

AVIOM[®]

AV-P2 ***Output Module***

User Guide

P/N 9310 1019 0001F rev 2.00

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PRO
16[®]



Certifications

ETL/cETL Listed

EMC: EN 55013, EN 55020, SAA AS/NZS 1053

Conforms to: IEC 60065, EN 60065, UL 6500-2001

Certified to: CAN/CSA E60065, KETI

RoHS Status: Pb-free



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READ THIS FIRST

Important Safety Instructions



1. Read these instructions.
2. Keep these instructions
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a 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 apparatus (including amplifiers) 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 third prong are provided for your safety. If the provided plug does not fit 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 the apparatus.



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 apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. No on/off power switches are included in the system. The external power supply should be used to control power to an Aviom device. This power supply should remain readily operable.
16. The solid line over dashed line symbol () indicates that the input voltage must be a DC voltage.
17. The box within a box symbol () indicates that the external power supply is double insulated.



WARNING!



TO REDUCE THE DANGER OF ELECTRICAL SHOCK DO NOT REMOVE COVERS.

NO USER SERVICEABLE PARTS INSIDE

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY

To reduce the risk of fire or electrical shock, do not expose this product to rain or other types of moisture.

To avoid the hazard of electrical shock, do not handle the power cord with wet hands.

Replace fuse with same type and rating.

Operating Temperature: 10°C to 50°C (50°F to 122°F)

Risque de choc électrique – ne pas ouvrir. Pour réduire le risque de feu ou de choc électrique, ne pas exposer cet équipement à la pluie ou la moisissure. Pour réduire le risque de choc électrique, ne pas retirer le couvercle. Pièces non remplaçables par l'utilisateur. Confier la réparation à une personne qualifiée. Attention – utiliser seulement un fusible de rechange de même type.

Cet appareil est conforme à la section 15 de la norme FCC. Son fonctionnement est soumis aux conditions suivantes : (1) cet équipement ne doit pas causer des interférences nocives, et (2) cet équipement doit accepter toute interférence captée incluant les interférences pouvant causer des opérations indésirables.

Cet appareil numérique de Classe B est conforme à la norme NMB-003 du Canada.

CAUTION:

- Using any audio system at high volume levels can cause permanent damage to your hearing.
- Set your system volume as low as possible.
- Avoid prolonged exposure to excessive sound pressure levels.

IMPORTANT:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to the product not expressly approved by Aviom, Inc. could void the user's FCC authority to operate the equipment.

Aviom, Inc. Limited Warranty

Aviom, Inc. warrants this product against defects in materials and workmanship for a period of **one year** from the date of the original retail purchase.

This warranty does not apply if the equipment has been damaged due to misuse, abuse, accident, or problems with electrical power. The warranty also does not apply if the product has been modified in any way, or if the product serial number has been damaged, modified, or removed.

If a defect is discovered, first write or call Aviom, Inc. to obtain a Return Authorization number. No service will be performed on any product returned without prior authorization. Aviom, Inc. will, at its option, repair or replace the product at no charge to you. The product must be returned during the warranty period, with transportation charges prepaid to Aviom, Inc., 1157 Phoenixville Pike, Suite 201, West Chester, PA 19380. You must use the product's original packing materials for shipment. Shipments should be insured for the value of the product. Include your name, address, phone number, description of the problem, and copy of the original bill of sale with the shipment. The Return Authorization number should be written on the outside of the box.

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Warranty Information

Please record the following information for future reference:

Your Authorized Aviom Dealer:

Name: _____

Address: _____

Phone: _____

Serial Numbers of Your Aviom Products: _____

Date of Purchase: _____

Your Authorized Aviom Dealer is your primary source for service and support. The information recorded above will be helpful in communicating with your Authorized Aviom Dealer should you need to contact Aviom Customer Service. If you have any questions concerning the use of this unit, please contact your Authorized Aviom Dealer first. For additional technical support, or to find the name of the nearest Authorized Aviom Repair Station, check the Aviom web site at www.aviom.com.

To fulfill warranty requirements, your Aviom product should be serviced only at an authorized Aviom service center. The Aviom serial number label must appear on the outside of the unit, or the Aviom warranty is void.

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Welcome

Thank you for purchasing the **AV-P2 Output Module**, a member of Aviom's Pro16® Series of digital products. All Pro16 products are powered by A-Net®, Aviom's proprietary data transmission protocol designed especially for the unique demands of live streaming audio. This User Guide is designed to familiarize you with your new product and to have your system up and running in no time.

Features

The AV-P2 Output Module is designed to output a 2-channel mono or stereo signal from a Pro16 system.

AV-P2 Output Module Features:

- Two balanced line-level audio output channels
- Individual output levels for each channel
- Audio output level DIP switches
- Euroblock terminal block audio connections
- Dual mono or stereo output
- Rotary A-Net channel selector
- Audio mute switch
- RJ45 A-Net® input and output
- Removable, reversible mounting flanges
- Remote power over A-Net by using the A-16D or A-16D Pro A-Net Distributor

Package Contents

Check the contents of the shipping box carefully before making connections and continuing with installation.

