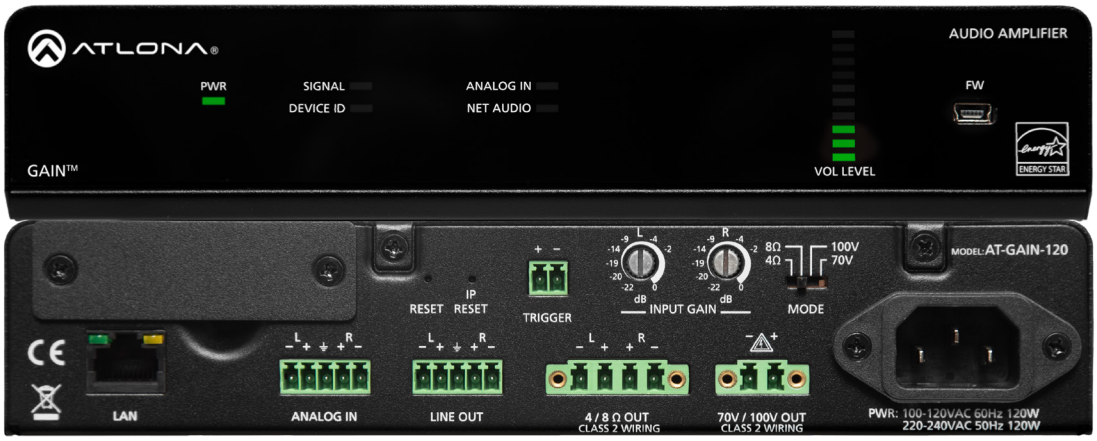
ATLONA
A division of HR

Stereo / Mono
Audio Power Amplifier
120 Watts



AT-GAIN-120

Atlona Manuals
Audio

Version Information

Version	Release Date	Notes
6	Nov 2023	Corrected errors in specification table.

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Operating Notes

IMPORTANT: Visit https://www.atlona.com/product/AT-GAIN-120 for the latest firmware updates and User Manual.

IMPORTANT: The input signal detection feature is *only* available on hardware revision B (or later). The hardware revision can be found on the sticker, on the bottom of the AT-GAIN-120.

Warranty

To view the product warranty, use the following link or QR code:

https://atlona.com/warranty/.

Important Safety Information

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.

Das Symbol des Blitzzeichens innerhalb eines gleichseitigen Dreiecks soll den Benutzer davor warnen, dass innerhalb des Gehäuses gefährlich hohe Spannung an berührbaren Teilen anliegt. Die Spannung ist hoch genug um bei Berührung zu einem gefährlichen elektrischen Schlag zu führen!

三角形內帶有箭頭符號的閃電，旨意在提醒用戶產品外殼內存在未絕緣的“危險電壓”可能會造成人體觸電危險

Вспышка молнии с символом стрелки в треугольнике предназначена для предупреждения пользователя о наличии неизолированного «опасного напряжения» в корпусе продукта, которое может иметь достаточную величину, чтобы представлять опасность поражения электрическим током для людей

Le flash lumineux dans le symbole de la flèche du triangle équilatéral est destiné à alerter l’utilisateur de la présence d’une «tension dangereuse» non isolée dans l’enceinte du produit qui peut être suffisamment importante pour constituer un risque d’électrocution pour les personnes

Il simbolo del lampo con la punta di una freccia, all’interno di un triangolo equilatero, avvisa l’utente della presenza di “tensioni pericolose” non isolate all’interno del contenitore del prodotto che possono essere sufficientemente elevate da costituire un rischio di folgorazione per le persone.

El símbolo del rayo con punta de flecha dentro de un triángulo equilátero alerta al usuario de la presencia de “voltaje peligroso” no aislado en el interior del producto que puede ser de una magnitud suficiente como para constituir un riesgo de descarga eléctrica para las personas.

Important Safety Information

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCT THE RISK OF ELECTRIC SHOCK
DO NOT OPEN ENCLOSURE OR EXPOSE TO RAIN OR MOISTURE.
NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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

The information bubble is intended to alert the user to helpful or optional operational 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 product 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 or place this product 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 a 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 product.
11. Only use attachments/accessories specified by Atlona.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this product during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the product 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 product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.

FCC Compliance

FCC Compliance and Advisory Statement: This hardware device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received including interference that may cause undesired operation. 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 or 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: 1) reorient or relocate the receiving antenna; 2) increase the separation between the equipment and the receiver; 3) connect the equipment to an outlet on a circuit different from that to which the receiver is connected; 4) consult the dealer or an experienced radio/TV technician for help. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulations.

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Introduction

The Atlona **Gain™ 120** (**AT-GAIN-120**) is a compact power amplifier designed for low or high impedance applications. A mode selector switch allows it to deliver two channels of 60 watts each into 4 or 8 ohms, or a single channel of 120 watts at 70 or 100 volts. This Class-D amplifier is energy efficient, ENERGY STAR® qualified, and is also convection-cooled to allow installation in conference rooms and quiet installation environments without the need for fans. In addition to the amplified speaker output, a line level audio output allows the incoming audio to be fed into an additional amplifier or audio system. The Gain 120 is controllable via TCP/IP or external trigger, and can be integrated with Atlona AV switchers and HDBaseT™ receivers for a wide variety of sound reinforcement applications.

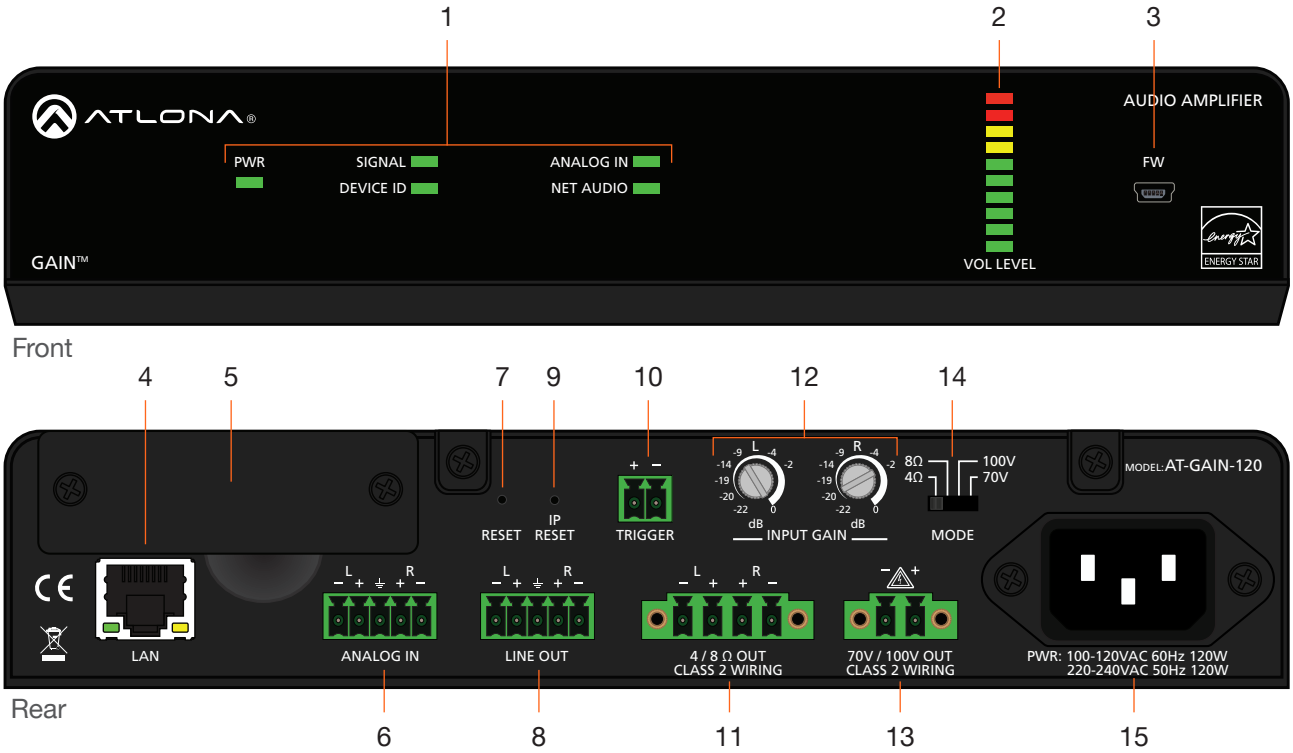
Features

- Selectable low or high-impedance operation.
  - » 2 x 60 watts @ 4 or 8 ohms.
  - » 1 x 120 watts @ 70 or 100 volts.
- Class-D efficient amplifier design.
- ENERGY STAR® qualified.
- Convection cooled – no need for fans.
- Available AES67 / Dante™ networked audio interface (AT-GAIN-NET) – receives two-channel audio from OmniStream AV encoders or compatible audio devices.
- Optional AT-RACK-1RU rack shelf highly recommended for rack installation.
- Automatic standby after 25 minutes of inactivity to minimize power consumption.
- Rear panel input level controls for setting audio system gain staging.
- Integrated protection circuitry automatically activates in the event of clipping, short circuit, thermal overload, and more.
- Low inrush current to prevent audible “thumps” when multiple amps are powered on simultaneously.
- Balanced analog audio output for pass-through to an additional amplifier or audio system.
- Integrated five-band equalizer.
- TCP/IP control of volume level, muting, and EQ.
- Ideal for IP-based control from Atlona Velocity Control System.
- Trigger port ideal for occupancy sensor to remotely power down amplifier or wake from standby.
- Front panel signal status LEDs for power, signal presence, volume level, device identification, and internal protection activation.
- Rack-mountable 1U, half rack width enclosure.
- Includes installation guide, power cable (US), and captive screw connectors.

Package Contents

1 x AT-GAIN-120
2 x Captive screw connector, 2-pin
1 x Captive screw connector, 4-pin
2 x Captive screw connector, 5-pin
1 x IEC power cord
1 x Installation Guide

Panel Description



1 **LED indicators**
Displays the current state of the unit. Refer to LED Indicators (page 17) for more information.

2 **Output Volume Level Indicator**
Displays the output audio level.

3 **FW**
Connect a USB-to-mini USB cable to this port from a computer for firmware updates.

4 **LAN**
Connect an Ethernet cable from this port to the Local Area Network (LAN).

5 **Removable Faceplate**
Remove this faceplate to install the AT-GAIN-NET (not included) card. Refer to Network Audio Card Installation (page 40) for more information.

6 **ANALOG IN**
Connect an audio source to this port using the included 5-pin captive screw connector. Refer to Audio Connectors (page 9) for wiring information.

7 **RESET**
Press and hold this button for 10 seconds to reset the unit to factory-default settings. Refer to Factory Reset (page 27) for more information.

8 **LINE OUT**
Use the included 5-pin captive screw connector to connect to another AT-GAIN-120, audio DSP, or audio mixer. Refer to Audio Connectors (page 9) for more information.

9 **IP RESET**
Press and hold button this button for 10 seconds to switch between DHCP and static IP mode. Refer to IP Configuration (page 13) for more information. Also press and hold for 3 seconds to bring the unit out of hibernation mode. Refer to Power Modes (page 18) for more information.

10 **TRIGGER**
Use this port to toggle the unit between on and standby or awaken the unit from hibernation mode.

11 **4 / 8 Ω OUT**
Connect a pair of 4 or 8 ohm speakers (low-impedance) to this port using the included 4-pin captive screw connector.

12 **INPUT GAIN**
Use a regular screwdriver to adjust the input gain level for left and right channel.

13 **70V / 100V OUT**
Connect a distributed speaker system (high-impedance) to this port using the included 2-pin captive screw connector.

14 **MODE**
Slide the switch to select between 4Ω, 8Ω, 70V, or 100V modes.

15 **PWR**
Connect from a power source to the AT-GAIN-120 using the included IEC power cord.

Installation

Audio Connectors

The AT-GAIN-120 provides three audio ports: one input and two outputs. The **ANALOG IN** port can be used to connect an audio digital signal processor (DSP) or other audio source device. Balanced or unbalanced wiring is supported.

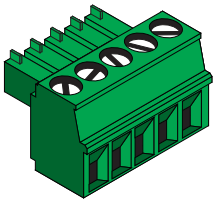
The **LINE OUT** port can be used to connect an audio output device or daisy-chain to another amplifier.

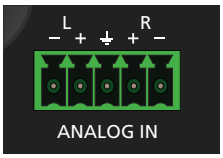
NOTE: The **LINE OUT** port only outputs analog audio. This port *cannot* be used to output digital audio from the optional AT-GAIN-NET card. Also, volume mute, using the web GUI or the VOUTMute command, will mute the **LINE OUT** pass-through.

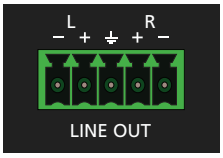
1. Use wire strippers to remove a portion of the cable jacket.
2. Remove at least 3/16" (5 mm) from the insulation of each wire.
3. Connect the wires as shown, using either balanced or unbalanced wiring.

ANALOG IN / LINE OUT

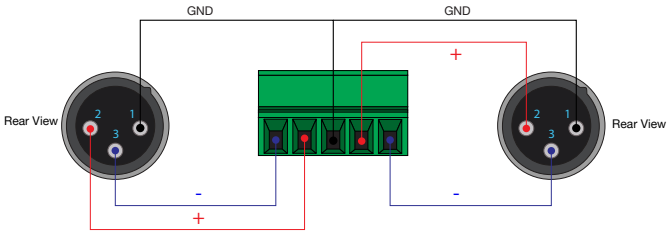
The wiring for the **ANALOG IN** and **LINE OUT** ports, support either balanced or unbalanced audio, as shown below. Both ports use the included 5-pin captive screw connectors.



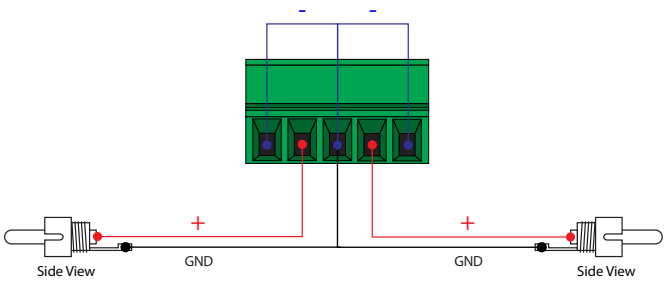




Balanced audio using XLR connectors



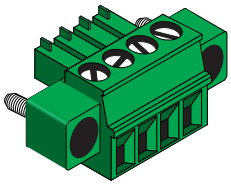
Unbalanced audio using RCA connectors

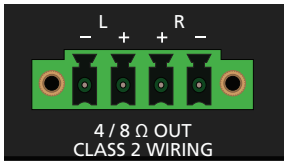


NOTE: The **LINE OUT** port is a fixed-level analog output, *only*. There is no D/A conversion when using the optional AT-GAIN-NET card.

4 / 8 Ω OUT

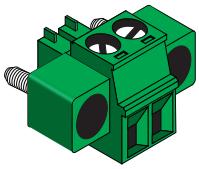
Connect program/stereo speakers to the included 4-pin captive screw connector, then connect the terminal block to the **4 / 8 Ω OUT** port. When connecting program / stereo speakers, set the **MODE** switch to either 4 Ω or 8 Ω, depending upon the speakers impedance.

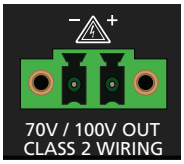




70V / 100V OUT

Connect a distributed speaker system to the included 2-pin captive screw connector, then connect the terminal block to the **70V / 100V OUT** port. When connecting program / stereo speakers, set the **MODE** switch to either 70V or 100V, depending upon the speakers.





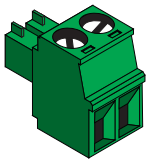
Trigger

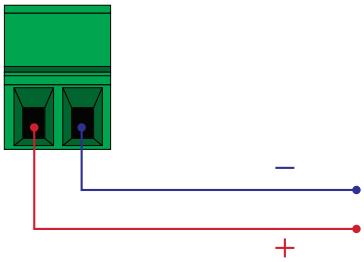
The AT-GAIN-120 provides a **TRIGGER** port allowing the AT-GAIN-120 to be connected to an occupancy sensor.

