

***XL***logic

**Super Analogue Mic Amp  
Owner's Manual**



**Solid State Logic**



Super-Analogue™ Outboard

Owner's Manual

## Solid State Logic

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As research and development is a continual process, Solid State Logic reserves the right  
to change the features and specifications described herein without notice or obligation

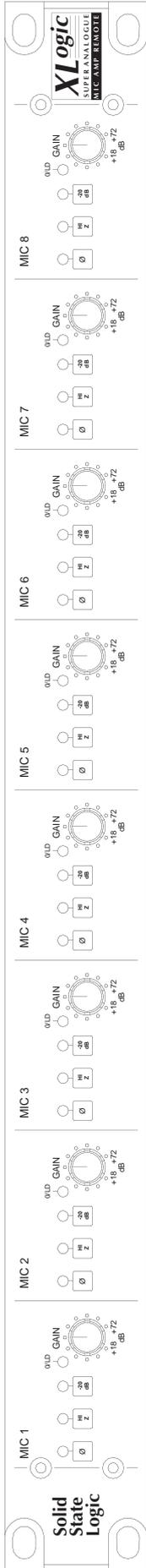
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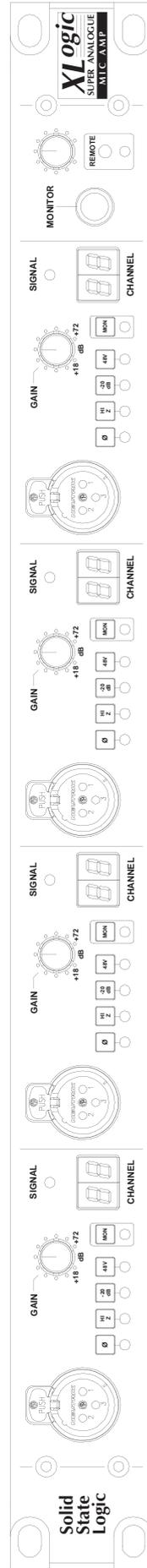
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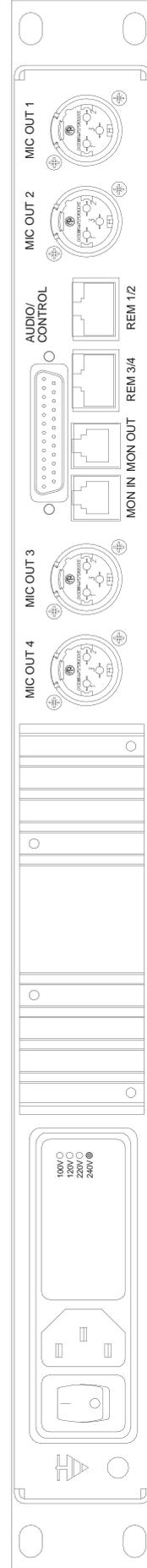
XLogic Mic Amp Remote (front)



XLogic Mic Amp Remote (rear)



XLogic Mic Amp (front)



XLogic Mic Amp (rear)

## **1.0 Introduction**

The XLogic Mic Amp is a 1U rack mounting unit containing four ultra high quality microphone amplifiers, utilising SSL's Super Analogue technology. The unit can be controlled either locally, from the XLogic Mic Amp Remote Control or from an XL 9000 console, allowing the mic amp to be placed close to the microphone in order to eliminate the signal degradation caused by long mic cables.

The object of this manual is to provide purchasers of the XLogic Mic Amp with information in the following areas:

- Safety considerations
- Installation requirement
- Electrical connections and cabling
- Connector pin-outs
- Specifications and physical dimensions

### **Warranty**

The warranty period for this unit is 12 months from date of purchase.

#### **In Warranty Repairs**

In the event of a fault during the warranty period the unit must be returned to your local distributor who will arrange for it to be shipped to Solid State Logic for repair. All units should be shipped to Solid State Logic in their original packaging. Solid State Logic can not be held responsible for any damage caused by shipping units in other packaging. In such cases Solid State Logic will return the unit in a suitable box, which you will be charged for. Please do not send manuals, power leads or any other cables - Solid State Logic can not guarantee to return them to you. Please also note that warranty returns will only be accepted as such if accompanied by a copy of the receipt or other proof of purchase.

#### **Out of Warranty Repairs**

In the event of a fault after the warranty period has expired, return the unit in its original packaging to your local distributor for shipment to Solid State Logic. You will be charged for the time spent on the repair (at Solid State Logic's current repair rate) plus the cost of parts and shipping.

## 2.0 Safety considerations

This section contains definitions and warnings, and practical information to ensure a safe working environment. Please take time to read this section before undertaking any installation work.

### 2.1 Definitions

#### 'Maintenance'

All maintenance must be carried out by fully trained personnel. *Note: it is advisable to observe suitable ESD precautions when maintenance to any part is undertaken.*

#### 'Non-User Adjustments'

Adjustments or alterations to the equipment may affect the performance such that safety and/or international compliance standards may no longer be met. Any such adjustments must therefore only be carried out by fully trained personnel.

#### 'Users'

This equipment is designed for use solely by engineers and competent operators skilled in the use of professional audio equipment.

#### 'Environment'

This product is a Class A product intended to form an integrated component part of a professional audio recording, mixing, dubbing, film, TV, radio broadcast or similar studio wherein it will perform to specification providing that it is installed according to professional practice.

### 2.2 Electrical Safety Warning

When installing or servicing any item of Solid State Logic equipment with power applied, when cover panels are removed, HAZARDOUS CONDITIONS CAN EXIST.

These hazards include:

- High voltages
- High energy stored in capacitors
- High currents available from DC power busses
- Hot component surfaces

Any metal jewellery (watches, bracelets, neck-chains and rings) that could inadvertently come into contact with uninsulated parts should always be removed before reaching inside powered equipment.

### 2.3 Installation

#### Voltage Selection and Fusing

All XLogic units have selectable voltage inlets. Always confirm that the input mains voltage range is set correctly before applying power. Always isolate the mains supply before changing the input range setting.

If it is ever necessary to replace a blown mains-fuse, then always use the correct rating and type of replacement. If a correctly rated fuse continues to blow, then a fault exists and the cause should be investigated or the unit returned to Solid State Logic for repair/replacement as appropriate.

Details of mains settings and correct fuse ratings can be found in Section 3.1 and Appendix A of this manual.

#### Safety Earth Connection

Any mains powered item of Solid State Logic equipment that is supplied with a 3-core mains lead (whether connectorised or not) should always have the earth wire connected to the mains supply ground. This is the safety earth and grounds the exposed metal parts of the racks and cases and should not be removed for any reason.

### **Mains Supply and Phases**

Solid State Logic equipment is designed for connection to single phase supplies with the Neutral conductor at earth potential - category TN - and is fitted with a protective fuse in the Live conductor only. It is not designed for use with Phase (Live) and Neutral connections reversed or where the Neutral conductor is not at earth potential (TT or IT supplies).

Mains cables will be coded with the following colour scheme:

LIVE:	Brown
NEUTRAL:	Blue
EARTH:	Yellow / Green

### **Mains Isolation and Over-Current Protection**

An external disconnect device is required for this equipment which must be installed according to current wiring regulations. A detachable power cord, as fitted to this equipment, is a suitable disconnect device.

An external over-current protection device is required to protect the wiring to this equipment which must be installed according to the current wiring regulations. The fusing or breaking-current are defined in the product specification. In certain countries this function is supplied by use of a fused plug.

