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**SOUNDCRAFT Delta SR**

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*USER GUIDE*

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## Warranty

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

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

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

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

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

# Glossary

<b>auxiliary send</b>	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.
<b>balance</b>	the relative levels of the left and right channels of a stereo signal.
<b>clipping</b>	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.
<b>CR (control room) monitors</b>	loudspeakers used by the operator (engineer) in the control room to listen to the mix.
<b>dB (decibel)</b>	a ratio of two voltages or signal levels, expressed by the equation $dB=20\text{Log}_{10}(V1/V2)$ . Adding the suffix 'u' denotes the ratio is relative to 0.775V RMS.
<b>DI(direct injection)</b>	the practice of connecting an electric 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.
<b>equaliser</b>	a device that allows the boosting or cutting of selected bands of frequencies in the signal path.
<b>foldback</b>	a feed sent back to the artistes via loudspeakers or headphones to enable them to monitor the sounds they are producing.
<b>frequency response</b>	the variation in gain of a device with frequency.
<b>(sub) group</b>	an output into which a group of signals can be mixed.
<b>headroom</b>	the available signal range above the nominal level before clipping occurs.
<b>highpass filter</b>	a filter that rejects low frequencies.
<b>line level signals</b>	at a nominal level of -10 to +6dBu, coming from a low impedance source.
<b>pan (pot)</b>	abbreviation of 'panorama': controls levels sent to left and right outputs.
<b>peaking</b>	an equaliser response curve affecting only a band of frequencies i.e. based on a bandpass response.
<b>PFL (pre-fade listen)</b>	a function that allows the operator to monitor the pre-fade signal in a channel independently of the main mix.
<b>rolloff</b>	a fall in gain at the extremes of the frequency response.
<b>shelving</b>	an equaliser response affecting all frequencies above or below the break frequency i.e. a highpass or lowpass derived response.
<b>spill</b>	acoustic interference from other sources.
<b>talkback</b>	the operator speaking to the artistes or to tape via the auxiliary or group outputs.
<b>transient</b>	a momentary rise in the signal level.

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# 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 supplied in a rugged cardboard box. If it is necessary to move it any distance after installation it is recommended that this packing is used to protect it. Be sure to disconnect all cabling before moving. If the console is to be regularly moved (e.g. for touring) 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 supply has been set to the same source voltage as the mains supply.

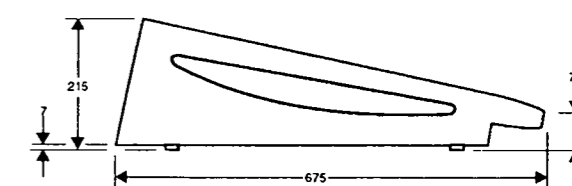
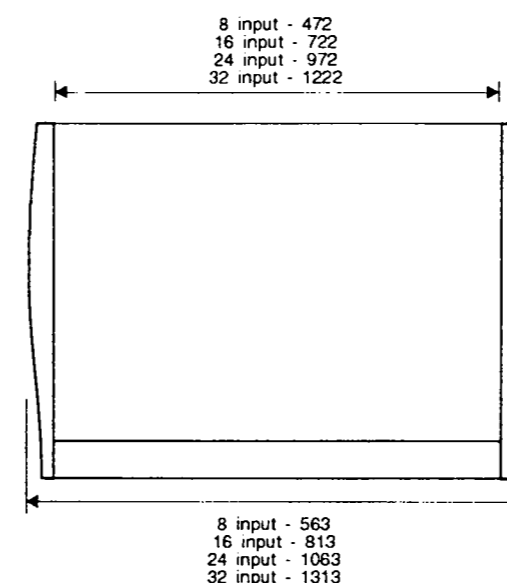
Always use the power supply and power cable supplied with the mixer: the use of alternative supplies may cause damage and voids the warranty; the extension of power cables may result in malfunction of the mixing console.

**Warning!** Always switch the power supply 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.

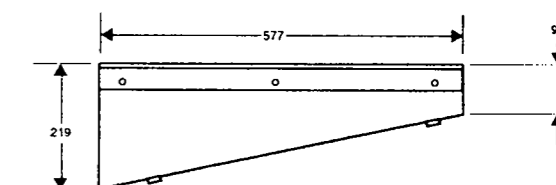
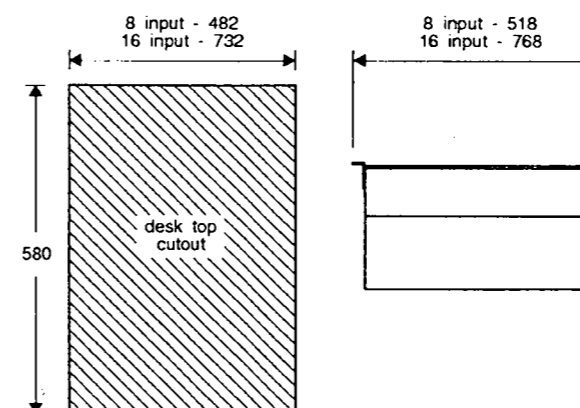
Always ensure that that you use the correct type of power supply for the size of your console. A CPS150 unit is required for all frame sizes except 32 input consoles, which must be powered by the CPS450 or CPS450B.

# Dimensions

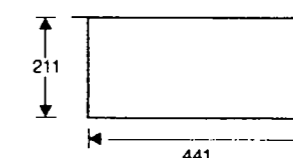
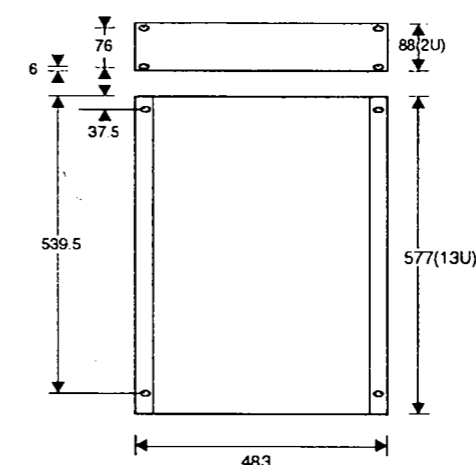
## Delta SR Outline Dimensions



FREE STANDING CONSOLE



DESK TOP CONSOLE  
WITH FIXING BRACKETS

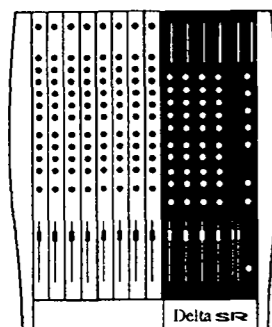


RACK MOUNT CONSOLE

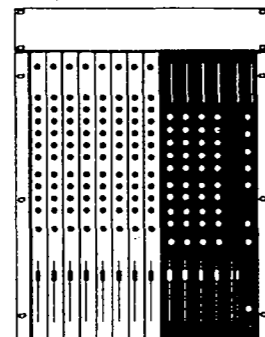
All dimensions shown  
in millimetres (mm).

# Configurations

8 Input Frame

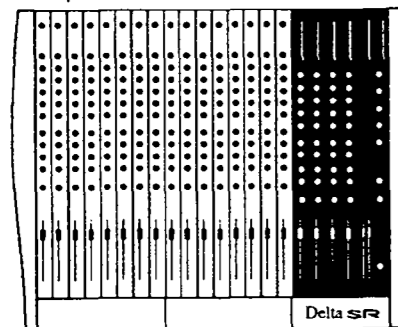


8 Input Rack Frame

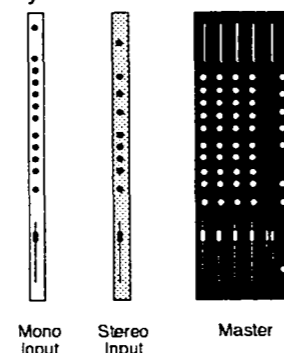


NOTES:  
● The Rack Frame requires 2U of blank space above for connector clearance.

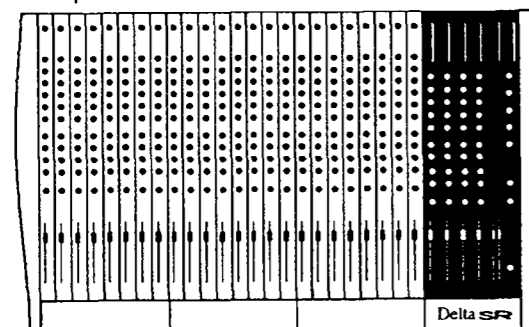
16 Input Frame



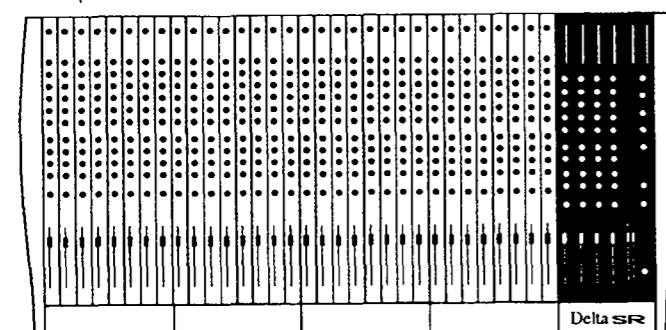
Key to Delta SR Modules



24 Input Frame



32 Input Frame



Above only shows the standard production configurations. There are few practical restrictions to the arrangement of modules of the types available. Please consult your dealer for advice on particular layouts.

# Introduction to Delta SR

The Delta SR series is a development of the Soundcraft 200 Delta, specifically configured for sound reinforcement applications including AV conferencing, fixed installations or places of worship. A choice of mono or stereo input modules is provided, with all output Group, FX Return and Master facilities incorporated on a single module. In addition, a 4-way Matrix section is included which offers great flexibility for theatre installations.

**Should you wish to replace or add extra modules, please contact your authorised Soundcraft dealer, who can supply the modules and change the configuration without voiding the warranty.**

The system has four group mixing buses, feeding the four group output sections, and a main stereo mix bus which gives the L + R outputs from the master section. Four auxiliary send busses are provided, giving four independent outputs with master level controls. The master section allows monitoring of the desk output, an external Tape Replay input, or a Pre Fade Listen (solo) signal accessing all inputs and groups.