The contents of the AV-P2 Output Module box include:

- One AV-P2 Output Module
- Mounting flanges
- One DC power supply for the AV-P2
- User documentation

Conventions Used in this Document

Button Presses

When indicating a specific button or switch, a special typeface is used. For example, “when selecting a Preset, press the **RECALL** button, followed by a numbered button”.

AN-Series

The AN-16/i Input Module, AN-16/i-M Mic Input Module, and AN-16/o Output Module are referred to generically as the **AN-Series** of products.

When describing audio network configurations, the AN-16/i-M Mic Input Module and most Pro16 console interface cards can be substituted anywhere the AN-16/i is used.

Using Personal Mixers

It is possible to create an audio distribution and personal monitor system using any combination of the AV-P2, AN-Series I/O modules, and Personal Mixer products, including the A-16II, and A-16R.

When referring to the use of the personal mixers in a system in general, the terms **A-16II Mixer** or **Personal Mixer** are used to describe a case where a standard A-16II Personal Mixer or a rack mounted A-16R Personal Mixer (with/without the optional A-16CS Control Surface) can be used.

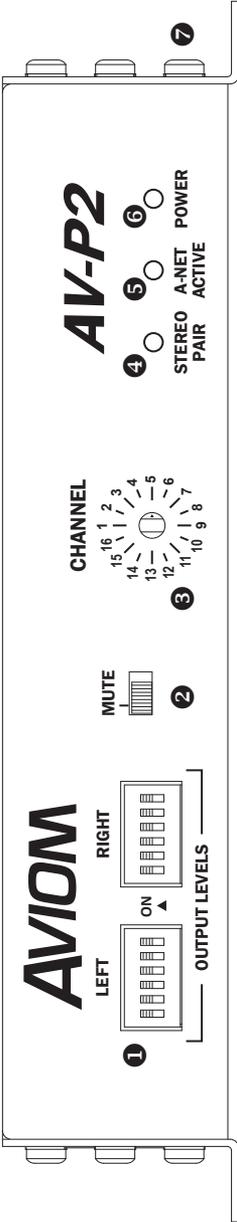
Cat-5 Cables

In most cases Cat-5e, Cat-6, and Cat-6e cables can be interchanged. When speaking about interconnections between components in a system, the term *Cat-5* is used generically to indicate the use of any of the applicable cable types.

A-Net Distributors

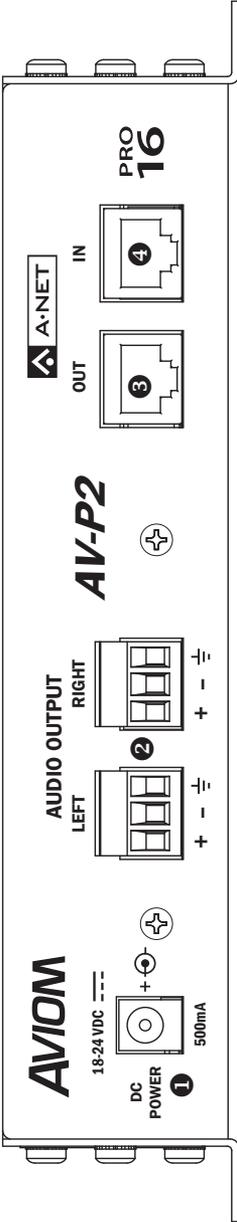
The A-16D and A-16D Pro A-Net Distributors are referred to generically as *A-Net Distributors*.

Front Panel Components



1. Output Level DIP Switches
2. Audio Mute Switch
3. A-Net Channel Selector
4. Stereo Pair LED
5. A-Net Active LED
6. Power LED
7. Reversible Mounting Flanges

Rear Panel Components



1. DC Power Connector
2. Audio Output Euroblock Connectors
3. A-Net Out Port
4. A-Net In Port

Compatibility

The AV-P2 Output Module can be used with the following Aviom Pro16 products:

- AN-16/i Input Module
- AN-16/i-M Mic Input Module
- AV-M8 Mic Input Module
- Aviom16/o-Y1 A-Net card for use with Yamaha® consoles
- A-16R Personal Mixer
- A-16II Personal Mixer
- A-16D A-Net Distributor
- A-16D Pro A-Net Distributor
- AN-16/o Output Module
- AN-16SBR System Bridge

In addition to the Aviom devices mentioned above, the AV-P2 Output Module can be connected to third-party devices that support Pro16 A-Net technology.

The AV-P2 Output Module can also be used with Aviom Pro64® systems when connected to the Pro64 ASI A-Net System Interface.

Pro16 Series Systems

A complete Pro16® Series audio network system consists of at least one Pro16 input module connected to at least one Pro16 output device such as the AV-P2 Output Module, AN-16/o Output Module, or A-16II Personal Mixer. Many configurations are possible by using additional input modules and/or Personal Mixers and output modules.

