

Concept  
200 Series

**OWNER'S MANUAL**



# Concept 200 Series

## OWNER'S MANUAL

### CONTENTS

Input	1-4
Subgroup	5-8
Matrix Subgroup	9-12
Auxiliary Send	13-15
Master	16-20
Communications/Monitors	21-25
Operating Instructions	26-28
Interfacing	29
Specifications	30
Power Supply	31-33
Block Diagram	34

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**CONCEPT      INPUT SECTION**



**ph. pwr** (phantom power switch)  
This switch connects the 48volt phantom power to the XLR input socket.

**ph. rev** (phase reverse switch)  
This switch reverses the phase of the microphone input signal.

**pad** (20dB - microphone input only)  
If the microphone signal coming into the channel is too strong for the gain control to adjust effectively (gain set below 9 o'clock and peak LED still on), then depressing the pad switch will reduce the input signal strength and allow the gain control to work at a more desirable level.



**mic/line gain**  
This controls the input level of the microphone and line inputs depending on whether a microphone or line input is selected. The continually variable control has a range of: +20dB to +60dB (pad out) 0dB to +40dB (pad in). The input channels feature a transformerless balanced microphone input with an impedance of 1.2k ohms which will allow any normal low impedance microphone to be used without matching problems.

**line**  
This switches between the balanced microphone input (XLR) and the dual balanced/unbalanced line input (1/4"). If a stereo(TRS) 1/4" jack is used, the input is balanced, otherwise it is unbalanced.

**tape gain**  
This controls the input level of the tape input. The variable control has a range of +20dB to -20dB. The gain control also affects the gain of the tape return to the subgroup section.

**tape**  
This switches from the input as selected above, to the tape return and allows the input channels to be used for remixing. If a stereo (TRS) 1/4" jack is used the tape return is balanced. This input is also used as the return input for the subgroup monitor section.



**equalisation**  
The equalisation section is a 6 band, fixed bandwidth, low Q type. Particular care has been taken to eliminate phase distortion, with the result that full boost or cut of any band will cause minimal phase cancellation in any other. The response is of the 'bell' type with centre frequencies at:

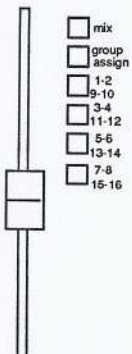
12.5kHz	+/- 12dB
4.5kHz	+/- 12dB
1.5kHz	+/- 12dB
500Hz	+/- 12dB
150Hz	+/- 12dB
60Hz	+/- 12dB



**sweep filter**  
This section contains a fixed Q sweepable notch filter with variable cut and frequency for use in removing unwanted peaks in a signal. It is variable in depth between +6dB and -24dB and variable in frequency between 50Hz to 5kHz.



**defeat**  
This switch defeats the current setting of equalisation, thus allowing a comparison to be made.



**auxiliary**

These controls allow some of the input signal to be "tapped" off the signal path (without affecting the signal strength) at different positions, and sent to an auxiliary device (such as an echo unit) or to a separate amplifier for monitor (foldback) purposes.

**aux #1/2.** aux #1 and 2 may be switched PRE or POST insert, eq. and fader and may therefore be used as either a cue (foldback) send (PRE) or effects send (POST) When switched PRE fade, they may be linked PRE or POST equalisation dependent on the position of an internal link. These sends may be further directed to either aux #1/2 or aux#5/6.

**aux #3/4.** as auxiliary #1/2. In addition they may be sent to either Aux 3/4 or to Aux 7/8 busses.

All the auxiliary sends may optionally be factory fitted with dual concentric controls, thus allowing simultaneous control of all 8 auxiliary sends.

**pan**

This control adjusts the position of the signal within a stereo image at the outputs selected with the routing switches below.

**mute**

This switch prevents signal from leaving the channel. In effect it turns the channel off, yet allows all PRE fader busses (monitors) to operate, and the signal can still be monitored in the headphones, on the channel peak-signal displays and on the pfl VU meter.

**pfl**

This switch sends the PRE fader signal to the headphone output, allowing the signal to be monitored in the headphones and on the pfl led display. If the auto-pfl switch is depressed on the functions module, depressing the pfl switch causes the signal to be connected to the monitor speaker output.

Note: the pfl system is additive, in that any number of pfl buttons can be depressed at the same time.

**peak**

This LED (light emitting diode) indicates when the input signal level is at +10dBu. The LED is POST eq. and PRE fader to allow accurate reading of the signal strength.

This is not a clip indicator - there is 12dB of headroom after this LED illuminates.

**signal**

This LED indicates that a signal is present at the selected input of the module. It will go out whenever the peak LED comes on.

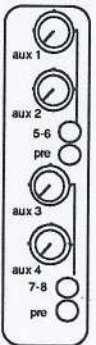
**fader**

A 100mm smooth action fader controls the output level of the channel.

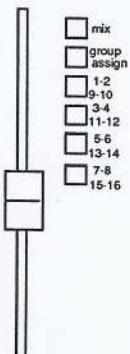
**routing**

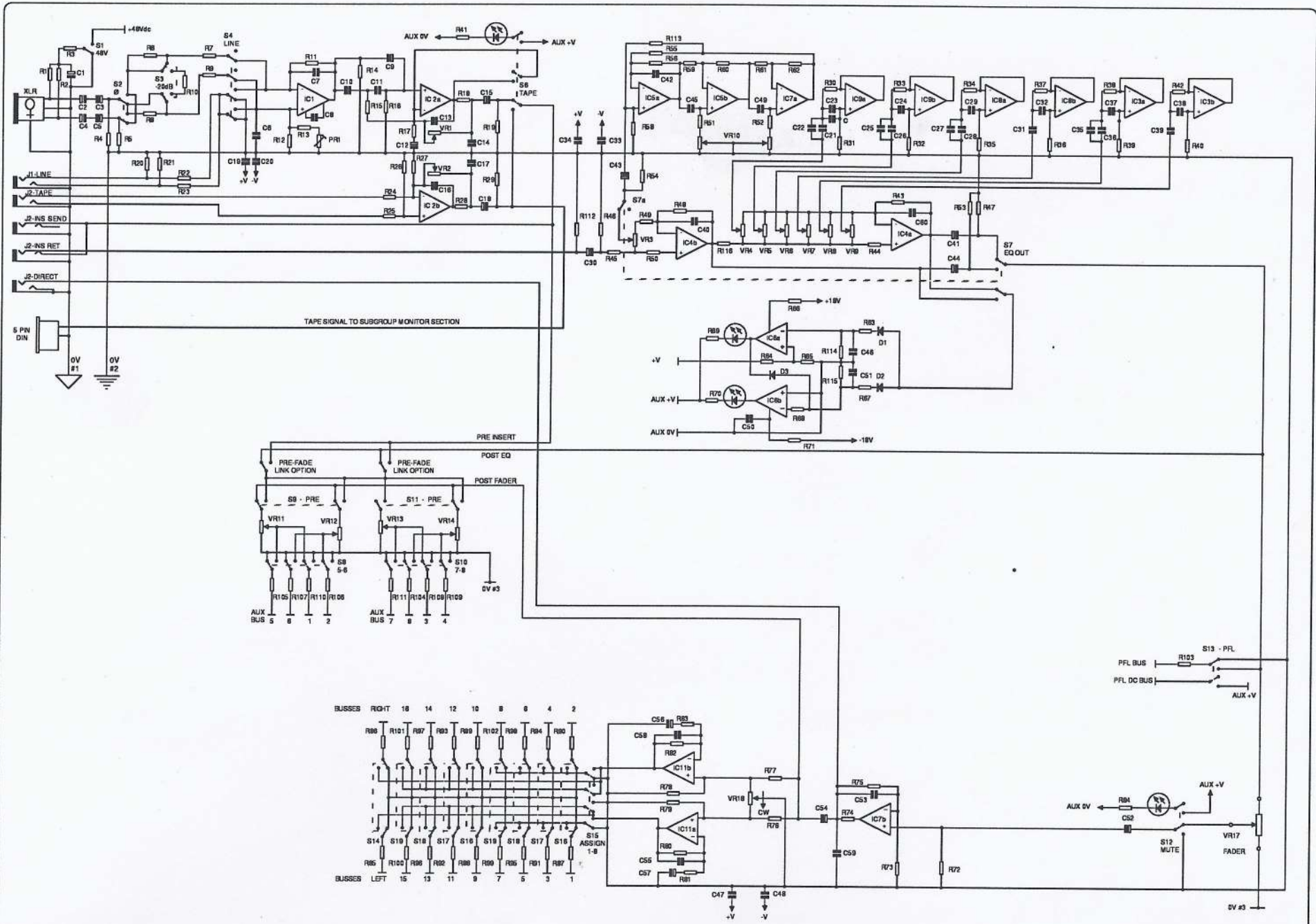
The POST fader signal can be sent to any of the 16 subgroups, or to the master stereo outputs, using these switches. Four routing switches are provided together with an ASSIGN switch. This changes the switches from routing from groups 1-8 to 9-16 to allow 16 track recording. With the assign switch depressed, the routing switches send to groups 1-8. Using the pan control in conjunction with the routing switches allows the operator to send to one or both of the outputs selected. Example: select groups 1 - 2.

