CyberData SIP Paging Ceiling Speaker V3 Integration with 8x8

This document covers the integration of CyberData's SIP Paging Speaker V3 with 8x8. This document was written for 8x8 and the following CyberData Products.

- 011397 (RAL 9002, Gray White) Talk Back Speaker
- 011398 (RAL 9003, Signal White) Talk Back Speaker
- 011393 (RAL 9002, Gray White) Celling Speaker (no talk back)
- 011394 (RAL 9003, Signal White) Celling Speaker (no talk back)

All support and supporting documentation for CyberData should be obtained from CyberData itself. This document also assumes the reader is familiar with setting up CyberData Paging equipment and/or has access to the Manuals for the CyberData equipment, as several sections are left out of this manual such as setting up the network configuration of the CyberData Equipment and pin outs for relay, and audio out usage.

CyberData devices do integrate with both Yealink and Polycom devices, 8x8 suggests using Yealink devices over Polycom if more than one zone is needed. For more information on the integration process see integration section.

1 Contents

2 Integration

CyberData SIP Celling Speaker can be integrated in multiple ways with 8x8, each integration option has its unique benefits and draw backs. For the best integration between all types of phones (Polycom, Yealink, and other 3rd party devices) as well as routing and remote devices 8x8 recommends SIP Page and Converted to Multicast.

The CyberData SIP Celling Speaker can listen in to Multicast Streams that are pre-defined and relay this pages to its Audio Out ports to traditional Paging equipment (this does not require DTMF input), or it be called directly by using an extension assigned to it, to start the page.

If equipped with the talk back function when the SIP extension is dialed, you can configure talk back (2-way audio) with the speaker. Additional options like Clock, Relays, Call button, and a strobe can be added.

Starting with CyberData firmware 7.2.0 you can integrate Polycom Group Paging with traditional Multicast paging services. This is accomplished via CyberData firmware enhancements to provide Multicast and Group Paging features at the same time, for more information see CyberData's website.

2.1 SIP Page and Converted to Multicast

This will afford the possibility to integrate the Yealink, Polycom and other 3rd party equipment along with the CyberData Paging equipment.

Traditional paging equipment can be integrated into this solution using CyberData SIP Celling Speaker's Audio Out port and Relays.

Users will simply dial the page extension, and make their page. A SIP call will be placed to the CyberData Celling Speaker (and any other device in the page group).

2.2 Pure Multicast

When using CyberData paging equipment you can integrate as a pure multicast solution, in that you will no longer use the paging services of 8x8, and rely purely on Multicast capabilities of the Polycom, Yealink and CyberData equipment. When using CyberData's SIP Celling Speaker and Yealink phones you may either dedicate a unique paging button on the phone per page zone. The Yealink phones only support listening to 5 multicast paging zones. If using Polycom phones, you can only use one of the Polycom paging groups.

Users will press a predefined paging button on the Polycom and Yealink devices to initiate the page, this will start a multicast from the device to all other devices listening to the same multicast IP address and Port pair.

2.3 Traditional Paging Equipment

Traditional Paging equipment can be integrated into either integration option (SIP or Multicast) by the CyberData SIP Paging Server. It is recommended to use the CyberData SIP Paging Server to integrate with traditional paging equipment input and offers the ability to include relays. The CyberData Paging Server supports a 600 Ohms at 5 VPP output referred to as Page Port and a 10K Ohms at 2 VPP output referred to as Line Out.

If integrating multiple locations with traditional paging equipment it is recommended to use the CyberData Paging Adapter to integrate additional locations using SIP paging from the 8x8, and the CyberData Paging Adapter to integrate to the traditional paging equipment.

3 Multicast Paging

3.1 How Multicast Paging Works

After a user presses a configured "Paging" key on the phone, the phone sends a page message (which is an RTP stream, hereinafter referred to as a "page") to a preconfigured multicast address. Any device in the local network listens for the page on the preconfigured multicast address. The device will display the multicast page sent/received address to the user. You can define multiple multicast zones by using a different multicast IP or port number, a single device can listen to multiple IP:Port combinations.

The device uses G711 uLaw CODEC for multicast paging.

The recipient can drop the incoming page if required. The recipient can also press Do Not Disturb (DND) or other "ignore" options on the device to ignore/reject any incoming pages.

3.2 Caveats of Multicast Paging

Multicast paging is designed for Yealink and Polycom devices. There is no guaranteed interoperability with any other 8x8 supported phones. CyberData Paging Equipment is an exception, as it has been tested and certified to work properly with the Yealink and Polycom phones. The Virtual Office Desktop Softphone does not support multicast paging.

This service is typically non-routable, and cannot be used to page across the WAN, complex VLANs, or to remote devices.

Note: Multicast page is one-way only - from sender to the receiver.

Note: For outgoing pages, all other existing calls on the phone are put on hold.

If a page session already exists on the phone, and the phone receives another incoming page, the priority is given to the first multicast session and the second multicast session is ignored. The behavior for the incoming calls in this case is also based on the setting for the "Allow Barge In" parameter. The incoming call is handled as if there were an existing call already on the phone.

3.3 Advantages of Multicast Paging

Multicast paging allows for virtually unlimited paging capability in a local network, does not require a session license to operate, and is almost instantaneous, as it does not require the phones to acknowledge the page request.

4 SIP Paging

4.1 How SIP Paging Works

SIP paging works as follows: the 8x8 places a SIP call to the device with an auto answer flag, the Cyber Data Celling Speaker will auto answer when properly configured for auto.

4.2 Caveats of SIP Paging

- Limited to 1 device currently, unless using the Configuration Manager.

4.3 Advantages of SIP Paging

- Works with remote devices.
- Works with the Yealink and Polycom product line.