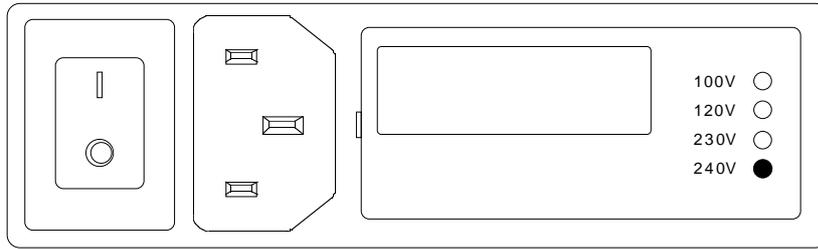
### **CE Certification**

Note that the majority of cables supplied with SSL equipment are fitted with ferrite rings at each end. This is to comply with current European CE regulations and these ferrites should not be removed.

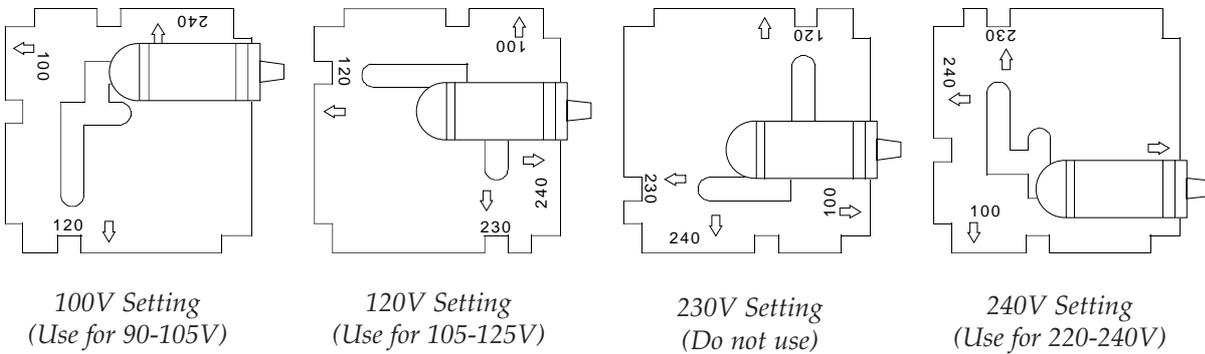
If any of the unit metalwork is modified in any way this may adversely affect the CE certification status of the product.

### **FCC Certification**

The XLogic unit has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Mains Input Module



Mains Input Programming PCB

*These diagrams show the PCB arrangements for the different voltage settings.*

*Note that where the mains voltage is a nominal 230V, the '240V Setting' should be used – not the '230V Setting'!*

## 3.0 Installation

### 3.1 Voltage Selection

Before connecting the mains supply ensure that the voltage range selector next to the IEC socket on the rear of the unit is correctly set. The input setting must be confirmed before applying power. The input module can be configured to be one of 4 voltage settings. The setting is indicated by a plastic pin protruding through the appropriate hole in the fuse panel.

The setting is altered by a small vertical PCB which can be fitted in 4 positions.

To change the setting:

Switch off and remove the IEC lead.

Using a small flat-bladed screwdriver, lever open the fuse panel to the right of the connector.

At the right hand side is a vertical PCB with a plastic key which indicates the setting. Using pliers, pull out the PCB.

The PCB has to be rotated until the desired voltage is shown along the edge which plugs into the module. The plastic key (and this bit is quite fiddly) must also be rotated so that it points out of the module and so that the round pin aligns with the appropriate hole in the cover panel; (refer to the diagrams opposite).

Re-insert the PCB and replace the fuse panel. The plastic pin should project through the appropriate hole.

### 3.2 Mounting

The XLogic unit is designed to be rack mounted. It is 1RU (44.5mm/1.75 inch) high. Its depth is:

325 mm/12.8 inches not including heatsink

365 mm/14.3 inches including heatsink

400 mm/15.75 inches including connectors

Please note that the rack ears of early XLogic Mic Amp units are *not* capable of supporting the full weight of the unit. Therefore if the unit is to be rack-mounted, it must either be mounted on suitable rack shelves or be fitted with a pair of support brackets to reinforce the rack ears – *do not rely on just the basic front panel for rack-mounting the unit*. Later XLogic Mic Amp units incorporate reinforcement brackets into the chassis and so are suitable for direct rack-mounting. Should your unit require them, pairs of support brackets (SSL Part No.: 629943XR) are available from your local distributor.

A 1RU space must be left above each unit to ensure adequate ventilation.

### 3.3 Standalone Operation

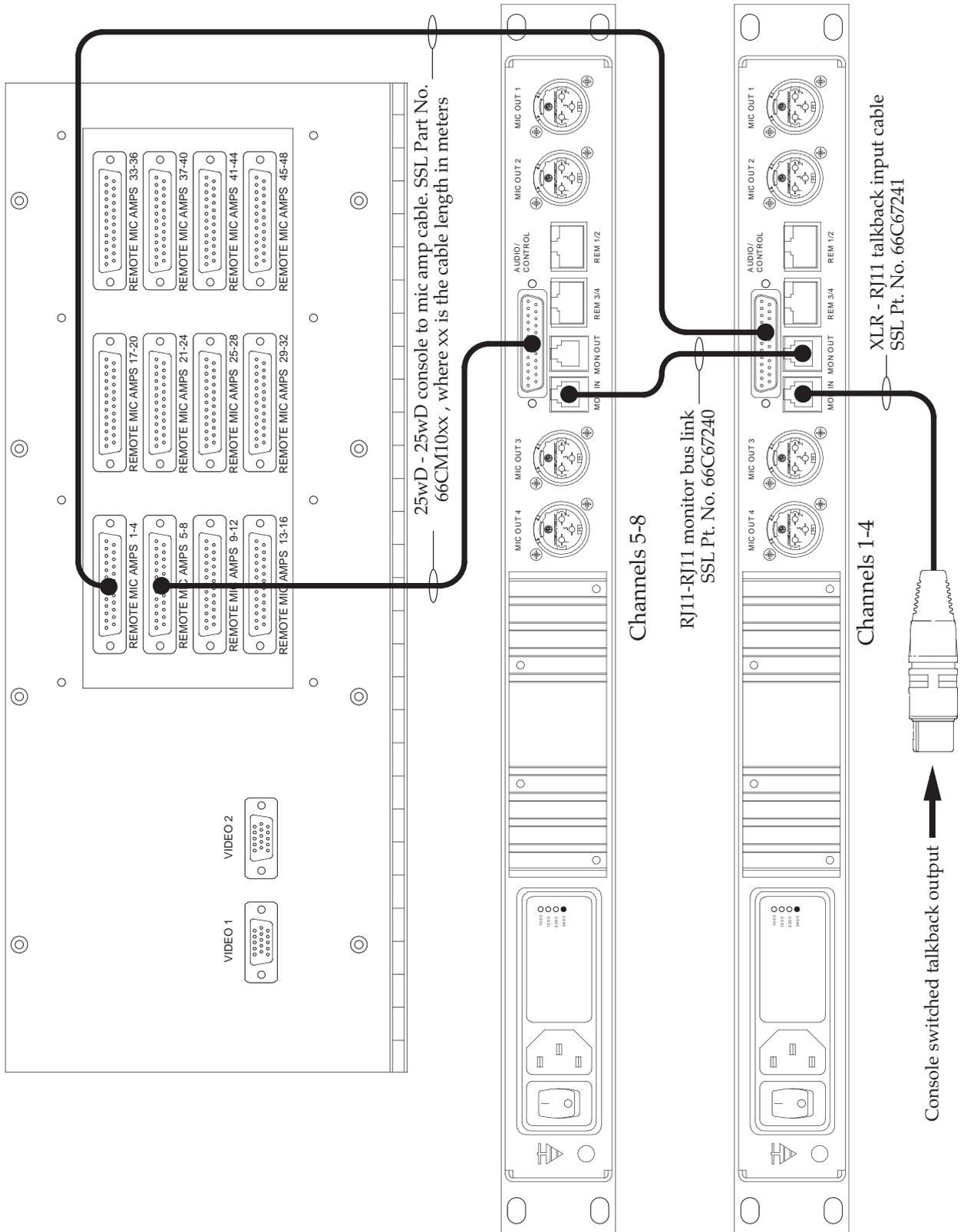
Before mounting the unit in the rack check that the front panel displays are correct by powering up the unit. Section 3.6 describes how to set the displays for your installation.

