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.

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Issue 1
Part No. ZM0045

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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 $\delta B=20 \log(V_1/V_2)$. 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 artists 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.

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Warranty

1. **Soundcraft** means Soundcraft Electronics Ltd.

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

3. **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.

4. **Equipment** means the equipment supplied with this manual.

5. 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.

6. 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.
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 auxiliary 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/slave 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 Littlefies 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.

Dimensions

Vienna Outline Dimensions

CONSOLE WIDTH
24 Ch  1575.90
32 Ch  1855.10
48 Ch  2142.30
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 0dBa.

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.

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 <7Ω 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 <7Ω. 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 (150mV into 8Ω).
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 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 II Technical Manual.

See page 50 for rear panel layout.
Installation

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.

Jumper Options

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Input A sensitivity</td>
<td>+4dBu</td>
<td>+4dBu</td>
</tr>
<tr>
<td>JMP1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP2</td>
<td>-10dBV</td>
<td></td>
</tr>
<tr>
<td>External Input B sensitivity</td>
<td>+4dBu</td>
<td>+4dBu</td>
</tr>
<tr>
<td>JMP3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP4</td>
<td>-10dBV</td>
<td></td>
</tr>
</tbody>
</table>

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    >10KΩ balanced

MATRIX OUTPUT (electronically balanced)
Nominal level     +4dBu
Maximum input level +26dBu into 600Ω
Output impedance  <7Ω 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)
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 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.

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 for feed Littlelites.

- Microphone Inputs to Talkback Inputs
- 2, 3, 4, 5, 6, 7
- 8, 9, 10, 11, 12, 13
- 14, 15, 16, 17, 18, 19

- Mic L, R & MONO Outputs to Monitor Outputs
- 20, 21, 22
- 23, 24, 25
- 26, 27, 28

- Group & Matrix Outputs
- 29, 30, 31
- 32, 33, 34
- 35, 36, 37

- Tip - HOT (IN PHASE SIGNAL)
- Ring - COLD (OUT OF PHASE SIGNAL)
- Sleeve - GROUND (SCREEN)

- Tip - HOT (IN PHASE SIGNAL)
- Ring - COLD (OUT OF PHASE SIGNAL)
- Sleeve - GROUND (SCREEN)

- Tip - LEFT SIGNAL
- Ring - RIGHT SIGNAL
- Sleeve - GROUND (SCREEN)
All frame sizes allow the addition of up to three lamps on BNC connectors ('Litliite' 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

---

**Dual Matrix Output Module RS5128**

**Description**

**and Operation**

---
Module Block Diagrams

Input Module

Stereo Input Module

Output Group/Stereo Return

Master Module

Aux Master Module

Matrix Output Module
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 2kΩ
Output impedance  <7kΩ

INSERT RETURN (electronically balanced)
Sensitivity  -2dBu
Maximum input level  +20dBu
Input impedance  >10kΩ balanced

AUX OUTPUT (electronically balanced)
Nominal level  +4dBu
Maximum output level  +20dBu into 600Ω
Output impedance  <7Ω
**Aux Master Module RS5530**

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 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.

**Insert Point**

Each Aux insert point is at a nominal level of -20dBu. 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.
Aux Master Module RS5530

Description

and Operation
2-TRACK INPUTS A and B (electronically balanced)
Sensitivity: +4dBu/-10dBV (switched)
Maximum input level: +30dBu
Output impedance: >10KΩ balanced

EXTERNAL TB INPUT (electronically balanced)
Sensitivity: +4dBu
Maximum input level: +30dBu
Input impedance: >10KΩ balanced

HEADPHONES OUTPUT (unbalanced)
Nominal level: +4dBu
Maximum output level: +20dBu into 600Ω
0dBu into 8Ω
Output impedance: 50Ω
**Jumper Options**

