CyberData

VoIP Intercom Operations Guide

Part #010935A

CyberData Corporation
2555 Garden Road
Monterey, CA 93940
(831) 373-2601

PoE VoIP Intercom Operations Guide 930181E
Part # 010935A

COPYRIGHT NOTICE:
© 2009, CyberData Corporation, ALL RIGHTS RESERVED.

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

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

OPEN SOURCE STATEMENT: Certain software components included in CyberData products are subject to the GNU General Public License (GPL) and Lesser GNU General Public License (LGPL) "open source" or "free software" licenses. Some of this Open Source Software may be owned by third parties. Open Source Software is not subject to the terms and conditions of the CyberData COPYRIGHT NOTICE or software licenses. Your right to copy, modify, and distribute any Open Source Software is determined by the terms of the GPL, LGPL, or third party, according to who licenses that software.

Software or firmware developed by CyberData that is unrelated to Open Source Software is copyrighted by CyberData, subject to the terms of CyberData licenses, and may not be copied, modified, reverse-engineered, or otherwise altered without explicit written permission from CyberData Corporation.

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

Phone: (831) 373-2601
Technical Support Ext. 333
support@cyberdata.net
Fax: (831) 373-4193
Company and product information at www.cyberdata.net

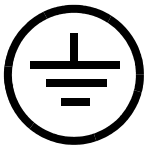
Important Safety Instructions

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 apmplifiers) 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.
14. WARNING: The VoIP Intercom enclosure is not rated for any AC voltages!

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

	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

	General Alert *This pictoral alert indicates a potentially hazardous situation. This alert will be followed by a hazard level heading and more specific information about the hazard.*
	Ground *This pictoral alert indicates the Earth grounding connection point.*

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 History

Revision	Date Released	Description of Changes
E	4/16/2009	Revises feature description in Section 1.2, "Product Features" to the following: "*Adaptive full duplex voice operation"*

Contents

Chapter 1 Product Overview 1

1.1 Typical System Installation 1
1.2 Product Features 3
1.3 Supported Protocols 3
1.4 Supported SIP Servers 4
1.5 Product Specifications 4

Chapter 2 Installing the VoIP Intercom 5

2.1 Parts List 5
2.2 Intercom Setup 6
2.2.1 VoIP Intercom Connections 6
2.2.2 Connecting a Device to the Auxiliary Relay 7
2.2.3 Identifying the VoIP Intercom Connectors 8
2.2.4 Call Button and Indicator Light 10
2.2.5 Network Connectivity, and Data Rate 11
2.2.6 RTFM Switch Jumper 13
2.2.7 Adjust the Volume 15
2.3 Configure the Intercom Parameters 16
2.3.1 Log in to the Configuration Home Page 16
2.3.2 Configure the Network Parameters 18
2.3.3 Set up the Intercom 20
2.3.4 Configure the SIP Parameters 22
2.4 Upgrade the Firmware and Reboot the Intercom 24
2.4.1 Reboot the Intercom 25

Appendix A Mounting the Intercom 27

A.1 Mount the Intercom 27

Appendix B Setting up a TFTP Server 33

B.1 Set up a TFTP Server 33
B.1.1 In a LINUX Environment 33
B.1.2 In a Windows Environment 33
B.1.3 In a Solarwinds Server Environment 33

Appendix C Troubleshooting/Technical Support 35

C.1 Frequently Asked Questions (FAQ) 35
C.2 Documentation 35
C.3 Contact Information 35
C.4 Warranty 36

Index 37

1 Product Overview

The Voice-over-IP (VoIP) Intercom is a SIP endpoint designed to provide VoIP phone connectivity in a tamper proof and secure package.

1.1 Typical System Installation

Figure 1-1, Figure 1-2, and Figure 1-3 illustrate how the VoIP Intercoms can be installed as part of a VoIP phone system.

