

Soundcraft *Lm1*

USER GUIDE

SoundcraftTM

B R O A D C A S T

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Issue 2

Part No. ZM0022

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Introduction

Introduction to the Location Mixer

Precautions and Safety Instructions

PPS100/PPS110 Power Supplies

Connections

Introduction to the Location Mixer

Overview

The LM1 Location Mixer is available in three frame sizes: 6,8 and 12 Input modules. The Location Mixer also houses an Output & Meter Master module and Monitor module.

The output meters are VU or PPM

The Location Mixer is lightweight, for portability, whilst also being rugged.

The power consumption is low to ensure a long usable life for the internal Batteries (typically 8-10 hrs from Ni-Cd batteries, and 15-20 hrs from alkaline cells - for the 12 input version).

Although the Location Mixer is primarily designed for remote use with on-board battery power, the mixer may also be rack (8-channel variant only), or furniture mounted, and may be mains powered via the PPS110 (or for early models, the PPS100) power supply.

Precautions and Safety Instructions

General Precautions

Avoid subjecting the mixer to conditions of excessive heat or cold, or installing it in positions where it is likely to be subject to vibration, dust or moisture. Do not use any liquids to clean the fascia of the unit: a soft dry brush is ideal. Use only water ethyl alcohol to clean the trim and legend strips. Other solvents may cause damage to paint or plastic parts.

Avoid using the mixer close to strong sources of electromagnetic radiation (e.g. video monitors, high-power electric cabling): this may cause degradation of the audio quality due to induced voltages in connecting leads and chassis. For the same reason, always site the mixer power supply away from the mixer.

Caution! In all cases, refer servicing to qualified personnel.

Power Supply & Cables

Always use a power supply and power cables specified for the mixer: the use of alternative supplies may cause damage and voids the warranty; the extension of power cables may result in malfunction of the mixer.

Warning! Before switching on the power supply, check that the mains voltage selectors are correctly set to the voltage for your area, and that the fuses are of the correct type and rating. This is marked on the case of the power supply. Do not replace the fuses with any other type, as this could become a safety hazard and will void the warranty.

Warning! Always switch the power supplies off before connecting or disconnecting the mixer's power cables, removing or installing modules, and servicing. In the event of an electrical storm, or large mains voltage fluctuations, immediately switch off the PSU and isolate from the mains. The power supply is connected to the mixer via the 4-way socket, marked DC Power, on the rear panel.

Always ensure that you use a suitable power supply for the mixer. The LM1 may now use a PPS100/PPS110 power supply (see details of the power connection below), or a suitable external source.

The mixer is powered from an external power supply when the **POWER** switch on the rear panel is set to **EXT**.

PPS100/PPS110 Power Supplies

An improved power supply (PPS110) is now supplied with all variants of the LM1 (Part Numbers RW5115, RW5116, RW5117 and RW5118). The earlier power supply (PPS100) was supplied with LM1 part numbers RW1485-1490, RW5010-5015 and RW5083-5086.

Both power supplies are capable of operating over a wide range of mains input voltages by means of a comprehensive set of selectable voltage settings. It is important to ensure that the correct voltage setting has been selected for the level of local AC mains input voltage supply, for safe, uninterrupted-operation of the units.

Warning! DO NOT CHANGE THE AC MAINS VOLTAGE SETTING WITHOUT FIRST DISCONNECTING THE MAINS PLUG FROM THE MAINS SOCKET.

The power supply is provided with an IEC-type mains connector, coupled with a voltage selector with integral AC mains fuseholder. Confirm that the arrow moulded into the connector unit aligns with the voltage setting that is correct for your area. Voltage selection should be as follows:

- 100Volt setting for AC Mains Input 100-115Volts AC
- 120Volt setting for AC Mains Input 115-125Volts AC
- 220Volt setting for AC Mains Input 210-225Volts AC
- 240Volt setting for AC Mains Input 230-264Volts AC

To change the selected voltage, prise off the fuseholder square top with a screwdriver-type tool, using the square blade tip in the slot. Pull the fuse carrier assembly clear of the body, rotate the fuse carrier body until the required input voltage lines up with the arrow, and then push the fuse carrier back into the connector body.

***Warning!* DO NOT USE DC MAINS INPUT VOLTAGES**

Replacing Mains Fuse

Switch the unit's on/off switch to the off position, remove the mains lead plug from the mains supply socket.

Check the fuse and replace if necessary: also check that the voltage selector is correct for the mains supply level before switching the unit on again. The correct fuse ratings are as follows:

220/240 VAC fuse rating T1.0A/250V

100/120 VAC fuse rating T2.0A/250V

***Warning!* TO AVOID THE RISK OF FIRE REPLACE ONLY WITH THE CORRECT VALUE AND TYPE OF FUSE INDICATED ON THE UNIT.**

In the event of repeated failure of the mains fuse, consult the dealer from whom the unit was purchased.

Technical Specification

Mains Input Voltages (Nominal):240/220/120/100 VAC @50/60Hz

Please read- Important information

We have used the introduction of the new power supply and the new LM1 part numbers to correct a problem which existed on the old power supply and LM1s: namely, that the 4 pin XLR used for the DC power input to the earlier LM1s did not match the industry-standard pin-out found on the battery belt packs.

This has been changed to correct the problem on the new frames currently in production (RW5115,RW5116,RW5117 and RW5118) which are supplied with a PPS110, however this means that they are not compatible with the older LM1 consoles without modification to reverse pins 3 and 4.

The new frames are easily identified by the D-rings found on the battery compartment cover which enabled removal without the use of a screwdriver.

Old XLR pin out (PPS100)

Pin 1 Chassis
Pin 2 0V
Pin 3 28V DC (nominal)
Pin 4 Battery charging voltage (28V DC (nominal))
(for charging the internal batteries)

New XLR pin out (PPS110)

Pin 1 Chassis
Pin 2 0V
Pin 3 Battery charging voltage (28V DC (nominal))
(for charging the internal batteries)
Pin 4 28V DC (nominal)

Users who have both PPS100 and PPS110 power supplies are advised to modify the older consoles and supplies to meet the new standard.

This involves reversing the wiring pins 3 and 4 on both consoles XLR and the cable XLR from the PPS100

Overall Dimensions (Chassis)

Height: 77mm
Width: 140mm
Depth: 172mm

Power Supply Installation Free Standing

The PPS100/110 is designed to operate as a free-standing unit without requiring any special cooling arrangement, but should not be accidentally or deliberately covered in any way.

Rack Mounting

The PPS100/110 can be provided with an optional 19-inch rack-mounting kit: it occupies 2U of space.

Batteries

The Location Mixer may also be powered by its own internal batteries: 12 or 16 D type cells are required: the 6 and 8-input variants use 12 cells, the 12-input variant uses 16 cells. These may be primary cells or rechargeable cells; all cells must be of the same type, do not mix types. The access panel for inserting and removing the cells is on the underside of the mixer.

Rechargeable cells may be recharged from the power supply. To do this set the **CHARGE** switch on the power supply to on. It is not advisable to charge the cells and use the mixer at the same time: performance specifications may not be achieved under adverse conditions.

Warning! DO NOT try to recharge dry (primary) cells: they may explode, and the wiring will melt if this is attempted.

The mixer is powered from the internal cells when the **POWER** switch on the rear panel is set to **INT**.

