Series 800B
User Manual

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SERIES 800B

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1.00 SERIES 800B

Model No. ..... Frame size.....

Serial No. ..... PSU Serial No. .....
(as used in final test)

Original Customer..... Works Order No. .....

PROGRESS	NAME	DATE	SUPERVISORS INSPECTION
Frame Fitted by.....			
Assembled/Wired by.....			
First Test by.....			
Final Test by.....			
Despatch Inspection by.....			

EQUIPPED WITH	TYPE	QUANTITY ISSUE
Input Modules.....		
Output Modules.....		
Master Module.....		
P.S.U.		

OPTIONS - SPECIFY

ALTERATIONS TO SPEC.

SPECIAL INSTRUCTIONS

DESPATCH KIT REQUIRED

1.01 SYSTEM MEASUREMENTS

1. Channel Line Input to Mix Output

CHANNEL	THD (Ref 1kHz, +12dBv)		Frequency Response (Ref 1khz) 20Hz	20kHz
1	0.0	%	-0.	-0.
2	0.0	%	-0.	-0.
3	0.0	%	-0.	-0.
4	0.0	%	-0.	-0.
5	0.0	%	-0.	-0.
6	0.0	%	-0.	-0.
7	0.0	%	-0.	-0.
8	0.0	%	-0.	-0.
9	0.0	%	-0.	-0.
10	0.0	%	-0.	-0.
11	0.0	%	-0.	-0.
12	0.0	%	-0.	-0.
13	0.0	%	-0.	-0.
14	0.0	%	-0.	-0.
15	0.0	%	-0.	-0.
16	0.0	%	-0.	-0.
17	0.0	%	-0.	-0.
18	0.0	%	-0.	-0.
19	0.0	%	-0.	-0.
20	0.0	%	-0.	-0.
21	0.0	%	-0.	-0.
22	0.0	%	-0.	-0.
23	0.0	%	-0.	-0.
24	0.0	%	-0.	-0.
25	0.0	%	-0.	-0.
26	0.0	%	-0.	-0.
27	0.0	%	-0.	-0.
28	0.0	%	-0.	-0.
29	0.0	%	-0.	-0.
30	0.0	%	-0.	-0.
31	0.0	%	-0.	-0.
32	0.0	%	-0.	-0.

2. Channel LIne Input to Auxiliary Output

AUXILIARY OUTPUT	THD (Ref 1kHz, +12dBv	
1	0.0	%
2	0.0	%
3	0.0	%
4	0.0	%
5	0.0	%
6	0.0	%
7	0.0	%
8	0.0	%

3. Channel Line Input to Control Room Outputs

CONTROL ROOM OUTPUT	THD (Ref 1kHz, +12dBv)	
Left (Via PFL)	0.0	%
Right (Via PFL)	0.0	%

4. Channel Line Input to Studio Output (Via all groups)

STUDIO OUTPUT	THD (Ref 1kHz, +12dBv)	
Left	0.0	%
Right	0.0	%

5. Crosstalk (at 10kHz)

Stereo Mix	-	dBv
Channel to Channel	-	dBv
Mute	-	dBv

6. Mix Noise (DIN Audio, all channels and groups at unity gain)

Mix Left	-	dBv
Mix Right	-	dBv

7. Power Supply

OUTPUT	RIPPLE & NOISE		VOLTAGE
+17V Audio	-	dBv	Volts
-17V Audio	-	dBv	Volts
+24V Logic	-	dBv	Volts
+48V Phantom	-	dBv	Volts
+7.5 Logic	-	dBv	Volts
-7.5 Logic	-	dBv	Volts

NOTES

0dBv = 0.775 Volt
0dBV = 1.000 Volt

The constraints and conditions under which the above performance figures have been measured are configured so as to ensure that all signal paths are within specification, with a minimum of separate tests. Many are therfore recorded via very long signal paths or under worst case conditions.

The results should not, therefore, be taken as representative of typical published specifications, which would normally be conducted under standard operative conditions.

PERFORMANCE SPECIFICATIONS

DISTORTION	
Mic pre-amp, -30dBu in, +4dBu out	40Hz:0.01 1kHz:0.01 18kHz:0.05 IMD:0.02
Channel line in to mix out, +4dBu in, +4dBu out	40Hz:0.01 1kHz:0.01 18kHz:0.05 IMD:0.02
CROSSTALK	
Line in through pan control to stereo mix bus	40Hz:-64dB 1kHz:-63dB 18kHz:-55dB
Adjacent channel	40Hz:-100dB 1kHz:-95dB 18kHz:-85dB
NOISE	
Equivalent input ref of 200Ohm	-127.5dBu
Mix noise; 32 inputs routed to mix at unity gain	-80dB (DIN audio)
INPUT IMPEDANCE	
Mic input	2kOhm (5kOhm with pad)
Line input	10kOhm
OUTPUT IMPEDANCE	
Any output	<75Ohm
OUTPUT CAPABILITY	
Any group or mix into 600Ohm	+21dBu
GAIN	
Max mic	75dB
Max line	40dB
FREQUENCY RESPONSE	
Mic input at 35dB gain to mix	20Hz:-2dB 1kHz:0dB 20kHz:-0.5dB
Line input at unity gain to mix	20Hz:-1.5dB 1kHz:0dB 20kHz:-0.5dB
PHASE RESPONSE	
Line input to mix output	25Hz:+30° 1kHz:0° 20kHz:-20°
DIMENSIONS	
16 inputs	42.5"x29.5"x12.5" (108x75x31.75cm)
24 inputs	54.2"x29.5"x12.5" (138x75x31.75cm)
32 inputs	66"x29.5"x12.5" (168x75x31.75cm)
40 inputs	77.8"x29.5"x12.5" (198x75x31.75cm)

NB: 0dBu=0.775Vrms.

SERIES 800B CONSOLE DESCRIPTION

The Soundcraft Series 800B console is designed to cater for both the small studio, (up to 8-track), and for public applications. Six input module types are available to cater for the needs of the various situations as well as two output module types and two master modules.

Key features on the desk include semi-parametric equalisation, up to eight auxiliary sends and dedicated mix outputs, (left and right). Eight effects returns are available on the effects return module and an 8-way matrix system is available. All balanced inputs and outputs use an electronic transformerless design to ensure low inherent noise.

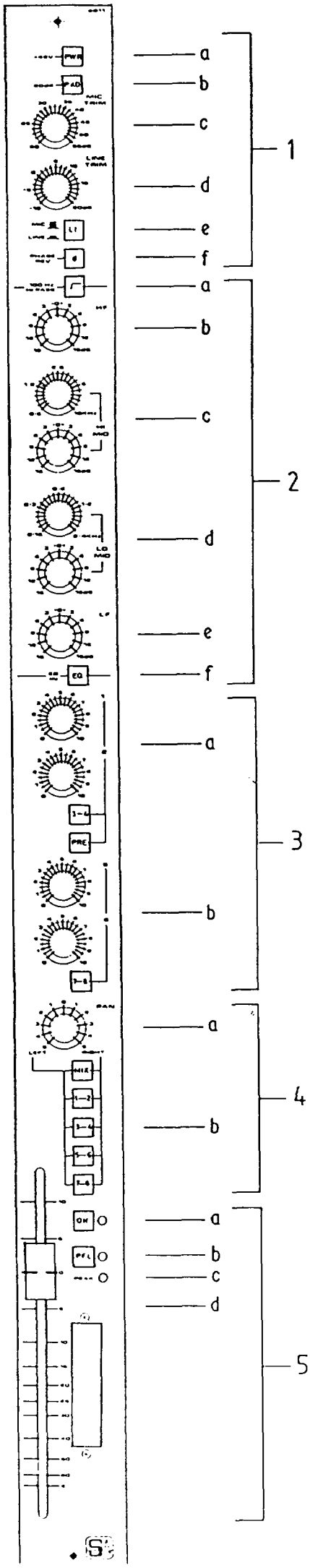
The use of electronic balancing reduces the degradation of signal quality which is introduced by more conventional transformer coupled designs, ensuring superior transient response, minimal phase shift and excellent common mode rejection even at high frequencies.

Metering on the Series 800B is in the form of 8 VU meters which may read group or matrix output or effects input, depending on the output module used, and 2 VU meters to read the Mix output or any soloed signal.

