CyberData

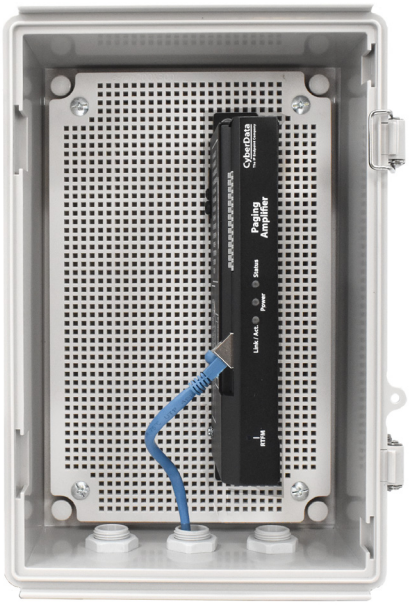
The IP Endpoint Company

SIP Loudspeaker Amplifier (PoE)

Operations Guide

Part #*011405*

Document Part #*931981A*
for Firmware Version *20.5.0*



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Operations Guide 931981A
Part # 011405

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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
Email: support@cyberdata.net
Fax: (831) 373-4193
Company and product information is at **www.cyberdata.net**.

Revision Information

Revision 931981A, which corresponds to firmware version 20.5.0, was released on June 16, 2023.

Pictorial Alert Icons

 GENERAL ALERT	General Alert *This pictoral 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 pictoral 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.

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 SIP Loudspeaker Amplifier (PoE) 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.

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

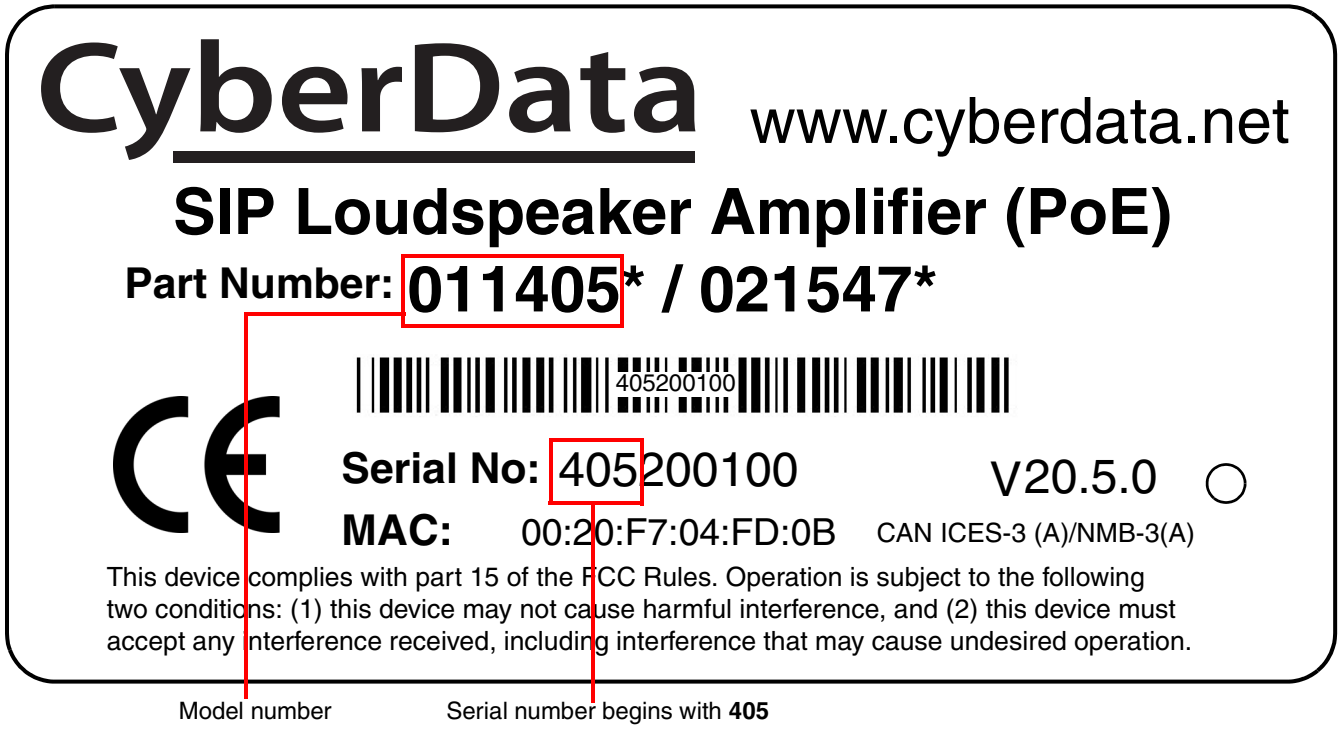
1 Product Overview

1.1 How to Identify This Product

To identify the SIP Loudspeaker Amplifier (PoE), look for a model number label similar to the one shown in Figure 1-1. Confirm the following:

- The model number on the label should be **011405**.

Figure 1-1. Model Number Label[1]

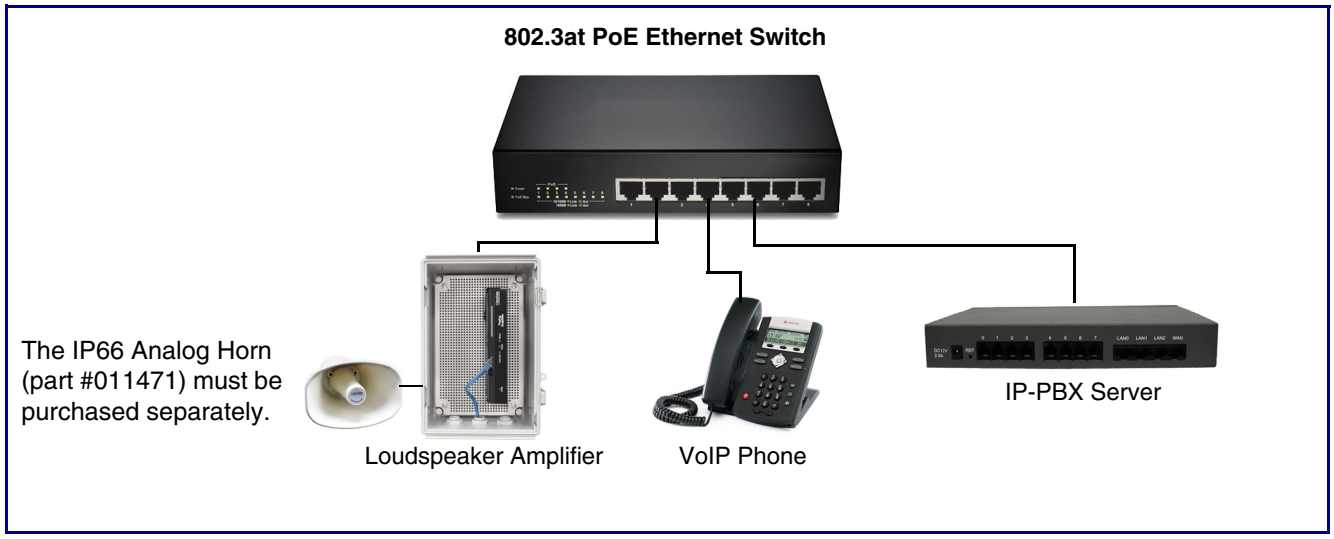


1. This figure is just an example. The revision and version information in this figure may be different than the label on your product.

1.2 Typical System Installation

Figure 1-2 illustrates how the SIP Loudspeaker Amplifier (PoE) is normally installed as part of a public address system.

Figure 1-2. Typical Installation



1.3 Features

- Concurrent SIP and multicast paging
- Loud/Night Ringer function - second SIP extension
- Paging Prioritization
- Support for 10 multicast paging groups
- 9 user-uploadable page messages
- Can receive pages directly from Poly phones as well as other devices that can send standard multicast
- Sense input capable of generating events or SIP calls
- Supports delayed pages, i.e. call buffering
- Support for security code to prevent unwanted SIP calls

- Support for auxiliary strobe
- Line-in for background music
- Line-out connector
- DTMF controlled relay
- Supports up to two 011471 IP66 Analog Horns or other 8 Ohm speaker
- Network volume control

- TLS 1.2 and SRTP enhanced security for IP Endpoints in a local or cloud-based environment
- Autoprovisioning via HTTPS, HTTP or TFTP
- HTTPS web based configuration
- Configurable event generation for device health and status monitoring
- 802.11q VLAN tagging
- HTTPS command interface
- Support for Cisco SRST resiliency

1.4 Supported Protocols

The SIP Loudspeaker Amplifier (PoE) supports:

- SIP
- Multicast
- HTTPS web-based configuration

  Provides an intuitive user interface for easy system configuration and verification of SIP Loudspeaker Amplifier (PoE) operations.
- TLS 1.2
- DHCP Client

  Dynamically assigns IP addresses in addition to the option to use static addressing.
- TFTP Client

  Facilitates hosting for the configuration file for Autoprovisioning.
- RTP
- SRTP
- RTP/AVP - Audio Video Profile
- SPEEX
- Audio Encodings

  PCMU (G.711 mu-law)

  PCMA (G.711 A-law)

  G.722

  G.729

  Packet Time 20 ms

1.5 Supported SIP Servers

The following link contains information on how to configure the SIP Loudspeaker Amplifier (PoE) for the supported SIP servers:

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

1.6 Specifications

Table 1-1. Specifications

Specifications	
Ethernet I/F	10/100 Mbps
Protocol	SIP RFC 3261 Compatible
Power Input	PoE 802.3at or 802.3af
Audio Output	802.3at: 117.9 (+/- 0.2) dBC @1M and 1kHz[a] 802.3af: 115.1 (+/- 0.2) dBC @1M and 1kHz[a]
Line In:	
Input Signal Amplitudes	2.0 VPP maximum
Input Impedance	10k Ohm
Line Out:	
Output Signal Amplitudes	2.0 VPP maximum
Output Level	+2dBm nominal
Total Harmonic Distortion	0.5% maximum
Output Impedance	10k Ohm
On-Board Relay	1A @ 30 VDC
Payload Types	G.711 a-law, G.711µ-law, G.722, and G.729
Network Security	TLS/SSL 1.2 and SRTP
Enclosure	UL 94-HB flame resistant, IK 08 Impact-rated, IP66 enclosure
Operating Range	Temperature: -40° C to 55° C (-40° F to 131° F) Humidity: 5-95%, non-condensing
Storage Temperature	-40° C to 70° C (-40° F to 158° F)
Storage Altitude	Up to 15,000 ft. (4573 m)
Dimensions[b]	10 in. [254 mm] Length 4 in. [101.6 mm] Width 14 in. [355.6 mm] Height
Weight	3.6 lbs. [1.63 kg]
Boxed Weight	4.6 lbs. [2.1 kg]
Compliance	CE: EMC Directive – Class A EN 55032 & EN 55024, LV Safety Directive – EN 62368-1; RoHS Compliant; FCC Part 15 Class A; Industry Canada ICES-3 Class A; IEEE 802.3 Compliant; TAA Compliant
Warranty	2 Years Limited
Part Number	011405

a.When used with the 011471 Horn (sold separately).

b. Dimensions are measured from the perspective of the product being upright with the front of the product facing you.

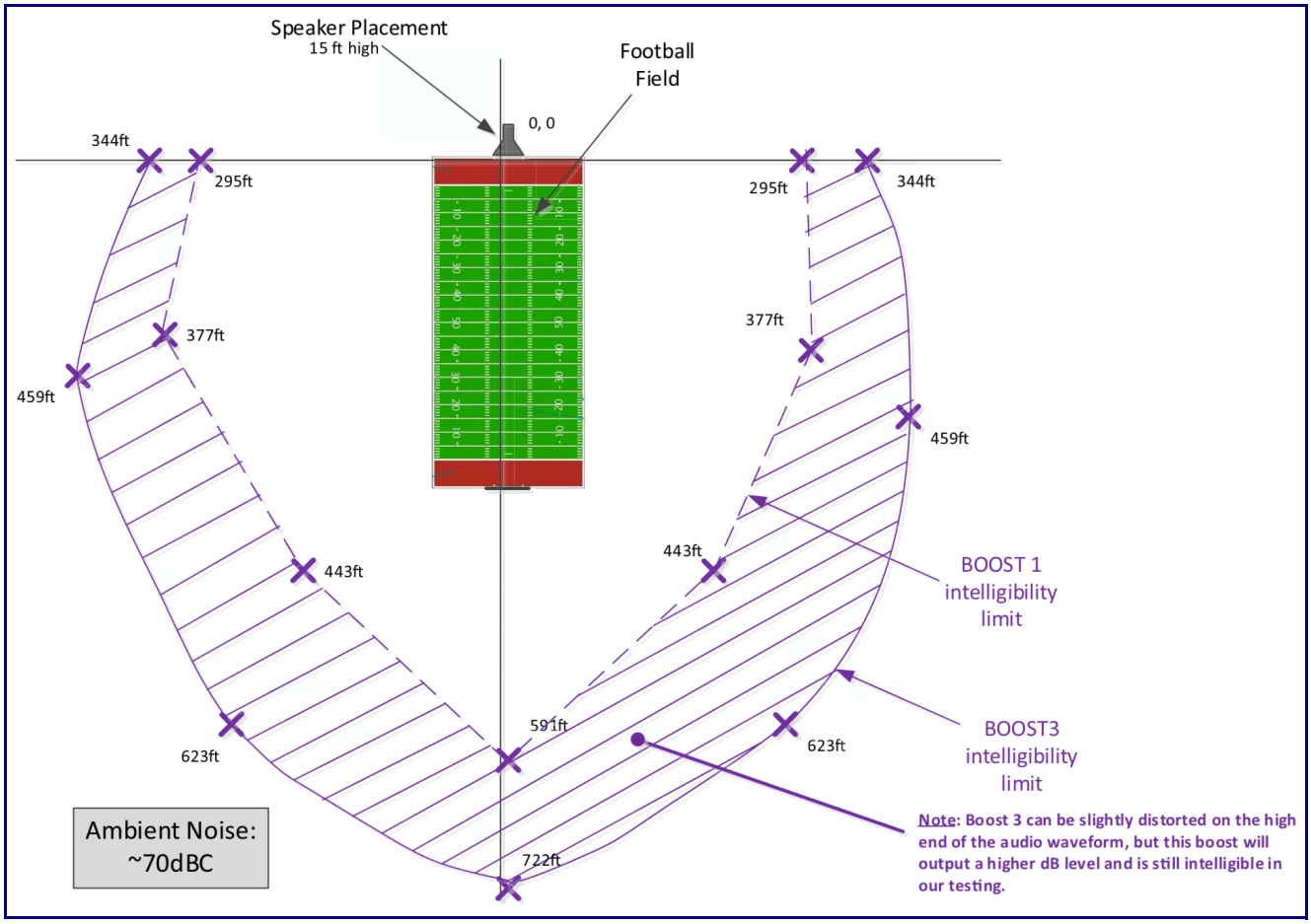
1.7 Typical Coverage

With one horn attached to Paging Amplifier under standard 802.3af PoE power, coverage is up to 5,000 square feet. With two horns attached to the Paging Amplifier under 802.3at PoE (high power), coverage is up to 10,000 square feet depending on ambient background noise levels.

1.7.1 Intelligibility Outdoor Field Test

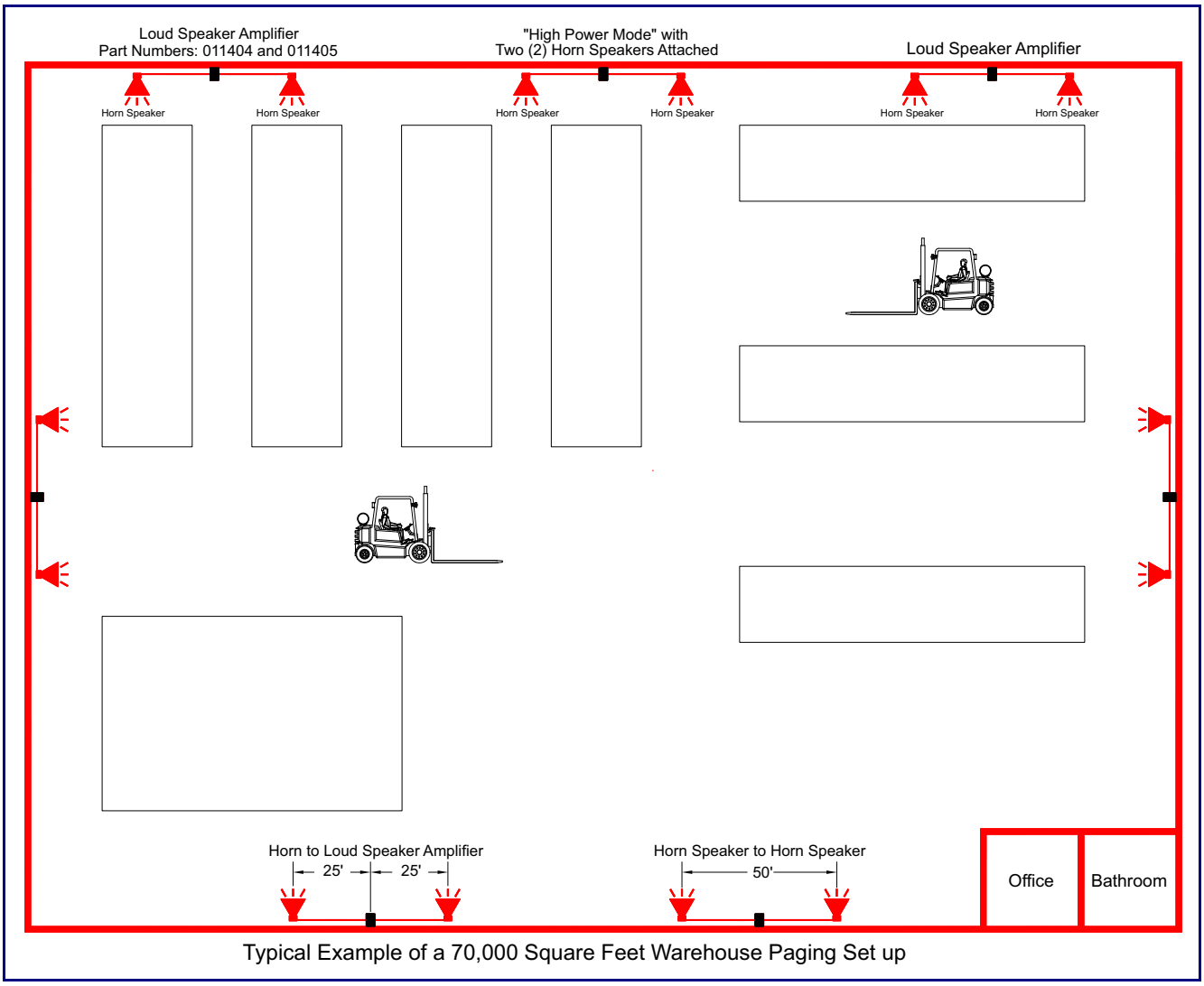
The figure below shows the intelligibility outdoor field test of the device when it is used with the 011471 IP66 Outdoor Analog Horn.

Figure 1-3. Intelligibility Outdoor Field Test



1.7.2 Typical Warehouse Paging Setup

Figure 1-4. Typical Warehouse Paging Setup



Typical Example of a 70,000 Square Feet Warehouse Paging Set up

1.8 Compliance

1.8.1 CE Statement

As of the date of manufacture, the Paging Series has been tested and found to comply with the specifications for CE marking and standards per EMC and Radio communications Compliance.

EMC Directive - Class A Emissions, Immunity, and LV Safety Directive, RoHS Compliant. Flammability rating on all components is 94V-0.

1.8.2 FCC Statement

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

1.8.3 Industry Canada (IC) Compliance Statement

Operation is subject to the following two conditions:

1.This device may not cause interference, and

2.This device must accept any interference, including interference that may cause undesired operations of the device.

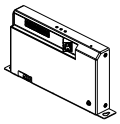
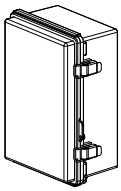
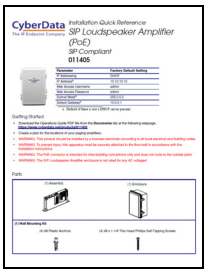
ICES-3 Class A

2 Installing the SIP Loudspeaker Amplifier (PoE)

2.1 Parts List

Table 2-1 illustrates the parts for each SIP Loudspeaker Amplifier (PoE) and includes a kit for mounting.

Table 2-1. Parts List

Quantity	Part Name	Illustration
1	SIP Paging Amplifier Assembly	
1	Enclosure	
1	Quick Reference Placemat	
1	SIP Loudspeaker Amplifier (PoE) Accessory Kit	

2.2 SIP Loudspeaker Amplifier (PoE) Setup

Set up and configure each SIP Loudspeaker Amplifier (PoE) *before* you mount it.

CyberData delivers each SIP Loudspeaker Amplifier (PoE) with the factory default values indicated in
Table 2-2:

Table 2-2. Factory Default Settings—Default of Network

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.

2.2.1 SIP Loudspeaker Amplifier (PoE) Components

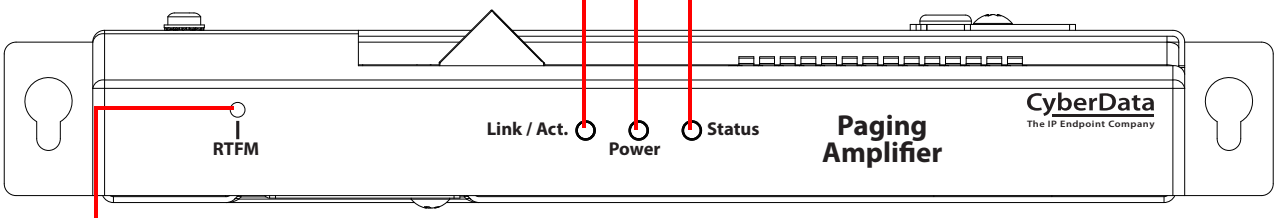
Figure 2-5 shows the components of the SIP Loudspeaker Amplifier (PoE).

Figure 2-5. SIP Loudspeaker Amplifier (PoE) Components

Power (PWR) LED (GREEN/BLUE)
The **Power (PWR)** LED is:
GREEN in low power mode (802.3af)
BLUE during high power mode (802.3at).

Link/Network Activity (Link/Act.) LED (GREEN)
The **GREEN Link/Network Activity (Link/Act.)** LED blinks to indicate network traffic.

Status LED (GREEN)
The **GREEN Status** LED illuminates after supplying power to the device.



RTFM Switch

To broadcast the device's current IP address, press and hold the RTFM switch for a couple of seconds and then release it.

To restore the factory defaults, complete the following steps:

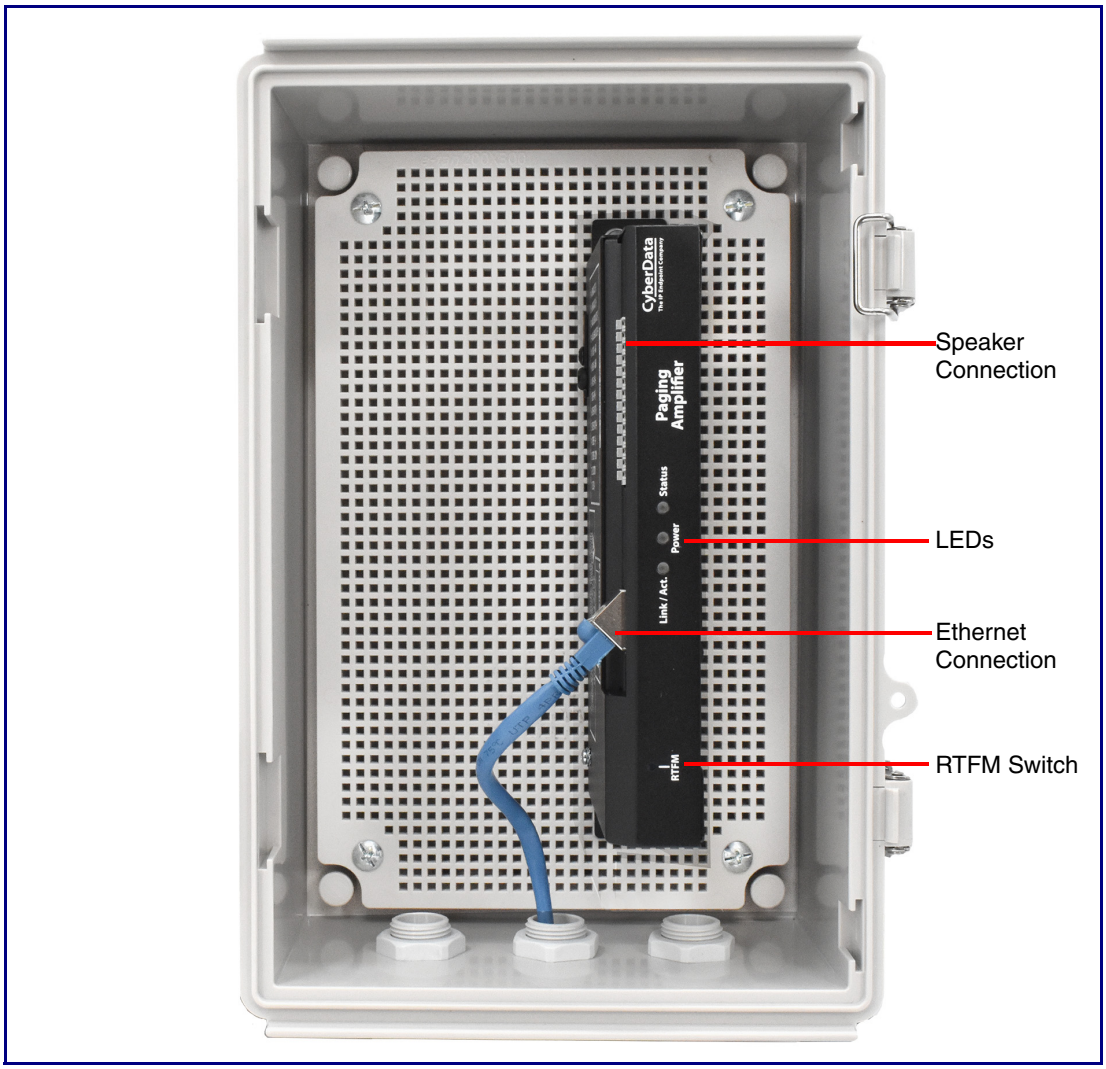
1. Press and hold the RTFM switch for several seconds.

2. Release the RTFM switch. The device will be restored to the factory default settings, and will announce "restoring defaults" and "rebooting."

2.2.2 NEMA Box Components of the SIP Loudspeaker Amplifier (PoE)

Figure 2-6 shows all of the NEMA box components of the SIP Loudspeaker Amplifier (PoE).

