

Leap Telecom Configuration Guide: SIP Enabled IP Intercoms

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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 Device in the Leap Tel System	6
4.0 Setting up the CyberData Intercom	10
5.0 Using the CyberData Intercom in a Leap Telecom system.....	13
5.1 Setting the Dialout Extension – Single button intercom	13
5.2 Calling with a Keypad Intercom	14
5.2.1 Setting up Speed Dial Operation	15
5.2.2 Setting up Security Mode Operation	16
5.3 Activating the on-board relay	17
6.0 Setup Diagram.....	18
7.0 Contact CyberData Corporation.....	19

1.0 Supported CyberData Products

This section describes the products used for interoperability testing with Leap Telecom.

Table 1-1: Supported CyberData Products

EQUIPMENT	MODEL or PART NUMBER	FIRMWARE VERSION
CYBERDATA SIP OUTDOOR INTERCOM	011186	20.4.1 or greater
CYBERDATA SIP INDOOR INTERCOM	011211	20.4.1 or greater
CYBERDATA SIP EMERGENCY INTERCOM	011209	20.4.1 or greater
CYBERDATA SIP KEYPAD INTERCOM	011214	20.4.1 or greater
SIP HAND WAVE INDOOR INTERCOM	011530	1.0.0 or greater
SIP OUTDOOR INTERCOM WITH RFID	011477	1.0.0 or greater

2.0 Before You Start

Network Advisories

Leap Telecom uses a Fully Qualified Domain Name (FQDN) for the SIP server. The CyberData intercom needs to perform a DNS query to resolve the IP address of Leap Telecom's Instance Name FQDN.

In addition, be sure to verify the following ports are available for the intercom to use:

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

The intercom will need to traverse the public internet in order to operate with Leap Telecom in the cloud. The intercom'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.

Product Documentation and Utilities

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

SIP Outdoor Intercom:

<https://www.cyberdata.net/collections/sip/products/011186>

SIP Indoor Intercom:

<https://www.cyberdata.net/collections/sip/products/011211>

SIP Emergency Intercom:

<https://www.cyberdata.net/collections/sip/products/011209>

SIP Outdoor Keypad Intercom

<https://www.cyberdata.net/collections/sip/products/011214>

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>

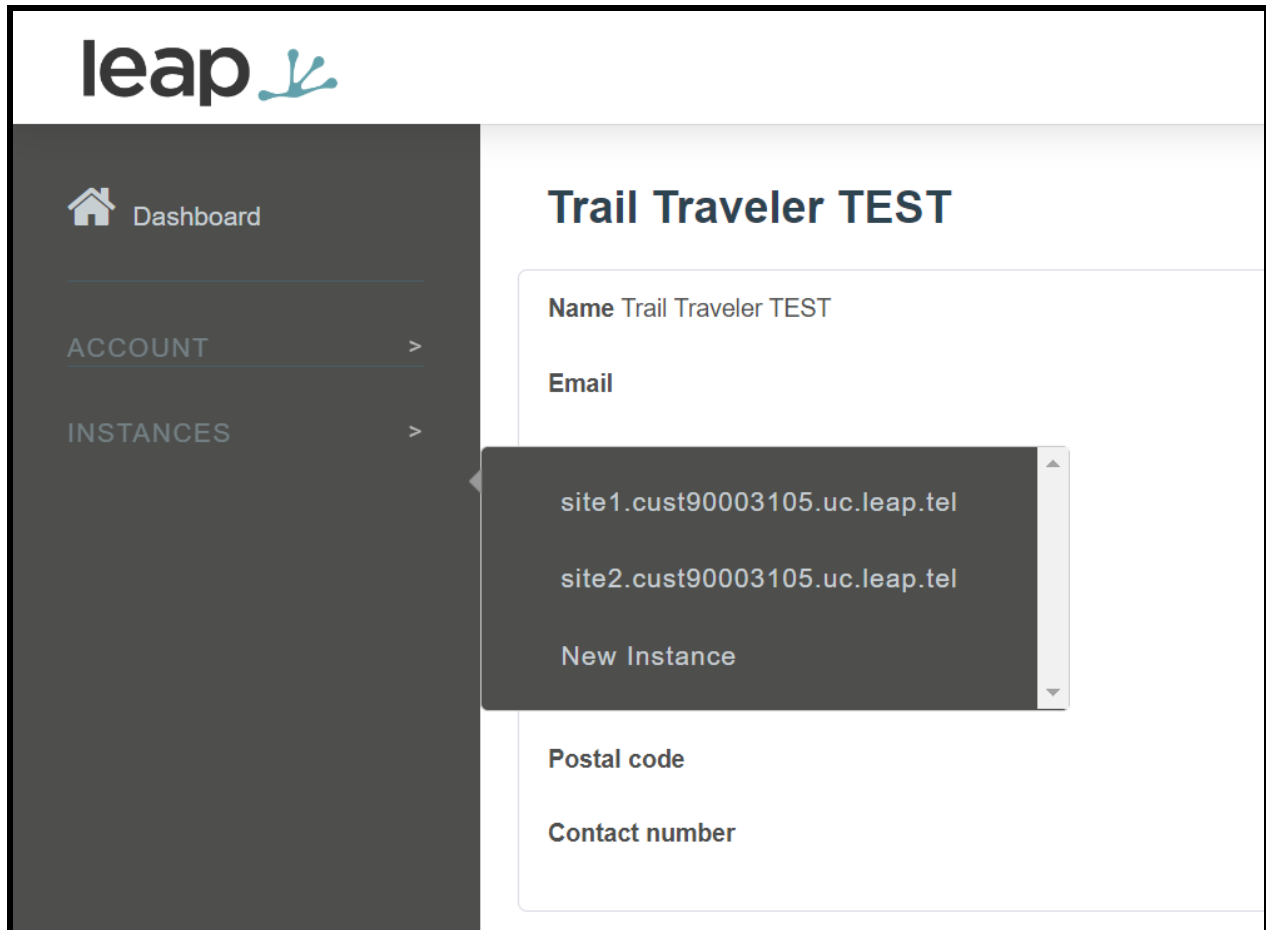
Note: DHCP addressing mode is enabled on default on all noted firmware levels.

3.0 Setting up a Device in the Leap Tel System

This section outlines how to create a device in the Leap Tel system.

1. Login to the Leap system
2. Mouse over instances and select the site/instance where the device will be used.

Figure 3-1: Instance Selection



- From the site page select **Devices**, then press the + button to create a new device.

Figure 3-2: Workspaces Page

Devices 8 -

Search:

Name	Login	SIP Caller ID name	SIP Caller ID number	Edit	Delete	Origins	Registration Status	Routing
Ted Home Phone	tedxxx	Traveler Traveler						
Home Speaker	cyb3r	Traveler Traveler						
Test device	fubar	Traveler Traveler						
Cyber Intercom	Intercom	Traveler Traveler						
CyberNight	CyberNight	Traveler Traveler						
CallButton	CallButton	Traveler Traveler						
PaulSoftphone	PaulSoftphone	Traveler Traveler						
KERRY'S DESK PHONE	kgarrison123	Traveler Traveler						

Show 1 - 8 of 8 < < > >

- Set the **Name** of the device, being descriptive can help for device management in the future.
- Set the **Login** field as desired, CyberData recommends not using spaces, hyphens, or underscores.
- Press **Save** at the bottom of the page.

Figure 3-3: Add a Device

New device

Name ⓘ

Login ⓘ

Password ⓘ REGENERATE PASSWORD

7. After pressing save the page will refresh, click on **Extensions**.
8. In the **Extensions** section press the + to create a new extension.

Figure 3-4: Pick a device

Extensions 9 -

Search:

Name	Number	Edit	Delete	Origins	Routing
CyberData Ring Group	3004				
Kerry Home Speaker	4001				
Cyber Intercom	3006				
CyberNight	3008				
CallButton	3010				
PaulSoftphone	3011				
Sales Conference Room Ext	4002				
Kerry	1002				
Ted	2005				

Show 1 - 9 of 9

+

9. In the New extension window set a **Name** for the extension. CyberData recommends having the name correlate to the device that will use the extension.
10. Set the **Number** as desired.
11. Set the **Destination** to the **Name** of the device set in step 4.
12. Press **Save**.

