



AVDA-8 Audio/Video Distribution Amp Balun Installation Guide

Features:

Supports NTSC and PAL
Distributed up to 2200 ft.
Up to 2 audio & 2 video channels
Integrates w/ Intelix A/V Baluns
Looping output to cascade to other
AVDA-8s or A/V equipment
Rubber stand-offs for desktop use

Applications:

CCTV Security & Surveillance
Classroom A/V Instruction
Corporate A/V Presentations
Tradeshaw Demonstrations

Introduction

The Intelix AVDA-8 Audio/Video Distribution Amp Balun allows up to two (2) baseband video signals and up to two (2) audio signals to be distributed to up to eight (8) destinations via twisted pair (UTP) cable for cost-effective and versatile cabling.

When used in conjunction with Intelix's line of audio/video Baluns, the AVDA-8 allows coaxial cable to be eliminated between the audio/video source and the destinations. The AVDA-8 is compatible with Intelix V1, V1-ST, V1A2, V2A2, and SVA2 Baluns.

The AVDA-8 allows the distribution of CCTV and audio/video signals to multiple locations via standard twisted pair cabling instead of costly coaxial video or audio cable.

Installation

Follow the steps listed below to install the AVDA-8:

1. The Intelix AVDA-8 is polarity sensitive and works in conjunction with Intelix's A/V Baluns. If the AVDA-8 is used with Baluns which have a signal polarity opposite that of the AVDA-8, then the signal polarity of the cabling between the distributor and the video Baluns may need to be reversed. Verify that the pin configuration of the video Baluns match the pin configuration of the distributor. The pin configuration of the distributor is conveniently located on the rear panel.



Pin Configuration Table

2. Connect the appropriate Intelix video Baluns to the audio/video source and destinations. The AVDA-8 supports up to two video and two audio channels. Therefore, the distributor will work in conjunction with Intelix V1, V1-ST, V1A2, V2A2, and SVA2 Baluns. Prepare the appropriate line cords to connect the Baluns to the twisted pair cabling system in the building.
3. Place the Audio-Video Hub in its final location.

Before connecting the cables, keep the maximum cable lengths in mind. The final location for the AVDA-8 must be within maximum distance specs of the controller and of each terminal (see *Specifications* section). Note that every connection is equivalent to 10' of cable and must be included in the maximum cable length calculation. If you are not sure of your cable length, it can be estimated by performing a DC resistance test with a digital ohm meter. 1000 feet of 24 AWG cable should give a reading of approximately 26 ohms (52 ohms if you are measuring at one end with the opposite cable ends shorted).

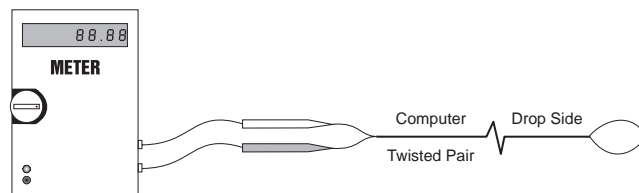


Figure 1 : Measuring Cable Impedance

The AVDA-8 must be kept away from sources of radio-frequency or electromagnetic radiation:

- a) 5" from power lines of 2 kVA or less
- b) 12" from fluorescent lighting and power lines between 2 and 5 kVA
- c) 36" from power lines greater than 5 kVA
- d) 40" from transformers and motors

Best performance is achieved using home-run cable. Do not use flat cable (i.e., cable that is not twisted), even for patching with short runs; flat cable acts as an antenna and will pick up nearby radio frequency interference.

4. Identify the pin configuration of both the video Balun and the AVDA-8. For example, when using an Intelix V1A2, the modular cable must use straight through polarity.

