

AI-S



Advanced Simulation Technology inc.

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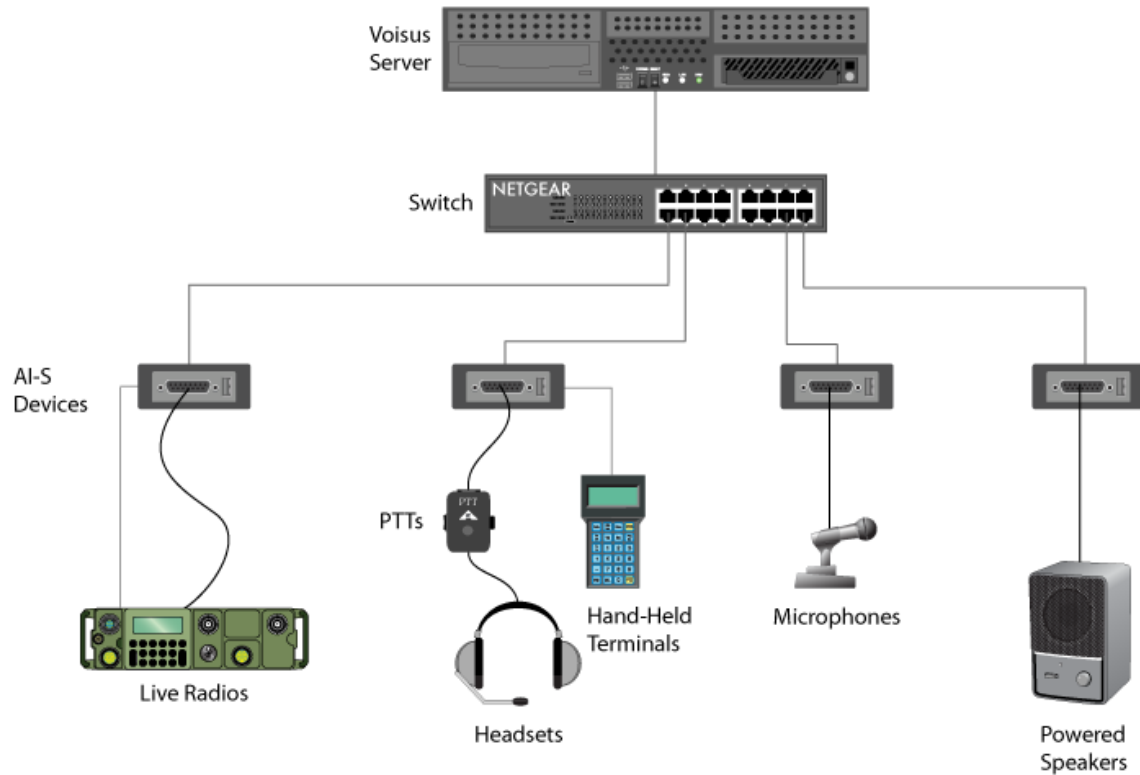
www.asti-usa.com

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The AI-S (ASTi Interface - Single) is a compact audio and I/O distribution device that connects remotely located operator headsets, speakers, control panels, and other peripherals to the Voicous network via Ethernet.

AI-S Hardware Diagram:

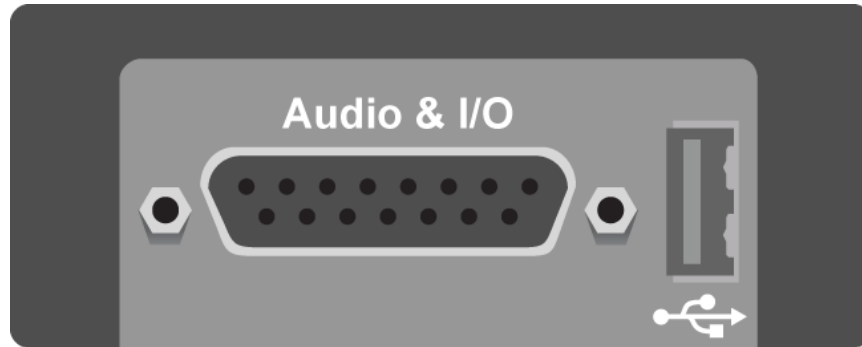


1 Features

- **Stereo Support:** Stereo operation (independent left and right output) is supported on a single connector, reducing cabling complexity and installation footprint for applications requiring stereo operators.
- **Reduced Footprint:** The AI-S has a compact footprint and fits easily on a desktop.
- **Software Configurable:** Adjustable preamp gains and sidetone for easy, direct connection to a variety of audio/communications systems and peripherals.
- **Serial Data Port:** Provides a convenient control interface for ASTi Hand-Held Terminals (HHTs), simulated panels, and live radio control.
- **Integrated I/O:** Configurable digital and analog I/O for direct connection of PTT units, volume controls, switch detection, radio PTT activation, and other control applications.