Signal Levels

It is important to supply the correct input levels to the mixer, otherwise signal-to-noise ratio or distortion performance may be degraded, and in extreme cases damage to the internal circuitry may result. Likewise, on all balanced inputs, avoid sources with large common mode DC, AC or RF voltages, as these will reduce the available signal range on the inputs. Note that 0dBu=0.775V RMS.

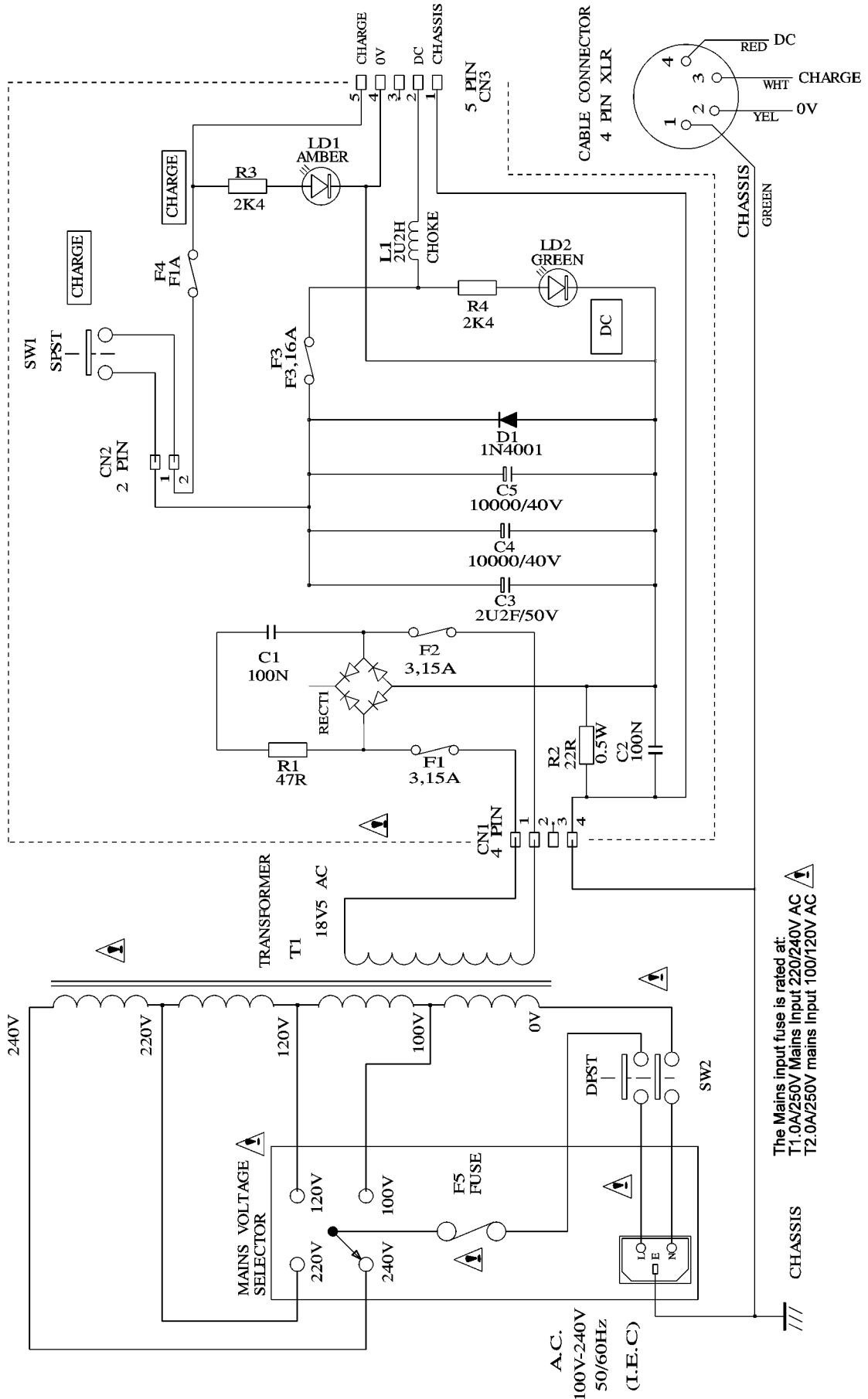
The microphone inputs are designed for use with balanced, low impedance (150 or 200 Ω) microphones.

Caution! DO NOT use unbalanced microphones or battery powered condenser microphones without isolating the phantom power-degraded performance or damage to the microphone may result.

PPS110 Circuit Diagram

PPS-110 UNREGULATED POWER SUPPLY

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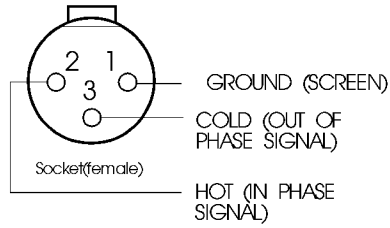


Connections

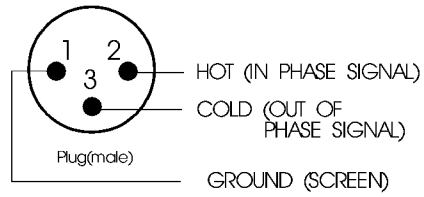
Wiring Conventions

The LM1 uses two different types of audio connector: 3-pin XLR and 1/4" 3-pole jacks.