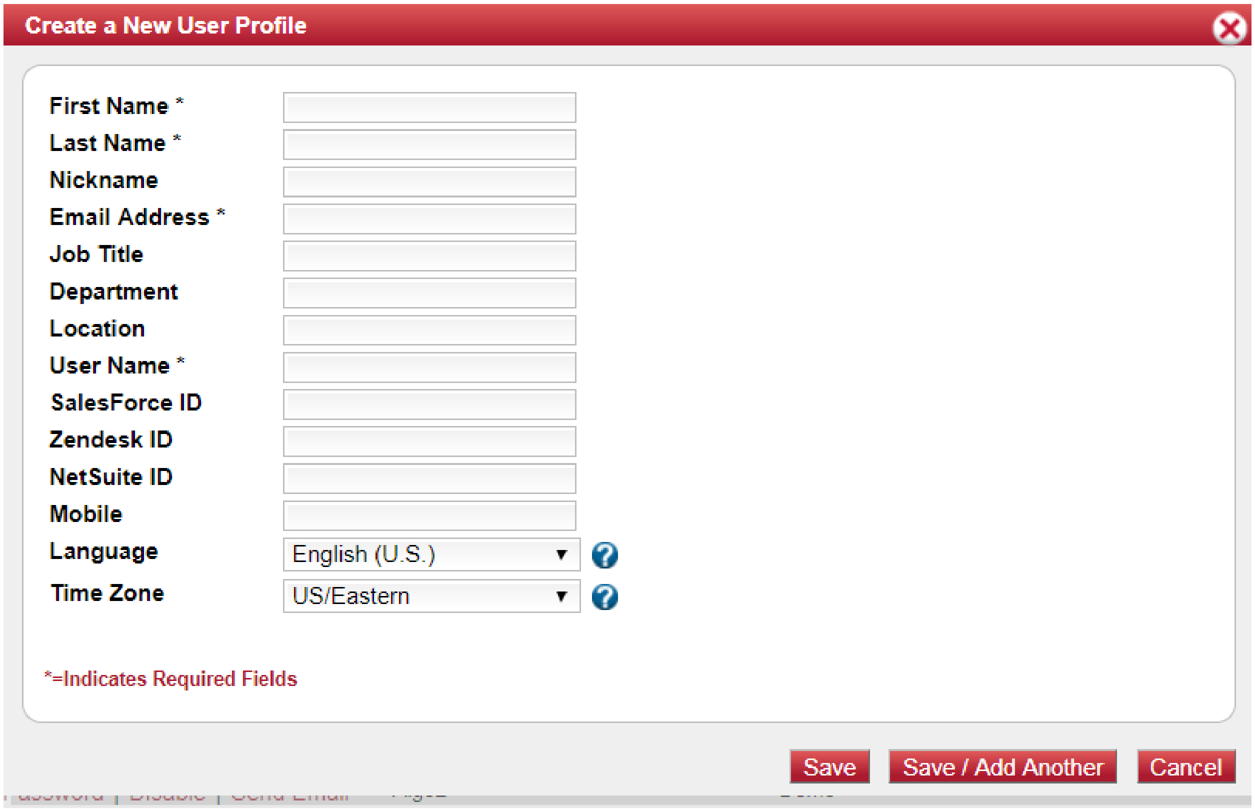
5 Creating a User Profile on 8x8 for SIP Calls and Night Ring Capabilities

If using the SIP Call and or Night Ring capabilities of the SIP Celling Speaker, a softphone device should be ordered and a user is required to be created on 8x8. Create a user profile and assign the new user profile to the softphone only device ordered. This will be needed to be done for Each Registration required on the CyberData Device. If not using the SIP Call or Night Ring capabilities of the CyberData equipment this section can be skipped.

5.1 Create User Profile

In account manager, click on Accounts and then User Profiles. Click Create New User Profile. Provide the following information:

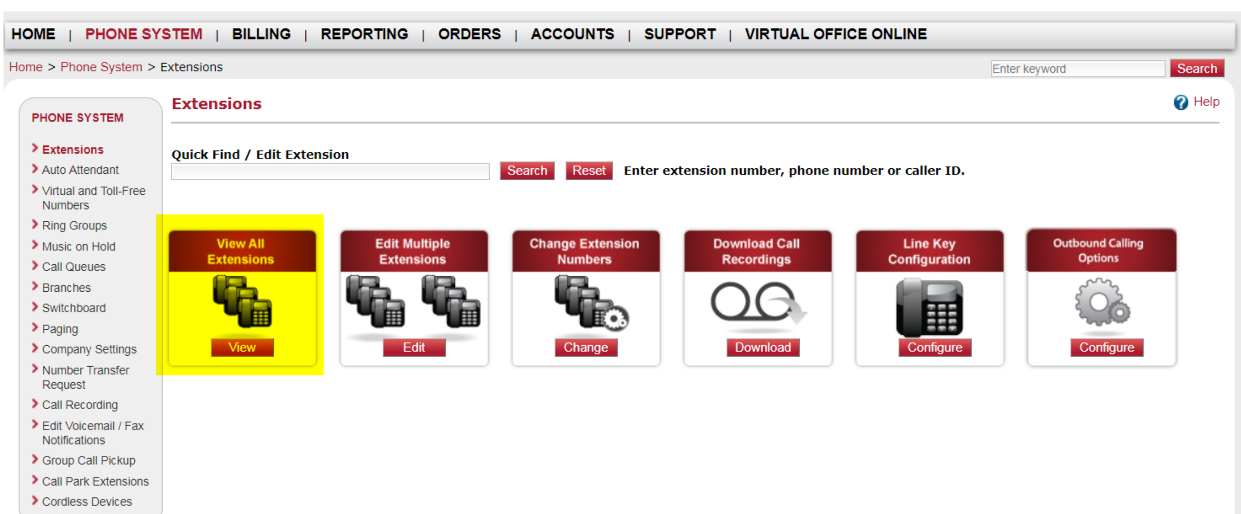
- First Name (Required)
- Last Name (Required)
- Nickname (Optional)
- Email Address (Required, and must be unique)
- Job Title (Optional)
- Department (Optional)
- Location (Optional)
- User Name (Required)
- SalesForce ID (Ignore)
- Zendesk ID (Ignore)
- NetSuite ID (Ignore)
- Mobile (Ignore)
- Language (Optional, Leave as Default)
- Time Zone (Optional, Leave as default)



Click on Save (or Save / Add Another if going to add a Page user as well).