Being modular in construction the Series 800B is easy to dismantle making any neccessary maintenance extremely straight-forward, even when on the road.

The power supply is a 19" rack mounted unit supplying the console with 17volts positive and negative rails and a +48volt rail for phantom power of microphones.

Later models with more than 32 input channels will have a larger power supply that differs slightly to the Standard power supply.



2.01 8011 STANDARD INPUT MODULE

1. Input to channel

Each channel is individually switchable between the Microphone and Line input by pressing the Line Input, LI, switch.

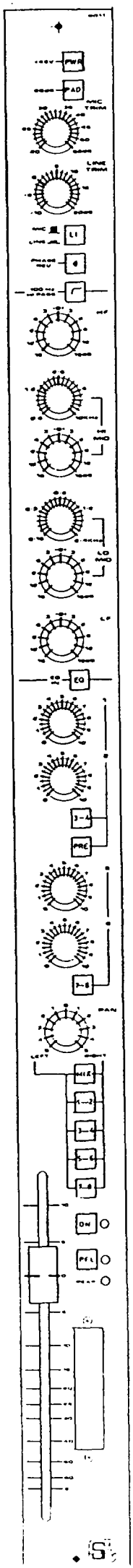
The microphone input is electronically balanced using a transformerless design, configured for optimum low noise operation. The input impedance of the mic input is greater than 2kOhms, which will not cause any loading effects on any normally used microphones.

The high level line input is unbalanced, with an input impedance of greater than 10kOhms, which is high enough to interface to any normal professional, peripheral equipment, without loading the source.

a) PWR
Capacitor microphones can be powered by the consoles internal +48volt phantom power supply by pressing the PWR button. When using Direct Injection boxes, or unbalanced sources, the phantom power should NOT be switched on.

b) PAD
Pressing the PAD button inserts a 20dB attenuator into the input of the microphone amplifier, and allows extremely high level input signals to be catered for, without overloading the input stage. Such high level signals can easily occur from high output capacitor microphones used in close proximity to musical instruments. Direct Injection boxes are also capable of providing high signal levels.

c) MIC TRIM
The microphone input can be varied between 20dB and 55dB of gain, using the MIC TRIM control, a 41 position detented potentiometer, allowing resettability with essentially continuously variable gain control. When used in conjunction with the 20dB PAD, a 55dB control range is available.



d) LINE TRIM
The line input can be varied between -10dB and +20dB of gain using a 41 position detented potentiometer.

e) LI
The high level line input is selected by pressing the LI button.
The Line Input is normalled to the tape return, ie. tape return 1 connects to channel input 1, this saves any unnecessary re-patching during mix down.

f) PHASE
Pressing the phase button reverses the phase of the input signal to correct for mis-wired microphones or out of phase mic pick-up in multi-mic situations.

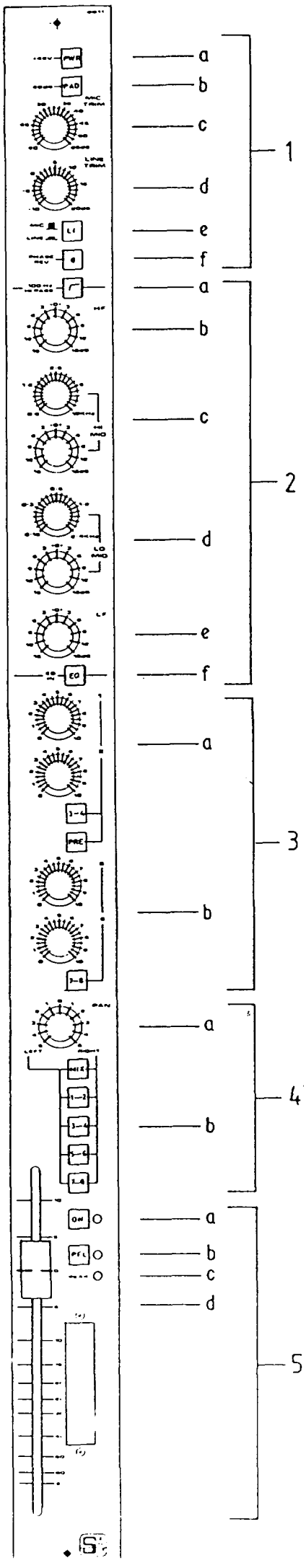
2. Equaliser section

The Equaliser unit is an exceptionally versatile device, allowing 5 areas of control over the audio spectrum. All boost/cut pots are centre detented for easy zeroing, and the mid band frequency select controls are 41 detented position types.

a) HIGH PASS FILTER
The High Pass filter operates at 100Hz with an ultimate slope of 12dB/octave. This will effectively remove any low frequency stage rumble, and other extraneous signals.

b) HF (High Frequency)
15dB of boost or cut is available at 10kHz, with a "shelving" characteristic, ie. the slope of the EQ curve does not keep rising with frequency, but having reached the desired amount, flattens out or "shelves" from that frequency on.

c) HI MID
The Hi Mid frequency is continuously variable between 600Hz and 10kHz. 15dB of boost or cut is available. The response is of the "bell" type, ie. Having reached maximum amplitude (or minimum in the case of cut), at the selected frequency, the amplitude response returns to zero on either side of that frequency. The shape of the curve, when plotted, shows a characteristic "bell" shape. The Q of the network (a measure of band-width), is 1.5.



d) LO MID
The Lo Mid section is identical to the Hi Mid section, with the exception that the frequency is variable between 150Hz and 2.4kHz.

e) LF (Low Frequency)
15dB of boost or cut is available at 60Hz, with a "shelving" characteristic.

f) EQ
The Equaliser circuitry can be switched in and out of the signal path independently of the high pass filter.

3. Auxiliary section

There are 4 auxiliary send controls available. Each control can be routed to 2 auxiliary buses, to give a total of 8 auxiliary sends for use as echo, foldback or other auxiliary effects units. All level controls are 41 position, detented potentiometers.

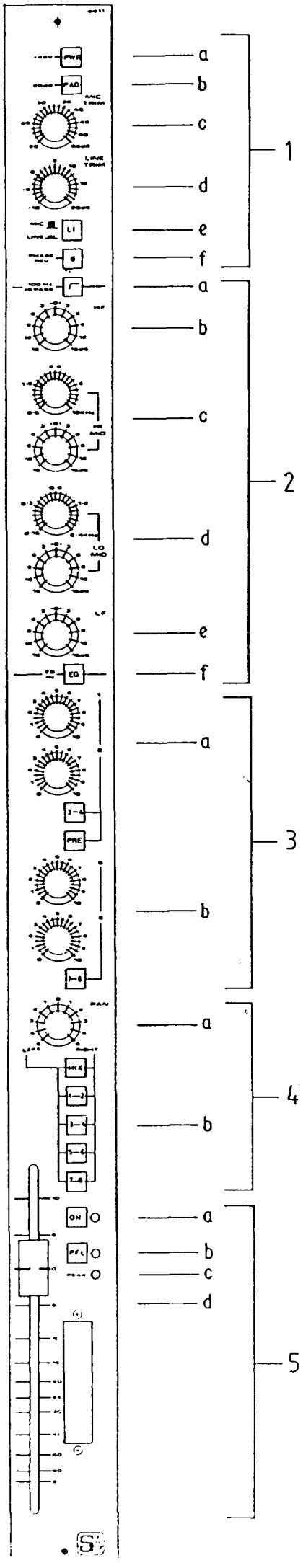
a) SENDS 1-2
Auxiliary sends 1 and 2 are normally post fader, but can be switched pre-fader. Additionally, they can be routed to auxiliary buses 3 and 4. In both cases they are post equaliser, insert point and channel on/off switch.

b) SENDS 5-6
Auxiliary sends 5 and 6 are permanently post fader, and can route to buses 5 and 6 or 7 and 8.

4. Routing section

The channel input can be routed to any or all of the 8 Group Outputs and the Stereo Mix, by selecting the relevant routing button.

a) PAN POT
The Pan Pot is a centre detented control, with a loss of 4.5dB at its centre point. This is a compromise between the 3dB loss required for constant power panning, and 6dB loss required for constant voltage panning.



b) ROUTING
Selection of any routing button assigns the channel signal to a pair of output groups or to the stereo mix via the Pan Pot. To route to odd numbered groups only select the relevant routing button and hard pan left and to route to even numbered groups select the relevant routing button and hard pan right.