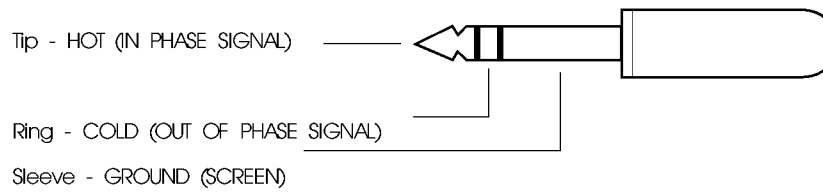
MICROPHONE & LINE INPUTS



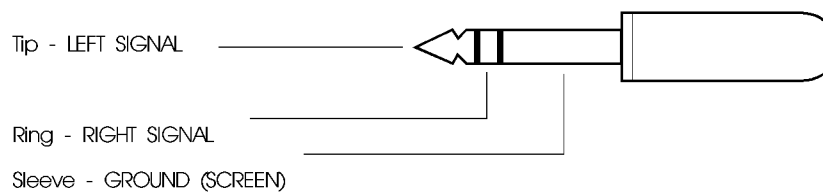
L&R, AUX 1&2 AND MONITOR L&R OUTPUT



1/4" 'A' Gauge Stereo Jack Plug used as balanced inputs:
External Monitor Inputs



1/4" 'A' Gauge Stereo Jack Plug used as stereo output for
Headphones



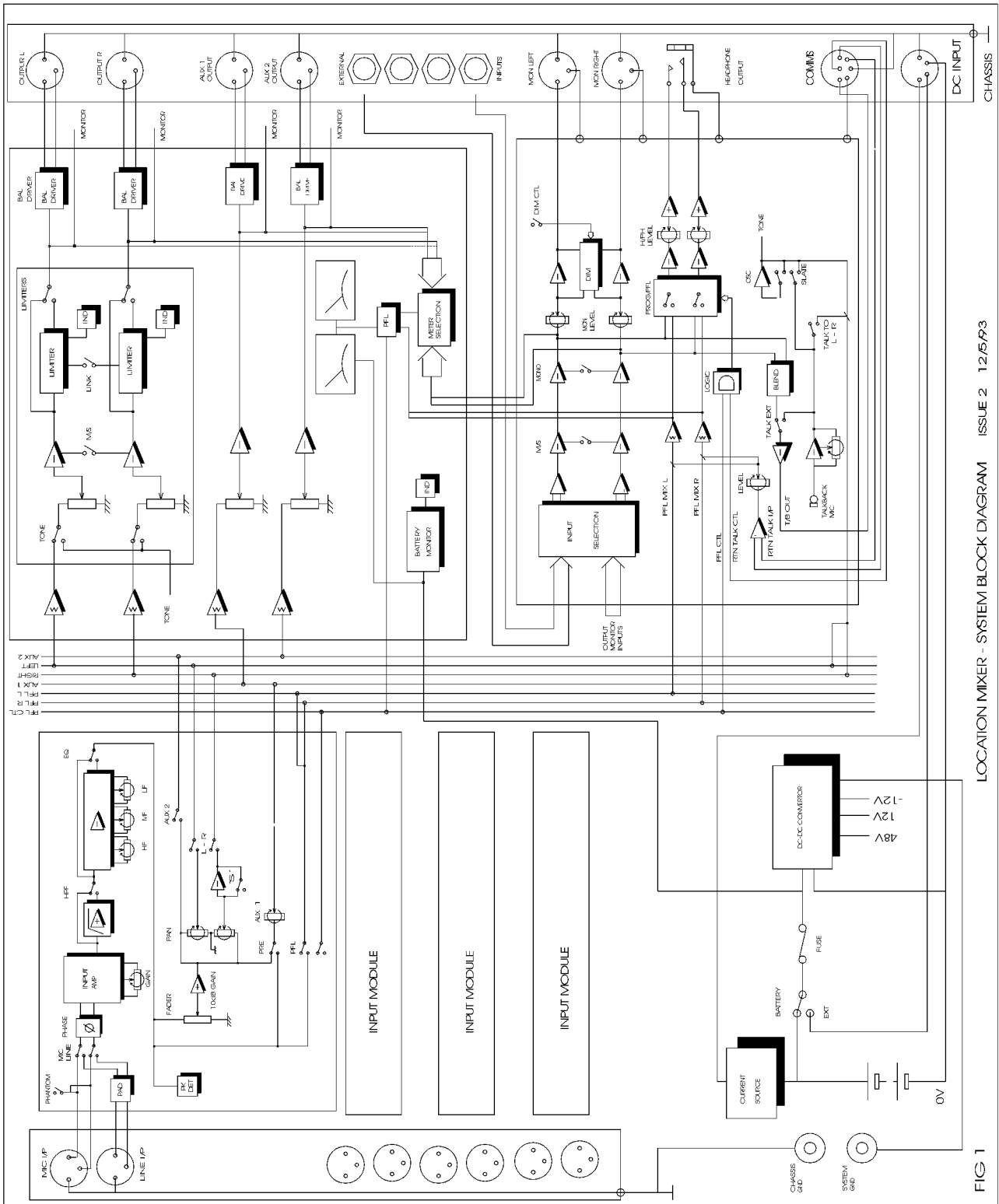
Block Diagrams

System Block Diagrams

Stereo Line Input

Stereo Mic Input

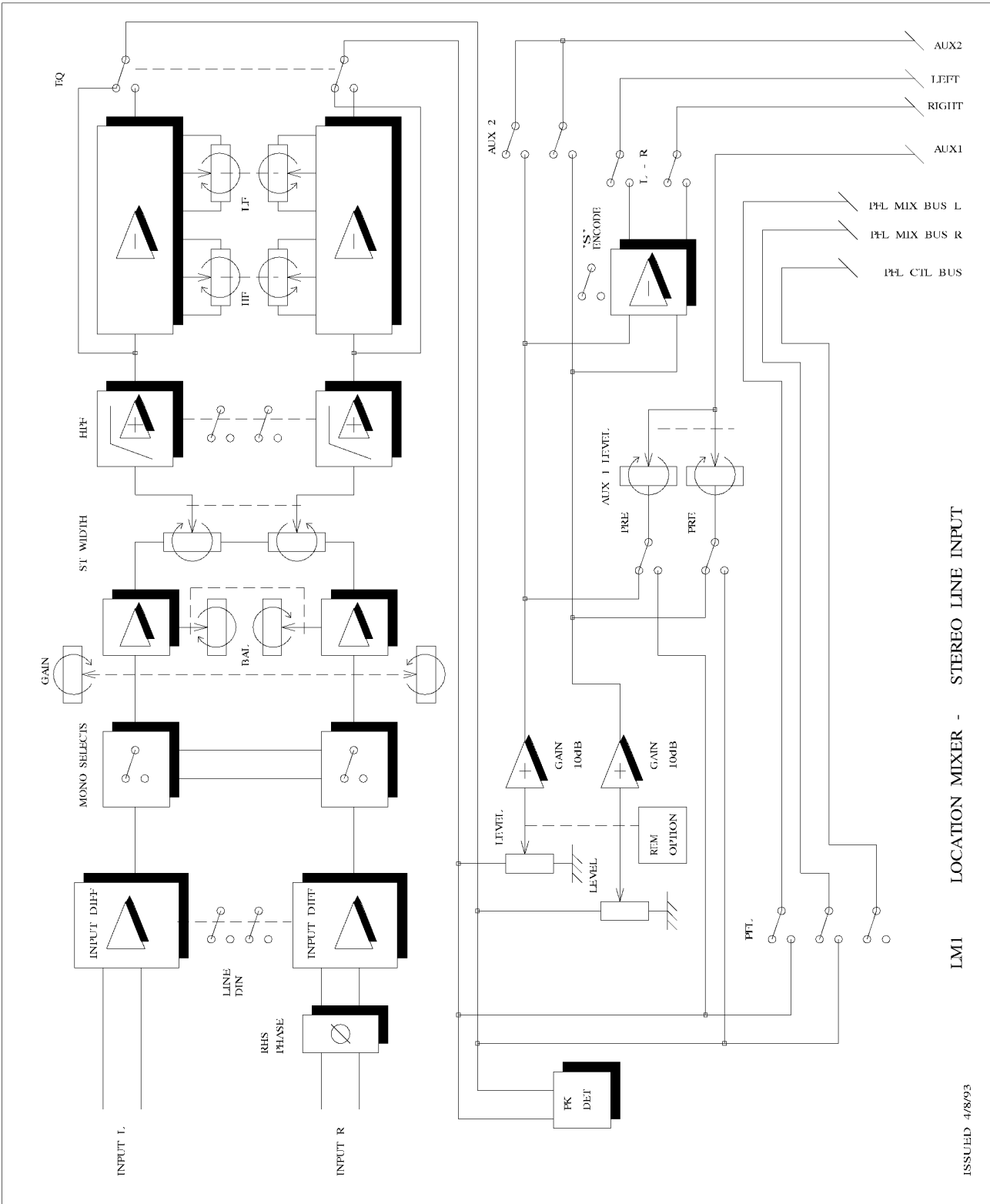
System Block Diagram



LOCATION MIXER - SYSTEM BLOCK DIAGRAM ISSUE 2 12/5/93

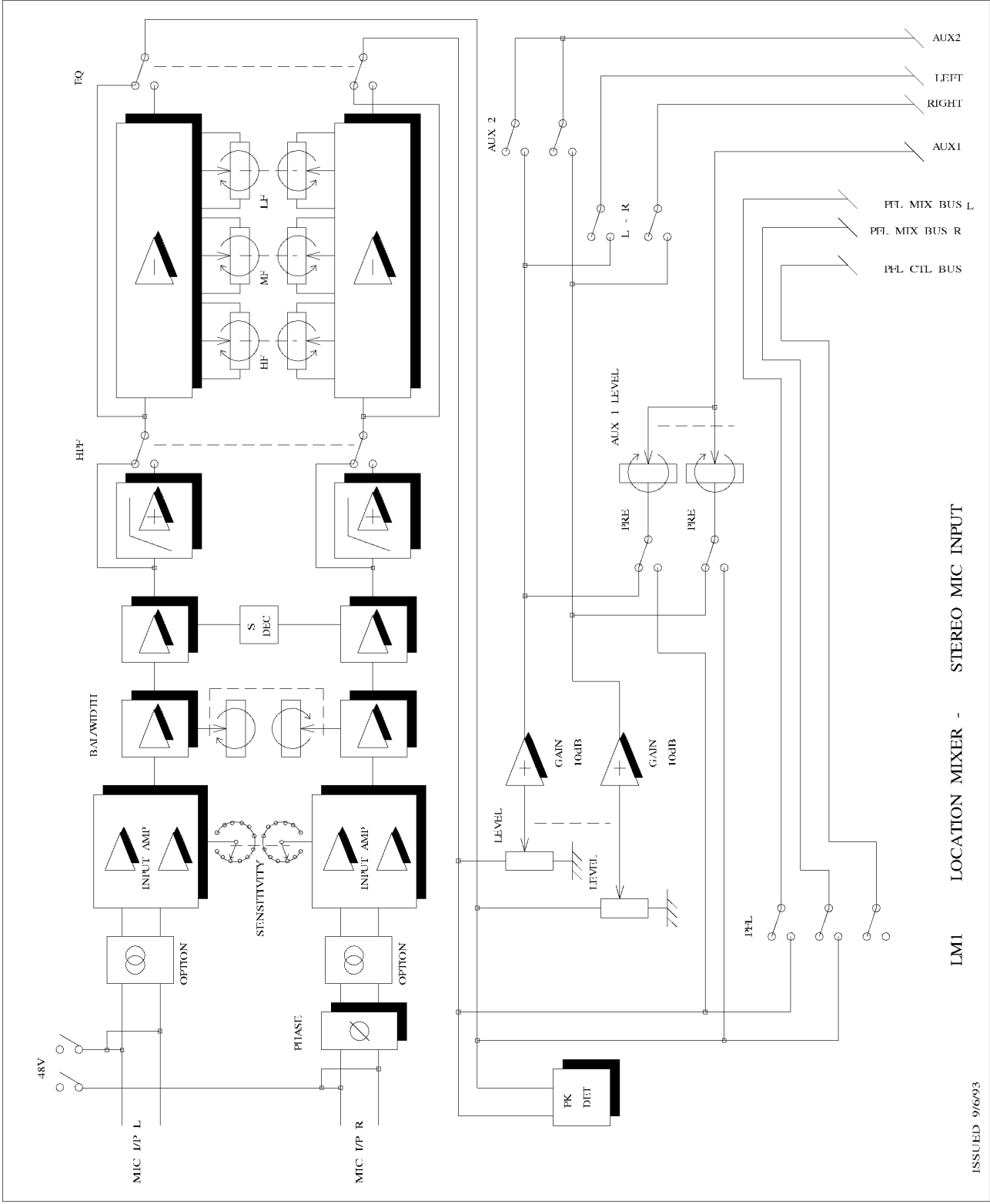
FIG 1

Stereo Line Input Block Diagram



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Stereo Mic Input Block Diagram

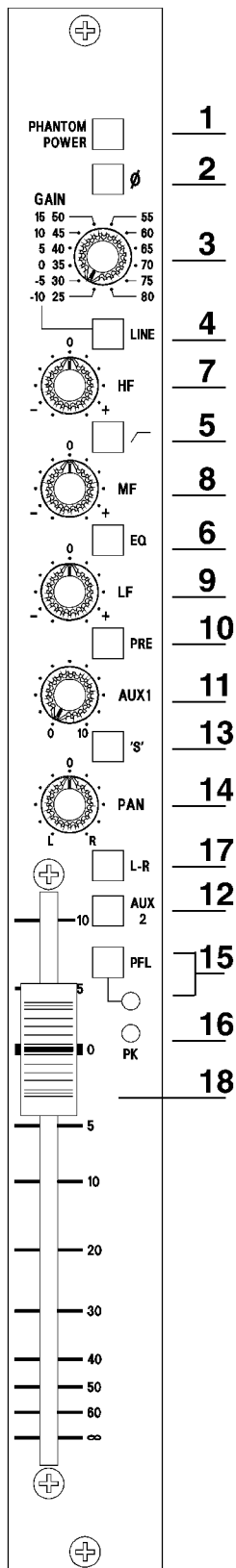


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Mono Input Module

Mono Input Module

Input



1 The **PHANTOM PWR** switch applies +48V or +12V to pins 2 & 3 of the mic XLR connector, depending on the internal jumper settings.

A 12 Volt T-power option is also available. This is set by links on the PCB. If this option is used then +12 V is applied to pin 2 of the XLR, and 0v is applied to pin 3.

2 The Phase (\emptyset) switch reverses the polarity (hot/cold) of whichever input is in use. The switch's released position is the normal setting.

3 The rotary **GAIN** switch controls the gain of either input, in 5dB steps. The mic range is from 80dB to 25dB gain, the line range is 45dB to -10dB. Note that the front panel only shows the Line input's normal operating range, i.e. 15dB to -10dB.

4 The **LINE** switch, when depressed, causes the mic input to be replaced by the line input. The line input is connected to the input amp via a 35dB attenuator.