6 Assign User to the Device

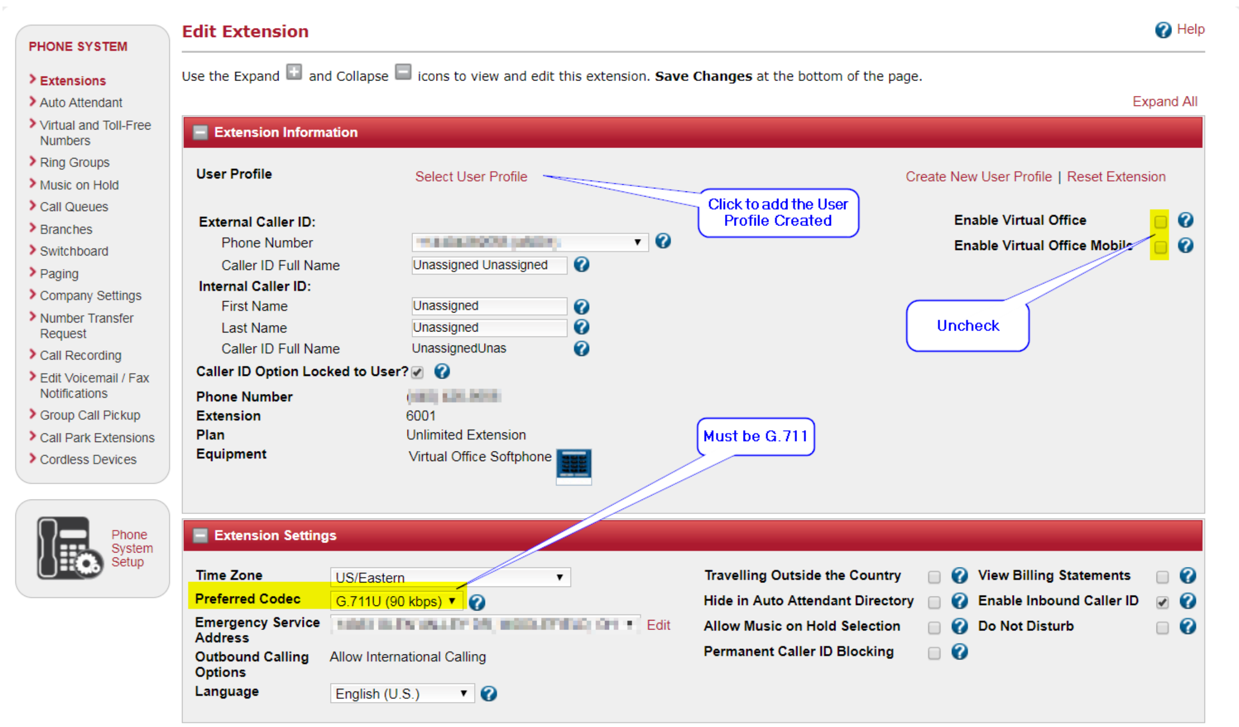
After creating the user profile that will interface with CyberData Equipment, assign the user to the device. In Account Manager select Phone System, and then click on View All Extensions.



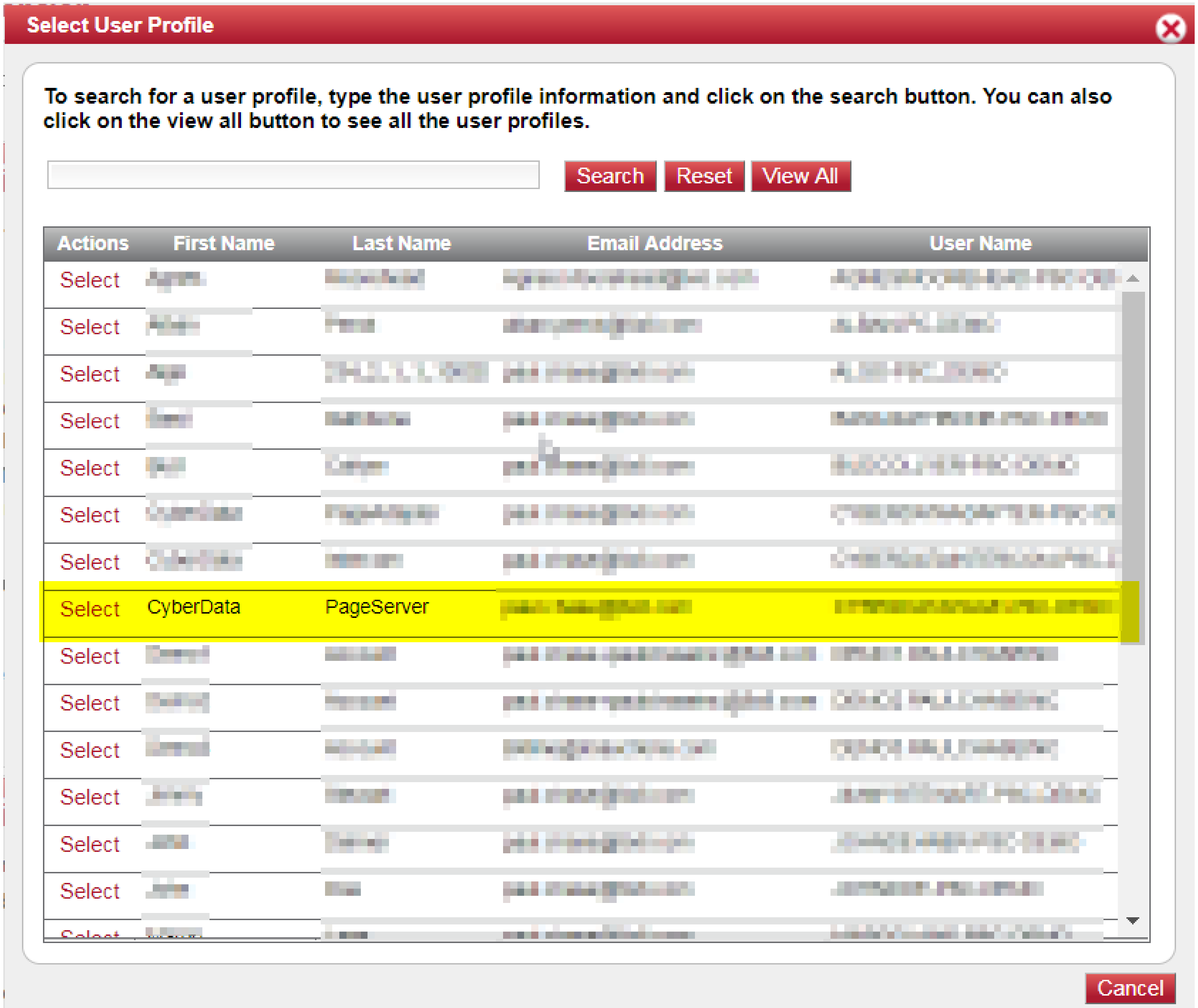
From the list of extensions find the extension ordered for the Cyber Data Device, and click Edit.

Set the following item, the rest can be left as “default”.

- Enable Virtual Office: No/Unchecked
- Enable Virtual Office Mobile: No/Unchecked
- Verify Preferred Codec is set to G.711U (90 kpbs)



Then click on “Select User Profile to add the appropriate User Profile, by clicking the “select” next to the profile you want to use.



