

Webex Calling Configuration Guide: IP to Analog Devices

Document Part #931944B

CyberData Corporation
3 Justin Court
Monterey, CA 93940
(831) 373-2601

Webex Calling Configuration Guide: IP to Analog Devices
Document #931944B

COPYRIGHT NOTICE:

© 2022, CyberData Corporation, ALL RIGHTS RESERVED.

This configuration guide and related materials are the copyrighted property of CyberData Corporation. No part of this configuration guide or related materials may be reproduced or transmitted, in any form or by any means (except for internal use by licensed customers), without prior express written permission of CyberData Corporation. This configuration guide, and the products, software, firmware, and/or hardware described in this configuration guide are the property of CyberData Corporation, provided under the terms of an agreement between CyberData Corporation and recipient of this configuration guide, and their use is subject to that agreement and its terms.

DISCLAIMER: Except as expressly and specifically stated in a written agreement executed by CyberData Corporation, CyberData Corporation makes no representation or warranty, express or implied, including any warranty or merchantability or fitness for any purpose, with respect to this configuration guide or the products, software, firmware, and/or hardware described herein, and CyberData Corporation assumes no liability for damages or claims resulting from any use of this configuration guide or such products, software, firmware, and/or hardware. CyberData Corporation reserves the right to make changes, without notice, to this configuration guide and to any such product, software, firmware, and/or hardware.

OPEN SOURCE STATEMENT: Certain software components included in CyberData products are subject to the GNU General Public License (GPL) and Lesser GNU General Public License (LGPL) “open source” or “free software” licenses. Some of this Open Source Software may be owned by third parties. Open Source Software is not subject to the terms and conditions of the CyberData COPYRIGHT NOTICE or software licenses. Your right to copy, modify, and distribute any Open Source Software is determined by the terms of the GPL, LGPL, or third party, according to who licenses that software. Software or firmware developed by CyberData that is unrelated to Open Source Software is copyrighted by CyberData, subject to the terms of CyberData licenses, and may not be copied, modified, reverse-engineered, or otherwise altered without explicit written permission from CyberData Corporation.

TRADEMARK NOTICE: CyberData Corporation and the CyberData Corporation logos are trademarks of CyberData Corporation. Other product names, trademarks, and service marks may be the trademarks or registered trademarks of their respective owners.

Revision Information

6/29/2022 – Initial Release

11/11/2022 – Update to add InformaCast Enabled Products

Table of Contents

Revision Information.....	2
Table of Contents.....	3
1.0 Supported CyberData Products	4
2.0 Before You Start.....	5
3.0 Setting up a Workspace in Webex Calling	7
4.0 Setting up the CyberData IP to Analog Device	12
5.0 Using the CyberData SIP Paging Adapter in a Webex Calling system.....	15
5.1 Setting up stored messages	15
5.1.1 <i>Creating the Audiofile</i>	15
5.1.2 <i>Uploading the Audiofile</i>	15
5.2 Manual DTMF for Analog Zone.....	17
6.0 Using the CyberData SIP Paging Server in a Webex Calling system.	18
6.1 Setting up a PGroup.	18
7.0 Setup Diagram.....	20
8.0 FAQ.....	21
9.0 Contact CyberData Corporation	22

1.0 Supported CyberData Products

This section describes the products used for interoperability testing with Webex Calling.

Table 1-1: Supported CyberData Products

EQUIPMENT	MODEL or PART NUMBER	FIRMWARE VERSION
CYBERDATA SIP PAGING ADAPTER	011233	20.2.0 or later
CYBERDATA SIP PAGING SERVER	011146	20.1.0 or later
INFORMACAST ENABLED PAGING ADAPTER	011280	20.2.0 or later

2.0 Before You Start

Network Advisories

Webex Calling uses a Fully Qualified Domain Name (FQDN) for the SIP server and Outbound Proxy addresses. The CyberData IP to Analog device needs to perform a DNS query to resolve the IP address of Webex's Outbound Proxy FQDN. In addition, be sure to verify the following ports are available for the device to use:

- TCP 5060, 5061 (SIP)
- UDP 10500 (RTP)

The device will need to traverse the public internet in order to operate with Webex Calling in the cloud.