**Left Hand PCB:**

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

**Right Hand PCB:**

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Track B Replay to Mono</td>
<td></td>
<td>off</td>
</tr>
<tr>
<td>JMP1</td>
<td>on</td>
<td></td>
</tr>
<tr>
<td>JMP2</td>
<td>off</td>
<td></td>
</tr>
<tr>
<td>Link Option Bypass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP3, JMP9</td>
<td>on for link bypass</td>
<td>remove if link option is fitted</td>
</tr>
<tr>
<td>SIP Enable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP4</td>
<td>ON for SIP enabled</td>
<td></td>
</tr>
<tr>
<td>PFL/AFL Meter Response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP5, JMP7</td>
<td>ON for average response</td>
<td></td>
</tr>
<tr>
<td>JMP6, JMP8</td>
<td>ON for peak response</td>
<td></td>
</tr>
</tbody>
</table>

**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 MONTOR 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
**Connecter 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)
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 
only optional multiway connector on the rear of the console.
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 from 2 track return B to be fed directly to the Mix outputs. The 2 TK B REPLY) 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.
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 to 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 L, R 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 buses. 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/loadspeakers 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.
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.

Standard Input Module RS5507

VCA Input Module RS5508

Description

and Operation
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 +6dBu to +20dBu (switched range). The High Impedance input sensitivity is +10dBu to +20dBu.

2. The 48V switch enables 48 V 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 switch reverses the phase of the selected input to compensate for conflicting microphone position or for crossing 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 2.6. 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-fader 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 ptt, 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 buses, which are all differential with balanced drive for maximum noise immunity.

10 Routing to the L & R buses is by the L/R switch. These buses 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.
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

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
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</thead>
<tbody>
<tr>
<td>Stereo Input SOLO IN PLACE</td>
<td>Mute</td>
<td>active</td>
</tr>
<tr>
<td>JMP1</td>
<td>active/disabled</td>
<td></td>
</tr>
</tbody>
</table>

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.

18 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/Outgroup/Stereo Input Module' 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

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert Point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP1, JMP2, JMP3, JMP6</td>
<td>IN for post-EQ</td>
<td>IN for pre-EQ</td>
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<td>JMP4, JMP5</td>
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<tr>
<td>SFE Switch</td>
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<tr>
<td>JMP7, JMP8</td>
<td>SOLO SAFE</td>
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<tr>
<td>Aux 1-7 PRE source</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP13, JMP16</td>
<td>IN for post-mute</td>
<td>IN for pre-EQ</td>
</tr>
<tr>
<td>JMP15</td>
<td>IN for pre-mute</td>
<td></td>
</tr>
<tr>
<td>Aux 8 PRE source</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP9, JMP10</td>
<td>IN for post-mute</td>
<td>IN follow Aux 1-7</td>
</tr>
</tbody>
</table>
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  2KΩ

HI-Z INPUT (electronically balanced)
Sensitivity  +10dBu to -20dBu
Maximum input level  +30dBu
Input impedance  >10KΩ balanced

INSERT SEND (electronically balanced)
Nominal level  +2dBu
Maximum input level  +20dBu into 2KΩ
Output impedance  <75Ω

INSERT RETURN (electronically balanced)
Sensitivity  -2dBu
Maximum input level  +20dBu
Input impedance  >10KΩ balanced

DIRECT OUTPUT (electronically balanced)
Nominal level  +4dBu
Maximum input level  +26dBu into 600Ω
Output impedance  <75Ω

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

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

14 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.

15 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.

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

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

Group Status

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.
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 overload 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/R 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.

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

8. 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.

9. 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.

10. 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.

11. 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.
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 (G) 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).
**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**: Cold (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**: >10kΩ balanced

**INSERT SEND** (ground compensated)
- **Nominal level**: -2dBu
- **Maximum output level**: +20dBu into 2kΩ
- **Output impedance**: <75Ω

**INSERT RETURN** (electronically balanced)
- **Sensitivity**: -2dBu
- **Maximum input level**: +20dBu
- **Input impedance**: >10kΩ balanced

**GROUP OUTPUT** (electronically balanced)
- **Nominal level**: +4dBu
- **Maximum output level**: +20dBu into 600Ω
- **Output impedance**: <75Ω

**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** (HMID) section has maximum cut or boost of 15dB at a fixed frequency of 3kHz, with a Q of 1.4.

