

USER GUIDE

Soundcraft

Vienna
.....

Introduction to Vienna

The Vienna 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 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 16, 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 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 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.

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

Installation

Connectors

Installation

Vienna 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 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. One CPS550 or CPS550-B unit and one CPS650 or CPS650-B unit are required for the 16, 24 and 32 channel consoles, while the 40 channel console requires one CPS550 or CPS550-B and one CPS750 or CPS750-B. Different configurations of power socket are used for each supply to prevent incorrect connection.

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.

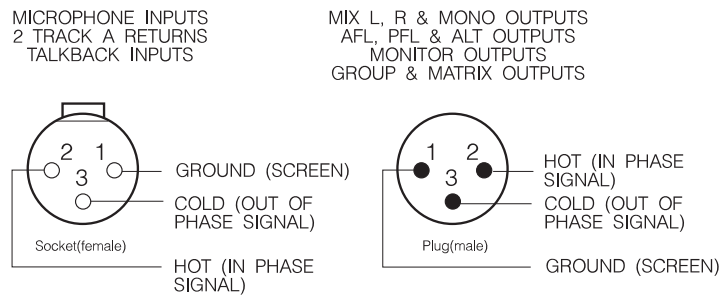
C Avoid locating mains distribution boxes near audio equipment, especially tape recorders, which are very sensitive to electro- magnetic fields.

D Where possible ensure that all audio cable screens and signal earths are connected to ground only at their source.

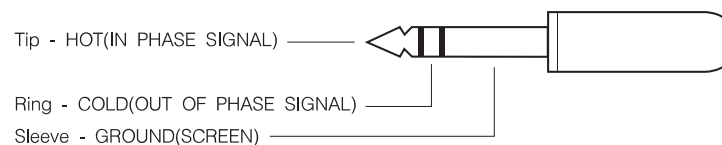
Connections

Wiring conventions

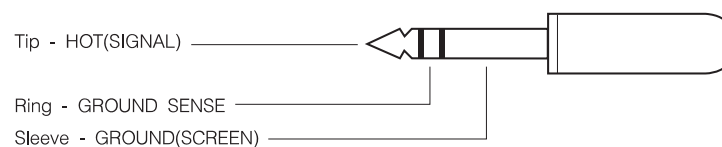
The standard Vienna console uses two different types of audio connector, 3 pin XLR (top diagram) and 1/4" three pole ('A' gauge or stereo) jacks. The latter are used in several configurations, as shown below. Two EDAC multiway connectors are included for linking to other Vienna or Europa consoles and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



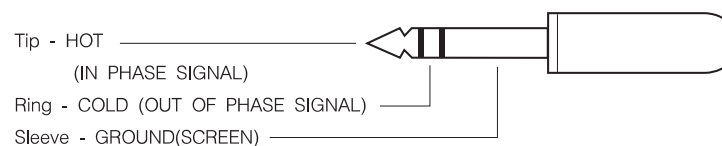
1/4" 'A' Gauge Stereo Jack Plug used as balanced input:
line inputs, 2 Track B returns, insert returns



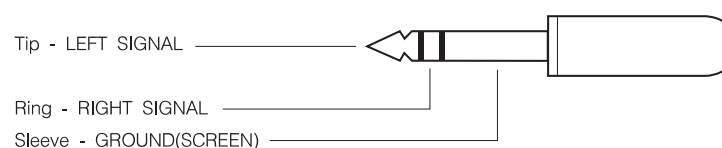
1/4" 'A' Gauge Stereo Jack Plug used as ground compensated output:
Input & Group insert sends



