www.radialeng.com

TrueToYourMusic

# SGI Stereo

## Stereo Instrument Line Driver

# 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® SGI Stereo User Guide

**Table of Contents** **Page**

Overview....1
Features .... 2-3
Making Connections....4
Powering the SGI TX....4
Using the Ground Lift and 180° Switches....5
Using the Thru Outputs ....6
Specifications ....7
Warranty ....Back cover

---

Thank you for purchasing the Radial SGI Stereo, an instrument line driver designed to feed guitar signals across long distances using standard Ethernet cables.

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

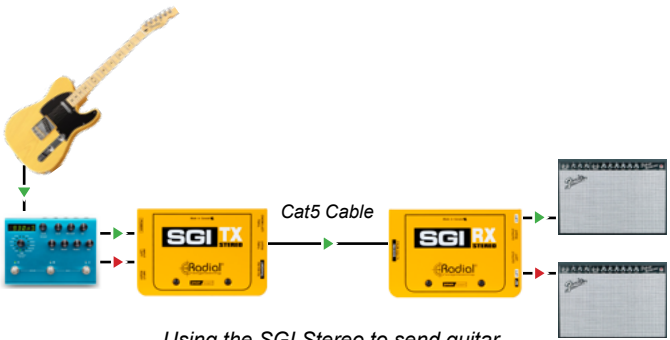
## OVERVIEW

The Radial SGI Stereo allows guitar players with stereo setups to connect to dual amplifiers in a remote location, such as an amp room in a studio or across a large stage.

The SGI Stereo system is comprised of two units: the SGI TX (transmitter) and the SGI RX (receiver). The SGI TX typically sits at the end of a guitar pedalboard, connecting to the last pedal in your effects chain via left and right ¼" instrument cables. The SGI RX lives next to your amplifiers and can be placed hundreds of feet away, depending on the size of the venue or the studio you are working in. Both units utilize premium Jensen transformers, which ensure your signal is free from noise, while preserving the original tone from your pedalboard, no matter how far you send the signal.

The SGI Stereo uses standard Cat5 Ethernet cables to connect between the TX and RX units, allowing you to use lightweight, economical cabling. It also means that the SGI Stereo can take advantage of existing building infrastructure to feed signals between different rooms, as many buildings have Ethernet cabling already wired throughout the walls. Rugged Neutrik etherCON connectors can also be used with both units to prevent against accidental disconnection during a live show.

Engineered with Radial's signature road-ready construction and industry-leading Jensen transformers, the SGI Stereo makes it easy to deliver audio cleanly across long distances without any alteration to the original tone of the instrument.




*Using the SGI Stereo to send guitar signals over long distances*

## FEATURES - SGI STEREO TX

1. **POWER LED:** Illuminates when the SGI Stereo TX is active and connected to power.

2. **POWER:** Connection for the included 15VDC power supply. The SGI Stereo is also compatible with pedalboard power supplies ranging from 9V to 18V.

3. **CABLE CLAMP:** Prevents accidental disconnection from the power supply.

4. **INPUTS:** ¼" jacks for connection to instruments or stereo effects pedals.

5. **TRANSMIT:** RJ45 Ethernet connector transmits a balanced stereo signal to the SGI Stereo RX unit. Compatible with Neutrik etherCON locking connectors.

6. **THRU:** ¼" output jacks for feeding unbalanced signals to local amplifiers or a direct box. If the Right Thru is left disconnected, both the left and right channels will be summed together on the Left Thru output.

## FEATURES - SGI STEREO RX

7. **RECEIVE:** RJ45 Ethernet connector receives balanced signals from the SGI Stereo TX. Compatible with Neutrik etherCON locking connectors.

8. **180°:** Polarity reverse switch for the Left Output. Can be used to correct signal cancellation for amplifiers that are wired out of phase with one another.

9. **GROUND LIFT:** Reduces ground loop hum by disconnecting the audio ground path on the corresponding channel. Individual ground lift switches are provided for the left and right channels.

10. **OUTPUTS:** ¼" jacks used to feed unbalanced instrument signals to guitar amplifiers or effects pedals.

## MAKING CONNECTIONS

The SGI Stereo utilizes standard ¼" unbalanced instrument connections for the main inputs and outputs, so you can easily connect your pedalboard to the SGI TX while also feeding the outputs on either unit directly to a pair of guitar amplifiers.

The connection between the SGI TX and the RX is made with a Cat5 Ethernet cable, which can be easily sourced from audio retailers or electronics stores. While this cable type is often used for transmitting data, the SGI Stereo uses it to send analog audio signals over the four twisted pairs of conductors inside the cable. We recommend using shielded Cat5 cables when possible for greater noise rejection.

*A typical Cat5 RJ45 connector and cable showing the four twisted pairs*

The SGI Stereo also supports the use of a ruggedized and lockable RJ45 connector type known as an etherCON connector, which features a metal shell that surrounds and protects the RJ45 plug, and prevents against accidental disconnection.

