

PULSE

USER MANUAL PMX1204 & PMX1604



WWW.PULSE-AUDIO.CO.UK

SAVE THESE SAFETY INSTRUCTIONS

Thank you for purchasing our product. To assure the optimum performance, please read this manual carefully and keep it in a safe place for future reference.

Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electronic shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



Waste Electrical and Electronic Equipment or WEEE symbol. When this product reaches the end of its life, do not dispose with the household waste. This includes remote controls and batteries. See www.recycle-more.co.uk. For more details of how to dispose of PULSE products in an environmentally sound fashion, or contact PULSE directly via www.pulse-audio.co.uk.



CE marking is a declaration by the manufacturer that the product meets all the appropriate provisions of the relevant legislation implementing certain European Directives.



Please take care when working with any audio equipment. If you are not fully aware how this unit works then it is best practice to turn down all monitors and then turn them up slowly. If you are unsure on how to use any equipment seek help from a professional. Although your new console will not output any sound until you feed it signals, it has the capability to produce sounds which when monitored through an amplifier or headphones may damage your hearing permanently.

- This product has a 12 month warranty. This warrant will be voided if it appears the product has been opened, modified or repaired by an unauthorised technician
- Unplug the mixer from the wall outlet before cleaning Do not use liquid cleaners or aerosol cleaner. Use a damp cloth for cleaning.
- Do not use this appliance near water for example, near a bathtub, wash-bowl, kitchen sink, in a damp room or near a swimming pool, etc.
- Do not place this appliance on an unstable platform, stand, or table. The appliance may fall causing serious injury to a child or adult, and serious damage to the appliance. Use only with a stable platform or stand recommended by the manufacturer, and use a mounting kit approved by the manufacturer. Do not put this equipment on a platform that is portable.
- Do not connect 2 amplified outputs to 1 speaker
- Do not short circuit or cross-connect inputs or outputs
- This appliance should never be placed near any heat source. This appliance should not be place in a built-in installation, unless proper ventilation is provided.
- Keep away from magnetic recording media (tape, mini disc, hard drives ect).
- Power amplifiers produce an electromagnetic field, which could effect stored files.
- Use adequate amplification and speakers for your needs. Always ensure the output rating of the amplifier is equal to or more than the RMS ratings of your speakers.
- This appliance should be operated only from the type of power source indicated on the marking label. The following wiring convention is used in all product mains leads, and this must be strictly observed: Green/Yellow = Earth, Brown = Live, Blue = Neutral. THIS UNIT MUST BE EARTHED. If you are not sure consult your dealer or a qualified electrician.
- Do not allow anything to rest on the power cord. Do not locate this appliance where the cord will be damaged by people walking on it.

- Do not overload wall outlets or extension cords, as this can result in fire or electric shock (MAX 3000W).
- Follow all warnings and instructions marked on the appliance.
- Do not attempt to service this appliance yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- Unplug this appliance from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A.** When the power cord or plug is damaged or frayed.
 - B.** If liquid has been spilled into or onto the appliance.
 - C.** If the appliance has been exposed to rain or water.
 - D.** If the appliance has been dropped or the cabinet has been damaged.
 - E.** When the appliance exhibits a distinct change in performance this indicates a need for service.
- Never remove warning or information labels from the equipment
- Check all connections (input and output, at both ends of cable)
- With all speaker wiring care must be taken to ensure no wires can present a short circuit to the amplifier. Speaker wires carry high voltages, care should be taken to ensure no bare wires can be touched as this may result in electric shock.
- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards. Upon completion of any service or repairs to the appliance, ask the service technician to perform routine safety checks to determine that the appliance is in safe operating condition.
- If the mains fuse needs replacing, DISCONNECT THE PRODUCT FROM THE MAINS SUPPLY. The fuses are located under the IEC socket and inside the mains products. The fuses must only be replaced with a fuse of the type and rating stated on the rear panel. If the replacement fuse fails do not use a higher rated fuse, contact your local service agent or PULSE via www.pulse-audio.co.uk.

