the t.mix

PM800

powermixer

th•mann
MUSIC IS OUR PASSION

user manual

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1 General notes

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products are subject to a process of continuous development. We therefore reserve the right to make changes without notice.

Symbols and signal words

This section gives an overview of the symbols and signal words used in this user manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
CAUTION!	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.

2 Safety instructions

Intended use

Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.

DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.

DANGER!

Electric shock caused by high voltages at the power amplifier output

The output voltages of modern high-performance amplifiers may result in death or serious injury.

Never touch the bare ends of loudspeaker cables when the amplifier is on.

CAUTION!

Possible hearing damage

With loudspeakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment.

Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment.

NOTICE!

Risk of fire

Do not block areas of ventilation. Do not install the device near any direct heat source. Keep the device away from naked flames.

NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

3 Installation

Unpack and check carefully there is no transportation damage before using the unit.

Establish all connections as long as the unit is switched off. Use the shortest possible high-quality cables for all connections.

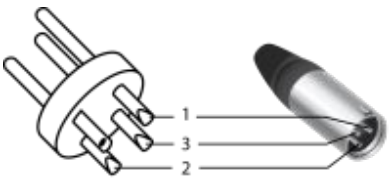
3.1 Pin assignment

You can use XLR and phone jack connectors with either balanced or unbalanced wiring.

XLR connection for signal in and outputs

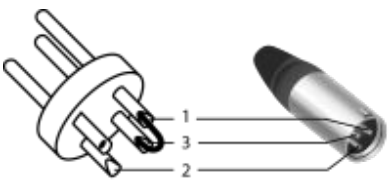
XLR mounting sockets provided for signal inputs. XLR mounting plugs provided for signal outputs. Drawings and descriptions explain the pin assignment.

Balanced wiring:



1	Ground, shielding
2	Positive signal (+)
3	Negative signal (–)

Unbalanced wiring:



1	Ground, shielding
2	Signal
3	bridged with Pin 1

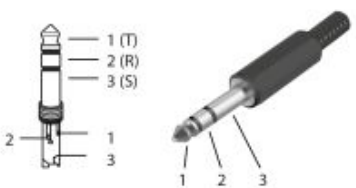
1/4" connectors for signal in and outputs

Drawings and descriptions explain the pin assignment of 1/4" connectors.

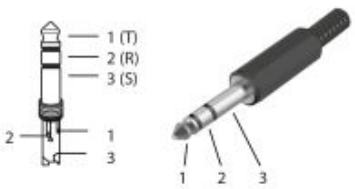
Unbalanced wired 1/4" TS jack:

1	Signal
2	Ground, shielding

Unbalanced wired 1/4" TRS jack:



1	Signal
2	Ground, shielding



Balanced wired 1/4" TRS jack:

1 (Tip)	Positive signal (+)
2 (Ring)	Negative signal (–)
3 (Sleeve)	Ground, shielding

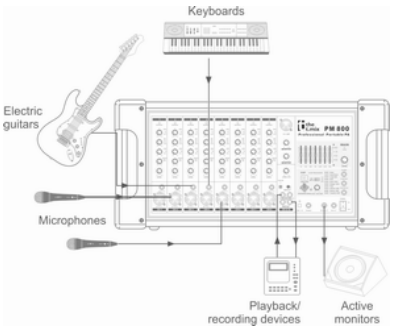
3.2 Tips on speaker positioning

We recommend you to set up the speakers in a way, that the sound signals can reach the audience unobstructedly. Often tripod mounting is a good way to maximise dispersion and range.

Always use high grade cable to connect your equipment. Otherwise you won't reach maximum sound quality.

For optimum results both impedance and power handling of the speakers must match the requirements of the amplifier. Always follow the technical specifications of the speakers! The overall impedance of the connected loudspeakers must not deceed the minimum output impedance of the amp. The power handling of the speakers should be above the amp's output power.

3.3 Connection diagram



Before connecting the device you have to make sure, that all units are switched off and its volume controls are turned down.

1. Connect line signal sources like CD or MP3 players to the unit.

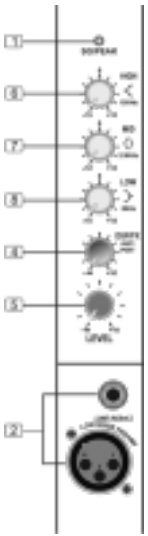
2. Use high quality cables to connect passive speaker boxes to the output sockets (33).

3. Refer to the diagram shown above to connect further devices.

4. During operation turn the volume controls (LEVEL, 5) up to about 70 %.

5. Use the PFL function of the powermixer to adjust a suitable input level. Adjust the output level using the MAIN LEVEL control (19).