If several units are to be mounted in the same rack then the headphone monitor and talkback bus should be connected between the units by connecting the 'MON IN' and 'MON OUT' connectors on adjacent units, using the supplied RJ11-RJ11 cable (SSL Part No.66C67240).

The headphone output monitors any channel selected to 'MON' plus an external talkback input. The talkback input can be connected to a line level console talkback output if required. This signal is bussed between units on the monitor link cables. Use an RJ11 to female XLR adaptor (SSL Part No. 66C67241) to connect talkback to a free MON IN or MON OUT connector. One adaptor cable is supplied with each unit.

Once these connection have been made apply power to the unit(s). Ensure that the yellow 'REMOTE' LED on the right of the front panel is not lit. If it is lit, use a small screwdriver or similar to turn off the recessed 'REMOTE' switch below the LED. Finally connect the male XLR connectors on the rear of the unit to the line level inputs of your console or recorder and your microphones to the XLR inputs on the front of the unit.

## Console Wiring Diagram



### **3.4 Connection to XL 9000 Consoles**

Remote mic amp prewiring has been fitted to many, but not all XL 9000 consoles. In many cases only a small number of channels have been wired. Check which (if any) bays of the console have been prewired for remote mic amps. Wiring can be retrofitted to any XL 9000 console if required - contact your local office or distributor for more information. The prewiring comprises two parts – two control signals from each channel plus a relay card that automatically switches the channel line input to the output of the XLogic Mic Amp.

Connection to an XL 9000 console is made from the 25 way 'D' type connector on the rear of the unit. This carries both audio and control signals. Depending on the age of the console the audio inputs and control outputs will either be on 96 pin Canon DL connectors (which were used on the original 24 channel 'SuperPre' mic amp) which have 24 circuits of audio and control on separate connectors, or on 25 way 'D' type male connectors with the same pin out as the Mic Amp unit. If the console is wired with DL connectors then a DL to 25 way 'D' type male adaptor cable will be required.

Interconnecting cables may be ordered from Solid State Logic or supplied by the facility. See the block diagrams opposite. Appendix B contains pinouts for all connectors. Appendix B also includes wiring information to build an adaptor cable to connect the audio and control DLs to 25 way 'D' type connectors.

The cable used should be 8 pair individually jacketed multicore with an overall screen such as Belden 1512C. Connectors should have metal or metallised covers. Connect the overall shield to the connector cover at both ends.

If several units are to be mounted in the same rack then the headphone monitor and talkback bus should be connected between the units by connecting the 'MON IN' and 'MON OUT' connectors on adjacent units, using the supplied RJ11-RJ11 cable (SSL Part No.66C67240).

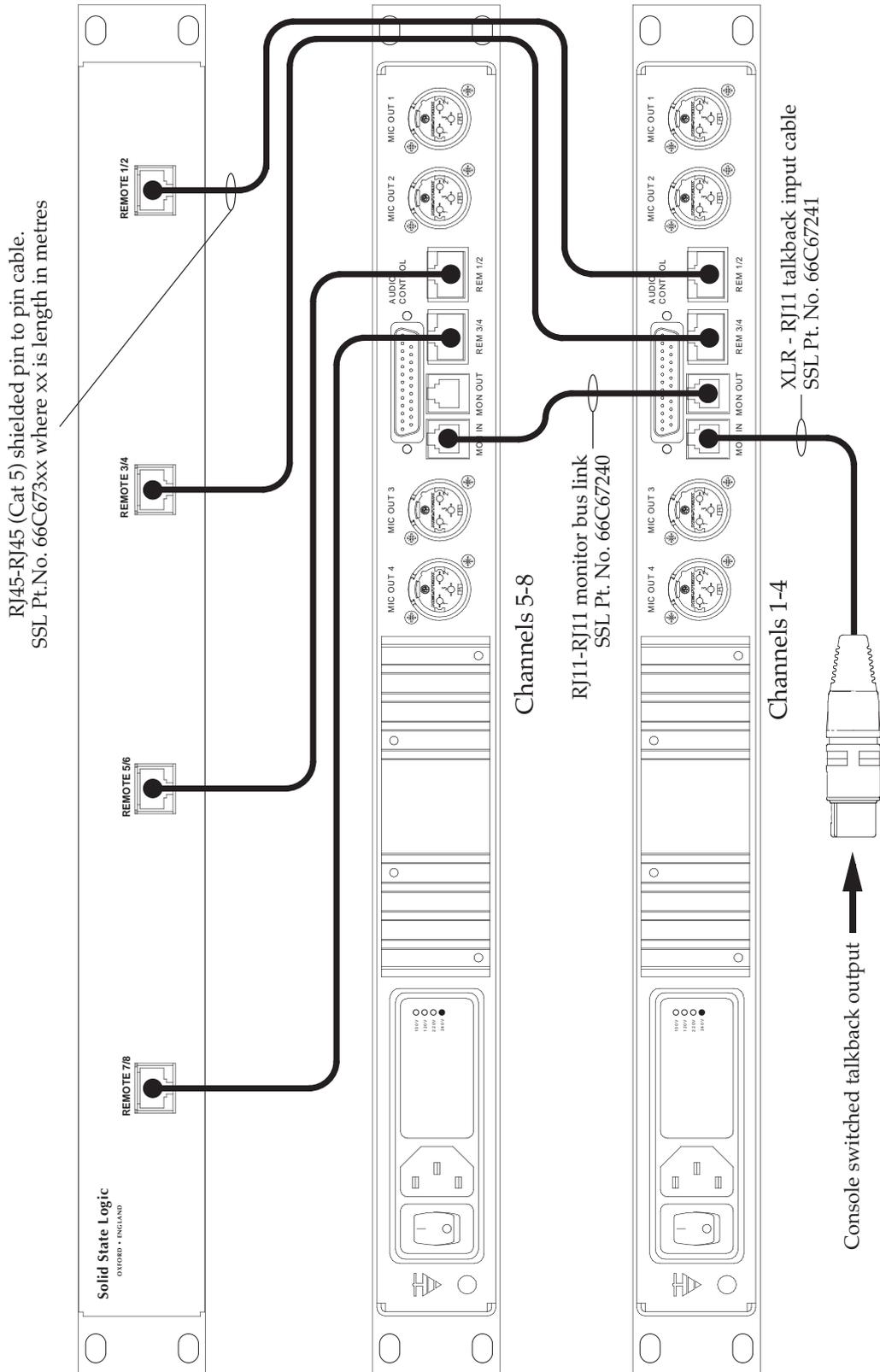
The headphone output monitors any channel selected to 'MON' plus an external talkback input. The talkback input can be connected to a line level console talkback output if required. This signal is bussed between units on the monitor link cables. Use an RJ11 to female XLR adaptor (SSL Part No. 66C67241) to connect talkback to a free MON IN or MON OUT connector. One adaptor cable is supplied with each unit.

Once these connections have been made apply power to the unit(s). Ensure that the yellow 'REMOTE' LED on the right of the front panel is lit. If it is not lit use a small screwdriver or similar to turn on the recessed 'REMOTE' switch below the LED.

