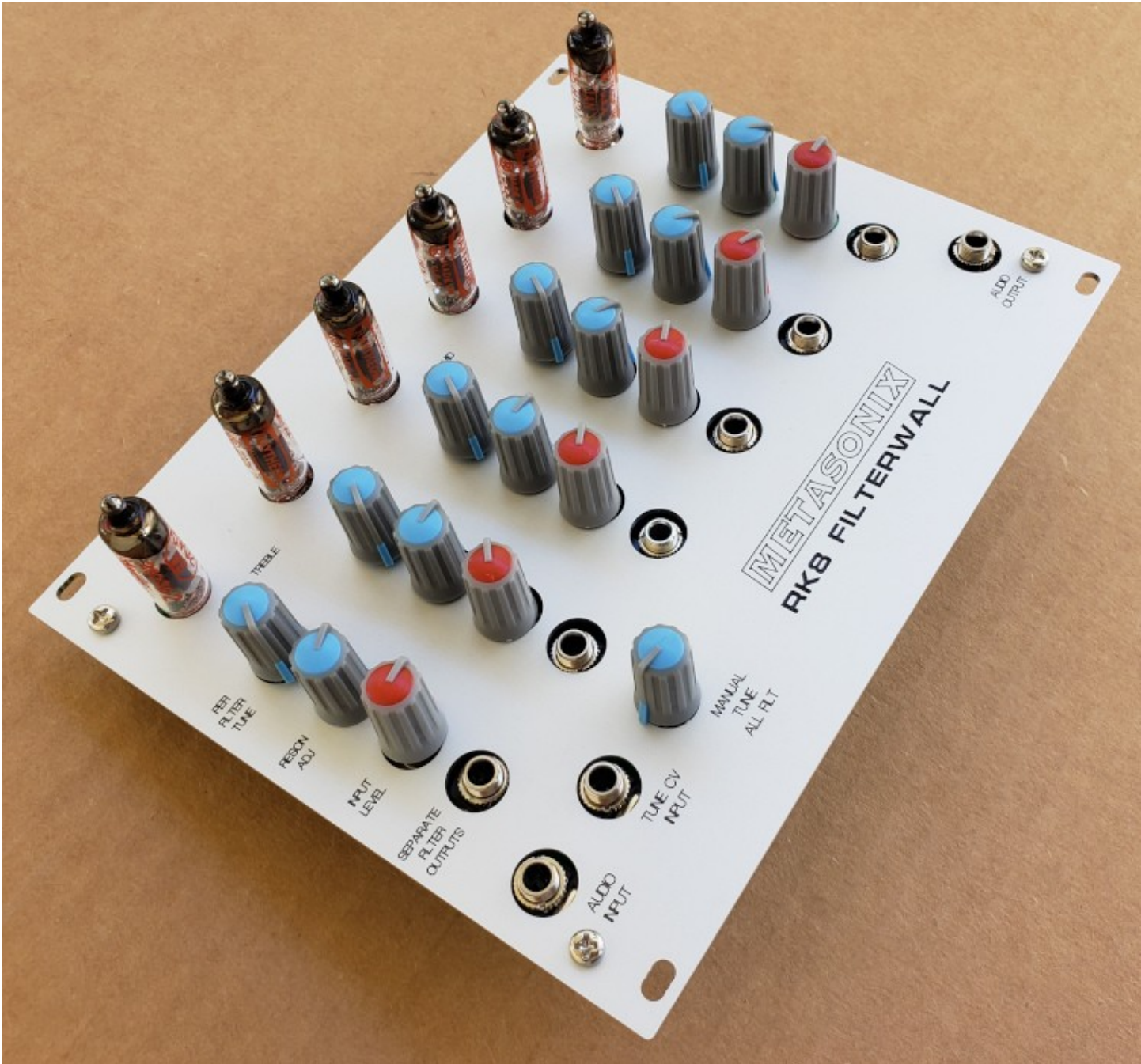


# METASONIX



## ***RK8 Filterwall***

owner's manual ver. 1.0

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**WARNING:**  
***this is an extremely abnormal product. If you purchased it expecting to get "moogy" or "conventional" filter sounds, you will be sorely disappointed.***

CAUTION: to reduce the risk of electrical shock, do not disassemble.

**DANGER! DANGER! HIGH VOLTAGE INSIDE.** There is a 48v dc supply internally. No user serviceable parts inside. Refer servicing to qualified service personnel.

**DETAILED SAFETY INSTRUCTIONS:**

All the safety and operation instructions must be read before the RK8 is operated. *If you don't read and HEED them, you are a MORON and you deserve to be raped by a 400-pound bronny.*

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

**HEED WARNINGS:** All warnings on the RK8 and in the operating instructions should be adhered to.

**FOLLOW INSTRUCTIONS:** All operating instructions should be followed.

**WATER AND MOISTURE:** The RK8 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., ya stupid bastard). Care should be taken so that liquids are not spilled onto or near the enclosure.

