

HIGHLINE

PASSIVE LINE ISOLATOR



User Guide

Radial Engineering Ltd.
1165-1845 Kingsway Ave, Port Coquitlam
British Columbia, Canada, V3C 0H3
Tel: 604-942-1001 • www.radialeng.com
Email: info@radialeng.com

Radial® Highline User Guide

Table of Contents	Page
Overview.....	1
Features	2
Getting Started	3
Making Connections	3-4
The Lift Switch	4
The Sum Switch	5
Specifications	6
Warranty	Back cover

Thank you for purchasing the Radial Highline, a passive line isolator designed to seamlessly connect guitar and amp modelers with PA and recording systems. The Highline features a premium Jensen transformer for exceptional audio quality, along with the same ruggedness you would expect from any Radial product, so you can rely on it to faithfully deliver your tone night after night.

We recommend you take a few minutes to read this short manual before you begin using the Highline, as it covers the various features of the device and tips for setup and use. Should you have any questions about the Highline or any other Radial devices, please visit our website at www.radialeng.com for additional resources and frequently asked questions.

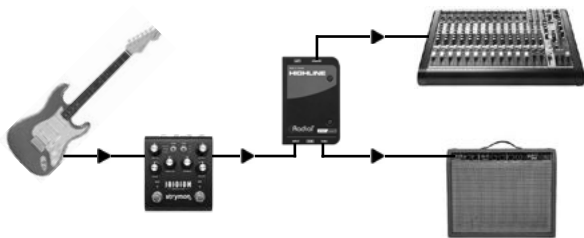
OVERVIEW

Amp and cab simulators are more popular than ever, and with good reason: they can produce a wide variety of amp tones that sound as good as a well-mic'd amp in a studio, they provide a consistent sound at every venue and, best of all, fit right on a pedalboard and eliminate the need to lug a heavy amplifier to a gig.

Guitarists and bassists who use these devices have a unique set of problems: While amp simulators can produce line-level outputs, they often still use 1/4" unbalanced connectors that won't support long cable runs without degrading the tone of the instrument, and they are particularly susceptible to noise from ground loops when connected directly to the PA. Some are even vulnerable to damage from 48V phantom power, should it be accidentally engaged at the PA mixer.

The Highline is a line isolator designed to specifically address these issues and seamlessly interface any amp simulator with a PA system. The Highline employs a premium Jensen 1:1 transformer, which retains the full volume level from the pedalboard to the PA and also provides galvanic isolation that eliminates ground loop noise for a clean and noise-free signal. The output of the Highline is a balanced signal for long cable runs to the PA, and the device blocks phantom power so it never reaches your pedalboard.

The Highline combines the features today's guitar and bass players need, along with the quality and durability that all Radial Engineering products provide. Housed in steel metalwork with ruggedized connectors and switches, the Highline is built for reliable performance over years of use. The industry-leading Jensen transformer inside retains the original tone of the pedalboard as much as possible, with minimal phase shift, distortion, or coloration, all while providing the full output of the pedalboard to the PA for optimal gain staging.



Connecting your amp modeler to the PA with the Highline

FEATURES



1. **INPUT:** 1/4" input jack to connect to the balanced or unbalanced outputs from amp simulators & guitar pedals.
2. **SUM:** Turns the Input and Thru jacks into a passive mixer to sum stereo sources down to mono.
3. **THRU:** 1/4" output to feed a stage amplifier. Can also be used as a second input if using a stereo source device.



4. **OUTPUT:** XLR output provides a balanced & isolated signal for feeding the input of a mixer.
5. **LIFT:** Ground lift switch eliminates hum and buzz from ground loops.

GETTING STARTED

The Highline is completely passive, meaning it doesn't require any power to operate. As soon as you've made your connections it will be ready for use.

The Input and Thru connectors are designed for use with standard ¼" TS instrument cables – we recommend keeping your cable lengths as short as possible to minimize the possibility of introducing noise into your audio signal.

If your source device is equipped with a balanced output, as some amp modelers are, you can use a cable or adaptor with a ¼" TRS balanced connector to feed the input of the Highline. Using a balanced TRS cable between your amp modeler and the Highline will provide more protection against noise and interference, but if your cable lengths are kept short then the additional benefits will be minimal.

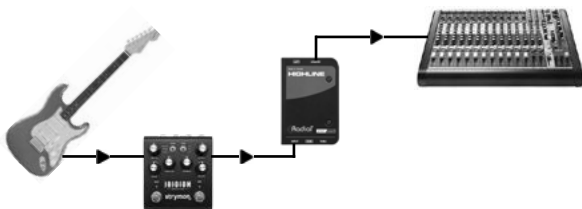
The output of the Highline uses a standard XLR connector, which allows you to feed the front of house mixer using a balanced XLR cable that can be up to 300 feet in length without any signal degradation.



