

VoIP Indoor Office Ringer Operations Guide

Part #011149*, RAL 9003, Signal White Color

*Document Part #930386E
for Firmware Version 6.1.0*

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VoIP Indoor Office Ringer Operations Guide 930386E
Part # 011149*

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Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
13. Prior to installation, consult local building and electrical code requirements.



GENERAL ALERT

Warning

Electrical Hazard: This product should be installed by a licensed electrician according to all local electrical and building codes.





GENERAL ALERT

Warning

Electrical Hazard: To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.

Pictorial Alert Icons

	<p>General Alert</p> <p><i>This pictorial alert indicates a potentially hazardous situation. This alert will be followed by a hazard level heading and more specific information about the hazard.</i></p>
	<p>Ground</p> <p><i>This pictorial alert indicates the Earth grounding connection point.</i></p>

Hazard Levels

Danger: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This is limited to the most extreme situations.

Warning: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Caution: Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also alert users against unsafe practices.

Notice: Indicates a statement of company policy (that is, a safety policy or protection of property).

The safety guidelines for the equipment in this manual do not purport to address all the safety issues of the equipment. It is the responsibility of the user to establish appropriate safety, ergonomic, and health practices and determine the applicability of regulatory limitations prior to use. Potential safety hazards are identified in this manual through the use of words **Danger**, **Warning**, and **Caution**, the specific hazard type, and pictorial alert icons.

Revision Information

Revision 930386E, which corresponds to firmware version 6.1.0., was released on June 29, 2011, and has the following changes:

- Updates [Section 2.3.5.1, "Point-to-Point Configuration"](#).
- Adds [Figure 2-15, "Sensor Configuration Page"](#).

Abbreviations and Terms

Abbreviation or Term	Definition
A-law	A standard companding algorithm, used in European digital communications systems to optimize, i.e., modify, the dynamic range of an analog signal for digitizing.
AVP	Audio Video Profile
Cat 5	TIA/EIA-568-B Category 5
DHCP	Dynamic Host Configuration Protocol
LAN	Local Area Network
LED	Light Emitting Diode
Mbps	Megabits per Second.
NTP	Network Time Protocol
PBX	Private Branch Exchange
PoE	Power over Ethernet (as per IEEE 802.3af standard)
RTFM	Reset Test Function Management
SIP	Session Initiated Protocol
u-law	A companding algorithm, primarily used in the digital telecommunication
UC	Unified Communications
VoIP	Voice over Internet Protocol

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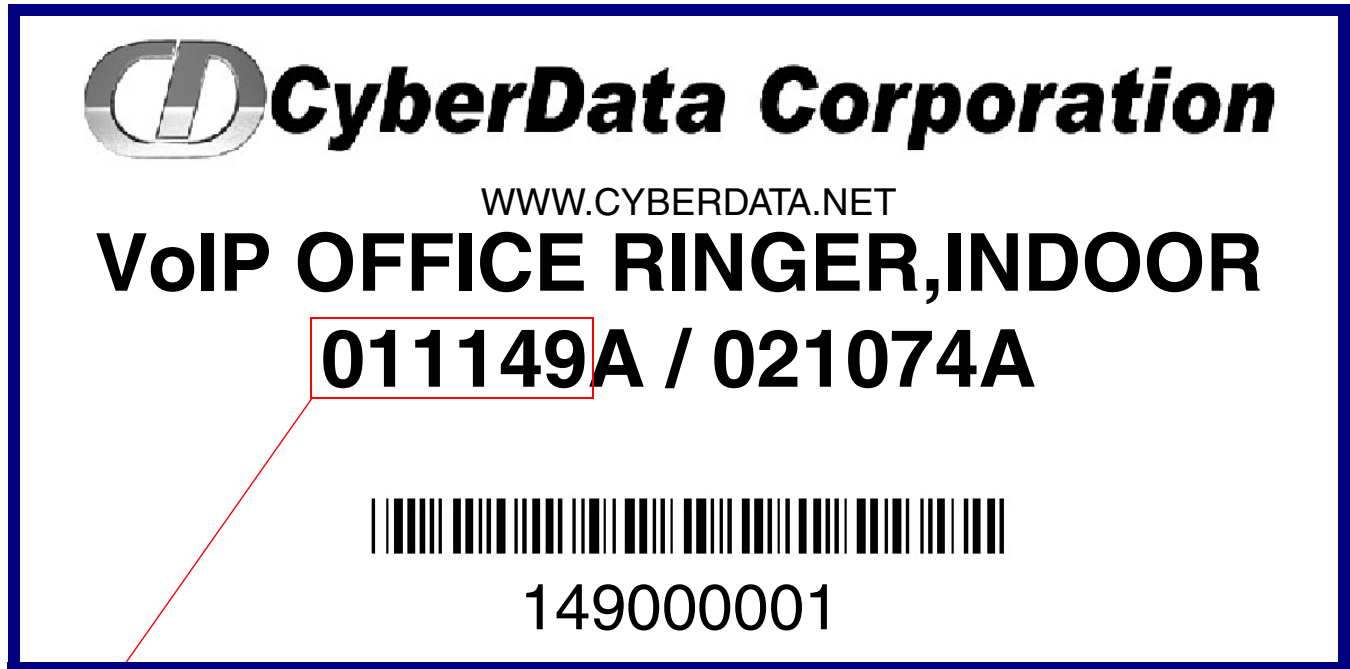
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1 Product Overview

1.1 How to Identify This Product

To identify the VoIP Indoor Office Ringer, look for a model number label similar to the one shown in [Figure 1-1](#). The model number on the label should be **011149**.

Figure 1-1. Model Number Label



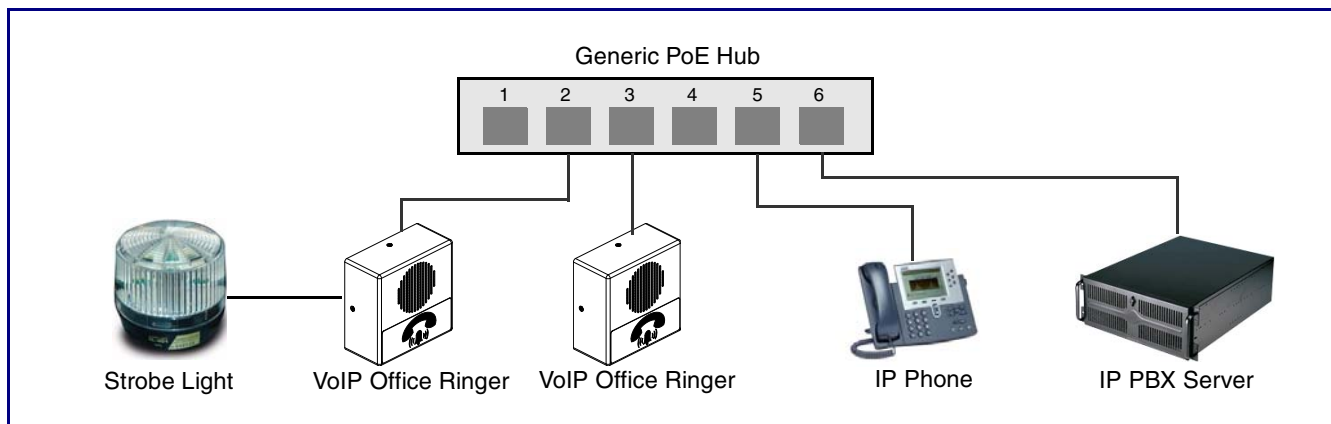
Model number




1.2 Typical System Installation

The Voice-over-IP (VoIP) VoIP Indoor Office Ringer is a SIP endpoint designed to provide an audible ring tone or pre-recorded message when the device is called as part of a Ring Group.

Figure 1-2 illustrates how the VoIP Indoor Office Ringer can be installed as part of a VoIP phone system.

Figure 1-2. Typical Installation—Door Entry/Access Control



 GENERAL ALERT	<p>Warning <i>Electrical Hazard:</i> The Office Ringer enclosure is not rated for any AC voltages.</p>
 GENERAL ALERT	<p>Warning <i>Electrical Hazard:</i> This product should be installed by a licensed electrician according to all local electrical and building codes.</p>
 GENERAL ALERT	<p>Warning <i>Electrical Hazard:</i> To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.</p>

1.3 Product Features



- SIP
- Dual speeds of 10 Mbps and 100 Mbps
- 802.3af compliant
- 2 gang outlet box size
- Network/Web management
- Network adjustable speaker volume adjustment
- Network configurable relay activation settings
- Network downloadable product firmware
- Doubles as a paging speaker
- One dry contact relay for auxiliary control
- Autoprovisioning
- Configurable audio files
- Office Ringer
- Three year warranty

1.4 Supported Protocols

The Office Ringer supports:

- SIP
- HTTP Web-based configuration
Provides an intuitive user interface for easy system configuration and verification of Office Ringer operations.
- DHCP Client
Dynamically assigns IP addresses in addition to the option to use static addressing.
- TFTP Client
Facilitates hosting for the Autoprovisioning configuration file.
- RTP
- RTP/AVP - Audio Video Profile
- Facilitates autoprovisioning configuration values on boot
- Packet Time 20 ms
- Audio Encodings
 - PCMU (G.711 mu-law)
 - PCMA (G.711 A-law)

1.5 Supported SIP Servers

The following link contains information on how to configure the Office Ringer for the supported SIP servers:

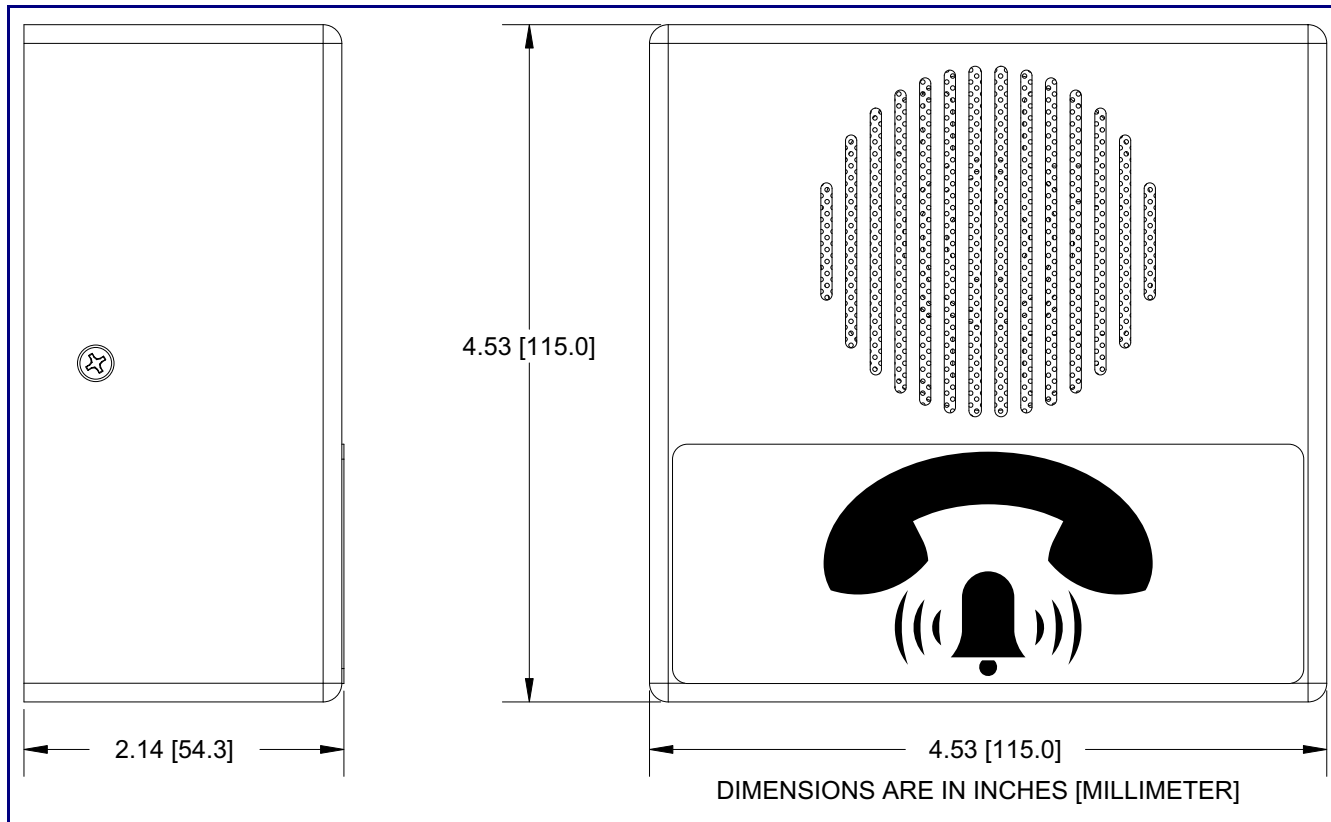
<http://www.cyberdata.net/support/voip/server.html>

1.6 Product Specifications

Category	Specification
Speaker Output	1 Watt Peak Power
Network Rate	10/100 Mbps
Power Requirement	PoE 802.3af compliant or +5 volts at 1000mA
Sound volume level	87db at 1 meter
Protocol	SIP
Part Number	011149
Dimensions	4.53" x 4.53" x 2.11" (H x W x D)
Weight	0.71 lbs./shipping weight of 1.1 lbs. (0.32 kg/shipping weight of 0.5 kg)
Auxiliary Relay	1 A at 30 VDC

1.7 Dimensions

Figure 1-3. Dimensions






2 Installing the VoIP Indoor Office Ringer

2.1 Parts List

Table 2-1 illustrates the VoIP Indoor Office Ringer parts.