About A-Net

The Pro16® version of A-Net® is a high-speed data transmission protocol capable of sending and receiving high-quality digital audio using readily available Cat-5 cables. A-Net is a proprietary technology developed by Aviom.



A-Net is based on the physical layer of Ethernet, a Local Area Network (or LAN) technology. This provides A-Net with a mature and robust base on which to build. However, it is important to note that A-Net devices are not compatible with Ethernet devices.

As used in the Pro16 series products, the A-Net signal carries sixteen channels of digital data from the Pro16 input module (AN-16/i, AN-16/i-M, or compatible console card) to each A-Net device connected to the system.

Some of the benefits of using A-Net to transmit digital audio are:

- Virtually no latency
 - No ground loops
 - Easy cabling using readily available components
 - An unlimited number of A-Net devices can be used in a system
 - Ease in spanning long distances between system components
- ✓ **NOTE:** While the Cat-5e cables and connectors used on your Aviom products look like typical computer Ethernet network connections, do not connect computers, routers, or other home and business networking equipment to your Aviom products.

Compatibility with Pro64

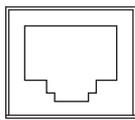
Many Pro16 products can be connected to a Pro64® A-Net system with the addition of the ASI A-Net Systems Interface. The ASI translates Pro64 A-Net data into Pro16 data and separates the 64-channel Pro64 stream into up to four 16-channel Pro16 outputs, depending on the Pro64 sample rate being used.

Only Pro16 devices that have an A-Net In port such as Personal Mixers, A-Net Distributors, and output modules are compatible with Pro64 and the ASI. Pro16 input modules and console cards cannot send their data into a Pro64 network.

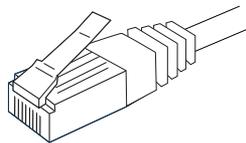
About Category 5

Category 5 (sometimes referred to as *Cat-5*) describes a commonly used type of high performance network cabling. It is used mainly for data transmission purposes to connect computers, modems and other devices. A standard Category 5 patch cable consists of four twisted pairs of copper wire terminated by RJ45 male connectors. The cable assembly is used to provide connectivity between any two Category 5 female outlet jacks. A variation, called Category 5e (or *Cat-5e*), uses additional twists in the cable to reduce interference in high-speed network applications. In general, when using long cable lengths, select *Cat-5e* cables for best performance.

Use Cat-5e Unshielded Twisted Pair (UTP) cables or better for all A-Net applications.



RJ45 Jack



Cat-5 Cable

The RJ45 connector looks similar to the connectors found on a telephone system, only larger. The twisting of the wire pairs helps to shield the cable from unwanted interference from electrical fields or radio interference (sometimes referred to as “RF”). Cat-5 cabling supports frequencies up to 100 MHz and speeds up to 1000 Mbps.

Cat-5 Cables

The cables used with your Aviom system are interchangeable with any standard Category 5e (Cat-5e) cables. If you need a longer cable for a particular application, any computer store should be able to supply you with an appropriate cable. A qualified technician should be able to build custom cables to any length (up to the maximum of 500 feet (150 meters) between components).

For fixed or permanent installations, you have the option of running Cat-5 cables inside walls and terminating them with readily available wall panel connectors that include the RJ45 jack. (Solid wire is recommended for permanent installations.)

In addition to standard Category 5e cables, Category 6 (Cat-6 and Cat-6e) cables can also be used.

- ✓ **NOTE:** When purchasing Category 5e cables, be sure to buy only standard Cat-5e UTP cables, not those sold as crossover cables. A crossover cable is used for file transfer between two computers. A crossover cable is not compatible with your Aviom equipment.

Cable Lengths

Cat-5e cables used with your Aviom products can be up to 500 feet (150 meters) in length between devices. The maximum cable length specification applies to the cable connected between the A-Net input module and the first Pro16 output device (such as an A-16II Personal Mixer) in your system as well as for cable runs between each additional Pro16 A-Net compatible device in your system.

computer outlets. Cables can be extended by using a simple passive device called an *inline coupler* to add length to existing cables (as long as you do not exceed the specified maximum cable length). If you need a longer cable on occasion, this is a simple solution. Note that it is possible that the maximum cable length specification can be compromised by using inline couplers or other passive connection devices.

AC Line Conditioning

Aviom products are digital devices and as such are sensitive to sudden spikes and drops in the AC line voltage. Changes in the line voltage from lightning, power outages, etc. can sometimes damage electronic equipment.

To minimize the chance of damage to your equipment from sudden changes in the AC line voltage, you may want to plug your equipment into a power source that has surge and spike protection. Power outlet strips are available with built-in surge protection circuits that may help protect your equipment.

Other options for protection of your equipment include the use of an AC line conditioner or a battery backup system (sometimes referred to as an *uninterruptible power supply*, or UPS).

Power Supplies

Your Aviom product uses a DC power supply that has a two-prong power cord. The prongs on the power supply are identical, meaning that there is no need to orient the plug in a specific direction in the power outlet. Some products with two-prong power cords have polarized plugs that can only be inserted into an electrical outlet one way.

