

# Studiomaster

since 1976

**GAIN** (x2)

**HI 12K** (x2)

**MID 2.5K** (x2)

**LO 60Hz** (x2)

**MON** (x2)

**PRE EQ** (x2)

**AUX/DSP** (x2)

**BAL** (x2)

**LISTEN** (x2)

**9 STEREO** (PEAK, MUTE / ALT 3-4)

**10 STEREO** (PEAK, MUTE / ALT 3-4)

**LISTEN**

**TO MAIN MIX**

**PLAYBACK**

**LEVEL**

**BAL**

**LISTEN**

**STEREO AUX INPUT**

**LEVEL**

**AUX / DSP RETURN TO MAIN MIX**

**05**

**UP**

**DOWN**

**MUTE**

01	Hall1	17	Voice doubler1
02	Hall2	18	Voice doubler2
03	HallB	19	Chorus1
04	HallH	20	Chorus2
05	Room1	21	Chorus3
06	Room2	22	Chorus+Reverb1
07	Plate1	23	Chorus+Reverb2
08	Plate2	24	Chorus+Reverb3
09	Ambient	25	Chorus+Reverb4
10	Delay+Reverb	26	Flanger1
11	Delay1	27	Flanger2
12	Delay2	28	Flanger3
13	Delay3	29	Gated Reverb1
14	Delay4	30	Gated Reverb2
15	Delay5	31	Reverse Reverb1
16	Delay6	32	Reverse Reverb2

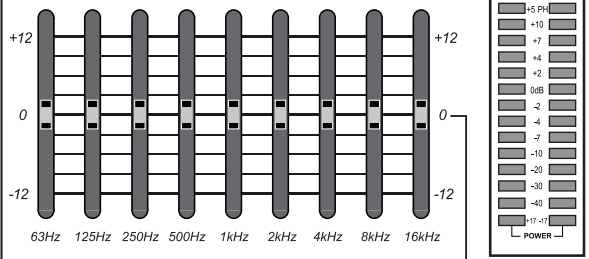
24-BIT DIGITAL SIGNAL PROCESSOR

**12V LAMP**

# Studiomaster

## POWERHOUSE 1000X-10

10 CHANNEL, 18 INPUT POWERED MIXER  
500W + 500W INTERNAL AMPLIFIER  
24 BIT DIGITAL SIGNAL PROCESSOR



**MON** (LISTEN, PEAK)

**AUX/DSP** (LISTEN, PEAK)

**ALT 3-4** (TO MAIN MIX, PEAK)

**PHONES / CONTROL ROOM** (MAIN MIX, ALT 3-4, SOLO ACTIVE, SOLO PFL, LISTEN MODE, PEAK)

**EQ ACTIVE**

**L MAIN MIX R**

MON AUX/DSP SEND

ALT 3-4

PHONES / CONTROL ROOM

L MAIN MIX R

# POWERHOUSE 1000X

## USER GUIDE

# POWERHOUSE

# 1000X

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# POWERHOUSE

# 1000X

## INTRODUCTION

Thank you for buying this Studiomaster product. The Powerhouse 1000X series of powered mixers combines professional facilities in a sleek compact package complete with on board effects DSP and 7 band graphic equaliser. You will find all the features you would expect from a Studiomaster product including 1000 Watts of audio power.

Please take time to read this manual to familiarise yourself with the controls enabling you to get the best from this product.

## READ THE USER GUIDE

Despite the sophisticated design the Powerhouse 1000X is very easy to use although to get the best from your new purchase, we recommend you read this User Guide before getting down to any serious work.

It also contains important safety information as well as practical hints.

## UNPACKING

Remove your Studiomaster product from its packaging and ensure that along with this User Guide you have an A.C. power cord / mains lead and a warranty card.

Retain the packing carton in the eventuality that the unit needs to be returned for service or repair, and please complete and return your warranty card. Returning the completed warranty card does not diminish your statutory rights in any way.

# POWERHOUSE

# 1000X

## **SAFETY INSTRUCTIONS**

READ THIS BEFORE YOU USE YOUR PRODUCT

1. Before connecting the A.C. power cord make sure the Powerhouse 1000X operating voltage is suitable to your local supply voltage. For supplies between 220 and 240V ensure your Powerhouse is a 230V model. For supplies between 110 and 120V use a 115V model.
2. Only use the A.C. power cord / mains lead supplied with the product. Replace if it becomes damaged in any way.
3. Never operate without, or remove the safety ground (earth) from the A.C. power cord / mains lead.
4. Do not attempt to remove any screws or panels. There are no user serviceable parts inside.
5. Do not operate the unit next to heat sources such as radiators.
6. The unit should not be operated or stored near rain or moisture.
7. This equipment must not be exposed to dripping or splashing and no objects filled with liquids should be placed on top of it.
8. Write the serial number in the box provided in the Warranty section for future reference.
9. If the unit gets damaged, has been dropped or appears to have developed a fault refer to the Service Information section for details.

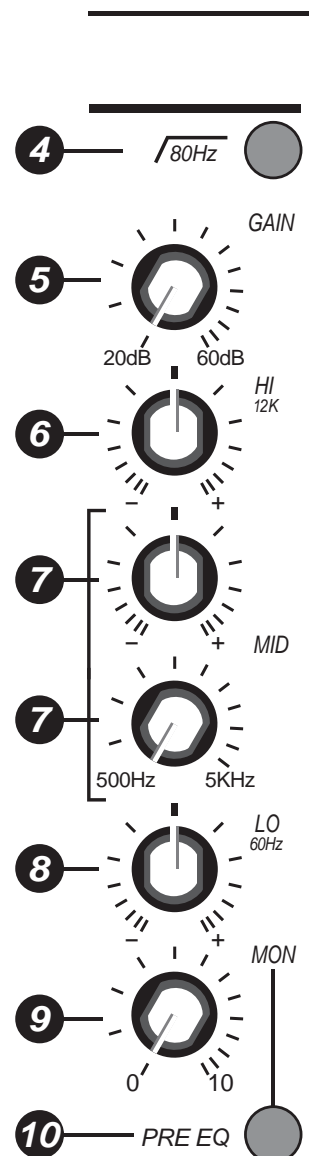
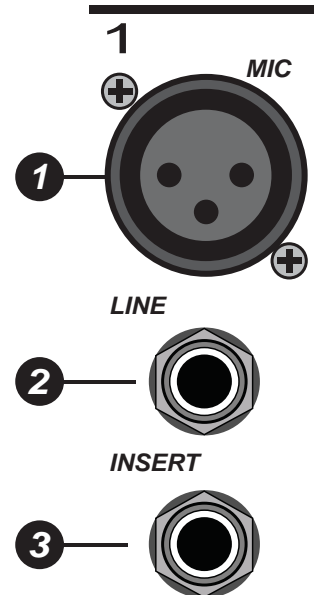
### **WARNING**

**THIS APPARATUS MUST BE EARTHED (GROUNDED)**

## Controls & Features - Front Panel

### Mono channels

- 1 **Mic input**  
3 pin XLR input designed for use with balanced, low impedance microphones such as the Studiomaster KM range. Global 48V phantom power is available for condenser microphones - see rear panel details for the 48V switch location. Can be wired for balanced or unbalanced use.
- 2 **Line input**  
¼" TRS jack socket for balanced or unbalanced line level signals. Suitable for use with keyboards, drum machines etc. Can be wired for balanced or unbalanced use.
- 3 **INSERT socket**  
¼" jack TRS socket enabling the channel signal to be routed to an external processor (like a vocal compressor) and returned back into the same channel. The signal to the socket is sourced after the gain control and before the EQ section.
- 4 **LO CUT switch**  
A steep low frequency filter that reduces microphone handling noise, stage rumble and wind noise. Always activate when using a vocal microphone.
- 5 **GAIN control**  
Adjusts the incoming signal to match the internal operating level of the Powerhouse for optimum performance.
- 6 **HI control**  
Hi frequency control providing 15dB of cut and boost at 12kHz
- 7 **MID controls**  
Consisting of two controls, the upper provides 15dB of cut and boost. The lower control sets the frequency of the cut and boost between 500Hz and 5kHz.
- 8 **LO control**  
Low frequency control providing 15dB of cut and boost at 60Hz
- 9 **MON control**  
An auxiliary send from the channel routed to the MON fader and then MON SEND output. An independent mix of all channels can be created to supply external equipment such as stage monitors. The source of the signal to the control is set by the PRE switch, see section 9.
- 10 **PRE EQ switch**  
In the up position the signal to the MON control is after (or post) the channel fader. Any movement of the channel fader will also change the signal to the MON control. This is useful when routing the MON output to external effects processors. In the down, PRE EQ position, the



## Controls & Features - Front Panel

### Mono channels - continued

signal to the MON control is before (or pre) the channel fader, and before (or pre) the EQ section (HF, MID, LO). Any movement of the fader will now not change the signal to the MON control. Also any change to the EQ controls will not change the signal to the MON control.

This is useful when routing the MON output signal to stage monitors.

#### 11 **AUX/DSP control**

An auxiliary send to the on board effects processor and to the AUX SEND output socket. The signal is derived after (post) the channel fader and allows an independent mix of each channel to the onboard effect processor. The AUX SEND output can be useful for connecting external effects processors.

#### 12 **PAN control**

Adjusts the channels signal between the MAIN MIX (left/right) output. In the centre position the signals to the MAIN MIX outputs are equal.

#### 13 **LISTEN button**

When pressed the channel signal will be displayed on the bargraph meters and can be heard on the headphones & monitor outputs. The PFL/SOLO modes are described later in this manual.

