CyberData
The IP Endpoint Company

Paging 25V/70V +4 Amplifier Operations Guide

SIP Compliant
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for Firmware Version *23.0*

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CyberData
The IP Endpoint Company

Technical Support

The fastest way to get technical support for your VoIP product is to submit a VoIP Technical Support form at the following website:
https://support.cyberdata.net/

Phone: (831) 373-2601, Ext. 333
Fax: (831) 373-4193
Company and product information is at **www.cyberdata.net**.

Revision Information

Revision 932073A, which corresponds to firmware version 23.0.0, was released on December 17, 2025.

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 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 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 apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus 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 apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. Prior to installation, consult local building and electrical code requirements.
14. **WARNING: The Intercom enclosure is not rated for any AC voltages!**

Warning

Electrical Hazard: This product should be installed by a licensed electrician according to all local electrical and building codes.

Warning

Electrical Hazard: To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

Warning

The PoE connector is intended for intra-building connections only and does not route to the outside plant.

Pictorial Alert Icons

General Alert

This pictorial alert indicates a potentially hazardous situation. This alert will be followed by a hazard level heading and more specific information about the hazard.

Ground

This pictorial alert indicates the Earth grounding connection point.

Hazard Levels

Danger: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This is limited to the most extreme situations.

Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution: Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also alert users against unsafe practices.

Notice: Indicates a statement of company policy (that is, a safety policy or protection of property).

The safety guidelines for the equipment in this manual do not purport to address all the safety issues of the equipment. It is the responsibility of the user to establish appropriate safety, ergonomic, and health practices and determine the applicability of regulatory limitations prior to use. Potential safety hazards are identified in this manual through the use of words Danger, Warning, and Caution, the specific hazard type, and pictorial alert icons.

Abbreviations and Terms

Abbreviation or Term	Definition
A-law	A standard companding algorithm, used in European digital communications systems to optimize, i.e., modify, the dynamic range of an analog signal for digitizing.
AVP	Audio Video Profile
Cat 5	TIA/EIA-568-B Category 5
DHCP	Dynamic Host Configuration Protocol
LAN	Local Area Network
LED	Light Emitting Diode
Mbps	Megabits per Second.
NTP	Network Time Protocol
PBX	Private Branch Exchange
PoE	Power over Ethernet (as per IEEE 802.3af standard)
RTFM	Reset Test Function Management
SIP	Session Initiated Protocol
SRTP	Secure Real Time Protocol
u-law	A companding algorithm, primarily used in the digital telecommunication
UC	Unified Communications
VoIP	Voice over Internet Protocol

Contents

Chapter 1. Product Overview

1.1 General Wire Recommendation for 25V or 70V Speakers

For the majority of installations we recommend the following specifications for the speaker wiring.

16/2 (16AWG/2 Conductor) Gray Stranded In-Wall CL3R Speaker Wire (Figure 1)

- Use with speaker systems in an indoor audio system
- Class 3, riser rated for in-wall installation in riser and non-riser spaces
- PVC insulating jacket
- 2 fully annealed class B stranded bare copper conductors
- 16-Gauge
- UL Type CL3R
- Plenum rated

There are many brands that will work, but we have personally tested the Southwire company. The description below are the details on this wire in a 500 foot length.

P50002 SY 16/2 STR CU OAS CMP/CL3P CMP/CL3P/FPLP FT6 PLENUM SHIELDED STRANDED 185 25.07

Note Different gauge wiring can be used from our standard 16/2 recommendation if specific distances or power levels are trying to be maintained. Feel free to consult with our Design Services Group for additional assistance.

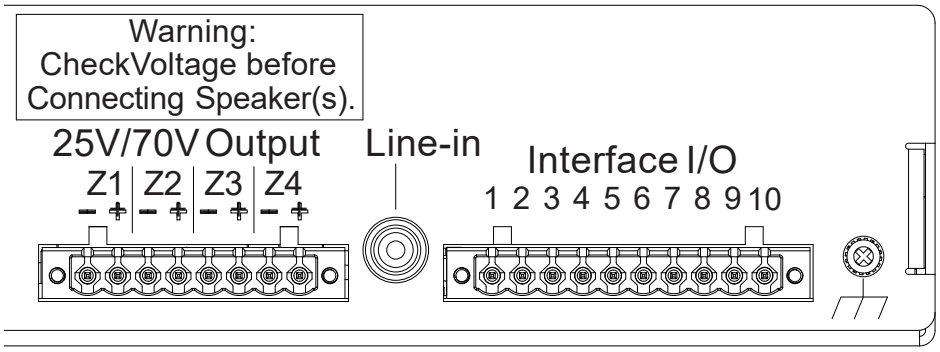
Figure 1. 16/2 (16AWG/2 Conductor) Gray Stranded In-Wall CL3R Speaker Wire

1.2 Connecting the Paging 25V/70V Amplifier

Before you connect the Paging 25V/70V Amplifier be sure that you have received all of the parts of the device on the Quick Reference Placemat which comes with the product.

See Figure 2 for the connection options that are available for the Paging 25V/70V Amplifier.

Figure 2. Connection Options



25V/70V Output

There are eight connections to hook analog speakers up to the amp. The connections accept up to a 12 AWG wire.

Line in

Line level input is for background music applications. The expected input level is 2Vpp (2 volts peak to peak voltage).

Interface I/O

1	Fault Sense Input (Common)
2	Fault Sense Input (Sense)
3-4	Reserved
5	Ground Reference
6	Relay Contact - Common
7	Relay Contact - Normally Open
8	Line Level Output (+)
9	Line Level Output (-)
10	Reserved

1.2.1 Ground Connection

This connection allows you to connect the device to an electrical ground.

1.2.2 Line In

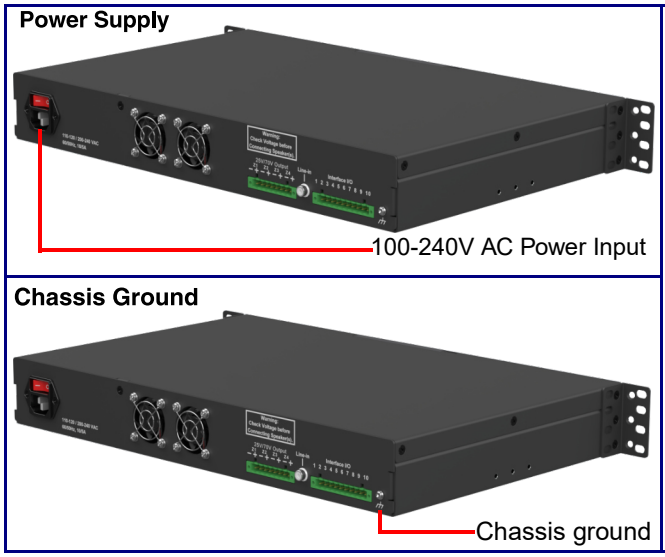
This RCA 10K Ohm Hi-Z input connection allows you to connect an external music player to the internal amplifier.

ESD Sensitivity: This equipment may be sensitive to ESD (electro-static discharge). It may cause the system to become unresponsive in some higher than normal ESD environments. As a precaution, during installation, it is best to make all external connections to the unit before powering on.

1.3 Connect to the Power Source

To supply power, connect the Paging 25V/70V Amplifier to a standard 100-240VAC 50/60Hz power supply. If required, connect the earth grounding wire to the chassis ground on the back of the unit. See Figure 3.

Figure 3. Connecting to the Power Source



To set up the device, connect the device to your network:

Power Supply

- Connect the Amplifier to a standard 100-240VAC, 50/ 60Hz external power supply

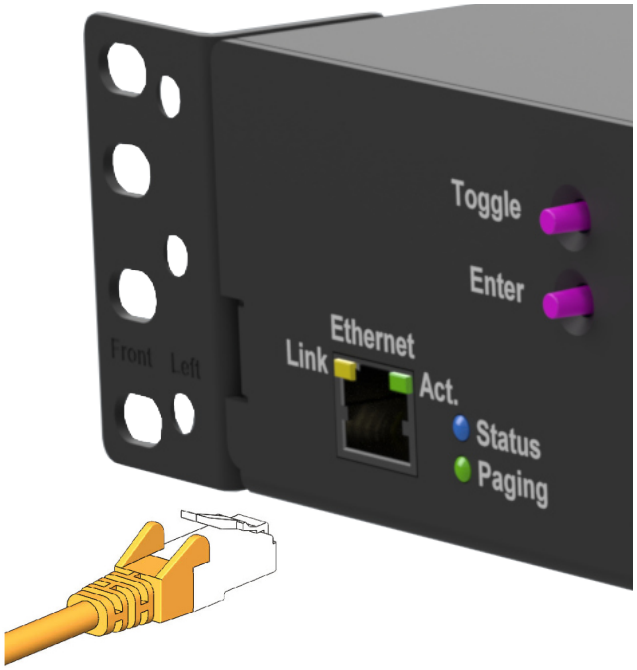
Chassis Ground

- Connect the earth grounding wire to the Chassis Ground. See the figure on the left.

1.4 Connect to the Network

Plug one end of a standard Ethernet cable into the device Ethernet port. Plug the other end into your network.

Figure 4. Connecting to the Network



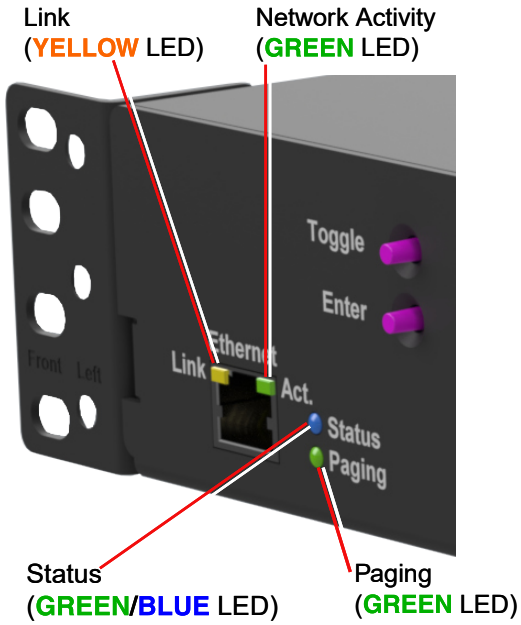
1.5 Confirm that the Device is Up and Running

The LEDs on the front of the Paging 25V/70V Amplifier verify the unit's operations.

Figure 5. LEDs

When you apply power, turn ON the Power switch and connect the Ethernet to a live network:

- The square, **YELLOW Link** LED above the **Ethernet** port indicates that the network connection has been established at 100Mbit speed.
- The square, **GREEN Network Activity** LED above the Ethernet port will blink to indicate network activity.
- The round **GREEN/BLUE Status** LED is **BLUE**, indicating power is **ON**. Once the device is initialized, the LED will blink **GREEN** at one second intervals.
- The round **GREEN Paging** LED comes on after the device is booted and initialized. This LED blinks when a page is in progress. You can disable **Beep on Initialization** on the **Device Configuration** page.



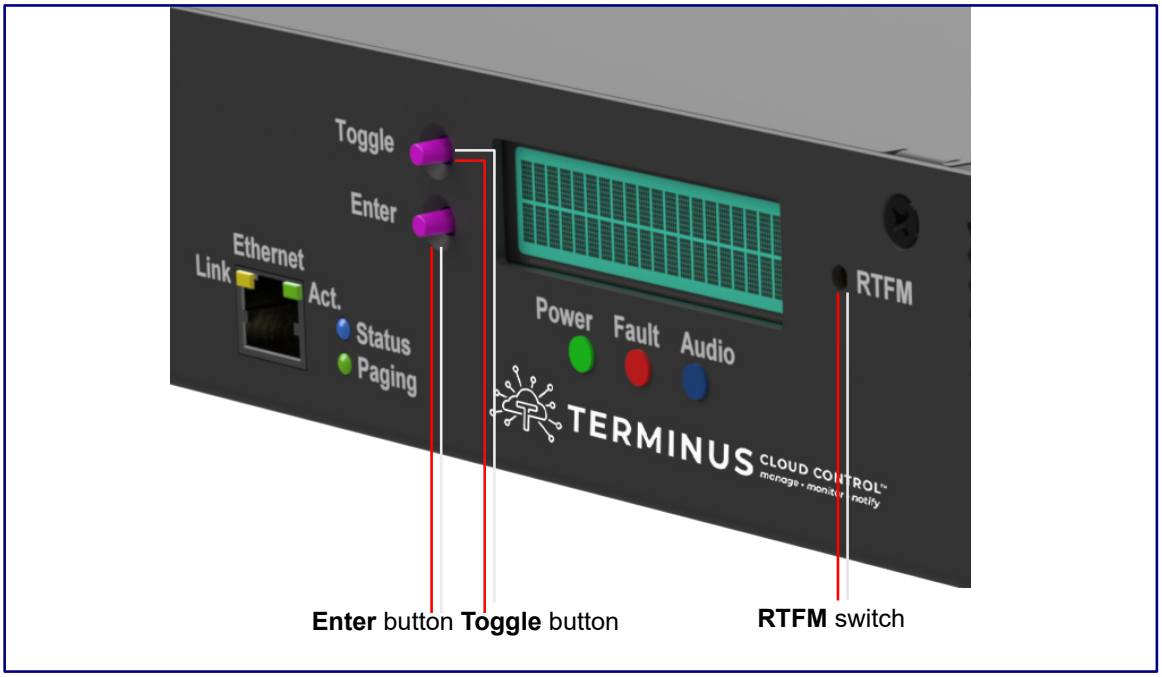
1.5.1 Verify Network Activity

The square, GREEN Network Activity LED blinks when there is network traffic.

