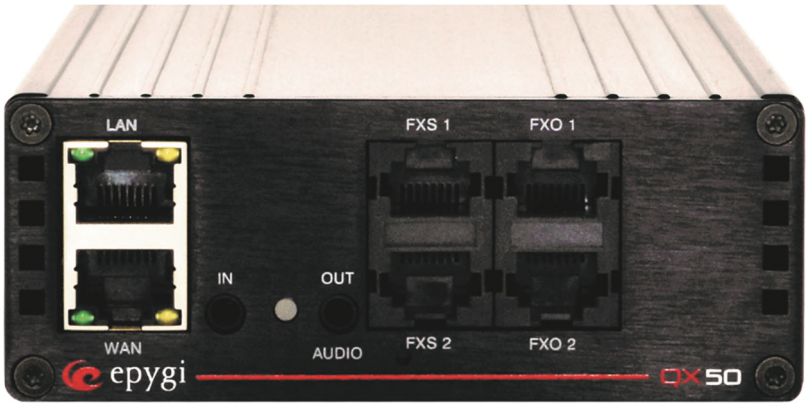
epygi®

CyberData
The IP Endpoint Company



Configuring QX IP PBXs with the CyberData VoIP devices

Abstract: This document describes the integration of the CyberData VoIP Paging and Intercom devices with the Epygi QX IP PBXs.

Document Revision History

Revision	Date	Revision	Valid for FW	Valid for Models
1.0	6-Jul-16	Initial version	6.1.x and higher	QX IP PBXs

Table of Contents

1 Introduction

Among the many other products and services, CyberData Corporation designs and manufactures peripheral devices for VoIP phone systems. These products facilitate legacy migration to VoIP, IP equivalents to existing analog devices, and application specific endpoints that add new functionality. The CyberData VoIP products, such as Paging, Intercom and IP authentication devices are cost-effective and easy to manage solutions for VoIP phone systems.

The Epygi QX IP PBXs (herein QXs) successfully configured to work with the CyberData paging and intercom devices.

Easily configurable with QXs the CyberData VoIP devices can be used in many different paging and intercom scenarios. This document describes the basic configuration on both QX and CyberData devices. Features, settings and connections specific to the different CyberData devices are beyond the scope of this document. Specifically, this document covers the configuration for the following CyberData devices:

- SIP Outdoor Intercom with Keypad – 011214C
- SIP Speaker – 011098B
- SIP Paging Adapter – 011233B
- SIP Paging Amplifier – 011061B (with LOUDSPEAKER, 8 OHM 40W ABS HORN – 011068A)
- SIP Strobe – 011087B

2 System Requirements

- FW version 6.1.x or higher running on the QX.
- QX is connected to the network and all network settings are properly configured.
- Two or more IP phones in Epygi supported phones list are connected and properly configured with QX.
- For the typical installation the QX and CyberData devices are connected to the same high power PoE switch.
- A PC connected to the same network for configuring the both QX and CyberData devices.

Please Note: The described configuration is generic for all QX models, such as the QX50/QX200/ QX2000/QXISDN4+.

3 Integration

The CyberData VoIP devices are integrated with the QX as IP Lines. Some of the extensions on QX with the attached IP lines should be configured in appropriate way and assigned to the CyberData VoIP devices. Thus the devices will register and function as SIP devices on the QX.

4 Configuration

Examples used for configuring CyberData devices with QX.

Device	Primary User ID / SIP User ID	Primary SIP Server, Remote SIP Port	Attached IP Line, Primary Extension	Nightringer User ID	Attached IP Line, Nightringer Extension
CyberData SIP Outdoor Intercom with Keypad	KeypadIntercom107	172.30.4.1:5060	IP Line 5, Ext.107	Nightringer112	IP Line 10, Ext.112
CyberData SIP Speaker	CeilingSpeaker109	172.30.4.1:5060	IP Line 7, Ext.109	Nightringer113	IP Line 11, Ext.113
CyberData SIP Paging Adapter	SPA110	172.30.4.1:5060	IP Line 8, Ext.110	Nightringer114	IP Line 12, Ext.114
CyberData SIP Paging Amplifier	PagingAmplifier108	172.30.4.1:5060	IP Line 6, Ext.108	Nightringer115	IP Line 13, Ext.115
CyberData SIP Strobe	Strobe111	172.30.4.1:5060	IP Line 9, Ext.111	Nightringer116	IP Line 14, Ext.116

Table 1: CyberData devices configured with QX

Sections below describe how to configure and use the CyberData devices with QX for some basic functions.

4.1 CyberData SIP Outdoor Intercom with Keypad

This section describes how to configure QX with the **CyberData SIP Outdoor Intercom with Keypad** for the basic functions:

- Intercom
- Nightringer

4.1.1 Configuring the QX IP PBX

Configure an IP line (with extension attached) for registering the device (**Primary** extension) as follows:

1. Connect the PC to the LAN port of the QX.
2. Open a browser on the PC to the QX LAN interface (**172.30.0.1** is the default IP).
3. Enter the default credentials (Username: **admin** and Password: **19**) to login as admin, go to the **Network→DHCP** menu and select the **Enable the DHCP Server** checkbox. This will provide an IP address to the device automatically.
4. Go to the **Interfaces→IP Lines** page.
5. Select a free (inactive) IP line and configure it as follows:
   - Enable the **IP Phone** option.
   - Select **Other** from the **Phone Model** drop down list.
   - Specify the **Username** and **Password** fields (Figure 1).

Please Note: Make a note of the specified **Username** and **Password** as they will be needed when configuring the device. It is suggested to use a good strong password, or use the system generated one.

How it works: The Ext.107 attached to the IP line 5 will serve as the Primary extension for intercom and will be used for device configuration (see chapter 4.1.2).

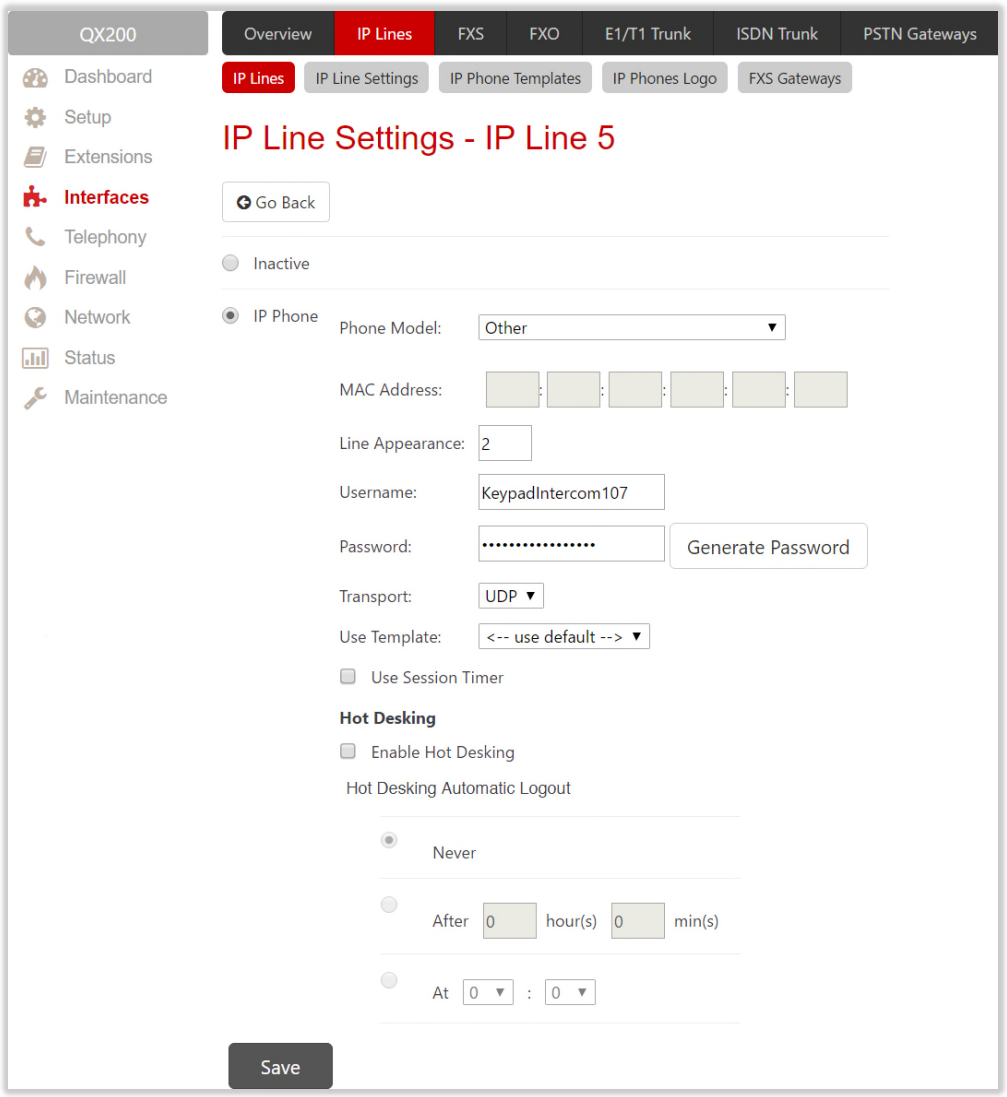


Figure 1: IP Line Settings page

Configure an IP line (with extension attached) for registering the **Nightringer** extension as follows:

1. Repeat the above described steps to configure another IP Line. For example, the **IP line 10** with **Ext.112** attached.
2. First enable the Ext.112 along with some other extensions to be included in the Many Extension Ringing (MER) group – 103, 104, 106 and 118. Then activate the MER service for the Ext.112 as shown below:
   - Go to the **Caller ID Based Services for any address** for extension **#112** (Figure 2).
   - Select and enable Ext.112, 103, 104, 106 and 118 in the **MER** list.
   - Select and enable the **MER** service.

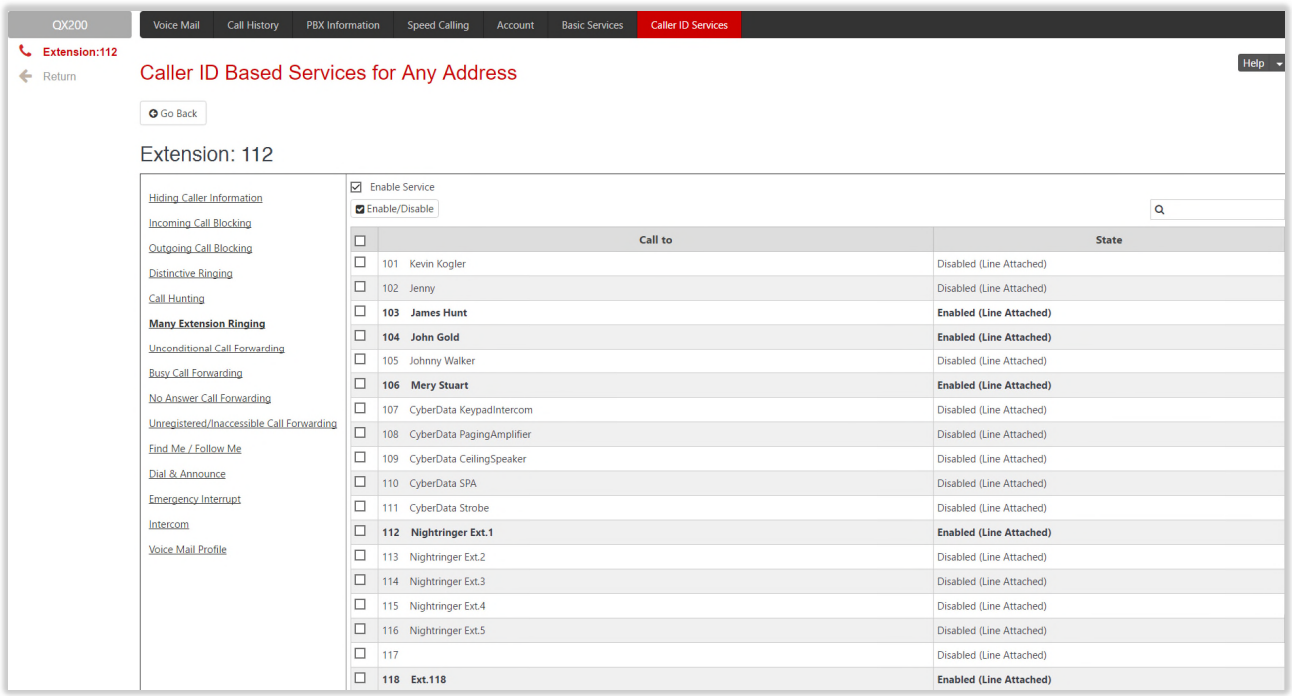


Figure 2: MER service configuration for extension 112

Please Note: The Ext.112 will be used as secondary **Nightringer** extension on the device.

How it works: When a call is placed to the Ext.112 **Nightringer** will play along with the other phones in MER group, but with a specific ring tone which will notify users about the incoming call.

4.1.2 Configuring the CyberData SIP Outdoor Intercom with Keypad

Power the device by a PoE switch and connect it to the QX LAN via an Ethernet cable through a network switch. The settings of the device will be configured through its web-based GUI interface.

Access the device to configure the **SIP Settings** and **Nightringer Settings** the following way:

1. Login from a PC by providing the IP address in a browser. By default, the DHCP service is enabled on the CyberData devices, therefore it will receive an IP address from the QX. The IP address provided by QX to the device can be easily found on the **Network→DHCP→DHCP Leases** page for QX. By default, the user name and the password for login are both "**admin**".

Please Note: After any settings have been changed the **Save** button should be pressed, followed by a **Reboot.** Only the minimum settings to configure the device are shown below.

2. Click **SIP** on the upper menu bar to access the **SIP** and **Nightringer Settings**. The following **SIP** settings need to be configured (Figure 3):
   - **Primary SIP Server** – the IP address of the QX.
   - **Primary SIP User ID** – the username configured in the QX IP line settings.
   - **Primary SIP Auth ID** – the username configured in the QX IP line settings.
   - **Primary SIP Auth Password** – the password configured in the QX IP line settings.

Please Note: The **Primary SIP User ID**, **Primary SIP Auth ID** and **Primary SIP Auth Password** should match those specified (**Username** and **Password**) for Primary extension in the IP line settings.