Voltage levels for this port are as follows:

Voltage level	Function
Voltage is 0 or less than 3 V	Off
Voltage is 3 V or greater (30 V max.)	On

1. Use wire strippers to remove a portion of the cable jacket.
2. Remove at least 3/16” (5 mm) from the insulation of each wire.
3. Connect the wires as shown.





Connection Instructions

The AT-GAIN-120 can be used with an optional network audio card, which supports Dante and AES76 audio streams. If this card will be installed, refer to Network Audio Card Installation (page 40) for more information before continuing with the following instructions. This network card is sold separately and is available from Atlona.

1. Connect an analog audio source, using the included 5-pin captive screw connector, to the **AUDIO IN** port. Use the desired wiring configuration, on the previous page. Both balanced and unbalanced wiring are supported.

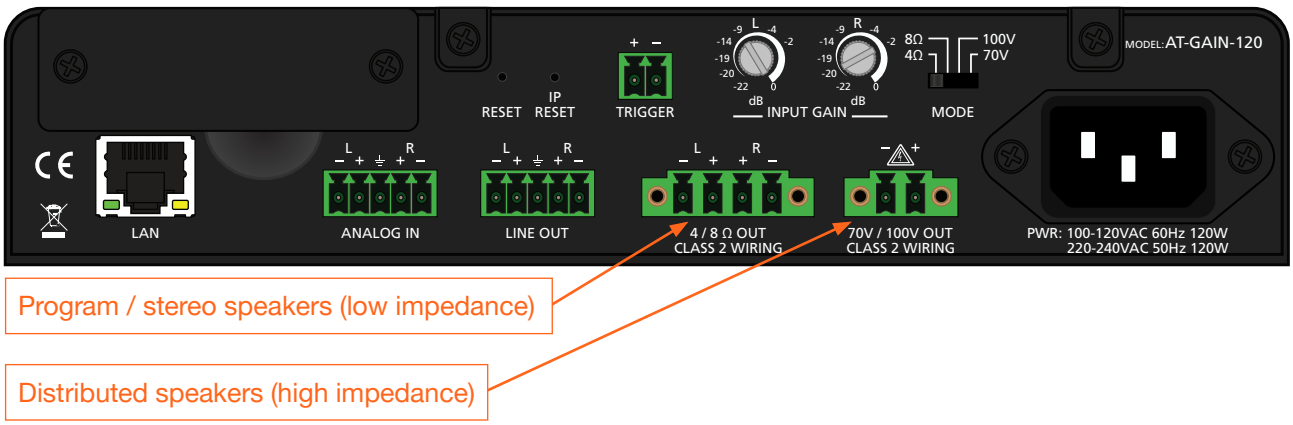
2. Connect an analog audio output device, using the included 5-pin captive screw connector, to the **LINE OUT** port. Use the desired wiring configuration, on the previous page. Both balanced and unbalanced wiring are supported.

> **NOTE:** Analog or NET audio (with optional card), are selectable from the web GUI, Atlona Velocity™, or thrid-party control using the API. Refer to the *Stereo / Mono Audio Power Amplifer 120 Watts Application Programming Interface*, on the Atlona web site for more information.
> In addtion, the **LINE OUT** port only outputs analog audio. This port *cannot* be used to output digital audio from the optional AT-GAIN-NET card.

3. Determine the use-case scenario of the AT-GAIN-120. The AT-GAIN-120 can be configured as either one of the following. Only one type of speaker connection is permitted at a time.

   - **Distributed speaker system (high impedance)**
     Set the **MODE** switch to the required voltage setting: **70V** or **100V**. This mode is used for commercial applications and longer speaker cable runs.

   - **Program speakers / stereo (low impedance)**
     Set the **MODE** switch to the impedance setting of the speakers being connected: **4Ω** or **8Ω**.
     This mode is used for consumer applications and shorter speaker cable runs.



4. Connect the speakers to the proper port on the AT-GAIN-120, based on the selection made in the previous step.

5. Set the **MODE** switch to the proper setting, based on the type of speaker connection that is being used.

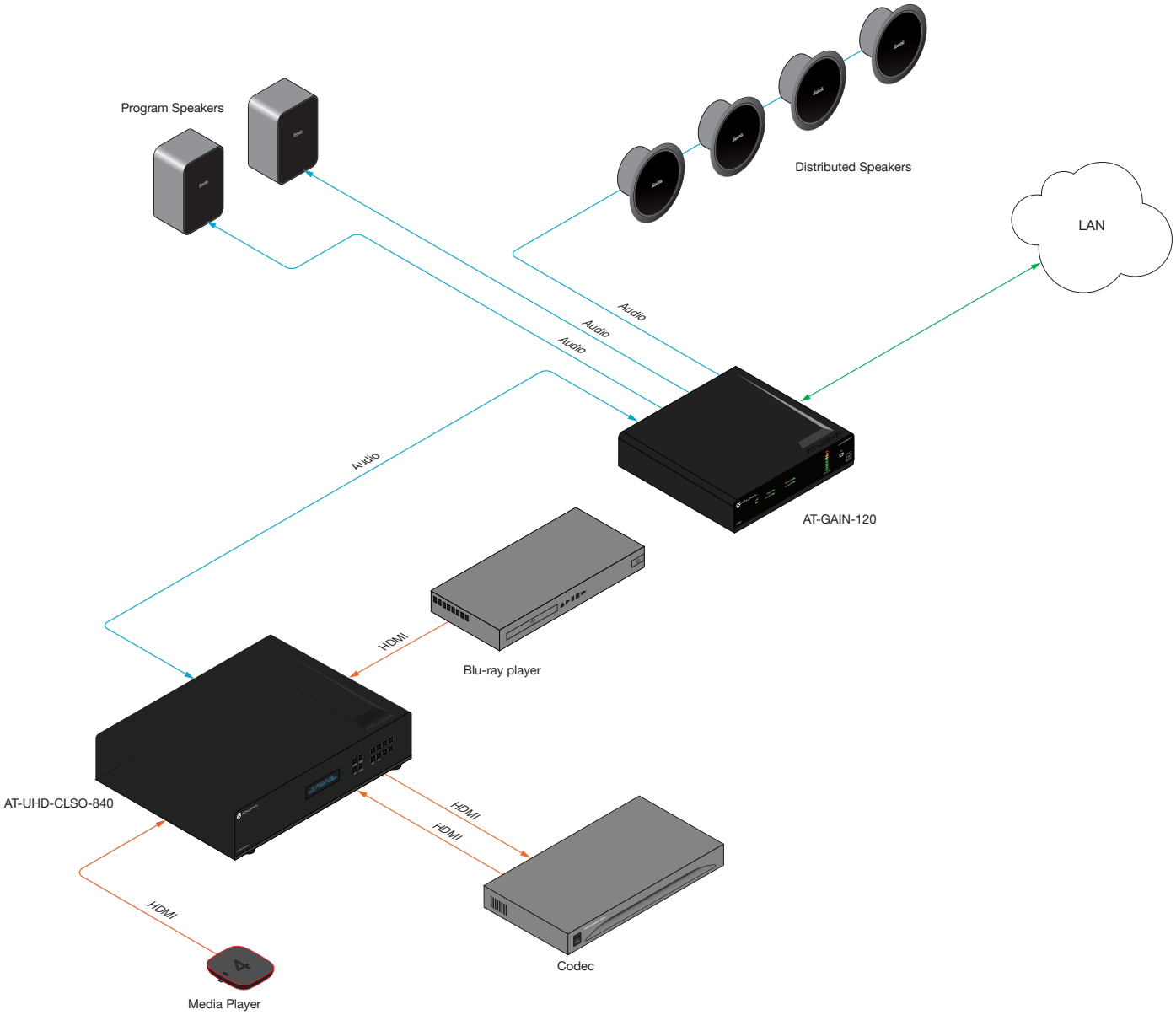
6. Connect the **LAN** port to a network switch for set up and control of the unit.

7. OPTIONAL: Connect the included 2-pin captive screw connector from the **TRIGGER** port to an automation control system.

8. Connect the included IEC power cord to the power receptacle.

9. Connect the IEC power cable to an available electrical outlet.

Connection Diagram



IMPORTANT: When connecting speakers, either use a distributed speaker system or program/stereo speakers. The AT-GAIN-120 does not support simultaneous distributed and program speaker connections.

Basic Operation

IP Configuration

The AT-GAIN-120 is shipped with DHCP enabled. Once connected to a network, the DHCP server (if available), will automatically assign an IP address to the unit. Execute the arp -a command at the Windows command line or use an IP scanner to locate the AT-GAIN-120 on the network.

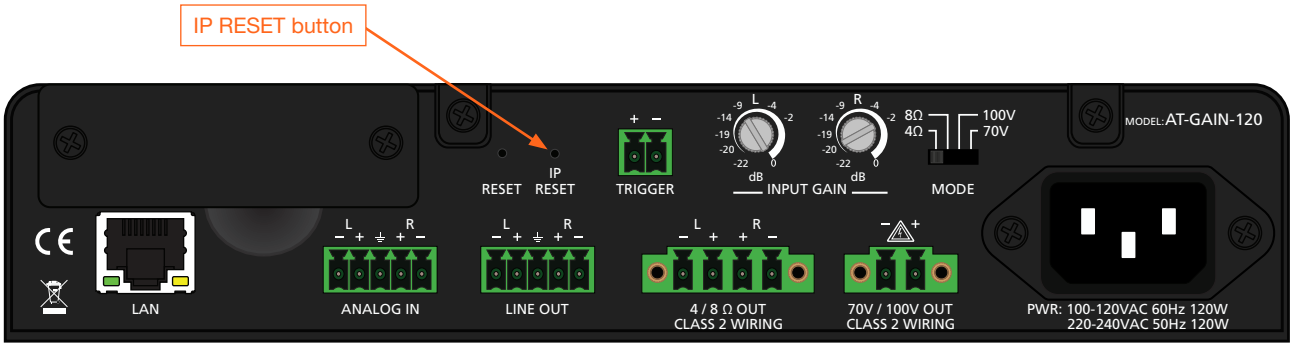
If the AT-GAIN-120 is unable to detect a DHCP server, within 15 seconds, then the unit will be assigned the following IP configuration:

- IP address `192.168.1.254`
- Subnet mask `255.255.0.0`
- Gateway `192.168.1.1`

If a static IP address is desired, the unit can be switched to static IP mode. Use one of the following procedures to switch between DHCP and static IP mode. 192.168.1.254 is the default static IP address.

Using the Rear Panel

1. Make sure the AT-GAIN-120 is powered.
2. Press and hold the **IP RESET** button for approximately 10 seconds.



3. Release the **IP RESET** button once the **PWR** LED indicator on the front panel begins to flash. The number of flashes will indicate the currently selected IP mode.

POWER LED flashes	Description
Two	Static IP mode
Four	DHCP mode

4. Once the unit has changed IP modes, the unit will shut down. To restart the unit, disconnect then reconnect the power cable.
5. The unit is now set to the new IP mode and ready for use.

Using Commands

Use the `IPStatic` and `IPDHCP` commands to switch between DHCP and static IP mode using Telnet. The use of a carriage return is required to terminate the command. The carriage return will depend on the software or control system being used. Refer to the Application Programmers Interface documentation for more information. All commands and their arguments are case-sensitive.

- **Setting static IP mode**

1. Connect to the AT-GAIN-120 using Telnet.
2. At the command line, execute the `IPDHCP` command using the off argument, as shown.

```
IPDHCP off
```

3. Execute the IPStatic command. This command requires three arguments: the desired IP address of the AT-GAIN-120, the subnet mask, and the gateway address. All arguments must be entered in dot-decimal notation. The following is an example:

```
IPStatic 192.168.1.112 255.255.255.0 192.168.1.1
```

4. Power-cycle the AT-GAIN-120.
5. The unit is now set to static IP mode and ready for use.

- **Setting DHCP mode**

1. Connect to the AT-GAIN-120 using Telnet.
2. At the command line, execute the IPDHCP command using the on argument, as shown. All characters are case-sensitive.

```
IPDHCP on
```

3. Power-cycle the AT-GAIN-120
4. The unit is now set to DHCP mode and will be assigned an IP address by the DHCP server (if present).

Using the Web GUI

The Network page (page 32) in the web GUI allows the option for the AT-GAIN-120 to use either DHCP or static IP mode. In order to access the web GUI, the IP address of the AT-GAIN-120 must be known.

1. Open the desired web browser and enter the IP address of the AT-GAIN-120.
2. Log in, using the required credentials. The factory-default username and password are listed below:

   Username: `admin`
   Password: `Atlona`

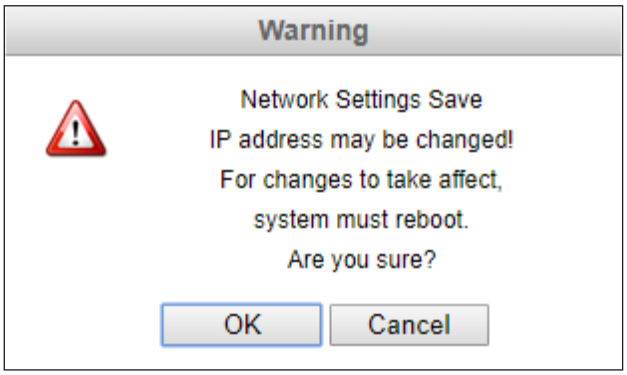
3. Click the **Network** tab, located on the side menu bar.

- **Setting static IP mode**
  a. Click **OFF**, next to **DHCP**.
  b. Enter the required information in the **IP Address**, **Subnet**, and **Gateway** fields.

- **Setting DHCP mode**
  a. Click **ON**, next to **DHCP**.

4. Click the **Save** button to save the changes.

5. The following message box will be displayed:



6. Click **OK** to accept the changes or click **Cancel** to abort changes and return to the **Network** page.

LED Indicators

The LED indicators on the front panel, provide information on the current state of the AT-GAIN-120. Refer to the table below for more information.

LED Indicator	State	Description
PWR	Solid green	Unit is powered.
	Off	Unit is not powered. • Check the power cable between the AT-GAIN-120 and the electrical outlet. • Make sure that the electrical outlet is live.
	Rapid flashing green	Firmware update is in progress. Refer to Updating the Firmware (page 36) for more information.
SIGNAL	Solid green	An active signal is present on the selected input.
DEVICE ID	Off	**Unit is not in device ID mode.**
	Flashing green	Unit is in “blink” mode. This LED indicator will flash once each second, and can be used to help physically identify the unit in a rack shelf.
ANALOG IN	Solid green	The **ANALOG IN** port is the active input.
	Off	The **ANALOG IN** port is not the active input.
NET AUDIO	Solid green	The **INPUT** port on the network card is the active input. This LED indicator is only functional when the optional AT-GAIN-NET card is installed. Note that this LED indicator does not indicate the presence of an audio signal.
	Off	The **INPUT** port is not the active input.
VOL LEVEL	Solid green	Audio should be free of clipping. If audio clipping is heard in this range, check the output setting or signal adjustment of the source device.
	Solid amber	Audio signals that approach the 0 dBFS level are represented in this range. If audio clipping is heard, reduce the **INPUT GAIN** until audio is free of distortion.
	Solid red	Audio signals which exceed 0 dBFS are represented in this range. Audio clipping occurs at this level. If clipping is heard, reduce the **INPUT GAIN** until the meter no longer blinks red and the audio is free of distortion.