12 The **LOW MID** (LMID) 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 pre-fade 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 setting. 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 VCA. 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 post-fade 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.

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

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereo Input SOLO IN PLACE Mute</td>
<td>active/disabled</td>
<td>active</td>
</tr>
</tbody>
</table>
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/R switch. This switch should normally be released.

4. A centre detented WIDTH control varies the width of the stereo image from monaural to a fully clockwise stereo.

Auxiliary sends

5. There are two AUX SEND controls. These are not 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 LR 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.

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

<table>
<thead>
<tr>
<th>Option</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert Left JMP1, JMP3, JMP6</td>
<td>IN for post-EQ</td>
</tr>
<tr>
<td>Insert Right JMP101, JMP103, JMP106</td>
<td>IN for post-EQ</td>
</tr>
<tr>
<td>SFE Switch JMP7</td>
<td>SOLO SAFE</td>
</tr>
<tr>
<td>Aux 16 Presource JMP10</td>
<td>IN for pre-EQ</td>
</tr>
<tr>
<td>Aux 7 PRE source JMP21</td>
<td>IN for mono (follow Aux 1-6)</td>
</tr>
<tr>
<td>Aux 7 POST source JMP23</td>
<td>IN for mono (left post-mute)</td>
</tr>
<tr>
<td>Aux 8 PRE source JMP25</td>
<td>IN for mono (follow Aux 1-6)</td>
</tr>
<tr>
<td>Aux 8 POST source JMP27</td>
<td>IN for mono</td>
</tr>
<tr>
<td>Aux 8 POST source JMP28</td>
<td>IN for stereo (right)</td>
</tr>
</tbody>
</table>
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: 2kΩ

**High-impedance Inputs A and B, Left and Right**
(electronically balanced)
- Sensitivity: +10dBu to -20dBu
- Maximum i/p level: +30dBu
- Input impedance: >10kΩ balanced

**Insert Send Left And Right**
(ground compensated)
- Nominal level: -2dBu
- Maximum output level: +20dBu into 2kΩ
- Output impedance: <75Ω

**Insert Return Left and Right**
(electronically balanced)
- Sensitivity: -2dBu
- Maximum i/p level: +20dBu
- Input impedance: >10kΩ 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.

Output Group/Stereo Input Module RS5124

*Description and Operation*
The 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 ("Little" 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.
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.

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Note: The Grand Master controls are fitted only to VCA consoles. On non-VCA consoles, the lamp socket and dimmer control only are present.
Grand Master Module RS5449

Description

and Operation
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**XLR Inputs Left And Right**
(electronically balanced)
- Sensitivity: 0dBu to -60dBu, +10dBu to -20dBu (switched)
- Maximum input level: +8dBu
- Input impedance: 2kΩ

**High-impedance Inputs A and B, Left and Right**
(electronically balanced)
- Sensitivity: +10dBu to -20dBu
- Maximum i/p level: +30dBu
- Input impedance: >10kΩ balanced

**Insert Send Left And Right**
(ground compensated)
- Nominal level: -2dBu
- Maximum output level: +20dBu into 2kΩ
- Output impedance: <75Ω

**Insert Return Left and Right**
(electronically balanced)
- Sensitivity: -2dBu
- Maximum i/p level: +20dBu
- Input impedance: >10kΩ 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.*
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.

Jumper Options

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert Left</td>
<td>JMP1, JMP3, JMP6</td>
<td>IN for post-EQ</td>
</tr>
<tr>
<td></td>
<td>JMP2, JMP4, JMP5</td>
<td>IN for pre-EQ</td>
</tr>
<tr>
<td>Insert Right</td>
<td>JMP101, JMP103, JMP106</td>
<td>IN for post-EQ</td>
</tr>
<tr>
<td></td>
<td>JMP102, JMP104, JMP105</td>
<td>IN for pre-EQ</td>
</tr>
<tr>
<td>SFE Switch</td>
<td>JMP7</td>
<td>SOLO SAFE</td>
</tr>
<tr>
<td></td>
<td>JMP8</td>
<td>MUTE SAFE</td>
</tr>
<tr>
<td>Aux 16 Presource</td>
<td>JMP10</td>
<td>IN for pre-EQ</td>
</tr>
<tr>
<td></td>
<td>JMP11</td>
<td>IN for pre-mute</td>
</tr>
<tr>
<td></td>
<td>JMP12</td>
<td>IN for post-mute</td>
</tr>
<tr>
<td>Note: only one of the above three jumpers should be fitted at one time.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stereo Input Module
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' bypasses the VCAs. If the CUT switch on the assigned VCA module 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 even 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 post-fade 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.

