



# StudioProjects



**Studio  
Projects**

**Place  
Stamp  
Here**

**STUDIO PROJECTS**  
DISTRIBUTED BY PMI AUDIO GROUP

23775 Madison Street  
Torrance, California 90505 USA



Studio Projects is manufactured and marketed under the direction of:

**PMI AUDIO GROUP**  
 23775 Madison Street  
 Torrance, CA 90505  
 voice (310) 373-9129  
 facsimile (310) 373-4714  
 toll-free USA (877) 563-6335  
 Email [info@pmiaudio.com](mailto:info@pmiaudio.com)

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## WHAT IS STUDIO PROJECTS?

Studio Projects is a technology company. Armed with the idea that quality products do not have to be expensive, Studio Projects set out to design and offer quality audio products at a price that is affordable to most users. As a small sized company with lower expenses than its competitors, Studio Projects is able to pass extra savings onto the end user, and provide a high level of quality at a very competitive price.

When Studio Projects introduced its "C" Series microphones in 2001, both end users, reviewers, and audio professionals acclaimed the quality and sound as nothing short of amazing. With the introduction of the new "B" Series microphones in 2002, Studio Projects has pushed the envelope even further supporting its quality and performance for an affordable price.

Now we are entering the electronic market and offer our first electronic product, the VTB1. This unique product will offer the best possible quality and feature set in its price class. We hope you will enjoy your new VTB1 as much as we have enjoyed making it for you.

## WHY DO I NEED A MICROPHONE PREAMPLIFIER

A microphone preamplifier takes audio signals from any microphone (XLR socket), musical instrument or high level source (1/4 inch jack sockets), and amplifies them up to 'line' level; that is, from a few millivolts, up to about a volt. The phantom power supply (push-button switch) provides power to capacitor microphones. Dynamic or ribbon microphones should be used with the phantom power turned off, then full advantage can be taken of the extreme low noise performance of this preamplifier.

### DESCRIPTION / CARE

Your new VTB1 is a sturdy piece of equipment. It should not require much care other than common sense. The VTB1 is built to stand up to the demanding use of the professional. If you follow a few simple procedures, it will provide you with years of trouble free service.

- 1) Keep the VTB1 in a dry dust free environment
- 2) Avoid blocking the air vents on the side panels
- 3) Never use an incorrect power supply other than the correct voltage and amp rating

### CONNECTING THE VTB1

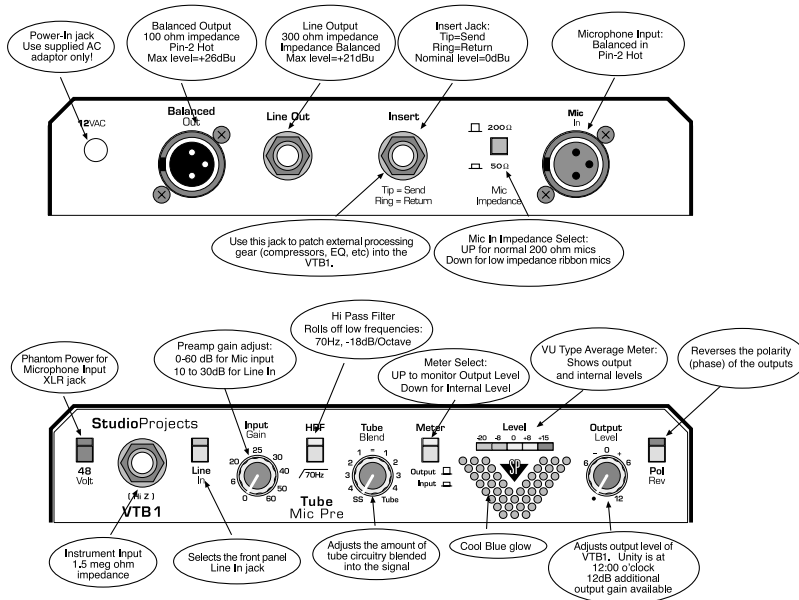
The VTB1 can be used in many applications, from recording to live applications. This section will help you get your new VTB1 connected as well as explain the connections on the VTB1 to help you get the most from your new unit.