Equalisation is very comprehensive on the input modules, with a 3-band EQ with swept mid and low sections on the Mono input, and 3-band EQ on the Stereo inputs. The stereo module includes an RIAA equalised input as standard.

Delta SR is available in 8, 16, 24 and 32 channel free-standing consoles, or as an 8-channel rack-mounting console.

## 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 with the +48V phantom power switched on: degraded performance or damage to the microphone may result.

The sensitivity of the microphone input is variable from -2dBu to -70dBu (for +4dBu at the Stereo Mix outputs), and the maximum input level (balanced) is 20dB above the set sensitivity that is, with the gain control at minimum, the maximum input level is +18dBu. Although the microphone input can thus handle some line level signals, we don't recommend this, since the source may be unduly loaded by the low (2kΩ) input impedance, or be damaged by the +48V phantom power.

The line inputs have a sensitivity variable between -20dBu and +10dBu, and can also handle a maximum input level up to 20dB above the set value. Note that the maximum input level for unbalanced inputs is 6dB less than that for balanced signals, so very high level unbalanced signals (e.g. loudspeaker outputs of power amplifiers) may cause distortion. The input impedance is approximately 20kΩ, and thus high impedance sources (e.g. electric guitars) may be loaded too heavily. Such sources are best fed through an external DI (Direct Inject) box to the microphone input.

The main outputs of the console (e.g. Stereo Mix, Group outputs, Aux sends, Matrix outputs) have a nominal output level of +4dBu, and an impedance of 75ohms. These outputs will deliver full level (+21dBu unbalanced, ground cancelling) into loads of greater than 600Ω. Secondary outputs, such as insert sends and channel direct outputs (all unbalanced) have a nominal output level of -2dBu and a slightly higher output impedance of 200Ω, and will only deliver the full output level of +21dBu into load impedances of greater than 5kΩ.

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## Appendices

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## SPECIFICATION NOTES AND CONDITIONS

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

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

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

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

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

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

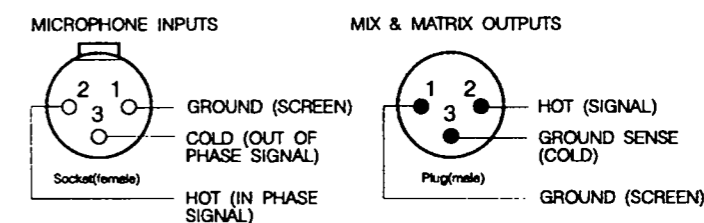
**G** All crosstalk and rejection figures stated with 16 channels routed to the measured output, where applicable.

**H** Mix noise figures are stated in two ways:

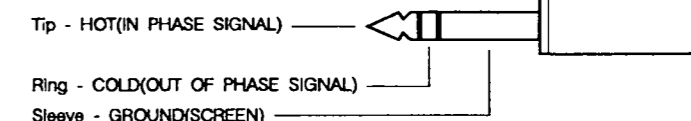
- Bus residual noise: Noise measured at the output with faders at unity and no channels routed.
- Mix bus noise: Noise measured at the output with all channels routed, faders down.

## Wiring Conventions

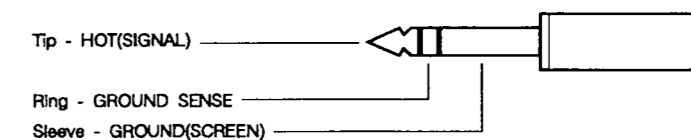
The standard Delta SR console uses two different types of audio connector, 3 pin XLR (top diagram) and 1/4" three pole (A gauge or stereo) jacks. The latter are used in five different configurations, as shown below. The rear frame of the console has standard apertures fitted with blanking panels. Your Soundcraft dealer can supply a variety of mounting plates to fit these, with EDAC (ELCO) multiway connectors, together with looms to link them to the modules.



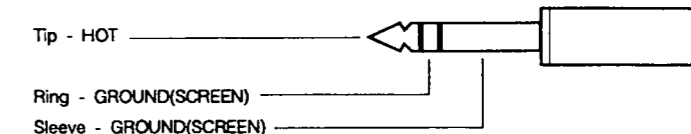
1/4" 'A' Gauge Stereo Jack Plug used as balanced input: line inputs, RIAA input, FX Returns



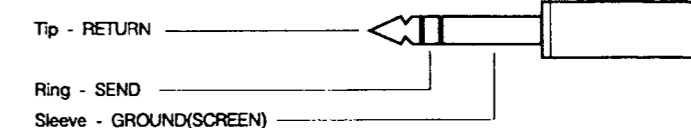
1/4" 'A' Gauge Stereo Jack Plug used as ground compensated output: Group output, Aux output



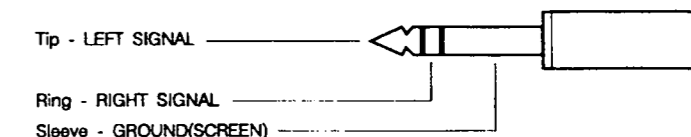
1/4" 'A' Gauge Stereo Jack Plug used as unbalanced output: Direct output



1/4" 'A' Gauge Stereo Jack Plug used as unbalanced insert:



1/4" 'A' Gauge Stereo Jack Plug used as a stereo input/output: headphones, Tape Record, Tape Replay



# Installation

Delta SR 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 Delta SR console, check that the mains voltage selector on the power supply unit is set to the correct mains voltage for your area, and that the fuse is of the correct rating. This is clearly marked on the case of the power supply. Do not replace the fuse with any other type, as this could become a safety hazard and will void the warranty.

Always ensure that you use the correct type of power supply for the size of your console. A CPS150 unit is required for all frame sizes except 32 input consoles, which must be powered by the CPS450 or CPS450B.

## 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.

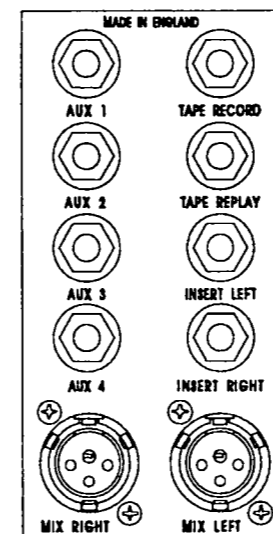
**B** Install separate mains outlets for the audio equipment, and feed these independently from any other equipment.

**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 other signal earths are connected to ground only at their source.

## Examples of use

The diagrams opposite and overleaf show typical applications of the Delta SR in Sound Reinforcement situations. These examples are of course only a indication of the systems possible with the unique flexibility of the Delta SR, which may be easily reconfigured to ideally suit your particular requirements.



Module Rear Panel

## Master Rear ConnectorPanel

### Mix O/Ps Male XLR

Pin 1	Screen
Pin 2	Hot(signal)
Pin 3	Ground sense (cold)

### Aux O/Ps, 3 Pole Jacks

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

### Mix Inserts 3 Pole Jack

Tip	Return
Ring	Send
Sleeve	Ground

### Tape Record, 3 pole jack

Tip	Left signal
Ring	Right signal
Sleeve	Ground

### Tape Replay, 3 pole jack

Tip	Left Signal
Ring	Right signal
Sleeve	Ground

## 2-Track Replay

**9** The **REPLAY** switch adds the signal from the unbalanced **TAPE REPLAY** jack socket into the post-fade Mix signal. The level of this signal is controlled by the **REPLAY LEVEL** pot.

The **REPLAY PFL** switch allows monitoring of the replay signal before it is added to the mix signal.

## PFL & AFL

**10** When a **PFL** or **AFL** switch is pressed anywhere on the console, the signal being monitored is replaced by the **PFL** or **AFL** signal, which is displayed on the Right meter; the Left meter is disabled. The **PFL/AFL LED** illuminates when either **PFL** or **AFL** are active.

## Monitoring

**11** The monitor sources for the **HEADPHONES** are Mix L&R or **PFL/AFL**, the selection being automatically done by the **PFL/AFL** detect circuitry. Mix monitoring is normally post-fade, but when the **REPLAY** switch(see 9 above) is pressed, mix monitoring is switched pre-fade.

Level at the headphones socket is determined by the **PHONES** control.

**Total Harmonic Distortion**

measured at +20dBu	1kHz	10kHz
Group Output	<0.005%	<0.03%
Mix Output	<0.005%	<0.03%
Matrix Output	<0.005%	<0.03%

**Crosstalk**

Channel muting (ON switch)	-100dB
Fader attenuation	-85dB
Panpot isolation	-80dB
Routing (chan. to gps.)	-100dB
Matrix send muting	-85dB
FX return muting	-100dB

**Frequency Response**

Mic or line input to any output, EQ out	+0, -0.5dB
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**Input & Output Levels**

Mic input sensitivity range	-2 to -70dBu
Line input sensitivity range	+10 to -20dBu
Channel insert & direct output nominal level	-2dBu
Group insert nominal level	-2dBu
Group, Mix & Matrix output nominal level	+4dBu
FX Return input sensitivity	-10dBV or +4dBu (linkable)

