

SM Pro Audio

Operating Manual - SM OC8

Version 1.0 Feb 2004



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 OC8 Main Features

Professional, multi-channel optical compressor

- 8 x fast electro-optical compressor
- soft-knee design with adjustable compression ratio
- class A transformerless high voltage signal path
- bypass/on switch
- tri-state LED indicator
- Low noise, wide bandwidth and superior transient response
- 1/4" line level Inputs & Outputs
- 110v-240v Internal power supply
- Size : 2U Rack

FOREWORD

Dear Customer,

Thank you very much for expressing your confidence in SM ProAudio products by purchasing this unit. The SM OC8 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

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1. INTRODUCTION

In purchasing the new SM OC8 you have acquired a multi-channel optical compressor of high class that meets many of the demands of the home/pro studio.

The SM OC8 is a 2U standard 19" rack-mount multi-channel optical compressor that builds on the success of the SM Pro Audio analog series products. With eight discrete high-quality optical compressors, the SM OC8 seamlessly fits into many audio workstation configurations. It features 8 x optical compressors in a simple to operate 2 unit rack-mount device.

Tailored to suit a wide variety of applications, the SM OC8 is perfectly suited for use as a multi-channel compressor for many applications. Optical compressors are sought after for the distinctive musicality they give to vocals, guitars and other instruments. The SM OC8 's adjustable ratio, attack, release and output controls are calibrated to generate a distinctive soft, rich character while providing magnificent control over dynamics. Fantastic for use as inserts on your multi-channel recording tracks!

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 components used in the SM OC8 are exceptional. They boast extreme linearity and very low distortion characteristics.

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 OC8 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 OC8 fits into a standard 19" rack unit space. Be sure that there is enough air space around the unit for cooling. As to avoid overheating, please do not place the SM OC8 on high temperature devices such as power amplifiers.

3.2 Mains voltage

The SM OC8 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 OC8 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 OC8 there are 8 x 1/4" jack audio connectors. These are used for the analog inputs to the device.

Analog outputs - On the rear of the SM OC8 there are 8 x 1/4" jack audio connectors. These are used for the analog outputs from the device.



4. FRONT PANEL CONTROLS & INDICATORS

The SM OC8 front panel has a very simple design including; Input stage, Compressor stage, EQ stage, and output level control stage.



4.1 Power switch

The power switch is located on the far right of the front panel. It illuminates when power to the unit is enabled.

4.2 Compressor controls

Compression on/off switch & LED Indicator

Turns the compressor stage on or off. The indicator shows the on/off status of the compressor.

Rotary compression control

The rotary compression control sets the compression ratio of the compressor. The compression ratio expresses the difference between the input level change and the output level change. A compression ratio of 6:1, for example, indicates that for every 6dB of level change on the input signal there is only 1dB of level change on the compressed signal. The higher the compression ratio, the smaller the dynamic range.

Rotary output control

The rotary output control sets the output level the current channels signal. often after reducing the signals dynamic range with processing such as compression, you require a process to 'make up' the lost gain. The rotary output control allows you to adjust or 'make up' gain at the compressor output stage.

Fast/slow attack switch & LED Indicator

This switch toggles the attack setting of the compressor between fast and slow attack times. The indicator shows the status 'fast' of the the attack setting. The attack setting on a compressor determines how fast it will react to the input sound. Short attack times quickly bring down the level of the loud, fast transients in the audio signal; long attack times let more sound through before the compressor engages, resulting in a punchier sound.

Fast/slow release switch & LED Indicator

This switch toggles the release setting of the compressor between fast and slow release times. The indicator shows the status 'fast' of the the release setting. The release setting on a compressor determines how quickly the signal level returns to its original level after the compressor has engaged. Short release times create a more exaggerated effect ("breathing"), whereas long release times have a more gradual, natural sound.

LED level meter

This meter allows you to visually analyze the incoming signal strength in dB values. It is advisable to view this meter to ensure that each channel has the desired amount of signal being sent into the input. Adjust your input signal from the source (ie pre-amp, etc).

5. APPLICATION

5.1 Using the SM OC8

The SM OC8 is well suited to many environments requiring smooth transparent compression processing.

The most common application would be to use the compressor on each channel of your mixer or digital audio systems 'insert' connectors. Insert connectors allow you to place a processing device such as a compressor inline with the individual channels signal path. This makes a perfect add-on to your mixer or digital audio system.

Step by step:

Make your physical connections ...

Place your incoming signals directly into the inputs on the rear of the SM OC8. Then connect the outputs of the SM OC8 to your next audio destination. Typically your inputs and outputs would be coming from a mixer or pre-amps 'insert' connectors so that the compressor would be 'inline' in your signal path.

Set your input gain control ...

The incoming signal strength cannot be adjusted on the OC8. It must be set prior to arriving at the units inputs. View the LED meter to analyze the incoming signal strength in dB. This allows you a good visual indicator so you can adjust your signal from the source (ie mixer gain, pre-amplifier gain control).

Apply the desired compression settings for each channel ...

You can now choose to add some optical compression to your signal if desired. Select the compressor on/off switch to the "on" position. Set your attack and release switches to the desired settings (fast/slow), and adjust the compression ratio rotary control until you are satisfied with the result.

Adjust your output level ...

Simply adjust the rotary output control so that your output signal is at your desired level.

6. SPECIFICATIONS

AUDIO INPUTS

Connector	1/4" jack
Type	Unbalanced

AUDIO OUTPUTS

Connector	1/4" jack
Type	Unbalanced

FREQUENCY RESPONSE

Line in	6Hz to 20Hz within 1dB
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COMPRESSOR

Photoresistive servo operated	
Ratio minimum	1.5 to 1
Ratio maximum	10 to 1
Attack time	1mS/5mS
Release time	500mS/1500mS

METERS

LED	-25dBu to + 18dBu
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PERFORMANCE

THD (Unweighted)	0.05%
Signal to noise	>93dB

POWER SUPPLY

Transformer	Internal
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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

PH- +61 3 9555 8081
FAX- +61 3 9555 8083

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.

The information contained in this manual is subject to change without notice. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording of any kind, for any purpose, without the express written permission of SM ProAudio.

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