

Tube MP Studio V3

Voiced Valve Preampfier w/Output Protection Limiting



USER'S MANUAL



IMPORTANT SAFETY INSTRUCTIONS – READ FIRST



This symbol, wherever it appears, alerts you to the presence of uninsulated Dangerous voltage inside the enclosure. Voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read manual.

Read instructions:

Retain these safety and operating instructions for future reference. Heed all warnings printed here and on the equipment. Follow the operating instructions printed in this user guide.

Do not open:

There are no user serviceable parts inside. Refer any service work to qualified technical personnel only.

Power sources:

Only connect the unit to mains power of the type marked on the rear panel.

Power cord:

Use the power cord with sealed mains plug appropriate for your local mains supply as provided with the equipment. If the provided plug does not fit into your outlet consult your service agent. Route the power cord so that it is not likely to be walked on, stretched or pinched by items placed upon or against.

Ventilation:

Do not position the unit where the air required for ventilation is impeded. If the unit is to be wall mounted with a 100mm vesa mounting system, ensure that it is constructed to allow adequate ventilation.

Moisture:

To reduce the risk of fire or electrical shock do not expose the unit to rain, moisture or use in damp or wet conditions. Do not place a container of liquid on it, which may spill into any openings.

Heat:

Do not locate the unit in a place close to excessive heat or direct sunlight, as this could be a fire hazard. Locate the unit away from any equipment, which produces heat such as: power supplies, power amplifiers and heaters.

Environment:

Protect from excessive dirt, dust, heat, and vibration when operating and storing. Avoid tobacco ash, drink spillage and smoke, especially that associated with smoke machines.

Handling:

To prevent damage to the cosmetics avoid rough handling or placing the front or rear face on an abrasive surface. Protect the controls from damage during transit. Use adequate padding if you need to ship the unit. To avoid injury to yourself or damage to the equipment take care when lifting, moving or carrying the unit.

Servicing:

Switch off the equipment and unplug the power cord immediately if it is exposed to moisture, spilled liquid, or the power cord or plug becomes damaged, during a lightning storm or if smoke odor or noise is noted. Refer servicing to qualified technical personnel only.

Installation:

Install the unit in accordance with the instructions printed in the user manual.

TUBE MP STUDIO V3

Tube Microphone Preamp with V3

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INTRODUCTION

Thank you for purchasing the Tube MP Studio V3™ and congratulations: You now own one of the most versatile preamplifiers available. Offering a superb level of sound quality, the Tube MP Studio's hybrid solid state and tube circuit design combined with a straightforward user interface quickly and easily gives you access to all of its features.

The original ART Tube MP put professional-caliber tube preamplification into the hands of thousands of musicians and recordists that wanted great tube tone in a compact and flexible package.

The Tube MP Studio V3™ extends the range of applications by adding V3™ (Variable Valve Voicing) technology with an output protection limiter (OPL™) to precisely control output peaks, and analog VU metering to aid in setting and maintaining proper signal levels.

The Tube MP Studio V3™ can be used in a wide variety of applications including recording, project and home studios, where its metering functionality and OPL™ circuitry really shines. It also functions as a direct box, with impedance matching and preamplification for instrument or line-level sources.

Features

- Built-in analog VU metering
- V3™ (Variable Valve Voicing) with OPL™ (switch selectable)
- Up to 70dB of gain
- Hand selected 12AX7A dual triode tube
- Balanced XLR inputs and outputs
- ¼-inch High impedance Instrument input and ¼-inch line level output
- +48V Phantom power (switch selectable)
- Phase Reverse Switch
- Gain (+20dB) Switch
- Input Gain Control
- Output Level Control
- Multifunction, dual color LED Power/Clip/Limit indicator
- Fully shielded all steel chassis
- Designed and developed in the USA

INSTALLATION

The Tube MP Studio V3™ may be used in a wide variety of applications and environments. Self-contained in an all-steel enclosure, the Tube MP Studio V3™ is designed for continuous professional use. Because the unit is compact and lightweight, mounting location is not critical. However, for greater reliability we recommend that you not place the Tube MP Studio V3™ on top of power amps or other sources of heat. The tube circuitry needs about a minute to “warm up” from a cold power up.

AC POWER HOOKUP

The Tube MP Studio has an external power supply designed to operate at 115 VAC @ 50 to 60 Hz. Units manufactured for use outside the United States of America have been modified to comply with the required electrical specifications. **Only use the adapter that came with the Tube MP Studio V3™.** If the adapter becomes lost or damaged, contact ART Customer Service for replacement. If you need to purchase one locally, just make sure that you specify 9 Volt AC (not DC), at 800 ma.