5 The **HPF** switch, when depressed, puts a High Pass filter into the signal path. This removes unwanted low frequency signals. The filter's -3dB point is at 80Hz, and the filter has a slope of 12dB/octave.

EQ

6 The **EQ** switch places the Equaliser section into the signal path.

The EQ section consists of three filters, controlled by the HF, MF and LF controls.

7 The shelving **HF** control provides a maximum cut/boost of 10dB at 10kHz. The control is centre-detented at 0dB.

8 The **MF** control creates a 'bell' envelope which has a maximum cut/boost of 14dB at 2kHz. The control is centre-detented at 0dB.

9 The **LF** control provides a maximum boost/cut of 10dB at 100Hz. The control is centre-detented at 0dB.

Auxiliary Sends

10 The Aux 1 **PRE** switch routes either the pre or post-fade signal to the Auxiliary 1 Level control.

11 The **AUX1** Level control is used to control the signal level which is sent to the Auxiliary 1 output mix. The signal can be varied between 0dB and infinite attenuation.

12 The **AUX2** switch routes the post-fade signal into the AUX2 bus.

Stereo/Mono

13 The S switch enables pairs of Input Modules to be used for Decoding MS to LR Stereo. The S switch must be depressed on the channel which carries the S signal. The PAN pot on each of the channels in the MS pair must be set to the centre.

In similar fashion LR stereo may be encoded to MS on the mix buses.

14 The mono input to the module may be positioned within the stereo image, which is carried by the Left and Right mix buses, by means of the **PAN**orama pot.

PFL

15 The **PFL** switch routes the pre-fade signal onto the PFL mix buses (L & R). The PFL control bus is also activated.

The associated PFL LED is illuminated when the PFL switch is active.

