



# **PM8**

## **Operating Manual**

## **SAFETY INSTRUCTIONS**

**CAUTION:** To reduce the risk of electrical shock, do not remove the cover or rear panel of this unit. Do not expose this appliance to rain or moisture. No user serviceable parts inside. Please refer servicing to qualified personnel only.

### **Retain Instructions:**

Please retain all safety and operating instructions for future reference.

### **Ventilation:**

Do not impede the flow of air through the ventilation openings. Take care when selecting appropriate installation locations so obstacles do not obscure proper ventilation.

### **Heat:**

This product should be situated away from other heat sources such as fire, high heat emitting devices, heaters, etc.

### **Power Source:**

Make sure the product is set to the correct voltage for the location in which it is being used.

### **Grounding and Polarization:**

Never defeat the products power grounding means.

### **Power-Cord Protection:**

Power supply cords should be connected or placed in a fashion that could allow possible exposure to damage. Take care to avoid wear and tear, rubbing, squashing, etc.

### **Cleaning:**

The product should be cleaned only with a soft cloth. Do not use any corrosive products on the unit.

### **Inactivity:**

The power cord of the product should be unplugged from the outlet when left unused for a long period of time.

### **Service requirement:**

Service by qualified service personnel when:

- The power supply cable has been damaged in any way
- Liquid has been spilled onto or into the product
- The product has been exposed to rain
- The product exhibits faults or obvious performance degradation
- The product has been damaged in a way that exposes components

The user should not attempt to service this product beyond what is described in this operating manual. All other servicing should be referred to qualified service personnel.

## FOREWORD

Dear Customer,

Firstly, we would like to thank you for purchasing our PM8 multi-channel passive summing mixer. With much thought and effort, our engineers have developed a product we know you will be satisfied with. The digital recording age has brought with it some great tools for tracking, editing, mastering, and more. But with all these benefits comes the reality that it can sometimes seem to let us down sonically. Many recording professionals believe that audio summed digitally seems to compromise the sonic integrity of their mixes.

Summing is the process whereby multiple audio tracks are mixed together to a common audio output or outputs. Typically, most multi-track sessions are mixed down to a stereo two-track output. Whilst digital workstations digitally sum audio signals via computer software, analog summing has traditionally been performed by large format outboard mixing consoles.

Many recording professionals regard analog summing as superior to digital summing and believe it provides sonic benefits in regard to clarity, punch, better resolution, the ability to record tracks at higher sample rates without having to dither down at final mix-down, improved imaging, greater headroom during mixing, and much more.

The PM8 is a stand-alone unit designed to passively sum up to 8 audio channel outputs from a digital workstation to a stereo mix. A +24dB internal make up gain stage is provided for two of the three independent stereo outputs, with a pure passive output also available for users wishing to provide their own make-up gain device. With pan, mute, and variable volume attenuation controls, mixing through the PM8 not only delivers that sought after classic analog console sound, but also helps minimize the effects of digital summing. Simply the best of both worlds!

Please read this manual thoroughly to best understand the safety and operational procedures of the PM8.

We hope you enjoy your new PM8 but please don't blame us if you feel you have to go back through your body of work and remix everything over again!

Regards,

SM ProAudio

### PM8 Main Features

The PM8 is a professional multi-channel passive summing mixer featuring:

- Pristine 8 x channel passive mix bus
- 8 x combo TRS/XLR inputs
- 1 x 25 pin DSUB input
- 8 x rotary channel volume attenuator controls
- 8 x mute switches
- 8 x rotary pan controls
- 2 x stereo mix volume attenuator controls
- 2 x stereo output pairs with +24dB internal make-up gain
- 1 x stereo passive output (no make-up gain, pure passive)
- 1 x ground pin connector
- 110v-230v internal power supply

*\* It should be pointed out, that extreme output volumes may damage your ears and/or your headphone units. Turn down the LEVEL controls before you switch on the unit.*

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## **1. INTRODUCTION**

In purchasing the new PM8, you have acquired a multi-channel passive summing mixer of high class that meets the demands of the home and professional studio. This sturdy 2RU allows for up to 8 channels of audio to be passively mixed down to a stereo output pair. Each input channel features its own pan, mute, and rotary volume attenuator control. Eight professional combo connector inputs (XLR & ¼" TS) and three balanced XLR stereo output pairs can be found on the rear panel. A 25pin D-SUB connector is also available for direct connection from compatible Tascam and Digidesign systems.