Figure 3-5: New Extension Creation

New extension

Name ⓘ

CyberData Indoor Intercom

Number ⓘ

3006

Destination ⓘ

CyberData Indoor Intercom (device:3442) ▼

CANCEL SAVE

Configuration on the Leap Tel side is now complete and the CyberData device is ready to be configured. Values set on the Device tab are required for registration, CyberData recommends opening up the Device created in steps 3 - 6 for ease of copy and pasting.

4.0 Setting up the CyberData Intercom

This section outlines the required sections for the CyberData device and how the credentials supplied from Leap correlate to the CyberData settings. For the purposes of the document the SIP Intercom is used to illustrate how to setup the device.

Table 4-1: SIP Credential Explanation

Leap Credential	CyberData Setting
Instance	Primary SIP Server
Device Login	Primary SIP User ID
Device Login	Primary SIP Auth ID
Device Password	Primary SIP Auth Password

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 Intercom web interface. The top navigation bar includes links for Home, Device, Network, SIP, SSL, Multicast, Sensor, Audiofiles, Events, DSR, Autopro, and Firmware. The main content area is titled 'CyberData Intercom' and is divided into several sections:

- Device Status:** Displays Serial Number (211200122), Mac Address (00:20:17:04:04:6d), Firmware Version (v20.4.1), Partition 2 (v20.4.1), Partition 3 (v20.4.1), and Booting From (partition 2). A 'Boot From Other Partition' button is present.
- Sensor Status:** Shows Relay Status (Locked), Door Status (Closed), and Intrusion (Opened).
- Admin Settings:** Includes fields for Username (admin), Password (masked with asterisks), and Confirm Password (masked with asterisks). Buttons for 'Save', 'Reboot', and 'Toggle Help' are at the bottom.
- Import Settings:** Features a 'Choose File' button and a 'No file chosen' message, along with an 'Import Config' button.
- Export Settings:** Includes an 'Export Config' button.
- IP Addressing:** Shows DHCP settings: IP Address (192.168.1.16), Subnet Mask (255.255.255.0), Default Gateway (192.168.1.1), and DNS Server 1 (192.168.1.1).
- Volumes and Gains:** Lists SIP Volume, Multicast Volume, Ring Volume, Sensor Volume, Push to Talk Volume, Microphone Gain, and Push to Talk Microphone Gain, all set to 4.
- Mode Settings:** Shows SIP Mode (Enabled), Multicast Mode (Disabled), and Event Reporting (Disabled).
- Server Status:** Indicates Primary SIP Server (Not registered), Backup Server 1 (Not registered), Backup Server 2 (Not registered), and Nightringer Server (Not registered).

2. Navigate to the SIP tab.
3. Set the **Primary SIP Server** field to the FQDN of the Instance.
4. Set the **Primary SIP User ID** to the Device Login set in step 3-5.
5. Set the **Primary SIP Auth ID** to the Device Login set in step 3-5.
6. Set the **Primary SIP Auth Password** to the Device Password.

Note: Leap Tel supports both UDP and TCP for SIP Transport. Please use either of the transport protocols, during testing CyberData found that TCP preforms best.

7. Save and Reboot.

Figure 4-2: SIP Tab

SIP Settings

Enable SIP operation: ☒

Register with a SIP Server: ☒

Primary SIP Server: site1.cust90003105.uc.leap.tel

Primary SIP User ID: Indoor_Intercom

Primary SIP Auth ID: Indoor_Intercom

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: TCP

TLS Version: 1.2 only (recommended)

Verify Server Certificate: ☐

Outbound Proxy: Host or IP address

Outbound Proxy Port: 0

Use Cisco SRST: ☐

Disable rport Discovery: ☐

Unregister on Boot: ☐

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

Dial Out Settings

Dial out Extension: 204

Extension ID: id204

Send Multicast Audio: ☐

Multicast Address: 224.5.5.5

Multicast Port: 5050

Repeat Message: 1

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): Disabled

Save Reboot Toggle Help

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

Figure 4-3: Home Tab – Registered

The screenshot displays the 'Home' tab of the CyberData Intercom web interface. The top navigation bar includes tabs for Home, Device, Network, SIP, SSL, Multicast, Sensor, Audiofiles, Events, DSR, Autoprov, and Firmware. The main content area is titled 'CyberData Intercom' and is divided into several sections:

- Device Status:**
 - Serial Number: 211200122
 - Mac Address: 00:20:f7:04:04:6d
 - Firmware Version: v20.4.1
 - Partition 2: v20.4.1
 - Partition 3: v20.4.1
 - Boot From: partition 2
 - Buttons: Boot From Other Partition
 - IP Addressing: DHCP
 - IP Address: 192.168.1.16
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.1.1
 - DNS Server 1: 192.168.1.1
 - DNS Server 2:
 - SIP Volume: 4
 - Multicast Volume: 4
 - Ring Volume: 4
 - Sensor Volume: 4
 - Push to Talk Volume: 4
 - Microphone Gain: 4
 - Push to Talk Microphone Gain: 4
 - SIP Mode: Enabled
 - Multicast Mode: Disabled
 - Event Reporting: Disabled
 - Primary SIP Server: Registered
 - Backup Server 1: Not registered
 - Backup Server 2: Not registered
 - Nightringer Server: Not registered
- Sensor Status:**
 - Relay Status: Locked
 - Door Status: Closed
 - Intrusion: Opened
- Admin Settings:**
 - Username: admin
 - Password: *****
 - Confirm Password: *****
 - Buttons: Save, Reboot, Toggle Help
- Import Settings:**
 - Buttons: Choose File (No file chosen), Import Config
- Export Settings:**
 - Buttons: Export Config

5.0 Using the CyberData Intercom in a Leap Telecom system.

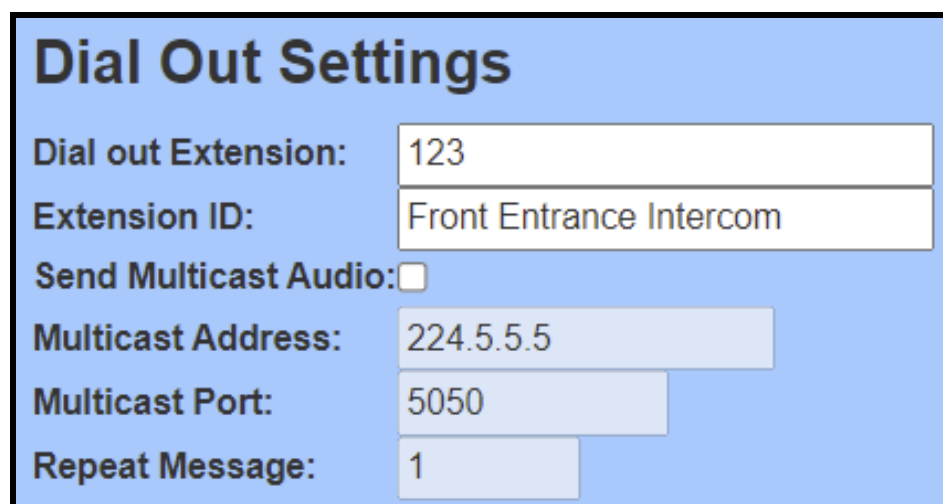
CyberData Intercoms are used for access control. Depending on the number of keys the intercom has there are different ways to use the intercom. A single button intercom can be configured to call a number when the call button is pressed. The Keypad variants can take advantage of the keypad and dial numbers to make a call. There are several different modes that can be used on Keypad intercoms.

5.1 Setting the Dialout Extension – Single button intercom

Once the intercom is registered with Leap Telecom, the “Dial out Extension” will need to be set for the intercom to call a number when the front call button has been pressed. This number can be either a direct extension, hunt group, call queue, or a direct phone number.

1. After Logging into the intercom go to the **SIP** Tab.
2. On the SIP Tab set the Dial out Extension to the address you want the intercom to call.
3. The Extension ID of the intercom is what should appear on the caller ID of the intercom.

Figure 5-1: Set the Dial out Extension



The image shows a web-based configuration interface titled "Dial Out Settings". It contains several fields for configuring intercom dialing settings:

Setting	Value
Dial out Extension:	123
Extension ID:	Front Entrance Intercom
Send Multicast Audio:	<input type="checkbox"/>
Multicast Address:	224.5.5.5
Multicast Port:	5050
Repeat Message:	1

5.2 Calling with a Keypad Intercom

The Outdoor Keypad Intercom (011214) has multiple different 'Dial Modes' that can be used which will make the intercom operate in a slightly different manner. There are four different dial modes that can be used. Telephone Operation, Cell Phone Operation, Speed Dial Operation, and Security Operation. These different modes are selected on the Buttons page.