1.6 LCD Display Explanation

The LCD Display can be interacted with via the Toggle and Enter buttons on the front panel of the device. See Figure 6.

Figure 6. LCD Display



The Toggle button is used to switch between menu pages and on specific pages to toggle between options.

The Enter button is used on specific pages to confirm a setting.

LCD Display menu pages:

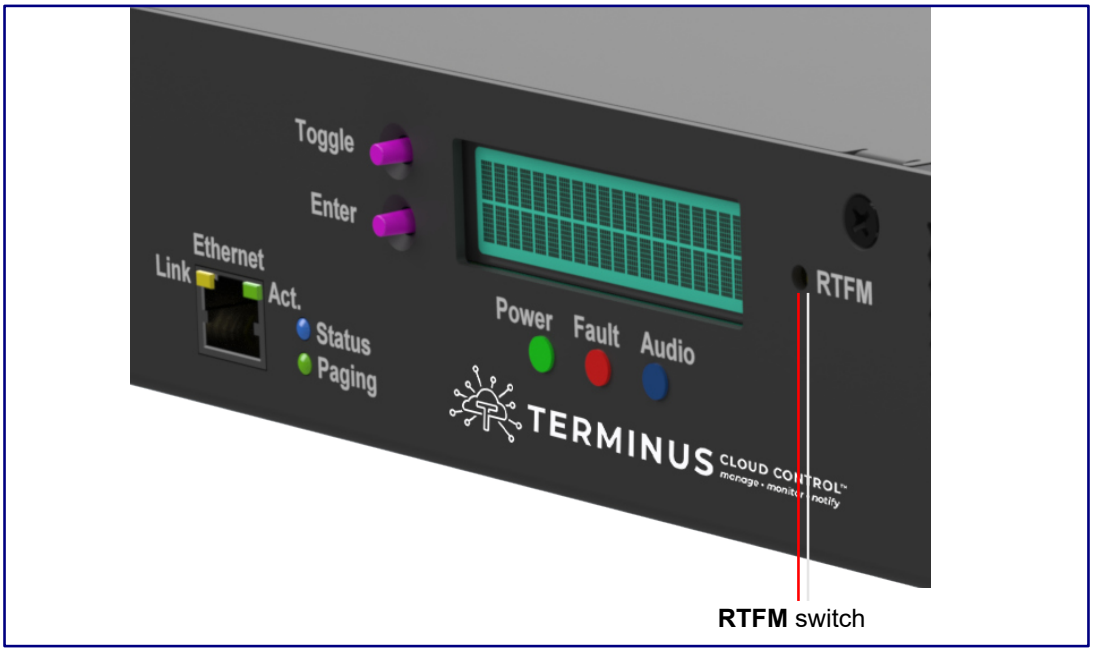
- Screen 1: CyberData Splash Screen
- Screen 2: Serial Number and Mode (25v or 70v)
- Screen 3: Temperature (Celsius /Fahrenheit) and fan status (on or off)
- Screen 4: IP Address and MAC Address
- Screen 5: Firmware Version and Part Number
- Screen 6: Master Volume Level
- Screen 7: Test Audio (Shows in Green)

1.7 Announcing the IP Address

To announce the IP address for the Paging 25V/70V Amplifier, complete the following steps:

1. Use a paper clip to press the RTFM button, bringing up the **RTFM** screen. See Figure 7.
2. Use the toggle button to select **Speak IP Address** and then **Enter** to activate.
3. If a speaker is connected, the device will announce the IP address.

Figure 7. RTFM Switch



1.8 Restore the Factory Default Settings

The Paging 25V/70V Amplifier is delivered with factory set default values for the parameters in Table 1. Use the RTFM switch (see Figure 8) on the front of the unit to restore these parameters to the factory default settings.

Note When you perform this procedure, the factory default settings are restored. The default parameters for access are shown in Table 1-2.

Table 1. Factory Default Settings

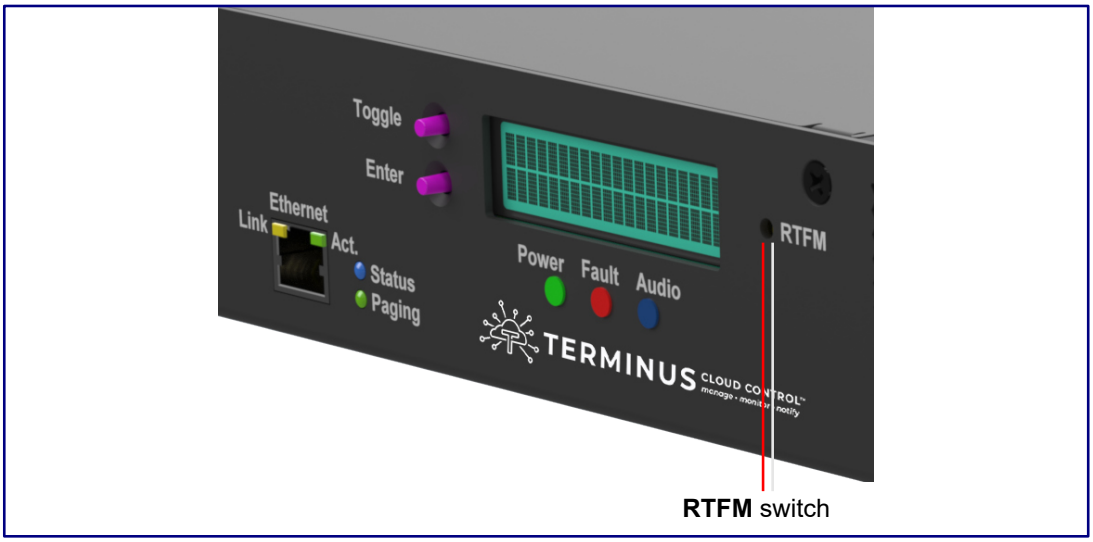
Parameter	Factory Default Setting
IP Addressing	DHCP
IP Address[a]	192.168.1.23
Web Access Username	admin
Web Access Password	admin
Subnet Mask[a]	255.255.255.0
Default Gateway[a]	192.168.1.1

[a] Default if there is not a DHCP server present.

To restore these parameters to the factory default settings:

1. Use a paper clip to press the RTFM button, bringing up the **RTFM** screen.
2. Use the toggle button to select **Restore Defaults**, and then Enter to activate.
3. Selecting **Restore Defaults** will bring up the confirmations screen, where selecting Enter will restore defaults.
4. If a speaker is connected, the device will announce, "restoring default configuration" and "rebooting."

Figure 8. RTFM Switch



Chapter 2. Configure the Device

2.1 Log In Page

1. Open your browser to the Intercom IP address.

   Note If the network does not have access to a DHCP server, the device will default to an IP address of 192.168.1.23.

   Note Make sure that the PC is on the same IP network as the Intercom.

   Note You may also download CyberData's VoIP Discovery Utility program which allows you to easily find and configure the default web address of the CyberData VoIP products.

   CyberData's VoIP Discovery Utility program is available at the following website address:

   https://www.cyberdata.net/pages/discovery

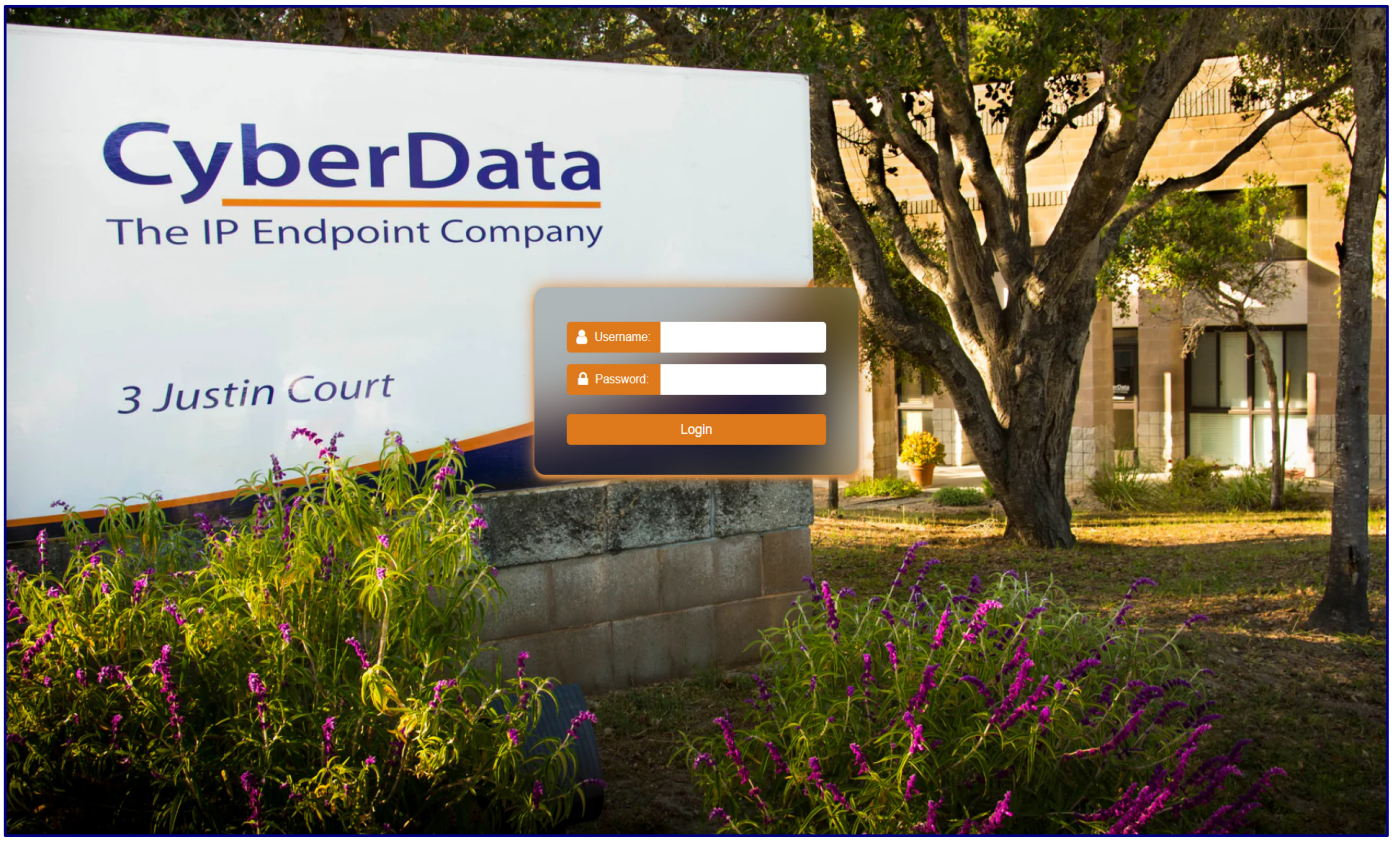
   Note The Intercom ships in DHCP mode. To get to the Home page, use the discovery utility to scan for the device on the network and open your browser from there.

