CyberData SIP Intercom Integration with 8x8

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

- 011214 SIP Outdoor Intercom with Keypad
  - Serial number begins with 2141.
- 011186 SIP Outdoor Intercom
  - Serial number begins with 1861.
- 011211 SIP Indoor Intercom
  - Serial number begins with 2111.
- 011272 SIP Indoor Intercom Flush Mount
  - Serial number begins with 2721.
- 011113 SIP Indoor Intercom with Keypad Surface Mount
  - Serial number begins with 1131.
- 011123 SIP Indoor Intercom with Keypad Flush Mount
  - Serial number begins with 1231.

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.

1 Contents

2 Integration

CyberData SIP Intercom can be integrated with 8x8 to provide an intercom door box service including relay functions for door strikes/locks.

The CyberData SIP Intercom can listen in to Multicast Streams that are pre-defined, and relay out the internal speaker.

8x8 highly recommends using the speed dial functions of the CyberData SIP Intercom for placing the intercom calls inside the building, vs. allowing the party to dial direct extensions. This could leave an opening for toll fraud, unless proper toll restrictions are implemented.

This document will concentrate on using the speed dial integration method.

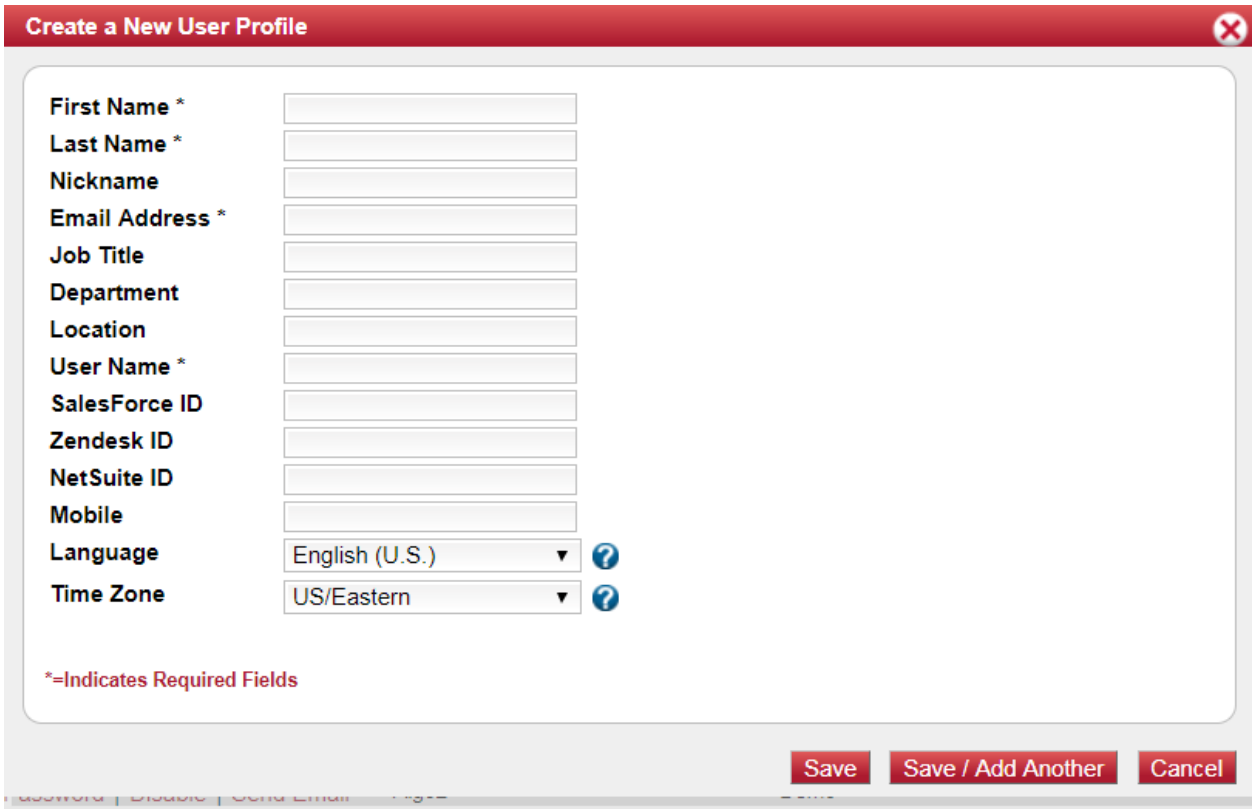
3 Creating a User Profile on 8x8 for SIP Calls and Night Ring Capabilities

If using the SIP Call and or Night Ring capabilities of the SIP Intercom, 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.

3.1 Create User Profile

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

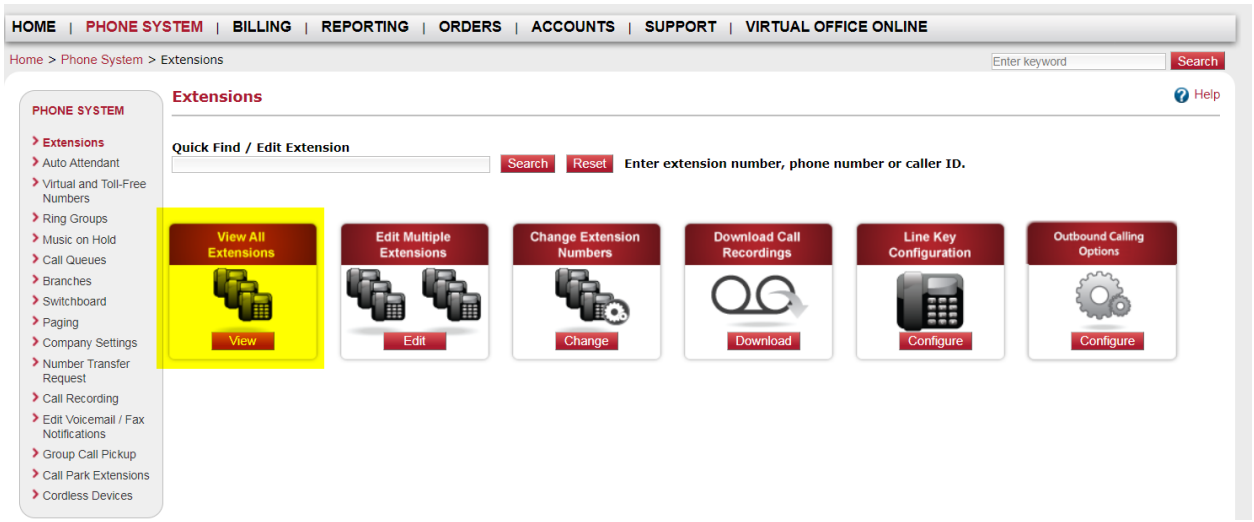
- First Name (Required)
- Last Name (Required)
- Nickname (Optional)
- Email Address (Required, and must be unique)
- Job Title (Optional)
- Department (Optional)
- Location (Optional)
- User Name (Required)
- SalesForce ID (Ignore)
- Zendesk ID (Ignore)
- NetSuite ID (Ignore)
- Mobile (Ignore)
- Language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

