

# AmpliPro Streamer - User Manual



Device Model: AP1-S4

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## 1 Links

Follow this QR code to go to a page that contains links to go to our community forums, developer blog, app downloads, quick-start video, and the newest version of this manual.

Can't follow the QR? Go to <https://www.amplipi.com/streamer-links>.



## 2 Safety and Legal

### 2.1 Safety

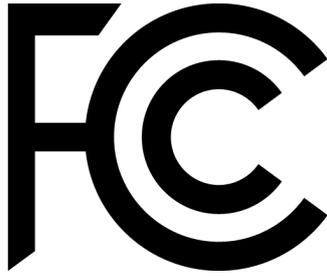


- **WARNING!** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO MOISTURE.
- **CAUTION!** TO REDUCE THE RISK OF ELECTRIC SHOCK, KEEP COVER ON AT ALL TIMES.

#### IMPORTANT SAFETY INSTRUCTIONS

- Read and retain these instructions for future reference.
- Take heed of all warnings and adhere to all guidelines outlined in this manual.
- Avoid using this unit in close proximity to water.
- Only a dry cloth may be used to clean the exterior surface.
- Utilize canned/compressed air to clean the interior, ensuring the unit is unplugged beforehand. Never remove the top cover of the unit.
- Ensure ventilation openings remain unobstructed and follow manufacturer's installation guidelines.
- Avoid placement near heat sources such as radiators, stoves, or other heat-producing appliances.
- Preserve the grounded safety pin of the plug; if incompatible with your outlet, consult an electrician for replacement.
- Protect the power cord from elastic stress damage, especially at plugs and exits from the unit.
- Avoid modifying or damaging the power cord; keep it away from heat sources and heavy objects.
- Use only attachments and accessories specified by the manufacturer.
- Unplug during lightning storms or extended periods of inactivity.
- Direct all servicing needs to qualified personnel in case of damage or malfunction.
- Operate within specified voltage limits to prevent fire or electric shock.
- Avoid contact with speaker terminals to prevent electric shock.
- Ensure proper grounding; consult an electrician to verify this.
- Ensure stable installation on level surfaces to prevent injury or damage.
- Note that the unit remains partially connected to AC power even when turned off; do not remove the cover.

## 2.2 FCC Statement



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 device.
- 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.

## 3 Overview

The AmpliPro Streamer (sometimes referred to as "the unit" or "the device" by this manual) is a multi-source home audio controller made for whole-home audio systems with many zones, specifically designed to be compatible with preexisting setups. It can play up to 4 simultaneous audio streams (Airplay, Pandora, Spotify Connect, etc.) with each routed to one of the outputs, all of which are configurable in real-time using the mobile apps (see QR codes on the first page of this manual), self-hosted AmpliPi Web App, or the underlying REST API. There are also third party drivers available, used by system integrators to interface AmpliPro directly with other systems, such as Nice (formerly ELAN), URC, and Home Assistant to name a few.

Your AmpliPro Streamer includes the following components:

- 1 x Quick Start Guide
- 1 x AmpliPro Streamer
- 1 x Power Cable
- 1 x Ethernet Cable

### 3.0.1 Front Panel



- **DISPLAY:** Displays system information:
  - Hostname
  - IP
  - Device serial number
  - Current playstate\* (number of connected streams that are playing, paused, or stopped)
  - SSH password

\* Note - the display keeps last state when power is lost, this data might not be up to date if the ON/STANDBY light is not on

- **ON/STANDBY:** Shows the state of the audio controller:
  - Solid: The unit is on
  - Blinking: The unit has an issue. See Troubleshooting page for guide on how to receive support.