2. On the **Log In** Page (Figure 9), use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 10):

   Web Access Username: **admin**

   Web Access Password: **admin**

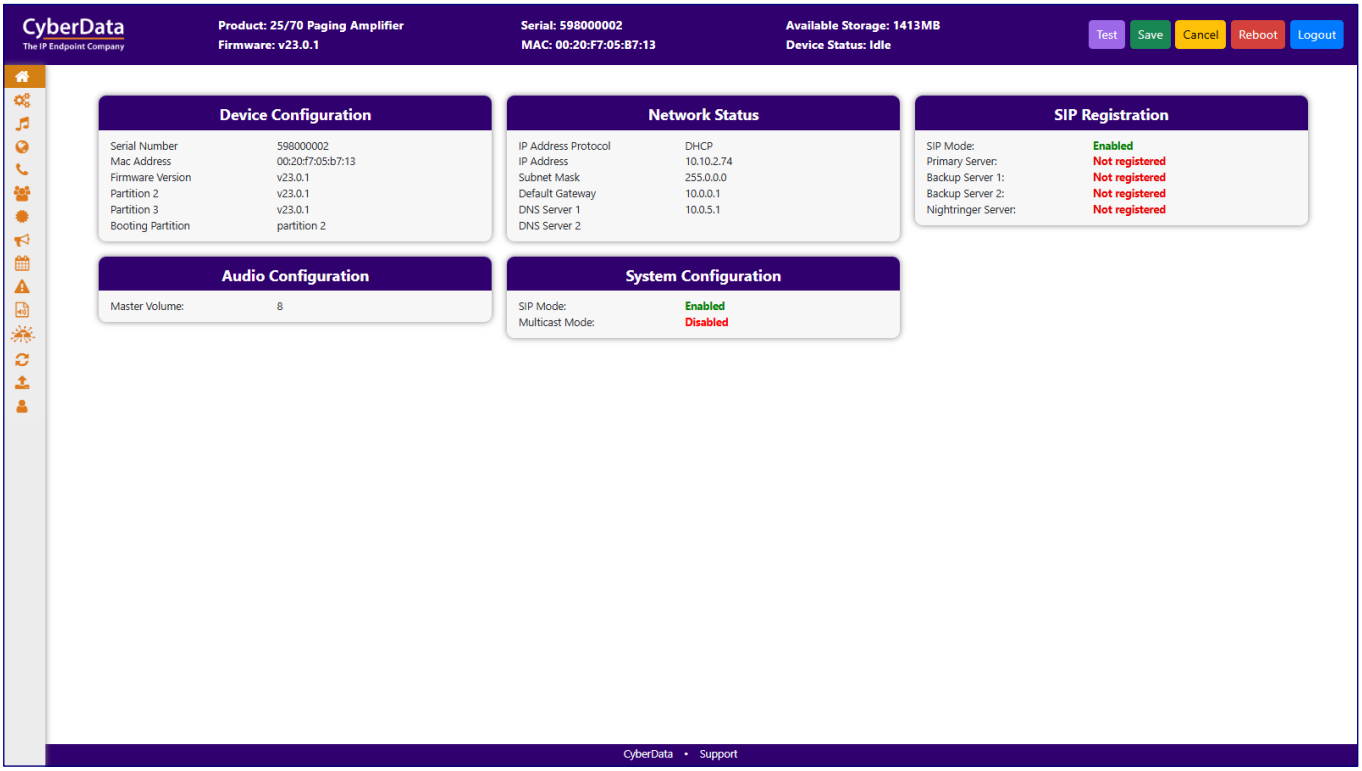
Figure 9. Log In Page



2.2 Home Page

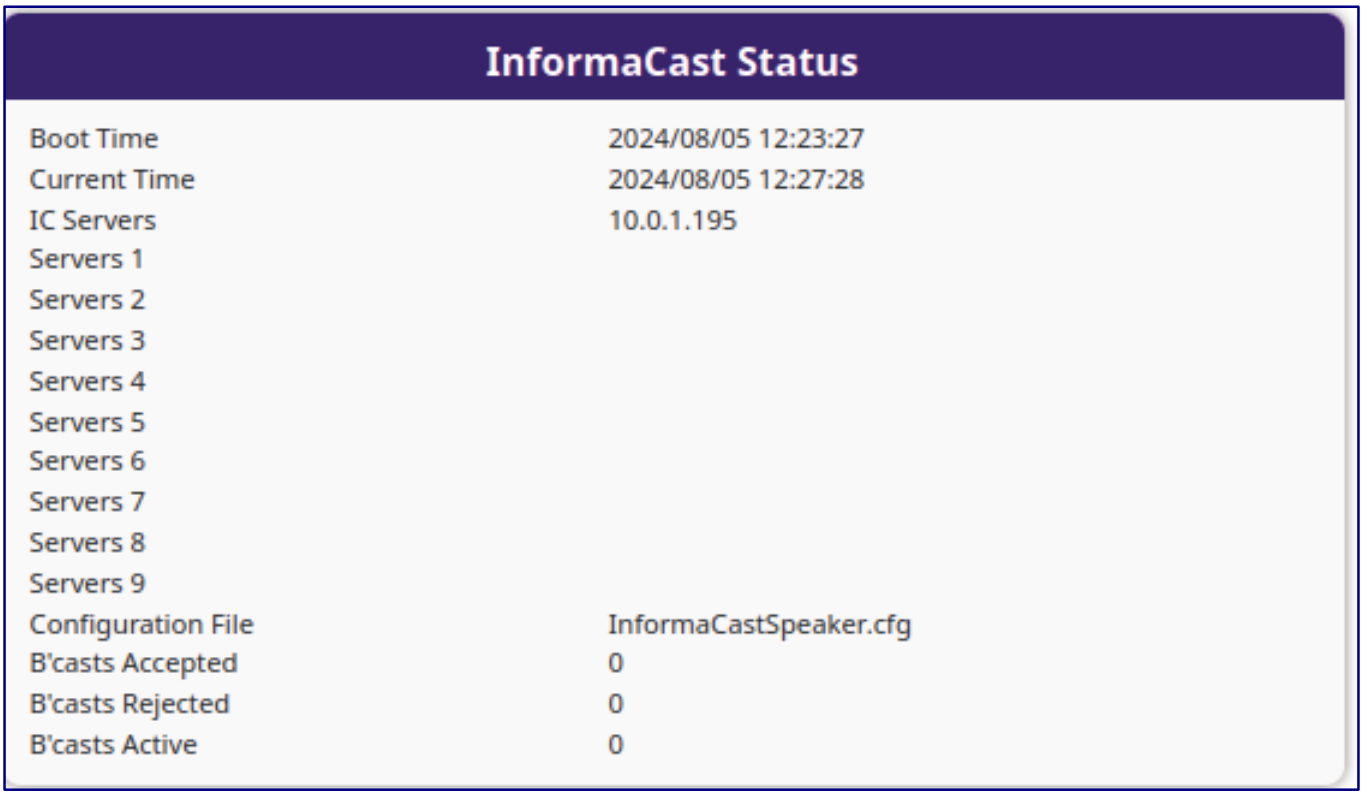
The Home page provides device specific information such as Serial Number, Mac Address, and Firmware version. This page is designed as an initial landing page to provide general information on the status of the device.

Figure 10. Home Page



If you are using an InformaCast enabled device, you will see the following:

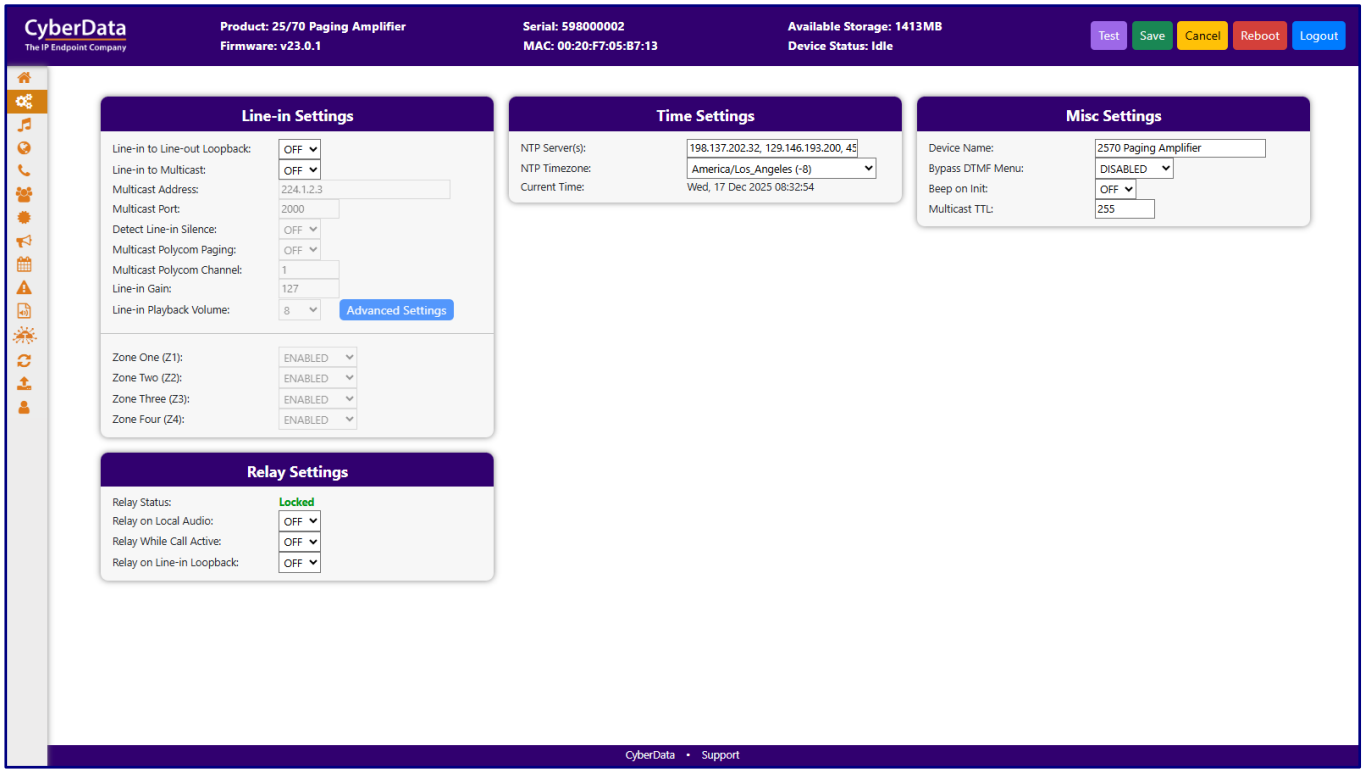
Figure 11. InformaCast enabled Device



2.3 Device

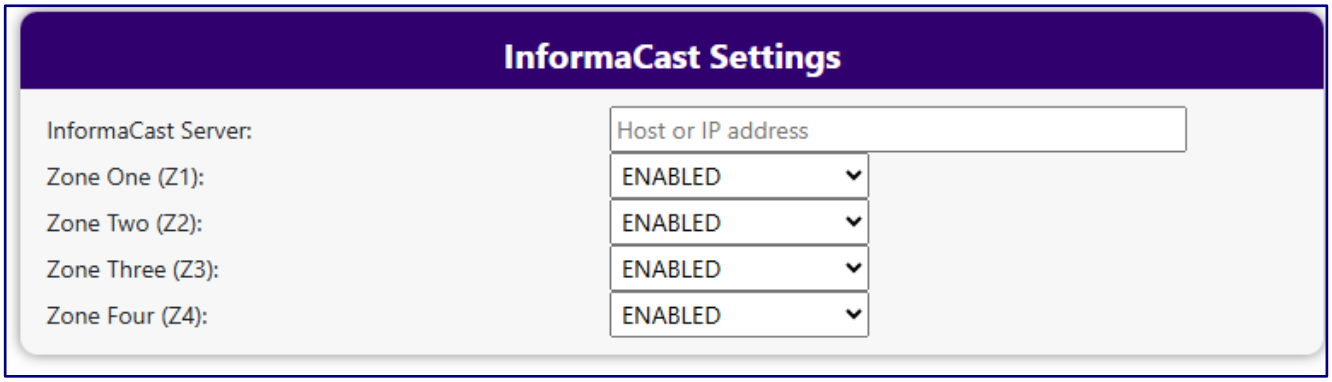
The Device page allows for adjustment of settings that pertain to the physical device such as relay settings and time zone.

Figure 12. Device Configuration Page



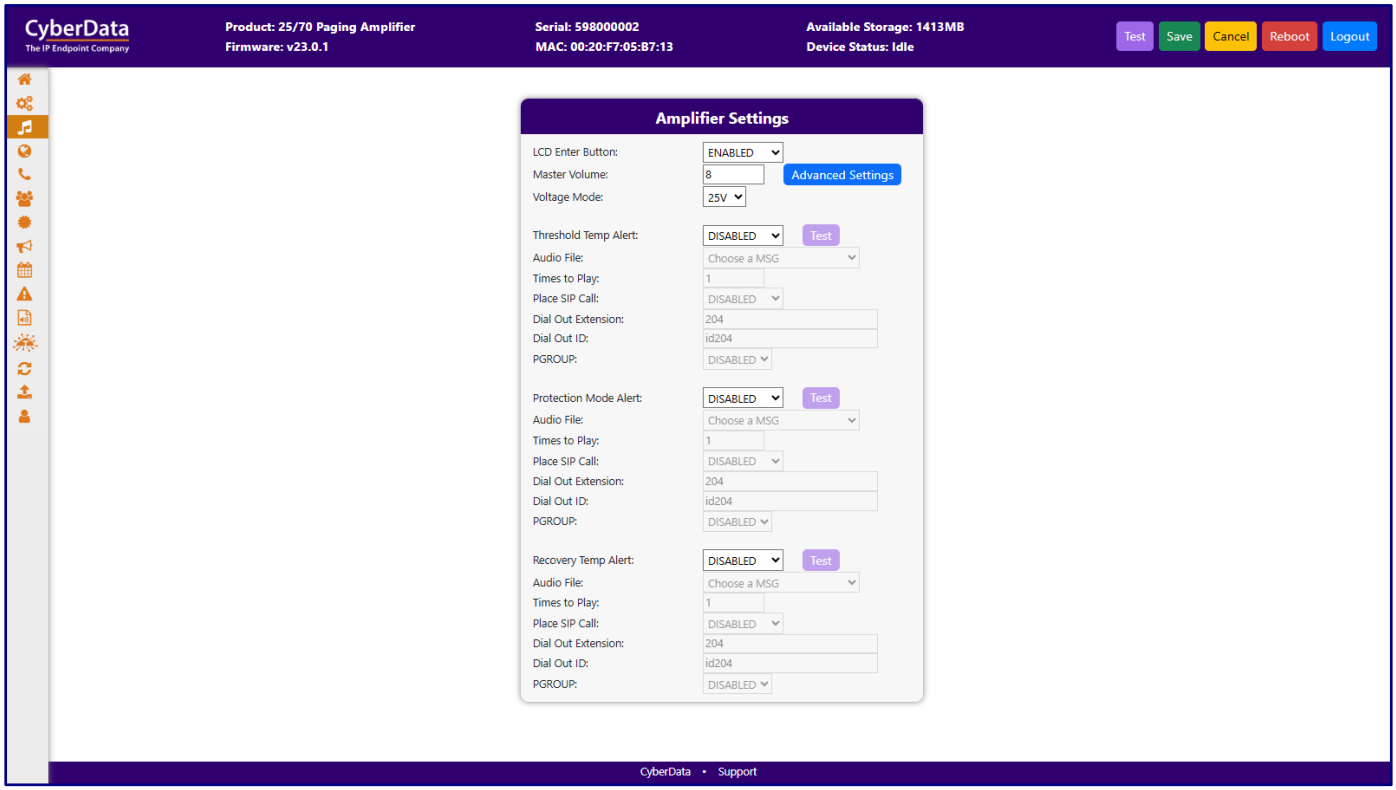
If you are using an InformaCast enabled device, you will see the following:

Figure 13. InformaCast enabled Device



2.4 Amplifier

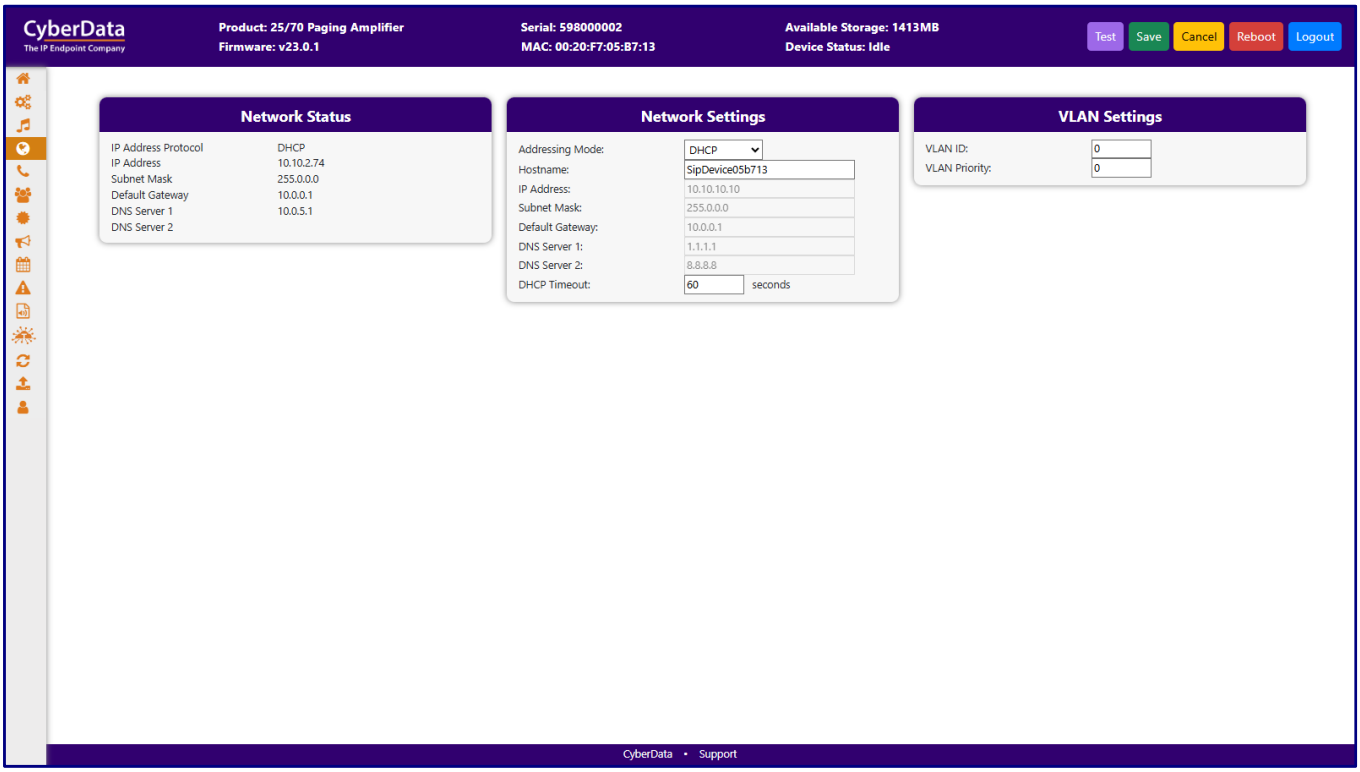
Figure 14. Amplifier Page



2.5 Network

The **Network** tab provides access to network-related settings. Assigning the device a static IP address or VLAN is done on this page.

Figure 15. Network Page



2.6 SIP (Session Initiation Protocol)

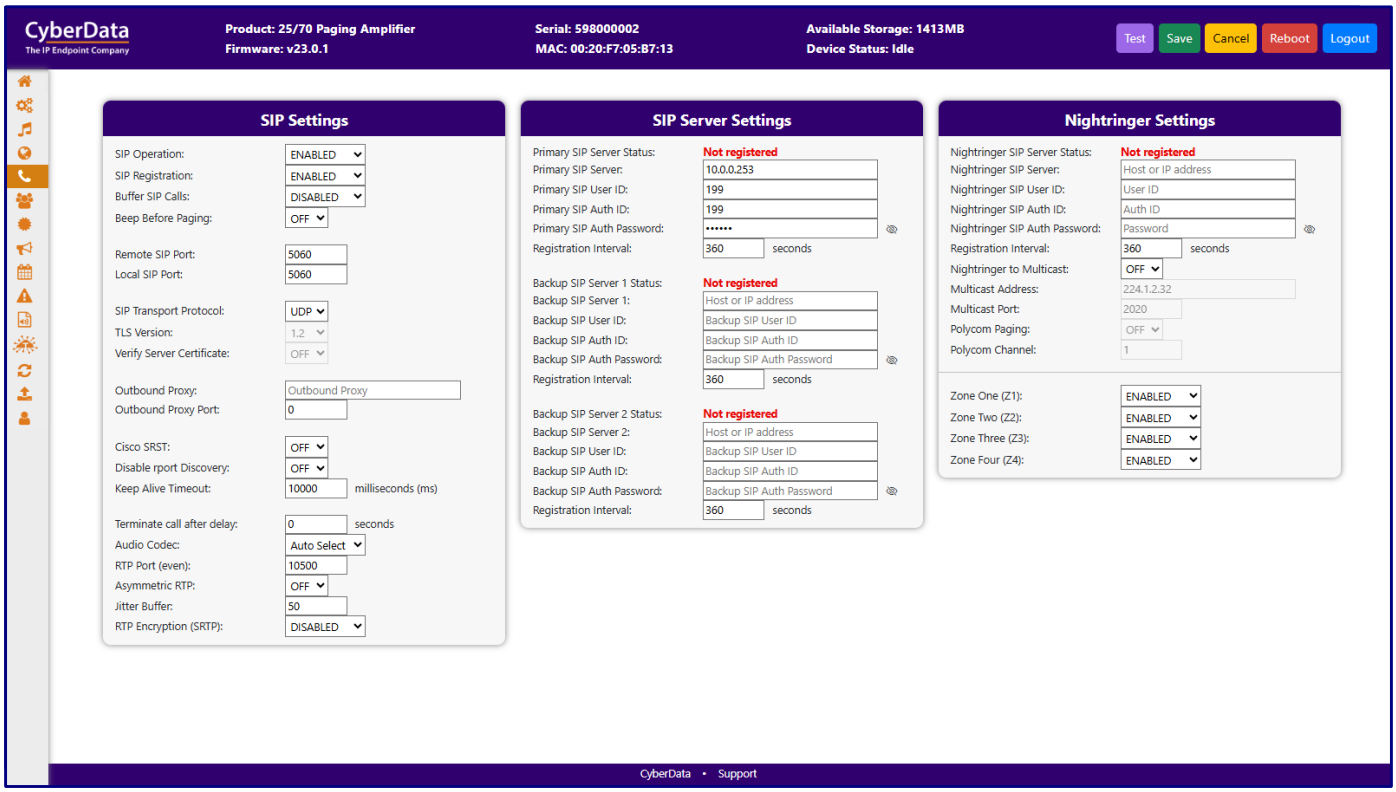
This page sets the options for phone calls. Configure up to 3 servers, with 2 acting as backup, and a server for the nightringer. The nightringer is a second sip extension that only rings, never connects to a call. Many customers use the nightringer in a hunt group.

Use this page to configure the options for security, transport, codec, and others.

Note For specific server configurations, go to the following website address:

https://www.cyberdata.net/pages/connecting-to-ip-pbx-servers

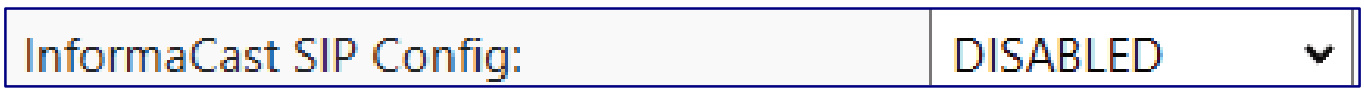
Figure 16. SIP Page



Note The Office Ringer is generally used with Auto Answer disabled, and produces a loud ring when called. With Auto Answer enabled, it will establish a half duplex call, where the Office Ringer receives audio.

If you are using an InformaCast enabled device, you will see the following:

Figure 17. InformaCast enabled Device



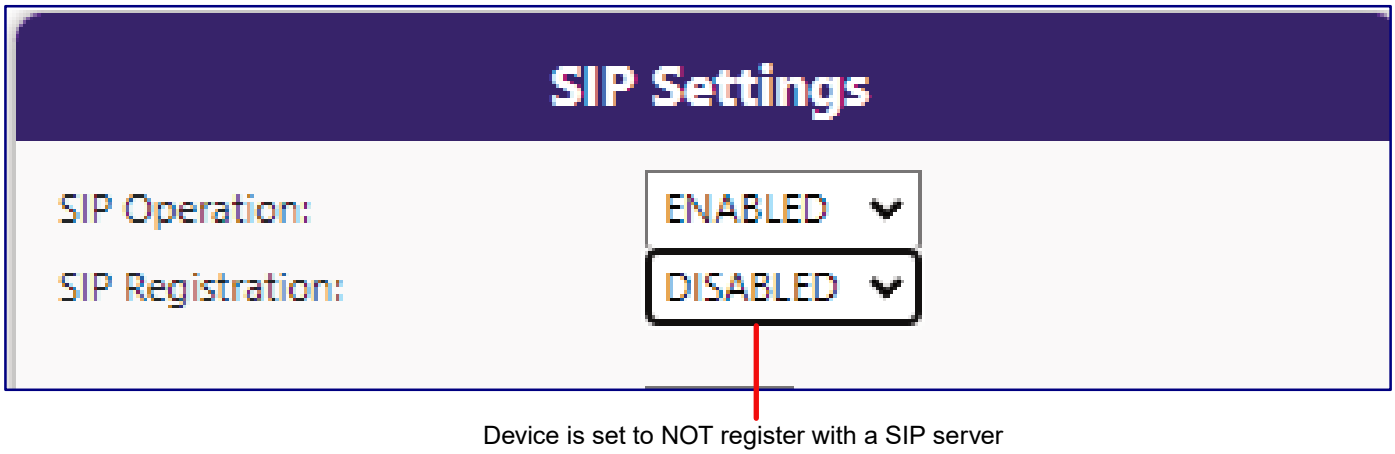
2.6.1 Dial Out Extension Strings and DTMF Tones (using rfc2833)

Outgoing calls support delayed DTMF (rfc2833) with the first comma pausing 2 seconds and subsequent commas pausing 1 second.

2.6.2 Point-to-Point Configuration

Dialing point-to-point allows the device to call and a single endpoint. All CyberData endpoints and many phones can use this option. To do this, enable **SIP Operation**, do not enable **SIP Registration,** and use the endpoint's IP address as the Dial Out extension. Delayed DTMF is supported. See Figure 18.

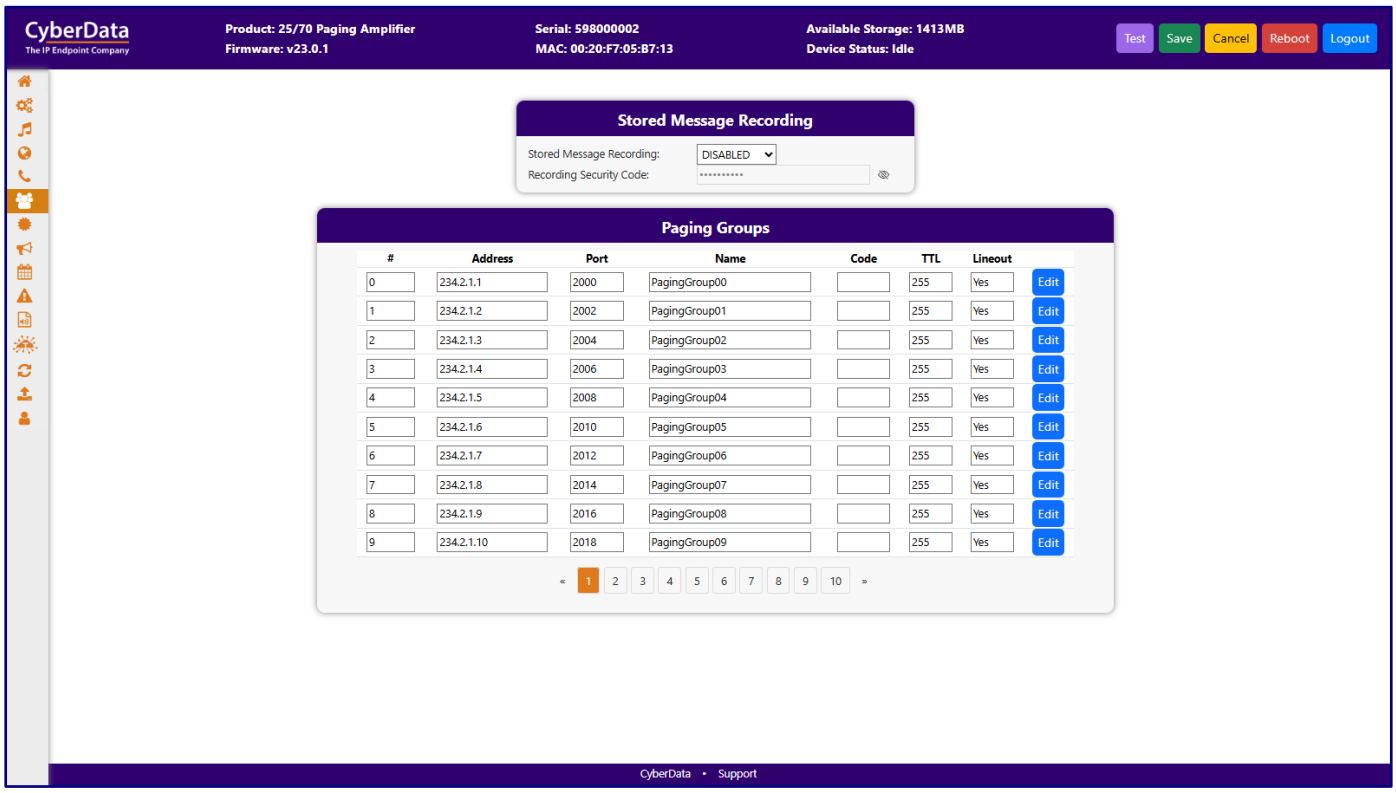
Figure 18. SIP Page Set to Point-to-Point Mode



2.7 Paging Groups (PGROUPS)

The PGroups page allows for configuration of the PGroup(s) including stored message playback and Polycom Paging.

