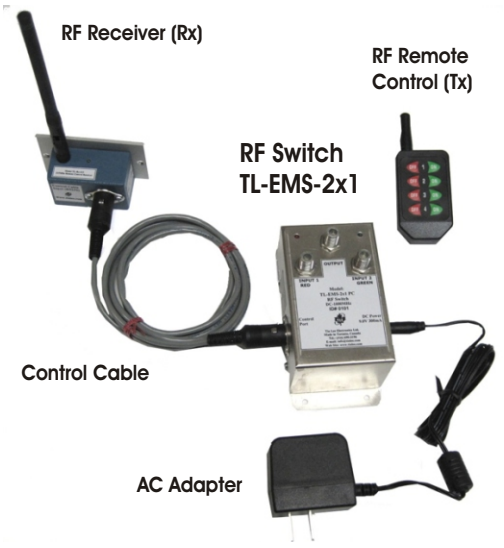
Instruction Manual 2-way RF Switch

Model: TL-EMS 2x1 ID# 0x###

(2 Inputs x 1 Output, with RF Remote Control)



Remote Control

RF Switch

TL-EMS 2x1 Instructions

Please read all instructions before installing and operating. Save this Instruction manual.
Keep record of ID# 0x### for TL-EMS 2x1 RF Switch and hand held remote control (Tx).
Additional or replacement Tx, will need the same ID# to control this Switch.
Limitation : the RF Receiver (Rx) will not operate if it is blocked by metallic obstruction.

Contents:

TL-EMS-2x1

Description:

The TL-EMS-2x1 is a high performance RF switch. It is an RF Switch with two inputs and one output. It is operated by RF remote control (see fig. 2). It is nondirectional, therefore, the two inputs can be used as outputs. Operating bandwidth is DC to 1000 MHz.

Indoor Control distance is up to 100 ft, through typical building materials (non-metallic). Indoor control distance can be increased by locating the RF receiver (Rx) away from the Switch box (up to 300' using optional 200' control cable - figure 2); Unobstructed control distance is up to 1000 feet.

Remote control system
The TL-EMS-2x1 is activated by control system comprised of handheld transmitter (Tx) and RF receiver (Rx), and control cable. For details of Tx, model CMD-HHR-315, refer to LINX Data Guide hand held transmitter. For details on RF receiver refer to TL-Rx-315 User's Manual.

TL-EMS-2x1 features

High-quality RF characteristic:
- Low thru loss (< 1dB)
- High RF isolation between ports (>55dB)
- Good return loss (>15 dB)
- Fast switching speed (<10 mSec)
- Low power switching and No power latching.

Easy installation - includes input selection LED
Wireless push-button RF remote control (FCC Certified)
Easy to install RF receiver
Remote control is customized to switch operation
Two-year limited warranty
Serial port control option (RS-232)
75 ohms impedance (50 ohms impedance option)