## **2. THE DESIGN**

### **2.1 High quality components and design**

The philosophy behind SM Pro Audio products guarantees a no-compromise circuit design and fault-tolerant component selection. All SM Pro Audio products go through a rigorous planning and production procedure from start to finish.

### **2.2 Inputs and outputs**

All inputs and outputs are secured firmly to the exterior chassis housing thus ensuring robust quality and confidence under all conditions.

## **3. INSTALLATION**

Your SM Pro Audio PM8 was carefully packed in the factory and the packaging was designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage, which may have occurred in transit.

*\* If you happen to receive a damaged unit, please notify your dealer and the shipping company immediately.*

### **3.1 What's included in the box**

You should have the following included inside your shipping box:

- 1 x PM8 Multi-channel passive summing mixer
- 1 x Power cable
- 1 x Operational user guide (the one you are reading!)

### **3.2 Rack-mount installation**

The SM Pro Audio PM8 can be used stand alone on your desktop, however it is best installed into "two" standard 19" compatible audio rack-mount unit spaces.

Please remove all cables (including power) before installing the PM8 into your audio rack.

Sturdy rack mounting ears are present on each side of the PM8's front panel. Simply mount the PM8 into an available 2 rack-space position and secure with rack-mount bolts/screws.

*\* Note: Please take into consideration ventilation of your equipment. A well-ventilated equipment rack will ensure optimum operation and longevity of your equipment. It's often a good idea to leave 1 free rack-bay position between your equipment to allow.*



PM8 front panel

### 3.3 Mains Voltage & front panel power switch

#### Mains Voltage

*Important - Before you connect your PM8 to the mains power supply, please make sure that your local voltage matches the voltage required by the unit!*

The PM8 has a professional internal power supply suitable for operation between AC 110/115v – AC 220/230/240v. A voltage configuration switch on the left hand side of the rear panel should be set to match the appropriate voltage of your mains power supply. Simply slide the selector switch with your finger or a small flat-blade screwdriver to either the 115v or 230v position to configure the unit accordingly.



To connect the PM8 to your mains power source simply connect the included standard IEC mains power cable to the PM8's three (3) pin power connector socket.

*\* If you are utilizing the 'Passive Output' pair mains power is NOT required. The 'Passive Output' delivers a pure passive attenuated signal. Typically this output would be connected to a 'make-up' gain stage device such as a quality 2 channel outboard microphone pre-amplifier. If you will be using the PM8's built in 'make up' stage +24dB outputs (Master 1 & 2 output pairs) then power will be required.*

#### Power on/off switch & LED power indicator

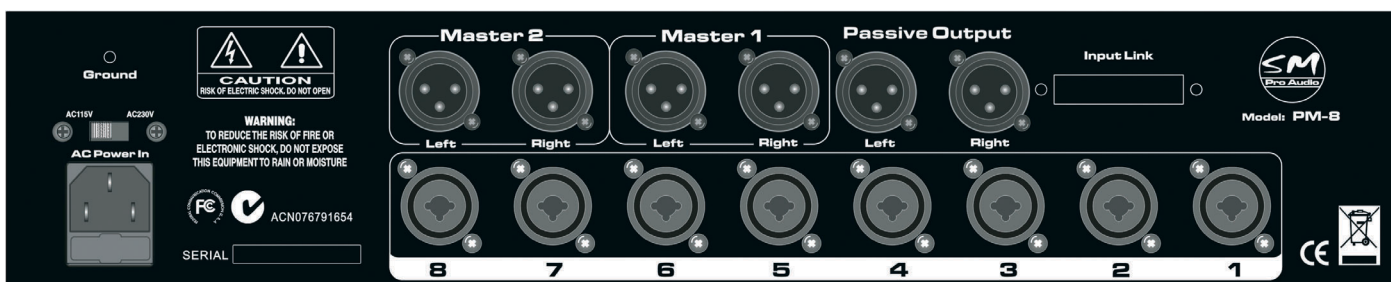
The PM8's power switch can be found on the right hand side of the front panel. To enable power to the PM8 or 'turn on', simply place the power on/off switch into the down position. The LED power indicator will illuminate to indicate the PM8's operational state as 'on' and ready for operation.

To power down or 'turn off' the PM8, simply place the power on/off switch into the up position. The LED power indicator will NOT illuminate to indicate the PM8's operational state as 'off'.