**Input & Output Impedances**

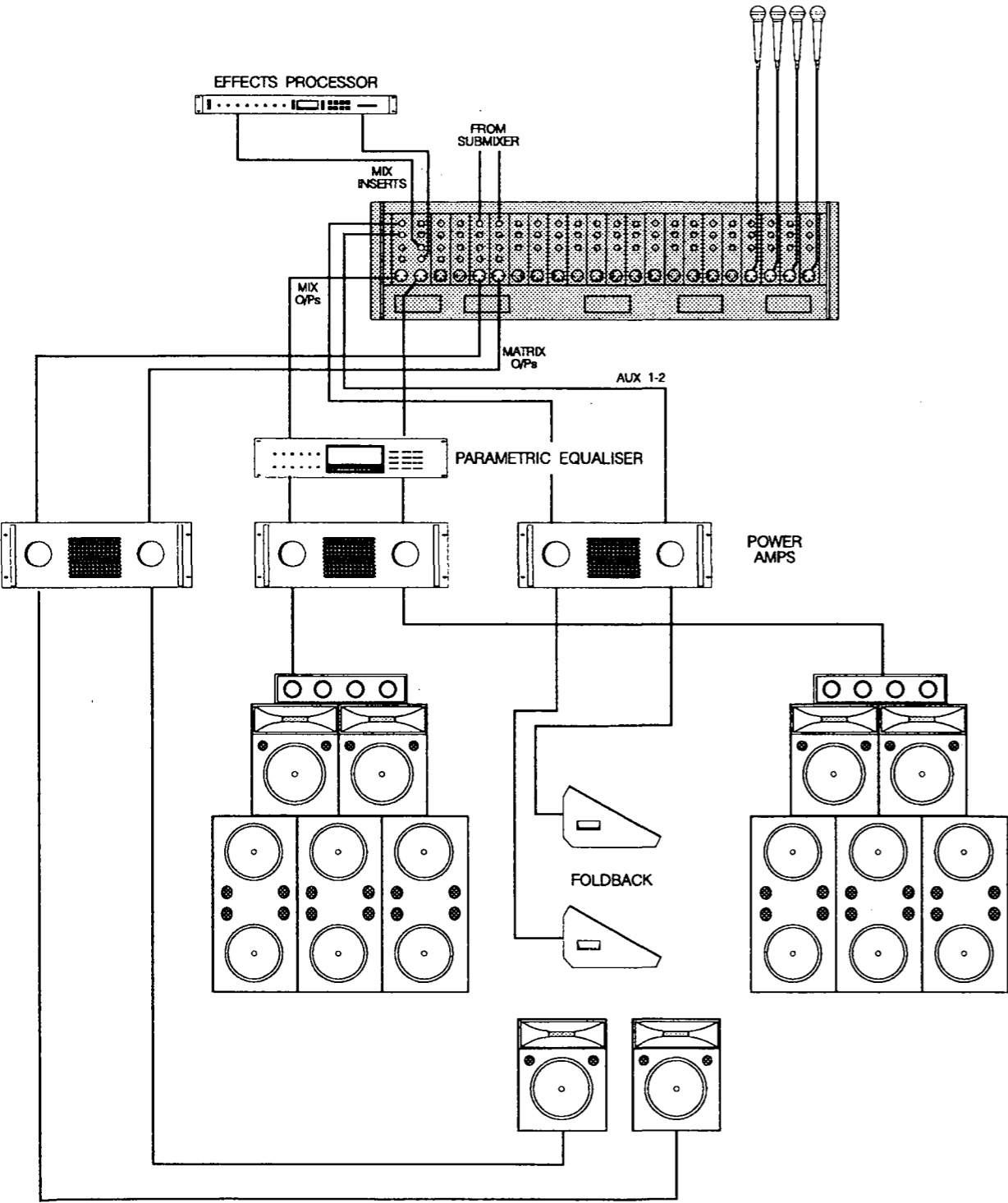
Mic input impedance	2kΩ, electronically balanced
Line input impedance	> 15kΩ, electronically balanced
Group & Mix outputs	75Ω, ground cancelling
Aux & Matrix outputs	75Ω, ground cancelling
FX Return input impedance	> 10kΩ, electronically balanced

**Metering**

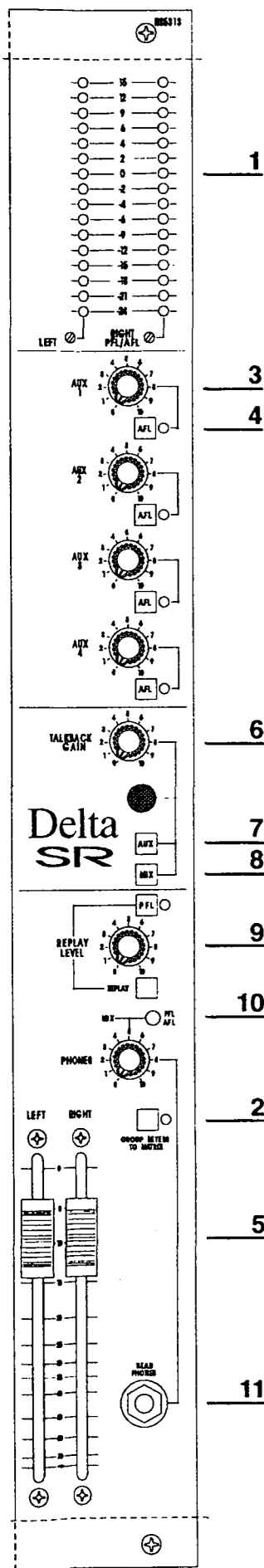
16 segment LED bargraph, peak reading
---------------------------------------

**Sound Reinforcement**

The diagram below shows a typical configuration in a larger scale sound reinforcement application. The main speakers are fed from the stereo mix via a parametric equaliser, with an effects processor connected to the mix inserts. Aux 1 and 2 feed stage foldback, and the outputs from an additional submixer are brought into FX Return 1 & 2. Four Dual Matrix modules are available to feed side fill speakers or a centre cluster, and two are shown connected for this purpose.



**RS5313 Master Section**



## Master

### Metering

Meter sourcing normally follows the pre/post fader selection of the **REPLAY** switch(see 10 below). When PFL/AFL is activated, the left meter is automatically disabled, and the right meter monitors the PFL or AFL signal.

1 The two **METERS** are 16-segment LED bargraphs, designated **LEFT & RIGHT/PFL/AFL**, and are located at the top of the module. Normally the meters follow the same signal as the headphones output. The Right/PFL/AFL meter usually monitors the right output, but when a PFL or AFL is active the PFL/AFL signal is displayed, and the Left meter is disabled. An alignment preset is located below each meter.

2 The **GROUP METERS TO MATRIX** switch moves all 4 group meters from monitoring the group outputs to monitoring the matrix outputs.

### Aux Masters

3 There are four Aux Masters, each with a rotary **FADER** which sets the output level. Each fader feeds a ground compensated output amplifier, which has a nominal output level of +4dBu.

4 The Aux **AFL** switch allows monitoring of the aux master output, either on headphones or the PFL/AFL meter.

### Stereo Mix

Each mix path (Left & Right) has a summing amplifier, the output of which feeds an unbalanced **INSERT SEND**. The send and return are combined on a single jack socket.

5 The Left & Right Insert Returns feed the top of the respective mix **FADERS**. These have 0dB gain at the top of their travel. The post-fade signals feed the ground compensated outputs on rear panel XLRs at a nominal level of +4dBu.

The insert send signals are also fed to the unbalanced **TAPE RECORD** output jack socket.

### Talkback System

6 There is an internal talkback microphone the level of which is set by the talkback **GAIN** control.

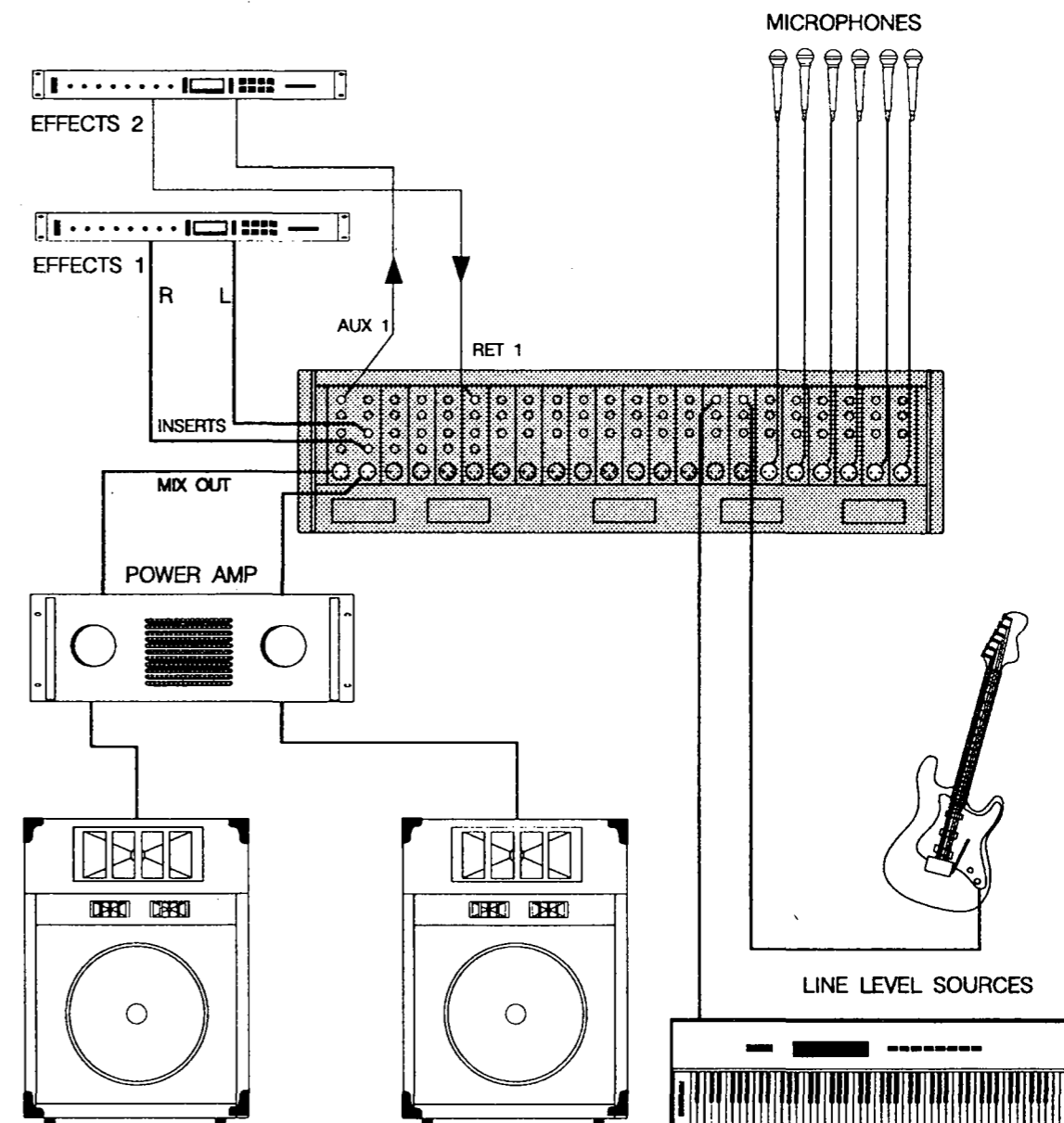
7 Pressing the **AUX** switch puts the talkback audio signal onto the busses of Auxes 1 and 2.

