OC8E

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 OC8E multi-channel compressor. With much thought and effort, our engineers have developed a product we know you will be satisfied with. We always guarantee you uncompromising quality as well as excellent audio properties at an affordable price.

Please read this manual thoroughly to best understand the safety and operational procedures of the OC8E.

Regards,

SM ProAudio

OC8E Main Features

The OC8E is a professional multi-channel optical compressor featuring:

- 8 x fast electro-optical compressor modules
- 8 x VU Meters (output meter)
- Adjustable attack, release, and compression threshold
- Low noise, wide bandwidth and superior transient response
- Class A transformerless high voltage signal path
- Bypass/on switch per channel
- Peak LED indicator per channel (input peak)
- 1/4" line level Inputs & Outputs
- 110v-240v Internal power supply
- Size : 2U Rack
- Optional ADAT interface available (PR8IIA)

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 SM OC8E you have acquired a multi-channel optical compressor of high class that meets many of the demands of the home/pro studio. The OC8E 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 OC8E seamlessly fits into many audio workstation configurations. It features 8 x optical compressors in a simple to operate 2RU unit device. Tailored to suit a wide variety of applications, the OC8E 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 OC8E's adjustable ratio, attack, release and output controls are designed to generate a distinctive soft, rich character while providing magnificent control over dynamics. Fantastic for use as inserts on your multi-channel recording tracks!

The OC8E also has provision for the optional installation of SM Pro Audio's PR8IIA ADAT output interface (also known as the EP84ADAT). The PR8IIA can provide users with the ability to output eight (8) channels in ADAT optical light-pipe format. The PR8IIA ADAT output board is perfect for users wanting to interface or add eight (8) additional channels of quality pre-amplification to a variety of digital devices such as digital mixers, audio recording interfaces, etc.

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 OC8E 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 shipping company immediately.*

3.1 What's included in the box
You should have the following included inside your shipping box:
- 1 x OC8E Multi-channel optical compressor
- 1 x Power cable
- 1 x Operational user guide (the one you are reading!)

3.2 Rack-mount installation
The SM Pro Audio OC8E 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 OC8E into your audio rack.

Sturdy rack mounting ears are present on each side of the OC8E's front panel. Simply mount the OC8E 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 ventilation As to avoid overheating, please do not place the OC8E on high temperature devices such as power amplifiers.

3.3 Mains Voltage & front panel power switch

Mains Voltage
Important - Before you connect your OC8E to the mains power supply, please make sure that your local voltage matches the voltage required by the unit!

The OC8E 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 110v or 220v position to configure the unit accordingly.

To connect the OC8E to your mains power source simply connect the included standard IEC mains power cable to the OC8E's three (3) pin power connector socket.

Power on/off switch & LED power indicator
The OC8E's power switch can be found on the right hand side of the front panel. To enable power to the OC8E or 'turn on" simply place the power on/off switch into the down position. The LED power indicator will illuminate to indicate the OC8E's operational state as 'on' and ready for operation.

To power down or 'turn off' the OC8E, simply place the power on/off switch into the up position. The LED power indicator will not illuminate to indicate the OC8E'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 (OC8E -> recording device -> power amplifier/active monitors).

OC8E rear panel

3.4 Audio Connections

Analog Inputs
8 x ¼" TS input connectors can be found on the rear panel. These are the direct analog inputs to the OC8E's 8 x individual compressor modules. Input your audio source material directly to these inputs.

Analog outputs
8 x ¼" TS analog output connectors are provided for each of the eight (8) compressor channels. Individual output levels can be controlled via the associated channels rotary output gain control encoder on the front panel.

OC8E front panel

4. FRONT PANEL CONTROLS & INDICATORS

4.1 Independent (8x) comp on/off bypass switches
The COMP switch toggles the channel bypass functions for each compressor module on or off.

* This is very handy for comparing compressed audio with your original non-compressed audio program material.

4.2 Independent (8x) peak led indicators
Each channel features a peak light LED indicator. This momentarily indicates when the input signal strength has reached optimum input level.

* A continuously illuminated peak LED indicates you have surpassed optimum input level and distortion of the respective channels audio signal will occur. It's time to adjust your input gain structure!

4.3 Independent (8x) rotary compression threshold encoders & tri-state led indicator
Each compressor modules COMPRESS encoder acts as a threshold adjustment. When input level is below the threshold the signal is unaffected. When input level exceeds the threshold attenuation of the output signal occurs.

A tri-state LED is available which indicates the following:

>Green – Compressor module active,
>Yellow/Orange – mild compression, input signal has exceeded the threshold level
>Red – heavy compression, signal level has exceeded the threshold setting considerably

4.4 Independent (8x) rotary attack encoders
The rotary attack controls allow for adjustment in milliseconds the time it takes each compressor module to respond to the corresponding input signals before gain reduction occurs. 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.

4.5 Independent (8x) rotary release encoders
The release controls set the time in seconds it takes for each compressor modules gain to return to the point of no gain reduction in the absence of audio program material. Short release times create a more exaggerated effect ("breathing"), whereas long release times have a more gradual, natural sound.

4.6 Independent (8x) rotary output encoders
The rotary output controls set the output level of each compressor module. 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.

Keep an eye on your VU meter to check the output signal strength!

4.7 Independent (8x) VU Meters
8 x accurate needle meters are provided for monitoring the output level of each corresponding compressor module. Each meter displays scale marks from -20 to +3dB. This indicates output signal level.

5. APPLICATION

5.1 General use of the OC8E
The OC8E 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 OC8E. Then connect the outputs of the OC8E 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 OC8E. It must me 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, preamplifier 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 channels attack and release encoders to the desired settings, 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. It is advised that you visually monitor the input signal level on the destination device you are sending signal to when making output level adjustments.

5.2 PR8IIA - Optional ADAT output module (also known as EP84ADAT)
The PR8IIA is an optional output module that can be fitted to the OC8E to provide pristine 24 bit digital conversion of your OC8E's output channels to an ADAT digital format stream. Perfect for use with ADAT compatible mixers, multi-track recorders, ADAT PC audio cards, or other professional ADAT compatible devices, the PR8IIA upgrades your OC8E to fit seamlessly into the digital world.

Many of today's computer based digital recording interfaces feature a mixture of both analog and digital inputs and outputs. Often systems may only be able to input 8 analog sources to the system simultaneously. Additional inputs may be provided in the form of an 8 channel digital ADAT format input. This is where a unit like the OC8E fitted with the PR8IIA module really shines. Simply connect the ADAT output of the PR8IIA to the ADAT input on your audio interface to achieve 8 channels of pristine input to your system. The PR8IIA offers internal or external sync selectors, word clock I/O connections, and a sample rate selector switch (44.1/48kHz).

Note: Both analog outputs from the OC8E and the PR8IIA's ADAT digital output function simultaneously.

6. SPECIFICATIONS

LINE INPUTS

Connector: ¼" TS jack
Type: unbalanced

LINE OUTPUTS

Connector: ¼" TS jack
Type: unbalanced

FREQUENCY RESPONSE

Line in 6Hz to 20Hz within 1dB

COMPRESSOR

Photoresistive servo operated
Ratio minimum 1.5 to 1
Ratio maximum 10 to 1
Attack time 1 mS / 100 mS
Release time 0.1 S / 3 S

VU METERS

-20 to +3dB

PERFORMANCE

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

POWER

Type: Internal 110v-220v

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

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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