*\* It's always good practice to protect your ears, and other audio equipment by taking appropriate care when powering up any audio equipment. Being aware of your gain structure, and performing a structured power up sequence with your equipment will help to avoid unexpected audio signals bursts. It's a good idea to power up devices in sequence from the start of the signal chain to the end of the signal chain.*

### 3.4 Audio Connections



PM8 rear panel

#### Analog Inputs – Combo, Input Link 25pin D-sub

The PM8 features 8 x combo (XLR & TS) connectors and 1 x 25pin (Input Link) 8-channel D-sub connector as channel input connectivity options. Typically you would connect the outputs of your digital audio workstation to your preferred input type.

#### Combo connectors

The combo connectors accept either XLR or 1/4" TRS connector types.



#### 25pin D-Sub 'Input Link' connector

The 25pin D-sub connector is wired in a standard Tascam/Digidesign pin configuration. It allows for 8 channels of audio to be connected directly. This is extremely handy for users who have compatible hardware and can take advantage of the convenience of a single cable connection delivering 8 channels of audio. Perfect for simple connection and for keeping the studio neat and tidy!

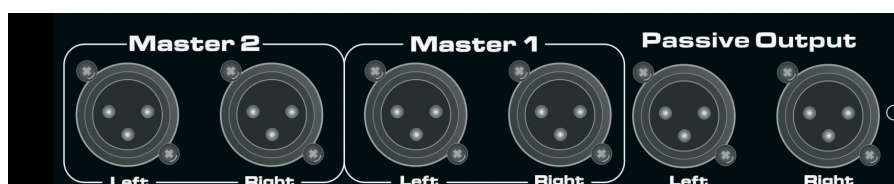
*\* The D-sub 'Input Link' signal path is in-line with the Combo input connectors. Both inputs will actually function simultaneously. Take care with your mixing if you have active signal passing to both connectors.*

#### Analog outputs – Passive Output, Master 1, Master 2

3 x XLR stereo pair outputs are provided. These outputs deliver the 2 channel summed audio material.

#### Passive Output

The 'Passive Output' is provided for pure passive transparent mixing without any discernable audio coloration that electronic circuits can sometimes exhibit. Typically users will want to connect this output pair to a high quality 2-channel microphone preamplifier to help compensate for the inherent 20-30dB of signal strength lost during the passive attenuation and summing process.



#### Master 1

The Master 1 output pair is a stereo balanced XLR pair delivering the summed signal of the 8 connected input signals. An internal electronic +24dB 'make-up' gain stage is provided to help compensate for the inherent loss of signal strength during the passive attenuation and summing process. Volume attenuation is provided for these outputs via rotating the 'Master 1' volume attenuator on the front panel.

#### Master 2

The Master 2 output pair is a stereo balanced XLR pair delivering the summed signal of the 8 connected input signals. An internal electronic +24dB 'make-up' gain stage is provided to help compensate for the inherent loss of signal strength during the passive attenuation and summing process. Volume attenuation is provided for these outputs via rotating the 'Master 2' volume attenuator on the front panel.

## 4. FRONT PANEL CONTROLS & INDICATORS



### 4.1 Independent (8x) rotary volume attenuation controls

8 x rotary volume attenuator knobs are provided for independent volume attenuation of the corresponding channel input signal. They allow precise level adjustments within 1dB from 0 to -40dB.

### 4.2 Independent (8x) led enabled mute switches

8 x led enabled mute switches are provided for independent channel muting of the corresponding channel input signal. When depressed, the switch will illuminate to indicate channel mute status as 'on/muted'. This is handy for the simple visual recognition of the PM8's channel mute status.

*\* If using the PM8 without mains power connected (ie, you are using the 'Passive Outputs' only – without the +24dB 'make-up' gain stage outputs), the led enabled mute switched will continue to function but will NOT illuminate when enabled.*

### 4.3 Independent (8x) rotary pan controls

8 x rotary pan control knobs are provided for stereo positioning of the audio during the summing process. Simply rotate the knob to the left or right position while monitoring the stereo outputs as desired.

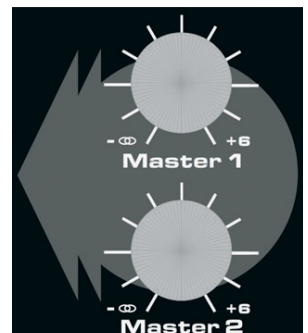
### 4.4 Master 1 & 2 volume attenuator controls

#### Master 1 volume attenuator control

The Master 1 volume attenuator provided volume attenuation to the stereo summed signal appearing at **both the Master 1 and Passive outputs**. It offers precise level adjustments within 1dB from 0 to -40dB.

