SM Pro Audio

Operating Manual
- SM PR8 Mark 2 -

Version 1.0 December 2003

SAFETY INSTRUCTIONS

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

DETAILED SAFETY INSTRUCTIONS:
All safety and operation instructions of this manual should be read and adhered to before operation.
Retain Instructions:
Please retain all safety and operating instructions for future reference.
Follow instructions:
All operation and user instructions should be followed.
Water, liquid and Moisture:
The appliance should not be used near water, rain or other liquids. Make sure that no liquid can leak, spill or otherwise seep into the appliance.
Ventilation:
Please place the appliance so no obstacles interfere or impede the flow of air through the ventilation openings.
Heat:
The appliance should be situated away from other heat sources such as heaters, radiators, ovens, or other appliances that produce heat.
Power Source:
Make sure your appliance is set to the correct voltage for the country in which it will be used.
Grounding and Polarization:
Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
Power-Cord Protection:
Power supply cords should be routed so that they are not likely to be walked on, pinched, damaged, worn, or rubbed by any other device or obstacle.
Cleaning:
The appliance should be cleaned only with a light soft cloth. Do not use any damaging or corrosive products on the unit.
Periods of inactivity:
The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
Damage Requiring Service:
The appliance should be serviced by qualified service personnel when:
- The power supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped, or the enclosure damaged.

Servicing:
The user should not attempt to service the appliance beyond that is described in the Operating Instructions.

All other servicing should be referred to qualified service personnel.

SM PR8 Mark 2 Main Features

Professional, multi-purpose multi-channel pre-amplifier system for studio applications
- Eight totally independent pre-amplifiers in 2 x RU package
- High quality audio circuit
- 8 x balanced inputs
- 8 x balanced outputs
- 8 x inserts
- Phantom On/Off per channel
- Phase reverse switch per channel
- 8 x phantom power LED indicators
- 8 x peak Light LED indicators
- Individual gain control on each channel with detented position pots
- High-quality components and rugged construction
- Internal power supply

* ADAT Digital output module (SMPR8IIA optional modular board for rear installation)
- ADAT 8 channel digital output
- 44.1/48kHz switchable
- Wordlock input and output BNC connectors

FOREWORD

Dear Customer,

Thank you very much for expressing your confidence in SM ProAudio products by purchasing this unit. The SM PR8 Mark 2 has been designed to be used as a standard tool for home/pro studios. With much experience in the audio industry over a long period of time, and along with valuable suggestions from our customers, our engineers have developed a product we know you will be satisfied with. We guarantee you uncompromising quality (manufactured under ISO9000 certified management system) as well as excellent technical and audio properties at an extremely affordable price.

Regards,

SM ProAudio

TABLE OF CONTENTS

1. INTRODUCTION

In purchasing the new SM PR8 Mark 2, you have acquired a multi-channel pre-amplifier of high class that meets many of the demands of the home/pro studio.

The market size for digital audio interfaces and computer based digital editing has increased in a massive way. With systems available at very low prices, more and more users are utilizing this technology. One of the main problems with many of these systems is the input stage only consisting of unbalanced line inputs or very low (or no mic pre) gain structure for the balanced input stage and the unavailability of Phantom power.

The PR8 Mark 2 comes to the rescue with 8 channels of balanced input, with a full range of gain control from -20dB to +40dB and Phantom power for every channel. Featuring inserts on each channel, dentented volume pots, independent phantom power and phase reverse switches, peak light indicators, this single rack unit can now solve many of the connectivity issues which are raised in a large range of situations, whether in the Studio, home, club installation or other live sound applications.

Optional ADAT Module (SMPR8IIA)
With the addition of the optional ADAT output module (SMPR8IIA), The PR8 Mark 2 is suitable for connection to a wide variety of popular audio recording systems. This can often make better use of your current hardware by adding an additional 8 inputs!

2. THE DESIGN CONCEPT

2.1 High quality components and design
The philosophy behind SM ProAudio products guarantees a no-compromise circuit design and employs the best choice of components. The operational amplifiers NJM2068 which are used in the SM PR8 Mark 2, are exceptional. They boast extreme linearity and very low distortion charac-teristics.

2.2 Inputs and outputs
All inputs and outputs are secured firmly to the exterior chassis housing. This ensures robust quality and confidence in performance under all conditions.

3. INSTALLATION

Your SM ProAudio SM PR8 Mark 2 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 the unit is damaged, please do not return it to us, but notify your dealer and the shipping company immediately, otherwise claims for damage or replacement may not be granted. Shipping claims must be made by the consignee.