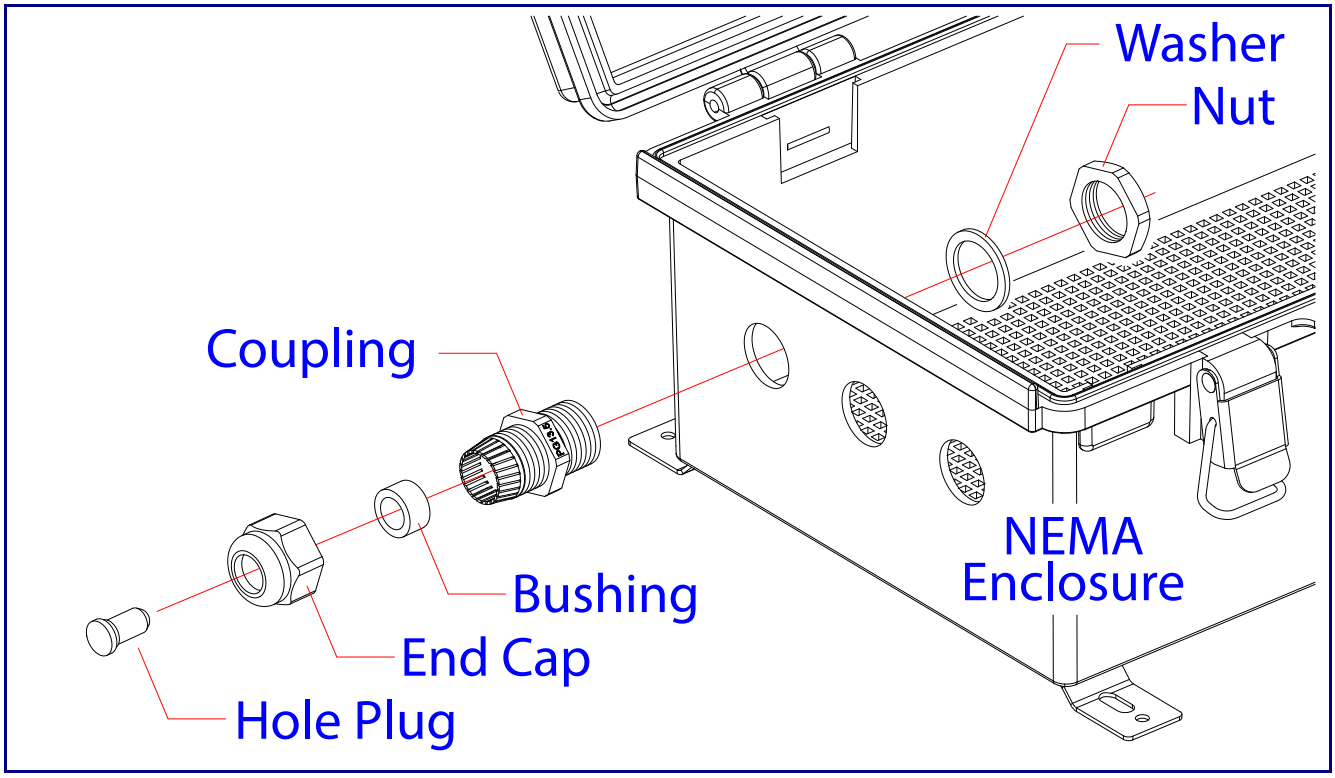
Figure 2-6. Loudspeaker Amplifier Components—PoE



2.2.3 Assembling the Cable Gland

Assemble the cable gland as shown in Figure 2-7.

Figure 2-7. Assembling the Cable Gland



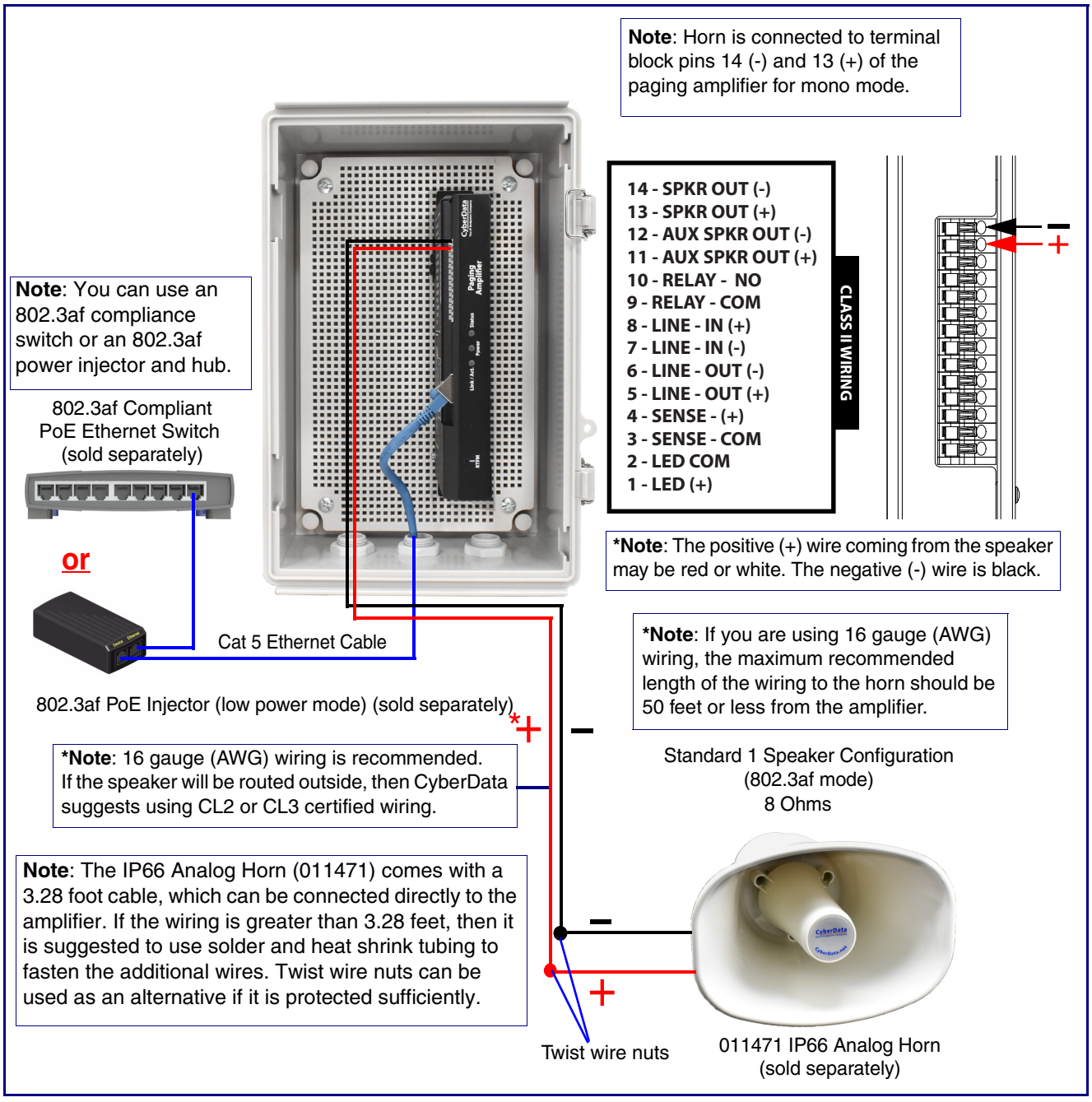
2.2.4 Connecting the SIP Loudspeaker Amplifier (PoE)

2.2.4.1 Using the Amplified Outputs

Low Power Mode (One Speaker)

The following figure illustrates how to connect the SIP Loudspeaker Amplifier (PoE) and use the amplified outputs in low power mode to one speaker or horn.

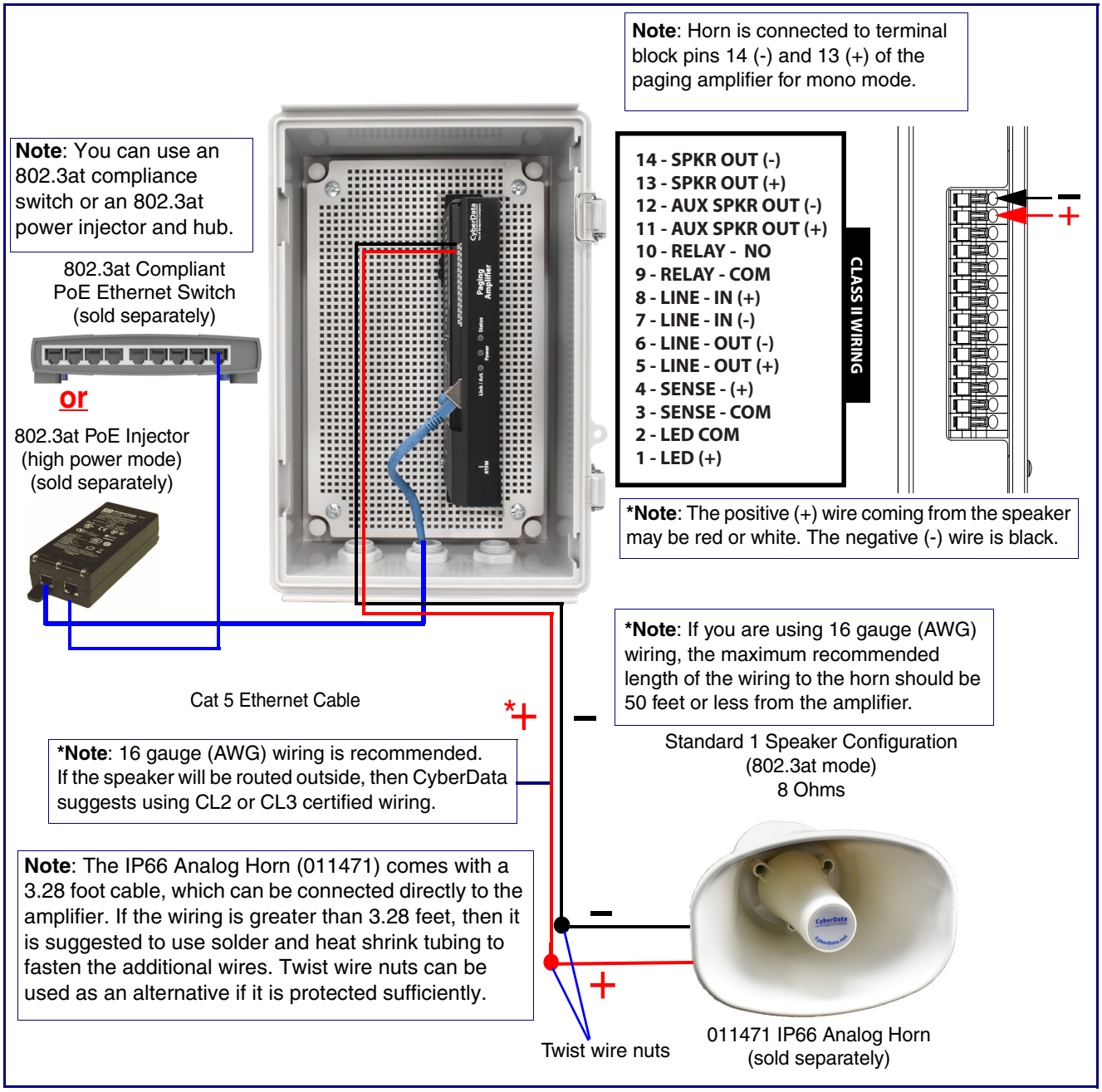
Figure 2-8. Using the Amplified Outputs—Low Power Mode with One Speaker



High Power Mode (One Speaker)

The following figure illustrates how to connect the SIP Loudspeaker Amplifier (PoE) and use the amplified outputs in high power mode to one speaker or horn.

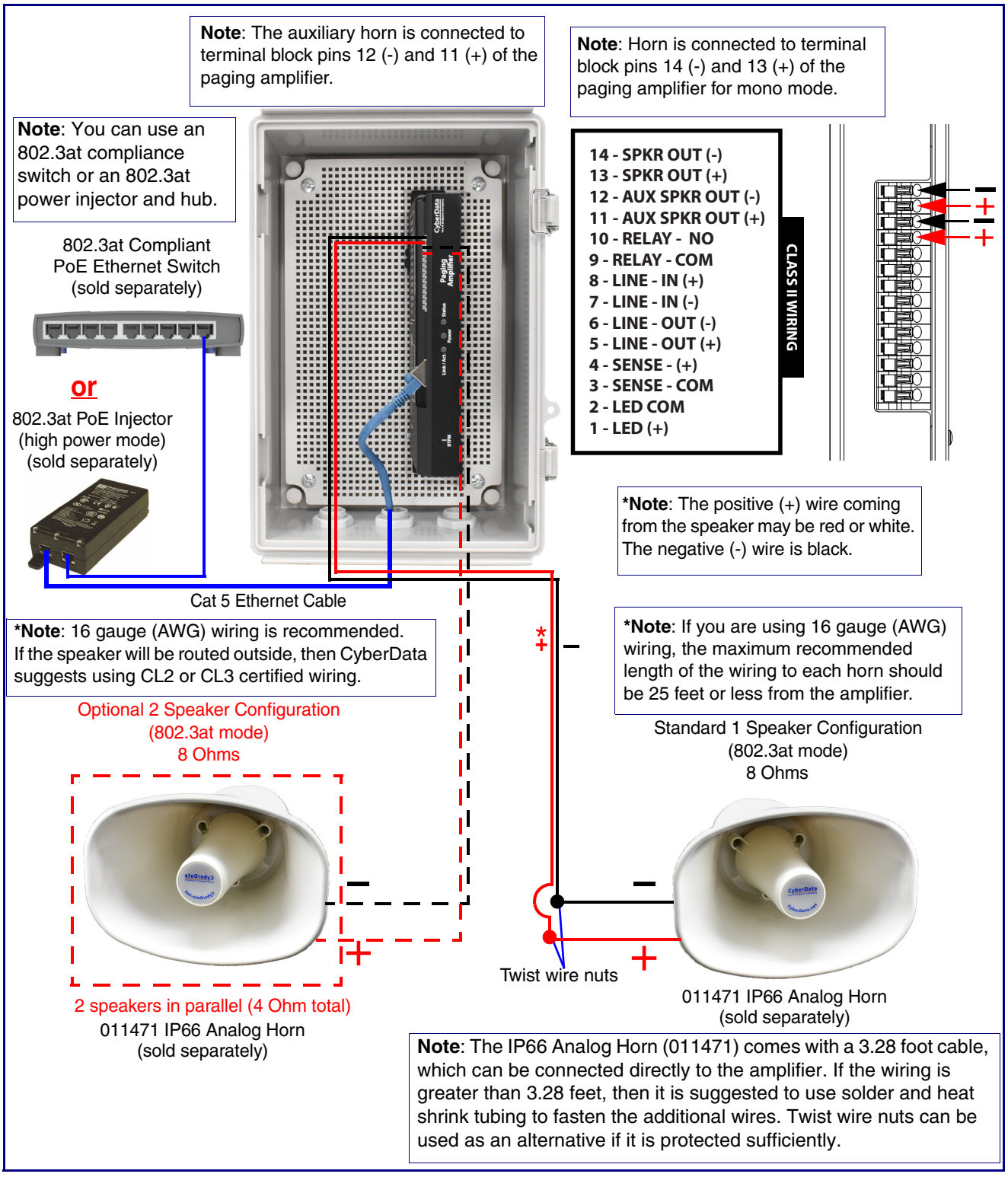
Figure 2-9. Using the Amplified Outputs—High Power Mode with One Speaker



High Power Mode (Two Speakers)

The following figure illustrates how to connect the SIP Loudspeaker Amplifier (PoE) and use the amplified outputs in high power mode to two speakers or horns.

Figure 2-10. Using the Amplified Outputs—High Power Mode with Two Speakers



2.2.5 SIP Loudspeaker Amplifier (PoE) System Installation and Connection Options

The following figures show the connection options for the SIP Loudspeaker Amplifier (PoE).

Figure 2-11. SIP Loudspeaker Amplifier (PoE) Connections

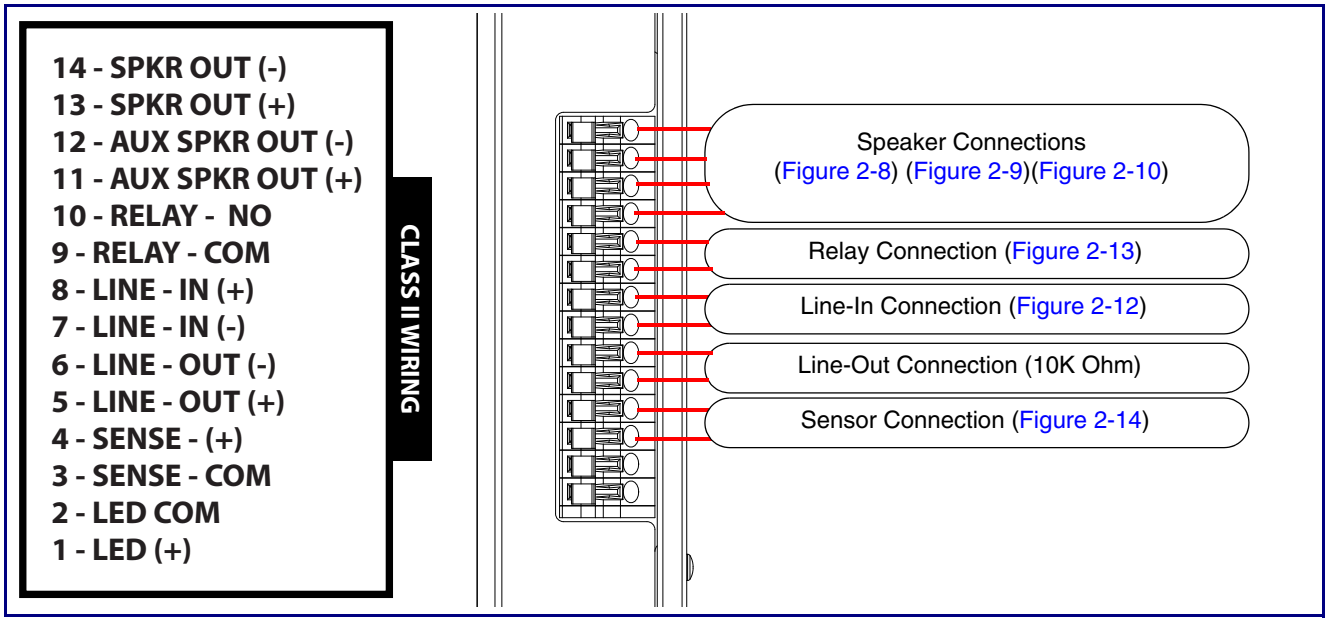


Figure 2-12. Line-In Connection

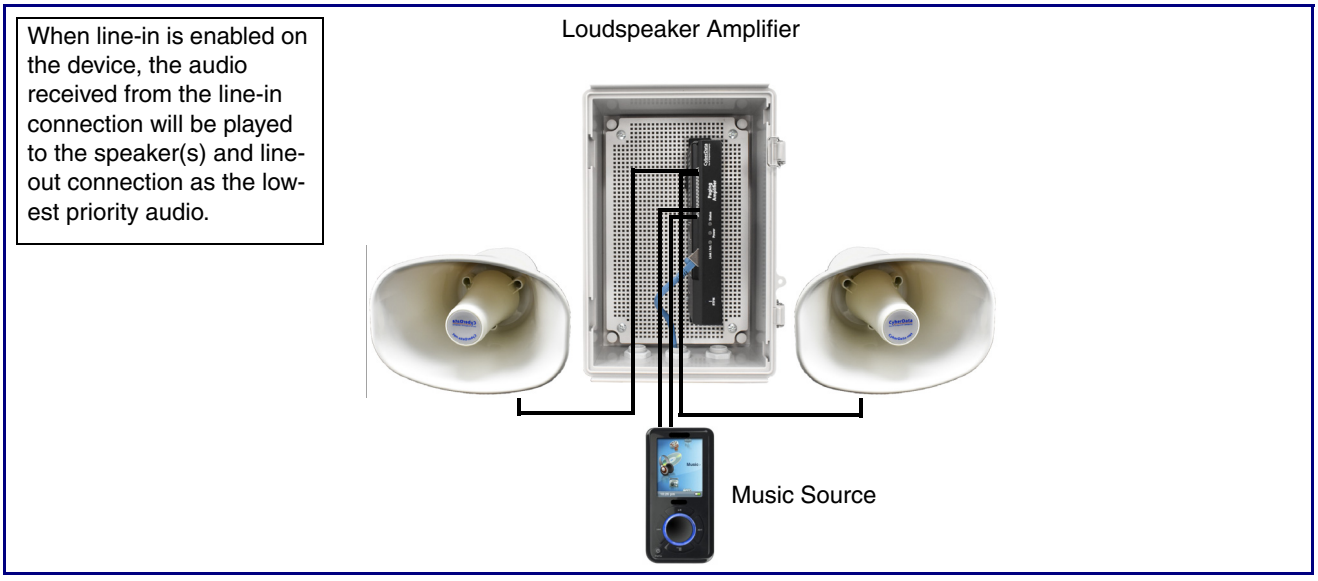


Figure 2-13. Relay or LED Strobe Connection

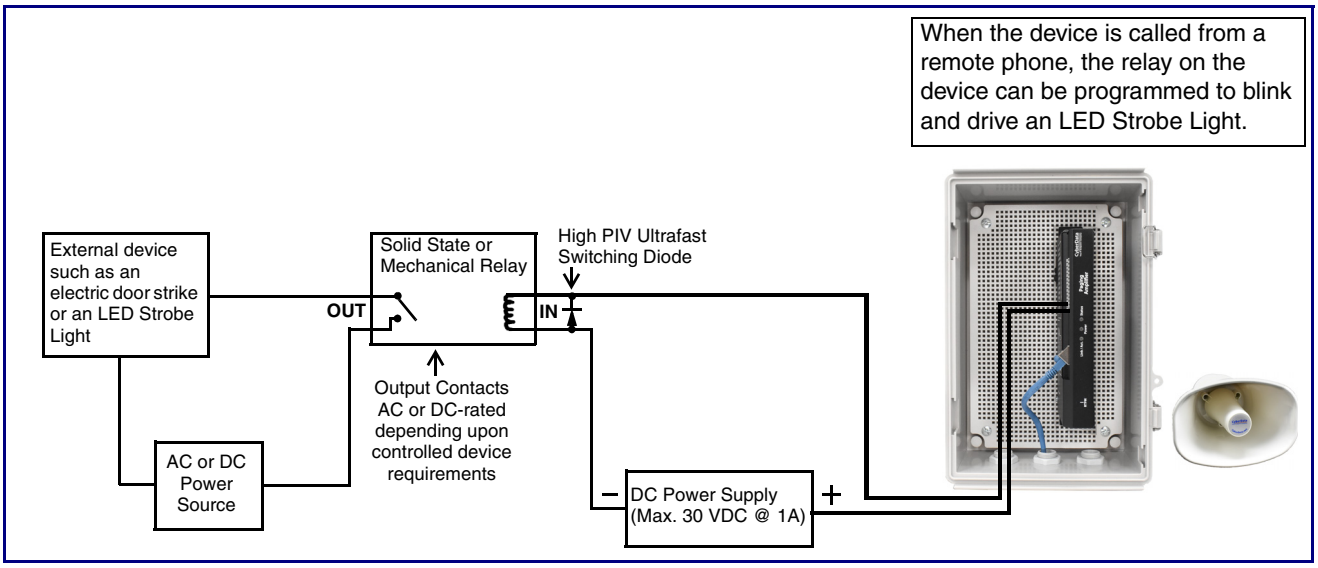
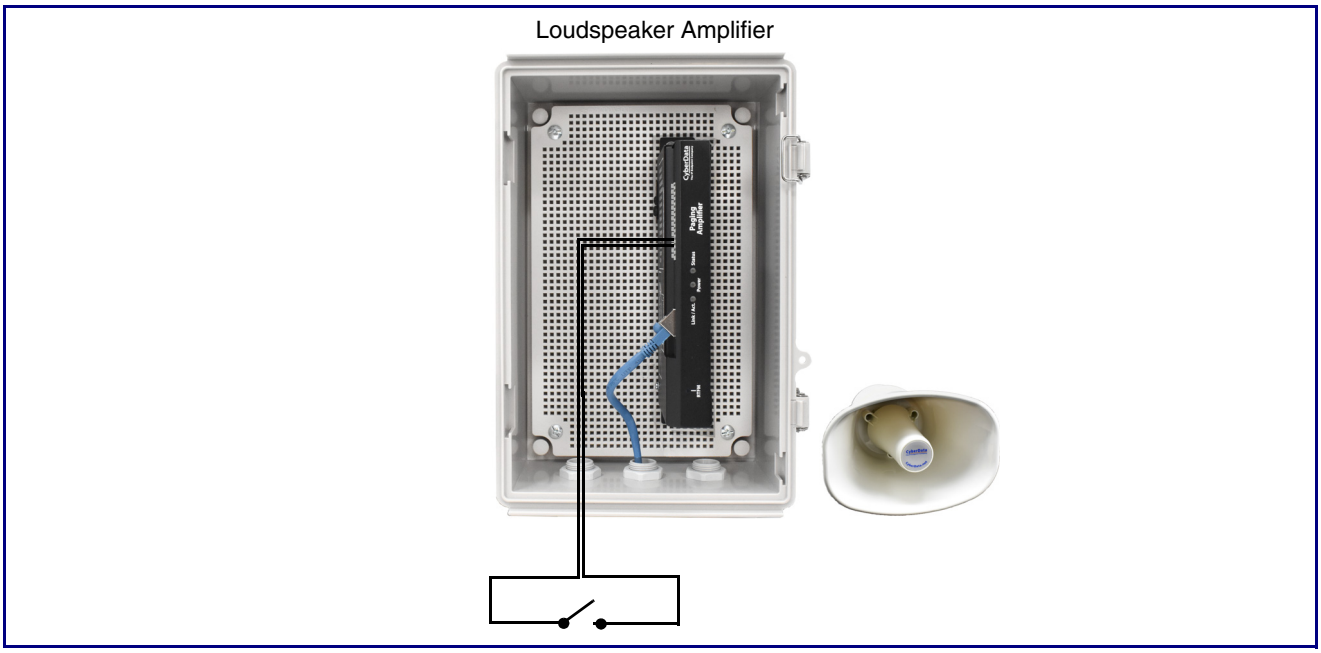


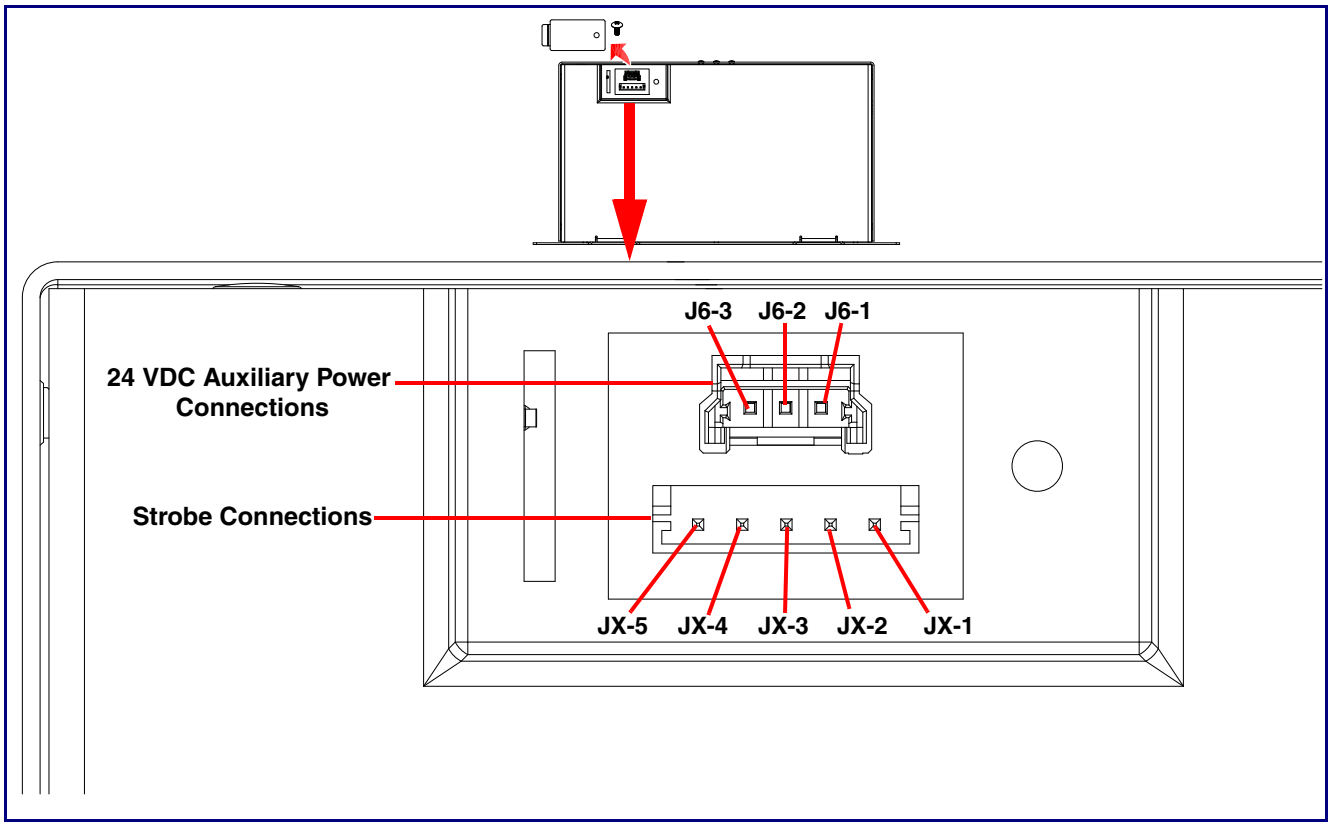
Figure 2-14. Sensor Connection



2.2.6 Strobe Connections Behind the Port Cover

See Figure 2-15 for the additional connection options for the SIP Loudspeaker Amplifier (PoE).