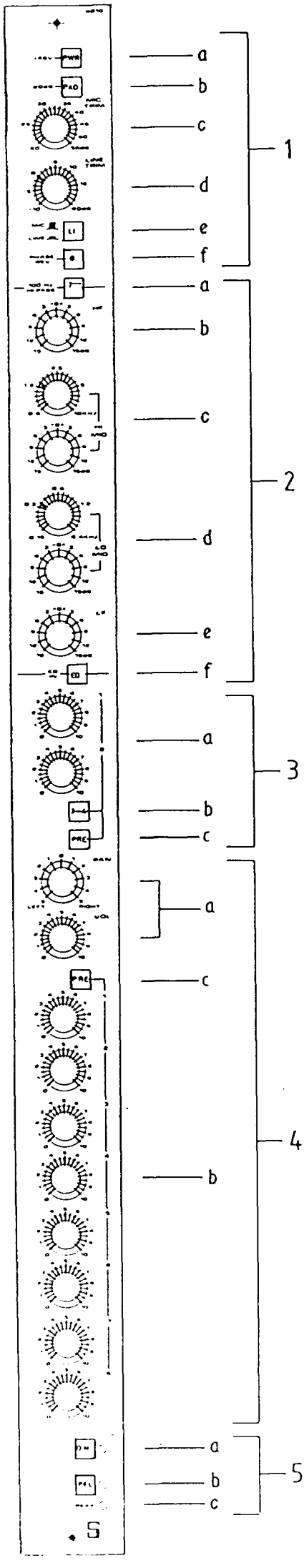
5. Channel Status section-

a) ON
The channel "ON" status is indicated by a green LED. When a channel is switched off, all auxiliary sends are switched off with the exception of the signal to the insert send jack.

b) PFL
PFL soloes the pre-fader, post insert jack signal, independently of the ON switch. PFL operation is indicated by a red LED on the channel, and a master warning LED on the Master module.

c) PEAK
A red LED indicates the peak signal level at the insert send point, and illuminates at a level of approximately 4dB below clipping.

d) CHANNEL FADER
The Channel Fader is a long throw linear fader. Infinity cut off is greater than 90dB.



2.02 8010 MONITOR INPUT

1. Channel Input Section

Each channel is individually switchable between the Microphone and Line input by pressing the Line Input, LI, switch.

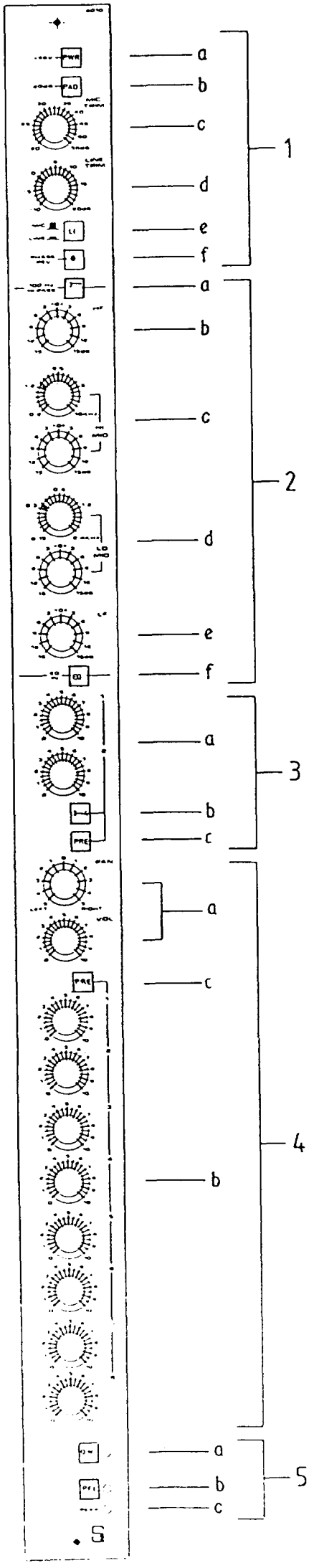
The microphone input is electronically balanced using a transformerless design, configured for optimum low noise operation. The input impedance of the mic input is greater than 2kOhms, which will not cause any loading effects on any normally used microphones.

The high level line input is unbalanced, with an input impedance of greater than 10kOhms, which is high enough to interface to any normal professional, peripheral equipment, without loading the source.

a) PWR
Capacitor microphones can be powered by the console's internal +48volt phantom power supply by pressing the PWR button. When using Direct Injection boxes, or unbalanced sources, the phantom power should not be switched on.

b) PAD
Pressing the PAD button inserts a 20dB attenuator into the input of the microphone amplifier, and allows extremely high level input signals to be catered for, without overloading the input stage. Such high level signals can easily occur from high output capacitor microphones used in close proximity to musical instruments. Direct Injection boxes are also capable of providing high signal levels.

c) MIC TRIM
The microphone input can be varied between 20dB and 55dB of gain, using the MIC TRIM control, a 41 position detented potentiometer, allowing resettability with essentially continuously variable gain control. When used in conjunction with the 20dB PAD, a 55dB control range is available.



d) LINE TRIM
The line input can be varied between -10dB and +20dB of gain using a 41 position detented potentiometer.

e) LI
The high level line input is selected by pressing the LI button.
The Line Input is normalled to the tape return, ie. tape return 1 connects to channel input 1, this saves any unnecessary re-patching during mix down.

f) PHASE
Pressing the phase button reverses the phase of the input signal to correct for mis-wired microphones or out of phase pick-up in multi-mic set-ups.

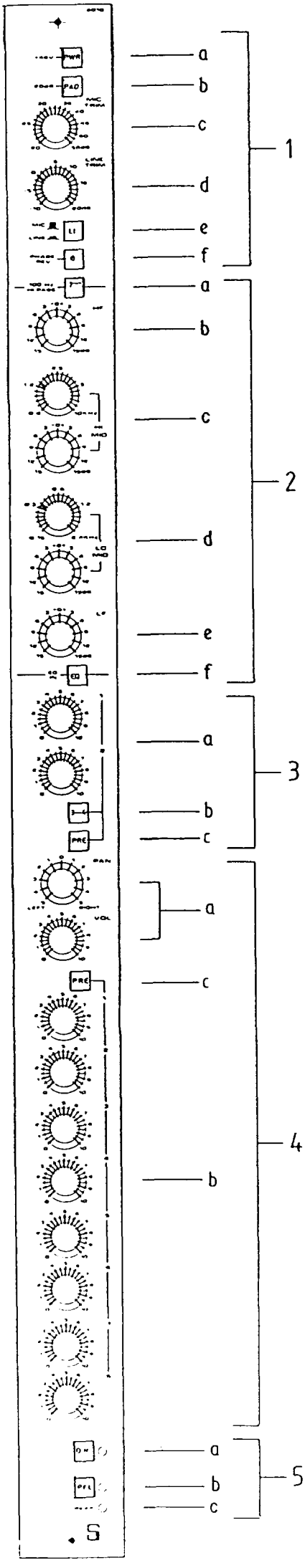
2. Equaliser section

The Equaliser unit is an exceptionally versatile device, allowing 5 areas of control over the audio spectrum. All boost/cut pots are centre detented for easy zeroing, and the mid band frequency select controls are 41 detented position types.

a) HIGH PASS FILTER
The High Pass filter operates at 100Hz with an ultimate slope of 12dB/octave. This will effectively remove any low frequency stage rumble, and other extraneous signals.

b) HF (High Frequency)
15dB of boost or cut is available at 10kHz, with a "shelving" characteristic, ie. the slope of the EQ curve does not keep rising with frequency, but having reached the desired amount, flattens out or "shelves" from that frequency on.

c) HI MID
The Hi Mid frequency is continuously variable between 600Hz and 10kHz. 15dB of boost or cut is available. The response is of the "bell" type, ie. Having reached maximum amplitude (or minimum in the case of cut), at the selected frequency, the amplitude response returns to zero on either side of that frequency. The shape of the curve, when plotted, shows a characteristic "bell" shape. The Q of the network (a measure of band-width), is 1.5.



d) LO MID
The Lo Mid section is identical to the Hi Mid section, with the exception that the frequency is variable between 150Hz and 2.4kHz.

e) LF (Low Frequency)
15dB of boost or cut is available at 60Hz, with a "shelving" characteristic.

f) EQ
The Equaliser circuitry can be switched in and out of the signal path independently of the high pass filter.