Peak

16 The **PEAK** LED starts to illuminate when there is 6dB of headroom left.

Output

17 The **L-R** switch routes the output from the Pan Pot (and the S matrix if selected) onto the Left and Right Main Mix buses.

18 The 100mm **Fader** provides 10dB of gain at maximum, and infinite attenuation when closed.

Rear Connector

Two XLR connectors are provided at the rear of the Mono Input Module.

The top one is for the Mic, the lower one is for the Line input.

Options

An optional input transformer (common to mic. and line) can be fitted.

Jumpers

The following table shows how to set the jumpers for phantom power and T-power options

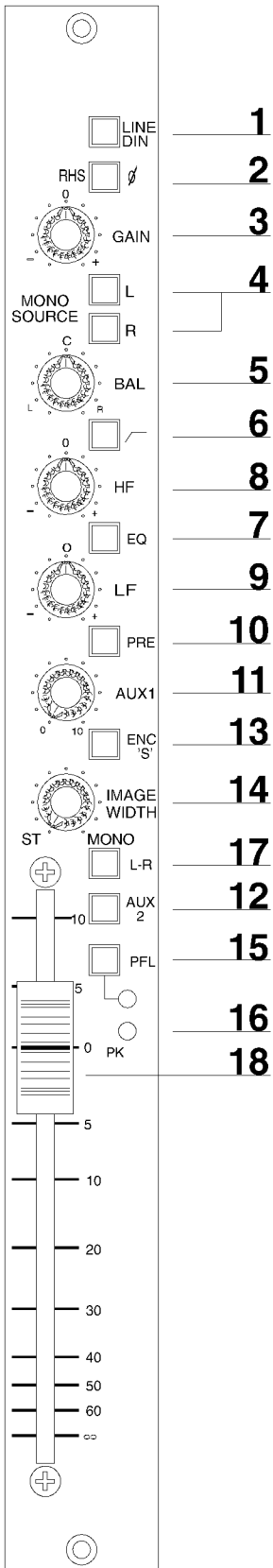
Jumper	48V (48V on pins 2 & 3)	12V (12V on pins 2 & 3)	12V-T 12V pin2, 0V pin3
J12-0V	OUT	OUT	IN
+12V	IN	IN	OUT
48V	IN	OUT	OUT
12V	OUT	IN	IN

Looking from the component side of the PCB, the four jumpers are located in an area central approx. 7cm from the top edge and 6cm from the right-hand edge of the PCB

Note: On issue 4 PCBs there is an internal switch to select 48V or 12V phantom power. The +12V and J12-0V jumpers remain.

Stereo Line Input Module

Stereo Line Input Module



Input

1 The **LINE/DIN** switch allows you to select a nominal level of +4dBu (when the switch is released) or a nominal level of -10dBv (when the switch is depressed).

2 Pressing the **RHS PHASE** switch will reverse the phase of the Right-hand signal

3 The rotary **GAIN** control provides 0dB at the centre detent, and a cut/boost of 15dB at the extremes of its travel.

4 The **L** and **R MONO SOURCE** switches operate as follows:

L position	R position	Effect
OUT	OUT	Normal Stereo operation
OUT	IN	Right-hand signal fed to both sides
IN	OUT	Left-hand signal fed to both sides
IN	IN	A mono sum of Left and Right signals is fed to both sides

5 The centre-dented **BAL**ance control provides a +3dB boost to one channel and a -8dB cut to the other channel at each end of its travel.

6 The **HPF** switch, when depressed, puts a High Pass filter into the signal patch. This removes unwanted low frequency signals. The filter's -3dB point is at 80Hz, and the filter has a slope of 12dB/octave.

EQ

The EQ has two shelving filters.

7 The two shelving filters are in-circuit when the **EQ** button is depressed.

8 The shelving **HF** control provides a maximum cut/boost of 10dB at 10kHz. The control is centre-dented at 0dB.

9 The **LF** control provides a maximum boost/cut of 10dB at 100Hz. The control is centre-dented at 0dB.

Auxiliary sends

10 The Aux 1 **PRE** switch routes either the pre or post-fade signal to the Auxiliary 1 Level control.

11 The **AUX1** Level control is used to control the signal level which is sent to the Auxiliary 1 output mix. The signal can be varied between 0dB and infinite attenuation. The signal is a mono blend of **L** and **R**.

12 The **AUX2** switch routes the post-fade signal into the AUX2 bus.

Stereo/Mono

13 The **ENC "S"** switch is used for encoding LR or MS stereo. This only affects the main L-R path.

14 The **IMAGE WIDTH** pot adjusts the stereo Image width, from mono to one end of its travel, to stereo at the other end.

PFL

15 The **PFL** switch routes the pre-fade post-EQ signals onto the PFL mix buses (L & R). The PFL control bus is also activated.

The associated PFL LED is illuminated when the PFL switch is active.

Peak

16 The **PEAK** LED starts to illuminate when there is 8dB of headroom left.

Output

17 The **L-R** switch routes the post-fader output onto the Left and Right Main Mix buses.

18 The 100mm **Fader** provides 10dB of gain at maximum, and infinite attenuation when closed.

Rear Connector

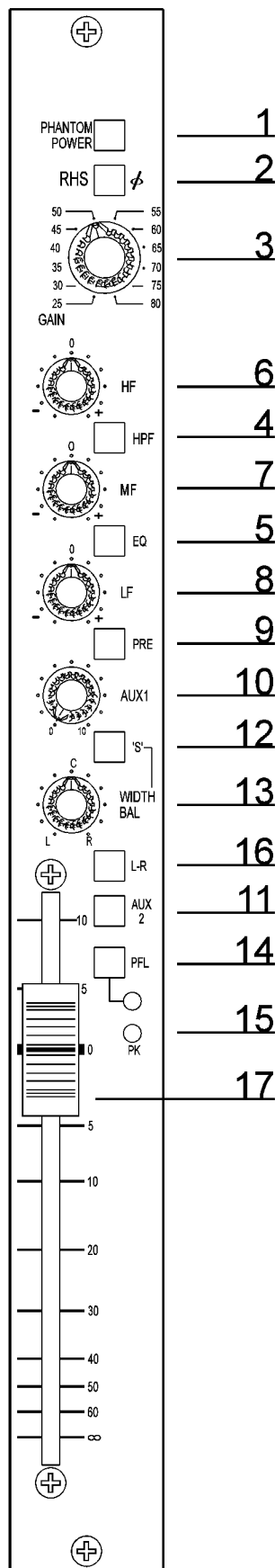
Two female XLR connectors are provided at the rear of the Stereo Line Input Module. The connections are as follows:

Pin 1	Ground (Screen)
Pin 2	Hot (In Phase)
Pin 3	Cold (Out of Phase)

Stereo Microphone Input Module

Stereo Mic Input Module

Input



1 The **PHANTOM POWER** switch provides both microphones with a Phantom Power supply.

2 Pressing the **RHS PHASE** switch will reverse the phase of the Right-hand signal.

3 The rotary **GAIN** control provides a gain range of 25dB to 80dB in 5dB steps.

4 The **HPF** switch, when depressed, puts a High Pass filter into the signal path. This removes unwanted low frequency signals. The filter's -3dB point is at 80Hz, and the filter has a slope of 12dB/octave.

EQ

5 The EQ section is in-circuit when the **EQ** button is depressed.

The EQ section consists of three filters, controlled by the HF, MF and LF controls.