4 Assign User to the Device

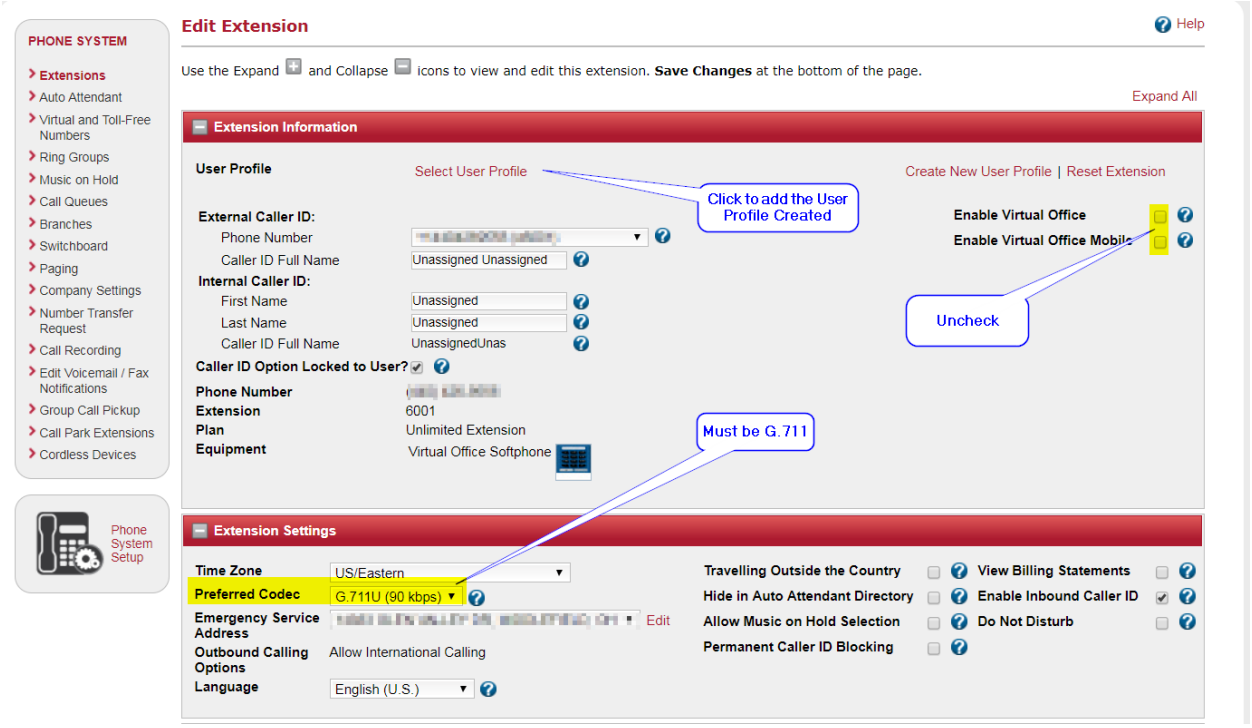
After creating the user profile that will interface with CyberData Equipment, assign the user to the device. In Account Manager select Phone System, and then click on View All Extensions.



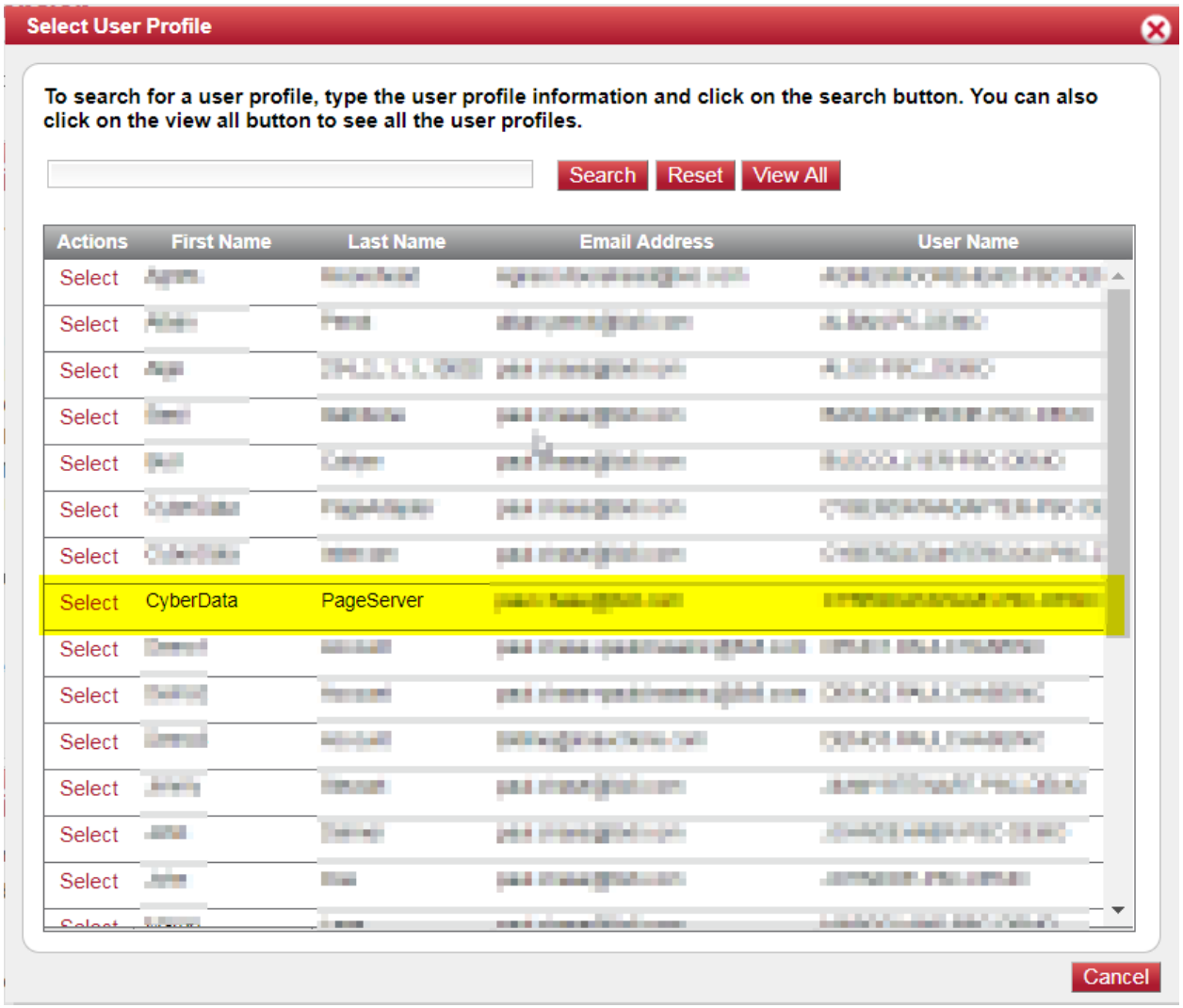
From the list of extensions find the extension ordered for the Cyber Data Device, and click Edit.

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.



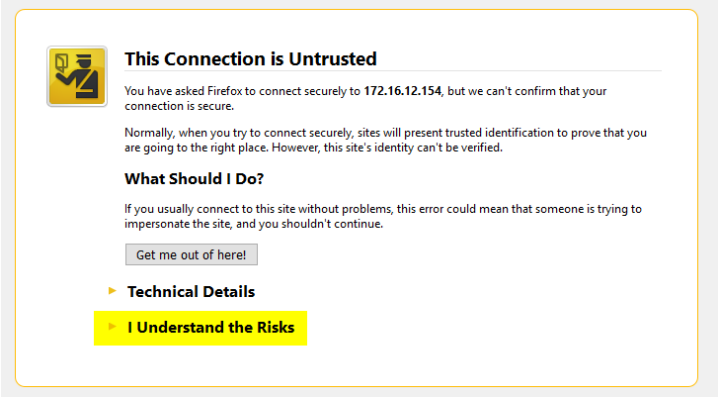
It will return you to the previous screen and click on “Save Changes”.