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



Module Block Diagrams

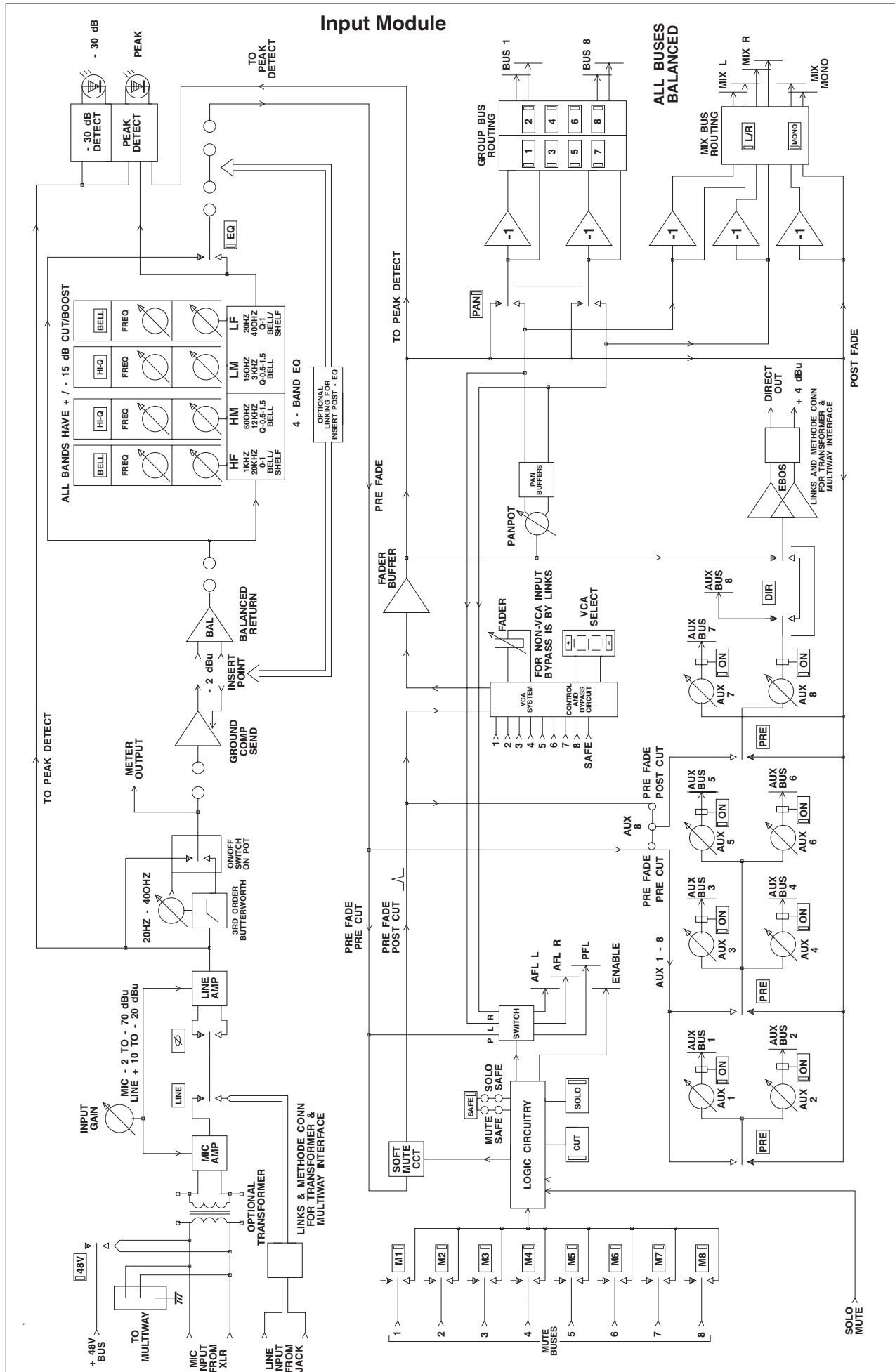
Input Module

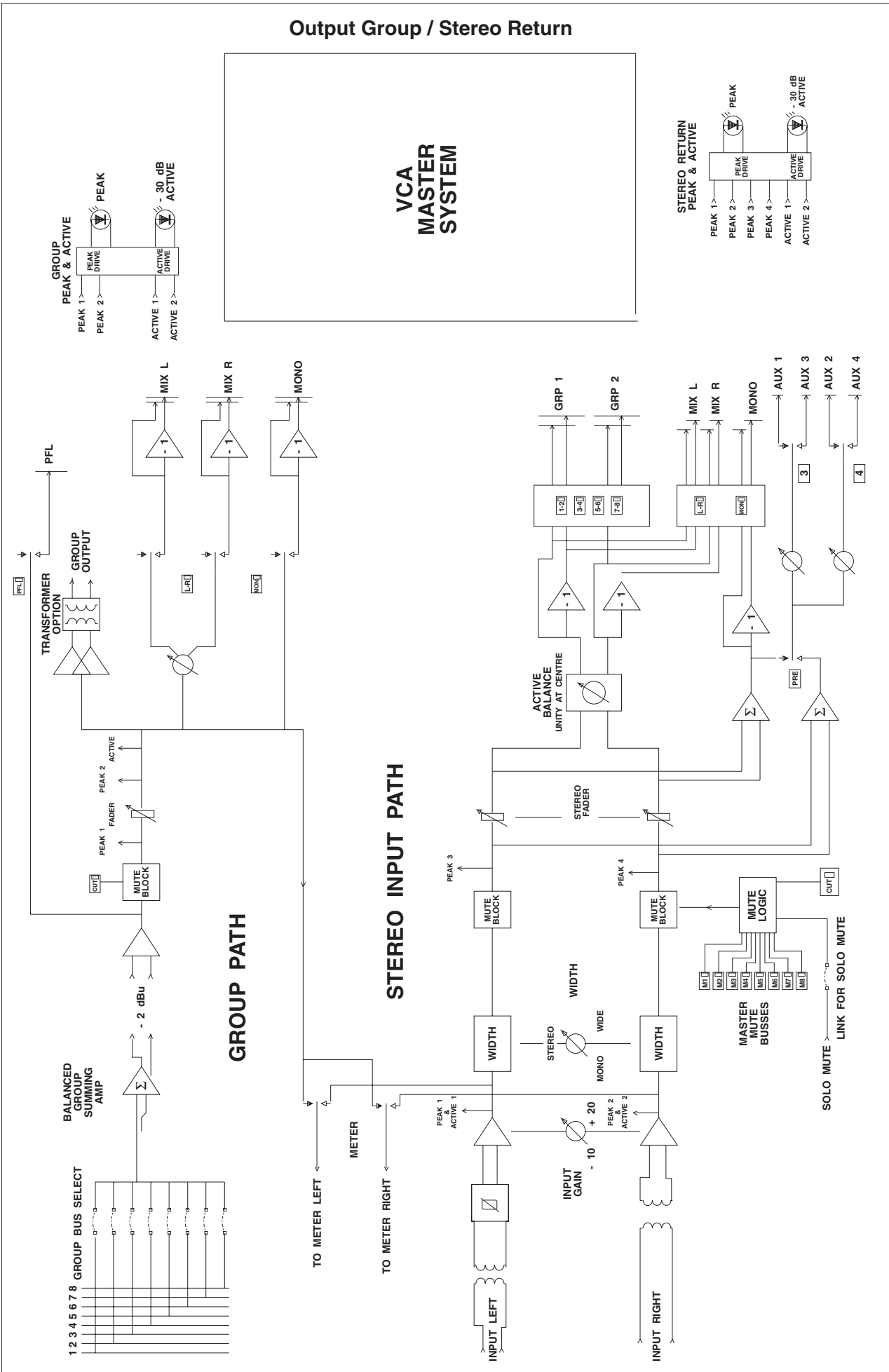
Output Group / Stereo Return Module

Master Module

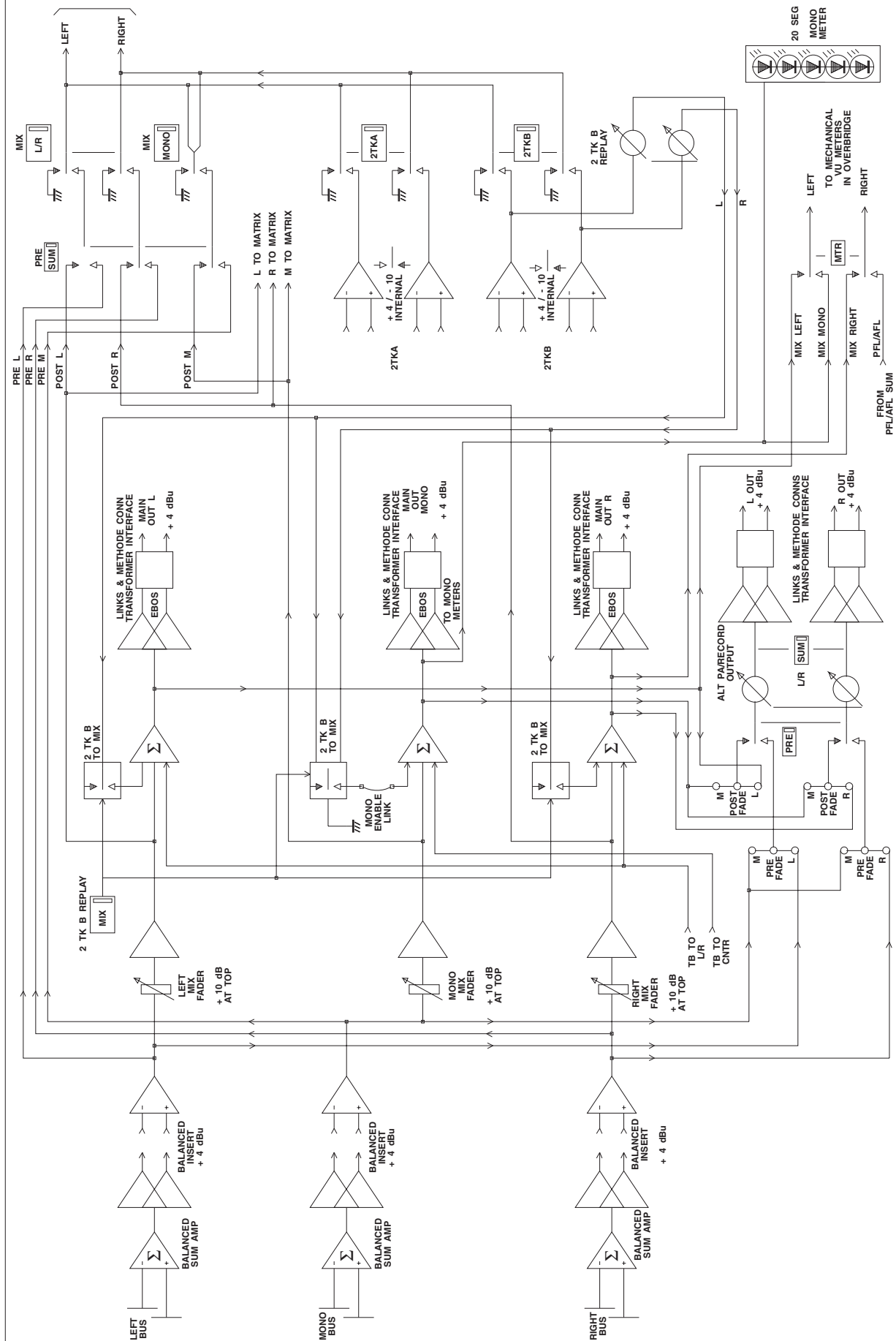
Aux Master Module

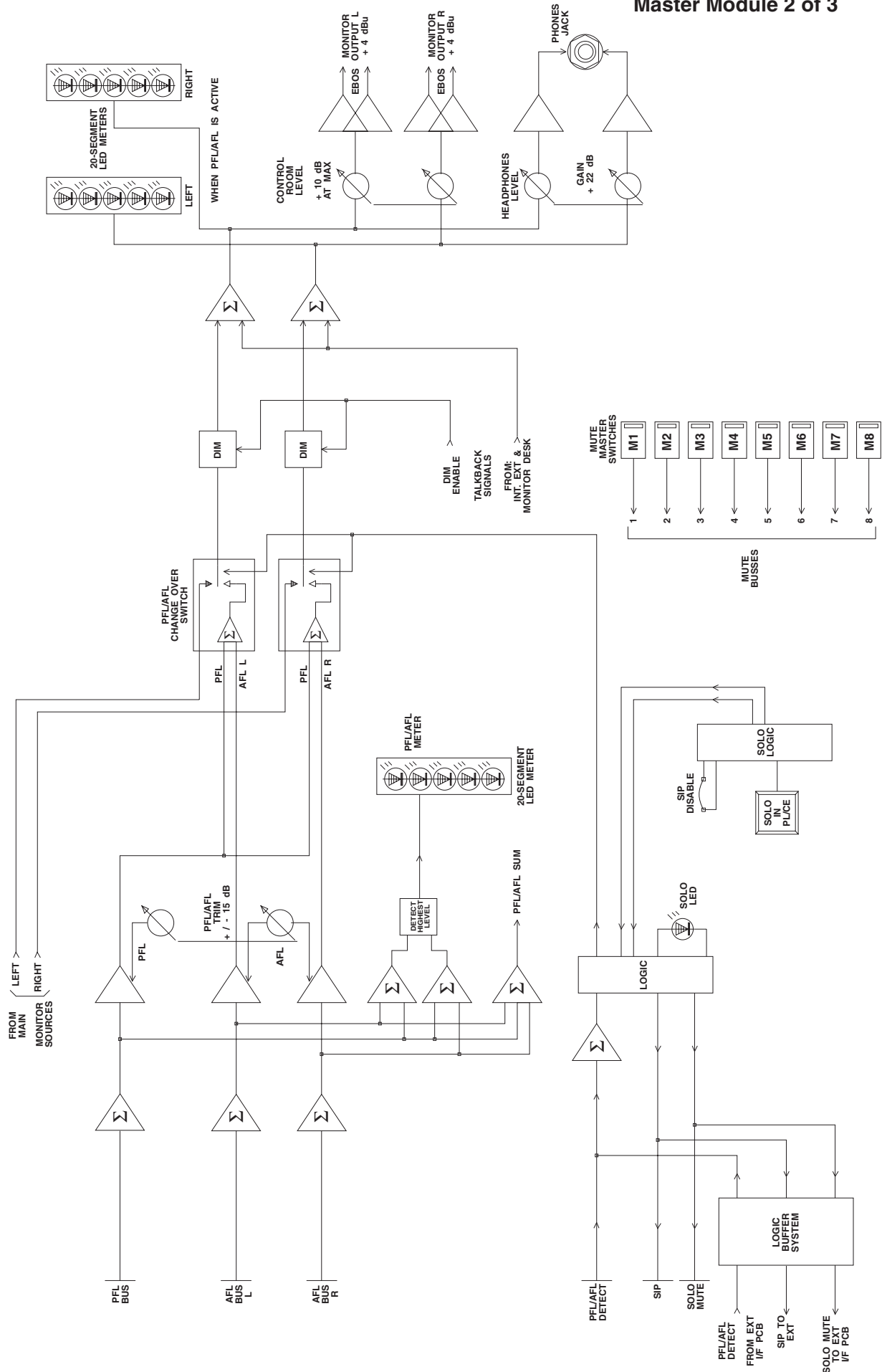
Matrix Output Module



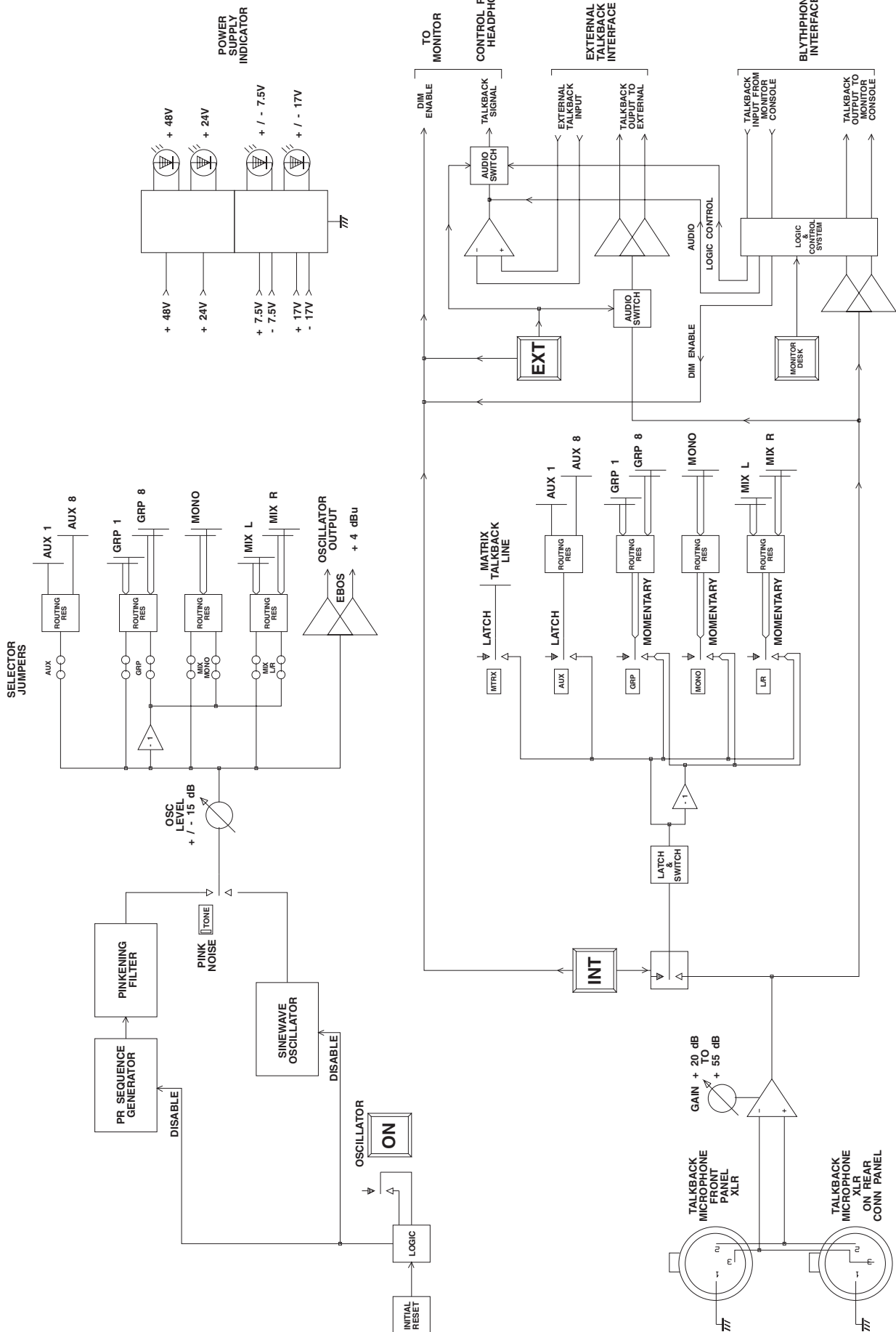