The Highline ships with a neoprene pad that can be affixed to the bottom of the unit to prevent it from sliding around. To attach, simply peel off the plastic backing and place it on the bottom of the Highline, making sure to line up the holes in the pad with the screws on the chassis. If you plan on mounting the Highline on a pedalboard using velcro or another mounting system, leave the neoprene pad unattached.

MAKING CONNECTIONS

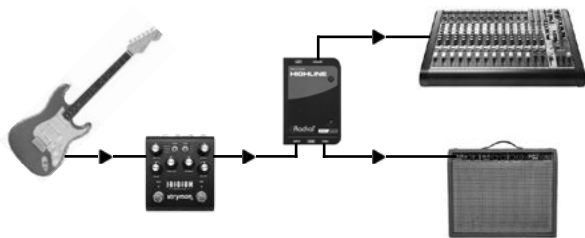
The simplest Highline setup will look something like this: Connect the output of your amp modeler to the Input of the Highline, and then take the output of the Highline directly to a channel on the front of house mixer for playback.



Connecting your amp modeler to the PA

The Highline will deliver your tone to the mixer without any signal loss or change in tone, while the transformer on board will isolate your pedalboard from the PA in order to reduce the chance of ground loop noise and protect your gear against 48V phantom power from the mixer.

The Thru output on the Highline is designed to feed a guitar amplifier, should you need to have one on stage for local monitoring or if you want to plug into an amp when practicing at home.



Adding an amplifier to the Thru output

THE GROUND LIFT SWITCH

The Lift switch on the Highline helps to eliminate buzz and hum that is often caused by ground loops. When this switch is engaged, it disconnects the audio ground path at the XLR output.

The Jensen transformer inside the Highline will eliminate the vast majority of ground loops, but, in some cases, the Lift switch can provide further assistance with this issue.



The Lift switch

There is no right or wrong setting for this switch: once you've made your connections to the Highline you can toggle this switch and leave it in the position that results in the least amount of noise coming through the PA system.

THE SUM SWITCH

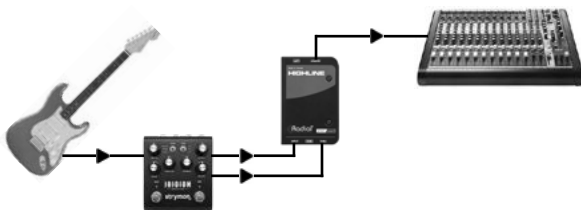
While the Highline is a mono output device, it can accept two input signals and sum them together. This gives you the ability to connect the left and right outputs of a stereo amp modeler to the Highline and have them both feed equally into the single output to the PA.

Engaging the Sum switch on the Highline reconfigures the Thru jack so it becomes a second input connection, and it brings a passive resistive mixing circuit into the signal path.

Once the switch is engaged, you can connect the second output from your source device to the Thru jack using a 1/4" TS or TRS cable.



The Sum switch



Summing a stereo signal to mono with the Highline

SPECIFICATIONS*

Audio circuit type:	Passive, transformer based
Transformer:	JT-11-YMPC
Number of channels:	Single channel (mono)
Frequency response:	20Hz - 20kHz (±0.05dB)
Signal to noise ratio:	110dB
Total harmonic distortion + noise:	<0.03% from 20Hz - 20kHz @ -10dBV, <0.0002% @ 1kHz @ -10dBV
Phase deviation:	±0.3° from 20Hz - 20kHz @ -10dBV

Features

Ground Lift, Input + Thru Sum

General

Construction:	14 gauge steel Outer Shell & 16 gauge Chassis
Finish:	Durable Powder Coat
Size (L x W x D):	4.25" x 2.75" x 1.75" (108mm x 70mm x 44mm)
Weight:	1.01lbs (0.496kg)
Power:	Passive, no power required
Conditions:	For use in dry locations only between 5°C and 40°C
Warranty:	Radial 3-year, transferable

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 an 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.

THERE ARE NO EXPRESSED WARRANTIES OTHER THAN THOSE ON THE FACE HEREOF AND DESCRIBED ABOVE. NO WARRANTIES WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL EXTEND BEYOND THE RESPECTIVE WARRANTY PERIOD DESCRIBED ABOVE OF THREE YEARS. RADIAL SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSS ARISING FROM THE USE OF THIS PRODUCT. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH MAY VARY DEPENDING ON WHERE YOU LIVE AND WHERE THE PRODUCT WAS PURCHASED.

To meet the requirements of California Proposition 65, it is our responsibility to inform you of the following:

WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Please take proper care when handling and consult local government regulations before discarding.



Made in Canada 

www.radialeng.com

Radial Engineering Ltd.

1165-1845 Kingsway Ave, Port Coquitlam, British Columbia, V3C 0H3

Tel: 604-942-1001 • www.radialeng.com • info@radialeng.com

Radial® Highline User Guide - V1.0, 01-2025 - R870 1277 00
Copyright 2025 Radial Engineering Ltd. All rights reserved.
Specifications and appearance subject to change without notice.

