Specifications

Environment	Composite video (NTSC, PAL, SECAM) equipment
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 (CMRR)	Greater than 40 dB over the frequency range	N/A
Max. Distance via Cat 5E/6 UTP/STP Cable	2,200 ft (670 m)	3,250 ft (990 m)
Pin Configuration (RJ45)	Video: Pins 7(R) & 8(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	One (1) RCA-M for video (yellow) Two (2) RCA-M for stereo audio (red, white) One (1) RJ45 for Cat 5E/6	
Temperature	Operating: 0º to 55º C Storage:- 20º to 85º C Humidity: Up to 95% non-condensing	
Enclosure	Fire retardant plastic	
Dimensions	2.40” x 2.25” x 1.00” (6.10 x 5.72 x 2.54 cm) plus 6” (15 cm) cable leads for video and stereo audio	
Weight	3.1 oz (89 g)	
Warranty	Lifetime	
Order Information	500039 Stereo Hi-Fi/Video Balun	

MuxLab

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 94-000393-B SE-000423-B

Stereo Hi-Fi / Video Balun
500039
Quick Installation Guide

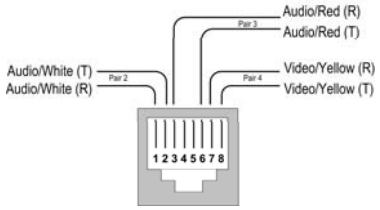
Overview

The Stereo Hi-Fi/Video Balun (500039) allows a single composite video signal to be transmitted via an unshielded twisted pair (UTP) cable up to 2,200 ft (670m) in a point-to-point connection. The Stereo Hi-Fi/Video Balun features full audio bandwidth response for high fidelity applications and features built-in color-coded cable leads for ease of installation. The Stereo Hi-Fi/Video Balun also works in conjunction with MuxLab’s Audio-Video Distribution Hub (500200) to allow composite video programming to be distributed via UTP. Applications include: Classroom video distribution, commercial and home audio/video systems, hospital video training, video conferencing, and video kiosks.

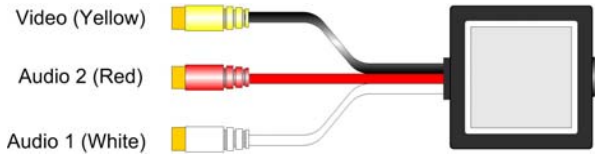
Installation

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:

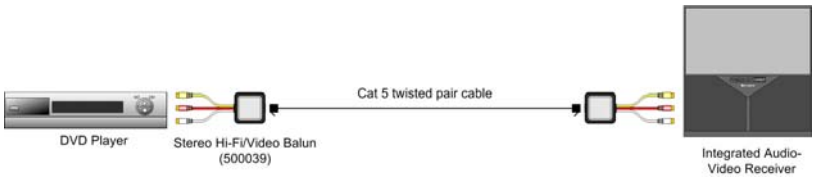
1. Identify the pin configuration of the baluns. One (1) twisted pair is required for composite video and two (2) twisted pairs are required for stereo analog audio. The pin configuration follows the EIA/TIA 568A/B standard. The Stereo Hi-Fi Video Balun is reverse polarity sensitive. Please ensure that wiring is straight-through (Ring to Ring, Tip to Tip).



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



3. Plug the second balun into the composite video/stereo audio input of the video screen or receiver at the remote end.
4. 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.
5. 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.



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:

Video Symptom	Probable Cause	Possible Solutions
No video	No continuity in video link	Verify cable continuity between pairs of baluns.
	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 and 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.

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).