



Radial engineering Relay Xo Active Balanced Remote Output AB Switcher User Guide

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True to the Music
Relay Xo Active Balanced Remote Output AB Switcher
User Guide



USER GUIDE

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OVERVIEW

Thank you for purchasing the Radial Relay Xo, a simple yet effective switching device designed to toggle a microphone or other balanced audio signal between two channels on a PA system. As with all products, getting to know the feature set is essential if you intend to get the most out of the Relay.

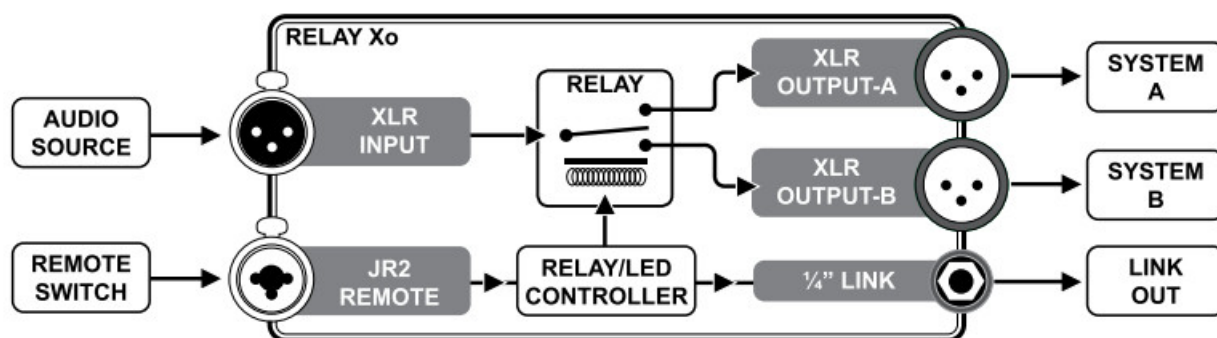
Please take a minute to read through this short manual. If you are left with unanswered questions, feel free to send us an email at info@radialeng.com and we will do our best to reply in short order. Now get ready to remotely switch to your heart's content!

The Relay is basically a 1-in, 2-out straight-wire switcher for balanced audio.

There is no transformer or buffering circuitry in between the input and outputs.

This means the Relay Xo can not introduce distortion or noise into the source signal and allows it to be used with mic or line level sources. A link feature allows multiple Relay Xo units to be combined and switch stereo or multichannel audio systems.

Switching can be done on the Relay Xo, via remote footswitch or by MIDI contact closure.



MAKING CONNECTIONS

Before making any connections, make sure volume levels are turned off or down and/or power is turned off. This will help you avoid turn-on or power-on transients that could harm more sensitive components like tweeters. There is no power switch on the Relay. Simply plug in the included 15 VDC supply and it will spring to life. A cable clamp next to the power jack can be employed to prevent accidental disconnection.

The audio input and outputs employ balanced XLR connections wired to the AES standard with pin-1 ground, pin-2 hot (+), and pin-3 cold (-). Connect your source device such as a microphone or wireless mic receiver to the Relay Xo input jack. Connect the A and B outputs to two inputs on a mixer.



Switching between the outputs can be done using the OUTPUT SELECT push button on the side panel. Start by setting up channel-A. Set the AB selector switch set to the A position (outward). Speak into the mic while slowly bringing up the volume levels. To set up the channel-B depress the AB selector switch to toggle the output. The LED indicators illuminate to display the active output.

REMOTE CONTROL

The Relay X0's outputs may be toggled remotely using an external 'latching' or 'momentary' switch connected to the 'JR1 REMOTE' jack. This combo jack features a locking XLR and 1/4" input. The 1/4" connection works with any standard footswitch such as a momentary sustain pedal or a latching amplifier channel switch. It can also work with any device equipped with a 1/4" contact-closure output like a MIDI controller.



Simple footswitches and contact-closure devices like MIDI controllers use 1/4" cables to connect to the Relay X0.

Both the combo jack's XLR and 1/4" connection work with the optional Radial JR1 footswitches. The JR1 footswitches are also equipped with locking XLR jacks allowing you to use either type of cable. Locking connectors are beneficial on busy stages as it reduces the opportunity for a connection to come loose during a performance. The JR1 footswitches are available in momentary (JR1-M) or latching (JR1-L) formats to address various needs on stage and include A/B LED status indicators.