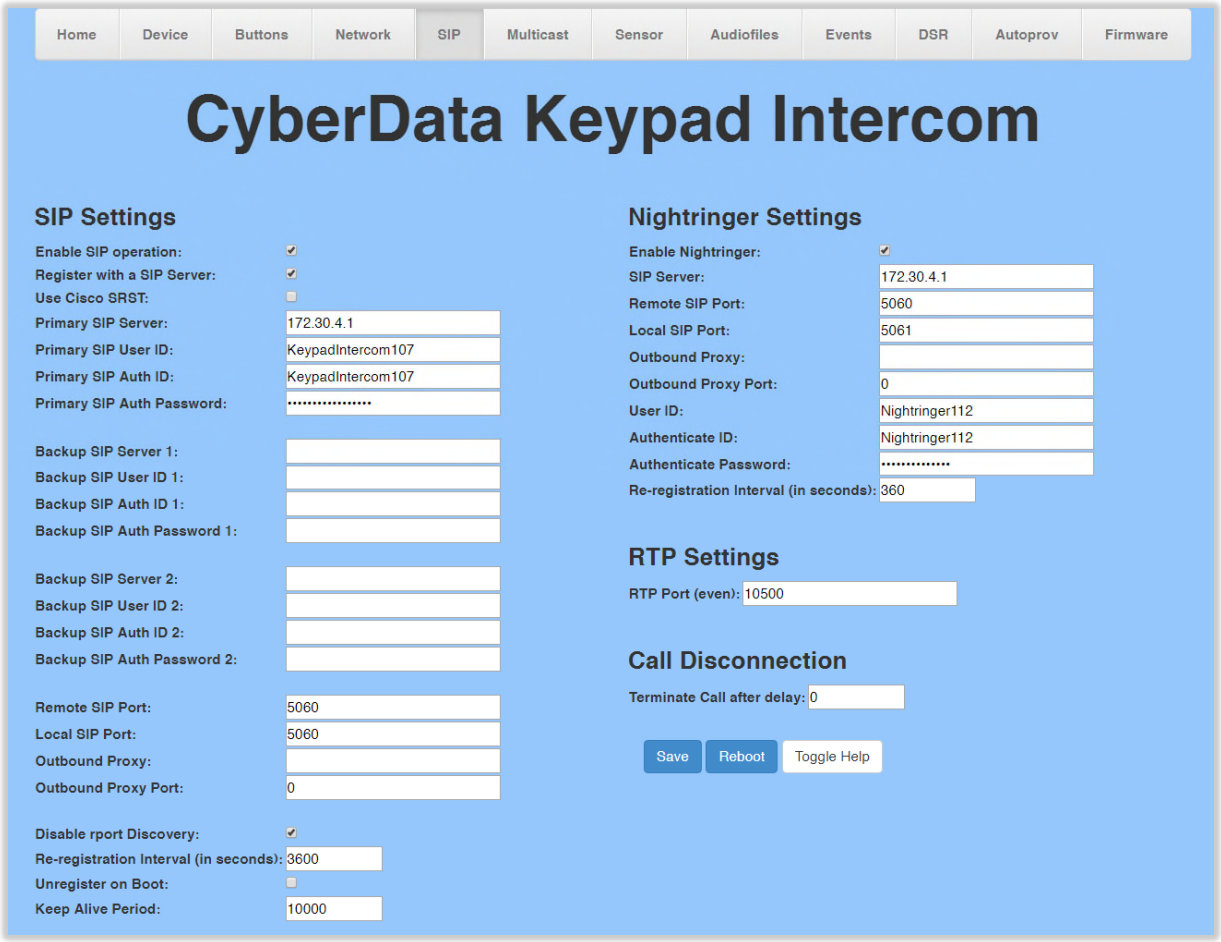


Figure 3: Primary and Nightringer extensions configuration

At this point the device would be registered as an IP Line on the QX. Check the registration status by going to the **System→Status→IP Lines Registration Status page** on QX. Or dial the ***74** feature code on keypad for verifying the status and line information.

3. Enable **Nightringer** option. The following **Nightringer** settings need to be configured (Figure 3):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings
   - **Authenticate Password** – the password configured in the QX IP line settings.

   Please Note: The **Authenticate ID** and **Password** should match those specified (**Username** and **Password**) for Nightringer extension in the IP line settings.

4. The audio file for **Night Ring** can be uploaded from the **Audiofiles** menu (Figure 4).

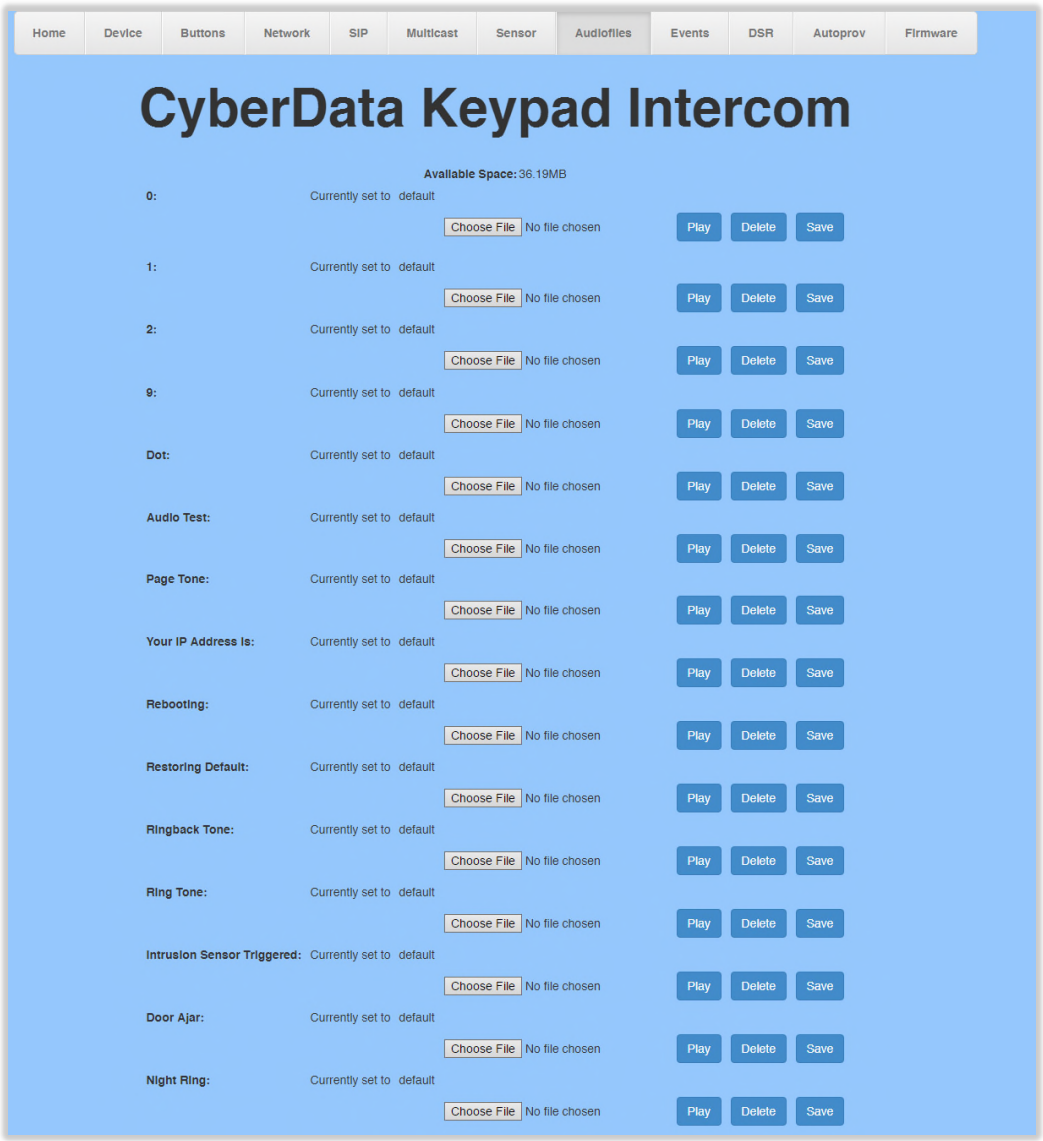


Figure 4: Audiofiles menu

How it works:

- When dialing the **Ext.107** the device will function as an **Intercom** by going on hook and opening two-way communication.
- When dialing the **Ext.112** the device will function as a **Nightringer** by ringing with predefined ringtone along with the other phones in MER group.

4.2 CyberData SIP Speaker

This section describes how to configure QX with **CyberData SIP Speaker** for the functions:

- Paging
- Nightringer

4.2.1 Configuring the QX IP PBX

Repeat the configuration procedure described in the chapter 4.1.1 to configure two IP lines with extensions.

4.2.2 Configuring the CyberData SIP Speaker

Power the device by a PoE switch and connect it to the QX LAN via an Ethernet cable through a network switch. The settings of the device will be configured through its web-based GUI interface.

Access the device for the **SIP Configuration** and **Nightringer Configuration** the following way:

1. Login from a PC by providing the IP address in a browser. By default, the DHCP service is enabled on the CyberData devices, therefore the **paging** device will receive an IP address from the QX. The IP address provided by QX to the device can be easily found on the **Network→DHCP→DHCP Leases** page. By default, the user name and the password for login are both "**admin**".

Please Note: After any settings have been changed the **Save** button should be pressed, followed by a **Reboot.** Only the minimum settings to configure the device are shown below.

2. Click **SIP Config** on the left menu bar to access the **SIP Configuration** page. The following settings need to be configured (Figure 5):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **SIP User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings.
   - **Authenticate Password** – the password configured in the QX IP line settings.

Please Note: The **SIP User ID**, **Authenticate ID** and **Authenticate Password** should match those specified (**Username** and **Password**) for Primary extension in the IP line settings.

At this point the device would be registered as an IP Line on the QX. Check the registration status by going to the **System→Status→IP Lines Registration Status page** on QX.