**VENTILATION AND COOLING:** The RK8 normally operates VERY warm to the touch. It MUST be situated so that its location or position does not interfere with convective cooling.

The RK8 MUST NOT be used on a bed, sofa rug or similar surface which may prevent proper cooling. It is NOT a toy, AND IT IS NOT A DILDO. If the RK8 is mounted in a rack or other built-in installation, space must be left around it to allow convection from the case.

**HEAT:** The RK8 MUST be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including power amps) that produce heat. We DO NOT recommend leaving the RK8 powered up for long periods.

**POWER SOURCE:** The RK8 should be connected to a Eurorack power supply of adequate capacity. It uses about 1400 mA on power-up and 600 mA after warming up fully from the +12v line. DO NOT attempt to use low cost power supplies.

**POWER CORD PROTECTION:** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them.

**CLEANING:** The RK8 should only be cleaned with a soft cloth moistened with water. Unplug the power supply before attempting to clean.

**NON-USE PERIODS:** The power supply of the RK8 should be unplugged from the outlet when left unused for a long period of time.

**DAMAGE OR TUBE REPLACEMENT REQUIRING SERVICE:**

The RK8 should be serviced by qualified service personnel when:

- The RK8 has been dropped, physically damaged, or subjected to force;
- Liquid has been spilled onto the RK8 or it has been exposed to rain;
- The RK8 does not appear to operate normally or exhibits a marked change in performance.

**SERVICING: The user MUST NOT attempt to service the RK8. All servicing must be referred to qualified service personnel.**

## **METASONIX LIMITED WARRANTY and standard legal disclaimer**

Thank you for purchasing this Metasonix product. And for not whining about “problems”. 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, 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. It is also not intended for use as a condom-warmer.

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.

This warranty is in lieu of all other expressed warranties, obligations or liabilities. ANY IMPLIED WARRANTIES, OBLIGATIONS, OR LIABILITIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED IN DURATION TO THE DURATION OF THIS WRITTEN LIMITED WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. IN NO EVENT SHALL WE BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY EXPRESS OR IMPLIED, WHATSOEVER. Some states do not allow the exclusion or limitation of special, incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

METASONIX shall not be held liable for any incidental, consequential, or direct damages or expenses associated with the use or misuse of the RK8. The audio output of the RK8 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. Don't perform anal surgery with a RK8, unless you like to abuse your mother.

**Did we mention the DANGEROUS HIGH VOLTAGES inside the RK8?**

**DO NOT OPEN THE RK8 unless you're a service technician.**

**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**

**WARNING: The RK8 is not intended to serve as a “general purpose” synthesizer filter. It is something you have NEVER seen before. It can NOT be compared to any other product, ever made, PERIOD. Do not walk into this with “preconceptions”.**

**Also, please do not power it up, experiment for a few minutes, and then quickly contact us, claiming it is “broken” or “bad”. Each new RK8 was tested at the**

factory very carefully and shipped with plenty of padding. Many of our past products were often returned with a warranty claim that they were “broken”. And most such “broken” units *turned out to be working perfectly*. We will *publicly mock* anyone who returns a working RK8 claiming it is “broken”.

The RK8 contains six bandpass filters, which use vacuum tubes. They are simple “twin T” designs. Each filter is about one octave lower in range than the one to the left—treble on the left, bass on the right.

Each filter may be manually swept with its own separate tuning knob, over approximately one and one-half octaves. Or ALL the filters may be swept together, using either the “MANUAL TUNE” knob, or the CV input, which overrides the knob when a patch cable is inserted. Although it is capable of some conventional swept-filter effects, the RK8 is more useful as a complex equalization system or for unique special effects.

Resonance is separately adjustable for each filter. Usually the treble filters will resonate strongly and oscillate under some settings. The bass filters might not. Inputs and outputs are compatible with all Eurorack and other modular synthesizer equipment. The output peak voltage is limited to the supply rails and can’t damage other modules.

Don’t assume you know what you are getting here—the RK8 is unlike anything else ever marketed. Also don’t expect it to track VCOs, its voltage-to-frequency curve is “more or less” hertz-per-volt but can’t really be guaranteed. The six vactrols in each RK8 were hand-matched, but can’t be expected to remain matched, or to track together perfectly.

Again, everything about the RK8 is abnormal. It is not perfectly “clean” and perfectly “distortionless”, and it cannot be made so. Because it uses vacuum tubes.