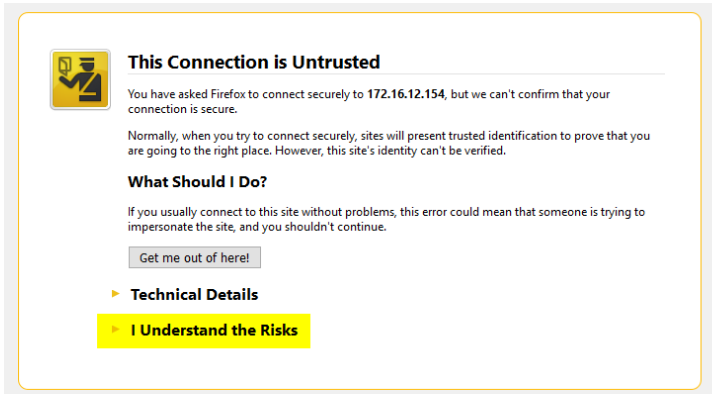
It will return you to the previous screen and click on "Save Changes".

7 CyberData SIP Celling Speaker Setup

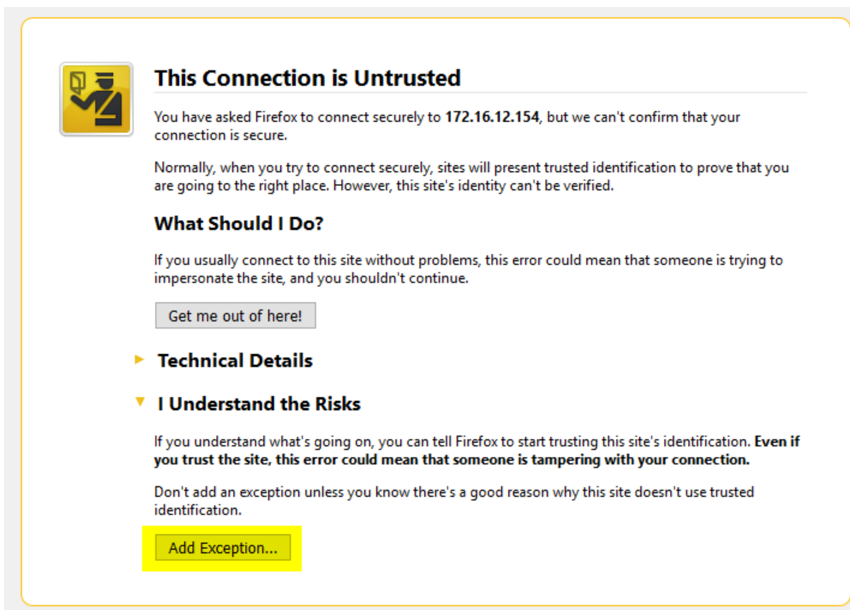
When deploying the CyberData SIP Celling Speaker it is recommended to use DHCP. CyberData provides a "Discovery Utility" that can be downloaded from their website (http://www.cyberdata.net/support/voip/discovery_utility.html) to initially discover the IP address of the SIP Celling Speaker. Using the CyberData Discovery Utility to obtain the current IP address of the CyberData SIP Celling Speaker login using a web browser using the default username of "**admin**" and the default password of "**admin**". For more information on using the discovery utility and basic setup of the CyberData equipment, please refer to the operating manuals from CyberData. If using the pure multicast integration option, the CyberData equipment will not be registering with 8x8.

7.1 Connecting to the CyberData SIP Celling Speaker

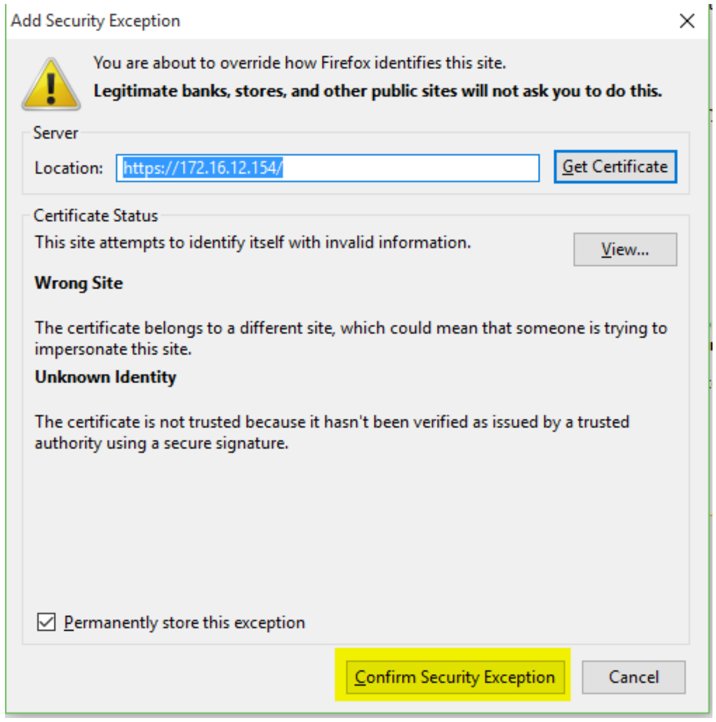
The CyberData SIP Celling Speaker now uses HTTPS to provision the device. When connecting to the CyberData Celling Speaker you will be required to accept the Self Signed certificate by clicking on "I understand the risks" link.



Then click "Add Exception".



And then click Confirm Security Exception.



7.2 Home Screen

After logging into the CyberData SIP Celling Speaker using your favorite browser you are immediately taken to the Home Screen which will display the following information