AUDIO CONNECTIONS

Audio connections to and from the Tube MP Studio V3™ are balanced XLR (Pin 2 = Hot (+), Pin 3 = Cold (-), Pin 1 = Ground) and unbalanced ¼-inch (Tip = Hot (+), Sleeve = Ground). We recommend that you switch off the +48V Phantom Power whenever changing connections to the XLR input.

SAFETY PRECAUTIONS

Warning: To avoid the risk of shock or fire, do not expose this unit to moisture. Refer all servicing to qualified personnel. Do not remove the metal cover; there are no user-serviceable parts inside. Only use the power adapter that came with this unit or one obtained from Arts Customer Service Department.

CONTROLS & INDICATORS

Input control

The Input Control sets the amount of input gain of the Tube MP Studio V3™. Turn the control clockwise to increase gain and counterclockwise to decrease gain. You may control two ranges of gain with this control, +26 to +60dB and +6 to +40dB. Selection of the gain range is made with the +20dB gain switch.

+20db gain switch

Use the +20dB Gain Switch to set the gain range of the input control. When the switch is out, the Tube MP Studio V3™ operates in Normal mode. Depressing the switch adds 20dB of gain. This mode is indicated by the labeling in red and corresponds directly to the input control's red gain range

labeling. For microphone applications, where more gain is needed, push the switch in. For hot line level inputs, set the switch in the out position.

Phantom power +48v switch

The Tube MP Studio V3™ can power any microphone needing +48 volts DC Phantom power. Phantom power is supplied to pins 2 and 3 of the XLR Input jack when this switch is depressed. The Tube MP Studio V3 s™ slowly applies and removes the +48volts, to prevent damage to microphones.

Be sure to turn down or mute the output of the Tube MP Studio V3™ when engaging or disengaging Phantom power. Additionally, when disengaging, allow 30 to 45 seconds for the power to completely discharge. Most microphones will make a sound like air leaking from a tire when Phantom power is disconnected, but some can make some very nasty low rumbles and whines as well.

Dynamic microphones should not be affected or damaged if they are plugged into a line where Phantom power is present. However, if the mic doesn't need it, do not use it. Some things are best left untested!

Phase reverse switch

The Phase Reverse switch is provided to reverse the phase of the signal. This switch works on Pins 2 and 3 of the XLR output jack and also reverses the polarity of the ¼-inch output jack. In the Normal position, the signal is in-phase. In the Reverse (or “in”) position, Pins 2 and 3 are reversed and the signal is changed to 180 degrees out of phase.

In multiple microphone applications, mic placement can affect the phase of the signals. If two microphones pick up the same signal from different locations, the result can be a hollow or frequency “shifted” sound. In some cases it may sound as if an instrument disappears if it happens to be 180 degrees out of phase. Depressing the Phase switch can remedy this. In general, if your sound is “thin” or “out of position”, try reversing the phase to correct the problem.

V3™ – Variable Valve VOICING™ Control

This Tube MP Studio V3™ features ART’s proprietary **V3™** technology. V3™ (which stands for Variable Valve Voicing), provides optimized reference points to begin the recording process for guitars, bass guitars, synths, acoustic instruments, percussion and more.

ART engineers ran our preamplification circuit through a battery of tests and real life studio conditions. Our goal was to create a processor that would allow a user to have presets that were optimized for specific recording applications. We set out to create a preamp that would be nimble enough to handle both violins and kick drums, and nearly everything in between.

We wanted to take the guessing out of the equation – and that is how we developed V3™. It’s simple, easy and it works really well.

For example, if you are recording an acoustic guitar, V3™ has a preset that has been optimized for that instrument. Once the preset is chosen, the user can even fine tune the signal – which shows the true power of V3™ technology...it’s tweakable. V3™ even features a multi setting, which is useful for a wide variety of applications – like overhead micing, broadcast and field recording.

This means that it is now quicker and easier than ever to make great recordings! Musicians want to play, not spend hours adjusting knobs. No other microphone preamp is as user-friendly as the Tube MP Studio V3™.

Power/clip/limit led

The bi-color Power/Clip/Limit LED lights green after power is applied and with lower level signals. If OPL™ is not being used, then the LED will serve as a signal clip indicator. It will light red whenever the signal at the tube's output is about to clip. If the LED is constantly lit, reduce the signal level with the Input gain control, or activate the OPL™ circuitry.

When the OPL™ circuit is engaged, the LED will turn red whenever the output signal peaks exceed the limiter's threshold, at which point the limiter will reduce gain automatically, to prevent output clipping.