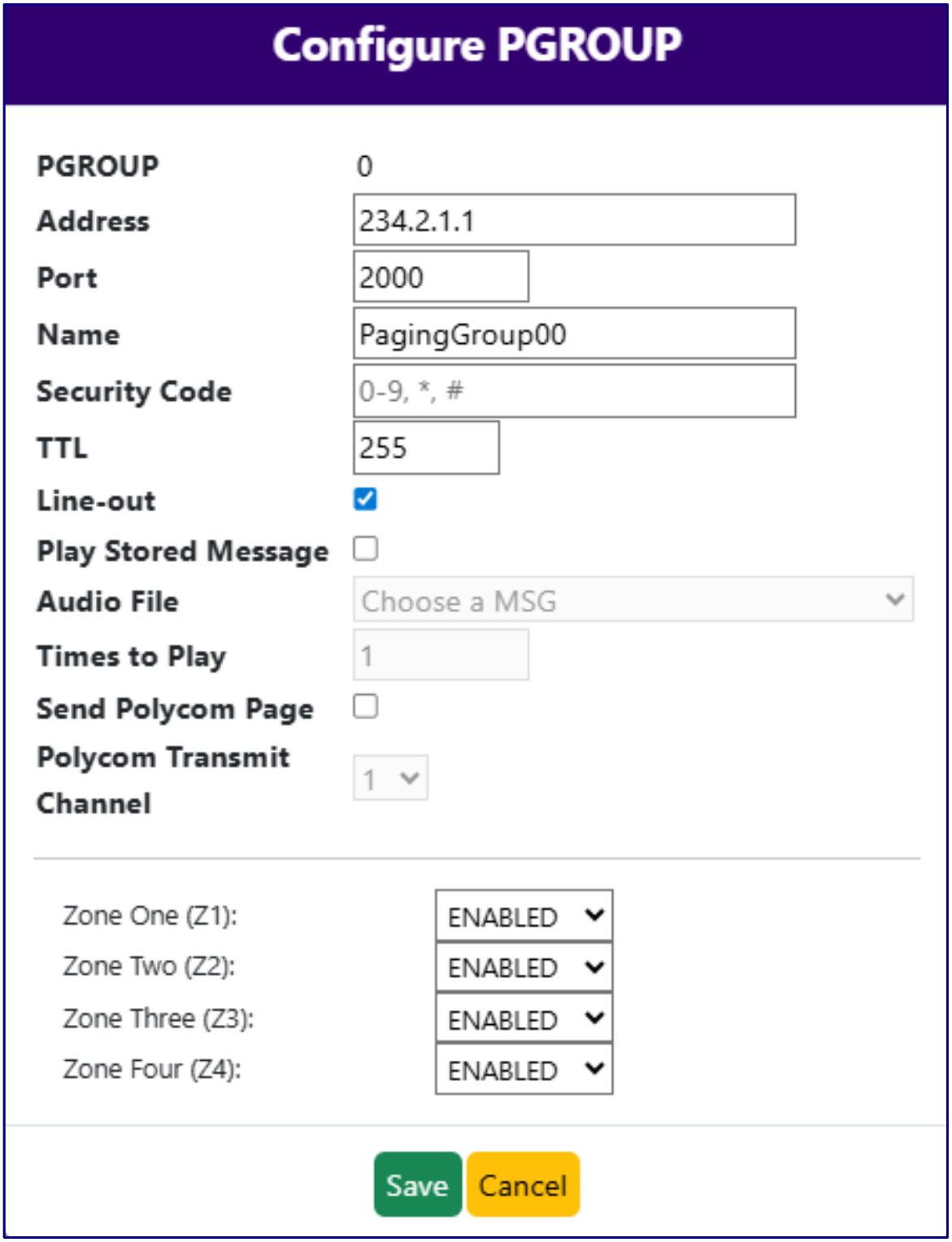
Figure 19. PGROUPS Page



2.7.1 PGroup Configuration

To use Polycom Group Paging, configure a multicast group with the IP address and port number of the Polycom phone. The default is 224.0.1.116, port 5001, but can be configured through the phone. Polycom defaults to channels 1, 24, and 25, but can also be configured. The payload should be 20 ms and the codec G711.Mu.

Figure 20. PGroup Configuration



2.8 SSL

The **SSL** tab allows for the adjustment of certificates used by the device. The certificates used for the web server, SIP Client, and Autoprovisioning can be changed here. It is also possible to add additional CA certificates on this page. CA Certificates allow the device to authenticate servers that it contacts.

Figure 21. SSL Page (1 of 2)

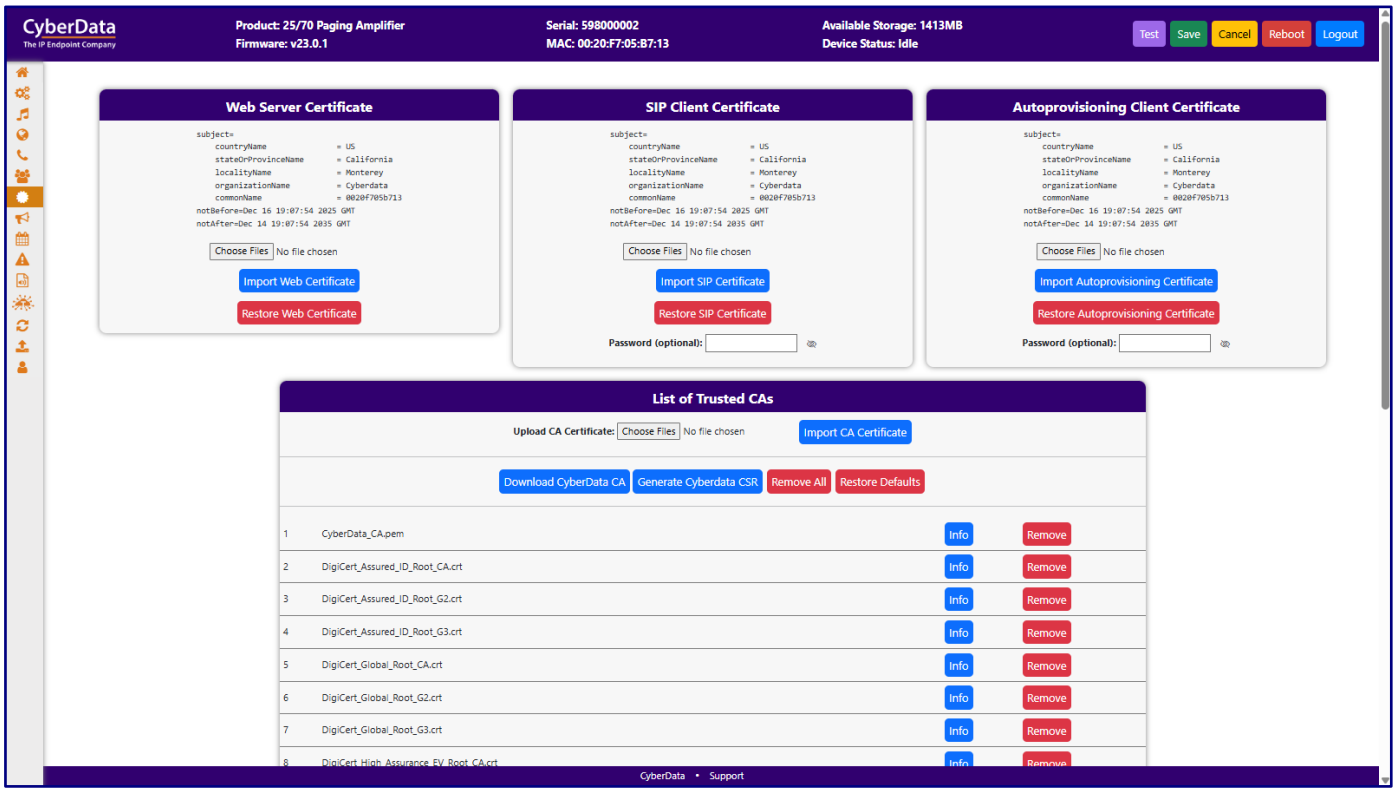
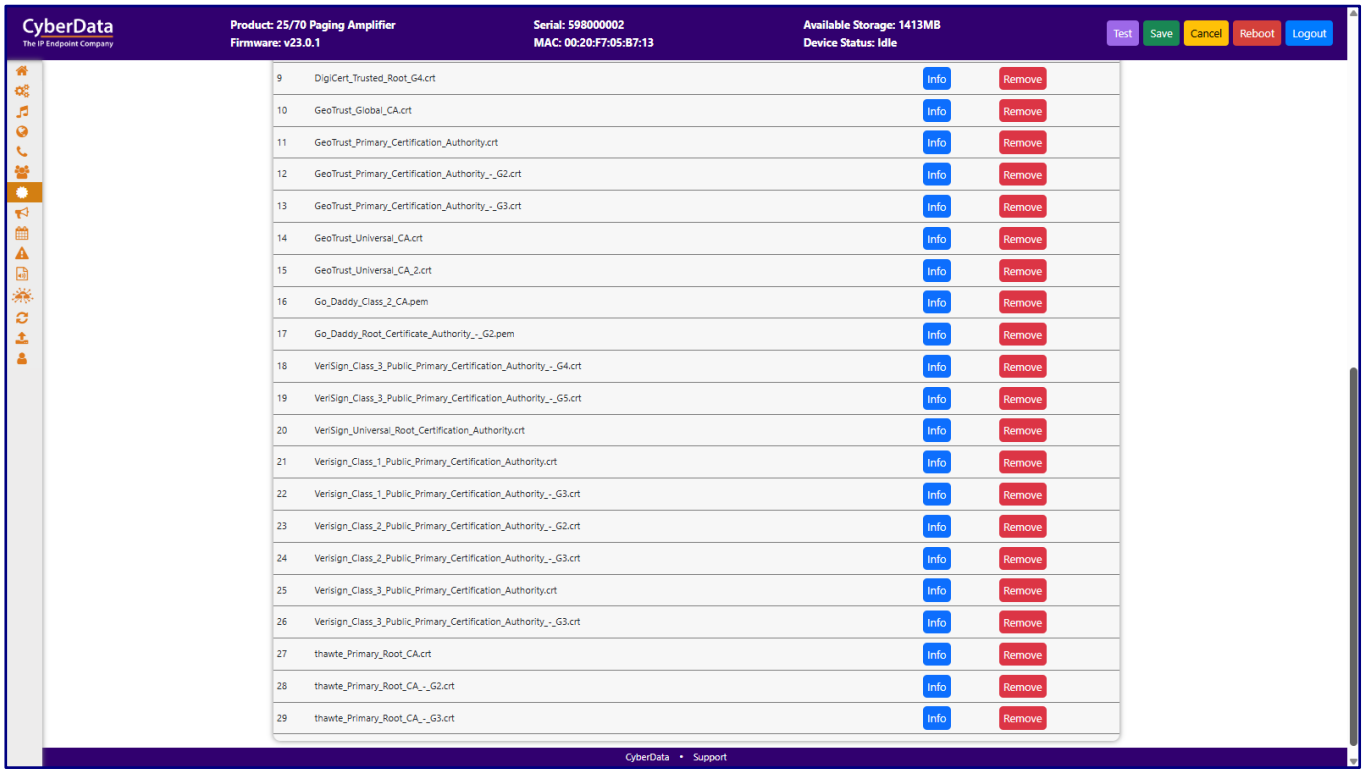


Figure 22. SSL Page (2 of 2)



