

JX•42[™]

Guitar and Amp Switcher



User Guide

Radial Engineering Ltd.
1588 Kebet Way, Port Coquitlam
British Columbia, Canada, V3C 5M5
Tel: 604-942-1001 • Fax: 604-942-1010
Email: info@radialeng.com

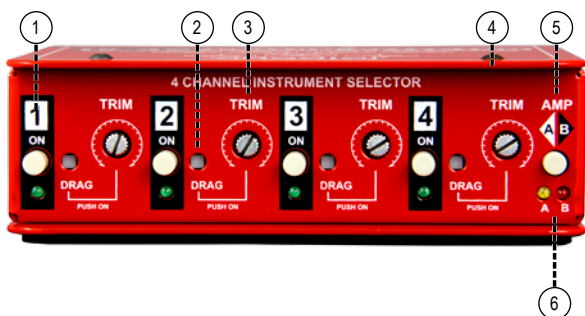
Radial® JX-42™ User Guide

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Thank you for purchasing the Radial JX-42 guitar and amp switcher. This compact device is designed to provide tons of connectivity options while being super easy to use. But as with all products, learning the ins-and-outs by reading the manual can save you a lot of time and optimize the way you approach to using it. Who knows... you may even find ways to improve upon your original setup concept and find a more streamlined approach to your needs.

If after you have read this short document you find yourself asking a question; please take a moment to visit the Radial JX-42 FAQ page as this is where we post questions and answers from users like yourself. If you still do not find what you are looking for, feel free to send us a note at info@radialeng.com and we will do our best to reply in short order.

Now get ready to start switching faster than a speeding bullet, quieter than a bat in flight and with the most natural tone you have 'never' heard.



FRONT PANEL FEATURES

- ON:** Activates the input channel. LED indicator lets you know which channel is active. Radio-style buttons only allow one input to be active at one time.
- TRIM / DRAG Switch:** Used to set the potentiometer function for either TRIM or DRAG (push in for DRAG).
- TRIM / DRAG ADJUST:** Potentiometer used to adjust the DRAG (load) on passive sources or TRIM (level) on active sources.
- BOOKEND DESIGN:** Inovative book-end design creates protective zone around switches, potentiometers and connectors.
- AB AMP:** Selector switch, lets you toggle between A or B amp outputs.
- AB LED:** Indicator to show which amp is selected.



Select
Ch.1

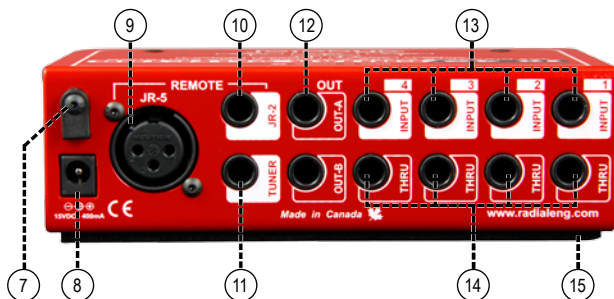
Select
Ch.2

Select
Ch.3

Select
Ch.4

JR-5 Remote:
Optional accessory
to select active
instrument input.

*Note: Mute will not affect
the JX-42. To mute the
output use JR-2.*



REAR PANEL FEATURES

7. **CABLE CLAMP:** Secures the power cable to prevent accidental disconnection.
8. **POWER:** 15VDC power connection for external power supply.
9. **REMOTE JR-5:** XLR for optional Radial JR-5 remote footswitch.
10. **REMOTE JR-2:** TRS 1/4" for optional Radial JR-2 remote footswitch.
11. **TUNER:** Dedicated tuner output is always on for quick adjustments. Separately buffered to reduce noise from the tuner's quartz clock.
12. **OUT AB:** Unbalanced outputs used to feed A or B guitar amps.
13. **INPUT:** Hi-Z 1/4" instruments input used to connect guitar, bass or wireless system to the JX-42.
14. **THRU:** Thru connections used to feed dedicated pedals, amplifier, rack effects or direct boxes.
15. **NO SLIP PAD:** Pad provides electrical insulation from the chassis and mechanical isolation from rough handling.