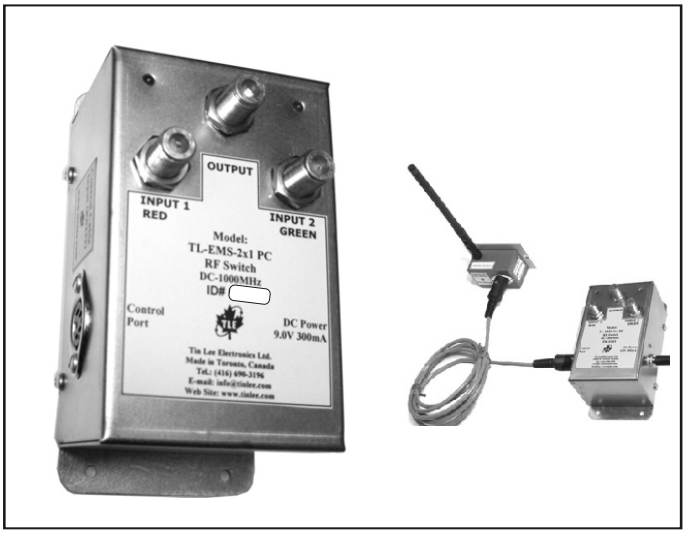


Figure 1: TL-EMS-2x1 withRF Receiver

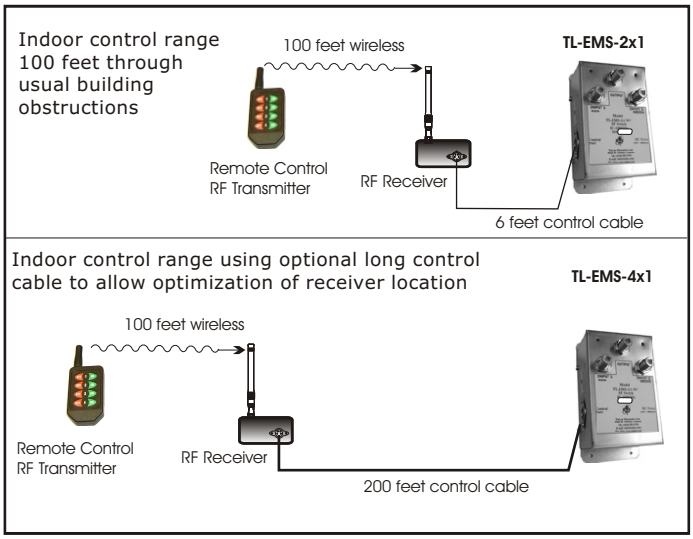


Figure 2: Remote Control Range

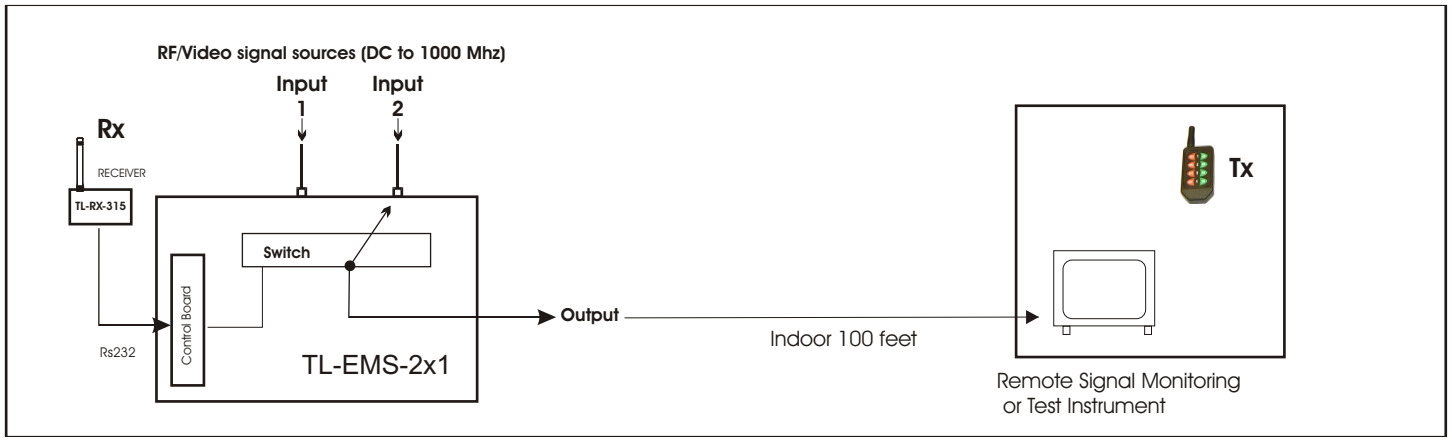


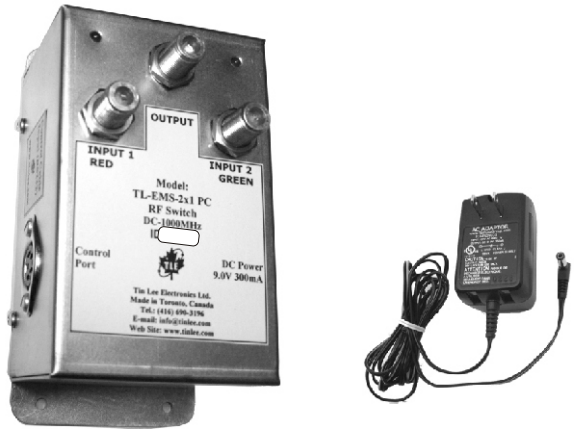
Figure 3: Basic Application The basic application of the TL-EMS-2x1 is to select between two different signal sources from a remote location.

Parts List

DESCRIPTION

Model TL-EMS-2x1 RF Switch Package includes:
A One RF Switch and power adapter;
B One Remote control Transmitter and spare battery;
C One RF receiver TL-Rx-315
D One Control Cable , 6ft length
E Documentation

A TL-EMS-2x1 RF Switch and AC Adapter



C & D TL-RX-315 RF Receiver and
Shielded 6 feet Control Cable

B Remote Controls Transmitter **(Tx)**
(details see LINX Data Guide)

Spare battery for (Tx), for battery
replacement refer to LINX data guide.

E **Documentations:**
1. Instruction Manual RF Switch TL-EMS-2x1
2. User guide Transmitter CMD-HHLR-315
3. Documentation for RF Receiver TL-Rx-315
4. Graph of Inputs RF Frequency response

Notes:
1. Tx, **CMD-HHLR-315,** remote control factory preset ID to activitate RF Switcher.
2. Standard control cable is 6 feet. Optional control cable is available up to 200 feet.

STEP 1 Connect Control Cable

Connect one end of control cable to RF Switch and other end to Receiver (photo A). Plug cable into RF Switch and Receiver with connector orientated as shown in photos A, B and C.

