1522AIOLR
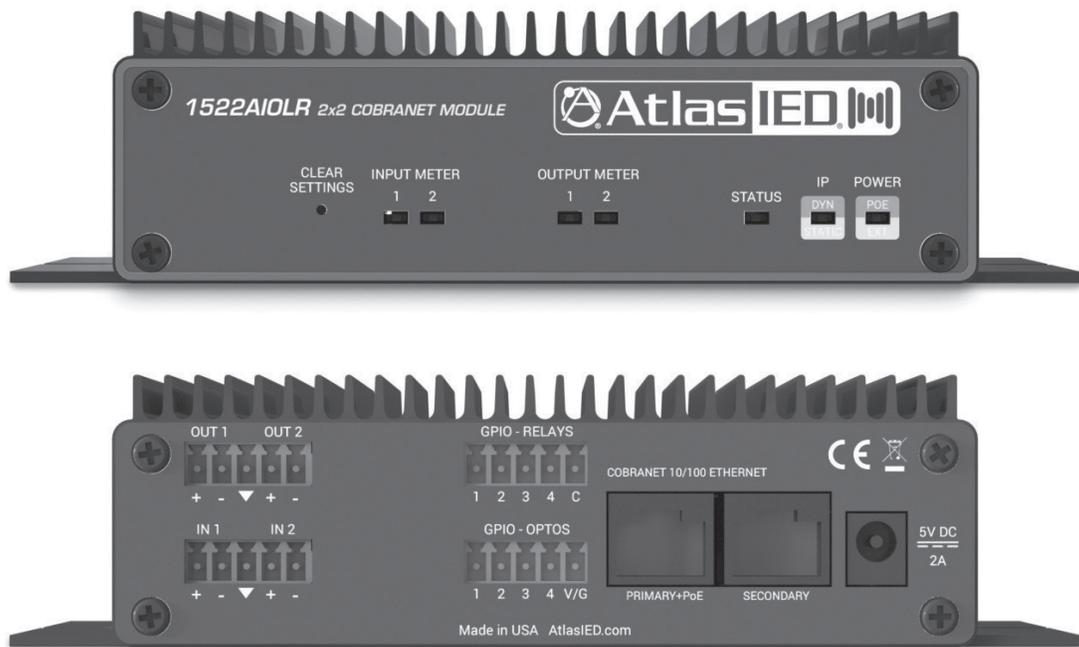## *2x2 CobraNet Audio I/O Module with Logic Inputs and Relay Outputs*
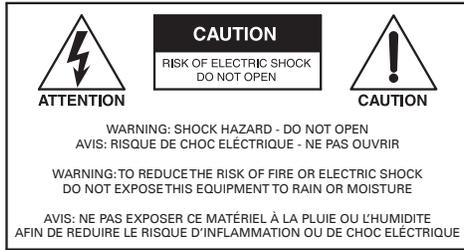
Installation Manual
Version: 0.2
Document: 1231B

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Important Safety Instructions

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

ATTENTION   CAUTION

WARNING: SHOCK HAZARD - DO NOT OPEN
AVIS: RISQUE DE CHOC ELÉCTRIQUE - NE PAS OUVRIR

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

AVIS: NE PAS EXPOSER CE MATÉRIEL À LA PLUIE OU L'HUMIDITE
AFIN DE REDUIRE LE RISQUE D'INFLAMMATION OU DE CHOC ELÉCTRIQUE

The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage " within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this device near water.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other device that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device.

11. Only use attachments / accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the device. When a cart is used, use caution when moving the cart / device combination to avoid injury from tip-over.

13. Unplug this device during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the device has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled, or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

16. **WARNING:** To reduce the risk of fire or electric shock, this device should not be exposed to rain or moisture and objects filled with liquids, such as a vase, should not be placed on this device.

17. To completely disconnect this equipment from the mains, disconnect the power supply cord plug from the receptacle.

18. The mains plug of the power supply cord shall remain readily operable.

19. ⏚ Protective earthing terminal. The apparatus should be connected to a mains socket with a protective earthing connection.

