



**RDL**<sup>®</sup>  
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

## STICK-ON<sup>®</sup> SERIES

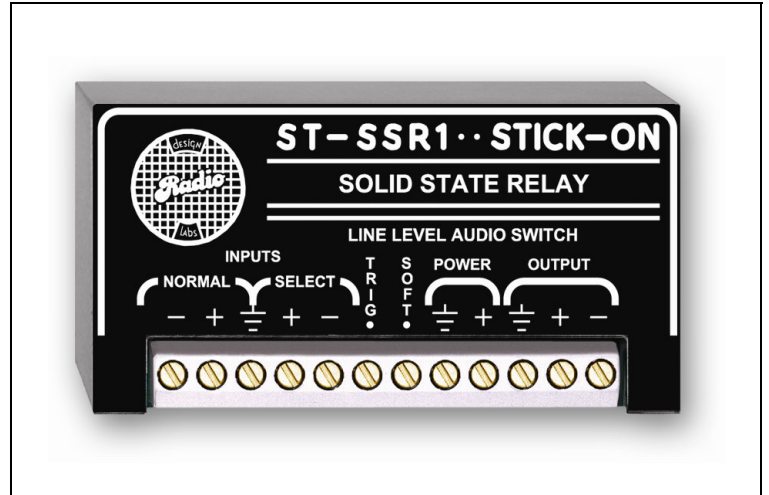
### Model ST-SSR1

### Solid-State Audio Relay

#### ANYWHERE YOU NEED...

- To Switch Line Level Sources
- To Select Between Two Balanced Lines
- Silent Audio Switching
- Audio Switching for Audio Muting
- Fast Switching for Audio Muting
- Switching by Open Collector Logic

#### *You Need ST-SSR1!*



The ST-SSR1 is part of a group of products in the STICK-ON series from Radio Design Labs. The durable bottom adhesive permits quick, permanent or removable mounting nearly anywhere or it may be used with RDL's racking accessories. The ST-SSR1 offers the ultimate in totally solid-state audio switching, with the big PLUS, you can put it right where you need it!

**APPLICATION:** The ST-SSR1 has two line-level audio inputs and a single, line-level audio output. In the absence of a control input, the **NORMAL** audio input feeds the module output. When the **TRIG** control terminal is pulled to ground, the **SELECT** input is switched to the output and the **NORMAL** input is switched off. When the **TRIG** terminal is again allowed to go **HI**, then the **SELECT** input is turned off and the **NORMAL** input is switched to the output. The module contains no mechanical relays or other devices. The audio inputs are applied to a low-noise preamplifier. The control circuits utilize solid-state switching to apply one of the input signals to the balanced output line driver with **OFF** attenuation better than 80 dB at all audio frequencies!

The ST-SSR1 has user-selectable switching rates. The module can be used in muting applications where audio must be switched off extremely fast. This could be required to prevent feedback in automatic microphone mixing installations. For muting, the audio source is connected to the **NORMAL** input, and the ST-SSR1 is used to turn this line **off**. In this mode, the audio off-time switching is accomplished in less than 100 microseconds. Although necessary in some circumstances, this fast switching transition can sound harsh to the ear and would be undesirable where the module is being used to select inputs to a high power amplifier or in high quality studio applications. Installation of a jumper between the **SOFT** terminal and **GROUND** slows the switching transition by implementing a soft knee, ramping the audio to the on or off condition. This still sounds instant to the ear, but is slowed sufficiently to remove any unpleasant edge from the switch transition. For most applications, the module is used in the **SOFT** mode.

The control current required at the **TRIG** terminal is so minimal (< 0.5 mA) that the ST-SSR1 can be controlled from nearly any source, from switches to logic circuits. The **TRIG** input feeds a comparator, which switches at a threshold of 2 volts, permitting open-collector switching, or switching directly from circuits operating from a 5 volt supply! The exceptional low noise and low distortion performance of the ST-SSR1 makes it the ideal choice for noiseless line-level audio switching in both sound system or recording installations. Used in conjunction with other RDL RACK-UP<sup>®</sup>, STICK-ON, TX<sup>™</sup>, or FLAT-PAK<sup>™</sup> series products as part of a complete audio/video system.