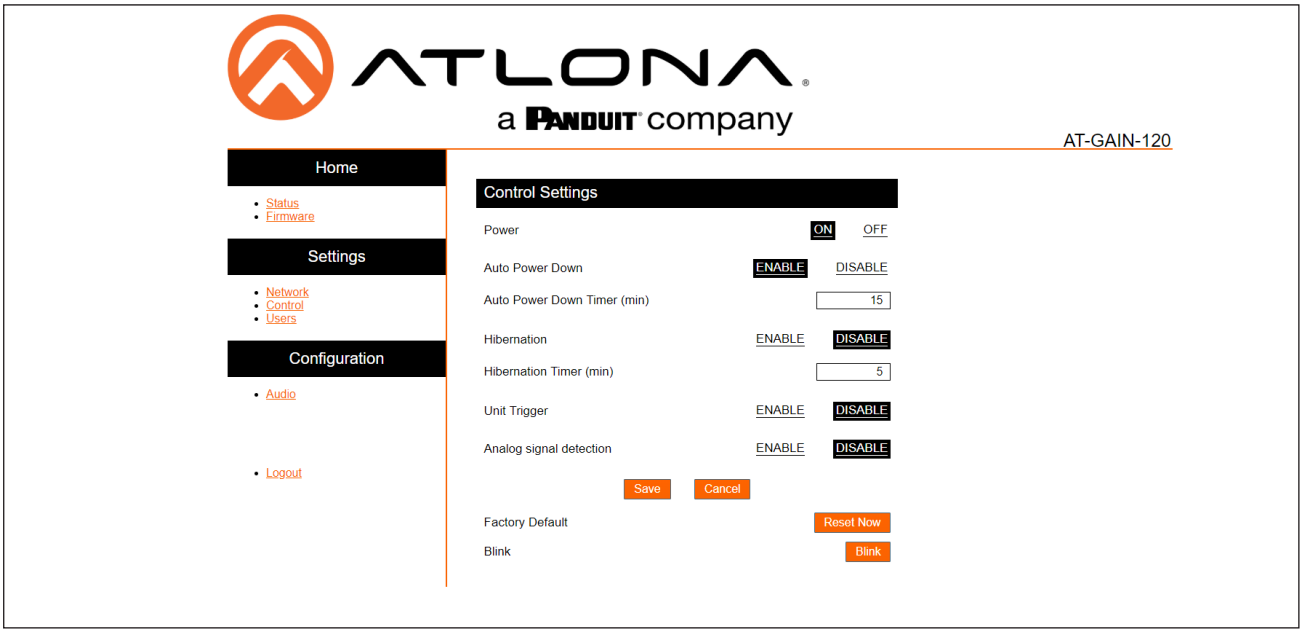
Power Modes

The following section discusses the power mode features which have been integrated into the AT-GAIN-120. Power modes are located under the **Control** tab within the web GUI.

1. Open the desired web browser and enter the IP address of the AT-GAIN-120.
2. Log in, using the required credentials. The factory-default username and password are listed below:

   Username: `admin`
   Password: `Atlona`

3. Click the **Control** tab, located on the side menu bar. The **Control Settings** section will be displayed.



Powering On or Off

Click the **OFF** option to power-off the AT-GAIN-120. When powered-off, audio output is disabled but both the LAN port and **INPUT** port (AT-GAIN-NET audio card, only) will remain active. To power-on the AT-GAIN-120, after it has been powered-off, any one of the following methods may be used:

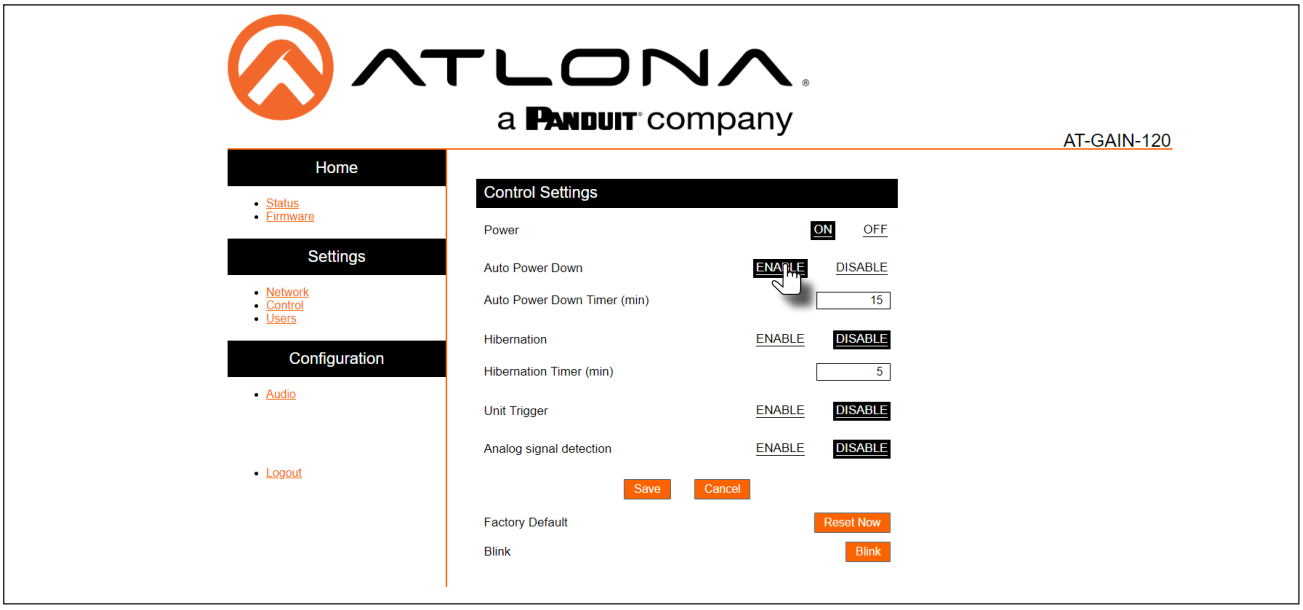
- Press and hold the **IP RESET** button for a minimum of 3 seconds, but not more than 5 seconds.
- Pull the **TRIGGER** port from low to high. **Unit Trigger** must be enabled for this to function.
- Set **Power** to the **ON** setting, in the web GUI.
- Route Dante / AES67 audio.

Auto Power Down Mode

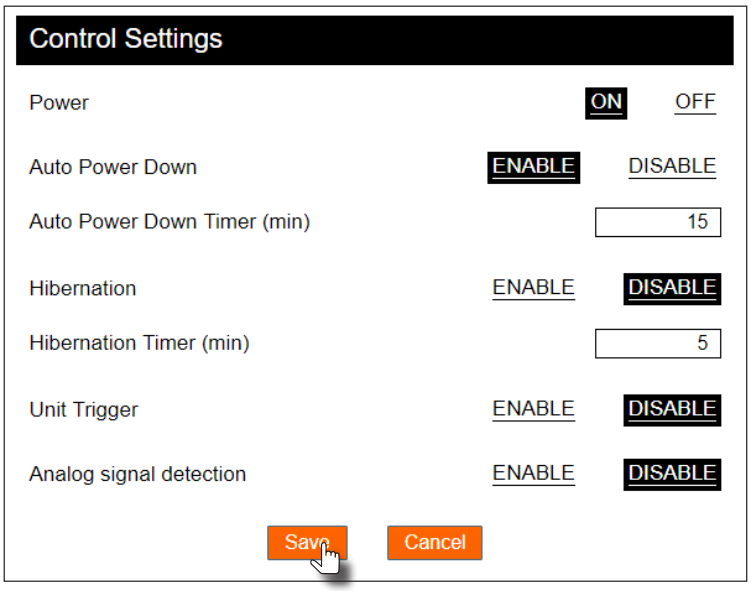
Enabling this mode will automatically power-down the AT-GAIN-120 if no audio input signal is present on either the **INPUT** port (AT-GAIN-NET audio card, only) or the **ANALOG IN** port, after the specified time interval. When the AT-GAIN-120 enters Auto Power Down mode, the Power option will be set to **OFF** and the front-panel LED indicators will turn off. In Auto Power Down mode, power consumption is limited to 2.2 W. By default this feature is enabled.

Note that when this mode is enabled, the AT-GAIN-120 only monitors the existence of an audio input signal, not the physical audio connection. Refer to the next page for instructions.

1. Click **Control**, under the **Settings** menu, on the left side of the screen.
2. Click **ENABLE** for the **Auto Power Down** option.



3. In the **Auto Power Down Timer (Sec)** field, enter the time interval before the AT-GAIN-120 powers-down. The default setting is 15 minutes.
4. Click the **Save** button.



Hibernation Mode

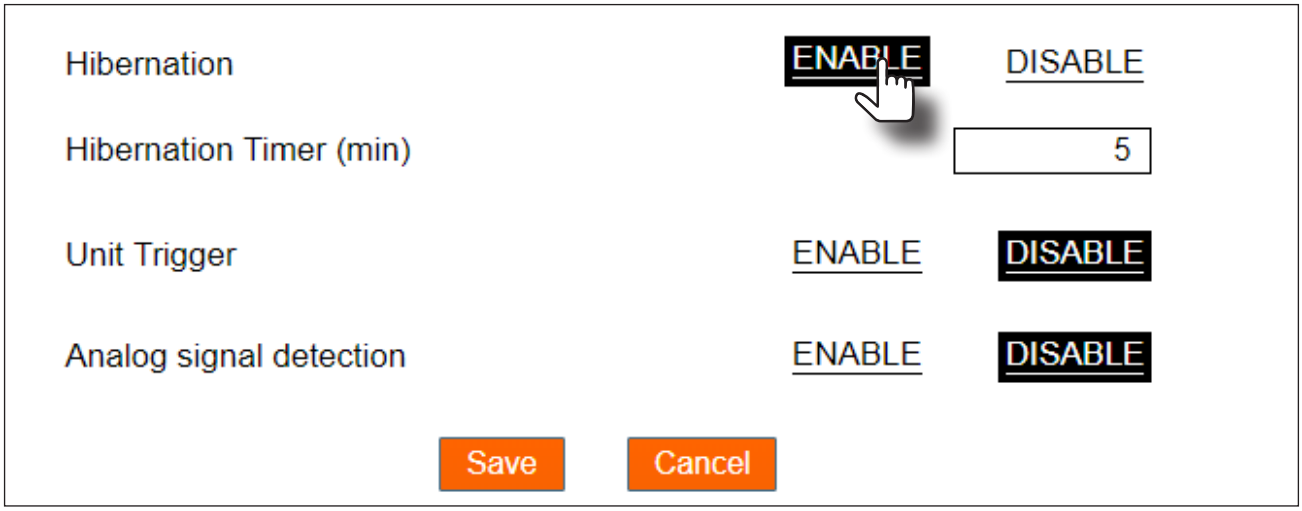
Enabling this mode will place the AT-GAIN-120 into a very-low power mode where power consumption is limited to 0.5 W. When in hibernation mode, there will be no audio output or network communication. The **PWR** LED indicator will blink once every second to indicate that the AT-GAIN-120 is in hibernation mode. By default this feature is disabled.

To wake the AT-GAIN-120 from hibernation mode, use one of the following methods:

- Press and hold the **IP RESET** button on the rear panel for approximately 3 seconds, but no longer that 5 seconds, using the end of a paper clip or other pointed object.
- Pull the trigger high using a control system such as Atlona Velocity. Note that even if the **Unit Trigger** option is set to **DISABLE**, this method will still wake the AT-GAIN-120.

NOTE: By placing the AT-GAIN-120 into Hibernation Mode, the unit will comply with ENERGY STAR® specifications.

1. Click the **ENABLE** option, if it is not selected.
2. Enter the time interval (in minutes) in the **Hibernation Timer (min)** field. If no audio input is detected, the hibernation timer will be triggered. Once the timer limit expires, the AT-GAIN-120 is placed in hibernation mode. The default value is 5 minutes. Integer values up to 30 can be specified.



3. Click the **Save** button to commit changes.
4. To wake the AT-GAIN-120 from hibernation mode, use one of the following operations:
   - Press and hold the **IP RESET** button on the rear panel for approximately 3 seconds, but no longer that 5 seconds, using the end of a paper clip or other pointed object.

     WARNING: If exiting hibernation mode, do not hold the **IP RESET** button for longer than 5 seconds. If this occurs, then the AT-GAIN-120 will switch IP modes.

   - Pull the trigger high using a control system such as Atlona Velocity. Note that even if the **Unit Trigger** option is set to **DISABLE**, this method will still wake the AT-GAIN-120.

Input Switching

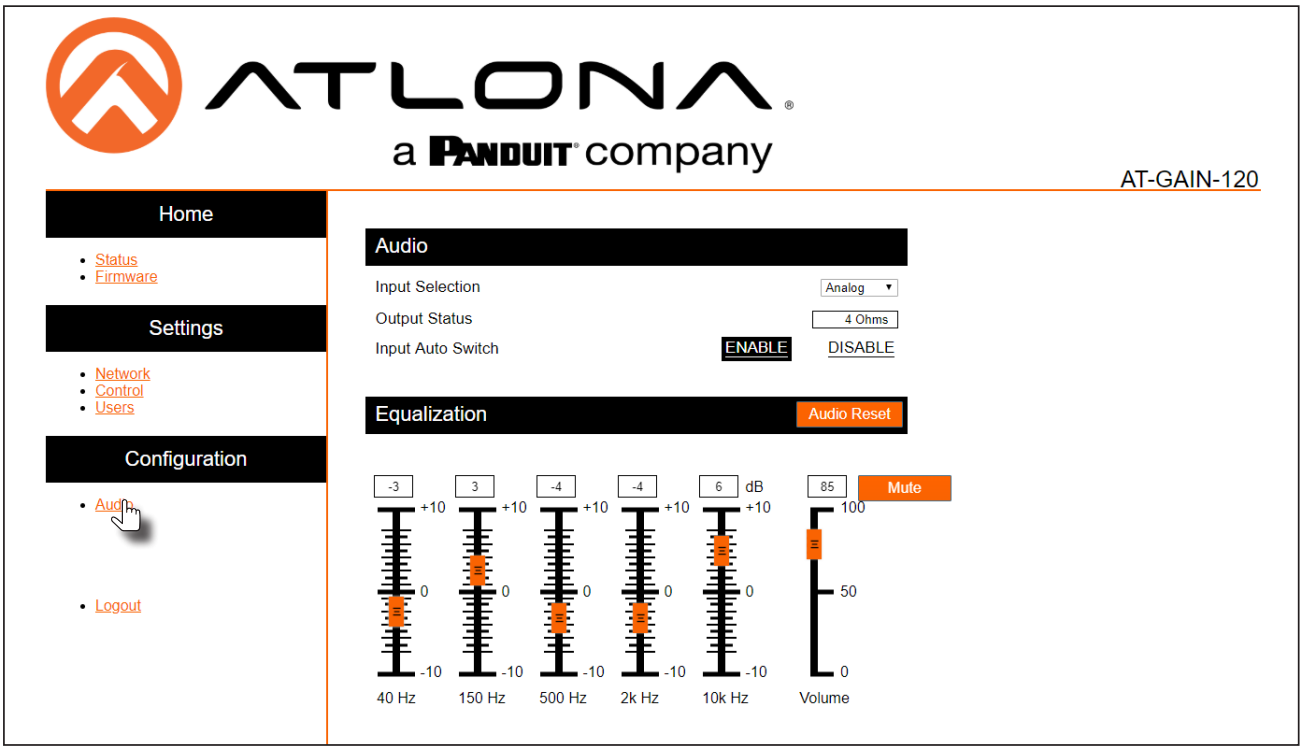
When the optional AT-GAIN-NET card is installed, switching between the **ANALOG IN** and the audio input on the AT-GAIN-NET card can be performed either manually or automatically. The following section covers both methods. The AT-GAIN-NET card is available from Atlona.

Manual Switching

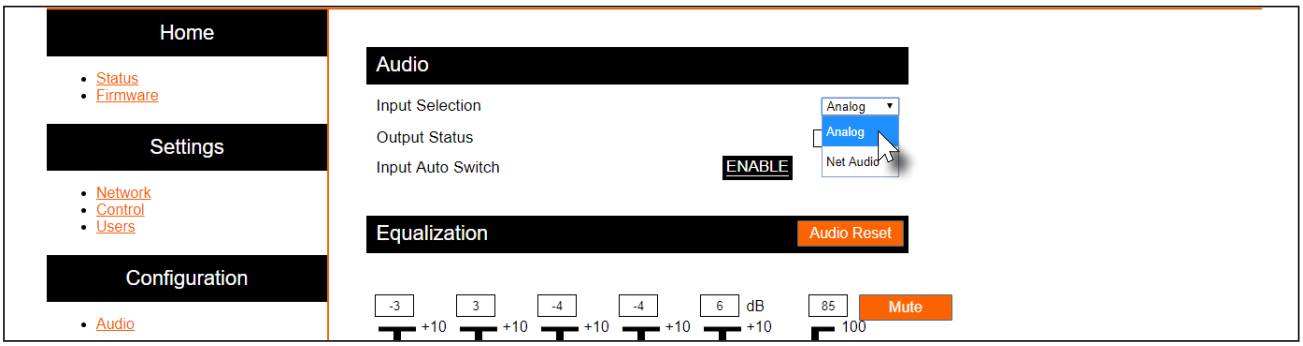
1. Open the desired web browser and enter the IP address of the AT-GAIN-120.
2. Log in, using the required credentials. The factory-default username and password are listed below:

   Username: admin
   Password: Atlona

3. Click the **Audio** tab, located on the side menu bar. The **Audio** and **Equalization** settings will be displayed.



4. Click the **Inut Selection** drop-down list to select the desired audio input. The currently selected audio input will be display in both the web GUI and on the front panel LED indicators. Refer to LED Indicators (page 17) for more information.