Table 2-1. Parts List

Quantity	Part Name	Illustration
1	Office Ringer Assembly	
1	Installation Quick Reference Guide	
1	Office Ringer Mounting Accessory Kit	

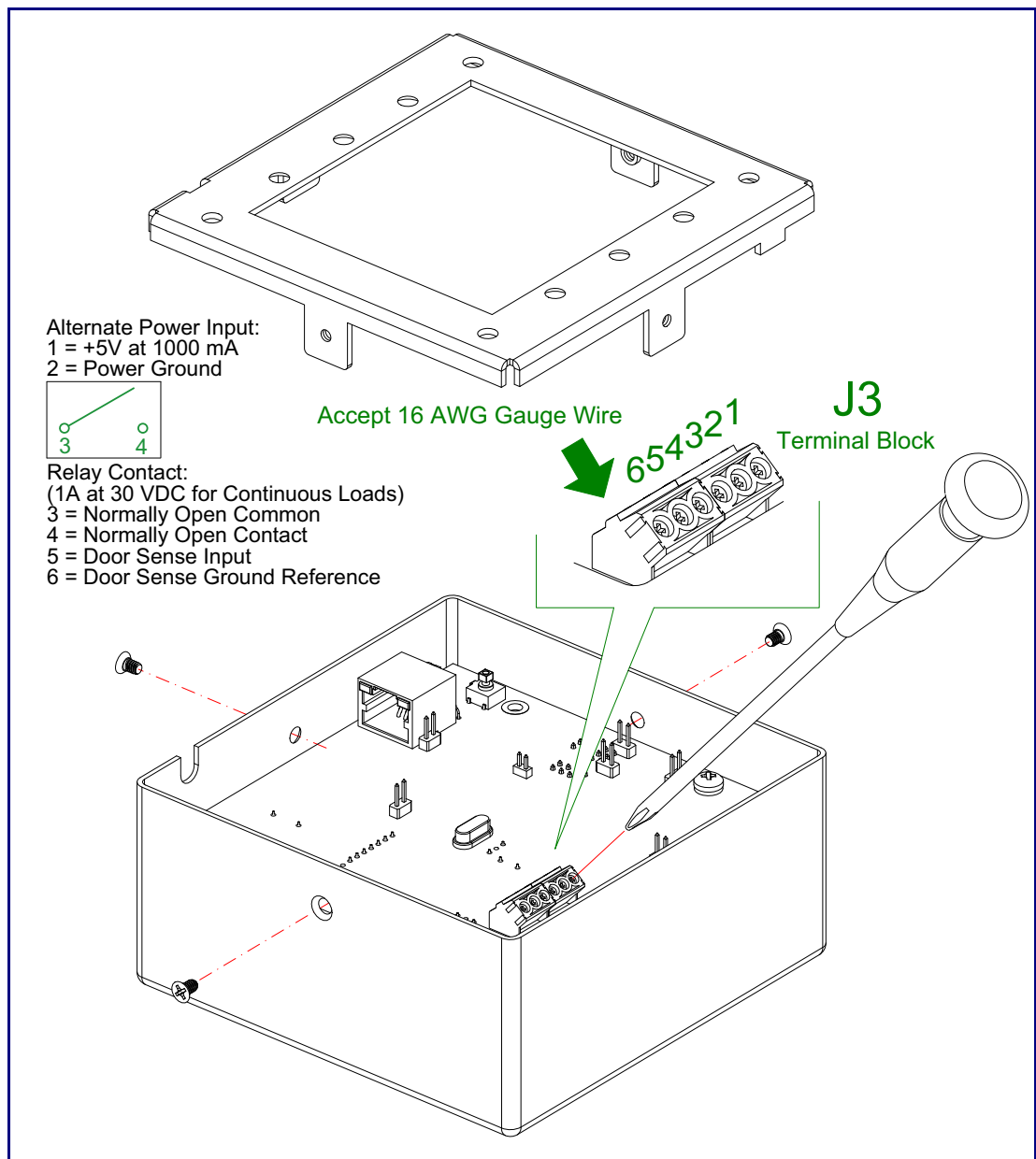
2.2 Office Ringer Setup

2.2.1 Office Ringer Connections

Figure 2-1 shows the pin connections on the J3 (terminal block). This terminal block can accept 16 AWG gauge wire.




Note As an alternative to using PoE power, you can supply 5 VDC at 1000 mA into the terminal block.

Figure 2-1. Office Ringer Connections



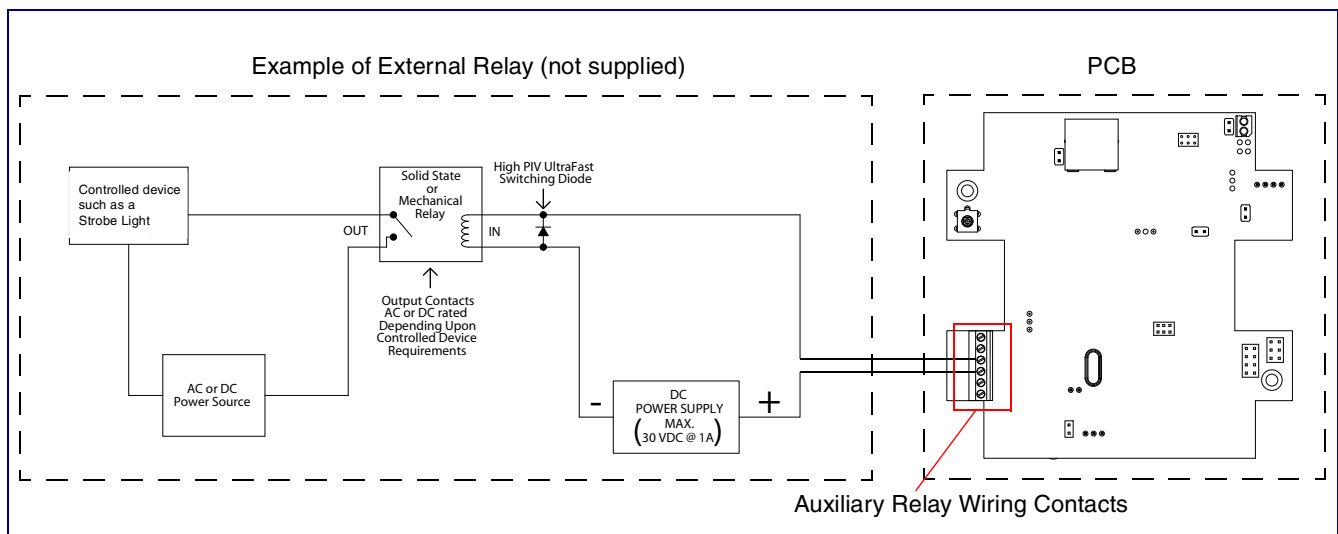
2.2.2 Connecting a Device to the Auxiliary Relay

The Office Ringer incorporates an on-board relay which enables users to control an external relay for activating an auxiliary device. The Office Ringer relay contacts are limited to 1 amp at 30VDC. The Office Ringer relay activation time is selectable through the web interface and is controlled by DTMF tones generated from the phone being called. The DTMF tones are selectable from the web interface as well.

	<p>Warning <i>Electrical Hazard:</i> The Office Ringer enclosure is not rated for any AC voltages.</p>
	<p>Warning <i>Electrical Hazard:</i> This product should be installed by a licensed electrician according to all local electrical and building codes.</p>
	<p>Warning <i>Electrical Hazard:</i> To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.</p>

Note The three digit code for the auxiliary relay must be sent in conformance with RFC2833 DTMF generation.

Figure 2-2. Auxiliary Relay Wiring Diagram



2.2.3 Identifying the Office Ringer Connectors

See the following Figures and Tables to identify the connectors and functions.

Figure 2-3. Connector Locations

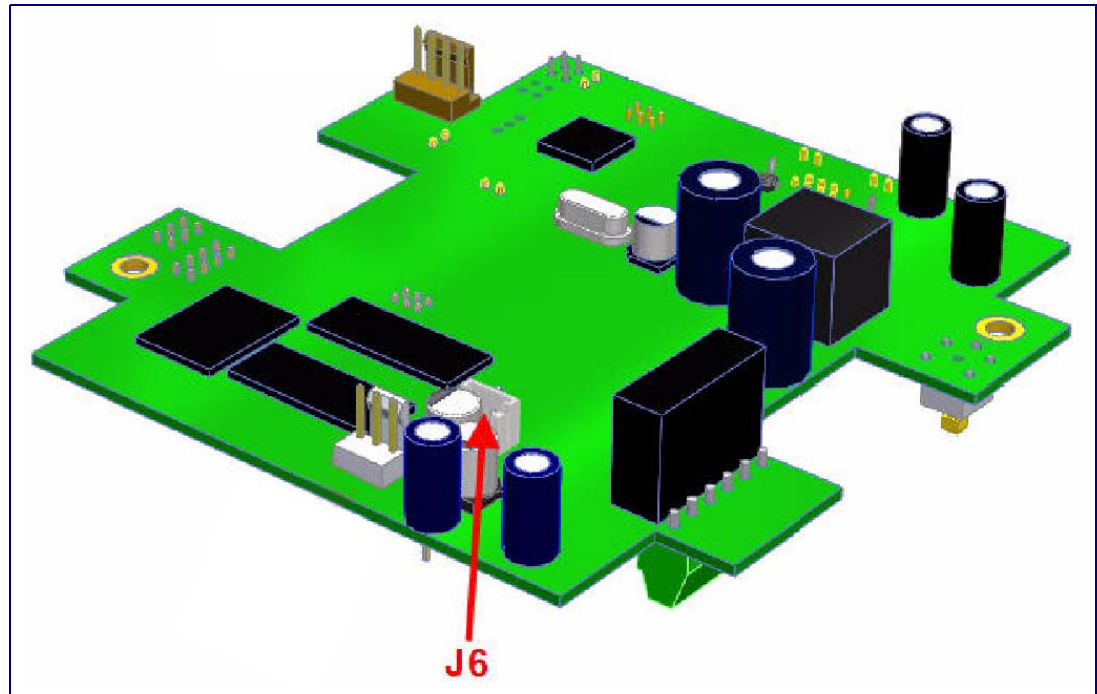


Table 2-2. Connector Functions

Connector	Function
J6	Speaker Interface

Figure 2-4. Connector Locations

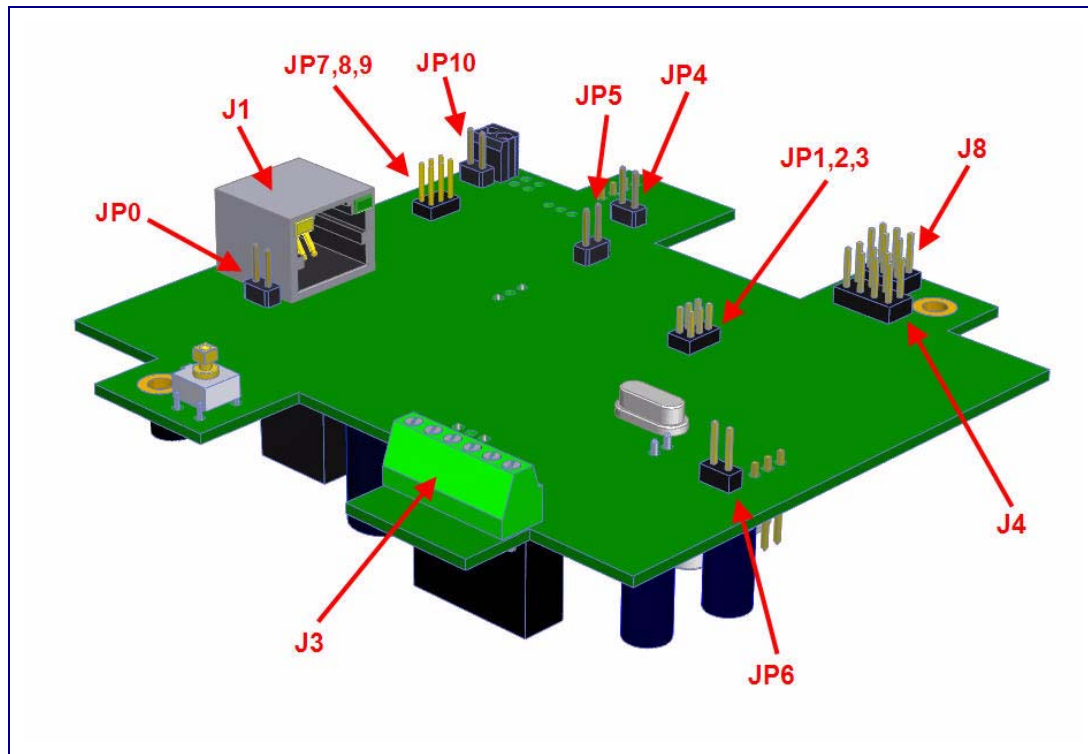


Table 2-3. Connector Functions

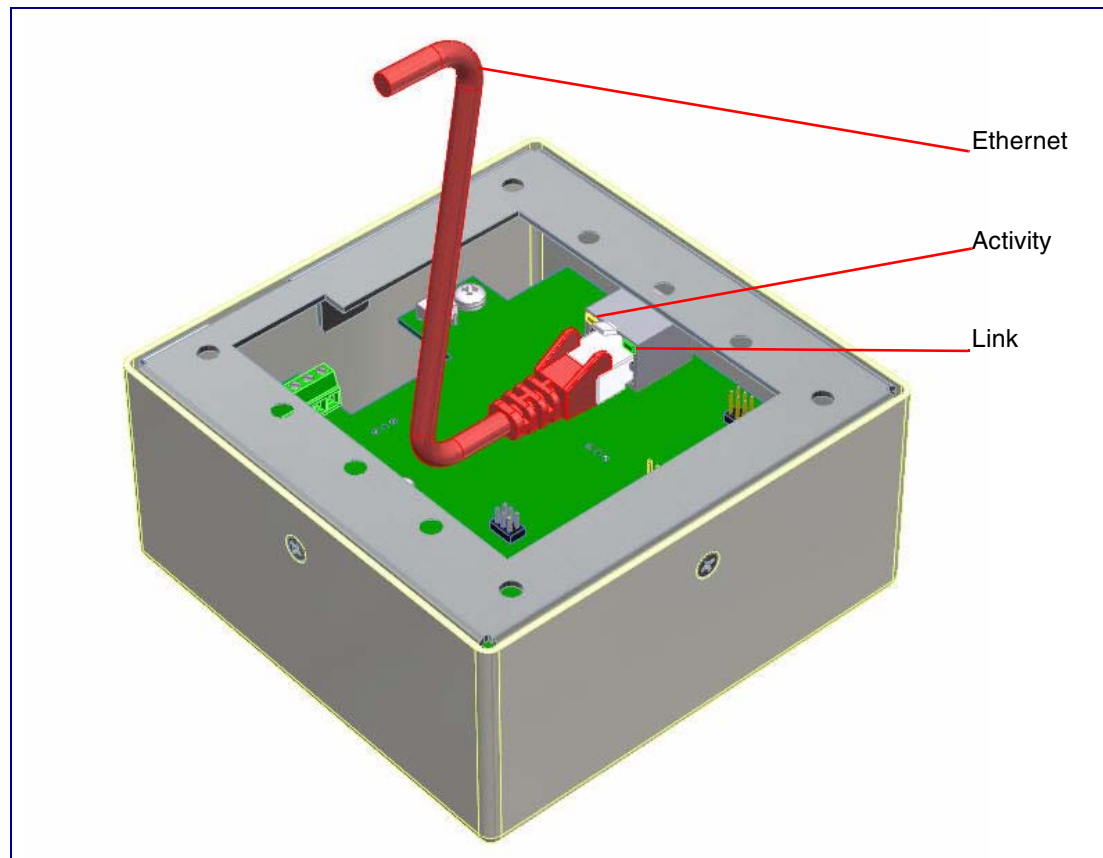
Connector	Function
J1	PoE Network Connection (RJ-45 ethernet)
J3	Terminal Block (see Figure 2-1)
J4	Factory Only
J8	Factory Only
JP0	Factory Only
JP1	Factory Only
JP2	Factory Only
JP3	Factory Only
JP4	Factory Only
JP5	Factory Only
JP6	Factory Only
JP7	Factory Only
JP8	Factory Only
JP9	Factory Only
JP10	Disables the intrusion sensor when installed.
SW1	RTFM (see Section 2.2.5, "RTFM Switch")

2.2.4 Network Connectivity, and Data Rate

When you plug in the Ethernet cable or power supply:

- The square, green **Link** light above the Ethernet port indicates that the network connection has been established (see [Figure 2-5](#) and [Figure 2-6](#)). The Link light changes color to confirm the auto-negotiated baud rate:
 - This light is yellow at 10 Mbps.
 - It is orange at 100 Mbps.