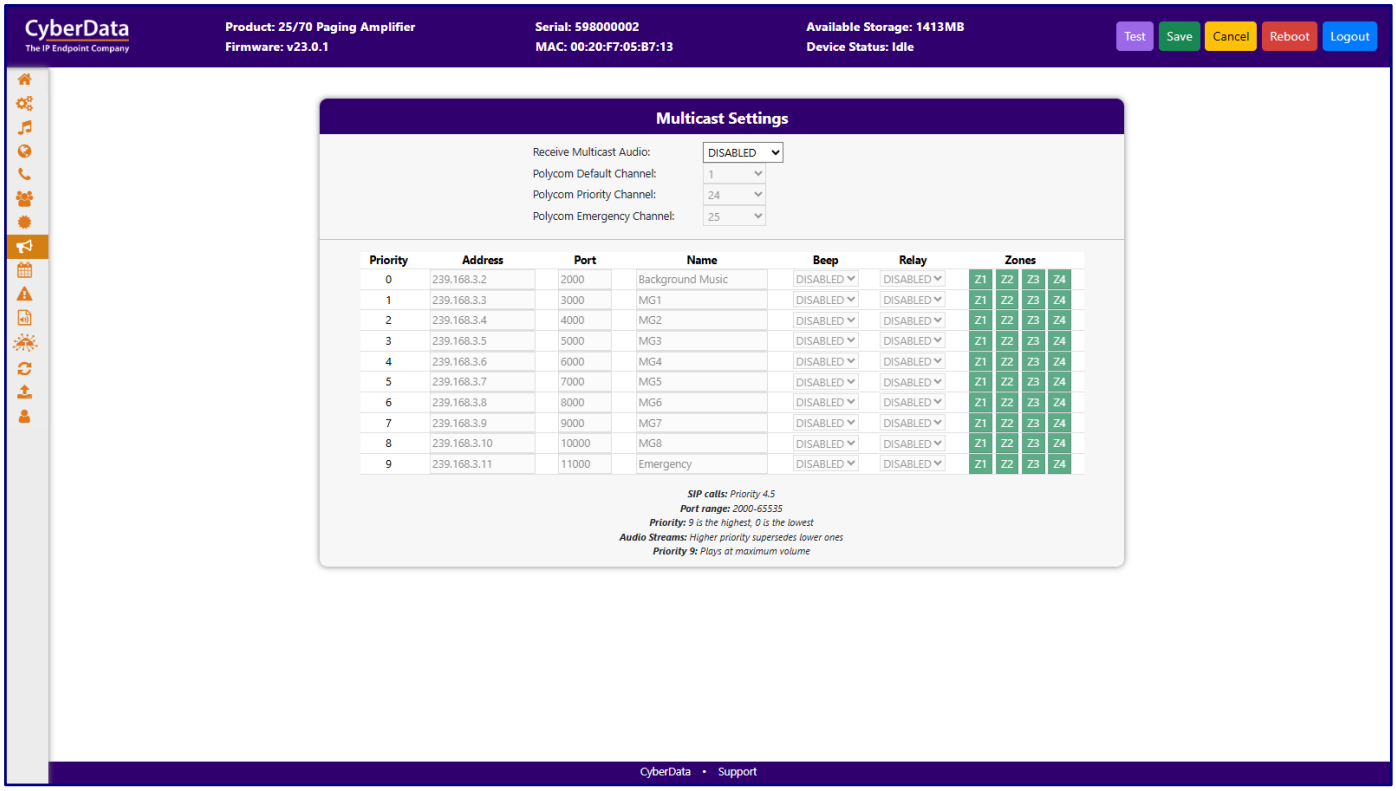
2.9 Multicast

The Multicast page allows the device to join up to ten paging zones that will activate the strobe when a stream is sent to its address.

A paging zone can consist of one or many CyberData multicast group-enabled products. There is no limit to how many endpoints can be in a given paging zone. Each multicast group is defined by a multicast address and port number.

Each multicast group is assigned a priority, allowing simultaneously arriving pages to be serviced based on importance. Multicast groups are compatible with IGMP through version 3. The device supports simultaneous SIP and Multicast.

Figure 23. Multicast Page



2.10 Schedules

Figure 24. Schedules Page

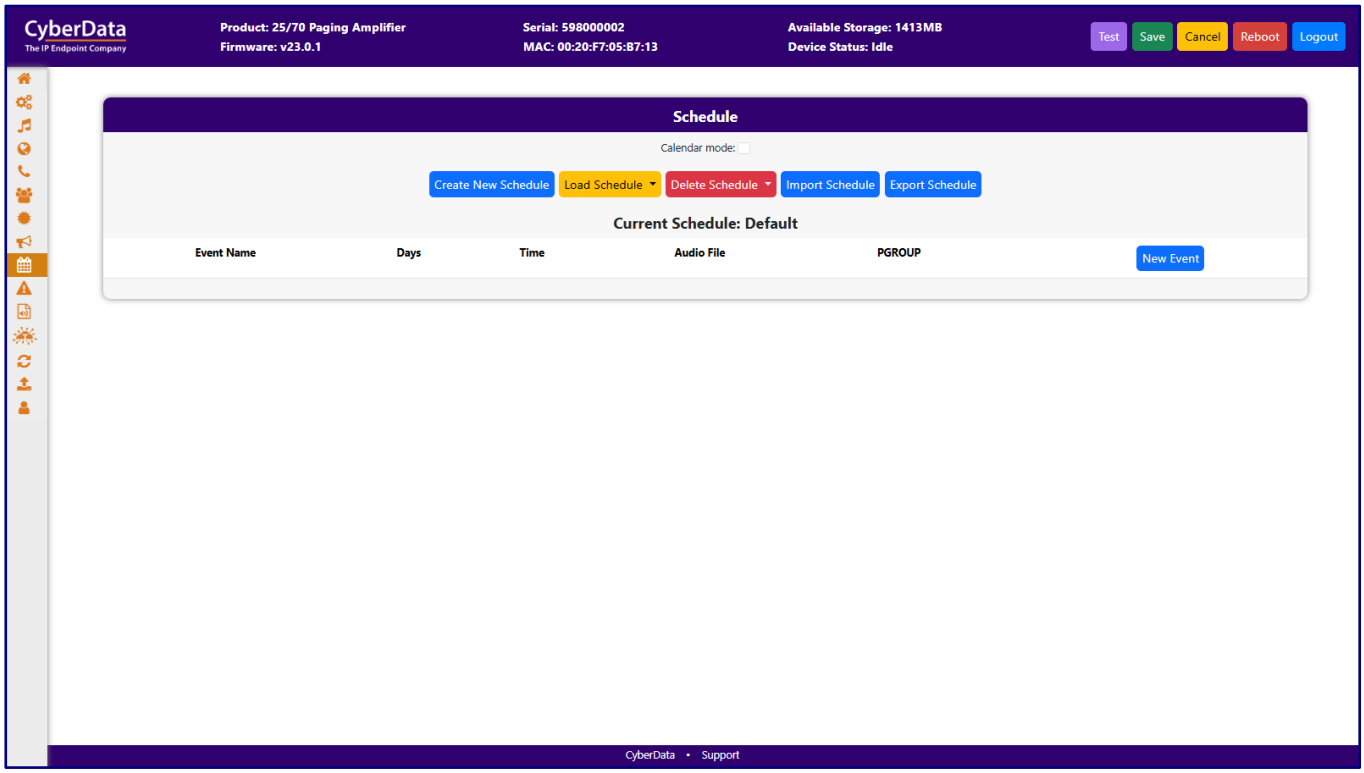
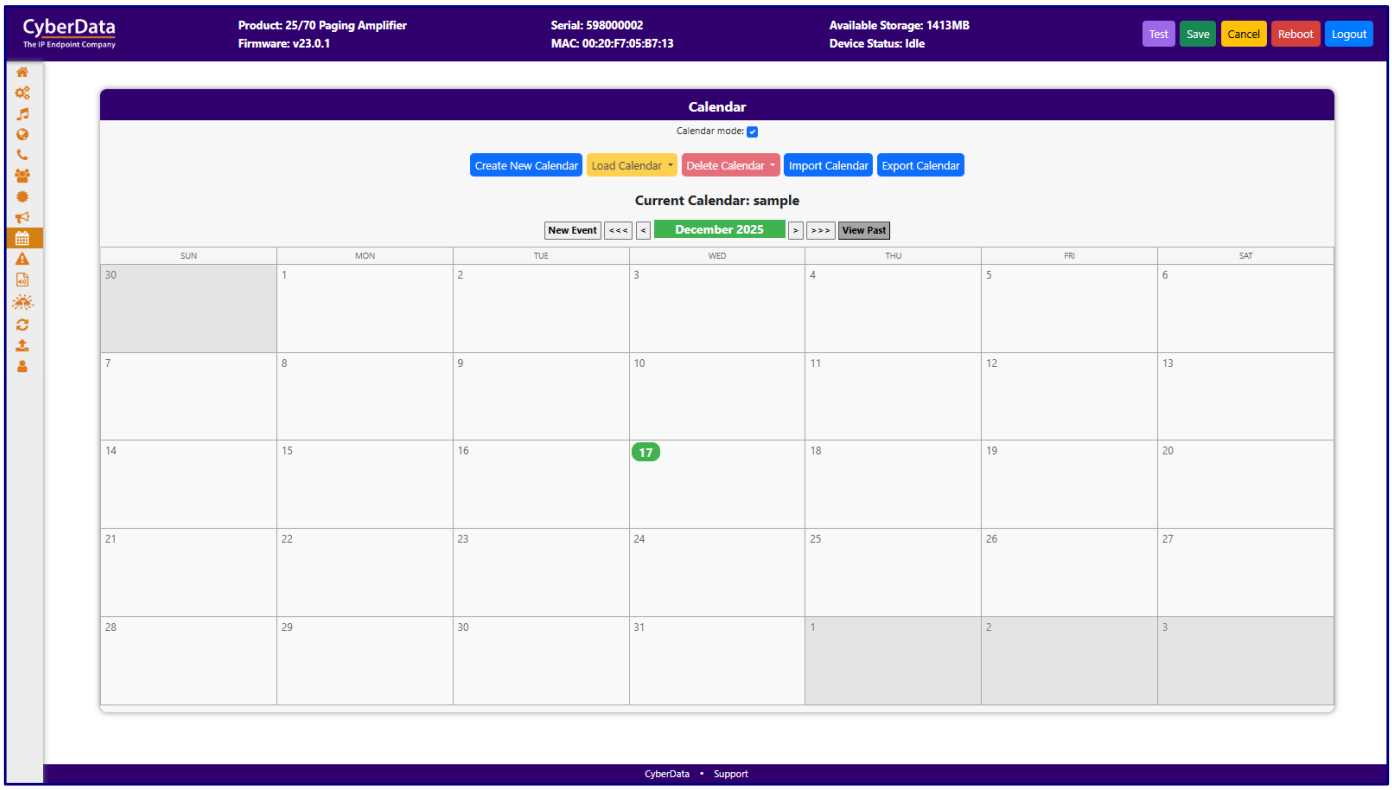


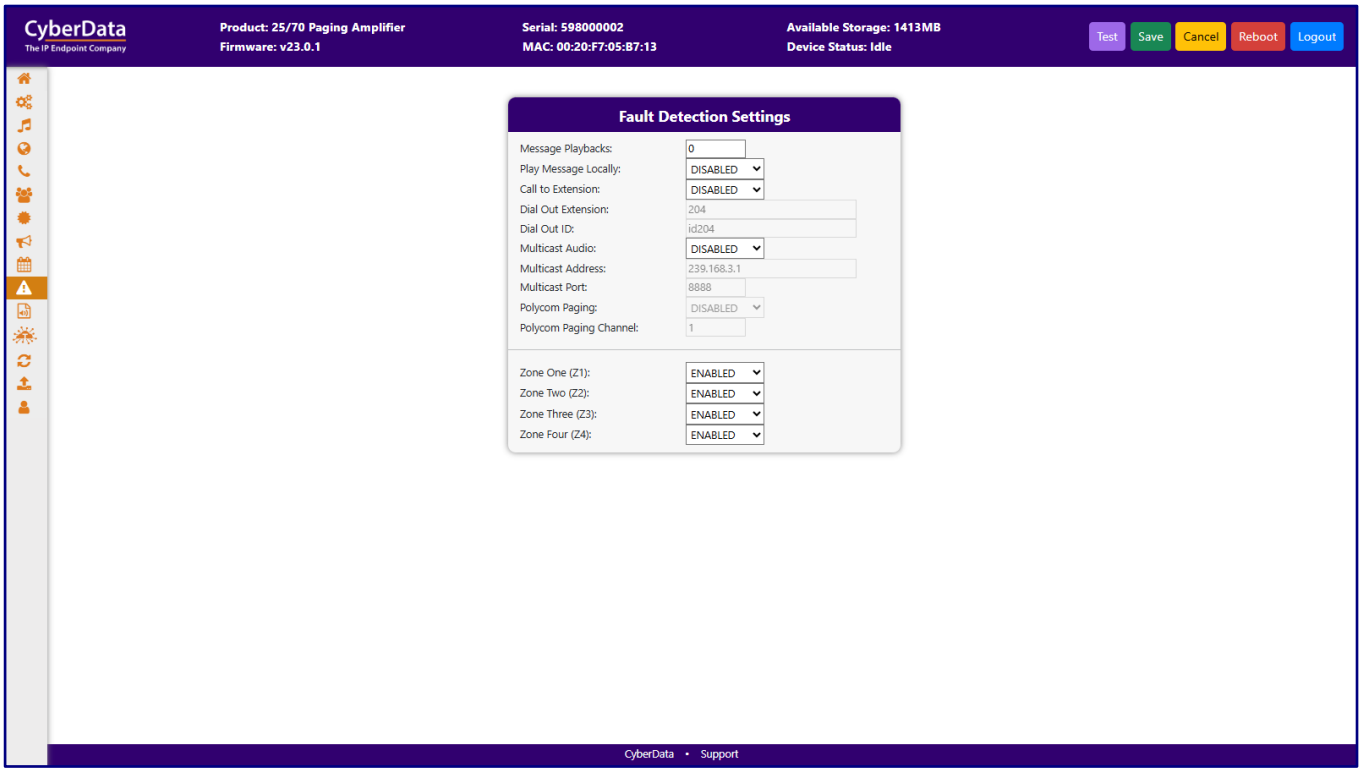
Figure 25. Calendar



2.11 Fault

The Fault page controls configuration of all Fault or sensor related capabilities of the unit. This can include the fault sensor that is used to have the device take action based on a physical input to the device.