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 | Mute | active/disabled
JMP1 | active |
**Connector Pinouts**

<table>
<thead>
<tr>
<th></th>
<th>Left Channel</th>
<th>Right Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip</td>
<td>Hot (in phase)</td>
<td>Hot (in phase)</td>
</tr>
<tr>
<td>Ring</td>
<td>Cold (out of phase)</td>
<td>Ground Sense</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Screen</td>
<td>Ground</td>
</tr>
</tbody>
</table>

**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 (HMID) section has maximum cut or boost of 15dB at a fixed frequency of 3kHz, with a Q of 1.4.

12 The LOW MID (LMID) 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.
**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 (57)** 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**

![Frequency Response Graphs](image)

**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).
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/R) 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 LED's illuminate when the internal level of either the left or right channel exceeds the stated threshold levels.
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)

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: 2kΩ

**HI-Z INPUT** (electronically balanced)
- Sensitivity: +10dBu to -20dBu
- Maximum input level: +30dBu
- Input impedance: >10kΩ balanced

**INSERT SEND** (electronically balanced)
- Nominal level: -2dBu
- Maximum input level: +20dBu into 2kΩ
- Output impedance: <75Ω

**INSERT RETURN** (electronically balanced)
- Sensitivity: -2dBu
- Maximum input level: +20dBu
- Input impedance: >10kΩ balanced

**DIRECT OUTPUT** (electronically balanced)
- Nominal level: +4dBu
- Maximum input level: +26dBu into 600Ω
- Output impedance: <75Ω

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**

13 14 The Group summing amplifier is a low noise, balanced virtual earth design, feeding the insert point.

15 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.

16 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.

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

18 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 led 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

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereo Input SOLO IN PLACE</td>
<td>Mute</td>
<td>active</td>
</tr>
<tr>
<td>JMP1</td>
<td>active/disabled</td>
<td></td>
</tr>
</tbody>
</table>

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.

18 When 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 Safe-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 AF 0 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/Group Output/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

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert Point</td>
<td>IN for post-EQ, IN for pre-EQ</td>
<td>post-EQ</td>
</tr>
<tr>
<td>JMP1, JMP3, JMP6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP2, JMP4, JMP5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SFE Switch</td>
<td>SOLO SAFE, MUTE SAFE</td>
<td>both</td>
</tr>
<tr>
<td>JMP7, JMP8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aux 1-7 PRE source</td>
<td>IN for post-mute, IN for pre-EQ</td>
<td>post-mute</td>
</tr>
<tr>
<td>JMP13, JMP14, JMP15</td>
<td>IN for post-mute</td>
<td>post-mute</td>
</tr>
<tr>
<td>Aux 8 PRE source</td>
<td>IN for post-mute, IN follow Aux 1-7</td>
<td>post-mute</td>
</tr>
<tr>
<td>JMP9, JMP10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 balancing 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 +14dB 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.