JR-2 Remote:
Optional accessory
for amp output.

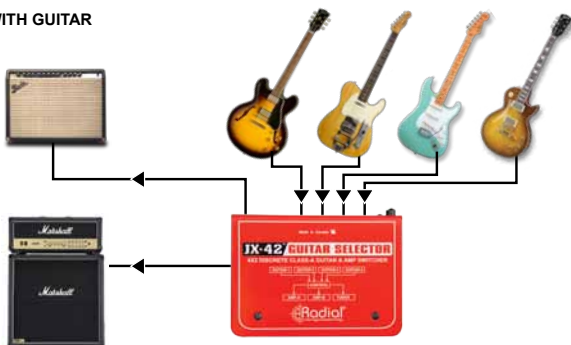
INTRODUCTION

The JX-42 is an unbalanced switcher designed to seamlessly switch between 4 guitars and 2 amps on a hectic concert stage. Every effort has been made to eliminate switches or controls that could either be cumbersome or get in the way. This switcher is all about efficiency and making sure the user stays out of trouble.

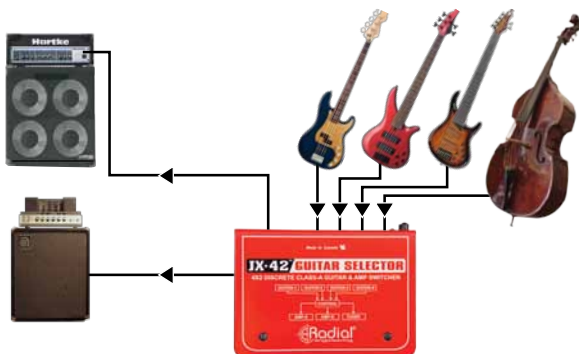
The four inputs are designed for guitar or bass but may also be used with other sources. Radio-style push button switches ensure only one input will be active at any one time. The outputs are also exclusive in that only one amp may be active at one time. The amps may be controlled using the front panel switch or via the optional JR-2 footswitch. When using the JR-2, a mute function becomes available that allows quiet on-stage tuning via a dedicated tuner output.

The compact design makes it easy to pack while enabling two JX-42's to be rack-mounted in a single 19" rack space (see page 12).

USE WITH GUITAR

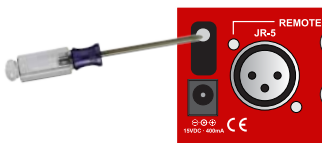


USE WITH BASS

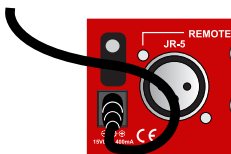


MAKING CONNECTIONS

As always, before making any electrical or audio connections, ensure all volume levels are turned down or systems turned off. This prevents turn-on or connection transients from damaging more sensitive components such as tweeters. A handy cable clamp is provided that can be used to secure the power supply if needed. Simply loosen with a hex key, slip the power supply cable into the cavity and tighten. There is no power switch. As soon as you plug in the JX-42 it will come to life.



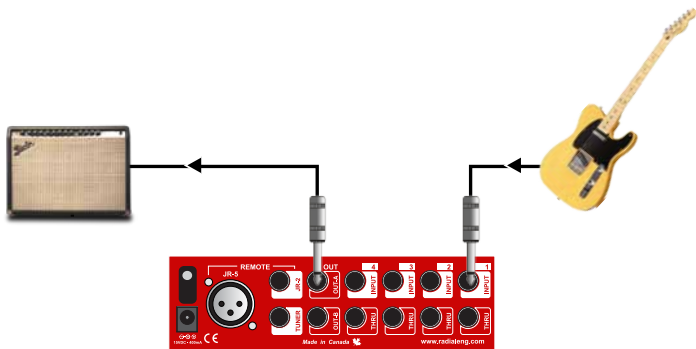
Use a hex driver to loosen the cable lock.



