Intelix AVO-VGA2-WP
Installation Manual

Introduction

The Intelix AVO-VGA2-WP balun set transmits VGA video and stereo audio passively over two standard unshielded twisted pair cables, such as Cat 5, Cat 5e, or Cat 6. The unit eliminates costly and bulky cable while extending transmission distances.

One twisted pair cable carries the audio path and a second twisted pair cable carries the video path, thereby allowing audio and video to be transmitted to two separate locations.

Pre-Installation

Note: The AVO-VGA2-WP does not support VGA handshaking and control signals. Therefore, it is necessary to set the monitor attributes prior to installing the balun set. First connect the source (typically a computer) directly to the destination (typically a monitor) with a standard VGA cable. After doing so, set the monitor attributes to the required settings (i.e., resolution, color, etc.). For best results, also set the contrast and brightness to the maximum level.

Caution: Do not attempt to disassemble or alter the balun housing. There are no user-serviceable parts inside the unit. Doing so will void your warranty.

Installation

1. Power off the source and destination devices which will be connected to the baluns.

2. Verify the modular outlets and cross connects to which you will connect the AVO-VGA2-WP are configured properly and labeled appropriately to identify the circuit.

> **Caution: To minimize the possibility of equipment damage from electrostatic discharge (ESD), all source and destination equipment must be powered off during installation. This includes signal extenders, splitters, and switches.**

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

> **Caution: Do not connect the balun to a telecommunication outlet wired to unrelated equipment. Doing so may damage the unit or any connected equipment. Ensure all connected twisted pair cabling is straight-through (point-to-point).**

4. Connect the send balun (AVO-VGA2-WP-S) to the audio/video ports of the source equipment. Tighten the mounting screws on each balun.

5. Connect the send balun to the twisted pair cables. Verify the termination conforms to the EIA/TIA 568B standard.

6. Connect the receive balun (AVO-VGA2-WP-R) to the destination equipment.

7. Connect the receive balun to the opposite end of the twised pair cables. Verify the termination conforms to the EIA/TIA 568B standard.

> **Note: For your convenience, it is recommended that you uniquely mark the ends of the twisted pair cable before pulling them through a wall or conduit.**

8. Power on the source and destination equipment.

9. If necessary, set monitor contrast and brightness to the desired levels.

10. Set the monitor refresh rate to the optimal rate for the display at the desired resolution.

11. If necessary, adjust the image quality with the *Sync* switch on the send and receive baluns. It is recommended that both switches be in the same position. Position *A* unbalances the signal (demux), position *B* balances the signal (mux).

> **Note:** The AVO-VGA2-WP features an optional grounding screw that may be used to correct any image anomalies, such as differences in hue from one side of a monitor to the next. Should this occur, connect the balun ground to earth ground. However, if the building has a grounding problem, such as ground loops, grounding the balun may negatively affect the signal. Only ground the AVO-VGA2-WP if it positively affects the signal.

Troubleshooting

Symptom	Probable Causes	Possible Solutions
Image distorted or skewed	Weak or distorted sync signal	Change the screen refresh rate of the video source to the next higher or lower setting
		Adjust the *Sync* switch on both the send and receive baluns
No image		Attach or detach the grounding screw on either or both of the baluns to earth ground
Unusual colors	Reversed polarity	Verify 110 punch pinout conforms to EIA/TIA 568A or 568B standard. If not, re-terminate the cable.
	Bad RJ45 crimp	
Smearing or weak video contrast	Exceeded cable distance	Verify cable grade and total cabling distance
		Reduce the screen resolution
		Reduce the screen refresh rate
Horizontal bars moving upward in background	Ground loop problem	Attach or detach the grounding screw on either or both of the baluns to earth ground
		Verify the source and destination equipment are at the same ground potential.
Shaking image		Change the screen refresh rate of the video source to the next higher or lower setting
Background pattern	EMI interference	Identify possible radiating frequency sources and isolate them from the cabling. Use shielded twisted pair cabling.
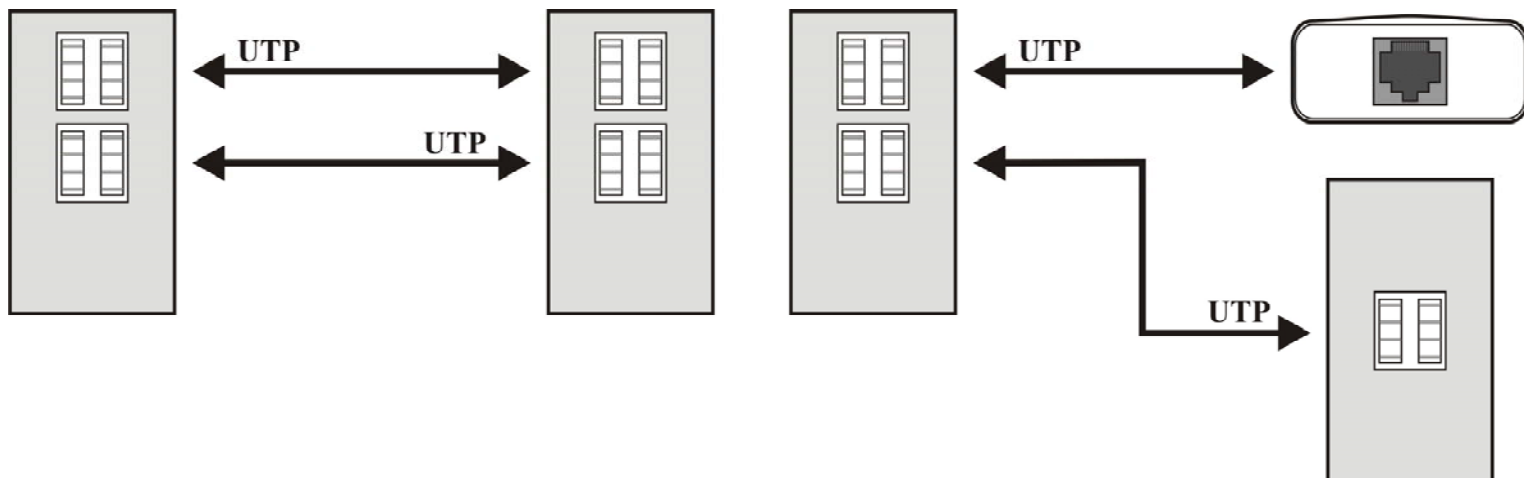
Technical Specifications

Video Max Distance	640x480: 450 feet 800x600: 350 feet 1024x768: 250 feet 1280x1024: 200 feet
Audio Max Distance	2,500 feet
Video Input Signal	Video 1.1 Vp-p Sync: TTL standard 300 kHz max
Video Bandwidth (3 dB)	DC to 60 MHz
Video Insertion Loss	Less than 3 dB per pair over the frequency range
Video Return Loss	-15 dB maximum from DC to 60 MHz
Audio Bandwidth	20 Hz to 20 kHz
Audio Impedance	600 ohms, balanced
Audio Isolation	500 V
Audio Nominal Level	1.0 volts
Audio Common Mode Rej.	Greater than 40 dB
Termination Style	(2) 110 punch-down connectors
Cable	Unshielded Cat 5, Cat 5e, Cat 6 or better
Temperature	Operating: 0 to 55 C. Storage: -20 to 85 C. Humidity: up to 95% non-condensing
Warranty	2 years
Order Information	AVO-VGA2-WP: one send and one receive balun AVO-VGA2-WP-R: one receive balun AVO-VGA2-WP-S: one send balun

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches. Intelix specifications are based on straight-through cabling with standard-grade Cat 5.