# Specifications

| Environment | S-Video equipment | |
|---|---|---|
| Devices | DVD players, satellite receivers, laptops, notebooks, monitors, LCD projectors, CCD cameras, video switchers, S-Video splitters, S-Video converters and other S-Video equipment | |
| Transmission | Transparent to the user | |
| | **S-Video** | **Audio** |
| Bandwidth | 20 Hz to 6 MHz | 20 Hz to 20 kHz |
| Impedance | 75 ohms | Source 100 Ω Max, Receiver 10 kΩ min. |
| Max. Input | 1.1 Vp-p | 1.1 Vp-p |
| Insertion Loss | Less than 2 dB per pair dB over the frequency range | Less than 2 dB per pair |
| Return Loss | Better than 15 dB over the frequency range | N/A |
| Common Mode Rejection Ratio | Greater than 40 dB over the frequency range | 60 dB @ 1 kHz min. |
| THD | N/A | Less then 0.007% @ 1 kHz |
| Max. Distance: Cat 5e/6 UTP/STP | 1,000 ft (305 m) | 3250 ft (1 km) |
| Pin Configuration (RJ45) *Reverse Polarity Sensitive* | Luma:      Pins 7(R) & 8(T)<br>Chroma:   Pins 4(R) & 5(T) | Audio 1:   Pins 1(R) & 2(T)<br>Audio 2:   Pins 3(R) & 6(T) |
| Cable: Cat 5e/6 UTP/STP | 24 AWG or lower solid copper twisted pair wire<br>Impedance: 100 ohms at 1 MHz<br>Maximum capacitance: 20 pf/ft<br>Attenuation: 6.6 dB/1,000 ft at 1 MHz | |
| Ground Loop Isolation | In the range of  +/-50VDC | |
| Connectors | One (1) 4-pin Mini DIN, two (2) RCA audio jacks and one (1) RJ45<br>The 500018 comes with one (1) 6" dual-RCA stereo audio cable | |
| Temperature | Operating: 0° to 55°C<br>Storage: -20° to 85°C<br>Humidity: Up to 95% non-condensing | |
| Enclosure | Fire retardant plastic; black | |
| Dimensions | 2.40" x 2.25" x 1.00" plus 6"  Max. S-Video lead | |
| Weight | 3.6 oz (103 g) | |
| Warranty | Lifetime | |
| Order Information | 500018      S-Video/Audio GLI Balun | |



# S-Video/Audio Balun  GLI – 500018

# Quick Installation Guide

**Overview**

The S-Video/ Audio GLI Balun allows one (1) S-Video channel and one (1) stereo line level analog audio channel to be transmitted via unshielded twisted pair (UTP) cable in a point-to-point connection for more versatile cabling. The S-Video/Audio GLI Balun offers full ground loop isolation to help to eliminate hum-bars or other distortions related to ground loop.  The balun is used in conjunction with other standard MuxLab S-Video products such as the 500016, 500017, 500038 and 500200 in order to provide ground loop isolation for the system.

**Applications**

The S-Video/Audio GLI Balun is applied where ground loop issues may be present. Some applications include home theatre systems, boardroom projector systems, classroom training and rental & staging.

**Caution:** Do not attempt to open the housing. There are no user-serviceable parts inside the S-Video/Audio GLI Balun. Opening the unit may void your warranty.

**Note:** In order to support the full 20Hz to 20KHz audio bandwidth, the baluns at both ends must support 20Hz to 20KHz bandwidth.  Please verify the balun's specification table.  Furthermore, only amplified speakers may be connected directly to the S-Video/Audio GLI Balun. Do not connect  4 ~ 8 ohm speakers directly to the balun.

# Installation

To install the S-Video/Audio GLI Balun, perform the following steps:

1. Only one (1) S-Video/Audio GLI Balun is required in the link. The other balun may be any MuxLab standard (non-GLI) S-Video balun.

2. Typically the S-Video/Audio GLI Balun is installed at the monitor side.

3. 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 or B standard. The S-Video/Audio GLI Balun is reverse polarity sensitive. Please ensure that wiring is straight through (Ring to Ring, Tip to Tip).
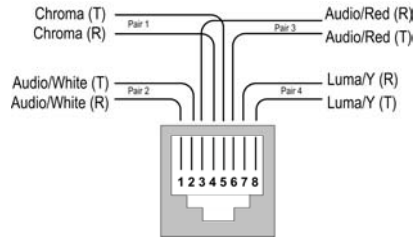


2. Turn off power and disconnect the S-Video source and S-Video monitor.

3. Make certain that modular outlets and cross connects to which you will connect the S-Video baluns are configured properly and labeled appropriately to identify the circuit.

4. Verify that the desired twisted pairs are not being used for other LAN or telephone equipment.

5. Connect the audio connectors to the audio source via RCA stereo audio jumper cables.

**Caution:** Respect colors appearing on color-coded RCA jacks and plugs in order to ensure the stereo effect is maintained.

6. Connect a standard (non-GLI) S-Video balun to the S-Video port of the source equipment (i.e. DVD or STB).

7. Connect a Cat 5e/6 cable from the RJ45 jack on the S-Video/Audio Balun to the twisted pair cabling of the building.

8. At the destination point, connect the S-Video/Audio GLI Balun to the S-Video display.

9. Connect the audio connectors to the line-level RCA audio inputs at the receiver via the RCA stereo audio jumper cable included with the product.

10. Connect the other end of the Cat 5e/6 cable to the RJ45 jack of the S-Video/ Audio GLI Balun.

11. Power on the S-Video/ Audio equipment at both ends and adjust the monitor image and audio levels to the desired settings. The figure below shows a typical application.
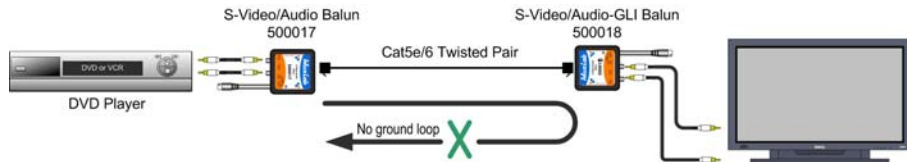
# Troubleshooting

The following tables describe some of the symptoms, probable causes and possible solutions regarding the S-Video/Audio GLI 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 lighting 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 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 specification 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).