### 3.0.2 Rear Panel



- **OUTPUT:** Zone pre-amp analog L/R audio outputs
- **SERVICE:** Micro USB service port, used for troubleshooting and reimaging the device
- **USB:** 2 x USB 2.0 ports, to be used with bluetooth or FM radio dongles, or for an external storage device that contains music files
- **AUX IN:** 3.5mm stereo audio input
- **NETWORK:** RJ-45 port for wired ethernet networking

### 3.1 Specifications

Feature	Description
Streaming Sources	Airplay™1 & 2, Pandora®, Spotify Connect™, DLNA®, Lyrion Media Server (LMS), Internet Radio, FM Radio*, Bluetooth™*, Local Media Playback
Control Interfaces	iOS App, Android App, Web App, REST API, Third-Party Drivers
Dimensions	1U 19" rackmount 6" D x 19" W x 1.75" H
Weight	5 lbs / 2.3 kg
Connectivity	100Mbps Ethernet
Power Input	IEC 60320 C14 Inlet 100-240VAC 50-60Hz
Power Consumption	5W Average 45W Peak
Outputs	4 x Line-Level RCA Ch 1: up to 32-bit 384 kHz Ch 2-4: up to 16-bit 48 kHz
Inputs	2 x External USB 2.0** 1 x Internal USB 2.0** 1 x 3.5mm Audio Input

\*With third-party hardware

\*\*Powered, max draw 0.5 A

## 4 Installation

### 4.1 Overview

It's time to power on your AmpliPro Streamer and try it out. To avoid damaging your device, please read through this guide before installing and powering your AmpliPro Streamer!

### 4.2 Mounting and Placement

AmpliPro Streamer ships with built-in 19" rackmount ears, so that they can be easily installed into a server rack. Also included are four silicone "feet" if you prefer to run the Streamer from a shelf. The weight of the device is approximately 5 pounds (2.3 kilograms)

Some things to keep in mind to avoid overheating your Streamer:

- Don't block the vent holes on the side
- Don't allow dust to build up inside the unit. See cleaning instructions on the safety page for more details.

### 4.3 Speakers and Amplifiers

Each of your Streamer's sources outputs as a line-level RCA output pair. These outputs can be used to connect to amplifiers, powered subwoofers, and other active/powered speakers. Unlike with a standard edition AmpliPro, there are no in-app volume controls; volume is intended to be controlled by whatever amplifier or powered speaker solution you choose.

#### 4.3.1 More Info

More information on installation can be found on the AmpliPro community forums<sup>1</sup> or our main website<sup>2</sup>. These links can also be found on the "About" page in your system's settings, or on the links page reached via the QR code at the start of this manual.

### 4.4 Power

Plug the AmpliPro Streamer into a wall outlet. The ON/STANDBY will turn solid blue once the unit is fully powered on. Continue below to enjoy your unit!

### 4.5 Startup and Configuration

Now that the AmpliPro Streamer is powered on, it's time to use the software. To access the app, there are two options:

#### 4.5.1 Mobile App

1. We offer mobile apps available on Android and iOS, simply search for "Amplipi" on the Google Play Store or Apple's App Store or go to the Links page at the start of this manual, scan the QR code, and click "Apps". Otherwise, follow this link on a mobile device: <https://www.amplipi.com/app>.
2. Once you have the app downloaded, permit the app to access devices on your local network. The app will automatically search your network for active AmpliPro units.
3. If you have multiple controllers (main units or streamers), it will ask which unit you wish to connect to. We suggest giving different hostnames to each unit if you have multiple controllers on the same network for this reason.

#### 4.5.2 Webapp

Simply enter "amplipi.local" into a web browser, on any device that both has a web browser and is connected to the same network. Android and Windows 7 users will need to type the IP address found on the unit's display into their web browser instead.

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<sup>1</sup><https://www.amplipi.com/community>

<sup>2</sup><https://www.amplipro.com>

### 4.5.3 From the App

Here, we give a basic rundown of the app. For more detail, please refer to our blog by scanning the QR code at the start of the manual or by going to <https://www.amplipi.com/blog> where you can find more detailed articles on how to use the app or use third-party integrations such as Nice (formerly ELAN) and more.

1. Click the plus (+) icon and select a stream
  - The Groove Salad - InternetRadio stream comes preconfigured (needs an internet connection).
2. Click on the record/disc icon at the bottom of the screen to enter the player view, which has more controls depending on the stream type.
3. If you wish to change the default group and zone names or add different streaming sources, click on the gear icon on the bottom right to reach the settings page where you can configure inputs and zones.