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

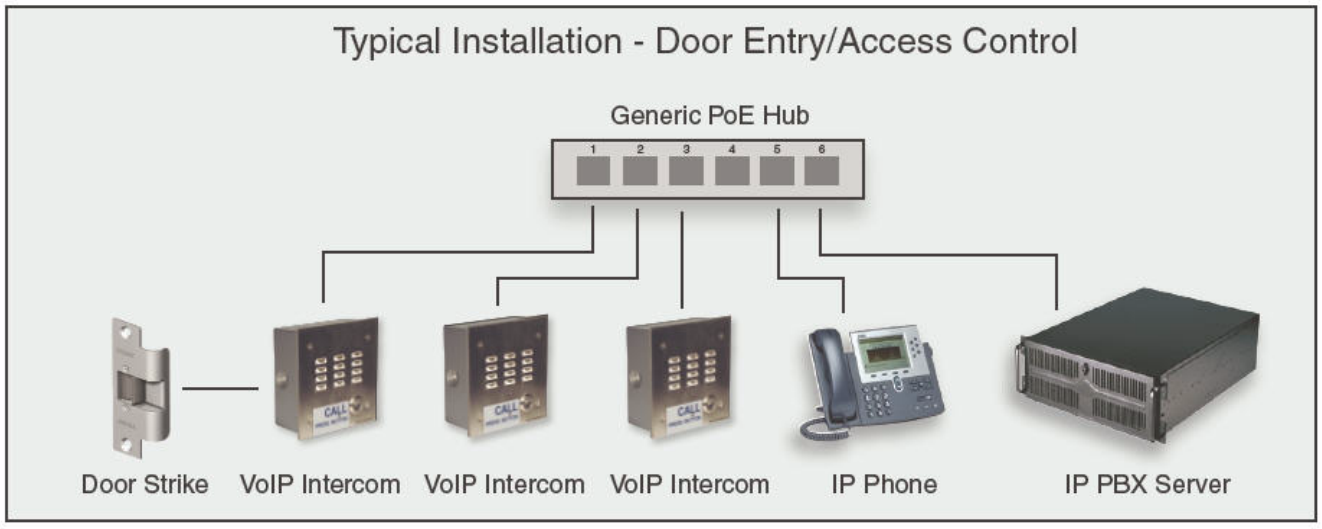


Figure 1-2. Typical Installation—Mass Notification

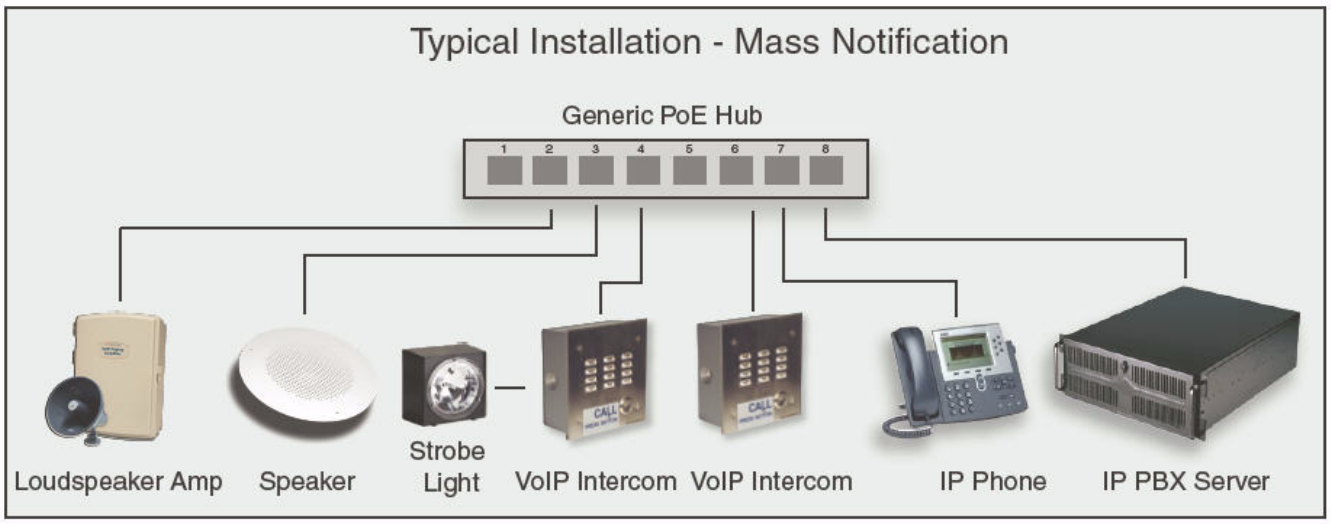
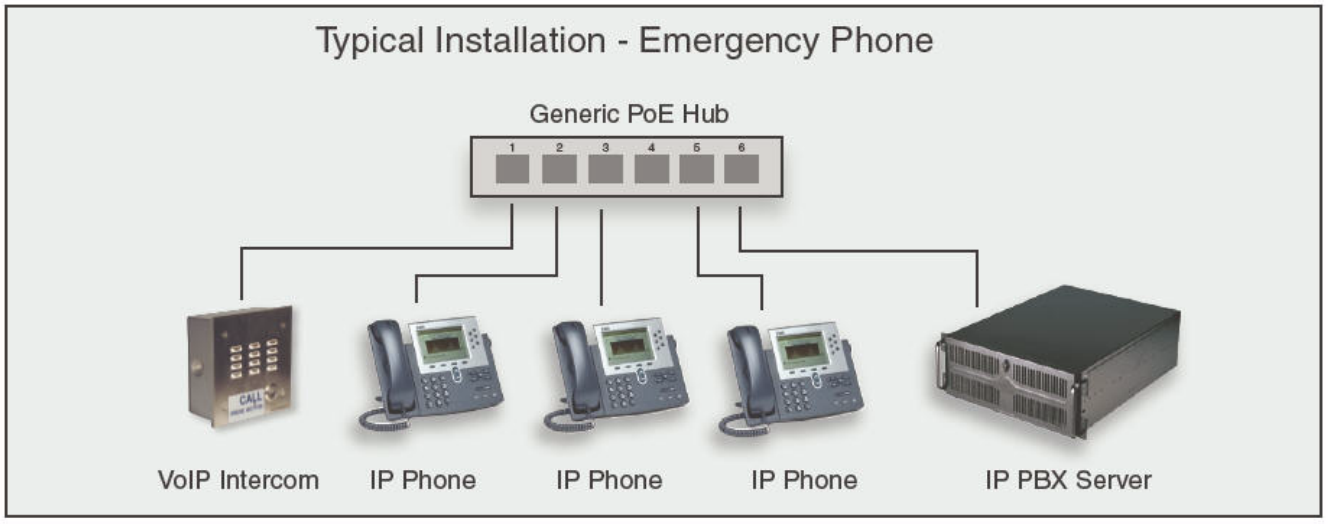