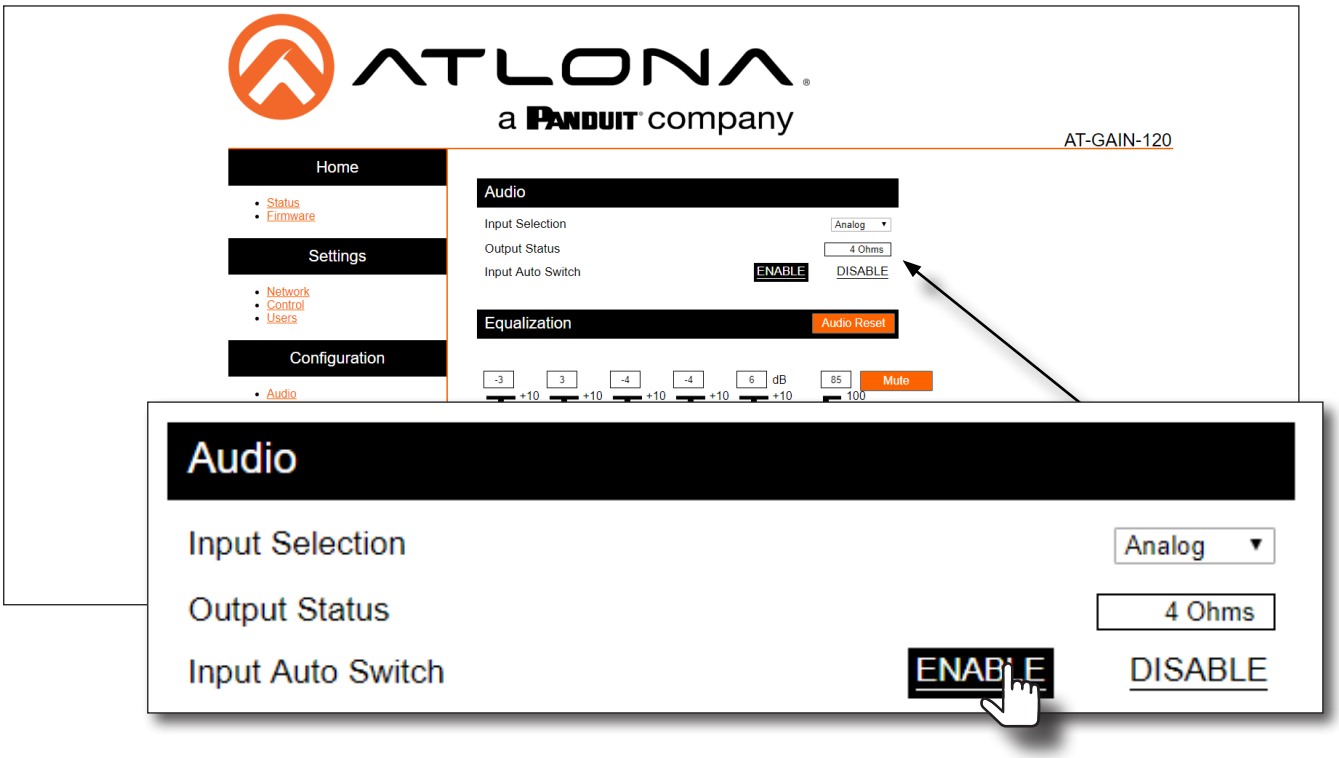
Auto Switching

When auto-switching is enabled, the AT-GAIN-120 will automatically switch audio inputs, based on the presence of an input signal. Auto-switching is enabled, by default. If the AT-GAIN-NET card is not installed, this feature will not have any effect.

1. Open the desired web browser and enter the IP address of the AT-GAIN-120.
2. Log in, using the required credentials. The factory-default username and password are listed below:

   Username: admin
   Password: Atlona

3. Click the **Audio** tab, located on the side menu bar. The **Audio** and **Equalization** settings will be displayed.
4. Make sure the **Input Auto Switch** feature is set to **ENABLE**, as shown below.



5. To disable audio auto-switching, set the **Input Auto Switch** feature to **DISABLE**.

Input Signal Detection

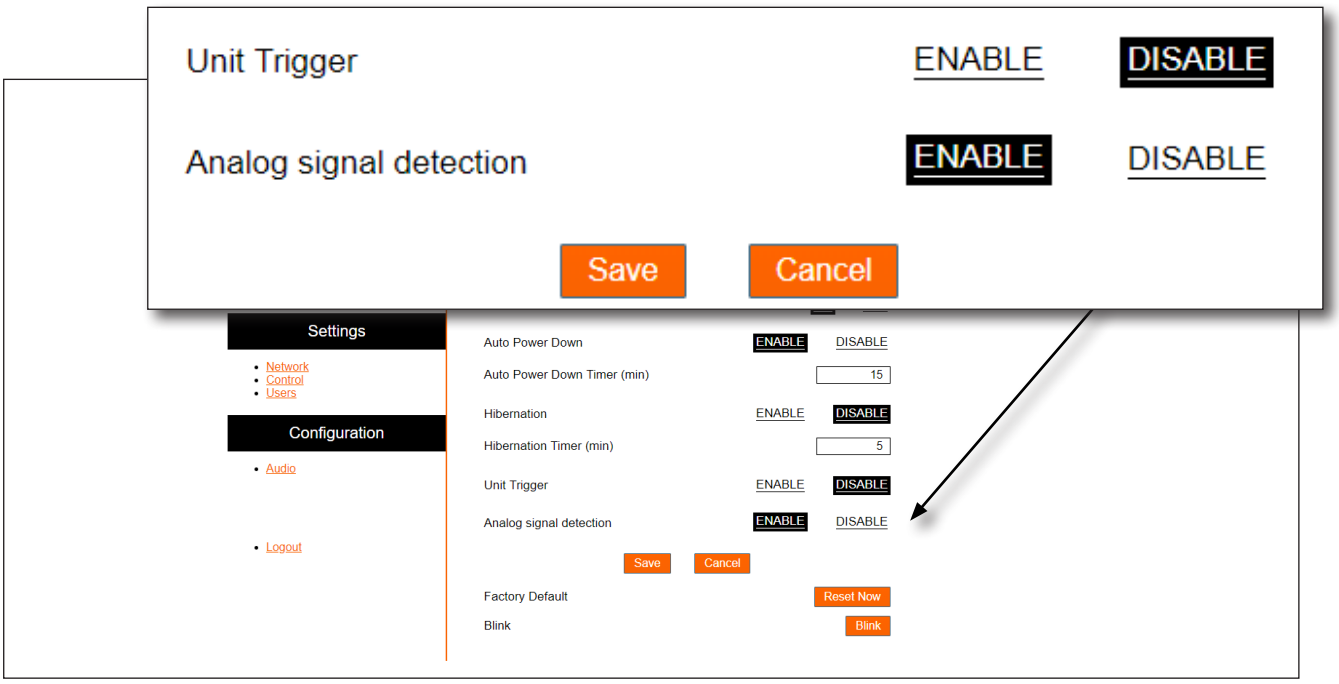
The AT-GAIN-120 has the capability to detect an input audio signal on the **AUDIO IN** port. When the input audio signal is detected, it will automatically "wake" the AT-GAIN-120 from hibernation mode. This feature is disabled, by default.

IMPORTANT: The input signal detection feature is *only* available on hardware revision B (or later). The hardware revision can be found on the sticker, on the bottom of the AT-GAIN-120.

1. Open the desired web browser and enter the IP address of the AT-GAIN-120.
2. Log in, using the required credentials. The factory-default username and password are listed below:

   Username: `admin`
   Password: `Atlona`

3. Click the **Control** tab, located on the side menu bar.
4. Set the **Analog signal detection** feature to **ENABLE**, as shown below.



Network Audio

The AT-GAIN-120 supports Dante and AES67 audio streams with the addition of the optional AT-GAIN-NET audio card, which can be purchased from Atlona. Refer to Network Audio Card Installation (page 40) for information on card installation.

For setup and control of Dante / AES67 audio routing and configuration, refer to the Audinate Dante Controller software. AMS 2.0 and the web graphical interface of the AT-GAIN-120 supports basic network, control, and audio level adjustments.

IMPORTANT: The AT-GAIN-120 must be connected within the same network segment as the Dante Controller, in order to utilize mDNS.

Dante Software Configuration

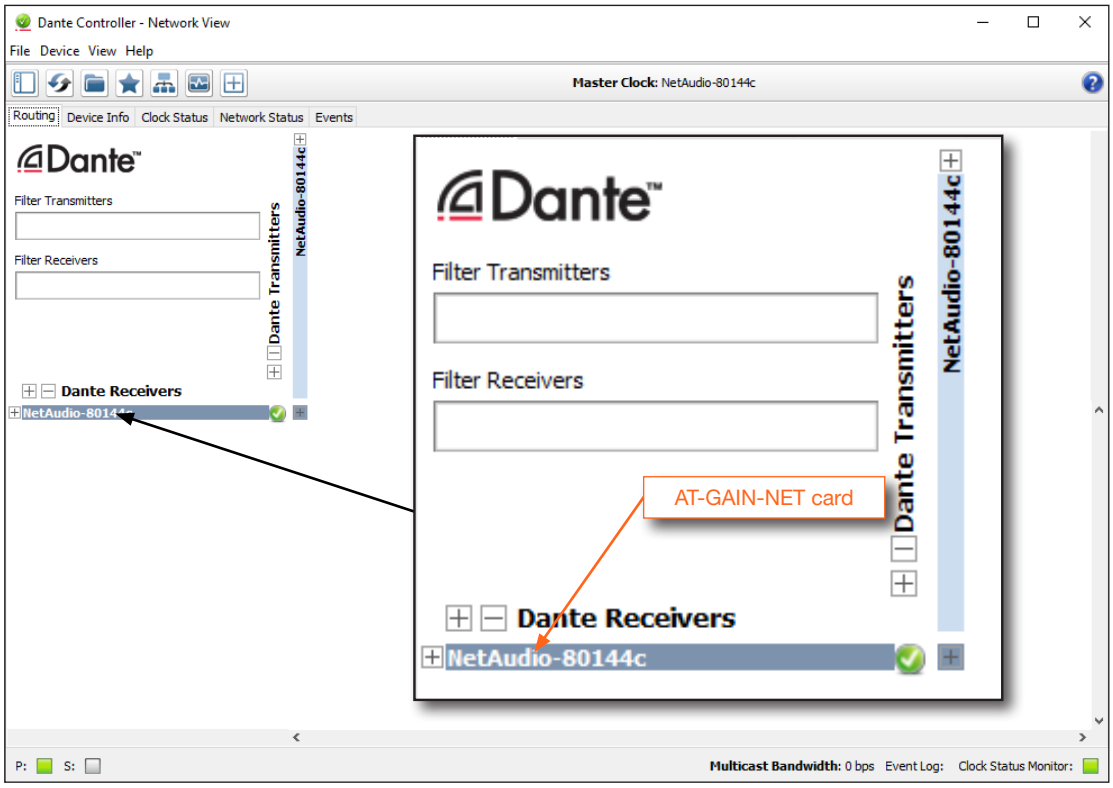
1. Download the Audinate Dante Controller software from the following URL:

   https://www.audinate.com/products/software/dante-controller

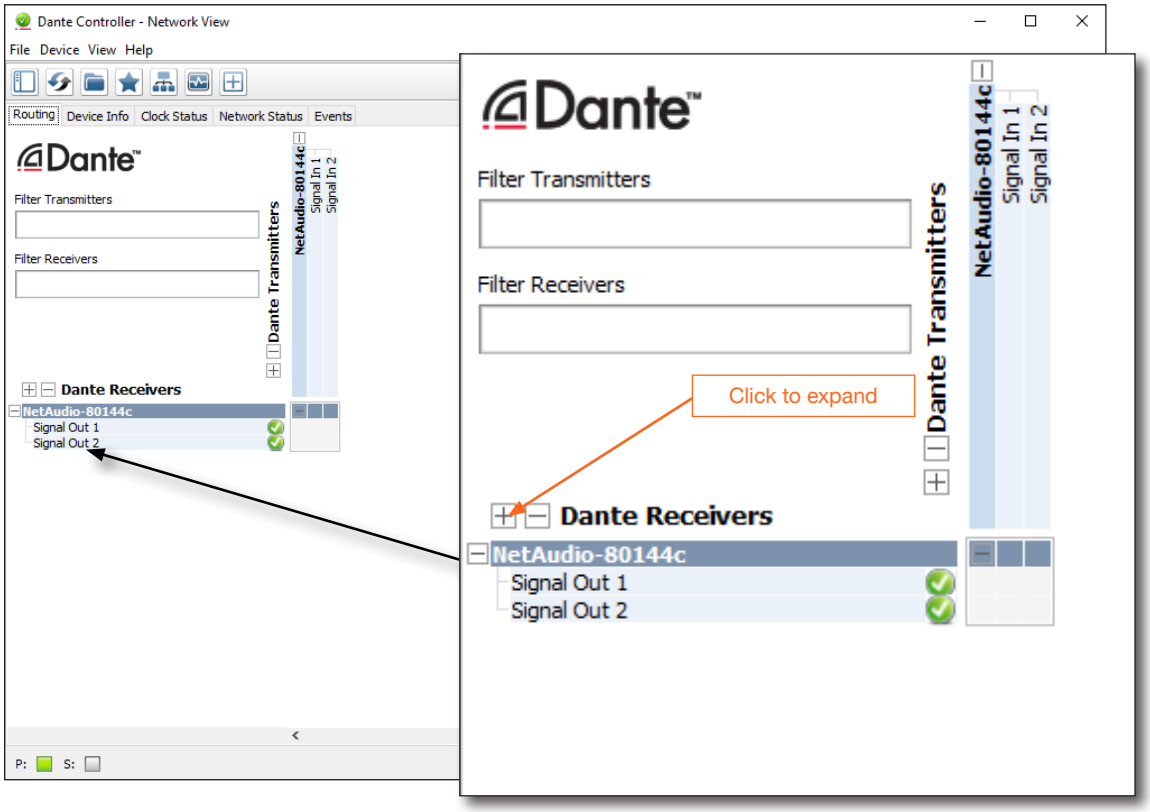
   NOTE: The AT-GAIN-120 was tested using Audinate Dante Controller software v4.0.6.5 and Java v1.8.0. Atlona recommends using Audinate Dante Controller software v4.0.6.5 or higher.

2. Make sure that an Ethernet cable is connected from the **INPUT** port on the rear panel to the network.
3. Launch the Dante Controller software.

   The AT-GAIN-NET network audio card will appear as **NetAudio-xxxxx**, where **xxxxx** refers to the last five hexadecimal digits of the network card MAC address.