On the Top, you will find your navigation options,

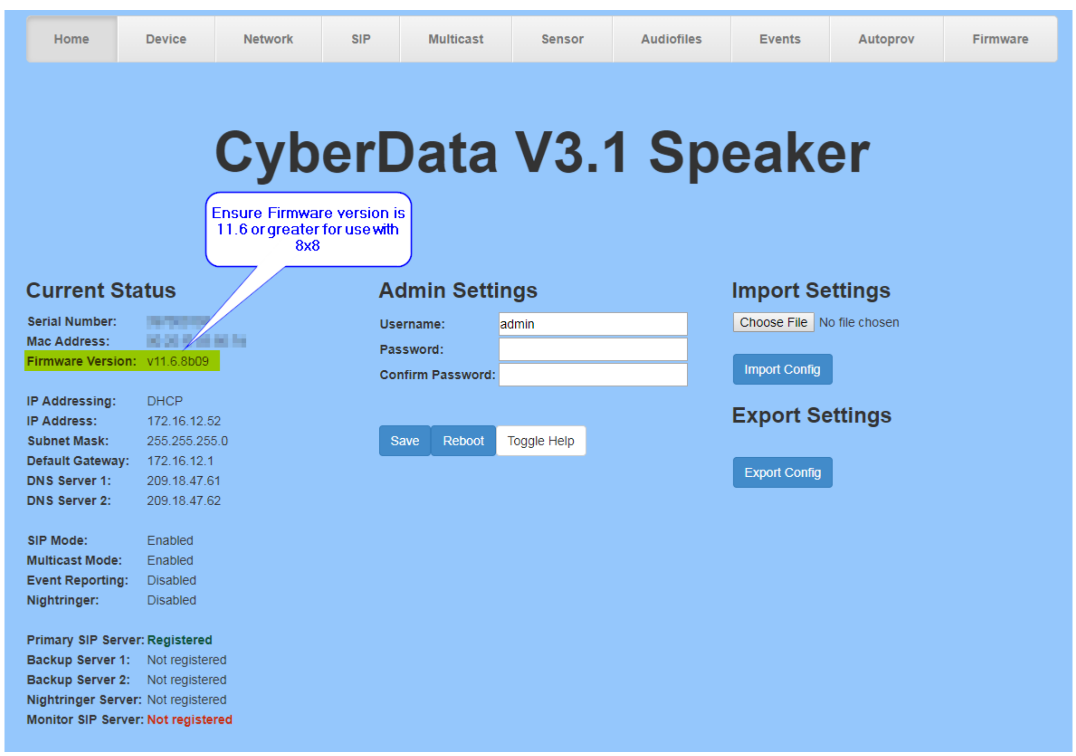
Change Username: Type in this field to change the username (25-character limit).

- Default: **admin**

Change Password: Type in this field to change the password (19-character limit).

- Default: **admin**

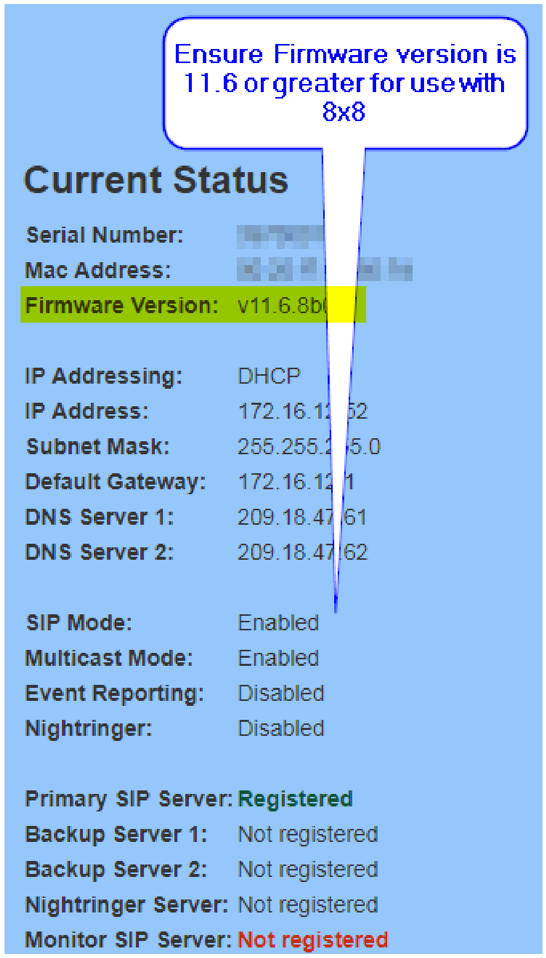
Re-enter Password: Type the password again in this field to confirm the new



password (19-character limit).

Current Settings:

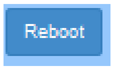
Provides you with the current IP addressing of the device, Mac address and serial number.



The home screen will also show the current registration status, and features enabled on the CyberData SIP Paging Speaker.

Click on 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.

7.3 Device Configuration

On the device configuration screen, you can configure several default options for the paging speaker.

It is 8x8's recommendation to leave all these settings as default.

If using a Cyber Data add on such as the Clock, Talkback, Strobe you may see additional options here.

Please refer to the Cyber Data Manual for additional information on this section.

Device Name: Shows the device name (25-character limit). If using multiple paging speakers, please provide a unique name for each speaker. This name should reference the physical location of the device for future administration purposes.