#### 14 **PEAK led**

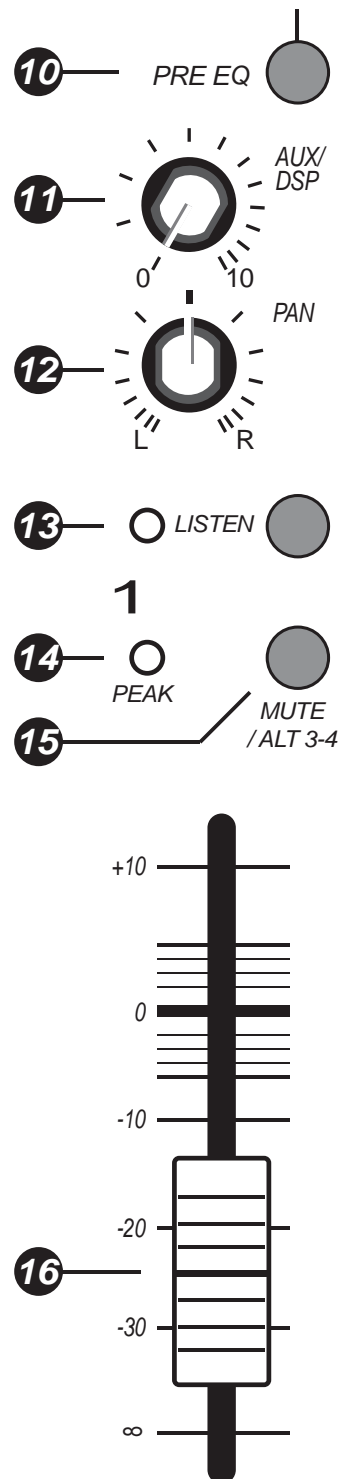
Indicates, by flashing briefly, when the channel signal is approaching its maximum level. If the led stays illuminated reduce the channel GAIN control to avoid distortion.

#### 15 **MUTE/ALT 3-4 switch**

When pressed the channel signal to the MAIN MIX is muted and now feeds the ALT 3-4 bus.

#### 16 **Channel fader**

Controls the level of the signal from the channel to the MAIN MIX or ALT 3-4 bus.



## Controls & Features - Front Panel

### Stereo Channels (not fitted on model 10R)

#### 17 INPUTS

Two ¼" TRS jack sockets for balanced or unbalanced stereo line level signals. For mono operation use only the LEFT input.

Can be wired for balanced or unbalanced use.



LEFT



#### 18 GAIN control

Adjusts the incoming signal to match the internal operating level of the Powerhouse for optimum performance.



RIGHT

#### 19 HF control

High frequency control providing 15dB of cut and boost at 12kHz

#### 20 MID control

High mid frequency control providing 15dB of cut and boost at 2.5kHz

#### 21 LO control

Low frequency control providing 15dB of cut and boost at 60Hz

#### 22 MON control

An auxiliary send from the channel routed to the MON fader and then MON SEND output. An independent mix of all channels can be created to supply external equipment such as stage monitors. The source of the signal to the control is set by the PRE switch, see section 23.

#### 23 PRE-EQ button

In the up position the signal to the MON control is after (or post) channel fader. Any movement of the channel fader will also change the signal to the MON control. This is useful when routing the MON output to external effects processors.

In the down, PRE EQ position, the signal to the MON control is before (or pre) the channel fader, and before (or pre) the EQ section (HF, MID, LO). Any movement of the fader will now not change the signal to the MON control. Also any change to the EQ controls will not change the signal to the MON control.

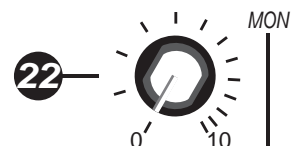
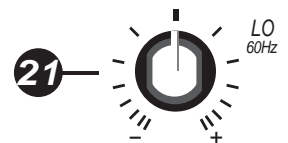
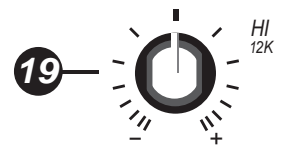
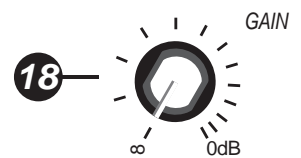
This is useful when routing the MON output signal to stage monitors.

#### 24 AUX/DSP control

An auxiliary send to the on board effects processor and to the AUX SEND output socket. The signal is derived after (post) the channel fader and allows an independent mix of each channel to the onboard effects processor. The AUX SEND output can be useful for use with external effects processors.

#### 25 BAL control

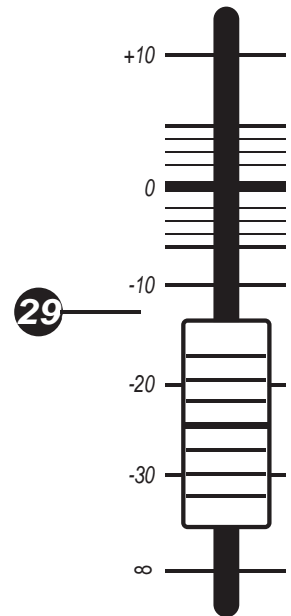
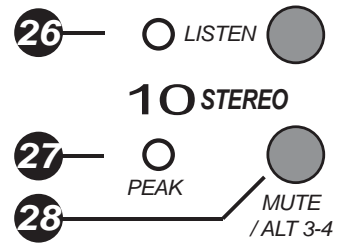
Adjusts the balance of the stereo signal between the left & right MAIN MIX. In the centre position the signals to the left & right MAIN MIX are equal. When the channel is used with a mono signal the BAL control works like a PAN control.



## Controls & Features - Front Panel

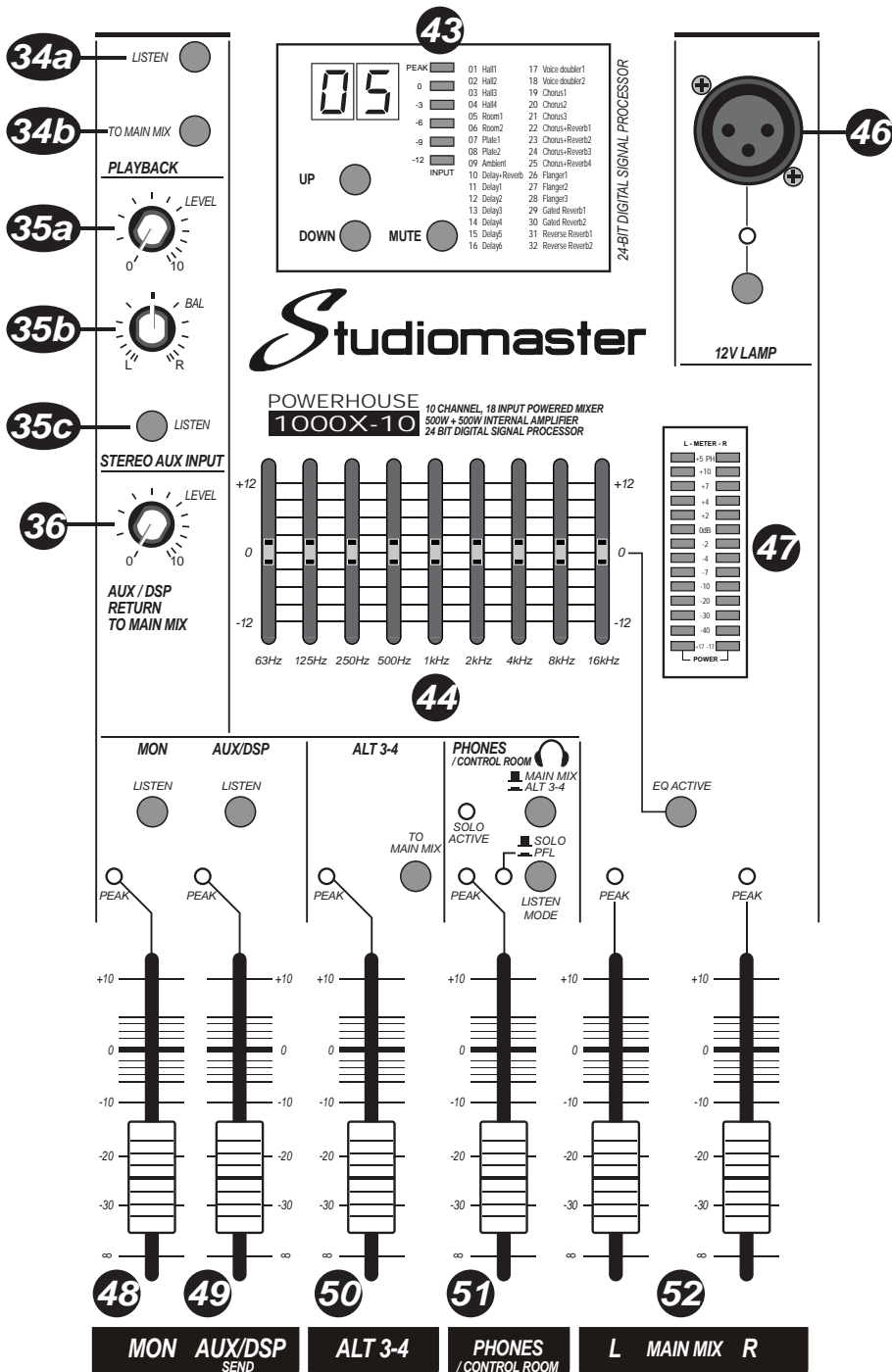
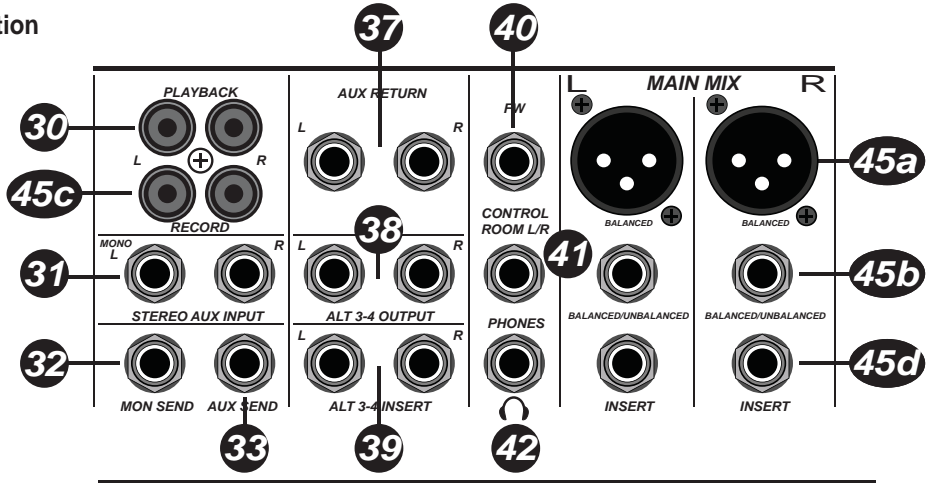
### Stereo Channels (not fitted on model 10R) - continued

- 26 **LISTEN button**  
When pressed the channel signal will be displayed on the bargraph meters and can be heard on the headphone & monitor outputs. The PFL/SOLO modes are described later in this manual.
- 27 **PEAK led**  
Indicates, by flashing briefly, when the channel signal is approaching its maximum level. If the led stays illuminated reduce the channel GAIN control to avoid distortion.
- 28 **MUTE/ALT 3-4 switch**  
When pressed the channel signal to the MAIN MIX is muted and now feeds the ALT 3-4 bus.
- 29 **Channel fader**  
Controls the level of the signal from the channel to the MAIN MIX or ALT 3-4 bus.



