
Soundcraft
Vienna II
.....

USER GUIDE



This equipment complies
with the EMC Directive
89/336/EEC

For further details contact:

Harman International Industries Ltd,
Cranborne House, Cranborne Road,
Potters Bar, Hertfordshire, EN6 3JN, U.K.

Tel: +44 (0) 1707 665000

Fax: +44 (0) 1707 660482

© Soundcraft Electronics Ltd. 1993

All rights reserved

Parts of the design of this product may be protected by worldwide patents.

Issue 1

Part No. ZM0045

Information in this manual is subject to change without notice and does not represent a commitment on the part of the vendor. Soundcraft Electronics Ltd. shall not be liable for any loss or damage whatsoever arising from the use of information or any error contained in this manual.

No part of this manual may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, electrical, mechanical, optical, chemical, including photocopying and recording, for any purpose without the express written permission of Soundcraft Electronics Ltd.

It is recommended that all maintenance and service on the product should be carried out by Soundcraft Electronics Ltd. or its authorised agents. Soundcraft Electronics Ltd. cannot accept any liability whatsoever for any loss or damage caused by service, maintenance or repair by unauthorised personnel.

Soundcraft Electronics Ltd.
Cranborne House,
Cranborne Industrial Estate,
Cranborne Road,
Potters Bar,
Hertfordshire,
EN6 3JN
England

Tel: 0707 665000

Fax: 0707 660482

Contents

Introduction to Vienna II	1
<i>Precautions & Safety Instructions</i>	<i>2</i>
Installation	5
<i>Connectors</i>	<i>7</i>
Module Block Diagrams	9
Module Descriptions, Specifications & Operation	
<i>Standard Input Module RS5507</i> <i>VCA Input Module RS5508</i>	<i>19</i>
<i>Stereo Input Module RS5518/ VCA</i> <i>Stereo Input Module RS5519</i>	<i>25</i>
<i>Grand Master Module RS5449</i>	<i>31</i>
<i>Output Group/Stereo Input Module</i> <i>RS5124</i>	<i>35</i>
<i>VCA Group / Output Group /</i> <i>Stereo Input Module RS5125</i>	<i>39</i>
<i>Master Module RS5127</i>	<i>45</i>
<i>Aux Master Module RS5530</i>	<i>53</i>
<i>Dual Matrix Output Module RS5128</i>	<i>57</i>
<i>Console Linking</i>	<i>60</i>
Appendices	61
<i>Specification Notes</i>	<i>62</i>
<i>Dimensions</i>	<i>63</i>
<i>Configurations</i>	<i>64</i>
<i>Warranty</i>	<i>65</i>
<i>Glossary</i>	<i>66</i>

Introduction to Vienna II

The Vienna II range of consoles continues the Soundcraft tradition in sound reinforcement, offering superb performance, ruggedness, versatility and value for money - equally at home in the theatre, on tour, in a conference hall, auditorium or place of worship.

Vienna II has been designed to provide outstanding sound quality and facilities, a clear and practical control surface and the sturdy frame with built-in handles offers the strength to survive many years, either as part of a fixed installation or 'on the road'.

The console is available in 24, 32 or 40 channel frame sizes, all with eight groups and eight stereo effects returns as standard. The console may be specified with eight VCA groups in addition to the audio groups, and may be fitted with optional dual Matrix Output modules in blocks of four where space is available.

The Input module is available in VCA or standard versions, with a patented padless microphone amp, hi-pass filter and a four band equaliser specifically designed for live sound applications. The channel signal may be fed to eight auxilliary sends, each with individual pre/post switching, and routed to eight audio groups and left, right and mono mix outputs. Comprehensive muting and solo facilities are included and the signal is monitored by individual LED bargraph meters.

The optional Stereo Input module allows connection of stereo Mic and 2 stereo Line sources and features full 4-band EQ and access to all Aux Sends, Groups and Mix.

The Group module comprises an audio subgroup with low-noise summing amplifier, PFL monitoring and routing to the main mix outputs, plus a full-featured stereo line input for use as an additional input or as an effects return. This stereo input has full muting and routing facilities, stereo image control and access to four of the auxiliary sends. On VCA consoles a similar module also houses a VCA group master fader.

On VCA consoles, a Grand Master module provides an additional two VCA grand master faders, which can be assigned to any of the eight VCA master faders.

Comprehensive master and monitor functions are provided on the central Master module, including versatile talkback facilities either from the local engineer to desk outputs or as two way communication with a separate monitor console.

The Auxiliary Master section includes Insert Points on each output.

The Dual Matrix output module allows additional submixes to be created from the group outputs, main mix outputs and a separate external input. These modules may be fitted in blocks of four where space is available.

Vienna II is designed to allow two consoles to be linked in a master/client configuration, with opto-isolated control signals and balanced, buffered audio connections for maximum noise immunity. The interface allows two Vienna II consoles, or one Vienna II and one Europa console to be linked.

Simplicity and clarity of operation is ensured by careful layout of controls, internally illuminated buttons and provision for three Littlelites on the top surface of the console, with an inbuilt dimmer.

Precautions and Safety Instructions

General Precautions

Avoid storing or using the mixing console in conditions of excessive heat or cold, or 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 or ethyl alcohol to clean the trim and scribble strips. Other solvents may cause damage to paint or plastic parts.

Avoid using the console 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 console power supply away from the unit .

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

Handling and Transport

The console is a very rugged unit, designed for touring. However, care in handling and transportation will ensure a long and trouble-free life. If the console is to be regularly moved we recommend that it is installed in a foam lined flight case. At all times avoid applying excessive force to any knobs, switches or connectors.

Power supplies & cables

Always make sure that the power supplies have been set to the same source voltage as the mains supply.

Always use the power supplies and power cables supplied with 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 mixing console.

Warning! Always switch the power supplies off before connecting or disconnecting the console power cable, removing or installing modules, and servicing. In the event of an electrical storm, or large mains voltage fluctuations, immediately switch off the PSU and unplug from the mains.

Always ensure that that you use the correct power supply for your console. The Vienna II console requires a CPS900 power supply.

Signal Levels

It is important to supply the correct input levels to the console, 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 input is designed for use with balanced low impedance (150 or 200Ω) microphones.

Caution! DO NOT use unbalanced microphones or battery powered condenser microphones without isolating the +48V phantom power on the rear panel. - degraded performance or damage to the microphone may result.

The sensitivity of the XLR inputs is variable from -2dBu to -70dBu (0dBu to -60dBu on stereo inputs) and +10dBu to -20dBu in two ranges (for +4dBu at the Mix outputs). The maximum input level is +28dBu.

The Hi-Z inputs give a sensitivity variable between +10dBu and -20dBu. The maximum input level is +30dBu.

The main outputs of the console (Mix Left, Right, Mono, Matrix, Monitor and Alt PA/Record) have an output level of +4dBu and an output impedance of <75Ω and a drive capability of +26dBu into 600Ω.

Two Track Returns are internally selectable as +4dBu or -10dBV outputs to suit both professional and semi-professional machines.

The Aux outputs have a nominal output level of +4dBu and an output impedance of <75Ω. These outputs can deliver full level (+26dBu balanced) into loads of greater than 600Ω.

Input, Group and Auxiliary Insert Sends are ground compensated and have a nominal output level of -2dBu at an output impedance of <75Ω, and a maximum output level of +20dBu into load impedances of greater than 2kΩ. Mix Insert Sends are balanced, with a nominal output level of +4dBu at an output impedance of <75Ω. All Insert Returns are balanced, at corresponding nominal levels, with an input impedance of >15kΩ.

The Headphone output can drive +20dBu into 600Ω (150mW into 8Ω).

Installation

Connectors

Vienna II is designed for reliability, high performance and built to the highest standards. Whilst great care has been taken to ensure that installations are made as trouble-free as possible, care taken at this stage, followed by correct setting up will be rewarded by a long life and reliable operation.

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

Always ensure that you use the correct power supplies for your console. The Vienna II console requires a CPS900 power supply.

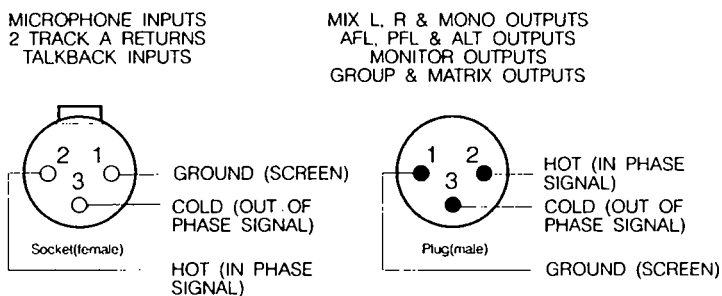
Wiring Considerations

- A** For optimum performance it is essential for the earthing system to be clean and noise-free, as all signals are referenced to this earth. A central point should be decided on for the main earth point, and all earths should be 'star-fed' from this point. It is recommended that an individual earth wire be run from each electrical outlet, back to the system star point to provide a safety earth reference for each piece of equipment.
- B** Install separate mains outlets for the audio equipment, and feed these independently from any other equipment.
- C** Avoid locating mains distribution boxes near audio equipment, especially tape recorders, which are very sensitive to electro-magnetic fields.
- D** Where possible ensure that all audio cable screens and signal earths are connected to ground only at their source.

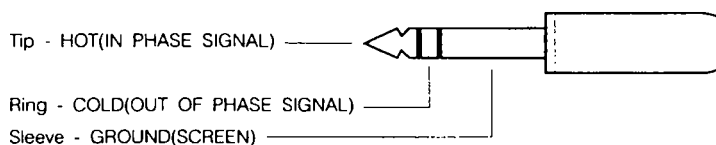
Connections

Wiring conventions

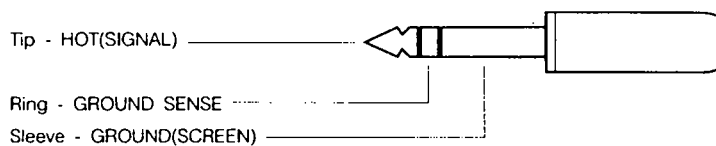
The standard Vienna II console uses two different types of audio connector, 3 pin XLR (top diagram) and 1/4" three pole ('A' gauge or stereo) jacks. The latter are used in several configurations, as shown below. Two EDAC multiway connectors are included for linking to other Vienna or Europa consoles and three BNC connectors are fitted feed Littlelites.



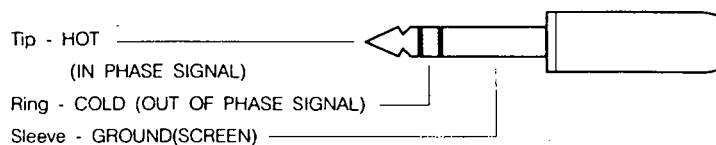
1/4" 'A' Gauge Stereo Jack Plug used as balanced input:
line inputs, 2 Track B returns, insert returns



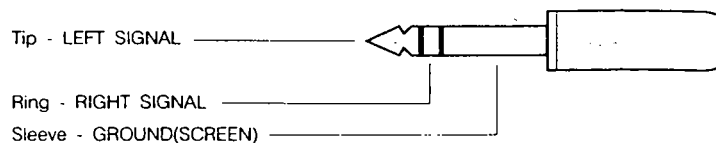
1/4" 'A' Gauge Stereo Jack Plug used as ground compensated output:
Input & Group insert sends



1/4" 'A' Gauge Stereo Jack Plug used as balanced output:
mix insert sends, channel direct outputs



1/4" 'A' Gauge Stereo Jack Plug used as a stereo output: headphones

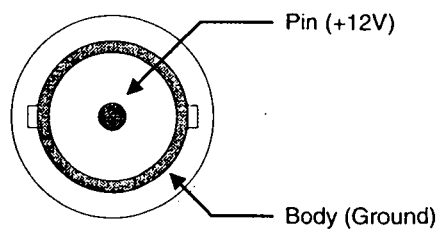


Illumination

All frame sizes allow the addition of up to three lamps on BNC connectors ('Littlite' or similar) for console illumination. One socket is fitted at each end of the console, and one by the master module. The sockets can supply up to 330mA each, and the voltage is variable between 1.5v and 12v by a dimmer control in the centre of the console.

The sockets are wired as follows:

Pin	+12v
Body	Ground



Module Block Diagrams

Input Module

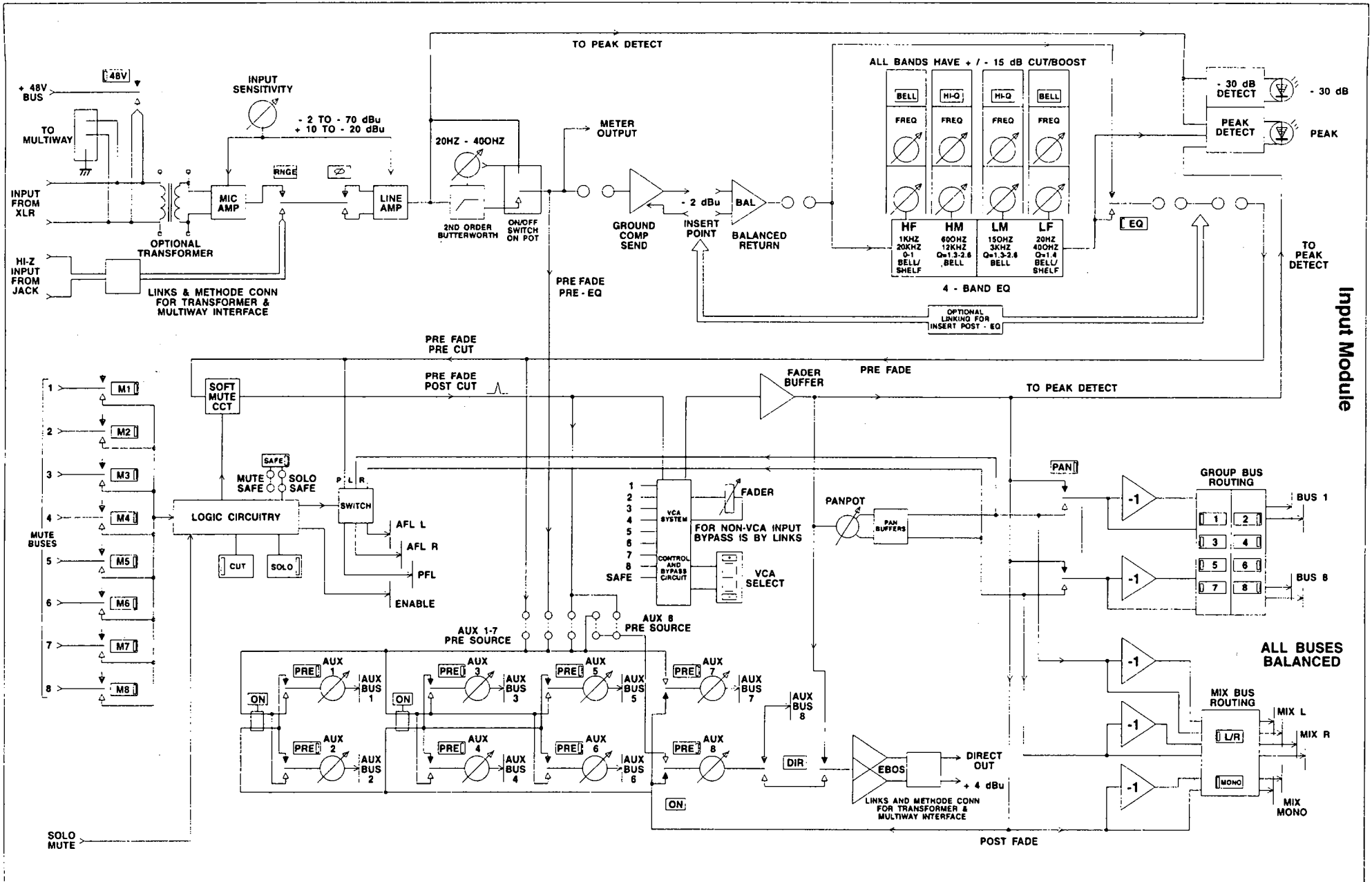
Stereo Input Module

Output Group/Stereo Return

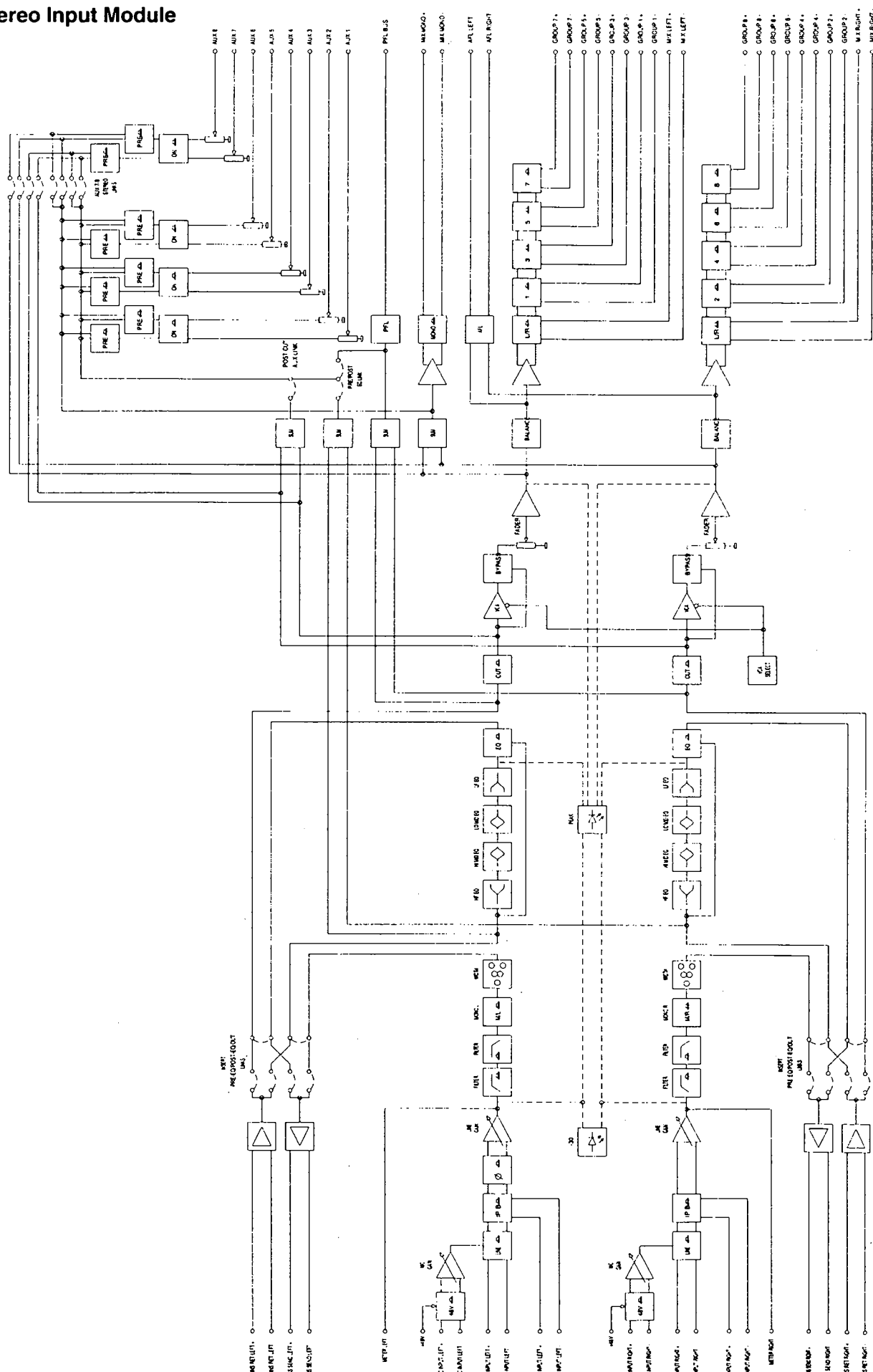
Master Module

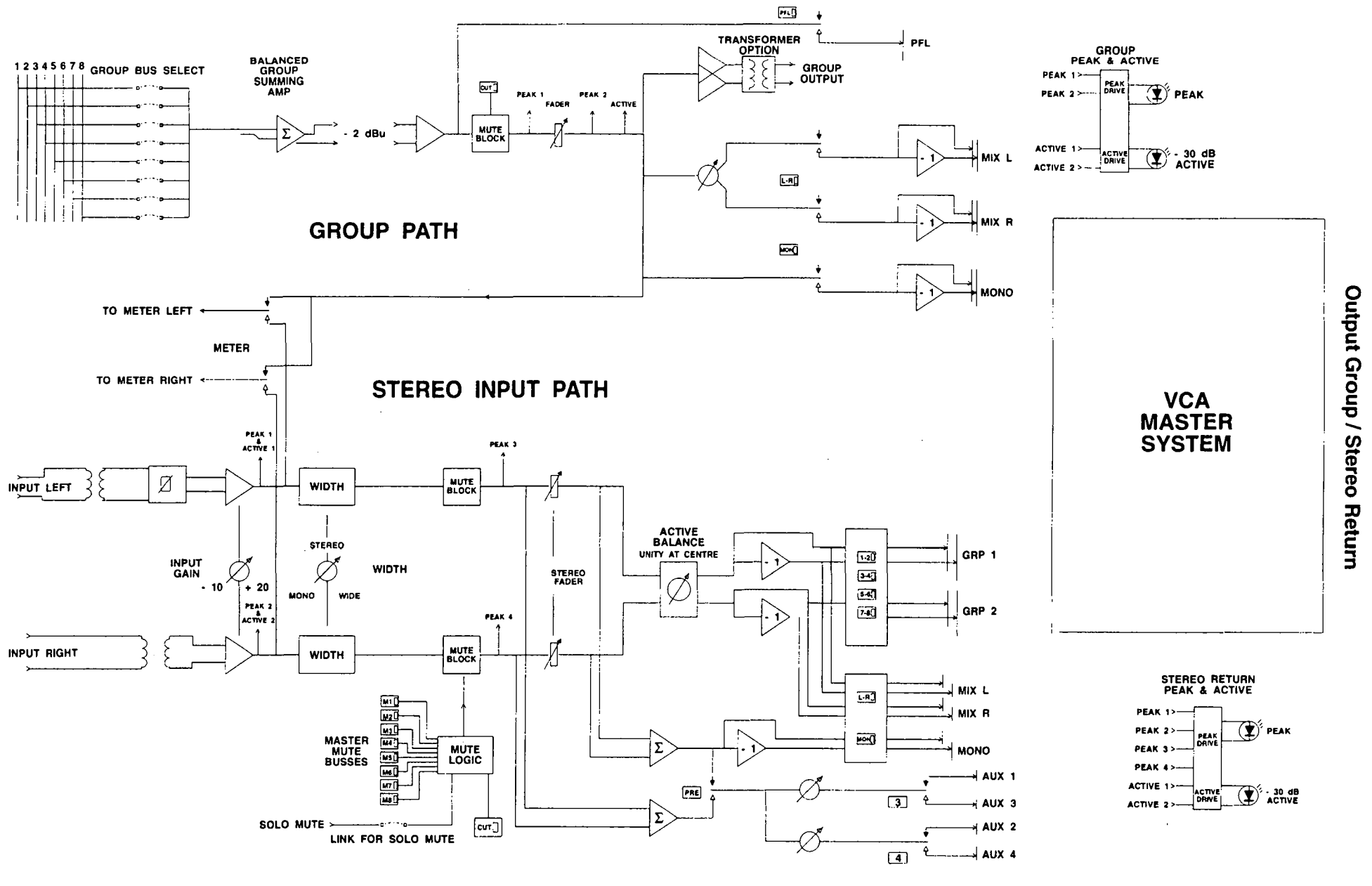
Aux Master Module

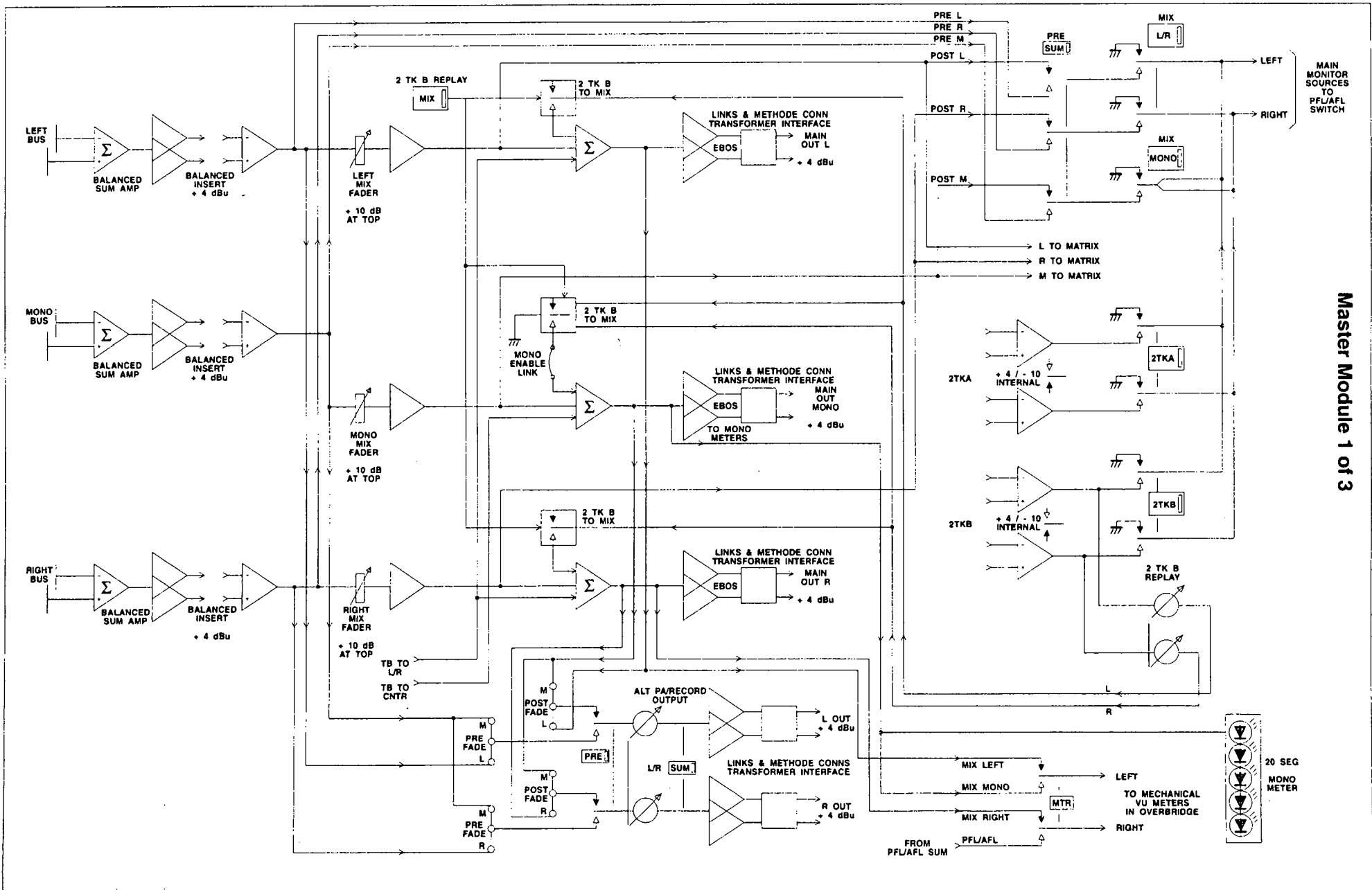
Matrix Output Module

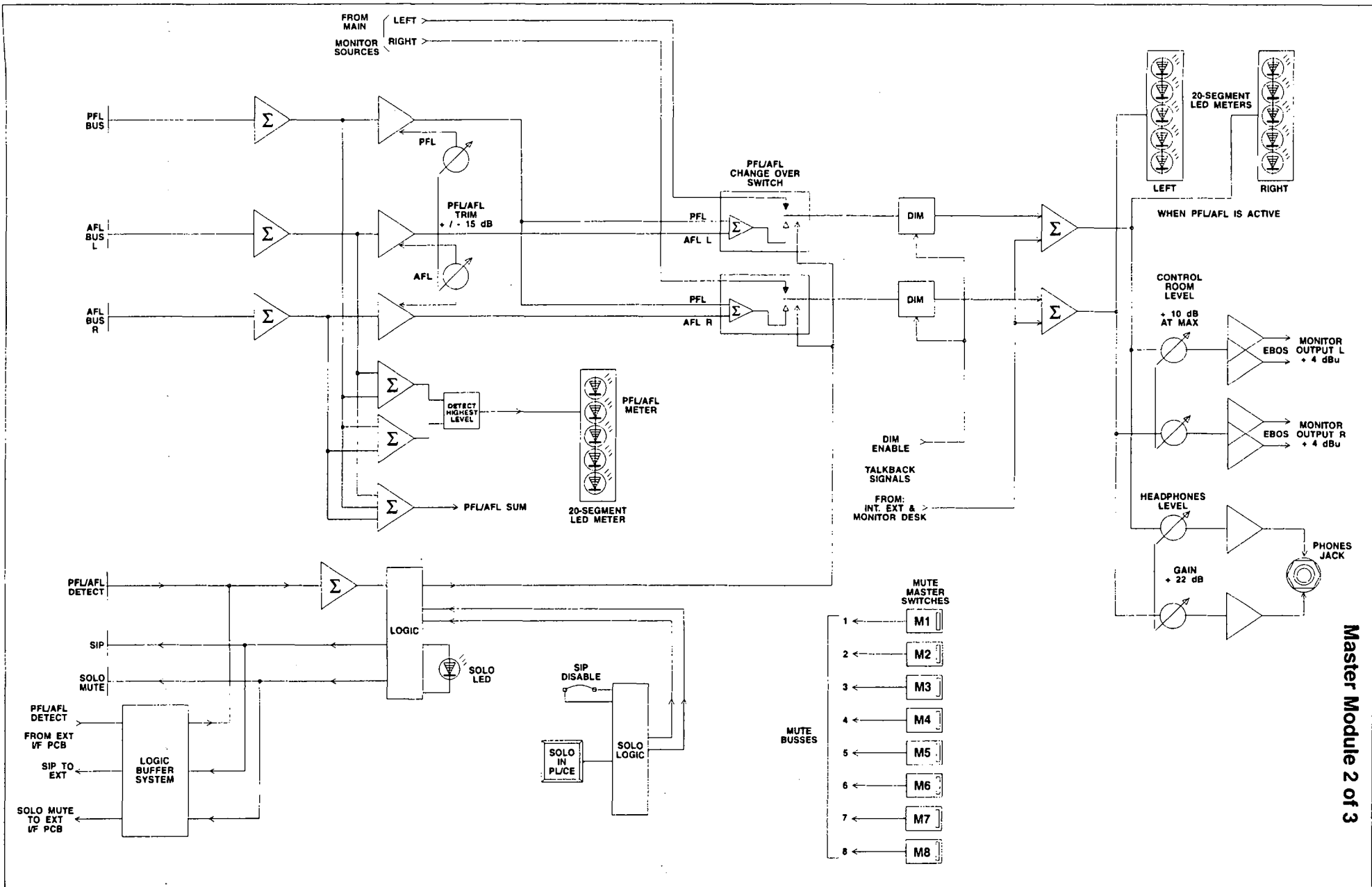


Stereo Input Module

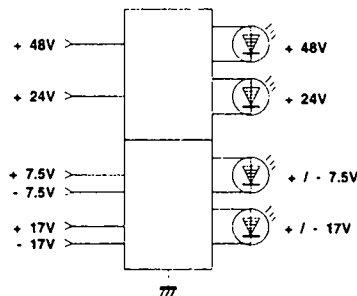




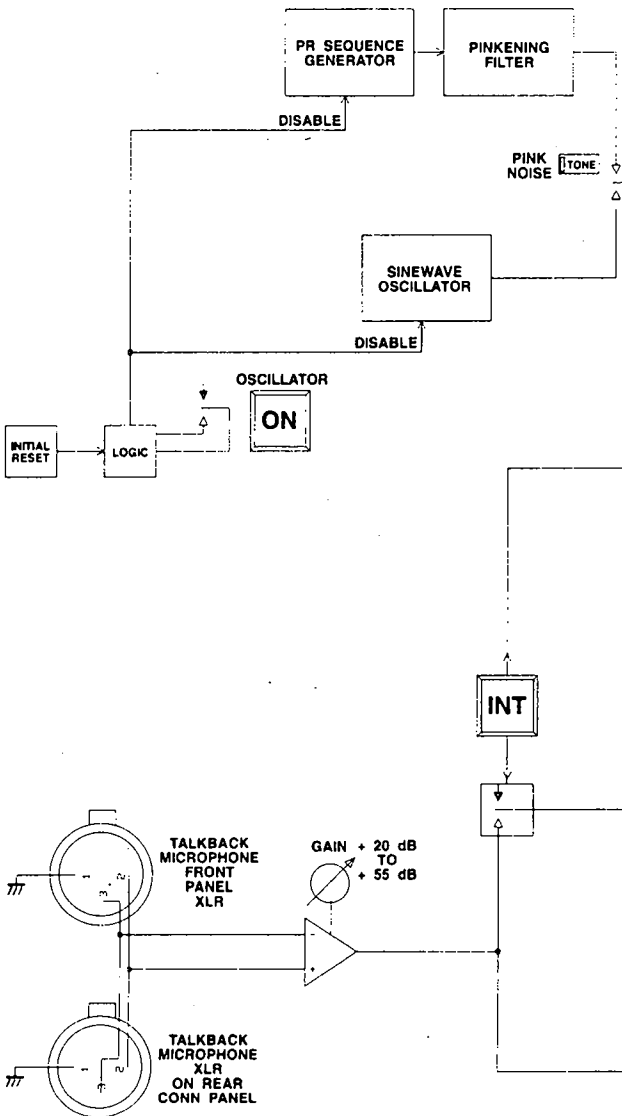
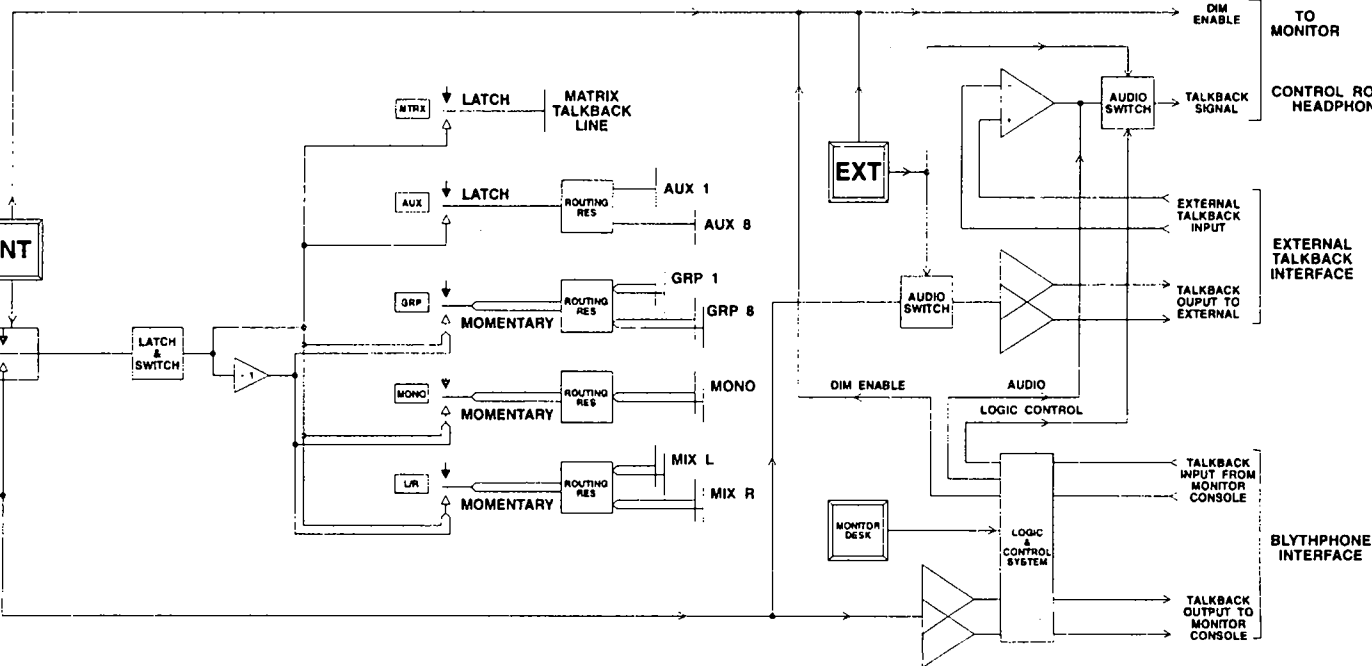
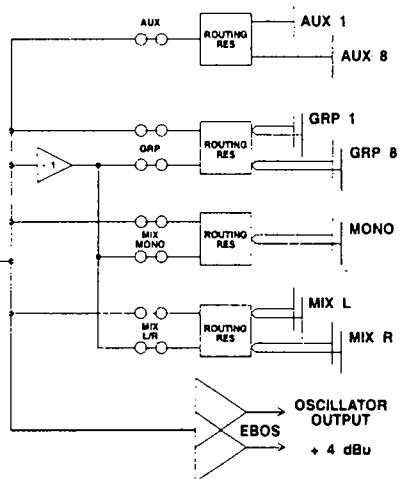


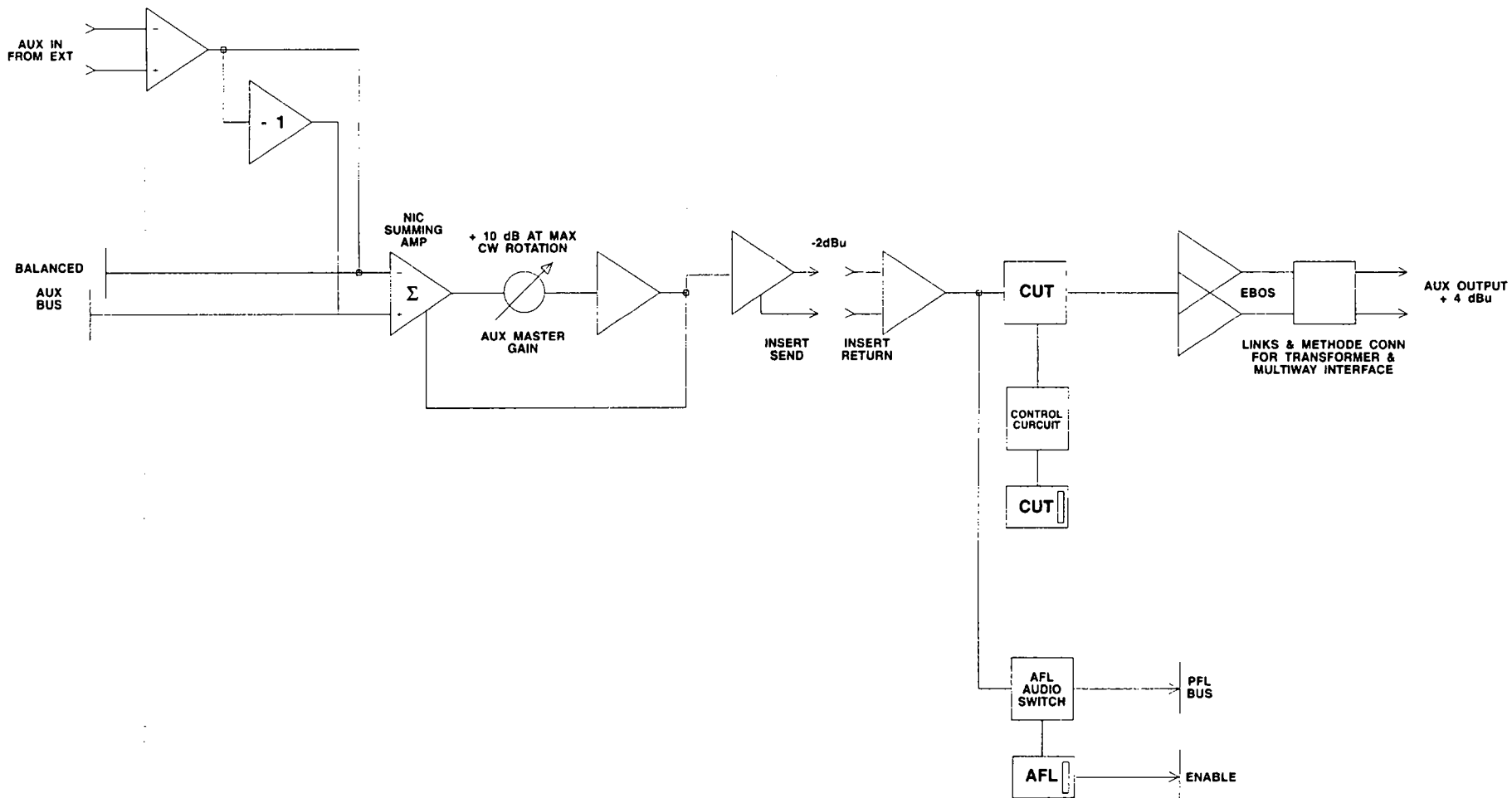


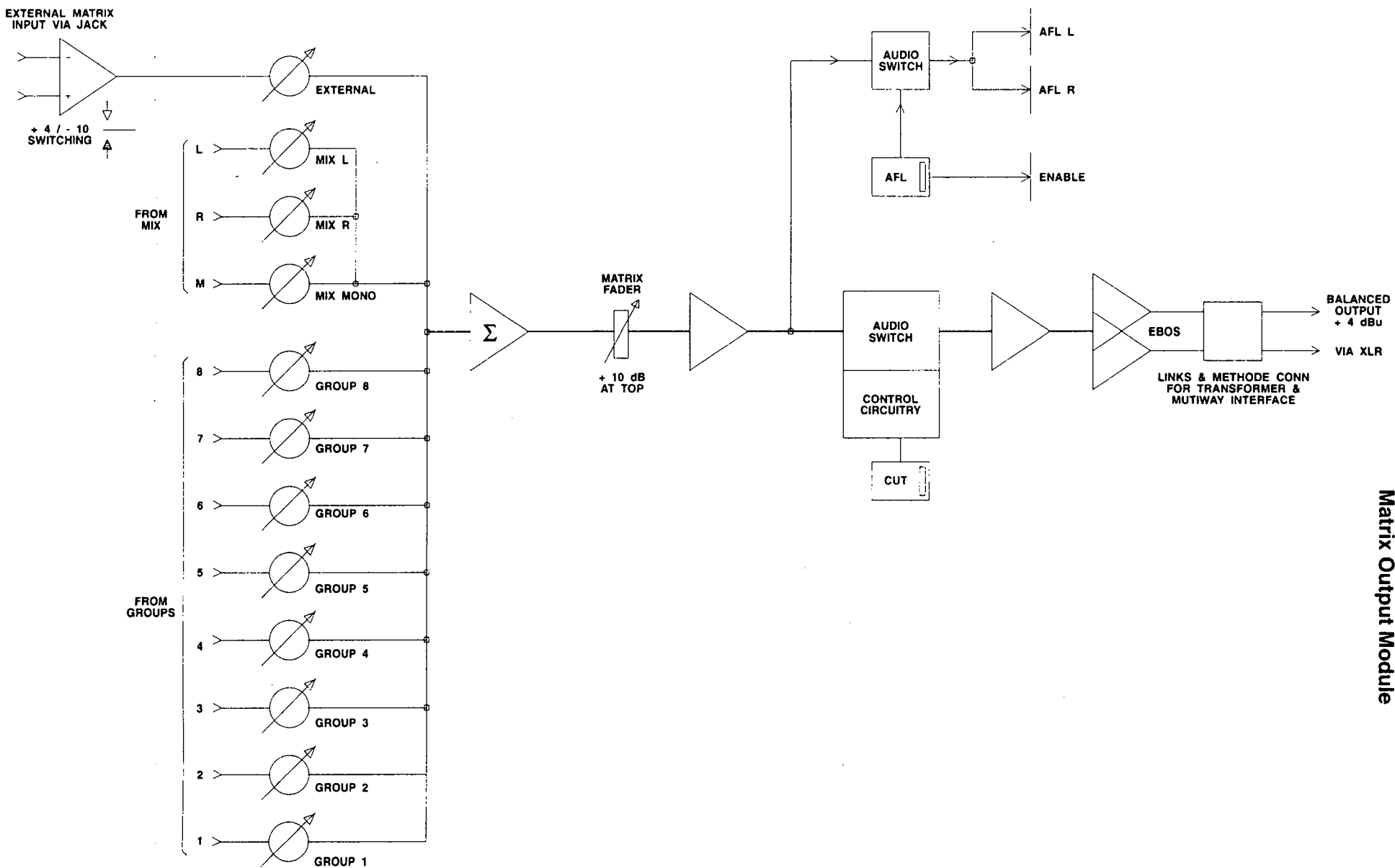
POWER
SUPPLY
INDICATOR