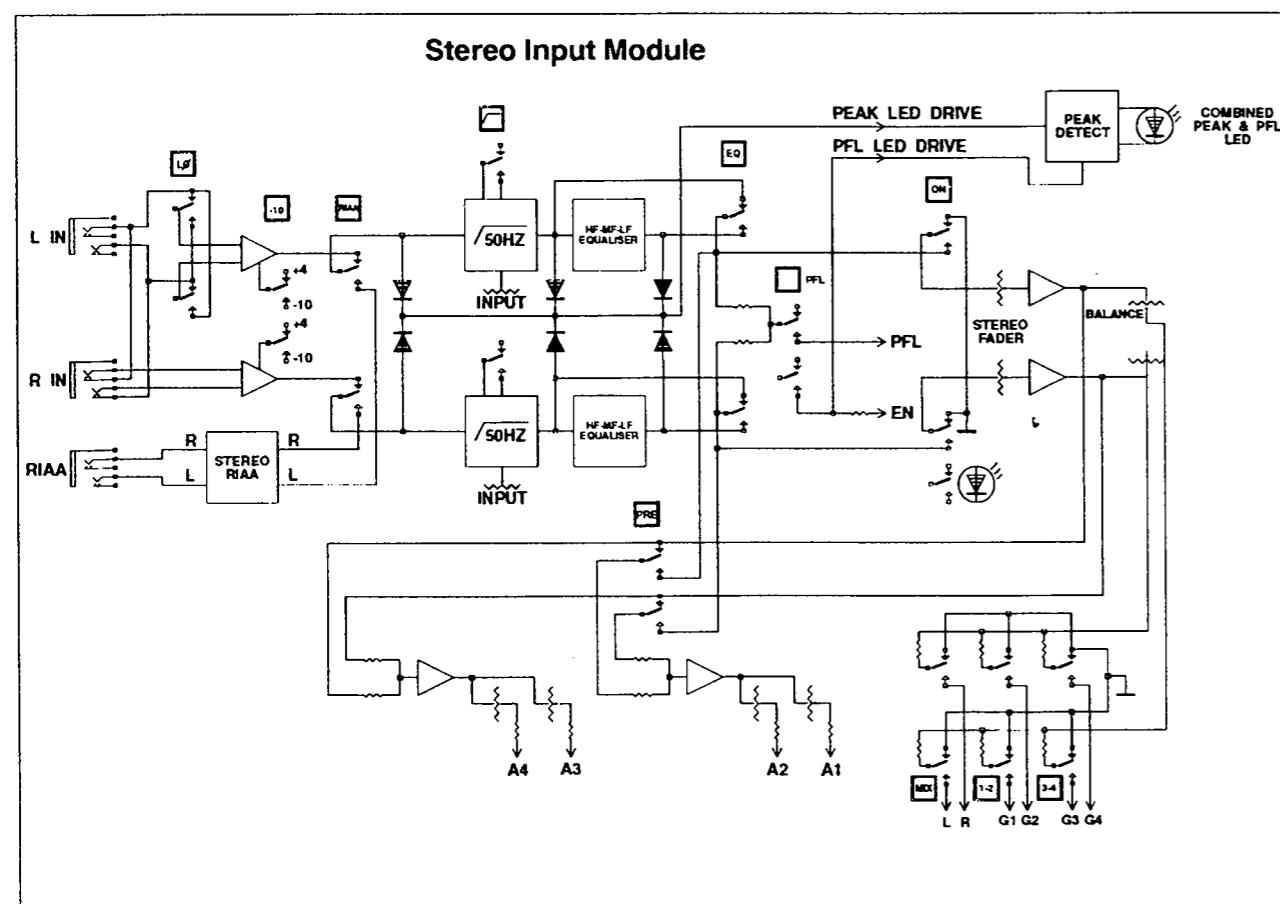
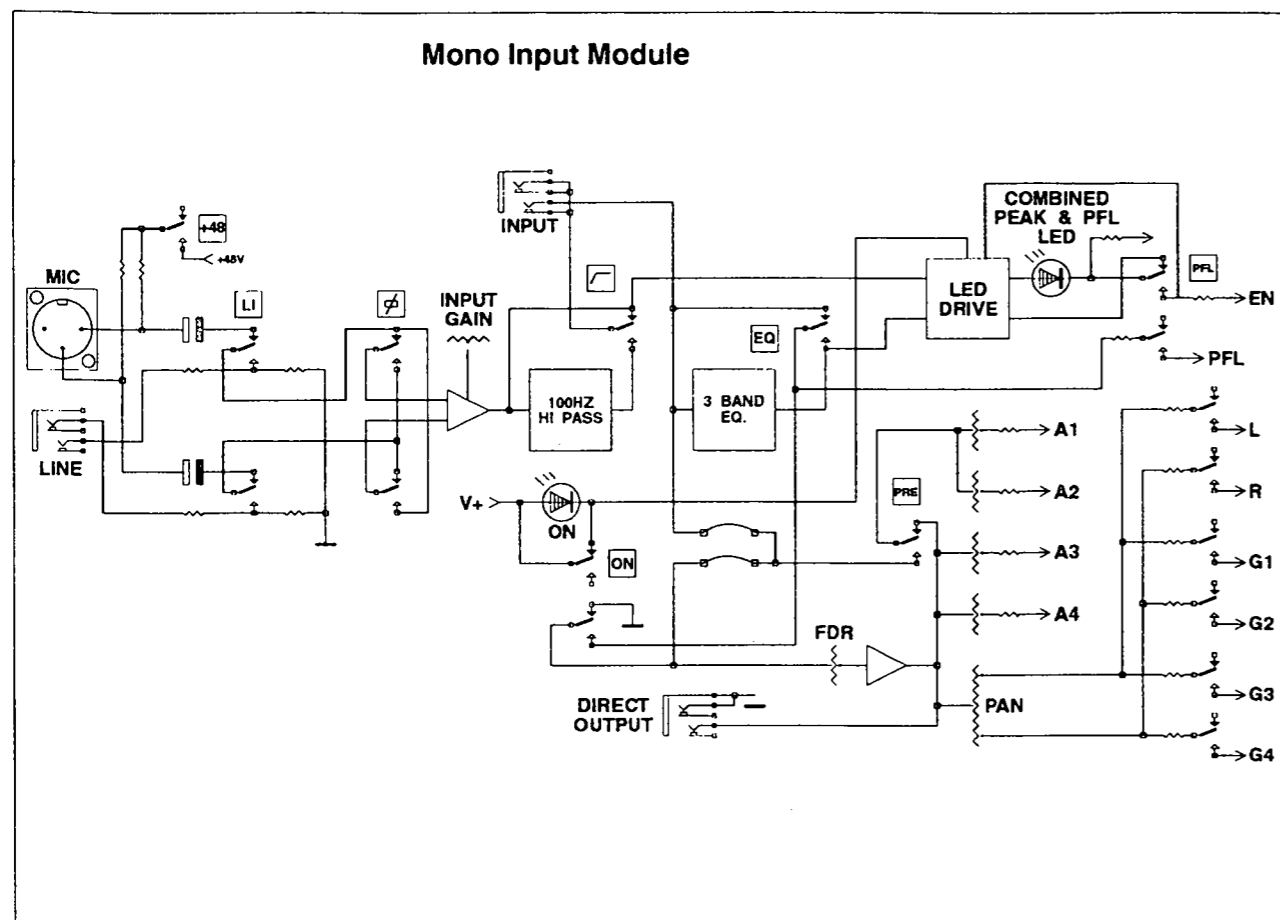
8 Pressing the **MIX** switch puts the talkback audio signal onto the Mix L&R busses.

Talk to **MATRIX** is achieved by the individual **T/B** switches on each Matrix section. The talkback signal replaces the matrix mix signal when the T/B switch is pressed.

## Public Address

This illustration shows the console in use as the front-of-house console in a sound reinforcement system. Microphones covering drums, guitars and vocals are fed to the mic inputs of the mono input modules. Keyboards and other line level sources are fed to line inputs, and stereo modules could be fitted in these positions as an alternative. The Stereo mix is fed to the main speakers, with a stereo effects unit available via the mix inserts. A separate effects unit is accessed via Aux 1, and returned to the console on one of the Effects Returns. Other Aux or matrix outputs may be used for foldback or other outboard equipment.





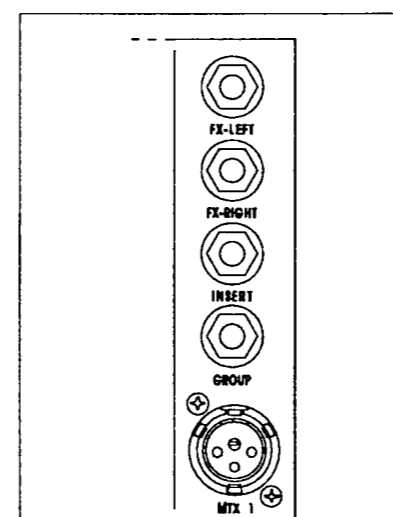
11 The panned outputs are fed to the main Mix bus by pressing the **MIX** switch.

12 The insert return feeds the **PFL** switch, and allows the pre-fade group signal to be monitored on headphones or the PFL/AFL meter.

### Group Metering

13 The 16-segment **LED METER** has a PPM response. There is a calibration control that is accessible through a hole in the fascia.

The meter source is selected by the **GROUP METERS TO MATRIX** switch on the master section. The source is normally the group output; pressing the switch selects the matrix output.