The power supply that is shipped with your Aviom product is a universal switching type. It is capable of working with voltages from 90 to 240 volts AC. This means that a separate power supply is not needed to use the products with the AC power systems found in most countries. You should always use the power supply that shipped with your product. When travelling, you may need plug adapters to use the power supply with the AC outlet plug shape variations in use throughout the world.

Should you need to replace the power supply that came with your product, we recommend using only a power supply that meets the following specifications.

Type:	Switching	
Input Voltage:	90-240 volts	50/60Hz 30VA
Output:	24VDC	0.5A
Polarity	Outer = negative; Inner = positive	
Plug Size	2 mm	



Note that polarity of the plug found on the DC power supply needs to match that of the original power supply that came with your Aviom equipment. Aviom products use a center positive power supply. The outer contact is negative, the inner contact is positive. (See the diagram above.)

Cleaning and Maintenance Information

The exterior of your Aviom products should be cleaned with a dry, soft, lint-free cloth. For tougher dirt, you can use a cloth slightly dampened with water or with a mild detergent.

When cleaning your Aviom products, never spray cleaners directly onto the product surfaces. Instead, spray a small amount of the cleaning solution onto a clean cloth first. Then use the dampened cloth to clean the product.

- ✓ **NOTE:** Never use solvents or abrasive cleaners on the finished surfaces of your Aviom products.

Mounting the AV-P2

The AV-P2 module is designed to be mounted to any flat surface. Optionally, it can be rack mounted using a standard 19-inch rack shelf. Two AV-P2 units can fit on a single rack shelf.

The mounting flanges on each side of the device are designed to support the weight of the AV-P2 without additional hardware. The mounting flanges can be reversed easily using only a Phillips head screwdriver. Each mounting flange contains holes for two screws per side. Always support the unit with all four screws when attaching the product to a flat surface.

If desired, the mounting flanges can be turned around so that they mount under the AV-P2, making the profile of the AV-P2 as small as possible. Always use all the mounting screws when reversing the flanges on the AV-P2.

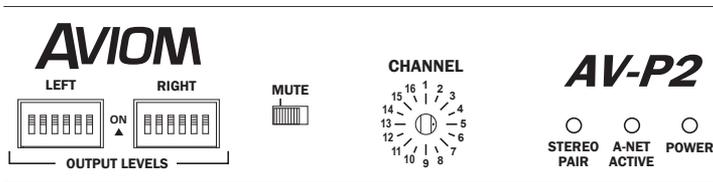
Always allow adequate ventilation for devices mounted in equipment racks. Avoid placing your AV-P2 directly above or below other rack-mounted devices that produce high levels of heat, such as power amps.

Panel Descriptions

This section explains the basic layout of the front and rear panels of your new Aviom product. The diagrams on the previous pages can be used as a quick visual guide to the location of the components of the AV-P2 mentioned in this section.

AV-P2 Front Panel

The front panel of the AV-P2 contains the Output Level DIP switches, Mute switch, A-Net Channel Selector knob, and LED indicators for Stereo Pair, A-Net Active, and Power.



The AV-P2 front panel interface

Audio Output Levels

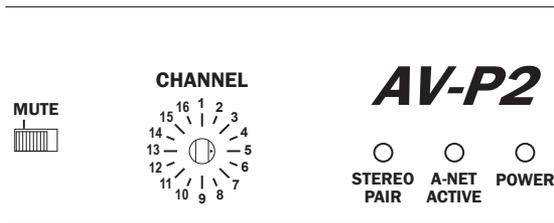
Individual DIP switches are provided for left and right channel audio output levels. The top of the AV-P2 case includes a handy output level chart. Move a DIP switch to the up position to activate it.

Mute Switch

The Mute switch provides an easy way to turn the audio output of the AV-P2 off temporarily without having to change the output level settings. Use it when making audio connections to other devices, changing cable routings, etc. Move the switch to the left to mute the AV-P2 audio output and to the right for normal operation.

A-Net Channel Selector

The AV-P2 can output single channel, dual mono, or stereo audio signals. The rotary channel selector knob is used to select a mono or stereo signal from the Pro16 A-Net stream connected to the AV-P2 via its A-Net In port.



The rotary Channel selector

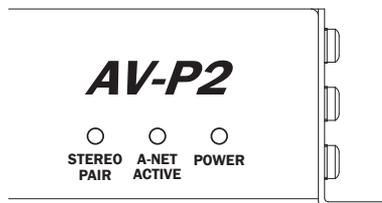
The Channel Selector provides mono or stereo output signals based on the settings of the Pro16 network's input module's Stereo Link switches.

- ✓ **Note:** The left and right audio channels have separate output level settings. When using mono A-Net channels, this allows two different output levels to be set if desired.

Stereo Pair LED

The Stereo Pair LED will light whenever the Channel Selector knob is positioned on either channel that makes up a left/right stereo pair (as set by the network's input module).