⚡ WARNING - When The Device Is In Use

- WARNING: For the terminals marked with symbol of ⚡ may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready-made leads or cords.
- WARNING: The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.
- WARNING: The mains plug is used as disconnect device, the disconnect device shall remain readily operable.
- To prevent electric shock, do not remove the product cover as there are high voltage components inside. Refer all servicing to AtlasIED.
- Should any of the following irregularities occur during use, immediately switch off the power, disconnect the power cord from the AC outlet and contact AtlasIED. Do not to attempt to continue operation with the product as this may cause fire or electric shock:
  - Smoke or strange smell coming from the unit.
  - If the product falls or the case is damaged.
  - If water or any metallic objects falls into the product.
  - If the power supply cord is damaged in any way.
  - If the unit is malfunctioning.
- Do not insert or drop metallic objects or flammable materials into the ventilation holes of the product's cover, as this may result in electric shock or fire.
- Do not place any containers with liquid or metallic objects on the top of the product. If any liquid spills into the unit, fire or electric shock may result.
- Never operate this product or touch the power supply cord during an electrical storm, electric shock may result.
- Never exceed the power rating on the product when connecting equipment. Fire and/or property damage may result.
- Operate the product only with the voltage specified on the unit. Fire and/or electric shock may result if a higher voltage is used.
- Do not modify, kink, or cut the power cord. Do not place the power cord in close proximity to heaters and do not place heavy objects on the power cord, including the product itself, doing so may result in fire or electrical shock.
- Ensure that the safety ground terminal is connected to a proper ground. Never connect the ground to a gas pipe as a catastrophic disaster may result.
- Be sure the installation of the product is stable, avoid slanted surfaces as the product may fall and cause injury or property damage.

⚠ CAUTION - When Installing The Product

- Plugging in or unplugging the power cord with wet hands may result in electric shock.
- Never move the unit with the power cord plugged into the wall, as damage to the power cord may result.
- When unplugging the cord from the wall, grasp the plug, NOT the cord.
- Never install this product in humid or dusty locations, nor in direct sunlight, near sources of heat, or in areas where sooty smoke or steam are present. Fire and electric shock may result.
- Keep all sides of the unit at least $3^1/_2$" away from objects that may obstruct air flow to prevent the unit's internal temperature rise.

⚠ CAUTION - When The Product Is In Use

- Never place heavy objects on the product, causing it to fall and/or break, resulting in personal injury and property damage. In addition, the product itself may fall and cause injury and property damage.
- Contact AtlasIED for instructions on cleaning the inside of the unit. Large accumulations of dust inside the unit may result in heat buildup and fire.
- Ensure that the power supply plug is securely plugged into the wall outlet. Never allow dust to accumulate on the power plug or inside the wall outlet.
- When cleaning the unit or the unit is not to be operated for an extended period, unplug the power cord from the wall.

WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain, moisture, dripping, splashing, or place objects filled with liquids on the equipment.

AVERTISSEMENT: Afin de réduire le risque d'incendie ou de choc électrique, n'exposez pas cet appareil à la pluie, à l'humidité, à l'égouttement, aux éclaboussures, et ne posez pas des objets remplis de liquide sur l'appareil

WARNING: If apparatus is equipped with Class I grounding plugs for safety purposes, it must be connected to MAINS that employ a protective earth ground connection.

AVERTISSEMENT: si l'appareil est équipé de prises de terre classe I, pour des raisons de sécurité, il doit être branché sur un réseau ayant une prise de terre de protection.

WARNING: The MAINS plug on this device may be used as the DISCONNECT DEVICE for MAINS power and must remain readily operable.

AVERTISSEMENT: La prise principale de cet appareil peut être utilisé comme DISPOSITIF de DECONNEXION du courant principal et doit rester facilement accessible.

WARNING: Installation and maintenance of AtlasIED equipment is to be made by trained / qualified personnel and must conform to all applicable local codes.

AVERTISSEMENT: l'installation et la maintenance des équipements AtlasIED doit être faite par du personnel formé / qualifié et doivent être conformes à toutes les réglementations locales en vigueur.

WARNING: If unit contains a lithium battery, there is a danger of explosion. Replace only with the same or equivalent type.

AVERTISSEMENT: Si l'unité contient une pile au lithium, il y a un danger d'explosion. Remplacez-la uniquement avec un modèle identique ou équivalent.

Safety Considerations

Safety Precautions

Personnel properly qualified in the application and use of life safety equipment ("qualified personnel") shall read this manual carefully before performing any actions to specify, apply, install, maintain and perform operational tests of AtlasIED systems, and associated products in accordance with the instructions in this manual. This manual shall be made available to all qualified personnel who operate, test, maintain, or service AtlasIED systems, and associated products. It is strongly recommend that such personnel read and understand the entire manual.