Figure 1-3. Typical Installation—Emergency Phone



.

GENERAL ALERT	Warning *Electrical Hazard:* The VoIP Intercom enclosure is not rated for any AC voltages.

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

Warning

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

1.2 Product Features

- *SIP*
- *Dual speeds of 10 Mbps and 100 Mbps*
- *802.3af compliant*
- *2 gang outlet box size*
- *Adaptive full duplex voice operation*
- *Network/Web management*
- *Network adjustable speaker volume adjustment*
- *Network configurable microphone input sensitivity adjustment*
- *Network Downloadable product firmware*
- *Doubles as a paging speaker*
- *Call button*
- *Call activity indicator (light)*
- *Tamper proof design*
- *1 dry contact relay for auxiliary control*
- *3 year Warranty*

1.3 Supported Protocols

The Intercom supports:

- SIP
- HTTP Web-based configuration

  Provides an intuitive user interface for easy system configuration and verification of Intercom operations.
- DHCP Client

  Dynamically assigns IP addresses in addition to the option to use static addressing.
- TFTP Client

  Facilitates Web-based firmware upgrades of the latest Intercom capabilities.

- RTP
- RTP/AVP - Audio Video Profile
- Audio Encodings

  PCMU (G.711 mu-law)

  PCMA (G.711 A-law)

  Packet Time 20 ms

1.4 Supported SIP Servers

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

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

1.5 Product Specifications

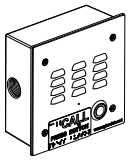
Category	Specification
Speaker Output	8 Watts Peak Power
Network Rate	10/100 Mbps
Power Requirement	802.3af compliant or 5V at 1000 mA
Protocol	SIP
Part Number	010935A
Dimensions	5” x 5” x 2.5”
Weight	1.6 lbs./shipping weight of 2.2 lbs.
Auxiliary Relay	(0.7 kg/shipping weight of 1.0kg)
	2 A at 30 VDC

2 Installing the VoIP Intercom

2.1 Parts List

Table 2-1 illustrates the SiP VoIP and PoE Speaker parts.