BACK PANEL

All the connections on this page our found on the back panel of the mixer

PHANTOM POWER switch

This switch activates and deactivates the Phantom power on all the microphone inputs. Most condenser microphones require phantom power, which is a lower DC voltage delivered to the XLR microphone connector.

MAIN OUTPUT 6.35mm (1/4") SOCKETS

These 1/4" output sockets provide balanced or unbalanced line-level signals. This is the same signal that appears at the XLR's main outputs, (except the 1/4" jacks are unaffected by the main output level switch. Connect these to the next device in the signal chain like an external processor, or directly to the input of the main amplifier.

MAIN OUTPUT XLR SOCKETS

Connect directly from the mixer directly to the speakers. Gain can be adjusted using the main mixers controls. Use none powered speakers and dedicated speaker cable. Connect one speaker to the left XLR and one speaker to the right XLR connections.

CHANNEL INSERTS 1-4

These unbalanced 1/4" Jacks are for connecting serial effects processors such as compressor, equalizer, de-esses, filters ect. The insert point is after the gain control, and the low cut filter, but before the channel's EQ and level. The channel signal can go out of the insert jack to an external device, be processed and come back in via the same jack plug.

ALT 3-4 OUTPUTS

The ALT 3-4 outputs are unbalanced and carry the signals from all the channels that you have muted. This can be used to send a group of signals to a further mixing console, or it could be used as a recording output in tandem with the main output.. This means you could record to four tracks all at the same time.

CONTROL ROOM OUTPUTS

The control room outputs normally connected to a monitor system in the control room and provides the stereo mix or, when required, the solo signal.

IEC MAINS INLET with fuse

For connecting to the mains outlet plate via an IEC lead

SPEAKON™ SOCKETS AND SPEAKER TERMINAL POSTS - These speakon™ connectors or Terminal posts are the output of the built in power amplifier, (see spec table for model and Wrms).

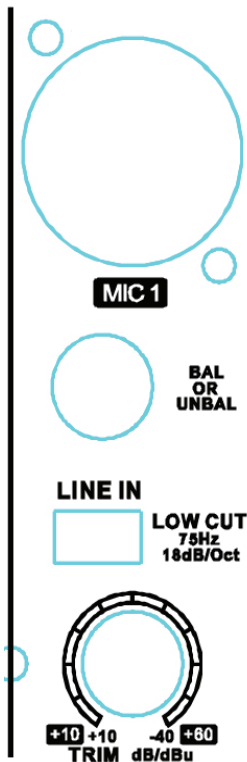
IMPORTANT: Do not connect both speaker types at the same time doing so can damage the built in amplifier. Make sure that the impedance of the speakers are never less than 4Ω (ie $1 \times 4\Omega$ or $2 \times 8\Omega$ in parallel), otherwise the power amplifier may become damaged. Make certain to always use only power cables for speakers (1.5mm^2) and not signal cable. You can also hard-wire your speakers directly to the amplifier using the terminal posts. Unscrew the terminals until you can see the connections at the side of the post, make sure you match the polarity of the speakers with the polarity on the amplifiers, RED +, BLACK ground. Insert the bare wire or the speaker and tighten the terminal post until it grips the cable tightly. Make sure no bare wire is visible after you have tightened the terminal.

Speakon; 1+ = speaker position, 1- = speaker negative

VENTILATION - In order to keep the mixers power amplifier working correctly it is essential that all the air vents are kept clear at all times and not near any other product that is dissipating heat. The fan is used to not only cool down the amplifier but also do dissipate heat from the ventilation vents around the amplifier.

FRONT PANEL

All the various controls will be described in this manual in sections. So before you start to read what each piece of equipment does find it first in the mixer. The manual will be starting in the top right hand corner beginning with MIC1 and working its way down the channel.