5 CyberData SIP Intercom Setup

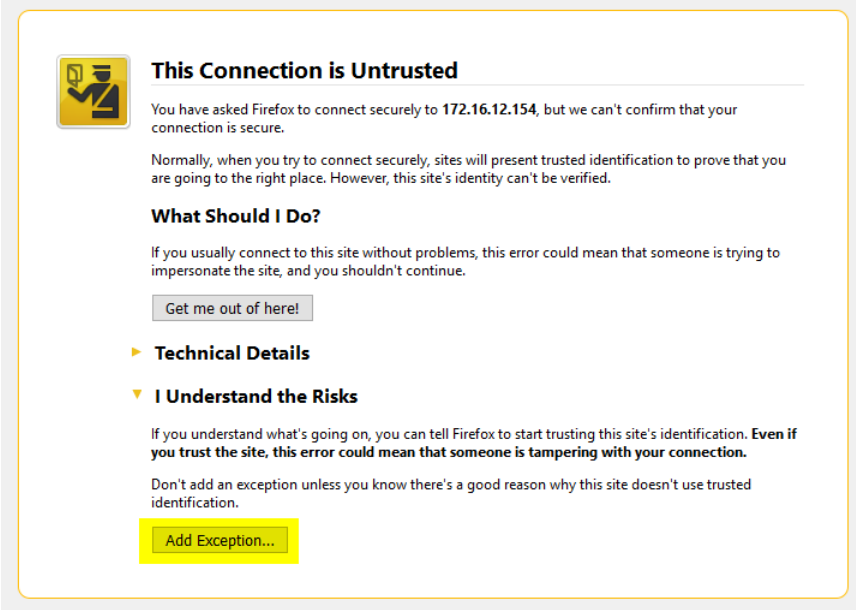
When deploying the CyberData SIP Intercom it is recommended to use DHCP. CyberData provides a “Discovery Utility” that can be downloaded from their website (http://www.cyberdata.net/support/voip/discovery_utility.html) to initially discover the IP address of the SIP Intercom. Using the CyberData Discovery Utility to obtain the current IP address of the CyberData equipment 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.

5.1 Connecting to the CyberData SIP Intercom

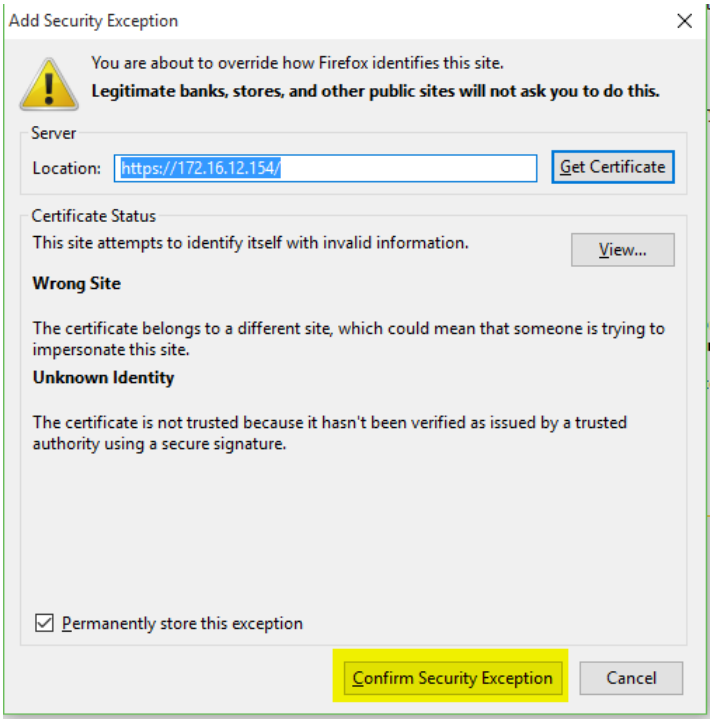
The CyberData SIP Intercom now uses HTTPS to provision the device. When connecting to the CyberData SIP Intercom you will be required to accept the Self Signed certificate by clicking on "I understand the risks" link.



Then click "Add Exception".



And then click Confirm Security Exception.



5.2 Home Screen

After loging into the CyberData SIP Intercom 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.

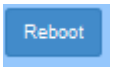
The home screen will also show the current registration status, and features enabled on the CyberData SIP Intercom.

Import/Export Settings

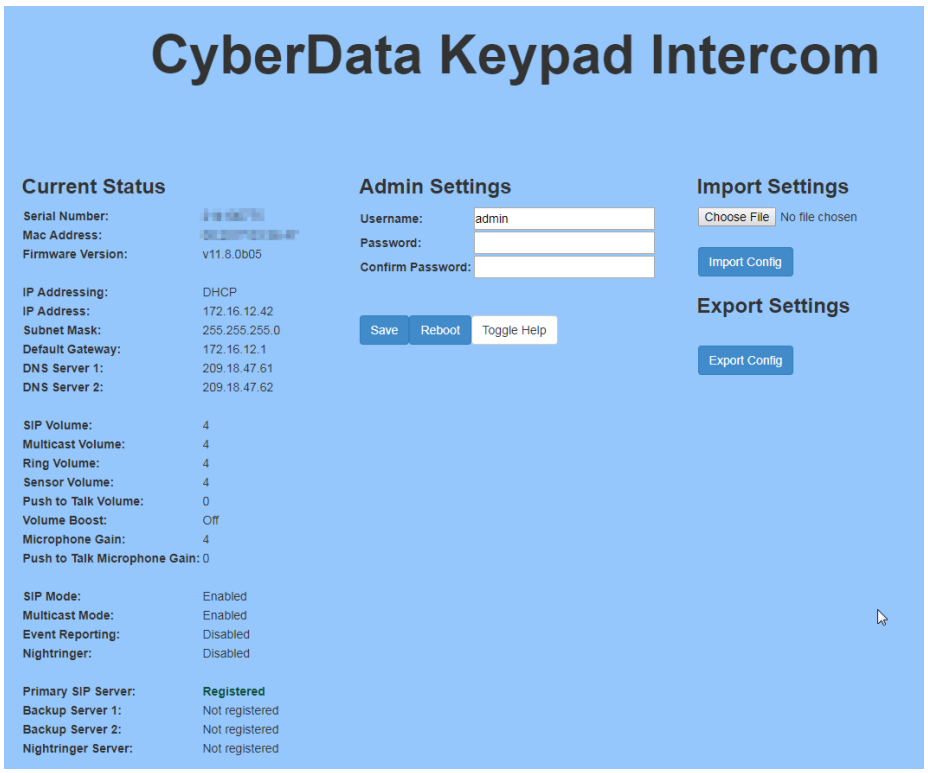
Allows for Importing and Exporting settings of the CyberData Intercom.

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.



5.3 Device Configuration

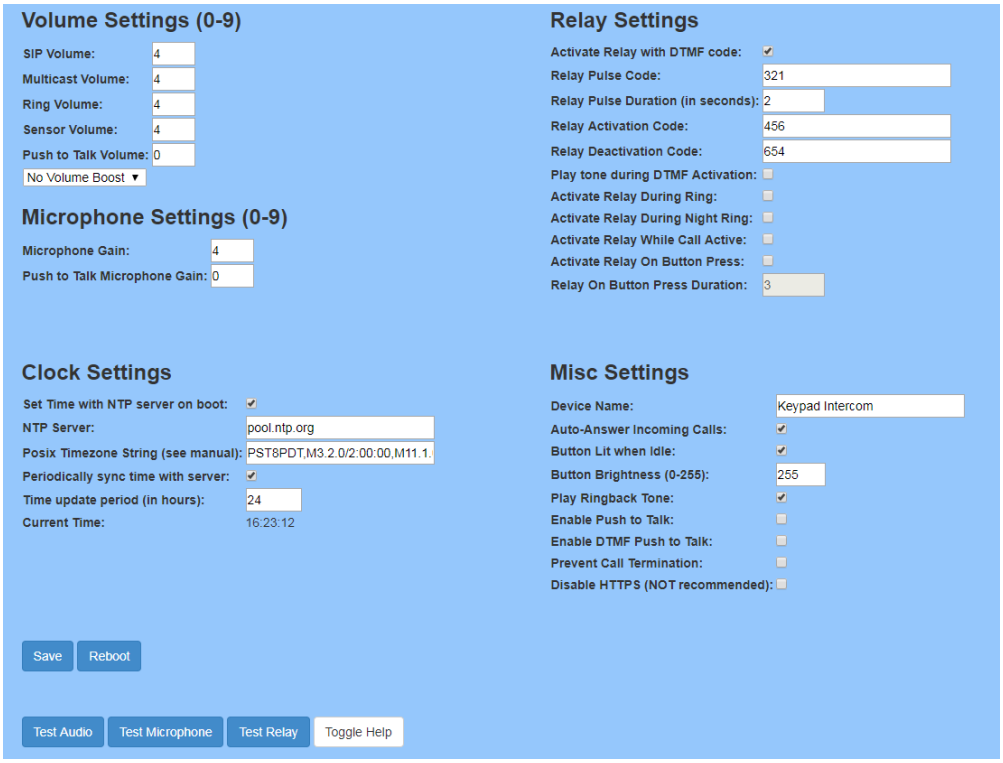
On the device configuration screen, you can configure several default options for the CyberData Intercom, and perform basic operation tests.