3. Auxiliary section

There are 4 auxiliary send controls available. Each control can be routed to 2 auxiliary buses, to give a total of 8 auxiliary sends for use as echo, foldback or other auxiliary effects units. All level controls are 41 position, detented potentiometers.

a) SENDS 1-2
Auxiliary sends 1 and 2 are normally post fader, but can be switched pre-fader. Additionally, they can be routed to auxiliary buses 3 and 4. In both cases they are post equaliser, channel insert point and channel on/off switch.

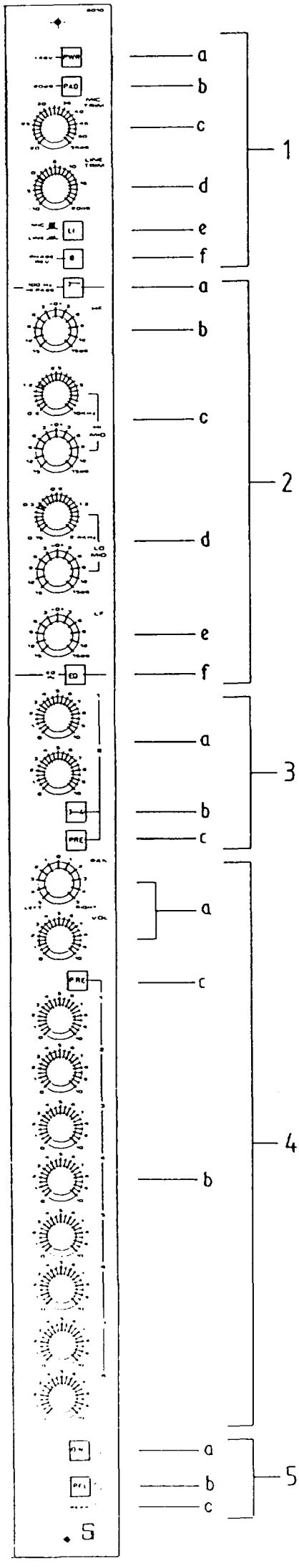
b) SENDS 3-4
Auxiliary sends 3 and 4 are selected by pressing the button marked 3-4.

c) PRE
Pressing PRE takes the feed for the auxiliary send from before the fader.

4. Monitor Section

a) PAN POT
The Pan Pot enables the channel signal to be panned between the left and right of the main stereo mix to provide an independent mix in addition to the normal 8 monitor sends.

b) VOL
The channel level control is in the form of a rotary potentiometer.



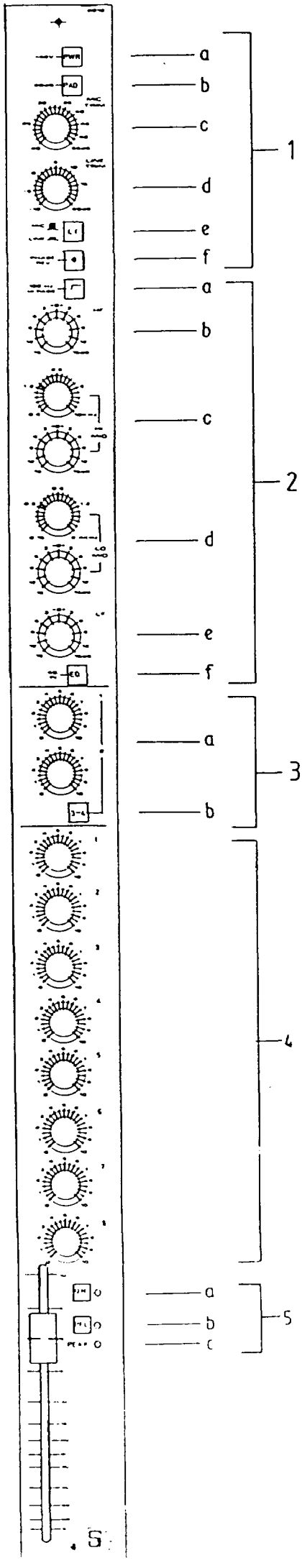
c) PRE
The 8 monitor sends are nomally post channel level control, but can be selected pre-fader for independent operation.

5. Channel status section

a) ON
The channel ON mode is indicated by a green LED. When a channel is switched off, all auxiliary sends are also switched off, with the exception of the signal to the insert send jack.

b) PFL (Pre-fade Listen)
PFL soloes the pre-fader, post insert jack signal, independently of the ON switch. PFL operation is indicated by a red LED on the channel, and a master warning LED on the Master module.

c) PEAK
A red LED indicates the peak signal level at the output of the equaliser, and illuminates at a level of 4dB below clipping.



2.03 8019 MONITOR INPUT

1. Channel Input Section

Each channel is individually switchable between the Microphone and Line input by pressing the Line Input, LI, switch.

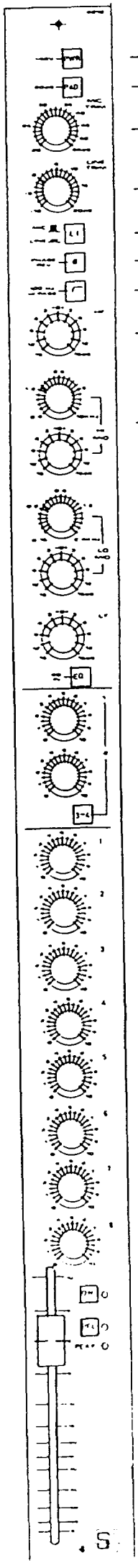
The microphone input is electronically balanced using a transformerless design, configured for optimum low noise operation. The input impedance of the mic input is greater than 2kOhms, which will not cause any loading effects on any normally used microphones.

The high level line input is unbalanced, with an input impedance of greater than 10kOhms, which is high enough to interface to any normal professional, peripheral equipment, without loading the source.

a) PWR
Capacitor microphones can be powered by the console's internal +48volt phantom power supply by pressing the PWR button. When using Direct Injection boxes, or unbalanced sources, the phantom power should not be switched on.

b) PAD
Pressing the PAD button inserts a 20dB attenuator into the input of the microphone amplifier, and allows extremely high level input signals to be catered for, without overloading the input stage. Such high level signals can easily occur from high output capacitor microphones used in close proximity to musical instruments. Direct Injection boxes are also capable of providing high signal levels.

c) MIC TRIM
The microphone input can be varied between 20dB and 55dB of gain, using the MIC TRIM control, a 41 position detented potentiometer, allowing resettability with essentially continuously variable gain control. When used in conjunction with the 20dB PAD, a 55dB control range is available.



d) LINE TRIM
The line input can be varied between -10dB and +20dB of gain using a 41 position detented potentiometer.

e) LI
The high level line input is selected by pressing the LI button.
The Line Input is normalled to the tape return, ie. tape return 1 connects to channel input 1, this saves any unnecessary re-patching during mix-down.

f) PHASE
Pressing the phase button reverses the phase of the input signal to correct for mis-wired microphones or out of phase mic pick-up in multi-mic set-ups.

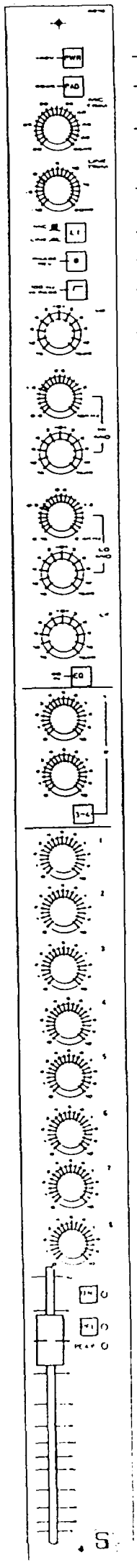
2. Equaliser section

The Equaliser unit is an exceptionally versatile device, allowing 5 areas of control over the audio spectrum. All boost/cut pots are centre detented for easy zeroing, and the mid band frequency select controls are 41 detented position types.