SELECTOR
JUMPERS

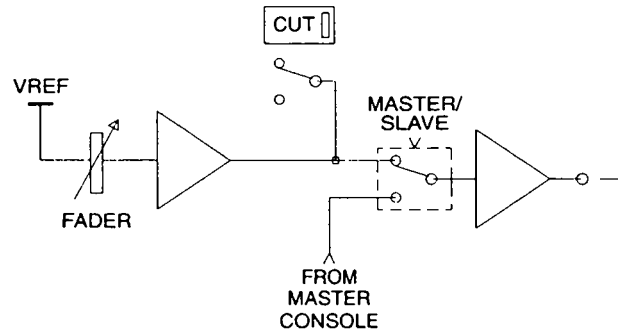




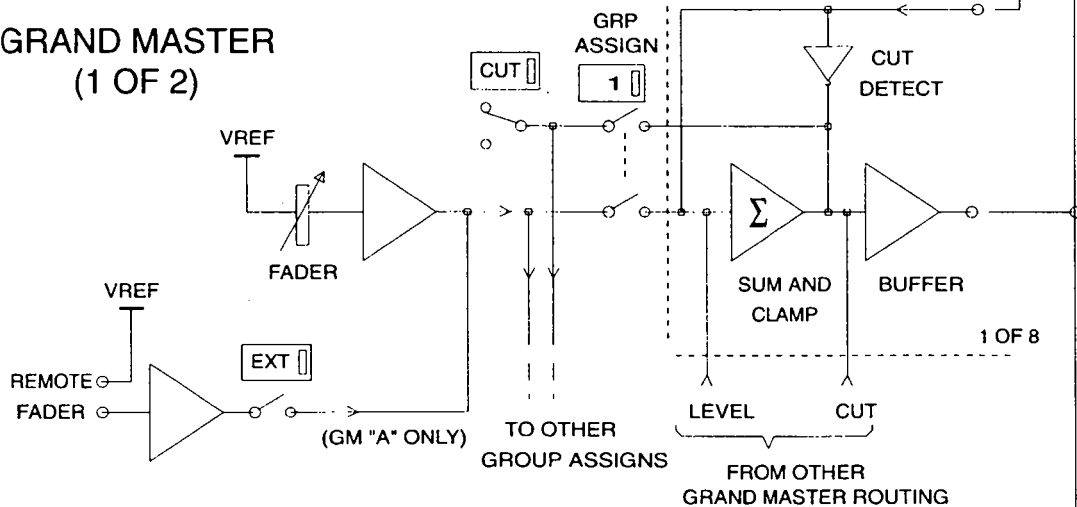


VCA Grand Master

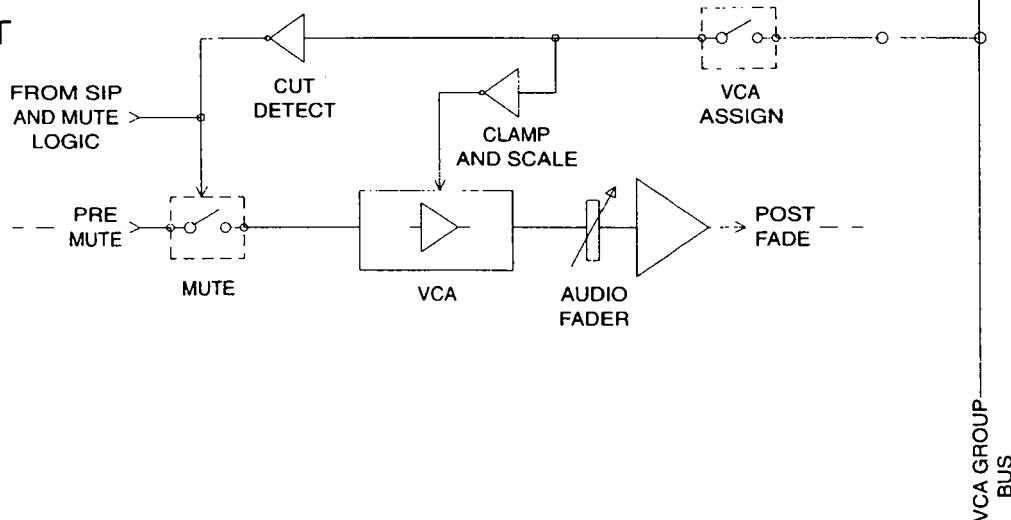
VCA MASTER



GRAND MASTER (1 OF 2)



INPUT



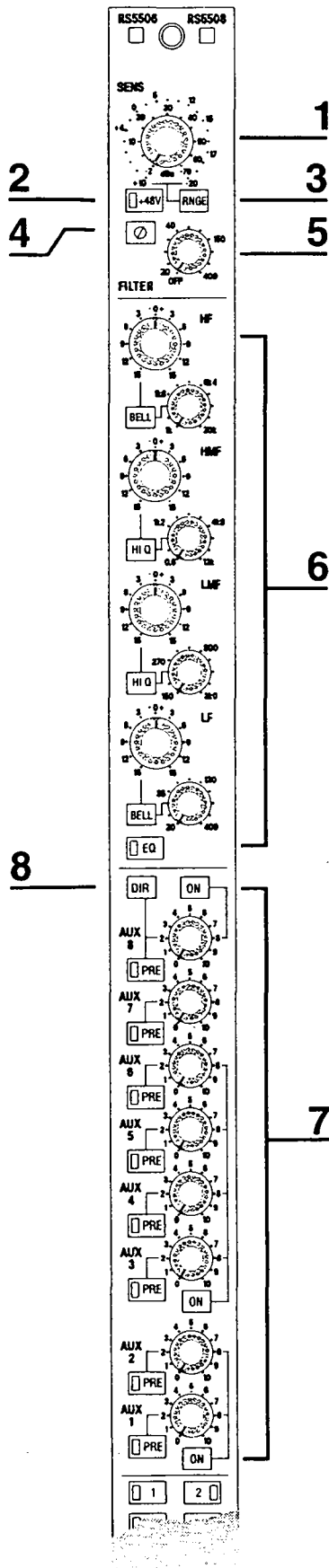
Standard Input Module RS5507

VCA Input Module RS5508

Description

and Operation

Input Modules RS5507/RS5508



Input Stage

1 The sensitivity of both the XLR and HIGH IMPEDANCE (HI-Z jack) inputs is adjusted by the **SENS** control. Both inputs are electronically balanced. The XLR sensitivity is -2dBu to -70dBu and +10dBu to -20dBu (switched range). The High Impedance input sensitivity is +10dBu to -20dBu.