# Controls & Features - Front Panel

## Output section



## Controls & Features - Front Panel

### Output section

#### 30 **PLAYBACK sockets**

RCA phono sockets for the connection of unbalanced signals from 2 track playback equipment such as mp3, CD players. See section 33 for the associated routing buttons.

#### 31 **STEREO AUX INPUT sockets**

Two ¼" TRS jack sockets for balanced or unbalanced stereo line level signals. For mono operation use only the LEFT input. See section 34 for the associated controls.

Can be wired for balanced or unbalanced use.

#### 32 **MON SEND socket**

¼" TS jack unbalanced output of the AUX signal. Note when a jack plug is connected the signal is cut to the on board DSP. This output would normally be used when an external effects processor is required.

#### 33 **AUX SEND socket**

¼" TS jack unbalanced output of the AUX signal. Note when a jack plug is connected the signal is cut to the on board DSP. This output would normally be used when an external effects processor is required.

#### 34 **PLAYBACK controls**

**a) LISTEN** - Allows the incoming signal from the PLAYBACK input to be monitored at the PHONES/CONTROL ROOM output and left-right bargraph.

**b) TO MAIN MIX** - Routes the incoming signal from the PLAYBACK input to the MAIN MIX. The music source could be checked using the LISTEN button and then routed to the main mix when required.

#### 35 **STEREO AUX INPUT controls**

**a) LEVEL control.** Adjusts the level of the music source connected to the STEREO AUX INPUT.

**b) BAL control.** Adjusts the balance of the stereo signal between the left & right MAIN MIX. In the centre position the signals to the MAIN MIX are equal. When the channel is used with a mono signal the BAL control works like a PAN control.

**c) LISTEN** - Allows the incoming signal from the STEREO AUX INPUT to be monitored at the PHONES/CONTROL ROOM output and left-right bargraph.

The LISTEN switch operates independently of the LEVEL control.

#### 36 **AUX/DSP RETURN TO MAIN MIX**

Adjusts the output signal of the on board DSP to the left-right MAIN MIX output. If jack plugs are connected to the AUX RETURN input sockets, the signal from the DSP is cut. This allows an external signal source, say from an effects processor, to be connected overriding the on board DSP.

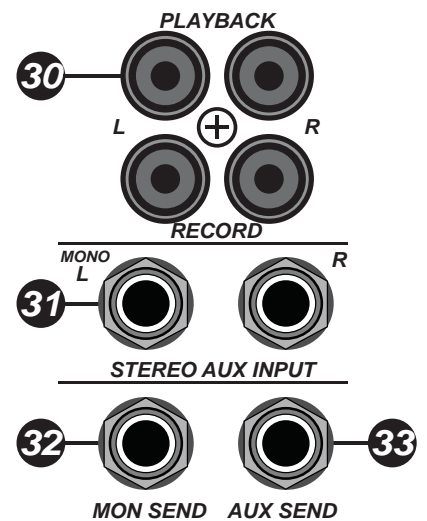
#### 37 **AUX RETURN INPUT socket**

¼" TS jack unbalanced stereo input. See item 35 for details.

#### 38 **ALT 3-4 OUTPUT socket**

¼" TRS jack balanced output socket.

Can be wired for balanced or unbalanced use.



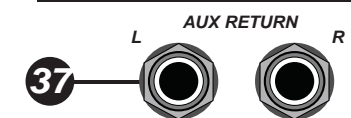
**PLAYBACK**



**STEREO AUX INPUT**



**AUX / DSP  
RETURN  
TO MAIN MIX**



## Controls & Features - Front Panel

### Output section - continued

#### 39 ALT 3-4 INSERT socket

¼" jack TRS socket enabling the ALT signal to be routed to an external processor (like a graphic equaliser) and returned back. The signal to the socket is sourced before (pre) the ALT 3-4 fader.

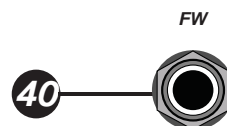


#### 40 FW / FS socket

This socket allows connection of a foot switch to turn on and off the signal from the DSP. This is useful between songs when a dry or clear voice is required with no effect.

Note: units with the socket marked FW require a special footswitch (included with the product). Normal type foot switches will not work with this model.

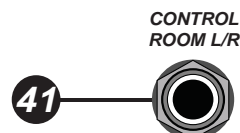
Units with the socket marked FS can be used with a standard latching, on/off type foot switch (not included with the product).



#### 41 CONTROL ROOM / L/R socket

¼" TRS jack, unbalanced, wired for stereo operation. The signal is controlled by the PHONES / CONTROL ROOM section.

This is a stereo signal suitable for connection to an amplifier and speaker system.

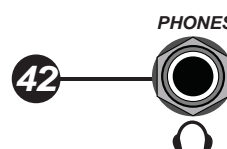


#### 42 PHONES socket

¼" TRS stereo jack, unbalanced, wired for stereo operation.

The signal is controlled by the PHONES / CONTROL ROOM section. This is a stereo signal suitable for headphones 100 ohms or greater impedance.

Lower impedance types can be used but volume maybe reduced.



#### 43 DSP (Digital Signal Processor)

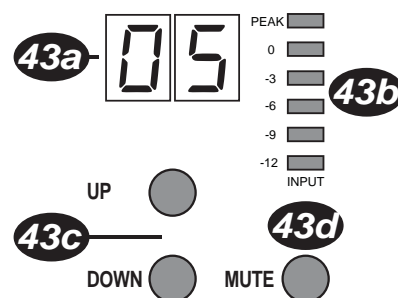
a) Twin seven segment display. Shows the current effect selected.

b) DSP input bargraph. Displays the signal going to the DSP section. The signal displayed should not exceed the orange LED marked 0.

Increasing the signal beyond this point may distort the DSP effect. If this happens reduce the individual channel AUX/DSP controls or the AUX/DSP SEND fader. See section 49a.

c) UP / DOWN buttons. Steps through the 32 DSP programs available. The program is automatically loaded when the button is released.

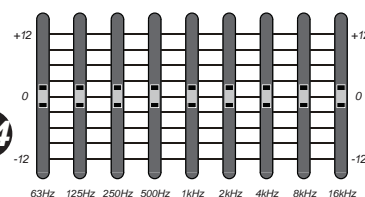
d) MUTE button. This button mutes the DSP signal. In this mode the twin seven segment display flashes to indicate a mute state. To return to normal operation press the MUTE button once again.



#### 44 Stereo 9 Band GRAPHIC EQUALISER

Provides 12dB of cut and boost over the following frequencies: 63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz & 16kHz.

The EQ ACTIVE button activates the graphic equaliser.



#### 45 MAIN MIX OUTPUT

a) XLR output. 3 pin XLR balanced.

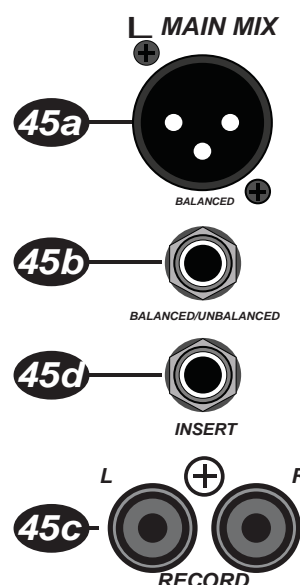
Can be wired for balanced or unbalanced use.

b) JACK output. ¼" TRS jack balanced.

Can be wired for balanced or unbalanced use.

c) RECORD output. RCA phono unbalanced.

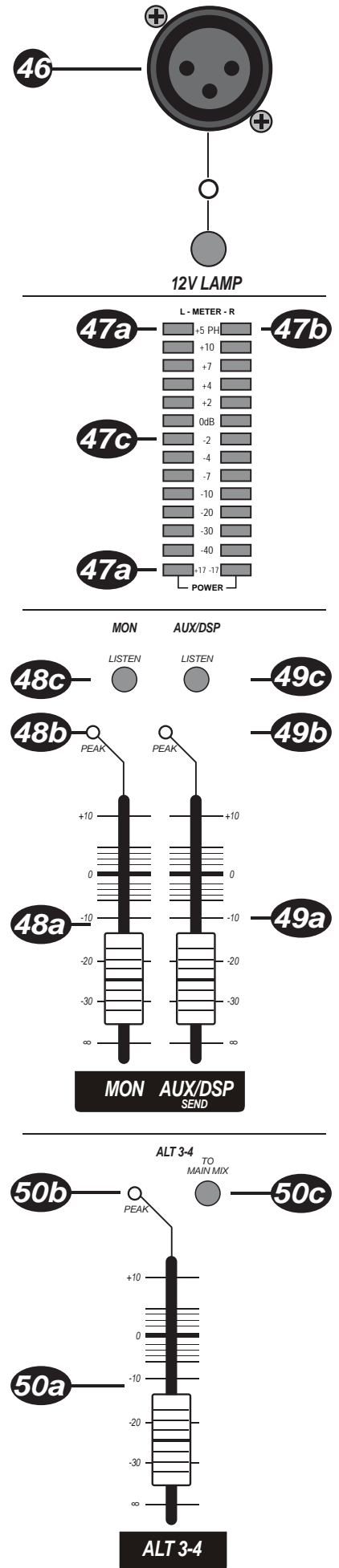
d) INSERT. ¼" jack TRS socket enabling the left-right MAIN MIX signal to be routed out to an external processor (like a graphic equaliser or speaker system controller) and returned back. The signal to the socket is sourced before (pre) the MAIN MIX fader.