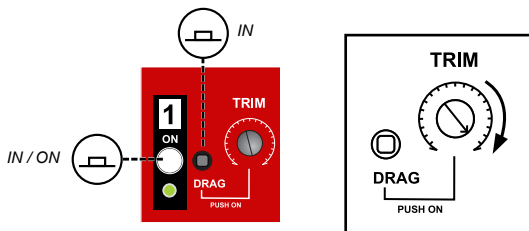
Pass the cable through and re-tighten.

As high impedance circuits are prone to noise, we recommend using high quality coaxial cables with sturdy metal connectors. It is also worth noting that shorter cables will be less prone to noise versus longer ones and when you exceed 8 meters (25'), the capacitive effect of the cable will begin to be audible.

When testing, start by connecting 1 guitar and 1 amp without any pedals. This keeps things simple and avoids lengthily trouble shooting. Connect your guitar into the JX-42 input-1 and the output-A from the JX-42 to your guitar amp. Check to make sure the power supply is properly connected. One of the front panel LEDs will illuminate to let you know if you are good to go. Using the front panel switch, select input-1 and output-A



Be sure to set all of the DRAG / TRIM switches in the in (DRAG) position and potentiometers turned are fully clockwise (5 o'clock). Make sure input-1 is active and output A is on. Turn on your amp and slowly increase the volume. Once satisfied that things are working as they should, add a second guitar by connecting it to input-2. Toggle between them using the front panel selector switches.

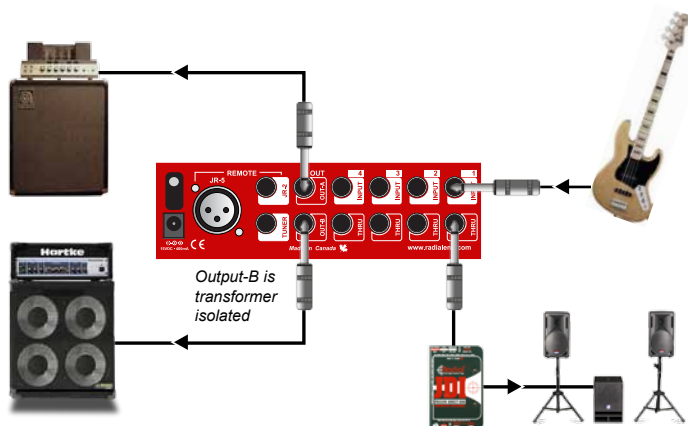


You can now add a second amp by connecting it from output-B. Use the front panel selector switch to toggle between your amps. Output-B on the JX-42 is transformer isolated in order to prevent hum and buzz caused by ground loops.

CAUTION: For safety, always ensure your guitar amplifiers are properly grounded following your local electrical code. Never remove the electrical ground. It is there to save your life!

It is good practice to connect all your amps and pedals using a common power bar. This helps reduce noise while ensuring all of your equipment is sharing a single common electrical ground.

There is also a THRU output on each channel. This non-buffered output allows you to take a signal direct from the instrument to feed a specific guitar amp, direct box or maybe an effects processor.



USING THE DRAG AND TRIM CONTROLS

One of the innovative features found on the JX-42 is the combination DRAG and TRIM control. This 'trick' is done using a dual wafer potentiometer with one wafer dedicated for the Drag function, the other for Trim. You merely select between the two functions using the recessed 'set & forget' switch.



Adjusting the Trim Control

When combining non-buffered signals such as a typical passive Fender® bass with a buffered source such as an active Yamaha® bass or wireless system, you will find that the signals can vary significantly. You can convert the DRAG control to a TRIM by simply pushing the recessed switch outward. To adjust the trim, set the potentiometers fully clockwise to 5 o'clock. Once all of the instruments are connected, compare them by switching between one another. For those that are loudest, simply reduce the level to suit.