2 Physical Specifications

- AI-S Front Panel:

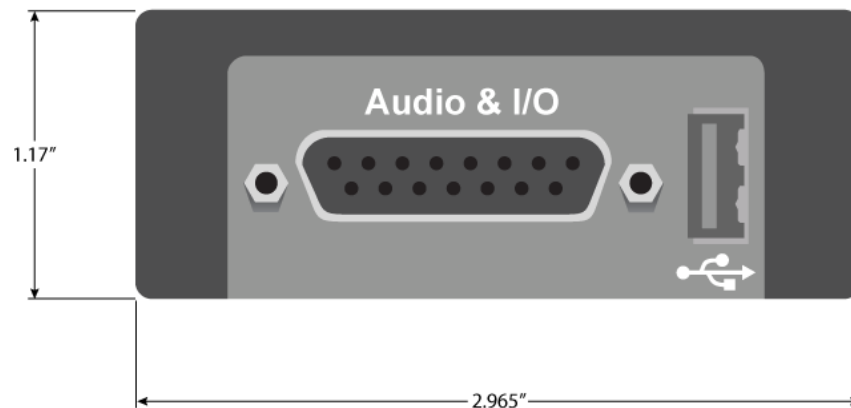


- AI-S Rear Panel:



2.1 Dimensions

Dimensions without connectors: 4.860" L x 2.965" W x 1.17" H



2.2 Weight

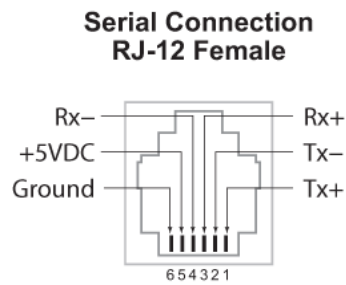
A packaged AI-S weighs 5oz.

2.3 Power Requirements

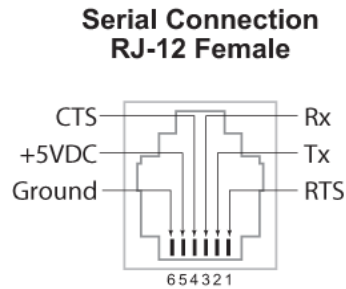
- The AI-S is powered through the Ethernet port via Power over Ethernet (PoE).
- Power Consumption: <10w @ 56VDC