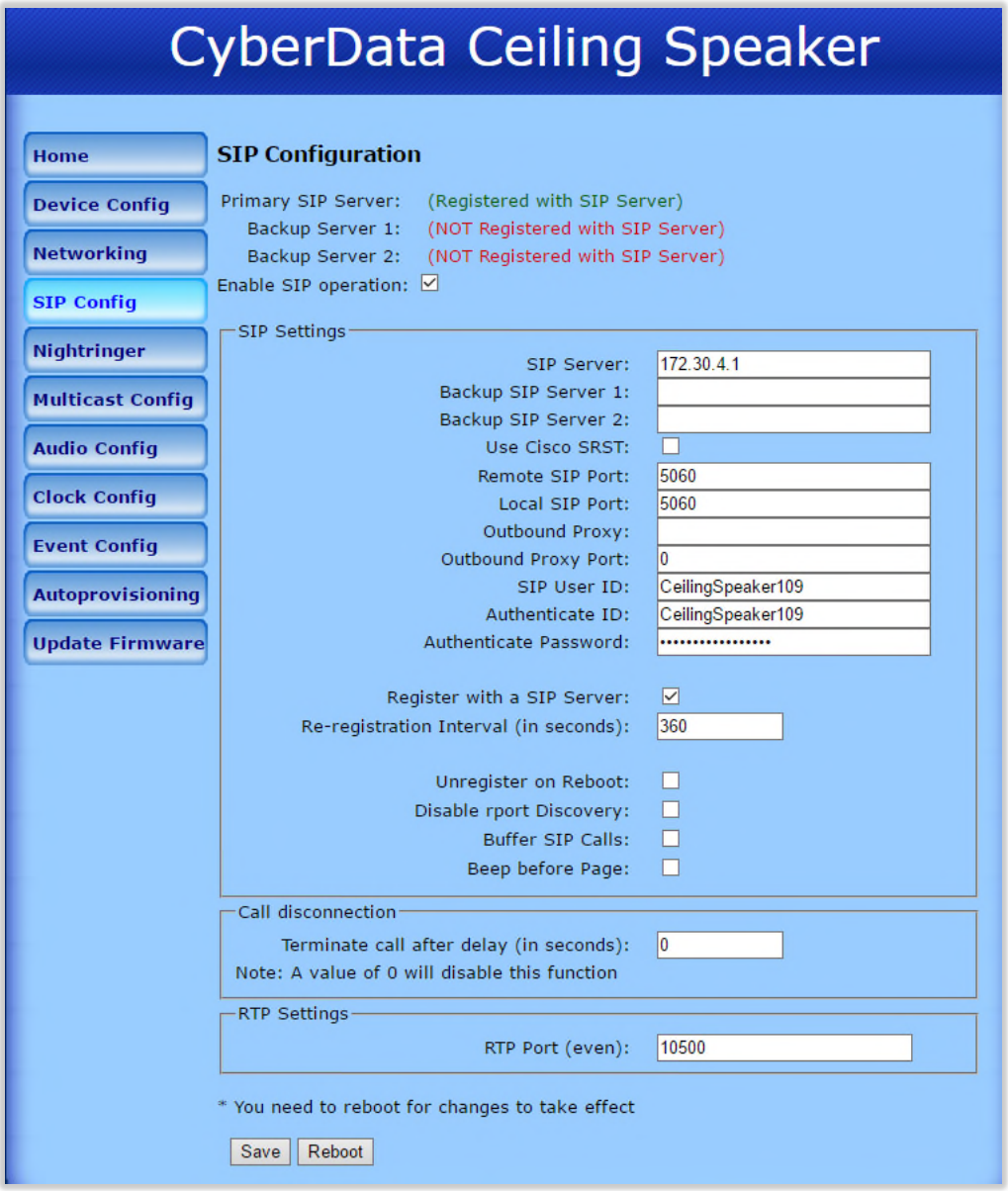


Figure 5: Primary extension configuration

3. Click **Nightringer** on the left menu bar to access the **Nightringer Configuration** page. The following **Nightringer** settings need to be configured (Figure 6):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings.
   - **Authenticate Password** – the password configured in the QX IP line settings.

Please Note: The **User ID**, **Authenticate ID** and **Password** should match those specified (**Username** and **Password**) for Nightringer extension in the IP line settings.

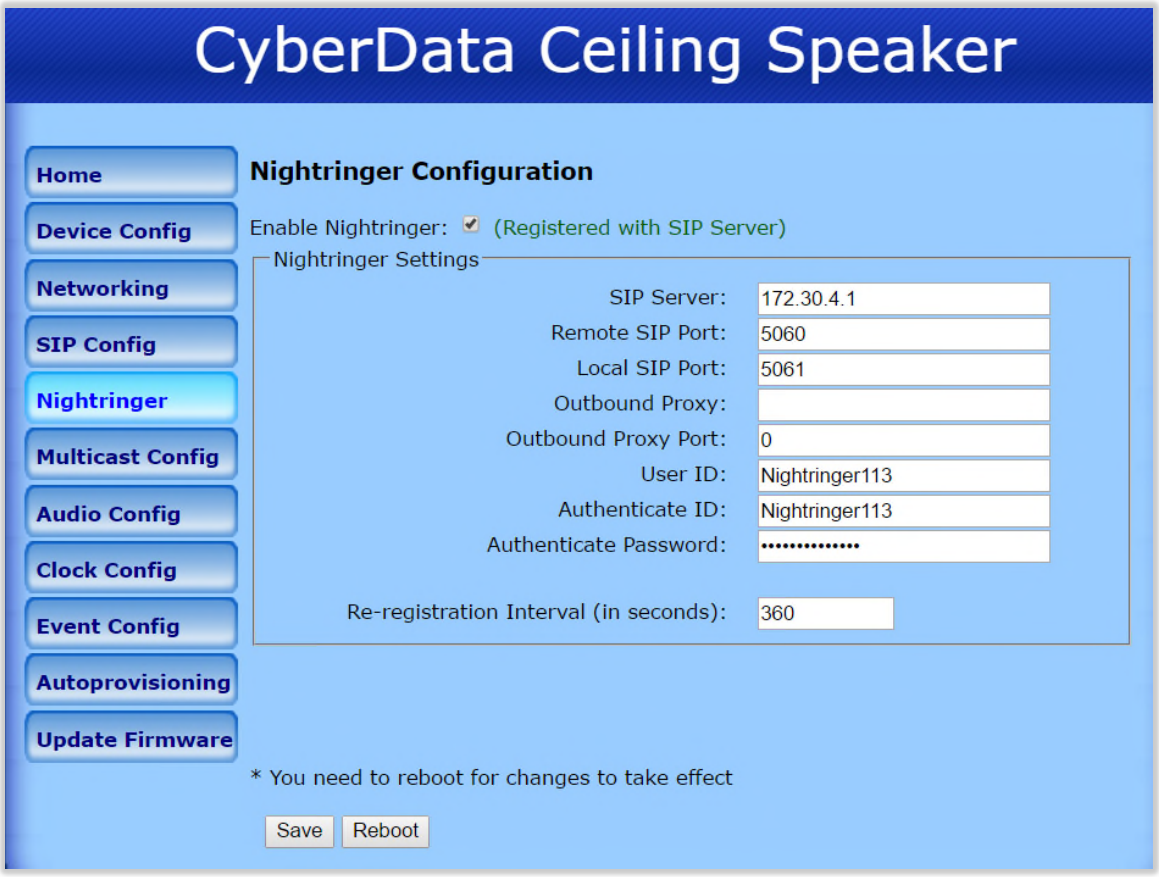


Figure 6: Nightringer extension configuration

4. The audio file for **Night Ring** can be uploaded from the **Audio Config** in the left menu (Figure 7).

Figure 7: Audio Config menu

How it works:

- When dialing the **Ext.109** the device will function as **Paging** by going on hook and opening one-way communication.
- When dialing the **Ext.113** the device will function as a **Nightringer** by ringing with predefined ringtone along with the other phones in MER group.

4.3 CyberData SIP Paging Adapter

This section describes how to configure QX with **CyberData SIP Paging Adapter** (herein **SPA**) for the basic functions:

- Paging
- Playing uploaded messages
- Nightringer

4.3.1 Configuring the QX IP PBX

Repeat the configuration procedure described in the chapter 4.1.1 and configure two IP lines and extensions.