### Rear Connector Panel

#### Group Output, 3 Pole Jack

Tip	Signal (Hot)
Ring	Ground Sense (cold)
Sleeve	Screen

#### Matrix Output, 3 Pin XLR

Pin 1	Screen
Pin 2	Hot
Pin 3	Ground Sense (cold)

#### FX Returns, 3 Pole Jack

Tip	Hot
Ring	Cold
Sleeve	Screen

#### Insert, 3 Pole Jack

Tip	Return
Ring	Send
Sleeve	Screen

---

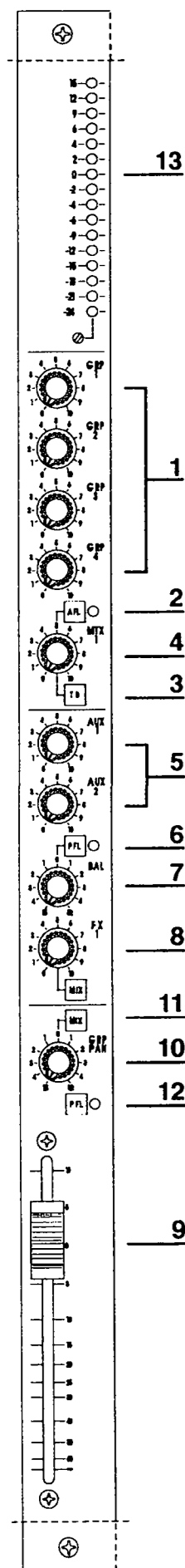
## Module Block Diagrams

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**RS5313 Group/FX/Matrix Section**

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## Output Group, FX Return & Matrix

A 6-module wide section contains Output Group, Matrix and FX Return sections as well as the Master functions. The four Group/FX/Matrix sections are identical and are arranged as separate vertical strips.

### Matrix

- Each matrix has a receive pot for each of the 4 post-fade **GROUP SIGNALS** to create composite mixes of the groups.
- The **AFL** switch allows monitoring of the matrix mix on headphones or the PFL/AFL meter.
- Talkback to the Matrix is enabled by the **T/B** switch. The talkback signal replaces the matrix mix signal.
- The matrix output **FADER** has 0dB at maximum rotation, and sets the level at the ground compensated output: nominally this is +4dBu. The output connector is a male XLR on the integral rear panel.

### Stereo FX Return

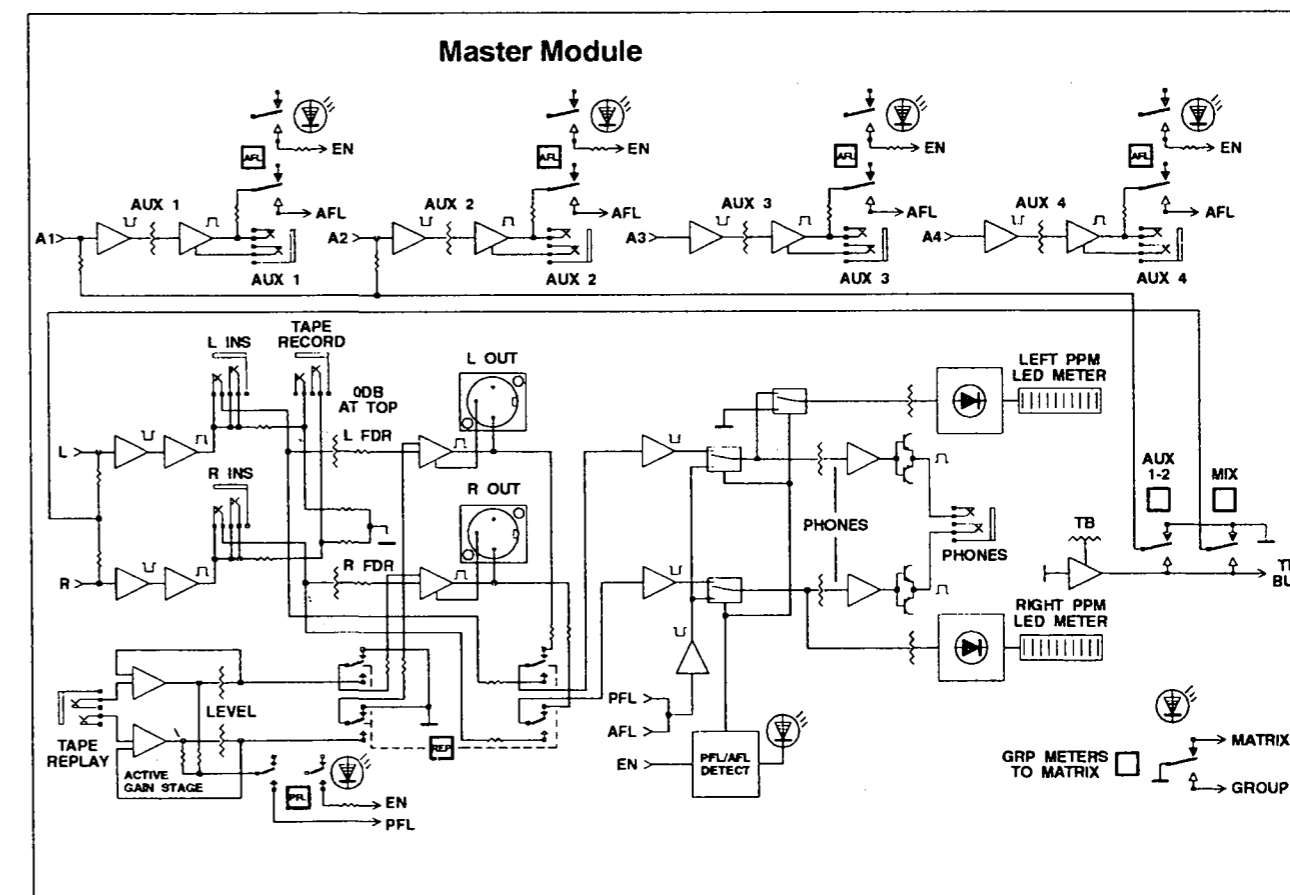
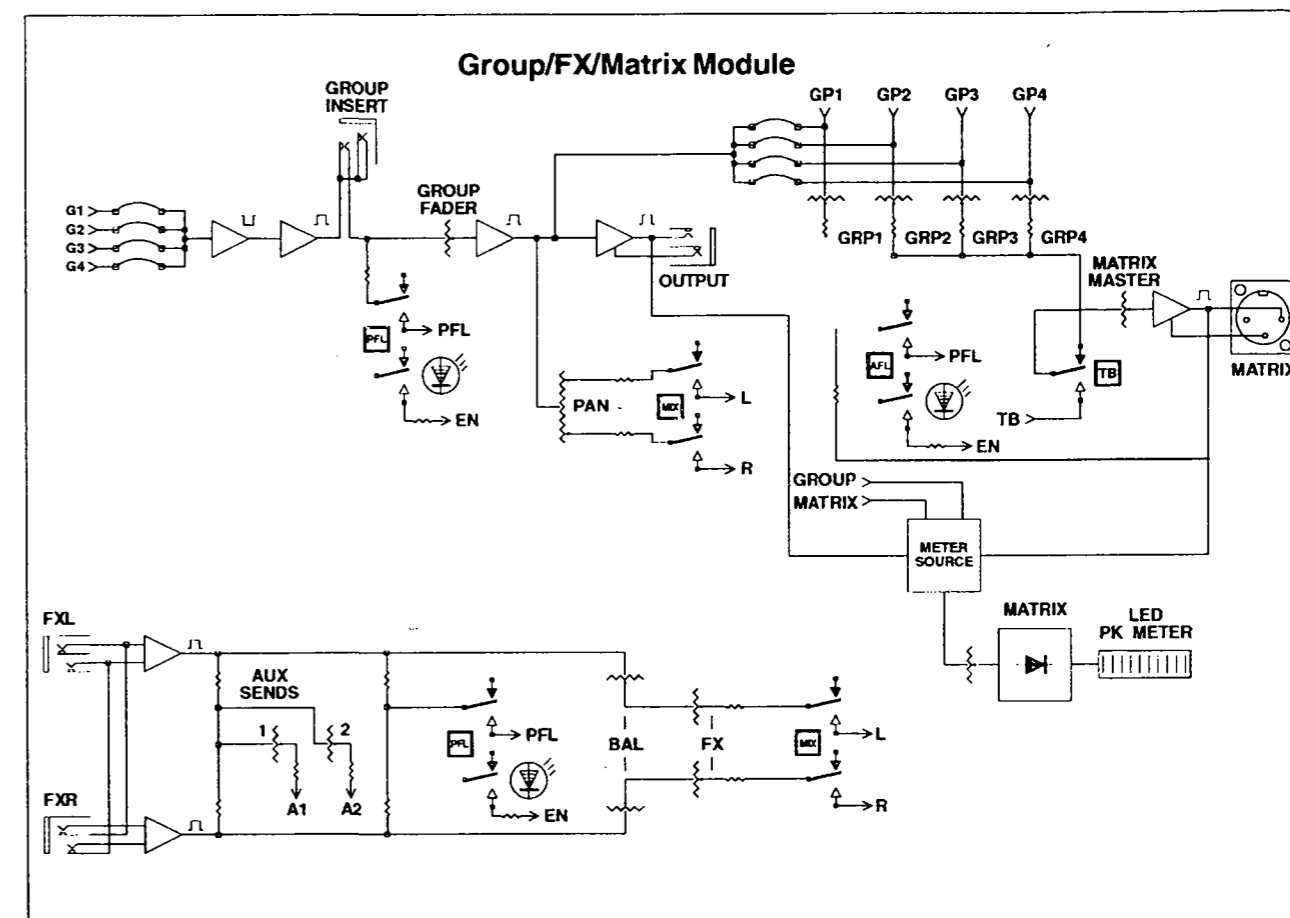
The electronically balanced inputs are via two jack sockets on the rear connector panel. Input level is factory set as -10dBV but may be selected to +4dBu by means of internal links. The left input is normalled through the right input jack so that by plugging a signal into the left input only, it will be applied to both left and right FX Return signal paths in mono. Plugging a signal into the right FX Return input routes the signal to the right FX Return path only.