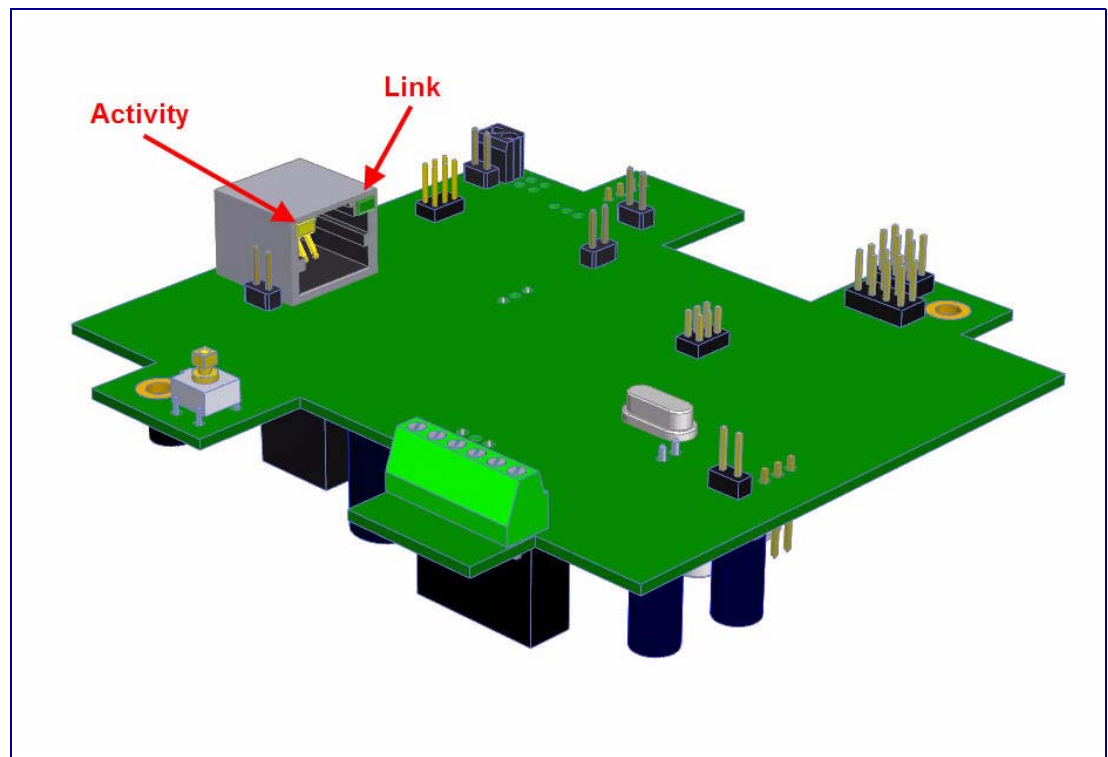
Figure 2-5. Network Connector Prior to Installation



2.2.4.1 Verify Network Activity

The square, yellow **Activity** light blinks when there is network activity.

Figure 2-6. Network Connector

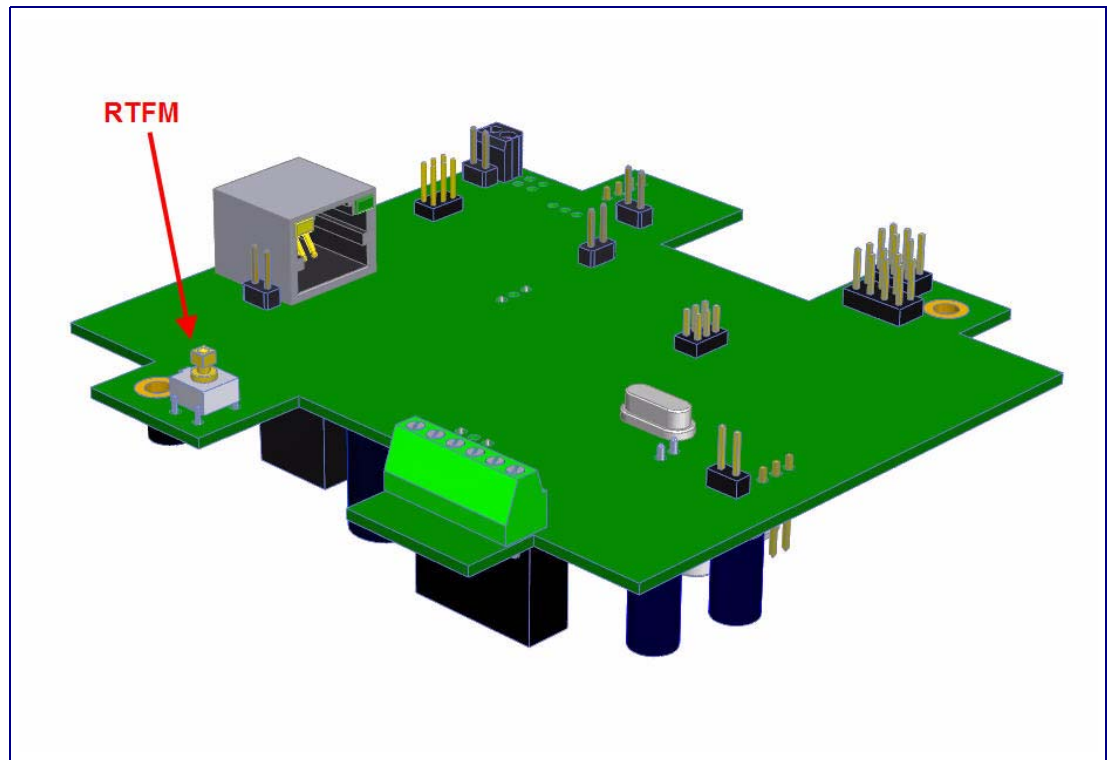


2.2.5 RTFM Switch

When the Office Ringer is operational and linked to the network, use the Reset Test Function Management (**RTFM**) switch ([Figure 2-7](#)) on the Office Ringer board to announce and confirm the Office Ringer's IP Address and test that the audio is working.

Note You must do these tests prior to final assembly.

Figure 2-7. RTFM Switch



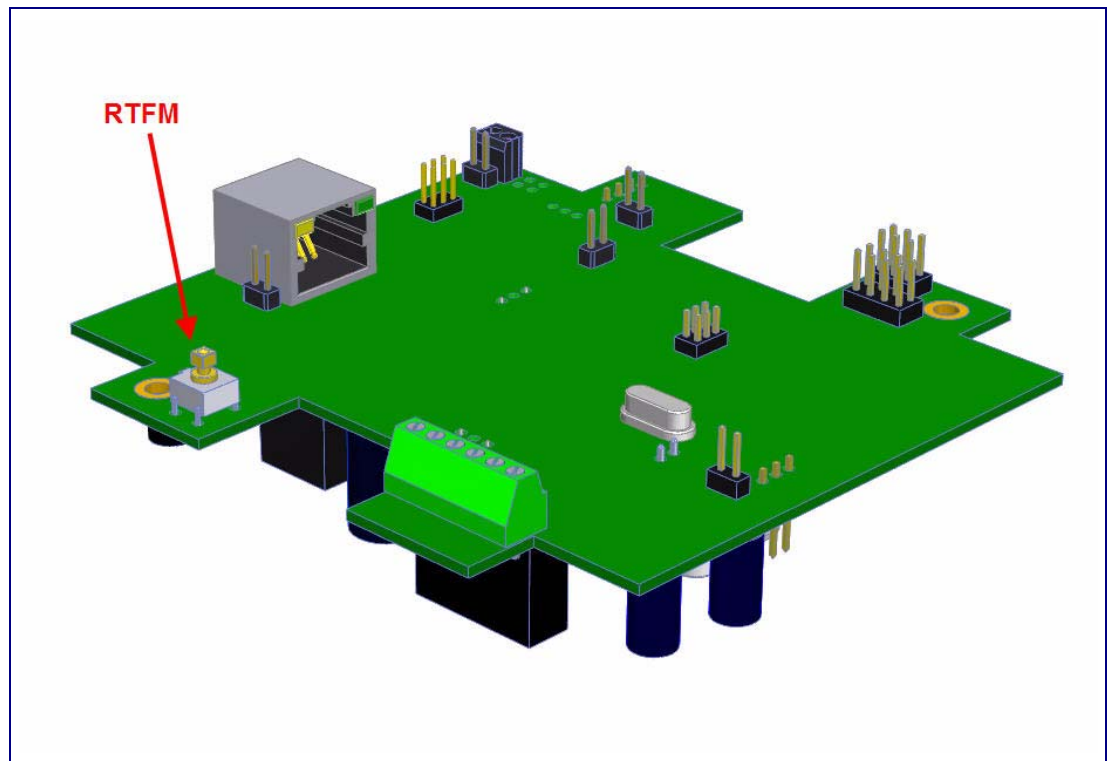
2.2.6 Announcing the IP Address

To announce an Office Ringer's current IP address, press and hold the RTFM switch for one to two seconds.

Note The Office Ringer will use DHCP to obtain the new IP address (DHCP-assigned address or default to 10.10.10.10 if a DHCP server is not present).

Note Pressing and holding the RTFM switch for longer than five seconds will restore the Office Ringer to the factory default settings.

Figure 2-8. RTFM Switch



2.2.7 Restore the Factory Default Settings

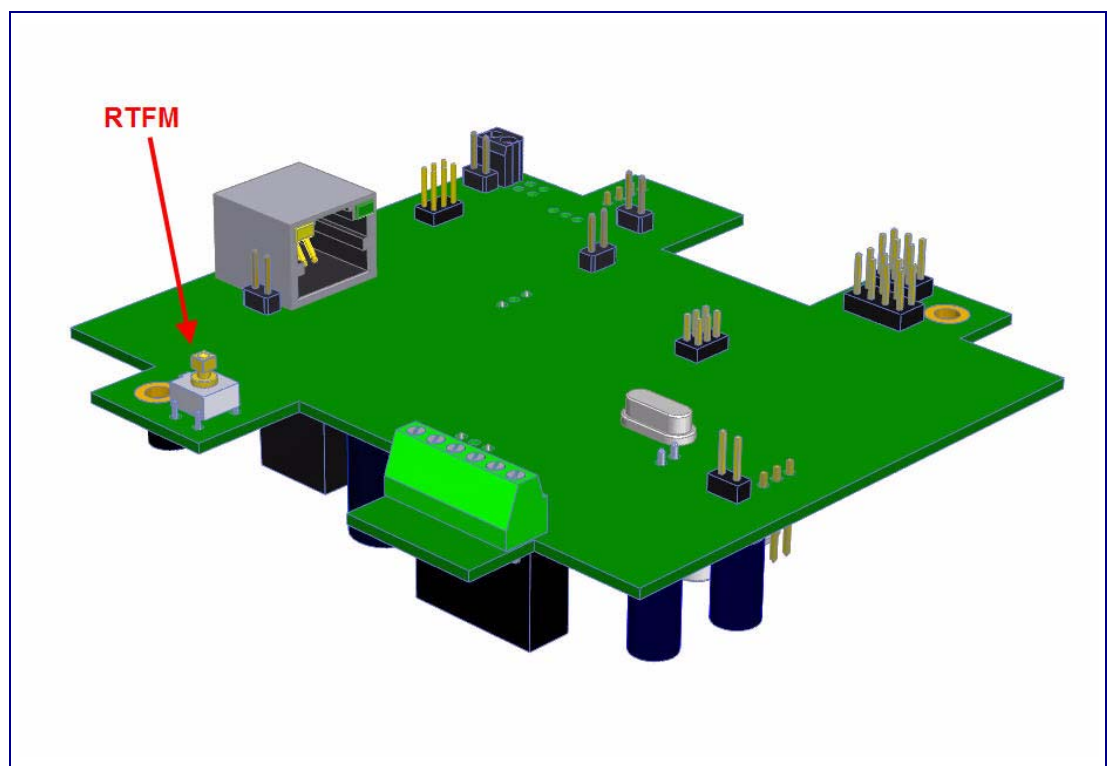
2.2.7.1 RTFM Switch

When the Office Ringer is operational and linked to the network, use the Reset Test Function Management (RTFM) switch ([Figure 2-9](#)) to set the factory default settings.

Note Each Office Ringer is delivered with factory set default values.

Note The Office Ringer will use DHCP to obtain the new IP address (DHCP-assigned address or default to 10.10.10.10 if a DHCP server is not present).

Figure 2-9. RTFM Switch



To set the factory default settings:

1. Press and hold the **RTFM** switch for more than five seconds.
2. The Office Ringer announces that it is restoring the factory default settings.

Note The Office Ringer will use DHCP to obtain the new IP address (DHCP-assigned address or default to 10.10.10.10 if a DHCP server is not present).

2.2.8 Adjust the Volume

You can adjust the volume through the [Speaker Volume](#) setting on the [Device Configuration Page](#).

2.3 Configure the Office Ringer Parameters

To configure the Office Ringer online, use a standard web browser.

Configure each Office Ringer and verify its operation *before* you mount it. When you are ready to mount an Office Ringer, refer to [Section A.1, "Mount the Office Ringer"](#) for instructions.

All Office Ringers are initially configured with the following default IP settings:

When configuring more than one Office Ringer, attach the Office Ringers to the network and configure one at a time to avoid IP address conflicts.

Table 2-4. Factory Default Settings












Parameter	Factory Default Setting
IP Addressing	DHCP
IP Address ^a	10.10.10.10
Web Access Username	admin
Web Access Password	admin
Subnet Mask ^a	255.0.0.0
Default Gateway ^a	10.0.0.1

a. Default if there is not a DHCP server present.

2.3.1 Office Ringer Web Page Navigation

Table 2-5 shows the navigation buttons that you will see on every Office Ringer web page.

Table 2-5. Web Page Navigation

Web Page Item	Description
	Link to the Home page.
	Link to the Device Configuration page.
	Link to the Networking page.
	Link to go to the SIP Configuration page.
	Link to go to the Officeringer page.
	Link to the Sensor Configuration page.
	Link to the Multicast Configuration page.
	Link to the Audio Configuration page.
	Link to the Event Configuration page.
	Link to the Autoprovisioning Configuration page.
	Link to the Update Firmware page.

2.3.2 Log in to the Configuration Home Page

1. Open your browser to the Office Ringer IP address.

Note If the network does not have access to a DHCP server, the device will default to an IP address of 10.10.10.10.

Note Make sure that the PC is on the same IP network as the Office Ringer.

Note You may also download CyberData's VoIP Discovery Utility program which allows you to easily find and configure the default web address of the CyberData VoIP products.