Master Module 1 of 3

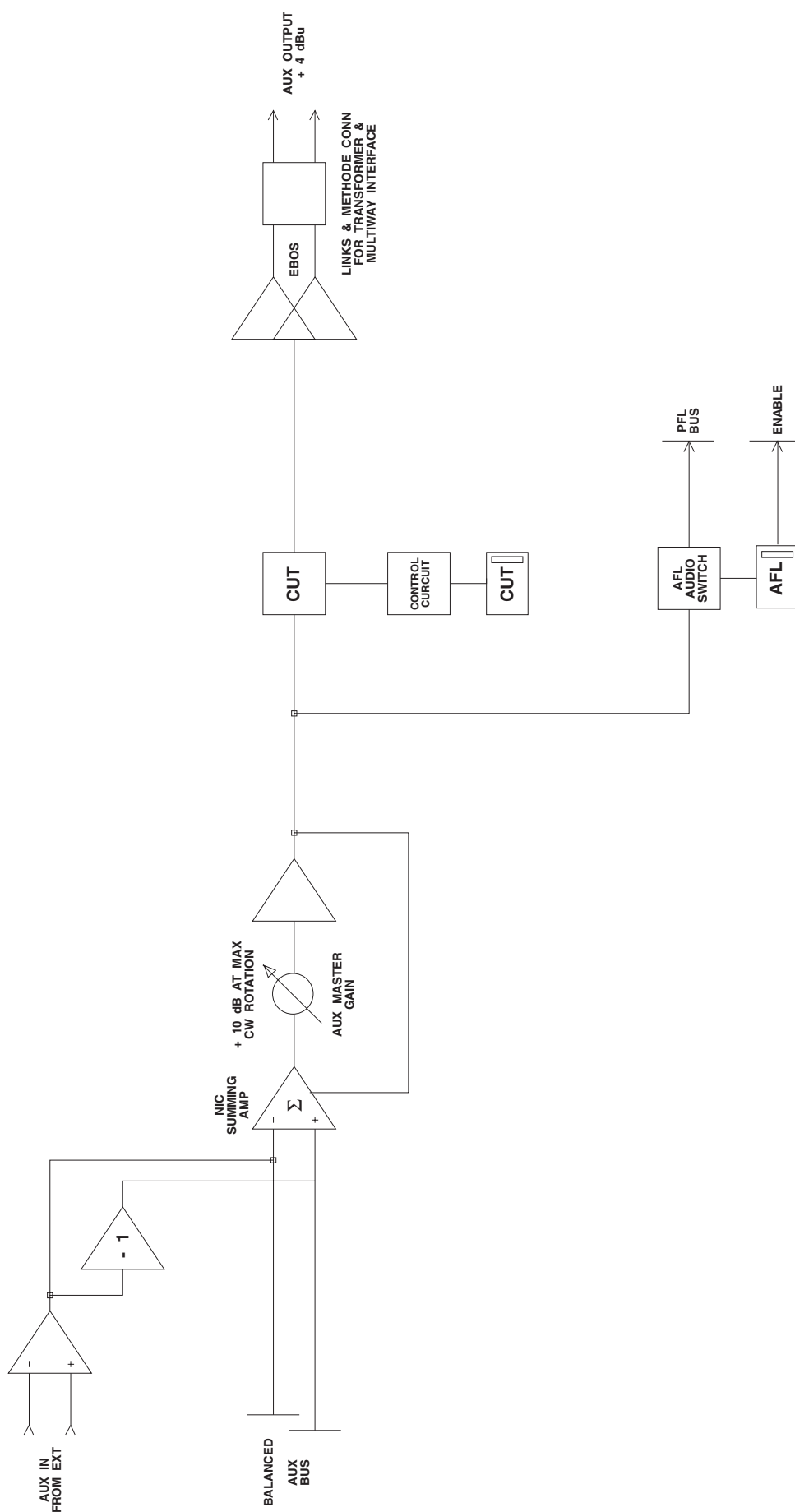


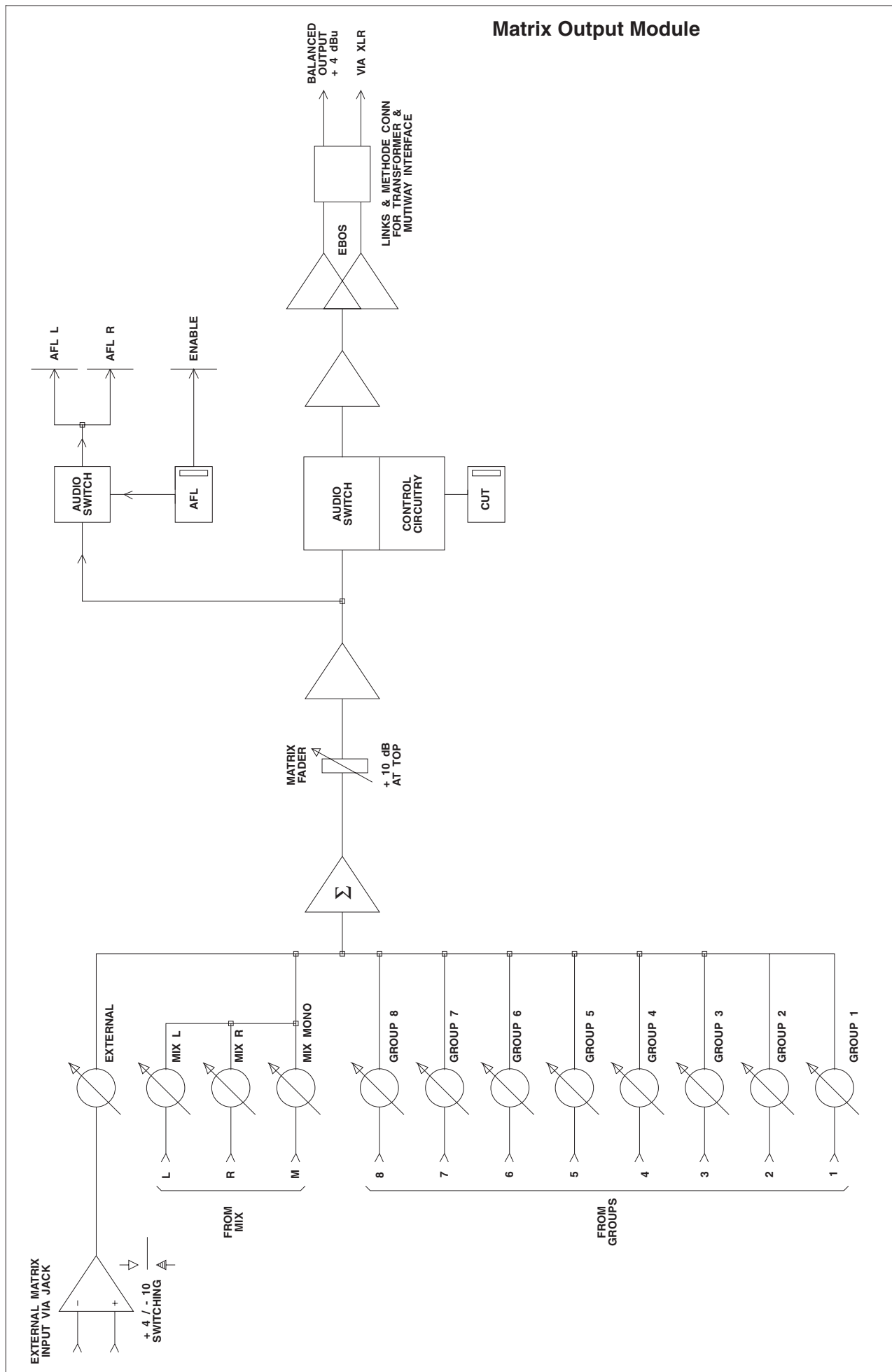


Master Module 3 of 3



Aux Master Module





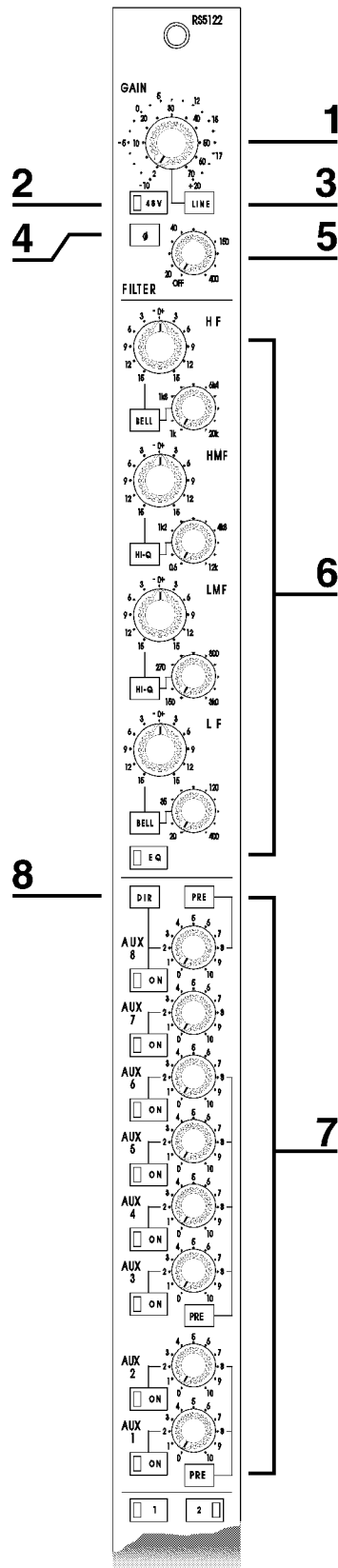
Standard Input Module RS5122

VCA Input Module RS5123

Description

and Operation

Input Modules RS5122/RS5123



Input Stage

1 The input stage has mic and line inputs, sharing a common **GAIN** control with a sensitivity range of -2dBu to -70dBu on the Mic input, and +10dBu to -20dBu on the Line input.

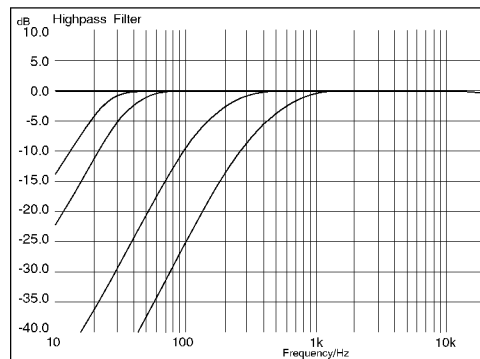
2 The **48V** switch enables 48V phantom power to be fed to the mic input. Modules may be optionally fitted with transformer coupling - refer to your dealer for suitable transformers.

