Specifications

Environment	Component Video (YPbPr), RGB Video (sync on green). 480i/p, 720p, 1080i/p.
Devices	DVD players, satellite receivers, plasma displays, projectors, monitors, amplifiers, switchers, home theatre and other equipment supporting HDTV component video and/or digital audio.
Transmission	Transparent to the user
Bandwidth	Video: 60 MHz, 3 dB roll off Digital audio: 25 MHz, 1 dB roll off
Maximum Input	1.1 Vp-p
Insertion Loss (Video)	0.1 dB for 0.1 MHz Gradually increasing to 2.5 dB over the frequency range
Insertion Loss (Audio)	Less than 1 dB over the frequency range
Return Loss (Video)	Greater than 15 dB over the frequency range
Return Loss (Audio)	Greater than 15 dB over the frequency range
Common Mode Rejection Ratio (Video)	-55 dB at 0.1 MHz Gradually increasing to -20 dB at 60 MHz
Common Mode Rejection Ratio (Audio)	-50 dB at 0.1 MHz Gradually increasing to -30 dB at 25 MHz
Max. Distance: **Cat 5E/6 UTP/STP**	480i/p: 1,000 ft (305 m) 720p and 1080i: 500 ft (152 m) Digital Audio: 600 ft (182 m). Compatible with 500020.
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
Cable: BNC	Impedance: 75 ohms at 1 MHz
Connectors	Three (3) RCA-M connectors: Green (Y), Blue (Pb), Red (Pr) One (1) RCA-F connector for digital audio RJ45S for twisted pair
Pin Configuration *Reverse polarity sensitive*	Red (Pr): Pins 7(R) & 8(T) Green (Y): Pins 3(R) & 6(T) Blue (Pb): Pins 1(R) & 2(T) Digital Audio: Pins 4(R) & 5(T)
Temperature	Operating: 0° to 55°C Storage: -20° to 85°C Humidity: Up to 95% non-condensing
Enclosure	ABS 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 lead for video.
Weight	2.9 oz (81 g)
Regulatory	FCC, CE
Warranty	Lifetime
Order Information	500050 Component Video/Digital Audio Balun, M 500051 Component Video/Digital Audio Balun, F

Component Video / Digital Audio Balun
500050, 500051
Quick Installation Guide

Overview

The Component Video/Digital Audio Balun (500050, 500051) allows one component video (YPbPr or RGB) signal and one Digital Audio signal to be transmitted via a cost-effective unshielded twisted pair (UTP) cable.

Used in pairs, the Component-Digital Balun supports 480i/p, 720p and 1080i/p resolution for high definition (HDTV) video applications.

The product allows four coaxial cables to be replaced by one Category 5E/6 twisted pair cable, enabling standard structured cabling techniques to be used for more efficient cabling.

Installation

One (1) pair of baluns is needed to complete one component (YPbPr/RGB) connection via Cat 5E/6 twisted pair. To install the baluns, perform the following steps:

1. Identify the pin configuration of the baluns. Three (3) twisted pairs are required for video and one (1) twisted pair is required for optional digital audio. The pin configuration follows the EIA/TIA 568A/B standard. The Component Video/Digital Audio Balun is reverse polarity sensitive. Please ensure that wiring is straight-through (Ring to Ring, Tip to Tip).
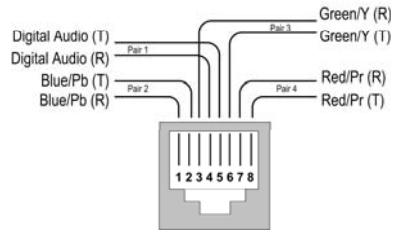
2. Plug one (1) balun into the component video coaxial cable output of the video source according to the color code of the RCA cable leads.
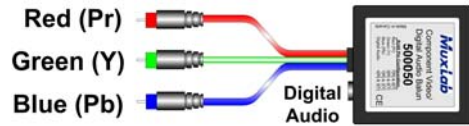
3. Plug the second balun into the component video coaxial cable input of the video screen or receiver at the remote end.

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. If Digital Audio is to be connected (optional), connect an RCA lead between the balun and the digital audio equipment at both ends.

6. Power-on the component 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.
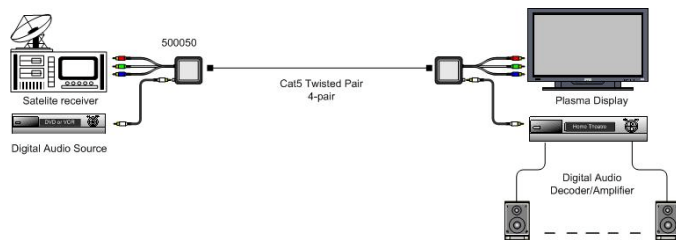
Troubleshooting

The following tables describe some of the symptoms, probable causes and possible solutions in respect to the installation of the Component Video/Digital Audio 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 Cause	Possible Solutions
No audio	Distance exceeded	Verify cable length between the two baluns.
	Split pair	Check if the UTP pairs are split and correct. Each signal pair must be twisted.
	Power-off	Check power supplies of digital audio equipment.
Missing channels	Cabling problem between the decoder/amp and the audio speakers	Check audio speaker cabling.
Noise, static	EMI interference	Check that wiring is not too close to transformers and ballasts.
	Distance exceeded or unusual cable attenuation	Check cable distance and cable grade.

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).