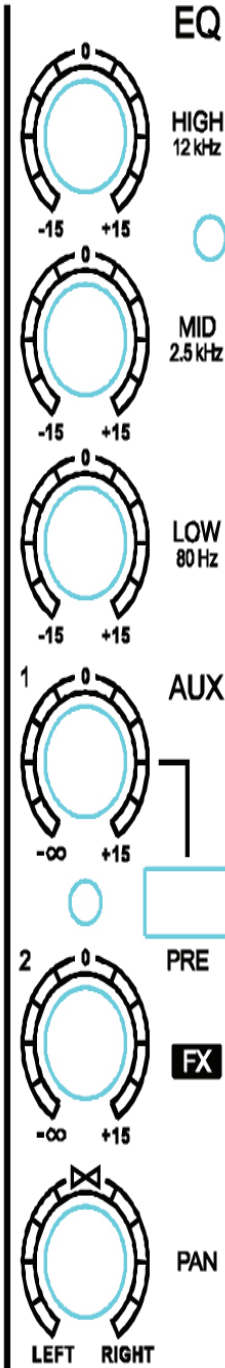


MIC 1 - The mic input accepts a balanced or unbalanced XLR plug and can also accept a balanced or an unbalanced 6.35mm (1/4") jack plug. There is also the option of using Phantom power supply (+48V) for when the use of a condenser microphone is needed. Caution should be taken when using Phantom power. Firstly that you are using the correct microphone for accepting a +48V signal and that the signal you are using is balanced. Secondly before turning the Phantom power on or off you must make sure you have turned down the gain control and that your amplifier is switched off to prevent the switch on thump coming through to your speakers. You can also use a balanced or an unbalanced 6.35mm (1/4") jack plug instead of using a XLR.

LINE - This line input accepts a 3-pole 6.35mm (1/4") jack plug. This is useful for accepting other signal inputs other than from a microphone, for example laptop, keyboards, drums ect. The line input is a balanced input, but it will still accept an unbalanced signal if there is one present. If you are using the line input then unplug anything that is inserted into the MIC input only one signal input should be connected at any one time per channel.

LOW CUT BUTTON - Use this button when there is excess noise from low frequencies like stage rumble or popping from mics. (75 Hz, 18dB/octave).

GAIN CONTROL - The gain control controls the amount of signal being sent to the mixer from either mic or line inputs. If the gain control is too high it may distort as it overloads the channel, too low and the background hiss may be more noticeable. Make sure that when you connect or disconnect any signal source that the gain control is turned fully anti-clockwise.



EQUALISER. HF, MF, LF

There are 3 dial controls to the equaliser, these are HF (high frequency above 12kHz), MF (medium frequency around 2.5kHz) and LF (low frequency below 80Hz). All dials can be turned to the centre-detented position when they are not required to change the signal levels of that particular frequency.

HF EQ - Turn to the right boosts the signal by up to +15dB, move it to the left to lower the signal by up to -15dB. This can be used to either sharpen the higher level frequencies such as cymbals or it may be used to reduce a background hiss.

MF EQ - Turn to the right boosts the signal by up to +15dB, move it to the left to lower the signal by up to -15dB. This can be used to control vocal range signals.

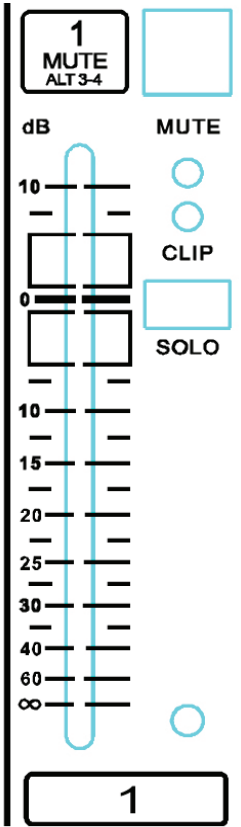
LF EQ - Turn to the right boosts the signal by up to +15dB, move it to the left to lower the signal by up to -15dB. This can be used to control the deep bass noises for example reducing the rumble made by low frequencies.

AUX CONTROL AND PRE BUTTON - The AUX control is used to change the amount of signal sent to a users headphones or other items to monitor the signal levels.

PRE BUTTON - Pre-fader button allows you to change the level for the auxiliary dial but not with the channel fader. You usually want to use pre-fader so you can control monitor mixes.

FX - The FX control is used to set the level of the post fade signal being sent to the FX bus and from there it is routed to the FX processor.