3.1 Rack Mounting
The SM ProAudio SM PR8 Mark 2 fits into "two" standard 19" rack unit spaces. Be sure that there is enough air space around the unit for cooling. As to avoid overheating, please do not place the SM PR8 Mark 2 on high temperature devices such as power amplifiers.

3.2 Mains voltage
The SM PR8 Mark 2 has a professional internal power supply thus eliminating the use of external power adaptors found in many lower end devices. Before you connect your SM PR8 Mark 2 to the mains, please make sure that your local voltage matches the voltage required by the unit!

3.3 Audio connections
Analog inputs - On the front of the SM PR8 Mark 2 there are 8 x balanced XLR balanced/unbalanced combo audio connections. These are used for the analog inputs to the device. You can use either 1/4" jacks or 3 pin XLR balanced audio connectors.

Analog outputs - On the rear of the SM PR8 Mark 2 there are 8 x +4dB XLR balanced connectors and 8 x -10dB 1/4" line output connectors. These are your individual channels audio outputs.

Insert Points - On the rear of the SM PR8 Mark 2 there are 8 x TRS insert connectors. By using a stereo 1/4" audio insert cable you can insert external devices into any of the eight individual channels audio path. Inserts are very useful for applying dynamic processing to an audio signal. For example, having audio compressors inserted directly into a channels signal path prior to the output.

Each channel has an insert point available and is accommodated on a single TRS jack socket on the rear panel.

4. CONTROLS & INDICATORS

SM PR8 Mark 2 front panel
The SM PR8 Mark 2 has eight independent pre-amplifiers channels. The unit provides variable detented rotary gain controls, individual switchable phantom power per channel, phase reverse switch per channel, and peak indicator lights per channel.

4.1 The front panel rotary gain controls
Each channel features a detented rotary gain control for variable adjustment of the desired pre-amplifier level.

4.2 The front panel phantom power switches
Each channel features a phantom power switch for enabling the supply of 48v through the XLR input connector to power condenser microphones. The switch will illuminate with an internal LED to indicate on position state at a glance.

4.3 The front panel phase reverse switches
Each channel features a phase reverse switch for reversing the audio signal 180 degrees.

4.4 The front panel peak light indicator LED's
Each channel features a peak light indicator. This momentarily indicates when the input signal strength has reached optimum input level. If the the indicator is illuminated all the time you have surpassed optimum input level and distortion will occur.

4.5 The front panel power on/off switch
On the front panel you will find the main power switch for the unit.

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5. APPLICATION

5.1 Using the SM PR8 Mark 2
It could not be simpler to use and operate the SM PR8 Mark 2. Each of the eight pre-amplifier channels has its own input, output, and variable gain control. All you have to do is to decide whether your input requires phantom power, phase reversal, or you wish to insert an external processor in your audio signals path.

Three simple steps:
1. Simply connect a signal for processing to one of the input channels on the front of the SM PR8 Mark 2.

It is at this point you can decide if your input source requires phantom power. If you have a condenser microphone that does not have a power supply or battery, you will have to enable the phantom power switch to supply the mic with 48v from the PR8 Mark 2. Depress the phantom switch for the desired channel. The switch will illuminate to indicate enabled state. If you have a dynamic microphone or are inserting a line level signal such as a keyboard, you will not require the phantom power to be enabled. If you require the signal to be phase inverted, depress the phase reverse switch for the appropriate channel.

2. Make a connection from the corresponding channel output on the rear of the SM PR8 Mark 2 to your desired destination (Mixer, recorder, etc). You can choose between either the XLR balanced +4dB outputs or the unbalanced -10dB line level outputs.

If you would like to insert an external processor (eg. audio compressor) in the channels audio signal path, connect your device using an insert cable to your devices input and ouptut.

3. Adjust the variable gain control to the desired pre-amplified level. To ensure sure you do not over pre-amplify, monitor your peak light indicator for excessive illumination.

5.2 Using the optional ADAT module

If you have the optional ADAT Mod (SMPR8IIA) either pre-installed or have had it installed by an authorized service technician, please read the following operation proceedures.

The ADAT module allows you to output the SMPR8 Mark 2's 8 channels digitally via an optical cable to any ADAT compatible input device such as digital mixer, audio card, etc. This is perfect for adding additional inputs to many solutions. Simply connect your ADAT light pipe cable from the ADAT output on the SMPR8IIA module to the ADAT input on your desired destination device (mixer, audio card, etc).