4 Control elements



Front panel

SG/PEAK LED (1)

This LED lights up in green when a signal is present in the LINE/MIC input. When the signal strength comes close to clipping, the LED turns red.

Mono input channels (2)

You can connect balanced, low impedance microphones or a low level signal to the XLR socket. Use the 1/4" TRS (LINE IN) socket to connect instruments with line level outputs like synthesizers, drum modules, preamps or the like.

NOTE: Never connect an unbalanced microphone to the XLR socket. Otherwise both the mic and the mixer may be damaged.

PHANTOM power switch and indicator (3)

Pressing this switch will apply +15 V phantom power to the XLR sockets. This voltage is needed to supply condenser microphones. If you connect devices to the XLR sockets, that do not require phantom power, make sure phantom power is turned off. Otherwise the device may be damaged.

With phantom power activated, the PHANTOM indicator lights up, otherwise the LED is off.

DSP/FX AUX POST control (4)

This potentiometer is "post fader" configured and controls the "FX SEND" level. Thus, the signal is affected by the channel fader. You can use the AUX1 signal to feed an external effect processor.

LEVEL control (5)

Use this fader to set the desired volume of the respective channel from — ∞ to +10 dB.

3 band equalizer

Channels 1 - 8 offer a 3 band EQ, that provides a vast range for frequency correction.

HIGH (6)

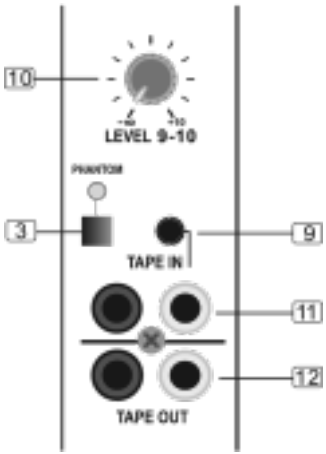
This is the treble control. Use it to reduce high frequency noises or to boost the sound of e.g. cymbals or high harmonics of voices. The gain range goes from -15 to +15 dB with a centre frequency of 12 kHz.

MID (7)

This is the mid range control. It can affect the most fundamental frequencies of all musical instruments and voices. An attentive use of this control will give you a very wide panorama of sound effects. The gain range goes from -12 to +12 dB with a centre frequency of 2.5 kHz.

LOW (8)

This is the bass control. It is used to boost male voices, kick drum or bass guitar. This will significantly enhance the sound of your PA system. The gain range goes from -15 to +15 dB with a centre frequency of 80 Hz.



1/8" phone jack input (9)

Here you can connect a computer, MP3 or CD player using a 1/8" phone jack cable.

LEVEL 9-10 (10)

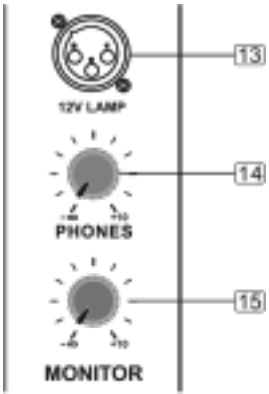
Use this control to adjust the level of both TAPE IN and 1/8" phone jack input (9). The adjustable range goes from — ∞ to +10 dB.

TAPE IN (11)

Your power mixer offers 2 RCA inputs, where you can connect the R / L output of a tape machine, DAT or cassette recorder.

TAPE OUT (12)

Use these outputs to route the main output signal into a tape / DAT device or computer for recording.



12 V LAMP (13)

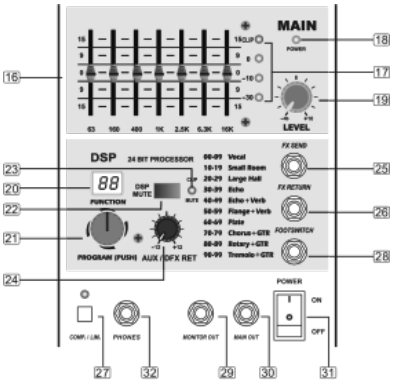
This XLR type lamp socket is provided for using a gooseneck lamp (PIN 1 = ground, PIN 2 = +).

PHONES (14)

Use this control to adjust the level of the PHONES output (32).

MONITOR (15)

Use this control to adjust the level of the MONITOR OUT (29).



Graphic EQ (16)

Your PM800 is equipped with a 7 band graphic EQ for the main mix. With these faders you can boost or attenuate the selected frequency by 15 dB with a fixed bandwidth. With all faders at centre position, the output response of the EQ is flat. The EQ function can be used, to shape the contour of the frequency spectrum and is available, as soon as the unit is powered up.