Figure 2-15. Connections Behind the Port Cover



See Table 2-3 for the descriptions of the connections behind the port cover.

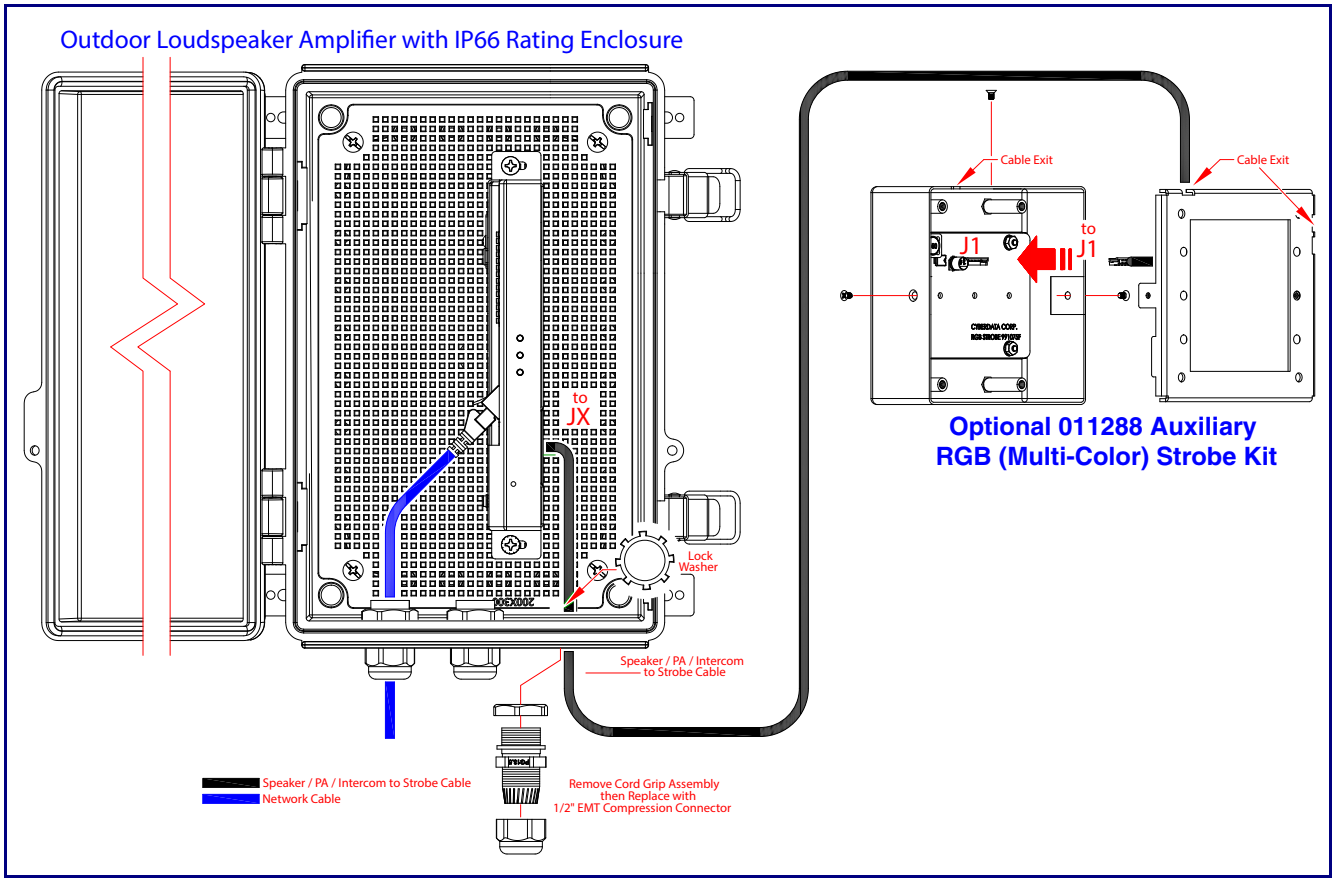
Table 2-3. Connections Behind the Port Cover

Connection	**Description**
J6-1	+24VDC
J6-2	Ground
J6-3	Chassis Ground
Strobe Connections	
Connection	**Description**
JX-1	Ground
JX-2	Strobe positive power (+24V)
JX-3	Ground
JX-4	I2C data
JX-5	I2C clock

2.2.7 Connecting the Optional 011288 Auxiliary RGB (Multi-Color) Strobe Kit

To connect the optional 011288 Auxiliary RGB (Multi-Color) Strobe Kit to the SIP Loudspeaker Amplifier (PoE), see Figure 2-16.

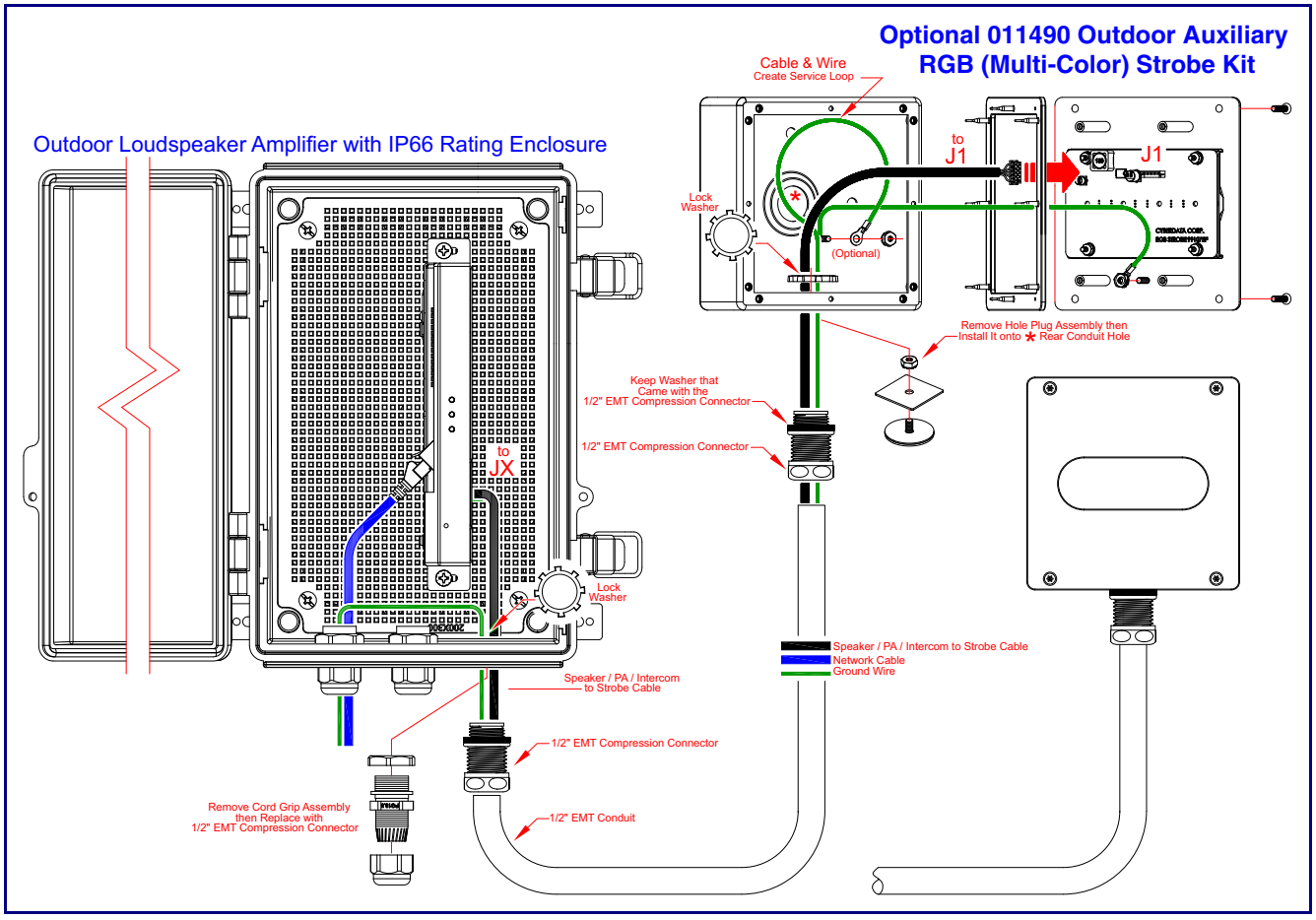
Figure 2-16. Connecting the 011288 Auxiliary RGB (Multi-Color) Strobe Kit



2.2.8 Connecting the Optional 011490 Outdoor Auxiliary RGB (Multi-Color) Strobe Kit

To connect the optional 011490 Outdoor Auxiliary RGB (Multi-Color) Strobe Kit, to the SIP Loudspeaker Amplifier (PoE), see Figure 2-17.

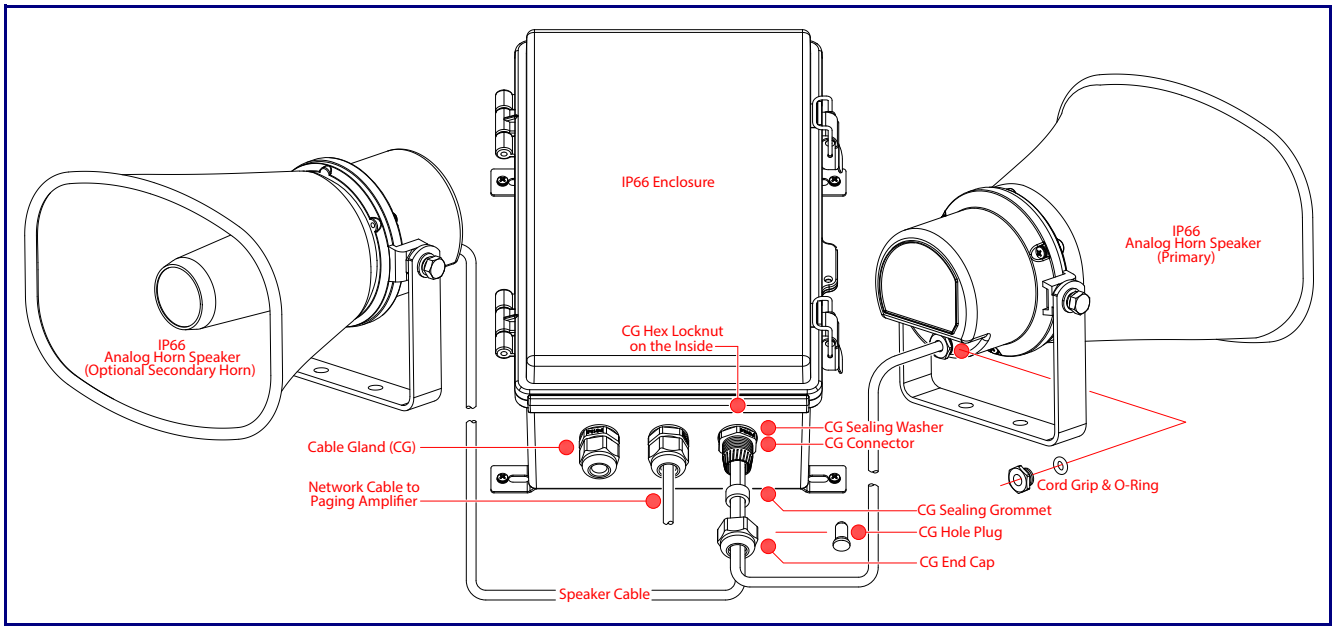
Figure 2-17. Connecting the 011490 Outdoor Auxiliary RGB (Multi-Color) Strobe Kit



2.2.9 IP66 Weatherproofing

See Figure 2-18 for the IP66 weatherproofing of the device.

Figure 2-18. IP66 Weatherproofing



2.2.10 Ethernet Connection

See Table 2-4 for details about the SIP Loudspeaker Amplifier (PoE) connection.

Table 2-4. SIP Loudspeaker Amplifier (PoE) Connection

Connection	Connection Details	Location
Ethernet	Use a RJ 45 cable.	SIP Loudspeaker Amplifier (PoE)

2.2.11 Loudspeaker Type

Using the amplified output, the CyberData SIP Loudspeaker Amplifier (PoE) supports the 011471 IP66 Analog Horn or equivalent unamplified loudspeaker.

Figure 2-19. 011471 IP66 Analog Horn

2.2.12 Cabling/Wiring

Using the amplified output, you may connect a 011471 Horn or equivalent unamplified speaker to a SIP Loudspeaker Amplifier (PoE) with good quality speaker wire that is 16 gauge and limited to 25 feet in length with two loudspeakers or 50 feet in length with one loudspeaker.

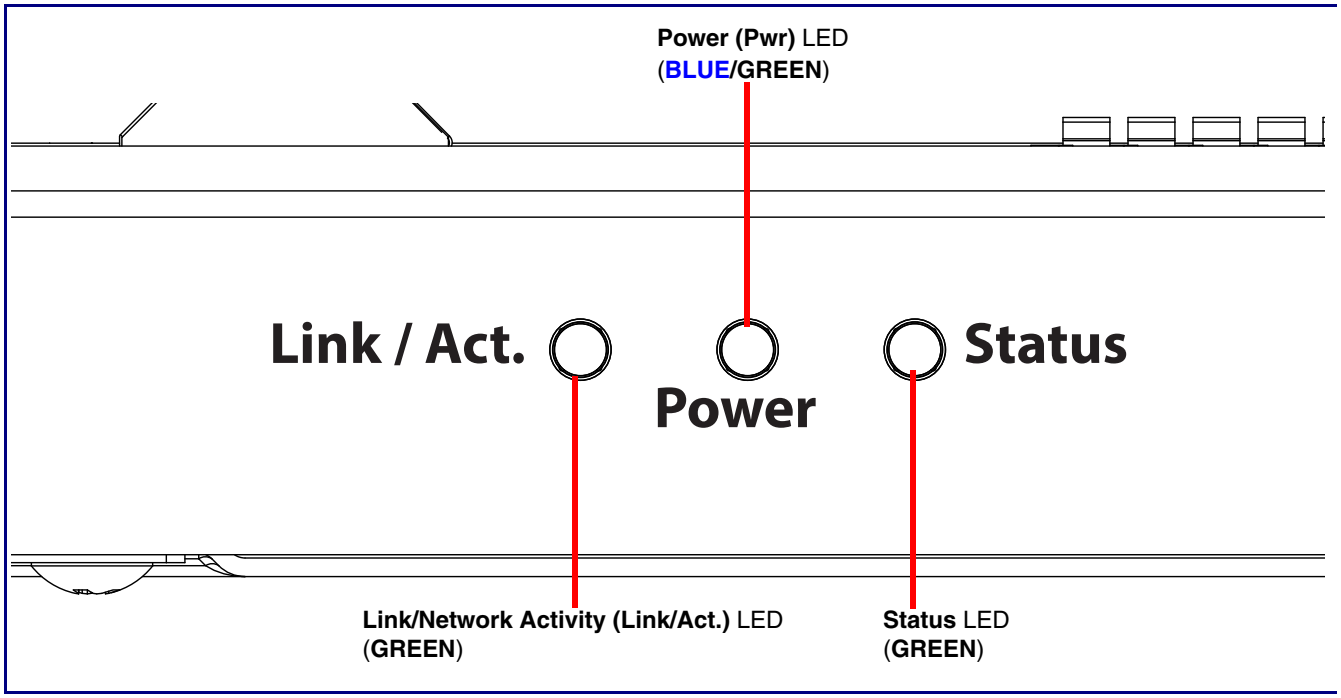
2.2.13 Confirm Operation

After connecting the SIP Loudspeaker Amplifier (PoE) to the 802.3af compliant ethernet hub, use the LEDs on the SIP Loudspeaker Amplifier (PoE) face to confirm that the SIP Loudspeaker Amplifier (PoE) is operational and linked to the network.

Table 2-5. SIP Loudspeaker Amplifier (PoE) LEDs

LED	Color	Function
Power (PWR)	**BLUE**/**GREEN**	The power LED is **GREEN** in low power mode (802.3af) and a **BLUE** during high power mode (802.3at). The power LED will blink during a boot up or a phone call.
Status	**GREEN**	After supplying power to the device, a steady **GREEN** **Status** LED illuminates. After about 20 seconds the **GREEN** **Status** LED will blink twice to indicate that the board is fully booted. The status LED will blink during a page when it is online.
Link/Network Activity (Link/Act.)	**GREEN**	The **Link/Network Activity (Link/Act.)** **GREEN** LED blinks to indicate network traffic.

Figure 2-20. SIP Loudspeaker Amplifier (PoE) LEDs

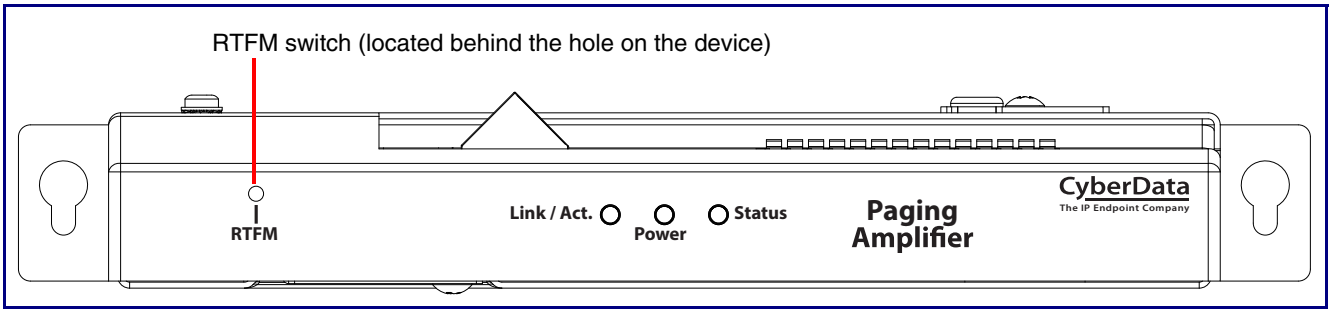


2.2.14 Confirm the IP Address and Test the Audio

2.2.14.1 RTFM Switch

When the SIP Loudspeaker Amplifier (PoE) is operational and linked to the network, use the Reset Test Function Management **(RTFM)** switch (Figure 2-21) (located behind the hole on the device) to announce and confirm the device's IP Address and test the audio to verify that it is working.

Figure 2-21. RTFM Switch



Announcing the IP Address

To announce a device's current IP address:

- Use a bent paperclip or a similar object to briefly press the RTFM switch and release it.

GENERAL ALERT

Caution

Equipment Caution: Pressing and holding the RTFM switch for more than five seconds will restore the device to the factory default settings. See the "Restoring the Factory Default Settings" section.

Restoring the Factory Default Settings

To restore the factory default settings, complete the following steps:

1. Use a bent paperclip or a similar object to press and hold the RTFM switch for several seconds.
2. Release the RTFM switch. The device will be restored to the factory default settings, and will announce "restoring defaults" and "rebooting."

2.3 Configure the SIP Loudspeaker Amplifier (PoE) Parameters

To configure the SIP Loudspeaker Amplifier (PoE) online, use a standard web browser.

Configure each SIP Loudspeaker Amplifier (PoE) and verify its operation *before* you mount it. When you are ready to mount an SIP Loudspeaker Amplifier (PoE), refer to Appendix A, "Mounting the Amplifier" for instructions.

2.3.1 Factory Default Settings

All SIP Loudspeaker Amplifier (PoE)s are initially configured with the following default IP settings:

When configuring more than one SIP Loudspeaker Amplifier (PoE), attach the SIP Loudspeaker Amplifier (PoE)s to the network and configure one at a time to avoid IP address conflicts.

Table 2-6. Factory Default Settings

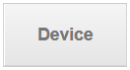
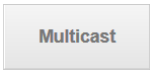
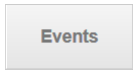
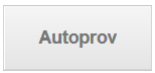
Parameter	Factory Default Setting
IP Addressing	DHCP
IP Address[a]	192.168.1.23
Web Access Username	admin
Web Access Password	admin
Subnet Mask[a]	255.255.255.0
Default Gateway[a]	192.168.1.1

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

2.3.2 SIP Loudspeaker Amplifier (PoE) Web Page Navigation

Table 2-7 shows the navigation buttons that you will see on every SIP Loudspeaker Amplifier (PoE) web page.

Table 2-7. Web Page Navigation

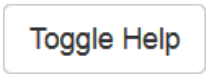
Web Page Item	Description
	Link to the **Home** page.
	Link to the **Device** page.
	Link to the **Audio** page.
	Link to the **Network** page.
	Link to go to the **SIP** page.
	Link to the **Multicast** page.
	Link to the **SSL** page.
	Link to the **Sensor** page.
	Link to the **Audiofiles** page.
	Link to the **Events** page.
	Link to the **Autoprovisioning** page.
	Link to the **Firmware** page.

2.3.3 Using the Toggle Help Button

The **Toggle Help** button allows you to see a short description of some of the settings on the webpage. To use the **Toggle Help** button, do the following:

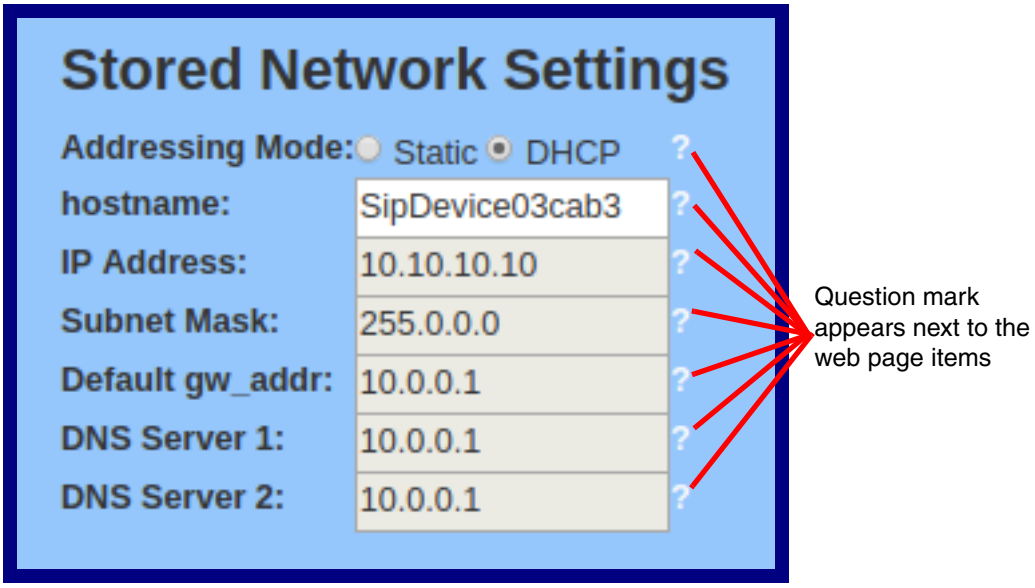
1. Click on the **Toggle Help** button that is on the UI webpage. See Figure 2-22 and Figure 2-23.

Figure 2-22. Toggle/Help Button



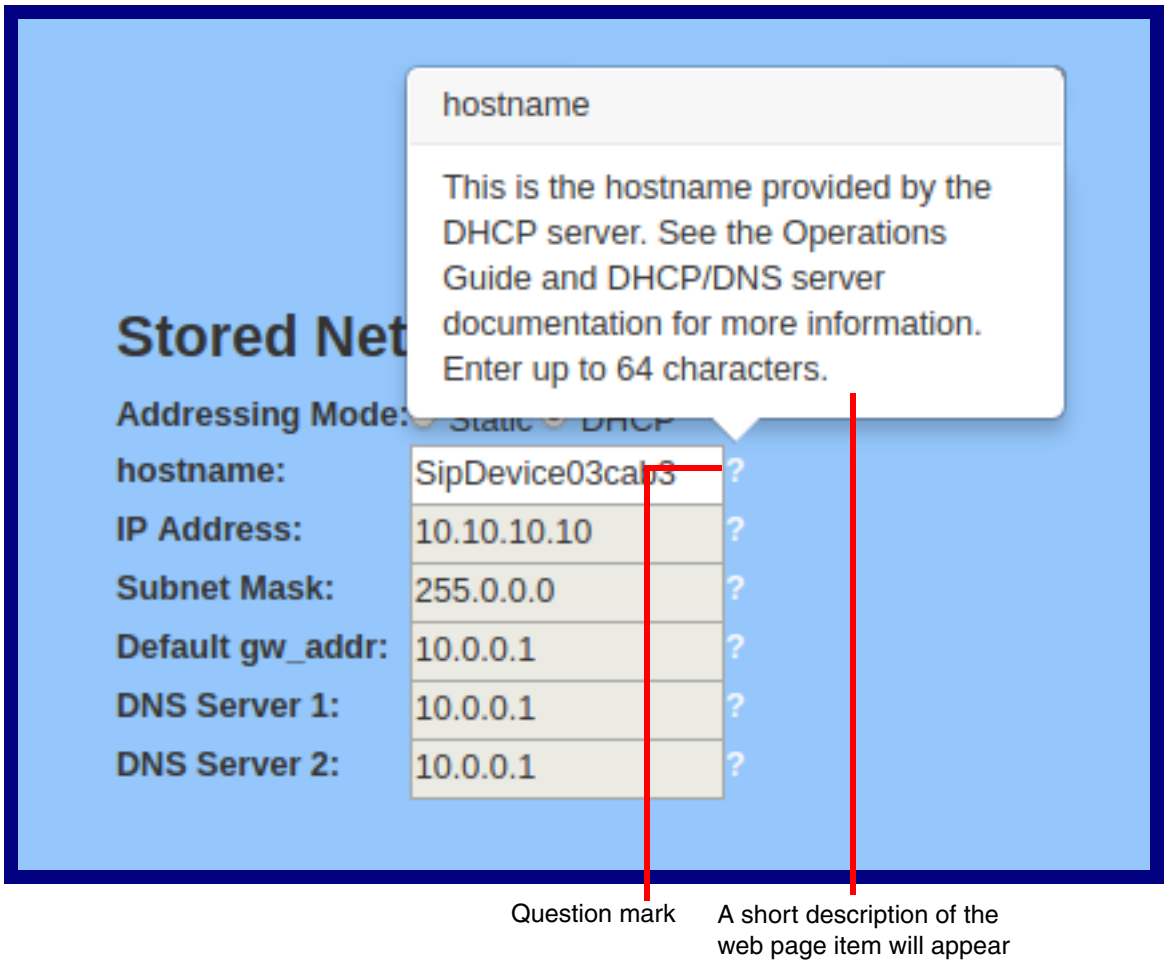
2. You will see a question mark (?) appear next to each web page item that has been provided with a short description by the Help feature. See Figure 2-23.

Figure 2-23. Toggle Help Button and Question Marks



3. Move the mouse pointer to hover over the question mark (?), and a short description of the web page item will appear. See Figure 2-24.

Figure 2-24. Short Description Provided by the Help Feature



2.3.4 Log in to the Home Page

1. Open your browser to the device IP address.

Note If the network does not have access to a DHCP server, the device will default to an IP address of 192.168.123.

Note Make sure that the PC is on the same IP network as the SIP Loudspeaker Amplifier (PoE).