### **SUGGESTIONS FOR USE by Mike Weeks**

In inaccurately simple laymans terms - the RK8 functions as a 6 band “EQ” – run a signal into the input, with the input/tune/resonance knobs more or less at 12:00, and you will get a colored but somewhat “neutral” tone (hahahahaha). Each band can then be adjusted (volume/gain – center frequency and resonance) to shape the sound like an evil equalizer. Right is bass, left is treble, you know what to do.

**That alone is enough to give you incredible ability to make sounds and tones (even non-staccato sounds) come through as “punchier” and more harmonically aggressive. It’ll give your TikTok video soundtrack that extra push.**

**With that logic – you can run anything through it – drum loops, pads, leads, blah blah blah. Try any source material that is harmonically rich and get a feel for each band in isolation, then add/subtract bands for more complex filtering tonalities.**

**BUT things get REALLY interesting when you inject some CV sources into the CV input. The CV input controls ALL of the bands, so the relative position for each filter center frequency can be modified dramatically by the modulation source coming in, relative to the starting point. LFOs do what you’d expect them to, but noise sources or other modulation types (including audio rate oscillators) will get you going in unique directions as well. Using a complex waveform LFO will animate the RK8 in unique ways and add layers of complexity you would NOT be able to attain with a standard filter.**

**Through the prototyping phases, we determined adding individual CV control over each band was not worth the board space that didn’t exist, and sweeping all simultaneously gives a series of discrete emphasis effects across a wide range of frequencies that truly makes this device unique.**

**And if you have more modules than sense, the individual outs make this a DREAM for parallel processing of frequency bands. This is a drone composers wet dream – take each frequency band and input into various effects units: reverb, delay, further filters in series, or distortion, and take what was one signal and make it into a cascading wall of nightmares.**

**Another experimental possibility: The RK8 is not really intended for use as a vocoder though it could give VERY crude vocoder-like effects if one feeds either: the output of an envelope follower, or a vco on its low bass range and tracking a keyboard, into the CV input. It’s totally unique. There is literally no other device that does what this does, not in the modular world and not really anywhere in pro audio. A tube vocoder would be possible but horribly expensive. And LARGE.**

**Honestly, if we have to tell you how to do any more than this, you’ve clearly wasted your money and you should have stuck with software with presets.**

## **MAINTENANCE**

The tubes are being run conservatively, and should last for many, many, MANY years. You WILL NOT need a new set of tubes for a long time/never, if the RK8 is treated carefully and used in a conservative fashion. Do NOT rush around looking for spares immediately. Do NOT listen to guitar amp “tech gurus”. They know very little, and have never seen this circuit before.

All the tubes in the RK8 are 5702 subminiature pentodes. As of 2023 they were very easy to find on eBay. But you will probably never need replacements, unless you are clumsy and break one. The tubes are soldered into the board so soldering equipment is needed to replace any of them.

Please, we beg you, check with us BEFORE YOU DO SOMETHING STUPID. Thank you.

The tubes in the RK8 MUST be of the correct type, because their heaters are connected in a series-parallel arrangement. DO NOT MIX OR EXPERIMENT WITH THE WRONG TUBE TYPES. Do not do stupid things, or you will DAMAGE the RK8 and we will be angry at you.

**Use ONLY the Eurorack power supplies we recommend to power the RK8. Inexpensive ones will not work. Experiment at your own risk.**

### **Technical specs**

Audio output: 1000 ohm unbalanced, suitable to drive 600-ohm inputs, maximum level +20dBm.  
CV input: maximum range -5v to +10v DC. The CV will respond only to positive control voltages of about +1.5v to +5v. Usable sweep depends on settings of Tune controls. All controls may interact with unrelated controls slightly. Individual audio outputs for each filter may not be fully isolated from the other filters. CV is not fully isolated from the outputs. There may be hum, noise and crosstalk on all inputs and outputs -- *get used to it*. It's vacuum tubes, and tubes are *evil and unruly* little bastards.

Because there are six tubes, the RK8 draws considerable power from the +12v line: up to 1400 mA when powered on cold, and about 600 mA after warm-up. 12v power requirement is less than 10 mA. The RK8 contains its own plate supply generator to make +48v for the tubes. The inputs and outputs CANNOT damage other electronics, the output voltage swing is limited to +/-10 volts.

It's an extremely primitive filter thing, and if you don't like that, we can only say: *why did you buy the damned thing?* And then we will say, *send it back immediately*, we have plenty of other customers who want one. Don't care about your neuroses.

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(Oh, you want to FIX it? You say you want a SCHEMATIC?? Oh, that's PRICELESS. Contact us at METASONIX. 495 N. Main #109, Lakeport CA 95453, (707) 245-9162, [synth@metasonix.com](mailto:synth@metasonix.com) or [metasonix@gmail.com](mailto:metasonix@gmail.com). We'll arrange for repair, while refusing to give you a schematic. The circuit of this bastard thing is so INSANE, we didn't write it down anyway.)