pan left - signal in group 1, pan right - signal in group 2, pan centre - signal in both.

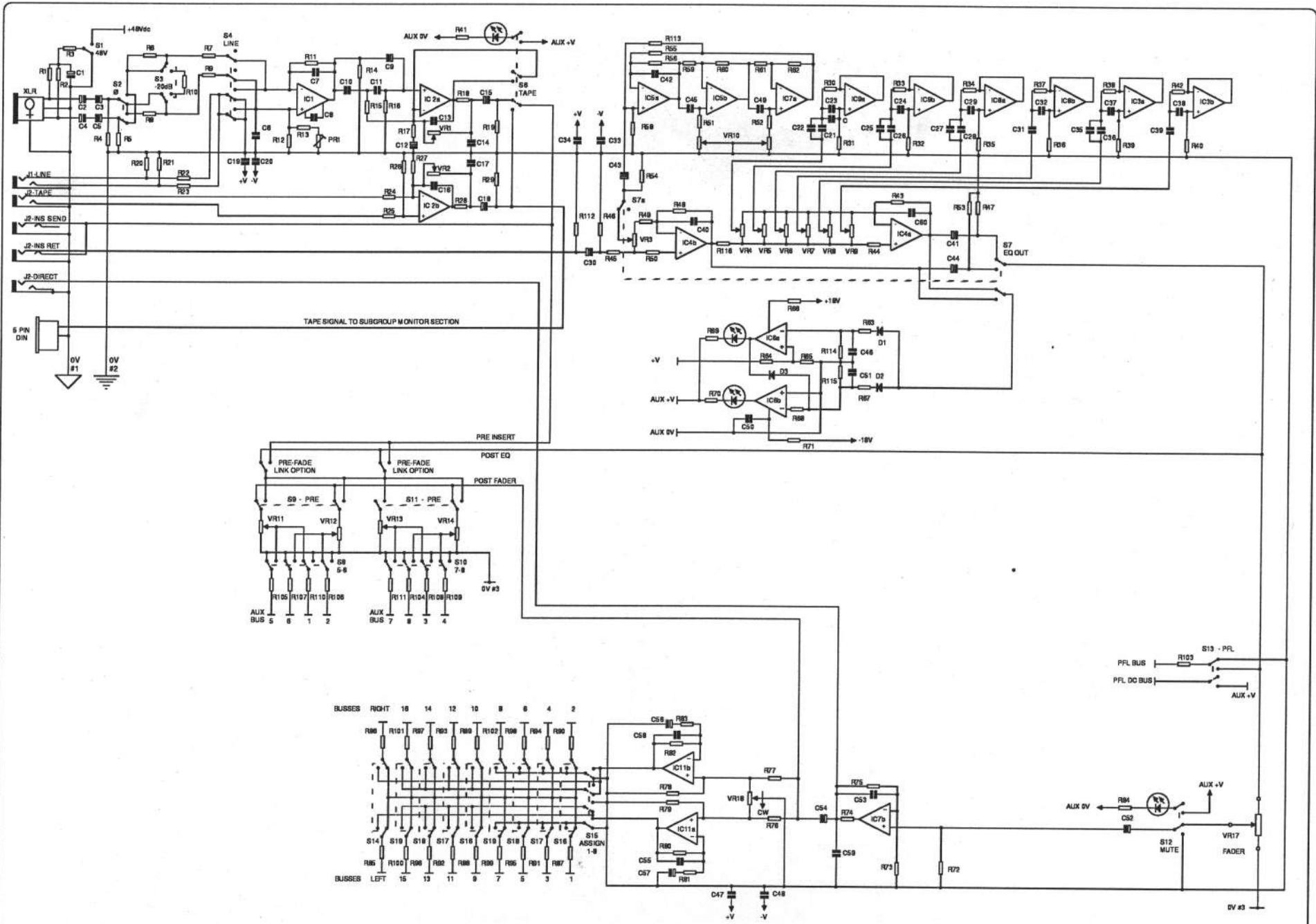


peak   
signal





	Drawn By:	Concept
	PF:	200 Series
	Date:	Input Circuit
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	PF:	200 Series
	Date:	Issue: 1
	S0/2/88	© Hill Audio Ltd.