PAN CONTROL - The PAN dial is designed to distribute the input sounds with constant power, so with the dial pointing to the 8 o'clock position (dials line pointing to left), the sound appears in only the left channel. Conversely, when placed in the 4 o'clock position (dials line pointing to the right), the sound only appears in the



right. In the middle, at the 12 o'clock position, the sound in each channel is evenly distributed.

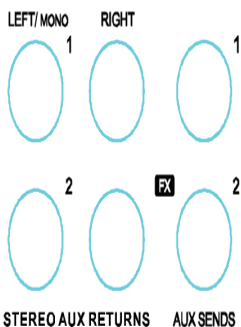
MUTE - Mutes the sound from the main mix and redirects it to the sub group faders 3-4.

MUTE LED - This illuminates to indicate a muted channel. The mute switch breaks the link to the pre channel fader. This signal is then set to post-fader to the sub group so the channel can still be heard separately from the rest of the channels on the mixer.

CLIP LED - This illuminates when the channel is either close to or distorting. Lower the gain to bring the sound levels down. Also you may need to check the levels on the equalizer.

SOLO BUTTON - Press this button to single out that channel so that the channel can be listened to through headphones and can be set to work at an optimum level without distorting. Whilst in solo this is the best time to adjust your gain and equaliser.

INPUT CHANNEL FADER - The channel has a fader (slider) to adjust the volume of the channel's signal before it is sent to the next stage (bus mix). There are two ways to adjust a channel's level: The input gain and the output fader. Make sure the input gain provides a strong signal level to the channel without clipping and leave it at that level, use the fader for ongoing adjustments.



The STEREO AUX RETURNS SOCKETS - These are used to introduce an external signal to the mixer (where the input from the external device was derived from the AUX SEND). If you only wish to operate on mono and not stereo then the jack plug should be connected the left jack socket only This input signal can then pass through the STEREO AUX RETURNS channel.

AUX SENDS 6.35mm (1/4") SOCKETS

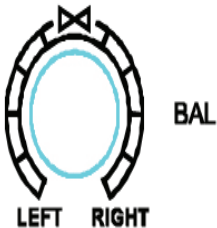
The AUX SENDS sockets send the signal from the AUX bus to either a different room or to a different audio system where you may wish to monitor the settings or add other audio signal before sending it back via the

STEREO AUX RETURN SOCKET



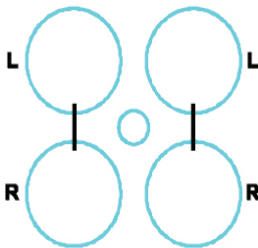
BALANCED/UNBALANCED 6.35mm (1/4") SOCKETS AND LEVEL BUTTON

A stereo signal input via both left and right 6.35mm (1/4") sockets. Same as the other channels on the mixer except this channel can work in stereo. If you wish to run in mono connect the left jack plug only. The Level button is used to switch between two settings to match the audio levels. The professional level is considered to be +4 dBu. The homeowner level is -10 dBV. Pressing the button will give you one or the other state.



BALANCED DIAL on CH 5/6 & 7/8

This is used to control the left and right stereo signals in the channel. Turning the dial to 7 o'clock means that the majority of the Left signal will pass through to the fader. Turning the dial to the 5 o'clock means that only the majority of the Right signal will go through to the fader.



INPUT TAPE 6.35mm (1/4") SOCKET - This takes any analogue signal and sends it to the main mix fader. This could be anything from tape to MP3 players.

OUTPUT CD/TAPE 6.35mm (1/4") SOCKET - This takes the output signal from the main mixer and sends it to any recordable device, e.g. Tape, CD or Laptops.

Note: With an adapter it may be possible to put your laptop into the input and into the output at the same time. So you can send a signal into the mixer and record the signal coming out from the main mix fader.



FX FOOT SWITCH 6.35mm (1/4") SOCKET

Allows you to connect a foot switch to the mixer via a 6.35mm (1/4") plug, this mutes the sound by pressing down on the foot switch.

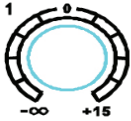


PHONES

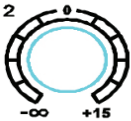
PHONES 6.35mm (1/4") SOCKET

Connect headphones to the mixer via this socket so you can listen to individual channels, change settings and listen to them separate from the audio signal being played.