For example, if A-Net channels 3 and 4 are stereo linked in the network, moving the AV-P2 Channel Selector knob to either position 3 or 4 will produce the same result: the Stereo Pair LED will light, A-Net channel 3 is assigned to the AV-P2 left audio output, and A-Net channel 4 is assigned to the AV-P2 right output.



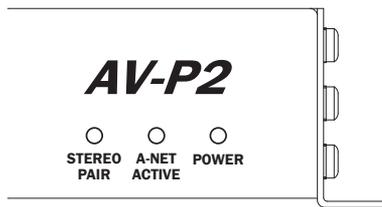
The Stereo Pair, A-Net Active, and Power LED indicators

A-Net Active LED

Whenever a valid A-Net signal is connected to the AV-P2 via the A-Net In port, the A-Net Active LED will light.

Power LED

The Power LED lights whenever the AV-P2 DC power supply is connected to a valid AC power source, or when it is receiving power over the Cat-5 connection. It does not, however, indicate that a valid A-Net digital stream is being received. That is the job of the A-Net Active LED.

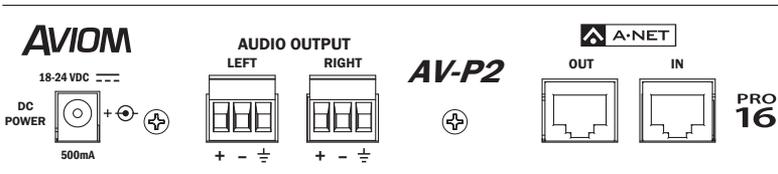


The Power LED indicators will be on when the AV-P2 is powered via the Cat-5 cable or from its own DC power supply.

AV-P2 Rear Panel

The rear panel of the AV-P2 Output Module contains the DC power connector, the left/right audio output Euroblock connections, and the A-Net connections.

The outputs on the AV-P2 use 5.0 mm Euroblock connectors, and can be connected to balanced or unbalanced audio devices. Male Euroblock jacks are provided.



The AV-P2 rear panel

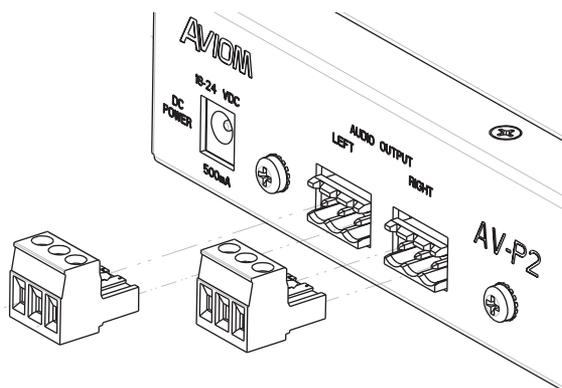
DC Power Connector

The AV-P2 Output Module comes with an external DC switching-type power supply. This type of power supply can be used worldwide with a wide range of AC wall current output voltages (100-240VAC). When traveling, you do not need to replace the power supply in countries where voltages are different. You may, however, need plug adapters to allow the power supply to be connected to wall outlets in some countries, since many countries use different physical plug layouts for their power systems.

If a replacement power supply is required, always choose a power supply with equivalent specifications: 18-24 VDC, 500mA, center pin positive.

Audio Outputs

Audio outputs on the AV-P2 are provided via locking Euroblock connectors. Each channel's output level can be set individually using the DIP switches on the front panel.



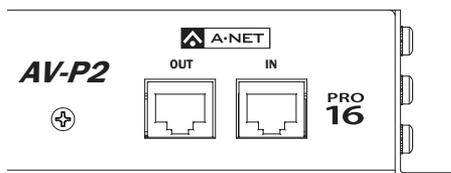
Euroblock connectors plug into the sockets on the AV-P2 panel.

The Euroblock plugs can be connected using only a small flat-blade screwdriver.

A-Net Connections

Two A-Net connections are provided on the rear panel of the AV-P2 Output Module. There is one A-Net In port and one A-Net Out port.

The A-Net In port receives digital data in Aviom's proprietary A-Net format. The A-Net Out port is used to pass incoming A-Net data to additional A-Net compatible devices in a system. The A-Net Out port will always transmit the full 16-channel A-Net stream regardless of the settings on the AV-P2.



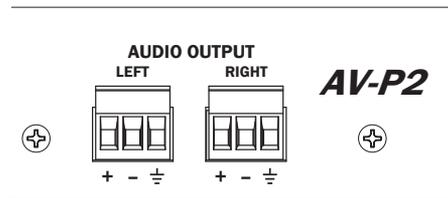
The AV-P2 rear-panel A-Net connections

Connecting Audio

The audio outputs on the AV-P2 Output Module can be connected to balanced or unbalanced devices via the Euroblock jacks.

Wiring a Euroblock

Euroblock connectors provide an easy, solder-free way of making audio connections between the AV-P2 and other audio components. Only a small flat-blade screw driver is required to make connections. For extra strength, you can add solder to each bare wire on an audio cable to stop the wire strands from unwinding (called “tinning”).