CyberData's VoIP Discovery Utility program is available at the following website address:

http://www.cyberdata.net/support/voip/discovery_utility.html

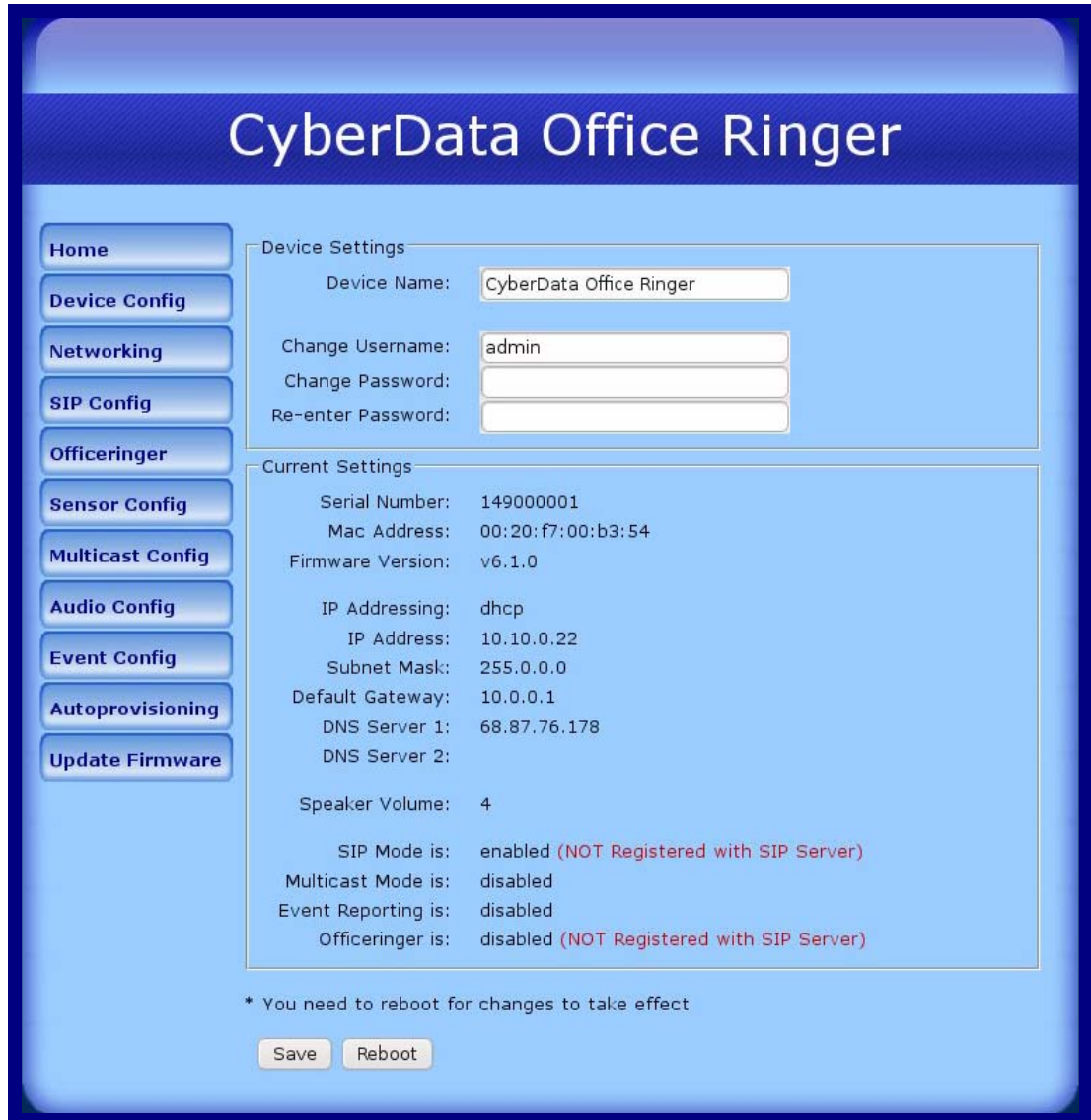
Note The Office Ringer ships in DHCP mode. To get to the **Home** page, use the discovery utility to scan for the device on the network and open your browser from there.

- When prompted, use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 2-10):

Web Access Username: **admin**



Web Access Password: **admin**

Figure 2-10. Home Page



3. On the **Home Page**, review the setup details and navigation buttons described in [Table 2-6](#).

Table 2-6. Home Page Overview

Web Page Item	Description
Device Settings	
Device Name	Shows the device name.
Change Username	Type in this field to change the username.
Change Password	Type in this field to change the password.
Re-enter Password	Type the password again in this field to confirm the new password.
Current Settings	
Serial Number	Shows the device serial number.
Mac Address	Shows the device Mac address.
Firmware Version	Shows the current firmware version.
IP Addressing	Shows the current IP addressing setting (DHCP or static).
IP Address	Shows the current IP address.
Subnet Mask	Shows the current subnet mask address.
Default Gateway	Shows the current default gateway address.
DNS Server 1	Shows the current DNS Server 1 address.
DNS Server 2	Shows the current DNS Server 2 address.
Speaker Volume	Shows the current speaker volume level.
SIP Mode is	Shows the current status of the SIP mode.
Multicast Mode is	Shows the current status of the Multicast mode.
Event Reporting is	Shows the current status of the Event Reporting mode.
Officeringer is	Shows the current status of the Officeringer mode.
	Click 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.

2.3.3 Configure the Device

1. Click the **Device Configuration** button to open the **Device Configuration** page. See [Figure 2-11](#).


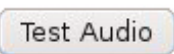
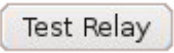

Figure 2-11. Device Configuration Page

2. On the **Device Configuration** page, you may enter values for the parameters indicated in [Table 2-7](#).

Table 2-7. Device Configuration Parameters

Web Page Item	Description
Volume Settings	
Speaker Volume	Type the desired Office Ringer volume level into this field.
Relay Settings	
Activate Relay with DTMF Code	When selected, the relay can be activated with a DTMF code.
DTMF Activation Code	Type the desired DTMF activation code (25 character limit).

Table 2-7. Device Configuration Parameters (continued)

Web Page Item	Description
DTMF Activation Duration (in seconds)	Type the desired DTMF activation duration (in seconds) (1 character limit). NOTE: A DTMF activation duration of 0 will toggle the relay indefinitely or until the activation code is sent again
Activate Relay During Ring	When selected, the relay will be activated for as long as the call is active. NOTE: When the phone is set to Auto Answer , it will not ring and this option does nothing.
Activate Relay During Office Ring	Check this box to activate the relay for as long as a Office Ring tone is ringing.
Activate Relay While Call Active	When selected, the relay will be activated for as long as the call is active.
Miscellaneous Settings	
Auto-Answer Incoming Calls	When selected, the device will automatically answer incoming calls. When Auto Answer is Off, the device will play a ringtone through the Office Ringer speaker until someone presses the button.
Play Ringback Tone	When selected, you will hear a ringback tone while making a call.
Volume Boost	When Volume Boost is enabled, the device will play at a higher volume at the risk of having the audio clip at very high levels.
	Click the Save button to save your configuration settings. Note: You need to reboot for changes to take effect.
	Click on the Test Audio button to do an audio test. When the Test Audio button is pressed, you will hear a voice message for testing the device audio quality and volume.
	Click on the Test Relay button to do a relay test.
	Click on the Reboot button to reboot the system.

3. After changing the parameters, click the **Save** button.

2.3.4 Configure the Network Parameters

1. Click the **Networking** button to open the **Network Configuration** page (Figure 2-12).

Figure 2-12. Network Configuration Page

CyberData Office Ringer

Home
Device Config
Networking
SIP Config
Officeringer
Sensor Config
Multicast Config
Audio Config
Event Config
Autoprovisioning
Update Firmware

Network Configuration

Stored Network Settings

IP Addressing: Static DHCP

IP Address: 10.10.10.10

Subnet Mask: 255.0.0.0

Default Gateway: 10.0.0.1

DNS Server 1: 10.0.0.1

DNS Server 2: 10.0.0.1

Current Network Settings



IP Address: 10.10.0.22
Subnet Mask: 255.0.0.0
Default Gateway: 10.0.0.1
DNS Server 1: 68.87.76.178
DNS Server 2:

* You need to reboot for changes to take effect

Save Reboot

2. On the **Network Configuration** page, enter values for the parameters indicated in [Table 2-8](#).

Table 2-8. Network Configuration Parameters

Web Page Item	Description
IP Addressing	Select either DHCP IP Addressing or Static IP Addressing by marking the appropriate radio button. If you select Static , configure the remaining parameters indicated in Table 2-8 . If you select DHCP , go to Step 3 .
Network Settings	
IP Address	Enter the Static IP address.
Subnet Mask	Enter the Subnet Mask address.
Default Gateway	Enter the Default Gateway address.
DNS Server 1	Enter the DNS Server 1 address.
DNS Server 2	Enter the DNS Server 2 address.
Current Network Settings	
IP Address	Shows the current Static IP address.
Subnet Mask	Shows the current Subnet Mask address.
Default Gateway	Shows the current Default Gateway address.
DNS Server 1	Shows the current DNS Server 1 address.
DNS Server 2	Shows the current DNS Server 2 address.
	Click 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.

3. After changing the parameters, click **Save Settings**. This updates the changed parameters and reboots the Office Ringer if appropriate.
4. Connect the Office Ringer to the target network.
5. From a system on the same network as the Office Ringer, open a browser with the new IP address of the Office Ringer.

2.3.5 Configure the SIP Parameters

1. Click **SIP Config** to open the **SIP Configuration** page (Figure 2-13).

Note For specific server configurations, go to the following website address:

<http://www.cyberdata.net/support/server/index.html>

Figure 2-13. SIP Configuration Page

CyberData Office Ringer

SIP Configuration

Home
Device Config
Networking
SIP Config
Officeringer
Sensor Config
Multicast Config
Audio Config
Event Config
Autoprovisioning
Update Firmware

Enable SIP operation: (NOT Registered with SIP Server)

SIP Settings

SIP Server: 10.0.0.253
Remote SIP Port: 5060
Local SIP Port: 5060
Outbound Proxy:
Outbound Proxy Port: 0
SIP User ID: 199
Authenticate ID: 199
Authenticate Password: ext199

Register with a SIP Server:
Re-registration Interval (in seconds): 360
Unregister on Reboot:

RTP Settings


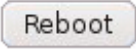
RTP Port (even): 10500

* You need to reboot for changes to take effect

Save Reboot

2. On the **SIP Configuration** page, enter values for the parameters indicated in [Table 2-9](#).

Table 2-9. SIP Configuration Parameters

Web Page Item	Description
Enable SIP Operation	Enables or disables SIP operation.
SIP Settings	
SIP Server*	Type the SIP server represented as either a numeric IP address in dotted decimal notation or the fully qualified host name (255 character limit [FQDN]).
Remote SIP Port*	Type the Remote SIP Port number (default 5060) (8 character limit).
Local SIP Port*	Type the Local SIP Port number (default 5060) (8 character limit).
Outbound Proxy	Type the Outbound Proxy as either a numeric IP address in dotted decimal notation or the fully qualified host name (255 character limit [FQDN]).
Outbound Proxy Port	Type the Outbound Proxy Port number (8 character limit).
SIP User ID*	Type the SIP User ID (up to 64 alphanumeric characters).
Authenticate ID*	Type the Authenticate ID (up to 64 alphanumeric characters).
Authenticate Password*	Type the Authenticate Password (up to 64 alphanumeric characters).
Register with a SIP Server	Check this box to enable SIP Registration. For information about Point-to-Point Configuration, see Section 2.3.5.1, "Point-to-Point Configuration" .
Re-registration Interval (in seconds)*	Type the SIP Registration lease time in minutes (default is 60 minutes) (8 character limit). Re-registration Interval (in seconds)*
Unregister on Reboot*	When selected, on boot, the device will first register with a SIP server with a expiration delay of 0 seconds. This has the effect of unregistering any current devices on this extension.
RTP Settings	
RTP Port (even)	Specify the port number used for the RTP stream after establishing a SIP call. This port number has to be an even number and defaults to 10500.
	Click 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.

3. After changing the parameters, click **Save Settings**.

2.3.5.1 Point-to-Point Configuration

When the device is set to not register with a SIP server, it is possible to set the Office Ringer to dial out to a single endpoint.

To set the Office Ringer to dial out to a single endpoint, complete the following steps:

1. Make sure that the **Register with a SIP Server** setting on the **SIP Configuration Page** is not enabled. See [Figure 2-14](#).
2. In the **Dial Out Extension** field on the **Sensor Configuration Page** (see [Figure 2-15](#)), type the IP address of the remote device.
3. Select **Save**.

Note The Office Ringer can also receive Point-to-Point calls. The delayed DTMF functionality is available in the Point-to-Point Mode. Receiving point-to-point SIP calls may not work with all phones.

Figure 2-14. SIP Configuration Page

Home SIP Configuration

Device Config Enable SIP operation: (NOT Registered with SIP Server)

Networking

SIP Config

Officeringer

Sensor Config

Multicast Config

Audio Config

Event Config

Autoprovisioning

Update Firmware

SIP Settings

SIP Server: 10.0.0.253

Remote SIP Port: 5060

Local SIP Port: 5060

Outbound Proxy:

Outbound Proxy Port: 0

SIP User ID: 199

Authenticate ID: 199

Authenticate Password: ext199

Register with a SIP Server:

Re-registration Interval (in seconds): 360

Unregister on Reboot:

RTP Settings

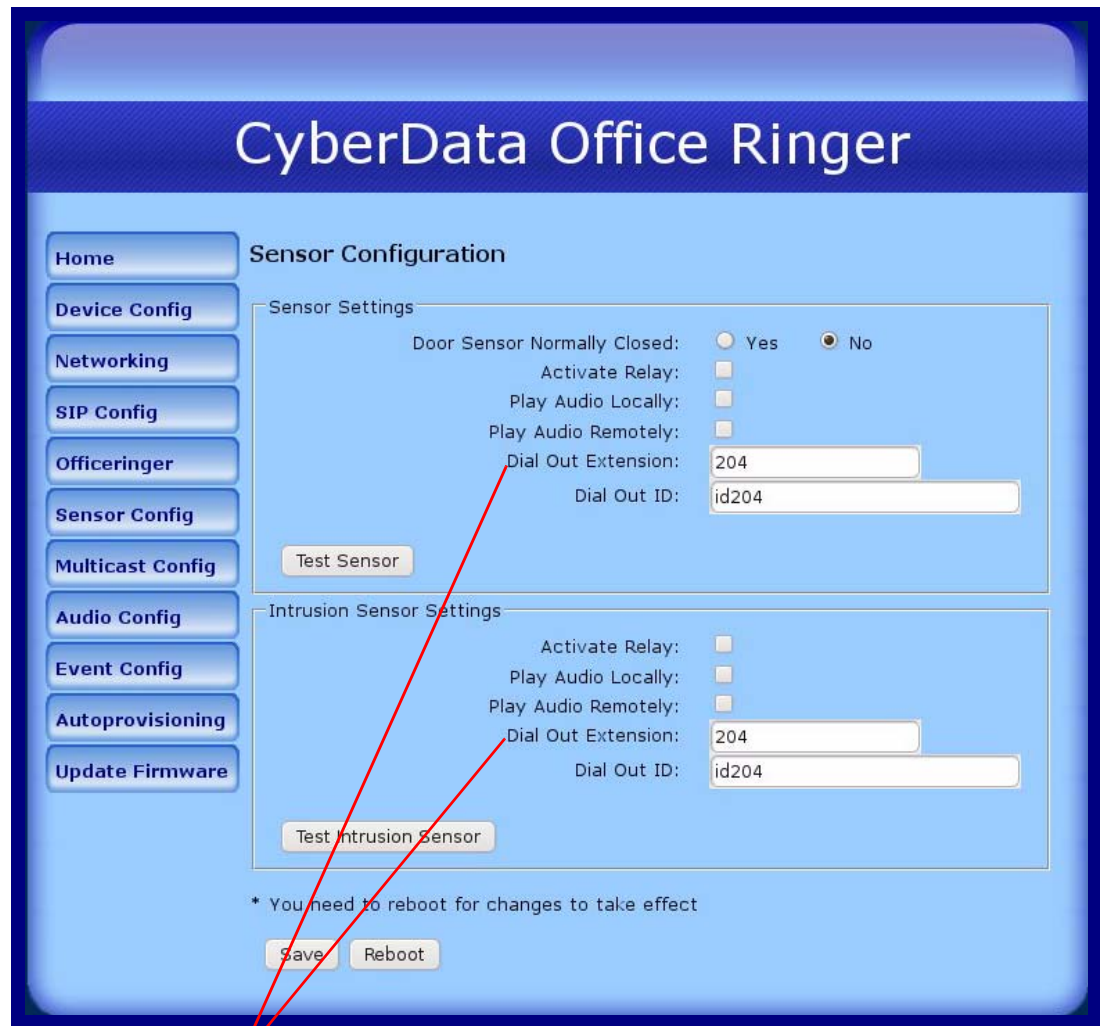
RTP Port (even): 10500

* You need to reboot for changes to take effect

Save Reboot

Device is set to NOT register with a SiP server

Figure 2-15. Sensor Configuration Page



Dial Out Extension

2.3.6 Configure the Officeringer Parameters

When the **Officeringer** option is enabled, the Office Ringer will register as a second SIP extension. Registration does not have to be to the same server as the primary SIP registration. Any calls made to the Officeringer extension will cause the Office Ringer to play a ring tone. There is no way to answer this call. The Officeringer is designed to be used in buildings where calls made after hours are directed to a ring group.