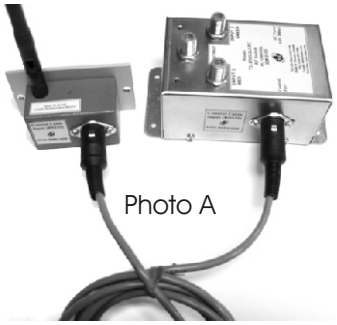


Photo A

Photo B

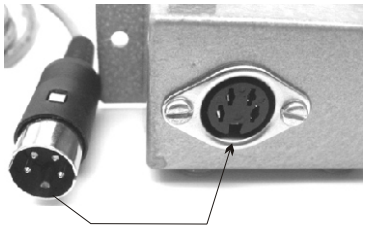


Photo C

STEP 2 Locate Receiver next to Switch

Locate Receiver near RF Switch to be able to check LEDs when testing Switch and Receiver operation

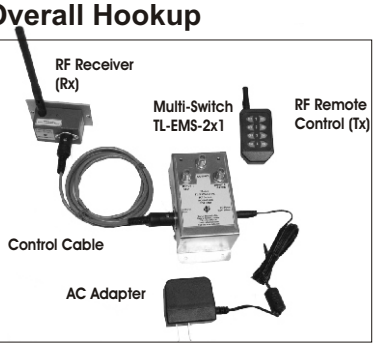
Note: Receiver can be located 6' up to 200 ft from Switch(optional up to 200 ft. control cable).

STEP 3 Plug in DC 9V

First connect 9 VDC plug into RF Switch. Plug AC into wall outlet after hookup check - step 4.

STEP 4 Check Overall Hookup

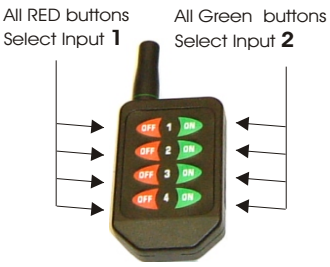
After hook up is checked. Plug in AC to wall outlet. Then, check the LED on the RF Receiver, it should flash rapidly to indicate "ready" state.



STEP 5 Note Remote Control Buttons

Remote Control:
-All Red buttons select Input 1
-All Green buttons select Input 2

Tip: Press button down, hold and release, to make "click" sound to activate switch. Note: Switch box will also make a "click" sound when new input is selected.



STEP 6 Test Remote Control with Switch

Initially, test remote control and switch action, near the RF Switch. Press any Red Tx button ("click" and release) to select switch Input 1, red LED, turns "ON". Press any Green button to select Input 2. Green LED turns "ON".

Note: Switch box will make " click " sound when a new input is selected.

Repeat test at a distance from Switch. Have other person help verify Switch control range.

To select Input 1, press any Red button on Tx - Red LED on Switch box also turns"ON"

INSTALLATION and CONNECTIONS

TL-EMS-2x1 and TL-Rx-315 (Receiver) Location
The Receiver and the Switch should be located in an interference free location, and where there is least amount of obstructions. Remote control works best when physical distance between Receiver and the Transmitter is less than 100 ft through usual indoor building materials.

Control Cable Connection
Connect one end of control cable to TL-Rx-315 and other end to the Controlled Device. The TL-Rx-315 has a circular 4 pin DIN output jack. The control cable is a shielded four conductor control cable with 4 pin circular DIN plug ends. Cable length is 6 feet standard, and available up to 200 feet.

Install TL-Rx-315 indoors, do not immerse in water, and avoid locating the TL-Rx-315 in direct sunlight or in temperatures below +14°F (-10°C) or above +122°F (+50°C).

Antenna Orientation: The TL-Rx-315 includes an articulating antenna which can be adjusted for best performance.(see illustrations below). In general orientate the Receiver and transmitter antennas vertically relative to the floor.

DO NOT modify the receiver.
The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.

The TL-Rx-315 is powered from the RF Switch. When the control cable is connected and power (+5Vdc) is applied, the LED on the receiver will flash rapidly to indicate it will receive the remote control transmissions.

Operating the Remote Control - To send a control signal press down a button and hold for 0.5 second, then release.

Operating range
Wireless remote control range is up 100 ft with typical indoor obstructions. The control range can be increase by increasing distance between TL-Rx-315 and Switch by using longer control cable (up to 200 feet).

Limitations:
The TL-Rx-315 and Remote Control range will vary depending on operational and environmental conditions. The Receiver and Remote Controls will not function if located between RF shielded area, RF signals will not travel through metal obstructions, e.g., aluminized wall panels.

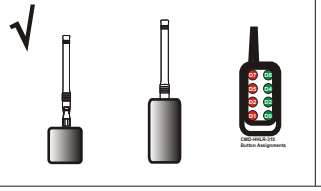
Multiple Transmitters (Tx) can operate in same reception area. Allow two seconds separation between transmissions.

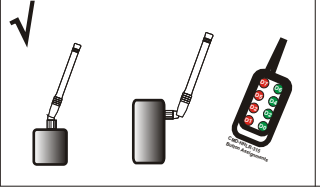
OPERATION

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Control Range and Antenna Orientation

Best Range:
When Tx and Rx antennas are in parallel.
And when obstructions between Tx and Rx are minimized.





Least range:
When Tx and Rx antennas are perpendicular.
Keep antenna away from objects, including Rx enclosure.