Table 2-1. Parts List

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

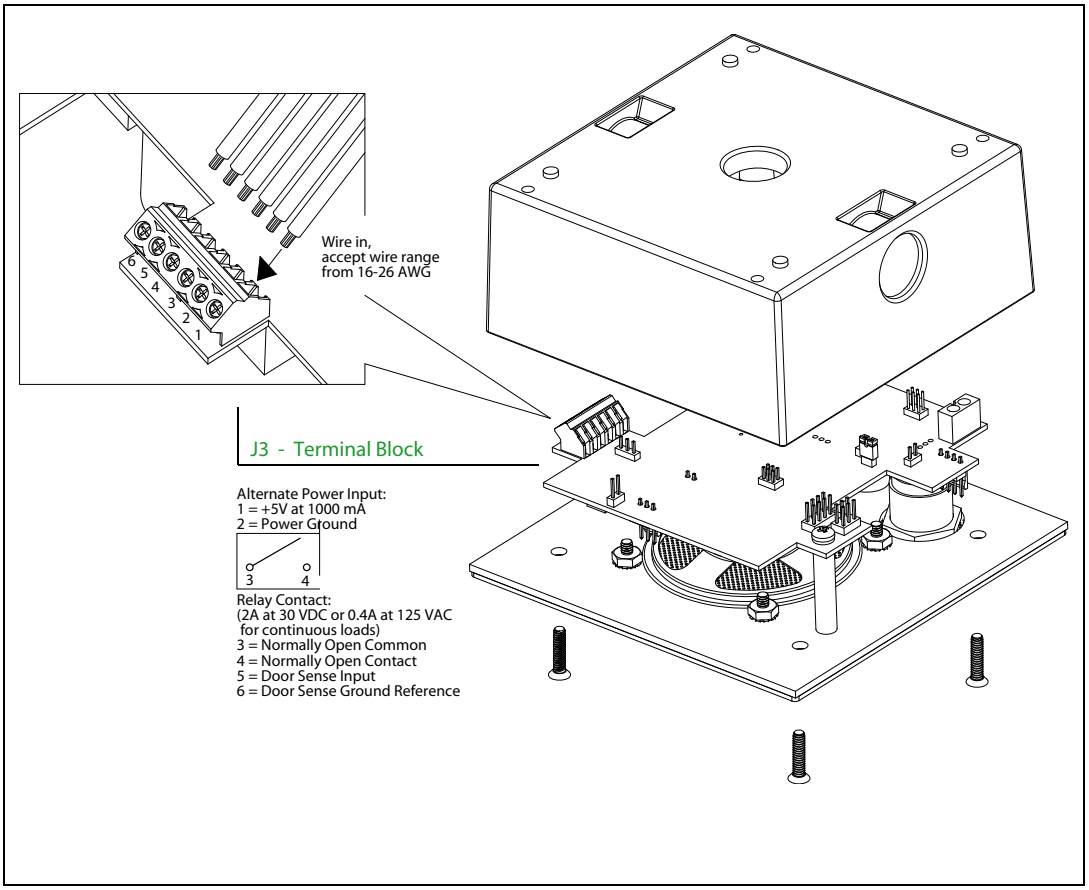
2.2 Intercom Setup

2.2.1 VoIP Intercom Connections

Figure 2-4 shows the pin connections on the J7 (terminal block). This terminal block can accept a wire range from 16 AWG to 26 AWG.

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

Figure 2-4. VoIP Intercom Connections



2.2.2 Connecting a Device to the Auxiliary Relay

A normally open relay is provided to enable users to switch on an auxiliary device like a door buzzer (see Figure 2-4). The relay contacts are limited to 1 amp at 30VDC. The relay on 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.

.

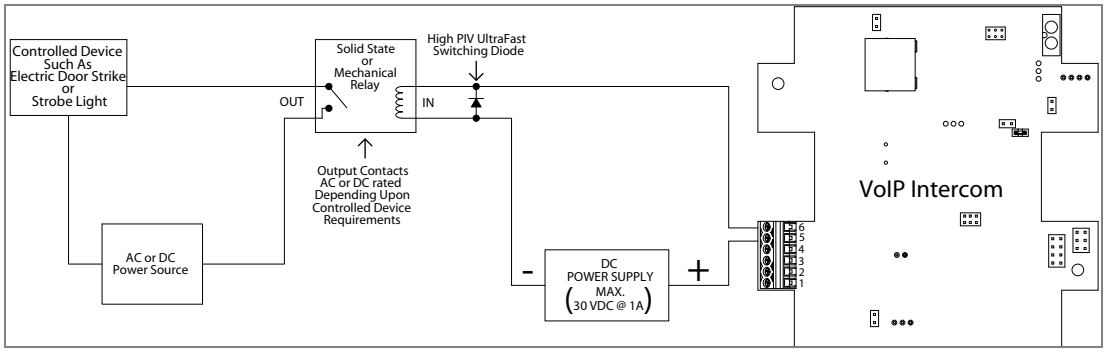
GENERAL ALERT	Warning *Electrical Hazard:* The VoIP Intercom enclosure is not rated for any AC voltages.

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.

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

Figure 2-5. Auxiliary Relay Wiring Diagram



2.2.3 Identifying the VoIP Intercom Connectors

See Figure 2-6, Figure 2-7, and Table 2-2 to identify the connectors and functions.