Figure 5-2: Dial Modes

The screenshot shows the 'Buttons' configuration page for a CyberData Keypad Intercom. The page has a navigation bar at the top with tabs: Home, Device, Buttons (highlighted), Security, Network, SIP, SSL, Multicast, Access Log, Sensor, Audiofiles, Events, DSR, Autoprov, and Firmware. The main content area is titled 'CyberData Keypad Intercom' and contains several configuration sections:

- Dial Mode:** Includes four radio buttons: 'Enable Telephone Operation', 'Enable Cell Phone Operation', 'Enable Speed Dial Operation', and 'Enable Security Operation'.
- Security Mode Settings:** Includes fields for 'Relay Activation Code' (9876123), 'Relay Deactivation Code' (9876456), and a checkbox for 'Allow Telephone Dialout'.
- Speed Dial Settings:** Includes a 'Speed Dial Timeout' field (0) and a table for configuring 12 keypad buttons. Each row has a 'Keypad' number (1-12), a 'Speed Dial Number' field, and an 'ID' field. The first 7 buttons are configured with numbers 600-607 and ID 'Entrance Intercom'. Buttons 8-12 are empty.
- Button Tones:** Includes a checkbox for 'Play Button Tones' and buttons for 'Save', 'Reboot', 'Start Button Test', and 'Toggle Help'.

- **Telephone Operation**
 - This mode operates like a telephone. Press the call button and then dial the number.
- **Cell Phone Operation**
 - This mode operates like a cell phone. Dial the number then press the call button.
- **Speed Dial Operation**
 - This allows each button (0-9 * # Call Button) to be for a specific speed dial number. The Speed Dial Timeout is how long the button must be pressed before the call will send.
- **Security Operation**
 - This mode restricts the calling options to only the call button. The keypad is then used for "Security Codes" for access control without making a call. Check the operations manual for more details on the Security Codes.

5.2.1 Setting up Speed Dial Operation

After setting the dial mode to **Speed Dial Operation**, the **Speed Dial settings** will be configurable. **Speed Dial Timeout** is how long the button will need to be pressed to make a call; if set to 0 the call will send immediately.

Figure 5-3: Speed Dial Settings

The screenshot displays the 'CyberData Keypad Intercom' configuration web interface. The top navigation bar includes links for Home, Device, Buttons, Security, Network, SIP, SSL, Multicast, Access Log, Sensor, Audiofiles, Events, DSR, Autopro, and Firmware. The main content area is divided into several sections:

- Dial Mode:** Contains four radio buttons: 'Enable Telephone Operation', 'Enable Cell Phone Operation', 'Enable Speed Dial Operation' (which is selected), and 'Enable Security Operation'.
- Security Mode Settings:** Includes fields for 'Relay Activation Code' (9876123), 'Relay Deactivation Code' (9876456), 'Allow Telephone Dialout' (unchecked), 'Call Button' (600), 'Send Multicast Audio' (checked), 'Multicast Address' (224.5.5.5), 'Multicast Port' (5050), and 'Repeat Message' (1).
- Speed Dial Settings:** This section is highlighted with a yellow border. It features a 'Speed Dial Timeout' field set to 0. Below it is a table with 12 rows for keypad assignments:

Keypad	Number	ID
Keypad 1:	800	Entrance Intercom
Keypad 2:	801	Entrance Intercom
Keypad 3:	802	Entrance Intercom
Keypad 4:	803	Entrance Intercom
Keypad 5:	804	Entrance Intercom
Keypad 6:	805	Entrance Intercom
Keypad 7:	806	Entrance Intercom
Keypad 8:	807	Entrance Intercom
Keypad 9:		ID:
Keypad 0:		ID:
Keypad *:		ID:
Keypad #:		ID:
Call Button:	600	Entrance Intercom
- Button Tones:** Includes a 'Play Button Tones' checkbox (checked) and buttons for 'Save', 'Reboot', 'Start Button Test', and 'Toggle Help'.