4.3.2 Configuring CyberData SIP Paging Adapter

The **SPA** is a VoIP endpoint that interfaces analog paging systems with SIP and Multicast-based audio sources. Power the device by a PoE switch and connect it to the QX LAN via an Ethernet cable through a network switch. The settings of the device will be configured through its web-based GUI interface.

Access the device to configure the **SIP Settings, Nightringer Settings** and **Multicast Config** the following way:

1. Login from a PC by providing the IP address in a browser. By default, the DHCP service is enabled on the CyberData devices, therefore the **SPA** will receive an IP address from the QX. The IP address provided by QX to the device can be easily found on the **Network→DHCP→DHCP Leases** page for QX. By default, the user name and the password for login are both "**admin**".

Please Note: After any settings have been changed the **Save** button should be pressed, followed by a **Reboot.** Only the minimum settings to configure the device are shown below.

2. Click **SIP** on the upper menu bar to access the **SIP** and **Nightringer Settings**. The following **SIP** settings need to be configured (Figure 8):
   - **Primary SIP Server** – the IP address of the QX.
   - **Primary SIP User ID** – the username configured in the QX IP line settings.
   - **Primary SIP Auth ID** – the username configured in the QX IP line settings.
   - **Primary SIP Auth Password** – the password configured in the QX IP line settings.

Please Note: The **Primary SIP User ID**, **Primary SIP Auth ID** and **Primary SIP Auth Password** should match those specified (**Username** and **Password**) for Primary extension in the IP line settings.

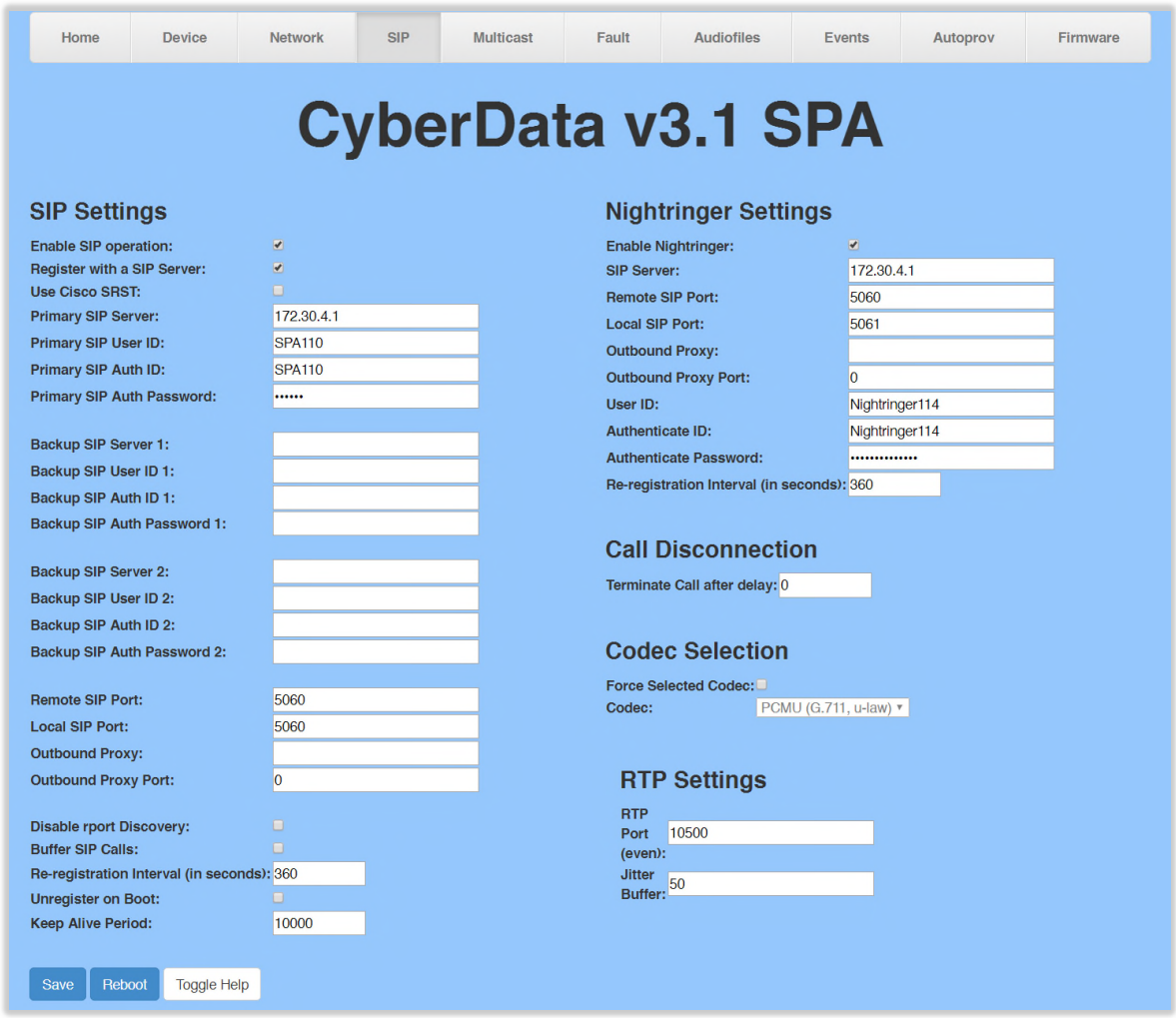


Figure 8: Primary and Nightringer extensions configuration

3. Enable **Nightringer** option. The following **Nightringer** settings need to be configured (Figure 8):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings
   - **Authenticate Password** – the password configured in the QX IP line settings.

Please Note: The **Authenticate ID** and **Password** should match those specified (**Username** and **Password**) for Nightringer extension in the IP line settings.

4. Click **Device** on the upper menu bar to access the **Relay Settings**. Enable **Activate Relay on Local Audio** option to pass audio through SPA interfaces, if connecting the onboard relay to an analog device for dry relay contact switching. (Figure 9).