Before you connect anything to your new VTB1, be sure to turn down all of the input and output levels. Plug in the supplied power adaptor. Be sure to plug the barrel connector into the VTB1 first, and then plug it into an electrical supply outlet. Using a good quality XLR cable, connect your microphone to the VTB1 XLR input on the back of the VTB1. Using either the XLR, or the 1/4" output, hook this into your recorder, computer card, or whatever you are recording or playing into. Be sure to turn the 48V phantom power switch to on if you are using a mic that requires phantom power. Wait at least 60 seconds for the power to charge your mic before turning up any gains. Set the meter selection switch to input, and adjust the GAIN control to get a meter reading within the 0 to +8 range. Then turn up the output control to feed your recorder. When changing microphones or powering down, be sure to turn down both input and output levels first. Then turn off the 48V power and wait 60 seconds. Then it will be safe to turn unplug the unit, or to change microphones. Use this method of powering up and down each time you use the VTB1. It is best to wait about 30 minutes before using the VTB1 to let the internal tube heat up to get the best out of the unit.

**CAUTION.** When using UNBALANCED MICROPHONES DO NOT USE PHANTOM POWER, It could damage the microphone and will certainly cause noise on the output. An LED light shows on the front panel as a warning that the phantom power is turned on.

## FEATURE CONTROL DESCRIPTION

This outline will familiarize you with all of the features and what they do.



## CIRCUIT TOPOLOGY

### Mic Preamp:

Discreet, current-source fed, paralleled-transistor balanced input stage feeding a bipolar opamp balanced-unbalanced converter. Dual feedback design for low distortion performance. 2-Stage design for increased performance; transistor stage provides up to 45dB gain, 2nd stage contributes up to 15dB gain.

### Line Input:

FET-input opamp buffer with hi input impedance to avoid pickup loading when used as an instrument preamp. 2nd stage provides adjustable gain from 10dB to 30dB, constant hi-impedance is maintained.

### Hi-pass filter:

75Hz hi-pass filter for low-freq wind and rumble elimination (3-pole filter @-18dB/oct).

### Tube Blend:

Constant-level blend control allows the user to smoothly change from an all solid-state path to a tube-based preamp. This allows the user to add the desired amount of tube sound to the signal without having to deal with complicated "tube drive" controls and such. Alternately, it allows the user to use only the solid-state portion of the preamp to get a very low distortion, un-colored sound when desired.

## VTB1 SPECIFICATIONS

### Maximum Gain:

Mic In to Bal Out: 72dB (60dB preamp gain, 12dB output gain)  
Line In to Bal Out: 42dB (30dB preamp gain, 12dB output gain)

### Distortion/Noise (THD + Noise):

-20dBu input-Mic; 0dBu input-Line  
Both measured at +15dBu output  
Mic or Line In to Bal or Line Out: <0.0015% (Blend set full CCW- no tube)  
Mic EIN: -128dBu (150 ohm source, 60dB gain)

### Frequency Response (20-20kHz, ref 1kHz):

-20dBu input, +15dBu output  
Mic In to Bal Out: +0 /-0.25 dB  
0dBu input, +15dBu output  
Line In to Bal Out: +0 /-0.5 dB

### Phase response (20-20kHz, either input): <+/- 15 degrees

### Input Impedance:

Mic Input (Rear switch in 200 ohm position): 2000 ohms  
Mic Input (Rear switch in 50 ohm position): 300 ohms  
Line Input (Front panel TRS jack): 1.5 meg ohms

### Output Impedance:

Male-XLR Balanced Output: 100 ohms (50 ohms each leg)  
TRS Line Out: 300 ohms (Impedance Balanced)

### Insert Jack (TRS):

Nominal level approx 0dBu  
Located between SS preamp stage and tube/output stage  
Tip=Send: 50 ohms output impedance  
Ring=Return: 7500 ohms input impedance

### Tube Stage:

12AX7 vacuum tube with DC filament supply for minimum hum and noise. 1st half of tube is operated as a hi-gain amplifier stage, 2nd half operates as a cathode follower to minimize loading of the first stage. A low-voltage plate supply is used to create a "starved-tube" condition for enhanced sound.