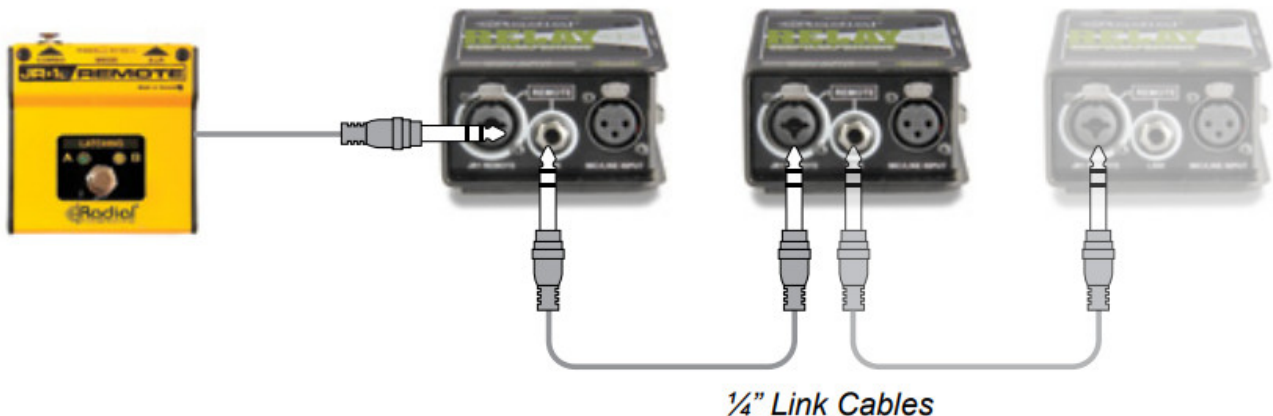
The JR1 uses either 1/4" or locking XLR cable to connect to the Relay X0.

Because footswitches are either momentary or latching it's important to understand how the Relay X0 works with these two types of switches. A momentary footswitch, like the JR1-M or a keyboard sustain pedal, will toggle to output-B only while held down. Once the momentary footswitch is released the Relay X0 will toggle back to output-A. A latching footswitch, like the JR1L or an amplifier AB channel selector switch will toggle the Relay each time it is pressed. One press will toggle to output-B. Pressing again will toggle back to output-A.

MULTI-CHANNEL SWITCHING

Two or more Relay Xo units can be switched in tandem by simply bridging the devices together using a standard ¼" patch cable. The LINK feature allows switching of stereo and multi-channel audio systems from a single switch. Connect a footswitch to the first unit or use the side panel OUTPUT SELECT switch. Connect the ¼" LINK jack on the first unit to the JR1 REMOTE jack on the second.

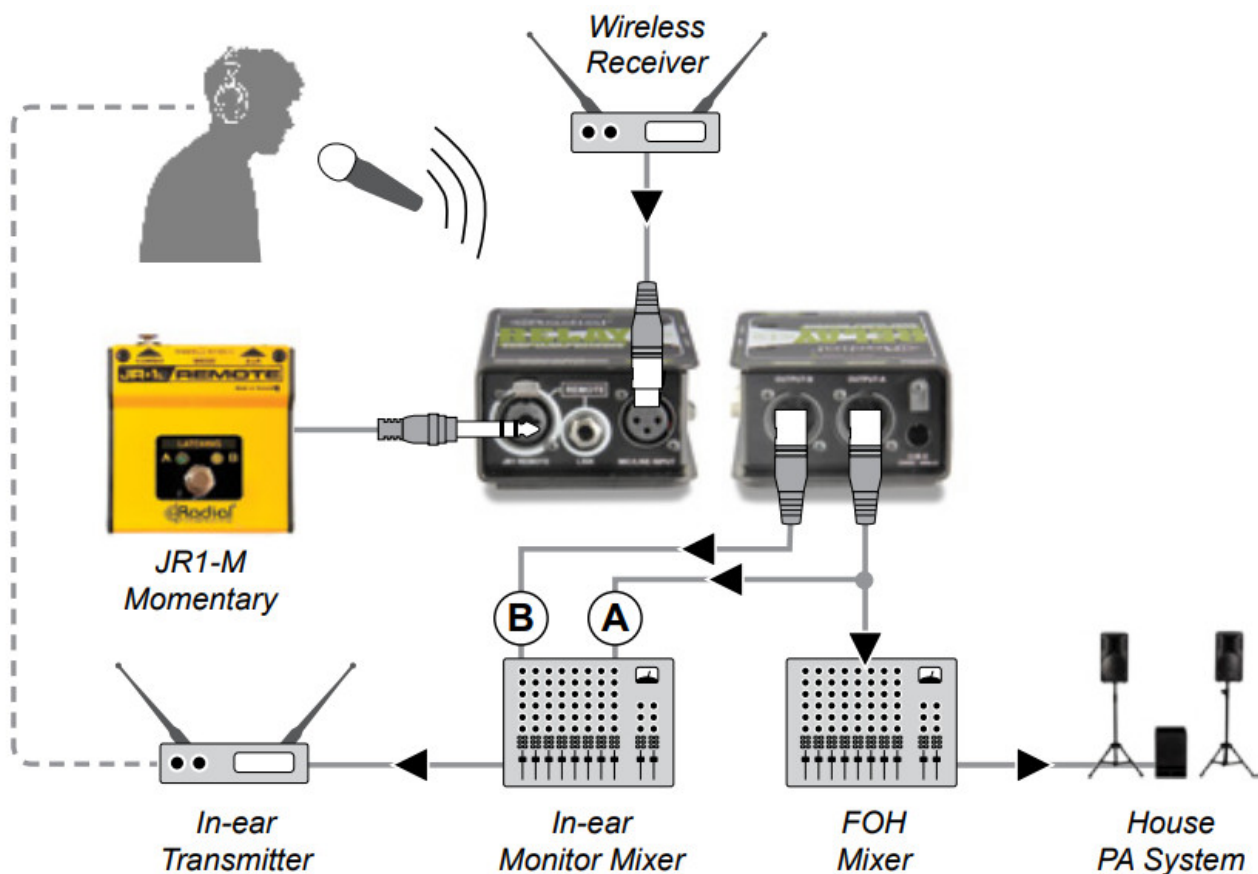
You can connect as many successive units as you like this way.