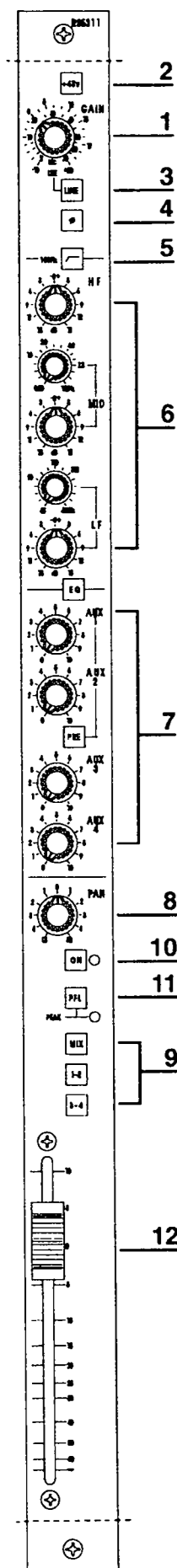
- There are two **AUX SEND** controls. These are pre the FX Return fader, and are fed a mono sum of the left and right signals.
- The **PFL** switch allows monitoring of the FX Return signal on headphones or the PFL/AFL meter.
- The centre detented passive **BAL** control positions the image across the L-R stereo field, and is pre-fade.
- The rotary **FX RETURN FADER**, has unity gain at full clockwise rotation, and directly feeds the **MIX** switch to route the signal to the left and right mix outputs.

### Group Path

The group summing amplifier's output feeds the **INSERT POINT** which has a nominal level of -2dBu.

- The **FADER** is a 100mm type, with 10dB of gain at the top of its travel.
- The post-fade group signal feeds the passive **GRP PAN** pot which positions the signal across the left/right stereo mix.



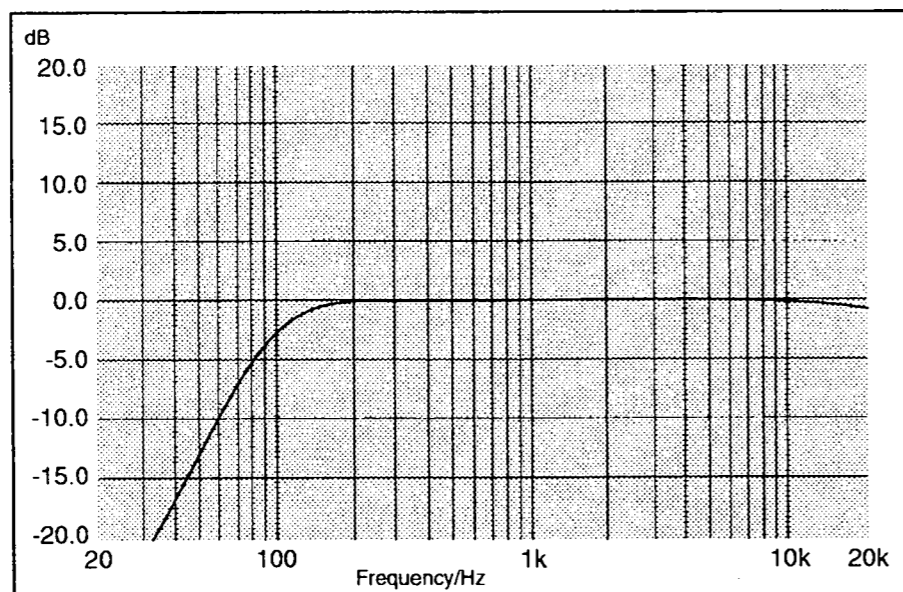


## Input Module

### Input Stage

- 1 The input stage has mic and line inputs, sharing a common **GAIN** control with a sensitivity range of -2dBu to -70dBu on the Mic input, and +10dBu to -20dBu on the Line input. The mic connects via an XLR on the integral rear panel.
- 2 The **+48V** switch enables phantom power to be fed to the mic input.
- 3 The Line input is via a rear panel jack, and is selected by the **LINE** switch.
- 4 The **Ø** (PHASE) switch reverses the phase of the selected input, to compensate for different wiring standards and conflicting microphone placement.
- 5 The **FILTER** switch introduces a 100Hz high-pass filter into circuit. This is especially useful for counteracting the proximity effect experienced with directional microphones, and eliminating low frequency spill and interference.

### Frequency Response Curve of the Hi-Pass Filter



### Equaliser

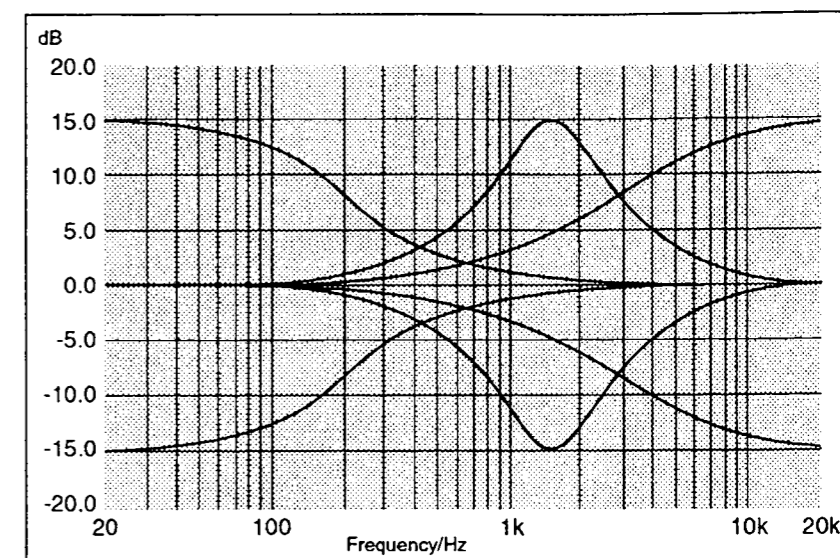
- 6 The equaliser has 3 bands, and is placed in circuit by pressing the **EQ** switch. When switched out of circuit, its input is grounded. All 3 bands have +/-15dB of cut and boost.

The HF control is fixed at a frequency of 12kHz.

The MF section offers a 20:1 frequency range ratio covering 500Hz to 10kHz. Q is fixed at about 0.5. Cut and boost is by the centre detented amplitude control.

The LF section offers an 8.8:1 frequency range ratio covering 45Hz to 400Hz. Q is fixed at about 0.5. Cut and boost is by the centre detented amplitude control.

### Frequency Response of the High Pass Filter



- 8 The **BAL** (balance) control determines the relative level of the L and R signals. In the centre position (detented) its gain is unity. Turning it fully CW increases the right signal by +4.5dB, and totally kills the left signal. Full ACW rotation has the opposite effect. Balance left biases the signal to odd numbered busses, balance right to even busses.

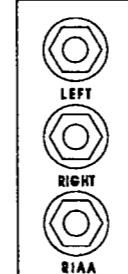
- 9 Three **ROUTING SWITCHES** give access in pairs to Mix left and right busses and 4 group busses.

- 10 The channel **ON** switch enables the post EQ, post insert channel signal path: when off, all auxiliary sends except those selected pre-fade, and all routing outputs are muted. We recommend that you switch all unused channels 'off', to prevent unwanted noise being added to any parts of the mix.

### PFL and Peak

- 11 Pressing the **PFL** switch routes the channel's pre-fade signal to the Master module where it replaces the signal on the monitor system. There is an associated red **LED** which glows when the channel is in PFL mode. The LED doubles up as a peak indicator: if a signal level of more than +16dBu internal level is detected at one of the 3 monitoring points (output of input buffer, output of gain/filter stage, and output of EQ) the LED will illuminate.

- 12 The **FADER** is a 100mm Alps type, with 10dB gain, and this is the main level control of the channel, with a long throw to enable rapid and accurate control of the channel output level. When mixing, you will get optimum headroom and signal-to-noise ratios by keeping the fader at about the unity gain (0) mark; avoid running the input **GAIN** too high, and the fader resultingly low, since this gives very little headroom. Similarly, running the input **GAIN** very low, and the fader fully up (10dB of gain) will increase noise levels, and does not allow any increase in gain on the fader should the source signal level drop unexpectedly.



Rear Connector Panel

Line Inputs L & R

3 Pole Jack, balanced

Tip	Hot
Ring	Cold
Sleeve	Screen

RIAA Input

3 Pole Jack

Tip	Left signal
Ring	Right signal
Sleeve	Gnd(screen)

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## RS5311 Mono Input Module

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**10** The channel ON switch enables the post EQ, post insert channel signal path: when off, all auxiliary sends except those selected pre-fade, and all routing outputs are muted. We recommend that you switch all unused channels 'off', to prevent unwanted noise being added to any parts of the mix.

**PFL and Peak**

**11** Pressing the **PFL** switch routes the channel's pre-fade signal to the Master module where it replaces the signal on the monitor system. There is an associated red **LED** which glows when the channel is in PFL mode. The LED doubles up as a peak indicator: if a signal level of more than +16dBu internal level is detected at one of the 2 monitoring points (output of input amp, and output of EQ) the LED illuminates.

**12** The **FADER** is a 100mm Alps type, with 10dB gain, and this is the main level control of the channel, with a long throw to enable rapid and accurate control of the channel output level. When mixing, you will get optimum headroom and signal-to-noise ratios by keeping the fader at about the unity gain (0) mark; avoid running the input **GAIN** too high, and the fader resultingly low, since this gives very little headroom. Similarly, running the input **GAIN** very low, and the fader fully up (10dB of gain) will increase noise levels, and does not allow any increase in gain on the fader should the source signal level drop unexpectedly.

**Direct Output**

A post fade unbalanced direct output (nominal level -2dBu) is provided on a rear panel jack socket.



Rear Connector Panel  
Mic I/P Female XLR

Pin 1	Screen
Pin 2	Hot
Pin 3	Cold

Line Input 3 Pole Jack

Tip	Hot
Ring	Cold
Sleeve	Screen

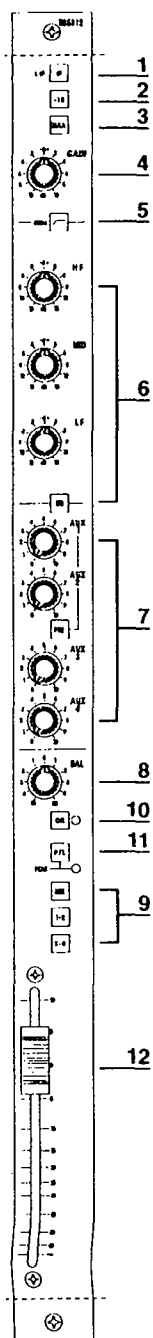
Insert 3 Pole Jack

Tip	Return
Ring	Send
Sleeve	Screen

Direct Output 3 Pole Jack

Tip	Hot
Ring	Ground
Sleeve	Screen

**RS5312 Stereo Input Module**



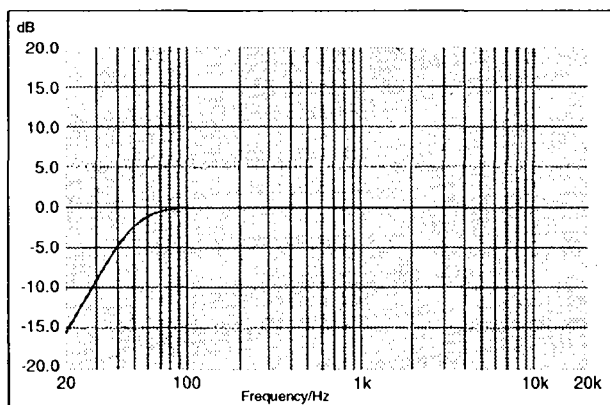
## Stereo Input Module

### Input Stage

Inputs are via three jack sockets on the integral rear connector panel: Two are balanced Left and Right line level inputs, and the third is a stereo RIAA input.