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 incoming calls. A value of 0 will mute the speaker instead of playing the ring tone when Auto-Answer Incoming Calls is disabled.

Sensor Volume Set the speaker volume for playing sensor activated audio. A value of 0 will mute the speaker during sensor activated audio.

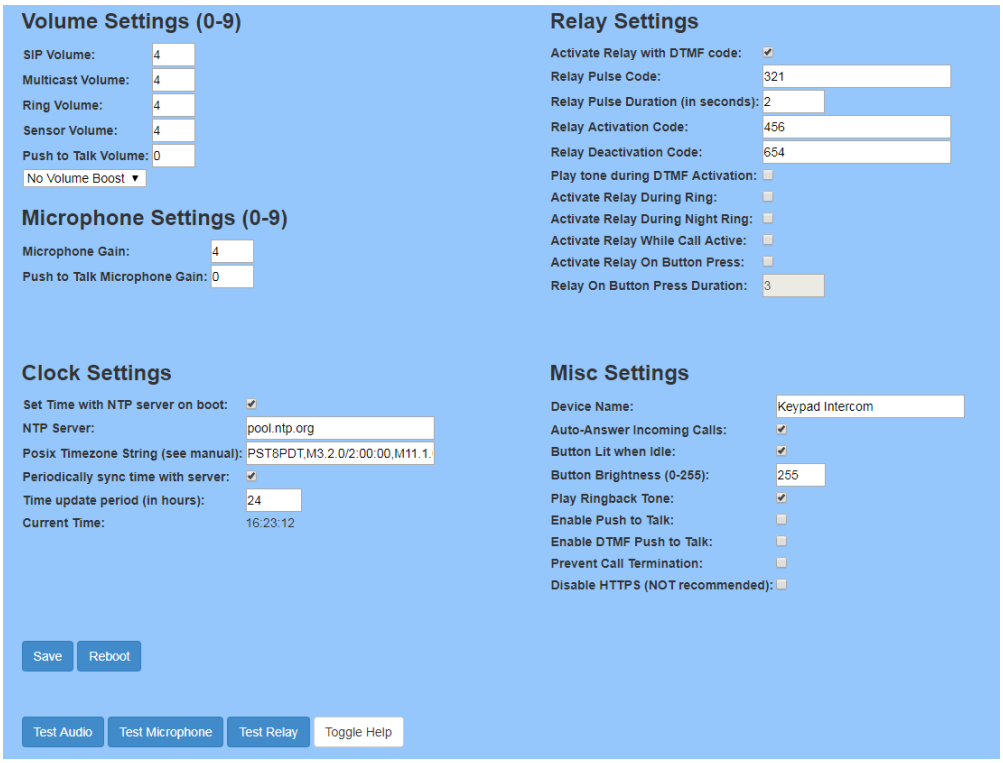


Microphone Gain
Set the microphone gain level.
Volume Boost:
No Volume Boost
Volume Boost 1
Volume Boost 2
Volume Boost 3

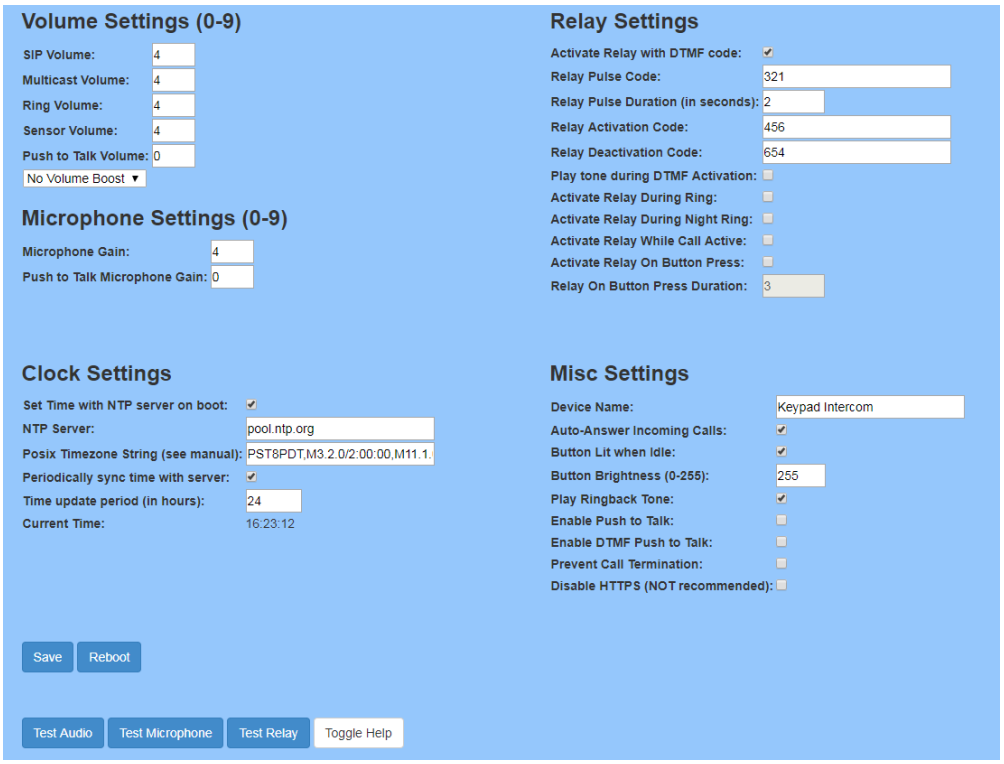
Set the Boost level to increase the volume output of the speaker.
Using Volume Boost may introduce audio clips or cause the device to
drop from full duplex to half duplex operation. Normal operation of the product can be met with volume levels 0 through 9. 0 being mute and 9 being the loudest volume that in a
normal arm's length and average background noise, will enable full
duplex operation and give the best quality of sound output.

The volume boost options increase the output of the speaker by:
3db for Boost level 1
6db for Boost level 2
9db for Boost level 3

If the user would like a higher output from the speaker, the Boost settings are available. However, operation in
Boost Mode may overdrive or clip the audio if, for example, the phone that is connected has a high microphone gain or if the person has a loud
voice talking too close to the microphone.



The acoustic echo canceller also has a harder time maintaining full duplex operation when in the Boost Mode.
The product may drop from full duplex operation into half/duplex mode while in Boost Mode.



Activate Relay with DTMF code: Relay can be activated via DTMF Code when checked.

DTMF Activation Code: Code used to activate relay.

DTMF Activation Duration (in seconds): Duration the relay is activated after the proper code is entered. 0-99 seconds. If 0 is entered the relay is indefinitely activated until the DTMF code is entered a second time.

Activate Relay During Ring: When enabled the relay is activated while the device is ringing. If Auto answer is enabled, this feature is disabled.

Activate Relay During Night Ring: When selected, the relay will be activated if the Night ringer extension is ringing.

Activate Relay While Call Active: When enabled the relay is activated for the duration of the call automatically.

Activate Relay on Button Press: When enabled, the relay is activated for the duration

specified in “Relay on Button Press Timeout” when the call button is pressed.

Relay on Button Press Duration (in seconds): Duration the relay is activated after the call button is pressed 1-9 seconds.

Device Name: Type the device name. Enter up to 25 characters.

Auto-Answer Incoming Calls: When enabled, the intercom will auto answer all incoming calls.

Button Lit when Idle: When enabled, the call button is lit when there is no active call.

Button Brightness (0-255): The desired Call button LED brightness level. Acceptable values are 0-255, where 0 is the dimmest and 255 is the brightest. Enter up to three digits.

Turn on Keypad backlight: When enabled, the keypad is backlit.

