

SMPRO



Tube Box

Operating Manual

August 2012



SMPRO



TUBEBOX



Output Level



Phase



LowCut



0.3



sec

MP



COMP



Pad



50



ms

Gain



+48V



Peak



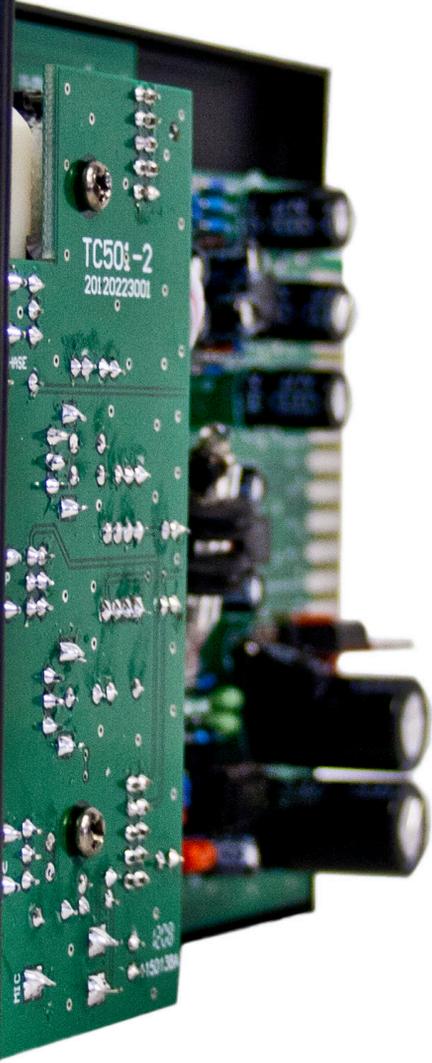
Comp



Mic In

Attack OPTICAL COMPRESSOR Release

TC501-2
20120223001



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 use before switching the device ON.

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 or in case a lightning storm occurs.

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.

FOREWORD

Dear Customer,

Thank you very much for expressing your confidence in SM Pro Audio products by purchasing this unit. The Tube Box has been designed to be used as a standard tool for home/pro studios, P.A. rental companies, Schools and in many other situations where audio products would be used. 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 as well as excellent technical and audio properties at an extremely affordable price.

Regards,
SM Pro Audio

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.

PLACEMENT

The SM Pro Audio Tube Box has an electronic circuit inside as well as isolation transformers. Be sure that there is enough air space around the unit for cooling. As to avoid overheating, please do not place the units on high temperature devices such as power amplifiers or near other units which may have high frequency transmittance such as wireless devices.

MAINS VOLTAGE

The Tube Box should only be used with the correct power supply. It is compatible with standard API lunch box systems as well as our own JUICE BOX series of power supplies. Please make sure you carefully read what the supply is rated for. Any damage occurring as a result of incorrect voltage selection may not be granted a warranty repair.

TUBE BOX MAIN FEATURES

API lunchbox compatible version of our popular TC01 tube preamplifier circuit.

- AN 6418 Electron Tube
- Tri color led for compression indication
- Low cut filter
- Switchable Phantom Power
- Switchable Phase Reversal
- Level display: Volume meter -20 dBu to +3 dBu
- Adjustable optical compressor
- Input gain control
- Switchable -20 dB Pad
- Housing: Metal

Ability to easily change opamps and bypass the tube circuit.



1. INTRODUCTION

In purchasing the new Tube Box, you have acquired a system 500 compatible tube mic/line preamp and optical compressor module.

The Tube Box is essentially a channel strip that meets many of the demands of the home/pro studio. A tube microphone preamplifier, optical compression, Phantom power, phase reverse switch, low cut switch, output volume control and metering, all packed in a convenient 500 series unit the Tube Box offers another layer of control and sound which opens up the creative side of music. The Tube Box is really 2 units in 1, giving you the unique sound of a tube preamplifier which on it's own is a complete product, at the same time offering you the smooth sound of an optical compressor. Don't try to compare the sound of this unit to any other on the market, it has it's own unique flavor which is destined to become a classic in it's own way.

The ability to bypass the tube and change the opamps give the Tube Box the extra advantage of letting users decide what kind of sound they like and opens up the possibility to modify the unit in various ways. You will undoubtedly see blogs and posts about users getting a different sound from the Tube Box by changing certain components, it's a great way to experiment.

2. THE DESIGN CONCEPT

2.1 High quality components and design

The philosophy behind SM Pro Audio products guarantees a no-compromise circuit design and employs the best choice of components.

3. INSTALLATION

Your SM Pro Audio Tube Box 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.

Please check that the TUBE is in place and has not come out of it's socket.

3.1 Connecting

The SM Pro Audio Tube Box is a standard 500 series module and as such you must follow the correct connection diagram and use an appropriate power supply (such as the SM Pro Audio 'Juice Box').