3 The Line input is selected by the **LINE** switch.

4 The **Phase Ø** 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.

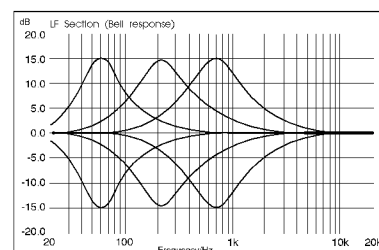
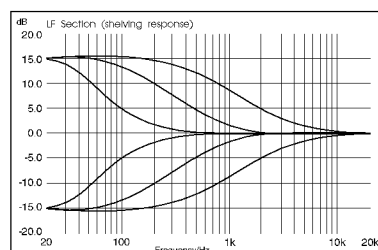
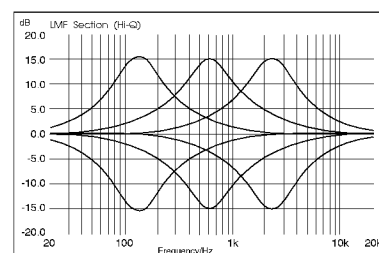
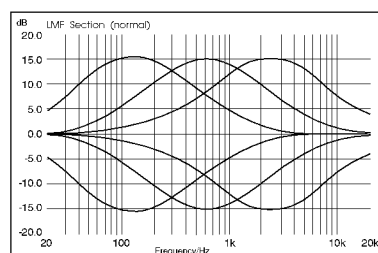
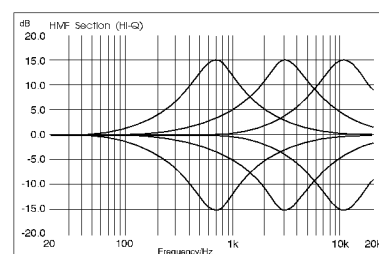
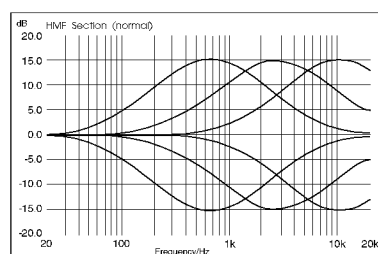
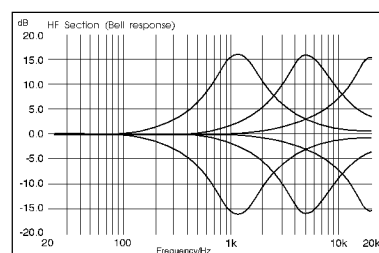
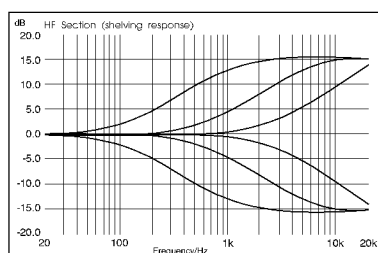
The **HF section** has a 20:1 frequency range ratio covering 1kHz to 20kHz. The Q is fixed at about 1. Cut and boost is by a centre detented control. The response is normally shelving, but can be switched to peak/dip by the **BELL** switch.

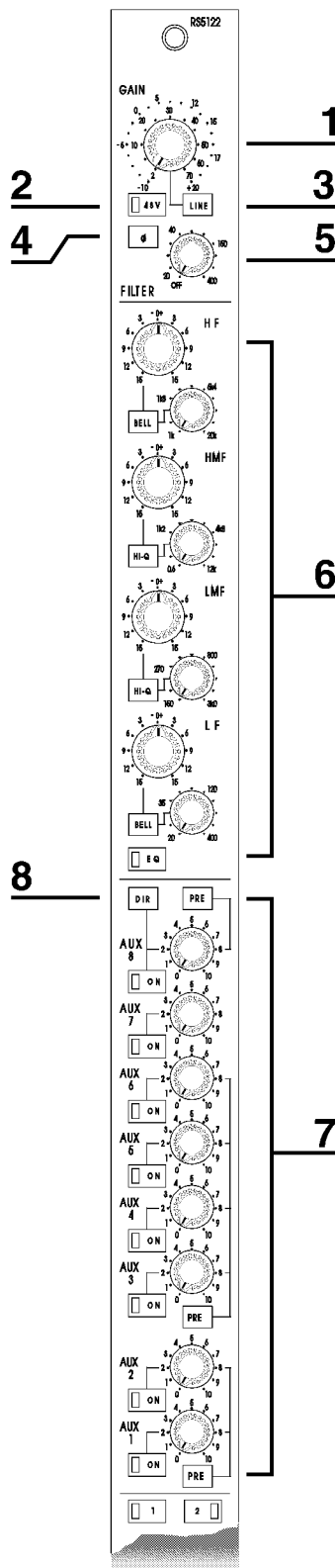
The **HMF section** offers a 20:1 frequency range ratio covering 600Hz to 12kHz. The Q is normally 0.5, but depressing the **HI-Q** switch gives a value of 1.5. Cut and boost is by a centre detented control.

The **LMF section** offers a 20:1 frequency range ratio covering 150Hz to 3kHz. The Q is normally 0.5, but depressing the **HI-Q** switch gives a value of 1.5. 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. 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 an **ON** switch. The aux busses are ground compensated for improved noise immunity.

Aux 7 is always post-fade. Three **PRE** switches allow pre-fade sourcing for Auxes 1 & 2, 3 to 6 and 8. The pre-fade signal on Auxes 1-6 is pre-cut, while that available on Aux 8 can be link selected as pre- or post-cut via PCB links.

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.

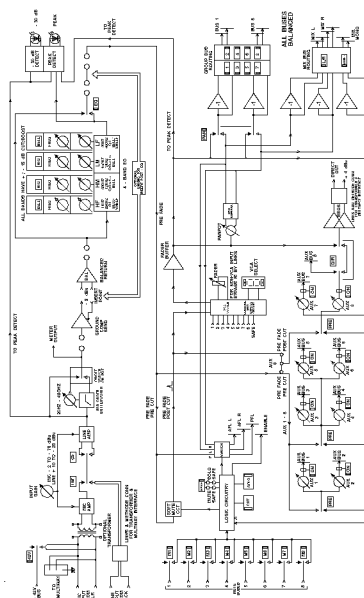
13 A green **-30dB** LED illuminates when a level of -30dBu or greater is present at the output of the Mic/Line amplifier to show that the channel is active.

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 (RS5123 only)

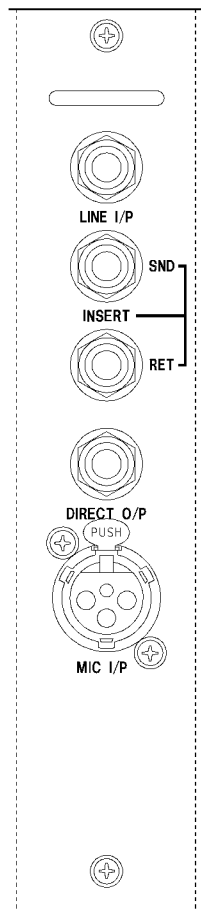
18 The VCA version of the console has 8 **VCA GROUPS**. Selection is by a thumbwheel switch. Only 1 VCA group can be active on each channel (positions 1 to 8) at any one time. See 'VCA Group/Output Group/Stereo Input Module' later in this manual for a full description of the VCA system.

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** which is to be located in the overbridge.