Play Ringback Tone: When enabled ringback tone is heard when making a call.

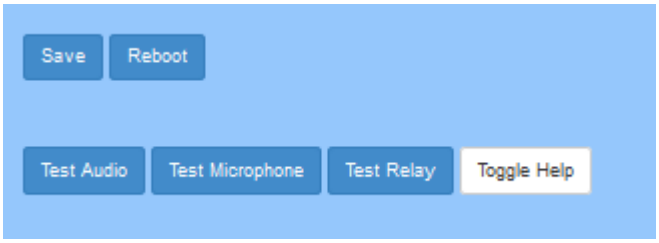
Enable Push to Talk: When enabled this will cause the device to be muted normally, and only transmit audio from the microphone while the call button is pressed. You will not

be able to terminate the call from the intercom unit.

Enable DTMF Push to Talk: When enabled pressing the * (star) key will disable the speaker and set the microphone gain level to the max, pressing the # (pound/hash) key the mic will be muted and the speaker will be set to its loudest level.

Prevent Call Termination: When enabled the call button cannot be used to terminate the call.

Disable HTTPS (NOT recommended): Disables the encrypted connection to the webpage. We do not recommend disabling HTT PS for security reasons.



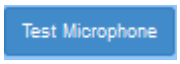
Save Click on the Save button to save your configuration settings.

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

Reboot Click on the Reboot button to reboot the system.

Test Audio When the Test Audio button is pressed, you will hear a voice message for testing the

device audio quality and volume.



When the Test microphone button is pressed, the Intercom will record 3 seconds of audio, then beep to indicate the end of recording, and play back the recording.

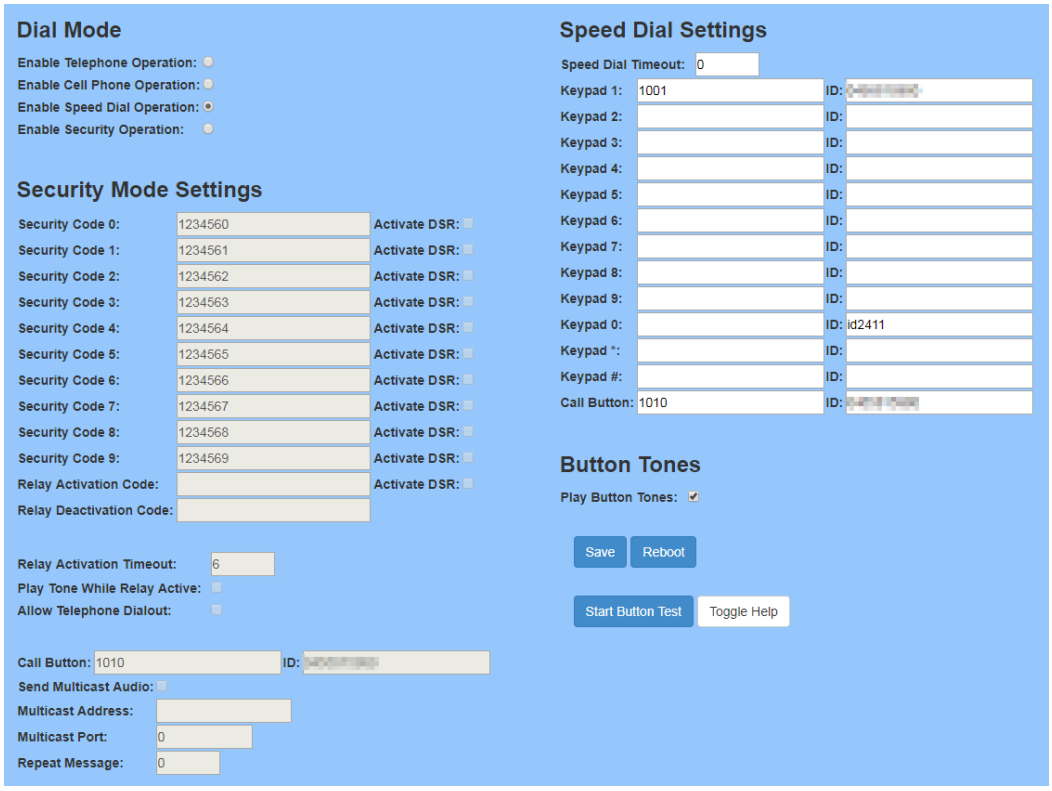
Click on the Test Relay button to do a relay test.

5.4 Button Configuration

Button configuration screen is used to configure what happens when the buttons (the Call Button or keys on the key pad) are pressed.

Enable Telephone Operation: Select Enable Telephone Operation to put the Intercom into Telephone Dial Mode. In Telephone Dial Mode, the Intercom will operate like a telephone:

- To make a call in this mode, press the Call Button to go 'off-hook'. The unit will begin playing a dial tone and will wait for keypad input.
- Dial the extension you want to reach and wait.
- Pressing the Call Button at any time in this process will hang up the call (put it back 'on-hook').



• During a call, you can use the keypad to send DTMF tones to the remote extension.

Enable Cellphone Operation: Select Enable Cellphone Operation to put the Intercom into Cellphone Dial Mode. In Cellphone Dial Mode, the Intercom will operate like a cellular phone:

• This mode is similar to the telephone operation but you dial in an extension differently.

• To make a call in this mode, dial the extension and then press the call button to 'send' or initiate the call.

• Pressing the call button at any time in this process will hang up the call (put it back 'on-hook').

• During a call you can use the keypad to send DTMF tones to the remote extension.

Enable Speed Dial: Select Enable Speed Dial to put the Intercom into Speed Dial Mode. In this mode the user sets up extensions to dial when a button is pressed.

Speed Dial Timeout (in seconds): The Speed Dial

Timeout (in seconds) setting is the number of seconds you need to hold the button before it will place a call. If this value is 0, it will place a call as soon as the button is released.

Keypad (0-9, *, #): Number to be called when this button is pressed (max of 64 characters).

Call Button: Number to be called when this button is pressed (max of 64 characters).

ID: Enter the Extension number assiciated with the Intercom User (64 character limit).

Enable Security Keypad Operation: Select Enable Security Keypad Operation to put the Intercom into Security Dial Mode. In Security Dial Mode, the Intercom will act like a normal, one-button Intercom by calling the extension specified in the Call Button field.

When a security code is entered on the keypad that matches one of the seven-digit fields specified on the page, the relay will be activated.

• This mode is meant for installation with security

doors. In Security Dial Mode, the Intercom will act like a normal, one-button Intercom by calling the extension specified in the Call Button field.

• Up to 10 (7-digit maximum) security codes can be registered with the device. Enter a security code by pressing the # key before entering the code. When one of these codes is typed on the keypad, it will activate the relay for the Relay Activation Timeout (in seconds) setting.