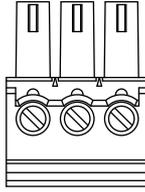


AV-P2 left/right Euroblock audio outputs

Connecting to a Balanced Device

To connect the AV-P2 Euroblock audio output to a device that can accept a balanced line-level input:

1. Strip the insulating jacket of the cable back about .75 inch (18 mm) to reveal the individual hot, cold, and ground wires within.
2. Remove a small amount of each individual wire's insulation (approximately .25 inch, 6 mm).
3. On the 5.0 mm Euroblock male plug, use a small screw driver to loosen and open the sockets that will receive the individual wires.
4. Insert the individual hot (+), cold (-), and ground wires into the matching sockets on the Euroblock plug.
5. Tighten the screws on the wire sockets to secure the individual wires.
6. Plug the completed Euroblock plug into the desired output channel on the AV-P2.
7. Connect the AV-P2 to your audio device.



The Euroblock plug, showing the screws that hold the individual wires in place (left-to-right), hot (+), cold (-), and ground

Connecting to an Unbalanced Device

The AV-P2 audio outputs can be connected to unbalanced audio devices; connections can use single-conductor or two-conductor shielded cable.

Single-conductor shielded cable

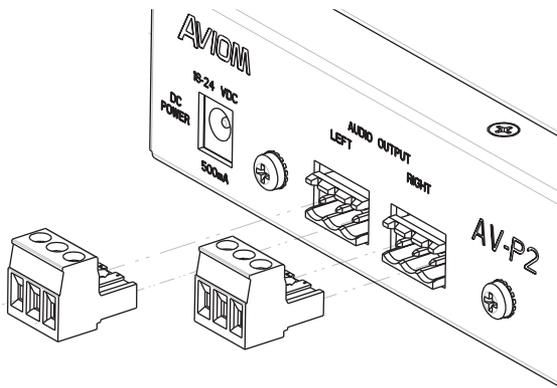
To connect the AV-P2 audio output to an unbalanced line-level device using single-conductor shielded cable:

1. Strip the insulating jacket of the cable back about .75 inch (18 mm) to reveal the individual hot and ground wires within.
2. Remove a small amount of each individual wire's insulation (approximately .25 inch, 6 mm).
3. On the Euroblock plug, use a small screw driver to loosen and open the sockets that will receive the individual wires.
4. Insert the audio cable's hot (+) wire into the matching socket on the Euroblock plug.
5. Insert the audio cable's ground wire into the matching socket on the Euroblock plug. The cold (-) socket on the Euroblock remains unused in this configuration.
6. Tighten the screws on the wire sockets to secure the individual wires.
7. Plug the completed Euroblock plug into the desired output channel on the AV-P2.
8. Connect the completed cable to your audio device.

Two-conductor shielded cable

To connect the AV-P2 audio output to an unbalanced line-level device using two-conductor shielded cable:

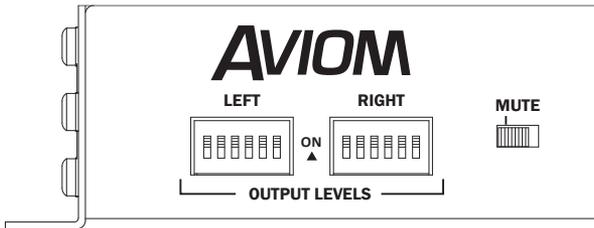
1. Strip the insulating jacket of the cable back about .75 inch (18 mm) to reveal the individual hot and ground wires within.
2. Remove a small amount of each individual wire's insulation (approximately .25 inch, 6 mm).
3. On the Euroblock plug, use a small screw driver to loosen and open the sockets that will receive the individual wires.
4. Insert the audio cable's hot (+) wire into the matching socket on the Euroblock plug.
5. Insert the audio cable's cold (-) wire into the matching socket on the Euroblock plug.
6. Insert the audio cable's ground wire into the matching socket on the Euroblock plug.
7. Tighten the screws on the wire sockets to secure the individual wires.
8. Plug the completed Euroblock plug into the desired output channel on the AV-P2.
9. At the other end of the cable, connect the hot (+) wire to the unbalanced device's hot connector.
10. Connect the cold (-) and ground wire to the unbalanced device's ground connector.
11. Connect the completed cable to your audio device.



Plug the completed Euroblock connectors into the AV-P2 audio output jacks.

Setting Output Levels

Output levels on the AV-P2 are set with the DIP switches on the front panel. Individual settings are possible for the left and right audio channels.



The AV-P2 front panel interface

To temporarily mute the output of the AV-P2 while adjustments are being made, move the **Mute** switch to the left.

DIP Switch Settings Table

The following table lists the DIP switch settings for the AV-P2 left/right output levels. In the output levels table, "0" indicates the down position and "1" indicates the up position on the DIP switch.