AUX SENDS



AUX SENDS DIAL AND SOLO SWITCH - Controls the gain of all the AUX busses and sends the signal to the AUX OUTPUT.



FX

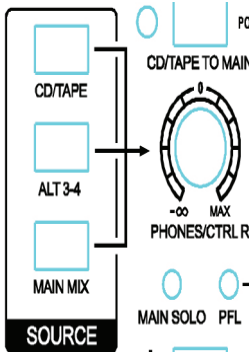


FX DIAL AND SOLO SWITCH - Controls the gain of all the FX busses and sends the signal to the FX OUTPUT.

SOLO SWITCH - You can use the SOLO switch to separately monitor the aux via the control room/phones outputs and check these with the level meters.

BUTTON SELECTOR ,HEADPHONES GAIN CONTROL AND TAPE TO MAIN

The buttons are as follows CD/TAPE, ALT 3-4 and MAIN MIX. You can press any one of these channels to get a signal to come through to the headphones. Pressing 2 will allow both the signals to come through at the same time.

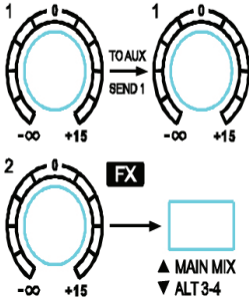


CTRL R. & PHONES - Use this dial to set control room output level and headphone volume respectively

NOTE : *When you are listening to your headphones for the first time make sure that the gain control dial is turned fully anti-clockwise so if the audio signal is too high it does not damage your hearing.*

TAPE TO MAIN - When the TAPE TO MAIN switch is pressed, the 2 track input is routed to the main mix and thus serves as an additional input for tape machines. You can also connect MIDI instruments or any other signal sources here that don't require any further processing. When you have pressed the TAPE TO MAIN this switch also disables the main mix to tape output link

STEREO AUX RETURNS



STEREO AUX RETURNS DIALS

The STEREO AUX RETURN 1 control determines the level of signal in the main mix. If STEREO AUX RETURNS 1 is used as effects return, this will determine the level effect when mixed with any “dry” channel. Note: when used this way, the effect device should be set at 100% effect. The right hand dial is there to add an effect to a monitor mix.

FX DIAL AND MAIN MIX / ALT 3-4 SWITCH

Works similar to the STEREO AUX RETURN. This dial controls the level of signal from the AUX FX JACK SOCKET back into the main mix. The MAIN MIX/ALT 3-4 switch is used to send the signal from the FX DIAL to either the MAIN MIX FADER or to ALT 3-4 fader.



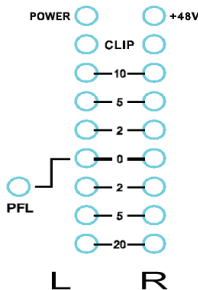
MODE SWITCH - This switch switches between SOLO (Solo In Place) and PFL (Pre Fader Listen). The LED above this switch will illuminate to tell you what state the switch is in. When in PFL mode the signals will be shown on the LED display.

PFL (Pre Fader Listen)

The PFL function should be used for level setting (GAIN). The signal is sourced pre-fader and assigned to the mono PFL bus.

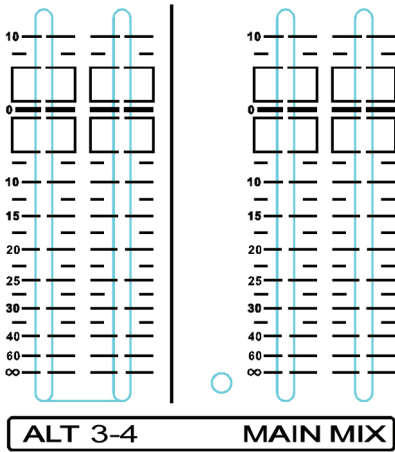
SOLO

This is used for listening to an individual signal or a group of signals. When SOLO is activated all other channels that are not SOLO selected are muted in the control room / headphones. The SOLO bus carries the output signals to the channel pan controls. Usually the SOLO signals are monitored via the control room outputs and headphones jack and displayed on the level meters.