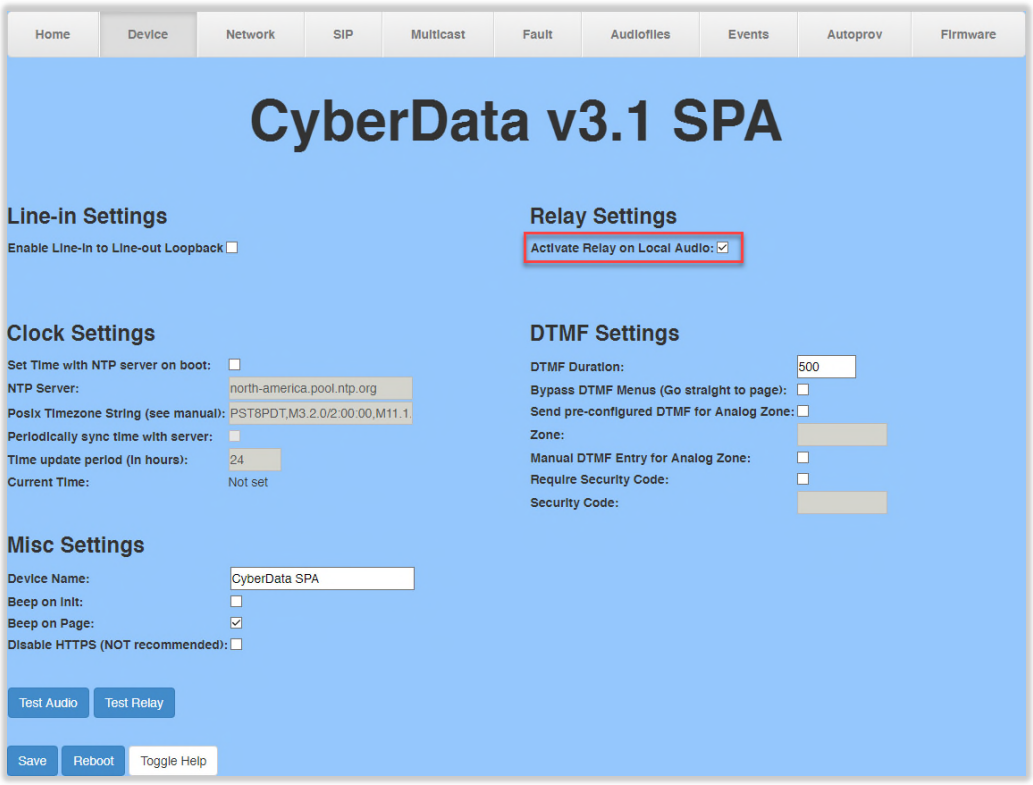


Figure 9: Relay Settings configuration

5. The audio file for **Night Ring** can be uploaded from the **Audiofiles** menu (Figure 10).

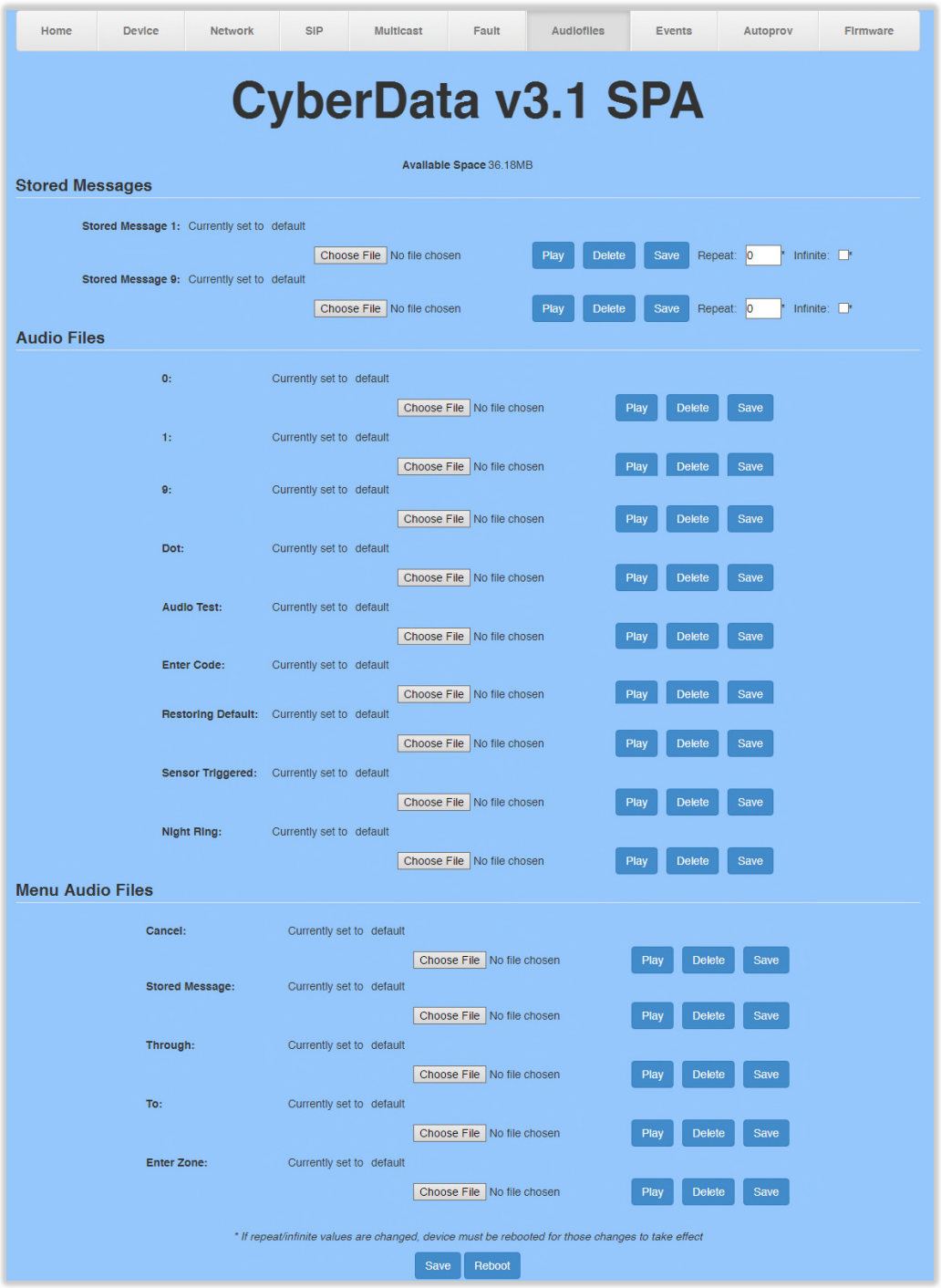


Figure 10: Audiofiles menu

How it works:

- When dialing the **Ext.110**, the device will function as IVR system. The following options will be available:
  - Press **0** for paging.
  - Press from **1** to **9** for playing the uploaded messages.
- When dialing the **Ext.114** the device will function as a **Nightringer** by ringing with predefined ringtone along with the other phones in MER group.

4.4 CyberData SIP Paging Amplifier

This section describes how to configure QX with **CyberData SIP Paging Amplifier** for the basic functions:

- Paging
- Nightringer

4.4.1 Configuring the QX IP PBX

Repeat the configuration procedure described in the chapter 4.1.1 to configure two IP lines and extensions.

4.4.2 Configuring CyberData SIP Paging Amplifier

The **SIP Paging Amplifier** provides an easy method for implementing an IP-based overhead paging system for both new and legacy installations. The SIP Paging Amplifier provides direct drive of a standard Horn speaker and supports a line-out connector for connection to an external amplifier.

Power the device by a PoE switch and connect it to the QX LAN via an Ethernet cable through a network switch. Connect the **011068 Loudspeaker** to **SIP Paging Amplifier**.

The settings of the device will be configured through its web-based GUI interface. Access the device to configure the **SIP** and **Nightringer Settings** the following way:

1. Login from a PC by providing the IP address in a browser. By default, the DHCP service is enabled on the CyberData devices, therefore the SIP Paging Amplifier will receive an IP address from the QX. The IP address provided by QX to the device can be easily found on the **Network→DHCP→DHCP Leases** page for QX. By default, the user name and the password for login are both "**admin**".

Please Note: After any settings have been changed the **Save** button should be pressed, followed by a **Reboot.** Only the minimum settings to configure the device are shown below.

2. Click **SIP Config** on the left menu bar to access the **SIP Configuration** page. The following settings need to be configured (Figure 11):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **SIP User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings.
   - **Authenticate Password** – the password configured in the QX IP line settings.

Please Note: The **SIP User ID**, **Authenticate ID** and **Authenticate Password** should match those specified (**Username** and **Password**) for Primary extension in the IP line settings.

At this point the device would be registered as an IP Line on the QX. Check the registration status by going to the **System→Status→IP Lines Registration Status page** on QX.