USING THE RELAY XO FOR A TALK-BACK SYSTEM

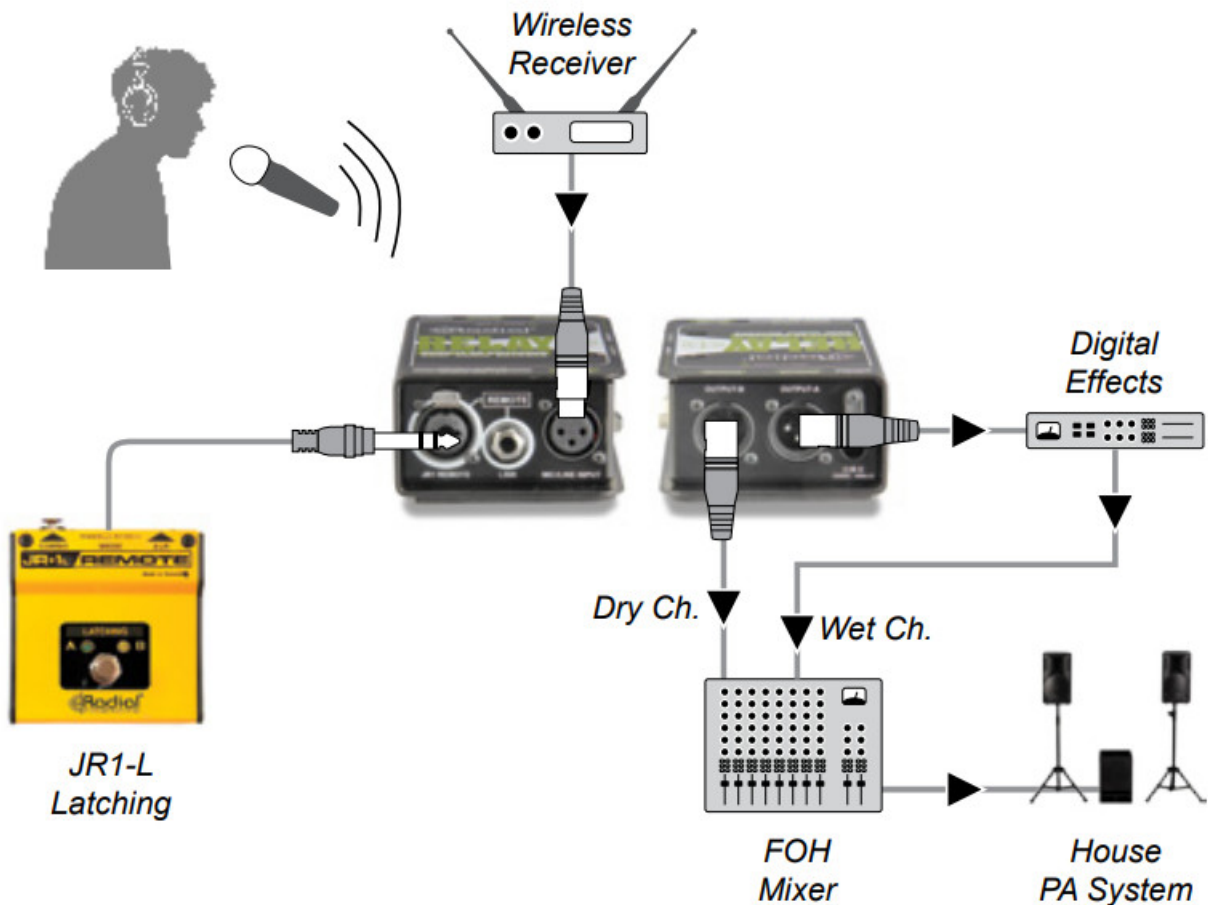
A momentary footswitch, like the optional JR1M, is recommended when using the Relay Xo as a talk-back or communication mic switcher as this requires holding the footswitch 'on' to speak with other band members or the crew.