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

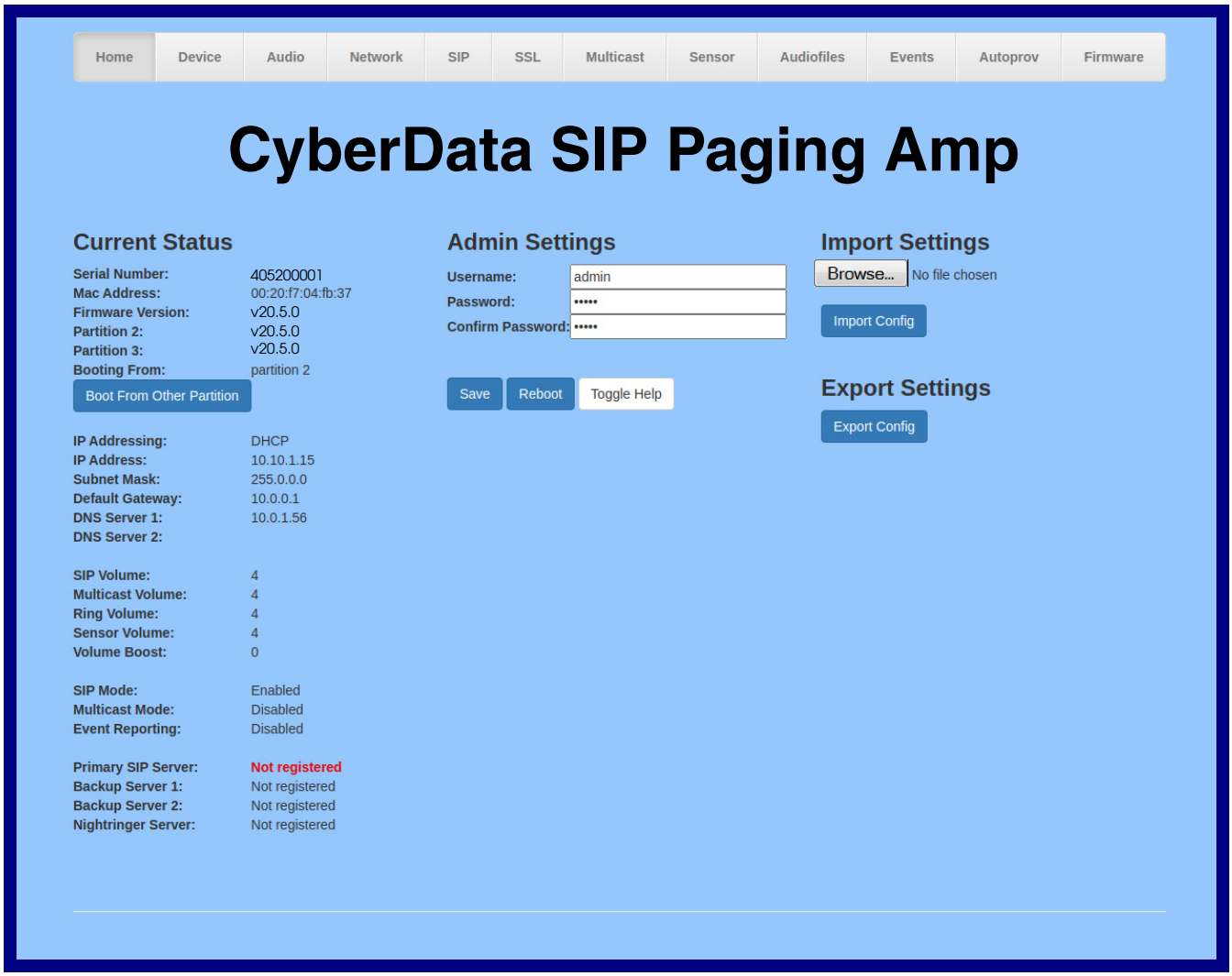
Note The device ships in DHCP mode. To get to the **Home** page, use the discovery utility to scan for the device on the network and open your browser from there.

2. When prompted, use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 2-25):

   Web Access Username: **admin**

   Web Access Password: **admin**

Figure 2-25. Home Page



3. On the **Home** page, review the setup details and navigation buttons described in Table 2-8.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-8. Home Page Overview

Web Page Item	Description
Admin Settings	
Username ?	The username to access the web interface. Enter up to 25 characters.
Password ?	The password to access the web interface. Enter up to 25 characters.
Confirm Password ?	Confirm the web interface password.
Current Status	
Serial Number	Shows the device serial number.
Mac Address	Shows the device Mac address.
Firmware Version	Shows the current firmware version.
Partition 2	Contains a complete copy of bootable software.
Partition 3	Contains an alternate, complete copy of bootable software.
Booting From	Indicates the partition currently used for boot.
Boot From Other Partition	Allows the user to boot from the alternate partition.
IP Addressing	Shows the current IP addressing setting (**DHCP** or **static**).
IP Address	Shows the current IP address.
Subnet Mask	Shows the current subnet mask address.
Default Gateway	Shows the current default gateway address.
DNS Server 1	Shows the current DNS Server 1 address.
DNS Server 2	Shows the current DNS Server 2 address.
SIP Volume	Shows the current SIP volume level.
Multicast Volume	Shows the current Multicast volume level.
Ring Volume	Shows the current Ring volume level.
Sensor Volume	Shows the current Sensor volume level.
Volume Boost	Shows the current Volume Boost level.
SIP Mode	Shows the current status of the SIP mode.
Multicast Mode	Shows the current status of the Multicast mode.
Event Reporting	Shows the current status of the Event Reporting mode.
Nightringer	Shows the current status of the Nightringer mode.
Primary SIP Server	Shows the current status of the Primary SIP Server.
Backup Server 1	Shows the current status of Backup Server 1.
Backup Server 2	Shows the current status of Backup Server 2.
Nightringer Server	Shows the current status of Nightringer Server.
Import Settings	

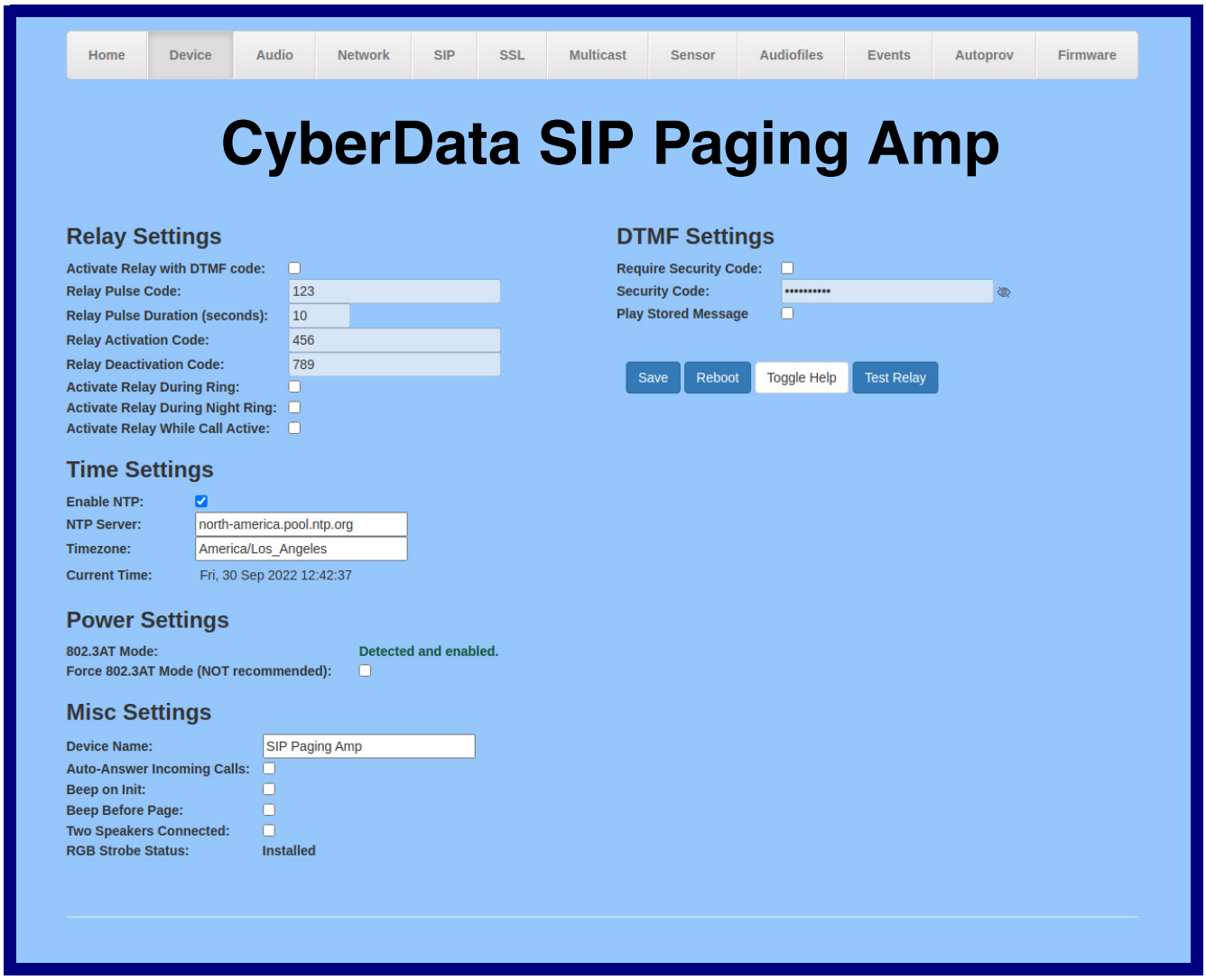
Table 2-8. Home Page Overview (continued)

Web Page Item	Description
Browse...	Use this button to select a configuration file to import.
Import Config	After selecting a configuration file, click Import to import the configuration from the selected file. Then, click Save to store changes.
Export Settings	
Export Config	Click Export to export the current configuration to a file.
Save	Click the **Save** button to save your configuration settings.
Reboot	Click on the **Reboot** button to reboot the system.
Toggle Help	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark (?) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.

2.3.5 Configure the Device

1. Click the **Device** menu button to open the **Device** page. See Figure 2-26.

Figure 2-26. Device Page



2. On the **Device** page, you may enter values for the parameters indicated in Table 2-9.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-9. Device Page Parameters

Web Page Item	Description
Relay Settings	
Activate Relay with DTMF Code ?	Activates the relay when the DTMF Activation Code is entered on the phone during a SIP call with the device. RFC2833 DTMF payload types are supported.
Relay Pulse Code ?	DTMF code used to pulse the relay when entered on a phone during a SIP call with the device. Relay will activate for Relay Pulse Duration seconds then deactivate. Activate Relay with DTMF Code must be enabled. Enter up to 25 digits (* and # are supported).
Relay Pulse Duration (in seconds) ?	The length of time (in seconds) during which the relay will be activated when the DTMF Relay Activation Code is detected. Enter up to 5 digits.
Relay Activation Code ?	Activation code used to activate the relay when entered on a phone during a SIP call with the device. Relay will be active indefinitely, or until the DTMF Relay Deactivation code is entered. Activate Relay with DTMF Code must be enabled. Enter up to 25 digits (* and # are supported).
Relay Deactivation Code ?	Code used to deactivate the relay when entered on a phone during a SIP call with the device. Activate Relay with DTMF Code must be enabled. Enter up to 25 digits (* and # are supported).
Activate Relay During Ring ?	When selected, the relay will be activated for as long as the device is ringing. When Auto-Answer Incoming Calls is enabled, the device will not ring and this option does nothing.
Activate Relay During Night Ring ?	When selected, the relay will be activated as long as the Nightringer extension is ringing.
Activate Relay While Call Active ?	When selected, the relay will be activated as long as the SIP call is active.
Time Settings	
Enable NTP ?	Sync device's local time with the specified NTP Server.
NTP Server ?	Use this field to set the address (in IPv4 dotted decimal notation or as a canonical name) for the NTP Server. This field can accept canonical names of up to 64 characters in length.
Timezone	Enter the tz database string of your timezone. Examples: America/Los_Angeles America/New_York Europe/London America/Toronto See **https://en.wikipedia.org/wiki/List_of_tz_database_time_zones** for a full list of valid strings.
Current Time	Displays the current time.
Power Settings	

Table 2-9. Device Page Parameters (continued)

Web Page Item	Description
802.3AT Mode	This device automatically detects if it is plugged into an 802.3AT (also known as PoE Plus) power source. 802.3AT provides more power than older 802.3AT power sources and allows this speaker to play audio at higher volumes. If you are sure this speaker is connected to an 802.3AT power source, but it is not being detected correctly, you can override the automatic settings below.
Force 802.3AT Mode (NOT recommended)	Enable this option if you are sure this speaker is connected to an 802.3AT power source, but it is not being detected correctly (not recommended).
Misc Settings	
Device Name	Type the device name. Enter up to 25 characters.
Auto-Answer Incoming Calls	When selected, the device will automatically answer incoming calls. When **Auto-Answer Incoming Calls** is disabled, the device will play a ring tone (corresponds to Ring Tone on the Audiofiles page) out of the speaker.
Beep on Init	Device will play the user-defined “pagetone” audio file when it boots.
Beep on Page	Device will play the user defined “pagetone” audio file before playing a SIP page.
Two Speakers Connected	Specify if one or two speakers are connected to the paging amplifier. If only one is connected, ensure that it is wired to the first set of terminal blocks.
RGB Strobe	Status of optional RGB Strobe.
DTMF Settings	
Require Security Code	When selected, the user will be prompted to enter a Security Code (entered on this page) before being able to execute a page when calling the device.
Security Code	Type the Security Code in this field. The Security Code must only use characters '0-9', '*' and '#'. Enter up to 25 characters.
Play Stored Message	When selected, the caller will be prompted to select one of nine stored messages to play through the speaker. Stored messages may be customized on the Audiofiles page.
Save	Click the **Save** button to save your configuration settings.
Reboot	Click on the **Reboot** button to reboot the system.
Toggle Help	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark ( ) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.
Test Relay	Click on the **Test Relay** button to do a relay test.

2.3.6 Configure the Audio

1. Click the **Audio** menu button to open the **Audio** page. See Figure 2-27.

Figure 2-27. Audio Page

2. On the **Audio** page, you may enter values for the parameters indicated in Table 2-10.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

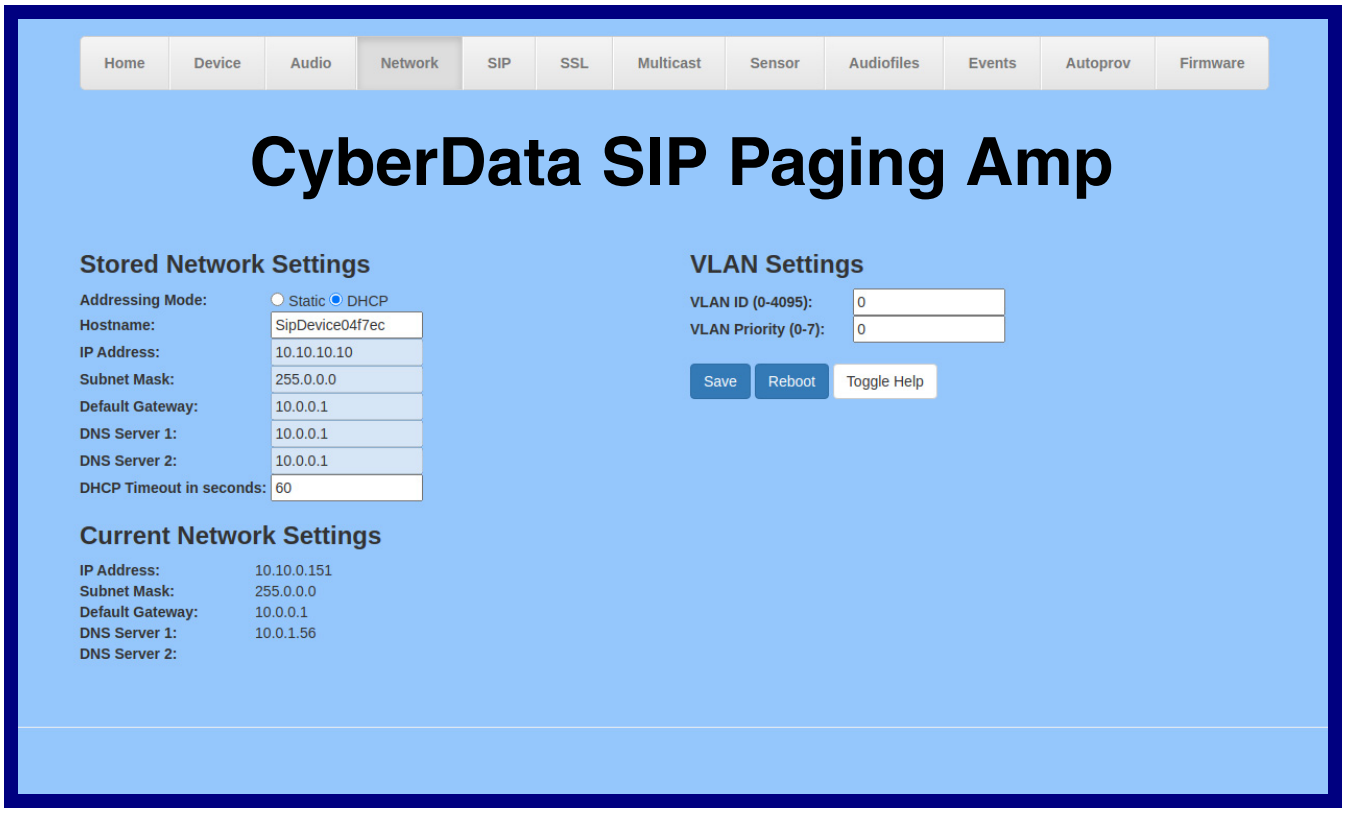
Table 2-10. Audio Page Parameters

Web Page Item	Description
Volume Settings (0-9)	
Enable Line-in to Line-out Loopback ?	Line-in audio will play back out the device's audio output ports. This is the lowest priority audio and will be preempted by any other audio stream.
SIP Volume ?	Set the speaker volume for a SIP call. A value of 0 will mute the speaker during SIP calls.
Multicast Volume ?	Set the speaker volume for multicast audio streams. A value of 0 will mute the speaker during multicasts.
Ring Volume ?	Set the ring volume for the Nightringer. A value of 0 will mute the speaker for the Nightringer.
Sensor Volume ?	Set the speaker volume for playing sensor activated audio. A value of 0 will mute the speaker during sensor activated audio.
Volume Boost: ? No Volume Boost Volume Boost 1 Volume Boost 2 Volume Boost 3	NOT RECOMMENDED! Set the Boost level to increase the volume output of the speaker. Using Volume Boost may introduce audio clipping, reduce intelligibility of the speaker audio, or cause instability. Boost will raise the volume above level '9', regardless of the digital volumesettings. If Boost is going to be used, it should be usedwith low gain audio sources and at a low volume output level.
Save	Click the **Save** button to save your configuration settings.
Reboot	Click on the **Reboot** button to reboot the system.
Toggle Help	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark (?) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.
Test Audio	Click on the **Test Audio** button to do an audio test. When the **Test Audio** button is pressed, you will hear a voice message for testing the device audio quality and volume.

2.3.7 Configure the Network Parameters

1. Click the **Network** menu button to open the **Network** page (Figure 2-28).

Figure 2-28. Network Page



2. On the **Network** page, enter values for the parameters indicated in Table 2-11.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-11. Network Page Parameters

Web Page Item	Description
Stored Network Settings	
Addressing Mode ?	Select either DHCP IP Addressing or Static Addressing by marking the appropriate radio button. DHCP Addressing mode is enabled on default and the device will attempt to resolve network addressing with the local DHCP server upon boot. If DHCP Addressing fails, the device will revert to the last known IP address or the factory default address if no prior DHCP lease was established. See Section 2.3.1, "Factory Default Settings" for factory default settings. Be sure to click **Save** and **Reboot** to store changes when configuring a Static address.
Hostname ?	This is the hostname provided by the DHCP server. See the DHCP/DNS server documentation for more information. Enter up to 64 characters.
IP Address ?	Enter the Static IPv4 network address in dotted decimal notation.
Subnet Mask ?	Enter the Subnet Mask in dotted decimal notation.
Default Gateway ?	Enter the Default Gateway IPv4 address in dotted decimal notation.
DNS Server 1 ?	Enter the primary DNS Server IPv4 address in dotted decimal notation.
DNS Server 2 ?	Enter the secondary DNS Server IPv4 address in dotted decimal notation.
DHCP Timeout in seconds ?	Specify the desired time-out duration (in seconds) that the device will wait for a response from the DHCP server before reverting back to the stored static IP address. The stored static IP address may be the last known IP address or the factory default address if no prior DHCP lease was established. Enter up to 8 characters. A value of -1 will retry forever.
Current Network Settings	Shows the current network settings.
IP Address	Shows the current Static IP address.
Subnet Mask	Shows the current Subnet Mask address.
Default Gateway	Shows the current Default Gateway address.
DNS Server 1	Shows the current DNS Server 1 address.
DNS Server 2	Shows the current DNS Server 2 address.
VLAN Settings	
VLAN ID (0-4095) ?	Specify the IEEE 802.1Q VLAN ID number. Enter up to 4 digits. **Note**: The device supports 802.1Q VLAN tagging support. The switch port connected to the device will need to be in “trunking mode” for the VLAN tags to propagate.
VLAN Priority (0-7) ?	Specify the IEEE 802.1p VLAN priority level. Enter 1 digit. A value of 0 may cause the VLAN ID tag to be ignored.

Table 2-11. Network Page Parameters (continued)

Web Page Item	Description
Save	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
Reboot	Click on the **Reboot** button to reboot the system.
Toggle Help	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark (?) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.

2.3.8 Configure the SIP (Session Initiation Protocol) Parameters

1. Click on the **SIP** menu button to open the **SIP** page (Figure 2-29).

Figure 2-29. SIP Page—Top

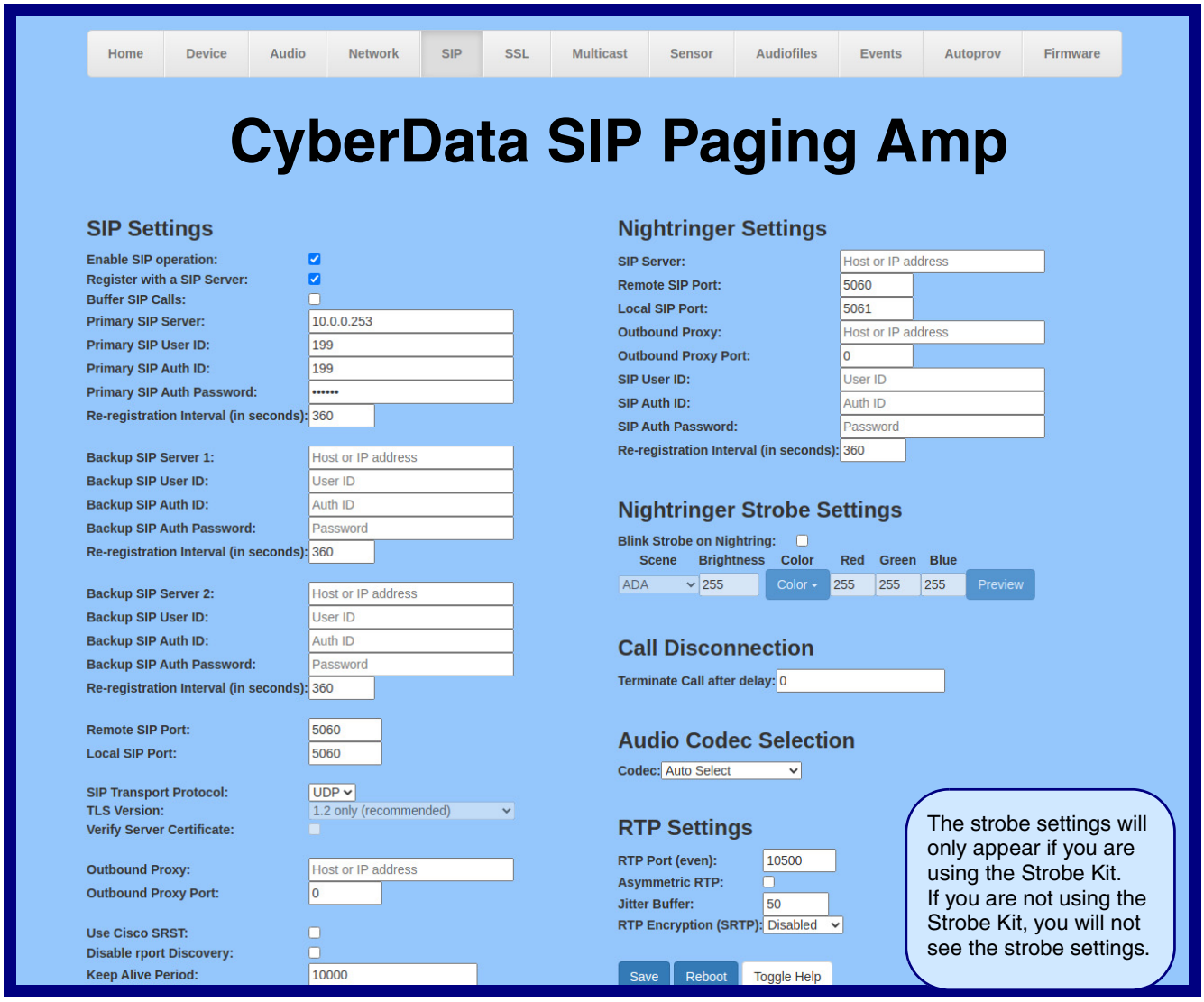
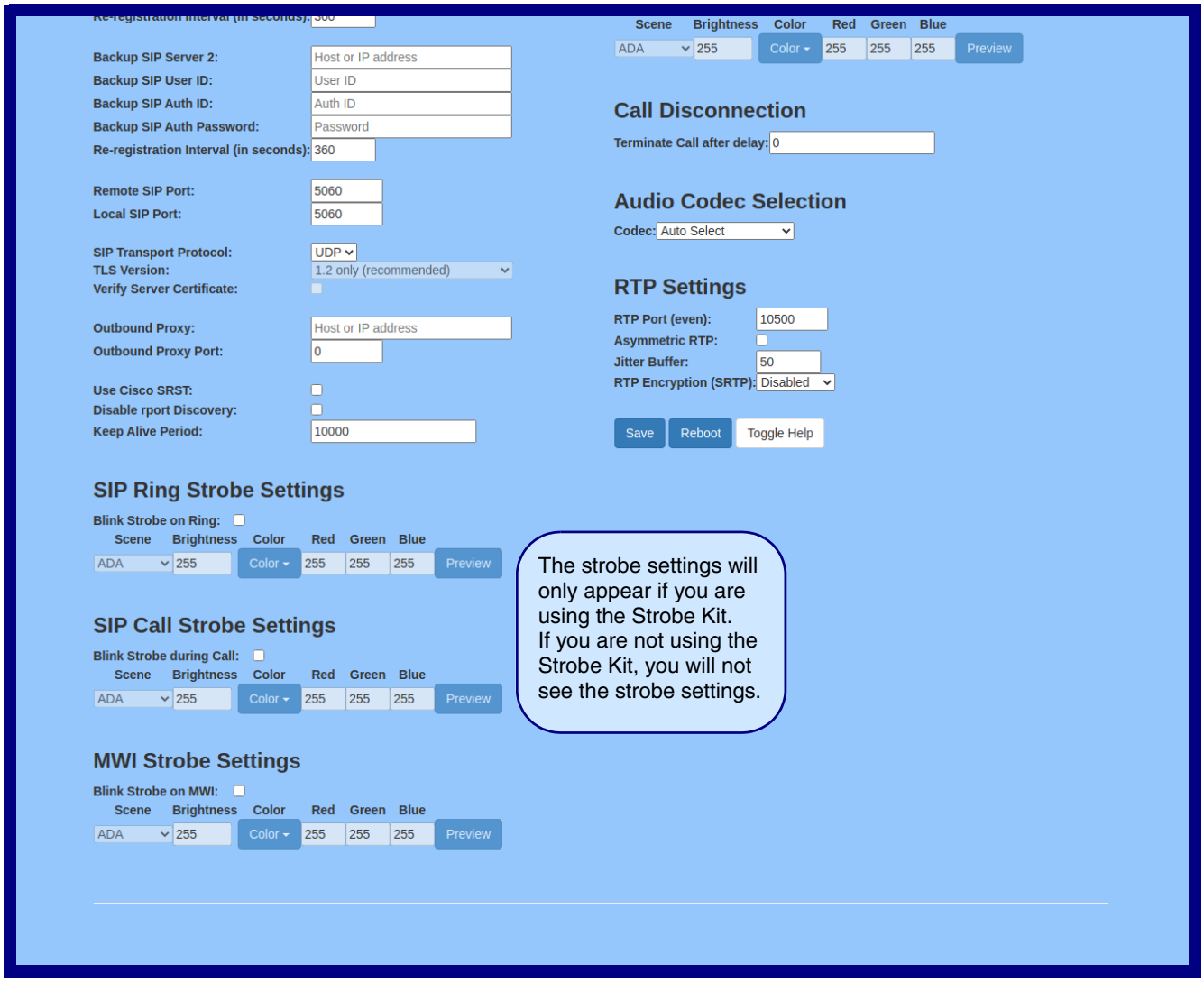


Figure 2-30. SIP Page—Bottom



2. On the **SIP** page, enter values for the parameters indicated in Table 2-12.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-12. SIP Page Parameters

Web Page Item	Description
SIP Settings	
Enable SIP Operation ?	When enabled, the device will transmit, receive, and process SIP messages according to the configured SIP settings below.
Register with a SIP Server ?	When enabled, the device will attempt to register to the configured SIP Server(s) on this page.
Buffer SIP Calls ?	Device will buffer audio and play it back after hang up. Length of the buffer varies with codec.
Primary SIP Server ?	Enter the SIP server address as an IPv4 address in dotted decimal notation or a fully qualified domain name. This parameter also becomes the host portion of the SIP-URI for the device's extension on the primary SIP server. This field can accept entries of up to 255 characters in length.
Primary SIP User ID ?	Specify the SIP User ID for the Primary SIP Server. This parameter becomes the user portion of the SIP-URI for the device's extension on the primary SIP server. Enter up to 64 alphanumeric characters.
Primary SIP Auth ID ?	Specify the Authenticate ID for the Primary SIP Server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
Primary SIP Auth Password ?	Specify the Authenticate Password for the Primary SIP Server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
Re-registration Interval (in seconds) ?	The SIP Re-registration interval (in seconds) is the SIP Registration lease time, also known as the expiry. The supported range is 30-3600 seconds. Enter up to 4 digits.
Backup SIP Server 1 ?	Enter the backup SIP server address as an IPv4 address in dotted decimal notation or a fully qualified domain name. This parameter also becomes the host portion of the SIP-URI for the device's extension on the backup SIP server. This field can accept entries of up to 255 characters in length.
Backup SIP User ID 1 ?	Specify the SIP User ID for the first backup SIP Server. This parameter becomes the user portion of the SIP-URI for the device's extension on the first backup SIP server. Enter up to 64 alphanumeric characters.
Backup SIP Auth ID 1 ?	Specify the Authenticate ID for the first backup SIP server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
Backup SIP Auth Password 1 ?	Specify the Authenticate Password for the first backup SIP server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
Re-registration Interval (in seconds) ?	The SIP Re-registration interval (in seconds) is the SIP Registration lease time, also known as the expiry. The supported range is 30-3600 seconds. Enter up to 4 digits.
Backup SIP Server 2 ?	Enter a second backup SIP server address as an IPv4 address in dotted decimal notation or a fully qualified domain name. This parameter also becomes the host portion of the SIP-URI for the device's extension on the second backup SIP server. This field can accept entries of up to 255 characters in length.
Backup SIP User ID 2 ?	Specify the SIP User ID for the second backup SIP Server. This parameter becomes the user portion of the SIP-URI for the device's extension on the second backup SIP server. Enter up to 64 alphanumeric characters.