6 The shelving **HF** control provides a maximum cut/boost of 10dB at 10kHz. The control is centre-detented at 0dB.

7 The **MF** control creates a 'bell' envelope which has a maximum cut/boost of 14dB at 2kHz. The Control is centre-detented at 0dB.

8 The **LF** control provides a maximum boost/cut of 10dB at 100Hz. The control is centre-detented at 0dB.

Auxiliary Sends

9 The Aux 1 **PRE** switch routes either the pre or post-fade signal to the Auxiliary 1 Level control.

10 The **AUX1** Level control is used to control the signal level which is sent to the Auxiliary 1 output mix. The signal can be varied between 0dB and infinite attenuation. The signal is a mono blend of L & R.

11 The **AUX2** switch routes the post-fade signal into the AUX2 bus.

Stereo/Mono

12 The **'S'** switch is used for decoding MS to LR Stereo.

13 The **WIDTH/BAL** pot has two functions: if you are using the input for LR stereo, the WIDTH/BAL pot is a balance control; if you are decoding MS microphones to LR stereo then the WIDTH/BAL pot controls the width of the stereo image, from mono when the control is anti clockwise, to enhanced stereo separation when it is fully clockwise.

The balance range is +/-15dB.

PFL

14 The **PFL** switch routes the pre-fade post-EQ signals onto the PFL mix buses (L & R). The PFL control bus is also activated.

The associated PFL LED is illuminated when the PFL switch is active.

Peak

15 The **PEAK** LED starts to illuminate when there is 8dB of headroom left.

Output

16 The **L-R** switch routes the post-fader output onto the Left and Right Main Mix buses.

17 The 100mm **Fader** provides 10dB of gain at maximum, and infinite attenuation when closed.

Rear Connector

Two female XLR connectors are provided at the rear of the Stereo Microphone Input Module. The connections are as follows:

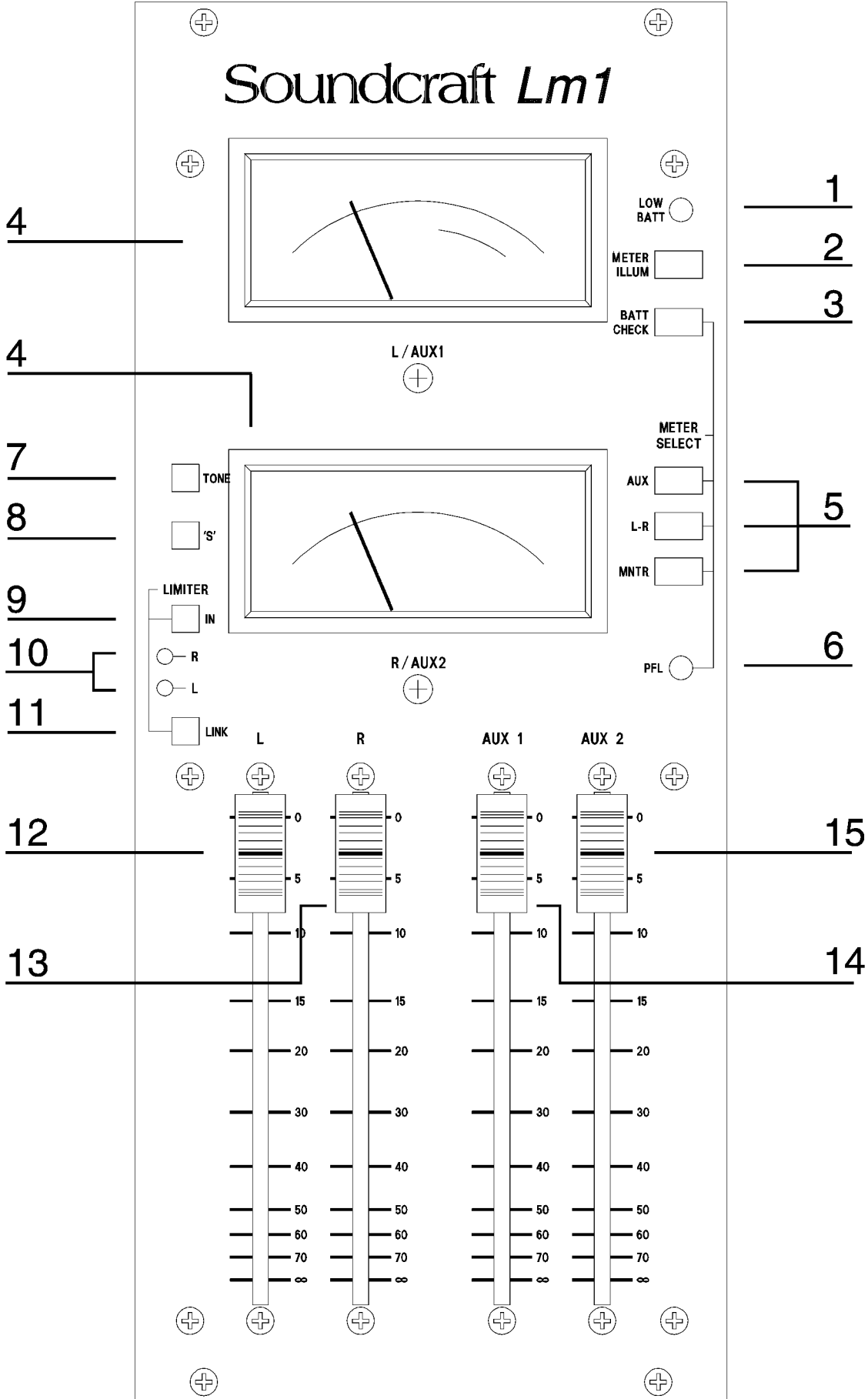
Pin1 Ground (Screen)

Pin2 Hot (In Phase)

Pin3 Cold (Out of Phase)

Master Section

Master Section



Power

- 1 The **LOW BATTERY LED** will flash when the battery voltage is too low. Typically 20-30 minutes of usable life remains at the onset of flashing.
- 2 The **METER ILLUM** switch allows the meters to be lit. Use of this facility will, of course, increase the drain on the battery.
- 3 The **BATT CHECK** switch allows the battery voltage to be monitored on the top (L) meter.

Metering

- 4 Two rear-mounted Sifam PPM or VU meters are fitted as standard.
- 5 Meter sources are selected in pairs by a bank of three interlocking switches:
 - Aux** Upper = Mono Output, Lower = Auxiliary Output.
 - L-R** The Main Output is monitored. Upper = Left, Lower = Right.
 - Monitor** This switch allows the source selected on the Monitor Panel to be metered.
- 6 A PFL from any of the input modules will over-ride any meter display. The **PFL LED** illuminates to indicate a PFL. The headphones will also be switched to follow any PFL signal.

Main Output

- 7 When the **TONE** switch is depressed the main mix L & R output signals are replaced by a 1kHz tone. The Auxiliary Outputs are not affected.
- 8 The **S** switch connects an MS matrix into the post-fade L and R output paths. This converts LR to MS format, and vice-versa. Note that this matrix is separate from those used by the input modules.
- 9 The **LIMITER** switch places a level limiter in each of the Main Outputs (L & R).
- 10 The **LIMIT LEDS** illuminate when their respective Outputs are being limited.

The Limiter threshold is settable by Internal jumpers, the options are: +4, +6 or +8dBu (the default is +8dBu). The Attack and Release times are 2msec and 300msec. respectively.