### Output Stage:

Bipolar, lo-noise, hi output-current opamp used for best performance. 1st stage is used to provide additional gain (6dB) and drives the Line out jack and Pin-2 of the balanced out. The 2nd stage provides signal inversion and drive for Pin-3 of the balanced output (effectively an additional 6dB gain).

### For best Tube-Sound results:

The tube operates best when provided with a solid signal. The best way to accomplish this is to use the on-board metering to set the internal levels. Press the Meter Select switch IN, the meter will now display the signal level within the preamp, just before the tube stage. Adjust the GAIN control to get a meter reading within the 0 to +8 range. With the OUTPUT control at "0", start turning the BLEND control clockwise until the desired sound is heard. Depending on the source material, more or less BLEND will be needed. If the output level is too high or low for your following equipment, adjust the OUTPUT control to compensate. This won't change the sound of the blended signal, just the overall level.

## PROBLEMS

Studio Projects electronics are extremely resistant to physical damage, but if the unit fails to work after being dropped, it should be returned in adequate packing to the supplier. A double test and inspection system means that manufacturing faults are non-existent but should any fault occur, it will be repaired (or replaced) free of charge except where the fault has been caused by physical damage. (SEE WARRANTY INFORMATION)

## ORIGINS AND MANUFACTURE

Studio Projects Electronics are entirely designed in the USA. They are manufactured in China by 797 Audio to a specification created by Studio Projects, Torrance, California. All Studio Projects electronics are inspected and tested at the factory, then inspected and tested again at PMI Audio Groups facility prior to shipping. Studio Projects electronics meet the requirements of electronic equipment sold both in the USA, Canada, and the European Union. All Studio Projects products are CE Approved, and all power supplies are UL rated.

## DECLARATION OF CONFORMITY

This analog audio processing equipment conforms to the standards and requirements of the European Economic Community.

The EC Harmonized standards that have been applied are;

- a) Electrical equipment (safety) Regulations 1994 (S.I. 1994/3260)
- b) Electromagnetic Compatibility Directive (89/336/EEC) incorporating (S.I. 1992/2372)

## STUDIO PROJECTS LIMITED WARRANTY

### THIS PRODUCT IS FOR PROFESSIONAL USE ONLY

PMI Audio Group warrants that all products will be free from defects in material or workmanship:

A: For a period of (1) one year from the date of purchase (hereinafter the labor warranty period), PMI Audio Group will repair or replace this Product if determined to be defective. After the expiration of the labor warranty period, the Purchaser must pay labor charges.

B: In addition, PMI Audio Group will supply, at no charge, replacements for defective parts for a period of (one year) from the date of purchase. During the labor warranty period, to repair the Product, Purchaser must return the defective Product, freight prepaid, or deliver it to PMI Audio Group Service Center. The product to be repaired is to be returned in either its original carton or a similar package affording an equal degree of protection. PMI Audio Group will return the repaired Product freight prepaid to the Purchaser. PMI Audio Group is not obligated to provide Purchaser with a substitute unit during the warranty period or at any time.

## CONDITIONS

1. Notification of claims: Warranty Service: If Purchaser discovers that the Product has proven defective in material or workmanship, then written notice with an explanation of the claim shall be given promptly by Purchaser to PMI but all claims for warranty service must be made within the warranty period. If after investigation PMI determines that the reported problem was not covered by the warranty, Purchaser shall pay PMI for the cost of investigating the problem at its then prevailing time-and-materials

## TROUBLESHOOTING

### 1) The microphone doesn't work!

Have you got something plugged into the INSTRUMENT input or is the mic/line set incorrectly? (this can disable the microphone input)

Is the phantom power on? (capacitor microphones).