3 a) HIGH PASS FILTER
The High Pass filter operates at 100Hz with an ultimate slope of 12dB/octave. This will effectively remove any low frequency stage rumble, and other extraneous signals.

b) HF (High Frequency)
15dB of boost or cut is available at 10kHz, with a "shelving" characteristic, ie. the slope of the EQ curve does not keep rising with frequency, but having reached the desired amount, flattens out or "shelves" from that frequency on.

4 c) HI MID
The Hi Mid frequency is continuously variable between 600Hz and 10kHz. 15dB of boost or cut is available. The response is of the "bell" type, ie. Having reached maximum amplitude (or minimum in the case of cut), at the selected frequency, the amplitude response returns to zero on either side of that frequency. The shape of the curve, when plotted, shows a characteristic "bell" shape. The Q of the network (a measure of band-width), is 1.5.



d) LO MID
The Lo Mid section is identical to the Hi Mid section, with the exception that the frequency is variable between 150Hz and 2.4kHz.

e) LF (Low Frequency)
15dB of boost or cut is available at 60Hz, with a "shelving" characteristic.

f) EQ
The Equaliser circuitry can be switched in and out of the signal path independently of the high pass filter.

3. Auxiliary section

There are 2 auxiliary send controls available which may be switchable between aux buses 1-2 and 3-4. The auxiliary sends are permanently pre-fader.

4. Monitor section

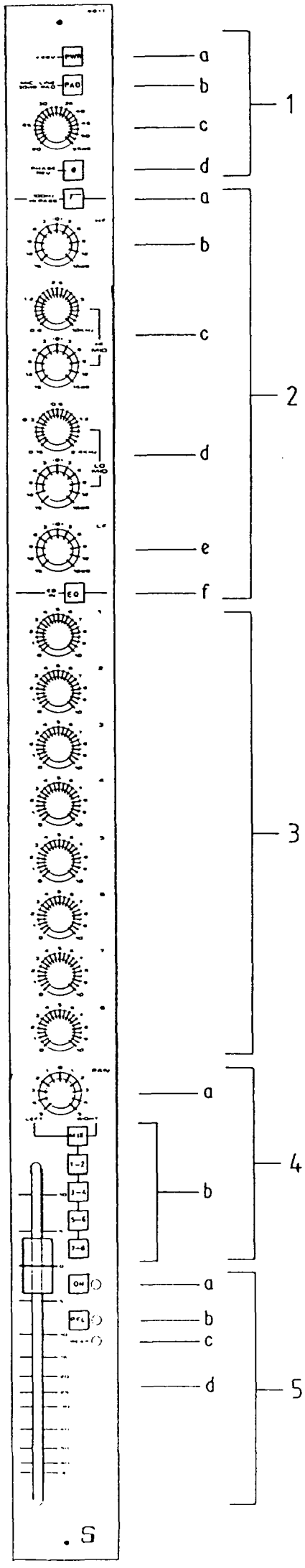
There are 8 individual monitor level controls. These are permanently routed to the eight group outputs.

5. Channel Status section

a) ON
The channel ON mode is indicated by a green LED. When a channel is switched off, all auxiliary sends are also switched off, with the exception of the signal to the insert send jack.

b) PFL (Pre-fade listen)
PFL soloes the pre-fader, post insert jack signal, independently of the ON switch. PFL operation is indicated by a red LED on the channel, and a master warning LED on the Master module.

c) PEAK
A red LED indicates the peak signal level at the output of the equaliser, and illuminates at a level of 4dB below clipping.



2.04 8017 PA INPUT MODULE

The 8017 PA input module has been specifically designed for use in "front of house" PA applications. The input is electronically balanced, and can be used with either microphone or line level input signals if the 30dB input attenuator is switched into the circuit. Interface to the channel is via the microphone input XLR connector on the rear panel. The associated line input jack is not connected with this model.

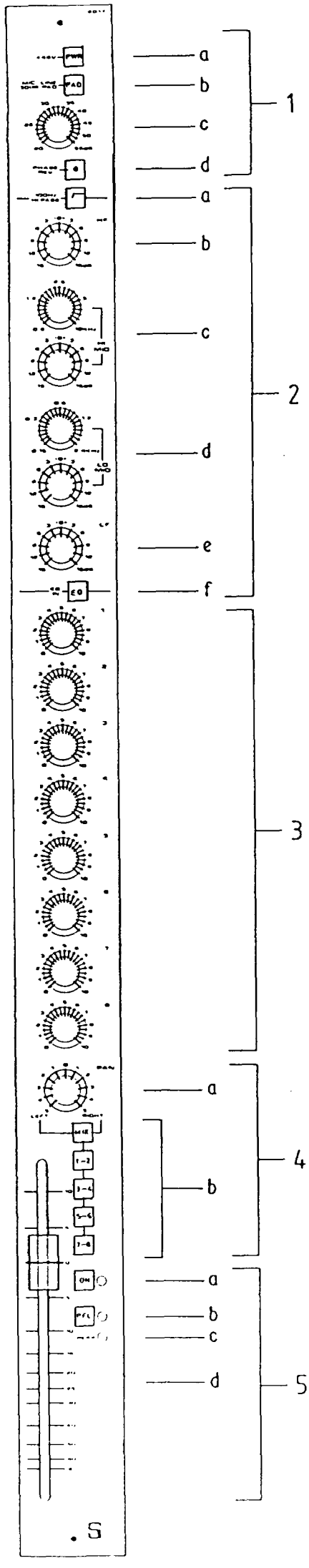
1) Input to Channel

The microphone/line input is electronically balanced, using a transformerless design, configured for optimum low noise operation.

The input impedance is greater than 2kOhms, which will not cause any loading effects on any normally used microphone. When the 30dB pad is inserted, the input impedance is greater than 5kOhms, which is high enough to interface to any normal professional peripheral equipment, without loading the source.

a) PWR
Pressing the PWR button enables capacitor microphones to be powered by the console's internal 48Volt Phantom Power supply. CAUTION: It is not advisable to use a Direct Injection box when the Phantom Power is on.

b) PAD (MIC/LINE SELECT)
Pressing the PAD button inserts a 30dB attenuator into the input of the microphone amplifier, and allows line level input signals to be catered for, without overloading the input stage. High level signals can also occur from high output capacitor microphones used in close proximity to musical instruments. Direct injection boxes are also capable of providing high signal levels.



c) MIC/LINE TRIM
The microphone/line input can be varied between 20dB and 55dB of gain using the input TRIM control a 41 position detented potentiometer with essentially continuously variable gain control. When used in conjunction with the 30dB PAD, a 65dB control range is available.

d) PHASE
Pressing the phase button reverses the phase of the input signal to correct for mis-wired microphones or out of phase mic pick-up in multi-mic situations.

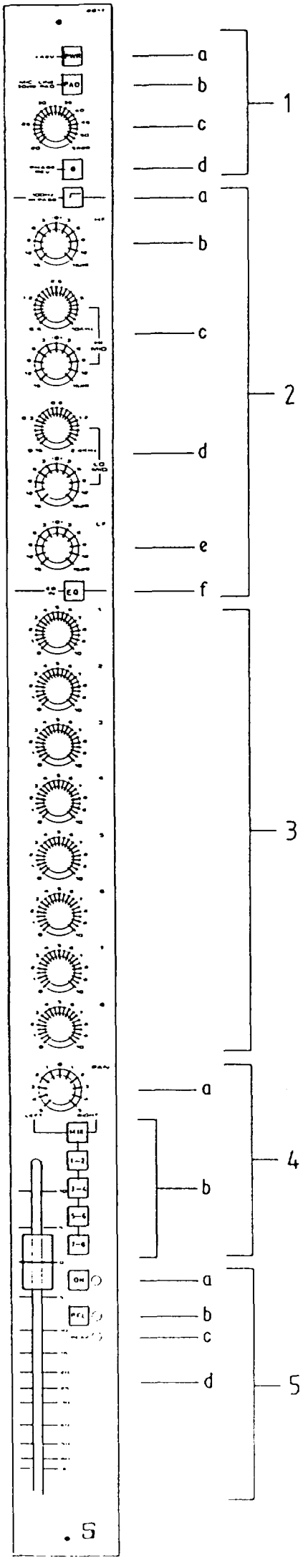
2) <u>The Equalisation Section</u>

The equalizer is a flexible device allowing five areas of control to be exercised. All amplitude pots are centre detented for easy zeroing, and the mid band frequency select controls are 41 detented position types. The equaliser may be switched in or out of circuit, indepently of the high pass filter.