- 1 The phase of the left line input can be reversed by the **LØ** switch.
- 2 The line input is designed to accept either +4dBu or -10dBV signal levels. The default is +4dBu; pressing the **-10** switch selects the alternative sensitivity.
- 3 Selection of the RIAA input is by the **RIAA** switch and this input is unaffected by the Left phase(LØ) and -10 switches.
- 4 The input **GAIN** control allows the sensitivity be adjusted +/-10dB. The 0dB gain point is at the centre detented position.
- 5 The **FILTER** switch introduces a 50Hz high-pass filter into circuit.

### Frequency Response of the High Pass Filter



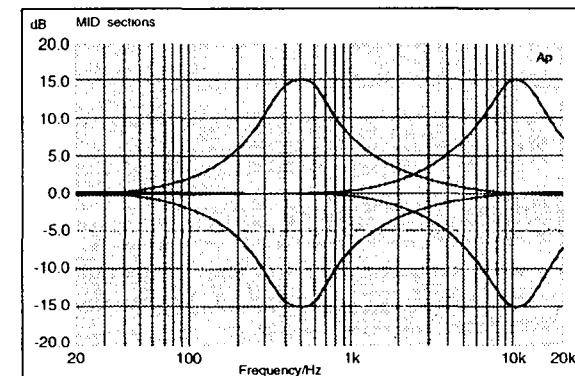
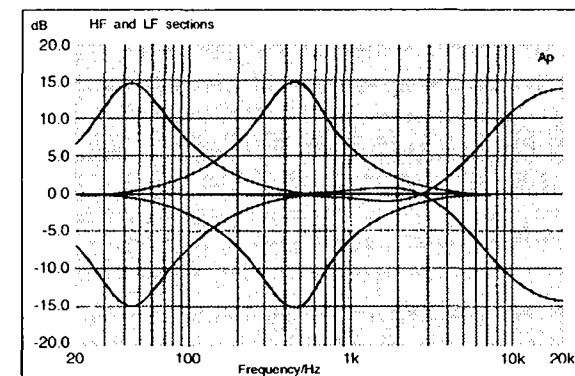
### Equaliser

- 6 The equaliser has 3 fixed-frequency bands, and is placed in circuit by pressing the **EQ** switch. When switched out of circuit, its input is grounded. All 3 bands have +/-15dB of cut and boost.

### Auxiliary sends

- 7 Four auxiliary sends are provided. Each has a rotary level control. Sourcing for Auxes 1 & 2 is normally post fade, but can be selected pre- fade by the **PRE** switch. The pre mode always follows the EQ switch: If EQ is out, aux source is pre-EQ; if EQ is in, aux source is post-EQ. The sources are mono-sums of their respective pre- and post- fade stereo signals.

### Frequency Response Curves of the Equaliser



### Auxiliary Sends

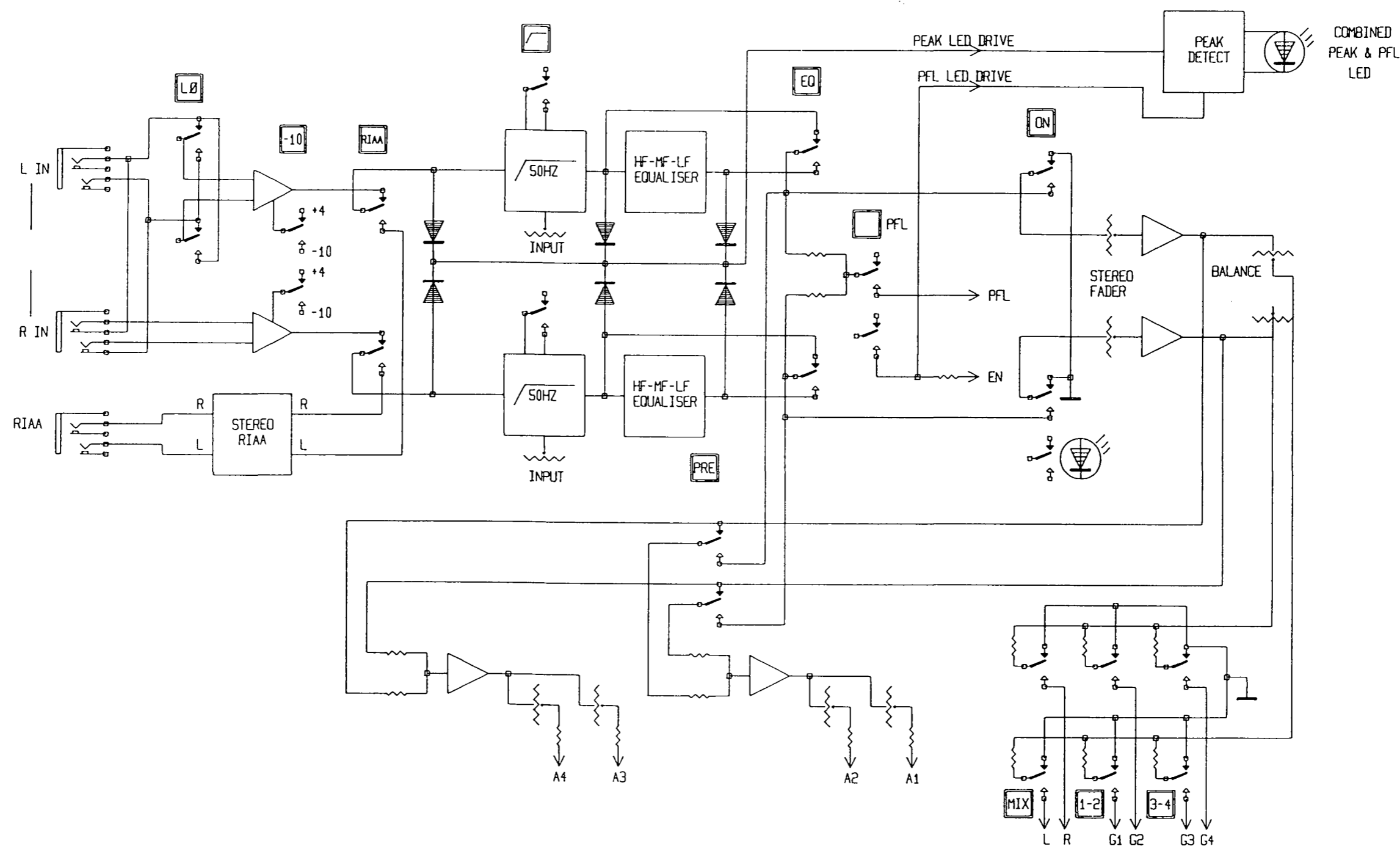
- 7 Four **AUXILIARY SENDS** are provided. Each has a rotary level control. Sourcing for Auxes 1 & 2 is normally post fade, but can be selected pre- fade by the **PRE** switch. Internal jumpers select the source as pre-fade, post ON or pre-fade, pre EQ. Auxes 3 & 4 are always post-fade.

### Routing

- 8 The routing switches are sourced after the centre detented passive **PAN** control. Pan left feeds the signal to odd numbered busses, pan right to even busses. Panning fully left or right sends signal to only the left or right side respectively.
- 9 The **ROUTING MATRIX** allows the channel post-fade signal to be fed to the group and mix busses which are unbalanced and paired as Mix L&R, Groups 1-2 and Groups 3-4.