#### Master 2 volume attenuator control

The Master 2 volume attenuator provided volume attenuation to the stereo summed signal appearing at the Master 2 output. It offers precise level adjustments within 1dB from 0 to -40dB.



## 5. APPLICATION

### 5.1 General use of the PM8

#### *Make the necessary input connections*

The PM8 is designed to mix the outputs of up to eight channels of audio signal from your DAW (digital audio workstation). Two choices of inputs are available on the PM8. You can either use XLR or TRS standard cables to connect each channel individually to the PM8's combo inputs, or if you have a compatible Tascam or Digidesign configured multi-pin output device you can connect eight (8) source signals directly to the 'Input Link' 25 pin D-sub connector.

#### *Make the necessary output connections*

- Master 1 - We recommend connecting the 'Master 1' output pair to your preferred 2-track mix-down device (DAT machine, back into 2 channels of your DAW, analog recorder, external converters, etc). The Master 1 output pairs is perfect for this function as it features an internal +24dB make-up gain stage to compensate for the dB loss during the attenuation and summing process.

- Master 2 - We recommend connecting the 'Master 2' output pair to your analog monitoring device (mixer, active monitors, etc). The Master 2 output pairs is perfect for this function as it features an

internal +24dB make-up gain stage to compensate for the dB loss during the attenuation and summing process.

- **Passive Output** - As all make-up gain devices do have their own unique sound characteristic, the PM8 also features a 'Passive Output' pair for those users wishing to make their own make-up gain device selection instead of ours. Users can choose their preamplifier of choice to make any necessary dB compensation adjustment prior to connection to their destination device. Typically users would connect to a high quality 2-channel microphone preamplifier and then to their 2-track mixing device (DAT machine, back into 2 channels of your DAW, analog recorder, external converters, etc).

*\* Note: It is important to note that the 'Master 1' volume attenuator control on the front panel attenuates the summed stereo mix to both the 'Master 1' and 'Passive Output' output pairs.*

#### *Configure your channel settings as desired*

Channel control could not be any simpler. Each channel offers a volume level attenuator, pan control knob, and a mute switch. When monitoring the summed stereo signal, simply adjust each channels level and pan setting to attain the desired result. Mute switches are provided so as to disable individual channel signal as required.

#### *A simple mix-down process idea/example*

Let's assume you have a digital recording system comprising of a PC, Cubase software, and a good quality audio interface featuring 8 individual analog D/A outputs. Your current recording session comprises of 16 tracks of drums, bass, guitars, keyboards, and vocals.

During mix-down of your previous sessions you may have simply mixed down within Cubase to two additional internal tracks, or even sent the final stereo mix out the 1&2 individual outputs (or digital output) to your mix-down recording device (DAT, 2-track analog master recorder, etc). This method relies on your software summing internally to create the final stereo mix. By grouping your audio tracks and connecting your audio interfaces analog outputs to the PM8, you can passively sum your mix externally.

#### *Suggested output routing of your recording session:*

- Output 1&2 - Drums
- Output 3&4 - Keyboards
- Output 5&6 - Guitars
- Output 7&8 – Vocals, Bass

All drum tracks should be panned internally within Cubase to the stereo output pair 1&2. Channels 1&2 on the PM8 should be panned hard left and hard right to retain the stereo separation of the stereo drum track settings of Cubase.

All Keyboard tracks should be panned internally within Cubase to the stereo output pair 3&4. Channels 3&4 on the PM8 should be panned hard left and hard right to retain the stereo separation of the stereo keyboard track settings of Cubase.

All guitar tracks should be panned internally within Cubase to the stereo output pair 5&6. Channels 5&6 on the PM8 should be panned hard left and hard right to retain the stereo separation of the stereo guitar track settings of Cubase.

As vocals and bass are usually mono recordings, they could be panned hard left and right within Cubase to the 7&8 output pair. This makes them available separately in the PM8 for stereo positioning via the respective rotary pan control knobs.

The 'Master 1' output pair could be connected to your choice of 2-channel mix-down recording device whilst the 'Master 2' output pair could be connected to your monitoring solution of choice.

*\* The individual master level attenuator controls on the front panel allow for independent levels to be sent to both your 2-track master recording device and your monitoring solution. Of course this is needed so you can monitor at a different level to what you send to your recording device!*

If you choose to use your own make-up gain stage rather than the PM8's internal +24 dB make-up gain stage, simply use the 'Passive Output' pair instead of the 'Master 1' output pair. You would then connect to your preferred 2-Channel microphone preamplifier of choice to compensate for dB level loss during the attenuation and summing process prior to connection to your 2-track final recording device of choice (DAT, 2-track analog master recorder, etc).