Figure 2-6. J2, J5, and J6 Connector Locations

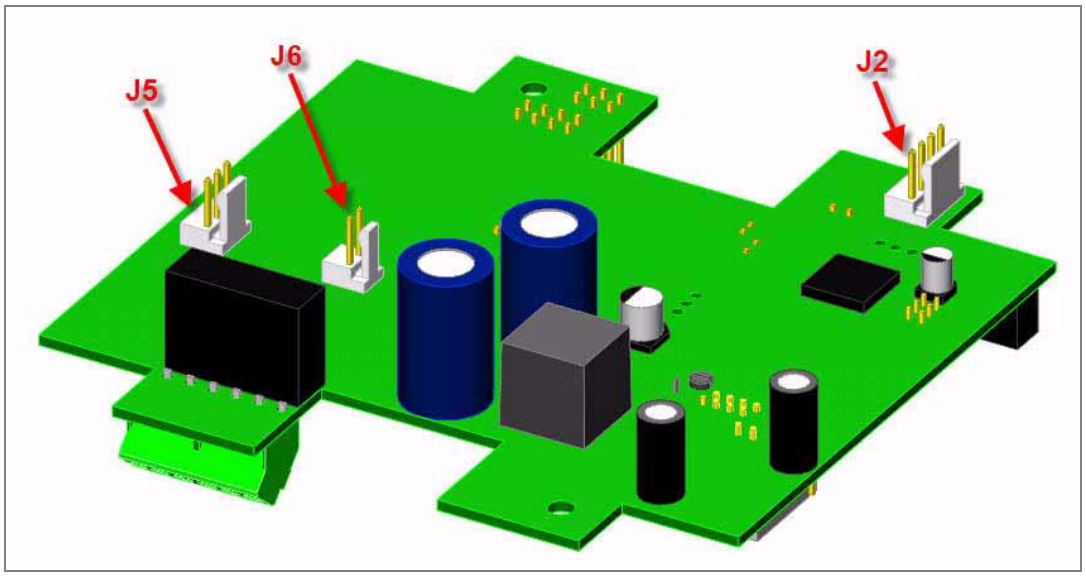


Figure 2-7. J1 and J7 Connector Locations

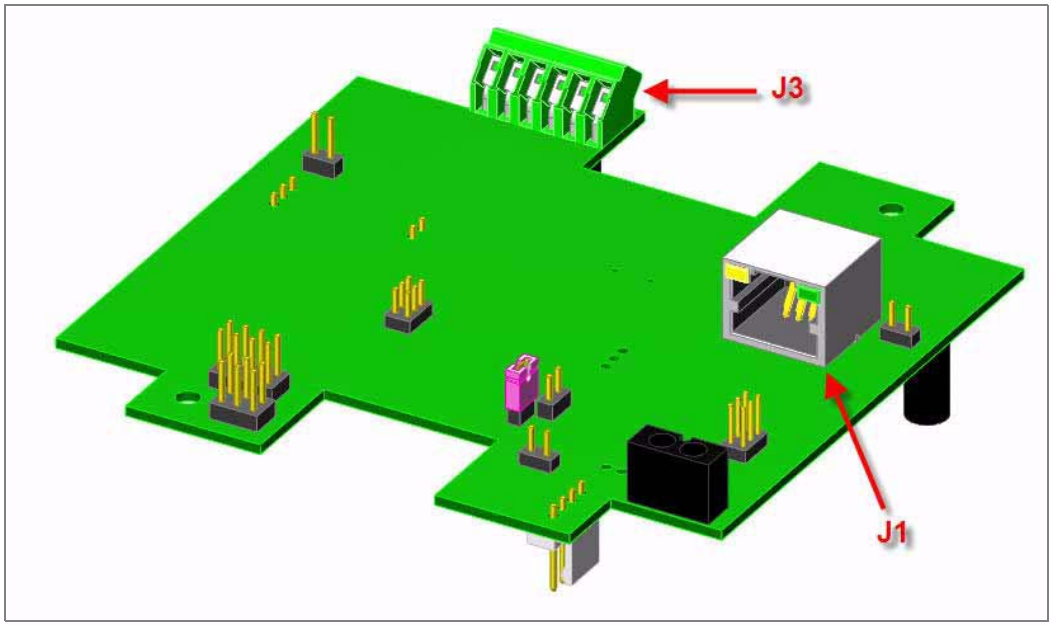
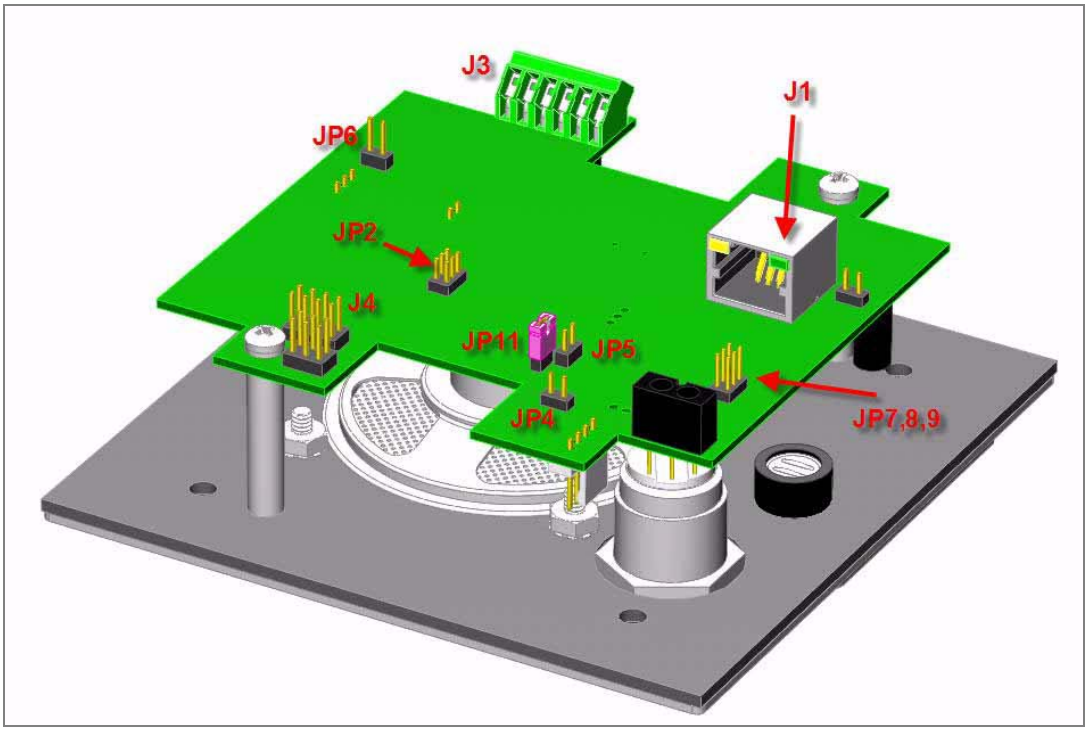