DRG NO. ED

INITIAL	ISSUE	DATE
GHB	1	10-9-91



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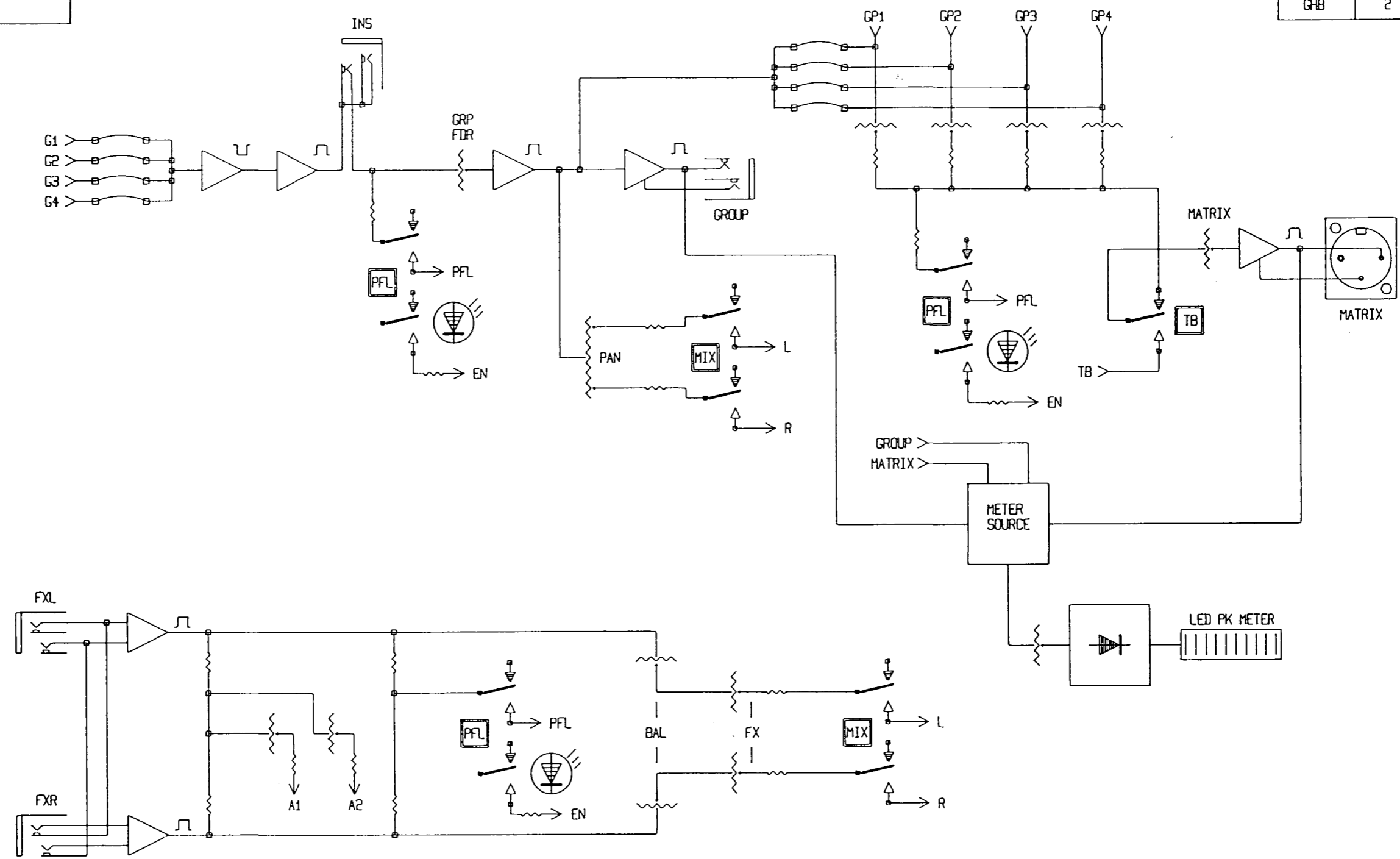
DRN. GHB  
FIG. 5.2  
FILE: SBLK101.CSD

TITLE DELTA SR  
STEREO INPUT BLOCK  
DRG NO. ED

SHT. OF

INITIAL	ISSUE	DATE
GHB	2	15-11-91

DRG NO. ED



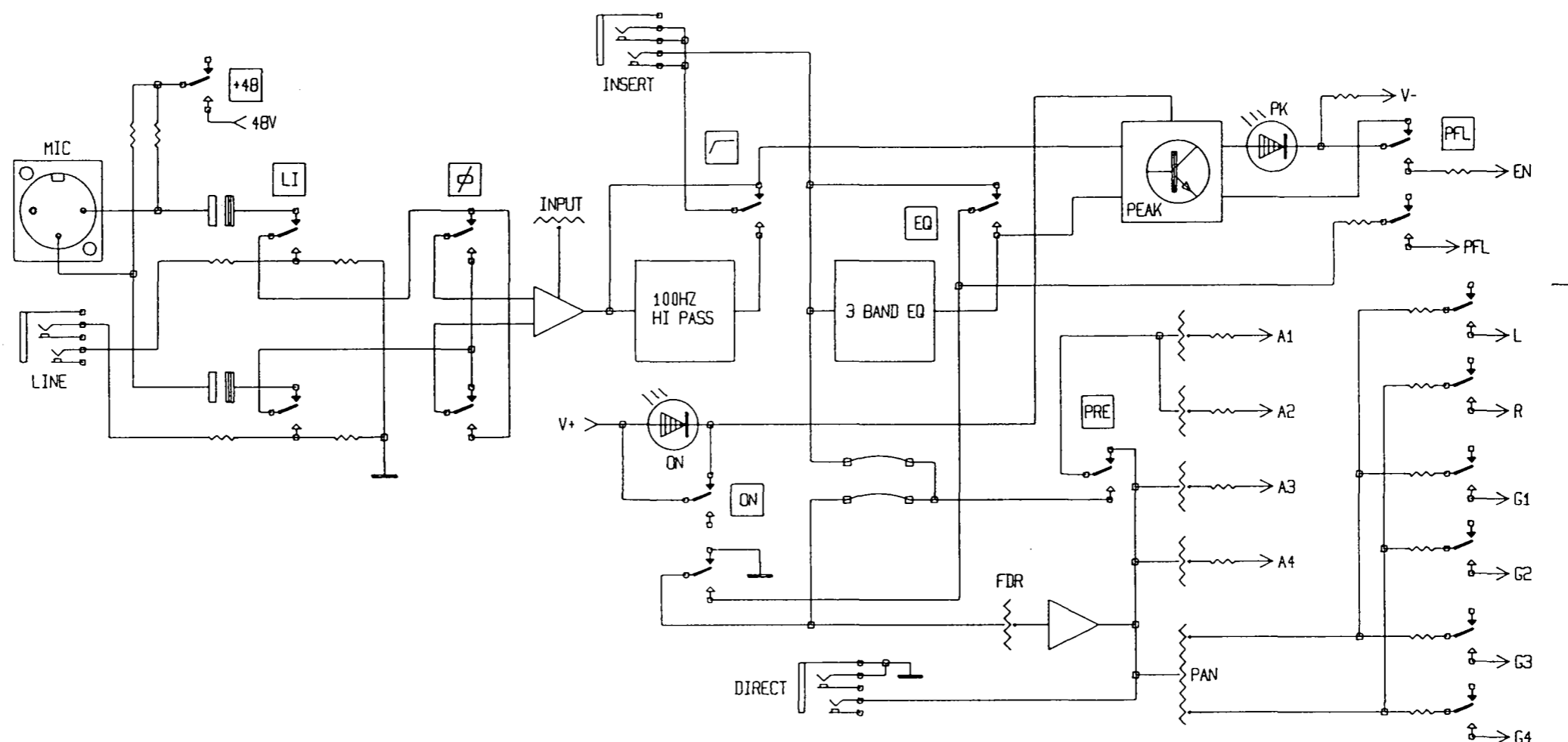
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DRN. GHB  
FIG. 6.2  
FILE: GBLK102.CSD

TITLE DELTA SR  
GROUP/FX/MATRIX BLOCK  
DRG NO. ED  
SHT. OF



NOTES

DRN.	GHB
FIG. 4.2	
FILE: IBLK102.C	

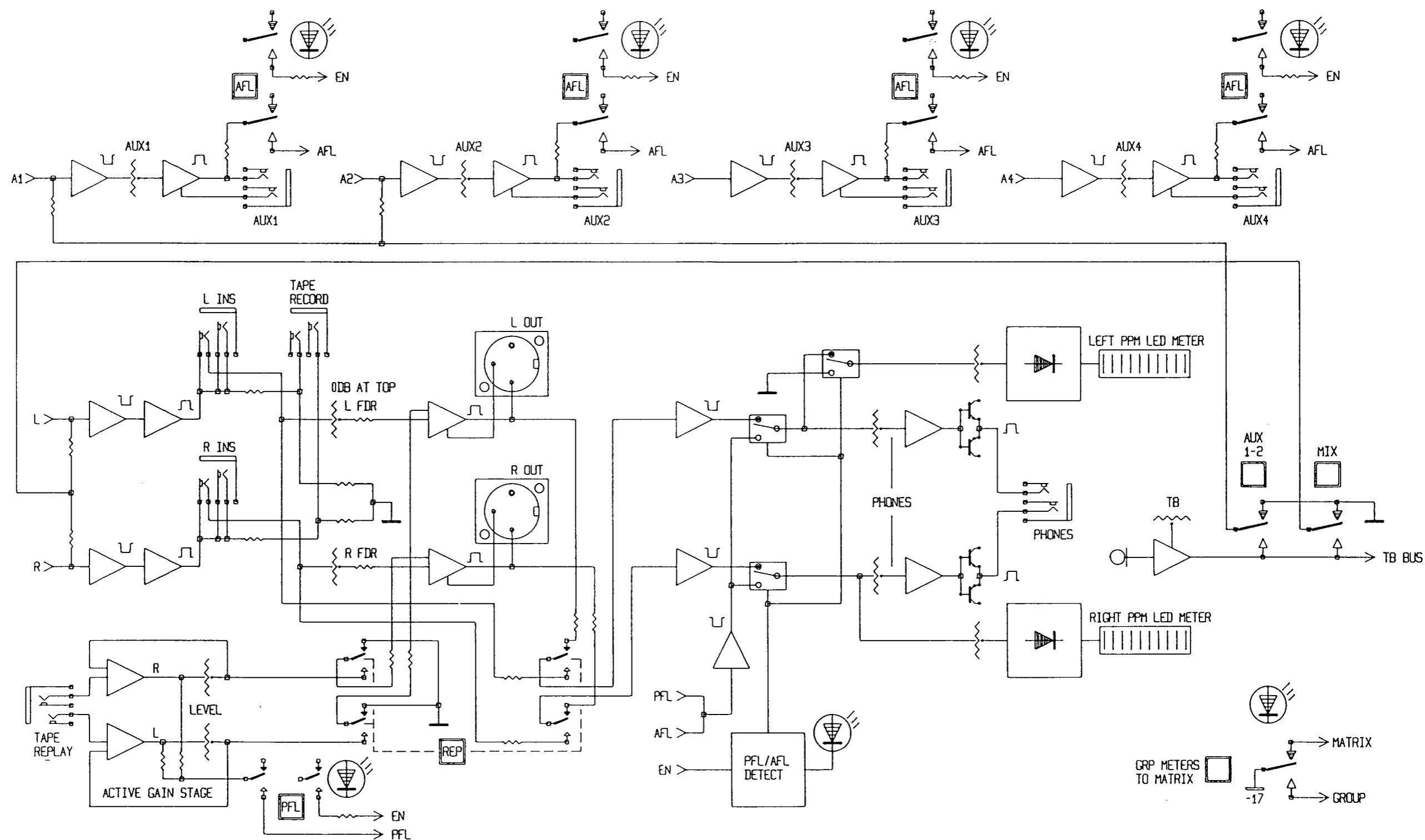
DRG NO.	ED
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GHB

FIG. 7.1

FILE: MBLK101.CSD

TITLE

DELTA SR  
MASTER BLOCK

DRG NO.

ED

SHT. OF