1. Click on the **Officeringer** button to open the **Officeringer Configuration** page. See [Figure 2-16](#).



Figure 2-16. Officeringer Configuration Setup



The screenshot displays the 'CyberData Office Ringer' configuration interface. On the left is a vertical navigation menu with buttons for: Home, Device Config, Networking, SIP Config, Officeringer (highlighted), Sensor Config, Multicast Config, Audio Config, Event Config, Autoprovisioning, and Update Firmware. The main content area is titled 'Officeringer Configuration'. It features a status indicator 'Enable Officeringer: (NOT Registered with SIP Server)'. Below this is a section for 'Officeringer Settings' containing several input fields: SIP Server (10.0.0.253), Remote SIP Port (5060), Local SIP Port (5061), User ID (241), Authenticate ID (241), Authenticate Password (ext241), and Re-registration Interval (in seconds) (360). At the bottom of the settings area, a note states '* You need to reboot for changes to take effect'. Two buttons, 'Save' and 'Reboot', are located at the bottom of the page.

2. On the **Officeringer Configuration** page, enter values for the parameters indicated in [Table 2-10](#).

Table 2-10. Officeringer Configuration Parameters

Web Page Item	Description
Enable Officeringer	When the officeringer is enabled, the unit will attempt to register a second extension with the SIP server. Any calls made to this extension will play a ringtone.
Officeringer Settings	
SIP Server	Type the SIP server represented as either a numeric IP address in dotted decimal notation.
Remote SIP Port	Type the Remote SIP Port number (default 5060) (8 character limit).
Local SIP Port	Type the Local SIP Port number (default 5060) (8 character limit). Note: This value cannot be the same as the Local SIP Port* found on the SIP Configuration Page .
User ID	Type the User ID (up to 64 alphanumeric characters).
Authenticate ID	Type the Authenticate ID (up to 64 alphanumeric characters).
Authenticate Password	Type the Authenticate Password (up to 64 alphanumeric characters).
Re-registration Interval (in seconds)*	Type the SIP Registration lease time in minutes (default is 60 minutes) (8 character limit). Re-registration Interval (in seconds)*
	Click 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.

3. After changing the parameters, click on the **Save** button.

2.3.7 Configure the Sensor Configuration Parameters

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 Office Ringer board and will be activated when the Office Ringer is removed from the case.

For each sensor there are four actions the Office Ringer 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 Office Ringer speaker until the sensor is deactivated
- Call a preset extension and play a pre-recorded audio file (once)

Note Calling a preset extension can be set up as a point-to-point call, but currently can't send delayed DTMF tones.

1. Click **Sensor Config** to open the **Sensor Configuration** page (Figure 2-17).

Figure 2-17. Sensor Configuration Page

CyberData Office Ringer

Sensor Configuration

Home
Device Config
Networking
SIP Config
Officeringer
Sensor Config
Multicast Config
Audio Config
Event Config
Autoprovisioning
Update Firmware

Sensor Settings

Door Sensor Normally Closed: Yes No
Activate Relay:
Play Audio Locally:
Play Audio Remotely:
Dial Out Extension: 204
Dial Out ID: id204

Test Sensor

Intrusion Sensor Settings

Activate Relay:
Play Audio Locally:
Play Audio Remotely:
Dial Out Extension: 204
Dial Out ID: id204





Test Intrusion Sensor

* You need to reboot for changes to take effect

Save Reboot

2. On the **Sensor Configuration** page, enter values for the parameters indicated in [Table 2-11](#).

Table 2-11. Sensor Configuration Parameters

Web Page Item	Description
Sensor Settings	
Door Sensor Normally Closed	Select the inactive state of the door sensors.
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 Office Ringer speaker until the sensor is deactivated.
Play Audio Remotely	Check this box to call a preset extension and play a pre-recorded audio file (once).
Dial Out Extension	Enter the desired dial-out extension number. For information about dial-out extension strings and DTMF tones, see Section 2.3.7.1, "Dial Out Extension Strings and DTMF Tones (using rfc2833)" .
Dial Out ID	Type the desired Extension ID (64 character limit).
	Use this button to test the door sensor.
Intrusion Sensor Settings	
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 Office Ringer speaker until the sensor is deactivated.
Play Audio Remotely	Check this box to call a preset extension and play a pre-recorded audio file (once).
Dial Out Extension	Enter the desired dial-out extension number. For information about dial-out extension strings and DTMF tones, see Section 2.3.7.1, "Dial Out Extension Strings and DTMF Tones (using rfc2833)" .
Dial Out ID	Type the desired Extension ID (64 character limit).
	Use this button to test the Intrusion sensor.
	Click 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.

3. After changing the parameters, click **Save Settings**.

2.3.7.1 Dial Out Extension Strings and DTMF Tones (using rfc2833)

On the **Button Configuration** page, dial out extensions support the addition of comma delimited pauses and sending additional DTMF tones (using rfc2833). The first comma will pause three seconds after a call is first established with a remote device. Subsequent commas will pause for 2 seconds. A pause of one second will be sent after each numerical digit.

Table 2-12. Examples of Dial-Out Extension Strings

Extension String	Resulting Action
302	Dial out extension 302 and establish a call
302,2	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2'
302,25,,,4,,1	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2', send out DTMF tone 5, wait 6 seconds, send out DTMF tone 4, wait 4 seconds, send out DTMF tone 1

Note The maximum number of total characters in the dial-out field is 64.

2.3.7.2 Delayed DTMF

On the **SIP Configuration** page the dial out extension supports the addition of comma delimited pauses and sending additional DTMF tones (using rfc2833). The first comma will pause three seconds after a call is first established with a remote device. Subsequent commas will pause for 2 seconds. A pause of one second will be sent after each numerical digit.

Table 2-13. Examples of Dial-Out Extension Strings

Extension String	Resulting Action
302	Dial out extension 302 and establish a call
302,2	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2'
302,25,,,4,,1	Dial out extension 302 and establish a call, wait 3 seconds then send the DTMF tone '2', send out DTMF tone 5, wait 6 seconds, send out DTMF tone 4, wait 4 seconds, send out DTMF tone 1

Note The maximum number of total characters in the dial-out field is 25.

2.3.8 Configure the Multicast Parameters

Multicast groups use multicasting to create public address paging zones. Multicasting is based on the concept of a group. Multicast addresses specify an arbitrary group of IP hosts that have joined the group and want to receive traffic sent to the group. Group members send IGMP messages to their local multicast routers, allowing the group traffic traversal from the source.

The **Multicast Configuration** page allows the Office Ringer to join up to 10 paging zones for receiving ulaw/alaw encoded RTP audio streams. A paging zone can consist of one or many CyberData multicast group-enabled products. There is no limit to how many Office Ringers can be in a given paging zone. Each multicast group is defined by a multicast address and port number. Each multicast group is assigned a priority, allowing simultaneously arriving pages to be serviced based on importance. Multicast groups are compatible with IGMP through version three. The Office Ringer supports simultaneous SIP and Multicast.

1. Click on the **Multicast Configuration** button to open the **Multicast Configuration** page. See [Figure 2-18](#).

Figure 2-18. Multicast Configuration Page

CyberData Office Ringer

Multicast Configuration

Enable Multicast operation:

Device Settings

priority	Address	port	Multicast Group Name
9	239.168.3.10	11000	Emergency
8	239.168.3.9	10000	MG8
7	239.168.3.8	9000	MG7
6	239.168.3.7	8000	MG6
5	239.168.3.6	7000	MG5
SIP calls are considered priority 4.5			
4	239.168.3.5	6000	MG4
3	239.168.3.4	5000	MG3
2	239.168.3.3	4000	MG2
1	239.168.3.2	3000	MG1
0	239.168.3.1	2000	Background Music

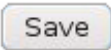
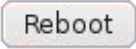
Port range can be from 2000-65535
Ports must be odd numbers
Priority 9 is the highest and 0 is the lowest
A higher priority audio stream will always supercede a lower one
Priority 9 streams will play at maximum volume

* You need to reboot for changes to take effect

Save Reboot

2. On the **Multicast Configuration** page, enter values for the parameters indicated in [Table 2-14](#).

Table 2-14. Multicast Configuration Parameters

Web Page Item	Description
Enable Multicast Operation	Enables or disables multicast operation.
Device Settings	
Priority	Indicates the priority for the multicast group. Priority 9 is the highest (emergency streams). 0 is the lowest (background music). See Section 2.3.8.1, "Assigning Priority" for more details.
Address	Enter the multicast IP Address for this multicast group (15 character limit).
Port (range can be from 2000 to 65535)	Enter the port number for this multicast group (5 character limit). Note: The multicast ports have to be even values. The webpage will enforce this restriction.
Multicast Group Name	Assign a descriptive name for this multicast group (25 character limit).
	Click 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.

3. After changing the parameters, click on the **Save** button.

2.3.8.1 Assigning Priority

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.

Note SIP calls, multicast streams, ring tones, ringback tones, and officering tones are all prioritized.

Ringtones and
Officeringtones

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

2.3.9 Configure the Audio Configuration Parameters

The **Audio Configuration** page is used to add custom audio to the board. User uploaded audio will take precedence over the audio files shipped with the Office Ringer.

1. Click **Audio Config** to open the **Audio Configuration** page (Figure 2-19).

Figure 2-19. Audio Configuration Page

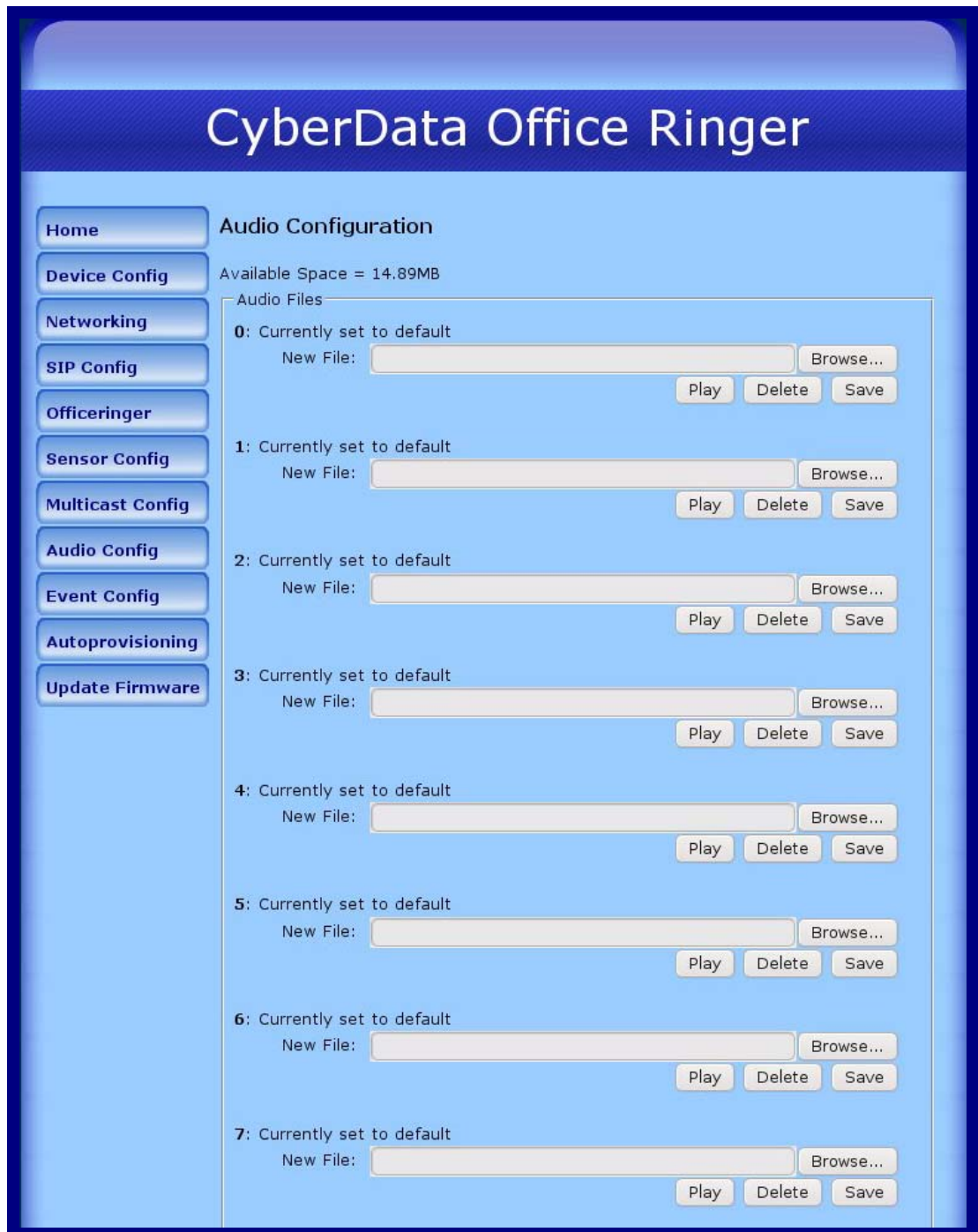


Figure 2-20. Audio Configuration Page (continued)

The screenshot displays a configuration page with a light blue background and a dark blue border. It contains ten distinct sections, each for a different audio file. Each section includes a label (e.g., '8:'), a status indicator ('Currently set to default'), a 'New File:' label, a text input field, a 'Browse...' button, and three action buttons: 'Play', 'Delete', and 'Save'.