a) THE HIGH PASS FILTER
The High Pass Filter operates at 100Hz with an ultimate slope of 12dB/octave. This will effectively remove low frequency stage rumble, and other extraneous signals.

b) HIGH FREQUENCY
15dB of boost or cut is available at 10kHz, with a "shelving" characteristic, ie. the slope of the EQ curve does not keep rising with frequency, but having reached the desired amount, flattens out or "shelves" from that frequency on.

c) HI MID
The Hi Mid Frequency is continuously variable between 600Hz and 10kHz, with 15dB of boost or cut available. The response is of the "bell" type, ie. having reached maximum amplitude (or minimum in the case of cut) at the selected frequency, the amplitude response returns to zero on either side of that frequency. The "Q" (a measure of the bandwidth) of the network is 1.5.



d) LO MID
The Low Mid section is identical to the Hi Mid section with the exception that the frequency is variable between 150Hz and 2.4kHz.

e) LOW FREQUENCY
15dB of boost or cut is available at 60Hz, with a "shelving" characteristic.

f) EQ BUTTON
The equaliser circuitry can be switched in or out of the signal path, independently of the High Pass filter.

3. Auxiliary Section

There are 8 auxiliary send controls available which can be used for echo, foldback or other auxiliary effects units. All controls are 41 position, detented potentiometers. Each pair of sends can be internally selected by a link on the PC Board to be either pre or post the channel fader.

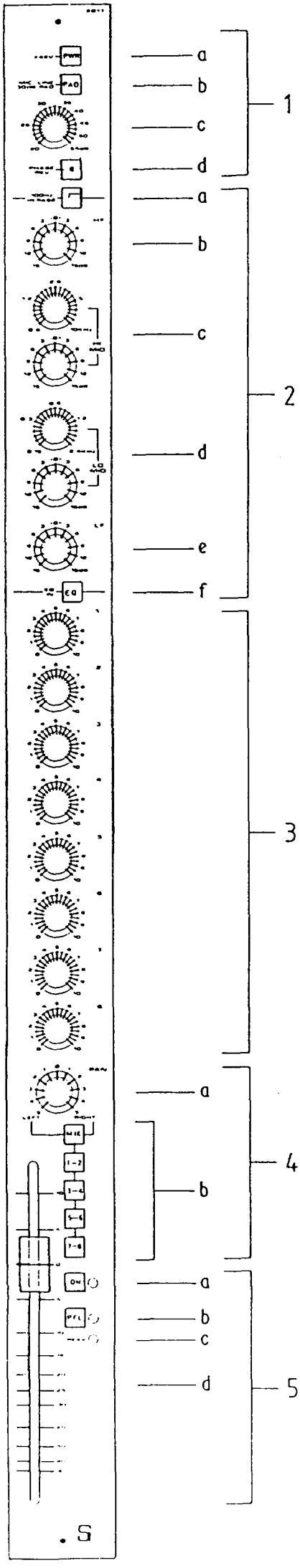
For Pre fader sends odd numbered links should be ON. ie. L1, L3, L5 and L7.
For Post fader sends even numbered links should be ON. ie. L2, L4, L6 and L8.
Links 1 and 2 are used for Aux 1 and 2
Links 3 and 4 are used for Aux 3 and 4 etc.

4. Routing Section

The channel input signal can be routed to any or all of the 8 Group Outputs and the stereo Mix by selecting the relevant routing button.

To route the input signal to one particular Group press the relevant routing button. Groups 1,3,5 and 7 correspond to the left-hand side of the pan-pot, and Groups 2,4,6 and 8 the right-hand side.

a) PAN POT
The Pan Pot is a centre detented control, with a loss of 4.5dB at its centre point. This is a compromise between the 3dB loss required for constant power panning, and 6dB loss required for constant voltage panning.



b) ROUTING
Selection of any routing button assigns the channel signal to a pair of output groups, or to the stereo mix via the Pan Pot.

5) Channel Status Section

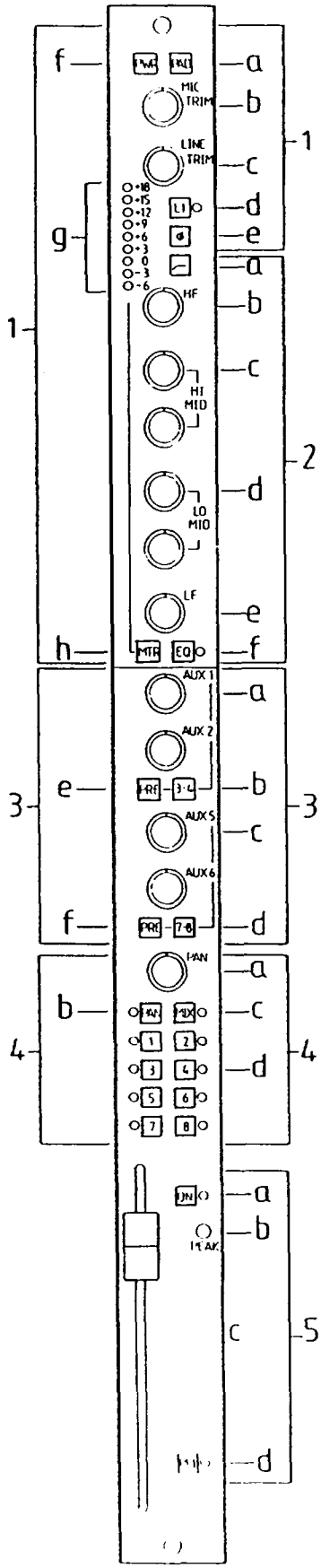
a) ON
The channel "ON" status is indicated by a green LED. When a channel is switched off, all auxiliary sends are also switched off, with the exception of the signal to the insert jack.

b) PFL (Pre Fade Listen)
PFL soloes the pre-fader, post insert jack signal, independently of the "ON" switch. PFL operation is indicated by a red LED on the Master Module.

c) PEAK
A red LED indicates the peak signal level at the insert send point, illuminating at a level of approximately 4dB below clipping.

d) CHANNEL FADER
The channel fader is a long throw linear fader. Infinity cut off is greater than 90dB.

S800B
THEATRE I/P
MODULE



2.05 OPTIONAL THEATRE INPUT MODULE

1) Channel Input Section

The channel can be operated in either Microphone or Line input modes.

The Microphone Input is an electronically balanced transformerless design, configured for optimum low noise performance.

The Microphone Input impedance is greater than 2kOhms, which will not cause any loading effects on any normally used microphone.