Finally check that:

- The channel number displays on the front of the unit match the numbers of the channels the unit is connected to.
- When you pull up the Mic Gain controls on the connected channels the 'MIC' LED changes colour from red to green.
- The motorised pots and the remote controlled switches (48V, PAD and Hi-Z) operate correctly from the XL 9000 when 'Remote' is selected and that they can be controlled locally when 'Remote' is not selected.
- When you connect a microphone to the Mic Amp input signal appears on the input of the correct channel of the console.

## Remote Control Wiring Diagram



### 3.5 Connection to XLogic Mic Amp Remote

The XLogic Mic Amp Remote (see drawing on page 2) is a 1U panel, approximately 100mm deep. Each unit will control one or two XLogic Mic Amp units (eight channels in total). It connects to each XLogic Mic Amp by two shielded RJ45 cables and is powered from the XLogic Mic Amp. Four 20 metre cables are supplied with each remote unit. These cables can be extended up to a maximum length of 100 metres using standard shielded Cat 5 network cable(s) with a minimum conductor size of 26AWG. Use of 24AWG cable allows the cable to be extended to a maximum of 200 metres. To ensure compliance with EU EMC regulations Solid State Logic recommend fitting a ferrite bead close to each end of the cable.

*Note that these cables carry +12 volts to power the remote unit and must not be connected to your ethernet network. Serious damage to the ethernet repeater may result if this is done.*

If several units are to be mounted in the same rack then the headphone monitor and talkback bus should be connected between the units by connecting the 'MON IN' and 'MON OUT' connectors on adjacent units, using the supplied RJ11-RJ11 cable (SSL Part No.66C67240). The drawing in Section 3.5 shows this.

The headphone output monitors any channel selected to 'MON' plus an external talkback input. The talkback input can be connected to a line level console talkback output if required. This signal is bussed between units on the monitor link cables. Use an RJ11 to female XLR adaptor (SSL Part No. 66C67241) to connect talkback to a free MON IN or MON OUT connector. One adaptor cable is supplied with each unit.

Once these connection have been made apply power to the unit(s). Ensure that the yellow 'REMOTE' LED on the right of the front panel is on. If it is off use a small screwdriver or similar to turn on the recessed 'REMOTE' switch below the LED.

Check that the motorised pots and the remote controlled switches (Phase, -20dB and Hi-Z) operate correctly from the Mic Amp Remote control unit when 'REMOTE' is selected and that they can be controlled locally when 'REMOTE' is not selected.

Finally connect the male XLR connectors on the rear of the unit to the line level inputs of your console or recorder and your microphones to the XLR inputs on the front of the unit.

**Table 1: Channel Display Setting - Normal Operation**

Channel Address *	LK5 Position	BCD Switch Setting	Front Panel Displays			
			Display 1	Display 2	Display 3	Display 4
0 0 0 0 0	a	0	DP	DP	DP	DP
0 0 0 0 1	a	1	1	2	3	4
0 0 0 1 0	a	2	5	6	7	8
0 0 0 1 1	a	3	9	10	11	12
0 0 1 0 0	a	4	13	14	15	16
0 0 1 0 1	a	5	17	18	19	20
0 0 1 1 0	a	6	21	22	23	24
0 0 1 1 1	a	7	25	26	27	28
0 1 0 0 0	a	8	29	30	31	32
0 1 0 0 1	a	9	33	34	35	36
0 1 0 1 0	a	A	37	38	39	40
0 1 0 1 1	a	B	41	42	43	44
0 1 1 0 0	a	C	45	46	47	48
0 1 1 0 1	a	D	49	50	51	52
0 1 1 1 0	a	E	53	54	55	56
0 1 1 1 1	b	F	57	58	59	60
1 0 0 0 0	b	0	61	62	63	64
1 0 0 0 1	b	1	65	66	67	68
1 0 0 1 0	b	2	69	70	71	72
1 0 0 1 1	b	3	73	74	75	76
1 0 1 0 0	b	4	77	78	79	80
1 0 1 0 1	b	5	81	82	83	84
1 0 1 1 0	b	6	85	86	87	88
1 0 1 1 1	b	7	89	90	91	92
1 1 0 0 0	b	8	93	94	95	96
1 1 0 0 1	b	9	DP	DP	DP	DP
1 1 0 1 0	b	A	DP	DP	DP	DP
1 1 0 1 1	b	B	DP	DP	DP	DP
1 1 1 0 0	b	C	DP	DP	DP	DP
1 1 1 0 1	b	D	DP	DP	DP	DP
1 1 1 1 0	b	E	DP	DP	DP	DP
1 1 1 1 1	b	F	DP	DP	DP	DP

Note: 'DP' - decimal point

\* Pull address pins marked '1' to 0V to enable.

### 3.6 Configuring the XLogic Mic Amp

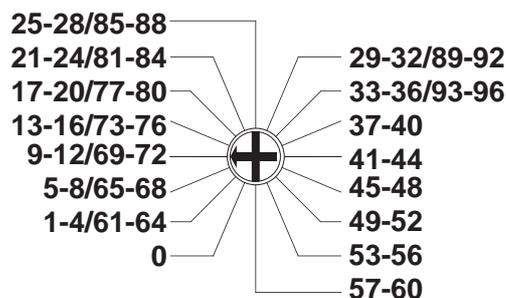
There are a number of internal link settings, most of which should not normally require adjustment – see Appendix A for a full listing. Those links that change the operation of the unit are described below.

#### Setting the Channel Displays

If the unit is connected to an XL 9000 console the 5 address bits on the 25 way 'D' type Audio/Control connector are set on the console channel bus card so that the channel displays automatically show the channels the unit is connected to.

When controlled locally or from the XLogic Mic Amp Remote control unit, the channel displays can be set by adjusting a rotary switch that is accessible through the lid of the case – see the drawing to the right. The rotary switch has 16 positions, allowing the front panel display to show channel numbers in the range 1 to 60. To display channel numbers above 60 the internal jumper LK5 (screened BIT 5) should be moved to position 'b'.

To perform this adjustment, make a note of the front panel displays, power-down the unit and insert a thin flat bladed screwdriver. Referring to both the screening on the top cover and to Table 1. opposite, set the switch as required. Remove the screwdriver and re-apply power.