The device's paging and Nightringer extension uses SIP port 5060 to send and receive SIP messages.

SIP ports 5060 and RTP port 10500 are the default values on all noted firmware levels. Alternatively, SIP ports are configurable on the **SIP** page of the web interface. The RTP port setting on the **SIP** page is used for both extensions.

InformaCast

Singlewire's InformaCast uses SLP (Service Location Protocol) for devices to discover the InformaCast server. CyberData recommends using SLP for the easiest deployment of intercoms to use with InformaCast. SLP requires multicast support on the LAN and a local InformaCast server for devices to connect with.

For assistance setting up SLP please contact Singlewire.

<https://support.singlewire.com/s/article/IP-Speaker-Registration-and-Troubleshooting-Guide>

Product Documentation and Utilities

Before you start, download the Operation and Quick Start guides from the device's product webpage:

SIP Paging Adapter:

<https://www.cyberdata.net/collections/sip/products/011233>

SIP Paging Server:

<https://www.cyberdata.net/collections/sip/products/011146>

InformaCast Enabled Paging Adapter

<https://www.cyberdata.net/collections/singlewire/products/011280>

The CyberData Discovery Utility can be used to locate CyberData devices on your network. You may download it from the following web address:

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

Note: *DHCP addressing mode is enabled on default on all noted firmware levels.*

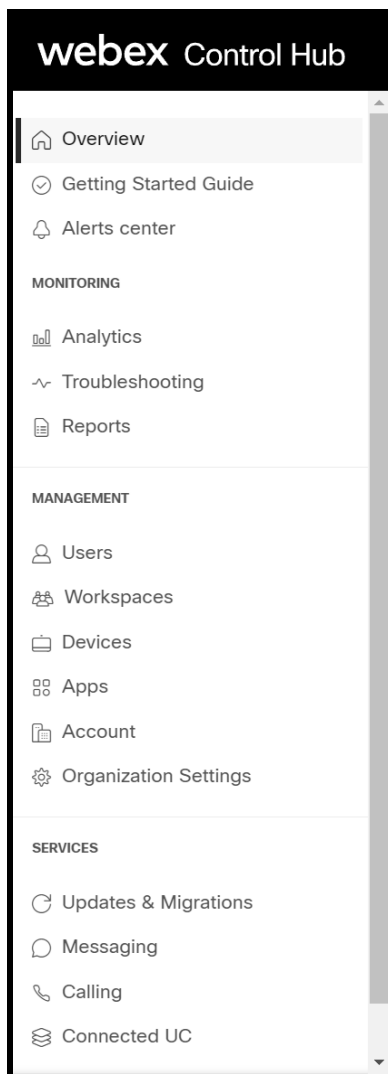
3.0 Setting up a Workspace in Webex Calling

This section outlines how to create a Webex Calling user in the Webex Control Hub (CH). This will provide the credentials to then setup the CyberData device.

[Cisco has detailed instructions in the Cisco Webex Help Center in the Add your customer managed device article.](#)

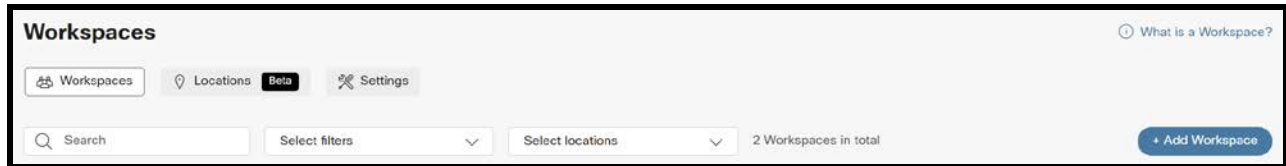
1. Login to [Webex Control Hub as the administrator](#).
2. From the overview page select **Workspaces**.

Figure 3-1: Overview Side Bar



- From the Workspaces page select the **Add Workspace** button.

Figure 3-2: Workspaces Page



- On the Add Workspace popup create a Workspace for the adapter.

Figure 3-3: Create a Workspace

Add Workspace

Workspaces represent a physical space in your organization. It may contain one device or multiple devices that work together. Workspace details show usage, settings, and environmental status for that physical space to help you make decisions to improve the use and cost of your space.