Figure 2-8. JP11—RTFM Switch Jumper



See Table 2-2 for the connector settings.

Table 2-2. Connector Settings

Jumper	Setting
J1	PoE Network Connection (RJ-45 ethernet)
J4	J-Tag (Factory only)
J3	Terminal Block (see Figure 2-4)
JP2	Call-Button/LED interface
JP4	Reset (Factory only)
JP5	Microphone Interface
JP6	Speaker Interface
JP8	Console (Factory only)
JP11	RTFM (see Section 2.2.6, "RTFM Switch Jumper")

2.2.4 Call Button and Indicator Light

2.2.4.1 Initial Power

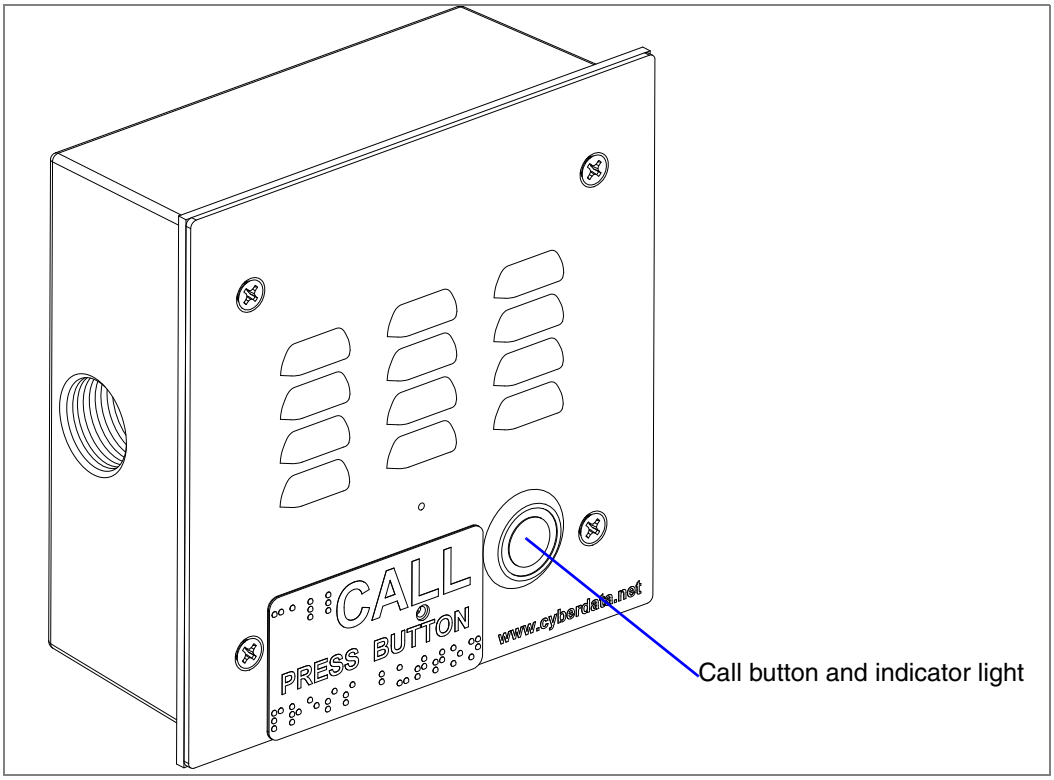
Upon initial power or reset, you will see the following:

- The light is on.
- The light will blink twice to indicate that the intercom has acquired its network settings and is operational.
- The first blink indicates that the intercom has acquired its network settings.
- The second blink indicates that the intercom is operational.