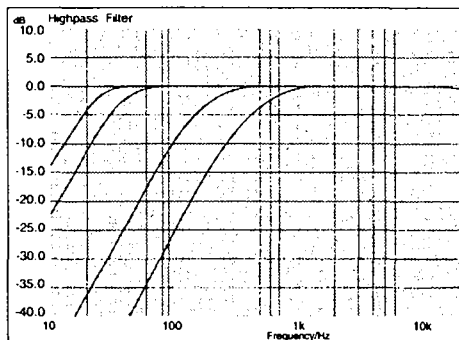
2 The **48V** switch enables 48V phantom power to be fed to the mic input. Modules may be optionally fitted with transformer coupling - refer to your dealer for suitable transformers.

3 When the **RNGE** (Range) switch is depressed to lower sensitivity range of the input is selected to allow line level signals to be used. The signal is taken from the input XLR, unless a jack is inserted into the HI-Z socket, when the signal from the jack is used instead. Note that when the **RNGE** switch is released, the HI-Z input socket cannot be used.

4 The **Phase** $\emptyset$ switch reverses the phase of the selected input to compensate for conflicting microphone position or for crossed wiring. This switch should normally be released.

5 The **High-pass Filter** control is swept 20Hz - 400Hz. It has an OFF switch at the ACW end of its rotation to switch the filter out of circuit.

Frequency Response Curves of the Hi-pass Filter



Insert Point

The insert point is normally configured as pre-EQ, and is permanently in circuit. Separate Send and return jacks are provided at a nominal level of -2dBu: the send is ground compensated; the return is electronically balanced. Internal links allow the insert to be configured as post-EQ.

Equaliser

6 The **Equaliser** has four swept bands and is placed in circuit by pressing the **EQ** switch. When switched out of circuit, its input is grounded. All 4 bands have +/-15dB of cut and boost.

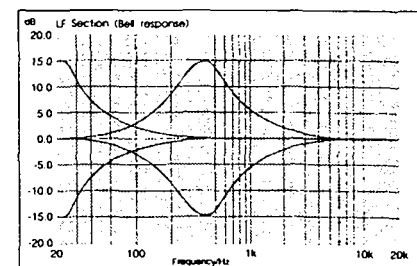
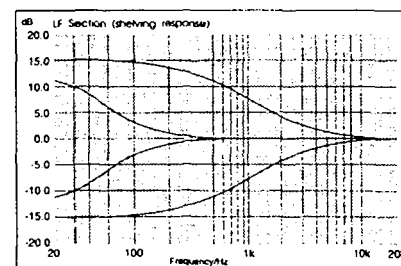
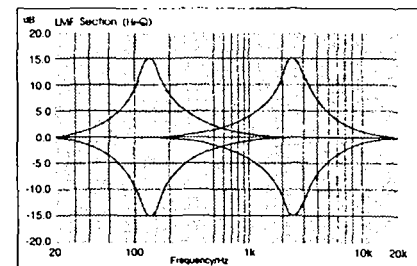
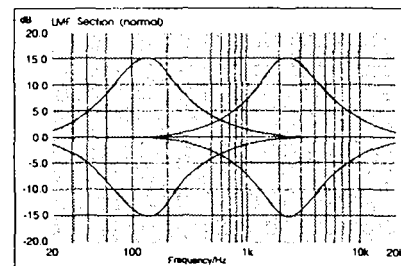
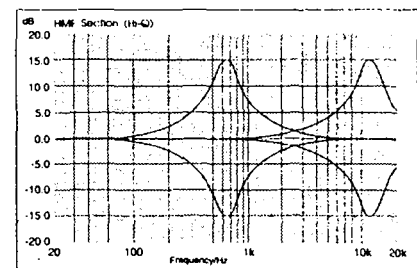
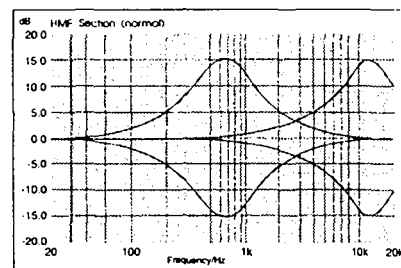
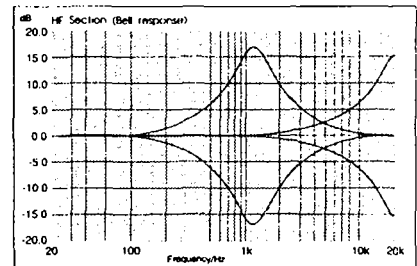
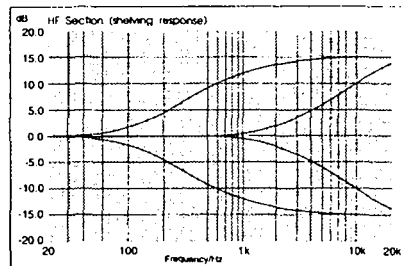
The **HF** section has a 20:1 frequency range ratio covering 1kHz to 20kHz. The **Q** is fixed at about 1. Cut and boost is by a centre detented control. The response is normally shelving, but can be switched to peak/dip by the **BELL** switch.

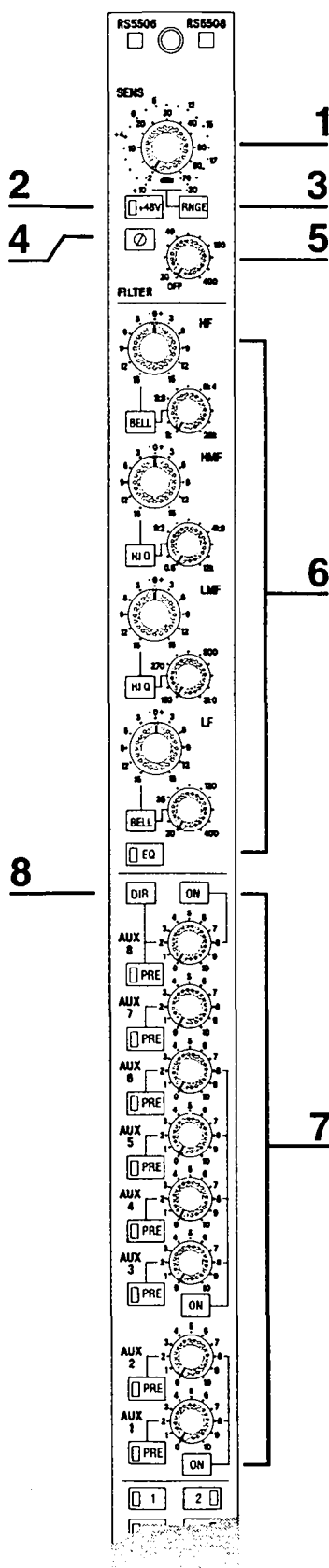
The **HMF section** offers a 20:1 frequency range ratio covering 600Hz to 12kHz. The Q is normally 1.3, but depressing the **HI-Q** switch gives a value of 2.6. Cut and boost is by a centre detented control.

The **LMF section** offers a 20:1 frequency range ratio covering 150Hz to 3kHz. The Q is normally 1.3, but depressing the **HI-Q** switch gives a value of .6. Cut and boost is by a centre detented control.

The **LF section** has a 20:1 frequency range ratio covering 20Hz to 400Hz. The Q is fixed at about 1.4. Cut and boost is by a centre detented control. The response is normally shelving, but can be switched to peak/dip by the **BELL** switch.

Frequency Response Curves of the Equaliser





Auxiliary Sends

7 Eight **Auxiliary Sends** are provided. Each has a rotary **LEVEL** control, and is sourced from the post-fader signal, but may be switched pre-fade by individual **PRE** buttons. The pre-fade signal source for Auxes 1-7 may be taken post-mute, pre-mute and post-EQ, or pre-EQ and pre-insert. The source selection is by internal push-on jumpers. The pre-fade signal for Aux Send 8 may be independently set post-mute, or set to follow the pre-fade source for Auxes 1-7.

Three **ON** switches activate the sends for Auxes 1 & 2, 3 to 6, and 8. Aux 7 is always active.

Direct Output

8 A post fade (nominal +4dBu) electronically balanced **Direct Output** is provided on a rear panel jack socket. Provision is made for an output transformer to be installed - refer to your dealer for suitable transformers.

Pressing the **DIR** switch replaces the post-fade channel direct output with the signal from the Aux 8 pot, following the pre or post selection via the **PRE** switch.

Group Routing

9 The **Routing Matrix** is above the panpot, and allows the channel post-fade signal to be fed to the eight Group and three Mix busses, which are all differential with balanced drive for maximum noise immunity.

10 Routing to the L & R busses is by the **L/R** switch. These busses are sourced after the centre detented active **PAN** control, but before the **PAN** switch, and are therefore always affected by the panpot. When the **MONO** switch is pressed, the pre-pan signal is routed to the mono bus.

11 Pressing **PAN** switches the **PAN POT** into the groups circuitry and allows left/right panning between odd and even groups respectively.

Signal monitoring LEDs

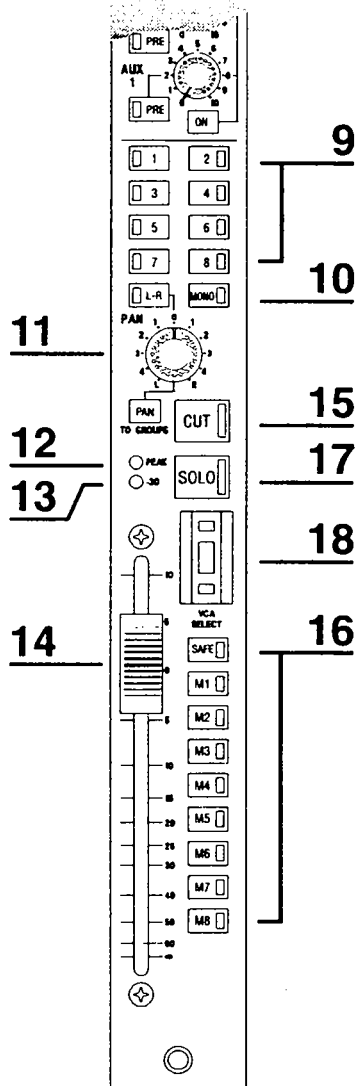
12 A multi-point peak detector illuminates the red **PEAK** LED when there is a level of +14dBu or greater at four critical places in the signal chain: the output of Mic/Line amplifier, the wiper of the EQ switch and the output of the fader buffer amplifier.

13 A green -30dB LED illuminates when a level of -30dBu or greater is present at the output of the Mic/Line amplifier to show that the channel is active.

Channel Fader, Status and Mute

14 The channel fader sets the level sent to the mix, group busses and post-fade outputs and has a gain of +10dB at the top of its travel.

The illuminated, mechanically latching **SOLO** and **CUT** switches, in conjunction with the 8 **MUTE** bus switches control whether the channel is **ON** or muted.



When pressed, the LEDs in the selected mute switches glow, indicating readiness to accept a Master mute. If the channel is muted via a Master mute bus, the channel's **CUT** switch flashes to indicate that a non-local mute is in operation.

15 Pressing the **CUT** switch will always mute the channel via the soft muting circuit.

16 If a **MUTE** bus is selected, pressing the corresponding mute master (located on the Master module) will mute the channel in the same way as the **CUT** switch.

17 If **SOLO-IN-PLACE** (SIP) is not selected on the Master Module, pressing the **SOLO** switch feeds the channel signal to the PFL bus and changes the central monitoring over to the selected channel without muting any other channels.

If SIP is selected, pressing the **SOLO** switch cuts all other inputs, unless they are isolated by the **SAFE** switch. This switch may be internally set by jumpers to act as a Solo safe, Master Mute safe or both. The factory default setting is both.

Pressing the **SOLO** switch on a channel that is set **SOLO SAFE** or **BOTH SAFE** whilst SIP is selected will **AFL** the channel in stereo. **AFL** changes the monitoring over to the selected channel without muting any other channels.

VCA Grouping (RS5508 only)

18 The VCA version of the console has 8 **VCA GROUPS**. Selection is by a thumbwheel switch. Only 1 VCA group can be active on each channel (positions 1 to 8) at any one time. See 'VCA Group/Output Group/Stereo Input Module' later in this manual for a full description of the VCA system.

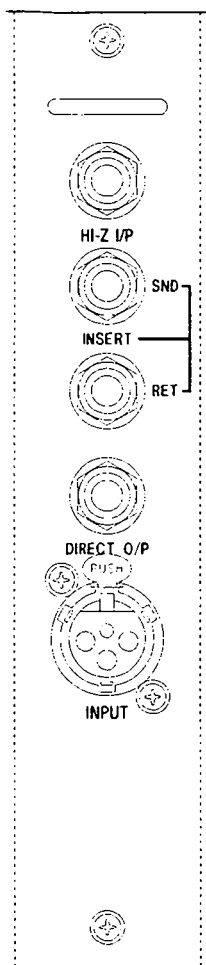
When the thumbwheel is set to the blank position, the VCA system is inactive, and the VCA is electronically bypassed.

Metering

The pre-insert, pre-EQ signal feeds a 16-segment LED bargraph input **METER** located in the overbridge.

Jumper Options

Function	Options	Default
Insert Point		post-EQ
JMP1, JMP3, JMP6	IN for post-EQ	
JMP2, JMP4, JMP5	IN for pre-EQ	
SFE Switch		both
JMP7	SOLO SAFE	
JMP8	MUTE SAFE	
Aux 1-7 PRE source		post-mute
JMP13	IN for post-mute	
JMP14	IN for pre-EQ	
JMP15	IN for pre-mute	
Aux 8 PRE source		post-mute
JMP9	IN for post-mute	
JMP10	IN follow Aux 1-7	



Connector Pinouts

Input - Female XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Hi-Z Input - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Screen

Insert Send - 3 Pole Jack

Tip	Hot(signal)
Ring	Ground Sense
Sleeve	Ground (screen)

Insert Return - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground (screen)

Direct Output - 3 pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground (screen)

Input and Output Levels

INPUT (electronically balanced)

Sensitivity	-2dBu to -70dBu, +10dBu to -20dBu
Maximum input level	+28dBu
Input impedance	2K Ω

HI-Z INPUT (electronically balanced)

Sensitivity	+10dBu to -20dBu
Maximum input level	+30dBu
Input impedance	>10K Ω balanced

INSERT SEND (electronically balanced)

Nominal level	-2dBu
Maximum input level	+20dBu into 2K Ω
Output impedance	<75 Ω

INSERT RETURN (electronically balanced)

Sensitivity	-2dBu
Maximum input level	+20dBu
Input impedance	>10K Ω balanced

DIRECT OUTPUT (electronically balanced)

Nominal level	+4dBu
Maximum input level	+26dBu into 600 Ω
Output impedance	<75 Ω

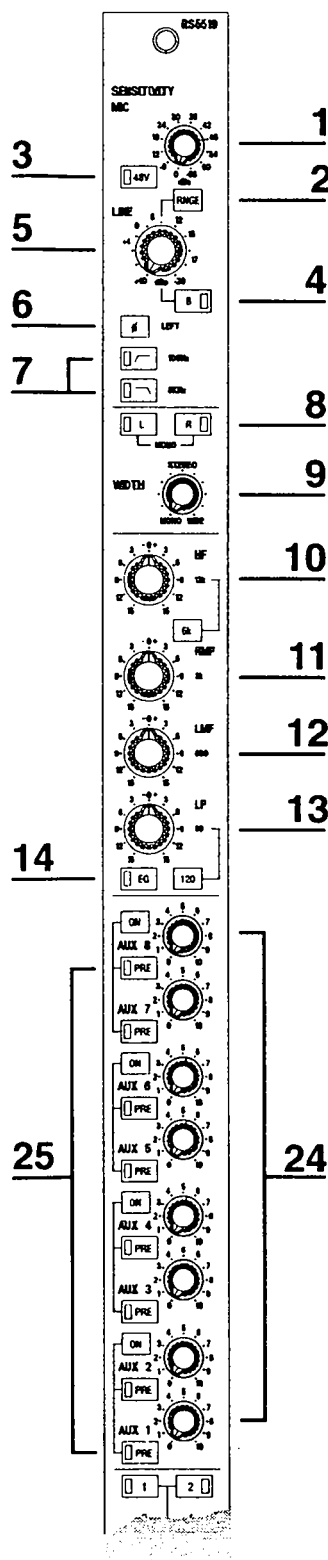
Stereo Input Module RS5518

VCA Stereo Input Module RS5519

Description

and Operation

Stereo Input Modules RS5518/RS5519



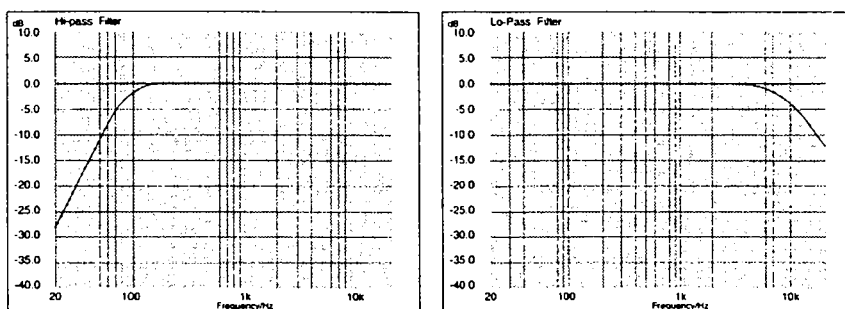
Input Stage

The module has two stereo inputs, A and B; the A input has a high-sensitivity XLR microphone input, and a high impedance line level input while the B input has only a line level input.