Table 2-12. SIP Page Parameters (continued)

Web Page Item	Description
Backup SIP Auth ID 2	Specify the Authenticate ID for the second backup SIP server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
Backup SIP Auth Password 2	Specify the Authenticate Password for the second backup SIP server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
Re-registration Interval (in seconds)	The SIP Re-registration interval (in seconds) is the SIP Registration lease time, also known as the expiry. The supported range is 30-3600 seconds. Enter up to 4 digits.
Remote SIP Port	The Remote SIP Port is the port number the device will use as the destination port when sending SIP messages. The default Remote SIP Port is 5060. The supported range is 0-65536. Enter up to 5 digits.
Local SIP Port	The Local SIP Port is the port number the device will use to receive SIP messages. The default Local SIP Port is 5060. The supported range is 0-65536. Enter up to 5 digits.
SIP Transport Protocol	Choose the transport protocol for SIP signaling. This will affect all extensions, including the Nightringer. Default is UDP.
TLS Version	Choose the TLS version for SIP over TLS. Modern security standards strongly recommend using TLS 1.2.
Verify Server Certificate	When enabled, the device will verify the authenticity of the server during the TLS handshake by its certificate and common name. The TLS handshake will be aborted if the server is deemed to be inauthentic and SIP registration will not proceed.
Outbound Proxy	Enter the Outbound Proxy address as an IPv4 address in dotted decimal notation or a fully qualified domain name (FQDN). When an IP address is configured, the device will send all SIP messages to this IP address. When an FQDN is configured, the device will run DNS NAPTR, SRV, and A queries on the FQDN to resolve an IP address to which it will send all SIP messages. This field can accept entries of up to 255 characters in length.
Outbound Proxy Port	The Outbound Proxy Port is port number used as the destination port when sending SIP messages to the outbound proxy. A value of 0 will default to 5060. The supported range is 0-65536. Enter up to 5 digits.
Use Cisco SRST	When enabled, the backup servers are handled according to Cisco SRST (Survivable Remote Site Telephony). It is required for use in clustered Cisco Unified Communications Manager topologies.
Disable rport Discovery	Disabling rport Discovery will prevent the device from including the public WAN IP address and port number in the contact information that is sent to the remote SIP servers. This will generally only need to be enabled when using an SBC or SIP ALG in conjunction with a remote SIP server.
Keep Alive Period	The minimum time in milliseconds between keep-alive packets sent for nat traversal. A value of 0 will disable keep alive packets.

Table 2-12. SIP Page Parameters (continued)

Web Page Item	Description
SIP Ring Strobe Settings	**The following strobe settings will only appear if a CyberData Strobe product is connected to your device. If a CyberData Strobe product is not connected to your device, you will not see the strobe settings.**
Blink Strobe on Ring	When selected, the Strobe will blink a scene when ringing.
Scene	Select desired scene (only one may be chosen).
ADA Compliant	Strobe will blink ON at the specified brightness for 150ms then OFF for 350ms during the duration of the event.
Slow Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 3.5 seconds during the duration of the event.
Fast Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 1.5 seconds during the duration of the event.
Slow Blink	Strobe will blink ON at the specified brightness for one second then OFF for one second during the duration of the event.
Fast Blink	Strobe will blink ON at the specified brightness then OFF five times per second during the duration of the event.
Color	Select desired color (only one may be chosen).
Brightness	How bright the strobe will blink when there is a SIP Ring. This is the maximum brightness for “fade” type scenes.
Red	The red LED value for SIP Ring.
Green	The green LED value for SIP Ring.
Blue	The blue LED value for SIP Ring.
Preview	Use this button to preview the strobe flashing behavior for the **SIP Ring Strobe Settings**.
SIP Call Strobe Settings	**The following strobe settings will only appear if a CyberData Strobe product is connected to your device. If a CyberData Strobe product is not connected to your device, you will not see the strobe settings.**
Blink Strobe during Call	When selected, the Strobe will blink a scene during a call.
Scene	Select desired scene (only one may be chosen).
ADA Compliant	Strobe will blink ON at the specified brightness for 150ms then OFF for 350ms during the duration of the event.
Slow Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 3.5 seconds during the duration of the event.
Fast Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 1.5 seconds during the duration of the event.
Slow Blink	Strobe will blink ON at the specified brightness for one second then OFF for one second during the duration of the event.
Fast Blink	Strobe will blink ON at the specified brightness then OFF five times per second during the duration of the event.
Color	Select desired color (only one may be chosen).
Brightness	How bright the strobe will blink when there is a SIP Call. This is the maximum brightness for “fade” type scenes.
Red	The red LED value for SIP Call.

Table 2-12. SIP Page Parameters (continued)

Web Page Item	Description
Green	The green LED value for SIP Call.
Blue	The blue LED value for SIP Call.
Preview	Use this button to preview the strobe flashing behavior for the **SIP Call Strobe Settings**.
MWI Strobe Settings	**The following strobe settings will only appear if you are using the Strobe Kit. If you are not using the Strobe Kit, you will not see the strobe settings.**
Blink Strobe on MWI	When selected, the strobe will blink a scene when a voicemail is waiting for its extension.
Scene	Select desired scene (only one may be chosen).
ADA Compliant	Strobe will blink ON at the specified brightness for 150ms then OFF for 350ms during the duration of the event.
Slow Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 3.5 seconds during the duration of the event.
Fast Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 1.5 seconds during the duration of the event.
Slow Blink	Strobe will blink ON at the specified brightness for one second then OFF for one second during the duration of the event.
Fast Blink	Strobe will blink ON at the specified brightness then OFF five times per second during the duration of the event.
MWI Call Color	Select desired color (only one may be chosen).
Brightness	How bright the strobe will blink when there is a message waiting. This is the maximum brightness for “fade” type scenes.
Red	The red LED value for MWI.
Green	The green LED value for MWI.
Blue	The blue LED value for MWI.
Preview	Use this button to preview the strobe flashing behavior for the **MWI Strobe Settings**.
Nightringer Settings	
Enable Nightringer	When Nightringer is enabled, the device will attempt to register a second extension with the SIP server. Any calls made to this extension will play a ringtone (corresponds to **Night Ring** on the **Audiofiles** page). By design, it is not possible to answer a call to the Nightringer extension.
SIP Server	Enter the SIP server address as an IPv4 address in dotted decimal notation or a fully qualified domain name. This parameter also becomes the host portion of the SIP-URI for the device's Nightringer extension on the SIP server. This field can accept entries of up to 255 characters in length.
Remote SIP Port	The Remote SIP Port is the port number the device will use as the destination port when sending SIP messages for the Nightringer extension. The default Remote SIP Port is 5060. The supported range is 0-65536. Enter up to 5 digits.

Table 2-12. SIP Page Parameters (continued)

Web Page Item	Description
Local SIP Port	The Local SIP Port is the port number the device will use to receive SIP messages for the Nightringer extension. This value cannot be the same as the **Local SIP Port** for the primary extension. The default Local SIP Port is 5061. The supported range is 0-65536. Enter up to 5 digits.
Outbound Proxy	Enter the Outbound Proxy address as an IPv4 address in dotted decimal notation or a fully qualified domain name (FQDN). When an IP address is configured, the device will send all SIP messages to this IP address for the Nightringer extension. When an FQDN is configured, the device will run DNS NAPTR, SRV, and A queries on the FQDN to resolve an IP address to which it will send all SIP messages for the Nightringer extension. This field can accept entries of up to 255 characters in length.
Outbound Proxy Port	The Outbound Proxy Port is port number used as the destination port when sending SIP messages to the outbound proxy for the Nightringer extension. A value of 0 will default to 5060. The supported range is 0-65536. Enter up to 5 digits.
SIP User ID	Specify the SIP User ID for the SIP server. This parameter becomes the user portion of the SIP-URI for the device's Nightringer extension. Enter up to 64 alphanumeric characters.
SIP Auth ID	Specify the Authenticate ID for the SIP Server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
SIP Auth Password	Specify the Authenticate Password for the SIP Server. This parameter is required for SIP registration authentication. Enter up to 64 alphanumeric characters.
Re-registration Interval (in seconds)	The SIP Re-registration Interval (in seconds) is the SIP Registration lease time, also known as the expiry. The supported range is 30-3600 seconds. Enter up to 4 digits.
Nightringer Strobe Settings	**The following strobe settings will only appear if you are using the Strobe Kit. If you are not using the Strobe Kit, you will not see the strobe settings.**
Blink Strobe on Nightring	When selected, the Strobe will blink a scene when the Nightringer is ringing.
Scene	Select desired scene (only one may be chosen).
ADA Compliant	Strobe will blink ON at the specified brightness for 150ms then OFF for 350ms during the duration of the event.
Slow Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 3.5 seconds during the duration of the event.
Fast Fade	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 1.5 seconds during the duration of the event.
Slow Blink	Strobe will blink ON at the specified brightness for one second then OFF for one second during the duration of the event.
Fast Blink	Strobe will blink ON at the specified brightness then OFF five times per second during the duration of the event.
Color	Select desired color (only one may be chosen).
Brightness	How bright the strobe will blink when the Nightringer is ringing. This is the maximum brightness for “fade” type scenes.
Red	The red LED value for Nightringer.
Green	The green LED value for Nightringer.
Blue	The blue LED value for Nightringer.
Preview	Use this button to preview the strobe flashing behavior for the **Nightringer Strobe Settings**.

Table 2-12. SIP Page Parameters (continued)

Web Page Item	Description
Call Disconnection	
Terminate Call After Delay	Automatically terminate an active call after a given delay in seconds. A value of 0 will disable this function. Enter up to 8 digits.
Audio Codec Selection	
Codec	Select desired codec (only one may be chosen).
RTP Settings	
RTP Port (even)	Specify the port number used for the RTP stream after establishing a SIP call. This port number must be an even number and defaults to 10500. The supported range is 0-65536. Enter up to 5 digits.
Asymmetric RTP	Specify if the remote endpoint will send and receive RTP packets on different ports. If set to false, the device will track the address/port that is sending RTP packets during a SIP call. If the address/port changes mid-stream, the device will disregard the SDP and send all further RTP packets to this new address. If set to true, this device will ignore the sending address/port and send RTP as specified in the SDP. Warning! Enabling asymmetric RTP can cause the RTP stream to be lost. Most installations should not enable asymmetric RTP.
Jitter Buffer	Specify the size of the jitter buffer (in milliseconds) used for SIP calls. Valid values are 50-1000.
RTP Encryption (SRTP)	When enabled, a SIP call's audio streams are encrypted using SRTP.
Call Disconnection	
Terminate Call After Delay	Automatically terminate an active call after a given delay in seconds. A value of 0 will disable this function. Enter up to 8 digits.
Codec Selection	
Force Selected Codec	When configured, this option will allow you to force the device to negotiate for the selected codec. Otherwise, the device will perform codec negotiation using the default list of supported codecs.
Codec	Select the desired codec (only one may be chosen).
Save	Click the **Save** button to save your configuration settings.
Reboot	Click on the **Reboot** button to reboot the system.
Toggle Help	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark ( ) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.

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

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

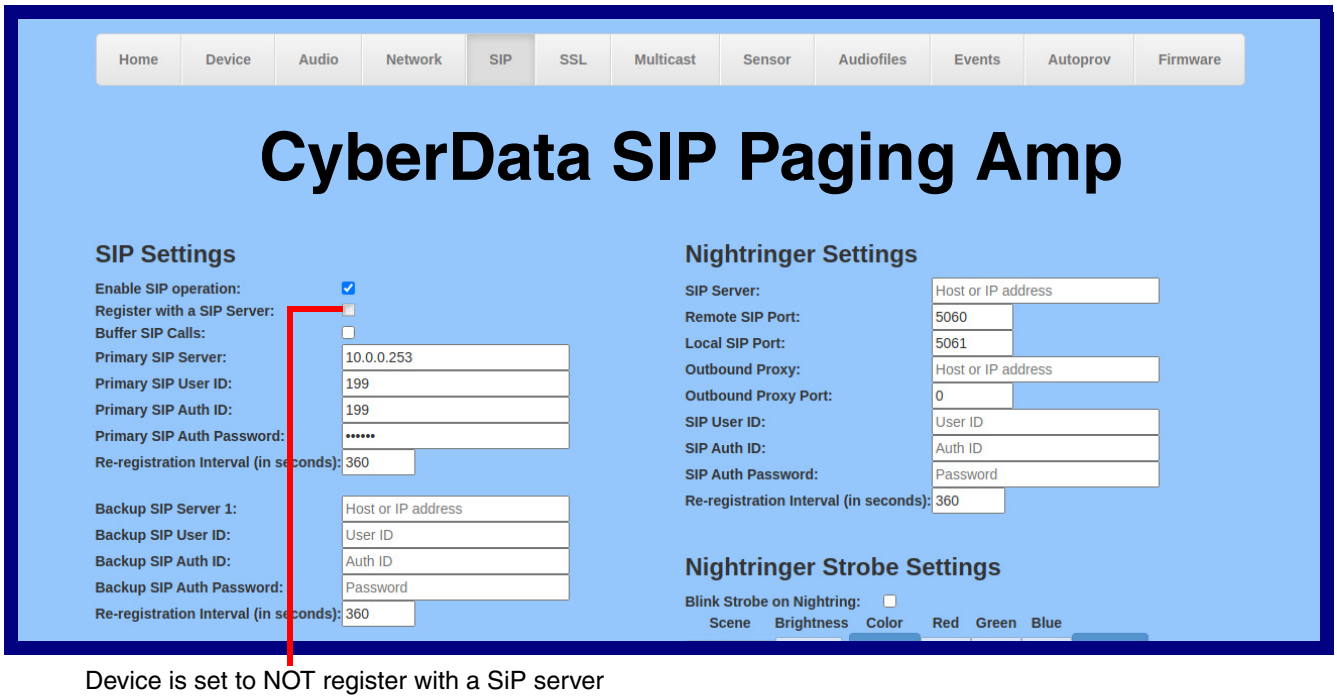
Note The maximum number of total characters in the dial-out field is 64.

2.3.8.1 Point-to-Point Configuration

When the device is set to not register with a SIP server (see Figure 2-31), it is possible for the speaker to receive Point-to-Point calls by setting the dial out extension to the IP address of the remote device. The delayed DTMF functionality is available in Point-to-Point Mode.

Note Receiving point-to-point SiP calls may not work with all phones.

Figure 2-31. SIP Page Set to Point-to-Point Mode



Device is set to NOT register with a SiP server

2.3.8.2 Delayed DTMF

On the **SIP Configuration** page the dial out extension supports the addition of comma delimited pauses and sending additional DTMF tones (using rfc2833). The first comma will pause three seconds after a call is first established with a remote device. Subsequent commas will pause for 2 seconds. A pause of one second will be sent after each numerical digit.

Table 2-13. Examples of Dial-Out Extension Strings

Extension String	Resulting Action
302	Dial out extension 302 and establish a call
302,2	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2'
302,25,,,4,,1	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2', send out DTMF tone 5, wait 6 seconds, send out DTMF tone 4, wait 4 seconds, send out DTMF tone 1

Note The maximum number of total characters in the dial-out field is 25.

2.3.9 Configure the SSL Parameters

1. Click **SSL** menu button to open the **SSL** page (Figure 2-32 and Figure 2-33).

Figure 2-32. SSL Configuration Page

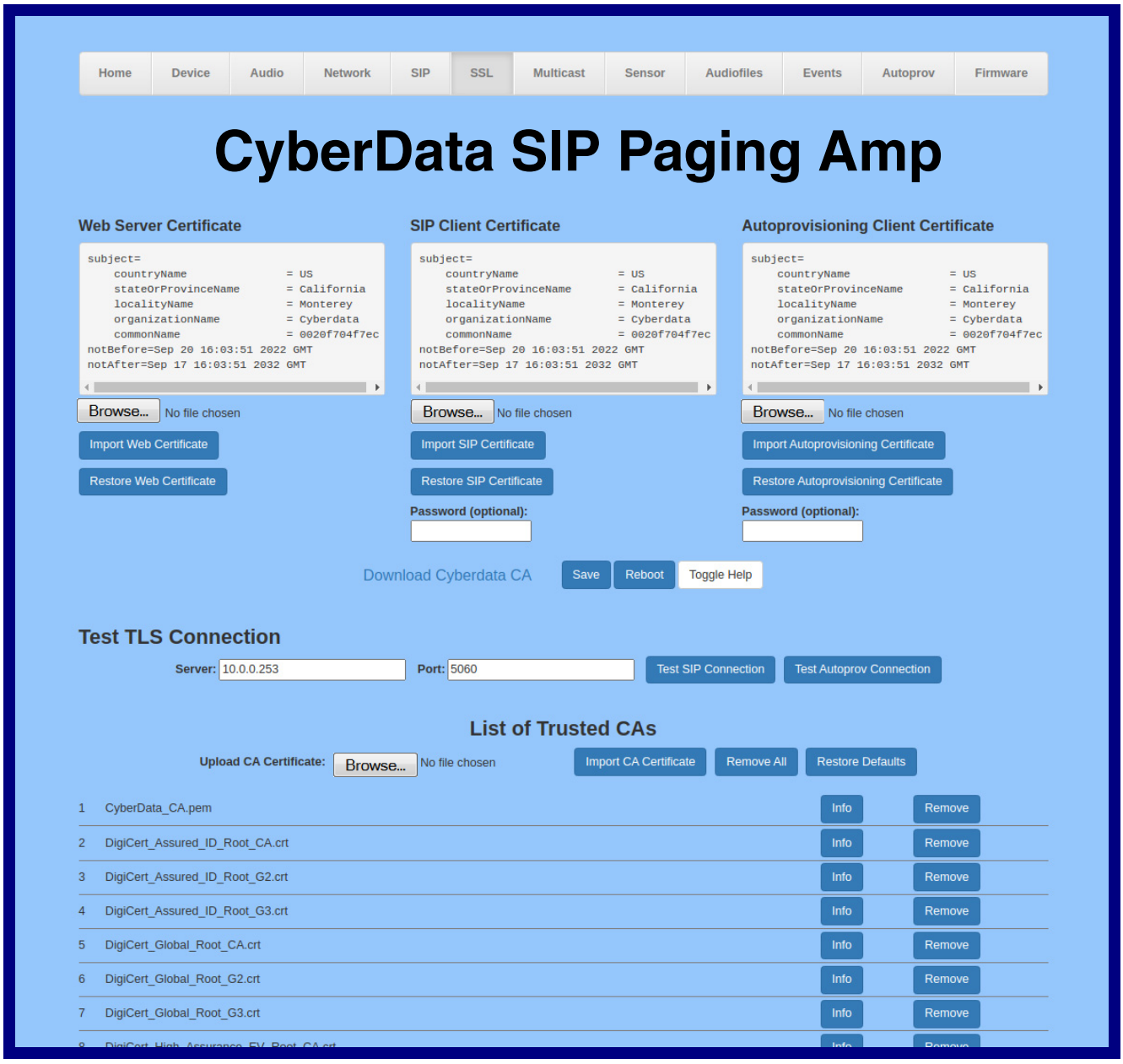
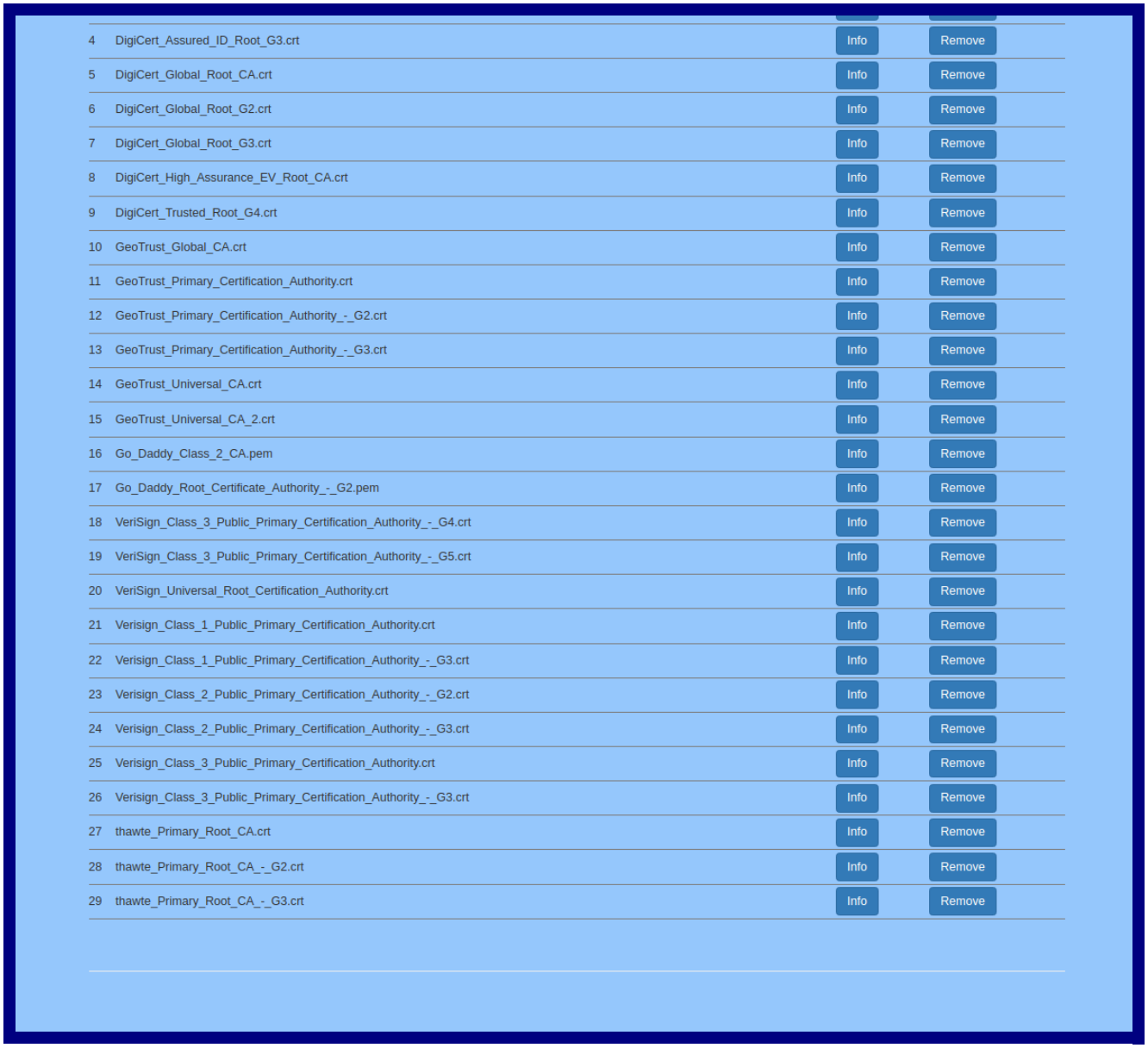


Figure 2-33. SSL Configuration Page



2. On the **SSL** page, enter values for the parameters indicated in Table 2-14.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-14. SSL Configuration Parameters

Web Page Item	Description
Web Server Certificate	Certificate used by the web server.
Browse...	Click **Browse** to select a certificate to import.
Import Web Certificate	After selecting a certificate, click **Import Web Certificate** to import it as the certificate used by this device's web server.
Restore Web Certificate	Restore the device's default web server certificate. This will remove the user-uploaded Web Server Certificate.(Server CAs and Trusted CAs are unaffected).
SIP Client Certificate	When doing mutual authentication this device will present a client certificate with these parameters.
Browse...	Click **Browse** to select a certificate to import.
Import SIP Certificate	After selecting a certificate, click **Import SIP Certificate** to import it as the certificate used by the device during SIP transactions.
Restore SIP Certificate	Restore the device's default sip client certificate. This will remove any user-uploaded sip client certificates (Server CAs and Trusted CAs are unaffected).
Password (optional) ?	Enter the optional password for the SIP certificate's private key. **Note**: When using a password, it must be entered and saved before importing the certificate.
Autoprovisioning Client Certificate	When doing mutual authentication this device will present a client certificate with these parameters.
Browse...	Click **Browse** to select a certificate to import.
Import Autoprovisioning Certificate	After selecting a certificate, click **Import Autoprovisioning Certificate** to import it as this device's certificate. This certificate will be used when requesting files during autoprovisioning.
Restore Autoprovisioning Certificate	Restore the device's default autoprovisioning certificate. This will remove any user-uploaded autoprovisioning certificates. (Server CAs and Trusted CAs are unaffected).
Password (optional) ?	Enter the optional password for the Autoprovisioning certificate's private key. **Note**: When using a password, it must be entered and saved before importing the certificate.
Download Cyberdata CA ?	Right click and **Save Link As...** to get the Cyberdata CA used to sign this client certificate.
Save	Click the **Save** button to save your configuration settings.