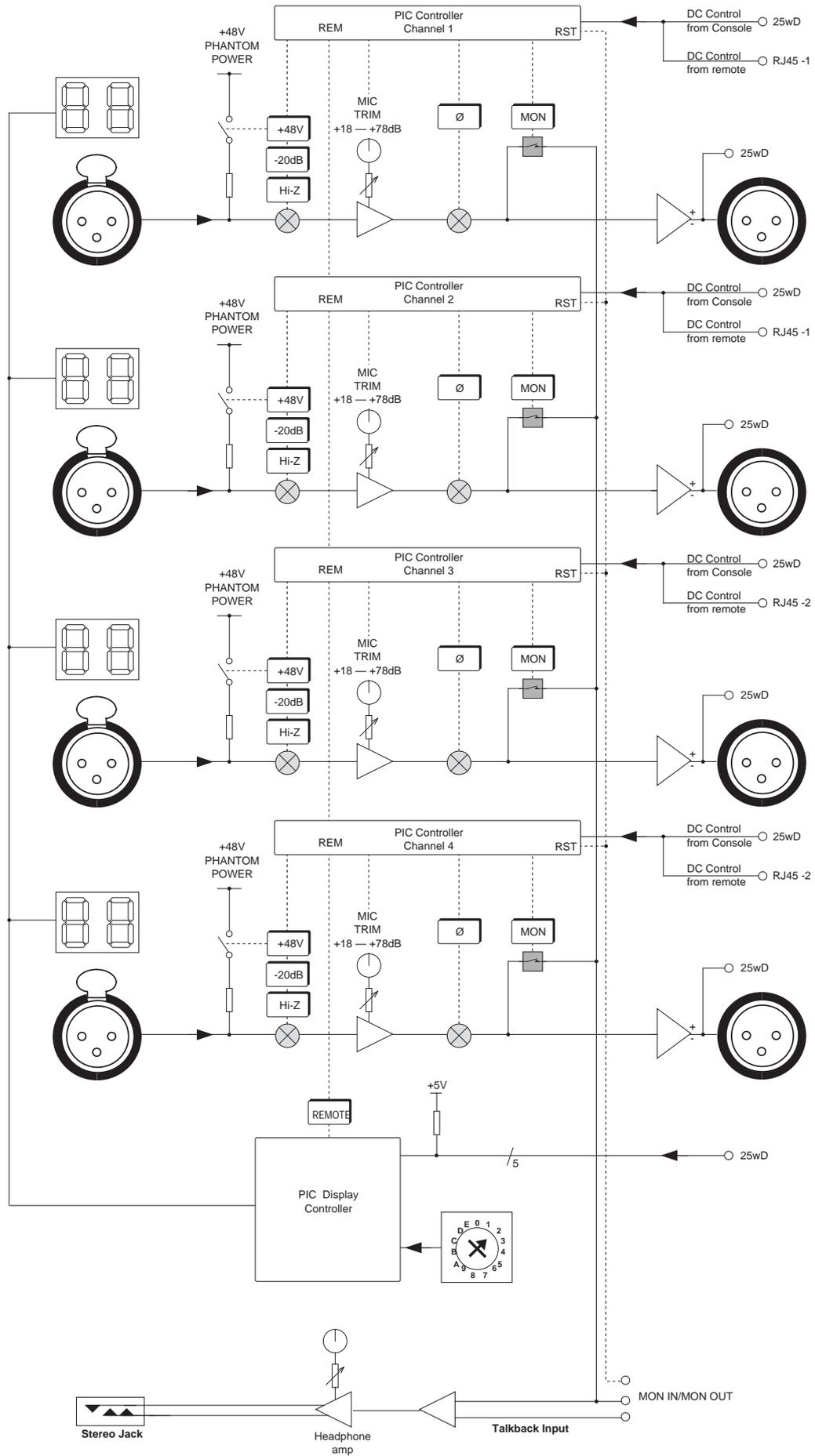


Note that the rotary switch position is ignored if the unit is connected to an XL 9000 console but that LK5 will always increase the displayed number by 60 when set to position 'b'.

*Note. It is recommended that this adjustment is not performed with power applied as a mis-placed screwdriver can cause damage to the XLogic Mic Amp!*

#### Changing the Remote +48V and Phase Switch Functions

If the unit is to be controlled from an XLogic Mic Amp Remote control unit then the phantom power selection is normally made from the Mic Amp front panel and phase is remote controlled. If the unit is to be controlled from an XL 9000 then phase is normally controlled from the Mic Amp front panel and phantom power is controlled from the console. This selection is automatic – the unit detects if any of the address inputs on the Audio/Control 25 way 'D' type connector are connected to ground and selects 'XL' mode accordingly. The selection can be reversed by moving the internal jumper LK6 (screened PHAS/PHAN) to position 'b'.

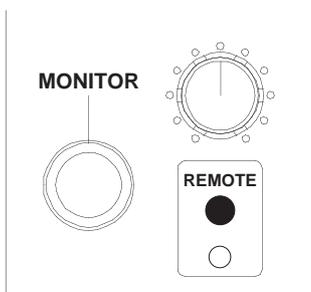


## 4.0 Operation

The XLogic Mic Amp is a 1U rack mounting unit containing four ultra high quality microphone amplifiers, utilising Solid State Logic's Super Analogue technology. The unit can be controlled locally, from the XLogic Mic Amp Remote unit or from an XL 9000 console, allowing the mic amp to be placed close the microphone in order to eliminate the signal degradation caused by long mic cables.

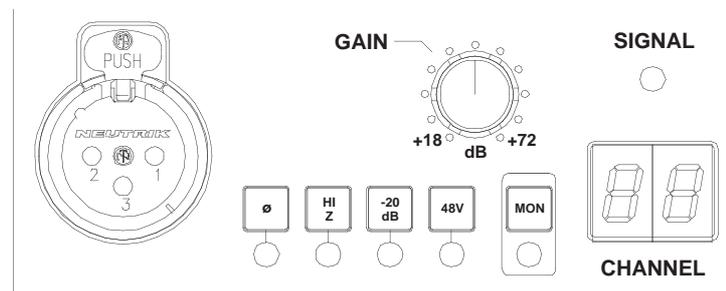
The 'REMOTE' switch on the right of the front panel (accessible through the hole above the 'Remote' LED) switches the unit between remote and local modes.

In local mode all the front panel switches and the microphone gains can be set from the front panel of the unit. Note that because of the servo motor and gear box the gain control is stiffer than a normal SSL potentiometer. In remote mode the gain controls and three of the front panel switches are controlled from either the XLogic Mic Amp Remote unit or an XL 9000 console. The MON switch and either the phase or 48V switch remain local. Which switch is local depends on whether the unit is connected to an XL 9000 or to an XLogic Mic Amp Remote unit (and also on the position of the internal PHAS/PHAN link – see section 3.6). The XL 9000 normally controls 48V, Hi-Z and -20dB switches. The Mic Amp Remote normally controls phase, Hi-Z and -20dB switches.



*Please note that connecting a microphone to the XLogic Mic Amp with phantom power switched on is not advised as it may cause damage to either the microphone or the input stage of the XLogic Mic Amp.*

Each channel has an XLR input on the front panel. The mic amp gain is controlled by a motorised potentiometer. Dedicated switches control phase reverse, phantom power, input impedance and 20dB pad. A dual seven segment display shows the channel number. These are set from either an internal BCD switch (accessible through the lid of the unit) or by links on the 25 way 'D' type connector on the rear of the unit. XL 9000 consoles automatically configure the unit to show which channels the unit is connected to.

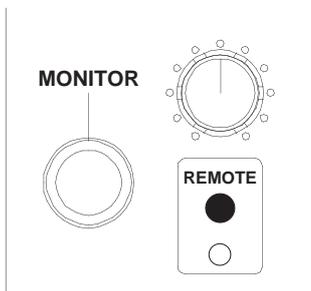


See section 3.6 for instructions on how to change the channel displays.

Each channel has two outputs – one on the Audio/Control 25 way 'D' type connector for connection to an XL 9000 console and one on a male XLR. Control inputs appear on both the 25

way 'D' type 'Audio/Control' connector for connection to an XL 9000 and also on two RJ45 connectors for connection to an XLogic Mic Amp Remote. The RJ45 connectors also carry power to the remote unit. Note that only one of the control inputs should be connected.

The headphone jack and level control at the left of the unit is fed by a mix of the talkback input on the rear panel 'MON' connectors and any microphone channel that is selected to 'MON'. The headphone outputs and talkback inputs on multiple units can be linked using the 'MON IN' and 'MON OUT' RJ11 connectors on the rear of the unit (see sections 3.3 and 3.4). The MON switches inter cancel between channels and between multiple units if they are linked, so any input can be monitored without having to move the headphones to a different unit.

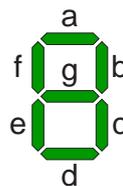


The block diagram opposite shows the signal path through the unit.