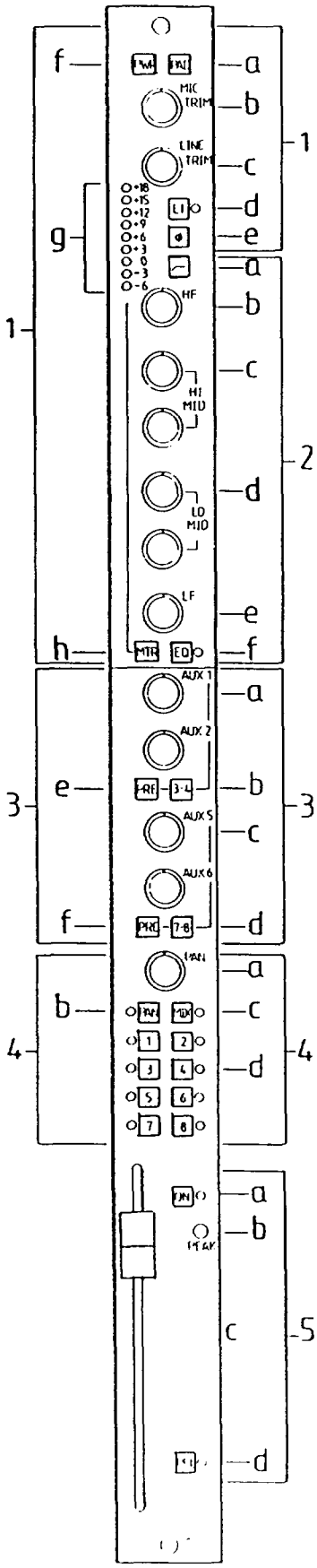
The high level Line Input is unbalanced, with an input impedance of greater than 10kOhms, which is high enough to interface to any normal professional peripheral equipment, without loading the source.

a) PAD
Pressing the PAD button inserts a 20dB attenuator into the input of the microphone amplifier, and allows extremely high level input signals to be catered for, without overloading the input stage. Such high level signals can easily occur from high output capacitior microphones used in close proximity to musical instruments. Direct injection boxes are also capable of providing high level signals.

b) MIC TRIM
The Microphone Input can be varied between 20dB and 55dB of gain, using the MIC TRIM control, a 41 position detented potentiometer, allowing resettability with essentially continuously variable gain control. Used in conjunction with the 20dB PAD, a 55dB control range is available.

c) LINE TRIM
The Line Input gain can be varied between -10dB and +20dB using a detented potentiometer.

S800B
THEATRE I/P
MODULE



d) LI (Line Input)
The high level Line Input is selected by pressing the LI button.

e) (Phase)
Pressing the Phase button will invert the phase on the input to correct for any input mismatch.

f) PWR
Capacitor microphones can be powered by the internal +48 volt phantom power supply by pressing the PWR button. When using Direct Injection boxes, or unbalanced sources, the phantom power supply should not be switched on.

g) INPUT METER
This meter, comprising of discrete LEDs, has a PPM characteristic and will indicate the input level as selected by the Mic/Line switch. The LEDs are coloured as follows:-

-6dB	to	0dB	-	GREEN
+3dB	to	+9dB	-	AMBER
+12dB	to	+18dB	-	RED

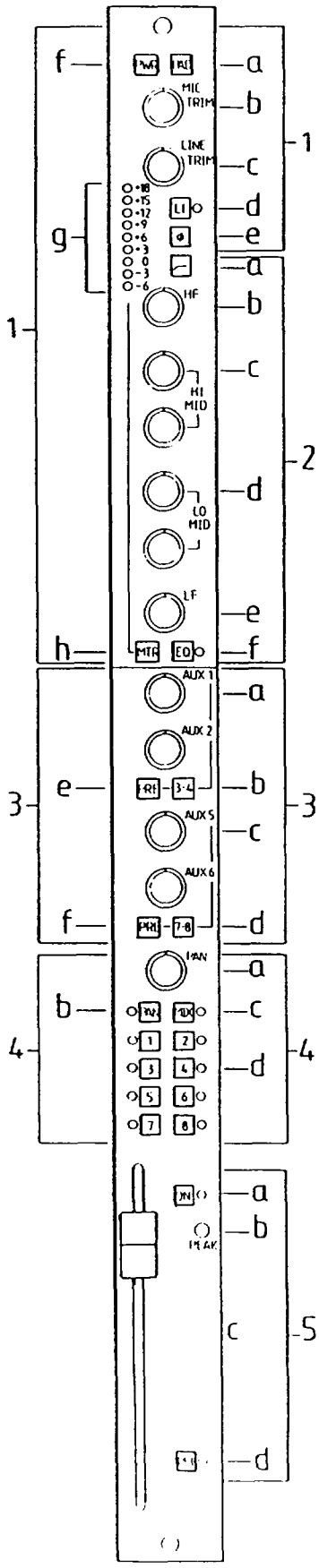
h) MTR
Pressing this will place the input meter into the signal flow.

2. Equaliser Section

The Equaliser is an exceptionally versatile unit, allowing 5 areas of control over the audio spectrum. All amplitude pots are centre detented for easy zeroing, and the Mid-band frequency select controls are 41 position detented potentiometers.

a) (High Pass Filter)
The high pass filter operates at 100 Hz with an ultimate slope of 12dB/Octave. This will effectively remove low frequency stage rumble, and other extraneous signals.

S800B
THEATRE I/P
MODULE



b) HF (High Frequency)
15dB of boost or cut is available at 10kHz, with a "shelving" characteristic, ie. the slope of the EQ curve does not keep rising with frequency but having reached the desired amount, flattens out or "shelves" from that frequency on.

c) HI MID
The Hi Mid Frequency is continuously variable between 600Hz and 10kHz. 15dB of boost or cut is available. The response is a "bell" type, ie. having reached maximum amplitude (or minimum in the case of cut) at the selected frequency, the amplitude response returns to zero on either side of that frequency. The shape of the curve, when plotted shows a characteristic "bell" shape. The Q of the network (a measure of bandwidth) is 1.5.

d) LO MID
The Lo Mid is identical to the Hi Mid section, with the exception that the frequency is variable between 150Hz and 2.4kHz.

e) LF (Low Frequency)
15dB of boost or cut is available at 60Hz, with a "shelving" characteristic.

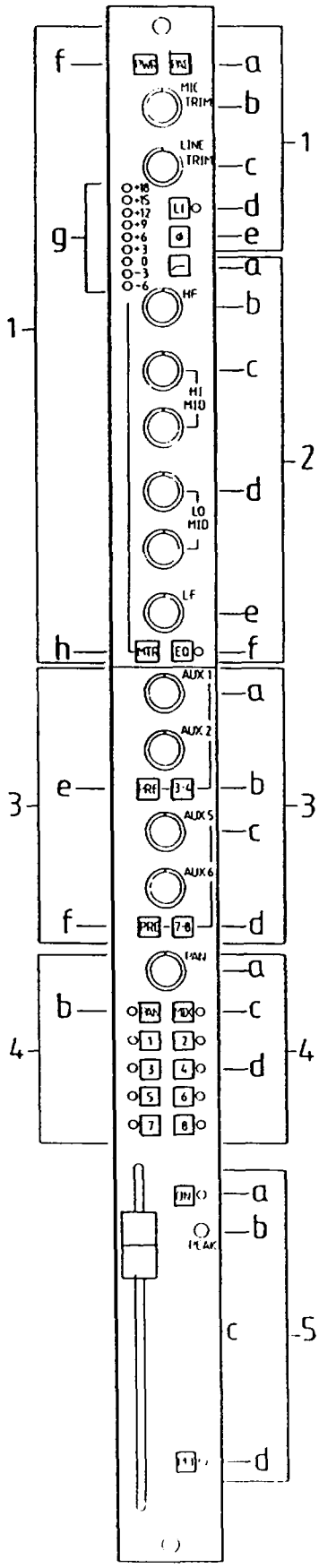
f) EQ
The Equaliser circuitry can be switched in or out of the signal path, independently of the high pass filter.

3.Auxiliary Section

There are 4 Auxiliary send controls available. Each control can be routed to 2 auxiliary mix buses, to give a total of 8 auxiliary sends for use as echo, foldback or other auxiliary effects units. All controls are 41 position, detented potentiometers.

a) SENDS 1 and 2
Auxiliary sends 1 and 2 are normally post-fader, but can be switched Pre-fader by pressing the appropriate PRE button. In both cases they are post equaliser, channel insert point, and channel on/off switch.

S800B
THEATRE I/P
MODULE



b) SENDS 3 and 4
Auxiliary sends 1 and 2 may be routed to auxiliary buses 3 and 4 by pressing the 3-4 button.

c) SENDS 5 and 6
As with Aux 1 and 2 above, Auxiliary sends 5 and 6 are normally post-fader but may be switched to Pre-fader by pressing the appropriate PRE button.

d) SENDS 7 and 8
Auxiliary sends 5 and 6 may be routed to auxiliary buses 7 and 8 by pressing the 7-8 button.

e) PRE (1-4)
Aux 1-2 or Aux 3-4 may be switched to Pre-fader, (but post EQ, insert point and channel on/off switch), by pressing the relevant PRE button.

f) PRE (5-8)
Aux 5-6 or Aux 7-8 may be switched to Pre-fader by selecting the relevant PRE button as above.