WARNING: IF SAFETY PRECAUTIONS, INSTALLATION AND TESTING ARE NOT PERFORMED PROPERLY, CONDITIONS COULD EXIST IN WHICH THE ATLASIED SYSTEM MAY NOT OPERATE, OR MAY OPERATE IMPROPERLY. THIS COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

AVERTISSEMENT: SI LES MESURES DE SECURITE, L'INSTALLATION ET LES ESSAIS NE SONT PAS EFFECTUES CORRECTEMENT, CELA POURRAIT EMPECHER LE SYSTÈME ATLASIED DE FONCTIONNER, OU DE FONCTIONNER CORRECTEMENT. CELA POURRAIT PROVOQUER DES DEGATS MATERIELS ET DES BLESSURES GRAVES, OU LA MORT POUR LES AUTRES ET/OU VOUS-MEMES.

It is very important that only responsible, trained personnel are allowed to operate and maintain these systems, and that they use only appropriate equipment and tools. If a person is not trained, they shall contact the AtlasIED factory for direction on how to operate and maintain an AtlasIED system.

Unauthorized personnel and equipment must be restricted from the areas of operation.

All operations should be performed carefully, methodically, and without hurrying. Greater effectiveness will be developed by increased familiarity of personnel with their assignments. During any maintenance operation, if a malfunction occurs or an incorrect indication appears, stop the operation and determine whether or not it is safe to proceed. Before performing any step in a procedure, be sure that the preceding step has been properly executed and correct results obtained. Cleanliness and good housekeeping in all installation areas are major factors in effective accident prevention. Tools and equipment should be maintained in good working order and should always be returned to their proper storage place after usage. Cleaning agents and other cleaning aids should be removed from the equipment areas immediately upon completing the task at hand.

AtlasIED|⦿|

9701 TAYLORSVILLE ROAD
LOUISVILLE, KENTUCKY 40299 U.S.A.

TELEPHONE: (502) 267-7436
SUPPORT@ATLASIED.COM

AtlasIED.com

General Precautions

Changes, modifications, or additions in connection with the AtlasIED system equipment shall not be made without explicit authorization of AtlasIED.

Safety devices found on mechanical, and electrical and electronic equipment are put there for the protection of personnel and equipment. These devices must be maintained in good working order and operative at all times. Safety devices shall never be removed or bypassed unless specifically authorized by the AtlasIED factory. Where safety devices have been rendered inoperable by proper and specific authorization, adequate notices shall be posted to warn personnel of the potential hazard.

Avoid the use of flammable or toxic cleaning fluids, and the use of carbon tetrachloride is prohibited.

Maintenance of the equipment shall be at least what is specified in the AtlasIED manuals and literature, and performed only by qualified personnel.

Whenever operation and maintenance is ongoing, personnel in the equipment areas shall have an effective communication among these areas in order to protect people if any accident occurs.

Preliminary Precautions

Precautions which are applicable to general electrical or electronic maintenance are as follows:

A. Check yourself. Wear no article that might catch on equipment or that might act as a conductor.

B. Check the working area. The equipment area shall be clean and dry. If possible, stand on a special insulator such as a rubber mat. There should be ample working space and good lighting.

C. Check the tools. Always use proper tools and check them for their safe condition. Use screwdrivers with plastic handles. Check test equipment periodically and examine test leads carefully as the slightest break in insulation is dangerous.

D. Check the procedures. Study the entire procedure before taking the first step. Consult the circuit diagram frequently to obtain an understanding of what is accomplished at each step. Know what is in the equipment and how it differs from others on which you have worked.

E. Be aware that high voltages may be present across terminals that are normally low voltage, due to equipment breakdown. Be careful when measuring low voltages in equipment containing high voltage circuits.

F. Do not make resistance measurements with power on.

G. Do not work within the equipment without the presence of a person who is capable of rendering aid, and who is familiar with the procedure for emergency shutdown of the equipment.

Precautions When Measuring High Voltage Potentials

Observe the following precautions when measurements must be performed on circuits with potentials over 48 volts.

A. Do not measure potentials over 48 volts without the presence or assistance of a person who is capable of rendering aid, and who is familiar with the procedure for emergency shutdown of the equipment.