	V1	V1A2	V2A2	SVA2
Signal	CCTV Balun	Stereo Audio-Video Balun	Dual Audio-Video Balun	S-Video/ Audio Balun
Video 1	7&8	7&8	7&8	7&8 luma
Video 2	N/A	N/A	4&5	4&5 chroma
Audio 1	N/A	1&2	1&2	1&2
Audio 2	N/A	3&6	3&6	3&6

Figure 2 : Intelix Video Balun Pin Configurations

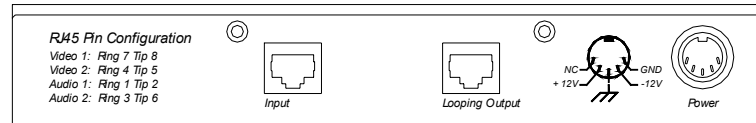


Figure 3: AVDA-8 Back Panel

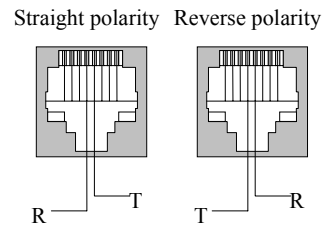


Figure 4: Polarities

5. Plug the ADVA-8 into the nearest AC power outlet. The Power LED should light up and stay on.

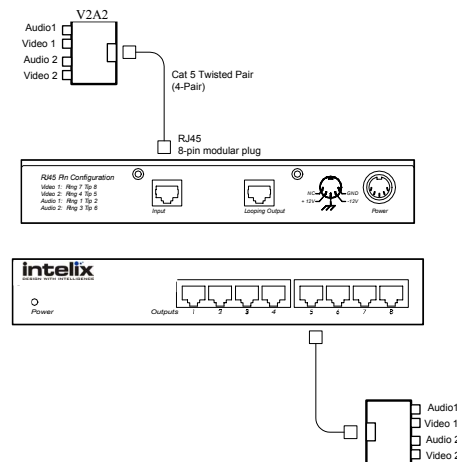


Figure 5: Connection Diagram

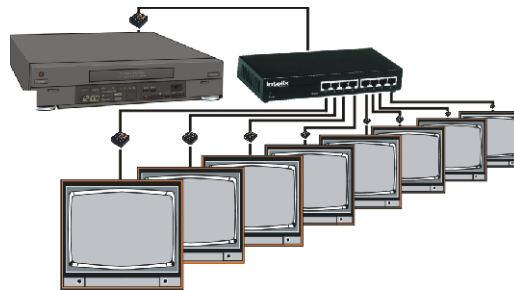
6. Connect the cable coming from the audio/video source to the Input located on the back of the AVDA-8.
7. Connect, one at a time, the twisted pair cables coming from the audio/video destinations into the front-panel ports. Power on the source and destination equipment and send an audio/video signal from the source. Verify the presence and quality of the audio and video.

Cascading Multiple Distributors

The AVDA-8 may be cascaded with another distributor to distribute a baseband audio/video source to more than eight destinations. The following picture shows the location of the Looping Output.



For example, an audio/video presentation from a VCR or DVD source may be distributed to multiple classrooms via pre-installed Cat 5 twisted pair cable. Due to the active electronics in the distributor, the number of distributors that may be cascaded is eight (8).



In order to cascade the first AVDA-8 to a second AVDA-8, prepare a 4-pair Cat 5 cable from the Looping Output of the first distributor to the Input Port of the second distributor. The cable must be configured as straight-thru and terminated with RJ45 modular plugs on both ends.

Note: The Distribution Ports and Looping Outputs do not amplify the signal. The maximum distance from the source to the most distant distributor or monitor may be up to 2500 feet depending on the type of audio/video signal being transmitted. The use of cross-connect blocks and patch panels is also supported. Each cross-connect results in an effective loss of distance of 5 to 10 feet. When splicing connections onto a cross-connect block, please ensure that the individual wires remain twisted right up within 0.5" of the cross-connect.

Another way of expanding the audio/video distribution network is to cascade the distributors in a tree topology. Each of the nine outputs is identical and any of these ports may be connected to the Input Port of another distributor. In the example below, nine distributors may be used to distribute an audio/video program to up to 64 audio/video monitors in a classroom or corporate training environment.