**Table 2: Channel Displays (Test Mode)**

Channel Address *	LK5 (bit 5) Position	BCD Switch Setting	Front Panel Displays			
			Display 1	Display 2	Display 3	Display 4
x x x x x	a	0	88	88	88	88
x x x x x	a	1	seg a	seg a	seg a	seg a
x x x x x	a	2	seg b	seg b	seg b	seg b
x x x x x	a	3	seg c	seg c	seg c	seg c
x x x x x	a	4	seg d	seg d	seg d	seg d
x x x x x	a	5	seg e	seg e	seg e	seg e
x x x x x	a	6	seg f	seg f	seg f	seg f
x x x x x	a	7	seg g	seg g	seg g	seg g
x x x x x	a	8	DP	DP	DP	DP
x x x x x	a	9				
x x x x x	a	A				
x x x x x	a	B				
x x x x x	a	C				
x x x x x	a	D				
x x x x x	a	E				
x x x x x	b	F				
x x x x x	b	0	0	0	0	0
x x x x x	b	1	11	11	11	11
x x x x x	b	2	22	22	22	22
x x x x x	b	3	33	33	33	33
x x x x x	b	4	44	44	44	44
x x x x x	b	5	55	55	55	55
x x x x x	b	6	66	66	66	66
x x x x x	b	7	77	77	77	77
x x x x x	b	8	88	88	88	88
x x x x x	b	9	99	99	99	99
x x x x x	b	A	DP	DP	DP	DP
x x x x x	b	B	0	0	0	0
x x x x x	b	C				
x x x x x	b	D				
x x x x x	b	E				
x x x x x	b	F				

Note: 'DP' – decimal point  
 \* – Ignored in Test Mode  
 – No entry means display is blank  
 – See right for segment display drawing



## Appendix A – Internal links and fuses

### Fuses (Mains Inlet)

The mains inlet contains a single 1 amp 1.25" time delay fuse (SSL Part No. 35FJJ310). To change it disconnect the mains inlet, then using a small screwdriver prise open the mains selector cover. This contains the fuse. Test and replace with the same type and value if necessary.

### Internal Fuses

The internal power rails are also individually fused. These fuses should only be changed by suitably experienced staff. They are listed below:

#### Fuses (629610X1 Power Regulator Card)

+48V FS1 - 500mA wire ended (SSL part No. 35F5E250)

#### Fuses (629601X1 Main Card)

+5V FS1 – 3 amp wire ended (SSL part No. 35F5E330)

+18V FS2 – 3 amp wire ended (SSL part No. 35F5E330)

+15V FS3 – 3 amp wire ended (SSL part No. 35F5E330)

-15V FS4 – 3 amp wire ended (SSL part No. 35F5E330)

-18V FS5 – 3 amp wire ended (SSL part No. 35F5E330)

### Links

LK1 Links output 0V to chassis. Normally fitted. Remove to capacitively couple.

LK3 Links chassis and analogue 0V. Normally fitted. Remove to increase impedance to 10Ω.

LK4 Test link. Normally set to position 'a'. See below for details of operation in test mode.

LK5 Bit 5 link. Normally set to position 'a'. Increases channel number display by 60 if set to position 'b'

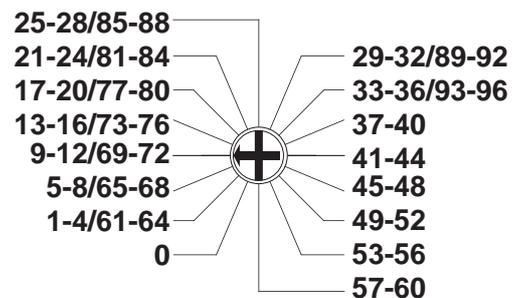
LK6 Phase/Phantom link. Normally set to position 'a'. Reverses default selection of remote control of phase and +48 switches when set to position 'b'.

### Test Mode

Test mode is selected by moving LK4 (screened 'TEST') to position 'b'.

*In test mode:*

- All front panel switches are local, regardless of the remote switch setting.
- Pressing both phase and Hi-Z switches will drive the motor on that channel anti-clockwise.
- Pressing both -20dB and 48V will drive the motor on that channel clockwise.
- All front panel displays have the same segments lit. The displayed segments depend on the position of the rotary BCD switch (accessible through the lid of the unit) and the internal jumper, LK5. Table 2 (opposite) shows the available displays.
- Normally the front panel displays are only written to when the address is changed. In 'Test' mode they are updated continuously to aid fault finding.



## Appendix B: Connector Pinouts

<b>Mic Input</b>	
Location: Front Panel	
Conn' Type: XLR Female	
<i>Pin</i>	<i>Description</i>
1	Chassis
2	Audio +ve
3	Audio -ve

<b>Channel Outputs 1 - 4</b>	
Location: Rear Panel	
Conn' Type: XLR Male	
<i>Pin</i>	<i>Description</i>
1	Chassis
2	Audio +ve
3	Audio -ve

<b>Audio/Control</b>		
Location: Rear Panel		
Connector Type: 25-way D-type Female		
<i>Pin</i>	<i>Description</i>	<i>Notes</i>
1	0V	Screen 1
14	0V	Screen 2
2	Ch 1 Pos	Red 1
15	Ch 1 Neg	Black 1
3	Ch 1 Gain	Red 5
16	Ch 1 Switch	Black 5
4	Ch 2 Pos	Red 2
17	Ch 2 Neg	Black 2
5	Ch 2 Gain	Red 6
18	Ch 2 Switch	Black 6
6	0V	Screen 3
19	0V	Screen 4
7	Ch 3 Pos	Red 3
20	Ch 3 Neg	Black 3
8	Ch 3 Gain	Red 7
21	Ch 3 Switch	Black 7
9	Ch 4 Pos	Red 4
22	Ch 4 Neg	Black 4
10	Ch 4 Gain	Red 8
23	Ch 4 Switch	Black 8
11	ID Bit 1	Screen 5*
24	ID Bit 2	Screen 6*
12	ID Bit 3	Screen 7*
25	ID Bit 4	Screen 8*
13	ID Bit 5	N/C

\* Linking the appropriate pins to 0V will set the channel displays. See Table 4 for details.  
Inputs are pulled to +5V via 15K resistors.

## Appendix B: Connector Pinouts (*continued*)

<b>Headphone Output</b>	
Location:	Front Panel
Conn' Type:	Stereo 1/4" Jack Socket
<i>Pin</i>	<i>Description</i>
Tip	Audio Left +ve
Ring	Audio Right +ve
Sleeve	0V

<b>Monitor In / Monitor Out</b>	
Location:	Rear Panel
Conn' Type:	6-way RJ11 Socket
<i>Pin</i>	<i>Description</i>
1	Monitor Bus -ve
2	Monitor Bus +ve
3	Mon Reset
4	0V
5	Talkback Bus/Input -ve
6	Talkback Bus/Input +ve

<b>Remote 1 - 2</b>	
Location:	Rear Panel
Conn' Type:	8-way RJ45 Socket
<i>Pin</i>	<i>Description</i>
1	Ch 2 Switch Control
2	Ch 2 Gain Control
3	Ch 1 Switch Control
4	Ch 2 Overload
5	Ch 1 Overload
6	Ch 1 Gain Control
7	0V
8	+12V

<b>Remote 3 - 4</b>	
Location:	Rear Panel
Conn' Type:	8-way RJ45 Socket
<i>Pin</i>	<i>Description</i>
1	Ch 4 Switch Control
2	Ch 4 Gain Control
3	Ch 3 Switch Control
4	Ch 4 Overload
5	Ch 3 Overload
6	Ch 3 Gain Control
7	0V
8	+12V