To complete your mix-down simply set your PM8's channel level controls to achieve the desired channel level balance required, and attenuate the 'Master 1' level attenuator to an acceptable level for your desired 2-track recording device to accept.

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By mixing this way through the PM8 you will have minimized some of the digital summing effects of your Cubase workstation. Like many other audio professionals before you, we believe you too will be astonished once you hear the difference!

## **6. SPECIFICATIONS**

### **INPUTS**

Input channels: 8  
Connector: COMBO (XLR / ¼" TRS) & 25pin D-sub  
Type: Balanced/unbalanced  
Input impedance: 25K  
Max input level: +42dB

### **OUTPUTS**

Output channels: 6  
Connector: XLR  
Type: Balanced  
Output impedance: 50 ohms balanced  
Recommended load impedance: 1300 ohms  
Max output level: +24dB  
Frequency response: 20-100KHz within 0.5dB  
Crosstalk @1kHz: -90dB

### **POWER**

Type: Internal 110v-230v

*\* Power is only required to operate the 'Master 1' or 'Master 2' output pairs internal 'make up' gain electronics. If passive operation is preferred and you would like to use your own 'make up' gain device, you should use the 'Passive Output' pair that does not require mains power connection.*

SM Pro Audio is constantly striving to maintain the highest professional standards. Modifications may be made over time to improve the performance and operation of this unit. As such, specifications and appearance may differ from those listed or shown.

## **7. WARRANTY**

### **7.1 WARRANTY CARD &/OR WEBSITE REGISTRATION**

To be protected by this warranty the purchaser of the product must complete an SM Pro Audio product registration procedure.

Product registration is available via two methods:

- Complete and return the enclosed warranty card within 14 days of the date of purchase to SM Pro Audio (see address below).
- Complete an online product registration form at the SM Pro Audio website. [www.smproaudio.com](http://www.smproaudio.com)

### **7.2 WARRANTY**

- SM Pro Audio warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year from the original date of purchase. SM Pro Audio will at its sole discretion either repair or replace the product if any defects occur that are not caused by normal wear or inappropriate use within the warranty period.
- This warranty does not apply if the product has been damaged by negligence, non-authorized modifications, accident, abuse, misuse, misapplication, or as a result of unauthorized service other than performed by that of SM Pro Audio's service department.
- All freight charges incurred for transport of justified warranty claims are at the buyer's expense. All other warranty claims other than those indicated above are excluded.

### **7.3 HOW TO REQUEST A RETURN AUTHORIZATION NUMBER**

To obtain warranty service, the purchaser must call SM Pro Audio during normal business hours before returning the product (Tel.: +61 3 9555 8081). An SM Pro Audio representative will discuss any issues with you over the telephone and then issue a return authorization number if deemed appropriate.

Please ship original shipping cartons along with your return authorization number to the following address:

SM Pro Audio  
Service Department  
Warehouse 25  
Roberna Business Park  
26-28 Roberna St  
Moorabbin 3189  
Melbourne, Victoria  
Australia

#### **7.4 WARRANTY REGULATIONS**

- Warranty can only be serviced when accompanying proof of purchase is provided. Dealers invoice and date stamp required.
- SM Pro Audio will endeavor to repair or replace any product under the terms of this warranty within 30 days of receipt of the product at SM Pro Audio.
- Modifications performed in order to comply with any applicable technical or safety standards in any country which is not the country for which the product was originally developed and manufactured shall not be considered a defect in materials or workmanship. SM Pro Audio shall not be held responsible for any costs incurred or resulting from any such modification whether performed correctly or not.
- This warranty does not cover defects of parts caused by normal operational wear. These parts are typically switches, knobs, and other similar components.

Product damage caused by the following conditions are not covered by this warranty:

- Operation of the unit in a way that does not comply with the safety regulations applicable in the country where the product is used.
- Damages or defects caused by conditions beyond the control of SM Pro Audio.

#### **7.5 WARRANTY TRANSFERABILITY**

This warranty is non transferable and available exclusively to the original purchaser.

#### **7.6 DAMAGE CLAIMS**

Failure of SM Pro Audio to provide proper warranty service does not entitle the purchaser to claim further damages. SM Pro Audio's liability shall in no way exceed the invoiced value of the product.

#### **7.7 OTHER WARRANTY RIGHTS**

This warranty does not exclude or limit any statutory rights provided by national law.

The information contained in this manual is subject to change without notice.

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