Concept 200 Input Components

R 1	6K8	1	% 1/4 W	R 59	10K	1	% 1/4 W	C 1	100µF	EL 63V	D 1	1N4148
R 2	6K8	1	% 1/4 W	R 60	10K	1	% 1/4 W	C 2	100µF	EL 63V	D 2	1N4148
R 3	560R	1	% 1/4 W	R 61	10K	1	% 1/4 W	C 3	100µF	EL 63V	D 3	1N4148
R 4	10K	1	% 1/4 W	R 62	10K	1	% 1/4 W	C 4	100µF	EL 63V		
R 5	10K	1	% 1/4 W	R 63	1K	1	% 1/4 W	C 5	100µF	EL 63V		
R 6	560R	1	% 1/4 W	R 64	51K	1	% 1/4 W	C 6	270pF	PC		
R 7	560R	1	% 1/4 W	R 65	10K	1	% 1/4 W	C 7	270pF	PC		
R 8	560R	1	% 1/4 W	R 66	100R	1	% 1/4 W	C 8	22pF	PC		
R 9	560R	1	% 1/4 W	R 67	1K	1	% 1/4 W	C 9	10µF	ST 10V		
R 10	120R	1	% 1/4 W	R 68	1K5	1	% 1/4 W	C10	33nF	PL		
R 11	5K6	1	% 1/4 W	R 69	20K	1	% 1/4 W	C11	33nF	PL		
R 12	7K5	1	% 1/4 W	R 70	3K9	1	% 1/4 W	C12	100µF	ST 4V		
R 13	20K	1	% 1/4 W	R 71	100R	1	% 1/4 W	C13	5.6pF	PC		
R 14	100K	1	% 1/4 W	R 72	100K	1	% 1/4 W	C14	100pF	PC		
R 15	33K	1	% 1/4 W	R 73	2K7	1	% 1/4 W	C15	100µF	ST 4V		
R 16	100K	1	% 1/4 W	R 74	47R	1	% 1/4 W	C16	5.6pF	PC	IC 1	5534(A) N 8 PIN SOCKET
R 17	560R	1	% 1/4 W	R 75	2K2	1	% 1/4 W	C17	100pF	PC	IC 2	5532 8 PIN SOCKET
R 18	47R	1	% 1/4 W	R 76	33K	1	% 1/4 W	C18	100µF	ST 4V	IC 3	5532 8 PIN SOCKET
R 19	51K	1	% 1/4 W	R 77	33K	1	% 1/4 W	C19	0.1µF	PL	IC 4	5532 8 PIN SOCKET
R 20	10K	1	% 1/4 W	R 78	100K	1	% 1/4 W	C20	0.1µF	PL	IC 5	5532 8 PIN SOCKET
R 21	10K	1	% 1/4 W	R 79	100K	1	% 1/4 W	C21	15nF	PL	IC 6	5532 8 PIN SOCKET
R 22	56K	1	% 1/4 W	R 80	3K9	1	% 1/4 W	C22	3n3F	PL	IC 7	5532 8 PIN SOCKET
R 23	56K	1	% 1/4 W	R 81	560R	1	% 1/4 W	C23	56pF	PC	IC 8	5532 8 PIN SOCKET
R 24	5K6	1	% 1/4 W	R 82	3K9	1	% 1/4 W	C24	120pF	PC	IC 9	5532 8 PIN SOCKET
R 25	5K6	1	% 1/4 W	R 83	560R	1	% 1/4 W	C25	47nF	PL	IC11	5532 8 PIN SOCKET
R 26	510R	1	% 1/4 W	R 84	1K5	1	% 1/4 W	C26	10nF	PL		
R 27	560R	1	% 1/4 W	R 85	10K	1	% 1/4 W	C27	0.1µF	PL		
R 28	47R	1	% 1/4 W	R 86	10K	1	% 1/4 W	C28	47nF	PL		
R 29	51K	1	% 1/4 W	R 87	10K	1	% 1/4 W	C29	330pF	PC		
R 30	1K	1	% 1/4 W	R 88	10K	1	% 1/4 W	C30	22µF	ST 16V		
R 31	220K	1	% 1/4 W	R 89	10K	1	% 1/4 W	C31	0.47µF	PL		
R 32	220K	1	% 1/4 W	R 90	10K	1	% 1/4 W	C32	1nF	PL		
R 33	1K	1	% 1/4 W	R 91	10K	1	% 1/4 W	C33	0.1µF	PL		
R 34	1K	1	% 1/4 W	R 92	10K	1	% 1/4 W	C34	0.1µF	PL	VR 1	47KB PC20 1/4
R 35	220K	1	% 1/4 W	R 93	10K	1	% 1/4 W	C35	1µF	PL	VR 2	47KB PC20 4mm CD
R 36	220K	1	% 1/4 W	R 94	10K	1	% 1/4 W	C36	0.47µF	PL	VR 3	10KA PC20 4mm CD
R 37	1K	1	% 1/4 W	R 95	10K	1	% 1/4 W	C37	3n3F	PL	VR 4	10KA PC20 4mm CD
R 38	1K	1	% 1/4 W	R 96	10K	1	% 1/4 W	C38	10nF	PL	VR 5	10KA PC20 4mm CD
R 39	220K	1	% 1/4 W	R 97	10K	1	% 1/4 W	C39	2µ2F	ST 35V	VR 6	10KA PC20 4mm CD
R 40	220K	1	% 1/4 W	R 98	10K	1	% 1/4 W	C40	33pF	PC	VR 7	10KA PC20 4mm CD
R 41	1K5	1	% 1/4 W	R 99	10K	1	% 1/4 W	C41	22µF	ST 16V	VR 8	10KA PC20 4mm CD
R 42	1K	1	% 1/4 W	R100	10K	1	% 1/4 W	C42	33pF	PC	VR 9	10KA PC20 4mm CD
R 43	22K	1	% 1/4 W	R101	10K	1	% 1/4 W	C43	100µF	ST 4V	VR10	220KC PC 20 1/4 DUAL
R 44	1K	1	% 1/4 W	R102	10K	1	% 1/4 W	C44	22µF	ST 16V	VR11	47KB PC16 4mm 41POS
R 45	22K	1	% 1/4 W	R103	10K	1	% 1/4 W	C45	15nF	PL	VR12	47KB PC16 4mm 41POS
R 46	51K	1	% 1/4 W	R104	51K	1	% 1/4 W	C46	1µF	ST 35V	VR13	47KB PC16 4mm 41POS
R 47	51K	1	% 1/4 W	R105	51K	1	% 1/4 W	C47	0.1µF	PL	VR14	47KB PC16 4mm 41POS
R 48	68K	1	% 1/4 W	R106	51K	1	% 1/4 W	C48	0.1µF	PL	VR17	10KB FADER
R 49	10K	1	% 1/4 W	R107	51K	1	% 1/4 W	C49	15nF	PL	VR18	10KA PC20 1/4 CD
R 50	1K	1	% 1/4 W	R108	51K	1	% 1/4 W	C50	0.1µF	PL		
R 51	2K2	1	% 1/4 W	R109	51K	1	% 1/4 W	C51	1µF	ST 35V	PR 1	4.7K PRESET
R 52	2K2	1	% 1/4 W	R110	51K	1	% 1/4 W	C52	22µF	ST 16V		
R 53	51K	1	% 1/4 W	R111	51K	1	% 1/4 W	C53	100pF	PC		
R 54	390K	1	% 1/4 W	R112	51K	1	% 1/4 W	C54	22µF	ST 16V		
R 55	10K	1	% 1/4 W	R113	10K	1	% 1/4 W	C55	100pF	PC		
R 56	10K	1	% 1/4 W	R114	1M	1	% 1/4 W	C56	100µF	ST 4V		
				R115	1M	1	% 1/4 W	C57	100µF	ST 4V		
R 58	390K	1	% 1/4 W	R116	1K	1	% 1/4 W	C58	100pF	PC		
								C59	100pF	PC		
								C60	33pF	PC		

## SUBGROUP

### Monitor section x 2

Two monitor sections are provided to allow for 16 track monitoring on the 8 bus version and 32 track monitoring on the 16 bus version. The lower monitor ONLY has the additional effects input.