2.4 Serial Connection

- **RJ-12 Pinout for RS-422 Mode**



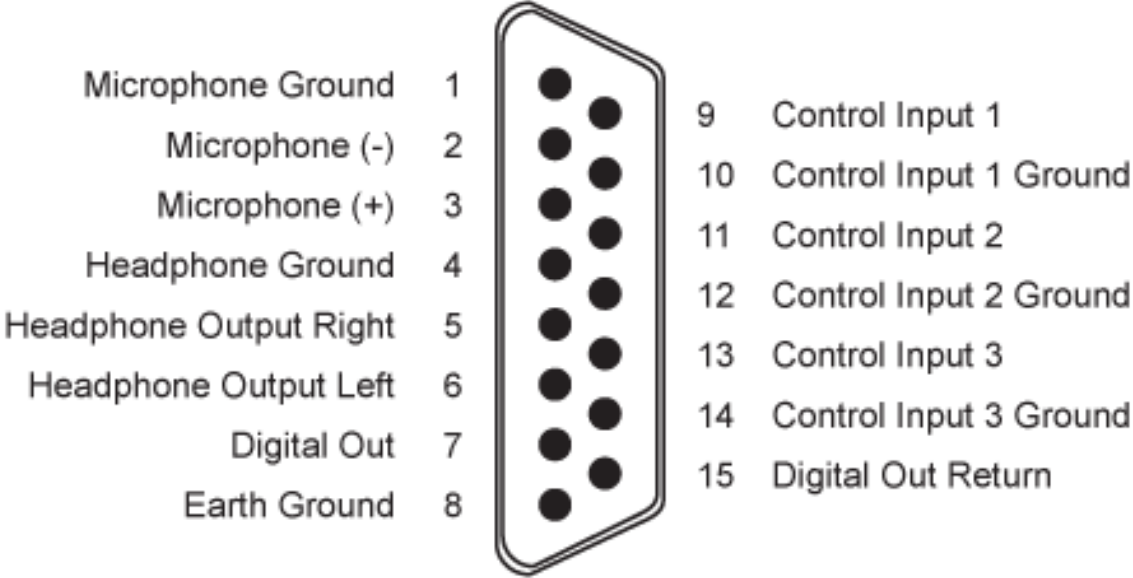
- **RJ-12 Pinout for RS-232 Mode**



2.5 Audio Interface Pinout

- **DB-15 Connector Pinout Diagram**

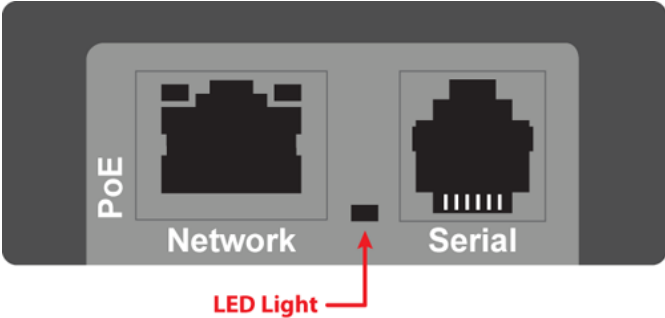
Interface Connection DB 15 Female



Shell: Earth Ground

2.6 Status Indicator Lights

The AI-S LED indicator light displays AI-S status.



LED Light	Status
Solid Green	Normal operation
Flashing Blue	Boot mode

Table 1: Audio Input

Characteristic	Value
Input Impedance	4.6 k
Max. Input Level	3.25 V _{pp} max (6.5 V _{pp} differential)
Input Gain	0dB, +9dB to 60dB, software configurable (see Note 1)

3 Audio Input and Audio Output

Note 1: The AI-S gain covers a total gain range of 60dB. The range 9dB to 60dB can be set in 3dB steps. The range 0dB to 9dB cannot be selected as a function of design.

Table 2: Audio Output

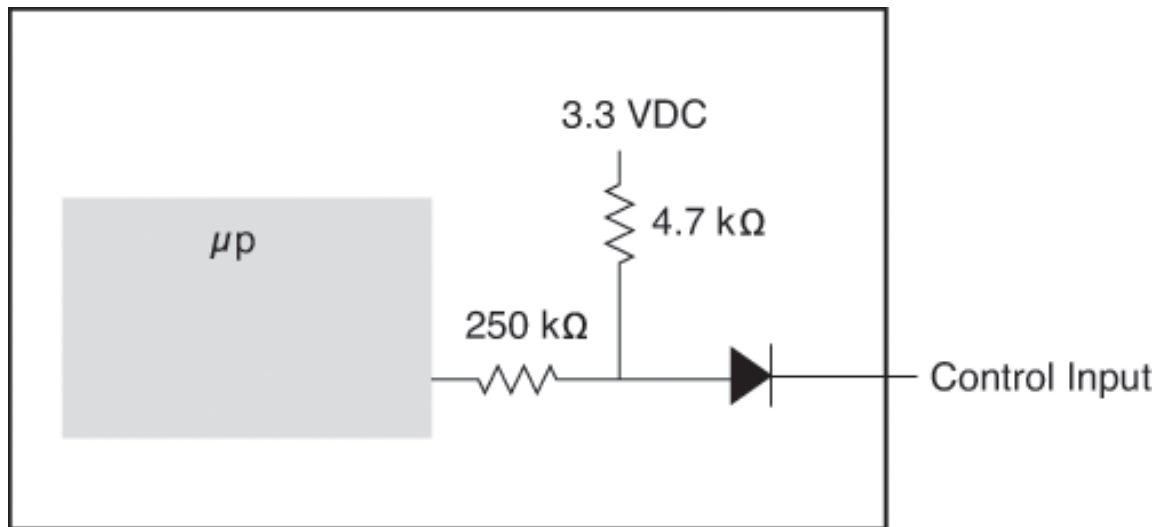
Characteristic	Value
Output Power	150 mW per Channel at 16
Max. Output Signal	5 V _{pp}

4 Control Input and Digital Output

4.1 Control Input

The control inputs are contact sensing; no voltage is required. Simply connect the control input and control input ground lines together using a switch or other suitable device, such as a press-to-talk (PTT) device. The control input can logically function as either a digital input or an analog input.