Adjusting the Drag Control

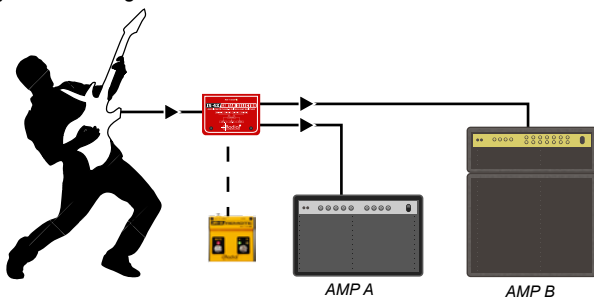
A common complaint from guitarists is the way that buffers alter the tone of their instrument. This is most commonly heard from players that employ wireless systems. Part of the problem is manufacturers have followed Leo Fender's lead by employing the same 1MΩ input that Fender® used on his tube amps. Early on, we discovered that a 1MΩ input sounds very different when used with a solid-state circuit and is likely one of the reasons guitarists still prefer the warmth of a tube amp over the solid state counterpart.

Drag™ control is a load correction circuit that lets you adjust the load or the impedance that is applied to the incoming source. Drag control only works on passive devices such as magnetic pickups. If the signal is buffered, the control will have little or no effect on the tone. Active basses or acoustic guitars with built in preamps and electronic keyboards are examples of buffered sources. Drag essentially replicates the 'tone and feel' as if connected to a tube amp, producing a warmer, more natural tone. Start by setting the Drag control to 12 o'clock. As you turn the control clockwise, it will sound brighter, when turned counter-clockwise, darker. Simply adjust to suit.

SWITCHING AMPS

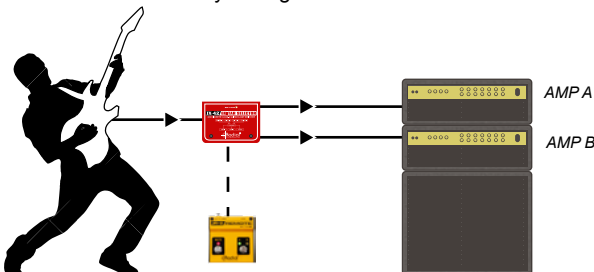
Two amp setup for soloing

There are two primary reasons for switching amps on stage. The most common is for artists that want to radically change their tone such as going from a clean 'Fender®' to a distorted 'Marshall®' to add crunch or maybe for soloing.



Two amp setup for backup

The second is to provide the artist on stage with a backup. Should one amp fail, the technician can quickly select the backup amp without having to reconnect wires half way through a show.

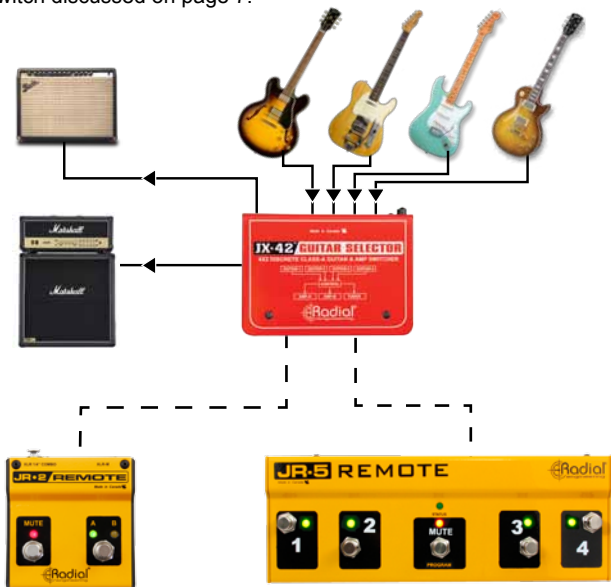


Switching between amps may be done by either using the front panel AB selector switch or by adding the JR-2 remote control footswitch. To eliminate hum and buzz caused by ground loops output B is transformer isolated. It is important to note that only one amp can be active at any one time.

Switching channels may also be done using the optional JR-2 remote footswitch (part no. R800 2090). This compact device features two footswitches: the first is an AB SELECT switch with two LED status indicators and the second a MUTE with another LED. The LEDs are remotely powered via the 1/4" TRS remote connection on the JX-42 thus eliminating the need for batteries. With a JR-2, you can use either a 1/4" TRS to TRS or a TRS to XLR-F cable. To switch channels, make sure the JR-2 is connected properly. One of the LED indicators will illuminate to let you know if power is being received. Simply depress the footswitch to select the active amp.