Releasing the footswitch reverts back to normal. This avoids accidentally leaving the Relay on 'communication mode' which could otherwise prove to be embarrassing if left on.



USING THE RELAY XO TO SWITCH MIXER CHANNELS

Using a latching switch, like the optional JR1L, is suggested when switching between audio channels on a PA system. Switching channels lets you alternate between a dry channel for communication with the audience and a wet channel with echo and reverb for singing.



FEATURES

1. JR1 REMOTE: Locking XLR and ¼" combo jack used to connect a remote switch. Use with footswitches, MIDI contact closures or the Radial JR1.
2. REMOTE LINK: Used to link the switching of additional Relay Xo units. Allows stereo and multichannel switching systems.
3. MIC/LINE INPUT: Balanced XLR input.
The Relay Xo signal path is 100% passive.
Audio signals will pass through unchanged without added noise or distortion.
4. OUTPUT-B: Alternate balanced XLR output.
This output is active when the select switch is pressed inward or when a remote switch is closed.
The B LED illuminates when the output is active.
5. OUTPUT-A: Main balanced XLR output.
This output is active when the switch is in the outward position or when a remote switch is open.
The A LED illuminates when the output is active.
6. CABLE CLAMP: Prevents accidental power disconnection by locking down the AC adapter cable.
7. POWER JACK: Connection for the included 15 volt (400mA) AC power adapter
8. FULL-BOTTOM NO-SLIP PAD: This provides electrical isolation and plenty of 'stay-put' friction to keep the Relay Xo in one place.
9. OUTPUT SELECT: This switch toggles the Relay Xo's outputs. Two LED indicators display which output is active.
10. GROUND LIFT: Disconnects pin-1 (ground) on the input XLR jack to help reduce hum and buzz caused by

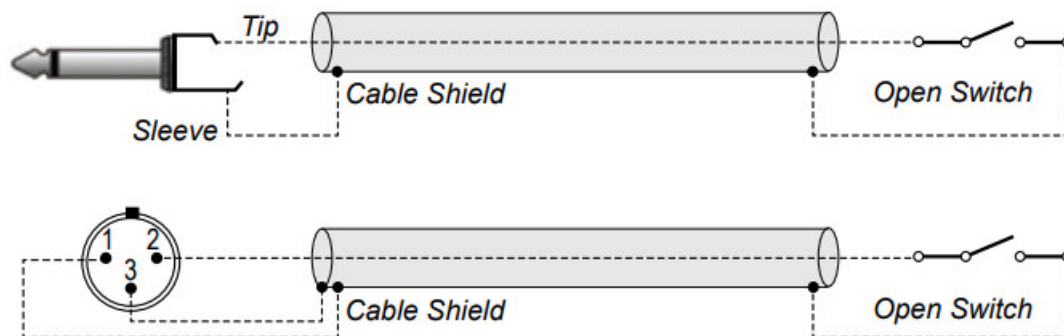
ground loops.



Relay X0 specifications

Audio circuit type: Passive balanced A/B switcher
Switch: Electronically controlled relay
XLR input and outputs: AES standard; pin-1 ground, pin-2 (+), pin-3 (-)
Ground lift: Lifts pin-1 on the XLR input
Power: 15V/400mA, 120V/240 power adapter included

Wiring diagram for custom JR1 REMOTE switch



RADIAL ENGINEERING 3 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 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.

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Documents / Resources

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