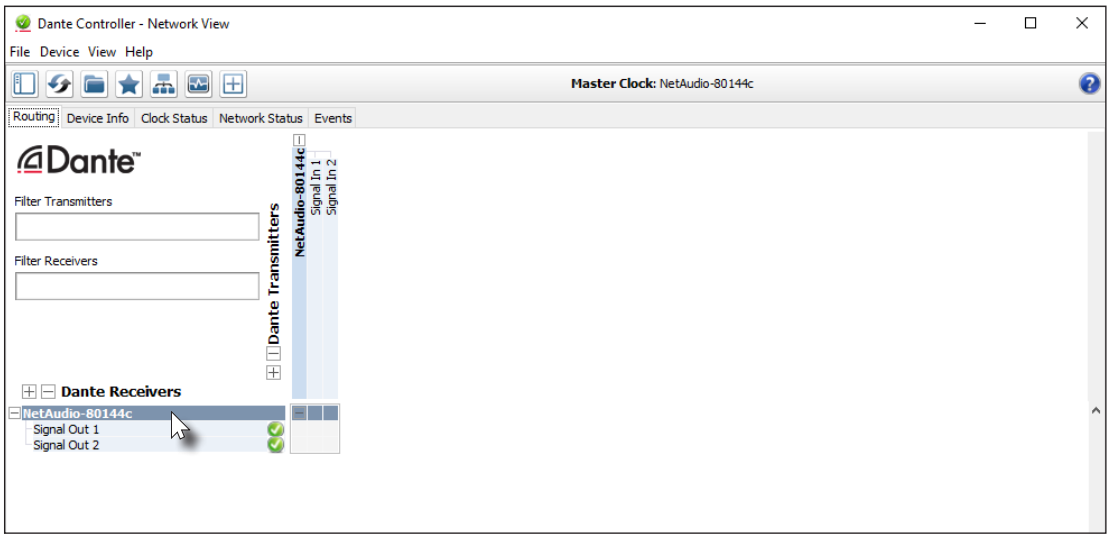
4. Click the [+] icon, next to the NetAudio-xxxxx card, under **Dante Receivers**, to view the channels. The AT-GAIN-NET audio card has a maximum of two channels of audio. Refer to the Dante Controller User Guide for details on operation.



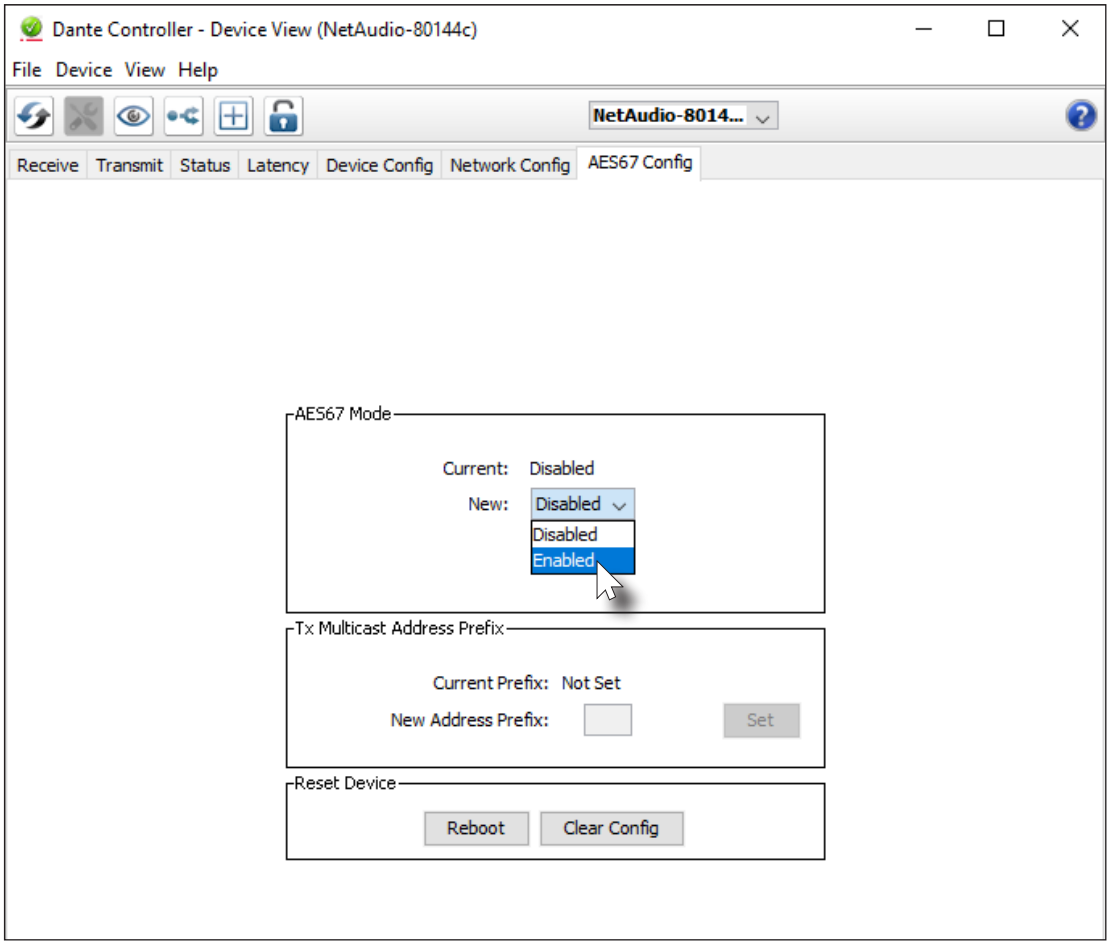
Enabling AES67 Support

In order to route AES67 audio over IP, both the transmitter and receiver must support AES67 and have this option enabled.

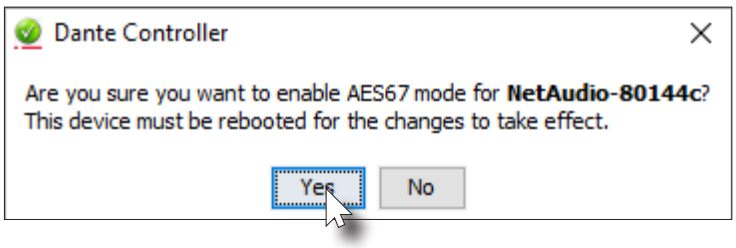
1. Double click the network card, under Dante Receivers



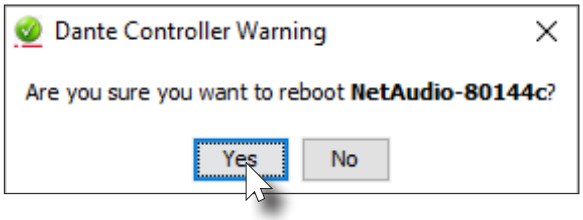
2. A separate window will open. Click the **AES67** tab.
3. Click the **New** drop-down list and select **Enabled**.



4. A message box will be displayed prompting to confirm AES67 is to be enabled. Click **Yes**.



5. Another message box will be displayed. In order for AES67 to be enabled, the card must be rebooted. Click **Yes** to reboot the network card.



6. AES67 is now enabled.

Volume Control

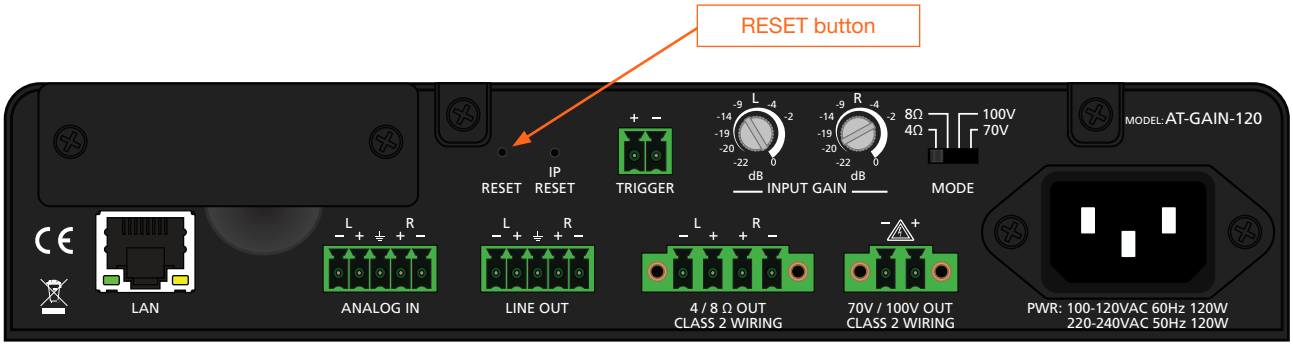
Output audio level is controlled hrough the built-in web GUI. Volume control only affects the **4 / 8 Ω OUT** and **70V / 100V OUT** ports. Adjusting the audio output volume does not affect the **LINE OUT** port, as this port is a fixed-level output. The **LINE OUT** port is designed to be connected to a pre-amp device.

1. Log in to the web GUI. Refer to Introduction to the Web GUI (page 28) for more information.
2. Click the **Audio** menu.
3. Use the **Volume** slider, under the **Equalization** section, to adjust the output volume.
4. Click the slider controls on the 5-band graphic equalizer to adjust the audio frequency output, if desired. By default, the graphic equalizer produces a “flat” response.

Factory Reset

If necessary, the AT-GAIN-120 can be reset to factory-default settings. Note that the AT-GAIN-120 will be placed in DHCP mode, as part of the reset procedure. The AT-GAIN-120 can also be reset through the web GUI. Refer to the Control page (page 33) for more information.

1. Make sure the unit is powered-on.
2. Press and hold the **RESET** button for 10 seconds, using the end of a paper clip or other pointed object.
3. Release the **RESET** button.



The Web GUI

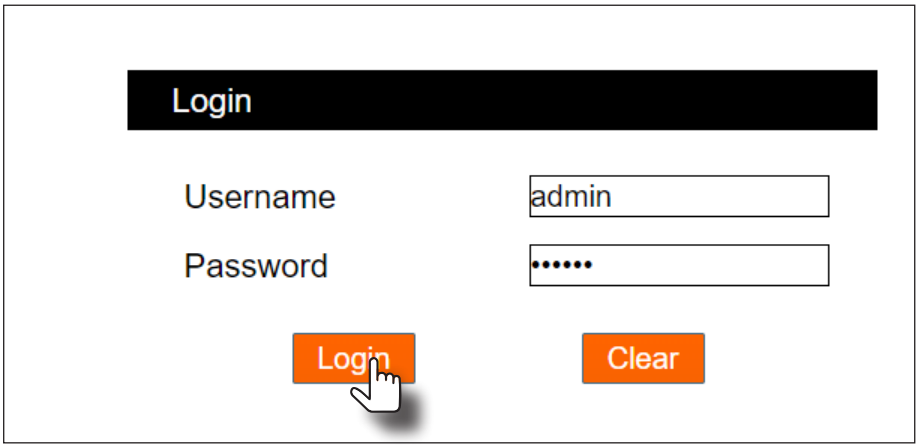
Introduction to the Web GUI

The AT-GAIN-120 includes a built-in web GUI. Atlona recommends that the web GUI be used to set up the AT-GAIN-120, as it provides intuitive management of all features.

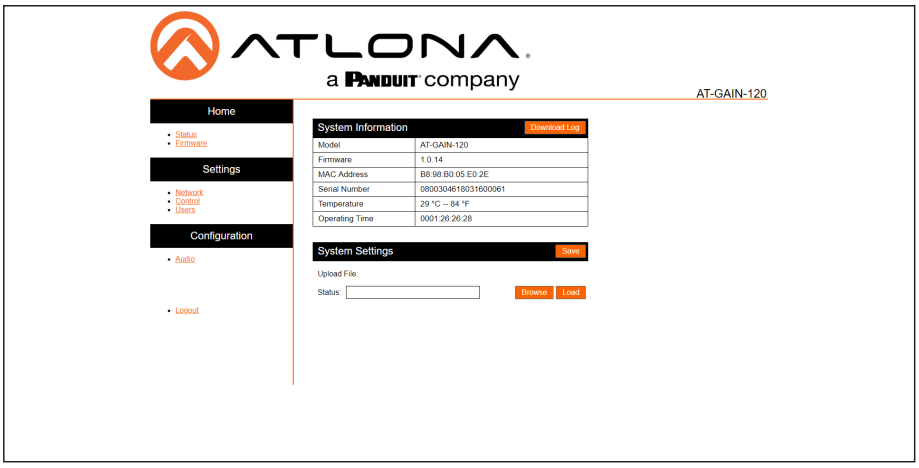
The AT-GAIN-120 is shipped with DHCP enabled. Once connected to a network, the DHCP server will automatically assign an IP address to the unit. Use an IP scanner to determine the IP address of the AT-GAIN-120. If a static IP address is desired, refer to IP Configuration (page 13). The default static IP address of the AT-GAIN-120 is 192.168.1.254.

1. Launch a web browser.
2. In the address bar, type the IP address of the AT-GAIN-120.
3. The **Login** page will be displayed.

4. Type admin, using lower-case characters, in the **Username** field.
5. Type Atlona in the **Password** field. This is the default password. The password field is case-sensitive. When the password is entered, it will be masked. The password can be changed, if desired. Refer to Users page (page 34) for more information.
6. Click the **Login** button or press the ENTER key on the keyboard.



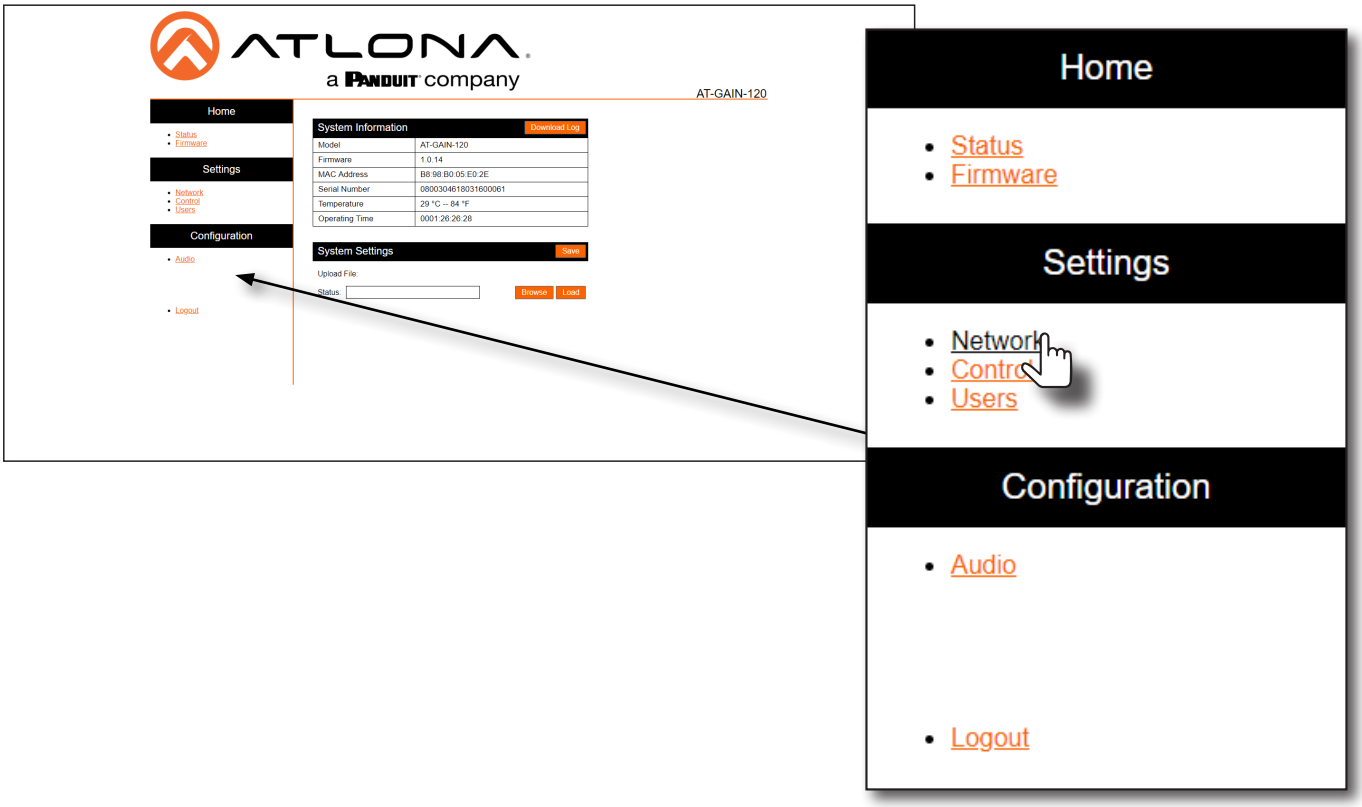
7. The **Status** page will be displayed.