SWITCHING GUITARS

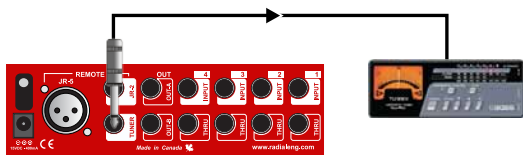
You can also select guitars using the optional JR-5 remote footswitch (part no. R800 6600) by connecting it to the JX-42 using a standard XLR cable. This lets you remotely select the inputs, allowing a stage tech to select the active channel back stage while the JX-42 can be stationed near the on stage amps. This has LED indicators that are powered by the JX-42 to give you instant status notification. Note that the middle mute footswitch on the JR-5 is not active when used with the JX-42. This is because the mute is controlled using the optional JR-2 amp selector footswitch discussed on page 7.



JR-2 Selects Amp

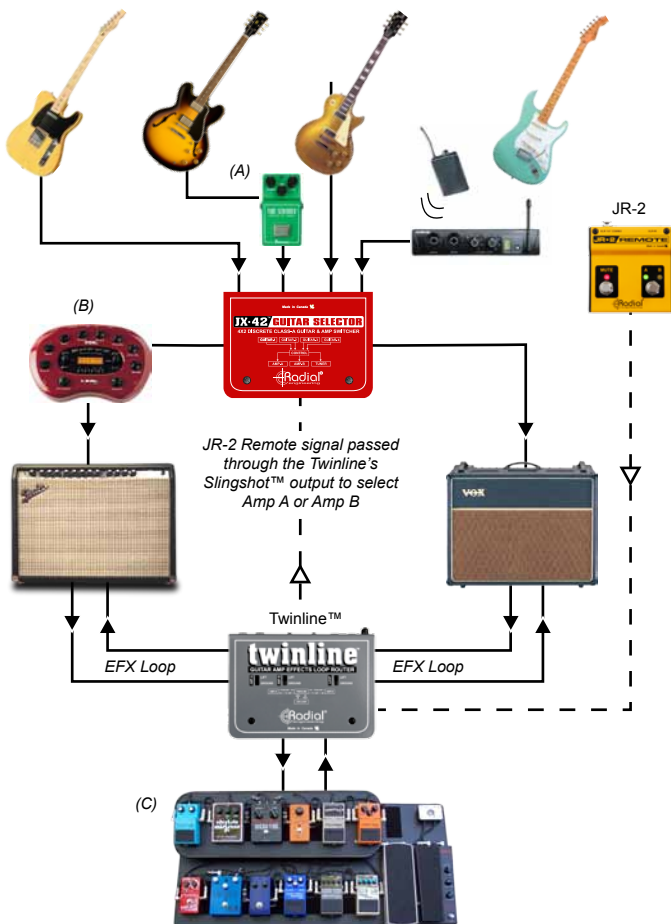
JR-5 Selects Instrument Input

As an added bonus, there is a dedicated TUNER out on the rear panel. This separately buffered output is always on to allow quick on-the fly adjustments. You can use the JR-2 footswitch to mute the signal for quiet on-stage tuning. When selected, the LED will illuminate and it will mute both the A and B amp outputs.



USING EFFECTS

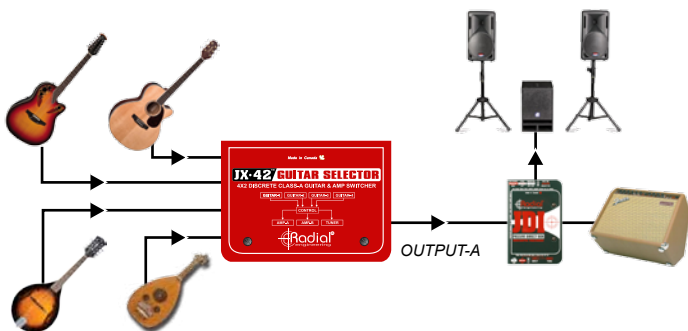
There are a number of ways that you can use guitar pedals or rack effects with the JX-42. These can be positioned in between a particular guitar - before the JX-42 (A), either of the output A or B outputs (B) or share a pedal board using your amps effects loop with the Twinline™ (C).