- 1 The **MIC SENSITIVITY** adjusts the sensitivity of the XLR input.
- 2 The **RNGE** switch selects the lower sensitivity line-level input. The signal is still taken from the input XLRs, with decreased sensitivity, unless jacks are inserted into the Input A HI-Z sockets, when signal from the jacks is used instead.
- 3 The **48V** switch, which has an integral red LED, applies 48v phantom power to the input XLRs.
- 4 The **B** switch, which has an integral green LED, selects a stereo signal from the second pair of HI-Z input jacks, replacing the signal from the A input XLRs or jacks.
- 5 The **LINE** pot controls sensitivity when the RNGE switch is depressed.
- 6 The **PHASE (Ø)** switch, when depressed, reverses the phase of the left channel of the selected input.
- 7 Stereo second-order high-pass and low-pass filters are switched in by depressing the **FILTER** buttons. The Filter buttons have integral green LEDs. The filter frequencies are:

Highpass filter 100Hz Lowpass filter 8kHz.

Frequency Response of the Filters



Stereo Control

- 8 The **L** and **R** buttons provide mono summing facilities. Pressing the **L** button only feeds the left signal to both left and right channels; pressing the **R** button only feeds the right signal to both left and right channels. Pressing both **L** and **R** feeds a mono sum of left and right inputs to both channels. Each button has an integral green LED.

- 9 The **WIDTH** control allows continuous variation of the stereo image between mono (anti-clockwise) through stereo (centre detent) to phase-enhanced stereo (clockwise).

Equaliser

The stereo EQ section is four band, with switched-frequency shelving high and low frequency sections, and two fixed frequency peaking mid sections.

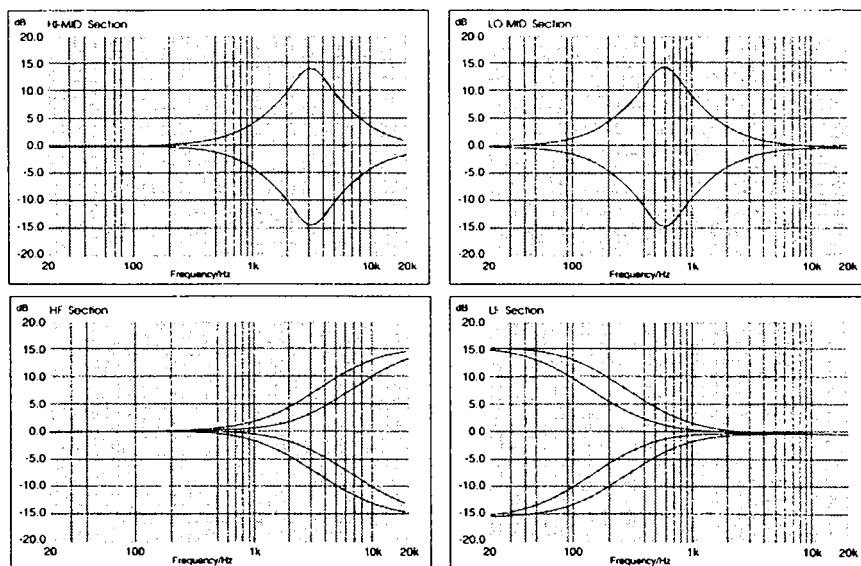
10 The **HF** section has cut or boost of 15dB and a shelving response. The frequency is normally 12kHz, but may be reduced to 6kHz by the **6K** switch.

11 The **HIGH MID (HMF)** section has maximum cut or boost of 15dB at a fixed frequency of 3kHz, with a Q of 1.4.

12 The **LOW MID (LMF)** section has maximum cut or boost of 15dB at a fixed frequency of 600Hz, with a Q of 1.4.

13 The **LF** section has maximum cut or boost of 15dB and a shelving response. The frequency is normally 60Hz, but may be increased to 120Hz by the **120** switch.

Frequency Response of the Filters



14 The EQ section is switched in by the **EQ** switch. An integral green LED is illuminated when the EQ section is in circuit.

Insert Point

Circuitry is fitted for a stereo insert point. The insert send and return sockets are not fitted as standard; however the signals are available on 0.1" connectors on the module.

The insert uses ground-compensated sends and electronically balanced returns at a nominal level of -2dBu. Push-on jumpers allow the insert to be set pre-EQ or post-EQ, or to be bypassed completely. The default is set to by-passed.

Output Control

The signal to the groups, mix and auxiliaries is controlled by the mute circuitry, the VCA (VCA Modules only) and the input fader.

15 The **CUT** switch, which has an integral red LED, mutes the module, turning the signal to the mix, groups and post-mute or post-fade auxiliaries off.

16 The mute switches **M1 - 8**, which have integral red LEDs, assign the module to the eight master mute buses; when the module is muted by the mute buses, the CUT switch flashes.

17 The **SAFE** button, which has an integral amber LED, prevents the module from being muted by the mute buses or the solo system or both, according to internal jumper position. The default setting is both.

18 The post-fade level is controlled by a 100mm stereo **Fader** with 10dB of gain at maximum, and (on VCA modules) the VCA system.

19 The **VCA SELECT** thumbwheel switch (VCA Modules only) assigns the input to one of the eight VCA groups; setting '0' by-passes the VCAs. If the CUT switch on the assigned VCA master is pressed, the channel is muted and the CUT switch flashes.

Normally, the **SOLO** switch, which has an integral amber LED, feeds the pre-fade, pre-mute signal to the Control Room and Phones outputs, replacing the selected monitor source. If Solo In Place is selected on the Master Module, pressing **SOLO** does not affect the monitoring, but mutes all other inputs. If the module is selected **SIP SAFE**, then **SOLO** with **SIP** selected feeds the stereo post-fade, post-balance signal to the Control-room and 'phones, replacing the selected monitor source.

20 The centre-detented **BALANCE** pot controls the relative level of the left and right channels sent to the mix and groups. The control has unity gain at the centre position, with 4.5dB of gain when turned fully one way, and cutting the signal when turned the other.

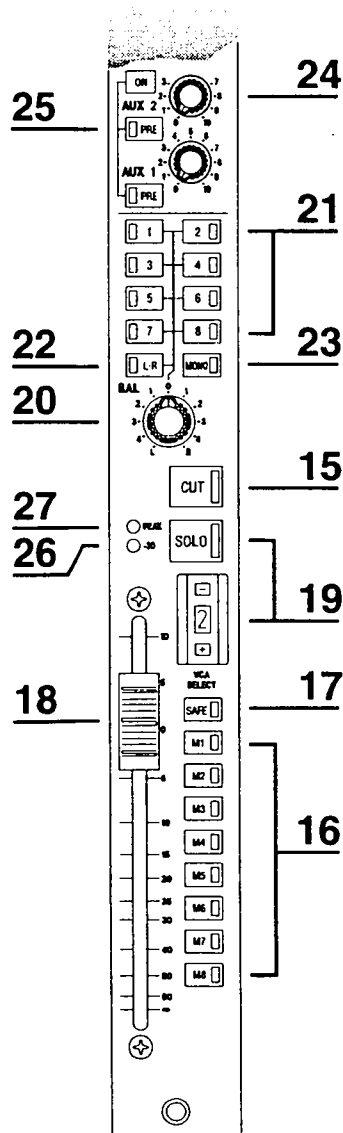
21 The group routing buttons **1 - 8**, which have integral green LEDs, route the post-balance signal to the eight group buses, odd numbers fed from the left channel and evens from the right.

22 The **L/R** button, which has an integral red LED, routes the stereo signal to the L/R mix bus.

23 The **MONO** button, which has an integral amber LED, routes a mono sum of the postfade left and right signals to the mono mix bus.

Aux Outputs

24 A mono sum of the left and right signals is sent to the auxiliary buses 1 - 8 via individual level pots, they are activated in pairs using the associated **ON** switch.



25 The sends are normally sourced post-fade; however they may be individually switched pre-fade by the **PRE** buttons, which have integral green LEDs. The pre-fade signal may be sourced pre-EQ and insert, pre-mute or post-mute using push-on jumpers.

Aux sends 7 and 8 are normally mono sends; push-on jumpers allow them to be used as a stereo pair: Aux 7 is fed from the left channel, Aux 8 from the right channel.

Signal Monitoring LEDs

26 The green **-30** signal active LED illuminates when the a signal of -30dBu or greater is present at the output of the left or right input amplifiers.

27 The red **PEAK** LED illuminates when the signal level exceeds +14dBu (internal) at the output of the input amplifier, the output of the EQ or the post fade amplifier on either left or right channels.

Metering

If metering is fitted, a 16 segment bargraph in the overbridge reads the pre-insert, pre-EQ signal; the higher of the left and right channels is displayed.

Jumper Options

Function	Options	Default
Insert Left JMP1, JMP3, JMP6 JMP2, JMP4, JMP5	IN for post-EQ IN for pre-EQ	by-passed
Insert Right JMP101, JMP103, JMP106 JMP102, JMP104, JMP105	IN for post-EQ IN for pre-EQ	by-passed
SFE Switch JMP7 JMP8	SOLO SAFE MUTE SAFE	both
Aux 16 Presource JMP10 JMP11 JMP12 Note: only one of the above three jumpers should be fitted at one time.	IN for pre-EQ IN for pre-mute IN for post-mute	post-mute
Aux 7 PRE source JMP21 JMP22	IN for mono (follow Aux 1-6) IN for stereo (left post-mute)	mono
Aux 7 POST source JMP23 JMP24	IN for mono IN for stereo (left)	mono
Aux 8 PRE source JMP25 JMP26	IN for mono (follow Aux 1-6) IN for stereo (right post-mute)	mono
Aux 8 POST source JMP27 JMP28	IN for mono IN for stereo (right)	mono

Input and Output Levels

XLR Inputs Left And Right

(electronically balanced)

Sensitivity	0dBu to -60dBu, +10dBu to -20dBu (switched)
Maximum input level	+8dBu
Input impedance	2k Ω

High-impedance Inputs A and B, Left and Right

(electronically balanced)

Sensitivity	+10dBu to -20dBu
Maximum i/p level	+30dBu
Input impedance	>10k Ω balanced

Insert Send Left And Right

(ground compensated)

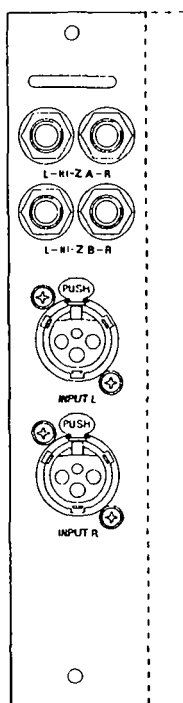
Nominal level	-2dBu
Maximum output level	+20dBu into 2k Ω
Output impedance	<75 Ω

Insert Return Left and Right

(electronically balanced)

Sensitivity	-2dBu
Maximum i/p level	+20dBu
Input impedance	>10k Ω balanced

Rear Connector Panel



XLR INPUTS (3 pin female XLR)

Pin 1	Ground
Pin 2	Signal Hot
Pin 3	Signal Cold

HIGH IMPEDANCE INPUTS (1/4" TSR Jack)

Tip	Signal Hot
Ring	Signal Cold
Sleeve	Ground

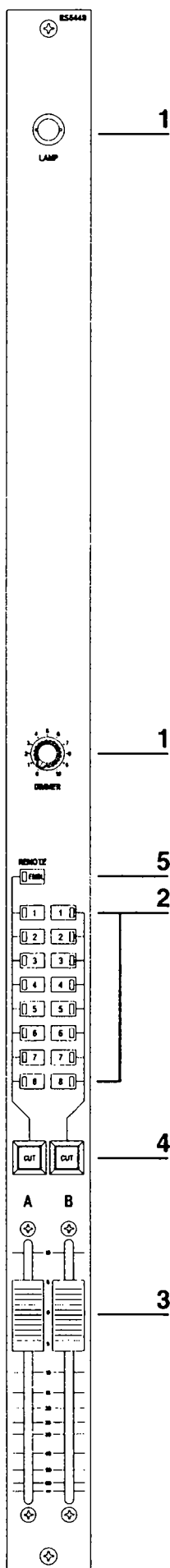
Note: The insert send and return sockets are not fitted as standard; the signals are available on .1" connectors on the module.

Grand Master Module RS5449

Description

and Operation

Grand Master Module RS5449



The Grand Master, fitted only to VCA consoles, enhances the VCA grouping system. The Grand Master System provides:

- two Grand Master faders with cut switches assignable to the eight VCA groups
- optional external master fader with enable switch allowing remote control of Grand Master A level.

The system is hierarchical - channels are assigned to the VCA Groups, and VCA Groups are assigned to the Grand Master. The Grand Master only affects the channels via the VCA Groups, and not directly.

1 The **Lamp** socket allows connection of a gooseneck lamp ("Littlite" or similar) via a BNC-type connector. Additional lamp sockets are fitted at the left and right hand ends of the console. The voltage to the lamp connectors is variable from 1.5V to 12V by the **Dimmer Control**.

2 A Grand Master is assigned to a VCA group by the **Group Assign Switches**; all channels assigned to that VCA group are then controlled by the Grand Master as well as the VCA Group. A Grand Master may be routed to any number of groups, and both Grand Masters may be routed to the same group.

3 The **Grand Master Faders**, together with the VCA Group fader, control the gain of any channels assigned to the VCA group. The channel VCA gain will be the sum of the gains set on the VCA Group and Grand Master faders; however, the combined gain of Group and Grand Master faders is limited to +10dB.

4 The **Cut** button will cut any affected channels, muting the post-fade signal, and pre-fade auxiliary sends (unless the sends are set pre-mute.) When muted, the Cut switches on the channels will flash; however, the VCA Group will not light. The VCA Group Cut switch will also cut the channels.

5 The **Remote Enable** switch activates an external master fader; this shares the Grand Master A routing to the VCA groups, and may be used to remotely control the level of the VCA groups. The remote fader connections are made via a 0.1" connector on the Grand Master module.

Note: The Grand Master controls are fitted only to VCA consoles. On non-VCA consoles, the lamp socket and dimmer control only are present.

Output Group/Stereo Input Module RS5124

*Description
and Operation*

Output Group / Stereo Input Module

Stereo Input

The Stereo Input section has been designed to offer a full-featured effects return capability, or to provide additional line level inputs, saving valuable input modules.

1 The input **GAIN** control allows the sensitivity of the balanced line level inputs to be adjusted from +10dB to -20dB.

2 The **MTR** switch selects the source for the 16-segment LED meter in the overbridge from either the post-fade post-CUT group (switch released) or the Stereo Input (switch pressed). When selected, both L and R signals are fed to the meter, and the highest level is displayed.

3 The **PHASE** of the left input can be reversed by the **(L)Ø** switch. This switch should normally be released.

4 A centre detented **WIDTH** control varies the width of the stereo image from mono (fully anticlockwise), through stereo at the centre detent, to phase-enhanced wide stereo (fully clockwise).

Auxiliary sends

5 There are two **AUX SEND** controls. These are normally sourced from a post-fade mono sum, but are switchable to a pre-fade, post-mute mono sum by the **PRE** switch. The **AUX 1** level control can be routed to Aux bus 3 by the **3** switch, and the **AUX 2** level control can be routed to Aux bus 4 by the **4** switch.

Routing Matrix.

6 The post-fade signal feeds the centre detented active **BAL** (balance) control, which has unity gain for both channels in the centre position. The outputs of this control feed the group **ROUTING SWITCHES** which route in pairs to groups 1-2, 3-4, 5-6, 7-8, and via the **L/R** switch to the stereo mix bus.

Pressing the **MONO** switch feeds a post-fade, pre-balance mono sum to the mono bus.

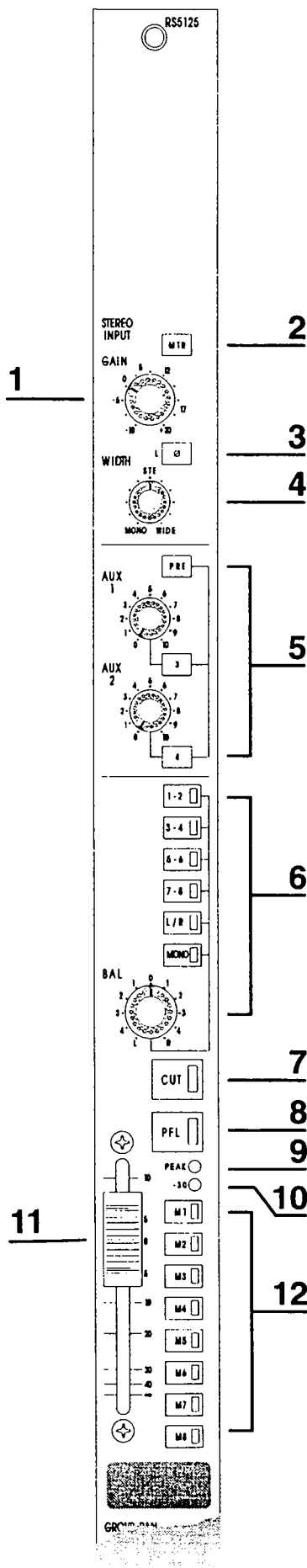
7 The illuminated **CUT** switch, in conjunction with the 8 **MUTE** bus switches (12) and Solo-in-Place system control whether the Stereo Input is ON or muted. Pressing the **CUT** switch will always mute the stereo input.