The Pinouts for 500 series modules can be found here:

Connector: 306-015-520-102EDAC type

Terminal:

- 1 CHASSIS
- 2 OUTPUT + (+4 Level)
- 3 Output + (-2 Level)
- 4 OUTPUT
- 5 GND
- 6 STEREO LINK
- 7 INPUT - (-2 Level)
- 8 INPUT - (+4 Level)
- 9 INPUT + (-2 Level)
- 10 INPUT + (+4 Level)
- 11 GAIN TRIM RESISTOR
- 12 +16V DC
- 13 GND
- 14 -16V DC
- 15 +48V DC



Optional SM Pro Audio power supply

3.2 Audio Connections

The Tube Box features a 1/4" (6.5mm) TRS connector on the front panel for connection of a Balanced Microphone.

All other connections are done thru the back panel multipin connector.

** Note: The Tube Box accepts mic or line level input signals. Do not connect your power amplifier outputs to the Tube Box inputs!*



3.3 Preamp control

The Tube Box features a Tube Amplifier, the control for the pre-amp are the INPUT GAIN, the PAD(-20dB) and the Phantom power switch.

A Peak LED is also provided to indicate when the input level exceeds the preamps operational level and send the unit into square wave (distortion) which sometimes may be a desirable effect.



3.4 optical compressor

3.4.1 Compression on/off switch & LED Indicator (near the PEAK light)

Turns the compressor stage on or off. The indicator shows the on/off status of the compressor as well as the compression amount, it is a tri state LED.

3.4.2 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.

3.4.3 Rotary attack encoder

The rotary attack control allows for adjustment in milliseconds the time it takes the compressor module to respond to the corresponding input signal 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.

3.4.4 Rotary release encoder

The release control sets the time in seconds it takes for the compressor module 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 decay.

3.5 Output level

The output level basically does as it says, controls the output level of the TUBE BOX.

3.5.1 Phase reversal switch

A phase reverse switch is available for reversing the phase of the signal by 180 degrees. This can be desired in situations such as recording a snare drum from above

and below the drum simultaneously. By reversing the phase on one of your microphone signals you will achieve a better result, recording full range of signal without a phase cancellation occurring. It is also used for matching the rest of your gear or recordings or removing feedback when recording stereo pairs.

3.5.2 80Hz low-cut (high-pass) filter switch

The low-cut (high-pass) filter switch enables and disables the 80Hz high-pass filter. Engaging this filter effectively removes low frequency “rumble” and other unwanted noise by attenuating the signal dB below 80Hz.

4. MAKING SOUND

Make your physical connections

Simply make your signal connections by either connecting an instrument (guitar, bass, mic etc) to the instrument input on the front panel, or connecting an input to the rear of a 500 series power supply box.

Do you need phantom power or to change the phase of your input signal?

If you are using a condenser microphone that requires phantom power, select the phantom power switch to the on position. You can also choose to switch the polarity of your signal at this stage if required.

Set your input gain control

Set your input level. Adjust the input rotary control to an acceptable level. This is a good time to check the clip indicator to ensure you are not overdriving the tube pre-amp with too much signal. If your signal is too strong, reduce the amount with the rotary control. If you cannot reduce the signal enough to stop the clip indicator constantly illuminating, you can enable the -20dB PAD to assist in reducing the incoming signal gain.

Do you desire compression?

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

Set your output level

Adjust your master output level rotary control to the required amount.

5. LET'S PLAY

The Tube Box's opamps are in DIP8 sockets, this simply means that users can easily interchange between different types of opamps to achieve different results.

We use a combination of 5532 and 4580 in the Tube Box so feel free to change them around and we would be happy if you report the results to us as well.

5.1 Line Input Level

Right next to the Tube, you will find a Blue colored trimpot. This trimpot is for the adjustment of the input level from the 500 series connector. To make the unit as compatible as possible we left this as a variable resistor so that users can match the level to their own system.

8. WARRANTY

8.1 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 Pro Audio (see address below 3). Failure to return the card in due time (date as per postmark) will void any extended warranty claims.

8.2 Warranty

8.2.1. 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 (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 Pro Audio shall, at its sole discretion, either repair or replace the product.

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

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

8.3 Return Authorization Number

8.3.1. To obtain warranty service, the buyer must call SM Pro Audio 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 Pro Audio will then issue a return authorization number or by email to service@smproaudio.com

8.3.2. 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
W25, 26-28 Roberna St
Moorabbin
Melbourne, Victoria
Australia 3189

8.4 Warranty Regulations

8.4.1. 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 Pro Audio under the terms of this warranty will be repaired or replaced in the best possible manner.

8.4.2. 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 Pro Audio shall not be held responsible for any cost resulting from such a modification/adaptation.

8.4.3. 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.

8.4.4. 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 Pro Audio.

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

8.4.6. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. SM Pro Audio will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 4 weeks after notification, SM Pro Audio 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.

8.5 Claim for Damages

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

8.6 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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