## 5 Troubleshooting

If you are having problems with your AmpliPro device, start here.

### 5.1 Updating

From the App

1. Click the gear icon in the bottom right corner to go to the configuration page
2. Select **Updates** and click the **Check for Updates** button

Without the app:

1. Collecting the IP from the front display of your AmpliPro unit
2. Navigating to `http://{Device_IP}:5001/update`

#### 5.1.1 New Release

To update your AmpliPi software to the latest version:

3. Click the **Update** button

#### 5.1.2 Prereleases and using previous versions

Had an issue with an update? Want to try a beta release? Follow these steps:

3. Click the **Older Releases** tab
4. Select the release you would like to use from the dropdown menu
5. Click the **Start Update** button

## 5.2 Taking and restoring configuration backups

There are two ways configuration backups are made - manually through the frontend, and nightly within the backend via a scheduled job.

### 5.2.1 Manual backups and restores

Manual backups are taken by navigating to Settings (gear icon) -> Config -> Download Config. This configuration includes all configured streams. These backups can be restored going to Settings -> Config -> Upload Config and selecting the downloaded config file. It is a good idea to take a manual backup before upgrading your appliance.

### 5.2.2 Automated system backups and restores

Automated backups are also taken nightly at 2AM and stored for 90 days, and also whenever you upgrade to a newer version of software. These are raw system backups, accessible only by an advanced user via the backend. These backups help either support, or a technical user, to restore prior system configuration from a particular point in time. If the below instructions do not make sense to you, you should feel free to email [support@micro-nova.com](mailto:support@micro-nova.com)<sup>3</sup> and we can help restore a backup from your appliance.

These backups are dated tarballs stored at `/home/pi/backups`. This tarball contains the entire `/home/pi/.config/amplipi` directory. To restore this backup:

1. Stop the AmpliPi service (`systemctl stop --user amplipi` as the pi user).
2. Unpack a backup tarball and overwrite the contents of `.config/amplipi` (something like `tar --force-local -xvzf backups/config_2024-08-22T12:42:31-04:00_pre-fw-upgrade.tgz -C /`). Here we use `config_2024-08-22T12:42:31-04:00_pre-fw-upgrade.tgz` as an example backup file.
3. Start AmpliPi again (`systemctl start --user amplipi`).

## 5.3 Reimaging AmpliPro

For directions on how to bring AmpliPro system back to a previous version, follow this link: [www.amplipi.com/reimaging](http://www.amplipi.com/reimaging). It is a good idea to take a system backup before running this process; see the above section labelled "Taking and restoring configuration backups".

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<sup>3</sup><mailto:support@micro-nova.com>

## 5.4 Error Codes

The following numerical codes are displayed on the AmpliPro's E-Ink Display on newer models, or on the TFT Display on older models, when the corresponding error occurs:

- 0: E-Ink Display service is running, but the AmpliPi service itself is not
- 1: Failed to get the IP address for the AmpliPi
- 10: Cannot connect to REST API
- 11: Time out when connecting to REST API
- 12: Invalid response from REST API
- 13: Other REST API Error
- 14: Error Getting Status From File/Another Process
- 15: Unable to find serial number (Some AmpliPro devices do not have EEPROM boards and therefore do not have internal serial numbers, but these do not have E-Ink Displays)
- 16: Unable to get number of expander units due to Exception
- 17: Unable to get number of expander units from API

## 5.5 Still need help?

You can contact our support. We can be reached via email at [support@micro.nova.com](mailto:support@micro.nova.com)<sup>4</sup>.

### 5.5.1 Gathering Logs

In most cases, the first thing that our support technicians will ask you for is to send us your system logs. These logs are wiped out on system reboot, so when possible try to collect them whenever an issue occurs *before* rebooting your device. Logs can be reached by going to Settings -> About -> Logs, or by navigating directly to `http://{Device_IP}:19531/entries`. Once you reach this page, you can either copy and paste the logs into your email, or hit control+S to save them to a file that you can attach to your email.