8 The **PFL** switch allows the pre-CUT, pre-fade signal to be monitored. **PFL** feeds a mono sum signal to the PFL bus and changes the central monitoring over to listen to the selected Stereo Input without muting anything else.

9 A red **PEAK** LED illuminates when there is a level of +14dBu or greater present at two critical points: the output of line input amplifier and a point pre-fade, post CUT.

10 A green **-30dB** LED illuminates when a level of -30dBu or greater is present at the output of the line input amplifier.

These LEDs illuminate when the internal level of either the left or right channel exceeds the stated threshold levels.



11 The 60mm stereo input fader, has 10dB of gain at the top of its travel.

Muting

12 The 8 **MUTE** bus switches, in conjunction with the illuminated **CUT** switch (7) and Solo-in-Place system control whether the Stereo Input is ON or muted. When pressed, the LEDs in the selected **MUTE** switches glow, indicating readiness to accept a master mute. If the Stereo Input is muted via a master mute bus, the **CUT** switch flashes to indicate that a non-local mute is in operation. The stereo input is internally selectable to be SIP SAFE, ie, not muted by the SIP system.

Group Path

The Group summing amplifier is a low noise, balanced virtual earth design, feeding the insert point.

The insert is at a nominal level of -2dBu. Separate send and return jacks are provided; the send is ground compensated, and the return is electronically balanced.

13 The post-fade group signal feeds the passive **PAN** control which positions the signal in the L/R stereo mix if the **L/R** switch is pressed.

14 The **L/R** switch feeds the signal to the main Mix bus, subject to the position of the **PAN** control.

15 The feed to the mono bus is enabled by the **MONO** switch and is sourced pre the **PAN** control.

Group Status

16 The balanced insert return jack feeds the **CUT** button which operates an electronic mute circuit.

17 The **PFL** switch allows the pre-CUT, pre-fade signal to be monitored. **PFL** feeds the group signal to the PFL bus and changes the central monitoring over to listen to the selected Group without muting anything else.

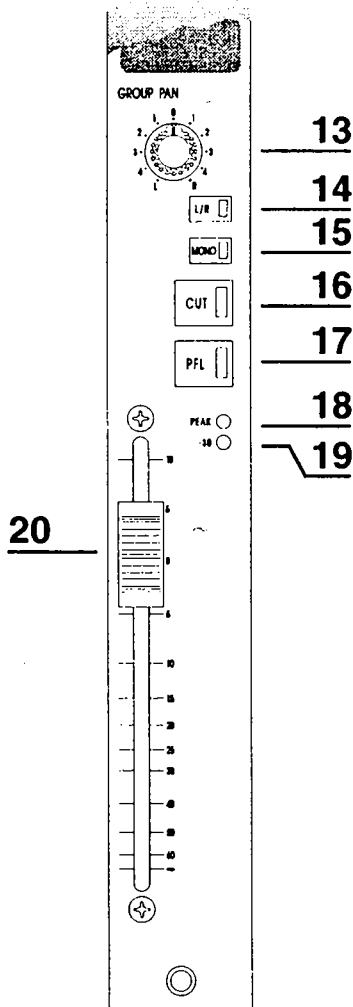
18 A red **PEAK** LED illuminates when the group signal exceeds +14dBu at pre-fade and post-fade points.

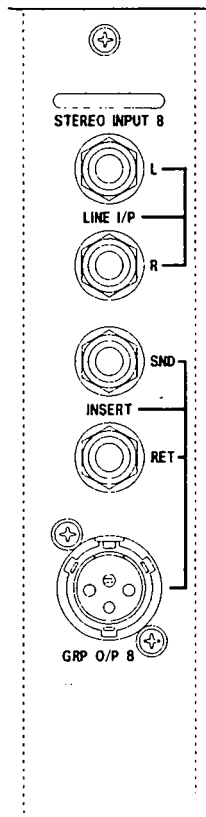
19 The green **-30dB** LED illuminates when a level of -30dBu or greater is present post fader.

20 The fader is a long-travel unit, with 10dB of gain at the top of its travel.

Jumper Options

Function	Options	Default
Stereo Input SOLO IN PLACE JMP1	Mute active/disabled	active





Connector Pinouts

Stereo Line Input - 3-Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Screen

Insert Send - 3 Pole Jack

Tip	Hot(signal)
Ring	Ground Sense
Sleeve	Ground (screen)

Insert Return - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground (screen)

Group Output - Male XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Input and Output Levels

STEREO INPUT LEFT & RIGHT (electronically balanced)

Sensitivity	+10dBu to -20dBu
Maximum input level	+30dBu
Input impedance	>10k Ω balanced

INSERT SEND (ground compensated)

Nominal level	-2dBu
Maximum output level	+20dBu into 2K Ω
Output impedance	<75 Ω

INSERT RETURN (electronically balanced)

Sensitivity	-2dBu
Maximum input level	+20dBu
Input impedance	>10k Ω balanced

GROUP OUTPUT (electronically balanced)

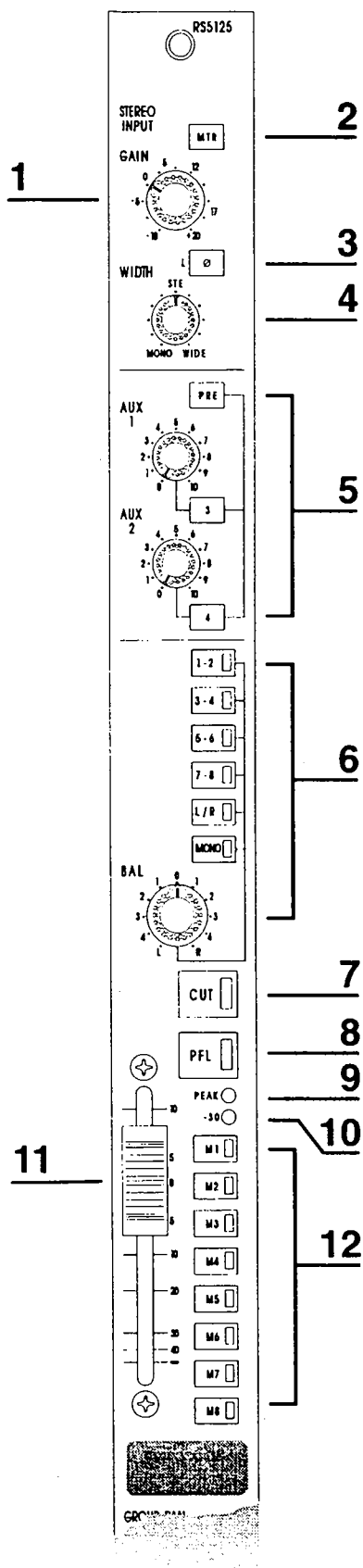
Nominal level	+4dBu
Maximum output level	+26dBu into 600 Ω
Output impedance	<75 Ω

VCA Group/Output Group/Stereo Input Module RS5125

Description

and Operation

Output Group / Stereo Input Module



Stereo Input

The Stereo Input section has been designed to offer a full-featured effects return capability, or to provide additional line level inputs, saving valuable input modules.

1 The input **GAIN** control allows the sensitivity of the balanced line level inputs to be adjusted from +10dB to -20dB.

2 The **MTR** switch selects the source for the 16-segment LED meter in the overbridge from either the post-fade post-CUT group (switch released) or the Stereo Input (switch pressed). When selected, both L and R signals are fed to the meter, and the highest level is displayed.

3 The **PHASE** of the left input can be reversed by the **(L)O** switch. This switch should normally be released.

4 A centre detented **WIDTH** control varies the width of the stereo image from mono (fully anticlockwise), through stereo at the centre detent, to phase-enhanced wide stereo (fully clockwise).

Auxiliary sends

5 There are two **AUX SEND** controls. These are normally sourced from a post-fade mono sum, but are switchable to a pre-fade, post-mute mono sum by the **PRE** switch. The **AUX 1** level control can be routed to Aux bus 3 by the **3** switch, and the **AUX 2** level control can be routed to Aux bus 4 by the **4** switch.

Routing Matrix.

6 The post-fade signal feeds the centre detented active **BAL** (balance) control, which has unity gain for both channels in the centre position. The outputs of this control feed the group **ROUTING SWITCHES** which route in pairs to groups 1-2, 3-4, 5-6, 7-8, and via the **L/R** switch to the stereo mix bus.

Pressing the **MONO** switch feeds a post-fade, pre-balance mono sum to the mono bus.

7 The illuminated **CUT** switch, in conjunction with the **8 MUTE** bus switches (12) and Solo-in-Place system control whether the Stereo Input is ON or muted. Pressing the **CUT** switch will always mute the stereo input.

8 The **PFL** switch allows the pre-CUT, pre-fade signal to be monitored. **PFL** feeds a mono sum signal to the PFL bus and changes the central monitoring over to listen to the selected Stereo Input without muting anything else.

9 A red **PEAK** LED illuminates when there is a level of +14dBu or greater present at two critical points: the output of line input amplifier and a point pre-fade, post CUT.

10 A green **-30dB** LED illuminates when a level of -30dBu or greater is present at the output of the line input amplifier.

These LEDs illuminate when the internal level of either the left or right channel exceeds the stated threshold levels.

- 11 The 60mm stereo input fader, has 10dB of gain at the top of its travel.

Muting

12 The 8 **MUTE** bus switches, in conjunction with the illuminated **CUT** switch (7) and Solo-in-Place system control whether the Stereo Input is ON or muted. When pressed, the LEDs in the selected **MUTE** switches glow, indicating readiness to accept a master mute. If the Stereo Input is muted via a master mute bus, the **CUT** switch flashes to indicate that a non-local mute is in operation. The stereo input is internally selectable to be SIP SAFE, ie, not muted by the SIP system.

Group Path

The Group summing amplifier is a low noise, balanced virtual earth design, feeding the insert point.

The insert is at a nominal level of -2dBu. Separate send and return jacks are provided; the send is ground compensated, and the return is electronically balanced.

13 The post-fade group signal feeds the passive **PAN** control which positions the signal in the **L/R** stereo mix if the **L/R** switch is pressed.

14 The **L/R** switch feeds the signal to the main Mix bus, subject to the position of the **PAN** control.

15 The feed to the mono bus is enabled by the **MONO** switch and is sourced pre the **PAN** control.

Group Status

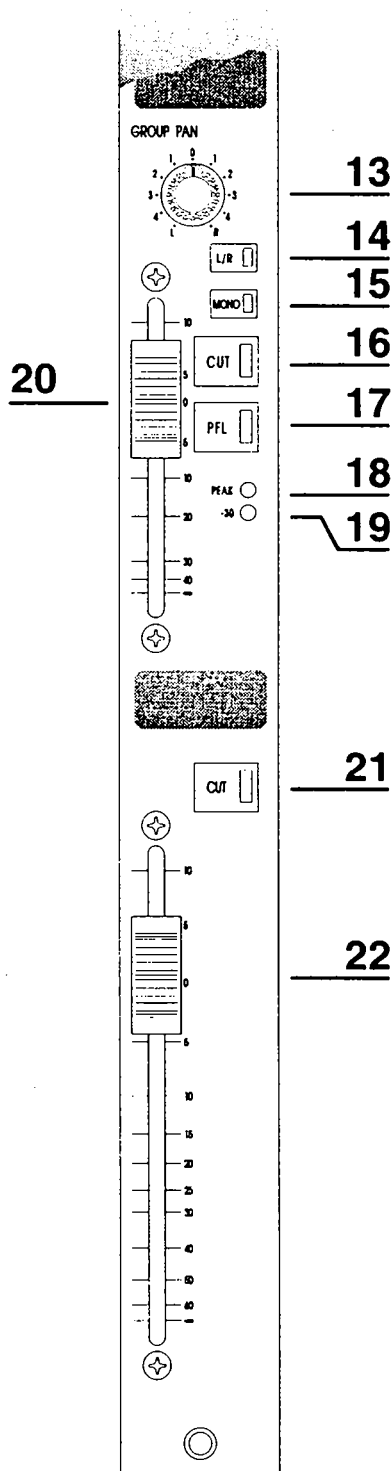
16 The balanced insert return jack feeds the **CUT** button which operates an electronic mute circuit.

17 The **PFL** switch allows the pre-CUT, pre-fade signal to be monitored. **PFL** feeds the group signal to the **PFL** bus and changes the central monitoring over to listen to the selected Group without muting anything else.

18 A red **PEAK** LED illuminates when the group signal exceeds +14dBu at pre-fade and post-fade points.

19 The green **-30dB** LED illuminates when a level of -30dBu or greater is present post fader.

20 The fader is a long-travel unit, with 10dB of gain at the top of its travel.



VCA Group

The VCA grouping system allows several channels to be placed under the control of a single VCA group fader, allowing the operator to change the level of that group of signals in the mix, while maintaining the relative levels of the channels in the group. Unlike audio subgrouping the channel signals are not routed out of the channel modules for grouping, thus greatly simplifying the signal path. Up to 8 VCA Groups may be created, controlling input channels only. Additionally there are two Grand Master Faders which can be assigned to any of the 8 groups, providing a further layer of control.

Channels are assigned to VCA groups using the thumbwheel switches on the channel modules. The switch has 9 positions:

- 1 - 8 select the VCA groups
- The '0' position isolates the channel from the VCA system, and the VCA circuitry is electronically bypassed.

21 The **CUT** switch mutes all channels in the VCA group, controlling the group mix in the same way as an audio subgroup. When active the **CUT** switch on the VCA Group lights continuously, and the **CUT** switches on the channels flash to show that a non-local mute is in operation.

22 The long-travel **VCA GROUP FADER** proportionately controls the level of the signals in the assigned channels.

Jumper Options

Function	Options	Default
Stereo Input SOLO IN PLACE JMP1	Mute active/disabled	active

Connector Pinouts

Stereo Line Input - 3-Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Screen

Insert Send - 3 Pole Jack

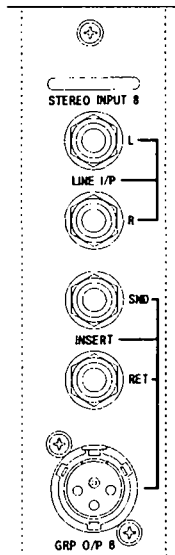
Tip	Hot(signal)
Ring	Ground Sense
Sleeve	Ground (screen)

Insert Return - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground (screen)

Group Output - Male XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)



Input and Output Levels

STEREO INPUT LEFT & RIGHT (electronically balanced)

Sensitivity	+10dBu to -20dBu
Maximum input level	+30dBu
Input impedance	>10k Ω balanced

INSERT SEND (ground compensated)

Nominal level	-2dBu
Maximum output level	+20dBu into 2K Ω
Output impedance	<75 Ω

INSERT RETURN (electronically balanced)

Sensitivity	-2dBu
Maximum input level	+20dBu
Input impedance	>10k Ω balanced

GROUP OUTPUT (electronically balanced)

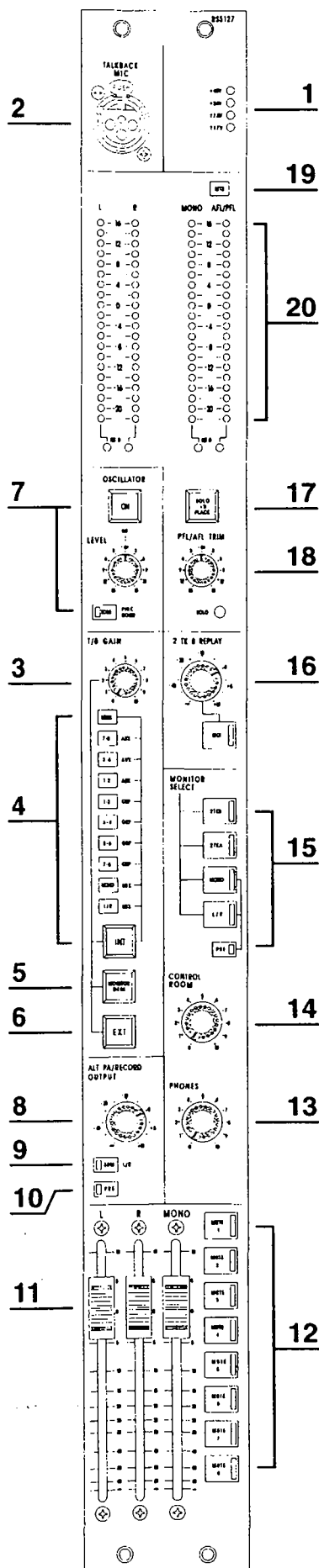
Nominal level	+4dBu
Maximum output level	+26dBu into 600 Ω
Output impedance	<75 Ω

Master Module RS5127

Description

and Operation

Master Module



Power Supply Monitor

1 LED monitoring of power supply voltages is by means of LEDs which show the presence of +48V Phantom power, +7.5V Logic supply, -7.5V Logic supply, +17V Audio supply and -17V Audio supply.