#### equalisation

The response is of the shelving type with a response of:

10kHz +/- 12dB

100Hz +/- 12dB

It operates on the monitor signal as selected by the source / tape and effects switch as described later.

#### defeat

This switch defeats the current setting of equalisation, thus allowing a comparison to be made.

#### auxiliary

These controls allow some of the monitor signal to be "tapped" off the signal path (without affecting the signal strength) at different positions, and sent to an auxiliary device (such as an echo unit) or to a separate amplifier for cue (foldback) purposes.

aux #1/2 auxiliary #1/2 take signal from the signal path PRE insert, eq. and fader (i.e. before eq. and fader) and is therefore only dependent on the input gain. The PRE eq. and fader signal is ideally suited for cue (foldback). They may also be switched to aux #3/4 and an internal link is provided to permanently assign them POST fade. Dual concentric controls may be optionally fitted to allow simultaneous access to all 4 busses.

#### pan

This control adjusts the position of the subgroup monitor signal within the stereo image of the monitor or mix outputs.

#### mute

This switch mutes the signal from this monitor group to the monitor speakers or master outputs. It does not affect the pfl signal or pre-fade aux1 and aux2 sends.

#### pfl (pre fader listen)

This switch sends the PRE fader signal to the headphone output, allowing the signal to be monitored in the headphones and on the pfl VU meter. It will also send the signal to the monitor output if pfl auto has been depressed.

#### mix

The POST fader signal is normally sent to the stereo monitor outputs. Pressing the MIX switch assigns the monitor sends to the MIX outputs. Using the pan control in conjunction with the MIX switch allows the operator to send to one or both of the outputs selected.

#### fx (only on lower monitor)

This switch selects the effects input to the monitor section, overriding the group/tape switch below. This input is suited to use as an effects return input during remixing when all input channels are used for tape returns. The VU metering does not monitor this input which may be viewed on the pfl VU meter.

#### tape

This controls the input to this monitor section which may be either the subgroup output or the tape return signal. An LED indicates when tape is selected. The metering follows the group / tape switches.

#### monitor level

A rotary fader which controls the level of the signal to the stereo monitor output. The output from here is routed via the PAN control and the MASTER switch.





## SUBGROUP

### Subgroup output section

#### VU Meter (On Meter Bridge)

0dB on the VU meters indicates that the output level is at +4dBm (or -10dBV if selected). The meters are PRE monitor fader (i.e. they are looking at what is coming into the monitor section from the tape/source switch). They can be used to check the level returned from the tape machine (off-tape level check) or to check the level being sent to the subgroup output. The subgroup feed to the monitors is taken after the subgroup fader, which will thus affect the monitor mix. The FX input cannot be monitored with these meters so that tape/source monitoring can continue when these inputs are used as effects returns.

#### group -10dBv

The subgroup direct outputs are normally set to +4dBm output level - the recording industry standard. This internal switch reduces the output level allowing the CONCEPT series to interface with -10dBv equipment. Depress the switch to change to -10dBv outputs.

#### pan

This control adjusts the position of the subgroup signal within a stereo image of the MIX Left/Right outputs if the MIX switch is depressed. If the MIX switch is not depressed, the signal is only accessible using the subgroup direct output.

#### mute

This switch prevents signal from leaving the subgroup. In effect it turns the subgroup off, yet allows the signal to be monitored in the headphones and on the pfl VU display

#### pfl (pre fader listen)

This switch sends the PRE fader subgroup signal to the headphone output, allowing the signal to be monitored in the headphones and on the pfl VU meter. It will also send the signal to the monitor output if pfl auto has been depressed.

#### mix

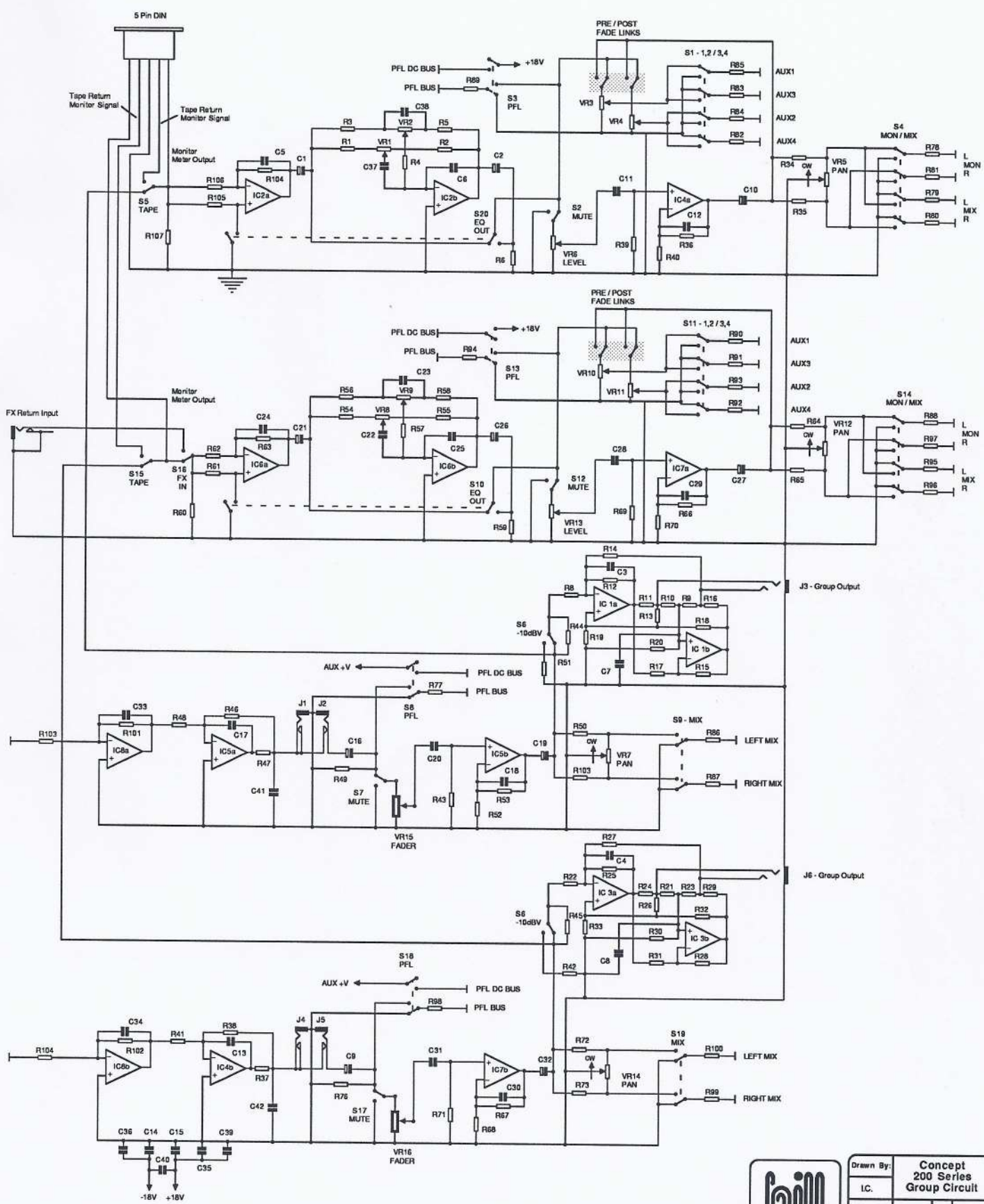
The subgroup output is available via direct output jacks. In addition the POST fader signal can be sent to the master stereo outputs using the MIX switch. Using the pan control in conjunction with the MIX switch allows the operator to send to one or both of the outputs selected.