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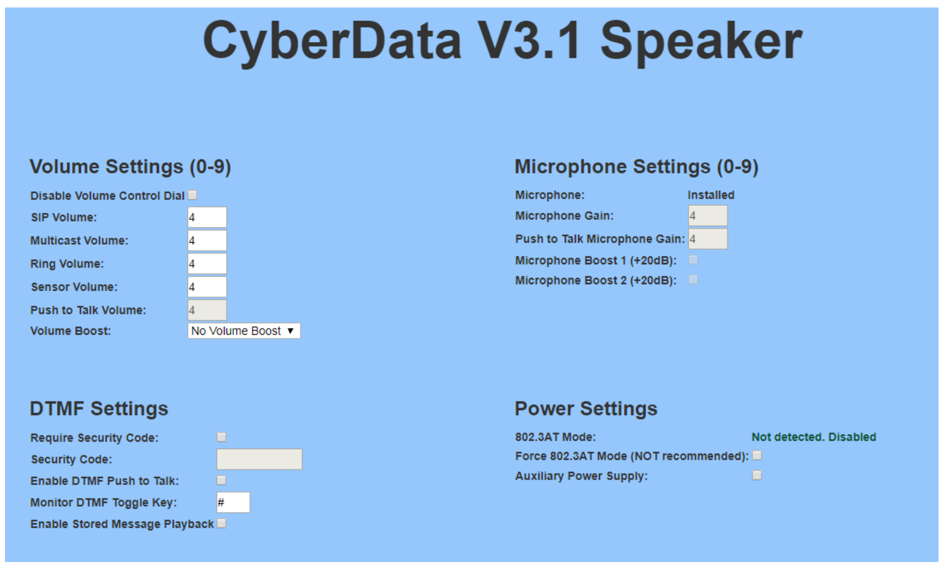
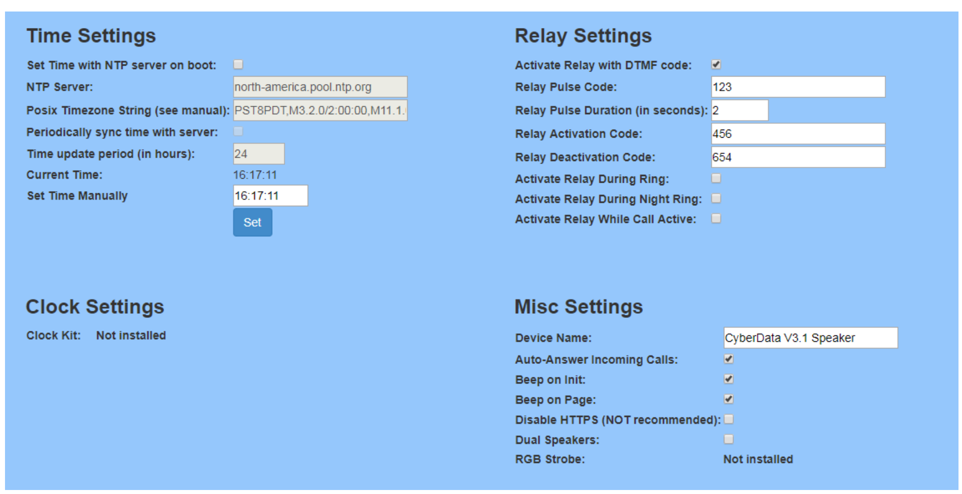
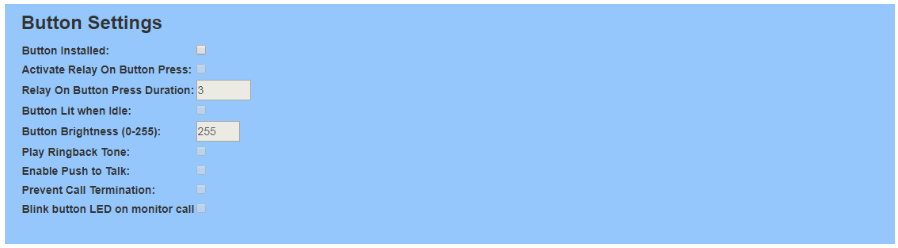
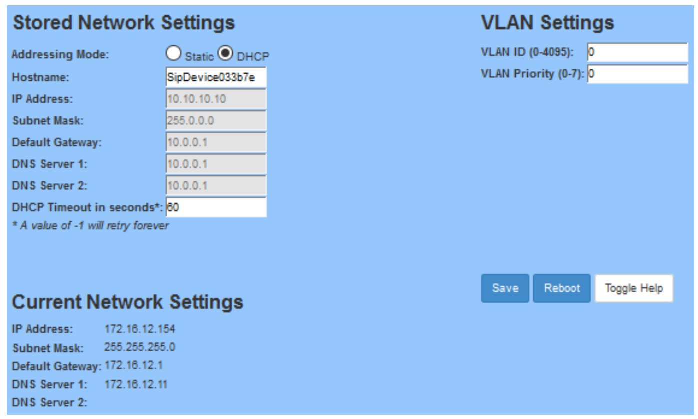






7.4 Network Configuration



Addressing Node 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.

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.

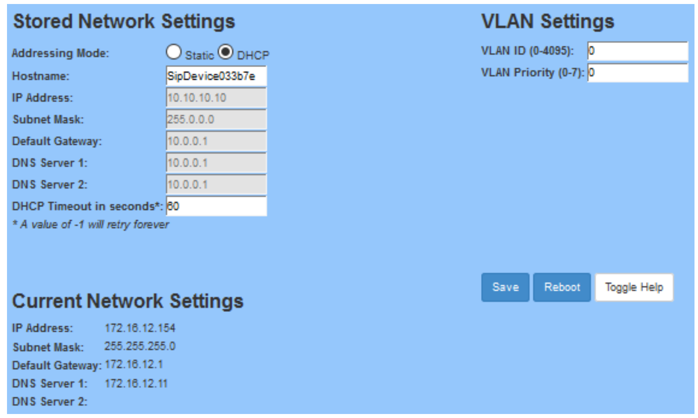
Subnet Mask Enter the Subnet Mask in dotted decimal notation.

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.

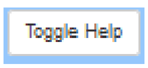
DHCP Timeout in seconds Specify the desired time-out duration (in seconds) that the device will wait for a response from the DHCP server before reverting to the stored static IP address. The stored static IP address may be the last known IP address or the factory default address if no prior DHCP lease was established. Enter up to 8 characters. A value of -1 will retry forever.



Click on 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.

7.5 SIP Configuration

SIP configuration screen is used to configure the SIP registration parameters used by the CyberData SIP Celling Speaker to register with 8x8 for paging purposes. The SIP User ID and Authentication ID are the same values which is the GUN ID provided by your 8x8 for the device and assigned to the user created previously. Authentication Password is provided by your 8x8 Engineer.

Enable SIP Operation: Checked

Register with a SIP Server: Checked

Use Cisco SRST: Unchecked

SIP Server: unsbc.8x8.com

Backup SIP Server 1: Not Used

Backup SIP Server 2: Not Used

Remote SIP Port: 5299

Local SIP Port: 5060

Outbound Proxy: must be left blank.

Outbound Proxy Port: 0

SIP User ID: the GUN ID provided by your 8x8 Engineer.

Authentication ID: Same as User ID.

Authentication Password: the SIP Proxy Password provided by your 8x8 engineer.

Monitor User ID: Leave as default.

Monitor Authenticate ID: Leave as default.