- 8:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- 9:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Dot:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Audio test:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Page tone:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Your IP Address is:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Rebooting:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Restoring Default:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Ringback tone:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]
- Ring tone:** Currently set to default. New File: [input field] Browse... [Play] [Delete] [Save]

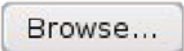
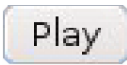


Figure 2-21. Audio Configuration Page (continued)

The screenshot displays a web-based configuration interface with a light blue background. It features three distinct sections, each for a different audio trigger event. Each section includes a title, a status indicator, a file selection field, and three action buttons.

- Intrusion Sensor Triggered:** Currently set to default. Includes a "New File:" text box, a "Browse..." button, and "Play", "Delete", and "Save" buttons.
- Sensor Triggered:** Currently set to default. Includes a "New File:" text box, a "Browse..." button, and "Play", "Delete", and "Save" buttons.
- Night Ring:** Currently set to default. Includes a "New File:" text box, a "Browse..." button, and "Play", "Delete", and "Save" buttons.

2. On the **Audio Configuration** page, enter values for the parameters indicated in [Table 2-15](#).

Table 2-15. Audio Configuration Parameters

Web Page Item	Description
Audio Files	
0-9	The name of the audio configuration option is the same as the spoken audio that plays on the board (24 character limit). '0' corresponds to the spoken word "zero." '1' corresponds to the spoken word "one." '2' corresponds to the spoken word "two." '3' corresponds to the spoken word "three." '4' corresponds to the spoken word "four." '5' corresponds to the spoken word "five." '6' corresponds to the spoken word "six." '7' corresponds to the spoken word "seven." '8' corresponds to the spoken word "eight." '9' corresponds to the spoken word "nine."
Dot	Corresponds to the spoken word "dot." (24 character limit)
Audiotest	Corresponds to the message "This is the CyberData IP speaker test message..." (24 character limit)
Pagetone	Corresponds to a simple tone that is unused by default (24 character limit).
Your IP Address is	Corresponds to the message "Your IP address is..." (24 character limit).
Rebooting	Corresponds to the spoken word "Rebooting" (24 character limit).
Restoring default	Corresponds to the message "Restoring default" (24 character limit).
Ringback Tone	This is the ringback tone that plays when calling a remote extension (24 character limit).
Ring Tone	This is the tone that plays when set to ring when receiving a call (24 character limit).
Intrusion Sensor Triggered	Corresponds to the message "Intrusion Sensor Triggered" (24 character limit).
Sensor Triggered	Corresponds to the message "Sensor Triggered" (24 character limit).
Night Ring	Specifies the ringtone for officering. By default this parameter uses the same audio file that is selected for the Ring Tone parameter.
	The Browse button will allow you to navigate to and select an audio file.
	The Play button will play that audio file.
	The Delete button will delete any user uploaded audio and restore the stock audio file.
	The Save button will download a new user audio file to the board once you've selected the file by using the Browse button. The Save button will delete any pre-existing user-uploaded audio files.

2.3.9.1 User-created Audio Files

User created audio files should be saved in the following format:

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

You can use the free utility *Audacity* to convert audio files into this format. See [Figure 2-22](#) through [Figure 2-24](#).

Figure 2-22. Audacity 1

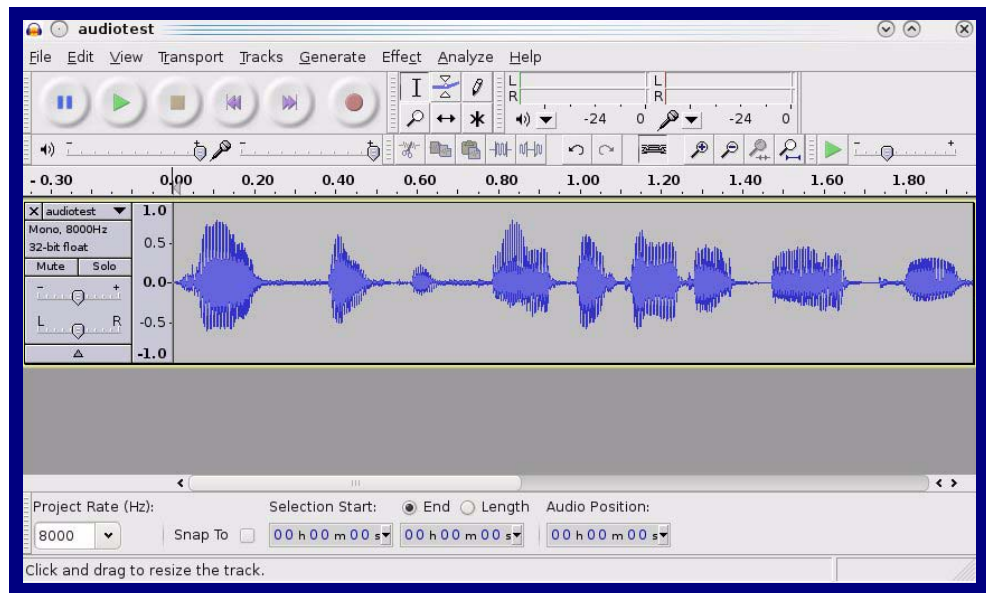
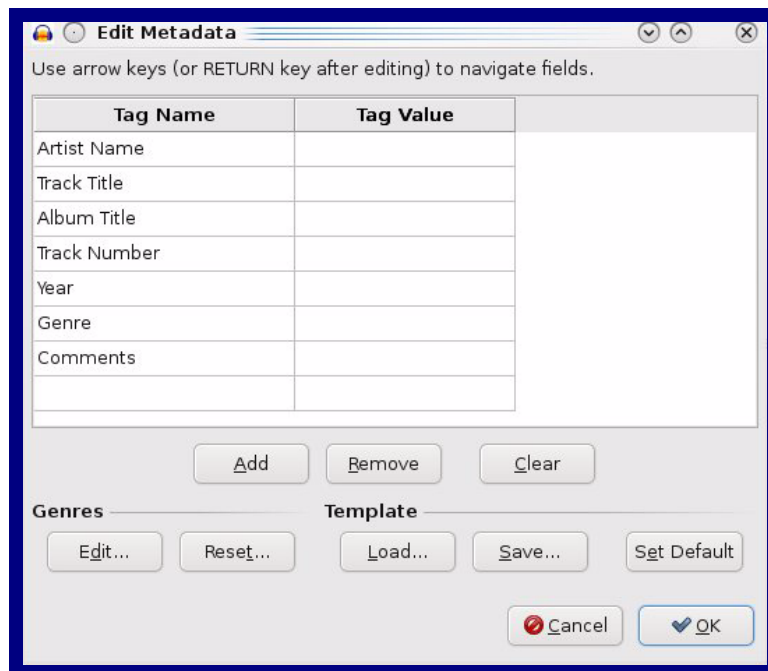


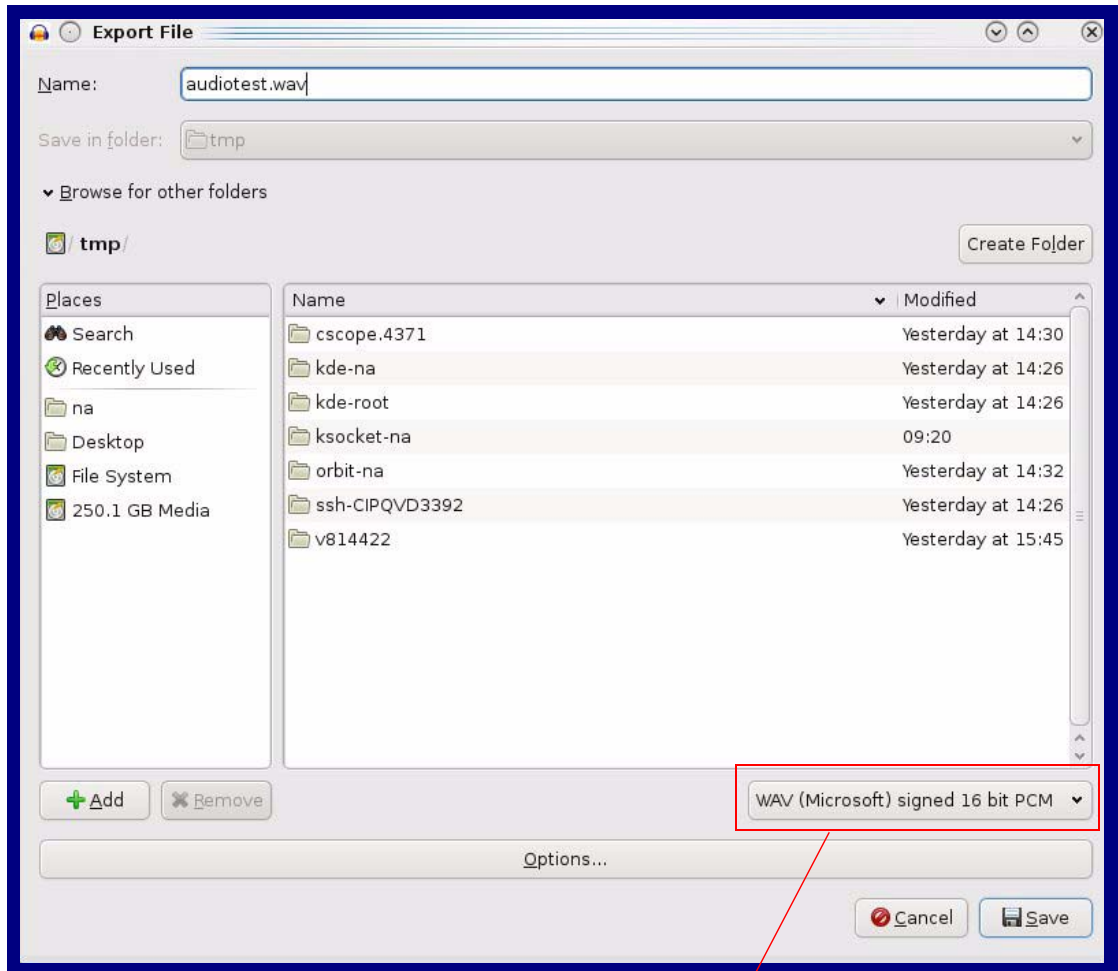
Figure 2-23. Audacity 2



When you export an audio file with Audacity, save the output as:

- **WAV (Microsoft) signed 16 bit PCM.**

Figure 2-24. WAV (Microsoft) signed 16 bit PCM



WAV (Microsoft) signed 16 bit PCM

2.3.10 Configure the Event Parameters

Click the **Event Config** button to open the **Event Configuration** page (Figure 2-25). The **Event Configuration** page specifies a remote server that can be used to receive HTTP POST events when actions take place on the board.

Figure 2-25. Event Configuration Page

CyberData Office Ringer

Home **Event Configuration**

Device Config Enable Event Generation:

Networking Remote Event Server

SIP Config Remote Event Server IP: 10.0.0.250

Officeringer Remote Event Server Port: 8080

Sensor Config Remote Event Server URL: xmlparse_engine

Multicast Config

Audio Config

Event Config

Autoprovisioning

Update Firmware

Events

Enable Call Active Events:

Enable Call Terminated Events:

Enable Relay Activated Events:

Enable Relay Deactivated Events:

Enable Ring Events:

Enable Office Ring Events:

Enable Multicast Start Events:

Enable Multicast Stop Events:

Enable Power on Events:

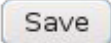
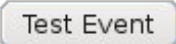
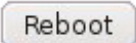
Enable 60 second Heartbeat Events:

* You need to reboot for changes to take effect

Save Test Event Reboot

Table 2-16 shows the web page items on the **Event Configuration** page.

Table 2-16. Event Configuration

Web Page Item	Description
Enable Event Generation	When selected, Event Generation is enabled.
Remote Event Server	
Remote Event Server IP	Type the Remote Event Server IP address. (64 character limit)
Remote Event Server Port	Type the Remote Event Server port number. (8 character limit)
Remote Event Server URL	Type the Remote Event Server URL. (127 character limit)
Events	
Enable Call Active Events	When selected, Call Active Events are enabled.
Enable Call Terminated Events	When selected, Call Terminated Events are enabled.
Enable Relay Activated Events	When selected, Relay Activated Events are enabled.
Enable Relay Deactivated Events	When selected, Relay Deactivated Events are enabled.
Enable Ring Events	When selected, Ring Events are enabled.
Enable Office Ring Events	When selected, there is a notification when the unit receives a office ring.
Enable Multicast Start Events	When selected, Multicast Start Events are enabled.
Enable Multicast Stop Events	When selected, Multicast Stop Events are enabled.
Enable Power On Events	When selected, Power On Events are enabled.
Enable 60 Second Heartbeat Events	When selected, 60 Second Heartbeat Events are enabled.
	Click the Save button to save your configuration settings. Note: You need to reboot for changes to take effect.
	Click on the Test Event button to test an event.
	Click on the Reboot button to reboot the system.

2.3.10.1 Example Packets for Events

The server and port are used to point to the listening server and the 'Remote Event Server URL' is the destination URL (typically the script running on the remote server that's used to parse and process the POST events).

Note The XML is URL-encoded before transmission so the following examples are not completely accurate.

Here are example packets for every event:

```
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 197
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>POWERON</event>
</cyberdata>
```

```
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 199
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>HEARTBEAT</event>
</cyberdata>
```

```
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 196
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>BUTTON</event>
</cyberdata>
```

```
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 201
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>CALL_ACTIVE</event>
</cyberdata>
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
```

```
User-Agent: CyberData/1.0.0
Content-Length: 205
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>CALL_TERMINATED</event>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 197
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>RINGING</event>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>MULTICAST_START</event>
<index>8</index>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 233
Content-Type: application/x-www-form-urlencoded

<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>MULTICAST_STOP</event>
<index>8</index>
</cyberdata>

POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
User-Agent: CyberData/1.0.0
Content-Length: 234
Content-Type: application/x-www-form-urlencoded
<?xml version="1.0" encoding="ISO-8859-1"?>
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>
<event>RELAY_ACTIVATED</event>
</cyberdata>
POST xmlparse_engine HTTP/1.1
Host: 10.0.3.79
```

```
User-Agent: CyberData/1.0.0  
Content-Length: 234  
Content-Type: application/x-www-form-urlencoded  
<?xml version="1.0" encoding="ISO-8859-1"?>  
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>  
<event>RELAY_DEACTIVATED</event>  
</cyberdata>
```

```
POST xmlparse_engine HTTP/1.1  
Host: 10.0.3.79  
User-Agent: CyberData/1.0.0  
Content-Length: 234  
Content-Type: application/x-www-form-urlencoded  
<?xml version="1.0" encoding="ISO-8859-1"?>  
<cyberdata NAME='CyberData VoIP Device' MAC='0020f70015b6'>  
<event>OFFICERINGING</event>  
</cyberdata>
```


2.3.11 Configure the Autoprovisioning Parameters

1. Click the **Autoprovisioning** button to open the **Autoprovisioning Configuration** page.
See [Figure 2-26](#).

Figure 2-26. Autoprovisioning Configuration Page

CyberData Office Ringer

Autoprovisioning

Autoprovisioning

Enable Autoprovisioning:

Get Autoprovisioning from DHCP:

Autoprovisioning Server (IP Address):


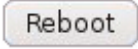
Autoprovisioning autoupdate (in minutes):

* Autoprovisioning file name: 0020f700b354.config

* You need to reboot for changes to take effect

2. On the **Autoprovisioning Configuration** page, you may enter values for the parameters indicated in [Table 2-17](#).

Table 2-17. Autoprovisioning Configuration Parameters

Web Page Item	Description
Autoprovisioning	
Enable Autoprovisioning	See Section 2.3.11.1, "Autoprovisioning" .
Get Autoprovisioning from DHCP	See Section 2.3.11.1, "Autoprovisioning" .
Autoprovisioning Server (IP Address)	See Section 2.3.11.1, "Autoprovisioning" (15 character limit).
Autoprovisioning Autoupdate (in minutes)	Type the desired time (in minutes) that you want the Autoprovisioning feature to update (6 character limit).
	Click 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.