Troubleshooting

Reading this section carefully will allow you to pinpoint and resolve any type of malfunction. If after going through this section your problems still cannot be resolved, please contact Intelix for assistance.

The following section describes some of the symptoms that may arise during an installation, as well as the possible causes and solutions.

- Symptom: The Power LED does not come on
Cause: No power received by unit.
Solutions: Make sure that the power cord is connected to the distributor. Verify that there is in fact AC at the wall plate by plugging in another working AC-powered device.
- Symptom: No video or audio image.
Causes: Open wiring path
Split or crossed twisted pairs
Solutions: Verify wiring continuity via a simple ohmmeter
Check for split twisted pairs
Check that pin configuration of distributor matches Baluns.
- Symptom: Distorted video image
Causes: Reverse signal polarity
Solutions: Verify that polarity is straight through on each audio-video channel. Verify that the pin configuration of the Baluns matches the distributor.
Verify that the twisted pairs are fully twisted up to the connection points.
- Symptom: Picture is clear but there is a loss of color.
Cause: Excessive signal loss
Solution: Check the effective length of the cable via an ohmmeter and ensure that distance specifications have not been exceeded.
Check for possible signal losses due to poor connections.

Specifications

Source Impedance Requirements	Video OUT: 75 ohms Audio OUT: 600 ohms max.
Destination Impedance Requirements	Video IN: 75 ohms Audio IN: 600 ohms min.
Hub Impedance	Video IN: 100 ohm balanced Audio IN: 10 kohms min. balanced Video OUT: 100 ohms balanced Audio OUT: 600 ohm balanced
3 dB Bandwidth	Video: DC to 8 MHz. Audio: 50 Hz to 16 kHz
Maximum Differential Input	Video: 0.55 Vp-p Audio: 0.50 Vp-p
Maximum Differential Output	Video: 0.55 Vp-p Audio: 0.50 Vp-p
Insertion Loss (differential)	Video: 0 dB max. @ 4 MHz Audio: 1 dB max. @ 1 kHz
Video Return Loss	24 dB minimum
Common Mode Rejection Input: balanced Output: unbalanced	Video: Greater than 40 dB over the frequency range. Audio: Greater than 60 dB over the frequency range.
Crosstalk Immunity	60 dB minimum over the frequency range
Max. Distance via Cat 5 Twisted Pair (UTP) *	Composite Video Color: 2200 ft (670m) * Composite Video B&W: 2500 ft (762m) * S-Video: 1000 ft (305m) * <i>*Measured between Source (ie;DVD) and Destination (ie;Monitor) with Hub placed anywhere between the source and destination</i>
Cable – UTP	24 gauge or lower solid copper twisted pair wire impedance: 100 ohms at 1 MHz. Cat 3 or better.
Connectors	Source Input: (1) RJ45 jack on rear panel Looping Output: (1) RJ45 jack on rear panel Distribution Outputs: (8) RJ45 jacks on front panel
RJ45 Pin Configuration Reverse Polarity Sensitive	Video 1: Ring 7 Tip 8 Audio 1: Ring 1 Tip 2 Video 2: Ring 4 Tip 5 Audio 2: Ring 3 Tip 6
Diagnostics	Power LED – Green
Power Supply	External AC: 110V and 220/240V DC: +/- 12VDC, 5W total max.
Power Supply Connector	5-pin DIN; pin 1 GND, pin 2 GND, pin 4 -12V, pin 5 +12V.
Temperature	Operating: 0 to 55 C. Storage:-20 to 85 C. Humidity: up to 95% non-condensing
Dimensions	8.5" x 4" x 1.3"
Compliance	FCC, CE-EMC Directive 89/336/EEC



2222 Pleasant View Road, Suite #1
 Middleton, WI 53562
 Phone: 608-831-0880
 T/F: 1-866-4-MATMIX
 Fax: 608-831-1833
intelix@intelix.com www.intelix.com