## Controls & Features - Front Panel

### Output section - continued

- 46 **12V LAMP socket**  
3 pin XLR socket to power a goose neck lamp. Use only with a 12V 4W lamp.
- 47 **BARGRAPH DISPLAY**  
a) Power supply status LEDs. Show the +-17V and +5V internal supplies are working normally.  
b) Phantom Power status LED. Illuminates when the Phantom Power is switched on. The switch is located on the rear panel and applies +48V to each mic input socket. If Phantom Power microphones are not used check Phantom Power is switched off.  
Do not use unbalanced dynamic microphones when Phantom Power is on as damage to the microphone may result. Balanced dynamic microphones should work normally with Phantom Power on however, if in doubt check with the microphone manufacturer.  
c) Left and right bargraphs. Displays the left and right signals assigned by the PHONES/CONTROL ROOM buttons. See section 51.
- 48 **MON section**  
a) MON fader. Controls the overall level of signals sent via the input channel MON controls. This can be used as the master volume control of the stage monitors.  
b) PEAK LED. Illuminates when the MON level is approaching maximum which could result in a distorted sound.  
c) LISTEN button. Allows the MON signal to be monitored at the PHONES/CONTROL ROOM (section 51) and displayed on the left – right bargraphs. The signal is monitored before (pre) the MON fader.
- 49 **AUX/DSP section**  
a) AUX/DSP fader. Controls the overall level of signals sent via the input channel AUX/DSP controls to the DSP (section 43) and AUX SEND (section 33).  
b) PEAK LED. Illuminates when the AUX/DSP level is approaching maximum which could result in a distorted sound.  
c) LISTEN button. Allows the AUX/DSP signal to be monitored at the PHONES/CONTROL ROOM (section 51) and displayed on the left – right bargraphs. The signal is monitored before (pre) the AUX/DSP fader.
- 50 **ALT 3-4 section**  
a) ALT 3-4 fader. Controls the overall level of signals sent via the input channels when any MUTE/ALT 3-4 buttons have been pressed. The signal is then sent to the ALT 3-4 OUTPUT sockets (section 38).  
b) PEAK LED. Illuminates when the ALT 3-4 level is approaching maximum which could result in a distorted sound.  
c) TO MAIN MIX. Routes the signals sent via the input channels, when any MUTE/ALT 3-4 buttons have been pressed, to the left – right MAIN MIX output. This switch operates independently of the ALT 3-4 fader.



## Controls & Features - Front Panel

### Output section - continued

#### 51 PHONES / CONTROL ROOM section

a) MAIN MIX or ALT 3-4 switch. Routes the signal from MAIN MIX or ALT 3-4 faders to the PHONES / CONTROL ROOM. The signals are routed after (post) the faders.

b) SOLO or PFL switch. In the SOLO position when any LISTEN button on input channels (only) is pressed, that signal is automatically routed to the PHONES / CONTROL ROOM. The signal source is after (post) the input channel fader and PAN control.

In the PFL position the PHONES / CONTROL ROOM will only monitor a signal when a LISTEN button is pressed. In this mode the signal is before (pre) fader.

If no LISTEN button is pressed there will be no signal at the PHONES / CONTROL ROOM.

Whatever monitor mode is chosen, any signal routed to the PHONES / CONTROL ROOM will be displayed on the bargraph meter – see section 47.

c) PHONES / CONTROL ROOM fader. Controls the signal level to the headphone and control room outputs.

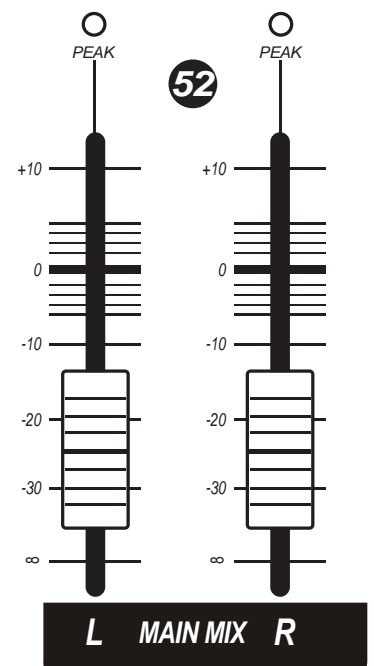
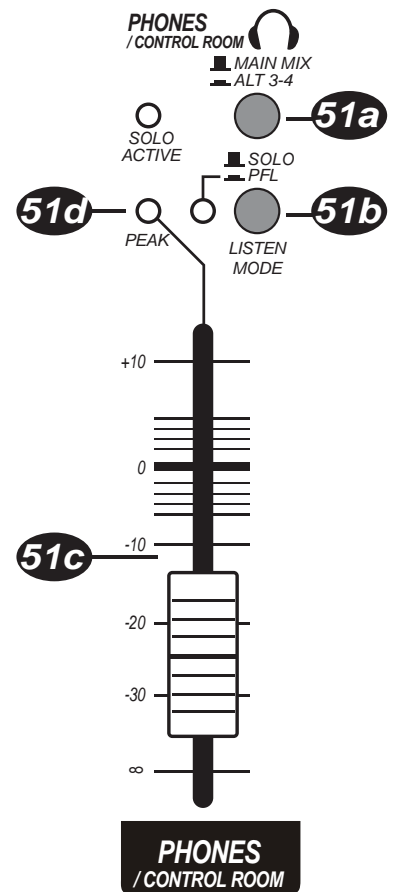
d) PEAK LED. Illuminates when the PHONES / CONTROL ROOM level is approaching maximum which could result in a distorted sound.

#### 52 MAIN MIX faders

Controls the signal level to the MAIN MIX outputs (XLR, jack & RCA Phono) and to the internal amplifiers. The signal feeding the amplifiers is monitored on the bargraph (section 47) and also SIGNAL & PEAK LEDS – see amplifier status section.

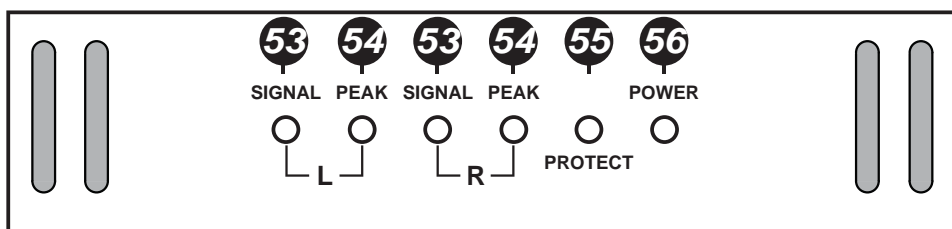
Operating your Powerhouse with the top +10 segment of the bargraph constantly illuminated and amplifier PEAK LEDs flashing continuously could damage your speakers. The Powerhouse will detect this and enter a protect mode, shutting down.

If this happens it can be reset by turning off and then on the A.C power to the Powerhouse again. Reduce the MAIN MIX faders a little to prevent entering protect mode again.



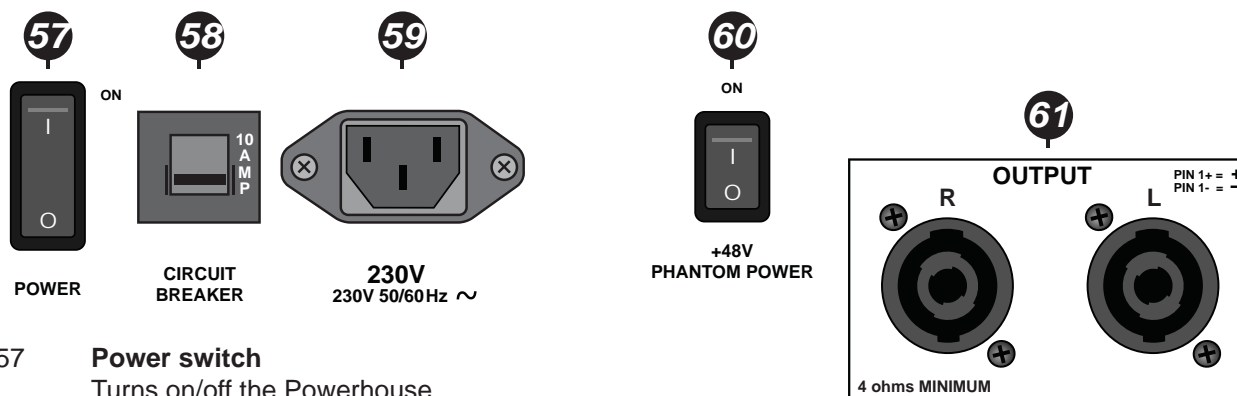
## Controls & Features - Rear Panel

### Amplifier status section



- 53 SIGNAL LEDs**  
Illuminate when the amplifier is operating at approximately 20% output power.
- 54 PEAK LEDs**  
Indicate when maximum power has been reached. They should only flash briefly on signal peaks. Operating your Powerhouse with the top +10 segment of the bargraph constantly illuminated and amplifier PEAK LEDs flashing continuously could damage your speakers. The Powerhouse will detect this and enter a protect mode, shutting down. If this happens it can be reset by turning off and then on the A.C power to the Powerhouse again. Reduce the MAIN MIX faders a little to prevent entering protect mode again.
- 55 Thermal PROTECT LED**  
Illuminates when the amplifier has overheated. If this happens the speaker outputs will turn off until the amplifiers have reached a safe operating temperature, then turn back on again. Ensure the ventilation slots front and rear are not blocked or the air flow impeded. Check also that a minimum speaker load of 4 ohms per channel is being used.
- 56 POWER LED**  
Illuminates when the Powerhouse has been switched on.

### Rear panel



- 57 Power switch**  
Turns on/off the Powerhouse.
- 58 Circuit breaker**  
Interrupts the power to the unit in the event of a fault. If the circuit breaker trips there could be a fault with the unit. Contact a Studiomaster service centre for advice.
- 59 AC power input: 230V AC 50/60 Hz**
- 60 Phantom Power switch**  
This supplies +48V to all mic channels to power condenser microphones. If phantom power is not required ensure the switch is in the off position.
- 61 Speaker outputs**  
Industry standard 4 pole connector.

# POWERHOUSE 1000X

## USING THE POWERHOUSE 1000X SETTING YOUR LEVELS

Connect suitable speakers (with a minimum impedance of 4 ohms) and connect the mains lead/A.C. power cord to an appropriate power source. Before switching on check all faders are at minimum and EQ controls central. Press the LISTEN button on the channel to be used and also select PFL on the LISTEN MODE button. Any signal in the channel will now be shown on the bargraph display.

Now connect a suitable signal source, CD / mp3 player is best, to the input. Switch on the Powerhouse; adjust the GAIN control until signal peaks from the music are peaking around the +4 / +7 calibration marks. Release the channel LISTEN and LISTEN MODE buttons. Raise the channel fader to the '0' position and slowly raise the MAIN MIX faders until the required volume level is reached.

If full volume is required, continue to raise the MAIN MIX fader whilst watching the bargraph display. When the top +10 segment of the display flashes maximum volume has been reached. This can be confirmed checking the

amplifier PEAK LEDS are briefly flashing.