Rear Connector Panel



Connector Pinouts

Microphone Input - Female XLR

Pin1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

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)

Direct Output - 3 pole Jack

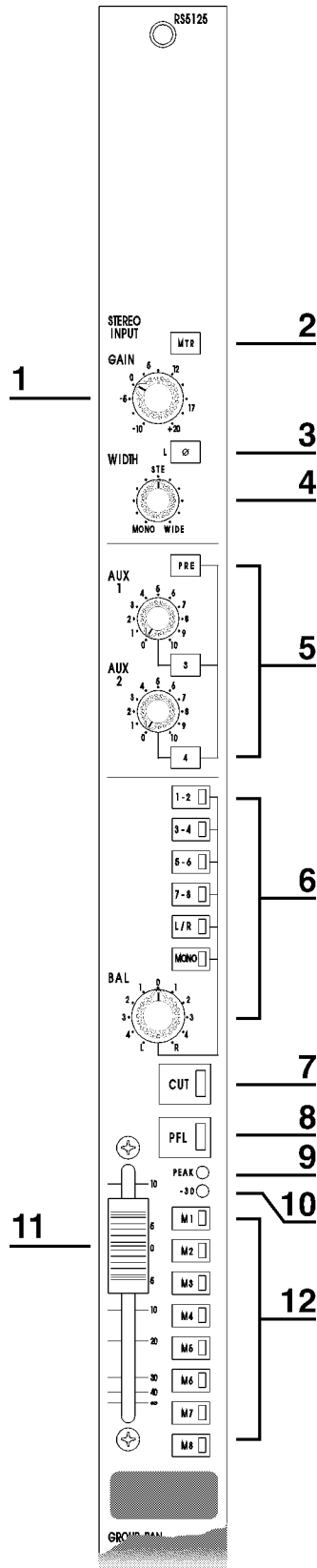
Tip	Hot(in phase signal)
Ring	Cold(out of phase signal)
Sleeve	Ground (screen)

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

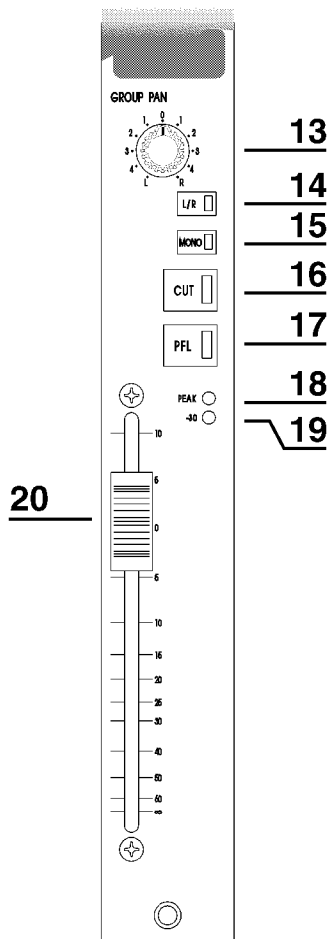
16 The balanced insert return jack feeds the **CUT** button which operates an electronic mute circuit.

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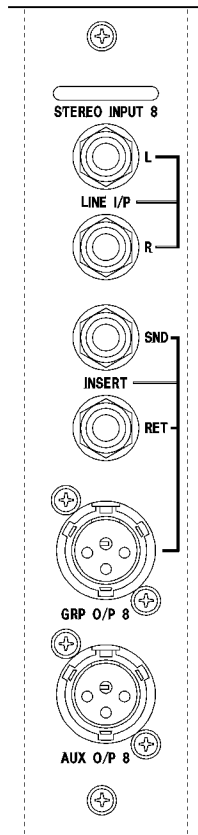
18 A red **PEAK** LED illuminates when the group signal exceeds +14dBu at pre-fade and post-fade points.

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.



Rear Connector Panel



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)

Aux Output - Male XLR

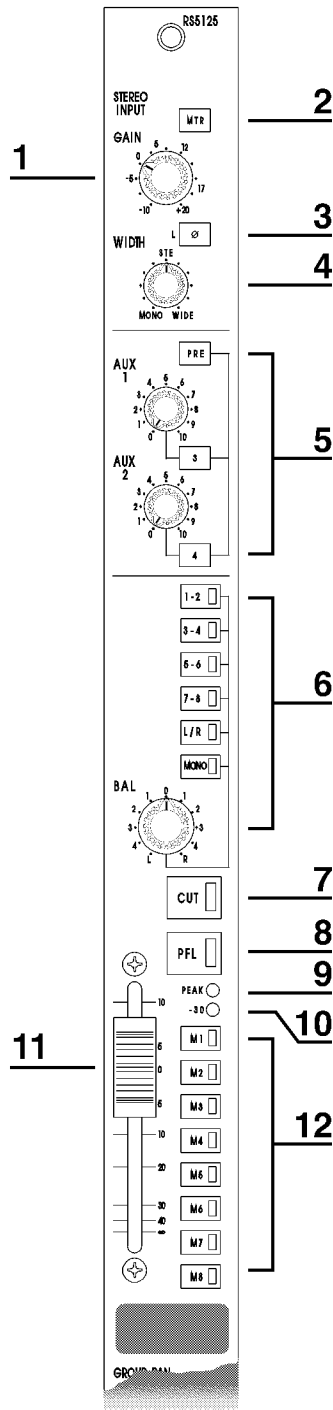
Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

VCA Group/Group Output/Stereo Input Module RS5125

Description

and Operation

Output Group / Stereo Input Module



Stereo Input

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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.

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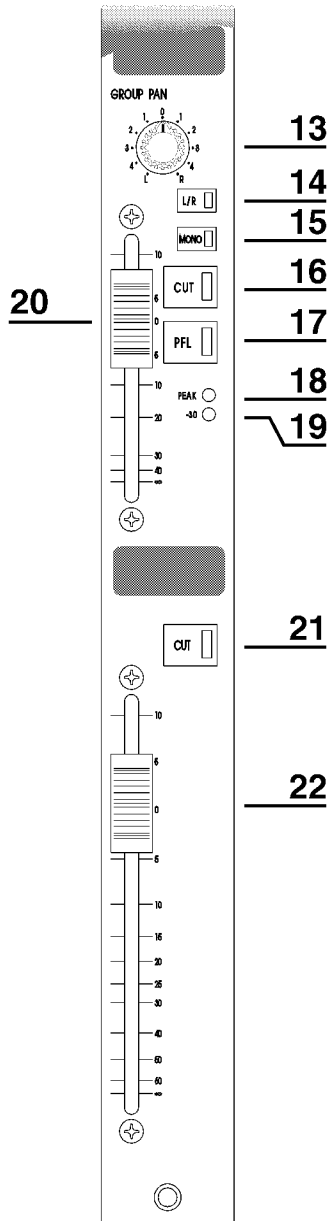
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These LEDs illuminate when the internal level of either the left or right channel exceeds the stated threshold levels.

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

Muting

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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.

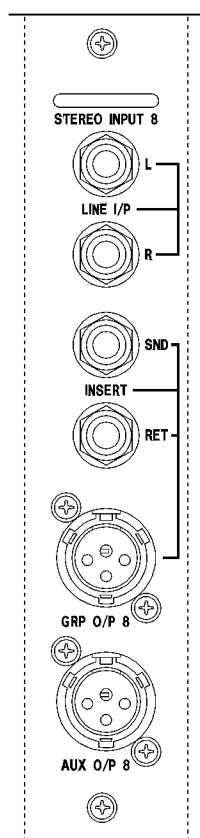
Channels are assigned to VCA groups using the thumbwheel switches on the channel modules. The switch has 9 positions:

- 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.

Rear Connector Panel



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)

Aux Output - Male XLR

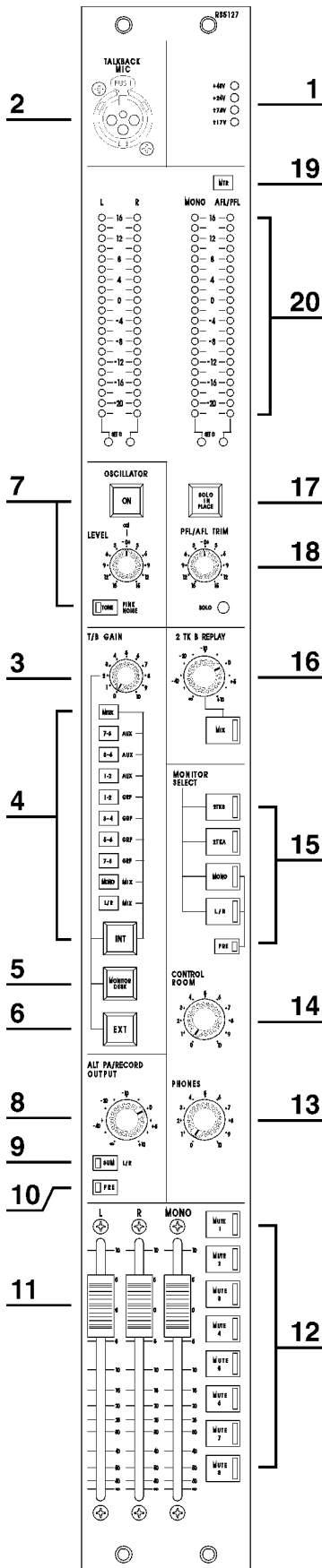
Pin 1	Screen
Pin 2	Hot(in phase signal)
Pin 3	Cold(out of phase signal)

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 busses, 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.