VU meter

The VU Meter gives an analog representation of the Tube MP Studio V3™'s output signal level. "0dB" on the meter represents +6dBu at the ¼-inch output jack and +12dBu at the XLR output jack. Besides showing the average analog level, it is sensitive to attack transients. When not using OPL™, the VU Meter is a great indicator of how hard you are running the tube. It also helps in setting a consistent level as you change mics and instrument sources.

The VU Meter also reflects the impact of the OPL™ circuitry on the signal. For example, if the signal is "in the red" on the meter, the meter will reflect the attenuation of the signal when the OPL™ is activated, and the signal is brought out of the "red".

OUTPUT control

The Output Control sets the output level of the Tube MP Studio V3™. When the control is fully counterclockwise, there is no output. Turning the control clockwise increases the level of the output signal. When setting the Output level control, refer to the VU Meter for an accurate level leaving the Tube MP Studio V3™.

CONNECTIONS

Despite the Tube MP Studio V3™'s sophistication, it is easy to interface the unit with a wide variety of equipment. All inputs and outputs are located on the rear panel. Standard ¼-inch and XLR inputs and outputs make patching simple.

¼-inch Input jack

The ¼-inch Input jack is for instrument and line level inputs. It has a high input impedance to minimize any loading effects on instrument pickups. It can also handle up to +22dBu signals for line level signals.

Though not normally suggested, both input jacks can be used simultaneously, in a pinch, to sum two signals. The signal present at the XLR jack will tend to attenuate the signal of the ¼-inch input.

XLR input jack

The XLR Input jack is primarily intended for microphone input, and as such can furnish Phantom Power when needed. It can handle up to +14dBu signals, which is the hottest signal you would get out of any microphone. For even hotter input signals, you should use the ¼-inch input jack. The XLR Input jacks medium input impedance is extremely flat over a wide frequency range, which allows it to be musically neutral to virtually any microphone (one of the Tube MP Studio V3™'s lesser known secrets).

XLR output jack

The XLR Output jack of the Tube MP Studio V3™ is active balanced. You may use it in an unbalanced configuration without harm to the output circuitry. The XLR output can provide a hefty signal level (+28dBu) at a low impedance, so make sure that you do not overdrive equipment with sensitive inputs. When using it on the front end of a mixer, go into the mixer's line in or insert inputs and not necessarily into the mixer's microphone input, unless the mixer can pad that input's level.

¼-inch output jack

The ¼-inch Output jack is unbalanced and should be used for sending signals to amps, processors, or other unbalanced configurations.

Both balanced and unbalanced output connections may be used simultaneously. This is particularly useful when using the Tube MP Studio V3™ as a direct box for instruments or line level signals. Make sure that both pieces of equipment connected to the Tube MP Studio V3™'s outputs are connected

to the same earth ground, beforehand, to avoid electrical shock.

If you experience a grounding hum when using both output connectors (one to a console, one to an instrument amp) simultaneously, a ground loop may be the problem. To remedy this problem, disconnect the ground wire (pin 1) from the XLR cable plugged into the Tube MP Studio V3™'s output. This interrupts the ground path and therefore breaks the loop.

Power

Insert the supplied 9 Volt AC adapter's plug into the input labeled Pwr, 9VAC on the TUBE MP Studio V3™'s back panel.

An external 9VAC adapter powers the TUBE MP Studio V3™. Always make sure the output plug is securely plugged into the rear of the TUBE MP Studio V3™, and that the adapter is held firmly in an electrical outlet. Never operate the TUBE MP Studio V3™ or AC adapter in the rain or in wet locations. If the AC adapter's cord is ever cut, discontinue use and replace the adapter with a new one. Unplug the adapter when the TUBE MP Studio V3 is not in use. Refer to the label on the adapter or the specifications later in this manual for the appropriate operating voltages.

OPERATION

The main application of the Tube MP Studio V3™ is a microphone preamplifier. Plug any microphone directly into either input and set the input and output controls to provide an appropriate level into the next stage of your system.

Use the Tube MP Studio V3™ as an acoustic or piezo pickup preamplifier to run directly into a console, amp, processor, recorder, or sound card.

The Tube MP Studio V3™ is ideal for use as a DI box. Plug the instrument into either input and use the XLR or ¼-inch (or both) outputs to connect to your recorder, board or PA system.

Because of its low noise and excellent tonal qualities, the Tube MP Studio V3™ is ideal for running mixes through before recording to DAT or cassette. Used as a mastering device, the Tube MP Studio V3™ is capable of adding warmth and gentle tube compression to the signal. Variable Input and Output level controls make the Tube MP Studio V3™ ideal for level matching material in postproduction situations.