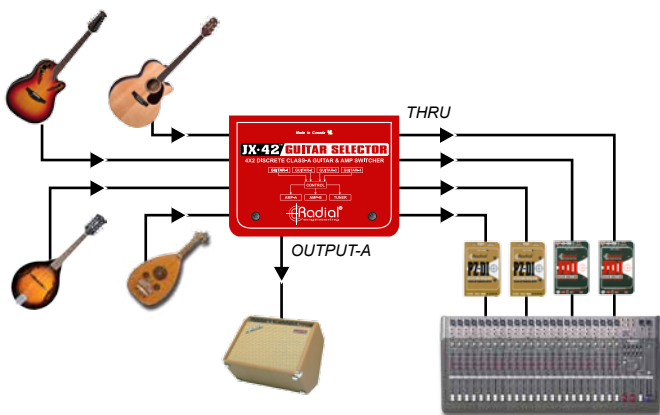
USING WITH MULTIPLE INSTRUMENTS

The JX-42 is a valuable tool that can be used for all kinds of instruments alongside guitar and bass. Since each input is buffered, has a variable load or can be trimmed so that the all of the instruments connected will have the same output, it is easy to incorporate the JX-42 into just about any multi-instrument setup. When using similar instruments such as mandolins, banjos and fiddles, one can easily connect a direct box like the Radial JDI at the AMP output to feed a PA system and share a single channel. Alternatively you can choose your ideal direct box for each instrument by using the THRU on each channel.