3. After changing the parameters, click the **Save** button.

2.3.11.1 Autoprovisioning

Enable Autoprovisioning Option With autoprovisioning enabled, the board will get its configuration from a remote TFTP server on startup or periodically on a scheduled delay. Autoprovisioned values will override values stored in on-board memory and will be visible on the web page. The board gets its autoprovisioning information from an XML-formatted file hosted from a TFTP server. CyberData will provide a template for this XML file and the user can modify it for their own use.

To use autoprovisioning, create a copy of the autoprovisioning template with the desired settings and name this file with the mac address of the device to configure (for example: **0020f7350058.config**). Put this file into your TFTP server directory and manually set the TFTP server address on the board.

It is not necessary to set every option found in the autoprovisioning template. As long as the XML is valid, the file can contain any subset. Options not autoprovisioned will default to the values stored in the on board memory. For example if you only wanted to modify the device name, the following would be a valid autoprovisioning file:

```
<?xml version="1.0" encoding="utf-8" ?>
<specific>
  <MiscSettings>
    <DeviceName>auto Office Ringer</DeviceName>
  </MiscSettings>
</specific>
```

Networking The board will only apply networking settings or firmware upgrades after a reboot.

Get Autoprovisioning from DHCP When this option is checked, the device will automatically fetch its autoprovisioning server address from the DHCP server. The device will use the address specified in **OPTION 150** (TFTP-server-name) or **OPTION 66**. If both options are set, the device will use **OPTION 150**.

Refer to the documentation of your DHCP server for setting up **OPTION 150**.

To set up a Linux DHCPD server to serve autoprovisioning information (in this case using both option 66 and 150), here's an example dhcpd.conf:

```
# dhcpd.conf
#
# Configuration file for ISC dhcpd (see 'man dhcpd.conf')
#
ddns-update-style ad-hoc;

option option-150 code 150 = ip-address;

subnet 10.0.0.0 netmask 255.0.0.0 {
    max-lease-time 120;
    default-lease-time 120;

    option routers                10.0.0.1;
    option subnet-mask            255.0.0.0;

    option domain-name            "voiplab";
    option domain-name-servers   10.0.0.1;

    option time-offset            -8;      # Pacific Standard Time

    option tftp-server-name       "10.0.0.254";

    option option-150             10.0.0.254;

    range 10.10.0.1 10.10.2.1;}
```

Autoprovisioning Server (IP Address) Instead of using DHCP to provide the autoprovisioning tftp server address, you can specify an address manually.

Autoprovisioning Autoupdate If **Autoprovisioning** is enabled and the **Autoprovisioning Autoupdate** value is something other than 0 minutes, a service is started on startup that will wait the configured number of minutes and then try to re-download its autoprovisioning file. It will compare its previously autoprovisioned file with this new file and if there are differences, it will reboot the board.

Autoprovisioned Firmware Upgrades An Autoprovisioned firmware upgrade only happens after a reboot, will take roughly three minutes, and the web page will be unresponsive during this time.

The '**FirmwareVersion**' value in the xml file *must* match the version stored in the '**FirmwareFile**'.

```
<FirmwareVersion>v5.0.5b01</FirmwareVersion>
<FirmwareFile>505b01-uImage-Office Ringer</FirmwareFile>
```

If these values are mismatched, the board can get stuck in a loop where it goes through the following sequence of actions:

1. The board downloads and writes a new firmware file.
2. After the next reboot, the board recognizes that the firmware version does not match.
3. The board downloads and writes the firmware file again.

CyberData has timed a firmware upgrade at 140 seconds. Therefore, if you suspect the board is stuck in a loop, either remove or comment out the **FirmwareVersion** line in the XML file and let the board boot as it normally does.

Autoprovisioned
Audio Files

Audio files are stored in non-volatile memory and an autoprovisioned audio file will only have to be downloaded once for each device. Loading many audio files to the device from the web page could cause it to appear unresponsive. If this happens, wait until the transfer is complete and then refresh the page.

The device uses the file name to determine when to download a new audio file. This means that if you used autoprovisioning to upload a file and then changed the contents of this file at the TFTP server, the device will not recognize that the file has changed (because the file name is the same).

Since audio files are stored in non-volatile memory, if autoprovisioning is disabled after they have been loaded to the board, the audio file settings will not change. You can force a change to the audio files on the board by clicking **Restore Default** on the **Audio Configuration** page or by changing the autoprovisioning file with “**default**” set as the file name.

2.4 Upgrade the Firmware and Reboot the Office Ringer

Note To guard against failed firmware upgrades, units shipped from CyberData with firmware version 5.1.2 and later feature a built-in "fail safe" mechanism. Note that field upgrading earlier units with v5.x.x will not allow for this feature.

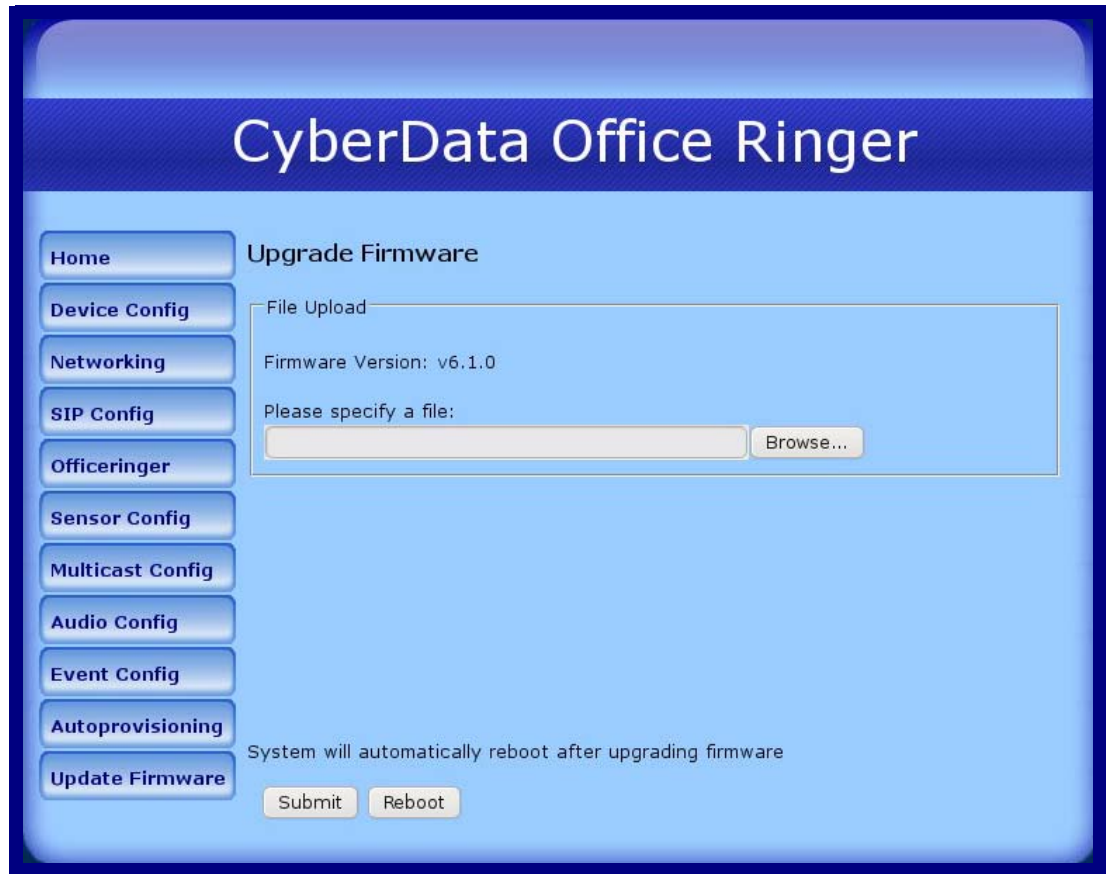
Note Any units that have shipped with firmware version 6.0.0 or later will not be able to run firmware that is version 5.1.2 or earlier.

To upload the firmware from your computer:

1. Retrieve the latest Office Ringer firmware file from the VoIP Indoor Office Ringer **Downloads** page at:
<http://www.cyberdata.net/products/voip/digitalanalog/officeringer/downloads.html>
2. Unzip the firmware version file. This file may contain the following:
 - Firmware file
 - Release notes
3. Log in to the Office Ringer home page as instructed in [Section 2.3.2, "Log in to the Configuration Home Page"](#).

- Click the **Update Firmware** button to open the **Upgrade Firmware** page. See [Figure 2-27](#).

Figure 2-27. Upgrade Firmware Page



- Select **Browse**, and then navigate to the location of the Office Ringer firmware file.
- Click **Submit**.

Note This starts the upgrade process. Once the Office Ringer has uploaded the file, the **Uploading Firmware** countdown page appears, indicating that the firmware is being written to flash. The Office Ringer will automatically reboot when the upload is complete. When the countdown finishes, the **Upgrade Firmware** page will refresh. The uploaded firmware filename should be displayed in the system configuration (indicating successful upload and reboot).

[Table 2-18](#) shows the web page items on the **Upgrade Firmware** page.

Table 2-18. Firmware Upgrade Parameters

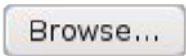
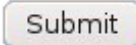
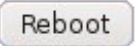
Web Page Item	Description
File Upload	
Firmware Version	Shows the current firmware version.
	Use the Browse button to navigate to the location of the Office Ringer firmware file that you want to upload.

Table 2-18. Firmware Upgrade Parameters (continued)

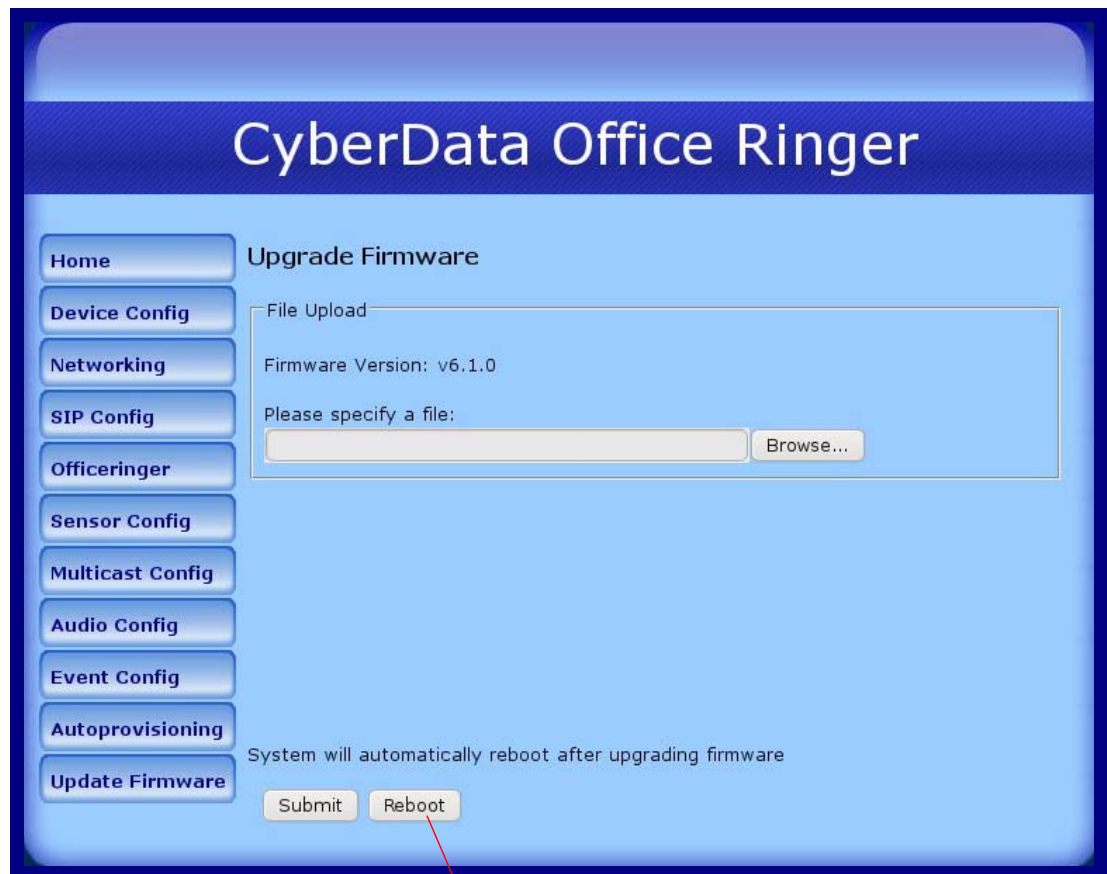
Web Page Item	Description
	Click on the Submit button to automatically upload the selected firmware and reboot the system.
	Click on the Reboot button to reboot the system.

2.4.1 Reboot the Office Ringer

To reboot a Office Ringer, log in to the web page as instructed in [Section 2.3.2, "Log in to the Configuration Home Page"](#).

1. Click **Update Firmware** to open the **Upgrade Firmware** page ([Figure 2-28](#)).

Figure 2-28. Reboot System Section



Reboot

2. Click **Reboot**. A normal restart will occur.

2.5 Command Interface

Some functions on the Intercom can be activated using simple POST commands to the web interface. The examples in [Table 2-19](#) use the free unix utility, **wget**, but any program that can send http POST commands to the device should work.

Note These commands require an authenticated session (a valid username and password to work).