Sample Rate Seletor Switch
Select your desired digital sample rate of either 44.1 kHz or 48kHz by using the sample rate toggle switch.

Word Clock Connectors
The SMPR8IIA ADAT module is always the sync clock master unless you connect a word clock sync cable to the provided BNC sync connector. If you require the master clock to be set by another device, simply connect a sync cable to the word clock input. The SMPR8IIA will automatically detect sync and lock to the external clock source. There is a word clock output for sending master clock sync data from the unit.

6. SPECIFICATIONS

AUDIO INPUTS & PRE AMPS

Connectors	XLR Combo connectors
Type	balanced +4dB / unbalanced -10dB
Impedance	5k Ohms mic, 38k Ohms line
Min Sensitivity	-50dBu Mic, -5.4dBu line
Peak input level	+8dB
Gain control range	-20 to +40dB mic, infinity to +50dB line
Phantom power	+48V, switchable

AUDIO OUTPUTS

Output Connectors	1/4" jack, XLR Balanced
Inserts	1/4" jack
Impedance	600 Ohmns balanced out, 10k Ohms unbalanced
Peak output level	+18.5dB

DIST, FREQ, S/N RATIO & CROSSTALK

Frequency response	20Hz~20kHz
Distortion	0.005%
S/N Ratio	>87dB

POWER SUPPLY

Mains voltages	USA/Canada ~ 120 V AC, 60 Hz
	U.K./Australia ~ 240 V AC, 50 Hz
	Europe ~ 230 V AC, 50 Hz
	General export model ~ 100-120 V AC, ~ 200-240 V AC, 50-60 Hz
Power consumption	11.5VA
Fuse	100-120 V AC: 630 mA (slow-blow)
	200-240 V AC: 315 mA (slow-blow)
Mains connection	Standard IEC receptacle

PHYSICAL

Dimension	1 3/4" (44.5 mm) * 19" (482.6 mm) * 8 1/2" (217 mm)
Net weight	approx. 3.4 kg

SM ProAudio is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or shown.

7. WARRANTY

1 WARRANTY CARD

To be protected by this warranty, the buyer must complete and return the enclosed warranty card (signed/stamped by retail dealer) within 14 days of the date of purchase to SM ProAudio (see address below 3). Failure to return the card in due time (date as per postmark) will void any extended warranty claims.

2 WARRANTY

1. SM ProAudio warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (3) years from the original date of purchase, in accordance with the warranty regulations described below. If any defects occur within the specified warranty period that are not caused by normal wear or inappropriate use, SM ProAudio shall, at its sole discretion, either repair or replace the product.

2. If the warranty claim proves to be justified, the product will be returned freight prepaid by SM ProAudio within Australia. Outside of Australia, the product will be returned at the buyer's expense.

3. Warranty claims other than those indicated above are expressly excluded.

3 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer must call SM ProAudio during normal business hours BEFORE returning the product (Tel.: +61 3 9555 8081). All inquiries must be accompanied by a description of the problem. SM ProAudio will then issue a return authorization number.

2. The product must be returned in its original shipping carton, together with the 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

4 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by an original retail dealer's invoice. Any product deemed eligible for repair or replacement by SM ProAudio under the terms of this warranty will be repaired or replaced within 30 days of receipt of the product at SM ProAudio.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship.

The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, SM ProAudio shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections, maintenance/repair work and replacement of parts are expressly excluded from this warranty, in particular if caused by inappropriate use. Likewise, the warranty does not cover defects of expendable parts caused by normal wear of the product. Expendable parts are typically pots, potentiometers, switches and similar components.

4. Damages/defects caused by the following conditions are not covered by this warranty:
- Misuse, neglect or failure to operate the unit in compliance with the instructions given in the user or service manuals.
- Connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- Damages/defects that are caused by any other condition beyond the control of SM ProAudio.

5. Any repair carried out by unauthorized personnel will void the warranty.

6. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. SM ProAudio will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 4 weeks after notification, SM ProAudio will return the unit C.O.D. with a separate invoice for freight and packing. Such cost will also be invoiced separately when the buyer has sent in a written repair order.

5 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of SM ProAudio.

6 CLAIM FOR DAMAGES

Failure of SM ProAudio to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of SM ProAudio exceed the invoiced value of the product.

7 OTHER WARRANTY RIGHTS

This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

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