Example: pan left - signal in left mix output  
pan right - signal in right mix output  
pan centre - signal in both

#### fader

A 100mm smooth action fader controls the output level of the subgroup.





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IC:			
Date:	Issue:	1	
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## MATRIX SUBGROUP SECTION



### Matrix Send Level controls

8 Matrix level controls are provided to allow the user to generate a special mix of the subgroups, for instance for a dressing-room mix or different areas of the concert hall. The signal source for these controls is internally linkable to either PRE or POST the main subgroup fader.

### Matrix Master section

#### Mute

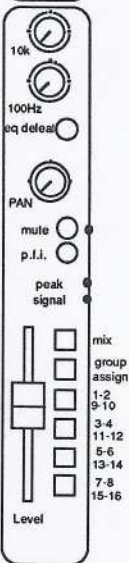
This switch prevents signal from leaving the matrix group. In effect it turns off the matrix output, yet allows the signal to be monitored in the headphones and on the pfl VU meter.

#### pfl (pre fader listen)

This switch sends the PRE fader matrix signal to the headphone output, allowing the signal to be monitored in the headphones and on the pfl VU meter. It will also send the signal to the monitor output if **pfl auto** has been depressed.

#### Level

A rotary master level control is provided to adjust the overall level for a matrix group.



### Effects return input

An effects return is provided to allow extra inputs to be added to the mix without using input modules. It is similar to the input module with reduced facilities.

#### equalisation

The response is of the shelving type with a response of:

10kHz +/- 12dB  
100Hz +/- 12dB

#### defeat

This switch defeats the current setting of equalisation, thus allowing a comparison to be made.

#### pan

This control adjusts the position of the subgroup monitor signal within the stereo image of the monitor or mix outputs.

#### mute

This switch mutes the signal from this monitor group to the monitor speakers or master outputs. It does not affect the pfl signal.

#### pfl (pre fader listen)

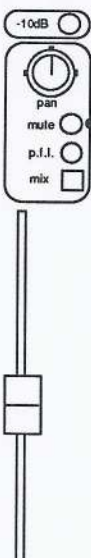
This switch sends the PRE fader signal to the headphone output, allowing the signal to be monitored in the headphones and on the pfl VU meter. It will also send the signal to the monitor output if **pfl auto** has been depressed.

#### peak

This LED (light emitting diode) indicates when the input signal level is at +10dBu. The LED is POST eq. and PRE fader to allow accurate reading of the signal strength. This is not a clip indicator - there is 12dB of headroom after this LED illuminates.

#### signal

This LED indicates that a signal is present at the input of the module. It will go out whenever the peak LED comes on.



## Effects return input contd.



### **fader**

A 60mm smooth action fader controls the output level of the channel.

### **routing**

The POST fader signal can be sent to any of the 16 subgroups, or to the master stereo outputs, using these switches. Four routing switches are provided together with an ASSIGN switch. This changes the switches from routing from groups 1-8 to 9-16 to allow 16 track recording. With the assign switch depressed, the routing switches send to groups 1-8. Using the pan control in conjunction with the routing switches allows the operator to send to one or both of the outputs selected. Example: select groups 1 - 2. pan left - signal in group 1, pan right - signal in group 2, pan centre - signal in both.

## SUBGROUP

### Subgroup output section

### **VU Meter (On Meter Bridge)**

0dB VU meter indicates that the output level is at +4dBm (or -10dBV if selected). The LEDs are POST the subgroup fader.

### **group -10dBv**

The subgroup direct outputs are normally set to +4dBm output level - the recording industry standard. This internal switch reduces the output level allowing the CONCEPT series to interface with -10dBv equipment. Depress the switch to change to -10dBv outputs.

### **pan**

This control adjusts the position of the subgroup signal within a stereo image of the MIX Left/Right outputs if the MIX switch is depressed. If the MIX switch is not depressed, the signal is only accessible using the subgroup direct output.

### **mute**

This switch prevents signal from leaving the subgroup. In effect it turns the subgroup off, yet allows the signal to be monitored in the headphones and on the pfl VU meter.

### **pfl (pre fader listen)**

This switch sends the PRE fader subgroup signal to the headphone output, allowing the signal to be monitored in the headphones and on the pfl VU meter. It will also send the signal to the monitor output if pfl auto has been depressed.

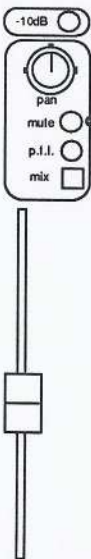
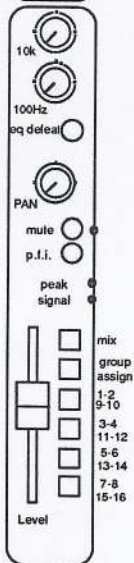
### **mix**

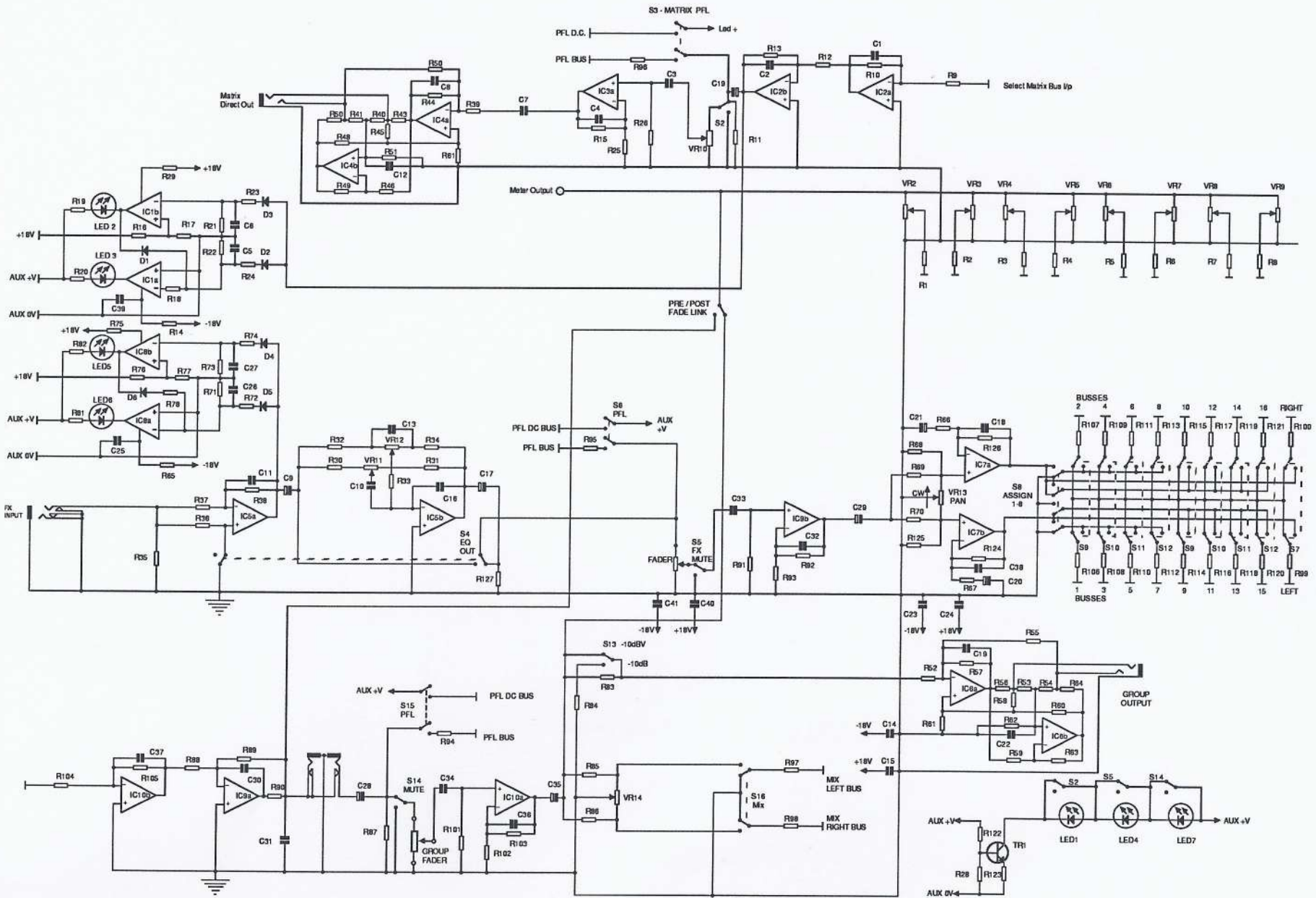
The subgroup output is available via a direct output jack on the rear panel. In addition the POST fader signal can be sent to the master stereo outputs using the MIX switch. Using the pan control in conjunction with the MIX switch allows the operator to send to one or both of the outputs selected.