V3™ Settings and their applications when processing:

When observing the V3™ dial from a clockwise perspective, the following settings are:

Neutral Settings:

These are useful for uncolored, natural reproduction of sound.

- 6:00 - Neutral Flat
- 6:45 – Neutral Vocal (Microphone)
- 7:30 – Neutral Guitar Amplifier
- 8:15 – Neutral Bass Guitar

Warm Settings:

These are useful when warming a signal is desired.

- 9:00 – Warm Electronic Keyboard
- 9:45 – Warm Electric Guitar
- 10:30 – Warm Vocal Microphone
- 11:15 – Warm Valve

Warm Settings with OPL™:

These are useful with high sound pressure levels, close proximity micing, and spiky transients, as well as warming the signal.

- 12:00 – Warm OPL™ Multiple Applications
- 12:45 – Warm OPL™ Vocal
- 1:30 – Warm OPL™ Acoustic Guitar
- 2:15 – Warm OPL™ Piano

Neutral Settings with OPL™:

These are useful with high spl's, close micing and spiky transients, as well as maintaining clarity.

- 3:00 – Neutral OPL™ Bass Guitar
- 3:45 – Neutral OPL™ Acoustic Guitar
- 4:30 – Neutral OPL™ Percussion
- 5:15 – Neutral OPL™ Limit

WARRANTY INFORMATION

Limited Warranty (USA only)

Applied Research and Technology will provide warranty and service for this unit in accordance with the following warrants:

Applied Research and Technology, (A R T) warrants to the original purchaser that this product and the components thereof will be free from defects in workmanship and materials for a period of **three** years from the date of purchase. Applied Research and Technology will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase date in the form of a valid sales receipt.

Online Registration

We recommend that you register your product online to insure prompt warranty repair servicing on any repair issues. Please go to www.artproaudio.com. Select "*Support*", then "*Product Registration*" input your information here.

Exclusions

This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

A R T reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

A R T shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights and you may have other rights, which vary from state to state.

For units purchased outside the United States, an authorized distributor of Applied Research and Technology will provide service.

SERVICE

The following information is provided in the unlikely event that your unit requires service.

1. Be sure that the unit is the cause of the problem. Check to make sure the unit has power, all cables are connected correctly, and the cables themselves are in working condition. You may want to consult with your dealer for assistance in troubleshooting or testing your particular configuration.
2. If you believe that the ART unit is at fault, go to www.artproaudio.com.
3. Select “*Support*”, then “*Return Authorization Request*” to request a return authorization number.
4. If you are returning the unit for service, pack the unit in its original carton or a reasonable substitute. The original packaging may not be suitable as a shipping carton, so consider putting the packaged unit in another box for shipping. Print the RA number clearly on the outside of the shipping box. Print your return shipping address on the outside of the box.
5. Include, with your unit, a note with the RA number and your contact information, including a return shipping address (we cannot ship to a P.O. box) and a daytime phone number, and a description of the problem, preferably attached to the top of the unit. Also include a copy of your purchase receipt.

Please fill in the following information for your reference

Date of purchase _____

Purchased from _____

Serial Number _____

SPECIFICATIONS

Input Connections	XLR (balanced), ¼-inchTS
Output Connections	XLR (balanced), ¼-inchTS
Input Impedance XLR, ¼-inch	2K ohms, 840k ohms
Output Impedance XLR, ¼-inch	600 ohms, 300ohms
Maximum Input Level, XLR	+14dBu
Maximum Input Level, ¼ - inch	+22dBu
Maximum Output Level, XLR	+28dBu
Maximum Output Level, ¼-inch	+22dBu
CMRR	>75dB (typical @ 1kHz)
Frequency Response	10Hz to 30kHz, +/- .5dB
Dynamic Range	>100dB (20-20kHz) typical
Total Harmonic Distortion (THD)	<0.1% (typical)
Maximum Gain	
XLR to XLR	70dB (typical)
¼-inch to ¼-inch	54dB (typical)
XLR to ¼-inch	64dB (typical)
¼-inch to XLR	60dB (typical)
Equivalent Input Noise (EIN)	
XLR to XLR	-129dBu (A weighted)
¼-inch to ¼-inch	
-105dBu (A weighted)	
Dimensions (HWD)	5-inch x 5.5-inch x 2-inch 127mm x 139.7mm x 50.8mm
Weight	1.5 lbs. (.680kg.)
Tube Type	12AX7A, Dual Triode, Hand Selected
Power Requirements	USA – 9VAC @ 0.8A (typ.) Export units configured for country of destination

ART maintains a policy of constant product improvement. ART reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install same on products previously manufactured. Therefore, specifications are subject to change without notice.



www.artproaudio.com
E-mail: support@artproaudio.com

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