2.2.4.2 Calling

- You may initiate a call by pressing the **Call** button.
- An active call is indicated by the light blinking at one second intervals.
- The intercom will automatically answer an incoming call.
- You can press the **Call** button to terminate an active call whether the call was an incoming call or a call that was initiated by you.

Figure 2-9. Call Button and Indicator Light

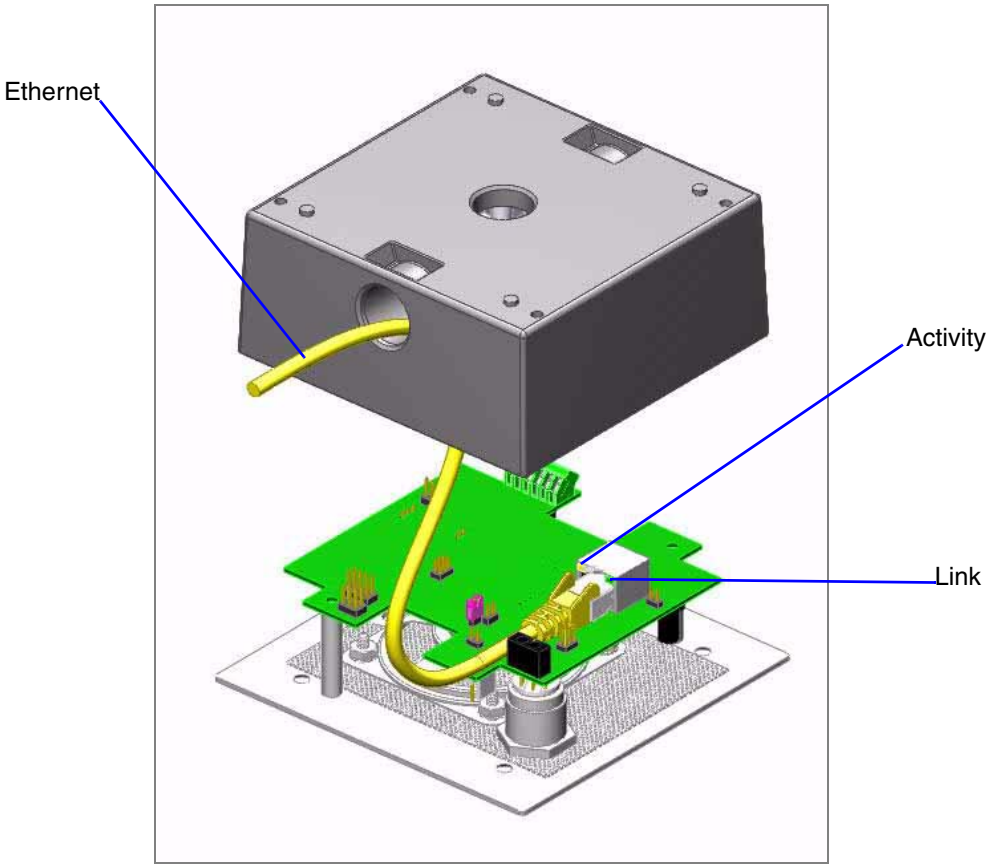


2.2.5 Network Connectivity, and Data Rate

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 2-10 and Figure 2-11). 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.

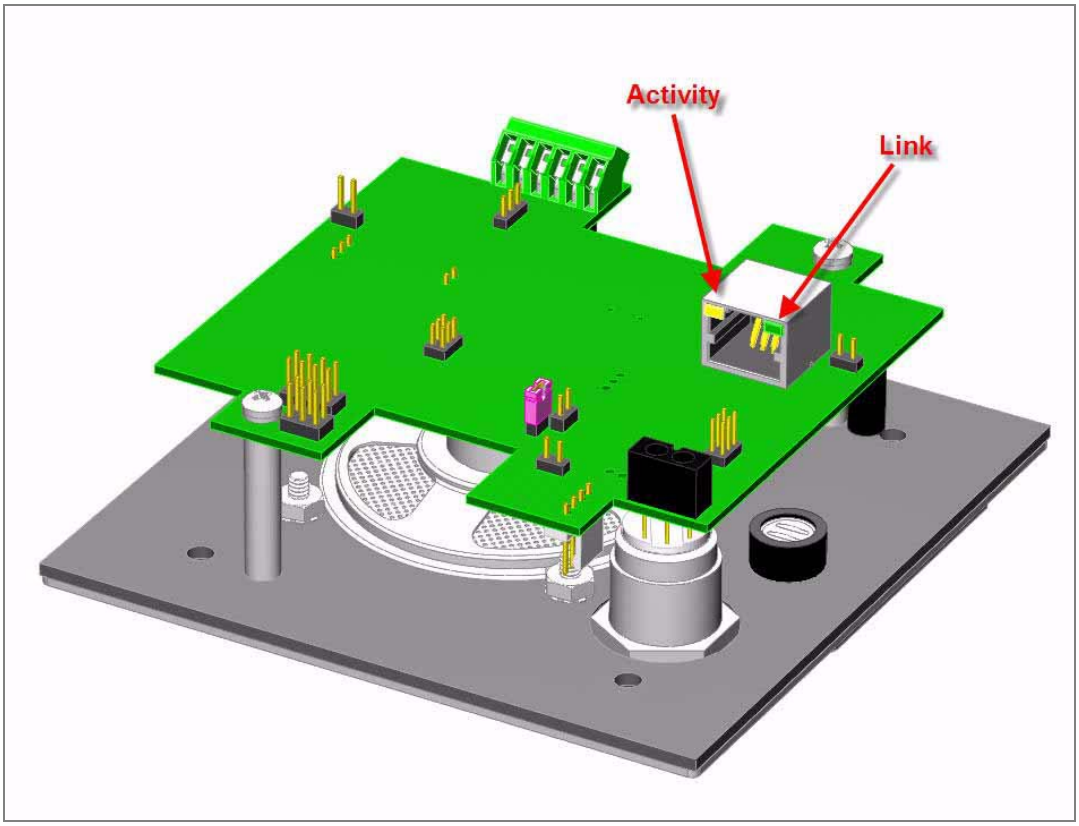
Figure 2-10. Network Connector Prior to Installation