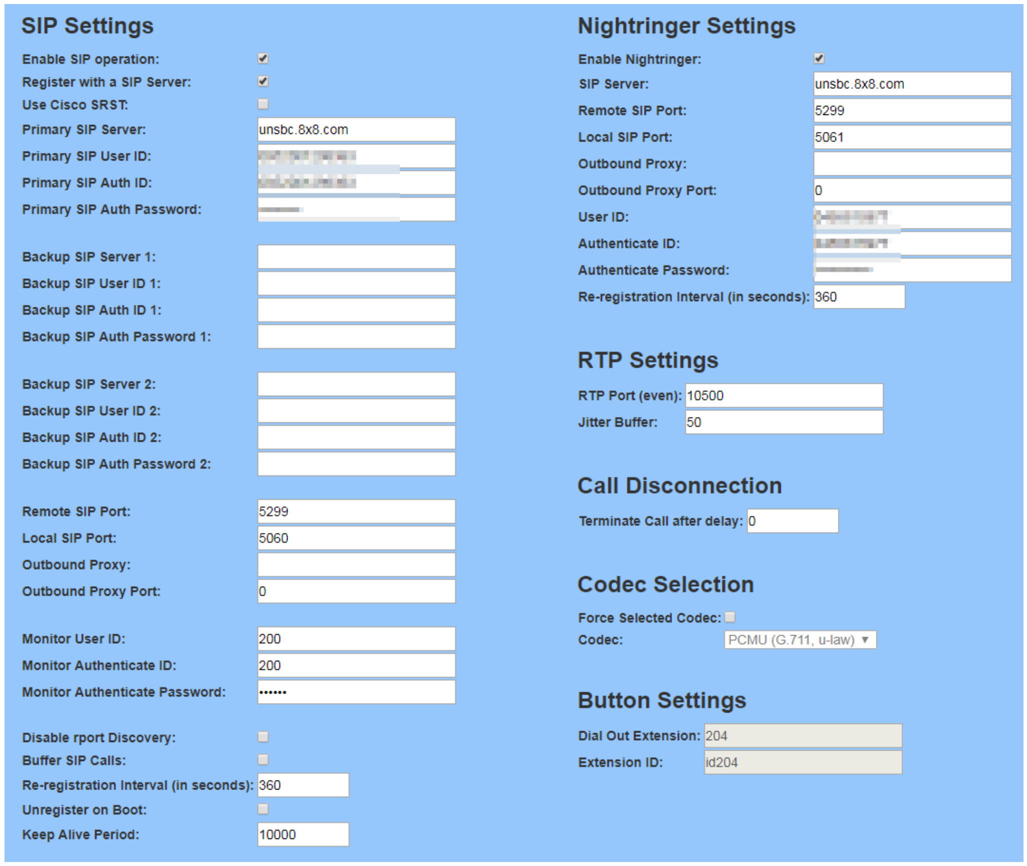
Monitor Authenticate Password: Leave as default.

Button Dial Out Extension: If equipped, the extension the device will dial.

Button Extension ID: If equipped, the extension the device will show the call coming from.

Re-registration Interval: 360

Unregister on Reboot: Unchecked



Note: if checked will create an issue on registration, and the device will fail to register.

Buffer SIP Calls: Optional, if checked the CyberData SIP Server will buffer the page, and once the call is disconnected, it will make the page.

RTP Port (even): 10500

Jitter Buffer: 50

Call Disconnection
Terminate call after delay: 0

Codec Selection Force
Selected Codec: Unchecked

Codec: PCMU (G.711, u-law)

7.6 Nightringer Configuration

Nightringer configuration screen is used to configure the SIP registration parameters used by the CyberData SIP Celling Speaker to register with 8x8 for Night Bell or Nightringer purposes. The SIP User ID and Authentication ID are the same values which is the GUN ID provided by your 8x8 for the device and assigned to the user. Authentication Password is provided by your 8x8 Engineer.

Enable Nightringer: Checked

SIP Server: unsbc.8x8.com

Remote SIP Port: 5299

Local SIP Port: 5061, must be Port 5061.

User ID: the GUN ID provided by your 8x8 engineer.

Authentication ID: Same as User ID.

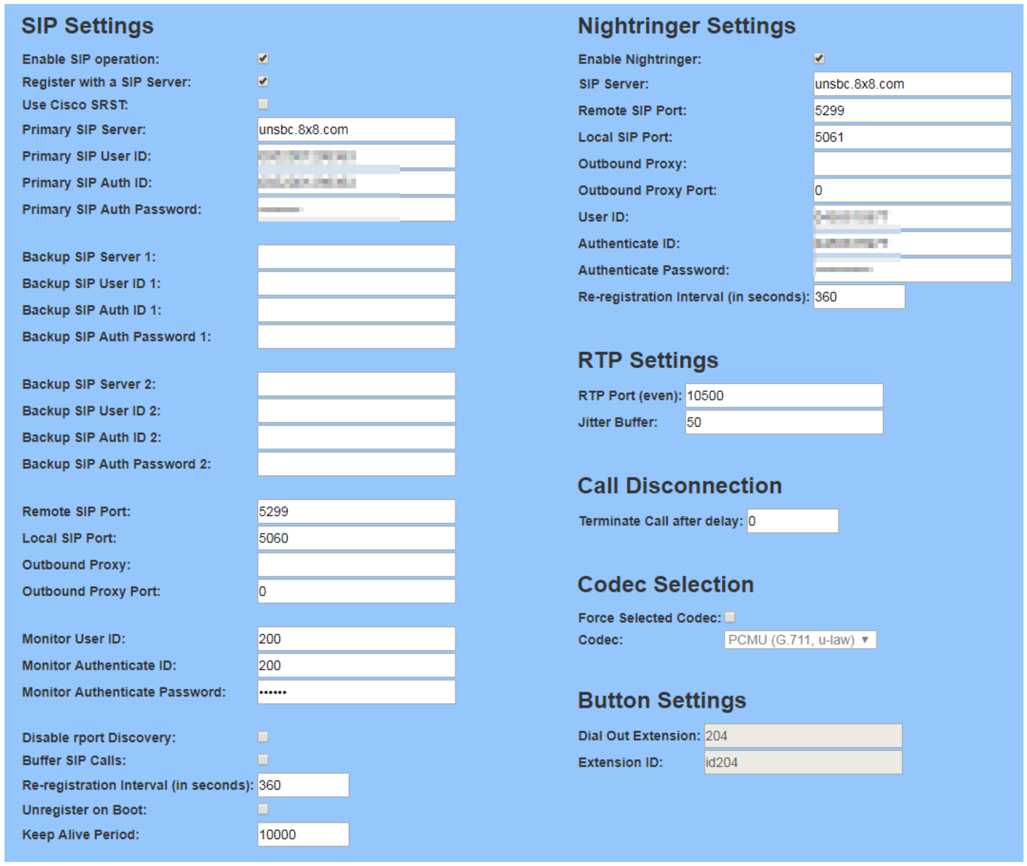
Authentication Password: The SIP Proxy Password for the Device as provided by your 8x8 engineer.

Re-registration Interval: 360

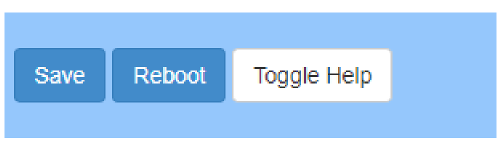
Relay rings to multicast: If you wish all multicast devices to receive the ringer page, CHECK this check box.

Multicast Address: the IP Address to send the nightringer page to.

