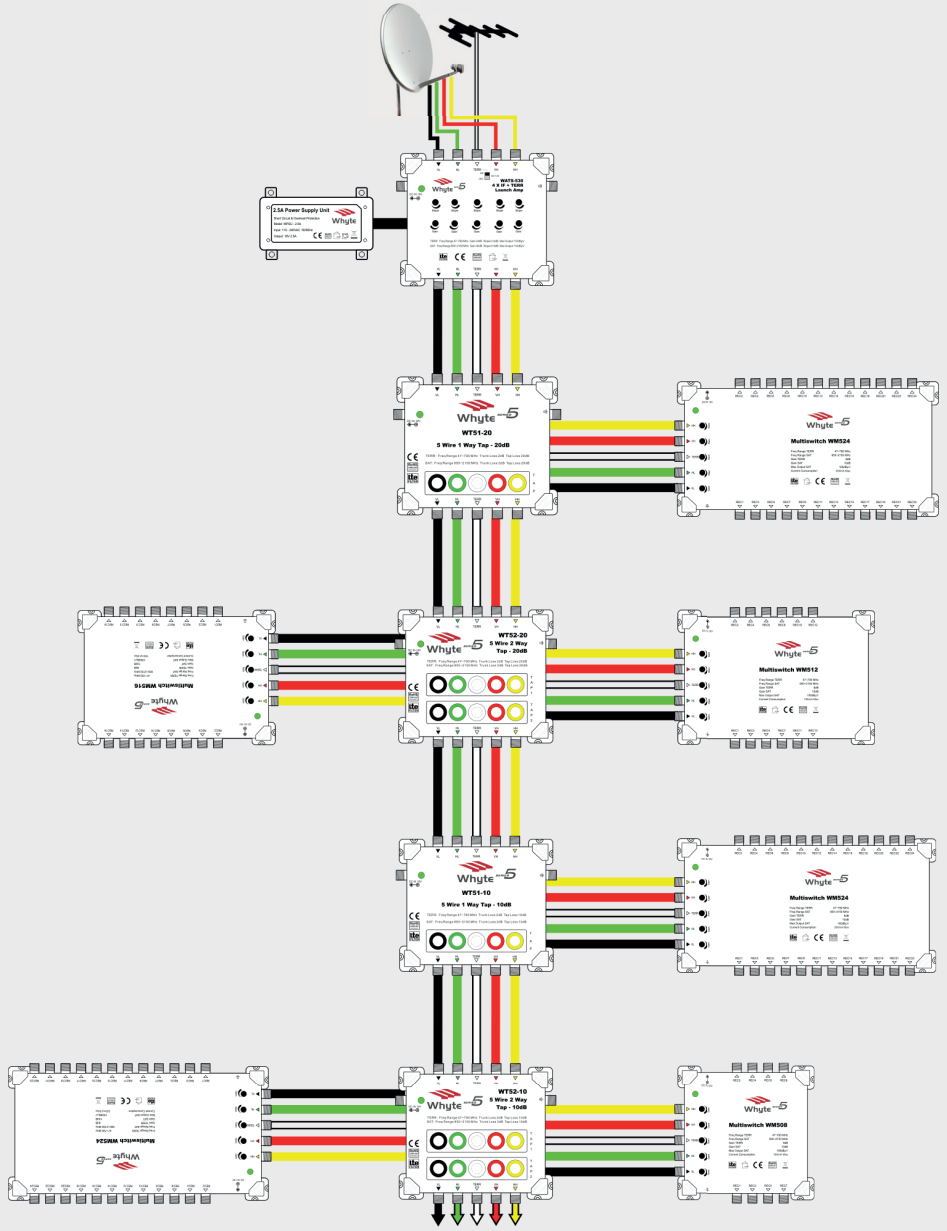
CONNECTING THE SUBSCRIBER CABLES

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. The Subscriber Cables may be arranged either side of the Multiswitch before being terminated and connected. If required, the Subscriber Cables may be arranged to one side of the Multiswitch, with the cables passing under the Multiswitch before being terminated and connected to the Subscriber Outputs on the opposite side. See figure 4.