DIP Switch Setting						LEVEL (dB)
1	2	3	4	5	6	
1	1	1	1	1	1	0
1	1	1	1	1	0	-1.2
1	1	1	1	0	1	-2.9
1	1	1	1	0	0	-4.6
0	1	1	1	1	1	-5.7
0	1	1	1	1	0	-6.9
0	1	1	1	0	1	-8.6
0	1	1	1	0	0	-10.3
0	1	0	1	1	1	-12.9
0	1	0	1	1	0	-14.1
0	1	0	1	0	1	-15.8
0	1	0	1	0	0	-17.5
0	0	1	1	1	1	-19.0
0	0	1	1	1	0	-20.2
0	0	1	1	0	1	-21.8
0	0	1	1	0	0	-23.6
0	0	0	1	1	1	-25.5
0	0	0	1	1	0	-26.7
0	0	0	1	0	1	-28.4
0	0	0	1	0	0	-30.2
0	0	0	0	1	1	-31.5
0	0	0	0	1	0	-32.8
0	0	0	0	0	1	-34.4
0	0	0	0	0	0	-35.9

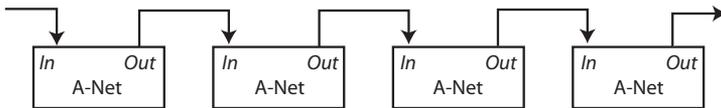
The output level table is also printed on the top of the AV-P2 case for quick reference.

A-Net Connections

When creating a Pro16 A-Net system, the simplest connection method uses what is called a *daisy chain*. That is, each A-Net device is connected in series. The first device in the chain receives its A-Net signal from the AV-M8 Mic Input Module's A-Net Out port. Each successive A-Net compatible device gets its A-Net connection from the A-Net Out port of the device preceding it in the daisy chain.

There is one drawback to this connection method, however. If one A-Net device in the daisy chain is disconnected from the A-Net signal chain, all units beyond that point will not output any audio until the unit is reconnected to a valid A-Net source.

Series Connection of A-Net Devices



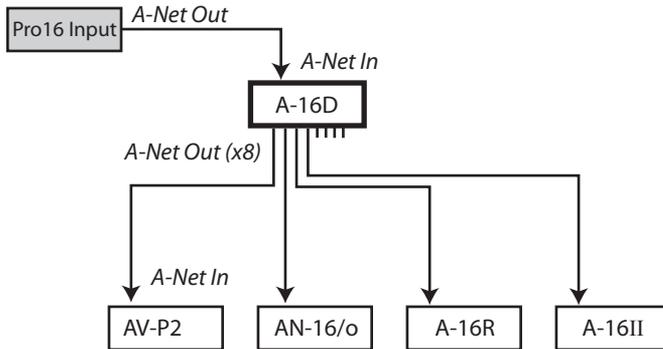
In this diagram, A-Net is connected from device to device using Cat-5e cables. The A-Net Out port on the first device connects to the A-Net In port on the next, and so on.

Parallel A-Net Routing

A parallel A-Net connection eliminates the need to daisy chain A-Net devices together. By using the optional A-16D or A-16D Pro A-Net Distributor, parallel A-Net connections are possible. In fact, any combination of series and parallel connections can be used to solve even the most complex audio routing problems.

Using an A-Net Distributor

Any Pro16 A-Net Distributor can be connected to the A-Net Out port of a Pro16 device. In the diagram below, a variety of A-Net compatible components are shown connected in parallel to an A-16D A-Net Distributor.



A-Net Out from the Pro16 input module connects to an A-Net Distributor and then up to eight parallel streams can connect additional Pro16 products.

The A-Net signal from the A-16D Distributor is connected to each A-Net compatible device with a Cat-5e cable. Removing one A-Net device has no effect on the other A-Net components being used.

- ✓ **Note:** The A-16D Pro Distributor can also be used in this configuration. It supplies DC power over the Cat-5e cable to compatible Pro16 devices.