Output level LEDs (17)

Use these 4 LEDs to monitor the output power.

POWER indicator (18)

This LED will light up as soon as the unit is turned on.

LEVEL control (19)

This control is used to adjust the overall output level from —∞ to +10 dB.

DSP section

Your PM800 features a special 100-preset digital effects section. You will read more about this later.

DSP display (20)

Here the unit displays the number of the current preset.

PROGRAM control (21)

Adjust this control to select the desired effect out of 100 options available: Echo, vocal, plate, and versatile two-effect combinations. When you are satisfied with the chosen preset, push this knob to confirm this preset.

DSP MUTE switch (22)

Use this switch to activate or deactivate the effect section. For a more convenient operation of this function you can connect a foot switch (not supplied) to the "FOOT SWITCH" socket (28).

CLIP/MUTE LED (23)

This LED lights up when either the input signal is too strong, or when the DSP section is muted.

AUX/DFX RET (24)

This control is used to adjust the volume of the effects return signal.

FX SEND (25)

Use this 1/4" jack socket to feed the signal from AUX bus to external devices like effects unit or stage monitors.

FX RETURN (26)

This jack is used to return the signal processed by an external effects unit into the main mix. You can also use it as an extra auxiliary input, if you're running short of "normal" input channels.

COMP./LIM. switch and indicator (27)

Set the COMP./LIM switch to ON position, to prevent your signals from exceeding a threshold that would cause distortion. If the input signal does not reach that threshold while this function is activated, the indicator lights up in green. When the input signal becomes too strong and exceeds the threshold, the indicator turns red.

FOOT SWITCH (28)

You can connect an external foot switch (not supplied) to this 1/4" socket, to turn the built-in effects section on or off.

MONITOR OUT (29)

This socket is used to connect the input of an external monitor amp or active speakers.

MAIN OUT (30)

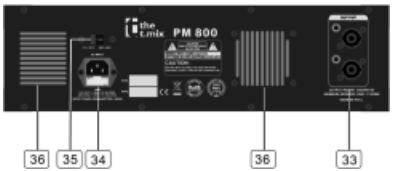
Use this socket to feed the main mix signal to an external device like a power amp or the like.

POWER switch (31)

This switch is used to turn the unit on or off.

PHONES output (32)

This socket sends out the monitor signal to a pair of headphones.



REAR PANEL

OUTPUTS (33)

Connect your speakers to these output sockets (SPK and 1/4" sockets). The minimum output impedance is 4 ohm.

AC INLET (34)

Connect the mains cable supplied here, to supply operating voltage to your powermixer.

VOLTAGE SELECTOR (35)

Use this switch to adjust the unit to the operating voltage available. When using the device in Germany, this switch must be in "220 - 240 V" position. Otherwise the unit will be damaged and you're facing risk of electric shock.

Vents (36)

These are the ventilation openings used for heat dissipation and cooling. They must never be obstructed during operation. Otherwise the unit may be damaged and you're facing risk of fire.

5 Technical specifications

Input channels	Microphone inputs	electronically balanced, discrete inputs
	Frequency response	20 Hz to 20 kHz, ± 3 dB
	Gain	50 dB
	Line inputs	electronically balanced
	Frequency response	20 Hz to 20 kHz, ± 3 dB
	Gain	20 dB
Impedance	Microphone inputs	1.5 kohm
	All other inputs	10 kohm or above
	Tape out	1 kohm
	All other outputs	120 ohm
Equalization	Treble	± 15 dB @ 12 kHz
	Mid range	± 12 dB @ 2.5 kHz

	Bass	± 15 dB @ 80 Hz
	Graphic EQ (sum)	7 band, 4/3 octave
DSP section	A/D and D/A converters	24 bit
	DSP resolution	24 bit
	Effect types	Vocal, Small Room, Large Hall, Echo, Echo + Verb, Flange + Verb, Plate, Chorus + GTR, Rotary + GTR, Tremolo + GTR
	Presets	100
	Controls/indicators	Preset control, CLIP-LED, MUTE switch with LED indicator
Main mix section	Noise (bus)	Fader 0 dB, channels muted: -85 dBr (ref.: +4 dBu) Fader 0 dB, all input channels assigned and set to unity gain: -81 dBr (ref.: +4 dBu)
	Monitor max. out	+22 dBu unbalanced, 1/4" phone jack socket
	FX sends max. out	+22 dBu unbalanced, 1/4" phone jack socket
THD	< 0.5 % @ 1 W power • < 1 % @ 250 W power	
S/N	Signal-to-noise ratio @ 1 kHz	> 65 dB