Rear Connector Panel

Connector Pinouts

Stereo Line Input - 3-Pole Jack

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>Ring</td>
<td>Cold (out of phase signal)</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Screen</td>
</tr>
</tbody>
</table>

Insert Send - 3 Pole Jack

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip</td>
<td>Hot (signal)</td>
</tr>
<tr>
<td>Ring</td>
<td>Ground Sense</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Ground (screen)</td>
</tr>
</tbody>
</table>

Insert Return - 3 Pole Jack

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tip</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>Ring</td>
<td>Cold (out of phase signal)</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Ground (screen)</td>
</tr>
</tbody>
</table>

Group Output - Male XLR

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1</td>
<td>Screen</td>
</tr>
<tr>
<td>Pin 2</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>Pin 3</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

Input and Output Levels

STEREO INPUT LEFT & RIGHT (electronically balanced)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>+10dBu to -20dBu</td>
</tr>
<tr>
<td>Maximum input level</td>
<td>+30dBu</td>
</tr>
<tr>
<td>Input impedance</td>
<td>&gt;10kΩ balanced</td>
</tr>
</tbody>
</table>

INSERT SEND (ground compensated)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal level</td>
<td>-2dBu</td>
</tr>
<tr>
<td>Maximum output level</td>
<td>+20dBu into 2kΩ</td>
</tr>
<tr>
<td>Output impedance</td>
<td>&lt;75Ω</td>
</tr>
</tbody>
</table>

INSERT RETURN (electronically balanced)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>-2dBu</td>
</tr>
<tr>
<td>Maximum input level</td>
<td>+20dBu</td>
</tr>
<tr>
<td>Input impedance</td>
<td>&gt;10kΩ balanced</td>
</tr>
</tbody>
</table>

GROUP OUTPUT (electronically balanced)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal level</td>
<td>+4dBu</td>
</tr>
<tr>
<td>Maximum output level</td>
<td>+26dBu into 600Ω</td>
</tr>
<tr>
<td>Output impedance</td>
<td>&lt;75Ω</td>
</tr>
</tbody>
</table>
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 2.6. 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**
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 +0dBu 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 0 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.
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.

Standard Input Module RS5507
VCA Input Module RS5508
Description and Operation
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/loadspeakers 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 accidently. 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 overhead 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

Connector Pinouts

Mix, Alt Outputs - Male XLR

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screen</td>
</tr>
<tr>
<td>2</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>3</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tip</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tip</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

2 TRK A Return - Female XLR

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screen</td>
</tr>
<tr>
<td>2</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>3</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

2 TRK B Return - 3 Pole Jack

<table>
<thead>
<tr>
<th>Tip</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

PFL, AFL & Oscillator Output - Male XLR

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screen</td>
</tr>
<tr>
<td>2</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>3</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

Main CR Room Output - Male XLR

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screen</td>
</tr>
<tr>
<td>2</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>3</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

Headphones - 3 Pole Jack

<table>
<thead>
<tr>
<th>Tip</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring</td>
<td>Left signal</td>
</tr>
<tr>
<td>Sleeve</td>
<td>Right signal</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screen</td>
</tr>
<tr>
<td>2</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>3</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

Ext, Monitor Talkback Output - Male XLR

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Screen</td>
</tr>
<tr>
<td>2</td>
<td>Hot (in phase signal)</td>
</tr>
<tr>
<td>3</td>
<td>Cold (out of phase signal)</td>
</tr>
</tbody>
</table>

Power Supply Connector Panel

Optional Console Linking Connector Panel
**Jumper Options**

**Left Hand PCB:**

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oscillator to Aux Buses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>IN for on</td>
<td>off</td>
</tr>
<tr>
<td>J2</td>
<td>IN for on</td>
<td>off</td>
</tr>
<tr>
<td>Oscillator to Group Buses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J3, 4</td>
<td>IN for on</td>
<td>off</td>
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<tr>
<td>J5, 6</td>
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</tr>
<tr>
<td>Oscillator to Mono Bus</td>
<td></td>
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<tr>
<td>J7, 8</td>
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<td>J9, 10</td>
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<tr>
<td>Alternate PA Output Source</td>
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<tr>
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<tr>
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<tr>
<td>J20</td>
<td>ON for average response</td>
<td></td>
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<tr>
<td>J21</td>
<td>ON for peak response</td>
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**Right Hand PCB:**