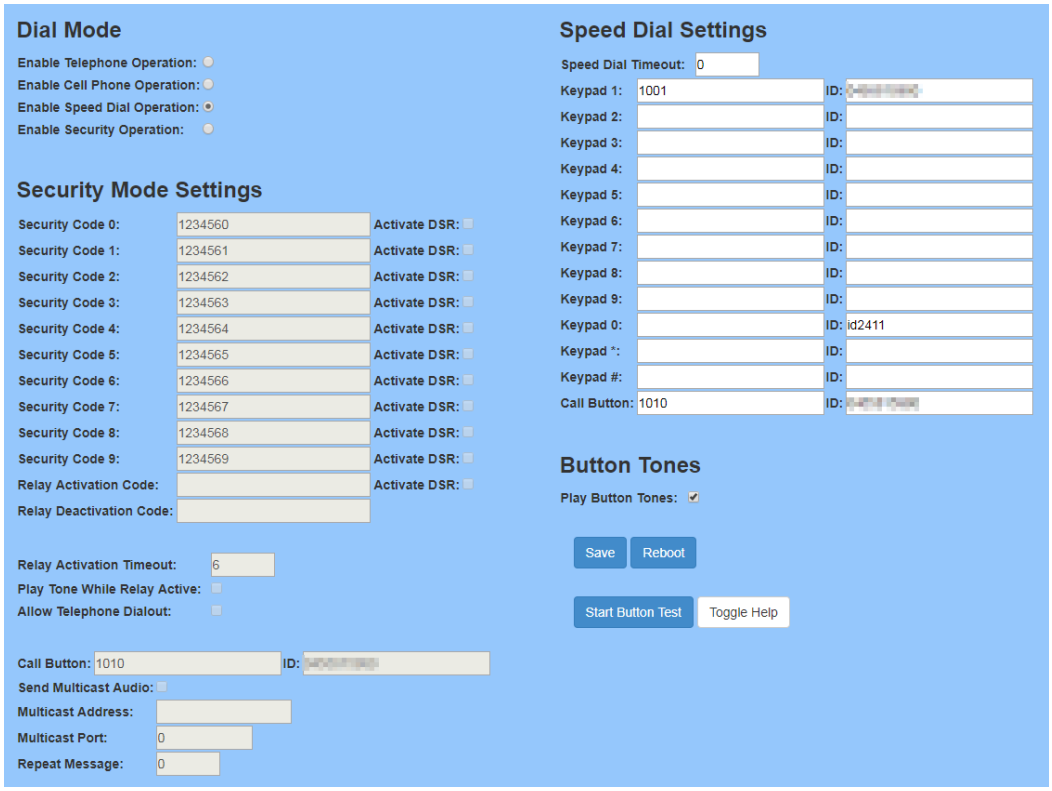
• It is possible to enter a security code both inside and out of calls.

• In this mode normal relay operation is suspended and the following settings are non-operational:

Relay On Button Press, Relay During Call Active, Relay During Ring, Relay During Night-ring

• In this mode, you can't send dtmf to a remote extension using the keypad. You can however setup delayed dtmf tones in the dial out string.

Relay Activation Timeout (in seconds): Type the desired length of time (in seconds) that you want the



relay to remain activated after a security code is entered.

Play Time While Relay is Active: Check this box to play an audible tone while the relay is activated.

Allow Telephone Dialout: When the Allow Telephone Dialout option is enabled, you can use the keypad to place calls to a dialed extension. To call an extension, dial the number and wait. You can still enter security codes with the Allow Telephone Dialout option enabled by pressing the # key before entering the code. With the Allow Telephone Dialout option disabled, all keypad input will be treated as security input. You can still use the # key but it is not necessary.

Call Button: Enter the desired dial-out extension number (64 character limit). Security codes are limited to seven characters and are activated with the # key.

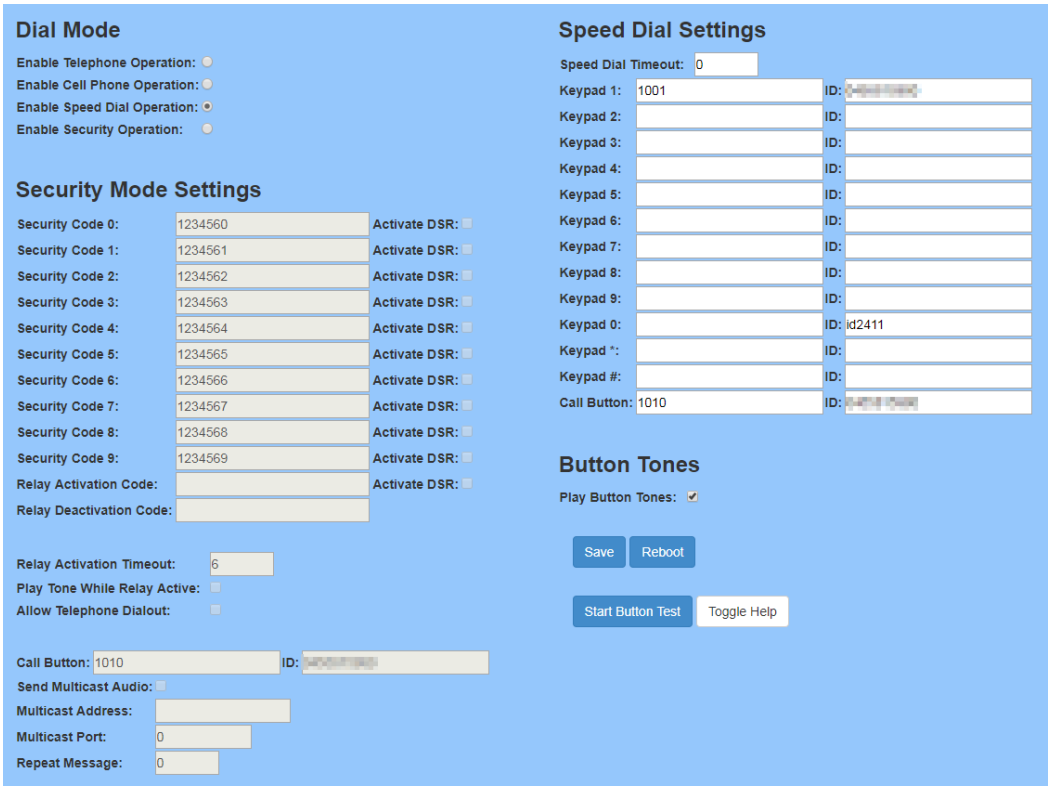
ID: Enter the Extension number assiciated with the Intercom User (64 character limit).

Security Code (0-9): Enter the desired security code

number (7 character limit). When a security code is entered on the keypad that matches one of the seven-digit fields specified on the page, the relay will be activated.

Play Button Tone: Check this box to hear a tone when a keypad button is pushed. This setting applies to all modes and determines whether the device will play an audible sound out of the speaker when doing any of the following:

- Entering a security code.
- Initiating a speed dial.
- Pressing the keys in cellphone and telephone modes.

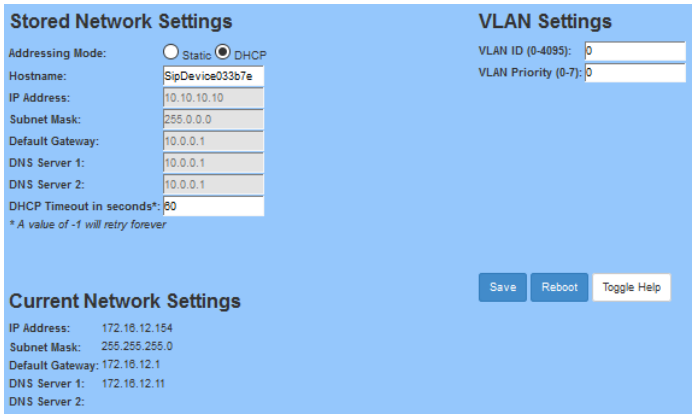


Save Click on the Save button to save your configuration settings.

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

Reboot Click on the Reboot button to reboot the system.

5.5 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.

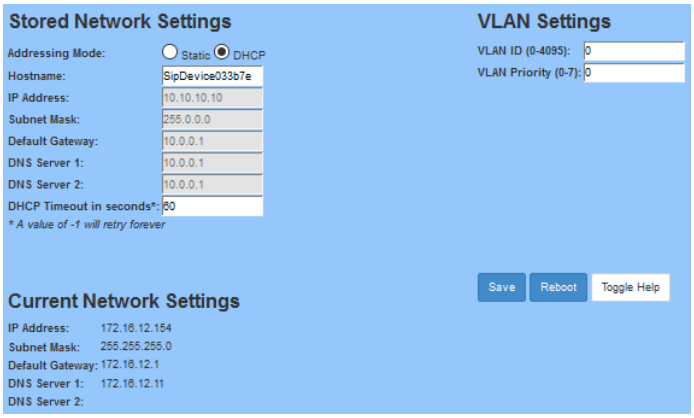
Subnet Mask Enter the Subnet Mask in dotted decimal notation.

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.



Save Click on 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.