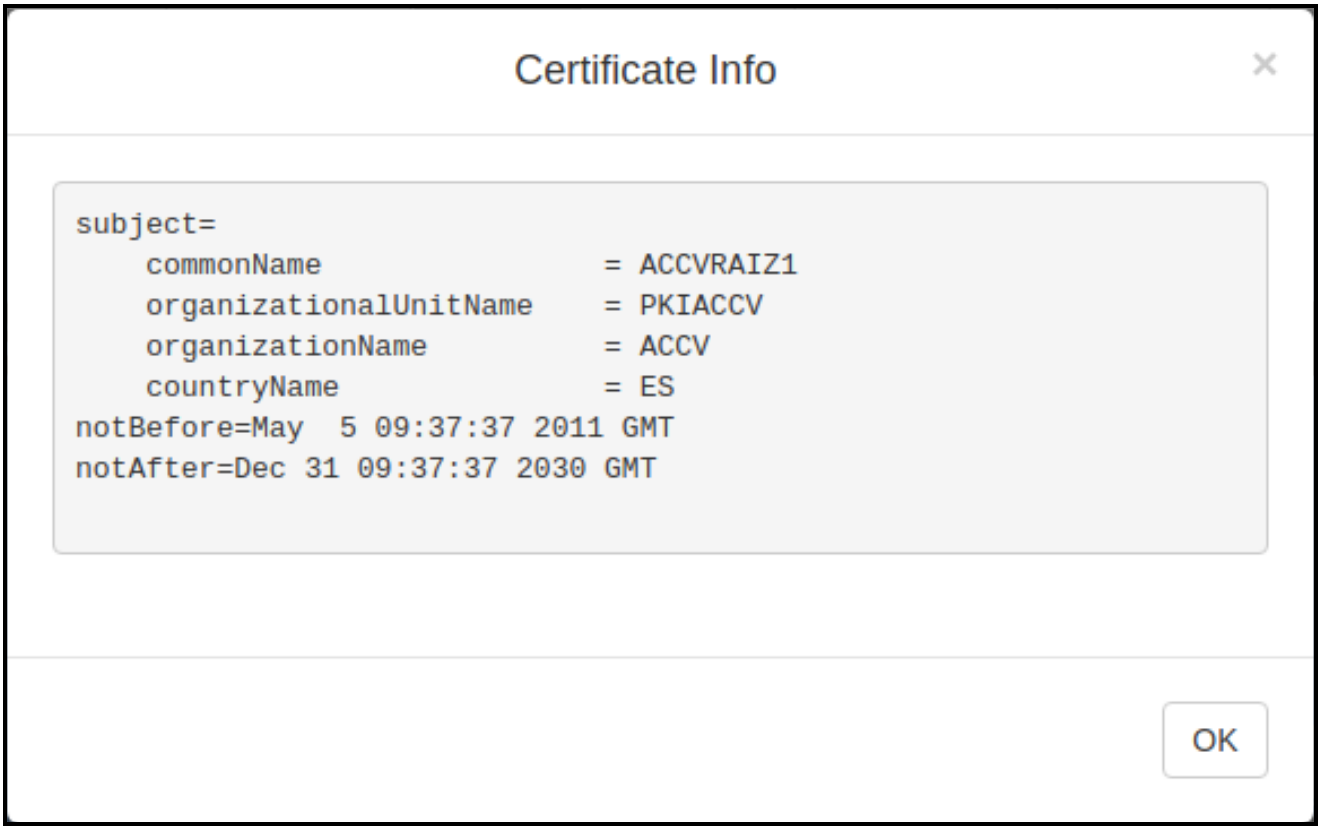
Table 2-14. SSL Configuration Parameters (continued)

Web Page Item	Description
Reboot	Click on the **Reboot** button to reboot the system.
Toggle Help	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark (?) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.
Test TLS Connection	
Server ?	The ssl test server address as a fully qualified domain name or in IPv4 dotted decimal notation.
Port ?	The supported range is 0-65536. SIP connections over TLS to port 5060 are modified to connect to port 5061. This test button will do the same.
Test SIP Connection	Use this button to test a TLS connection to a remote server using the sip client key and password. This will attempt to make a socket connection to the configured test server and port and report the success or failure. This can be used to debug TLS connection issues separate from SIP registration issues.
Test Autoprov Connection	Use this button to test a TLS connection to a remote server using the autoprovisioning client key and password. This will attempt to make a socket connection to the configured test server and port and report the success or failure. This can be used to debug TLS connection issues with secure autoprovisioning.
List of Trusted CAs	
Browse...	Use this button to select a configuration file to import.
Upload CA Certificate ?	
Import CA Certificate	Click **Browse** to select a CA certificate to import. After selecting a server certificate authority (CA), click **Import CA Certificate** to import it to the list of trusted CAs. CAs are used to validate the certificate presented by the server when establishing a TLS connection.
Restore Defaults	**Restore Defaults** will restore the default list of registered CAs and **Remove All** will remove all registered CAs.
Remove All	**Restore Defaults** will restore the default list of registered CAs and **Remove All** will remove all registered CAs.
Info	Provides details of the certificate. After clicking on this button, the **Certificate Info Window** appears. See Section 2.3.9.1, "Certificate Info Window".
Remove	Removes this certificate from the list of trusted certificates. After clicking on this button, the **Remove Server Certificate Window** appears. See Section 2.3.9.2, "Remove Server Certificate Window".

2.3.9.1 Certificate Info Window

The **Certificate Info Window** provides details of the certificate. This window appears after clicking on the **Info** button. See Figure 2-34.

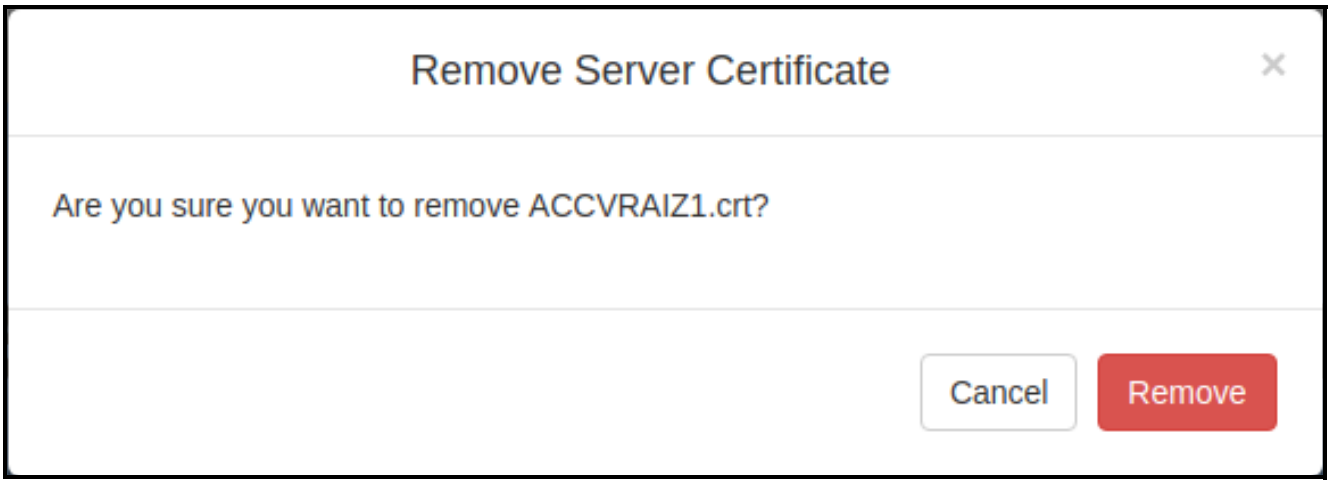
Figure 2-34. Certificate Info Window



2.3.9.2 Remove Server Certificate Window

The **Remove Server Certificate Window** will ask if the user wants to remove a certificate from the list of trusted certificates. This window appears after clicking on the **Remove** button. See Figure 2-35.

Figure 2-35. Remove Server Certificate Window



2.3.10 Configure the Multicast Parameters

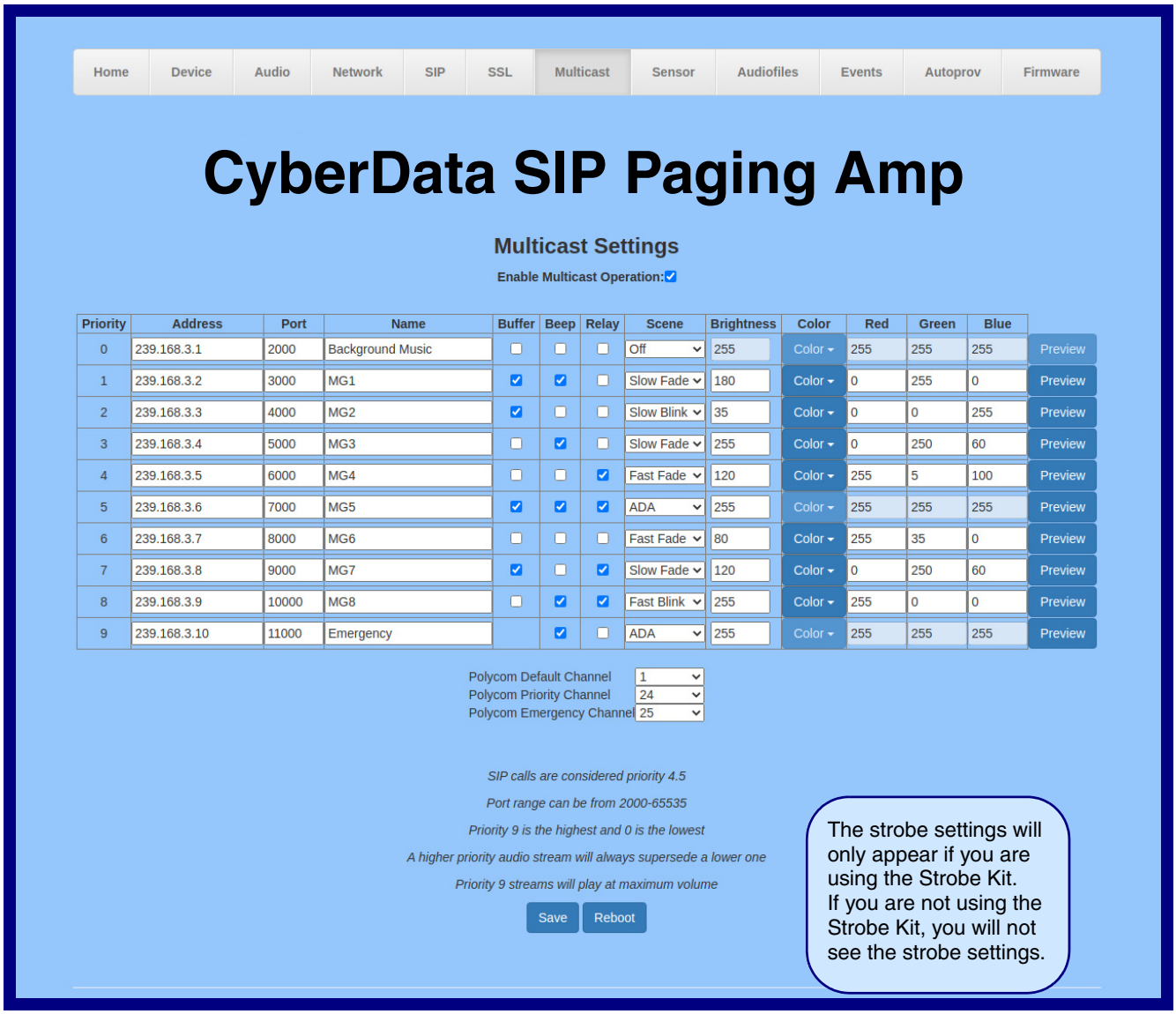
The **Multicast** page allows the device to join up to ten paging zones for receiving ulaw/alaw encoded RTP audio streams.

A paging zone can consist of one or many CyberData multicast group-enabled products. There is no limit to how many speakers 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.

1. Click on the **Multicast** menu button to open the **Multicast** page. See Figure 2-36.

Figure 2-36. Multicast Page



2. On the **Multicast** page, enter values for the parameters indicated in Table 2-15.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-15. Multicast Page Parameters

Web Page Item	Description
Enable Multicast Operation	Enables or disables multicast operation.
Priority	Indicates the priority for the multicast group. Priority **9** is the highest (emergency streams). **0** is the lowest (background music). SIP calls are considered priority **4.5**. See Section 2.3.10.1, "Assigning Priority" for more details.
Address	Enter the multicast IP Address for this multicast group (15 character limit).
Port	Enter the port number for this multicast group (5 character limit [range can be from 2000 to 65535]). **Note**: The multicast ports have to be even values. The webpage will enforce this restriction.
Name	Assign a descriptive name for this multicast group (25 character limit).
Buffer	Device will buffer up to four minutes of audio and then play back the recording after the multicast stream finishes or after the buffer is full.
Beep	When selected, the device will play a beep before multicast audio is sent.
Relay	When selected, the device will activate a relay before multicast audio is sent.
Scene ?	Select desired scene (only one may be chosen). **Note: The strobe settings will only appear if you are using the Strobe Kit. If you are not using the Strobe Kit, you will not see the strobe settings.**
ADA Compliant ?	Strobe will blink ON at the specified brightness for 150ms then OFF for 350ms during the duration of the event.
Slow Fade ?	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 3.5 seconds during the duration of the event.
Fast Fade ?	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 1.5 seconds during the duration of the event.
Slow Blink ?	Strobe will blink ON at the specified brightness for one second then OFF for one second during the duration of the event.
Fast Blink ?	Strobe will blink ON at the specified brightness then OFF five times per second during the duration of the event.
Brightness ?	How bright the strobe will blink on a multicast page. This is the maximum brightness for “fade” type scenes.
Color ▾	Select desired color (only one may be chosen).
Red ?	The red LED value for Multicast.
Green ?	The green LED value for Multicast.
Blue ?	The blue LED value for Multicast.
Preview	Use this button to preview the strobe flashing behavior for the **Multicast Strobe Settings**.

Table 2-15. Multicast Page Parameters (continued)

Web Page Item	Description
Polycom Default Channel	When a default Polycom channel/group number is selected, the device will subscribe to the default channel for one-way group pages. Group Numbers 1-25 are supported. Or, select **Disabled** to disable this channel.
Polycom Priority Channel	When a priority Polycom channel/group number is selected, the device will subscribe to the priority channel for one-way group pages. Group Numbers 1-25 are supported. Or, select **Disabled** to disable this channel.
Polycom Emergency Channel	When an emergency Polycom channel/group number is selected, the device will subscribe to the default channel for one-way group pages. Group Numbers 1-25 are supported. Or, select **Disabled** to disable this channel.
Save	Click the **Save** button to save your configuration settings.
Reboot	Click on the **Reboot** button to reboot the system.

2.3.10.1 Assigning Priority

The device will prioritize simultaneous audio streams according to their priority in the list.

If both SIP and Multicast is enabled, SIP audio streams are considered priority **4.5**. SIP audio will interrupt multicast streams with priority **0** through **4** and will be interrupted by multicast streams with priority **5** through **9**.

During priority **9** multicast streams, the volume is set to maximum.

Note SIP calls, multicast streams, ring tones, ringback tones, and nightring tones are all prioritized.

Ringtones and Nightringtones

Ringtones all play at the same priority level. This means that it is possible to have a nightring tone and a normal ringtone playing at the same time.

2.3.11 Configure the Sensor Page Parameters

The door sensor (pins 3 and 4) on the terminal block can be used to monitor a door's open or closed state. There is an option on the **Sensor Page** to trigger on an open or short condition on these pins. The door sensor alarm will be activated when the **Sensor Timeout (seconds)** parameter has been met.

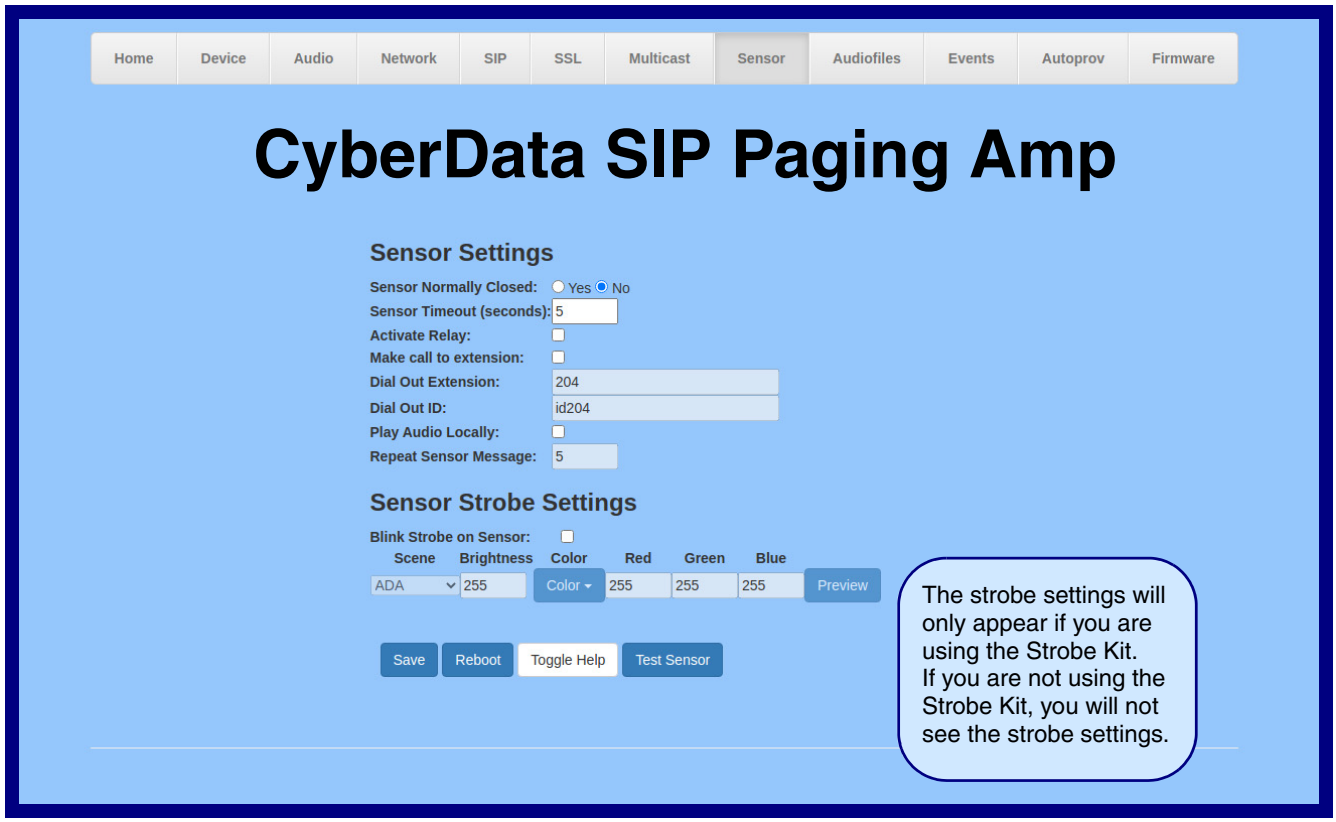
Each sensor can trigger up to three different actions:

- Activate the relay until the sensor is deactivated
- Loop an audio file out of the speaker until the sensor is deactivated
- Call an extension and play a pre-recorded audio file

Note Calling a preset extension can be set up as a point-to-point call, but currently can't send delayed DTMF tones.

1. Click **Sensor** menu button to open the **Sensor Page** (Figure 2-37).

Figure 2-37. Sensor Page



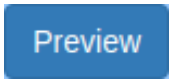
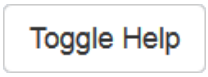
2. On the **Sensor** page, enter values for the parameters indicated in Table 2-16.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-16. Sensor Page Parameters

Web Page Item	Description
Sensor Settings	
Sensor Normally Closed ?	Select the inactive state of the sensor. The sensor is also known as the Sense Input on the device's terminal block.
Sensor Timeout (seconds) ?	The time (in seconds) the device will wait before it performs an action when the on-board door sensor is activated. The action(s) performed are based on the configured Sensor Settings below. Enter up to 5 digits.
Activate Relay ?	When selected, the device's on-board relay will be activated until the on-board sensor is deactivated.
Make call to extension ?	When selected, the device will call an extension when the on-board door sensor is activated. Use the **Dial Out Extension** field below to specify the extension the device will call.
Dial Out Extension ?	Specify the extension the device will call when the on-board sensor is activated. Enter up to 64 alphanumeric characters.
Dial Out ID ?	An additional Caller identification string added to outbound calls. Enter up to 64 alphanumeric characters.
Play Audio Locally ?	When selected, the device will loop an audio file out of the speaker until the sensor is deactivated.
Repeat Sensor Message ?	The number of times to repeat the audio message through the local speaker or to the remote endpoint. A value of 0 will repeat the message while the sensor is active. Enter a value from 0-65536.
Sensor Strobe Settings	
Blink Strobe on Sensor ?	When selected, the Strobe will blink a scene when the sensor is triggered.
Scene ?	Select desired scene (only one may be chosen).
ADA Compliant ?	Strobe will blink ON at the specified brightness for 150ms then OFF for 350ms during the duration of the event.
Slow Fade ?	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 3.5 seconds during the duration of the event.
Fast Fade ?	Strobe will increase in brightness from 0 to the specified brightness and back to 0 over the course of about 1.5 seconds during the duration of the event.
Slow Blink ?	Strobe will blink ON at the specified brightness for one second then OFF for one second during the duration of the event.
Fast Blink ?	Strobe will blink ON at the specified brightness then OFF five times per second during the duration of the event.
Brightness ?	How bright the strobe will blink when the sensor is triggered. This is the maximum brightness for “fade” type scenes.

Table 2-16. Sensor Page Parameters (continued)

Web Page Item	Description
	Select desired color (only one may be chosen).
Red	The red LED value for Sensor.
Green	The green LED value for Sensor.
Blue	The blue LED value for Sensor.
	Use this button to preview the strobe flashing behavior for the **Sensor Strobe Settings**.
	Click the **Save** button to save your configuration settings. **Note**: You need to reboot for changes to take effect.
	Click on the **Reboot** button to reboot the system.
	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark ( ) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.
	Click the **Test Sensor** button to test the sensor.

2.3.12 Configure the Audiofiles Page Parameters

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.

1. Click on the **Audiofiles** menu button to open the **Audiofiles** page (Figure 2-38).

Figure 2-38. Audiofiles Page

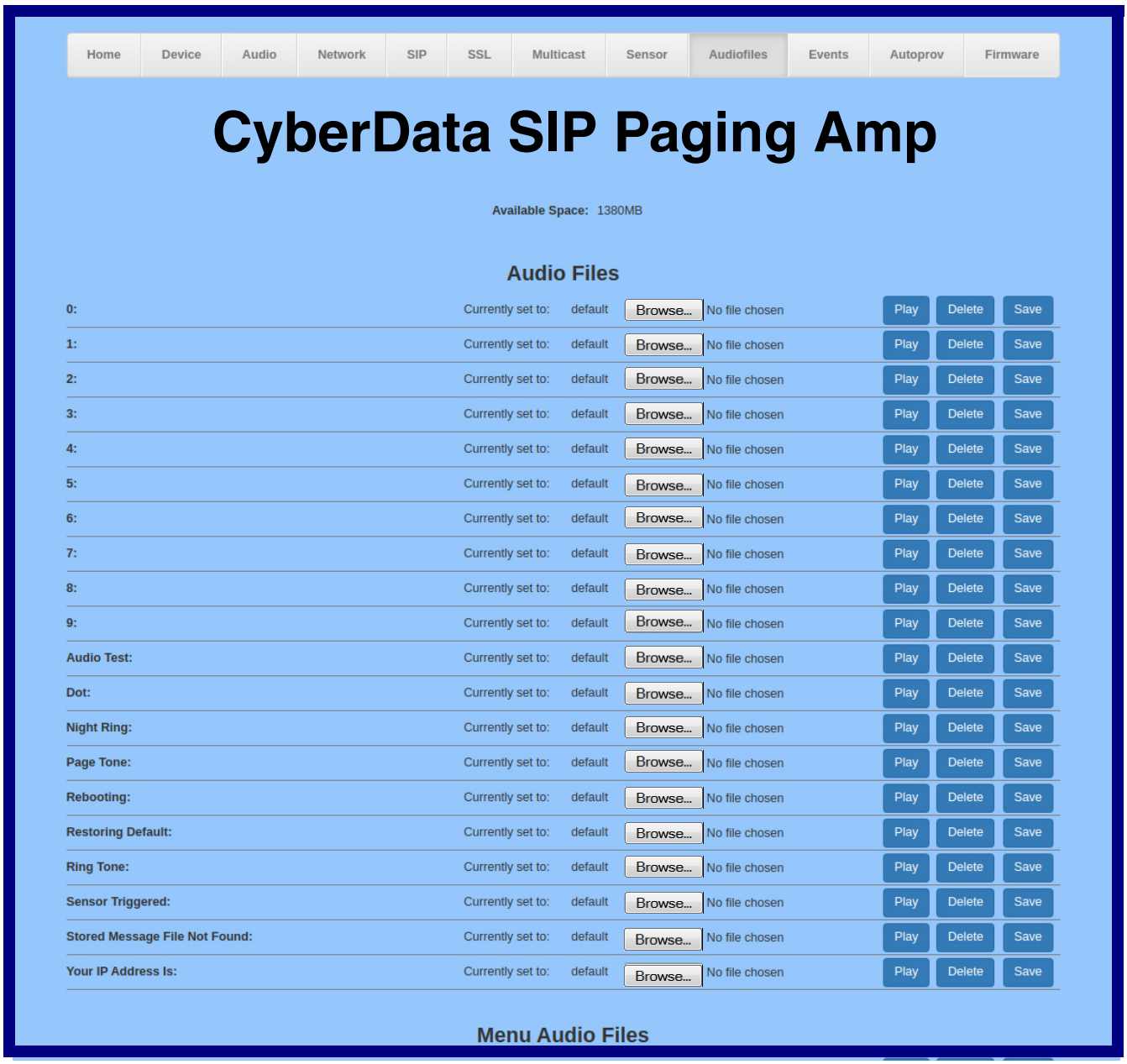


Figure 2-39. Audiofiles Page

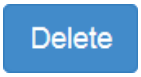
2. On the **Audiofiles** page, enter values for the parameters indicated in Table 2-17.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-17. Audiofiles Page Parameters

Web Page Item	Description
Available Space	Shows the space available for the user to save custom audio files.
Audio Files	
0-9	The name of the audio configuration option is the same as the spoken audio that plays on the board (24 character limit). '0' corresponds to the spoken word “zero.” '1' corresponds to the spoken word “one.” '2' corresponds to the spoken word “two.” '3' corresponds to the spoken word “three.” '4' corresponds to the spoken word “four.” '5' corresponds to the spoken word “five.” '6' corresponds to the spoken word “six.” '7' corresponds to the spoken word “seven.” '8' corresponds to the spoken word “eight.” '9' corresponds to the spoken word “nine.”
Audio Test	Corresponds to the message “This is the CyberData IP speaker test message...” (24 character limit).
Dot	Corresponds to the spoken word “dot.” (24 character limit).
Night Ring	Specifies the ringtone for nightring. By default this parameter uses the same audio file that is selected for the **Ring Tone** parameter.
Page Tone	Corresponds to a simple tone that is unused by default (24 character limit).
Rebooting	Corresponds to the spoken word “Rebooting” (24 character limit).
Restoring Default	Corresponds to the message “Restoring default” (24 character limit).
Ring Tone	Specifies the Ring Tone.
Sensor Triggered	Corresponds to the message “Sensor Triggered.” (24 character limit).
Stored Message File Not Found	Corresponds to the message “Stored Message File Not Found.”
Your IP Address is	Corresponds to the message “Your IP address is...” (24 character limit).
Menu Audio Files	**Menu Audio Files** are user-uploadable messages that create the audio menu played to the caller.
Cancel	Corresponds to the word "Cancel" used in the audio menu played to the caller. (24 character limit).
Currently Playing	Corresponds to the words "Currently Playing" used in the audio menu played to the caller. (24 character limit).
Invalid Entry	Corresponds to the words "Invalid Entry" used in the audio menu played to the caller. (24 character limit).
Page	Corresponds to the word "Page" used in the audio menu played to the caller. (24 character limit).