Static power consumption	Without signal	< 50 W
Output power		250 W RMS @ 1 kHz THD = 1 %, 4 ohm Last
	Frequency response	20 Hz to 20 kHz, ± 3 dB
Power supply voltage	AC 220-240 V / 110-127 V 50/60 Hz	
Dimensions/weight	Dimensions	21.3" × 10.4" × 10.00" (540 × 265 × 256 mm)
	Net weight	24 lbs (10.9 kg)

5.1 Preset list

No.	Preset	Description	Parameter
00 ~ 09	Vocal	Simulates a small room	Decay time: 0.8~0.9 s Pre-delay: 0~45 ms
10 ~ 19	Small room	Simulates a bright studio room	Decay time: 0.7~2.1 s Pre-delay: 20~45 ms
20 ~ 29	Large hall	Simulates a large acoustic room	Decay time: 3.6~5.4 s Pre-delay: 23~55 ms
30 ~ 39	Echo	Echo / delay effect	Delay time: 145~205 ms
40 ~ 49	Echo + verb	Echo & reverb combination	Delay time: 208~650 ms Decay time: 1.7~2.1 s
50 ~ 59	Flange + verb	Flanger effect & reverb combination	Decay time: 1.5~2.9 ms Rate: 0.8 Hz~2.52 Hz
60 ~ 69	Plate	Simulates classic, bright vocal plate	Decay time: 0.9~3.6 s

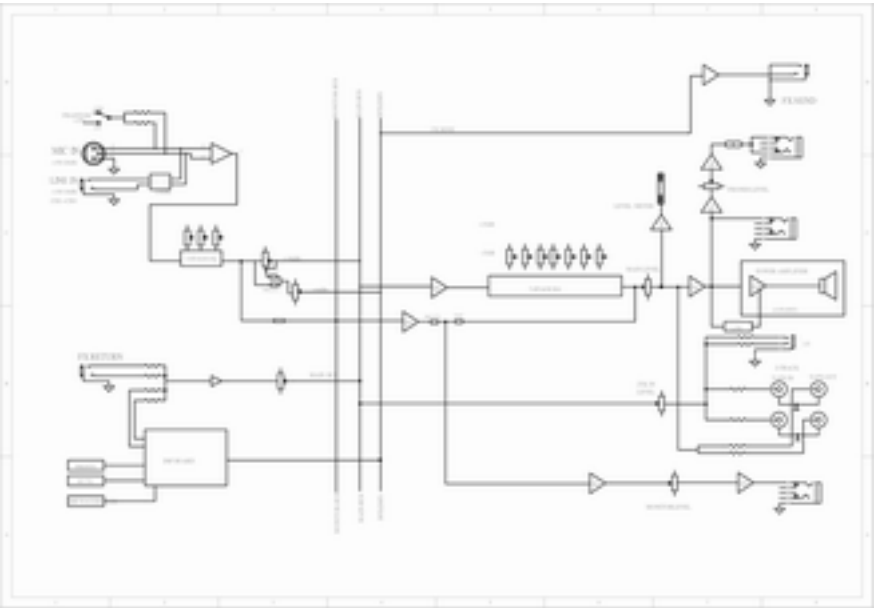
No.	Preset	Description	Parameter
70 ~ 79	Chorus + GTR	Guitar effect: Chorus	Rate: 0.92 Hz~1.72 Hz
80 ~ 89	Rotary + GTR	Guitar effect: Rotary	Modulation depth: 20~80 %
90 ~ 99	Tremolo + GTR	Guitar effect: Tremolo	Rate: 0.6 Hz~5 Hz

5.2 Features

250 W output power @ 4 ohm
8 line inputs with 1/4" sockets
8 balanced microphone inputs with XLR sockets
3 band EQ for each channel
Monitor and effect send for each channel
7 band graphic main mix EQ
Signal / peak indicator for channels 1 - 8
Tape out for recording
Tape in with level control
1 AUX input with 1/8" socket
LED display for output level
Foot switch connector for switching DSP function on / off

Line outputs for main and monitor signal
Selectable power supply voltage (AC 110~127 V or AC 220~240 V)

5.3 Block diagram



6 Protecting the environment

Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose these materials with your normal household waste, but make sure that they are fed to a recovery. Please follow the notes and markings on the packaging.

Disposal of your old device

This device is subject to the European directive 2002/96/EC.

Do not dispose the device with your normal household waste.

Dispose this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.