

METASONIX

R-57 dual VCA/preamp user's manual

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Please read all of this before using it!

RETAIN INSTRUCTIONS: The safety and operating instructions should be retained for future reference.

HEED WARNINGS: All warnings on the R-57 and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS: All operating instructions should be followed.

WATER AND MOISTURE: The R-57 should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool etc.). Care should be taken so that liquids are not spilled onto or near the enclosure.

VENTILATION AND COOLING: The R-57 normally operates warm to the touch. It **MUST** be situated so that its location or position does not interfere with convective cooling. The R-57 **MUST NOT** be used on a bed, sofa rug or similar surface which may prevent proper cooling. It is **NOT** a toy. If the R-57 is mounted in a synthesizer rack or other built-in installation, space *must* be left around it to allow convection cooling.

HEAT: The R-57 **MUST** be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including power amps) that produce heat.

POWER SOURCE: The R-57 should be connected to a power supply **ONLY** of the type described in the operating manual or as marked on the R-57. **WARNING:** Each R-57 requires +12v at 300 mA and -12v at 300 mA, with a brief transient consumption of 850 mA at first power-on. The cabinet power supply *must* be able to deliver this current. **WARNING:** The tubes get hot in normal operation and should not be touched after 10 minutes with power applied.

CLEANING: The R-57 should only be cleaned with a soft cloth moistened with water. Unplug the power supply before attempting to clean.

NON-USE PERIODS: The R-57 should be shut off when left unused for a long period of time.

MECHANICAL: unlike all other synthesizer modules on the market, the R-57 has its reverb spring "tank" mounted directly on the front panel. The tank is fragile and must be treated with extra care, especially if the user decides to remove the protective cover and modify or scrape on the springs.

DAMAGE OR TUBE REPLACEMENT REQUIRING SERVICE:

The R-57 should be serviced by qualified service personnel when:

--The power supply has been damaged;

--The R-57 has been dropped, physically damaged, or subjected to force;

--Liquid has been spilled onto the R-57 or it has been exposed to rain;

--The R-57 does not appear to operate normally or exhibits a marked change in performance.

SERVICING: The user should not attempt to service the R-57. All servicing should be referred to qualified service personnel.

METASONIX LIMITED WARRANTY and standard legal disclaimer

Thank you for purchasing this Metasonix product. The following terms and conditions apply:

1. Warranty period is for ONE YEAR from date of purchase with proof of purchase submitted. Warranty covers electrical failure of vacuum tubes and gas-filled tubes, except in cases explained in 3 below.

2. Operating instructions must be followed. This device was intended **ONLY** for use by **AUDIO AND MUSIC PROFESSIONALS**.

IT IS NOT INTENDED FOR USE BY ORDINARY CONSUMERS!!

Product must not have been damaged as a result of defacement, misuse, abuse, neglect, accident, destruction or alteration of the serial number, improper electrical voltages or currents, repair, alteration or maintenance by any person or party other than our own service facility or an authorized service center, use or installation of non-Metasonix replacement parts in the product, or the use of this product outside of the U.S.A. or Canada (except as a product distributed by an authorized Metasonix dealer), or modification of the product in any way, or incorporation of the product into any other products, or damage to the product caused by accident, fire, floods, lightning, or acts of God, or any use violative of instructions furnished by Metasonix.

3. Obligations of Metasonix shall be limited to repair or replacement with same or similar unit, at our option. To obtain repairs under this warranty, present the product and proof of purchase (e.g. bill or invoice) to the authorized Metasonix service center, transportation charges prepaid. When returning the product for repair, please pack it very carefully, preferably using the original packaging materials. Please also include an explanatory note.

IMPORTANT:

To save yourself unnecessary cost and inconvenience, please check carefully that you have fully read and followed the instructions in this instruction manual.

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METASONIX shall not be held liable for any incidental, consequential, or direct damages or expenses associated with the use or misuse of its products. The audio output of this product is capable of damaging some types of solid-state audio equipment; such use is entirely at the risk of the user. METASONIX does not guarantee that any of its products are designed for any particular use or purpose. The entire risk of suitability and performance of this product lies with the user. Products manufactured and/or sold by METASONIX are not authorized for use as critical components in devices used in life support and other systems whose failure or performance could result in compromised safety or danger to life or property.

NOTE: All sales are FINAL, especially custom designs. Only a Metasonix authorized dealer is permitted to return products to Metasonix for a refund or exchange.