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<tr>
<td>JMP1</td>
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<tr>
<td>JMP2</td>
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<td>bypass</td>
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<td>remove if link option is fitted</td>
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<td>enable</td>
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<td>JMP4</td>
<td>ON for SIP enabled</td>
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<td>peak</td>
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<tr>
<td>JMP6, JMP8</td>
<td>ON for peak response</td>
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**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 (electrostatically balanced)
Nominal level +4dBu
Maximum input level +26dBu into 600Ω
Output impedance <75Ω

**INSERT RETURN LEFT and RIGHT** (electrostatically 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 >10kΩ balanced

EXTERNAL TB INPUT (electronically balanced)
Sensitivity +4dBu
Maximum input level +30dBu
Input impedance >10kΩ balanced

HEADPHONES OUTPUT (unbalanced)
Nominal level +4dBu
Maximum output level +20dBu into 600Ω
0dBu into 8Ω
Output impedance 50Ω
Aux Master Module RS5530

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 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.

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 2kΩ
- Output impedance: <75Ω

**INSERT RETURN** (electronically balanced)
- Sensitivity: -2dBu
- Maximum input level: +20dBu
- Input impedance: >10kΩ balanced

**AUX OUTPUT** (electronically balanced)
- Nominal level: -4dBu
- Maximum output level: +26dBu into 600Ω
- Output impedance: <75Ω
Module Block Diagrams

Input Module
Stereo Input Module
Output Group/Stereo Return
Master Module
Aux Master Module
Matrix Output Module
Illumination

All frame sizes allow the addition of up to three lamps on BNC connectors ('Litlite' 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:

<table>
<thead>
<tr>
<th>Pin</th>
<th>+12v</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Ground</td>
</tr>
</tbody>
</table>

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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.

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.

Vx* 'A' Gauge Stereo Jack Plug used as balanced input:
line inputs, 2 Track B returns, insert returns
Tip - HOT(IN PHASE SIGNAL) -
Ring - COLD(OUT OF PHASE SIGNAL) -
Sleeve - GROUND(SCREEN)

Vx* 'A' Gauge Stereo Jack Plug used as ground compensated output:
Input & Group insert sends
Tip - HOT(SIGNAL) -
Ring - GROUND SENSE -
Sleeve - GROUND(SCREEN)

Vx* 'A' Gauge Stereo Jack Plug used as balanced output:
mix insert sends, channel direct outputs
Tip - HOT
(N IN PHASE SIGNAL) -
Ring - COLD(OUT OF PHASE SIGNAL) -
Sleeve - GROUND(SCREEN)

Vx* 'A' Gauge Stereo Jack Plug used as stereo output:
headphones
Tip - LEFT SIGNAL -
Ring - RIGHT SIGNAL -
Sleeve - GROUND(SCREEN)
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.

**Jumper Options**

<table>
<thead>
<tr>
<th>Function</th>
<th>Options</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Input A Sensitivity</td>
<td>+4dBu</td>
<td>+4dBu</td>
</tr>
<tr>
<td>JMP1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP2</td>
<td>-10dBV</td>
<td></td>
</tr>
<tr>
<td>External Input B Sensitivity</td>
<td>+4dBu</td>
<td>+4dBu</td>
</tr>
<tr>
<td>JMP3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JMP4</td>
<td>-10dBV</td>
<td></td>
</tr>
</tbody>
</table>

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: >10KΩ balanced

- **MATRIX OUTPUT (electronically balanced)**
  - Nominal level: +4dBu
  - Maximum input level: +26dBu into 600Ω
  - Output impedance: <7Ω 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)
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 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 II Technical Manual.

See page 50 for rear panel layout.
**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 0dBa.

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.

---

**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 -2dB 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 <7Ω 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 <7Ω. 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 -2dB at an output impedance of <7Ω, 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 <7Ω. 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).
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 you use the correct power supply for your console. The Vienna II console requires a CPS900 power supply.

Dimensions

Vienna Outline Dimensions

![Diagram of Vienna Outline Dimensions]
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 effect 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 auxiliary 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 Auxilary 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/slave 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 Littlefites on the top surface of the console, with an inbuilt dimmer.
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.
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<td><strong>CR (Control Room) Monitors</strong></td>
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<td><strong>dB (decibel)</strong></td>
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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.