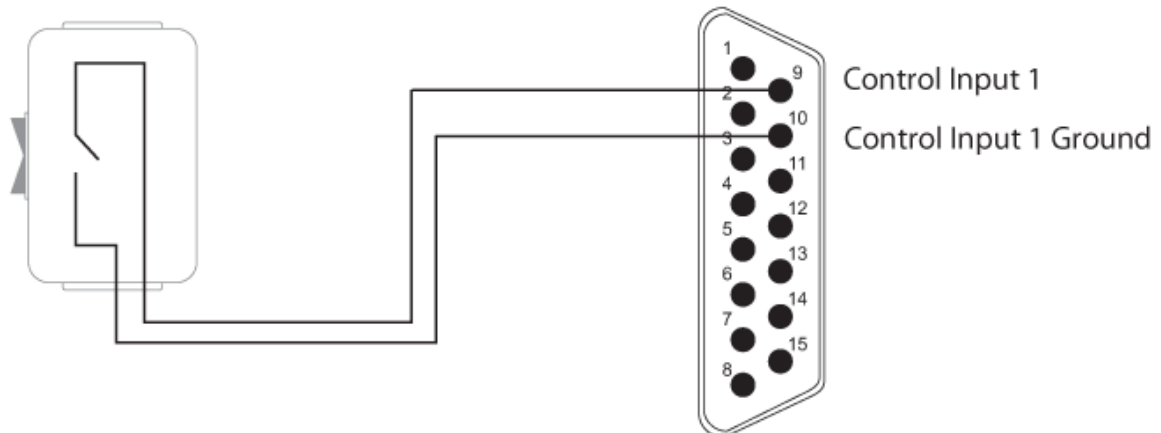
Control Input Circuitry



Control Input Used as Digital Input

To use the Control Input as a Digital Input, simply short or open the required pins. For example, if you short pins 9 and 10, Control Input 1 will be True. If the pins are open, Control Input 1 will be False. In this example the control input acts like an on/off switch.

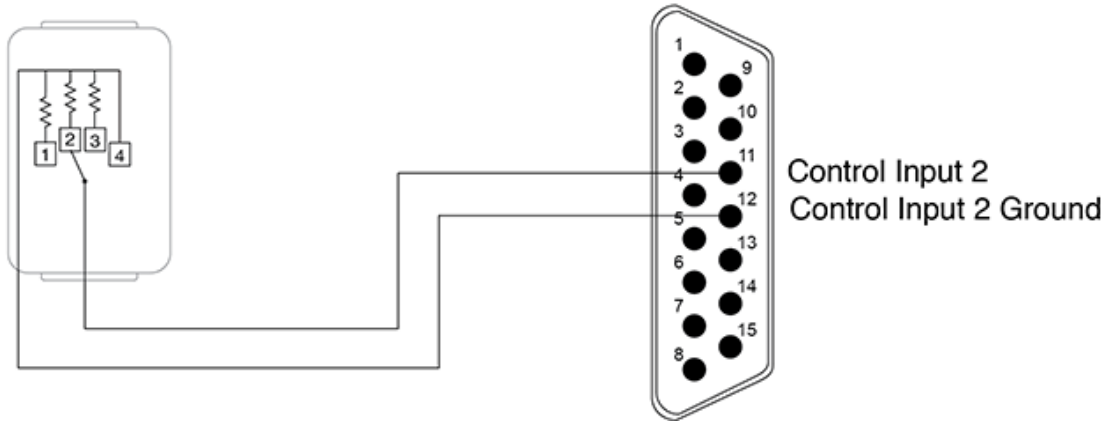
Hand-Held PTT



Control Input Used as Analog Input

The control input can be used as an analog input by inserting a resistance between the control input and control input ground pins. The 4-channel selector knob, for example, contains a switch that is used to change the resistance between the control input and control input ground pins.