## Appendix B: Connector Pinouts (continued)

Table 3a - XL 9000 DL to 25way 'D' Wiring: Channels 1-8 / 25-32 / 49-56 / 73-80

Signal	Cable #	Colour	DL Audio Pin	DL Control Pin	25wD Male 1-4
Channel 1 Positive	1	Red 1	A1		2
Channel 1 Negative	1	Black 1	B1		15
Channel 1 Screen	1	Screen 1	C1		1
Channel 2 Positive	1	Red 2	A2		4
Channel 2 Negative	1	Black 2	B2		17
Channel 2 Screen	1	Screen 2	C2		14
Channel 3 Positive	1	Red 3	A3		7
Channel 3 Negative	1	Black 3	B3		20
Channel 3 Screen	1	Screen 3	C3		6
Channel 4 Positive	1	Red 4	A4		9
Channel 4 Negative	1	Black 4	B4		22
Channel 4 Screen	1	Screen 4	C4		19
Channel 1 Gain control	1	Red 5		A1	3
Channel 1 Switch Control	1	Black 5		B1	16
Channel 2 Gain control	1	Red 6		A2	5
Channel 2 Switch Control	1	Black 6		B2	18
Channel 3 Gain control	1	Red 7		A3	8
Channel 3 Switch Control	1	Black 7		B3	21
Channel 4 Gain control	1	Red 8		A4	10
Channel 4 Switch Control	1	Black 8		B4	23
ID Bit 1	1	Screen 5		C1	11*
ID Bit 2	1	Screen 6		C2	n/c
ID Bit 3	1	Screen 7		C3	n/c
ID Bit 4	1	Screen 8		C4	n/c
ID Bit 5					

Signal	Cable #	Colour	DL Audio Pin	DL Control Pin	25wD Male 5-8
Channel 5 Positive	2	Red 1	A5		2
Channel 5 Negative	2	Black 1	B5		15
Channel 5 Screen	2	Screen 1	C5		1
Channel 6 Positive	2	Red 2	A6		4
Channel 6 Negative	2	Black 2	B6		17
Channel 6 Screen	2	Screen 2	C6		14
Channel 7 Positive	2	Red 3	A7		7
Channel 7 Negative	2	Black 3	B7		20
Channel 7 Screen	2	Screen 3	C7		6
Channel 8 Positive	2	Red 4	A8		9
Channel 8 Negative	2	Black 4	B8		22
Channel 8 Screen	2	Screen 4	C8		19
Channel 5 Gain control	2	Red 5		A5	3
Channel 5 Switch Control	2	Black 5		B5	16
Channel 6 Gain control	2	Red 6		A6	5
Channel 6 Switch Control	2	Black 6		B6	18
Channel 7 Gain control	2	Red 7		A7	8
Channel 7 Switch Control	2	Black 7		B7	21
Channel 8 Gain control	2	Red 8		A8	10
Channel 8 Switch Control	2	Black 8		B8	23
ID Bit 1	2	Screen 5		C5	n/c
ID Bit 2	2	Screen 6		C6	24*
ID Bit 3	2	Screen 7		C7	n/c
ID Bit 4	2	Screen 8		C8	n/c
ID Bit 5					

\* Pinout shown is for channels 1-24. For other bays connect id. bits as shown in Table 4.

## Appendix B: Connector Pinouts (continued)

Table 3b - XL 9000 DL to 25way 'D' Wiring: Channels 9-16 / 33-40 / 57-64 / 81-88

Signal	Cable #	Colour	DL Audio Pin	DL Control Pin	25wD Male 9-12
Channel 9 Positive	3	Red 1	D1		2
Channel 9 Negative	3	Black 1	E1		15
Channel 9 Screen	3	Screen 1	F1		1
Channel 10 Positive	3	Red 2	D2		4
Channel 10 Negative	3	Black 2	E2		17
Channel 10 Screen	3	Screen 2	F2		14
Channel 11 Positive	3	Red 3	D3		7
Channel 11 Negative	3	Black 3	E3		20
Channel 11 Screen	3	Screen 3	G1		6
Channel 12 Positive	3	Red 4	D4		9
Channel 12 Negative	3	Black 4	E4		22
Channel 12 Screen	3	Screen 4	G2		19
Channel 9 Gain control	3	Red 5		D1	3
Channel 9 Switch Control	3	Black 5		E1	16
Channel 10 Gain control	3	Red 6		D2	5
Channel 10 Switch Control	3	Black 6		E2	18
Channel 11 Gain control	3	Red 7		D3	8
Channel 11 Switch Control	3	Black 7		E3	21
Channel 12 Gain control	3	Red 8		D4	10
Channel 12 Switch Control	3	Black 8		E4	23
ID Bit 1	3	Screen 5		F1	11*
ID Bit 2	3	Screen 6		F2	24*
ID Bit 3	3	Screen 7		G1	n/c
ID Bit 4	3	Screen 8		G2	n/c
ID Bit 5					n/c

Signal	Cable #	Colour	DL Audio Pin	DL Control Pin	25wD Male 13-16
Channel 13 Positive	4	Red 1	D5		2
Channel 13 Negative	4	Black 1	E5		15
Channel 13 Screen	4	Screen 1	G7		1
Channel 14 Positive	4	Red 2	D6		4
Channel 14 Negative	4	Black 2	E6		17
Channel 14 Screen	4	Screen 2	G8		14
Channel 15 Positive	4	Red 3	D7		7
Channel 15 Negative	4	Black 3	E7		20
Channel 15 Screen	4	Screen 3	F7		6
Channel 16 Positive	4	Red 4	D8		9
Channel 16 Negative	4	Black 4	E8		22
Channel 16 Screen	4	Screen 4	F8		19
Channel 13 Gain control	4	Red 5		D5	3
Channel 13 Switch Control	4	Black 5		E5	16
Channel 14 Gain control	4	Red 6		D6	5
Channel 14 Switch Control	4	Black 6		E6	18
Channel 15 Gain control	4	Red 7		D7	8
Channel 15 Switch Control	4	Black 7		E7	21
Channel 16 Gain control	4	Red 8		D8	10
Channel 16 Switch Control	4	Black 8		E8	23
ID Bit 1	4	Screen 5		G7	n/c
ID Bit 2	4	Screen 6		G8	n/c
ID Bit 3	4	Screen 7		F7	12*
ID Bit 4	4	Screen 8		F8	n/c
ID Bit 5					n/c

\* Pinout shown is for channels 1-24. For other bays connect id. bits as shown in Table 4.

## Appendix B: Connector Pinouts (continued)

Table 3c - XL 9000 DL to 25way 'D' Wiring: Channels 17-24 / 41-48 / 65-72 / 89-96

Signal	Cable #	Colour	DL Audio Pin	DL Control Pin	25wD Male 17-20
Channel 17 Positive	5	Red 1	L1		2
Channel 17 Negative	5	Black 1	K1		15
Channel 17 Screen	5	Screen 1	J1		1
Channel 18 Positive	5	Red 2	L2		4
Channel 18 Negative	5	Black 2	K2		17
Channel 18 Screen	5	Screen 2	J2		14
Channel 19 Positive	5	Red 3	L3		7
Channel 19 Negative	5	Black 3	K3		20
Channel 19 Screen	5	Screen 3	H1		6
Channel 20 Positive	5	Red 4	L4		9
Channel 20 Negative	5	Black 4	K4		22
Channel 20 Screen	5	Screen 4	H2		19
Channel 17 Gain control	5	Red 5		L1	3
Channel 17 Switch Control	5	Black 5		K1	16
Channel 18 Gain control	5	Red 6		L2	5
Channel 18 Switch Control	5	Black 6		K2	18
Channel 19 Gain control	5	Red 7		L3	8
Channel 19 Switch Control	5	Black 7		K3	21
Channel 20 Gain control	5	Red 8		L4	10
Channel 20 Switch Control	5	Black 8		K4	23
ID Bit 1	5	Screen 5		J1	11*
ID Bit 2	5	Screen 6		J2	n/c
ID Bit 3	5	Screen 7		H1	12*
ID Bit 4	5	Screen 8		H2	n/c
ID Bit 5					n/c