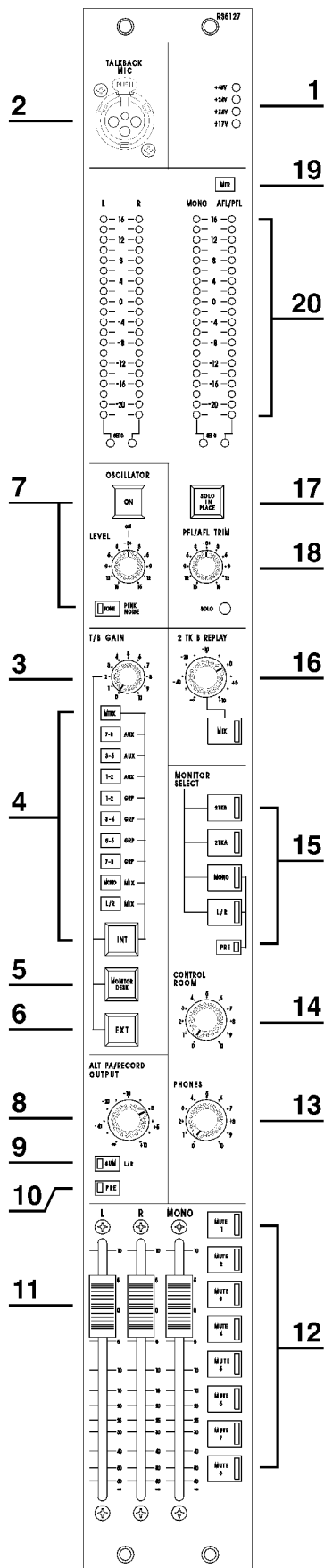
Output Control

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.

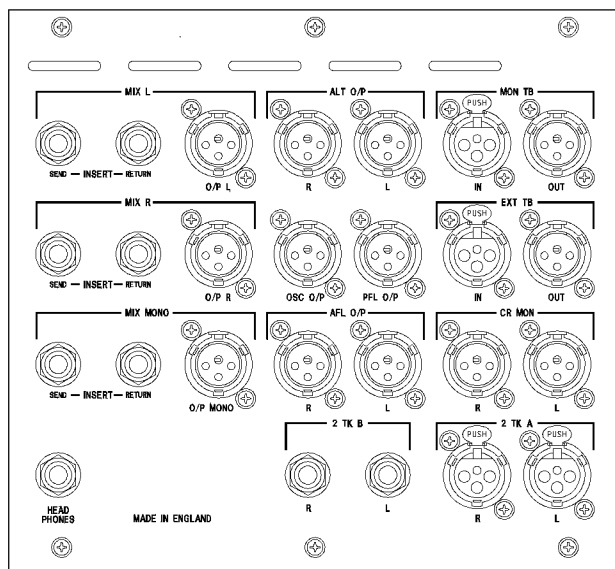
The 20 segment PFL/AFL meter reads the PFL or AFL signal before the trim control so that a true level is displayed. Where the AFL signal is in stereo, the higher of the Left or Right signals is displayed. Calibration trimmers are accessible through small holes below each LED column for adjustment with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

Expansion Input

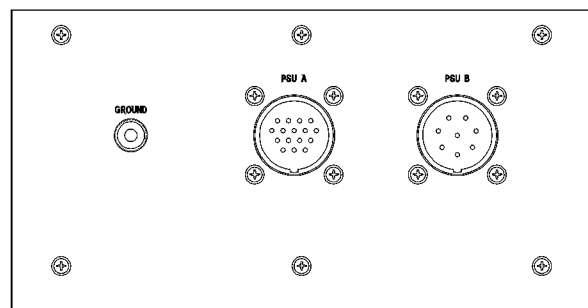
A balanced and buffered +4dBu input for a slave console provides the necessary interface to the Stereo and Mono Mix, PFL and AFL busses. The input is via an optional multiway connector on the rear of the console.

Rear Connector Panels

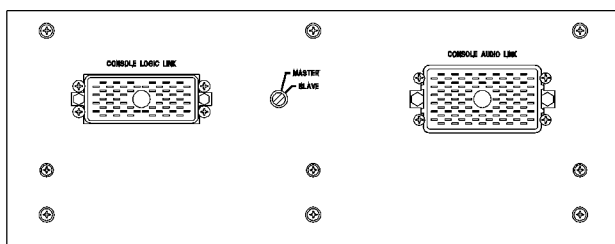
Audio Connector Panel



Power Supply Connector Panel



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)

Ext, Monitor Talkback Input - Female XLR

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

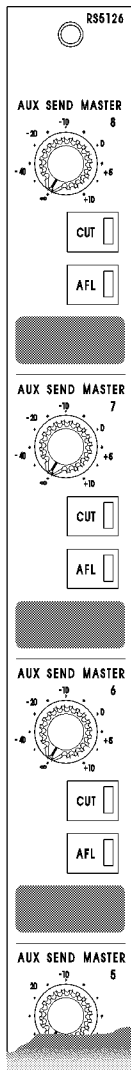
Ext, Monitor Talkback Output - Male XLR

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

Aux Master Module RS5126

Description

and Operation



1
2
3

Aux Master Module

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.

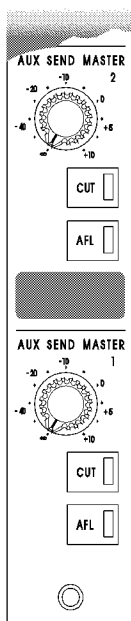
3 The **AFL** switch allows monitoring of the pre-cut Aux output on the Control Room Monitors, Headphones or AFL/PFL bargraph meter.

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

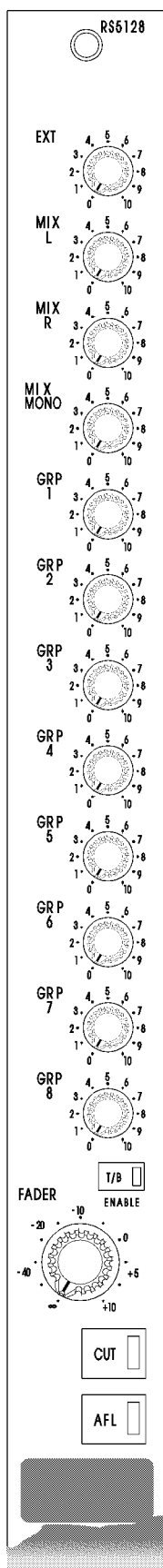
A balanced and buffered +4dBu input for a slave console provides the necessary interface to the ground compensated Aux busses. The input is via an optional multiway connector on the rear of the console.



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

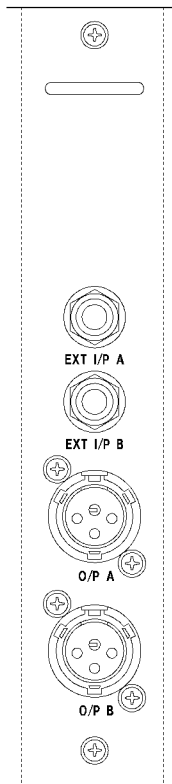
5 The matrix output fader has +10dB gain at maximum clockwise rotation, and sets the level at the electronically balanced output. The output connector is a male XLR on the rear panel, providing a nominal +4dBu output.

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.

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)

Specifications

Specifications

Input/Output Levels

Mic Input Sensitivity	-2 to -70dBu variable
Line Input Sensitivity	-20 to +10dBu variable
Insert Send/Return (Input, Group)	-2dBu
Insert Send/Return (Mix L,R,Mono)	+4dBu
Outputs (balanced)	+4dBu
2-Track Inputs A & B	+4dBu/-10dBV switched

Input/Output Capability

Mic Input headroom	+18dBu
Line Input headroom	+20dBu
Insert Sends (Input, Group)	+20dBu into 2k Ω
Insert Sends (Mix L,R,Mono)	+26dBu into 600 Ω
All balanced Outputs	+26dBu into 600 Ω
Headphone Output	+20dBu into 600 Ω (150mW into 8 Ω)

Input & Output Impedances

Microphone Input	2k Ω
Line Input	>15k Ω
Insert Send (Input, Group)	75 Ω
Insert Send (L,R,Mono)	75 Ω
Insert Returns	>15k Ω
Outputs (balanced)	75 Ω
2-Track Inputs	43k Ω

Frequency Response

Mic or Line Input to any Output (20Hz to 20kHz)	+0,-0.5dB
-------------------------------------------------	-----------

Crosstalk (all at 1kHz)

Input Channel Fader Attenuation	>80dB
Input Channel Muting	>100dB
Input Channel Panpot Isolation	>85dB
Mix Routing Isolation	>100dB
Group Routing Isolation	>100dB
Group to Group Crosstalk	<-90dB
Mix to Group Crosstalk	<-90dB
Group to Mix Crosstalk	<-90dB

Noise

Measured 20Hz to 20kHz bandwidth, Average Reading, Unweighted

Mic Input E.I.N. (200 Ω source)	<-127.5dBu
Mix O/P Noise (residual)	-92dBu
Mix O/P Noise (32 channels routed)	-82dBu
Group O/P Noise (32 channels routed)	-80dBu

Distortion

Line Input to Direct Output at +20dBu (VCA out)	< 0.007% (1kHz) < 0.02% (10kHz)
Line Input to Direct Output at +20dBu (VCA in)	< 0.02% (1kHz) < 0.025% (10kHz)
Line Input to Mix Output at +20dBu (Non VCA)	< 0.008% (1kHz) < 0.02% (10kHz)

Console Linking

Provision is included in the Vienna 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 Slave, 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 Technical Manual.