Example: pan left - signal in left mix output  
pan right - signal in right mix output  
pan centre - signal in both

### **fader**

A 100mm smooth action fader controls the output level of the subgroup.





Drawn By: **Concept 200**  
 P.F. **Matrix Group**  
 Date: **19/4/88** Issue: **1**  
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## AUXILIARY SEND SECTION



### **Auxiliary Master Level controls**

These are the overall output level controls for the auxiliary busses.

If, after setting the individual aux sends on each channel to your desired level, you find the overall level is too high or low, it can be adjusted using this control, without having to adjust all the individual aux sends.

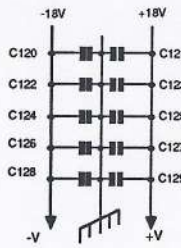
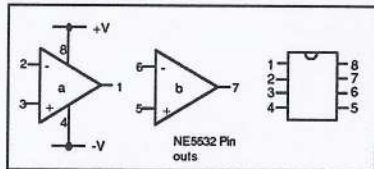
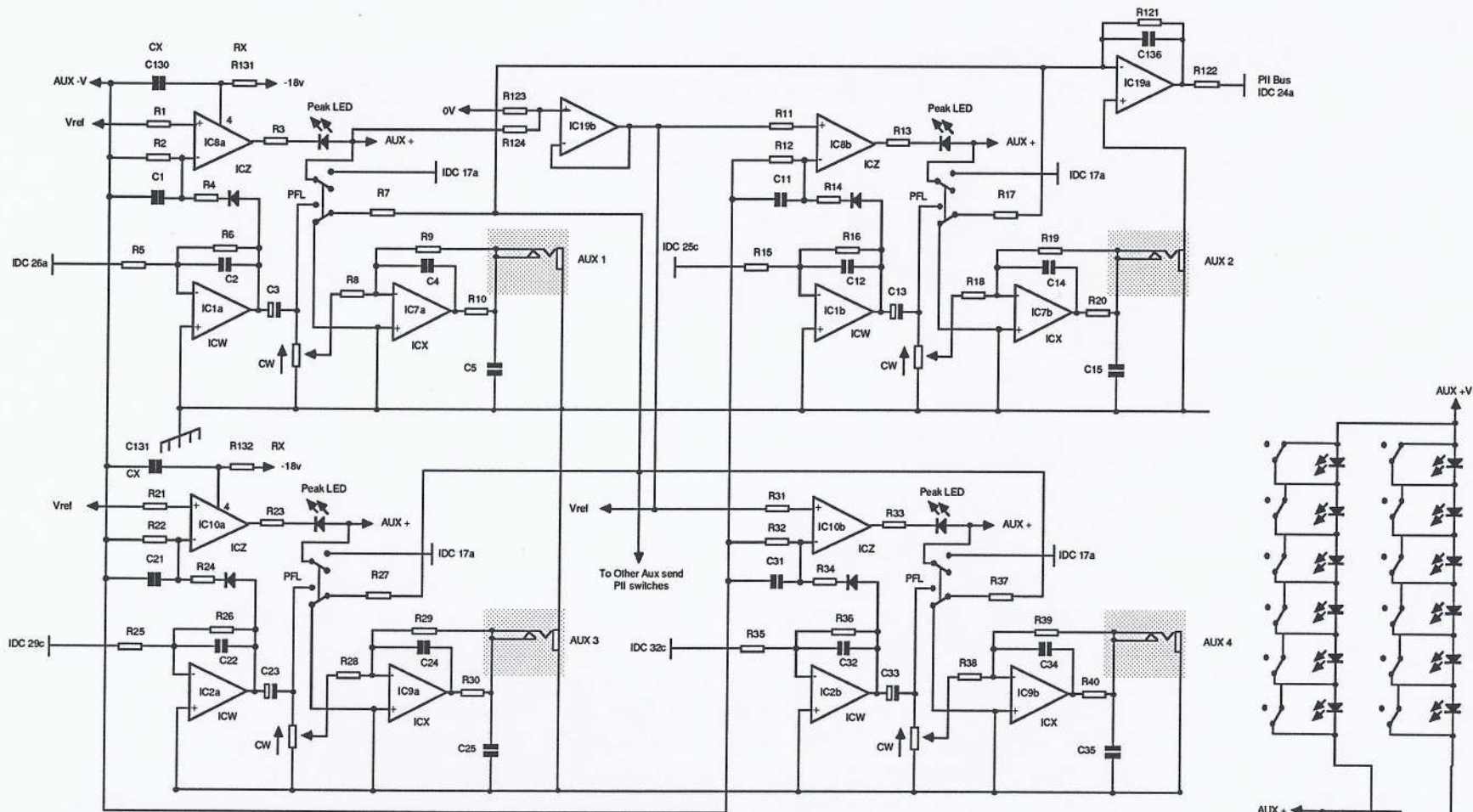
### **Pfl (pre fader listen)**

These switches send the PRE fader signal to the headphone output, allowing the signal to be monitored in the headphones and on the pfl led display. It will also send the signal to the monitor output if **pfl auto** has been depressed.