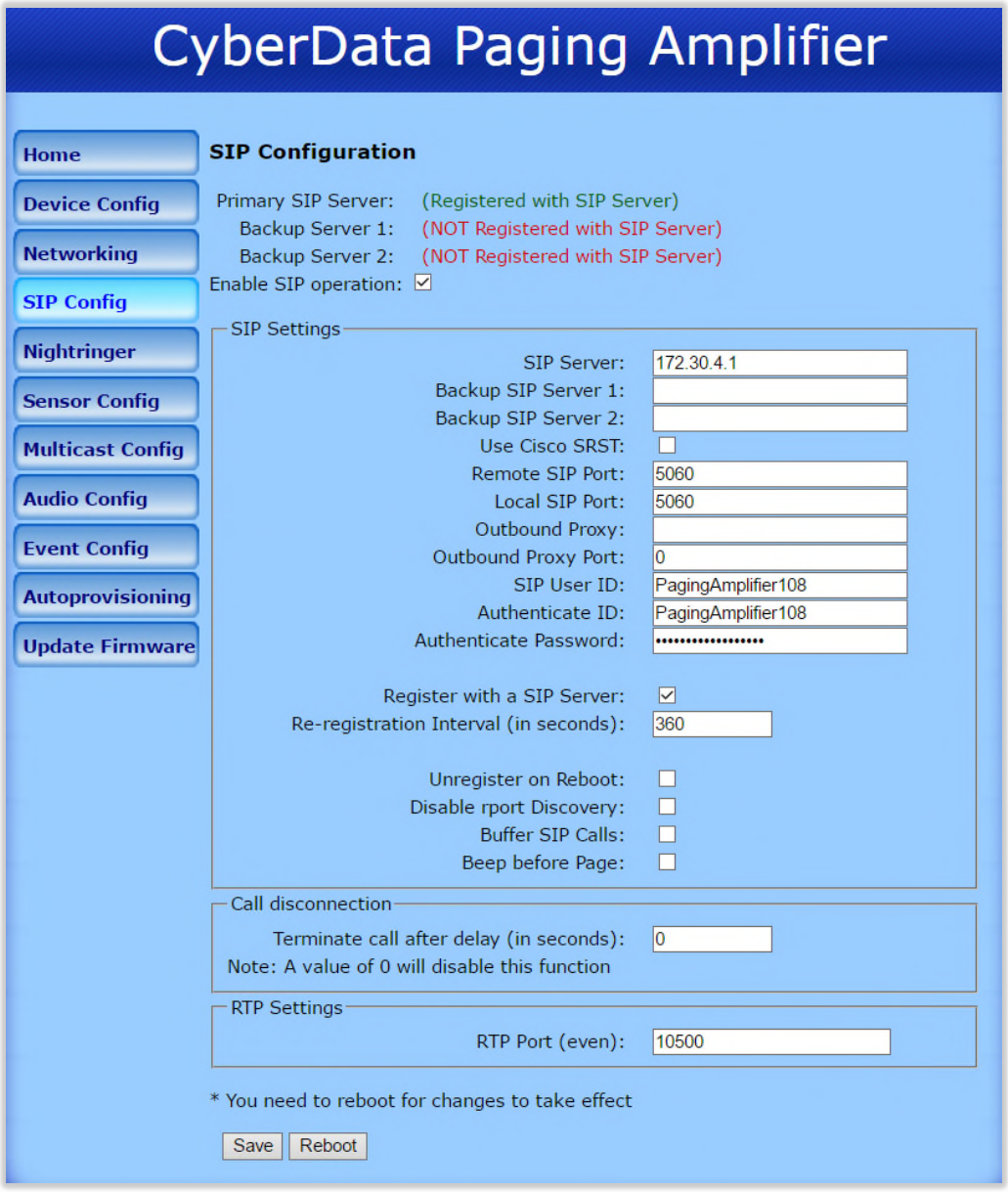


Figure 11: Primary extension configuration

3. Click **Nightringer** on the left menu bar to access the **Nightringer Configuration** page. The following **Nightringer** settings need to be configured (Figure 12):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings.
   - **Authenticate Password** – the password configured in the QX IP line settings.

Please Note: The **User ID**, **Authenticate ID** and **Password** should match those specified (**Username** and **Password**) for Nightringer extension in the IP line settings.

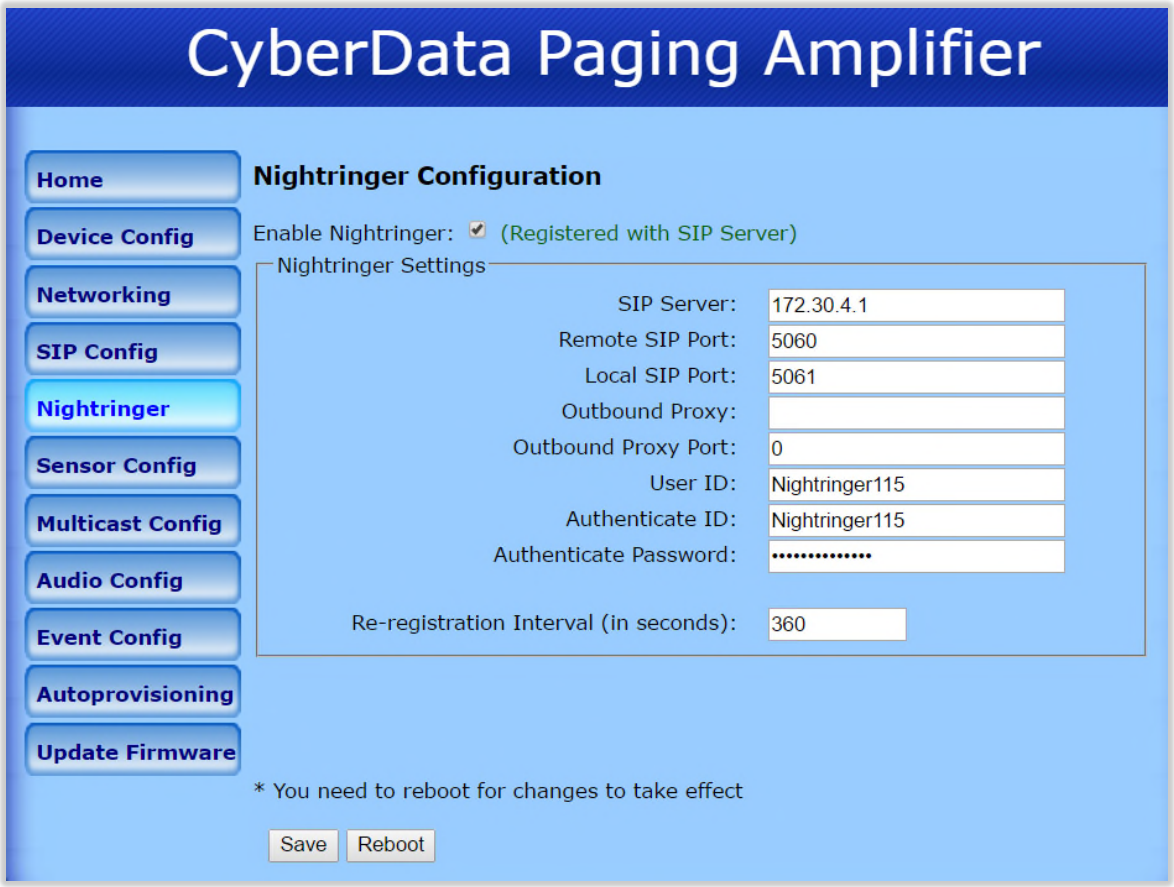


Figure 12: Nightringer extension configuration

4. The audio file for **Night Ring** can be uploaded from the **Audio Config** in the left menu (Figure 13).

Figure 13: Audio Config menu

How it works:

- When dialing the **Ext.108**, the device will function as **Paging** by going on hook and opening one-way communication.
- When dialing the **Ext.115** the device will function as **Nightringer** by ringing with predefined ringtone along with the other phones in MER group.

4.5 CyberData SIP Strobe

This section describes how to configure QX with **CyberData SIP Strobe** for the basic functions:

- SIP
- Nightringer

4.5.1 Configuring the QX IP PBX

Repeat the configuration procedure described in the chapter 4.1.1 to configure two IP lines and extensions.

4.5.2 Configuring the CyberData Strobe

The **CyberData SIP Strobe** is a SIP endpoint designed to provide with high intensity **strobe** light for alerting and notification of phone ringing and security events.

Power the device by a PoE switch and connect it to the QX LAN via an Ethernet cable through a network switch. As mentioned above, the device connected to the QX LAN interface will receive the IP address from QX DHCP server. The settings of the device will be configured through its web-based GUI interface.

Access the device to configure the **SIP Settings** and **Nightringer Settings** the following way:

1. Login from a PC by providing the IP address in a browser. The IP address provided by QX to the device can be easily found on the **Network→DHCP→DHCP Leases** page for QX. By default, the user name and the password for login are both "**admin**".

   Please Note: After any settings have been changed the **Save** button should be pressed, followed by a **Reboot.** Only the minimum settings to configure the device are shown below.

2. Click **SIP Config** on the left menu bar to access the **SIP Configuration** page. The following settings need to be configured (Figure 14):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **SIP User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings.
   - **Authenticate Password** – the password configured in the QX IP line settings.

   Please Note: The **SIP User ID**, **Authenticate ID** and **Authenticate Password** should match those specified (**Username** and **Password**) for Primary extension in the IP line settings.

At this point the device would be registered as an IP Line on the QX. Check the registration status by going to the **System→Status→IP Lines Registration Status page** on QX.