Multicast Port: The Port Address to send the nightringer page to.



Click on 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.

7.7 Multicast (Paging Groups)

A multicast group is a way of assigning multicast IP addresses and port numbers when configuring CyberData multicast paging. To assign a multicast address, you must first configure the Yealink, Polycom and CyberData VoIP speakers that you want to put into a paging zone by entering a particular multicast address and port number combination in the Yealink, Polycom web interface, and web configuration for CyberData VoIP speakers. Each zone must have a unique IP address and Port number. The Port number must be even. The Multicast Configuration page consists of four pages. Each page must be saved independently.

To edit a paging group, click on the Edit button for the group you wish to edit. In the popup windows enter your configuration options for that paging group.

Polycom will use a Default IP of 224.0.1.116 and a port of 5001 for its paging functions. 8x8 recommends that when using Polycom phones to set Priority 0 to be your Polycom Paging group by entering the IP of 224.0.1.116 and Port 5001 into Priority 0.

Address: Enter the IP address of the PGROUP.

- **Note**: To disable a relay on a group, use an IP address of 0.0.0.0.

Port: Enter the port number of the PGROUP.

- **Note**: The port range can be from 2000 to 65534 and must be even.

Name: Enter a name for the PGROUP.

Buffer: Should this be buffered before played.

Beep: should a beep be played before page.

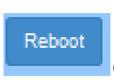
Relay: should the relay be engaged with this page.

Polycom Default Channel: 1

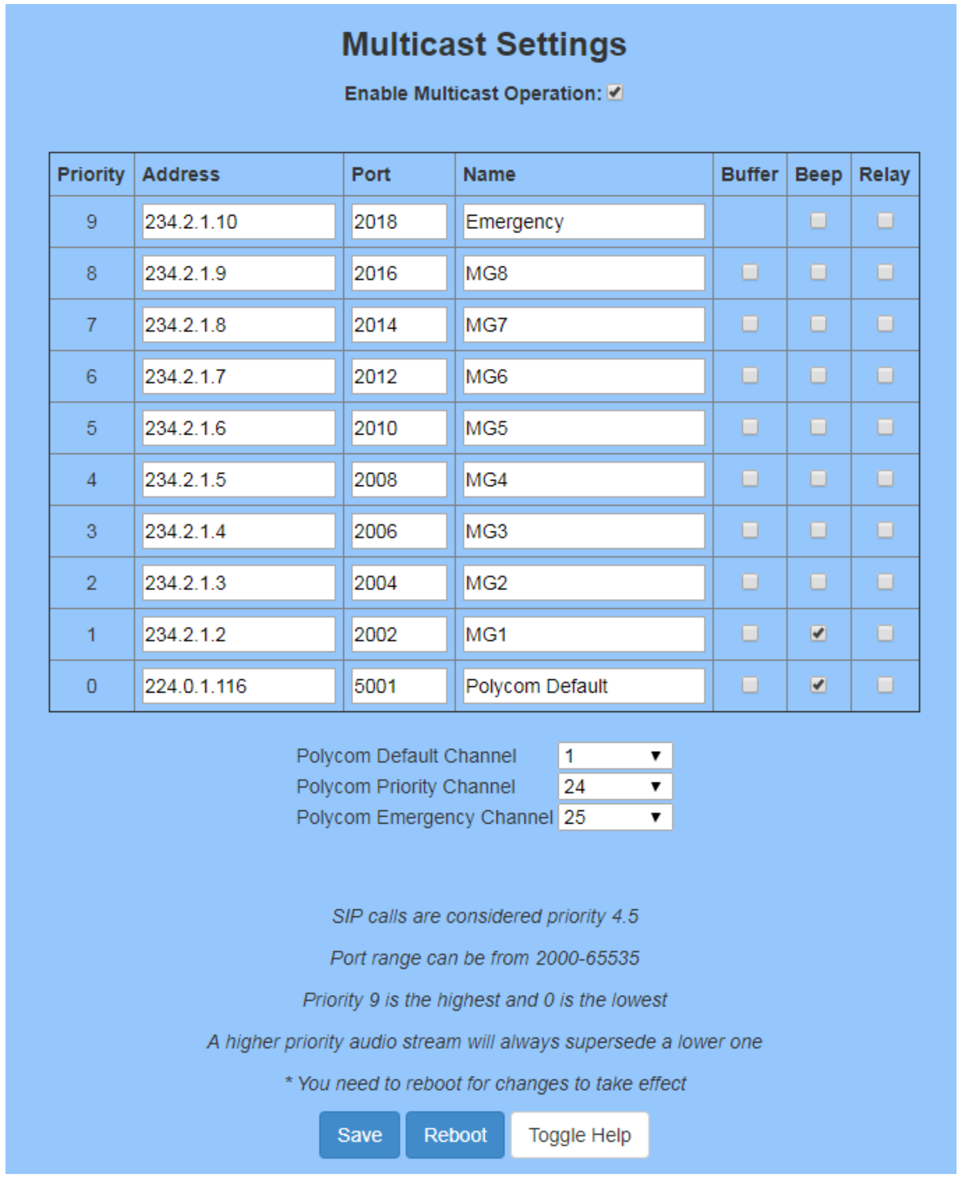
Polycom Priority Channel: 24

Polycom Emergency Channel: 25

Note: You need to reboot for changes to take effect.



Click on the Reboot button to reboot the system.



Multicast Settings

Enable Multicast Operation: ☑

Priority	Address	Port	Name	Buffer	Beep	Relay
9	234.2.1.10	2018	Emergency		☐	☐
8	234.2.1.9	2016	MG8	☐	☐	☐
7	234.2.1.8	2014	MG7	☐	☐	☐
6	234.2.1.7	2012	MG6	☐	☐	☐
5	234.2.1.6	2010	MG5	☐	☐	☐
4	234.2.1.5	2008	MG4	☐	☐	☐
3	234.2.1.4	2006	MG3	☐	☐	☐
2	234.2.1.3	2004	MG2	☐	☐	☐
1	234.2.1.2	2002	MG1	☐	☑	☐
0	224.0.1.116	5001	Polycom Default	☐	☑	☐

Polycom Default Channel: 1

Polycom Priority Channel: 24

Polycom Emergency Channel: 25

SIP calls are considered priority 4.5

Port range can be from 2000-65535

Priority 9 is the highest and 0 is the lowest

A higher priority audio stream will always supersede a lower one

** You need to reboot for changes to take effect*

Save | Reboot | Toggle Help