Table 2-17. Audiofiles Page Parameters (continued)

Web Page Item	Description
Play Stored Message	Corresponds to the words "Play Stored Message" used in the audio menu played to the caller. (24 character limit).
Pound (#)	Corresponds to whatever word or phrase the user wishes to call the pound key in the audio menu played to the caller (24 character limit).
Press	Corresponds to the word "Press" used in the audio menu played to the caller. (24 character limit).
Stored Message	Corresponds to the words "Stored Message" used in the audio menu played to the caller. (24 character limit).
Through	Corresponds to the word "Through" used in the audio menu played to the caller. (24 character limit).
To	Corresponds to the word "To" used in the audio menu played to the caller. (24 character limit).
Enter Security Code Followed by Pound (#) key	Corresponds to the words "Enter Security Code Followed by Pound (#) key" used in the audio menu played to the caller. (24 character limit).
Stored Messages	
Stored Message 1 through 9	**Stored Message 1** corresponds to the message played after pressing **1** on a phone keypad. **Stored Message 2** corresponds to the message played after pressing **2** on a phone keypad. **Stored Message 3** corresponds to the message played after pressing **3** on a phone keypad. **Stored Message 4** corresponds to the message played after pressing **4** on a phone keypad. **Stored Message 5** corresponds to the message played after pressing **5** on a phone keypad. **Stored Message 6** corresponds to the message played after pressing **6** on a phone keypad. **Stored Message 7** corresponds to the message played after pressing **7** on a phone keypad. **Stored Message 8** corresponds to the message played after pressing **8** on a phone keypad. **Stored Message 9** corresponds to the message played after pressing **9** on a phone keypad.
	Click on the **Browse** button to navigate to and select an audio file.
	The **Play** button will play that audio file.
	The **Delete** button will delete any user uploaded audio and restore the stock audio file.
	The **Save** button will download a new user audio file to the board once you've selected the file by using the **Browse** button. The **Save** button will delete any pre-existing user-uploaded audio files.

2.3.12.1 User-created Audio Files

User created audio files should be saved in the following format:

RIFF (little-endian) data, WAVE audio, Microsoft PCM, 16 bit, mono 8000 Hz

You can use the free utility *Audacity* to convert audio files into this format. See Figure 2-40 through Figure 2-42.

Figure 2-40. Audacity 1

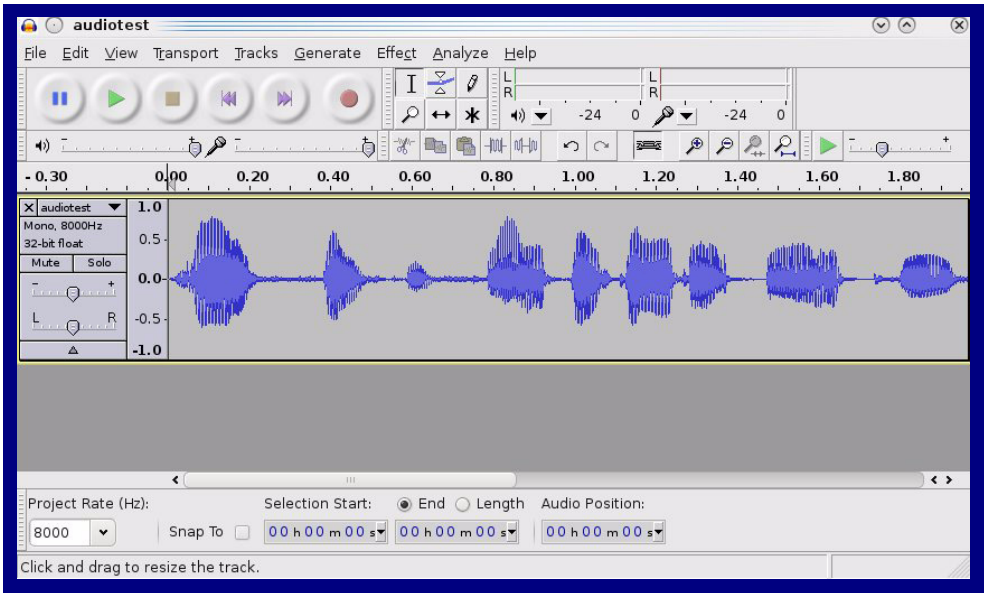
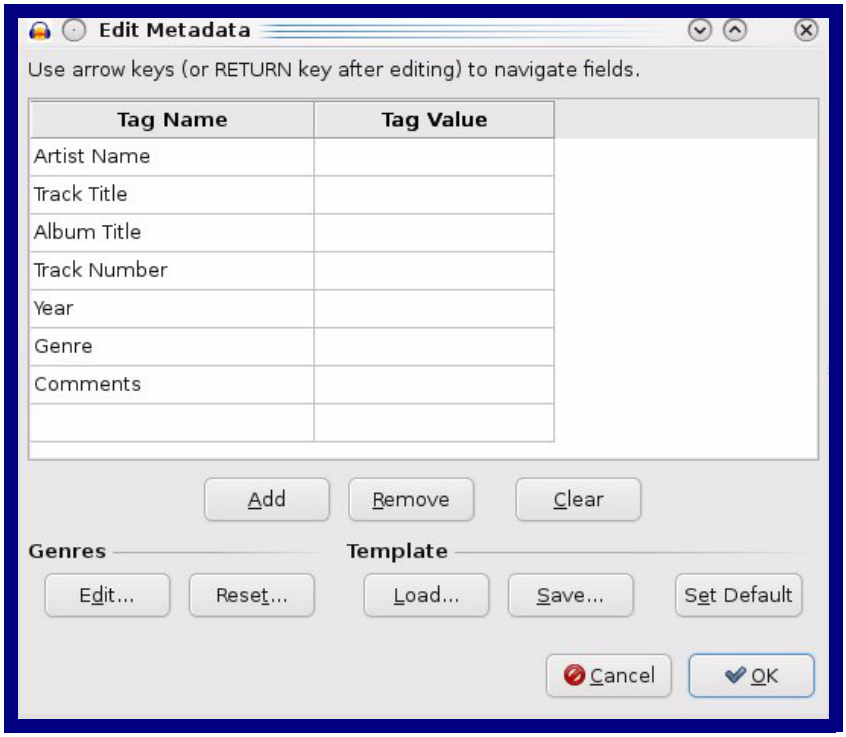


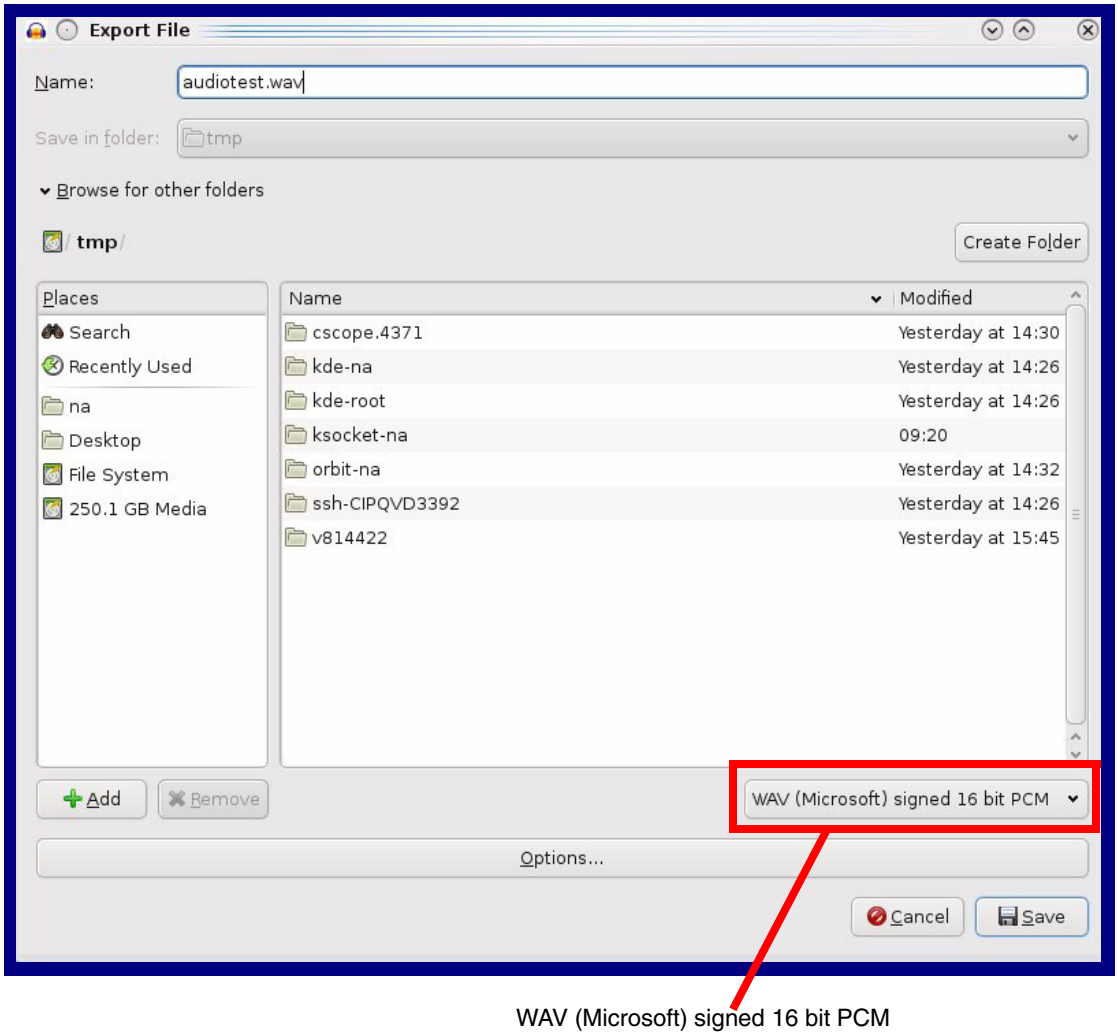
Figure 2-41. Audacity 2



When you export an audio file with Audacity, save the output as:

- **WAV (Microsoft) signed 16 bit PCM**.

Figure 2-42. WAV (Microsoft) signed 16 bit PCM

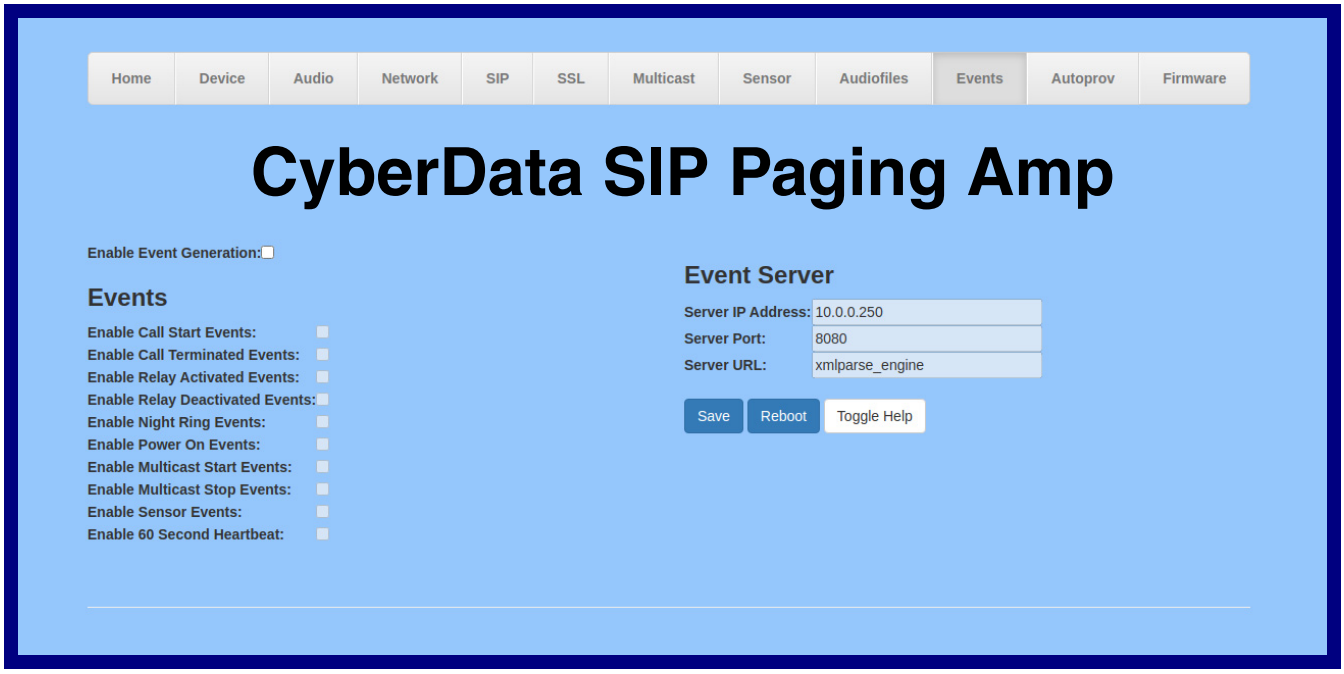


2.3.13 Configure the Events Parameters

The **Events** page specifies a remote server that can be used to receive HTTP POST events when actions take place on the board.

1. Click on the **Events** menu button to open the **Events** page (Figure 2-43).

Figure 2-43. Event Page



2. On the **Events** page, enter values for the parameters indicated in Table 2-18.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-18. Events Page Parameters

Web Page Item	Description
Enable Event Generation ?	The device will send HTTP POST events to the specified remote server and port number whenever a certain action takes place. Select an event type below to generate an HTTP POST event.
Events	
Enable Call Start Events ?	When selected, the device will report the start of a SIP call.
Enable Call Terminated Events ?	When selected, the device will report the end of a SIP call.
Enable Relay Activated Events ?	When selected, the device will report relay activation.
Enable Relay Deactivated Events ?	When selected, the device will report relay deactivation.
Enable Night Ring Events ?	When selected, the device will report when it starts ringing upon an incoming SIP call to the Nightringer extension. As a reminder, the Nightringer extension always rings upon an incoming SIP call and it is not possible to alter this behavior.
Enable Power On Events ?	When selected, the device will report when it boots.
Enable Multicast Start Events ?	When selected, the device will report when the device starts playing a multicast audio stream.
Enable Multicast Stop Events ?	When selected, the device will report when the device stops playing a multicast audio stream.
Enable Sensor Events ?	When selected, the device will report when the on-board sensor is activated.
Enable 60 Second Heartbeat Events ?	When enabled, the device will report a Heartbeat event every 60 seconds. SIP registration is not required to generate Heartbeat events.
Event Server	
Server IP Address ?	The IPv4 address of the event server in dotted decimal notation.
Server Port ?	Specify the event server port number. The supported range is 0-65536. Enter up to 5 digits.
Server URL ?	Generally, the destination URL is the name of the application that receives the events and the string in the HTTP POST command. It can be a script used to parse and process the HTTP POST events. Enter up to 127 characters.
Save	Click the **Save** button to save your configuration settings.
Reboot	Click on the **Reboot** button to reboot the system.
Toggle Help	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark (?) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.

2.3.13.1 Example Packets for Events

The server and port are used to point to the listening server and the 'Remote Event Server URL' is the destination URL (typically the script running on the remote server that's used to parse and process the POST events).

Note The XML is URL-encoded before transmission so the following examples are not completely accurate.

Here are example packets for every event:

```
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 197
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>POWERON</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 199
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>HEARTBEAT</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 196
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>BUTTON</event>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 201
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>CALL_ACTIVE</event>
</cyberdata>
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
```

```
User-Agent: CyberData/1.0.0
Content-Length: 205
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>CALL_TERMINATED</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 197
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>RINGING</event>
</cyberdata>


POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>MULTICAST_START</event>
<index>8</index>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 233
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>MULTICAST_STOP</event>
<index>8</index>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded
<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>RELAY_ACTIVATED</event>
</cyberdata>
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
```

```
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded
<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>RELAY_DEACTIVATED</event>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded
<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData Device' MAC='0020f70015b6'>
<event>NIGHTRINGING</event>
</cyberdata>
```

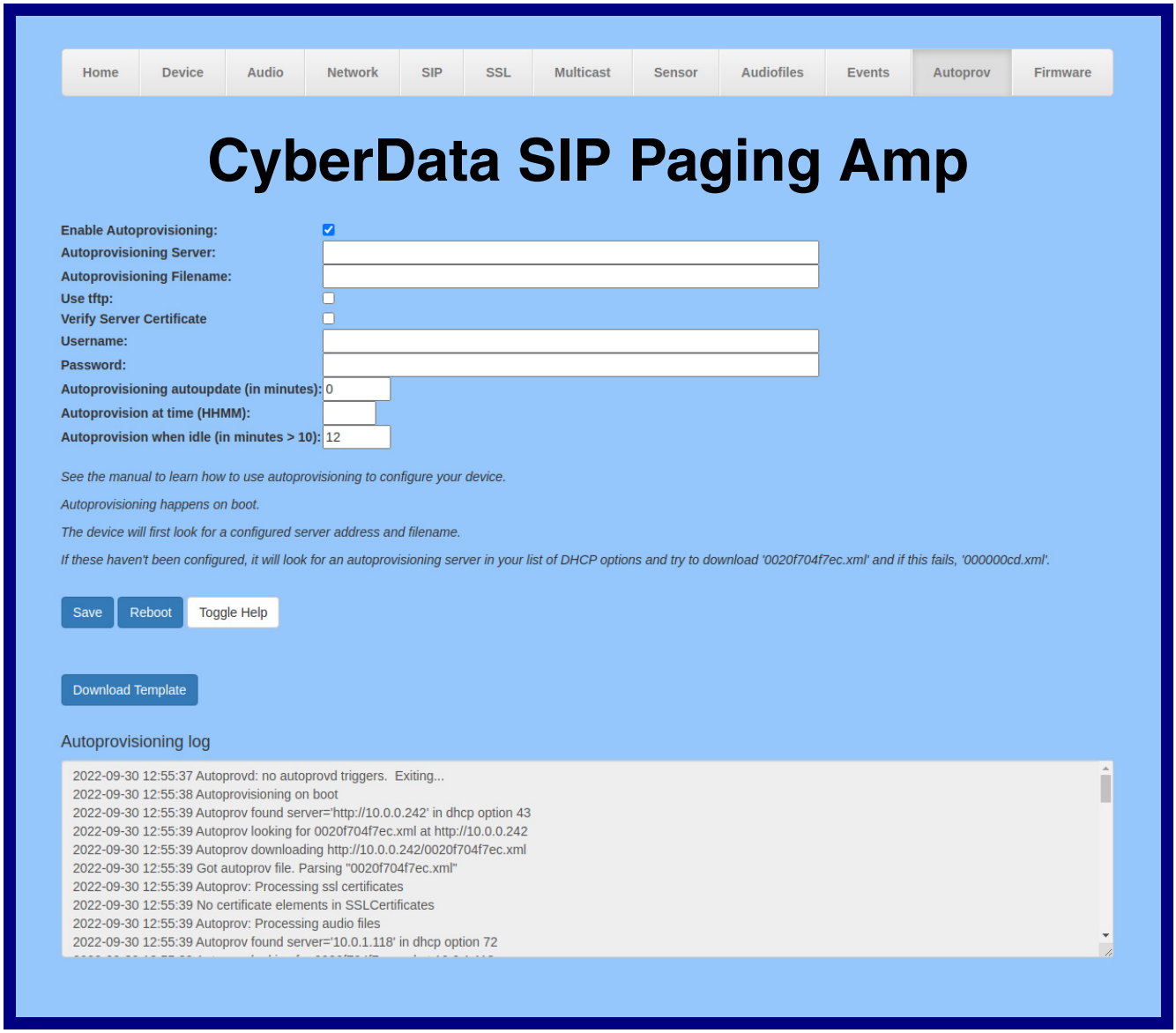
2.3.14 Configure the Autoprovisioning Parameters

Autoprovisioning can be used to automatically configure your device. The autoprovisioning file is an xml file with the device configuration. Values found in this file will override values stored in on-board memory.

Note By default, the device will try to set up its configuration with autoprovisioning.

1. Click the **Autoprov** menu button to open the **Autoprovisioning** page. See Figure 2-44.

Figure 2-44. Autoprovisioning Page



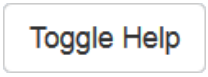
2. On the **Autoprovisioning** page, you may enter values for the parameters indicated in Table 2-19.

Note The question mark icon (?) in the following table shows which web page items will be defined after the **Toggle Help** button is pressed.

Table 2-19. Autoprovisioning Page Parameters

Web Page Item	Description
Enable Autoprovisioning ?	The device will automatically fetch a configuration file, also known as the 'autoprovisioning file', based on the configured settings below.
Autoprovisioning Server ?	Enter the IPv4 address of the provisioning server in dotted decimal notation.
Autoprovisioning Filename ?	The autoprovisioning filename is the configuration filename. The default autoprovisioning filename is in the format of **<mac address>.xml**. Supported filename extensions are .txt, and .xml. The current filename is denoted by an asterisk at the bottom of the **Autoprovisioning Page**. Enter up to 256 characters. A file may have any name with an xml extension. If a file name is entered, the device will look for the specified file name, and only that file.
Use tftp ?	The device will use TFTP (instead of http) to download autoprovisioning files.
Verify Server Certificate ?	When using ssl to download autoprovisioning files, reject connections where the server address doesn't match the server certificate's common name.
Username ?	The username used to authenticate with an autoprovisioning server. Leave this field blank to disable authentication.
Password ?	The password used to authenticate with an autoprovisioning server. Leave this field blank to disable authentication.
Autoprovisioning Autoupdate (in minutes) ?	The reoccurring time (in minutes) the device will wait before checking for new autoprovisioning files. Enter up to 6 digits. A value of 0 will disable this option. **Note**: To use the auto update options, make sure that the **Enable NTP** setting on the **Device Page** page is selected (see Table 2-9).
Autoprovision at time (HHMMSS) ?	The time of day the device will check for a new autoprovisioning file. The time must be 6 characters in length and in HHMMSS format. An empty value will disable this option. **Note**: To use the auto update options, make sure that the **Enable NTP** setting on the **Device Page** page is selected (see Table 2-9).
Autoprovision when idle (in minutes > 10) ?	The idle time (in minutes greater than 10) after which the device will check for a new autoprovisioning file. Enter up to 6 digits. A value of 0 will disable this option. **Note**: To use the auto update options, make sure that the **Enable NTP** setting on the **Device Page** page is selected (see Table 2-9).

Table 2-19. Autoprovisioning Page Parameters (continued)

Web Page Item	Description
	Click the **Save** button to save your configuration settings.
	Click on the **Reboot** button to reboot the system.
	Click on the **Toggle Help** button to see a short description of some of the web page items. First click on the **Toggle Help** button, and you will see a question mark (?) appear next to some of the web page items. Move the mouse pointer to hover over a question mark to see a short description of a specific web page item.
	Press the **Download Template** button to create an autoprovisioning file for the device. See Section 2.3.14.3, "Download Template Button"
Autoprovisioning log	The autoprovisioning log provides information about the latest autoprovisioning attempt (i.e. dhcp options and server accessed and files parsed or not found).

2.3.14.1 Autoprovisioning

On boot, the device will look for an autoprovisioning server configured on the Autoprovisioning Page or specified as a DHCP option. When it finds a server, it will try to download the following (in order of preference):

1. The file configured on the autoprovisioning page.
2. A file named according to it's mac address (for example: 0020f7350058.xml).
3. The file 000000cd.xml

The file can be hosted using a standard web server (like apache, IIS, or nginx), and the device can download over SSL. The file server can be an ipv4 address in dotted decimal notation or a fully qualified domain name.

By default, the device will get its autoprovisioning server from the DHCP options. See Section 2.3.14.2, "Sample dhcpd.conf" for an example of how to configure dhcpd to offer autoprovisioning server addresses. If multiple options are set, the device will attempt to download autoprovisioning files from every server.

The DHCP option determines the protocol used to download the autoprovisioning file. The device looks for DHCP options in the following order:

1. Option 43 - a FQDN or an IP address to an http server
2. Option 72 - an IP address to an http server
3. Option 150 - an IP address to a tftp server
4. Option 66 - an IP address to a tftp server or if the entry starts with 'http', a FQDN to a http server.

You can download an autoprovisioning template file from the Autoprovisioning Page using the **Download Template** button (see Table 2-19). This file contains every configuration option that can be set on the board.

Autoprovisioning files can contain the whole configuration or a subset of this file. The first autoprovisioning file can also contain links to other autoprovisioning files.

The <MiscSettings> section contains some examples of additional autoprovisioning files:

```
    <MiscSettings>
        <DeviceName>CyberData
Device</DeviceName>
<!--    <AutoprovFile>common.xml</AutoprovFile>-->
<!--    <AutoprovFile>sip_reg[macaddress].xml</AutoprovFile>-->
<!--    <AutoprovFile>audio[macaddress]</AutoprovFile>-->
<!--    <AutoprovFile>device[macaddress].xml</AutoprovFile>-->
    </MiscSettings>
```

After downloading the first autoprovisioning file, the device will step through up to twenty additional <AutoprovFile> entries and try to download these files from the same server.

When the device finds a filename with the string **[macaddress]**, it will replace this string with the mac address.

As an example, the user has configured option 43 on their DHCP server to “http://example.com,” and on their server, they have a file named **0020f7123456.xml** (the same as the mac address of the device).

The file 0020f7123456.xml contains:

```
<?xml version="1.0" encoding="utf-8" ?>
<specific>
        <MiscSettings>
               <DeviceName>Newname</DeviceName>
               <AutoprovFile>common.xml</AutoprovFile>
               <AutoprovFile>sip_reg[macaddress].xml</AutoprovFile>
               <AutoprovFile>audio[macaddress]</AutoprovFile>
               <AutoprovFile>device.xml</AutoprovFile>
        </MiscSettings>
</specific>
```

1. The device will first set it's name to 'Newname'.
2. It will try to download http://example.com/common.xml.
3. It will try to download http://example.com/sip_reg0020f7123456.xml.
4. It will try to download http://example.com/audio0020f7123456.
5. It will try to download http://example.com/device.xml.

The device is reconfigured every time it downloads a new file so if two files configure the same option the last one will be the one that is saved.

It is possible to autoprovision autoprovisioning values (for example, to disable autoprovisioning or to configure a time to check for new files).

Checking for New Autoprovisioning Files after Boot

The device will always check for an autoprovisioning files on boot but it can be configured to also check after a periodic delay, when idle, or at a specified time. When one of these options is set, the device will download its autoprovisioning files again, and if it finds any differences from the files it downloaded on boot, it will force a reboot and reconfigure.

The Autoprovisioning Filename

The autoprovisioning filename can contain a file, a file path, or a directory.

Table 2-20. Autoprovisioning File Name

Autoprovisioning Filename	Autoprovisioning Server	File Downloaded
config.xml	10.0.1.3	10.0.1.3/config.xml
/path/to/config.xml	10.0.1.3	10.0.1.3/path/to/config.xml
subdirectory/path/	10.0.1.3	10.0.1.3/subdirectory/path/0020f7020002.xml

TFTP options may not support subdirectories. If a directory is set in the filename field, firmware and audio files will also be downloaded from this subdirectory.

If the filename ends with a forward slash "/," the device will treat it as a subdirectory.

For example:

The autoprovisioning server is set to "https://www.example.com"

The autoprovisioning filename is set to "cyberdata/"

On boot, the device will try to download:

https://www.example.com/cyberdata/0020f7123456.xml

...and if this fails:

https://www.example.com/cyberdata/000000cd.xml

Audio files and firmware files will also add "cyberdata" to the URL before downloading.

Autoprovisioning Firmware Updates

```
<FirmwareSettings>
  <FirmwareFile>505-uImage-ceilingspeaker</FirmwareFile>
  <FirmwareServer>10.0.1.3</FirmwareServer>
  <OutdoorIntercom30>firmware_file_v9.3.0</OutdoorIntercom30>
  <OutdoorIntercom31>firmware_file_v10.3.0</OutdoorIntercom31>
  <CallButton31>firmware_file_v10.3.0</CallButton31>
</FirmwareSettings>
```

In the <FirmwareSettings> section, the <FirmwareServer> element can be used to specify a different server for hosting firmware files. When this element is not available, the device will try to download the file from the autoprovisioning server.

The device will use the filename to determine when to autoprovision firmware updates. The default configuration is blank, so the first time you set a value in your autoprovisioning file, it may force a firmware update even if the firmware version has not changed.

The <FirmwareFile> name can contain path elements (i.e. /path/to/firmware/10.3.0-uImage-[device_file_name]).

The device also supports product strings for downloading firmware. If the <FirmwareFile> option is not set, the device will look for its particular product string for a firmware filename. In this way, a generic autoprovisioning file can specify unique firmware for a range of products.

