Specifications

Environment	Composite video (NTSC, PAL, SECAM). Line level analog audio. IR Remote.
Devices	DVD players, VCR, satellite receivers, MPEG players, laptops, notebooks, monitors, LCD projectors, CCD cameras, video switchers, sequencers, digital video servers, video multiplexers, video splitters, video converters and other composite video equipment.
Transmission	Transparent to the user

	Composite Video	Audio
Bandwidth	DC to 6 MHz	20 Hz to 20 KHz over the distance range
Impedance	75 ohms	600 ohms min.
Max. Input	1.1 Vp-p	1.1 Vp-p
Insertion Loss	Less than 2 dB per pair over the frequency range from DC to 6 MHz	Less than 2 dB per pair over the frequency range
Return Loss	Better than 15 dB over the frequency range	N/A
Common Mode Rejection Ratio	Greater than 40 dB over the frequency range	N/A
Max. Distance via Cat 5E/6 UTP/STP Cable	2,200 ft (670 m) IR: Please refer to IR vendor specifications	3,250 ft (990 m)
Pin Configuration (RJ45)	Video: Pins 7(R) & 8(T) IR Pass-Thru: Pins 4(R) & 5(T) *Reverse Polarity Sensitive*	Audio 1: Pins 1(R) & 2(T) Audio 2: Pins 3(R) & 6(T)
Cable: Cat 5E/6 UTP/STP	24 AWG or lower solid copper twisted pair wire Impedance: 100 ohms at 1 MHz Maximum capacitance: 20 pf/ft Attenuation: 6.6 dB/1,000 ft at 1 MHz	
Connectors	Three RCA-F connectors: Video (yellow) & stereo audio (red, white) One (1) 2-pole terminal block for IR emitter pass-through One (1) RJ45 for Cat 5E/6	
Temperature	Operating: 0º to 55ºC Storage: -20º to 85ºC Humidity: Up to 95% non-condensing	
Enclosure	ABS fire retardant plastic, Color white, Finish glossy.	
Dimensions	4.1" (104 mm) x 1.8" (45.7 mm) x 1.44" (36.6 mm). Choose 1.6" (40 mm) deep back box to allow for Cat 5E/6 wiring connection.	
Weight	4.1 oz (115 g)	
Compliance	FCC, CE, Decora® faceplate.	
Warranty	Lifetime	
Order Information	500049-WP-US Stereo AV/IR Pass-Thru Wall Balun UPC: 6-27699-92049-7	

Stereo AV / IR Pass-Thru Wall Balun

500049-WP-US

Quick Installation Guide

Overview

The Stereo AV/IR Pass-Thru Wall Balun (500049-WP-US) allows one (1) composite video, one (1) stereo audio and one (1) IR emitter signal to be transmitted via a single Cat 5E/6 cable in a point-to-point connection. Used in pairs, or in conjunction with the 500048 or 500049, the Stereo AV/IR Pass-Thru Wall Balun features full audio bandwidth response for high fidelity applications and features built-in color-coded RCA connectors for ease of installation. The Stereo AV/IR Pass-Thru Wall Balun also works in conjunction with third party IR Remote Control equipment. This enables the IR Emitter to connect to the IR control module using the same Cat 5E/6 cable as video and audio, allowing for more cost-efficient cabling. Some applications include: Classroom video distribution, commercial and home audio/video systems, hospital video training, video conferencing, and video kiosks.
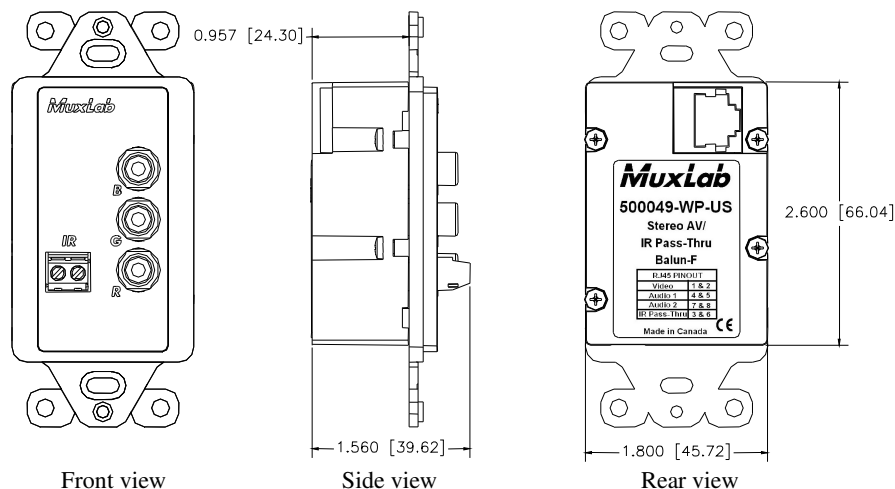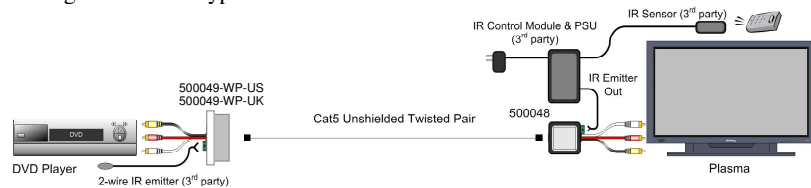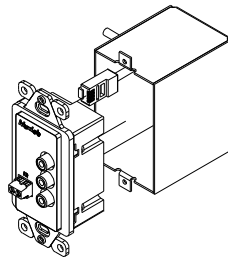
Installation