What it does:

The R-57 is a dual high-gain amplifier made with triode-pentodes. It is arranged so the screen grids of the pentodes can be effected with a control voltage, allowing each channel to be used as a conventional VCA, or as a voltage-variable distortion device. Additionally, channel 2 has an INVERT switch for its CV input, causing its gain to vary inversely from normal. By wiring the same signal to both inputs and the same CV to both CV inputs, the R-57 can then be used as a voltage-controlled stereo panner. Plus, each channel has enough gain to allow its use as a preamp, with up to 50+ dB of gain available.

Audio and CV inputs have 100k ohm impedance. The audio output is able to drive a 600-ohm load. The CV inputs may be anywhere in the -15v to +15v range, the effective range is -2v to +15v (variable by setting the CV TRIM control).



USAGE

The audio input has a considerable range of control with Input Level, so the R-57 can be fed with a low-line level audio signal, as low as a microphone or electric-guitar output, or with the very hot signals produced by most Euro synthesizer modules. Because our past users have repeatedly begged for “more gain”, the R-57 has copious gain. The user must be aware of the ease of overdriving the R-57 – it is intentional and can be controlled with the INPUT LEVEL control. If you hear unpleasant clipping sounds, and aren't looking for such effect intentionally, reduce the input level. By overdriving the input, tube distortion is added, then solid-state distortion effects, from subtle to extreme. The channels have so much gain, a hissing or whining noise in the output is possible if the input level isn't hot enough, in some circumstances. A “balancing act” may be needed for best results. By all means, use a power supply that is known to provide clean well-filtered DC.

When using an R-57 channel as a VCA for envelope control of a signal, the CV TRIM control must be set so that when the envelope is not triggered, there is no output signal; and when triggered, maximum possible volume is heard. INPUT LEVEL may be adjusted to suit the output level needed, or overdriven

for added tube distortion. Set the INVERT switch to the RIGHT when using channel 2 as a VCA.

When using a channel as a preamp, run the low-level signal into the input and adjust both INPUT LEVEL and CV TRIM for maximum gain, as needed.

If CV panning is desired, connect the suitable CVs to the two CV inputs and the same signal to both audio inputs, using a mult or Y-cable. Set the INVERT switch to the LEFT, and adjust the CV TRIM controls for the desired stereo pan effect.

MAINTENANCE

The R-57 requires a power supply producing +12v DC at 800-850 mA cold, and 300 mA after warmup. When first powered on, the R-57 briefly draws greater current, so be aware of this when using a power supply to run it plus other modules. You **MUST** assure the power supply is able to handle the R-57 load plus the load of other modules. We do not recommend the use of Tiptop microZeus or "Happy Ending" power supplies, due to their limited peak current capacity.

The tubes in the R-57 are being run VERY conservatively. They should last for tens of thousands of hours of normal use. Still, the R-57 produces a lot of waste heat, so we recommend shutting it off when not in use.

UNLESS YOU KNOW EXACTLY WHAT YOU ARE DOING, DO NOT REPLACE OR SUBSTITUTE THE TUBES YOURSELF!

Please note: not all tubes have easily visible heaters. They were not designed to offer pretty cosmetics. If you can't see a heater glowing, DO NOT assume that tube is bad. We get many foolish complaints of this type!

TUBE REPLACEMENT: despite their expected long lifetime, the tubes might be damaged or develop faulty internal wiring connections, requiring replacement. This particular R-57 was shipped, and wired for, two 12CT8 triode/pentodes. The R-57 can also accept type 7060 or 7258 tubes without modification, types which are much more difficult to find than 12CT8s. Do NOT attempt to substitute other tube types. 12CT8s are still quite easy to find and are available from distributors such as Radio Electric Supply (vacuumtubes.net) or Antique Electronic Supply (tubesandmore.com).

Note: this is an ADVANCED MODIFICATION and is NOT RECOMMENDED for inexperienced personnel. The R-57 can be rewired to accept 5AN8, 6AN8 or 8489 triode/pentodes, by cutting the traces going to the heater pins (4 and 5) and wiring those pins to a source of +5v power. This source will need to provide about 3.5 amps of cold current and up to 1.2 amps of operating current after warmup. This is NOT a trivial modification, and the assistance of Metasonix or a technician with experience in working with tube electronics is mandatory.

If you are confused or have ANY technical questions, feel free to contact us. Please DO NOT ASSUME and *if you are not an experienced technician*, DO NOT TRY RANDOM TUBES OR MODIFY THE CIRCUIT IN ANY WAY!

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495 N. Main #109, LAKEPORT CA 95453 USA
707-263-5343, synth@metasonix.com, www.metasonix.com