Operating your Powerhouse with the top +10 segment of the bargraph constantly illuminated and amplifier PEAK LEDS flashing continuously could damage your speakers. The Powerhouse will detect this and enter a protect mode, shutting down.

If this happens it can be reset by turning off and then on the A.C power to the Powerhouse again. Reduce the MAIN MIX faders a little to prevent entering protect mode again.

---

## SETTING UP A PA GETTING IT RIGHT THE FIRST TIME

In small venues, the PA (public address) works as a sound reinforcement system, helping to boost the sound level of the vocals, solo instruments and backing tracks. The Powerhouse 1000X is ideal for this application as it has plenty of input channels and a total of 1000Watts of power to provide a clear, powerful sound.

The following paragraph has some useful tips and should be used along with the setup diagrams to help get the best from your Powerhouse 1000X.

Always position the PA speakers in front of any microphones. This will help achieve a high volume level before feedback problems occur.

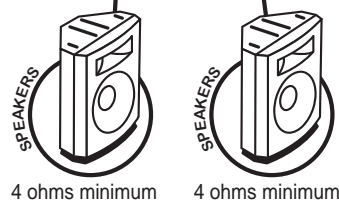
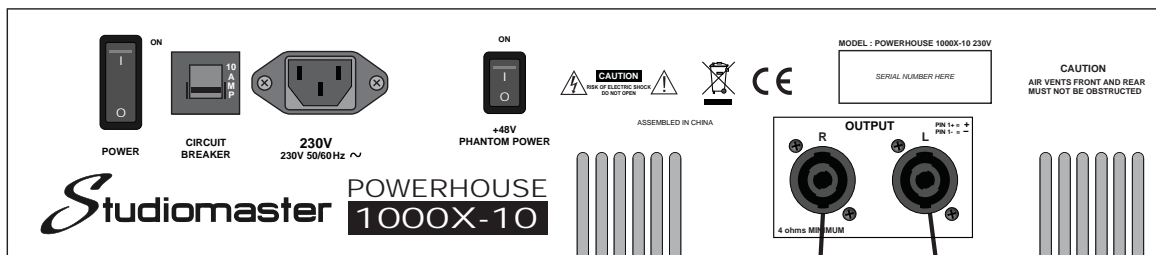
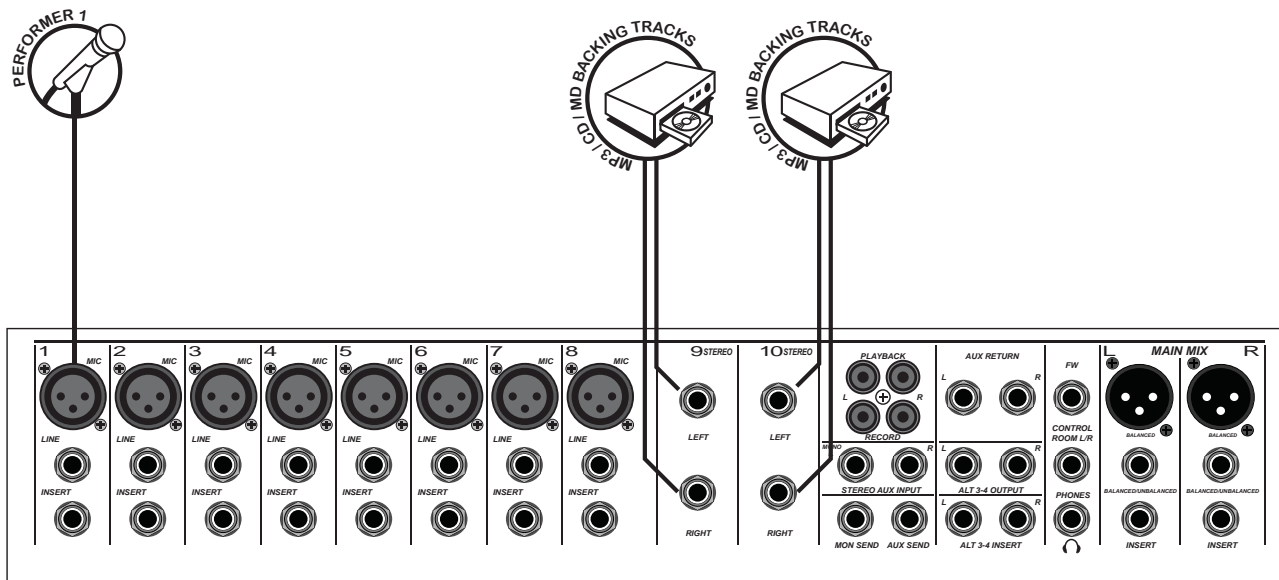
If you find it difficult to hear what you are singing, don't be tempted to turn one of the PA speakers round so that you can listen to it. This will most certainly lead to feedback but also deprive your audience of sound on one side of the stage. Consider some type of monitoring, either in ear or stage monitor speakers. The Powerhouse 1000X has the facility to set up a separate mix (using the MON controls) which can be sent to your monitor system. You can decide

just what you want to hear helping you deliver a better performance.

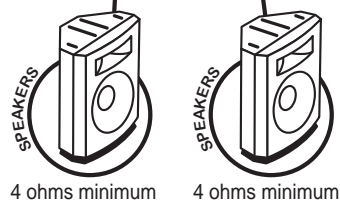
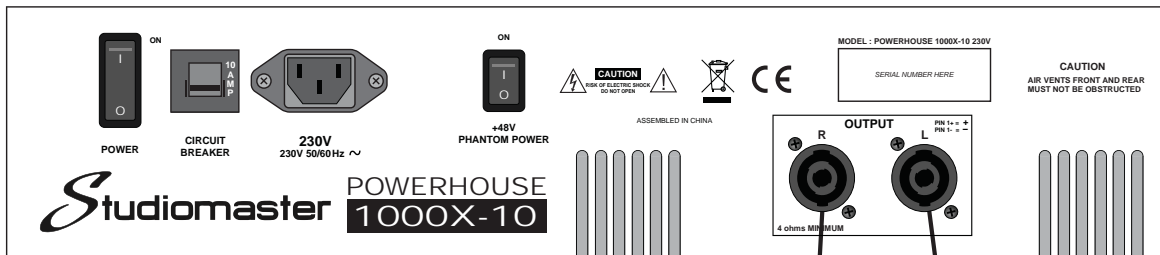
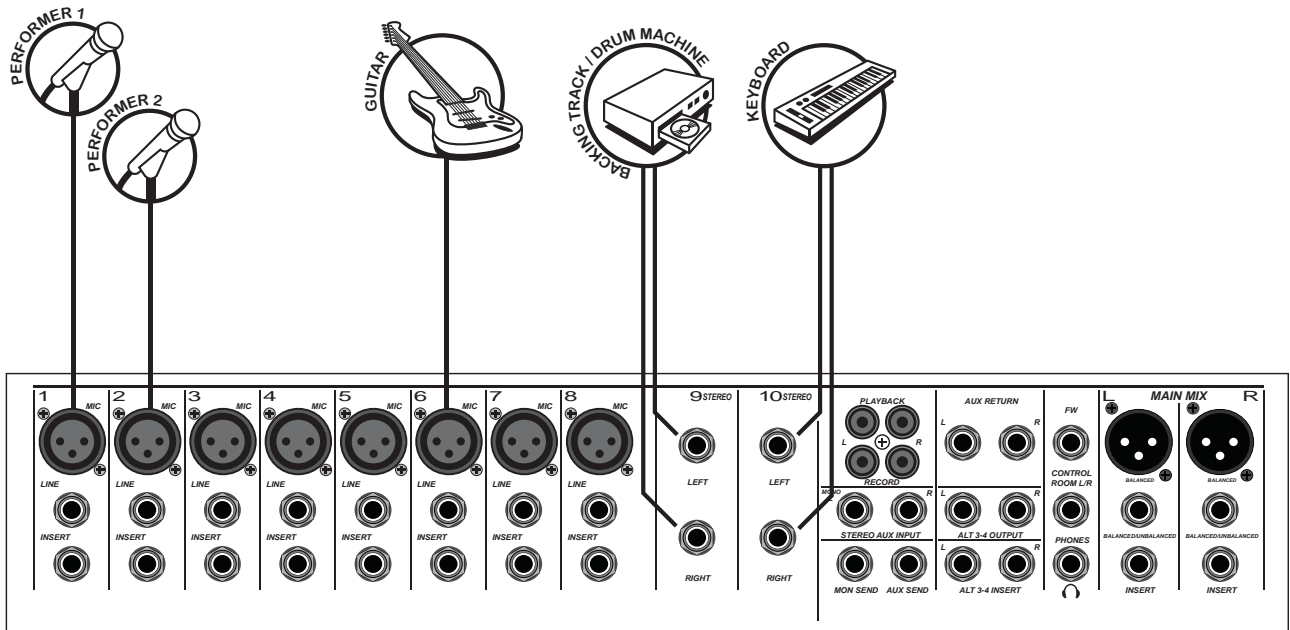
A common problem when setting up a PA is the vocal mic(s) picking not only your voice but other sound sources on the stage like drums, guitars etc. Use a quality microphone that's designed for live sound. A uni-directional mic, such as the Studiomaster KM range, picks up most of the sound from the front but much less from the sides and very little from the rear. This gives better isolation from sounds either side. If possible do not position the vocalist with sound directly behind them, such as a drum kit, as it will be difficult to avoid picking up this sound along with the singer.

When setting up the mix, concentrate on getting a clear vocal sound which is above the level of the backing instruments. Avoid the singer 'competing' with the other instruments or backing track otherwise clarity will suffer and the singer will have to work a lot harder to be heard.