*The SGI Stereo RX RJ45 connector*

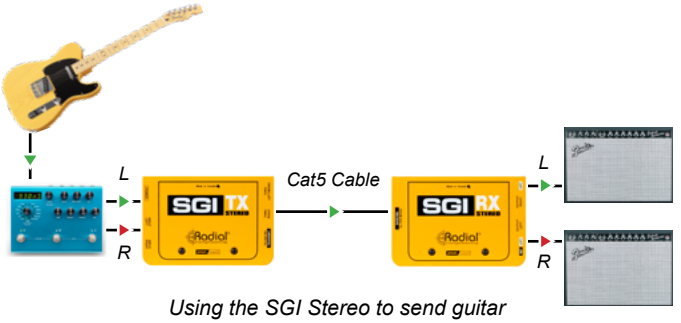
*A Neutrik etherCON connector*

## POWERING THE SGI STEREO TX

The SGI Stereo TX unit requires power to operate. Simply connect it to the included 15VDC power supply, and the green LED will illuminate to indicate that it is active and ready to use. Should you wish to incorporate the SGI TX onto your pedalboard and utilize a different power supply, you can use any supply from 9V to 18V, with either center pin positive or center pin negative polarity.

The SGI Stereo RX unit is completely passive and requires no power to operate.

A typical setup would see the SGI TX placed at the end of a pedalboard, with the last effects pedal in the signal chain feeding the left and right ¼" inputs. You can use a Cat5 cable of up to 300 feet in length to connect from the SGI TX to the RX unit, which would then feed your two guitar amps using short instrument cables.




*Using the SGI Stereo to send guitar signals over long distances*

## USING THE GROUND LIFT AND 180° SWITCHES

The SGI RX has three additional switches that can be employed to correct certain issues that might arise once you've completed your SGI Stereo setup. Ground lift switches are included for each individual output to help reduce buzz and hum from ground loops.

*The SGI RX output section*

Both SGI Stereo units employ Jensen transformers, which provide isolation that usually prevents ground loops from occurring, but should you run into additional noise, try toggling the ground lift switches and leave them in the position that results in the least noise.

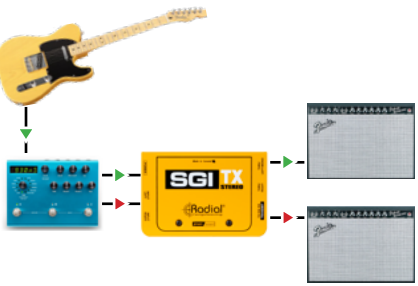
Similarly, the 180° switch reverses the polarity of the left output channel on the SGI RX. This can correct for phase cancellation that might occur if the two amplifiers are wired out of phase with one another. Again, simply toggle this switch as necessary and leave it in the position that results in the fullest sound when playing through both amplifiers.

## USING THE THRU OUTPUTS ON THE SGI TX

The SGI Stereo TX features two additional unbalanced ¼" outputs, which allow you to connect to local amplifiers as needed. This eliminates the need to unplug from the SGI TX should you wish to connect to amps nearby when practicing at home, or during gigs where you can place the amps close to your pedalboard.

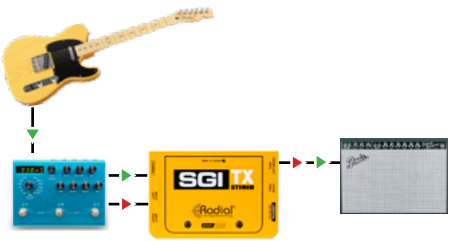
*The SGI TX Thru Outputs*

Use ¼" TS instrument cables to connect the left and right outputs to two amps as needed.




*Using the SGI Stereo TX to feed local amplifiers when the RX isn't needed*

If you only want to use a single amp, connect the Left Thru output to that amp and leave the Right Thru output disconnected - the SGI TX will automatically sum both channels to the Left Thru so you can hear your full signal.




*Using the SGI Stereo TX to feed both channel to a single amplifier*

## SPECIFICATIONS*

Frequency Response: .....20Hz - 18kHz, ±1dB
Total Harmonic Distortion: .....<0.0052% @ -20dBu, 1kHz, 22Hz - 22kHz
Total Harmonic Distortion + Noise: .....<0.0056% @ -20dBu, 1kHz, 22Hz - 22kHz
Intermodulation Distortion: .....<0.024% 60Hz/7kHz, 4:1, +4dBu
Signal to Noise Ratio: .....>91dB re -20dBu, 1kHz
Dynamic Range: .....>103.4dB @ -20dBV, 20kHz BW
Input Impedance: .....200kΩ
Output Impedance: .....1.3kΩ
Crosstalk: .....<-32.7dB @ -20dBu, 10kHz
Maximum Input: .....>8.28dBu @ 1% THD+N, 1kHz, unbalanced

**Features**

Input / Output Connectors .....6x ¼" TS, 2x etherCON locking RJ45
180° Switch (RX Only): .....Reverses Polarity on Left output
Ground Lift Switches (RX Only): .....Disconnects Pin-1 on associated ¼" jack
Power (TX Only): .....±9-18VDC compatible (ships with 15VDC)

**General**

Construction: .....14-gauge Steel Chassis
Finish: .....Durable Powder Coat
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 support@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 center 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.

Radial® engineering

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® SGI Stereo User Guide - Part #: R870 2021 00 / 01-2026
Copyright 2026 Radial Engineering Ltd. All rights reserved.
Specifications and appearance subject to change without notice.

RoHS 2002 / 95 / EC