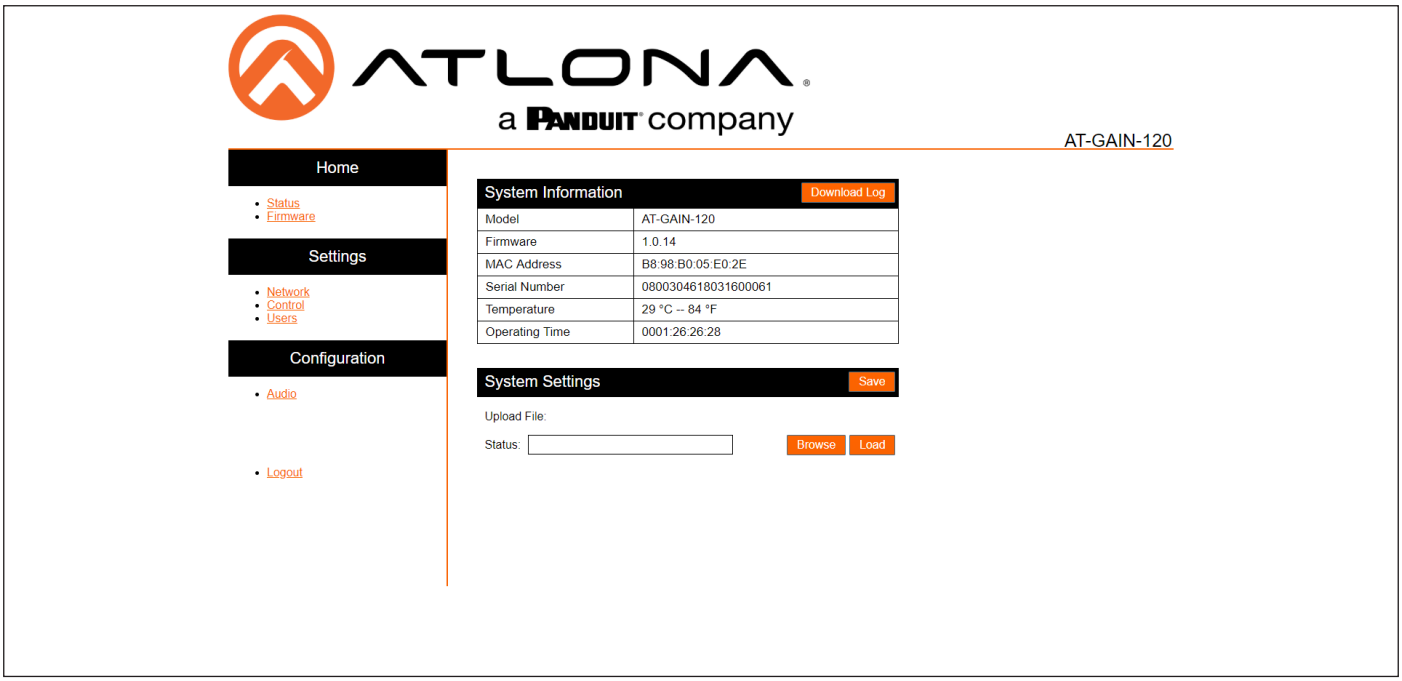
8. To logout of the web GUI at any time, click **Logout** on the side menu bar. Once logged out, the AT-GAIN-120 will display the login screen.

Menu Bar

The window on the left side of the screen is the menu bar. The menu system is divided into three sections: **Home**, **Settings**, and **Configuration**. When the mouse is moved over each menu item, it will be highlighted in black. Click the menu item to go that page.



Status page



Download Log
Click this button to download a log of command events to the computer's hard disk.

Model
The SKU of this product.

Firmware
The current firmware version installed.

MAC Address
The MAC address of the AT-GAIN-120.

Serial Number
The serial number of the AT-GAIN-120.

Temperature
The current internal ambient temperature of the AT-GAIN-120.

Operating Time
The time in which the unit has been in the "on" state since it was last rebooted.

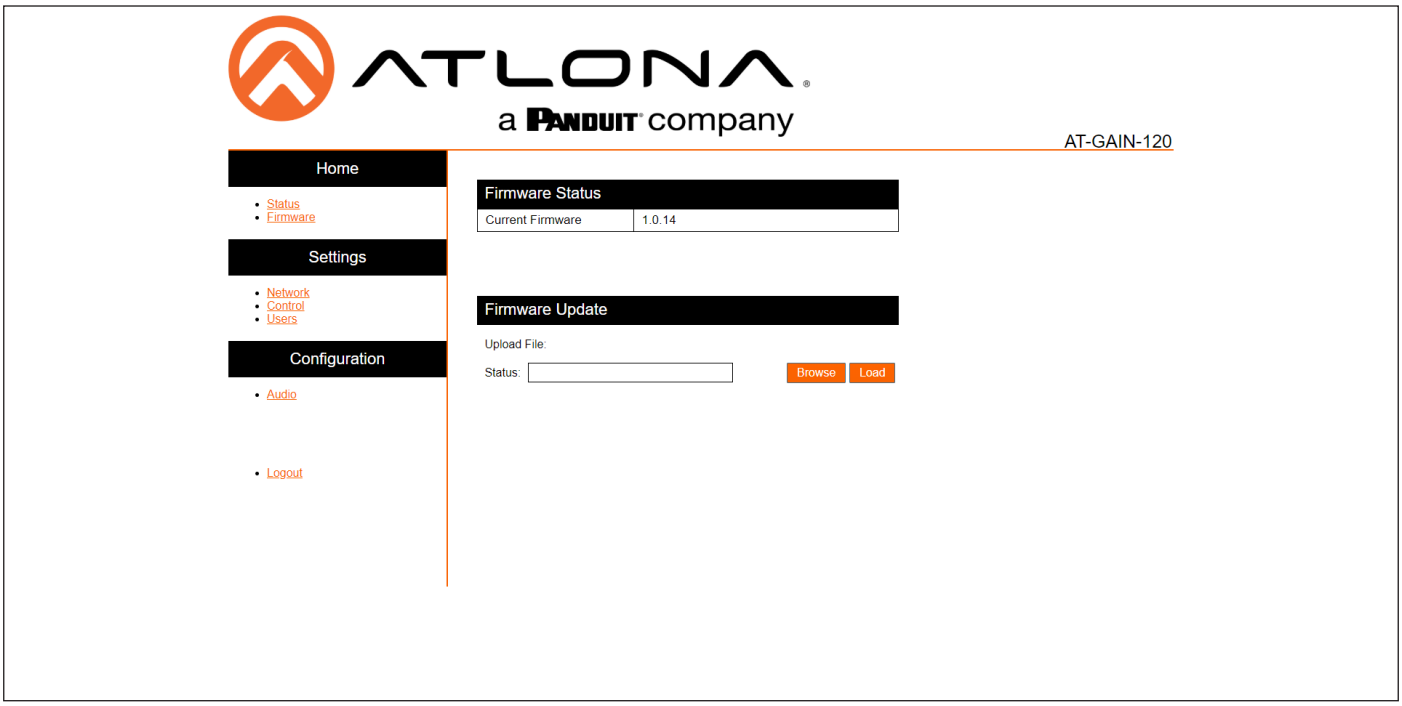
Save
Click this button to save the system settings to a local file. System settings files are saved in .bin (binary) format. The default system settings filename is systemsettings.bin. It is recommended to save the system settings before performing a firmware update.

Status (progress bar)
Displays the status of saving and loading system settings files.

Browse
Click this button to select the desired system settings file. Click the **Load** button to upload the settings file to the AT-GAIN-120.

Load
Click this button to upload the selected settings file to the AT-GAIN-120. While the system settings file is being loaded, the **Status** progress bar will display the current progress.

Firmware page



Current Firmware
The current firmware version installed.

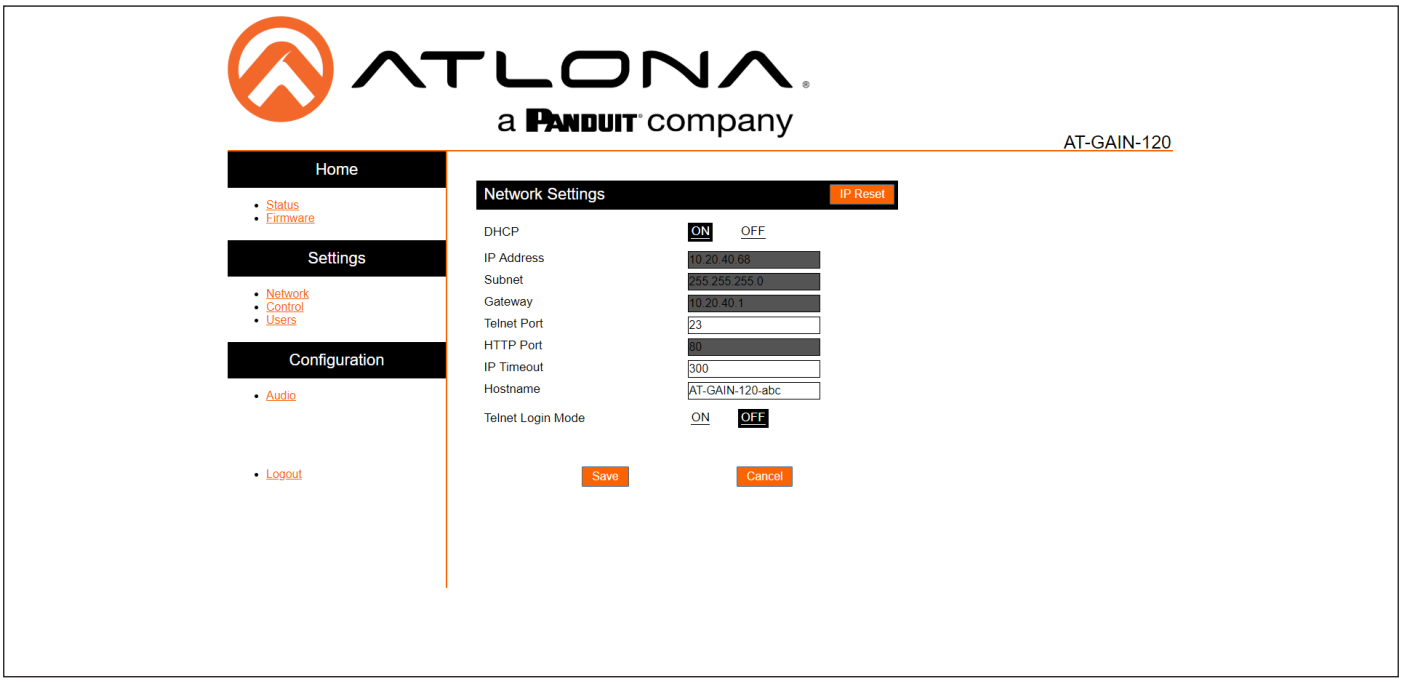
Status (progress bar)
Displays the status of loading new firmware during a firmware update procedure.

Browse
Click this button to select the firmware file. Click the **Load** button to begin the update procedure. Refer to Updating the Firmware (page 36) for more information.

Load
Click this button to upload the selected firmware file to the AT-GAIN-120. While the firmware file is being uploaded, the **Status** progress bar will display the current progress.

Network page

After pressing the **Save** button, a reboot message will appear at the top of the web GUI. The AT-GAIN-120 must be rebooted when any of the network settings have changed.



DHCP
Click the **ON** button to enable DHCP. Click the **OFF** button to enable static IP mode. In static IP mode, the IP Address, Subnet, and Gateway fields can be modified.

IP Address
Enter the IP address of the AT-GAIN-120 in this field. This field can only be changed when DHCP is set to **OFF**.

Subnet
Enter the subnet mask in this field. This field can only be changed when DHCP is set to **OFF**.

Gateway
Enter the gateway (router) IP address in this field. This field can only be changed when DHCP is set to **OFF**.

Telnet Port
Enter the Telnet listening port in this field. The default port is 23.

HTTP Port
Enter the HTTP listening port in this field. The default port is 80. This field cannot be modified.

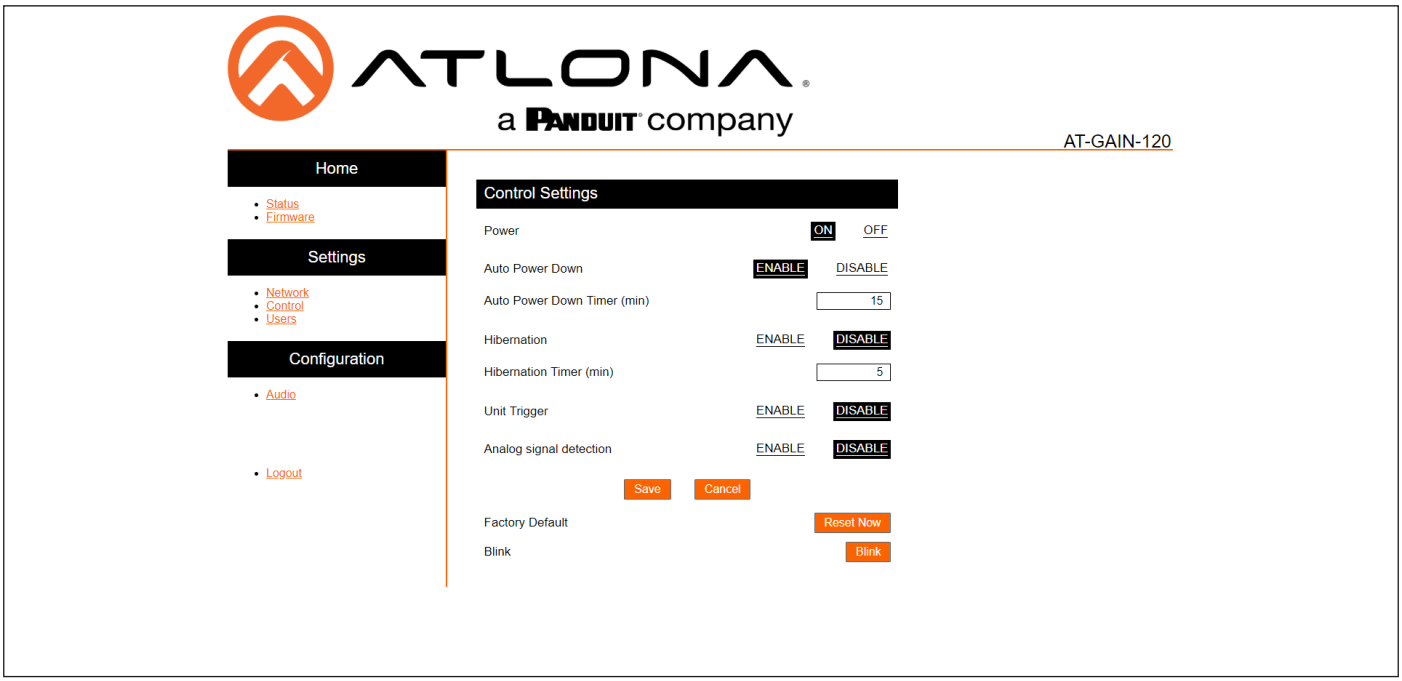
IP Timeout
Enter the time-out interval (in seconds) in this field. This field represents the time interval before the TCP/IP connection times out.

Hostname
Enter the desired hostname in this field. By default, the hostname is the product (SKU) plus the last five digits of the unit serial number.

Telnet Login Mode
Click the **ON** button to prompt for username and password credentials. Username and password credentials are the same as the web GUI login credentials. Click the **OFF** button to create an open Telnet session that does not require login credentials. The default setting is **OFF**.

Save / Cancel
Click the **Save** button after any changes have been made. Click the **Cancel** button to abort changes.

Control page



Power
Click the **ON** button to power-on the AT-GAIN-120. Click the **OFF** button to power-off the unit.

Auto Power Down
Enables or disables auto power down mode. Refer to Auto Power Down Mode (page 19) for more information.

Auto Power Down Time (min)
Specify the time interval before the AT-GAIN-120 goes into auto power down mode. Refer to Auto Power Down Mode (page 19) for more information.