One (1) pair of baluns is needed to complete one composite stereo audio-video connection via Cat 5E/6 twisted pair. To install the baluns, perform the following steps:

1. Identify the pin configuration of the baluns. One (1) twisted pair is required for composite video and two (2) twisted pairs are required for stereo analog audio. The pin configuration follows the EIA/TIA 568A/B standard. The Stereo Hi-Fi Video Balun is reverse polarity sensitive. Please ensure that wiring is straight-through (Ring to Ring, Tip to Tip).
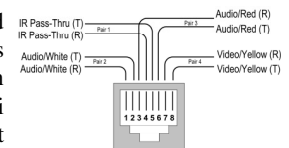
2. To install the balun in a single back box, choose a back box with a depth of 40 mm or more. Connect the RJ45 plug into the rear of the balun. Secure the balun with the 2 front screws.

3. Place a Decora® faceplate (not included) and secure with the 2 front screws.

4. Plug one (1) balun into the composite video/stereo audio output of the video source according to the color code of the RCA connectors.

5. Plug the second balun into the composite video/stereo audio input of the video screen or receiver at the remote end.

6. Complete the connection between the two baluns, using standard Cat 5E/6 twisted pair cable and connecting hardware, terminated on RJ45 plugs at both ends. Ensure that there are no split pairs or taps.

7. Power-on the audio-video equipment. Check the image quality and refer to the troubleshooting table below if the image quality is unsatisfactory. The following diagram shows a typical installation.

Front view   Side view   Rear view

Troubleshooting

The following tables describe some of the symptoms, probable causes and possible solutions in respect to the installation of the Stereo Hi-Fi Video Balun. If you still cannot diagnose the problem, please call MuxLab Customer Technical Support at 877-689-5228 (toll-free in North America) or (+1) 514-905-0588 (International).

Video Symptom	Probable Cause	Possible Solutions
No video	No continuity in video link	Verify cable continuity between balun pairs.
	Power off	Check power supplies of video equipment.
	Improper connection and/or swapped pair	Check that baluns are connected to correct video inputs and outputs.
Unusual colors	Reversed polarity	Check wiring & ensure straight-through polarity
Background pattern	EMI interference	Identify possible radiating frequency sources (*i.e.*, wireless LANs, switching power supplies). Try to isolate them from the video connection. Use shielded twisted pair grounded at both ends.
Smearing	Exceeded distance	Verify cable grade. Use higher grade cable if necessary.
Weak contrast	Exceeded distance	Verify cable grade. Use higher grade cable if necessary. Increase contrast on monitor.
	Unusual link attenuation	Verify cable distance using ohmmeter or cable tester.
Image not stable	Defective link or equipment	Verify video equipment interface integrity.
Horizontal bars moving slowly	Substantial crosstalk between multiple video sources	Consecutively turn off other video sources to determine which video source is the cause of interference.
Snowy picture	Distance is near limit	Verify cable grade. Use higher grade cable if necessary. Reduce color intensity at monitor.

Audio Symptom	Probable Causes	Possible Solutions
Poor audio quality	EMI interference	Check that wiring is not too close to transformers and ballasts.
	Split pair	Ensure that the UTP pairs are not split and that each pair of wires is twisted.
No audio	No power	Check your audio system for power.
	Open circuit	Check wiring to ensure continuity.
	Defective balun	Change Stereo Hi-Fi/Video Baluns for another pair.
Audio phase cancellation	Reversed wires	Check for straight-through wiring.
Audio weak	Distance specifications exceeded	Check DC loop resistance and verify if distance spec is exceeded. Reduce cable length or eliminate high-loss components.

IR Symptom	Probable Cause	Possible Solutions
No IR signal	No continuity in IR pair	Check wiring
	IR equipment malfunction	Check IR equipment with direct connection