# Specifications

| Environment | S-Video equipment |
|---|---|
| Devices | DVD players, VCR, satellite receivers, MPEG players, laptops, notebooks, monitors, LCD projectors, CCD cameras, video switchers, sequencers, digital video servers, video multiplexers, S-Video splitters, S-Video converters and other S-Video equipment. |
| Transmission | Transparent to the user |

| | S-Video | Audio |
|---|---|---|
| Bandwidth | DC to 6 MHz | 20 Hz to 20 kHz |
| Impedance | 75 ohms | 600 ohms min. |
| Maximum 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 | Greater than 60 dB at 1 kHz Greater than 40 dB over the frequency and distance range |
| Max. Distance via Cat 5E/6 UTP/STP Cable | 1,000 ft (305 m) | 3,250 ft (990 m) |
| Pin Configuration (RJ45) *EIA 568 A or B* | S-Video Luma: Pins 7(R) & 8(T) S-Video Chroma: 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 | One (1) 4-pin Mini DIN jack for S-Video Two (2) RCA audio jacks for stereo audio One (1) RJ45 for Cat 5E/6 | |
| Temperature | Operating: 0º to 55ºC Storage: -20º to 85ºC 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) | |
| Weight | 2.1 oz (60 g) | |
| Warranty | Lifetime | |
| Order Information | 500038     S-Video/Hi-Fi Balun, Female | |

# S-Video / Hi-Fi Balun
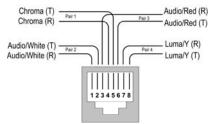# 500038
# Quick Installation Guide

**Overview**

The S-Video/Hi-Fi Balun allows one S-Video signal and one hi-fidelity stereo audio channel to be transmitted via an unshielded twisted pair (UTP) cable in a point-to-point connection for more versatile cabling. Used in pairs, the S-Video/Hi-Fi Balun eliminates costly and bulky S-Video and audio cable, allowing S-Video equipment to be connected or moved to any convenient modular outlet. The S-Video/Hi-Fi Balun also works in conjunction with MuxLab's Audio/Video Distribution Hub (500200) to allow S-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. Two (2) twisted pairs are required for S-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 S-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 S-Video/Hi-Fi Balun 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 Symptoms | 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 S-Video/Hi-Fi 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).