B. Be sure you are not grounded when you are adjusting equipment or using measuring equipment. Stand on a rubber mat or other insulator if possible. Be sure the equipment area is clean and dry. In general, use only one hand when servicing live equipment.

C. If a test meter must be held or adjusted while voltage is applied, ground the case of the meter before starting a measurement. Do not touch the live equipment or personnel working on live equipment while holding the meter. The "common" terminal on some A/C electronic voltmeters is at ground potential; never connect the "common" terminal to any point above ground potential.

D. High-voltage, high-capacitance capacitors should be discharged before servicing is started.

⚡ **WARNING!** Discharging must be done carefully and judiciously. First ascertain whether there is a built-in bleeder network. If so, wait a minute or two for the capacitor to discharge through the network. Otherwise, use an external discharge network. This is most important in the case of high voltage or high capacitance capacitors. If one terminal is connected to ground, connect the discharge network between the other terminal and ground. If neither terminal of the capacitor is grounded, connect the network across the capacitor terminals. Connecting a short circuit across the terminals is not recommended. Doing so can produce extremely high currents and a flash which can injure the eyes, vaporize metals, and cause burns.

⚡ **AVERTISSEMENT:** La décharge doit être faite soigneusement et judicieusement. Vérifier d'abord si il y a un réseau de purgeur incorporé. Si c'est le cas, attendez une minute ou deux pour que le condensateur se décharge par le réseau. Sinon, utilisez un réseau de décharge externe. Ceci est très important en cas de haute tension ou des condensateurs à haute capacité. Si un terminal est relié à la terre, connecter le réseau de décharge entre l'autre terminal et la terre. Si aucun terminal de condensateur est fondé, relier le réseau au terminal du condensateur. La connexion d'un court-circuit entre les terminaux n'est pas recommandée. Cela peut créé des courants très élevés où des étincelles pourrait blesser les yeux, fondre les métaux et causer des brûlures.

Precautions When Working on Energized Equipment

When it is necessary to work on energized equipment, think ahead and anticipate every hazard. Never work alone on energized equipment.

Interlock switches are installed on some of the doors and panels to break the power circuits when the enclosure is entered. When it is necessary to work within such an enclosure on energized equipment, the interlock may be bypassed. Extreme caution should then be exercised, as dangerous voltages are present within the unit.

AC Power Circuits

Equipment obtaining power from a secondary distribution system should be grounded at all times by means of a third grounding wire on the power lines. Equipment permanently wired to a secondary distribution system should also be grounded separately by connection to a grounding bus or ground rod with a sufficiently large conductor to handle the current expected if the secondary source is accidentally shorted to the equipment.

The ground wire should be protected from mechanical damage and periodically inspected for good physical condition.

Personnel should never depend on a switch to remove power from equipment. If the equipment is connected to the secondary distribution system by means of a power cable, detach the cable from the receptacle before attempting any repairs of removal of chassis.

If the equipment is permanently wired to the secondary distribution system, remove the main fuses or open the power switch. Attach a suitable warning tag to the switch which will warn personnel not to operate the equipment; only the person who originally attaches the warning tag should be authorized to remove it.

Resuscitation

Personnel working with or near high voltage should be familiar with modern methods of resuscitation. Such information and training is available from the Red Cross or local emergency response personnel such as the police and fire department.