Figure 26. Fault Page



2.12 Audiofiles

The Audiofiles page is used to add custom audio to the board. User uploaded audio will take precedence over the audio files shipped with the device.

Figure 27. Audiofiles Page (1 of 3)

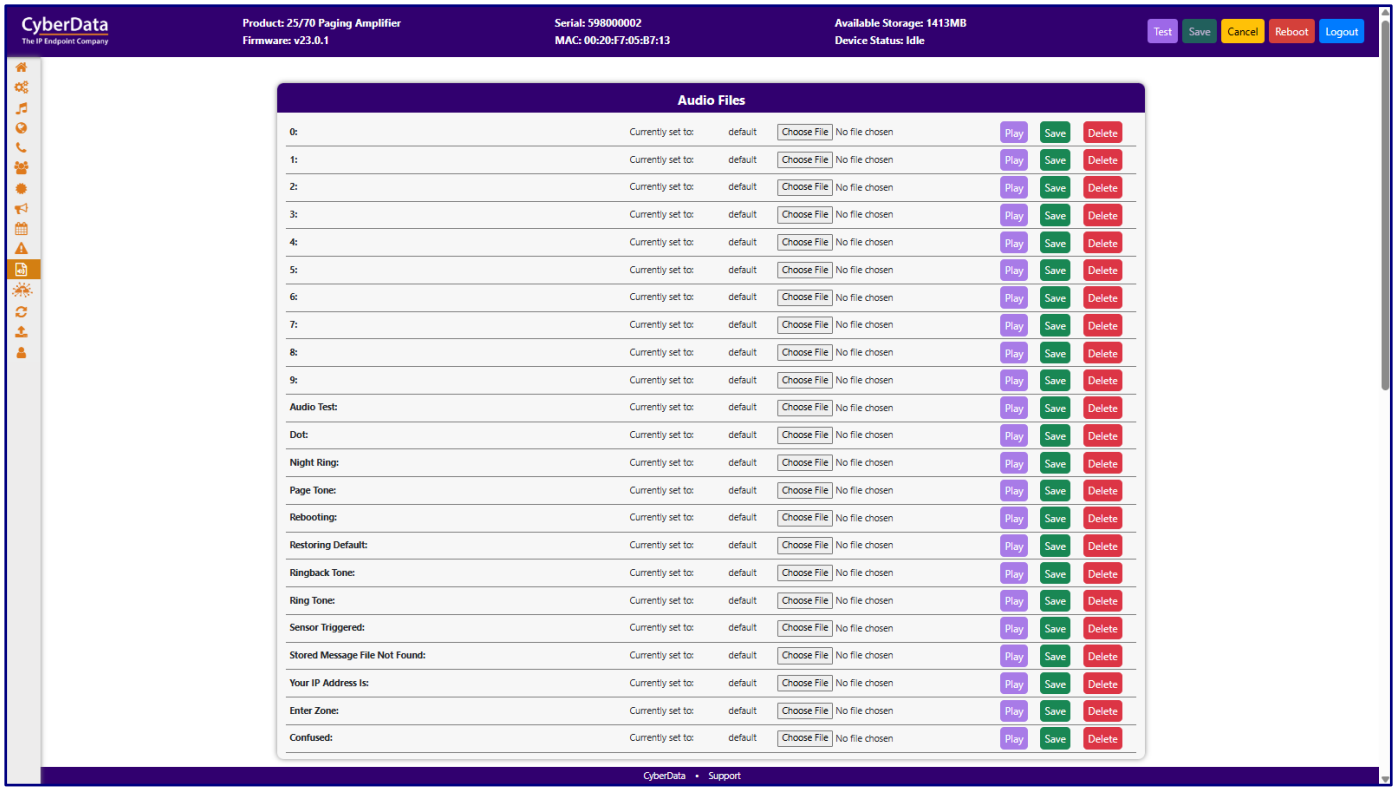


Figure 28. Audiofiles Page (2 of 3)

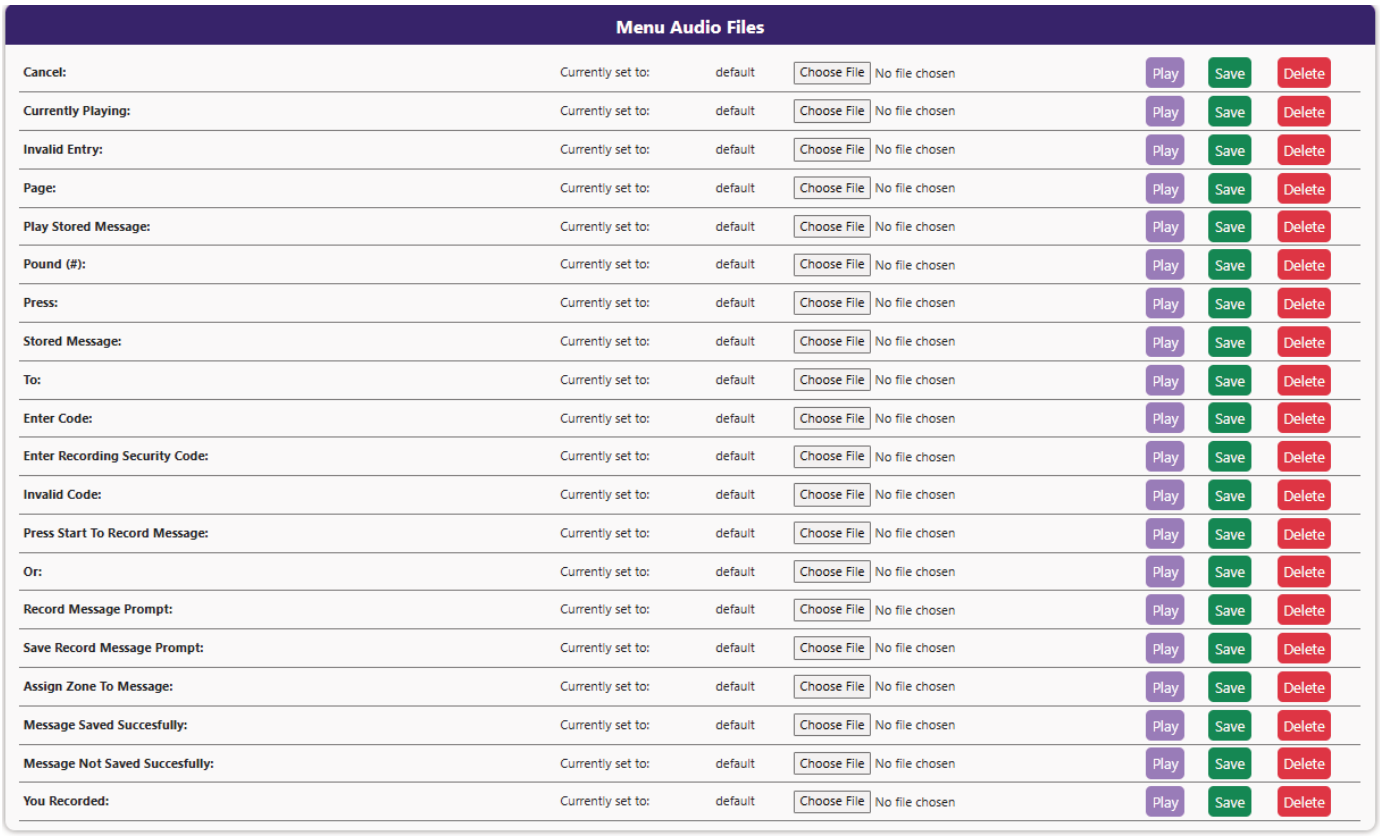
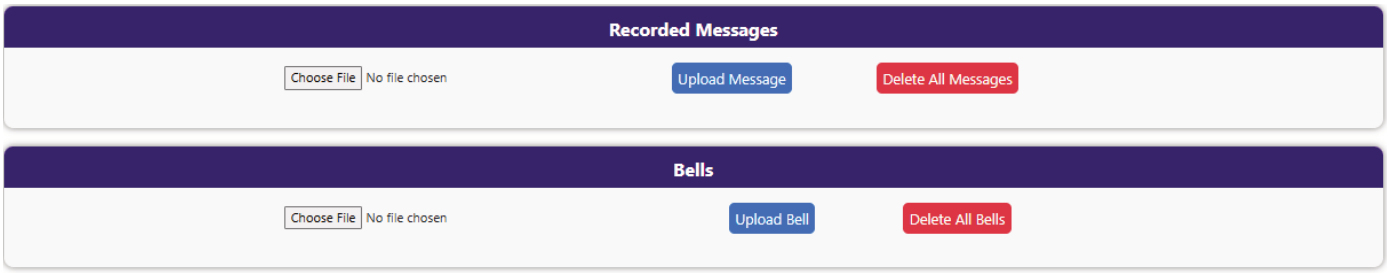


Figure 29. Audiofiles Page (3 of 3)

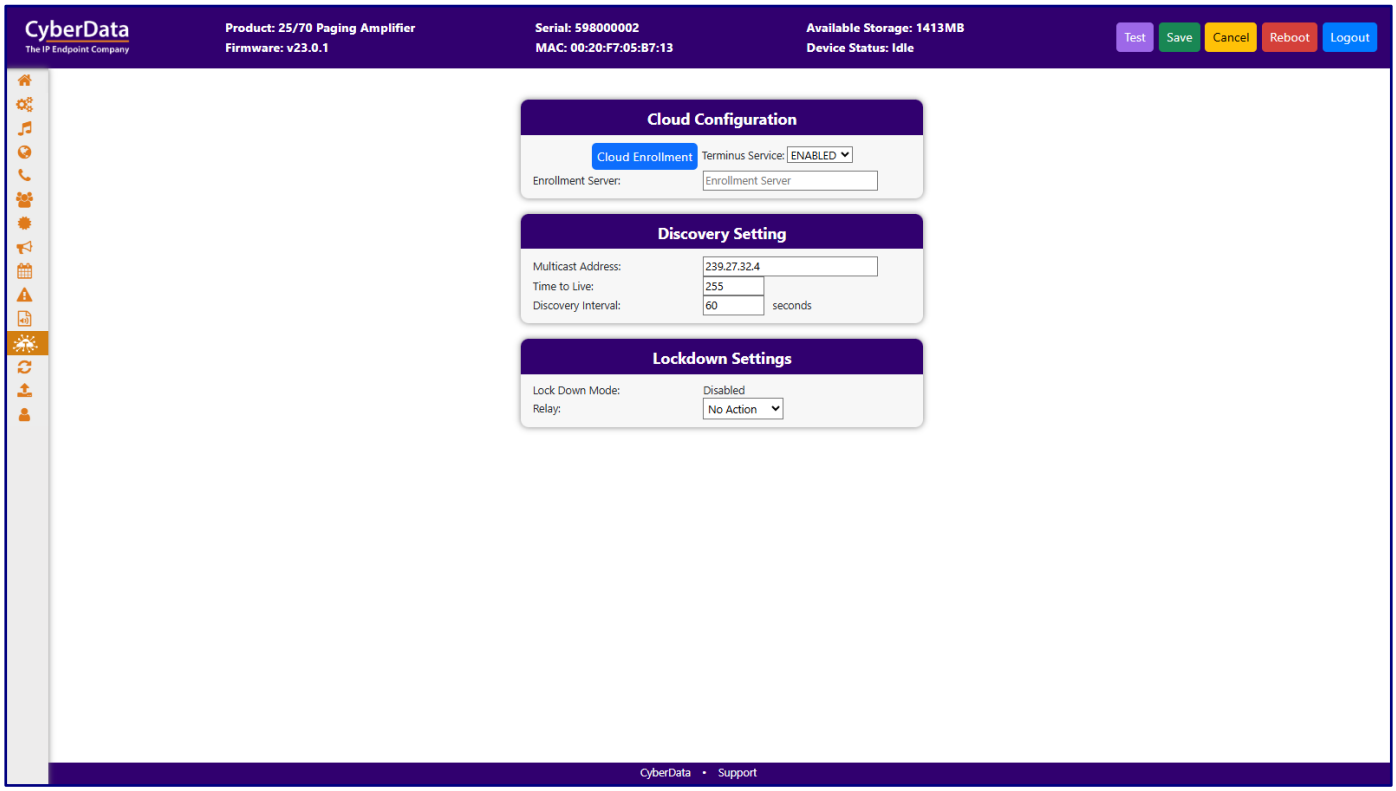


2.13 Terminus

Terminus Cloud Control™ allows users to configure, monitor, and manage notification functions for CyberData's extensive VoIP product line, all from a single, easy-to-use platform. To learn more about Terminus Cloud Control™, go to **https://www.cyberdata.net/pages/terminus**.

The **Terminus** page allows for configuration of settings related to Terminus Cloud Control™

Figure 30. Terminus Page



2.14 Autoprovisioning

Enabling autoprovisioning allows the device to download provisioning files from a server. It defaults to using DHCP, with options configured in dhcpd.conf on the DHCP server. The file name is <mac address>.xml and if not found, 000000cd.xml.