5.6 SIP Configuration

SIP configuration screen is used to configure the SIP registration parameters used by the CyberData SIP Intercom to register with 8x8 for paging purposes. The SIP User ID and Authentication ID are the same values which is the Device ID created in 8x8 configuration and assigned to the user. Authentication Password is only used if a SIP Proxy Password is required by the Generic SIP Device created in 8x8 configuration manager.

Enable SIP Operation: Checked

SIP Server: unsbc.8x8.com

Backup SIP Server 1: Not Used

Backup SIP Server 2: Not Used

Use Cisco SRST: Unchecked

Remote SIP Port: 5199

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.

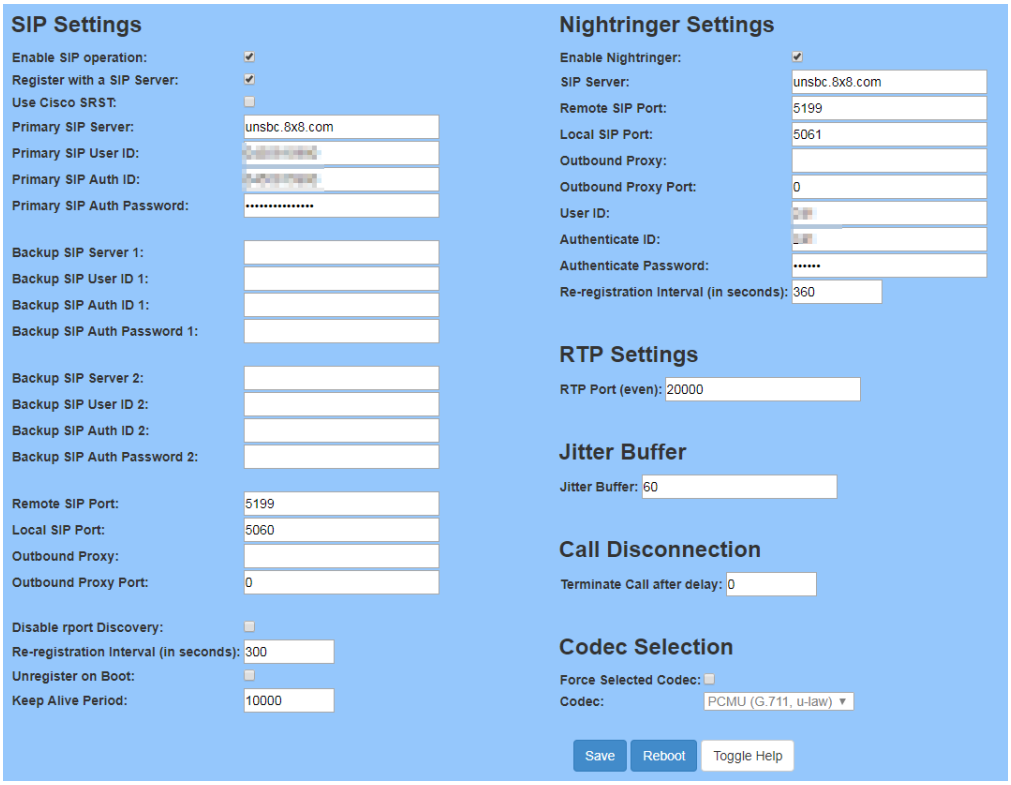
Authentication Password: The SIP Proxy Password for the Device as provided by your 8x8 engineer.

Register with a SIP Server: Checked

Re-registration Interval: 360

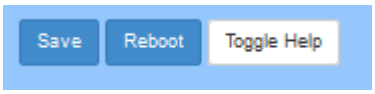
Terminate call after delay (in seconds): Type the desired number of seconds that you want to last before a call is terminated.

Note: A value of 0 will disable this function.

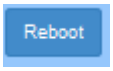


Unregister on reboot:
Unchecked

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.

5.7 Nightringer Configuration

Nightringer configuration screen is used to configure the SIP registration parameters used by the CyberData SIP Intercom 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 in section 6 and assigned to the user created previously. Authentication Password is provided by your 8x8 Engineer.

Enable Nightringer: Checked

SIP Server: unsbc.8x8.com

Remote SIP Port: 5199

Local SIP Port: 5061, must be Port 5061.

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

Authentication ID: Same as User ID.

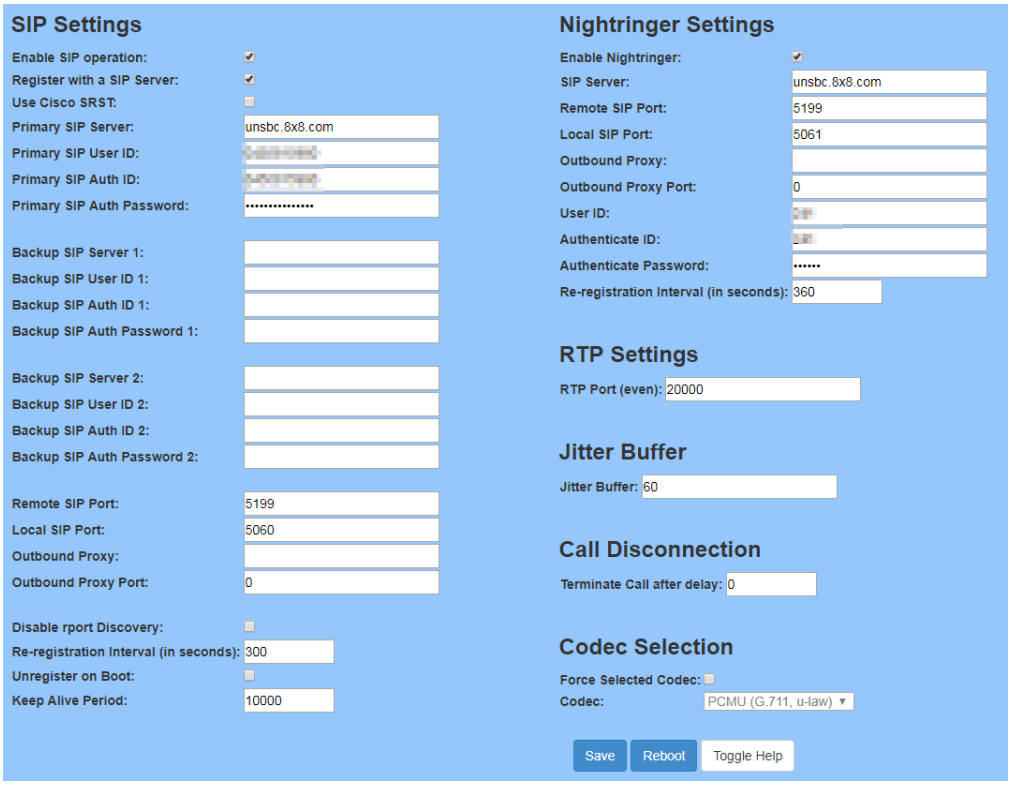
Authentication Password: The SIP Proxy Password for the Device as provided by your 8x8 engineer.

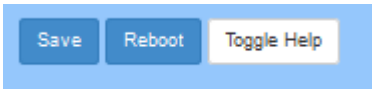
Re-registration Interval: 360

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.

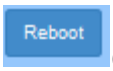
Multicast Port: The Port Address to send the nightringer page to.



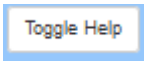


Click on the Save button to save your configuration settings.

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.

5.8 Multicast Configuration

Multicast Configuration is used to create multiple zones that the CyberData SIP Intercom will listen to and relay pages that are received, configure each multicast zone to match the multicast Zone. If you are not using Multicast Paging, or do not want to include the Intercom in the paging zone this section can be skipped.

When playing multicast streams, audio on different streams will preempt each other according to their priority in the list. An audio stream with a higher priority will interrupt a stream with a lower priority.

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 analog volume control is bypassed and the volume level is set to maximum.

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

Priority 9 will pay the announcement at maximum volume.

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.

Enable Multicast operation: Checked

Address: Enter the IP address of the Multicast Group.

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

Port: Enter the port number of the Multicast Group.

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

Name: Enter a name for the Multicast Group.