The list of valid product strings:

```
<ProductString>CallButton31</ProductString>
<ProductString>EmergencyIntercom31</ProductString>
<ProductString>EmergencyIntercom31SW</ProductString>
<ProductString>IndoorIntercom31</ProductString>
<ProductString>IndoorIntercom31SW</ProductString>
<ProductString>IndoorKeypad31</ProductString>
<ProductString>IndoorKeypad31SW</ProductString>
<ProductString>OfficeRinger31</ProductString>
<ProductString>OfficeRinger31SW</ProductString>
<ProductString>OutdoorIntercom31</ProductString>
<ProductString>OutdoorIntercom31SW</ProductString>
<ProductString>OutdoorKeypad31</ProductString>
<ProductString>OutdoorKeypad31SW</ProductString>
<ProductString>Strobe31</ProductString>
<ProductString>Strobe31SW</ProductString>
```

Autoprovisioning Example 1

Here's a simple example using four autoprovisioning files to configure two devices:

We boot up two devices with mac addresses **00:20:f7:02:00:01** and **00:20:f7:02:00:02** (Device1 and Device2).

The devices are set to use DHCP and that server provides an autoprovisioning server address with option 43. The address is “https://autoprovtest.server.net.” The files on this server are as follows:

000000cd.xml

```
<MiscSettings>
<DeviceName>CyberData Autoprovisioned</DeviceName>
<AutoprovFile>sip_common.xml</AutoprovFile>
<AutoprovFile>sip_[macaddress].xml</AutoprovFile>
</MiscSettings>
```

sip_common.xml

```
<SIPSettings>
<SIPServer>10.0.0.253</SIPServer>
<RemoteSIPPort>5060</RemoteSIPPort>
</SIPSettings>
```

sip_0020f7020001.xml

```
<SIPSettings>
<SIPUserID>198</SIPUserID>
<SIPAuthPassword>ext198</SIPAuthPassword>
<DialoutExtension0>204</DialoutExtension0>
</SIPSettings>
```

sip_0020f7020002.xml

```
<SIPSettings>
<SIPUserID>500</SIPUserID>
<SIPAuthPassword>ext500</SIPAuthPassword>
<DialoutExtension0>555</DialoutExtension0>
</SIPSettings>
```

On boot, Device1 tries to fetch the file **0020f7023614.xml** from “https://autoprovtest.server.net”. This file is not available, so device1 then tries to fetch the file **000000cd.xml**. This file exists, and Device1 parses the three elements.

1. Device1 changes its device name to **CyberData Autoprovisioned**.
2. Device1 finds an AutoprovFile element containing the filename **sip_common.xml**. The device downloads **sip_common.xml** from “https://autoprovtest.server.net,” and imports this configuration, setting the sip server to **10.0.0.253** and the remote port to **5060.3**.
3. Device1 finds another AutoprovFile element containing the filename **sip_[macaddress].xml**. The device replaces the **[macaddress]** with its own mac address value creating **sip_0020f7020001.xml**, downloads this file from “https://autoprovtest.server.net,” and imports this configuration. This sets the user ID to **198**, the password to **ext198**, and the dialout extension to **204**. Device1 is now finished with autoprovisioning.

Device2 goes through the same steps by setting its device name to **CyberData Autoprovisioned**, its SIP server to **10.0.0.253**, and its port to **5060**. When Device2 "sees" **sip_[macaddress].xml**, Device2 replaces it with its own mac address and downloads **sip_0020f7020002.xml** from "https://autoprovtest.server.net." Device2 sets the SIP User ID to **500**, the password to **ext500**, and the dialout extension to **555**.

Autoprovisioning Example 2

Here is another example of setting up your autoprovisioning files:

We boot up two devices with mac addresses **00:20:f7:02:00:01** and **00:20:f7:02:00:02** (Device1 and Device2) and boot them on a network with a DHCP server configured with an autoprovisioning server at **10.0.1.3** on option **150**. Our TFTP server has three files:

0020f7020001.xml

```
<MiscSettings>
<AutoprovFile>common_settings.xml</AutoprovFile>
</MiscSettings>
<SIPSettings>
<SIPUserID>198</SIPUserID>
<SIPAuthPassword>ext198</SIPAuthPassword>
<DialoutExtension0>204</DialoutExtension0>
</SIPSettings>
```

0020f7020002.xml

```
<MiscSettings>
<AutoprovFile>common_settings.xml</AutoprovFile>
</MiscSettings>
<SIPSettings>
<SIPUserID>500</SIPUserID>
<SIPAuthPassword>ext500</SIPAuthPassword>
<DialoutExtension0>555</DialoutExtension0>
</SIPSettings>
```

common_settings.xml

```
<MiscSettings>
<DeviceName>CyberData Autoprovisioned</DeviceName>
</MiscSettings>
<SIPSettings> <SIPServer>10.0.0.253</SIPServer>
<RemoteSIPPort>5060</RemoteSIPPort>
</SIPSettings>
```

1. On boot, Device1 downloads **0020f7020001.xml** from **10.0.1.3** and imports these values. The SIP User ID is **198**, the password is **ext198**, and the dialout extension is **204**.

2. Device1 then gets the filename **common_settings.xml** from the AutoprovFile element and downloads this file from the TFTP server at **10.0.1.3**. and imports these settings. The device name is set to **CyberData Autoprovisioned**, the SIP server is set to **10.0.0.253**, and the port is set to **5060**.

Device2 does the same except it downloads **0020f7020002.xml** on boot and imports these values instead. The Sip User ID is **500**, password is **ext500**, and dialout extension is **555**. Device2 then downloads the **common_settings.xml** file and imports those values. The device name is set to **CyberData Autoprovisioned**, the SIP server is set to **10.0.0.253**, and the port is set to **5060**.

XML Files

XML files can contain <AutoprovFile> elements. If multiple DHCP options are specified, the device will try to download autoprovisioning files from each in turn. The device will only look for <AutoprovFile> elements in the first file downloaded from each server. You can specify up to 20 <AutoprovFile> elements in the first autoprovisioning file.

There are numerous ways to change an element of the **configuration(xml)** file. Using **sip ext** as an example, the extension can be changed:

Within the device-specific xml, i.e. **[macaddress].xml**, via the AutoprovFile element:<SIPSettings>/<SIPExt>

From the device specific xml, a pointer to a sip_common file

From the device specific xml, a pointer to the device specific sip_[macaddress].xml

From the common file, a pointer to sip_common.xml

From the common file, a pointer to the device specific (sip_[macaddress].xml)

Autoprovisioned Audio Files

Audio files are stored in non-volatile memory and an autoprovisioned audio file will only have to be downloaded once for each device. Loading many audio files to the device from the web page could cause it to appear unresponsive. If this happens, wait until the transfer is complete and then refresh the page.

The device uses the file name to determine when to download a new audio file. This means that if you used autoprovisioning to upload a file and then changed the contents of this file at the TFTP server, the device will not recognize that the file has changed (because the file name is the same).

Since audio files are stored in non-volatile memory, if autoprovisioning is disabled after they have been loaded to the board, the audio file settings will not change. You can force a change to the audio files on the board by clicking **Restore Default** on the **Audio** page or by changing the autoprovisioning file with “**default**” set as the file name.

2.3.14.2 Sample dhcpd.conf

```
#
# Sample configuration file for ISC dhcpd for Debian
#

ddns-update-style none;

option domain-name "voiplab";
option domain-name-servers 10.0.0.252;
option option-150 code 150 = ip-address;
option ntp-servers north-america.pool.ntp.org;
option space VendorInfo;
option VendorInfo.text code 10 = { text };
authoritative;
log-facility local7;

subnet 10.0.0.0 netmask 255.0.0.0 {
    max-lease-time 3600;
    default-lease-time 3600;

    option routers                  10.0.0.1;
    option subnet-mask              255.0.0.0;

    option domain-name              "voiplab";
    option domain-name-servers      10.0.0.252;

    option time-offset              -8;             # Pacific Standard Time

#     option www-server               99.99.99.99;                    # OPTION 72

#     option tftp-server-name          "10.0.1.52";                   # OPTION 66
#     option tftp-server-name          "http://test.cyberdata.net";   # OPTION 66

#     option option-150                10.0.0.252;                    # OPTION 150

# These two lines are needed for option 43
#     vendor-option-space VendorInfo;                                 # OPTION 43
#     option VendorInfo.text "http://test.cyberdata.net";             # OPTION 43

    range 10.10.0.1 10.10.2.1; }
```

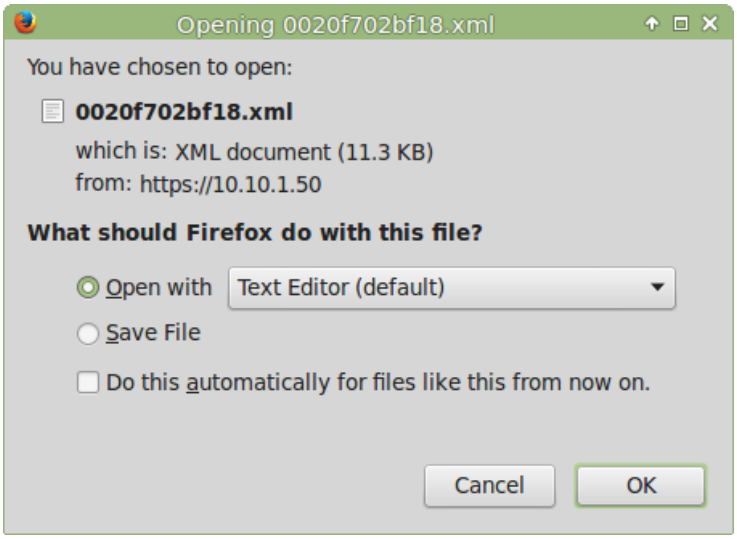
2.3.14.3 Download Template Button

The **Download Template** button allows the user to generate, download, edit, and then store an autoprovisioning template on the server that serves the autoprovisioning files for devices.

To generate an autoprovisioning template directly from the device, complete the following steps:

1. On the **Autoprovisioning** page, click on the **Download Template** button.
2. You will see a window prompting you to save a configuration file (**.xml**) to a location on your computer (Figure 2-45). The configuration file is the basis for the default configuration settings for your unit).
3. Choose a location to save the configuration file and click on **OK**. See Figure 2-45.

Figure 2-45. Configuration File



4. At this point, you can open and edit the autoprovisioning template to change the configuration settings in the template for the unit.
5. You can then upload the autoprovisioning file to a TFTP or HTTP server where the file can be loaded onto other devices.

2.4 Upgrade the Firmware and Reboot the SIP Loudspeaker Amplifier (PoE)

2.4.1 Downloading the Firmware

To download the firmware to your computer:

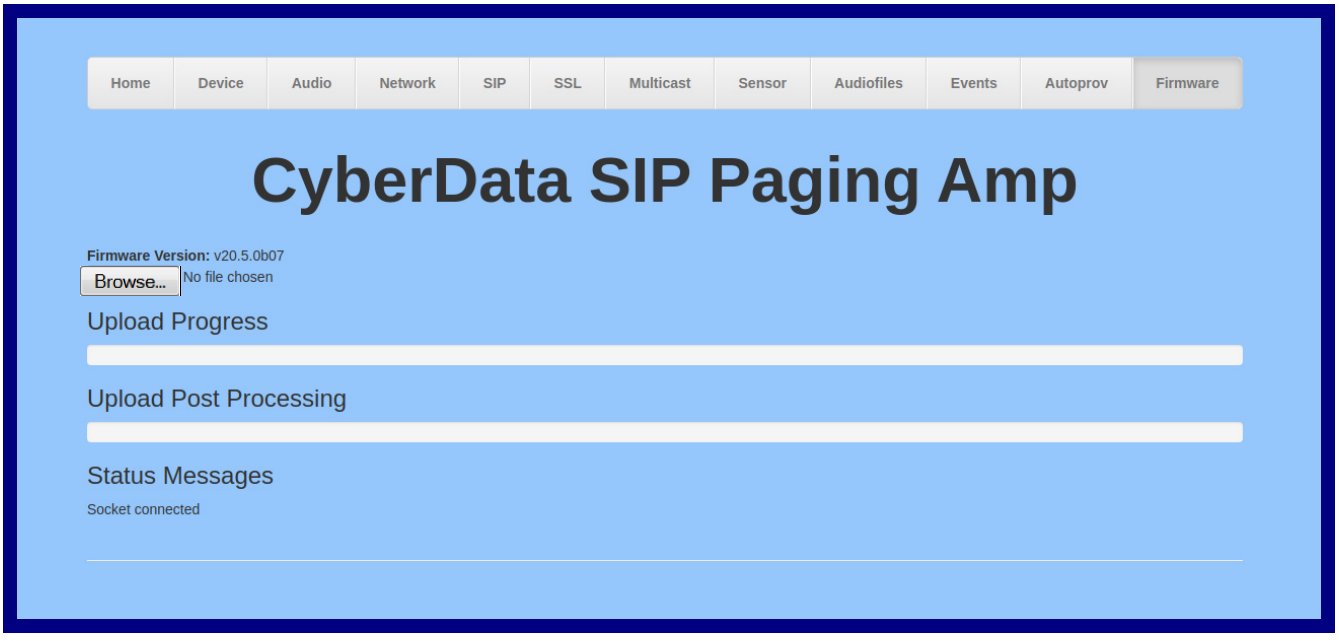
1. Download the latest firmware file from the **Downloads** tab at the following webpage:
   https://www.cyberdata.net/products/011405
2. Unzip the firmware version file. This file may contain the following:

- Firmware file
- Release notes
- Autoprovisioning template

3. Log in to the **Home** page as instructed in Section 2.3.4, "Log in to the Home Page".
4. Click on the **Firmware** menu button to open the **Firmware** page (Figure 2-46).

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

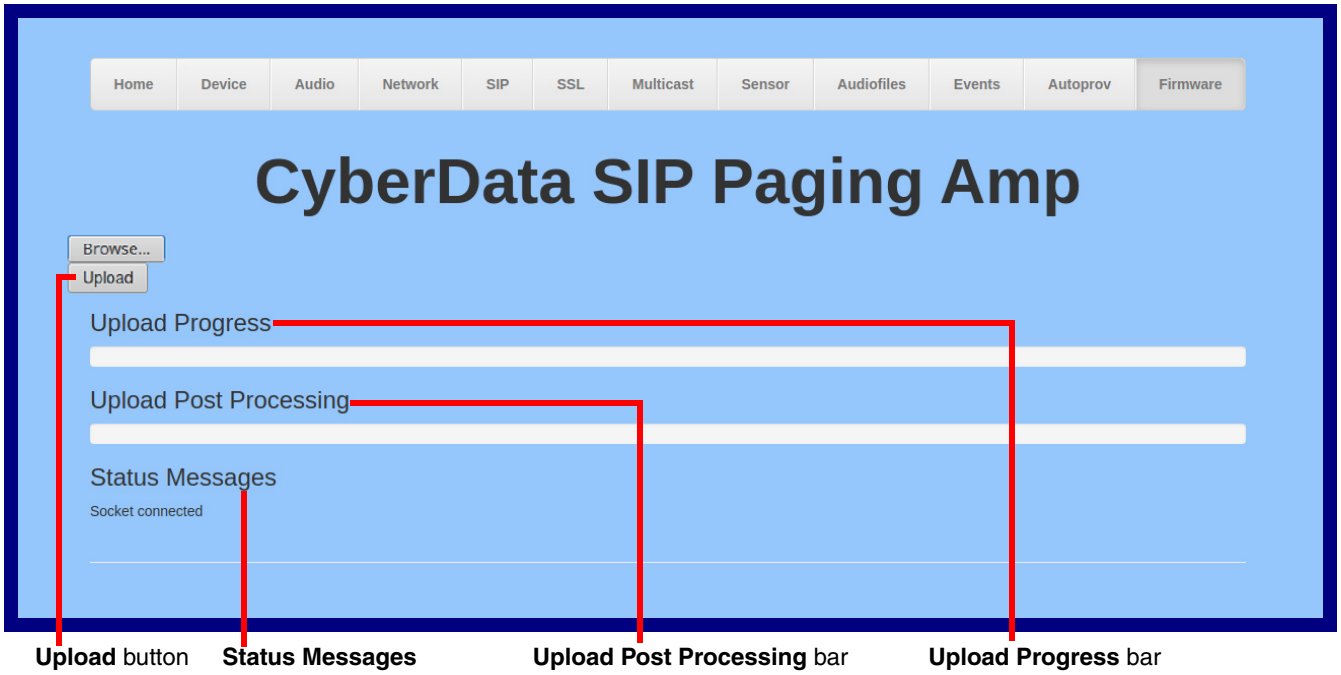
Figure 2-46. Firmware Page



5. Click on the **Browse** button, and then navigate to the location of the firmware file.

6. Select the firmware file. This reveals the **Upload** button (Figure 2-47).

Figure 2-47. Upload Button



7. Click on the **Upload** button. After selecting the **Upload** button, you will see the progress of the upload in the **Upload Progress** bar.
8. When the upload is complete, you will see the words **Upload finished** under **Status Messages**.
9. At this point, you will see the progress of the upload's post processing in the **Upload Post Processing** bar.

Note Do not reboot the device before the upgrading process is complete.

10. When the process is complete, you will see the words **SWUPDATE Successful** under **Status Messages**.
11. The device will reboot automatically.
12. The **Home** page will display the version number of the firmware and indicate which boot partition is active.

Table 2-21 shows the web page items on the **Firmware** page.

Table 2-21. Firmware Page Parameters

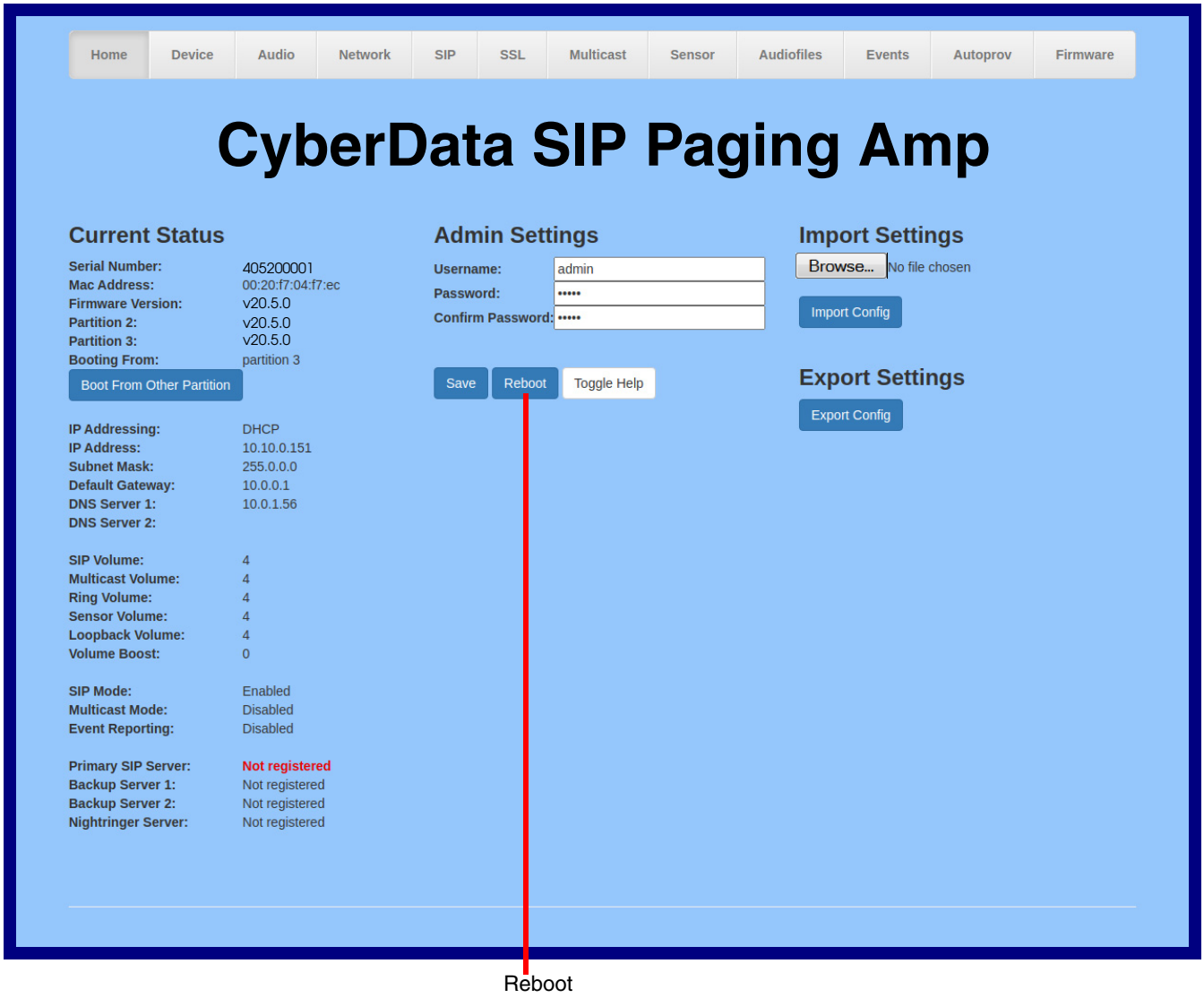
Web Page Item	Description
Browse...	Use the **Browse** button to navigate to the location of the firmware file that you want to upload.
Upload	Click on the **Upload** button to automatically upload the selected firmware and reboot the system. **Note**: This button only appears after the user has selected a firmware file.
Upload progress	Status bar indicates the progress in uploading the file.
Upload Post Processing	Status bar indicates the progress of the software installation.
Status Messages	Messages relevant to the firmware update process appear here.

2.4.2 Reboot the Device

To reboot a SIP Loudspeaker Amplifier (PoE), log in to the web page as instructed in Section 2.3.4, "Log in to the Home Page".

1. Click on the **Reboot** button on the **Home** page (Figure 2-48). A normal restart will occur.

Figure 2-48. Home Page



2.5 Command Interface

Some functions on the device can be activated using simple POST commands to the web interface. The examples in Table 2-22 use the free unix utility, **wget**, but any program that can send http POST commands to the device should work.

2.5.1 Command Interface Post Commands

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

Table 2-22. Command Interface Post Commands

Device Action	HTTP Post Command[a]
Reboot	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.247/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://10.10.1.247/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://10.10.1.247/command" --post-data "request=terminate"
Speak IP Address	wget --user admin --password admin --auth-no-challenge --quiet -O /dev/null --no-check-certificate "https://10.10.1.247/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://10.10.1.247/command" --post-data "request=test_audio"
Swap Boot partitions	wget --user admin --password admin --auth-no-challenge --no-check-certificate --quiet -O /dev/null "https://10.10.1.81/command" --post-data "request=swap_boot_partition"

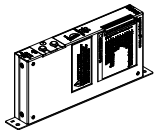
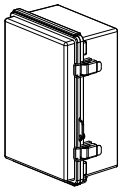
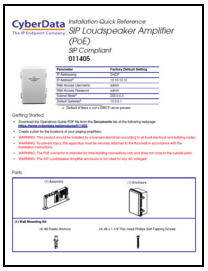
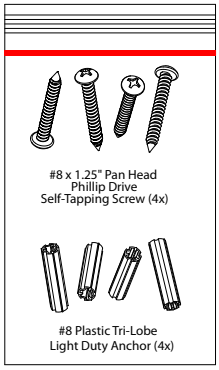
a.Type and enter all of each http POST command on one line.

Appendix A: Mounting the Amplifier

A.1 Mount the Amplifier

Before you mount the enclosure, make sure that you have received all of the parts for each enclosure. Refer to Table A-1.

Table A-1. Parts List

Quantity	Part Name	Illustration
1	SIP Paging Amplifier Assembly	
1	Enclosure	
1	Quick Reference Placemat	
1	Mounting Accessory Kit which includes: (4) #8 Plastic Anchors (4) #8 x 1-1/4" Pan Head Phillips Self-Tapping Screws	

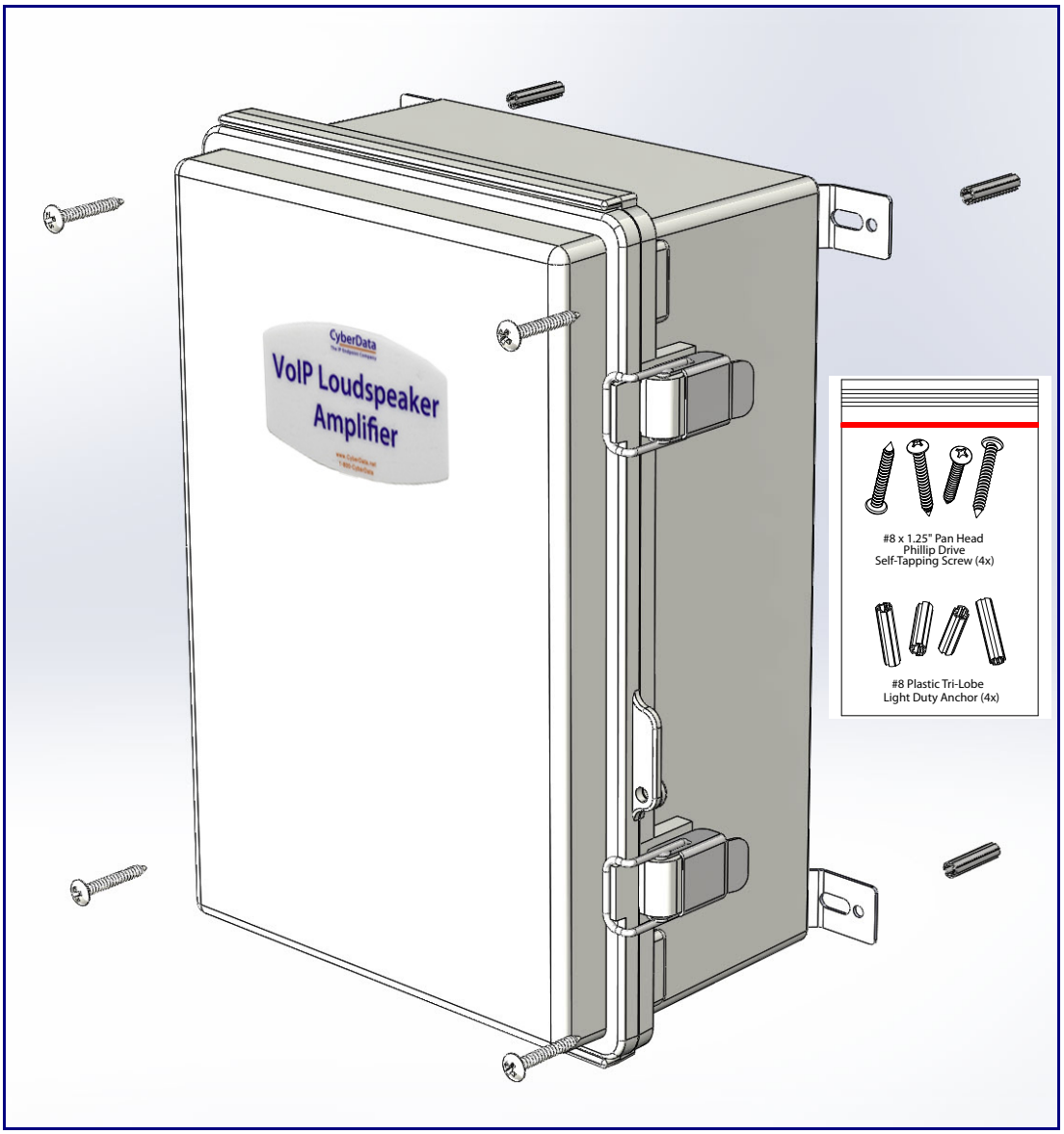
Note The SIP Loudspeaker Amplifier (PoE) was designed for indoor use. Mounting it on the external part of a building will require additional hardware for weatherproofing, cabling access, and lightning suppression. Consult a certified electrician for details.

A.1.1 Mounting the Enclosure

To mount the enclosure:

1. Prepare holes for the screws.
2. Plug in the power adapter and use the **Power (PWR)** LED to verify that the power is on.
3. Plug the ethernet cable into the device. The **Link/Activity (Link/Act.)** LED verifies the network connection.
4. For wall mounting, use the four #8 1-1/4" Pan Head Phillips Self-Tapping screws to secure the speaker. See Figure A-1.

Figure A-1. Mounting the Enclosure



Appendix B: Troubleshooting/Technical Support

B.1 Frequently Asked Questions (FAQ)

To see a list of frequently asked questions for your product, click on the **FAQs** tab at the following webpage:

https://www.cyberdata.net/products/011405

B.2 Documentation

The documentation for this product is released in an English language version only.

To download PDF copies of CyberData product documentation, click on the **Downloads** tab at the following webpage:

https://www.cyberdata.net/products/011405

B.3 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

B.4 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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