Four-channel selector knob

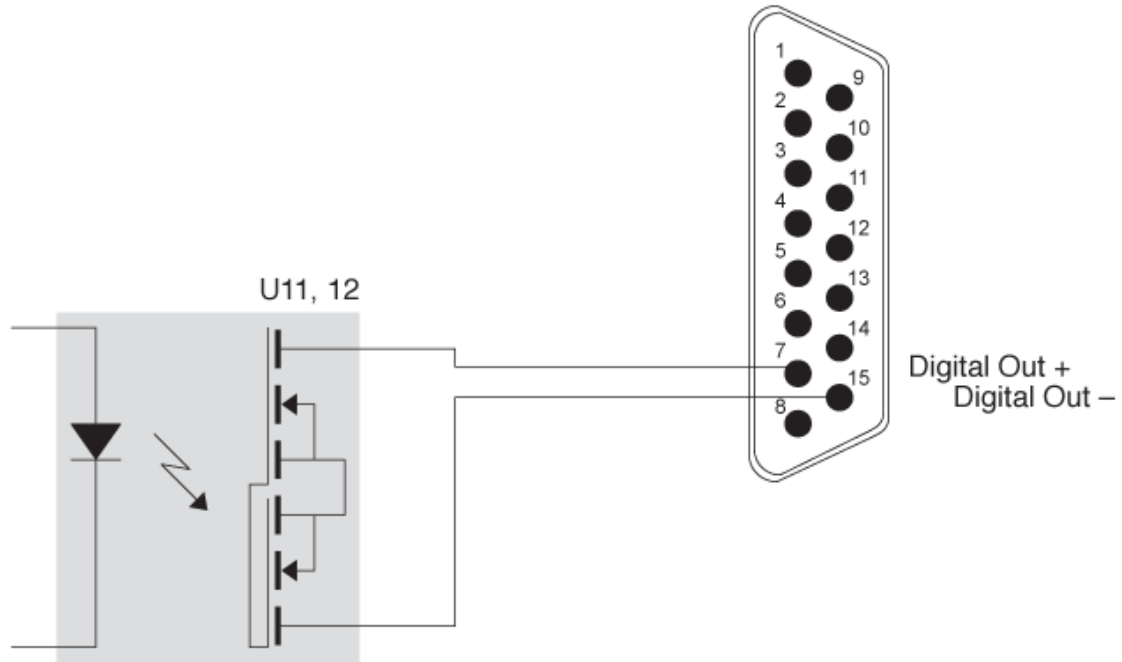


4.2 Digital Output

The digital output circuitry consists of an opto-isolated, solid-state relay for switching power to external loads.

Type	Opto-isolated FET
Maximum Continuous Current Rating	120 mA
Maximum Power Dissipation	300 mW

Digital Output Circuitry



5 Additional Information

5.1 Memory Devices

The AI-S memory devices are summarized in the table below.

Volatile	
MCU Internal SRAM	96kB SRAM
SDRAM	8MB

Non-Volatile	
MCU Internal	512 kB

5.2 Temperature & Humidity Ranges

The AI-S temperature and humidity ranges are summarized in the table below.

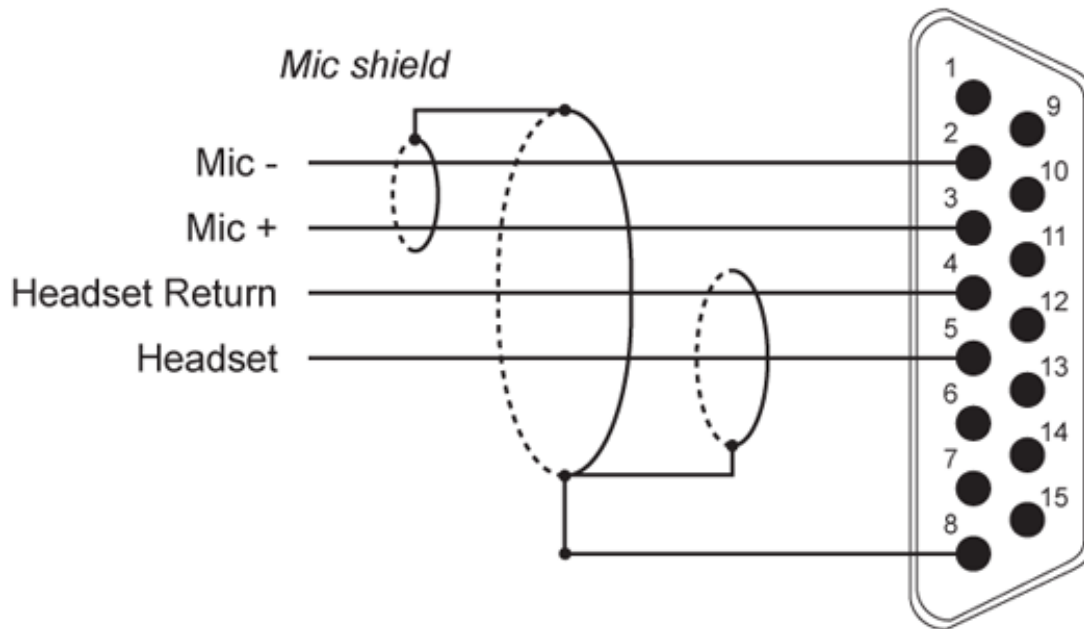
Type of Range	Suggested Range
Operating Temperature Range	+10C to +32C (50F to 90F)
Operating Max. Temperature Gradient	20C (68F) per hour
Operating Humidity Range	10% to 70% non-condensing
Storage Temperature Range	0C to 55C (32F to 135F)
Storage Max. Temperature Gradient	30C (86F) per hour
Storage Humidity Range	5% to 95%