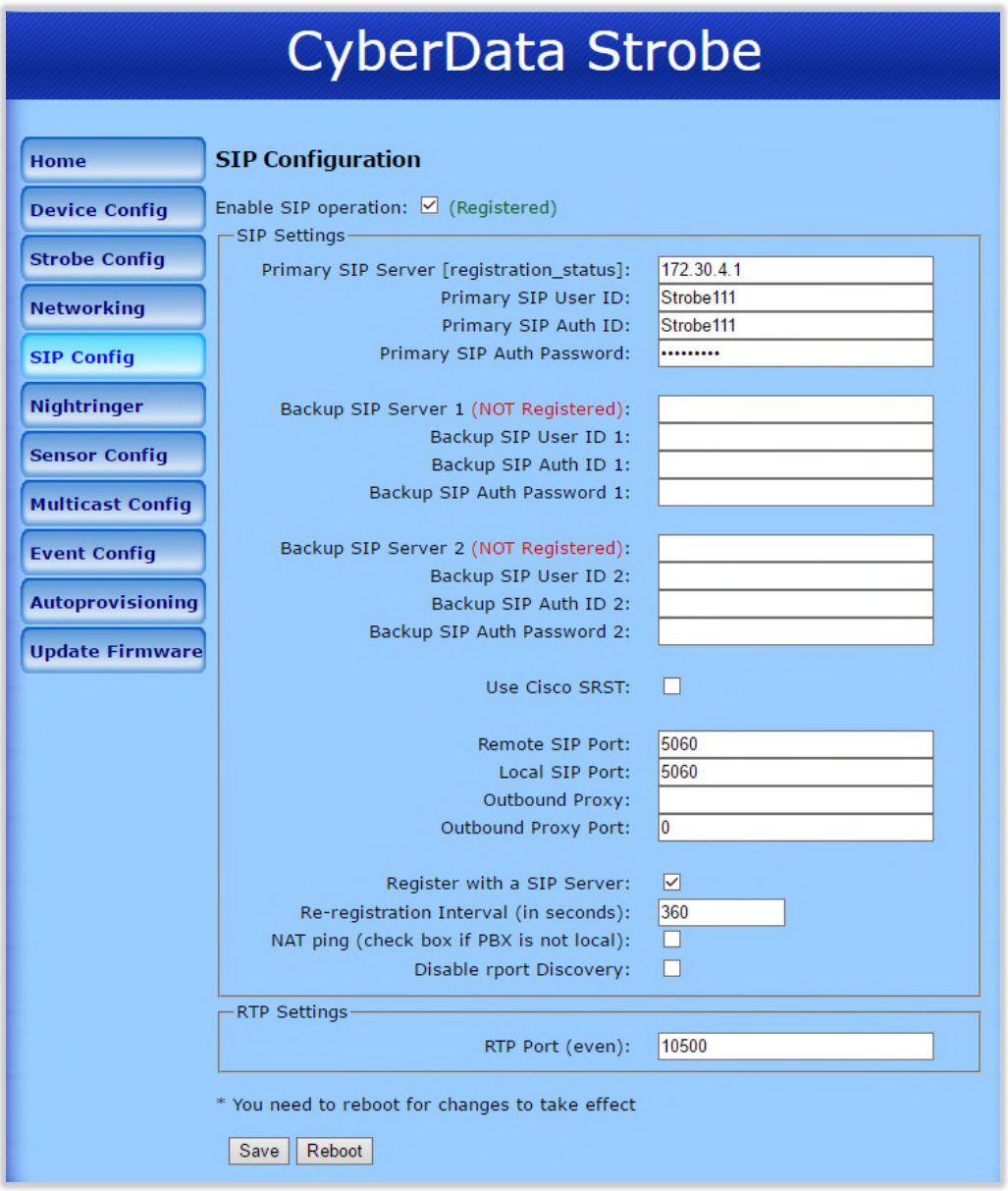


Figure 14: Primary extension configuration

3. Click **Nightringer** on the left menu bar to access the **Nightringer Configuration** page. The following **Nightringer** settings need to be configured (Figure 15):
   - **SIP Server** – the IP address of the QX.
   - **Remote SIP port** – the SIP port of the QX.
   - **User ID** – the username configured in the QX IP line settings.
   - **Authenticate ID** – the username configured in the QX IP line settings.
   - **Authenticate Password** – the password configured in the QX IP line settings.

Please Note: The **User ID**, **Authenticate ID** and **Password** should match those specified (**Username** and **Password**) for Nightringer extension in the IP line settings.

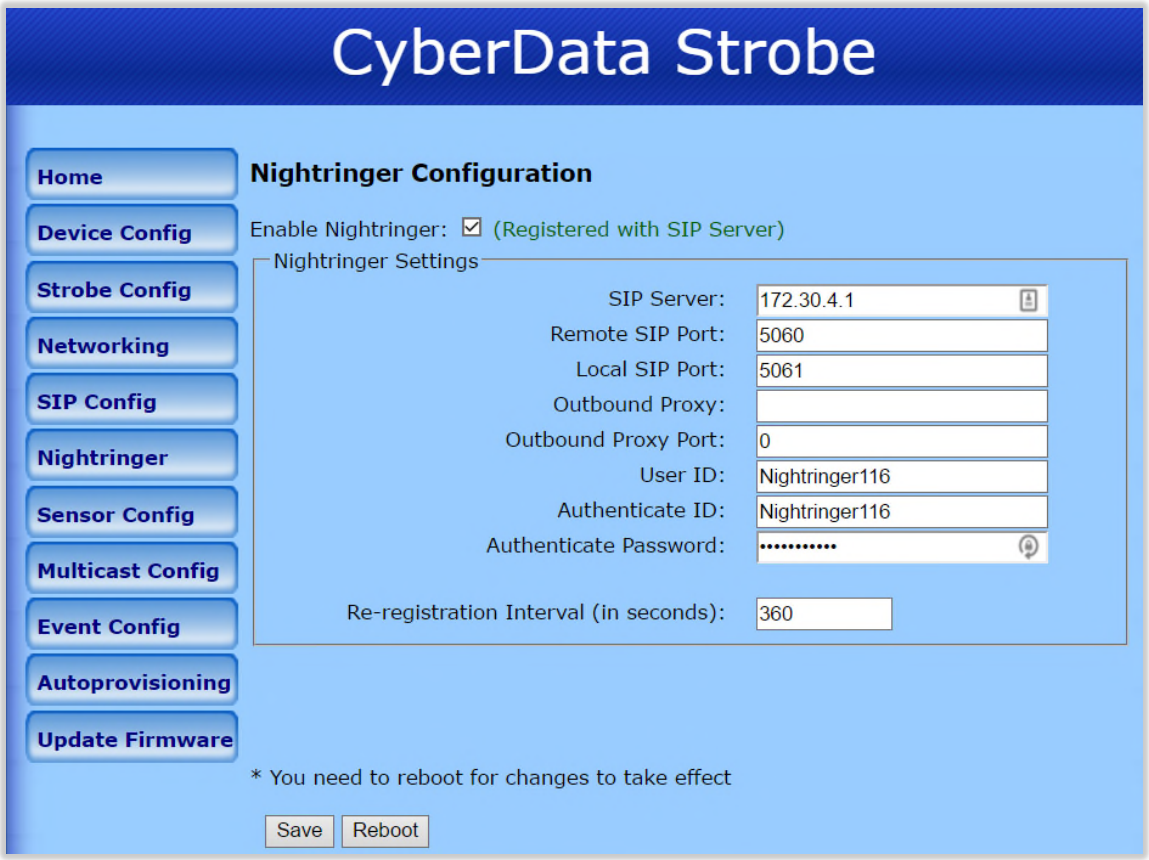


Figure 15: Nightringer extension configuration

How it works:

- When dialing the **Ext.111**, the light on the device will start flashing.
- When dialing the **Ext.116** the device will function as **Nightringer**. Along with the ringing phones in MER group the light on the device will start flashing as well.

Please Note: The **Primary** extension for **Strobe** should be included in MER Group.

5 References

Refer to the below listed recourses to get more details about the configurations described in this guide:

- Manual I: QX IP PBX Installation Guide
- Manual II: QX IP PBX Administrator's Guide

Find the above listed documents in the Epygi Support Portal.

Additional documentation on the CyberData VoIP devices may be found at:

- http://www.cyberdata.net/voip/011214/
- http://www.cyberdata.net/voip/011098/
- http://www.cyberdata.net/voip/011233/
- http://www.cyberdata.net/voip/011061/
- http://www.cyberdata.net/voip/011087/