<blockquote>

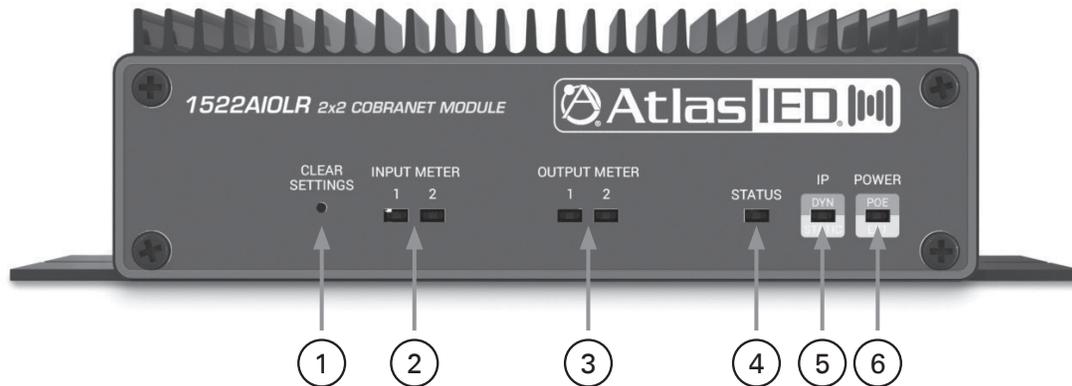</blockquote>

Introduction

The 1522AIOLR 2x2 CobraNet Audio I/O Module provides the ability to get analog audio onto or off of a network using CobraNet audio technology. This module includes DSP functions including level control, equalization (EQ), delay and compression. The 1522AIOLR provides two line-level balanced analog audio outputs and two mic or line-level balanced analog inputs. Additionally, there is 48V phantom power that may be enabled on the inputs. The 1522AIOLR integrates with AtlasIED's GLOBALCOM.IP announcement controller, or may be used in stand-alone applications.

The 1522AIOLR also provides four opto-isolated logic inputs, and four isolated relay contact closures.

Key Features

- Two Balanced Analog Mic / Line Inputs
- Software Adjustable, Non-volatile, Input Levels from –50 to + 24dBu
- -90dB THD+N
- Software Selectable 48V Phantom Power Individually Available On All Inputs
- Two Balanced Analog Line Outputs
- Software Adjustable, Non-volatile Output Levels from -10 to + 24dBu
- Four Opto-isolated Inputs
- Four Normally Open Relay Isolated Outputs
- Redundant CobraNet
- Separate CobraNet Channels Used for In and Out
- Programmable Delay Up to 10 Seconds on Each Audio Output
- 5 Band Parametric Equalizer Bands (High-Pass, Low-Pass, Peaking, Notch)
- Compander / Limiter On Each Input
- Level Control
- Power Over Ethernet (PoE) 802.3af Compliant on Primary Ethernet Connection
- Can be eExternally Powered From + 5V Supply if PoE Not Available (Order Separately)

Front Panel

1. **Clear Settings** - Multi-function recessed button:

   • When held during power up, loads factory default firmware (second copy stored onboard)

   • Short press (less than one second) switches between meter displays (see Meter LEDs)

   • Long press (between 1 and 3 seconds) enters menu mode, Meter LEDs all flash initially

   • Very long press (more than 3 seconds) resets the Meter LEDs to default input / output metering

2/3. **Input Meter / Output Meter** - During normal metering mode, these indicate the status of analog inputs / outputs:

   • Green - Audio detect above -40 dBfs (decibel full scale)

   • Red - Audio detect above -1 dBfs

   • Bright Red - Clipping at / above 0 dBfs – **Note**: When this condition occurs, it is held for one full second before the meter resumes normal indications.

   • Blinking Red - Firmware updating

   The Meter LEDs can be taken out of normal mode via the Clear Settings button. There are four alternate metering modes available by 1-4 short presses of the Clear Settings button:

   1. Show the CobraNet receiver levels on the Meter LEDs

   2. Show the CobraNet transmitter levels on the Meter LEDs

   3. Show the state of the four opto-inputs on the Meter LEDs

   4. Show the state of the four relay outputs on the Meter LEDs

   The Meter LEDs will return to normal metering mode upon a fifth press of the Clear Settings button or automatically after 10 seconds of showing the alternate mode selected.

4. **Status LED** - This multi-color LED indicates overall device status:

   • Green - Unit is OK

   • Yellow - Unit is running from its factory default (backup) firmware (after Clear Settings button held during startup)

   • Blinking Red - There is an internal error in the unit. **Note:** A unit in this condition will not respond over the network. The unit should register a communication fault in the AtlasIED system that is managing the device.
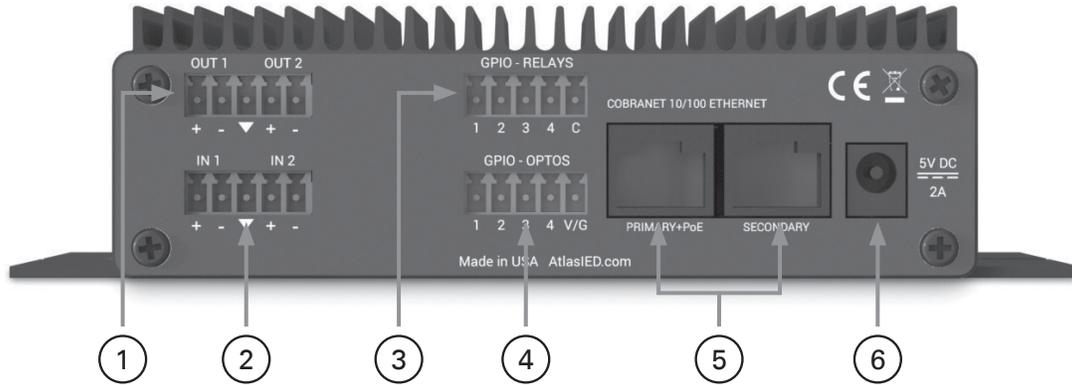
5. **IP Address LED** - This multi-color LED indicates the state of the IP address for the unit:

   • Blinking Yellow - There is no IP address assigned to the unit

   • Solid Yellow - A static IP address is assigned to the unit

   • Solid Green - A dynamic IP address is assigned to the unit (assigned via DHCP / BOOTP)

6. **Power LED** - This multi-color LED indicates the state of input power to the unit:

   • Green - Running from Power over Ethernet (PoE). **Note:** PoE is only available from the primary port RJ-45.

   • Yellow - Running from an external +5V supply

   • Yellow+Green - Both power sources are present (but hard to see as Yellow dominates).

Rear Panel

1. **Analog Outputs** - Balanced outputs at a level from -10 to +24 dBu.

2. **Analog Inputs** - Balanced inputs at a level from -50 to +24 dBu. Optionally, 48V phantom power may be enabled for these inputs.

3. **Relay Outputs** - Four dry contact closures between numbered pins and common (C) pin.

4. **Logic Inputs** - These four opto-isolated inputs are for connection to dry contact closures. The unit supplies 5V pull-up wetting voltage on all inputs.

5. **Redundant Ethernet Connections** - RJ-45 jacks for standard 100Base-T Ethernet connections. PoE is recognized only on the primary jack. If power needs to persist when this connection goes down or is cut, then one should supply power via the power input jack (6).

6. **Power Input** - Input of 5V DC with current rating sufficient for 10 Watts of power (2 Amps).

Installing the 1522AIOLR
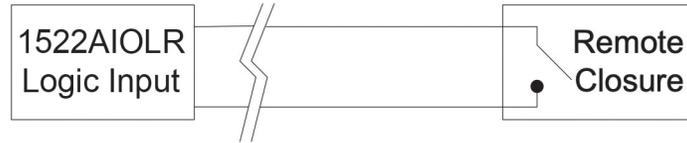
Unpacking and Preparing the Unit

Unpack the unit from its shipping carton and identify any accompanying components that may have been included. The unit as supplied is suitable for mounting to a flat surface via the slotted legs on each side.

Installing the Unit into a Rack

A rack mount kit (IEDENC2305) is available to mount a pair of units into a 19" rack.

Connecting Supervised Logic Inputs

In order to supervise logic inputs, it is necessary to provide external 10k Ohm resistors (not provided) on or near the remote device as shown in the figure below. The 1522AIOLR supplies a wetting voltage of 5V through a 1K Ohm resistor. This means the external contacts supplying the closure must be able to handle the 5 mA of current draw that would go through them.

Connecting Unbalanced Audio Inputs / Outputs

The analog audio inputs / outputs on the 1522AIOLR are balanced. On occasion, it may be necessary to connect unbalanced audio devices to the 1522AIOLR. When doing this, one should wire as shown in the figure below.

Connecting a Power Supply

A suitable power supply should be connected to the rear connector. Possible supplies that may be ordered separately from AtlasIED and used for this purpose include:

• Part PS025

Complete Unit Configuration

Once the unit is booted up, complete the system configuration using GLOBALCOM.IP System Management Center (SMC) software, as part of overall system configuration.

Resetting Audio Control Settings

The 1522AIOLR stores audio control settings in flash memory so that they may be restored upon power up. To restore all control settings, mixer volumes, and signal processing analog levels to factory defaults perform the following steps:

1. Enter MENU mode by pressing the CLEAR SETTINGS button for 1 to 3 seconds, until the meter LEDs all blink green.

2. Press the button (short presses) until the 3rd LED from the left is blinking.

3. Press the button for 1 to 3 seconds until the LED stops blinking.

4. Power cycle the unit.

The unit's control settings will now be set to their default settings.