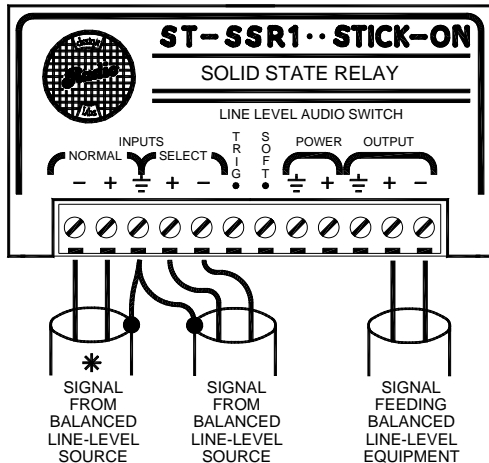
# STICK-ON<sup>®</sup> SERIES

## Model ST-SSR1 Solid State Relay

## Installation/Operation

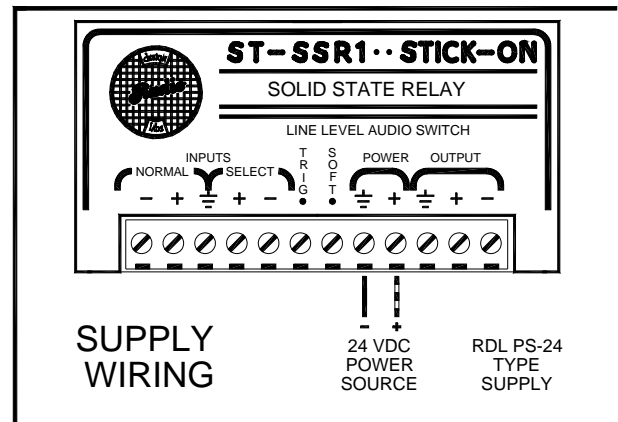
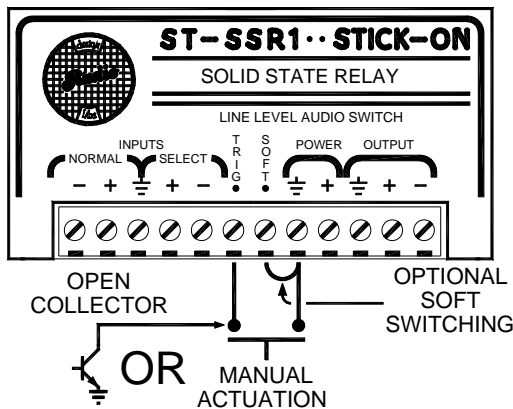
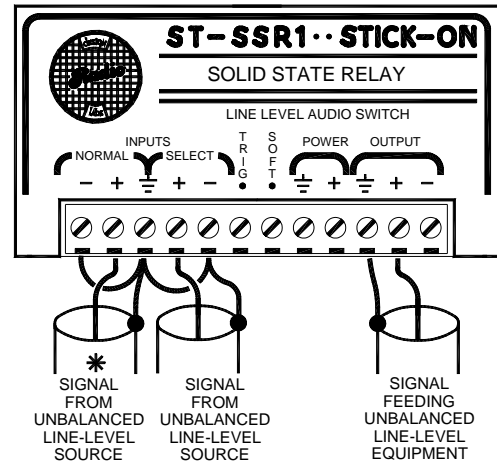


EN55103-1 E1-E5; EN55103-2 E1-E4  
Typical Performance reflects product at publication time  
exclusive of EMC data, if any, supplied with product.  
Specifications are subject to change without notice.



### AUDIO WIRING

\* FEEDS OUTPUT WHEN UNIT IS NOT TRIGGERED



### TYPICAL PERFORMANCE

Switching Time:	<b>Fast</b>	<b>Soft</b>
Time required for <i>Normal</i> input to turn off:	10 $\mu$ s	5 ms
Time required for <i>Normal</i> input to turn on:	15 $\mu$ s	70 ms
Time required for <i>Select</i> input to turn off:	15 $\mu$ s	10 ms
Time required for <i>Select</i> input to turn on:	20 $\mu$ s	35 ms
Control Signal:	<b>TRIG</b> terminal must be externally pulled to ground.	
Control Current:	0.5 mA	
Headroom:	> 18 dB above +4 dBu	
THD+N:	< 0.030% (@ 1 kHz)	
CMRR:	> 45 dB (either input, 100 Hz)	
Freq. Response:	15 Hz to 20 kHz (+/- 1/2 dB into bridging input)	
	30 Hz to 20 kHz (+/- 1/2 dB into 600 $\Omega$ )	
Noise:	< -80 dB below +4 dBu unweighted (-85 dB typical)	
ON Gain:	Unity (nominal, either input into bridging output)	
OFF Attenuation:	> 80 dB @ 1 kHz (either input)	
Reference:	0 dBu = 0.775 V RMS	
Power:	24 to 33 Vdc @ 40 mA, Ground-referenced	

Radio Design Labs Technical Support Centers

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