If there is indication on the VU LED, is the output volume control turned down?

### 2) Got signal going through but no output?

Is there enough signal? Use plenty of drive.

Is the output gain control turned up, and do you have a properly working monitor system?

### 3) I don't get any power!

Is the supplied power supply plugged in correctly? Make sure the barrel connector is pushed all the way into the socket, and be sure you have available power to the supply.

rate. No repair or replacement by Purchaser of any Product or part thereof shall extend the warranty period as to the entire Product. The specific warranty on the repaired part only shall be in effect for a period of ninety (90) days following the repair or replacement of that part or the remaining period of the Product warranty, whichever is greater.

2. Exclusive Remedy: Acceptance: Purchaser's exclusive remedy and PMI's sole obligation is to supply (or pay for) all labor necessary to repair any product found to be defective within the warranty period and to supply, at no extra charge, new or rebuilt replacements for defective parts. If repair or replacement fails to remedy the defect, then and only in such an event, shall PMI exchange to Purchaser a new or reconditioned unit. Purchaser's failure to make a claim as provided in paragraph 1 above or continued use of the product shall constitute an unqualified acceptance of such Product and a waiver by Purchaser of all claims thereto.

3. Exceptions to Limited warranty: PMI shall have no liability or obligation to Purchaser with respect to any Product subjected to abuse, improper use, negligence, accident, modification, failure of the end-user to follow the operating and maintenance procedures outlined in the users manual, attempted repair by non-qualified personnel, operation of the unit outside of the published environmental and electrical parameters, or if such products original identification (trademark, serial number) markings have been defaced, altered, or removed. PMI excludes from warranty coverage, Products sold AS IS and/or WITH ALL FAULTS and excludes used products which have not been sold by PMI to the Purchaser. PMI also excludes from warranty coverage consumables such as fuses and batteries, etc.

4. Proof of purchase: The dealer's dated bill of sale must be retained as evidence or the date of purchase and to establish warranty eligibility

## DISCLAIMER OF WARRANTY

EXCEPT FOR THE FORGOING WARRANTIES, PMI HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR LIMITED, INCLUDING, BUT NOT LIMITED TO ANY/OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND/OR ANY WARRANTY WITH REGARD TO ANY CLAIM OF INFRINGEMENT THAT MAY BE PROVED IN SECTION 2-312(3) OF THE UNIFORM COMMERCIAL CODE AND/OR IN ANY COMPARABLE STATE STATUTE. PMI HEREBY DISCLAIMS ANY REPRESENTATIONS OR WARRANTY THAT THE PRODUCT IS COMPATIBLE WITH ANY COMBINATION OF NON-PMI AUDIO PRODUCTS PURCHASER MAY CHOOSE TO CONNECT TO THE PRODUCT.

## LIMITATION ON LIABILITY

THE LIABILITY OF PMI, IF ANY, AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DAMAGES FOR ANY CLAIM OF ANY KIND WHATSOEVER, REGARDLESS OF THE LEGAL THEORY AND WHETHER ARISING IN TORT OR CONTRACT, SHALL NOT BE GREATER THAN THE ACTUAL PURCHASE PRICE OF THE PRODUCT WITH RESPECT TO WHICH SUCH CLAIM IS MADE. IN NO EVENT SHALL PMI BE LIABLE TO PURCHASER FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION, REIMBURSEMENT OR DAMAGES ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS OR ANY OTHER REASON WHATSOEVER.