5.3 Reliability

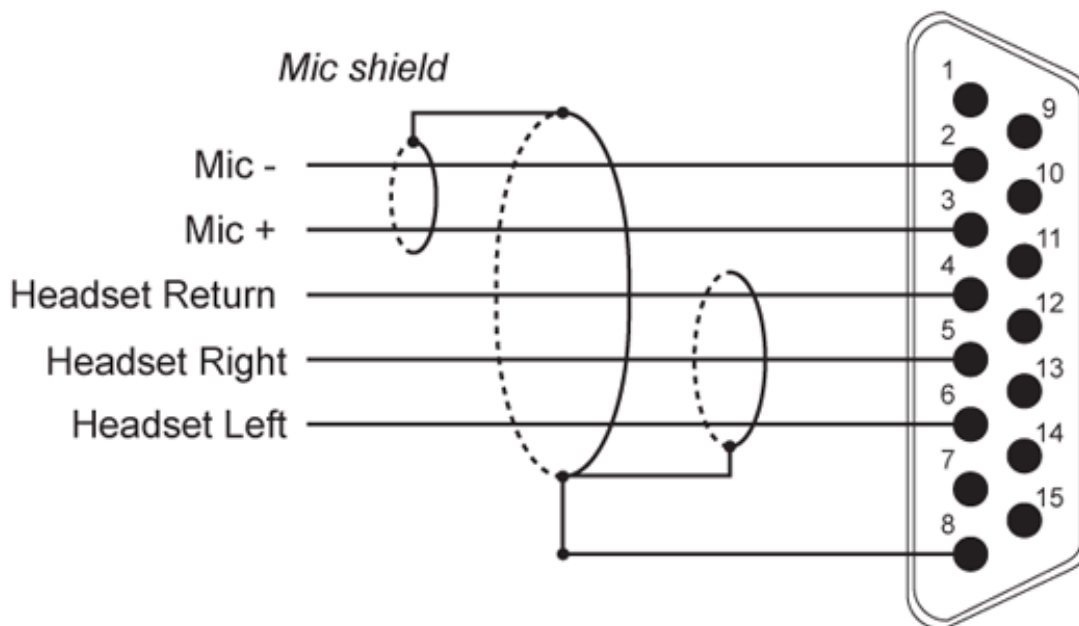
Typical System Mean Time Between Failure (MTBF): 1,970,288.06 hours

6 Typical Headset Settings

- Typical Mono Headset Connection:



- Typical Stereo Headset Connection:



7 Warranty Information

- The equipment is covered by warranty for a period of one year following purchase. In the case of equipment upgrades, the warranty applies to original date of shipment of individual components.
- Other commercial equipment purchased or provided such as monitors, amplifiers, speakers, and fiber optic links are also covered under the one year warranty unless otherwise stated.
- The warranty does not cover improper equipment handling or improperly packaged returns. Extended warranties are available. Contact ASTi for details at (703) 471-2104.

7.1 Repairs and Returns

If it becomes necessary to return the equipment to ASTi, please observe the following instructions:

1. Request an RMA number through the ASTi website: <http://www.asti-usa.com/support/>
The receiving team at ASTi will not receive a repair without an RMA number.
2. When packaging the equipment for return, make sure it is well protected. **ALWAYS DOUBLE-BOX THE EQUIPMENT.** The inner container should employ some semi-rigid, contour-fitting foam, while the exterior container should use a more pliant, shock-absorbing material such as styrofoam peanuts. The device should be properly enclosed in an anti-static bag to prevent

possible ESD damage. Failure to properly package the equipment during shipping could void the warranty.

3. Do not ship accessory pieces such as rackmount kits, power supplies or software. Only include items that do not work.
4. The shipping label must include the RMA number.
5. Include a description of the problem including the serial number for the unit in question. Include point-of-contact information including name, telephone number and equipment return address. Failure to include this information could extensively delay the return of the equipment.