Name *

What do you want to name the Workspace?

Type ⓘ

What type best describes the Workspace?

Capacity

How many people is the Workspace suitable for?

Location

Where is the Workspace located?

Types of Workspaces

Workspaces come in different shapes and sizes, defining what type of workspace you are adding will help us deliver insights into adoption and usage, in the future defaults for certain types may exist.

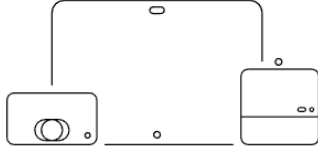
6/6

5. After creating the workspace select **Cisco IP Phone**.

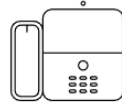
Figure 3-4: Pick a device

Add Workspace

What kind of device do you want to set up in this workspace?



Room, Board or Desk series
e.g. Cisco Webex Board, Room, and Desk series, and Webex Share.



Cisco IP Phone
e.g. Cisco 8845, 8865, 8800 and Analog Telephone Adapter ports

Select Device

Customer Managed Device

Device Vendor

Cyberdata Customer Managed

Enter MAC Address

Enter the MAC address of the IP phone you want to add.

0020f7046e95

☒ *I confirm that creating this device profile will expose sensitive device credentials that could be misused and exploited by users with unauthorized access. You are responsible for securing and recycling these credentials. You agree that Cisco is not responsible for any fraudulent charges or phone calls that result from the exposure of these device credentials. Cisco offers limited support for third-party devices connected via this interface. Cisco will only investigate basic issues for third-party devices that are actively registered to the Webex Calling platform. Any other third-party device-related support issues should be directed to the third-party device vendor, including issues related to onboarding, deployment, configuration, or connectivity.

Back

Next

6. Set the device to **Customer Managed Device**.
7. Select **CyberData Customer Managed** as the Device Vender.
8. Enter the MAC address of the CyberData device.
9. Check the box to confirm authorization.
10. Press **Next** to continue.

Figure 3-5: Set an Extension Number

✕

Add Workspace

Assign numbers
Choose from the available phone numbers and extensions in the drop-down lists. These will become the primary line which you can use to reach this place.

[Reset](#)