CONNECTING THE POWER SUPPLY UNIT (PSU)

Calculate the total current consumption of the Series 5 Multiswitch(es), LNB and any Series 5 Launch Amplifiers that make up the complete IRS System. The current consumption of the Series 5 Multiswitch range can be found in the Specification section of this manual. If in doubt, assume the current consumption of each LNB to be 200mA max (0.2A). Connect a suitable Whyte PSU to the Auxiliary 18V DC Input. If more than one PSU is required, the additional PSU(s) may be connected to any other Multiswitch, Launch Amplifier, Tap or Splitter within the system. When all connections have been made, connect the PSU to a 240V socket to power up the IRS System. It is highly advisable to isolate and hence divide the system in to DC Groups containing only a single PSU per group, by using F-type DC blockers (not supplied).

EXAMPLE APPLICATION



SPECIFICATIONS

Model		WM508	WM512	WM516	WM524	WM532
Frequency	Satellite	950-2150MHz	950-2150MHz	950-2150MHz	950-2150MHz	950-2150MHz
	Terrestrial	47-790MHz	47-790MHz	47-790MHz	47-790MHz	47-790MHz
4G/5G Switch		Yes	Yes	Yes	Yes	Yes
Inputs (F Connectors)		4 SAT+1 TERR	4 SAT+1 TERR	4 SAT+1 TERR	4 SAT+1 TERR	4 SAT+1 TERR
Outputs (F Connectors)		8 Taps	12 Taps	16 Taps	24 Taps	32 Taps
Gain	Tap SAT	10±2dB	10±2dB	10±2dB	10±2dB	10±2dB
	Tap TERR	9±2dB	9±2dB	9±2dB	9±2dB	9±2dB
Gain Control	SAT	11±2dB	11±2dB	11±2dB	11±2dB	11±2dB
	TERR	11±2dB	11±2dB	11±2dB	11±2dB	11±2dB
Isolation	Trunk-Trunk	≥33dB	≥33dB	≥33dB	≥33dB	≥33dB
	Cross-Polar	≥25dB	≥25dB	≥25dB	≥25dB	≥25dB
	Tap-Tap (SAT)	≥30dB	≥30dB	≥30dB	≥30dB	≥30dB
	Tap-Tap (TERR)	≥30dB	≥30dB	≥30dB	≥30B	≥30dB
	Rejection	≥25dB	≥25dB	≥25dB	≥25dB	≥25dB
Output level	SAT (IMA³-35dB)	100dBµV	100dBµV	100dBµV	100dBµV	100dBµV
	TERR (IMA³-60dB)	85dBµV	85dBµV	85dBµV	85dBµV	85dBµV
Switching Voltage		15±0.8V	15±0.8V	15±0.8V	15±0.8V	15±0.8V
Trunk Max Current Pass (per line)		2A	2A	2A	2A	2A
TERR 12V DC Supply (switchable)		100mA	100mA	100mA	100mA	100mA
Switching Commands		13V-18V 13V22k-18V22K	13V-18V 13V22k-18V22K	13V-18V 13V22k-18V22K	13V-18V 13V22k-18V22K	13V-18V 13V22k-18V22K
DC Input (F-Type Connector)		Yes	Yes	Yes	Yes	Yes
Auxiliary DC Output (F-Type Connector)		Yes	Yes	Yes	Yes	Yes
Current Consumption		210mA Max	210mA Max	210mA Max	230mA Max	230mA Max
Dimensions (mm)		151x185x44	214x185x44	214x185x44	279x185x44	342x185x44
Weight		670g	880g	920g	1180g	1480g

NOTES

NOTES

Whyte SERIES 5

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