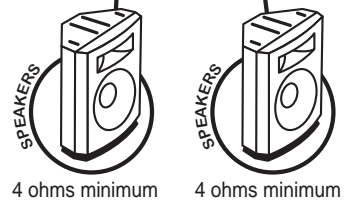
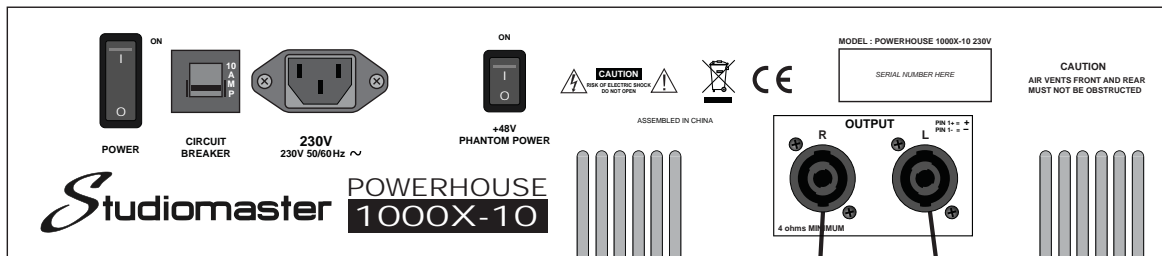
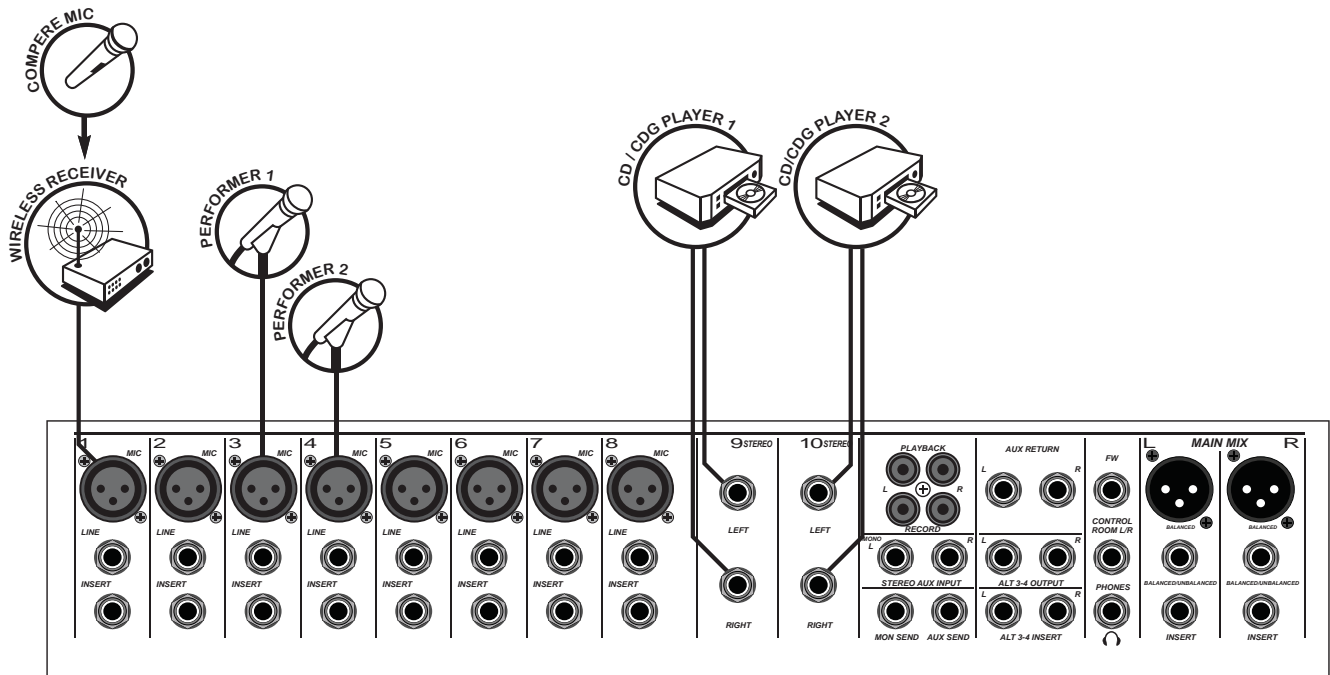
# SOLO ENTERTAINER



# DUO PERFORMANCE



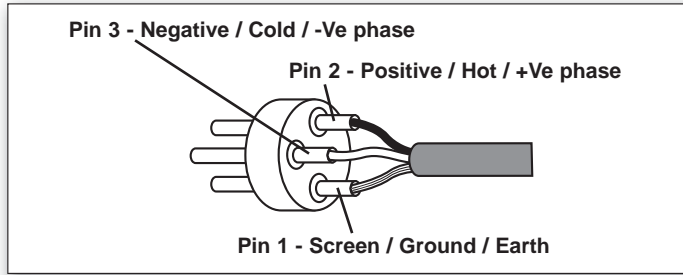
# KARAOKE



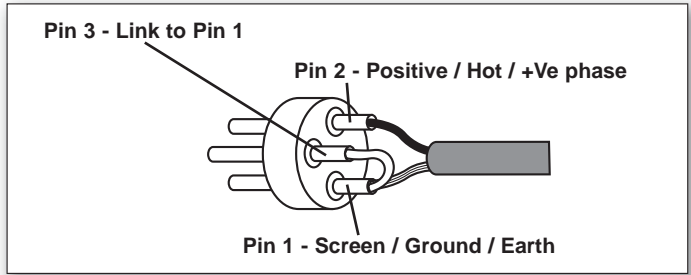
# WIRING CONNECTIONS

## HOW DO I KNOW I HAVE THE RIGHT LEADS

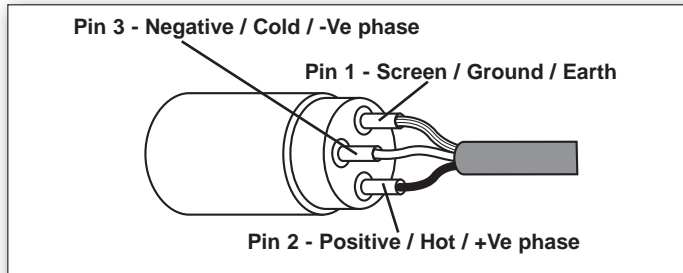
To connect a Balanced Microphone to a mic input 3 pin XLR - male



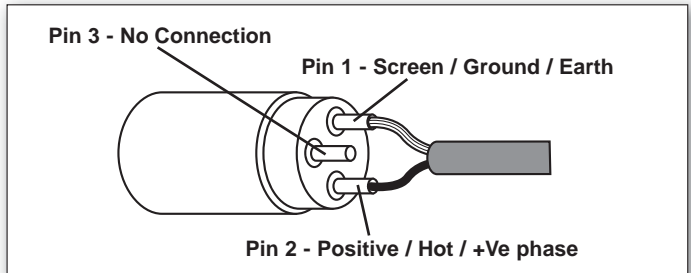
To connect an Unbalanced Microphone to a mic input 3 pin XLR - male



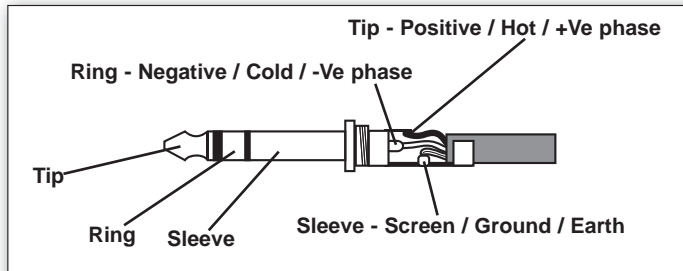
To connect a Balanced lead to the MAIN BALANCED OUTPUT 3 pin XLR - female



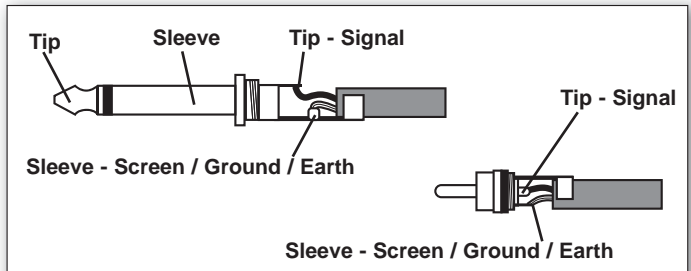
To connect an Unbalanced lead to the MAIN BALANCED OUTPUT 3 pin XLR - female



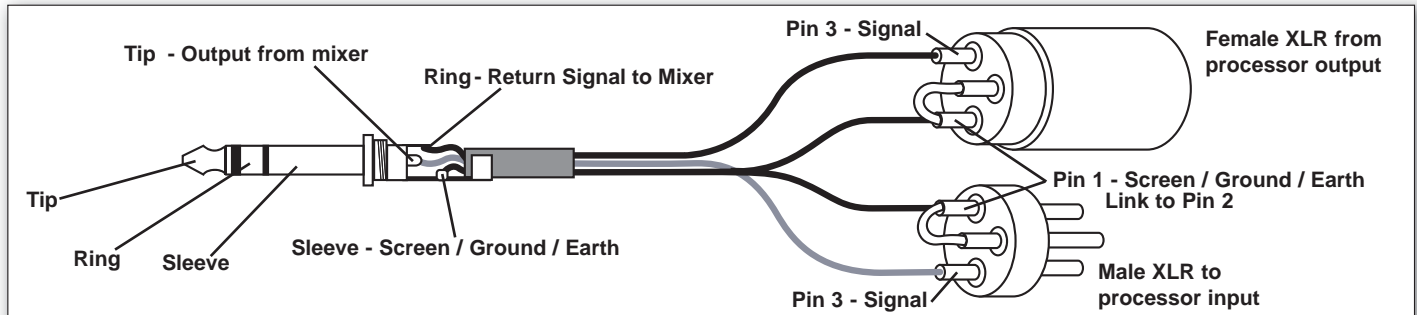
To connect Balanced equipment to an input or output



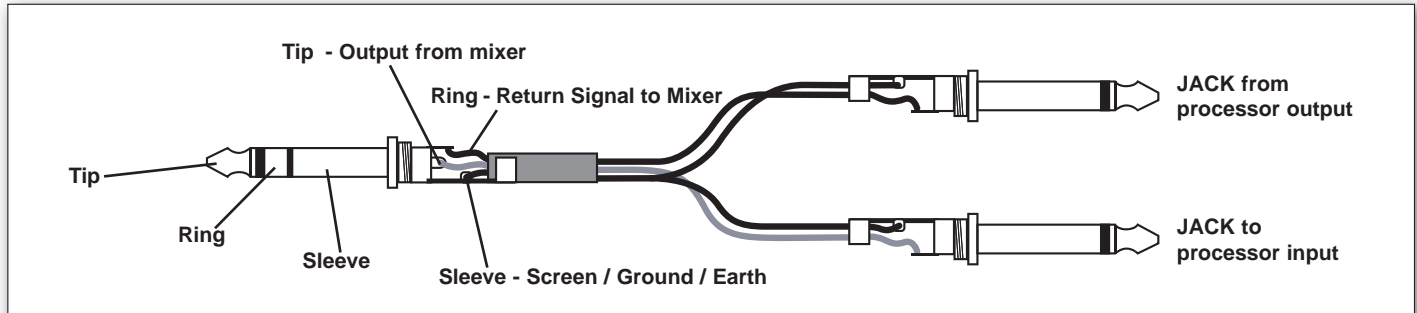
To connect Unbalanced equipment to an input or output



To connect an external Processor with XLR input / output to an INSERT socket (Mic Input channels, Main Outputs, Alt Outputs)



To connect an external Processor with JACK input / output to an INSERT socket (Mic Input channels, Main Outputs, Alt Outputs)



# HINTS & TIPS

## SETUP ADVICE

### INPUTS

Most sound sources can be used with the 1000X although there are some exceptions.