Table 2-19. Command Interface Post Commands

Device Action	HTTP Post Command ^a
To trigger the relay (for the configured delay)	wget --user admin --password admin --post-data "test_relay=yes" "http://10.0.3.78/cgi-bin/command.cgi" > /dev/null
To cause the Intercom to place a call to extension 130	wget --user admin --password admin --post-data "call=130" "http://10.0.3.78/cgi-bin/command.cgi" > /dev/null
To terminate an active call	wget --user admin --password admin --post-data "terminate=yes" "http://10.0.3.78/cgi-bin/command.cgi" > /dev/null
To force the Intercom to reboot	wget --user admin --password admin --post-data "reboot=yes" "http://10.0.3.78/cgi-bin/command.cgi" > /dev/null
To play the test audio file	wget --user admin --password admin --post-data "test_audio=yes" "http://10.0.3.78/cgi-bin/command.cgi" > /dev/null
To cause the Intercom to speak it's ip address	wget --user admin --password admin --post-data "speak_ip_address=yes" "http://10.0.3.78/cgi-bin/command.cgi" > /dev/null

a.Type and enter all of each http POST command on one line.

Appendix A: Mounting the Indoor Office Ringer

A.1 Mount the Office Ringer

Before you mount the Office Ringer, make sure that you have received all the parts for each Office Ringer. Refer to [Table A-1](#).

Table A-1. Wall Mounting Components (Part of the Accessory Kit)



Quantity	Part Name	Illustration
4	#6 x 1" Pan head phillips wood screw	
4	Plastic-ribbed anchor	

Table A-1. Gang Box Mounting Components

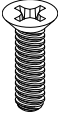
Quantity	Part Name	Illustration
4	6-32 x 0.5-inch flat undercut Phillips machine screw	

Figure A-2 shows a wall mounting option.

Figure A-2. Wall Mounting Option

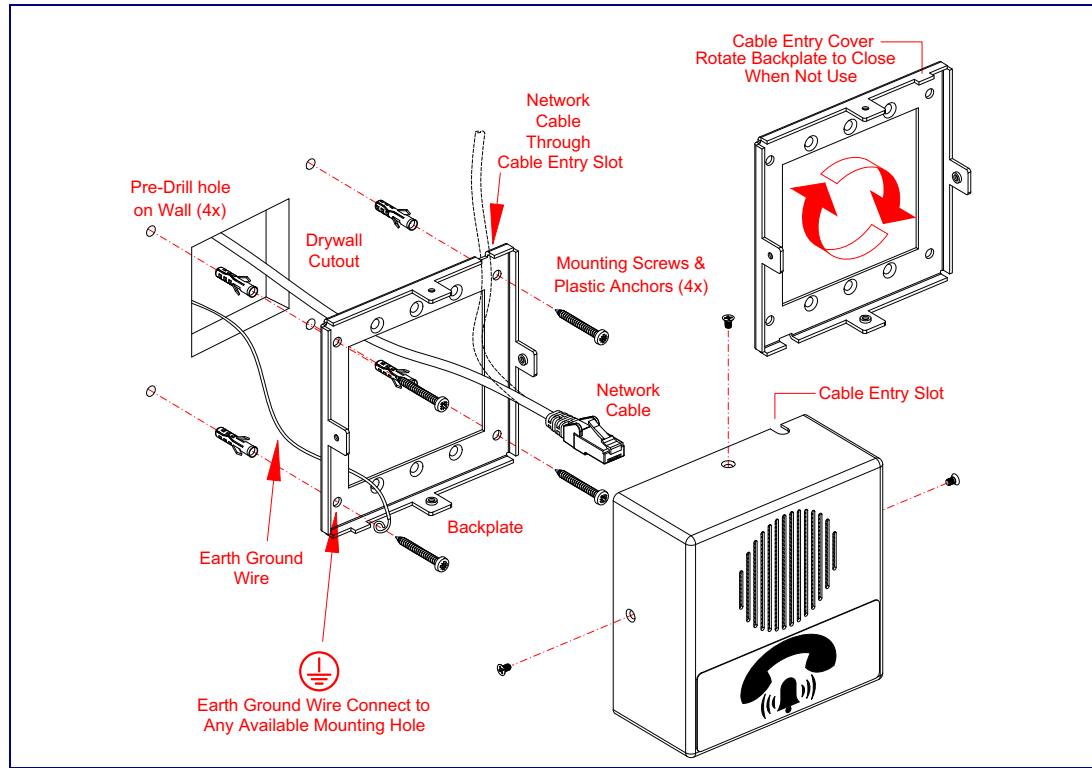


Figure A-3 shows a 1-Gang Box and a 2-Gang Box mounting option.

Figure A-3. Gang Box Mounting

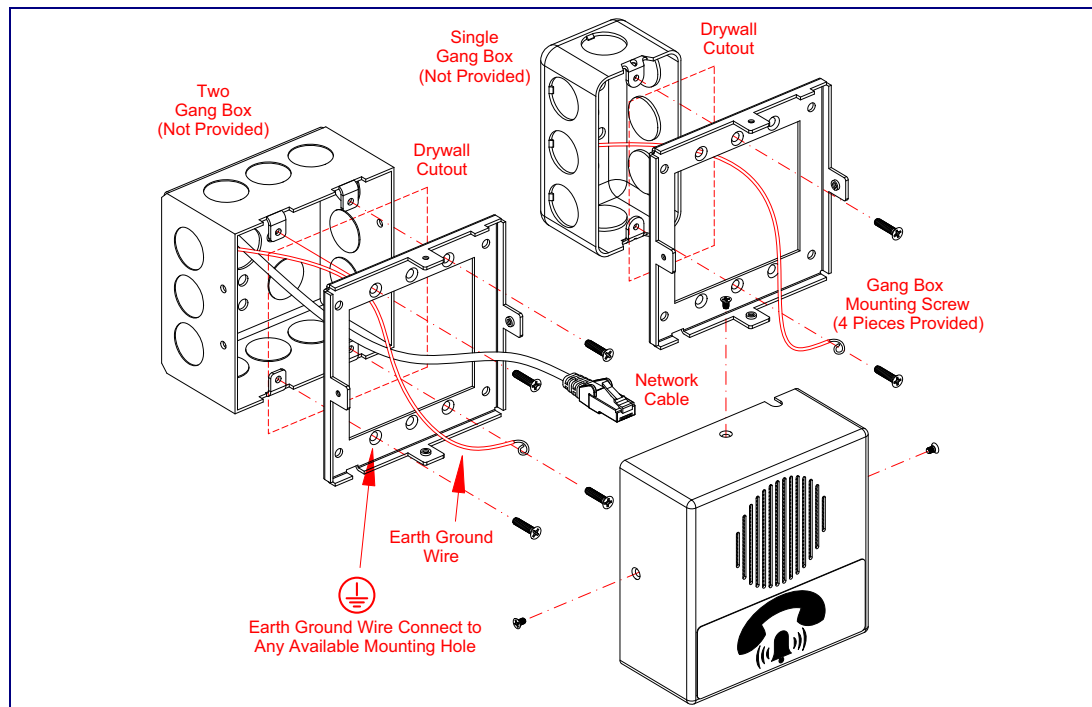
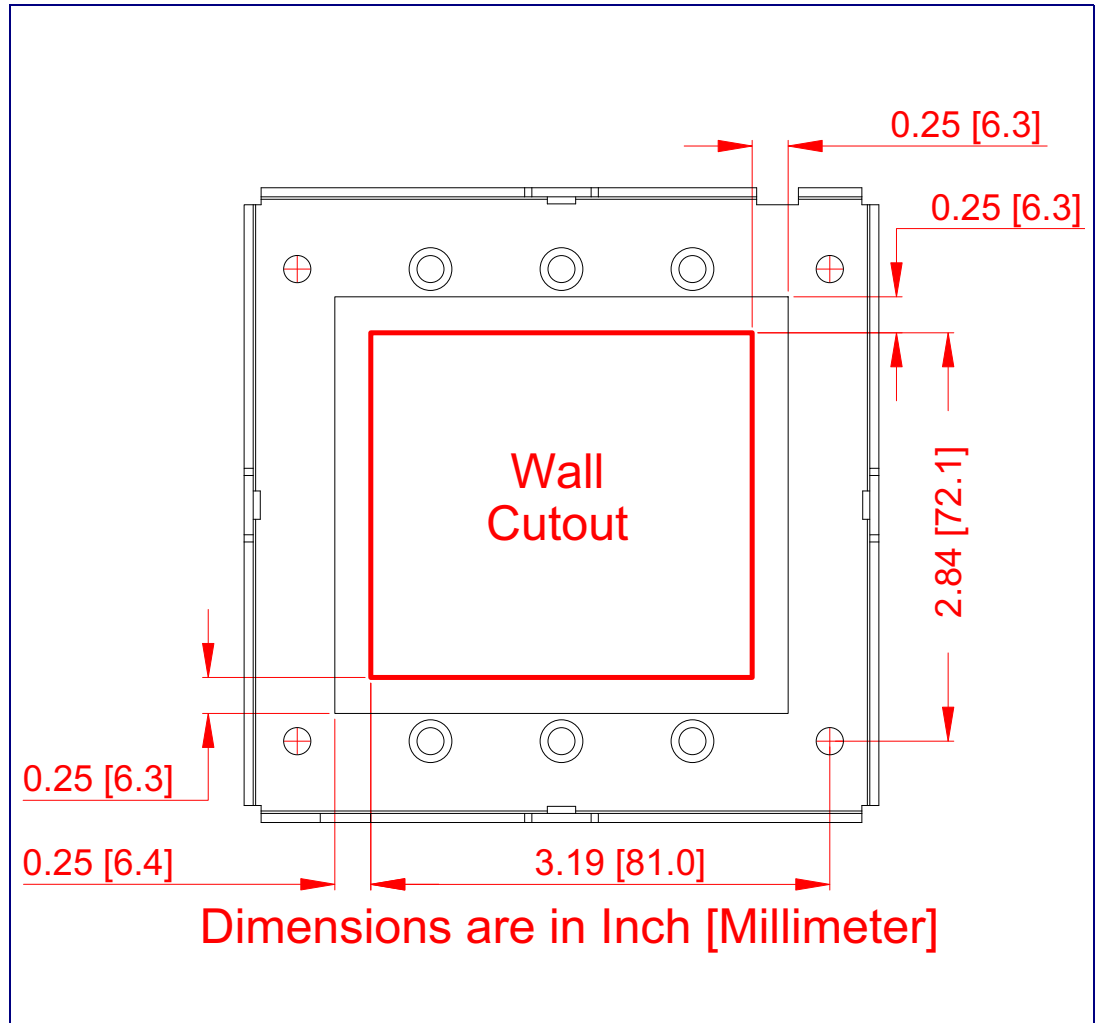


Figure A-4 shows the recommended wall cutout dimensions.

Figure A-4. Recommended Wall Cutout Dimensions



Appendix B: Setting up a TFTP Server

B.1 Set up a TFTP Server

Autoprovisioning requires a TFTP server for hosting the configuration file.

B.1.1 In a LINUX Environment

To set up a TFTP server on LINUX:

1. Create a directory dedicated to the TFTP server, and move the files to be uploaded to that directory.
2. Run the following command where `/tftpboot/` is the path to the directory you created in [Step 1](#): the directory that contains the files to be uploaded. For example:

```
in.tftpd -l -s /tftpboot/your_directory_name
```

B.1.2 In a Windows Environment

You can find several options online for setting up a Windows TFTP server. This example explains how to use the Solarwinds freeware TFTP server, which you can download from the following website address:

<http://www.cyberdata.net/support/voip/solarwinds.html>

To set up a TFTP server on Windows:

1. Install and start the software.
2. Select **File/Configure/Security** tab/**Transmit Only**.
3. Make a note of the default directory name, and then move the firmware files to be uploaded to that directory.

Appendix C: Troubleshooting/Technical Support

C.1 Frequently Asked Questions (FAQ)

A list of frequently asked questions (FAQs) are available on the VoIP Indoor Office Ringer product page at:

<http://www.cyberdata.net/products/voip/digitalanalog/officeringer/faqs.html>

Select the support page for your product to see a list of frequently asked questions for the CyberData product:

C.2 Documentation

The documentation for this product is released in an English language version only. You can download PDF copies of CyberData product documentation from the VoIP Indoor Office Ringer product page at:

<http://www.cyberdata.net/products/voip/digitalanalog/officeringer/docs.html>

C.3 Contact Information

Contact	CyberData Corporation 3 Justin Court Monterey, CA 93940 USA www.CyberData.net Phone: 800-CYBERDATA (800-292-3732) Fax: 831-373-4193
Sales	Sales 831-373-2601 Extension 334
Technical Support	Phone: 831-373-2601 Extension 333 Web: http://www.cyberdata.net/support/contactsupportvoip.html
Returned Materials Authorization	To return the product, contact the CyberData Returned Materials Authorization (RMA) department at: Phone: 831-373-2601, Extension 136 Email: RMA@CyberData.net

When returning a product to CyberData, an approved CyberData RMA number must be printed on the outside of the original shipping package. No product will be accepted for return without an approved RMA number. Send the product, in its original package, to the following address:

CyberData Corporation
3 Justin Court
Monterey, CA 93940
Attention: RMA "your RMA number"

RMA Status Form If you need to inquire about the repair status of your product(s), please use the CyberData RMA Status form at the following web address:

<http://www.cyberdata.net/support/rmastatus.html>

C.4 Warranty

CyberData warrants its product against defects in material or workmanship for a period of two years from the date of purchase. Should the product fail within the warranty period, CyberData will repair or replace the product free of charge. This warranty includes all parts and labor.

Should the product fail out-of-warranty, a flat rate repair charge of one half of the purchase price of the product will be assessed. Repairs that are in warranty but are damaged by improper modifications or abuse, will be charged at the out-of-warranty rate. Products shipped to CyberData, both in and out-of-warranty, are shipped at the expense of the customer. Shipping charges for repaired products shipped back to the customer by CyberData, will be paid by CyberData.

CyberData shall not under any circumstances be liable to any person for any special, incidental, indirect or consequential damages, including without limitation, damages resulting from use or malfunction of the products, loss of profits or revenues or costs of replacement goods, even if CyberData is informed in advance of the possibility of such damages.

C.4.1 Warranty & RMA Returns within the United States

If service is required, you must contact CyberData Technical Support prior to returning any products to CyberData. Our Technical Support staff will determine if your product should be returned to us for further inspection. If Technical Support determines that your product needs to be returned to CyberData, an RMA number will be issued to you at this point.

Your issued RMA number must be printed on the outside of the shipping box. No product will be accepted for return without an approved RMA number. The product in its original package should be sent to the following address:

CyberData Corporation
3 Justin Court
Monterey, CA 93940
Attn: RMA "xxxxxx"

C.4.2 Warranty & RMA Returns Outside of the United States

If you purchased your equipment through an authorized international distributor or reseller, please contact them directly for product repairs.

C.4.3 Spare in the Air Policy

CyberData now offers a *Spare in the Air* no wait policy for warranty returns within the United States and Canada. More information about the *Spare in the Air* policy is available at the following web address:

<http://www.cyberdata.net/support/warranty/spareintheair.html>

C.4.4 Return and Restocking Policy

For our authorized distributors and resellers, please refer to your CyberData Service Agreement for information on our return guidelines and procedures.

For End Users, please contact the company that you purchased your equipment from for their return policy.

C.4.5 Warranty and RMA Returns Page

The most recent warranty and RMA information is available at the CyberData Warranty and RMA Returns Page at the following web address:

<http://www.cyberdata.net/support/warranty/index.html>

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