Extending A-Net Cable Runs

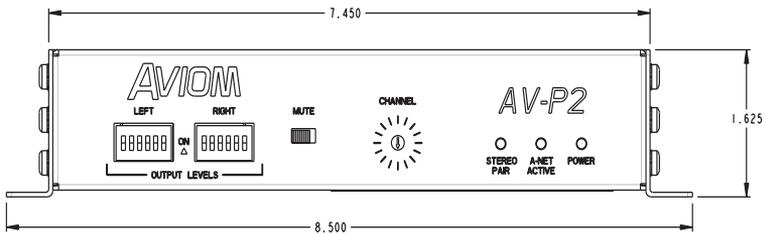
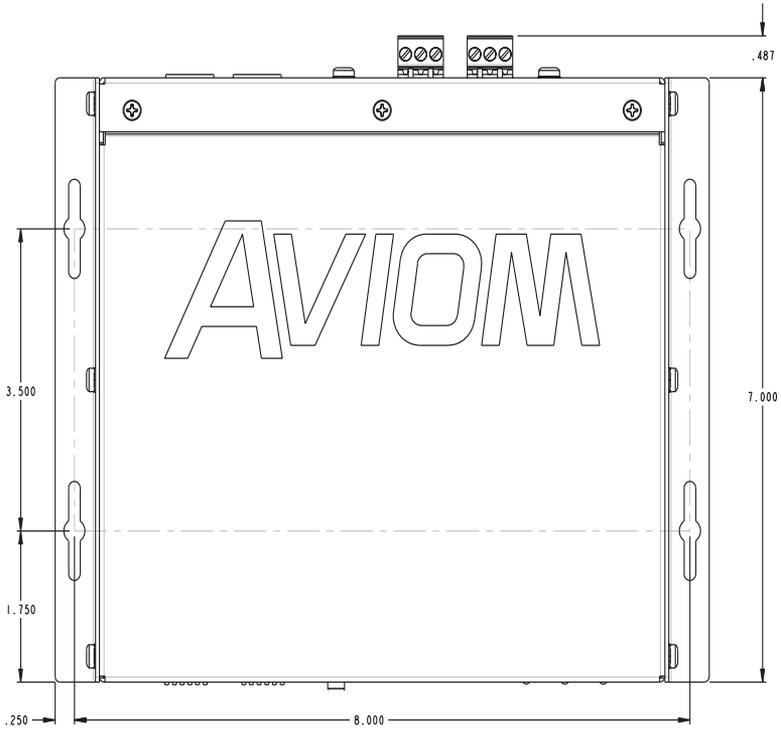
To span distances longer than the maximum specified for a single A-Net cable (500 feet, 150 meters), the A-16D (or A-16D Pro) A-Net Distributor can be used as a signal repeater. Simply insert the A-16D or A-16D Pro into the A-Net stream at the 500-foot point and the A-Net signal will be refreshed. Another 500 feet/150 meters of cable can then be added. This process can be repeated as many times as required to extend cables. In fact, any Pro16 device will refresh the A-Net signal and allow another 500-foot cable run between it and the next Pro16 device.

For long distance applications, fiber optic cable can be used to span distances up to 50 miles (80 km) with the use of devices called *media converters*. A media converter changes the Cat-5 Ethernet-based A-Net signal to a fiber optical signal at the source location and then back to Cat-5 at the destination. Several companies make media converters that can be used with your Aviom equipment. Both single and multi-mode fiber devices can be used. Refer to the Aviom website for a list of approved devices.

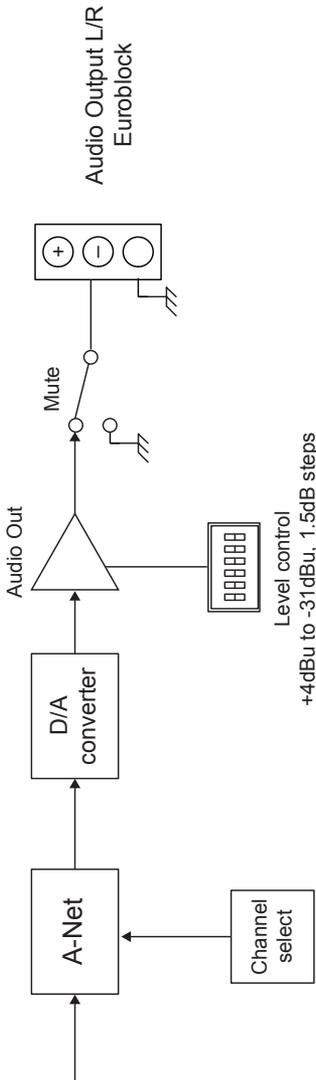
Specifications

Audio Outputs	2, impedance balanced line-level
	5.0 mm Euroblock connectors, female, panel-mount
	2 male Euroblock connectors supplied in box
	Screw terminals: Audio +; Audio -; Ground
Channel Selection	16-position rotary switch
D/A Conversion	48kHz, 24-bit
Output Levels	Variable: +4dBu to -31dBu in 1.5dB increments
	6-position DIP switch, per channel
Indicators	LEDs; red: Power, green: A-Net Active, yellow: Stereo Pair
Output Impedance	100 ohms
Signal to Noise (unweighted)	93dB typical, A/D to D/A
	Measured from AN-16/i Input Module to AV-P2
Freq. Response	4Hz–22kHz +0.2dB/-3dB
THD +N	-93dB at -10dBFS
Crosstalk	-85dB at 1kHz
Bit Error Rate (BER)	10 ⁻¹²
Digital Connections	A-Net In: 1; A-Net Out: 1; RJ45 connectors
Pro16™ A-Net®	Uses unshielded Cat-5e UTP (or better) cable
Latency	0.880 msec (measured from analog input to analog output)
Power Supply Input Voltage Output Voltage Plug Size	External, DC, universal switching type
	100–240 volts, 50/60Hz, 30VA
	18–24 VDC, 0.5 amp
Dimensions	2 mm, locking, center pin hot
	7.45" (189.2 mm) wide x 7" (177.8 mm) deep; 1U high
Weight	3.4 lb. (1.54 kg)
<i>All Aviom products are designed and manufactured in the USA.</i>	

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Block Diagram



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