Signal	Cable #	Colour	DL Audio Pin	DL Control Pin	25wD Male 21-24
Channel 21 Positive	6	Red 1	L5		2
Channel 21 Negative	6	Black 1	K5		15
Channel 21 Screen	6	Screen 1	H7		1
Channel 22 Positive	6	Red 2	L6		4
Channel 22 Negative	6	Black 2	K6		17
Channel 22 Screen	6	Screen 2	H8		14
Channel 23 Positive	6	Red 3	L7		7
Channel 23 Negative	6	Black 3	K7		20
Channel 23 Screen	6	Screen 3	J7		6
Channel 24 Positive	6	Red 4	L8		9
Channel 24 Negative	6	Black 4	K8		22
Channel 24 Screen	6	Screen 4	J8		19
Channel 21 Gain control	6	Red 5		L5	3
Channel 21 Switch Control	6	Black 5		K5	16
Channel 22 Gain control	6	Red 6		L6	5
Channel 22 Switch Control	6	Black 6		K6	18
Channel 23 Gain control	6	Red 7		L7	8
Channel 23 Switch Control	6	Black 7		K7	21
Channel 24 Gain control	6	Red 8		L8	10
Channel 24 Switch Control	6	Black 8		K8	23
ID Bit 1	6	Screen 5		H7	n/c
ID Bit 2	6	Screen 6		H8	24*
ID Bit 3	6	Screen 7		J7	12*
ID Bit 4	6	Screen 8		J8	n/c
ID Bit 5					n/c

\* Pinout shown is for channels 1-24. For other bays connect id. bits as shown in Table 4.

## Appendix B: Connector Pinouts (*continued*)

**Table 4 - Channel Address Bit Linking**

Channel	Action	Channel	Action
Channels 1-4	connect pin 11	Channels 49-52	connect pins 11, 12, 25
Channels 5-8	connect pin 24	Channels 53-56	connect pins 12, 24, 25
Channels 9-16	connect pins 11, 24	Channels 57-60	connect pins 11, 12, 24, 25
Channels 13-16	connect pin 12	Channels 61-64	connect pin 13 *
Channels 17-20	connect pins 11, 12	Channels 65-68	connect pins 11, 13 *
Channels 21-24	connect pins 12, 24	Channels 69-72	connect pins 24, 13 *
Channels 25-28	connect pins 11, 12, 24	Channels 73-76	connect pins 11, 24, 13 *
Channels 29-32	connect pin 25	Channels 77-80	connect pins 12, 13 *
Channels 33-36	connect pins 11, 25	Channels 81-84	connect pins 11, 12, 13 *
Channels 37-40	connect pins 24, 25	Channels 85-88	connect pins 12, 24, 13 *
Channels 41-44	connect pins 11, 24, 25	Channels 89-92	connect pins 11, 12, 24, 13 *
Channels 45-48	connect pins 12, 25	Channels 92-96	connect pins 25, 13 *

\* For channel numbers above 60 either connect pin 13 or set LK5 to position 'b'  
The latter allows the use of standard 8 pair individually screened multicore

## Appendix C – Performance Specification

### Conditions:

Source impedance 150Ω unless otherwise stated.

All measurements are RMS and are made using a 22Hz to 22kHz filter unless otherwise stated.

### General

Gain:	Continuously variable from +18dB to +72dB with switchable 20dB pad
Input Impedance:	>1200Ω switchable to 8200Ω

### Noise

Input terminated with 150Ω

Equivalent input noise:

Gain	EIN
70dB	-129dBu
50dB	-129dBu
40dB	-128dBu
30dB	-127.5dBu
18dB	-120dBu

### Frequency Response

Measured reference level at 1kHz. Source impedance 50Ω.

	Minimum Gain	Maximum Gain
20Hz to 20kHz	±0.1dB	±0.1dB
10Hz to 96kHz	±0.2dB	+0.2/-0.75dB
10Hz to 200kHz	+0.2/-1dB	+0.2/-6dB

### Common Mode Rejection Ratio (CMRR)

At minimum gain (+18dB), input level +6dBu, ground referenced:

Frequency	CMRR (dB)
20Hz to 1kHz	> 75dB
10kHz	> 60dB

At maximum gain (+72dB), input level -45dBu, ground referenced:

Frequency	CMRR (dB)
20Hz to 1kHz	> 85dB
10kHz	> 75dB

## THD + Noise

In all cases THD is essentially unmeasurable, being less than the inherent noise of the amplifier until the output level exceeds +20dBu.

Note: All THD+N measurements at gains above +30dB made using 40dB resistive pad to minimise effect of generator noise at low signal levels.

### Gain +18dB, input level +0dBu, output level +18dBu

20Hz to 10kHz THD + N < 0.0007% (20Hz - 22kHz filter)

20Hz to 20kHz THD + N < 0.002% (80kHz filter)

### Gain +30dB, input level -12dBu, output level +18dBu

20Hz to 10kHz THD + N < 0.004% (20Hz - 22kHz filter)

20Hz to 20kHz THD + N < 0.005% (80kHz filter)

### Gain +70dB, input level -50dBu, output level +20dBu

20Hz to 10kHz THD + N < 0.03% (20Hz - 22kHz filter)

20Hz to 20kHz THD + N < 0.05% (80kHz filter)

## Crosstalk

Channel to channel crosstalk, measured with one input terminated with 150Ω. All channels at +50dB gain. A test tone of -30dBu is applied to any channel input except the one under test. Crosstalk is the ratio of level at the output of the test channel and the output of the channel to which signal is applied:

@ 50Hz < -105dB

@ 1kHz < -105dB

@ 15kHz < -90dB

## Headroom

Headroom is defined at the output level at which THD exceeds 1%:

Headroom > +28dBu output level, 20Hz to 20kHz, any gain setting

## Appendix D – Calibration Information

The XLogic Mic Amp is factory calibrated and should only need calibration if a potentiometer or other component has been replaced or if it is suspected that there is a problem with calibration.

In all of the following instructions it is assumed that the top cover has been removed and that power has been applied. It is also assumed that unless otherwise specified, all switches are released and all potentiometers are at unity, minimum or indent position as appropriate. The required accuracy for each adjustment will be specified along with the target value.

All level and distortion measurements should be made with audio-band 20Hz to 20kHz filters unless otherwise specified.

### Microphone Input

Equipment Required:	Calibrated audio oscillator and audio level meter
Test Signal:	50Hz sinewave @ -12dBu, common mode
Input and Output:	Oscillator to Microphone Input and Mic Out to the audio level meter
Unit Setup:	Set the Microphone Gain to '36dB'

### CMRR Trim

Adjustment:	On the 629601 card, adjust the following presets for minimum level (normally < -40dBu):
Channel 1:	VR1
Channel 2:	VR2
Channel 3:	VR3
Channel 4:	VR4

## Appendix E – Physical Specification \*

Depth:	325mm/12.8 inches not including heatsink 365mm/14.3 inches including heatsink 400mm/15.75 inches including connectors
Height:	44.5mm/1.75 inches (1 RU)
Width:	480mm/19 inches
Weight:	4.1kg/9 pounds
Power:	45 Watts/60 VA Max
Boxed size:	520mm x 520mm x 182mm (20.5" x 20.5" x 7.2")
Boxed weight:	6.4kg (14 pounds)

\* All weights and dimensions are approximate

## Appendix F – Environmental Specification

Temperature	Operating:	5 to 30 Deg. C
	Non-operating:	-20 to 50 Deg. C
	Max. Gradient:	15 Deg. C/Hour
Relative Humidity	Operating:	20 to 80 %
	Non-operating:	5 to 90 %
	Max. wet bulb:	29 Deg. C (non-condensing)
Vibration	Operating:	< 0.2 G (3 - 100Hz.)
	Non-operating, power off:	< 0.4 G (3 - 100Hz.)
Shock	Operating:	< 2 G (10mSec. Max.)
	Non-operating:	< 10 G (10mSec. Max.)
Altitude	Operating:	0 to 3000m (above sea level)
	Non-operating:	0 to 12000m