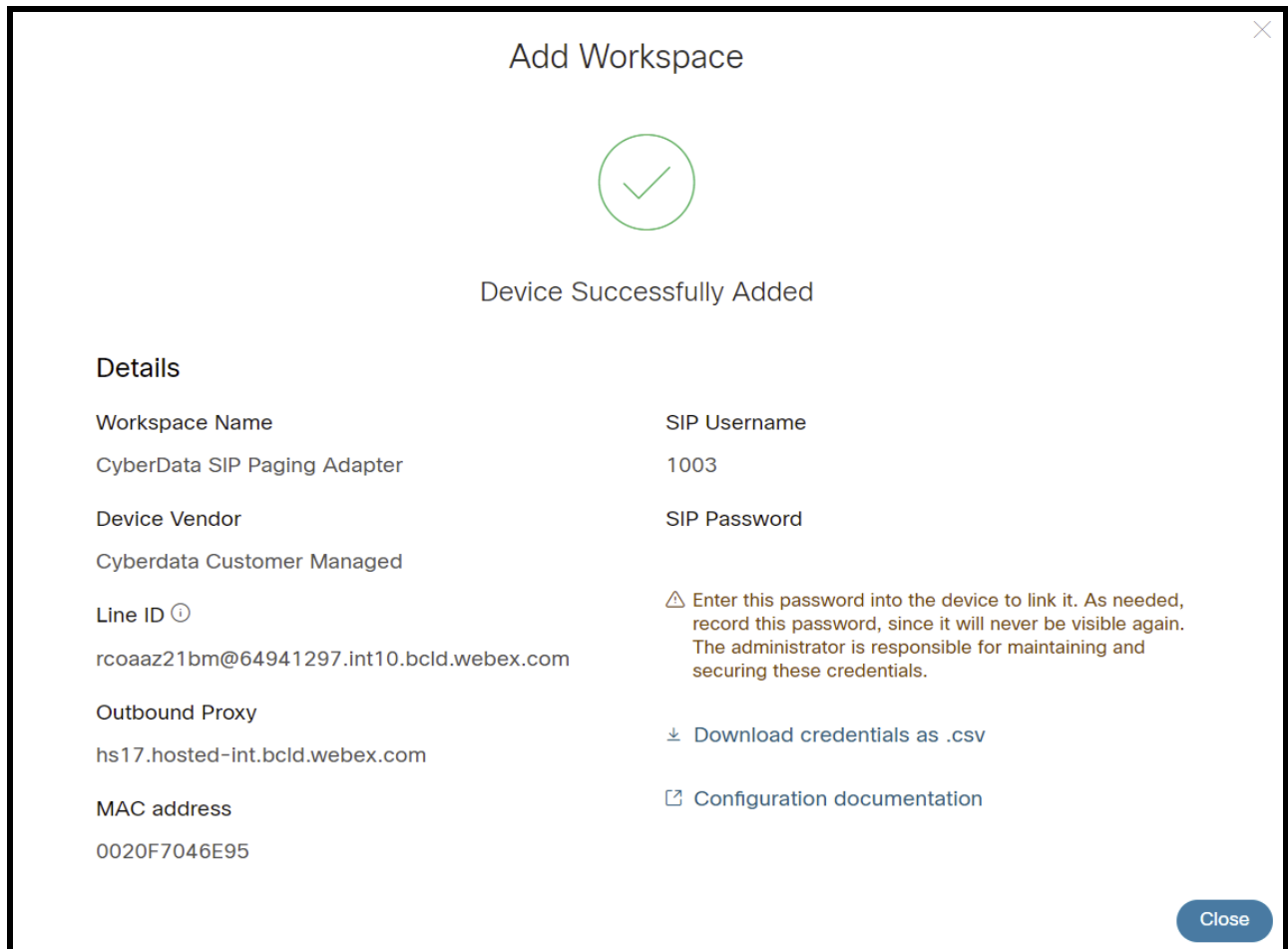
User	Location	Phone Number	Extension	Calling Plan
CyberData SIP Paging Adapter	CyberData_Test	None	1003	

Back Save

11. Set a location for the device.
12. If desired set a phone number for the device.
13. Set an Extension Number for the device

Note: It is possible to create a workspace with both a phone number and extension number, or just one or the other. Depending on the nature of the use case set the numbers accordingly.

Figure 3-6: Device Successfully Added



Note: The password has been obscured.

11. Make sure to press **Download credentials as .csv** because this page is only shown once.

4.0 Setting up the CyberData IP to Analog Device

This section outlines the required sections for the CyberData device and how the credentials supplied from Webex correlate to the CyberData settings. For the purposes of the document the SIP Paging Adapter is used to illustrate how to setup the device. There is no difference in configuration for the SIP Paging Adapter or SIP Paging Server.

Table 4-1: SIP Credential Explanation

Webex Calling Credential	CyberData Setting
2 nd Half of Line ID	Primary SIP Server
1 st Half of Line ID	Primary SIP User ID
SIP Username	Primary SIP Auth ID
SIP Password	Primary SIP Auth Password
Outbound Proxy	Outbound Proxy

Note: CyberData devices do not support 'Line IDs' and the ID provided by Webex must be broken up to be used by the CyberData device. Webex provides the line ID in the following format: "UserID@SIP_Server_Address". Everything before the @ symbol is used as CyberData's Primary SIP User ID and everything after the @ symbol is used as the Primary SIP Server.

CyberData's default login credentials are:

Username: admin

Password: admin

1. Log into the web interface of the CyberData device.

Figure 4-1: Home Tab

The screenshot displays the 'Home' tab of the CyberData Paging Adapter web interface. At the top, there is a navigation bar with tabs: Home, Device, Network, SIP, SSL, Multicast, Fault, Audiofiles, Events, Autoprovisioning, and Firmware. The main content area is titled 'CyberData Paging Adapter' and is divided into several sections:

- Current Status:** Displays device information such as Serial Number (233200125), Mac Address (00:20:17:04:5e:95), Firmware Version (v20.2.0), Partition 2 (v20.2.0), Partition 3 (v20.2.0), and Booting From (partition 2). It also includes a 'Boot From Other Partition' button.
- Admin Settings:** Contains fields for Username (admin), Password (masked), and Confirm Password (masked). It includes 'Save', 'Reboot', and 'Toggle Help' buttons.
- Import Settings:** Features a 'Choose File' button and an 'Import Config' button.
- Export Settings:** Includes an 'Export Config' button.
- Network Settings:** Shows IP Addressing (DHCP), IP Address (192.168.1.4), Subnet Mask (255.255.255.0), Default Gateway (192.168.1.1), and DNS Server 1 (192.168.1.1).
- SIP Mode:** Shows SIP Mode (Enabled), Multicast Mode (Disabled), and Event Reporting (Disabled).
- Servers:** A list of servers with their status: Primary SIP Server (Not registered), Backup Server 1 (Not registered), Backup Server 2 (Not registered), and Nightingale Server (Not registered).

2. Navigate to the SIP tab.
3. Set the **Primary SIP Server** field to the 2nd half of the Line ID.
4. Set the **Primary SIP User ID** to the 1st half of the Line ID.

Note: Do not add an @ to SIP Server or User ID.

5. Set the **Primary SIP Auth ID** to the Extension Number.
6. Set the **Primary SIP Auth Password** to the SIP Password.
7. Set the **Outbound Proxy** to the Outbound Proxy.
8. Leave the **Outbound Proxy port** set to 0.
9. Set the **SIP Transport** to TLS.
10. Ensure **TLS Version** is set to **1.2 Only (Recommended)**.
11. Set RTP Encryption to **Mandatory**.
12. Save and Reboot.

Figure 4-2: SIP Tab

CyberData Paging Adapter

SIP Settings

Enable SIP operation: ☒

Register with a SIP Server: ☒

Buffer SIP Calls: ☐

Primary SIP Server: 64941297.int10.bcld.webex.com

Primary SIP User ID: rcoaaaz21bm

Primary SIP Auth ID: 1003

Primary SIP Auth Password: *****

Re-registration Interval (in seconds): 360

Backup SIP Server 1: Host or IP address

Backup SIP User ID: User ID

Backup SIP Auth ID: Auth ID

Backup SIP Auth Password: Password

Re-registration Interval (in seconds): 360

Backup SIP Server 2: Host or IP address

Backup SIP User ID: User ID

Backup SIP Auth ID: Auth ID

Backup SIP Auth Password: Password

Re-registration Interval (in seconds): 360

Remote SIP Port: 5060

Local SIP Port: 5060

SIP Transport Protocol: TLS ☒ NTP enabled

TLS Version: 1.2 only (recommended)

Verify Server Certificate: ☐

Outbound Proxy: hs17.hosted-int.bcld.webex.com

Outbound Proxy Port: 0

Use Cisco SRST: ☐

Disable rport Discovery: ☐

Keep Alive Period: 10000

Nightringer Settings

SIP Server: Host or IP address

SIP User ID: User ID

SIP Auth ID: Auth ID

SIP Auth Password: Password

Re-registration Interval (in seconds): 360

Call Disconnection

Terminate Call after delay: 0

Audio Codec Selection

Codec: Auto Select

RTP Settings

RTP Port (even): 10500

Asymmetric RTP: ☐

Jitter Buffer: 50

RTP Encryption (SRTP): Mandatory

Save Reboot Toggle Help

If the credentials have been entered correctly the device should now be registered with Webex. This can be verified on the home tab of the web interface or on the Webex site.

Figure 4-3: Home Tab – Registered

The screenshot displays the 'Home' tab of the CyberData Paging Adapter web interface. The interface has a top navigation bar with tabs: Home, Device, Network, SIP, SSL, Multicast, Fault, Audiofiles, Events, Autopro, and Firmware. The main content area is titled 'CyberData Paging Adapter' and is divided into several sections:

- Current Status:**
 - Serial Number: 233200125
 - Mac Address: 00:20:f7:04:6e:95
 - Firmware Version: v20.2.0
 - Partition 2: v20.2.0
 - Partition 3: v20.2.0
 - Booting From: partition 2
 - Buttons: 'Boot From Other Partition' (blue)
- Admin Settings:**
 - Username: admin
 - Password: *****
 - Confirm Password: *****
 - Buttons: 'Save' (blue), 'Reboot' (blue), 'Toggle Help' (white)
- Import Settings:**
 - Buttons: 'Choose File' (white), 'No file chosen' (text), 'Import Config' (blue)
- Export Settings:**
 - Buttons: 'Export Config' (blue)
- Network Settings:**
 - IP Addressing: DHCP
 - IP Address: 192.168.1.4
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.1.1
 - DNS Server 1: 192.168.1.1
 - DNS Server 2:
- SIP Settings:**
 - SIP Mode: Enabled
 - Multicast Mode: Disabled
 - Event Reporting: Disabled
- Registration Status:**
 - Primary SIP Server: **Registered**
 - Backup Server 1: Not registered
 - Backup Server 2: Not registered
 - Nighthtringer Server: Not registered

5.0 Using the CyberData SIP Paging Adapter in a Webex Calling system.

CyberData SIP Paging Adapters are designed as an interface to an existing analog paging system. Connecting to the analog speaker system is crucial and CyberData has a matrix of different compatible amplifiers available on our [website](#). If your amplifier is not on our website please reach out to our [support department](#) to see if and how to connect to the amplifier.

5.1 Setting up stored messages

Once the adapter has been registered with Webex Calling it is possible to either make a live announcement or play a stored message. Follow these steps to setup a stored message.

5.1.1 Creating the Audiofile

CyberData devices require audio files to be in a specific format. CyberData recommends using a free tool like Audacity to convert an audio file into the specific required format.

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

5.1.2 Uploading the Audiofile

Once the audiofile is created it must then be uploaded to the CyberData device.

1. Navigate to the **Audiofiles** tab.

Figure 5-1: Audiofiles Tab

The screenshot shows the 'Audiofiles' tab in the CyberData Paging Adapter interface. At the top, there is a navigation bar with tabs: Home, Device, Network, SIP, SSL, Multicast, Fault, **Audiofiles**, Events, Autoprovisioning, and Firmware. Below the navigation bar, the title 'CyberData Paging Adapter' is displayed, followed by 'Available Space: 1481MB'. The main section is titled 'Stored Messages' and contains a table with 9 rows, each representing a stored message. Each row has a 'Choose File' button, a status indicator (e.g., 'No file chosen'), and a set of action buttons: 'Play', 'Delete', 'Save', 'Repeat', and an 'Infinite' checkbox. The 'Repeat' button is currently set to '0'.

2. Upload the audiofile to one of the 9 stored message options by pressing **Choose File**.
3. Select the desired audiofile and press **open**.
4. Click **Save** to upload the audiofile.

Figure 5-2: Audiofile Uploaded

The screenshot shows the 'Audiofiles' tab in the CyberData Paging Adapter interface, similar to Figure 5-1. However, the first row, 'Stored Message 1', now shows 'Currently set to: Gas_Vent_East_Side.wav' instead of 'default'. The 'Choose File' button is still present, and the 'No file chosen' status is no longer displayed. The other rows remain unchanged.

5.2 Manual DTMF for Analog Zone

Some analog amplifiers require a DTMF pattern to select a physical zone. In those situations, the setting “Manual DTMF Entry for Analog Zone” is required. Follow these steps to enable the setting.

1. Navigate to the **Device** tab.
2. Check the box for “**Manual DTMF Entry for Analog Zone**” located in the DTMF settings section (Bottom Right).
3. Save.

Figure 5-3: Device Tab

The screenshot displays the CyberData Paging Adapter configuration web interface. At the top, a navigation bar includes tabs for Home, Device (selected), Network, SIP, SSL, Multicast, Fault, Audiofiles, Events, Autoprovisioning, and Firmware. The main header reads "CyberData Paging Adapter".