Hibernation
Enables or disables hibernation mode. Refer to Hibernation Mode (page 20) for more information.

Hibernation Timer (min)
Sets the time interval of inactivity (in minutes) before the unit is automatically placed in hibernation mode.

Unit Trigger
Enables or disables the trigger.

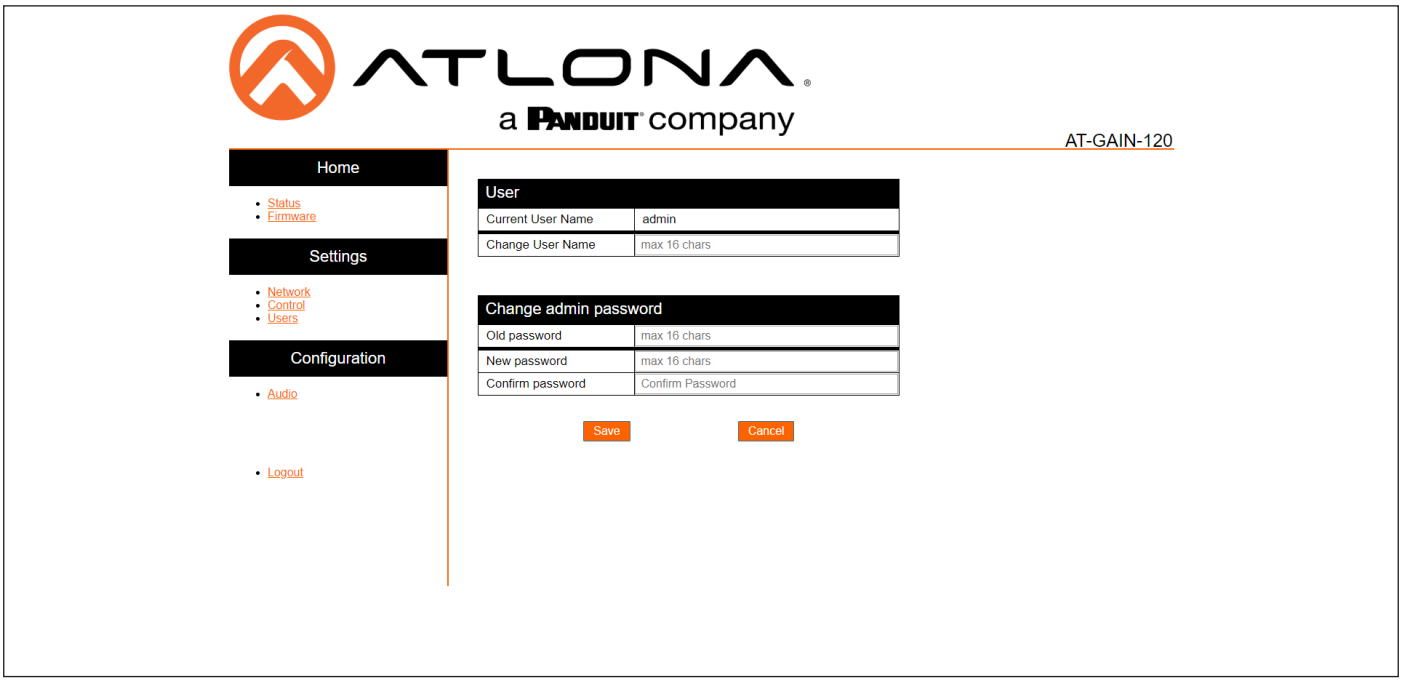
Analog signal detection
When an input audio signal is detected, it will automatically “wake” the AT-GAIN-120 from hibernation mode. This feature is disabled, by default.

Save / Cancel
Click the **Save** button to apply changes. Click the **Cancel** button to abort changes.

Factory Default
Click the **Reset Now** button to reset the AT-GAIN-120 to factory-default settings.

Blink
Click the **Blink** button to start blinking the **DEVICE ID** LED indicator. This feature is useful to identify the unit when multiple units are being used.

Users page



Current Username
The administrator username. This field cannot be changed.

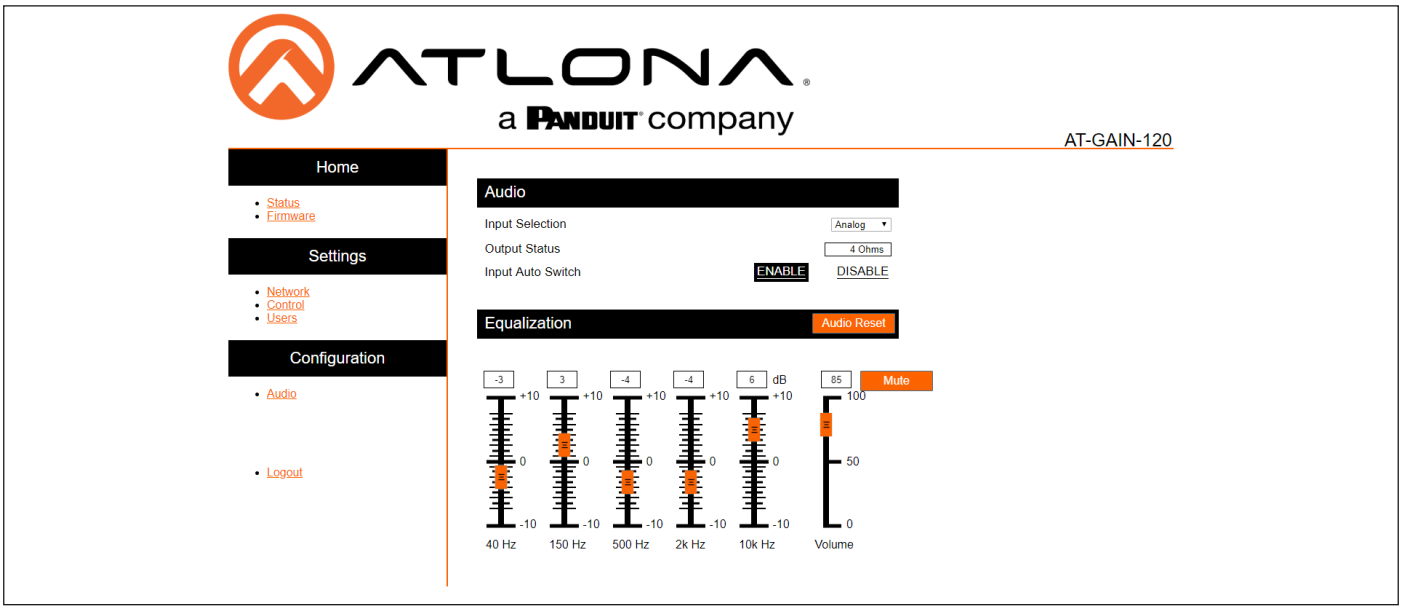
Password
Enter the password for the administrator in this field. Special characters (e.g. #, %, @, &, etc.) are not permitted.

Change Admin Password

- **Old password**
  Enter the current password in this field. The default password is Atlona.
- **New Password**
  Enter the new password in this field.
- **Confirm Password**
  Verify the new password by entering it in this field.

Save / Cancel
Click the **Save** button to apply all changes. Click the **Cancel** button to abort changes.

Audio page



Input Selection

Click this drop-down list to select the audio input: **Analog** or **Net Audio**. The **Net Audio** selection will only be available if the optional AT-GAIN-NET card is installed. This card is available from Atlona.

Output Status

Displays the current output impedance setting.

Input Auto Switch

When enabled, the AT-GAIN-120 will auto-switch between audio inputs. Auto-switching is enabled, by default. If the AT-GAIN-NET card is not installed, this feature will not have any effect.

Equalization (Graphic, 5-band)

Click and drag each of these sliders to adjust the output frequency range. Each band has a range from -10 dB to +10 dB. The following table provides a general breakdown of each frequency in the audio spectrum.

Slider	Description	General Range
40 Hz	Sub-bass frequency	20 Hz - 50 Hz
150 Hz	Bass frequency	50 Hz - 200 Hz
500 Hz	Upper-bass to lower midrange	200 Hz - 800 Hz
2 kHz	Midrange to upper midrange	800 - 4 kHz
10 kHz	“Brilliance” frequency	7 kHz - 12 kHz

Audio Reset

Click this button to reset all equalizer bands to their default settings. Refer to Default Settings (page 42) for more information.

Mute

Click this button to mute the audio output. Note that clicking this button will mute all audio output ports: **LINE OUT**, **4 / 8 Ω OUT**, and **70V / 100V OUT**.

Volume

Click and drag this slider to adjust the output volume. This volume slider only affects the output volume on the speaker outputs. It does not affect the audio volume of the **LINE OUT** port, as this port is a fixed-level port. Note that the volume range for this slider is not measured in decibels.

Appendix

Updating the Firmware

The AT-GAIN-120 can only be updated either through the web GUI or using the mini-USB port on the front panel.

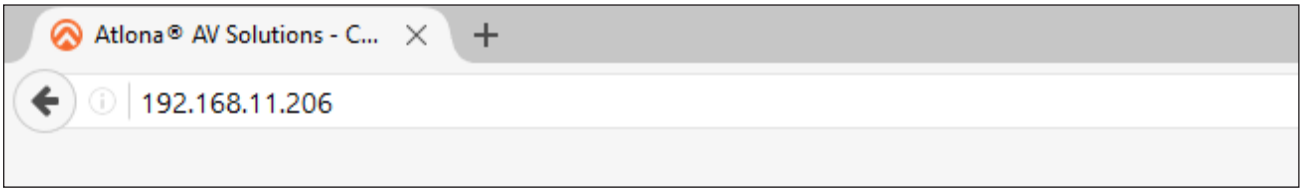
IMPORTANT: As of this writing, Google Chrome is the only browser that is supported for firmware updates. Other browsers will be supported in future versions of firmware.

Web GUI

Required items:

- Firmware
- IP address of the AT-GAIN-120
- Computer on the same network as the AT-GAIN-120
- Username and password to access the web GUI

1. Verify that an Ethernet cable is connected between the AT-GAIN-120 and the network. The computer used to access the web GUI must be on the same network as the AT-GAIN-120.
2. Type the IP address of the AT-GAIN-120 into the web browser, as shown in the example below.

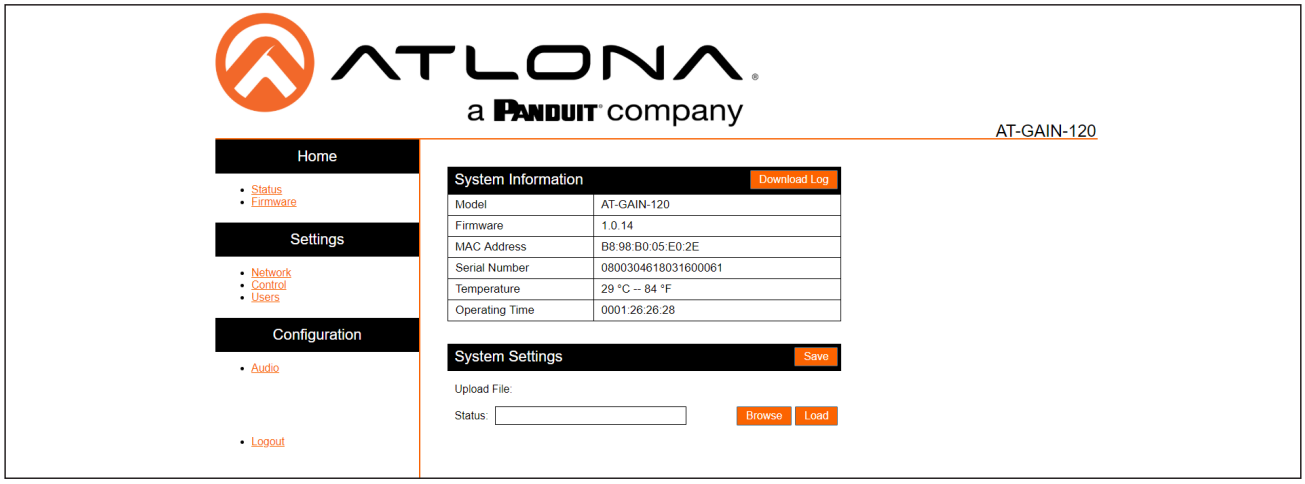


3. The login screen will be displayed. Login using the username and password. The default login credentials are:

   Username: admin
   Password: Atlona

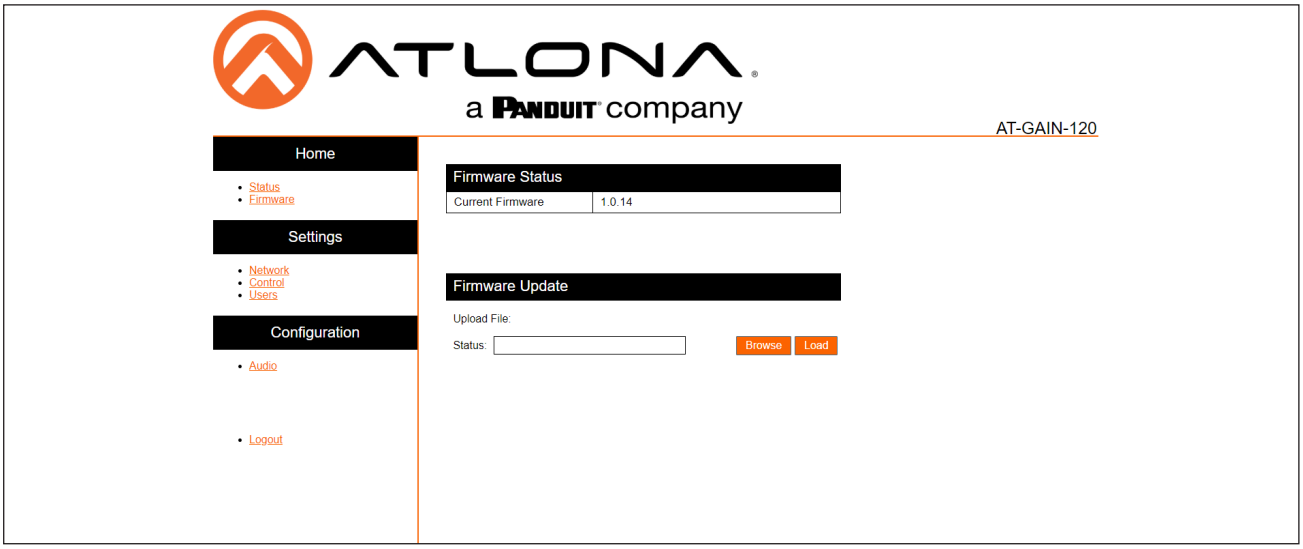
4. Click **Status** in the menu bar on left side of the screen.

5. Click the **Save** button.



6. The **Save As** dialog box will be displayed. Select the folder where the file will be saved. Click the **Save** button to save the file. The file is saved in .bin format and uses the default name of systemsettings.bin.

7. Click **Firmware** on the left side of the screen.



8. Click the **Browse** button to select the firmware file.

9. Click the **Load** button to begin the upgrade process and the PWR LED indicator will flash rapidly. A progress bar will be displayed during the update process. Once the update has been completed, re-login to the webGUI.

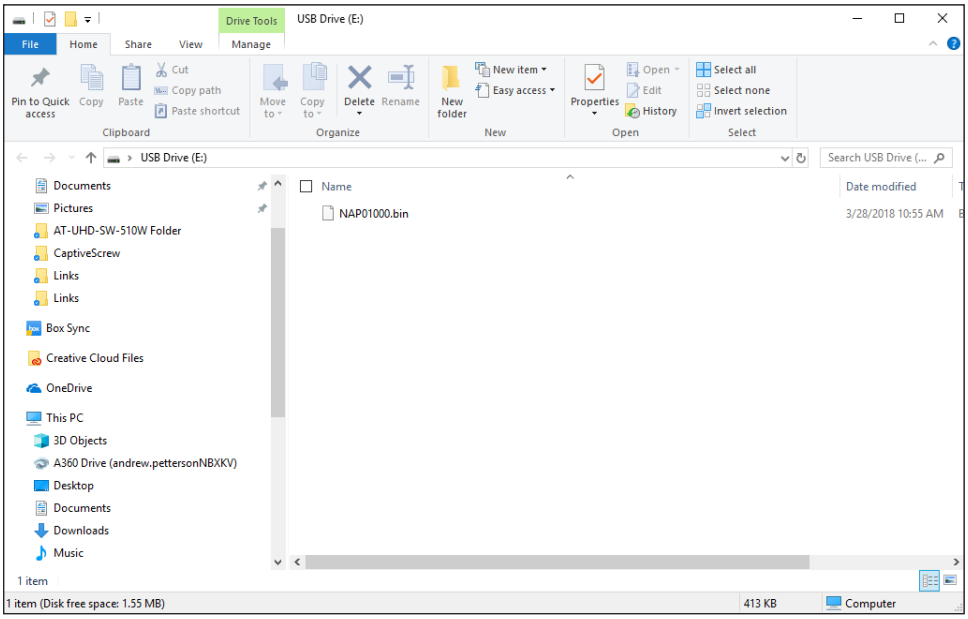
WARNING: Power must not be disconnected or interrupted during the firmware update process.