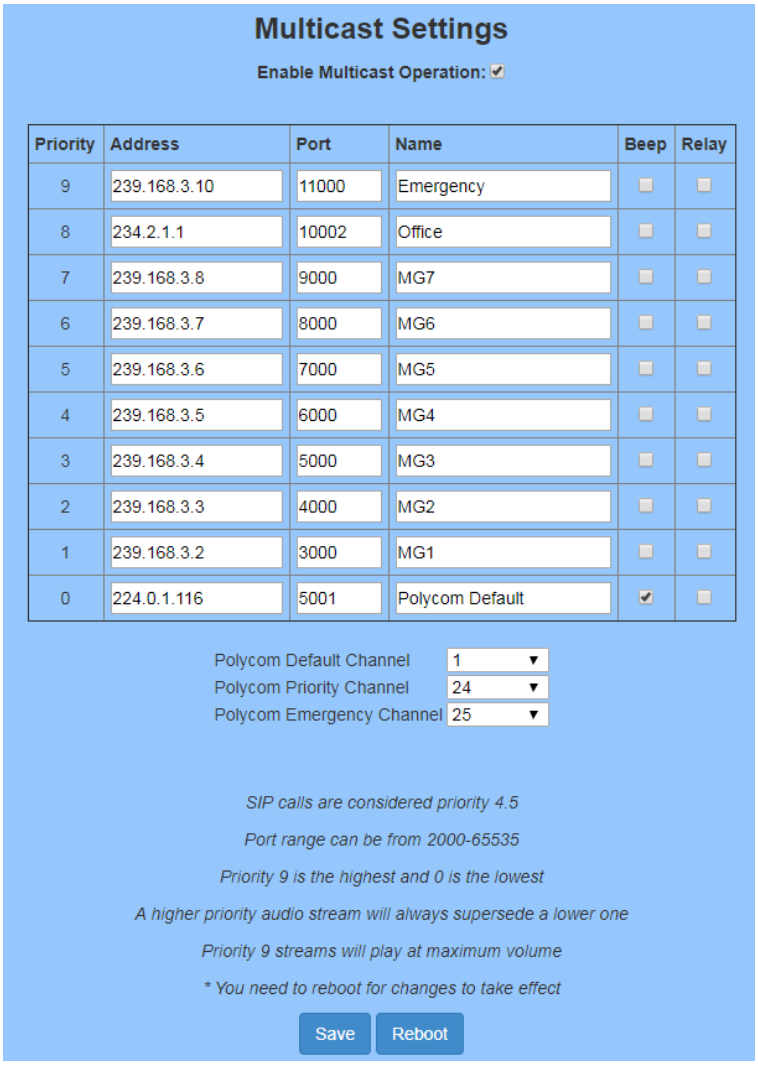
Beep: should a beep be played before page.

Relay: should the relay be engaged with this page.

Polycom Default Channel: 1

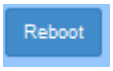
Polycom Priority Channel: 24

Polycom Emergency Channel: 25



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.

5.9 Sensor Configuration

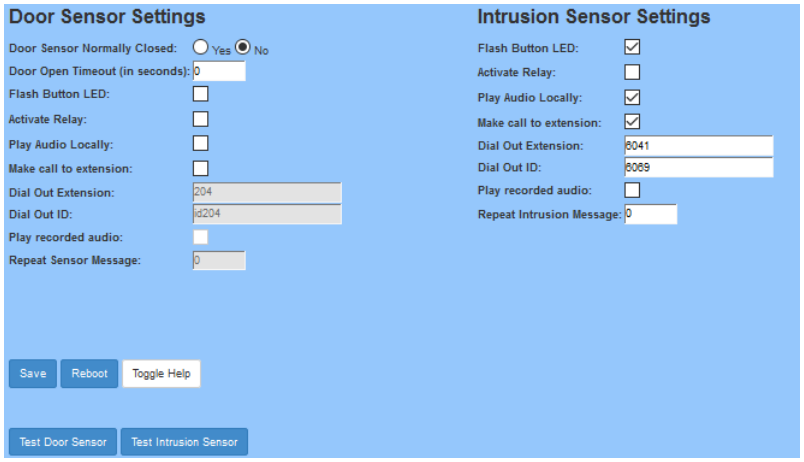
The door sensor (pins 5 and 6) on the header can be used to monitor a door's open or closed state. There is an option on the Sensor Configuration page to trigger on an open or short

condition on these pins. The door sensor alarm will be activated when the Door Open Timeout parameter has been met.

The intrusion sensor is an optical sensor installed on the Intercom board and will be activated when the Intercom is removed from the case. 8x8 Highly recommends implementing the Intrusion Sensor Settings.

For each sensor, there are five (5) actions the Intercom can take:

- Flash the LED until the sensor is deactivated (roughly 10 times/second)
- Activate the relay until the sensor is deactivated
- Loop an audio file out of the Intercom speaker until the sensor is deactivated
- Call an extension and play a pre-recorded audio file (once)
- Call an extension and establish a 2 way conversation



Door Sensor Normally Closed: Select the inactive state of the door sensors.

Door Open Timeout (in seconds): Select the number of seconds that you want to pass before the door sensor is activated.

Flash Button LED: Check this box to flash the LED until the sensor is deactivated (roughly 10 times/second).

Activate Relay: Check this box to activate the relay until the sensor is deactivated.

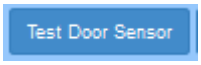
Play Audio Locally: Check this box to loop an audio file out of the Intercom speaker until the sensor is deactivated.

Make Call to Extension: Check this box to call a preset extension (one time).

Play recorded audio: Check this box to play a pre-recorded audio file (one time).

Dial Out Extension: Enter the desired dial-out extension number.

Dial Out ID: Enter in the GUN number associated with the Intercom User (64-character limit).



: Use this button to test the door sensor.

Flash Button LED*: Check this box to flash the LED until the sensor is deactivated (roughly 10 times/second).

Activate Relay: Check this box to activate the relay until the sensor is deactivated.

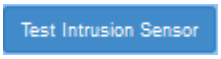
Play Audio Locally: Check this box to loop an audio file out of the Intercom speaker until the sensor is deactivated.

Make call to extension: Check this box to call a preset extension (once).

Play recorded audio: Check this box to play a pre-recorded audio file (once).

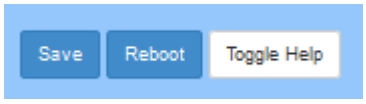
Dial Out Extension: Enter the desired dial-out extension number.

Dial Out ID: Enter in the GUN number associated with the Intercom User (64-character limit).

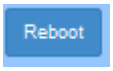


Test Intrusion sensor.

Click on the Save button to save your configuration settings.



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



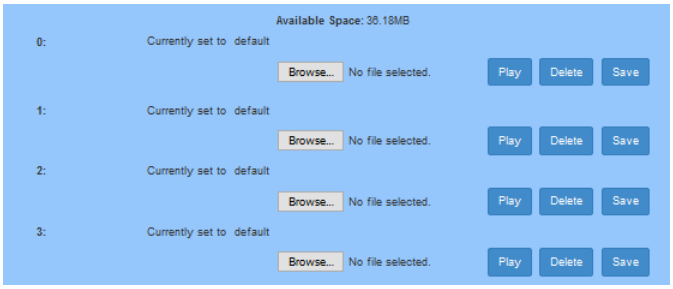
Click on the Reboot button to reboot the system.

5.10 Audio Files

CyberData SIP-enabled Outdoor Keypad Intercom allows you replace all the prompts used by the intercom with your own custom paging prompts. Custom prompts must be saved as

```
WAVE audio, Microsoft PCM, 16 bit, mono 8000 Hz
```

Custom files may be uploaded for all prompts played by the CyberData SIP-enabled Outdoor Keypad Intercom.



Save The Save button will download a new user audio file to the board once you've selected the file by using the Browse button.

Delete The Delete button will delete any user uploaded audio and restore the stock audio file.

Play The Play button will play that audio file.

Browse... The Browse button will allow you to navigate to and select an audio file.