- 11 The limiter pair may be linked together via the **LINK** switch. This is to provide tracking during stereo operation.
- 12 The Left Fader controls the level of the Left Output
- 13 The Right Fader controls the level of the Right Output

Auxiliary Output

- 14 The **AUX 1** Fader controls the level of the Aux 1 Output mix.
- 15 The **AUX 2** Fader controls the level of the Aux 2 Output mix.

Options

The four major outputs (L, R, Aux1 and Aux2) are electronically balanced. Optional 1:1 output transformers can be fitted to provide electrical isolation. These are easily fitted to the internal motherboard.

Jumpers

There are 6 jumpers: they are arranged in 2 groups of 3 jumpers. They set the limiter threshold to +4, +6 or +8dBu.

Looking from the component side of the PCB, the first group of jumpers is located approximately 3cm from the top edge and 6cm from the right-hand edge of the PCB.

The second group is approximately 6cm from the top and 10cm from the right-hand edge of the PCB.

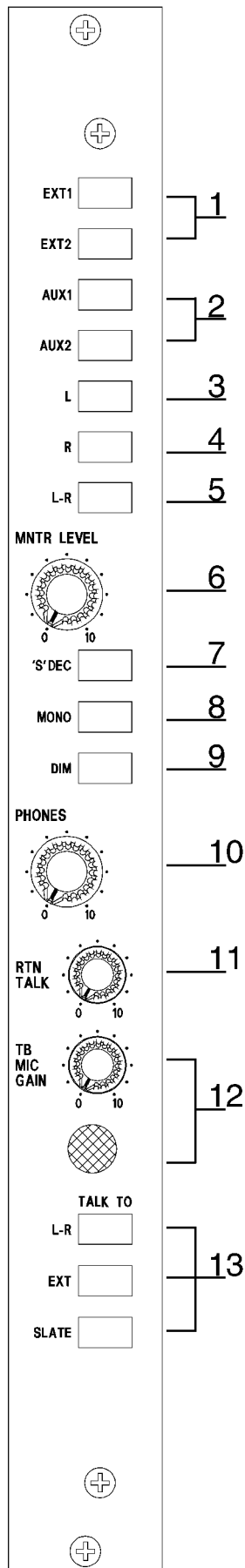
Ensure that both groups of jumpers are set in accordance with each other.

Rear Connector Panel

There are four 3-pin XLR male connectors on the Master Module rearcon panel. These are **OUTPUT L**, **OUTPUT R**, **AUX1** and **AUX2**..

Monitor Module

Monitor Module



Input Select

A bank of seven interlocking switches selects the input source fed to the stereo Monitor and Headphone paths.

- 1 **EXT1** is a stereo pair of balanced inputs accessed by separate Left and Right Jack sockets on the rear connector panel; EXT2 is similar.
- 2 **AUX1** routes the Aux 1 mix to the Left and Right sides of the Monitor and Headphone paths; AUX2 is similar.
- 3 The **L** switch feeds the main Mix Left signal to the Left and Right sides of the Monitor and Headphone paths.
- 4 The **R** switch feeds the main Mix Right signal to the Left and Right sides of the Monitor and Headphone paths.
- 5 The **L-R** switch feeds the Main Mix Left signal to the Left Monitor and Headphone path, and feeds the Main Mix Right signal to the Right paths: i.e. it allows normal monitoring of the main mix output.

Output Control

- 6 The **MON LEVEL** control adjusts the level of the Monitor Outputs (L & R).
- 7 The **'S'** DECode switch allows you to listen, in normal LR stereo, to MS encoded signals on the Main Mix buses.
- 8 The **MONO** switch links the Left and Right signals in both the Monitor and Headphones outputs.
- 9 The **DIM** switch attenuates the Monitor outputs by a nominal 20dB. The Headphone output is not affected.
- 10 The level of the Headphones Output is adjusted by the **PHONES** control.

Talkback

- 11 The level of Return Talkback signal is adjusted via the **RTN TALK** control. The output signal from the RTN TALK pot is fed into the stereo PFL mix buses. An associated logic control input enables the Return Talkback signal (together with any PFL from the Inputs) to replace the Monitor path to the Headphones.
- 12 The signal from the **Inbuilt Mic** is amplified by a preamplifier whose gain is adjusted by the **T/B MIC GAIN** control.
- 13 The output of the preamp is then passed to the **TALK TO** routing switches which operate as follows:

The **L-R** switch routes the signal to the Main Mix buses.

The **EXT** switch routes the signal to the COMMS connector on the rear connector panel. Note when EXT is not in use a mono mix of the monitor signal is sent to the COMMS connector. This can be removed by cutting the link, "OPT1".

Looking from the component side of the monitor PCB, the link, "OPT1" is located approx. 4cm from the top edge, and 5.5cm from the right-hand edge of the PCB.

The **SLATE** switch routes the signal to the Main Mix buses and also routes the 32Hz tone from the Slate Oscillator to the Main Mix buses. Note: the Tone oscillator changes from 1kHz to 32Hz when SLATE is depressed, it is also 10dB lower than when the TONE button is depressed.

Rear Connector Panel

There are two associated 3-pin XLR male connectors on the Master Module rearcon panel. They are the **MNTR (Monitor) LEFT** and **MNTR RIGHT**.

There are 4 1/4" jack sockets, these provide for inputs for the **EXT MNTR1** and **EXT MNTR2** L and R signals.

There is a further 1/4" jack socket for the headphones.

There is a 4-pin connector (**DC POWER**) for connection to the mains power supply. See page 5. for details.

There is also a 6-pin connector (COMMS) to provide talkback facilities. The connections are as follows:

pin1 Talk O/P-Line-Level Output

pin2 Chassis Gnd

pin3 System Gnd

pin4 Rtn +Balanced Return Talkback Input

pin5 Rtn - Balanced Return Talkback Input

pin6 Rtn Control -Active-Low input -Connect a switch between pin 6 and 2

There are, finally, two screw post connectors for **CHASSIS** and for **SYSTEM GROUND**.

Appendices

Typical Specifications

Dimensions

Warranty

Typical Specifications

Frequency Response

+0.0, -1dB 20 Hz to 20kHz (Mic Input to Main Output, 70dB Gain)

Total Harmonic Distortion

(All measurements at +18dBu output level) Mic/Line Input to Main Output (Faders at 0dB)

<0.003% (20Hz-20kHz)

Noise

(20Hz to 20kHz, unweighted)

Microphone Input E.I.N	<-128dBu (150Ω source)
Main Bus Output Noise	<-80dBu (6 Input desk, 1 channel open at 0dB)
Aux Bus Output Noise	<-80dB (6 Input desk, 1 channel open at 0dB)

Crosstalk

(All measurements at 1kHz)

Channel Fader Attenuation	>90dB (80dB at 10 kHz)
Channel Routing Isolation	>90dB (80dB at 10 kHz)
Aux 1 Send Attenuation	>90dB(80dB at 10 kHz)

Input and Output Impedances

Microphone Input	>1.5kΩ Balanced (1kHz)
Line Input	>15kΩ Balanced (1kHz)
L,R,Aux1,Aux2 Outputs	<80Ω Balanced

Input/Output Levels

Microphone Max Input Level	+6dBu (30dB above nominal level)
Line Max Input Level	+40dBu (30dB above nominal level)
All Balanced Outputs	+24dBu
Headphones	+16dBu into 600Ω