Talkback System

2 An XLR connector is provided to accept a talkback microphone on a gooseneck.

3 The level of the talkback microphone is set by the **TALKBACK GAIN** control. The scaling 0 - 10 corresponds to a gain range of +20dB to +55dB.

Internal Talkback

4 Internal talkback is initiated by the **INT** switch and can be routed to Groups (**GRP**) in pairs, Matrix outputs (**MTRX**), **L/R** and **MONO** Mix outputs, and **AUX** sends. Talk to Matrix and Aux switches are latching. Talk to Groups, Mix **L/R** and Mix **MONO** switches are momentary.

External Talkback

5 Talkback to **MONitor Desk** uses a proprietary Soundcraft interface, and is intended to link to a compatible Soundcraft monitor console via XLR connectors. Talkback is activated when the switch is pressed.

6 External talkback is bi-directional and enabled by the **EXT** switch. Balanced line in and line out are provided on XLRs on the rear panel, at a nominal level of +4dBu. When the external talkback input is activated (by pressing **EXT**) and feeding the monitors, the selected monitor signal is dimmed by 20dB.

Oscillator

The oscillator normally produces pink noise, but can be switched to produce sine waves at a fixed frequency of 1kHz. Internal jumpers enable the signal to be routed to Aux, Group and Mix buses, and is factory set to Mix. A rear panel XLR output is provided, and is active only when the oscillator is switched ON. The output is balanced at +4dBu nominal level.

7 The latching **ON** switch enables the oscillator and feeds the signal to the internally selected outputs and the rear panel output.

Pressing the **TONE** switch enables the sine wave output instead of pink noise. The **LEVEL** control sets the oscillator output level and is variable between +/-15dB.

Alt PA/Record Output

8 The rotary **FADER** controls the level to an additional electronically balanced stereo output which enables the pre or post fade output to be fed to, for example, an external tape machine. Pre-settable jumpers inside the module source the ALT PA from either the L&R MIX outputs, or from the MONO MIX output.

9 The default source for the Alt PA/Record output is post the Main Faders, but can be sourced pre fade by pressing the **PRE** switch.

10 The stereo output can be switched to mono by pressing the **(L-R) SUM** switch.

Mix Paths

11 The low noise **L, R** and **MONO** summing amplifiers feed the electronically balanced insert sends at a nominal level of +4dBu. Separate Insert send and return jacks are provided. The insert return amps are balanced, and feed the top of the three main Left, Right and Mono output **FADERS**. These have +10dB gain at the top of their travel. The post-fade signals feed the meters and bargraphs as well as the electronically balanced output buffers. The rear panel XLRs are at a nominal level of +4dBu. Transformer output balancing is available to special order.

Mute System

12 The **MUTE MASTERS 1-8** will mute any channel assigned to the group by selecting the corresponding channel mute switches.

Channels and Stereo Inputs may be assigned to any combination of the eight master mute busses. When a Channel/Stereo Input is assigned to a mute bus, it is muted when the corresponding **MUTE MASTER** is pressed. The **MUTE MASTER** switch lights steadily, and the Channel/Stereo **CUT** switch flashes to indicate a non-local mute is in operation. The channel/stereo input may be removed from the mute bus system by de-selecting the appropriate bus switch.

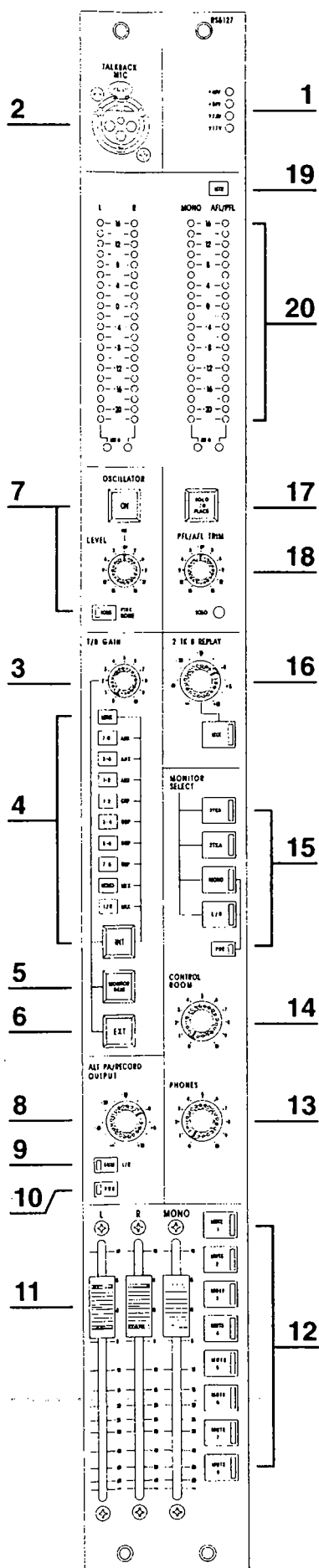
Output Control

Left and Right monitor outputs are provided to drive control room power amps/loudspeakers and are fed from a choice of sources determined by the Monitor Select switches. The chosen source also feeds the headphones output.

13 Headphones connect via a jack socket on the left hand utility panel. This is paralleled with a jack socket on the rear connector panel. The **HEADPHONE LEVEL** control has a gain of +22dB.

14 The Control Room level control has a gain of +10dB at maximum.

The EXT Talkback feed into the console is summed into the monitor feeds pre the level controls, and when talkback is activated, dims the selected signal to the Monitor Outputs and Headphones by 20dB.



Monitor Select

15 The monitor system allows selection of the following sources:

- (MIX) L/R routes the mix signal in stereo to the monitors (L&R speakers and phones outputs).
- (MIX) MONO routes Mono mix to the monitors. It is split to equally feed the L&R speakers and phones outputs.

The **PRE** switch allows monitoring of the mix signals to be sourced pre the L/R and MONO mix faders.

- 2TKA (2 track return A). This has balanced inputs and internal switching for +4dBu or -10dBV nominal level.
- 2TKB (2 track return B). This has balanced inputs and internal switching for +4dBu or -10dBV nominal level.

All 4 source switches are mechanically latching. More than one source can be selected, and all selected sources sum together.

2-Track B Replay

16 The **2TKB REPLAY** controls allow the signal the from 2 track return B to be fed directly to the Mix outputs. The (2 TK B REPLAY) **MIX** switch routes the signal directly to Mix L and R outputs (an internal jumper allows a mono sum to go to the MONO bus), and the **LEVEL** control sets the level, which adds to the post-fade mix signal.

PFL, AFL and SOLO

There are 2 modes of operation: **PFL** or **AFL** (*non-destructive solo*), and **SOLO IN PLACE** (*destructive solo*).

17 The **SOLO IN PLACE** enables SIP monitoring and, because this cuts all other signals except the selected channel, is potentially catastrophic if caused accidentally. SIP can be permanently disabled by removing an internal jumper - refer to the Vienna Technical Manual for details of this modification. In this case only PFL and AFL are available.

A balanced +4dBu PFL/AFL output is provided on an XLR on the rear panel to allow for linking to another console.

SIP not Selected

Pressing **SOLO** on any channel, or PFL/AFL on any other module switches the monitoring (control-room output or headphones) to listen to the pre-or post-fade signal from the module. The SOLO, PFL or AFL switches on the modules light steadily, and the red **SOLO** LED also lights steadily to indicate an active PFL/AFL.

SOLO IN PLACE Selected

When SIP is selected by pressing SOLO IN PLACE, the switch glows steadily to indicate that it is armed and ready to receive a SIP.

SIP Selected: Inputs

Pressing **SOLO** on any input mutes all other inputs except Stereo inputs, unless they are selected to be SOLO SAFE. On the muted inputs, the **CUT** switches flash. On the SOLO'd input, the **SOLO** switch lights steadily. On the master, the **SOLO LED** illuminates to indicate an active solo.

Pressing **SOLO** on an input selected SOLO SAFE does not cut the other channels. Monitoring is switched over to listen to the stereo, after-fade signal from the SOLO'd channel. The **SOLO** switch lights steadily and the **SOLO LED** on the master lights to indicate an active solo.

SIP Selected: Aux & Matrix Masters, Stereo Returns & Groups

Pressing **AFL** on an auxiliary or matrix master, or **PFL** on a stereo return switches the monitoring over to the PFL or AFL signal, and the PFL or AFL switches light steadily. The **SOLO-IN-PLACE** switch and the **SOLO LED** on the master module illuminate.

PFL / AFL Trim and Metering.

18 The level of the PFL and AFL signals can be adjusted by the centre detented **PFL/AFL TRIM** control, which has a range of +/-15dB.

19,20 There are four 20-segment LED bargraphs (Left, Right, Mono and PFL/AFL). The **L & R** meters normally monitor the selection of the Monitor Select switches. The **MONO** meter only monitors the Mono Mix output. The **PFL/AFL** meter monitors the PFL or AFL signal. When the AFL signal is in stereo, the higher of the Left or Right signals is displayed. Two mechanical VU meters in the overbridge normally monitor the Mix Left and Right outputs. Pressing **MTR** (19) changes them to follow the Mono and PFL/AFL signals. In AFL, a sum of the L&R signals is metered.

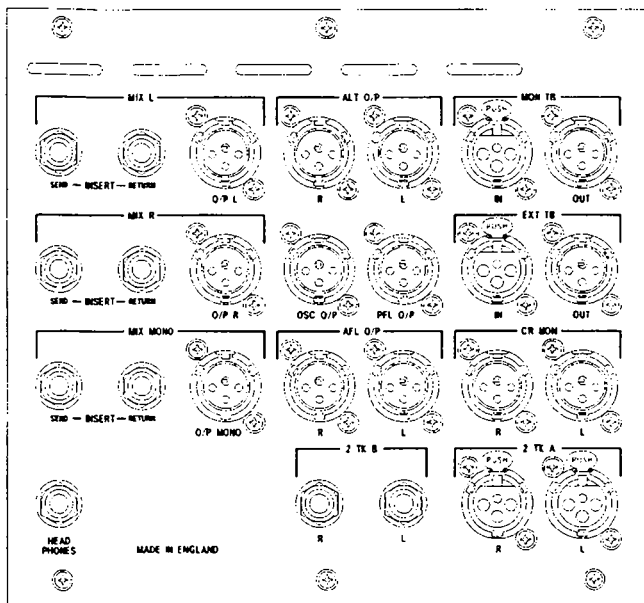
The 20 segment PFL/AFL meter reads the PFL or AFL signal before the trim control so that a true level is displayed. Where the AFL signal is in stereo, the higher of the Left or Right signals is displayed. Calibration trimmers are accessible through small holes below each LED column for adjustment with a suitable miniature screwdriver.

Expansion Input

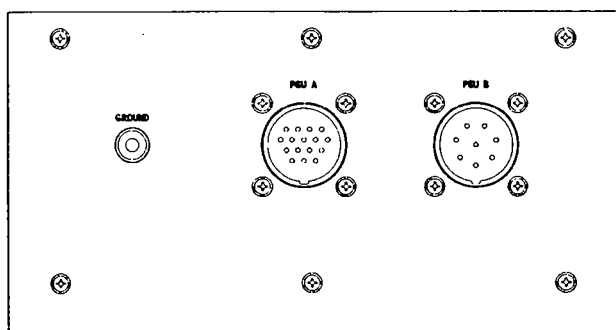
A balanced and buffered +4dBu input for a client console provides the necessary interface to the Stereo and Mono Mix, PFL and AFL busses. The input is via an optional multiway connector on the rear of the console.

Rear Connector Panels

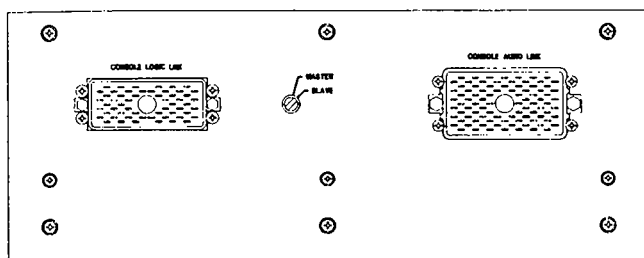
Audio Connector Panel



Power Supply Connector Panel



Optional Console Linking Connector Panel



Connector Pinouts

Mix, Alt Outputs - Male XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Mix Insert Send L & R, Mono - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground(screen)

Mix Insert Return L & R, Mono - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground(screen)

2 TRK A Return - Female XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

2 TRK B Return - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground(screen)

PFL, AFL & Oscillator Output - Male XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Main C/Room Output - Male XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Headphones - 3 Pole Jack

Tip	Left signal
Ring	Right signal
Sleeve	Ground(screen)

Note: The headphones socket is duplicated under the front armrest on VCA consoles, and by the master faders on non-VCA consoles.

Ext, Monitor Talkback Input - Female XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Ext, Monitor Talkback Output - Male XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Jumper Options

Left Hand PCB:

Function	Options	Default
Oscillator to Aux Busses		off
J1	IN for on	
J2	IN for off	
Oscillator to Group Busses		off
J3, 4	IN for on	
J5, 6	IN for off	
Oscillator to Mono Bus		on
J7, 8	IN for on	
J9, 10	IN for off	
Alternate PA Output Source		stereo
J12, J14, J16, J18	stereo	
J13, J15, J17, J19	mono	
Monitor Left Meter Response		peak
J20	ON for average response	
J21	ON for peak response	

Right Hand PCB:

2-Track B Replay to Mono		off
JMP1	on	
JMP2	off	
Link Option Bypass		bypass
JMP3, JMP9	on for link bypass remove if link option is fitted	
SIP Enable		enable
JMP4	ON for SIP enabled	
PFL/AFL Meter Response		peak
JMP5, JMP7	ON for average response	
JMP6, JMP8	ON for peak response	

Input and Output Levels

MIX OUTPUT LEFT, RIGHT and MONO

MIX INSERT SENDS LEFT, RIGHT and MONO

ALT LEFT and RIGHT OUTPUTS

CONTROL ROOM OUTPUTS LEFT and RIGHT

PFL, AFL OUTPUTS LEFT and RIGHT

EXTERNAL and MONITOR TB OUTPUT

OSCILLATOR OUTPUT (electronically balanced)

Nominal level	+4dBu
Maximum input level	+26dBu into 600Ω
Output impedance	<75Ω

INSERT RETURN LEFT and RIGHT (electronically balanced)

Sensitivity	+4dBu
Maximum input level	+26dBu
Input impedance	>10KΩ balanced

2-TRACK INPUTS A and B (electronically balanced)

Sensitivity	+4dBu/-10dBV (switched)
Maximum input level	+30dBu
Output impedance	>10K Ω balanced

EXTERNAL TB INPUT (electronically balanced)

Sensitivity	+4dBu
Maximum input level	+30dBu
Input impedance	>10K Ω balanced

HEADPHONES OUTPUT (unbalanced)

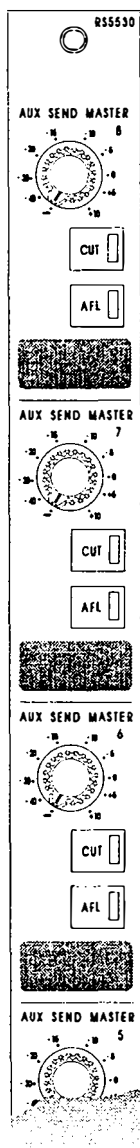
Nominal level	+4dBu
Maximum output level	+20dBu into 600 Ω 0dBu into 8 Ω
Output impedance	50 Ω

Aux Master Module RS5530

Description

and Operation

Aux Master Module RS5530



1

2

3

The Aux Master module has 8 identical sections and therefore only one will be described.

Level Control

1 Each Aux Send has its own master **LEVEL** control which has a maximum gain of +10dB at full clockwise rotation. The balanced output buffers give a nominal output level of +4dBu at the rear panel connectors.

Status

2 The illuminated **CUT** switch mutes the output when pressed.

3 The **AFL** switch allows monitoring of the pre-cut, post-insert Aux output on the Control Room Monitors, Headphones or AFL/PFL bargraph meter.

Output

The output signal is electronically balanced at a nominal level of +4dBu. The output XLRs are located on the bottom of the Output Group rear connector panel.

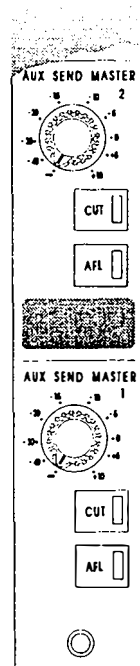
Expansion Input

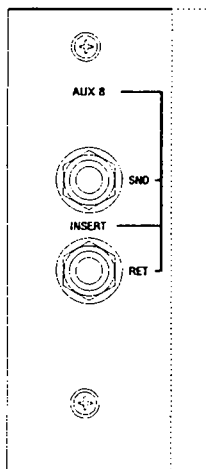
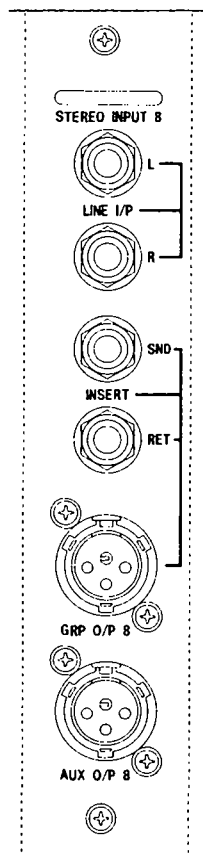
A balanced and buffered +4dBu input for a client console provides the necessary interface to the ground compensated Aux busses. The input is via an optional multiway connector on the rear of the console.