Some guitars have a very low signal (sound) output, which is only a problem if maximum sound level is required. If this is the case, a guitar pre-amplifier will be required to boost the sound going to the input of the 1000X.

Some microphones, like the types fitted with jack plugs, may have too low a signal (sound) output. A clue to this is if the channel and output faders have to be set high or at maximum to get a good volume level and a hissing sound can be heard from the loudspeakers. If this is the case the only solution is to use another microphone preferably one fitted with the larger XLR type connector.

**WARNING :** Do not connect the loudspeaker outputs from amplifiers or hi-fi units to any input. This will cause damage to the 1000X.

### TONE CONTROLS - suggestions

Microphones    HI set to  MID set to  LO set to 

CD / MP3        HI set to  MID set to  LO set to 

Guitars          HI set to  MID set to  LO set to 

Try starting with these settings although there is no substitute for experimentation.; Remember the tone controls are for enhancing the sound and do not have to be used.

### DSP CONTROLS - to the on board effects processor

A very powerful feature on any mixing console as it gives you the facility to add effects to your sounds. However, especially with reverb effects it pays not to use too much as it will tend to distance the sound(s) it is used on.

### LOUDSPEAKERS

Only use speakers of the correct type and rating for the 1000X. Note : The minimum impedance must never be lower than 4 ohms / channel.

Due to the high audio power the 1000X can deliver, only heavy duty loudspeakers should be used and not domestic Hi-Fi types.

Use good quality speaker cables to minimise power loss and possible damage.

### PLAYBACK / RECORD

Generally used for checking recording or playing background music. However it can be more useful to connect the CD/MP3 playback output to a stereo input channels. This will give you more control over the sound with its channel fader and tone controls.

### HEADPHONES

The best headphones to use with your 1000X are studio grade 400 ohm types, although most types can be used but may not sound as loud.

Headphones are ideal when setting up, recording, playing back or just getting to know the 1000X controls.

### SQUEAL

Correct term 'feedback' occurs when a microphone picks up sound from loudspeakers connected to the 1000X, increases the sound level and feeds it back to the speakers - not very nice! The following points can help reduce this problem:

- Keep microphones away from the front of the loudspeakers.
- Don't use too much MID and HI tone control on channels used with microphones. These controls tend to boost sounds that can cause feedback.
- Microphone technique is important. Encourage the users to sing/talk directly into and not too far away from the microphone.

### VENTILATION

The 1000X produces heat, especially when used at high volume levels. It uses small fans to remove this heat.

Don't worry if warm air comes out of the cooling slots on the rear panel. It's quite normal when used at high volume.

It is important to keep all ventilation slots free from obstruction for long term reliability. Never place the rear of the unit closer than 100mm (4") to a wall or object.

# TROUBLE SHOOTING

## WHY IS IT NOT WORKING!

### **No Power.....**

Check mains lead/A.C. power cord is connected and pushed in firmly.

Is there power at the A.C. wall outlet?

Is the Powerhouse switched on?

### **No sound.....**

Is there an input signal?

Are the speakers connected?

Are the channel and output faders raised?

### **Working fine and then sound cuts out....**

Is the PROTECT led on? This indicates the amplifier has over heated. Check ventilation slots are not blocked and there is a good flow of cool air. Check speaker cabinets are no lower than 4 ohms impedance. Are the speaker cables damaged?

### **Working fine and then turns off....**

Has the power supply switched off? Turn the power switch off then on again. If sound returns lower the output level to prevent reoccurrence.

# GLOSSARY OF TECHNICAL TERMS

## WHAT DO THESE WORDS MEAN!

### **AC or a.c.**

Alternating current.

### **AC POWER SUPPLY**

Local electrical supply

### **ASSIGN**

To switch or route a signal to a specific signal path.

### **ATTENUATE**

To reduce or make quieter.

### **BALANCED**

Balanced 3 connection circuitry is widely used in audio equipment from cheap dynamic microphones to top quality studio devices. The balanced system is used as it cancels outside interference in the connecting cables resulting in a cleaner signal.

### **BANDWIDTH**

The bandwidth is the range of frequencies that will pass through a piece of equipment.

### **BUS**

A common conductor that carries a signal, or number of signals, through a mixing console.

### **CLIPPING**

Distortion caused by a signal exceeding the maximum level that an input can accommodate.

### **COLD**

The negative phase of a signal. Usually the black wire in a balanced cable. For an unbalanced signal the SCREEN is used for the COLD connection.

### **COMPRESSOR**

An electronic device used to stop the level of a sound from increasing above a set threshold point. They can be used to help fit signals onto a media with a limited dynamic range such as analogue and digital tape. A compressor can also be used to keep signal levels from overloading the input of a piece of equipment.

### **CUEING**

Another word for monitoring, usually when a signal source is prepared to be played at a specific time during a performance. It may be a sound effect for a stage production or an MP3, CD or MD track ready to play so that the music is ready to start immediately.

### **dBA**

The most commonly used unit for measuring sound pressure levels. The 'A weighting' takes account of the ear's varying sensitivity to different frequencies, which is most pronounced at low volumes.

### **dBu**

A standard reference voltage = 0.775V rms. Derived from the earlier dBm which was used to the power in 600ohm circuits.

### **dBV**

A standard reference voltage = 1V rms.

### **DECIBEL (dB)**

A logarithmic method of measurement for acoustics and electronics. One decibel (1/10th of a Bel) is the 'standard' change in loudness perceptible by the human ear, although 'trained ears' can detect smaller changes. 0dB (acoustic) is the threshold of human hearing at mid range frequencies.

### **DELAY**

Nowadays a delay or DDL (digital delay line) is an electronic effects processor which samples a short sound and replays it back a short time later to give an echo effect. Delays are also used in radio to 'vet' live phone calls and in live sound to ensure that sound from different speaker stacks arrive at the listeners ears at the same time.

### **D.I.**

Direct Injection. Often a small 'D.I. box' is used to send a signal directly from a guitar or bass into the console without first putting it through an amplifier and speaker and capturing the sound with a microphone.

### **ECHO**

The effect produced when sound is reflected off hard surfaces often reproduced artificially using electronic equipment (see DELAY).

### **EFFECTS (FX) SENDS**

Any outputs from a channel or console that can be connected to external equipment for extra sound processing. Usually effects sends are post fade so any level changes to the main signal also adjust the signal sent for processing.

### **EQUALISATION (EQ)**

Tone Controls

### **FADER**

Volume control, often a linear or slider type volume control.

### **FEEDBACK**

The deafening squealing sound produced when a microphone picks up it's own amplified sound from a loudspeaker.

### **F.O.H.**

Front of House. The speaker system which is used to project the sound from the stage to the audience. It is also used to describe the position, in front of the stage, where the main mixing console is situated.

### **FOLDBACK**

Sound which is sent from the main mixing position back to the stage so the performers can hear it. Often, with a large sound system an entirely separate foldback (or monitor) system with a dedicated console is located on one side of the stage so the performers can communicate easily with the operator.

### **GRAPHIC / GRAPHIC EQUALISER**

An equaliser that uses rows of slider controls to adjust the sound. Each of the sliders will adjust one part of the frequency spectrum giving a visual display of which areas have been cut or boosted.

### **GROUND**

Earth

### **HERTZ (Hz)**

A measurement of frequency. 1Hz = 1 cycle per second.

**HIGH (or TOP)**

The treble or high frequency content of a sound or the speakers (often compression drivers attached to horns or flares) used to reproduce it.

**HOT**

The positive phase of a signal. Usually the red wire in a screened cable.

**IMPEDANCE**

Similar to resistance, except that impedance also reflects the effect of any inductance or capacitance in the circuit.

**INSERT (SEND/RETURN)**

A TRS jack that is both a send and a return. These allow an individual signal to be sent out of the console to be processed and then returned to the console. Inserts may also be fitted to the main outputs or sub groups for overall mix or sub mix processing. Inserts are generally used for dynamics treatments such as compressors and noise gates as the whole of the signal is processed.

**KILOHERTZ (kHz)**

A measurement of frequency. 1000 Hertz = 1kHz (1000 cycles per second).

**LEVEL**

The size of a signal, at any given point, in an audio system.

**LINE LEVEL**

A signal level higher than microphone level used to interconnect equipment. A typical level of semi pro equipment is -10dBV while pro equipment is usually +4dBu and often balanced. Typical line levels can be from 100mV to 4V (-15 to +15dBu).

**MONO**

Single channel sound reproduction (short for monaural).

**MONITOR**

The speakers used by the performers or operator to hear signals in a recording studio or on-stage. Also used in live sound as an alternative name for FOLDBACK.

**NOISE**

Any sound you didn't want (hiss, hum etc).

**OHM**

A unit of electrical resistance. 1000 Ohms = 1kOhm

**PFL**

Pre fade listen. Button that allows the operator to monitor signals within the console before they are included in the main mix.

**RESISTANCE**

A measure of the ratio of Voltage and Current in a circuit or component. Resistance (Ohms) = Voltage/Current.

**REVERB**

Reverberation. A series of very closely spaced echoes which ring on after the original sound has finished. Probably the most widely used effect in modern recorded music. Clap your hands in a room and listen to the way the sound fades away, that is reverberation. Reverb as an effect is generally reproduced by electronic devices.

Churches and concert halls are often specifically designed to be highly reverberant to enhance the type of music usually performed there.

**RMS**

Root Mean Square. The method normally used to measure AC Voltages.

**SCREEN**

The interference suppressing outer conductor in mic and line cables.

**SEND**

The connectors or controls used to send a signal, connected externally to a mixing console.

**SIGNAL TO NOISE**

The ratio used to describe the relationship between the level of a signal and the background noise that accompanies it.