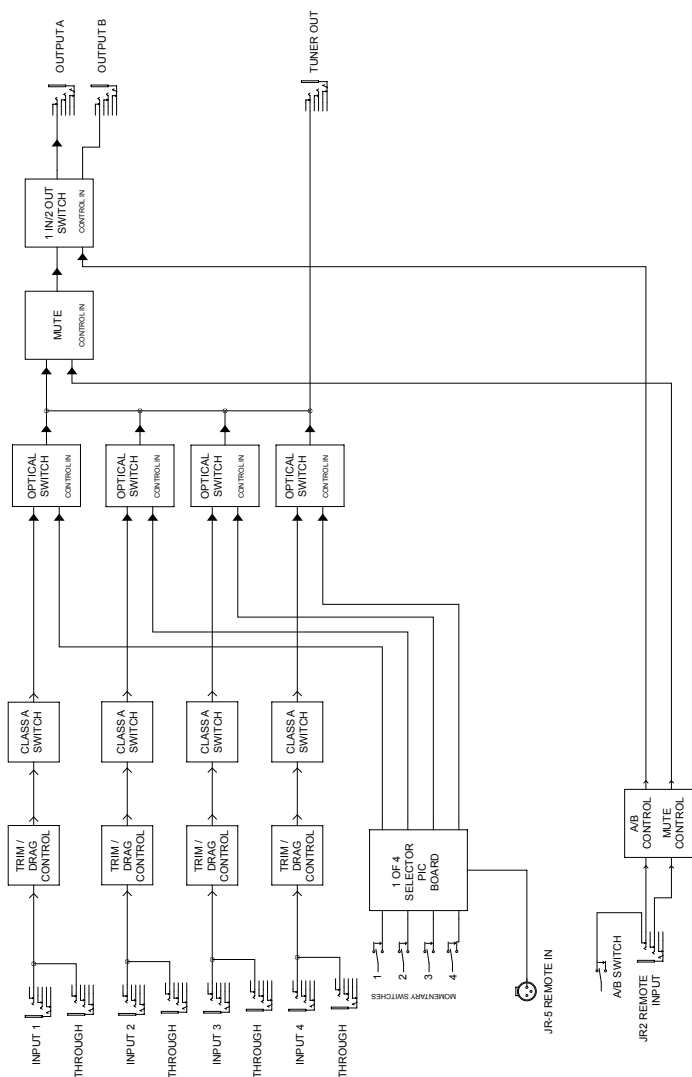
Single DI Setup



Multiple DI Setup



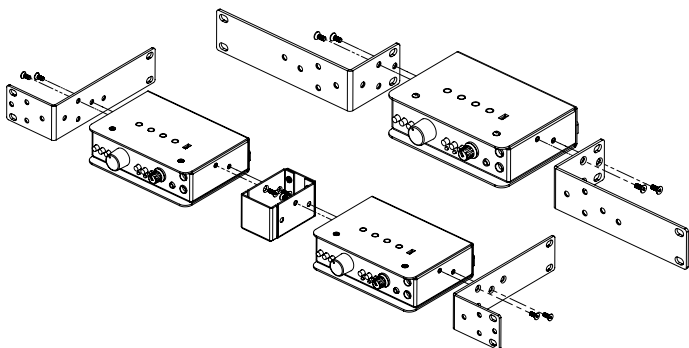
BLOCK DIAGRAM*



* Subject to change without notice.

RACK MOUNTING

You may also special order a rack mount kit (part no. R800 9420 10) for the JX-42 that lets you mount one or two JX-42's into a single 19" rack space. This is particularly handy for touring musicians that need to have their switcher nearby their amps or for technicians that require strategically positioned amp setups.



SPECIFICATIONS*

| | |
|------------------------------|--|
| Audio circuit type: | Class-A BiFET buffering amplifier |
| Dynamic range: | 112dB |
| Gain - Input to all outputs: | -1.5dB |
| Equivalent input noise: | -103dB |
| Intermodulation distortion: | 0.04% |
| Maximum input: | +11dBu |
| Total harmonic distortion: | 0.002% @ -20dBu |
| Input impedance: | Drag Control - Variable from 22K to 500K |
| Output impedance: | 1000Ω |
| Phase Deviation: | 5° @ 50Hz |

Features

| | |
|---------------------|--|
| Controls: | Dual function Trim or Drag Control |
| Switches: | Input select, Trim/Drag, Amp A/B select |
| Input connections: | 1/4" inputs and thru-puts for each channel |
| Output connections: | A/B Amp outputs, Tuner Output |
| Remote controls: | Slingshot contact closure in/out |

General

| | |
|-------------------|--------------------------------------|
| Construction: | 14 gauge steel chassis & outer shell |
| Finish: | Durable powder coat |
| Size: (W x H x D) | 4.5" x 2" x 6" (114 x 57 x 147mm) |
| Weight: | 2.8lbs (1.3Kg) |
| Power: | 15V 400mA Power Adapter |
| Warranty: | Radial 3-year, transferable |

* Subject to change without notice.

THREE YEAR TRANSFERABLE LIMITED WARRANTY

RADIAL ENGINEERING LTD. ("Radial") warrants this product to be free from defects in material and workmanship and will remedy any such defects free of charge according to the terms of this warranty. Radial will repair or replace (at its option) any defective component(s) of this product (excluding finish and wear and tear on components under normal use) for a period of three (3) years from the original date of purchase. In the event that a particular product is no longer available, Radial reserves the right to replace the product with a similar product of equal or greater value. In the unlikely event that a defect is uncovered, please call 604-942-1001 or email service@radialeng.com to obtain a RA number (Return Authorization number) before the 3 year warranty period expires. The product must be returned prepaid in the original shipping container (or equivalent) to Radial or to an authorized Radial repair centre and you must assume the risk of loss or damage. A copy of the original invoice showing date of purchase and the dealer name must accompany any request for work to be performed under this limited and transferable warranty. This warranty shall not apply if the product has been damaged due to abuse, misuse, misapplication, accident or as a result of service or modification by any other than an authorized Radial repair center.

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Made in Canada 

www.radialeng.com

Radial Engineering Ltd.

1588 Kebet Way, Port Coquitlam, British Columbia, V3C 5M5

Tel: 604-942-1001 • Fax: 604-942-1010 • Email: info@radialeng.com

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