The interface is divided into several settings sections:

- Line-in Settings:** Includes "Enable Line-in to Line-out Loopback:" with an unchecked checkbox.
- Relay Settings:** Includes "Activate Relay on Local Audio:" with an unchecked checkbox.
- Clock Settings:** Includes "Enable NTP:" (checked), "NTP Server:" (north-america.pool.ntp.org), "Timezone:" (America/Los_Angeles), and "Current Time:" (Thu, 19 May 2022 15:42:46).
- DTMF Settings:** Includes "DTMF Duration:" (500), "Bypass DTMF Menus (Go straight to page):" (unchecked), "Send pre-configured DTMF for Analog Zone:" (unchecked), "Analog Zone:" (0-9, *, #), "Manual DTMF Entry for Analog Zone:" (checked), "Require Security Code:" (unchecked), and "Security Code:" (masked with asterisks).
- Misc Settings:** Includes "Device Name:" (Paging Adapter), "Beep on Init:" (unchecked), "Beep Before Page:" (unchecked), and "Disable HTTPS (NOT recommended):" (unchecked).

At the bottom, there are buttons for "Test Audio", "Test Relay", "Save", "Reboot", and "Toggle Help".

6.0 Using the CyberData SIP Paging Server in a Webex Calling system.

CyberData's SIP Paging Server is designed as a SIP to Multicast style device that can receive a SIP call and convert the audio to Multicast to send across the local area network. The SIP Paging Server supports up to 100 Multicast Groups or Zones, CyberData refers to these as 'PGroups'.

6.1 Setting up a PGroup.

Once the SIP Paging Server is registered with the platform, use the PGroups tab to configure the Paging Group.

1. After Logging into the Paging Server go to the **PGroups** Tab.
2. On the PGroups Tab press **edit** on the group to be configured, for the purpose of this document group 0 will be edited.

Figure 6-1: PGroups Tab

#	Address	Port	Name	Code	TTL	Lineout	
0	234.2.1.1	2000	PagingGroup00		255	Yes	Edit
1	234.2.1.2	2002	PagingGroup01		255	Yes	Edit
2	234.2.1.3	2004	PagingGroup02		255	Yes	Edit
3	234.2.1.4	2006	PagingGroup03		255	Yes	Edit
4	234.2.1.5	2008	PagingGroup04		255	Yes	Edit
5	234.2.1.6	2010	PagingGroup05		255	Yes	Edit
6	234.2.1.7	2012	PagingGroup06		255	Yes	Edit
7	234.2.1.8	2014	PagingGroup07		255	Yes	Edit
8	234.2.1.9	2016	PagingGroup08		255	Yes	Edit
9	234.2.1.10	2018	PagingGroup09		255	Yes	Edit

« 1 2 3 4 5 6 7 8 9 10 »

Save

3. Adjust the Multicast Address if necessary.
4. Adjust the Multicast Port if necessary.
5. Name the PGroup.
6. If required set a security code for the group.
7. Press **OK** to finish editing.

