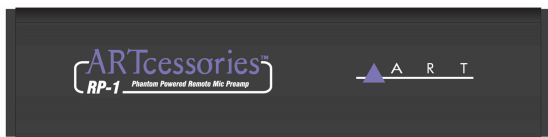


RP-1

Phantom powered remote Mic Preamp

ARTcessories



User's Manual



APPLIED RESEARCH AND TECHNOLOGY

IMPORTANT SAFETY INSTRUCTION – READ FIRST



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

Read Instructions: Retain safety and operating instructions for future reference. Heed all warnings printed here and on the equipment. Follow the operating instructions printed in this user manual.

Do not open: There are no user serviceable parts inside. Refer any service work to qualified technical personnel only.

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: 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: Refer servicing to qualified technical personnel.

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

INTRODUCTION

Thank you for purchasing Applied Research and Technology's RP-1. The RP-1 is the ideal solution to increasing the performance of your ribbon and dynamic microphones. This phantom powered preamp brings out all of the nuances of your mic before running into your recording interface or Mixer through long cable runs.

With the RP1 you can tailor the loading on the mic through the variable impedance control. The low cut filter allows you to remove wind noise and plosives before adding additional gain.

The discrete preamp circuitry inside is designed for low noise and transparent operation. The balanced output drives long cable runs with ease allowing you to place the preamp as close as possible to the mic before picking up any noise or interference.

The RP-1 is packaged in a rugged extrusion, metal XLR jacks and a solid rubber foot underneath for long, reliable operation.

Get the very best out of your mics with the RP-1

FEATURES

- Very low noise mic preamp
- Switchable Low Cut Filter
- Variable Impedance control
- Adds at least 20dB of gain to your mic
- Low THD discrete circuitry
- Runs off a Phantom power supply
- Able to drive long balanced cables
- Compact rugged package, extruded chassis
- Designed and developed in the USA

INSTALLATION and OPERATION

Connect the outputs of the RP-1 to a Phantom powered source such as a mixer or preamplifier.

Connect the RP-1 input to your Ribbon or dynamic mic.

Make sure you start with the gain pot set to their minimum setting. Once connected engage the Phantom power and adjust the gain on the RP-1 for the desired level. The phantom power will not pass through to the input thus avoiding any potential damage to any dynamic or ribbon mic.

Connections



APPLICATIONS

Perfect for: Live use, Project studios, Home and Commercial installations.

The RP-1 may be used in a wide variety of applications and environments. Self-contained in an extruded enclosure, the remote mic Preamp is designed for continuous professional use. Because the unit is compact and lightweight, mounting location is not critical.



The RP-1 is placed inline with the Mic. The RP-1 can be zip tied to the mic stand, so tonal adjustments can be made on the fly.

LOW CUT FILTER control

The Low Cut Filter is a single tuned High Pass Filter. The input signal can be filtered to remove low frequency information. The roll off frequency is set at 100Hz. Since it is single tuned, it preserves some low frequency content so its use is less obtrusive. It is especially useful in close mic'd applications cutting out pops and wind noise.

Variable Impedance Function

Using this variable impedance function allows the user to adjust the input impedance seen by the microphone, in turn achieving better tonal response from your microphone used.

Dynamic Mic

Dynamic (coil) microphones are sensitive to loading. If these mics are not coupled correctly, the result maybe a loss in frequency response and could result in added distortion.

As an example a common mic like the SM57 prefers a 600ohm load. When the load is varied above or below the 600ohms, then the mid range resonance could sound harsh and distorted. The low-end response will also sound more controlled with a 600ohm load. There are many dynamic mics that may have similar issues but not be as sensitive to loading as the SM57.

Ribbon Mic

Ribbon type (transformer coupled) microphones are sensitive to the input impedance of the preamps or mixers used to achieve the optimum frequency response. A Ribbon mic would like to see an input impedance several times larger than its output impedance. Ribbon mics, being transformer coupled, have increased impedance at high and low frequencies. On the low end the mic is power bound, as you load it there becomes a low frequency cut off at higher levels, so it may sound distorted. At the high end, the output impedance of the transformer increases (independent of level), so the greater the load the less high end.

As an example, a typical ribbon mic with a characteristic impedance of 300ohms may have an inherent 600ohm impedance at 20kHz and a 2k impedance at its low frequency resonance (about 50Hz). If you set the input impedance to 10k ohms your result would be a 0.25dB drop at 20kHz. This would also drop the low frequency resonance by 1.3dB. Compare this to a typical mixer input (3k input impedance) where you would get a 0.75dB drop at 20kHz and 3.6dB at resonance.

So increasing the input impedance seen by the mic using the impedance pots on the Dual RP will result in an optimum performance from the ribbon mic used. If the preamp or mixer input impedance is too low then you will start to limit the frequency response of the ribbon mic. When this occurs, the low-end of the microphone's sound quality will be limited and the transient response will sound flat degrading the overall performance of the microphone. So by adjusting the impedance pot on the Dual RP, you can achieve a clean full frequency response from your microphones using the Dual RP.

The beauty of the RP-1 may be the ability to operate at higher impedance or control the impedance vs. the mixer¹ you are currently using.

¹ A Phantom power capable input has around 13K maximum impedance simply due to the 6.8k Phantom power pull-up resistors.

WARRANTY INFORMATION

Limited Warranty

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*". Then 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

Fill in the following information for your reference:

Date of purchase _____

Purchased from _____

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.

SPECIFICATIONS

Input Connections	XLR
Input Impedance	150 Ohms to 10k Ohms, variable
Max Input level	-18dBu
Output Connections	XLR
Max. Output Level	+9dBu
Gain	+27dB
Low Cut Filter	Single pole 100hz
THD	< .002% @1kHz typ.
E.I.N.	-131dBu "A" wtd.
C.M.R.R.	>60dB 20-20kHz
Power Requirements	External Power requirements Standard 48V Phantom power supply, 8ma.
Dimensions (HxWxD)	1.26-inch x 1.12-inch x 5.18-inch (32 x 28.4 x 132 mm)
Weight	0.31 lbs / 0.14 kg



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