**SOLO**

The facility to be able to hear an individual or group of signals in isolation. Solo in Place (SIP) allows the signals to be heard in their stereo position, often with any effects which have been added.

**SPEAKON™**

A high quality connector designed for use with high power amplifiers and loudspeakers.

**SPL**

Sound Pressure Level.

**STEREO**

Two channel sound reproduction where the two signals are sent to separate left and right speaker systems.

**SWEEP EQ**

An Eq system which allows the centre frequency of the cut and boost control to be adjusted over a wide range to achieve the most effective results.

**TRS**

Tip, Ring, Sleeve. 1/4" three pole jack plug. Often referred to as a stereo jack plug (phone jack in USA). Used for balanced line signals, insert (send/return) points and some stereo headphones.

**TS**

Tip, Sleeve. 1/4" two pole jack plug. Often referred to as a mono jack (phone jack in USA). Used for unbalanced signals.

**UNBALANCED**

Two wire connection using one signal and one screen conductor.

**XLR**

An industry standard connector used for audio signals (usually 3 pin). They are used for low level signals (like microphones) and line level signals. **AC or a.c.** Alternating current.

# POWERHOUSE

# 1000X

## TECHNICAL SPECIFICATION

### FACTS & FIGURES

Gain to Balanced L-R Outputs	MIN	MAX	RANGE
Mic	20dB	60dB	40dB
Line	0dB	40dB	40dB
Stereo Line	infinity	17dB	17dB
Stereo Aux Input	Infinity	26dB	26dB
Playback	-	19dB	-
Aux Return	Infinity	26dB	26dB

---

EQ (+/- 15dB)	HF	MF	LF
Mic Channel	12kHz	500Hz - 5kHz	60Hz
Stereo Channel	12kHz	2.5kHz	60Hz
Graphic Equaliser	63Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz		

---

Frequency Response to L-R Outputs		
Mic Channel	30Hz to 60kHz	-1dB
Stereo Line Channel	10Hz to 60kHz	-1dB

**Equivalent Input Noise, Max Gain, 20kHz B/W**

Mic	-126dBu
Line	-98dBu
Stereo Line	-80dBu

**Distortion, +10dB Signal at L-R Balanced Outputs**

Mic	0.04%	@ 30dB Gain
Line	0.04%	@ 10dB Gain
Stereo Line	0.03%	@ 15dB Gain
Aux Input	0.04%	@ 15dB Gain

**Fader Cut Off @ 1kHz L-R Output**

Mic	80dB
Stereo Line	80dB
Main Mix	77dB

---

Output Levels	Nominal	Maximum
Mic Channel Insert	0dBu	+22dBu
Main Mix Insert	-3dBu	+18dBu
XLR Balanced Output	+10dBu	+28dBu
Jack Unbalanced Output	+4dBu	+24dBu
Record Output	+2dBv	+20dBv
Mon Output	-	+23dBu
Aux Send Output	-	+23dBu
Alt 3-4 Output	+8dBu	+28dBu

---

Maximum Signal Level to balanced Outputs	Maximum Gain	Minimum Gain
Mic Input	-38dBu	+13dBu
Line Input	-9dBu	+30dBu
Stereo Input	+12dBu	-
Stereo Aux Input	+3dBu	-
Playback	+10dBu	-
Aux Return	+4dBu	-

**On Board EFFECTS PROCESSOR** 24 Bit, 32 preset Digital Signal Processor

# POWERHOUSE

## 1000X

**Rated Amplifier Output power per channel** @ 1% THD  
 Into 4 ohm load 500W rms  
 Into 8 ohm load 300W rms

**Power Requirement** 230V AC 50/60Hz

**Power Consumption @ 1/3 Power Pink Noise** 4.6A

<b>Dimensions</b>	<b>Width</b>	<b>Height</b>	<b>Depth</b>	<b>Weight</b>
Powerhouse 1000X-10R	482mm (19")	150mm (5.9")	410mm (16.1")	15.5KG (34.1lbs)
Powerhouse 1000X-10	474mm (18.6")	150mm (5.9")	410mm (16.1")	15.5KG (34.1lbs)
Powerhouse 1000X-14	590mm (23.2")	150mm (5.9")	410mm (16.1")	16KG (35.2lbs)
Powerhouse 1000X-18	696mm (27.3")	150mm (5.9")	410mm (16.1")	16.5KG (36.3lbs)

# POWERHOUSE

## 1000X

## WARRANTY

### ARE YOU COVERED?

The Manufacturer warrants all Studiomaster products to be free from defects in materials and workmanship for a period of one year from date of purchase. The Manufacturer reserves the right to the final decision on all warranty claims.

#### Exclusions to Warranty Cover

Damage caused by accident, misuse, improper installation or neglect.

Damage caused by repair, modification or service by persons not authorised by Studiomaster.

Products on which the serial number has been defaced, altered or removed.

#### Who is Protected

This warranty is enforceable by the original purchaser and any subsequent owner(s) during the warranty period, providing a

copy of the original sales receipt is submitted whenever a warranty service is required.

It is recommended that you complete and mail the Warranty Registration Card supplied with your product.

For your reference in the event of a warranty or service repair, please complete the following information and attach a copy of your original sales receipt.

Model : \_\_\_\_\_

Serial Number : \_\_\_\_\_

Purchase Date : \_\_\_\_\_

Purchased From : \_\_\_\_\_

Note : THIS WARRANTY DOES NOT AFFECT YOUR STATUTORY RIGHTS

## SERVICE INFORMATION

### HOW TO GET MY PRODUCT REPAIRED

If you have a problem with your Studiomaster product or think it has developed a fault you should first carefully check the Trouble Shooting section in this guide. If this does not solve the problem or if the product is physically damaged, contact your local dealer or distributor for service details.

Should it be recommended you return the product to your nearest Studiomaster Service Centre you must first contact them.

You will be asked for the product type and serial number. You will then be given a Returns Authorisation (RA) number.

Pack the unit in its original carton to protect it from shipping damage.

You must have the Returns Authorisation number clearly marked on the outside of the carton or we may refuse the delivery. Studiomaster cannot be held responsible for damage resulting from the equipment being packed incorrectly.

Label the equipment clearly with your name and address and include a clear description of the fault. The more information you supply helps the service engineer, minimising repair cost when out of warranty.

**Important** : No liability will be accepted by Studiomaster for any transit damage to units not returned in their original packing, for warranty repairs or otherwise.

# POWERHOUSE 1000X

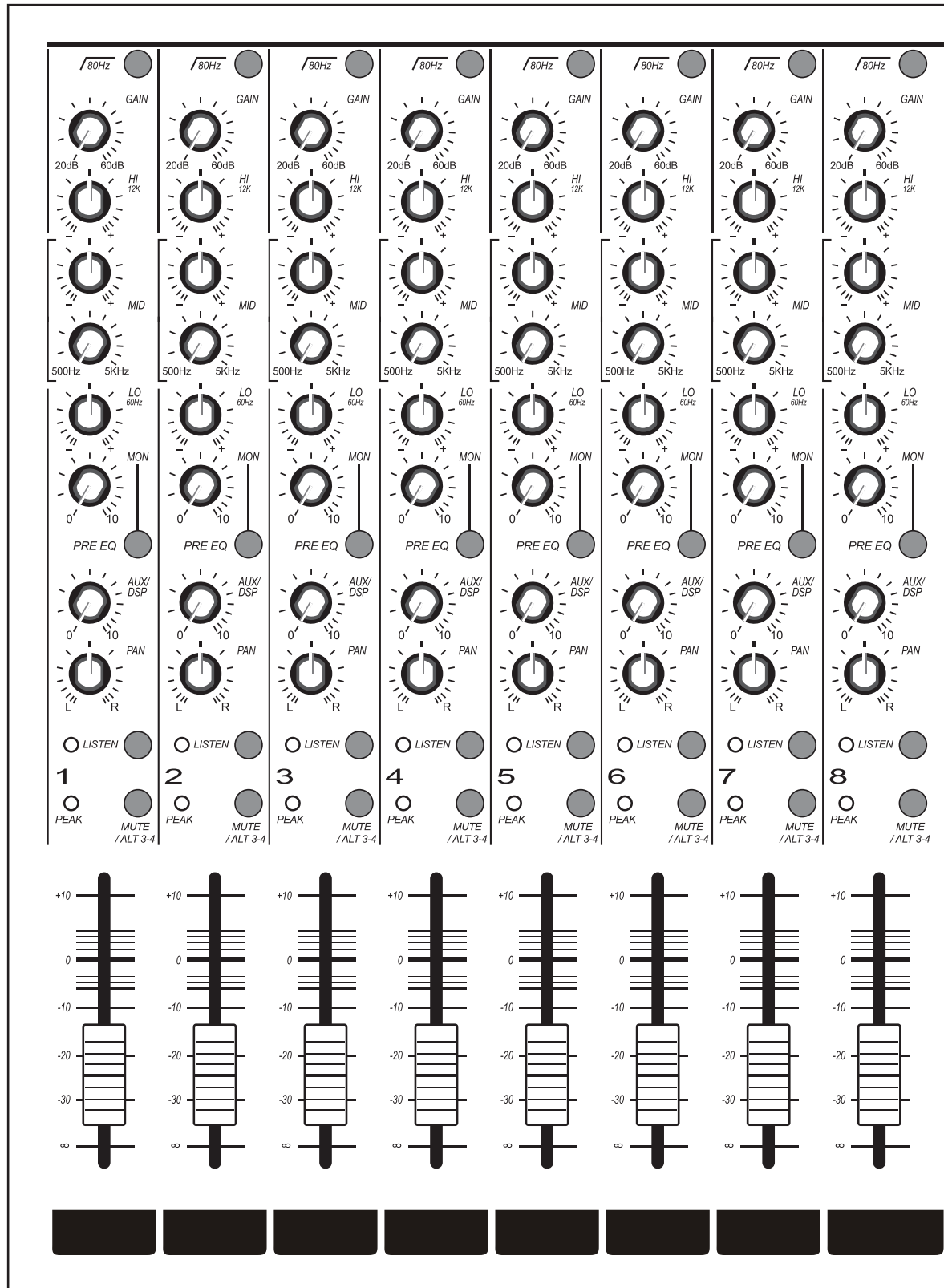
In Accordance with our progressive product development, Studiomaster / Studioking reserve the right to change features and specifications without prior notice.

EXPECT THE BEST



# StuDiomaster

since 1976



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