## OWNERS REGISTRATION CARD

TO BE COMPLETED AT TIME OF PURCHASE

Name \_\_\_\_\_

Date of Purchase \_\_\_\_\_

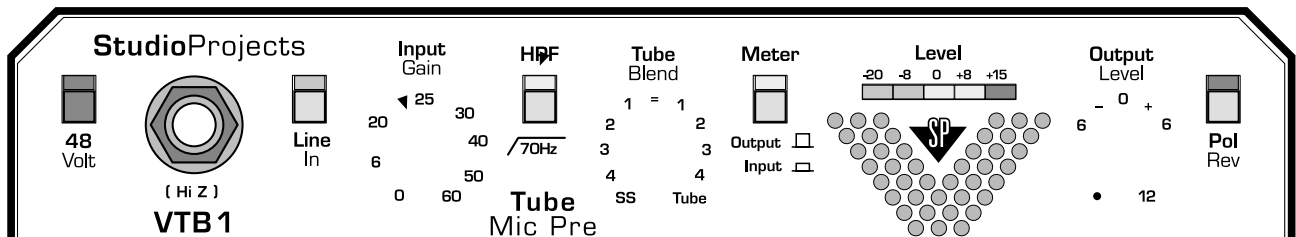
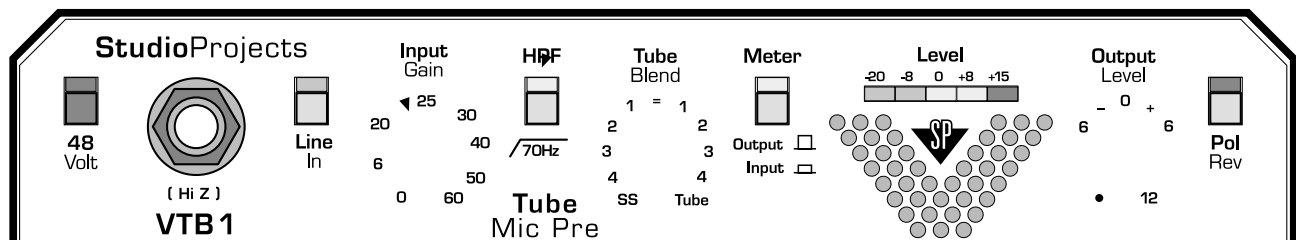
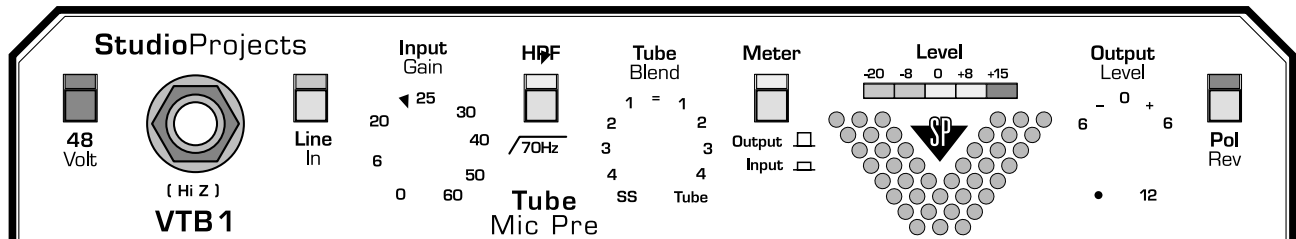
Serial Number \_\_\_\_\_

Dealer's Name \_\_\_\_\_

RETAIN FOR YOUR RECORDS

PLEASE DISPATCH AND RETURN  
YOUR REGISTRATION  
TO STUDIO PROJECTS  
WITHIN 14 DAYS OF PURCHASE

Specifications and model numbers are subject to change without notice



# NOTES

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## PRODUCT REGISTRATION INFORMATION PLEASE FILL THE BELOW SECTIONS AND RETURN

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ email Address: \_\_\_\_\_

Model Purchased: \_\_\_\_\_ Date Purchased: \_\_\_\_\_

Serial Number: \_\_\_\_\_ Dealer: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

**What magazines do you read to influence your buying decision:** (please check all that apply)

- MIX  Electronic Musician  EQ  Home Recording  Pro Audio Review  Recording  Pro Sound News