See page 36 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.

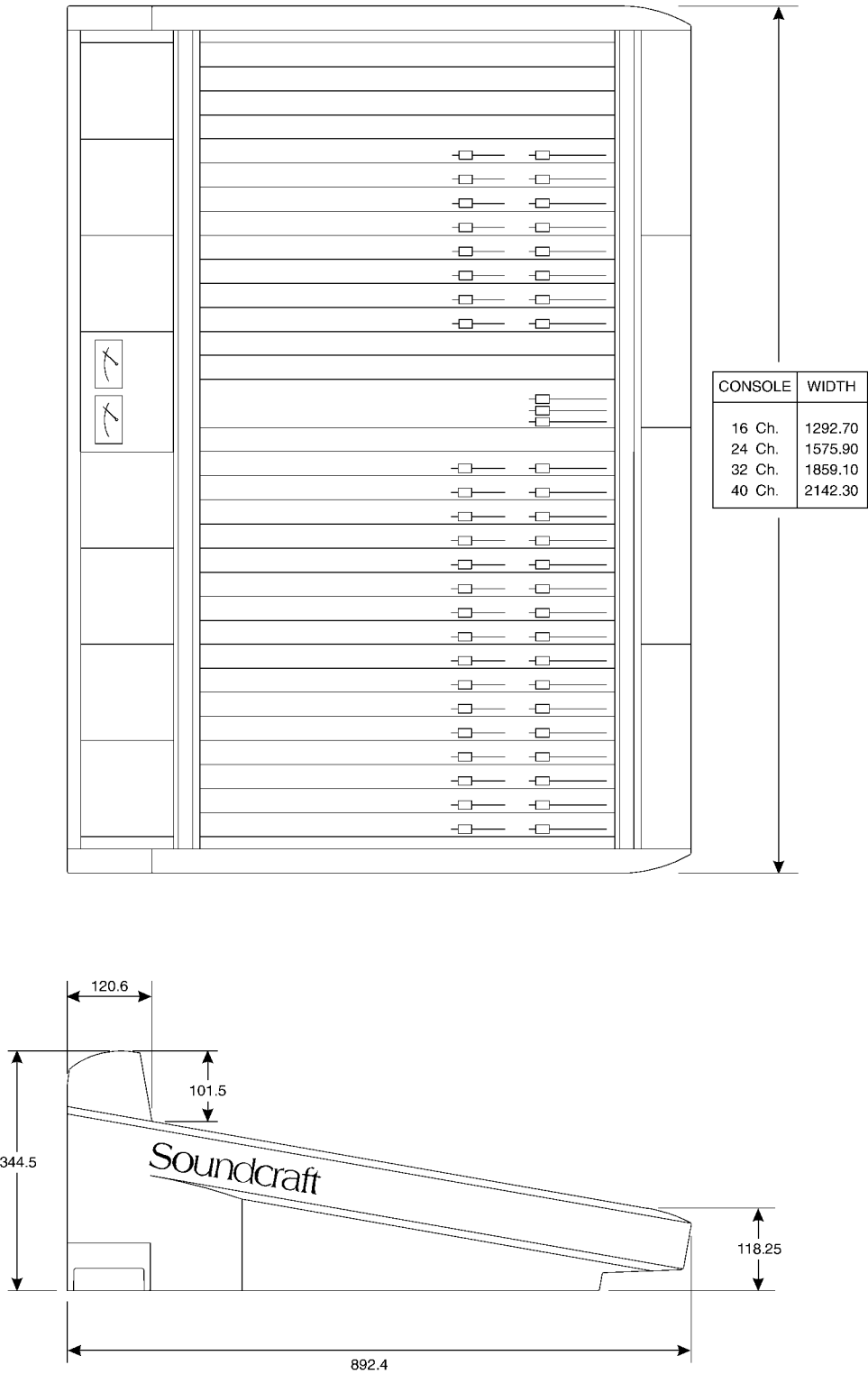
G All crosstalk and rejection figures stated with 16 channels routed to the measured output, where applicable.

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.

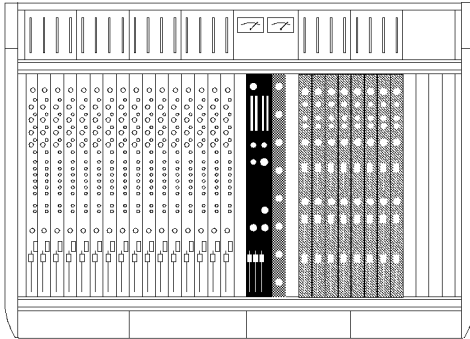
Dimensions

Vienna Outline Dimensions

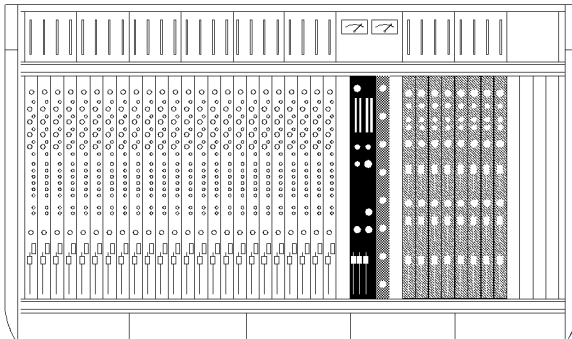


Configurations

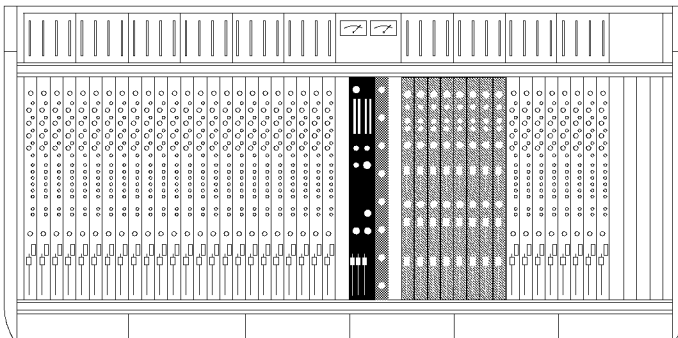
16 Channel Console



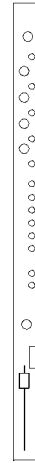
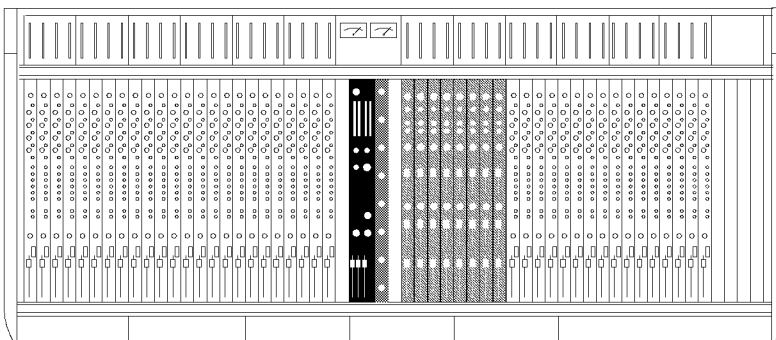
24 Channel Console



32 Channel Console



40 Channel Console



Standard
or VCA
Input



Master



Aux
Master



Optional
Matrix
Output

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.