LED DISPLAY

The top two LEDs are power on the left and phantom power (+48V) on the right. The green, yellow and red led's are indicators for the signal level. If all the LEDs illuminate then the signals are too high. Use the MAIN



MIX fader to lower the signal levels. Signals may be distorted if the signal levels are set to high.

ALT 3-4 outputs are unbalanced and carry the signal of the channels that you have assigned to this group using the mute switch. This can be used to route a subgroup to a further mixing console for example, or used as a recording output working alongside the main output.

MAIN MIX FADER - The faders are used to control the overall signal levels from all channels.

NOTE: There is a BNC connector for connecting a 12V BNC type lamp for lighting up the mixer, ideal when you in a dark or poorly lit area .

PROGRAM

The dial can be used to scroll through and pick the program effect that you want. The display flashes the number of the current preset. To recall the selected preset, press the button; and the flashing stops.

24-BIT MULTI-EFFECTS PROCESSOR

This built in effects module produces various effects including reverb, chorus, flanger and other various combination effects. The advantage of the effects module being integrated is that it requires no wiring. This way there is no chance of creating ground loops or uneven sound levels. These effects are designed to be added to dry signals. If you move the FX TO MAIN control, you mix the channel signal (dry) and the effect signal.

SPECIFICATION TABLE

Power

230V AC 50Hz

Mixer spec

PMX1204: 2 x 200Wrms / 8 ohms

2 x 300Wrms / 4 ohms

PMX1604: 2 x 300Wrms / 8 ohms

2 x 500Wrms / 4 ohms

Mic pre amps (4 mics PMX1204 & 8 mics PMX1604)

130dB Range for 24-bit, 192 kHz sampling rate inputs

60dB Gain range

Total Harmonic Distortion: 0.0007% (20Hz to 20 kHz)

24 Bit digital stereo FX processor

3 Band equaliser

2 Aux sends per channel: 1 pre/post fader switchable, 1 post fader

2 Stereo aux returns with flexible routing

2 Sub groups with separate outputs for added routing flexibility

Peak LEDs, mute / alt 3-4, SOLO and PFL functions on all channels

Balanced line inputs with +4 / -10 level section

FX send control per channel

Control room / phones output with multi-input source matrix

Tape inputs assignable to main mix or control room/phones outputs

+48V Phantom power

Cable connections

You are going to use a large amount of cable that run to and fro from your console and have different plugs connected. When running your cables please make sure all cables are out of the way of where people may be walking. Damaged cables or your console being pulled off your workstation by cables being pulled on may damage the console. Here are diagrams on how to wire different plug connectors. These are for illustration purposes only, if you have any doubt about how to wire your console do not attempt to install it yourself

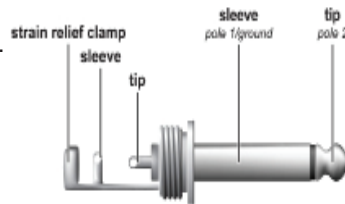
Balanced use with XLR connectors



For unbalanced use pin 1 and pin 3 have to be bridged.

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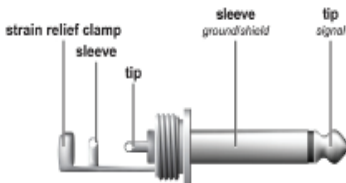
1/4" TS connector for use with footswitch



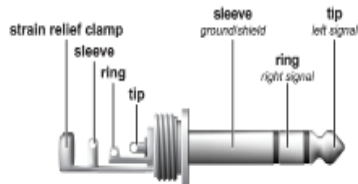
The footswitch connects the two poles momentarily

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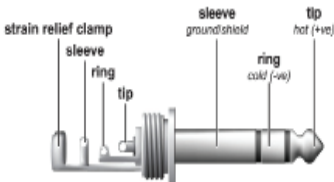
Unbalanced use of
1/4" TS connector



Headphones connection
with 1/4" TRS connector



Balanced use of
1/4" TRS connector



For connection of balanced and unbalanced plugs, ring and sleeve have to be bridged at the stereo plug.