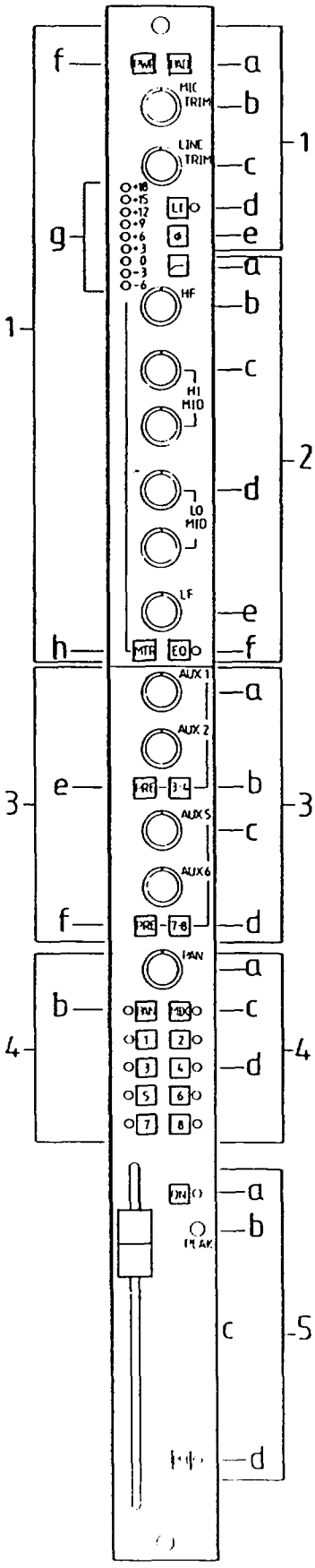
4. Routing Section

The channel input signal can be routed to any or all of the 8 Group Outputs and the Stereo Mix, by selecting the relevant routing button.

a) PAN POT
The Pan Pot is a centre detented control, with a loss of 4.5dB at its centre point. This is a compromise between the 3dB loss required for constant power panning, and 6dB loss required for constant voltage panning.

b) PAN
The Pan control may be placed in the signal path by pressing the PAN button. When the Pan control is not in the signal path any signal routed via the MIX button appears at equal level both Left and Right.

S800B
THEATRE I/P
MODULE



c) MIX
By selecting Mix the signal is routed directly to the stereo Mix Bus. If the Pan Pot is selected then the signal is routed via the Pan Pot, if the Pan Pot has not been selected then equal amounts of signal appear Left and Right.

d) GROUPS 1 - 8
The signal may be routed to any of Groups 1 - 8 by selecting the appropriate routing button.

When PAN is selected the Group routing is also fed via the Pan Pot. Panning left will feed Groups 1,3,5 & 7 and panning right will feed Groups 2,4,6 & 8.

5. Channel Status Section

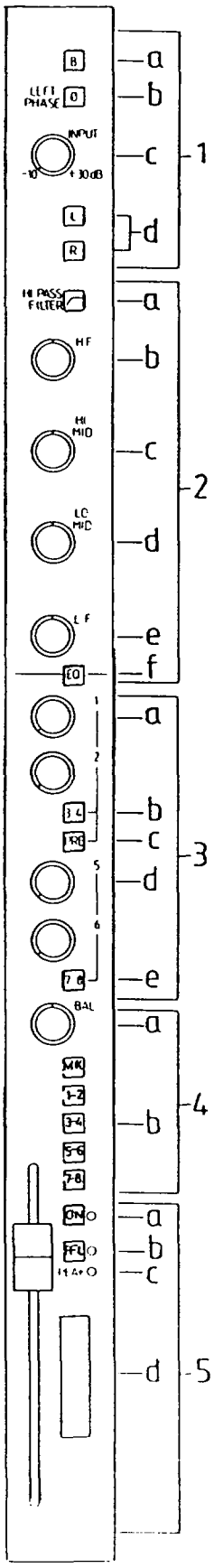
a) ON
The channel ON status is indicated by a green LED. When a channel is switched off, all auxiliary sends are also switched off, with the exception of the signal to the insert send jack.

b) PEAK
A red LED indicates the peak signal level at the insert send point, and illuminates at a level of approximately 4dB below clipping.

c) CHANNEL FADER
The Channel Fader is a long throw linear device. Infinity cut off is greater than 90dB.

d) PFL (Pre-fade Listen)
PFL soloes the pre-fader, post insert jack signal, independently of the ON switch. PFL operation is indicated by a red LED on the channel, and master warning LED on the Master Module.

S800B
STEREO INPUT
MODULE



2.06 8022 OPTIONAL STEREO INPUT MODULE

The optional stereo input module is available in blocks of 4.

1. Channel Input Section

The Channel can be operated using either Line Input A OR Line Input B OR both. Both Line Inputs are balanced, with an input impedance of greater than 10kOhms, which is high enough to interface to any normal professional peripheral equipment without loading the source.

a) B
Line Input B may be selected by pressing the button marked B.

b) (Phase)
Pressing the Phase button will invert the phase on the left-hand input only to correct for any input mismatch.

c) INPUT GAIN
The Input Gain can be varied between -10dB and +30dB of gain using the Gain Trim control.

d) L & R.
i. With both these switches out the module works in stereo mode.

ii. With either L or R switched in, both channels of the module are fed by either the left or right input.

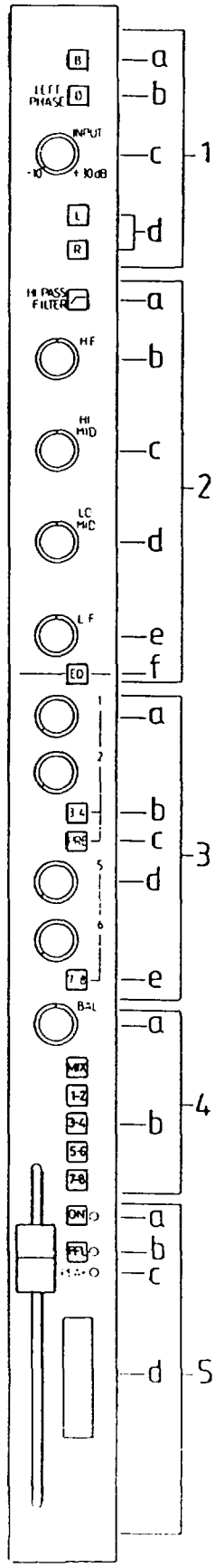
iii. With both switches pressed, both channels of the module are fed by a mono sum of the left and right input.

2. Equaliser Section

The Equaliser is a versatile unit, allowing 5 areas of control over the audio spectrum. All amplitude pots are centre detented for easy zeroing.

a) (High Pass Filter)
The High Pass Filter operates at 100Hz with an ultimate slope of 12dB/Octave. This will effectively remove low frequency stage rumble, and other extraneous signals.

S800B
STEREO INPUT
MODULE



b) HF (High Frequency)
15dB of boost or cut is available at 10kHz, with a "shelving" characteristic, ie. the slope of the EQ curve does not keep rising with frequency, but having reached the desired amount, flattens out or "shelves" from that frequency on.

c) HI MID
15dB of boost or cut is available at 2kHz, with a "bell" characteristic, ie. having reached maximum amplitude, (or minimum in the case of cut) the amplitude response returns to zero on either side of the frequency. The shape of the curve, when plotted shows a characteristic "bell" shape. The Q of the net-work (a measure of bandwidth) is 1.5.

d) LO MID
The Lo Mid section is identical to the Hi Mid section, with the exception that the frequency is 300Hz.

e) LF (Low Frequency)
15dB of boost or cut is available at 60Hz, with a "shelving" characteristic.

f) EQ
The Equaliser circuitry can be switched in and out of the signal path, independently of the high pass filter.

3. Auxiliary Section

There are 4 Auxiliary send controls available. Each control can be routed to 2 auxiliary buses, to give a total of 8 Auxiliary sends for use as echo, foldback or other auxiliary effects units.

a) SENDS 1 and 2
Auxiliary sends 1 and 2 are normally post-fader, but can be switched Pre-fader by pressing the appropriate PRE button. In both cases they are post equaliser. Auxiliaries 1 and 2 can be selected mono or stereo and dependent/independent of the channel mute by push-on links.