Insert Point

Each Aux insert point is at a nominal level of -2dBu. Separate Send and Return jacks are provided. The Send is ground-compensated and the Return is electronically balanced.

The Send and Return jacks are located below the Aux output XLRs.





Connector Pinouts

Aux Output - Male XLR

Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

Aux Insert Send - 3 Pole Jack

Tip	Hot(signal)
Ring	Ground Sense
Sleeve	Ground(Screen)

Aux Insert Return - 3 Pole Jack

Tip	Hot (in phase signal)
Ring	Cold (out of phase signal)
Sleeve	Ground

Input & Output Levels

INSERT SEND (ground compensated)

Nominal level	-2dBu
Maximum output level	+20dBu into 2k Ω
Output impedance	<75 Ω

INSERT RETURN (electronically balanced)

Sensitivity	-2dBu
Maximum input level	+20dBu
Input impedance	>10k Ω balanced

AUX OUTPUT (electronically balanced)

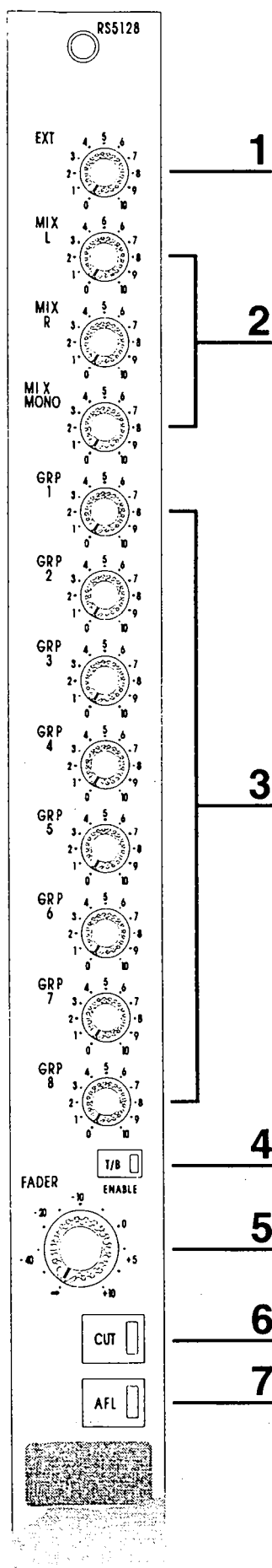
Nominal level	+4dBu
Maximum output level	+26dBu into 600 Ω
Output impedance	<75 Ω

Dual Matrix Output Module RS5128

Description

and Operation

Dual Matrix Output Module



This module allows the creation of composite mixes of an External input, the Group and main mix L, R & MONO output signals. The module comprises two independent, but functionally identical sections which may be fitted on the far right hand side of the console where spare module spaces are available.

External Receive

1 There is an EXTERNAL (**EXT**) receive level control for a balanced, line level external input. The input has internal jumpers to select +4dBu/-10dBV nominal input level.

Mix Receive

2 Three controls set the level of the main post-fade Mix signals **L**, **R**, and **MONO**.

Group Receive

3 Eight controls set the level of the post-fade **GROUP** signals alternating grey (even groups) and black (odd groups).

Talkback

4 Talkback to the Matrix output is enabled by the **T/B (ENABLE)** switch.

Matrix Fader

5 The matrix output fader has +10dB gain at maximum clockwise rotation, and sets the level at the electronically balanced output. The output connector is a male XLR on the rear panel, providing a nominal +4dBu output.

Matrix Status

6 The **CUT** switch mutes the post-fade signal when pressed.

7 The **AFL** switch allows post-fade, pre-mute monitoring of the output signal on the Control Room monitors, Headphones or AFL/PFL bargraph meter.

Jumper Options

Function	Options	Default
External Input A sensitivity		+4dBu
JMP1	+4dBu	
JMP2	-10dBV	
External Input B Sensitivity		+4dBu
JMP3	+4dBu	
JMP4	-10dBV	

Note: Only one of the above jumpers should be fitted at one time.

Input and Output Levels

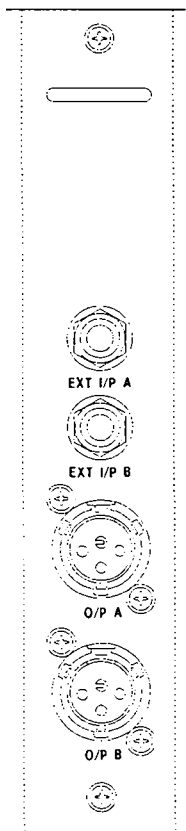
EXTERNAL INPUT (electronically balanced)

Sensitivity	+4dBu/-10dBV (jumper selectable)
Maximum input level	+30dBu
Input impedance	>10K Ω balanced

MATRIX OUTPUT (electronically balanced)

Nominal level	+4dBu
Maximum input level	+26dBu into 600 Ω
Output impedance	<75 Ω balanced

Rear Connector Panel



Connector Pinouts

External Inputs - 3 Pole Jack

Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground (screen)

Matrix Output - Male XLR

Pin 1	Screen
Pin 2	Hot (in phase signal)
Pin 3	Cold (out of phase signal)

Console Linking

Provision is included in the Vienna II console to expand the capability of the console by linking all essential audio and control functions with a second Vienna console or a Soundcraft Europa console.

Interfacing

Multiway connectors are optionally fitted at the rear of the console. One connector carries bi-directional, opto-isolated control signals, while the other carries fully balanced and buffered audio signals.

One console must be assigned as a Master, and the other as a Client, and a recessed switch on the interface connector panel is provided to select the appropriate setting for each console.

Details of the interface connectors are given in the Vienna II Technical Manual.

See page 50 for rear panel layout.

Appendices

Specification Notes

Dimensions

Configurations

Warranty

Glossary

SPECIFICATION NOTES AND CONDITIONS

A The console has a nominal output level of +4dBu: all input sensitivities are relative to this: i.e. with line input gain set to '0', an input of 0dBu, will give an output of +4dBu at any group or mix output and, a sensitivity of +4dBu gives unity gain from input to output.

B Noise measurements are taken with 22Hz-22kHz bandwidth, average reading response.

C Distortion measurements are made with an input of +20dBu (line inputs at unity gain) giving an output of +20dBu. The analyser reads THD+N with an average response, over a 10Hz-30kHz bandwidth.

D Frequency response and E.Q. measurements are made with an input of 0dBu to line inputs at unity gain, outputs are quoted relative to 0dBu.

E Crosstalk and rejection measurements are made with an input level of +20dBu (line inputs at unity gain) giving an output of +20dBu on the active signal path. The ratio quoted is relative to +20dBu output.

F Gain tolerance +/-1.5dB or 10% of indicated value, which ever is the greater.

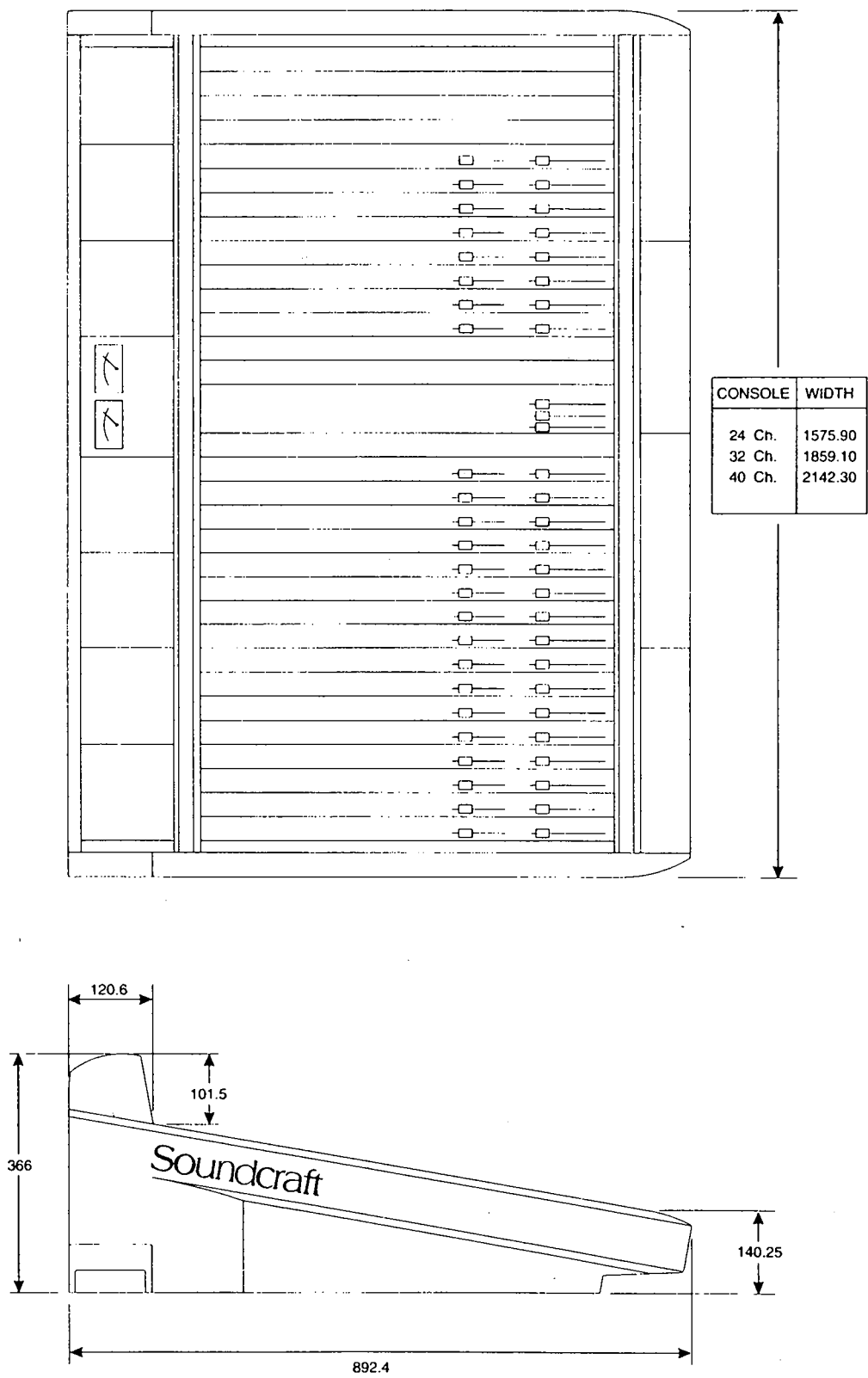
G All crosstalk and rejection figures stated with 16 channels routed to the measured output, where applicable.

H Mix noise figures are stated in two ways:

- Bus residual noise: Noise measured at the output with faders at unity and no channels routed.
- Mix bus noise: Noise measured at the output with 36 channels routed, faders down.

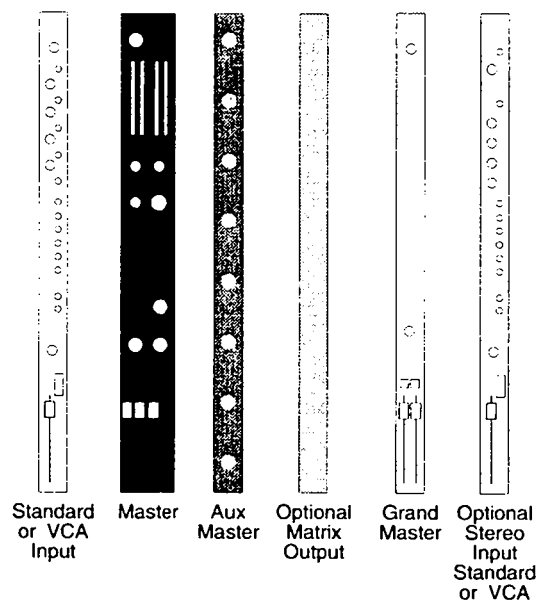
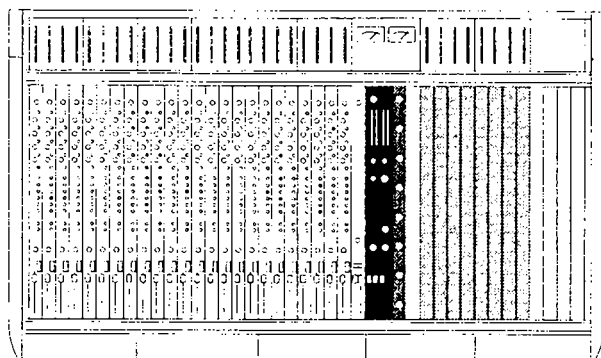
Dimensions

Vienna Outline Dimensions

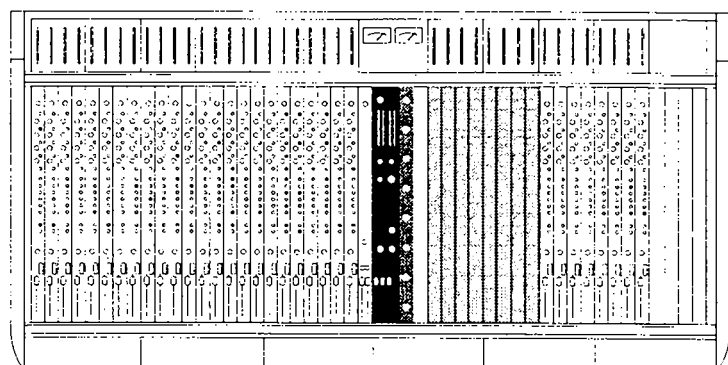


Configurations

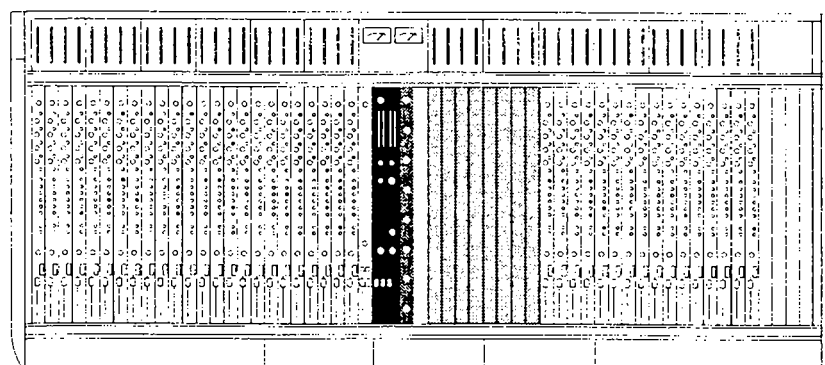
24 Channel Console



32 Channel Console



40 Channel Console



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 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.

Glossary

Auxiliary Send	an output from the console comprising a mix of signals from channels and groups derived independently of the main stereo group mixes. Typically the feeds to the mix are implemented on rotary level controls.
Balance	the relative levels of the left and right channels of a stereo signal.
Clipping	the onset of severe distortion in the signal path, usually caused by the peak signal voltage being limited by the circuit's power supply voltage.
CR (Control Room) Monitors	loudspeakers used by the operator (engineer) in the control room to listen to the mix.
dB (decibel)	a ratio of two voltages or signal levels, expressed by the equation $dB=20\log_{10}(V1/V2)$. Adding the suffix 'u' denotes the ratio is relative to 0.775V RMS.
DI(Direct Injection)	the practice of connecting an electronic musical instrument directly to the input of the mixing console, rather than to an amplifier and loudspeaker which is covered by a microphone feeding the console.
Equaliser	a device that allows the boosting or cutting of selected bands of frequencies in the signal path.
Foldback	a feed sent back to the artistes via loudspeakers or headphones to enable them to monitor the sounds they are producing.
Frequency Response	the variation in gain of a device with frequency.
(sub) Group	an output into which a group of signals can be mixed.
Headroom	the available signal range above the nominal level before clipping occurs.
Highpass Filter	a filter that rejects low frequencies.
Line Level Signals	at a nominal level of -10dBV to +6dBu, coming from a low impedance source.
Noise Gate	an electronic switch which only passes signals exceeding a set threshold level.
Pan (pot)	abbreviation of 'panorama': controls levels sent to left and right outputs.
Patchbay	a connection panel providing access to most input/output signals on the console, allowing the operator to redirect or rearrange internal and external connections using flexible patch cords.
Peaking	an equaliser response curve affecting only a band of frequencies i.e. based on a bandpass response.
PFL (Pre-fade Listen)	a function that allows the operator to monitor the pre-fade signal in a channel independently of the main mix.
Rolloff	a fall in gain at the extremes of the frequency response.
Shelving	an equaliser response affecting all frequencies above or below the break frequency i.e. a highpass or lowpass derived response.
Spill	acoustic interference from other sources.

Talkback	the operator speaking to the artistes or to tape via the auxiliary or group outputs.
Transient	a momentary rise in the signal level.
VCA	(Voltage Controlled Amplifier) a device which acts as a variable audio attenuator controlled by an external d.c. voltage.