USB

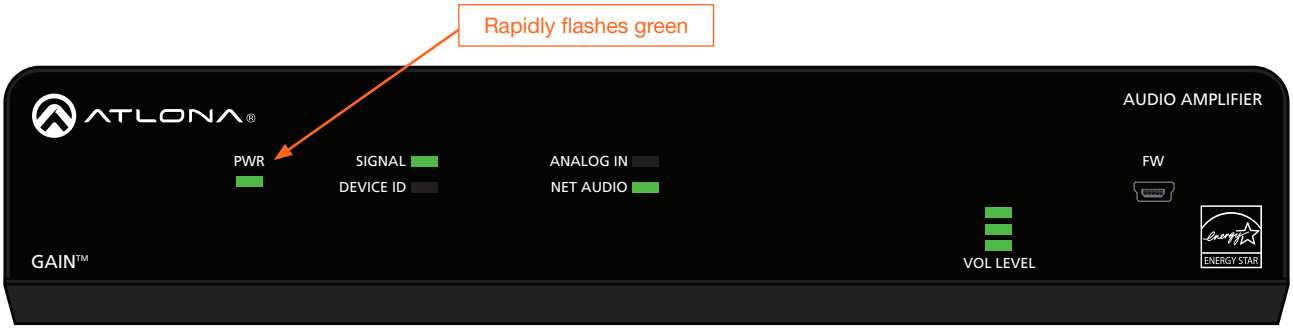
Required items:

- Firmware
- USB Type A to Mini-USB Type B cable
- Computer with USB port

1. Download the latest firmware from the Atlona web site.
2. Disconnect the power from the AT-GAIN-120.
3. Connect the USB cable from the FW port on the front panel to the computer with the firmware.
4. Reconnect the power to the AT-GAIN-120. After a few seconds, a drive folder will be displayed.



5. Delete all existing files on this drive.
6. Drag-and-drop the firmware file on the computer to this folder. Wait for the file to be copied.
7. Disconnect both the USB cable and power cable from the AT-GAIN-120.
8. Reconnect the power to the AT-GAIN-120. The PWR LED indicator on the front panel will rapidly flash green, indicating that the firmware upgrade is in process; this should take only a few seconds.



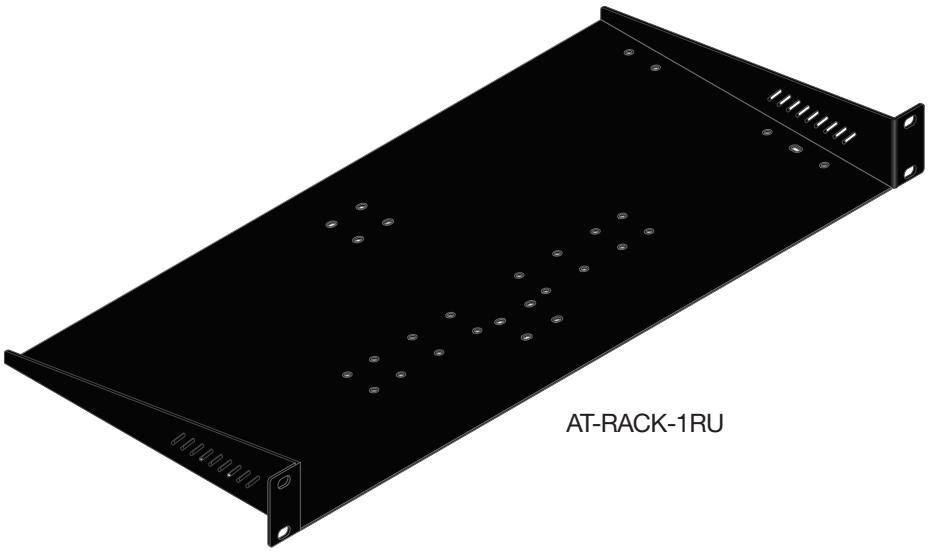
9. The firmware upgrade process is complete.

Rack Mount Installation

The AT-GAIN-120 can be mounted in different ways, based on the number of units that are being installed. When installed into a standard 19” rack, the AT-RACK-1RU will need to be purchased from atlona.com.

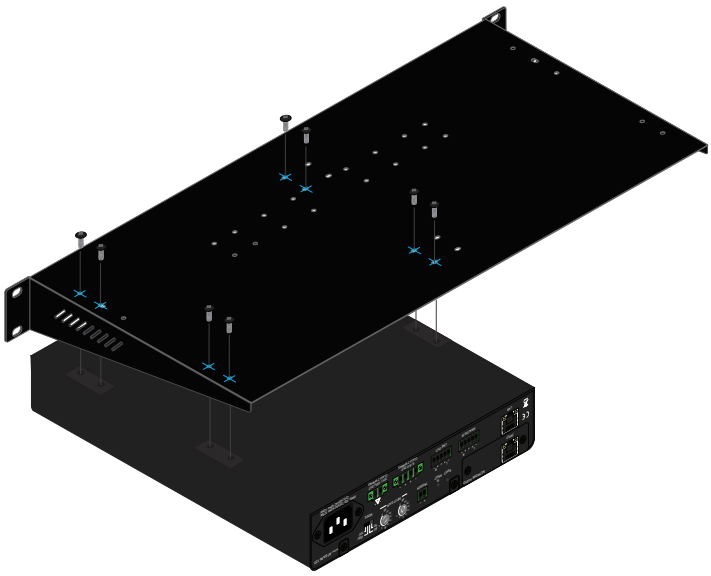
The AT-RACK-1RU can be used to either mount a single AT-GAIN-120 unit or it can be used to mount multiple half-rack Atlona products, such as a AT-GAIN-120 and a AT-UHD-SW-510W.

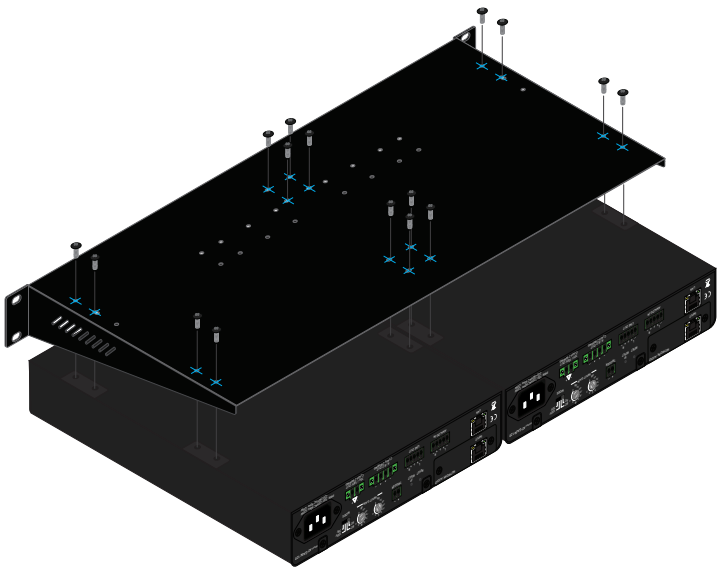
IMPORTANT: The AT-RACK-1RU rack shelf is a required accessory to ensure a proper, secure rack installation. Additionally, 2U of space will be required to install the Gain 120 in a rack. Before mounting the AT-GAIN-120 to the AT-RACK-1RU, remove the rubber feet from the bottom of the unit.



1. Place the AT-GAIN-120 on a flat surface, upside down.
2. Turn the AT-RACK-1RU upside down, placing it on top of the AT-GAIN-120, as shown, and align the holes of the AT-RACK-1RU, marked in blue, with the mounting holes on the AT-GAIN-120.
3. Use the included 7 mm screws to secure the AT-RACK-1RU to the AT-GAIN-120.

IMPORTANT: To prevent possible damage to the device, rack, and/or screws, do not overtighten or use high-torque devices when securing the devices to the rack.





Network Audio Card Installation

The AT-GAIN-NET is an optional audio card which allows Dante and AES67 audio streams to be used with the AT-GAIN-120. Follow the instructions below to install the AT-GAIN-NET audio card.

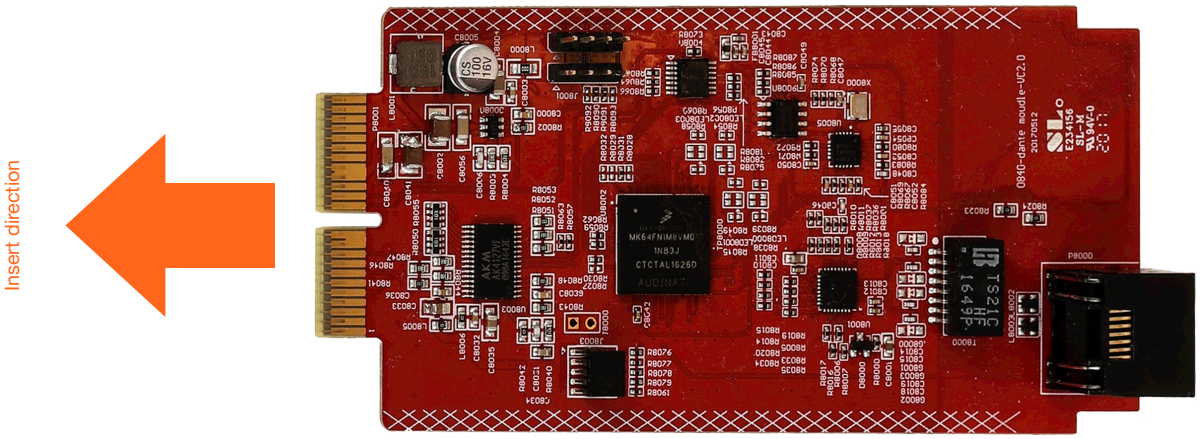
WARNING: To prevent the risk of electrocution or electric shock, always disconnect the power cord from the AT-GAIN-120 before installing or removing the AT-GAIN-NET network card.

1. Disconnect the power cord from AT-GAIN-120.
2. Set the AT-GAIN-120 on a flat surface, free of obstructions. Position the AT-GAIN-120 as shown in the picture below.
3. Using a small Phillips-head screwdriver, remove the two screws holding the faceplate in place. After the faceplate is removed, set it aside.

4. Locate the plastic guides on either side of the expansion slot, and carefully position the card between the upper and lower rail of each guide.
5. Gently push the AT-GAIN-NET network card forward, until it locks in place. The card will make a small snapping sound, once the card is in place.

   Refer to the picture on the following page.

IMPORTANT: When handling the card, avoid touching the components. Always hold the card by the edges. Electrostatic discharge can damage components and the card.



6. Locate the included AT-GAIN-NET faceplate and install the faceplate using the screws from Step 2. Do not over-tighten the screws using high-torque devices, as this may cause damage to the screws or the faceplate assembly.

7. Card installation is complete.

8. Connect the power cable to the AT-GAIN-120.

9. Connect an Ethernet cable, with an encoded digital audio stream, to the **INPUT** port. Refer to the Network Audio (page 24) for information on using Dante and AES67 audio streams.

Default Settings

The following table lists the factory-default settings for the AT-GAIN-120.

Feature	Settings	
Network	DHCP	ON
	Static IP address	192.168.1.254
	Subnet	255.255.0.0
	Gateway	192.168.1.1
	Telnet Port	23
	HTTP Port	80
	IP Timeout	300
	Hostname	AT-GAIN-120-[last five digits of serial number]
	Telnet Login Mode	OFF
Control	Power	OFF
	Auto Power Down	Enabled
	Auto Power Down Timer (min)	15
	Hibernation	Disabled
	Hibernation Timer (min)	5
	Unit Trigger	Disabled
	Analog signal detection	Disabled
	Blink	Disabled
Users	Admin username	admin
	Admin password	Atlona
Audio	Input Selection	Analog
	Input Auto Switch	Enabled
	Equalization bands	
	40 Hz	0
	150 Hz	0
	500 Hz	0
	2 kHz	0
	10 kHz	0
	Volume	30

Specifications

Input Signal	
Analog Input	Balanced: 20 kΩ, unblanced: 10 kΩ
CMRR	51 dB / 58 dB
Detection Threshold	0 dBV = 2.218 dBu

Output Signal	
Distributed speakers (mono)	70 V / 100 V
Program speakers (stereo)	4 Ω / 8 Ω, line-level
Power	70 V = 120 Vrms 100 V = 120 Vrms 4 / 8 Ω = 60 W per channel

Audio Processing	
D/A Conversion	24-bit, selectable sampling rate
Audio Formats	24-bit uncompressed, selectable at 44.1, 48, 88.2, and 96 kHz sampling rate
Latency	2 ms
Signal Processing	Volume, Auto on/off signal sensing, 80 Hz HPF
Network Audio Transport	Dante, AES67
Equalization	5-band, adjustable: 40 Hz, 150 Hz, 500 Hz, 2 kHz, and 10 kHz bands Range: -10 dB to +10 dB

Audio Performance	
Frequency Response	20 Hz - 20 kHz, ±2 dB @ 4 Ω load
THD + N	< 0.1% @ 1kHZ, 3 db below clipping
SNR	> 90 dBA WTD
Damping Factor	< 90 @ 8 Ω
Amplifier Type	Class D

Temperature	Fahrenheit	Celsius
Operating	32 °F to 122 °F	0 °C to 50 °C
Storage	-40 °F to 158 °F	-40 °C to 70 °C
Humidity (RH)	90% RH, non-condensing	

Power	
Standby Mode	Powers down after 5 - 25 minutes (adjustable) of no signal; complies with ENERGY STAR power consumption limits of < 0.5 W in standby mode
Consumption	120 W (max.)
Standby Consumption	normal standby < 0.5 W network standby < 2 W
Supply	100 - 240 V AC, 50/60 Hz, 120 W

Appendix

Connectors, Controls, and Indicators		
INPUT	1 - RJ45 (AT-GAIN-NET network audio card, only), 100 Mbps	
LAN	1 - RJ45	
ANALOG IN	1 - 5-pin captive screw, balanced: 20 k Ω, unbalanced: 10 kΩ	
LINE OUT	1 - 5-pin, 3.5mm	
TRIGGER	1 - 2-pin captive screw	
4 / 8 Ω OUT	1 - 4-pin, 5.08 mm lock-down screw connector	
70V / 100V OUT	1 - 2-pin, 5.08 mm lock-down screw connector	
FW	1 - mini-USB, type-B	
INPUT GAIN	2 - Rotary pots, L/R channel	
MODE	1 - Slider switch, 4-pole, 4 Ω / 8 Ω / 70 V / 100 V	
RESET	1 - Push button, tact-type	
IP RESET	1 - Push button, tact-type	
Power	1 - IEC power receptacle	
PWR	1 - LED indicator, green	
SIGNAL	1 - LED indicator, green	
DEVICE ID	1 - LED indicator, green	
ANALOG IN	1 - LED indicator, green	
NET AUDIO	1 - LED indicator, green	
VOL LEVEL	1 - Multi-LED indicator	

Dimensions	Inches	Millimeters
H x W x D	1.69 x 8.66 x 12.99	43 x 220 x 330

Weight	Pounds	Kilograms
Device	19.84	9

Certification	
Device	CE, FCC, CB, RoHS, WEEE, FCC, ENERGY STAR®