Resetting Static IP Address

If the unit has been configured for a static IP address, it can be reset back to a dynamically assigned IP address using the following steps:

1. Enter MENU mode by pressing the CLEAR SETTINGS button for 1 to 3 seconds, until the meter LEDs all blink green.

2. Press the button (short presses) until the 2nd LED from the left is blinking.

3. Press the button for 1 to 3 seconds until the LED stops blinking.

4. The unit's IP LED will now turn from solid yellow to flashing yellow until it has acquired a new dynamic IP address.

Resetting CobraNet Persistence

The CobraNet persistence variable can be reset if communication is lost with the 1522AIOLR CobraNet interface. To reset all CobraNet Tx and Rx bundles to 0, perform the following steps:

1. Enter MENU mode by pressing the CLEAR SETTINGS button for 1 to 3 seconds, until the meter LEDs all blink green.

2. Press the button (short press) until the 1st LED from the left is blinking.

3. Press the button for 1 to 3 seconds until the LED stops blinking.

The unit's CobraNet persistence variable is now reset.

System	
Type	2x2 CobraNet Audio I/O Module

CobraNet Input / Output	
Type	Dual Redundant 100BaseT Ethernet
Connector	RJ-45, Qty 2
Precision	16, 20 or 24bit PCM
Sample Rate	48kHz
Latency	1.33, 2.66 or 5.33ms
Control Protocol	SNMP and HPI

Mic / Line Input	
Type	Balanced
Connector	Terminal Block
Input Level	-50 to +24dBu in 1dB Increments
Input Impedance	5KΩ Balanced
Phantom Power	48V @ 5mA Max per Input, Software Selectable On Each Input; On and Off
Dynamic Range [1]	>100dB
THD+N [2]	< -90dB
A/D Converter	24bit Over Sampling
Sample Rate	48kHz
Frequency Response	20Hz to 20kHz +/-3dB

Analog Output	
Type	Balanced
Connector	Terminal Block
Output Level	-10 to +24dBu in 1dBu Steps
Load Impedance	-10 to +14dBu: 600 Ohms or Greater; 15dBu to +24dBu: 2k Ohms or Greater
Dynamic Range [1]	>100dB
THD+N [2]	< -88dB
Sample Rate	48kHz
Frequency Response	20Hz to 20kHz +/-3dB

GP Opto-Isolated Inputs	
Isolation	2000VRMS
Input Drive	4mA Typical with Internal 5V Supply and Internal 1K Current Limiting Resistor

GP Relay Outputs	
Isolation	1500VRMS Between Relay Contacts and Coil
Contact Rating	Up to 220VDC / 250VAC and 2A, 60W Maximum

Indicators	
Power LED	Multi-color LED on Front
Input Meter LED	Multi-color LED on Front, Qty 2
Output Meter LED	Multi-color LED on Front, Qty 2
Status LED	Multi-color LED on Front
IP Address LED	Multi-color LED on Front
Network Connection LED	Yellow LED on RJ-45 Connectors on Rear
Network Data LED	Green LED on RJ-45 Connectors on Rear

Power Requirements	
PoE	IEEE 802.3af Power-over-Ethernet Class 0, Primary Ethernet Jack Only
Power Supply	External +5VDC @ 2A

Mechanical	
Dimensions (HxWxD)	1.9" x 6.5" x 3.125" (48mm x 165mm x 80mm)
Shipping Dimensions (HxWxD)	4.25" x 9.75" x 7" (108mm x 248mm x 178mm)
Unit Weight - lbs	1.5lb (0.68kg)
Shipping Weight - lbs	1.95lb (0.88kg)
Rack Mount Requirements	Rack-Mount Kit (IEDENC2305)
Environmental Specifications	
Operating Temperature Range	32°F to 113°F (0°C to 45°C) Ambient, Assuming Still Air.
Compliance	
Certifications	CE: EN55022, EN55024 Class A, FCC: Part 15 Subpart B Class A
Compliance	RoHS 2011 / 65 / EU

NOTES:

1. Dynamic range measured with a –60dBFs sine wave and A weighting filter and 20-20kHz b/w
2. THD+N measured using a + 20dBu 1kHz sine wave sampled at 48kHz, 20-20kHz b/w and A weighting filter

FCC Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

lwIP

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