### 5.5.2 Support Tunnel

We may ask you to open a support tunnel so we can connect to your running appliance. When you request a tunnel, the web interface will generate and provide you with two pieces of information - the tunnel ID and a preshared key. Without these pieces of information, we are *incapable* of connecting to your appliance. Additionally, a support tunnel can be stopped at any time and has an expiration date of 2 weeks after it was created. This is for your privacy and security.

You can request a tunnel by following these steps:

1. Click the gear icon in the bottom right corner to go to the configuration page
2. Select **Updates**, and click the **Support Tunnel** Tab
3. Click the **Request support tunnel** button. It may 60 seconds for the request to complete.
4. Once the request has been created, this page provides you with the tunnel ID and a preshared key. Please provide both of these to our support personnel in your communications.

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<sup>4</sup><mailto:support@micro-nova.com>

## 6 Warranty and Return information

### 6.1 1-Year Limited Warranty

We take great pride in our products, and your satisfaction is truly our top priority. We guarantee AmpliPro hardware to be free of defects in material or workmanship under normal use during the warranty period. This warranty covers AmpliPro units sold directly by MicroNova LLC through this website, as well as authorized distributors.

The warranty period shall last 1 year, beginning from the date that you receive your AmpliPro unit (based upon the tracking information from your shipment.) During this warranty period, MicroNova LLC will repair or replace, at no charge, the AmpliPro unit (or components within that AmpliPro unit) that prove defective under normal use. The replacement unit or component assumes the remaining warranty of the original unit. This warranty does not cover products damaged by accident, misuse, or by third-party equipment. Note that for international orders, we are unable to cover shipping costs or any duties incurred as part of the warranty work.

We test each and every AmpliPro unit thoroughly before shipping to you, but we are only human. If you believe your item has an issue, please contact our support team at [support@micro-nova.com](mailto:support@micro-nova.com) to help diagnose and resolve the issue. Most issues can be resolved by working with our team. AmpliPro is a new and evolving open-source product, and we ask for your patience and understanding as we address any issues you may encounter. Everyones home audio setup is unique, and we cannot anticipate and test for all possible permutations, but we will do our best to make AmpliPro work for you! Remember that we are in this together, and by working with the MicroNova team and the AmpliPro open source community to resolve issues, you are helping fix the issue not just for yourself, but for the whole community!

AmpliPro is a radically open product, with open-source software, firmware, and schematics. While we encourage users to modify AmpliPro to meet their needs, our warranty understandably cannot cover hardware that has been modified by end users. Should you encounter issues while making modifications, we will do our best to support you in any way that we can, including making replacement components available to you at a reasonable cost.

We at MicroNova reserve the right to extend this warranty **at our discretion**. There is no right to a further extended warranty, though some customers may receive such treatment **at our discretion**.

### 6.2 30-Day Return Policy

If for any reason you are not completely satisfied with AmpliPro, you may return it in its original condition within 30 days from the date that you receive your AmpliPro unit (based upon the tracking information from your shipment) for a refund. This warranty covers AmpliPro units sold directly by MicroNova LLC through this website. Buyer is responsible for return shipment costs and must use a shipping carrier that provides tracking information. We will promptly issue your refund upon receipt of your return. Note that for international orders, we are unable to refund original shipping costs or any duties incurred.

We encourage anyone considering returning their unit to contact our support team at [support@micro-nova.com](mailto:support@micro-nova.com) to try and resolve any issues you are encountering!

### 6.3 Contact Information

Contact us at [support@micro-nova.com](mailto:support@micro-nova.com) for any support needs

## 7 Glossary

- App: Refers to the device software, whether the mobile app or the webapp (see installation page for details)
- Firmware: Software that controls the device hardware
- Imaging / Reimaging: The process of restoring the device to factory settings via the micro-usb service port
- Line-Level: Unamplified output
- Source / Stream: Source of audio, such as an RCA or 3.5mm input or an instance of Spotify, Pandora, Internet Radio, etc.
- SSH: Secure Shell, a computer protocol used to wirelessly access the device
- Tarball: Type of compressed file, typically used to transfer software packages in Linux