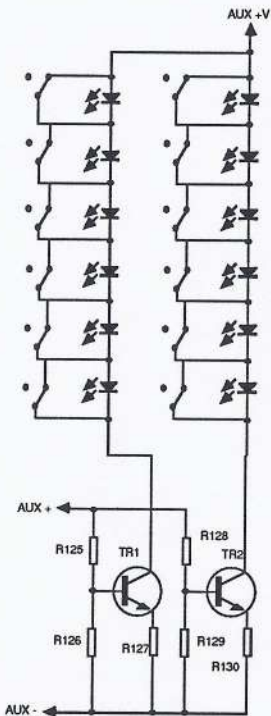
### **Peak**

These LEDs (light emitting diode) indicate when the pre aux master level control signal level is at +10dBm. These are not clip indicators - there is 12dB of headroom after these LEDs illuminate.





AUX	Resistors	Capacitors	RX	CX	ICW -	ICX -	ICZ -	IDC pin
5	R41-50	C41-45	R133	C132	IC3a	IC11a	IC12a	25a
6	R51-60	C51-55	R134	C133	IC3b	IC11b	IC12b	26c
7	R61-70	C61-65	R135	C134	IC4a	IC13a	IC14a	27a
8	R71-80	C71-75	R136	C135	IC4b	IC13b	IC14b	28c
9	R81-90	C81-85	R137	C136	IC5a	IC15a	IC16a	30c
10	R91-100	C91-95	R138	C137	IC5b	IC15b	IC16b	31c
11	R101-110	C101-105	R139	C138	IC6a	IC17a	IC18a	26c
12	R111-120	C111-115	R140	C139	IC6b	IC17b	IC18b	27c



Drawn By: **Concept Series**  
**Auxiliary Send**  
 P.F.  
 Date: **Issue: 1**  
 2/09/87 **© Hill Audio Ltd**

Concept Aux Sends Components

R 1	15K	1%	1/4 W	R69	51K	1%	1/4 W	C1	1uF	ST 35V	D 1	1N4148		
R 2	1M	1%	1/4 W	R70	47R	1%	1/4 W	C2	22pF	PC	D 2	1N4148		
R 3	20K	1%	1/4 W	R71	15K	1%	1/4 W	C3	10uF	ST 10V	D 3	1N4148		
R 4	1K	1%	1/4 W	R72	1M	1%	1/4 W	C4	22pF	PC	D 4	1N4148		
R 5	27R	1%	1/4 W	R73	20K	1%	1/4 W	C5	100pF	PC	D 5	1N4148		
R 6	51K	1%	1/4 W	R74	1K	1%	1/4 W	C11	1uF	ST 35V	D 6	1N4148		
R 7	51K	1%	1/4 W	R75	27R	1%	1/4 W	C12	22pF	PC	D 7	1N4148		
R 8	51K	1%	1/4 W	R76	51K	1%	1/4 W	C13	10uF	ST 10V	D 8	1N4148		
R 9	51K	1%	1/4 W	R77	51K	1%	1/4 W	C14	22pF	PC	D 9	1N4148		
R 10	47R	1%	1/4 W	R78	51K	1%	1/4 W	C15	100pF	PC	D 10	1N4148		
R 11	15K	1%	1/4 W	R79	51K	1%	1/4 W	C21	1uF	ST 35V	D 11	1N4148		
R 12	1M	1%	1/4 W	R80	47R	1%	1/4 W	C22	22pF	PC	D 12	1N4148		
R 13	20K	1%	1/4 W	R81	15K	1%	1/4 W	C23	10uF	ST 10V				
R 14	1K	1%	1/4 W	R82	1M	1%	1/4 W	C24	22pF	PC	TR 1	BC184LC		
R 15	27R	1%	1/4 W	R83	3k3	1%	1/4 W	C25	100pF	PC	TR 2	BC184LC		
R 16	51K	1%	1/4 W	R84	1K	1%	1/4 W	C31	1uF	ST 35V				
R 17	51K	1%	1/4 W	R85	27R	1%	1/4 W	C32	22pF	PC				
R 18	51K	1%	1/4 W	R86	51K	1%	1/4 W	C33	10uF	ST 10V	IC 1	5532		
R 19	51K	1%	1/4 W	R87	51K	1%	1/4 W	C34	22pF	PC	IC 2	5532		
R 20	47R	1%	1/4 W	R88	51K	1%	1/4 W	C35	100pF	PC	IC 3	5532		
R 21	15K	1%	1/4 W	R89	51K	1%	1/4 W	C41	1uF	ST 35V	IC 4	5532		
R 22	1M	1%	1/4 W	R90	47R	1%	1/4 W	C42	22pF	PC	IC 5	5532		
R 23	20K	1%	1/4 W	R91	15K	1%	1/4 W	C43	10uF	ST 10V	IC 6	5532		
R 24	1K	1%	1/4 W	R92	1M	1%	1/4 W	C44	22pF	PC	IC 7	5532		
R 25	27R	1%	1/4 W	R93	20K	1%	1/4 W	C45	100pF	PC	IC 8	5532		
R 26	51K	1%	1/4 W	R94	1K	1%	1/4 W	C51	1uF	ST 35V	IC 9	5532		
R 27	51K	1%	1/4 W	R95	27R	1%	1/4 W	C52	22pF	PC	IC 10	5532		
R 28	51K	1%	1/4 W	R96	51K	1%	1/4 W	C53	10uF	ST 10V	IC 11	5532		
R 29	51K	1%	1/4 W	R97	51K	1%	1/4 W	C54	22pF	PC	IC 12	5532		
R 30	47R	1%	1/4 W	R98	51K	1%	1/4 W	C55	100pF	PC	IC 13	5532		
R 31	15K	1%	1/4 W	R99	51K	1%	1/4 W	C61	1uF	ST 35V	IC 14	5532		
R 32	1M	1%	1/4 W	R100	47R	1%	1/4 W	C62	22pF	PC	IC 15	5532		
R 33	20K	1%	1/4 W	R101	15K	1%	1/4 W	C63	10uF	ST 10V	IC 16	5532		
R 34	1K	1%	1/4 W	R102	1M	1%	1/4 W	C64	22pF	PC	IC 17	5532		
R 35	27R	1%	1/4 W	R103	20K	1%	1/4 W	C65	100pF	PC	IC 18	5532		
R 36	51K	1%	1/4 W	R104	1K	1%	1/4 W	C71	1uF	ST 35V	IC 19	5532		
R 37	51K	1%	1/4 W	R105	27R	1%	1/4 W	C72	22pF	PC				
R 38	51K	1%	1/4 W	R106	51K	1%	1/4 W	C73	10uF	ST 10V	VR 1	47KB	PC16 4mm 41POS	
R 39	51K	1%	1/4 W	R107	51K	1%	1/4 W	C74	22pF	PC	VR 2	47KB	PC16 4mm 41POS	
R 40	47R	1%	1/4 W	R108	51K	1%	1/4 W	C75	100pF	PC	VR 3	47KB	PC16 4mm 41POS	
R 41	15K	1%	1/4 W	R109	51K	1%	1/4 W	C81	1uF	ST 35V	VR 4	47KB	PC16 4mm 41POS	
R 42	1M	1%	1/4 W	R110	47R	1%	1/4 W	C82	22pF	PC	VR 5	47KB	PC16 4mm 41POS	
R 43	20K	1%	1/4 W	R111	15K	1%	1/4 W	C83	10uF	ST 10V	VR 6	47KB	PC16 4mm 41POS	
R 44	1K	1%	1/4 W	R112	1M	1%	1/4 W	C84	22pF	PC	VR 7	47KB	PC16 4mm 41POS	
R 45	27R	1%	1/4 W	R113	20K	1%	1/4 W	C85	100pF	PC	VR 8	47KB	PC16 4mm 41POS	
R 46	51K	1%	1/4 W	R114	1K	1%	1/4 W	C91	1uF	ST 35V	VR 9	47KB	PC16 4mm 41POS	
R 47	51K	1%	1/4 W	R115	27R	1%	1/4 W	C92	22pF	PC	VR 10	47KB	PC16 4mm 41POS	
R 48	51K	1%	1/4 W	R116	51K	1%	1/4 W	C93	10uF	ST 10V	VR 11	47KB	PC16 4mm 41POS	
R 49	51K	1%	1/4 W	R117	51K	1%	1/4 W	C94	22pF	PC	VR 12	47KB	PC16 4mm 41POS	
R 50	47R	1%	1/4 W	R118	51K	1%	1/4 W	C95	100pF	PC				
R 51	15K	1%	1/4 W	R119	51K	1%	1/4 W	C101	1uF	ST 35V				
R 52	1M	1%	1/4 W	R120	47R	1%	1/4 W	C102	22pF	PC				
R 53	20K	1%	1/4 W	R121	10K	1%	1/4 W	C103	10uF	ST 10V				
R 54	1K	1%	1/4 W	R122	10K	1%	1/4 W	C104	22pF	PC				
R 55	27R	1%	1/4 W	R123	10K	1%	1/4 W	C105	100pF	PC				
R 56	51K	1%	1/4 W	R124	5K1	1%	1/4 W	C111	1uF	ST 35V				
R 57	51K	1%	1/4 W	R125	10K	1%	1/4 W	C112	22pF	PC				
R 58	51K	1%	1/4 W	R126	1K2	1%	1/4 W	C113	10uF	ST 10V				
R 59	51K	1%	1/4 W	R127	100R	1%	1/4 W	C114	22pF	PC				
R 60	47R	1%	1/4 W	R128	10K	1%	1/4 W	C120	0.1uF	PL				
R 61	15K	1%	1/4 W	R129	1K2	1%	1/4 W	C121	0.1uF	PL				
R 62	1M	1%	1/4 W	R130	100R	1%	1/4 W	C122	0.1uF	PL				
R 63	20K	1%	1/4 W	R131	100R	1%	1/4 W	C123	0.1uF	PL				
R 64	1K	1%	1/4 W	R132	100R	1%	1/4 W	C124	0.1uF	PL				
R 65	27R	1%	1/4 W	R133	100R	1%	1/4 W	C125	0.1uF	PL				
R 66	51K	1%	1/4 W	R134	100R	1%	1/4 W	C126	22pF	PC				
R 67	51K	1%	1/4 W	R135	100R	1%	1/4 W	C127	0.1uF	PL				
R 68	51K	1%	1/4 W	R136	100R	1%	1/4 W	C128	0.1uF	PL				
								C129	0.1uF	PL				
								C130	0.1uF	PL				
								C131	0.1uF	PL				
								C132	0.1uF	PL				
								C133	0.1uF	PL				
								C134	0.1uF	PL				
								C135	0.1uF	PL				
								C136	22pF	PC				