5.2.2 Setting up Security Mode Operation

Security Mode Operation will make the call button function as the main way to make a call. The call button can call a direct extension, ring group/call queue, or a standard phone number. The keypad can then be used for security codes that are configured on the security tab.

Relay Activation and Relay Deactivation are codes that can be entered on the keypad to activate and deactivate the relay. If those fields are left blank, they will be disabled.

Figure 5-4: Security Mode Operation

The screenshot displays the 'CyberData Keypad Intercom' configuration page. A navigation bar at the top includes links for Home, Device, Buttons, Security, Network, SIP, SSL, Multicast, Access Log, Sensor, Audiofiles, Events, DSR, Autopro, and Firmware. The 'Security' tab is selected. The page is divided into several sections:

- Dial Mode:** Contains four radio buttons: 'Enable Telephone Operation', 'Enable Cell Phone Operation', 'Enable Speed Dial Operation', and 'Enable Security Operation'. The 'Enable Security Operation' option is selected.
- Security Mode Settings:** This section is highlighted with a yellow border and contains:
 - Relay Activation Code: 9876123
 - Relay Deactivation Code: 9876456
 - Allow Telephone Dialout: ☐
 - Call Button: 600 (ID: Entrance Intercom)
 - Send Multicast Audio: ☐
 - Multicast Address: 224.5.5.5
 - Multicast Port: 5050
 - Repeat Message: 1
- Speed Dial Settings:** A table with 10 rows for Keypad 1 through Keypad 10. Each row has a 'Key' field (e.g., 800, 801, etc.) and an 'ID' field (all set to 'Entrance Intercom').
- Button Tones:** Includes a checkbox for 'Play Button Tones' (checked) and buttons for 'Save', 'Reboot', 'Start Button Test', and 'Toggle Help'.

5.3 Activating the on-board relay

While in a call with the intercom, DTMF codes can be entered on the phone to trigger the onboard relay of the intercom. These settings are found on the Device tab of the web interface.

- Relay Pulse code
 - Activates the relay for the configured Relay Pulse Duration.
- Relay Pulse Duration
 - How long the relay will activate when the Pulse code is sent.
- Relay Activation Code
 - This code activates the relay.
- Relay Deactivation Code
 - This code deactivates the relay.

Figure 5-5: Relay Settings

The screenshot shows the CyberData Keypad Intercom web interface. The top navigation bar includes tabs: Home, Device, Buttons, Security, Network, SIP, SSL, Multicast, Access Log, Sensor, Audiofiles, Events, DSR, Autopro, and Firmware. The main title is "CyberData Keypad Intercom".

The interface is divided into several sections:

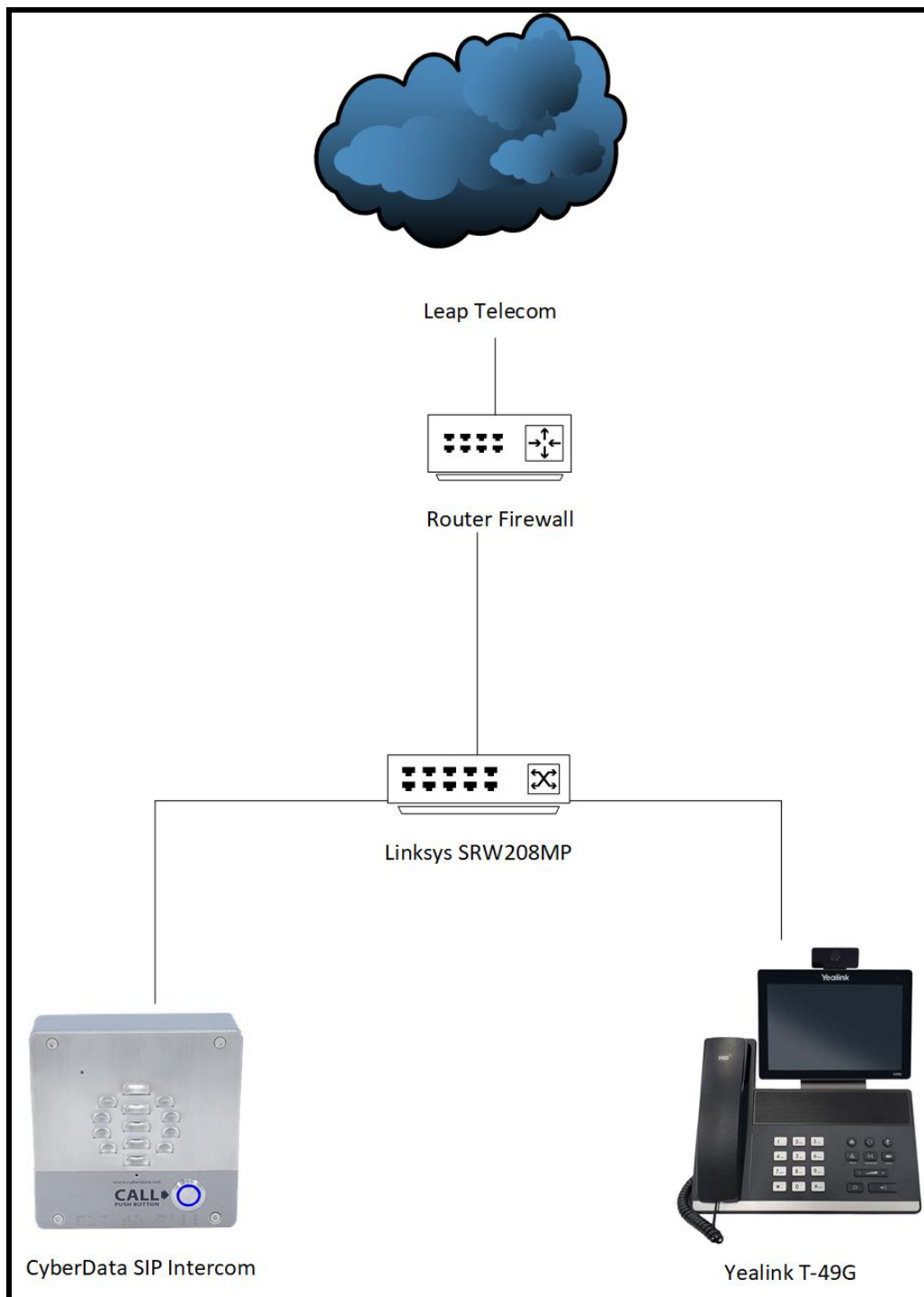
- Volume Settings (0-9):** SIP Volume: 4, Multicast Volume: 4, Ring Volume: 4, Sensor Volume: 4, Push to Talk Volume: 4.
- Microphone Settings (0-9):** Microphone Gain: 4, Push to Talk Microphone Gain: 4.
- Clock Settings:** Enable NTP: ☒, NTP Server: north-america.pool.ntp.org, Timezone: America/Los_Angeles, Current Time: Thu, 03 Oct 2019 15:58:08.
- Relay Settings (highlighted with a yellow box):**
 - Activate Relay with DTMF code: ☒
 - Relay Pulse Code: 123
 - Relay Pulse Duration (in seconds): 2
 - Relay Activation Code: 456
 - Relay Deactivation Code: 654
 - Play Tone During DTMF Activation: ☐
 - Activate Relay During Ring: ☐
 - Activate Relay During Night Ring: ☐
 - Activate Relay While Call Active: ☐
 - Activate Relay On Button Press: ☐
 - Relay On Button Press Duration: 3
- Misc Settings:**
 - Device Name: Keypad Intercom
 - Auto-Answer Incoming Calls: ☐
 - Button Lit when Idle: ☒
 - Button Brightness (0-255): 255
 - Keypad Lit when Idle: ☒
 - Keypad Brightness (0-255): 255
 - Play Ringback Tone: ☐
 - Enable Push to Talk: ☐
 - Enable DTMF Push to Talk: ☐
 - Prevent Call Termination: ☐
 - Disable HTTPS (NOT recommended): ☐

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

Note: Enable "Play Tone During DTMF Activation" if you want a tone to play when the onboard relay is active.

6.0 Setup Diagram

Figure 6-1: Interoperability Test Infrastructure



7.0 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 Leap Telecom solution may render this document obsolete. We welcome and encourage documentation feedback to ensure continued applicability.