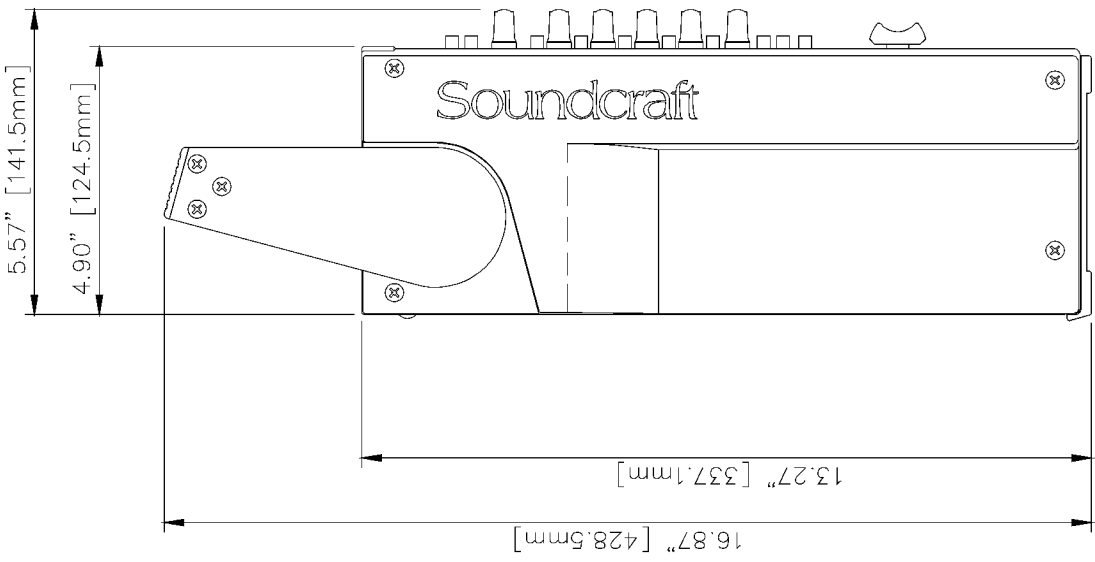
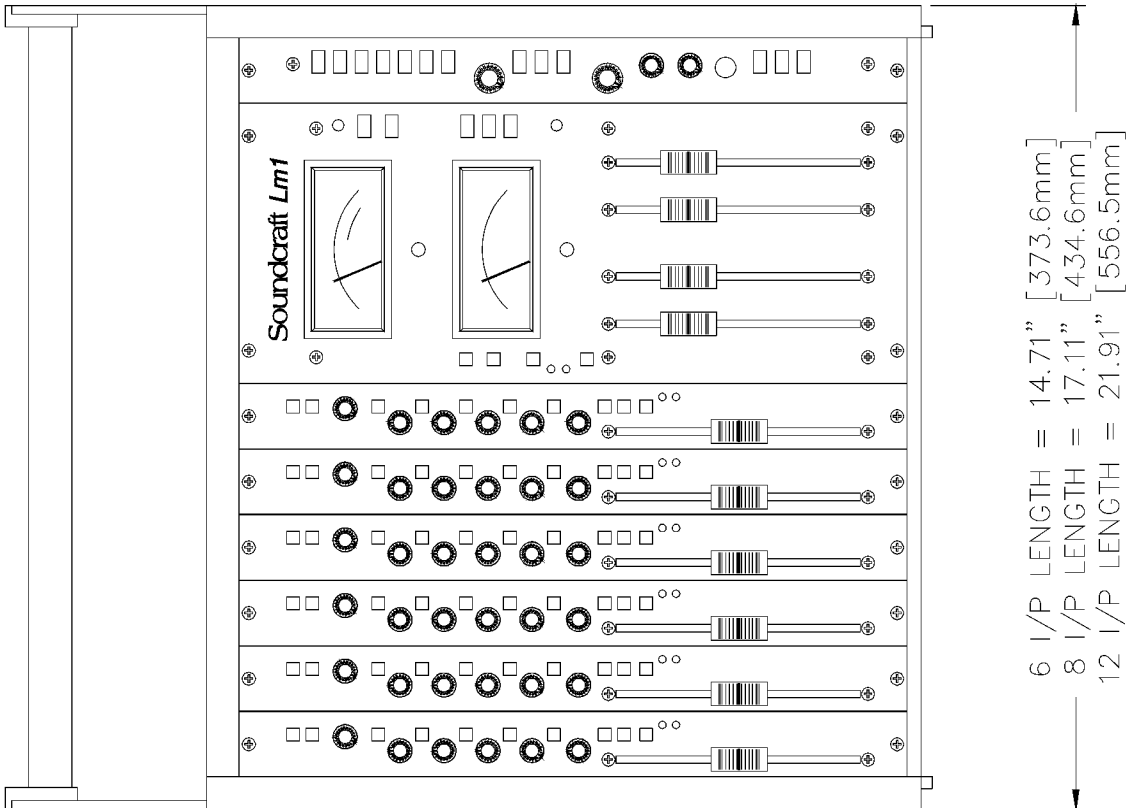
Input and Output Levels

Microphone Input Sensitivity	-25dBu to -80dBu, switched in 5dBu steps
Mono Line Input Sensitivity	+10dBu to -35dBu, switched in 5dBu steps
Stereo Line Input Sensitivity	+15dBu to -15dBu (Line switch out) +5dBu to -25dBu (Line switch in)
L, R, Aux Outputs	+4dBu for 0VU

All measurements assume:

- 1) Fresh or fully charged battery cells
- 2) Limiters out
- 3) Measurements taken with calibrated Neutrik TP401
- 4) Electronically balanced Input/Output

Dimensions



Weights (without batteries and flight case):

- 6 Input variant 8.8kg
- 8 Input variant 10.0kg
- 12 Input variant 12.4kg

Warranty

1 **Soundcraft** means Soundcraft Electronics Ltd.

End User means the person who first puts the equipment into regular operation.

Dealer means the person other than Soundcraft (if any) from whom the End User purchased the Equipment, provided such a person is authorised for this purpose by Soundcraft or its accredited Distributor.

Equipment means the equipment supplied with this manual.

- 2 If within the period of twelve months from the date of delivery of the Equipment to the End User it shall prove defective by reason only of faulty materials and/or workmanship to such an extent that the effectiveness and/or usability thereof is materially affected the Equipment or the defective component should be returned to the Dealer or to Soundcraft and subject to the following conditions the Dealer or Soundcraft will repair or replace the defective components. Any components replaced will become the property of Soundcraft.
- 3 Any Equipment or component returned will be at the risk of the End User whilst in transit (both to and from the Dealer or Soundcraft) and postage must be prepaid.
- 4 This warranty shall only be available if: a) the Equipment has been properly installed in accordance with instructions contained in Soundcraft's manual; and
- b) the End User has notified Soundcraft or the Dealer within 14 days of the defect appearing; and
- c) no persons other than authorised representatives of Soundcraft or the Dealer have effected any replacement of parts maintenance adjustments or repairs to the Equipment; and
- d) the End User has used the Equipment only for such purposes as Soundcraft recommends, with only such operating supplies as meet Soundcraft's specifications and otherwise in all respects in accordance with Soundcraft's recommendations.
- 5 Defects arising as a result of the following are not covered by this Warranty: faulty or negligent handling, chemical or electro-chemical or electrical influences, accidental damage, Acts of God, neglect, deficiency in electrical power, air-conditioning or humidity control.
- 6 The benefit of this Warranty may not be assigned by the End User.
- 7 End Users who are consumers should note their rights under this Warranty are in addition to and do not affect any other rights to which they may be entitled against the seller of the Equipment.