## MASTER SECTION

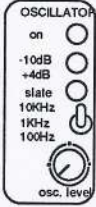
### VU Meters (on meter bridge)

The POST fader signal of each MIX output is indicated on these 2 meters.  
0dB on the LED's indicates that the output level is at +4dBm. (see -10dBv switch above).

### PSU

P.S.U.  
-V   
+V   
l.e.d.   
ph. p.

+V dc LED shows positive rail operational  
-V dc LED shows negative rail operational  
+Aux LED shows auxiliary power rail operational  
PH.PWR: LED shows Phantom power rail operational



### Oscillator

A variable level and frequency sine wave oscillator is provided for tape machine line-up and other test purposes. The output of the oscillator is available on the rear panel for test purposes as well as being internally routable.

#### on

This switch can be used to turn the oscillator on/off. We suggest that the oscillator be left OFF except when in use for testing or line-up purposes.

#### -10dBv/+4dB

This switch is used to define the nominal output level of the oscillator. When the switch is out the level is -10dBv, and when depressed, the level is +4dBu relative to the 0dB position on the level control.

#### Slate

This switch connects the oscillator output to all the subgroup busses, thus allowing simultaneous line up of all tracks of a tape machine.

#### 100Hz/1kHz/10kHz

This switch sets the frequency of the oscillator to either 100Hz, 1kHz or 10kHz.

#### Level

This is a continuously variable level control, allowing the oscillator to be used for testing microphone or other low level inputs. The level available is adjustable between fully off and +10dBu when the level switch is set to +4dBu.

Stereo Outputs



### Subsidiary Master stereo outputs

Two stereo auxiliary master outputs are provided to allow the user to assign the MIX output to two alternative devices such as a cassette machine or a second tape machine. These have identical facilities as follows.

#### -10dBv

This switch reduces the output from the stereo output, making it suitable for -10dBv equipment. The nominal level with the switch out is +4dBu.

#### stereo output level

A stereo rotary level control is provided to allow the user to adjust the level being sent.

#### peak

This LED (light emitting diode) indicates when the output signal level is at +10dBu. The LED is POST fader to allow accurate reading of the signal level.

This is not a clip indicator - there is 12dB of headroom after this LED illuminates.

#### signal

This LED indicates that a signal is present at the selected output of the module. It will go out whenever the peak LED comes on.

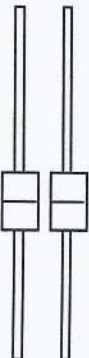
#### mono

This switch when depressed causes the output to be used as a mono output. It does not affect the main stereo MIX outputs.

#### pre/post

This switch switches the above stereo output from PRE the MIX fader to POST the MIX fader. This allows this output to be used independent of the MIX faders if required.

Both the subsidiary stereo outputs are unbalanced although output A may be factory fitted with an electronic floating output to allow use with balanced equipment.



## Master Mix section

### **-10dBv**

This switch reduces the output from the stereo output, making it suitable for -10dBv equipment. The nominal level with the switch out is +4dBu.

P.S.U.  
-v   
+v   
l.e.d.   
ph. p.

### **mute**

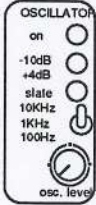
This switch prevents signal from leaving the main MIX output. In effect it turns the MIX output off, yet allows the signal to be monitored in the headphones and on the pfl led display.

### **pfl (pre fader listen)**

This switch sends the PRE fader signal to the headphone output, allowing the signal to be monitored on the headphones and on the pfl VU display. It will also send the signal to the monitor output if pfl auto has been depressed. It is only a mono signal, the stereo outputs may be monitored in stereo by using the MIX monitor switch on the functions module.

### **faders**

2 100mm smooth action faders control the output level of the master stereo MIX outputs. Optionally a single stereo fader may be specified.



Stereo Outputs