If a server is named, DHCP is bypassed, and the device will look for a file on the named server.

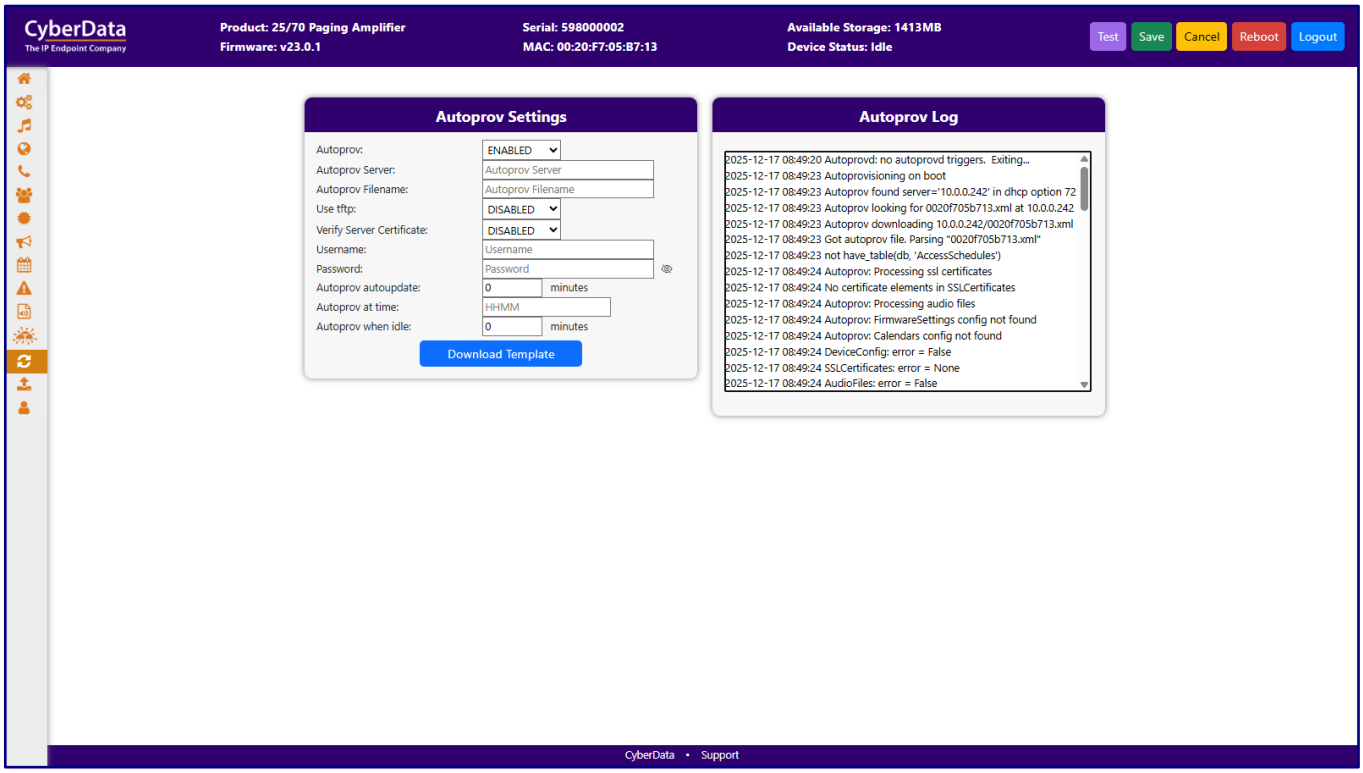
If a file is named, it will be downloaded instead of <mac address>.xml.

If a server is named, **Use tftp** searches for the file on a tftp server instead of http. If the server is secured (with a password), use **Verify Server Certificate** (username/password) to access it. When using DHCP, these options are configured in dhcpd.conf.

Autoprov autoupdate, **Autoprov at time**, and **Autoprov when idle** options are available with either DHCP or a named server.

The template is an xml file with all options set to default values.

Figure 31. Autoprovisioning Page



2.15 Firmware

Note CyberData strongly recommends that you do not upgrade the firmware when the device is likely to be in use.

To upgrade the firmware of your device:

1. Download the latest firmware from the following CyberData web site, and locate your device:

   https://www.cyberdata.net/collections/sip
   https://www.cyberdata.net/collections/singlewire (for InformaCast Enabled devices)

2. Unzip the firmware version file. This file may contain the following:

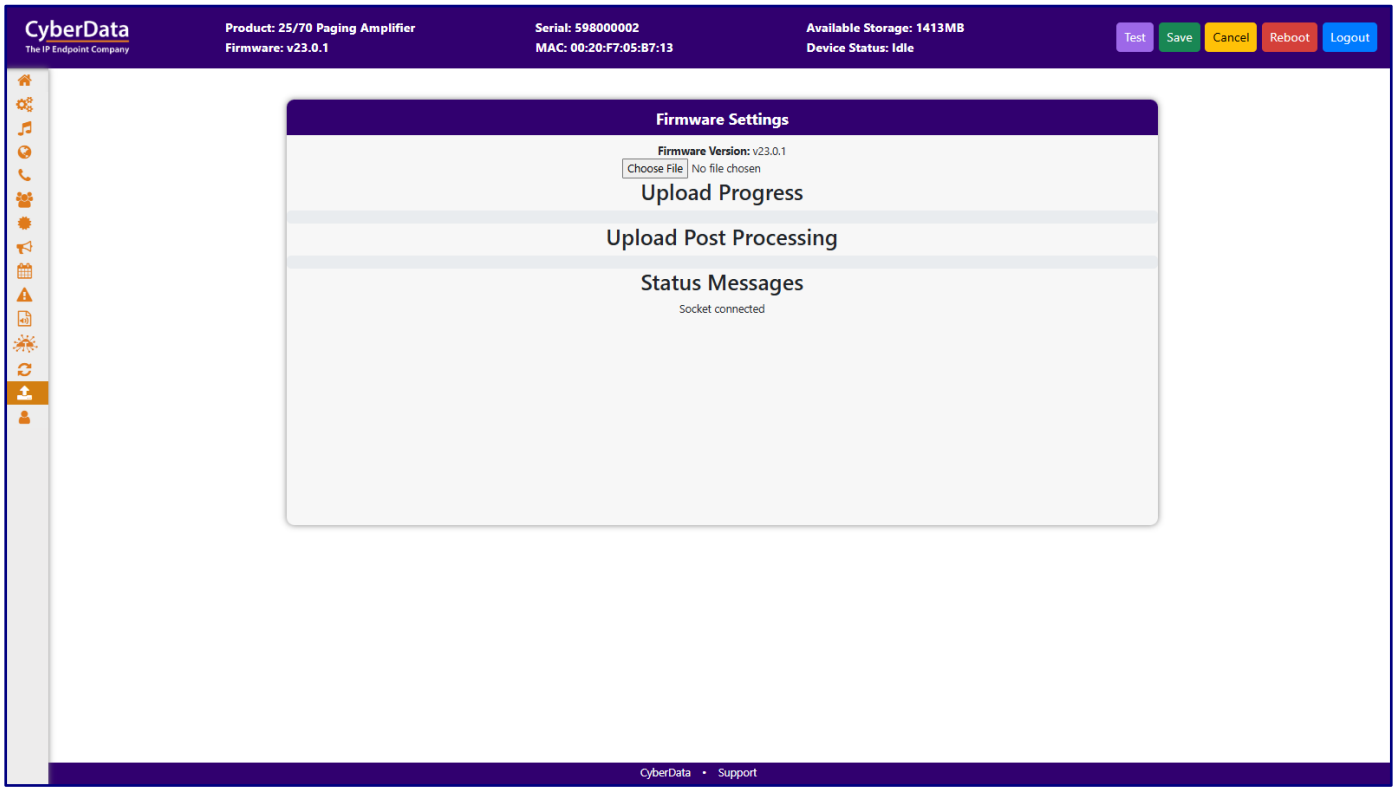
- Firmware file
- Release notes
- Autoprovisioning template

GENERAL ALERT

Caution

Equipment Hazard: Do not reboot the device. It will reboot automatically when the process is complete.

Figure 32. Firmware Page

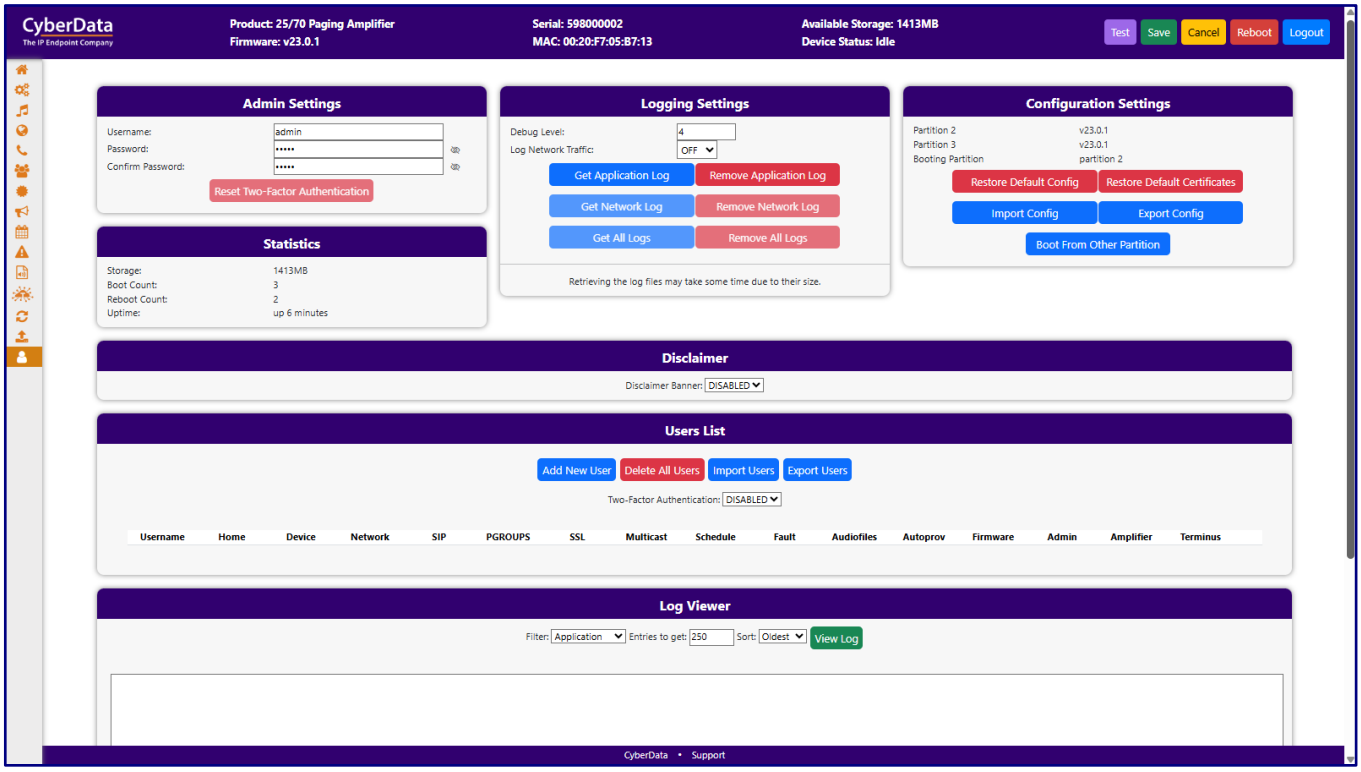


2.16 Admin

The administrator uses the Users List to create new accounts, assigning user names and passwords, and granting access to specific web pages.

Note Two factor authentication is enabled here.

Figure 33. Admin Page



2.17 Command Interface

Some functions on the device can be activated using simple POST commands to the web interface. The examples in Table 2 use the free unix utility, wget commands. However, any program that can send HTTP POST commands to the device should work.

2.17.1 Command Interface Post Commands

These commands require an authenticated session (a valid username and password to work).

Table 2. Command Interface Post Commands

Device Action	HTTP Post Command[1]
Reboot	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" --post-data "request=reboot"
Place call to extension (example: extension 600)	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" --post-data "request=call&extension=600"
Terminate a call	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/
Test Relay	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" --post-data "request=test_relay"
Activate Relay	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" -- post-data "request=activate_relay"
Deactivate Relay	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" -- post-data "request=deactivate_relay"
Speak IP Address	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" --post-data "request=speak_ip_address"
Test Audio	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" --post-data "request=test_audio"
Swap boot partitions	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.154/command" --post-data "request=swap_boot_partition"

[1] Type and enter all of each http POST command on one line.

Appendix A: Troubleshooting/Technical Support

A.1 Contact Information

Contact

CyberData Corporation
3 Justin Court
Monterey, CA 93940 USA
www.cyberdata.net
Phone: 831-373-2601
Fax: 831-373-4193

Sales

Sales 831-373-2601, Extension 334

Technical Support

The fastest way to get technical support for your VoIP product is to submit a VoIP Technical Support form at the following website:

https://support.cyberdata.net/

The Support Form initiates a ticket which CyberData uses for tracking customer requests. Most importantly, the Support Form tells us which PBX system and software version that you are using, the make and model of the switch, and other important information. This information is essential for troubleshooting. Please also include as much detail as possible in the **Comments** section of the Support Form.

Phone: (831) 373-2601, Extension 333

A.2 Warranty and RMA Information

The most recent warranty and RMA information is available at the following website address:

https://support.cyberdata.net/

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