Figure 6-2: Edit PGroup

Configure PGROUP

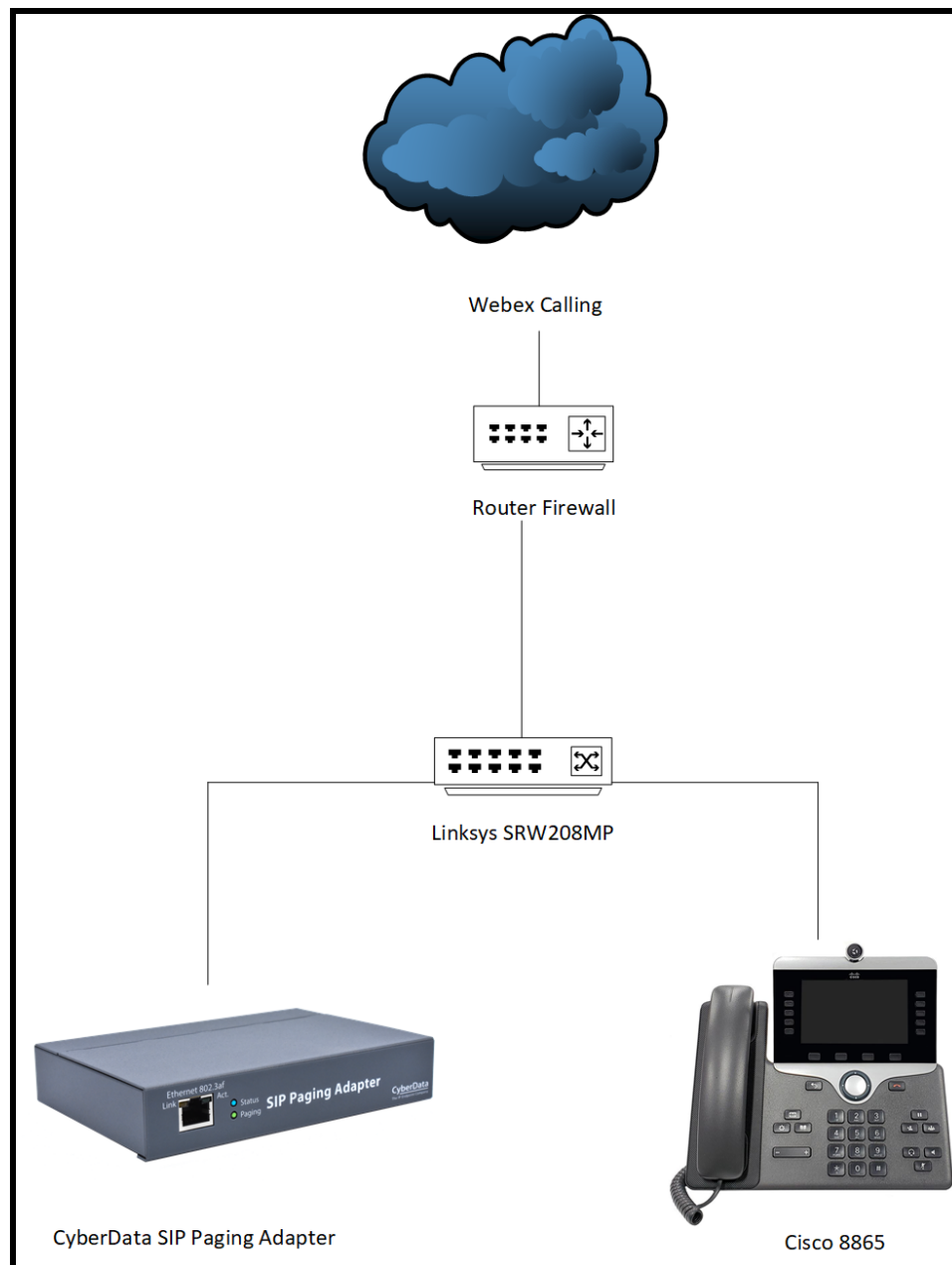
PGROUP	0
Address	234.2.1.1
Port	2000
Name	General Paging
Security Code	0-9, *, #
TTL	255
Line-out	<input checked="" type="checkbox"/>
Play Stored Message	<input type="checkbox"/>
Audio File	▼
Times to Play	1

Toggle Help Cancel **Ok**

8. Save the changes.

7.0 Setup Diagram

Figure 7-1: Interoperability Test Infrastructure



8.0 FAQ

Why is the device registering to a backup server and not the primary server listed in the SRV record?

CyberData devices have a bug where they will not fall back to the primary server listed in the SRV record in the event it switches to a backup server. To resolve this issue simply reboot the device. This will be fixed in a future release.

Connecting to InformaCast without SLP.

CyberData InformaCast Enabled devices can be pointed directly to the InformaCast servers when SLP is not working or is not possible in the environment. On the Device tab of the CyberData device add the path to the InformaCast server, here is an example value:

`http://10.0.1.195:8081/InformaCast/resources/`

Note: Make sure to change the address listed in the path to the IP address of the server.

9.0 Contact CyberData Corporation

Sales

For sales-related questions, please visit our [Contact CyberData Sales](#) web page for more information.

Technical Support

For CyberData Technical Support, please submit a [Contact CyberData VoIP Technical Support](#) form on our website.

The CyberData VoIP Technical Support Contact form initiates a troubleshooting ticket which CyberData uses for quality assurance purposes.

Additionally, the Contact VoIP Tech Support form tells us which phone system you are using, the make and model of the network switch, and other essential troubleshooting information we need to efficiently assist with a resolution. Please also include as much detail as possible in the Describe Problem section of the form. Your installation is extremely important to us.

Documentation Feedback

We realize changes to the software or hardware of the Webex solution may render this document obsolete. We welcome and encourage documentation feedback to ensure continued applicability.