2.2.5.1 Verify Network Activity

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

Figure 2-11. Network Connector

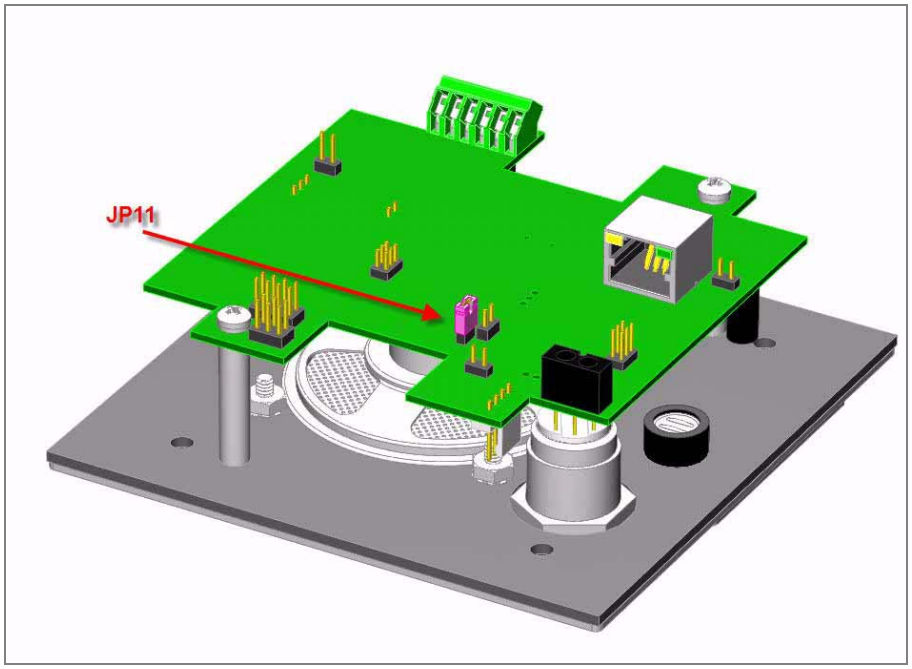


2.2.6 RTFM Switch Jumper

When the Intercom is operational and linked to the network, use the Reset Test Function Management **(RTFM)** switch (see Figure 2-12) on the Intercom board to announce and confirm the Intercom's IP Address, test that the audio is working, and check the volume.

Note You must do this test prior to final assembly. Please remember to remove the RTFM switch jumper prior to final assembly.

Figure 2-12. RTFM Switch Jumper



2.2.6.1 Announcing the IP Address

To announce an Intercom's current IP address:

1. Unplug the intercom.
2. Install the RTFM jumper.
3. Plug the network cable into the intercom to supply power to the intercom. The LED will illuminate during initialization, blink once, and then turn off.
4. The intercom will announce the IP address.

Note If you installed the RTFM jumper, and if you press the **Call** button for 10 seconds, the default factory settings will be restored.

2.2.6.2 Restoring the Factory Default Settings

To restore the factory default settings:

1. Complete the steps in Section 2.2.6.1, "Announcing the IP Address".
2. Press and hold the **Call** button for **10** seconds.
3. When you hear the announcement, release the **Call** button. The factory default settings are restored, and the intercom will automatically restart.

2.2.6.3 Restore the Factory Default Settings

When troubleshooting configuration problems, it is sometimes convenient to restore the device to a known state.

Each Intercom is delivered with factory set default values for the parameters indicated in Table 2-3. Use the **RTFM** switch on the Intercom face to restore these parameters to the factory default settings.

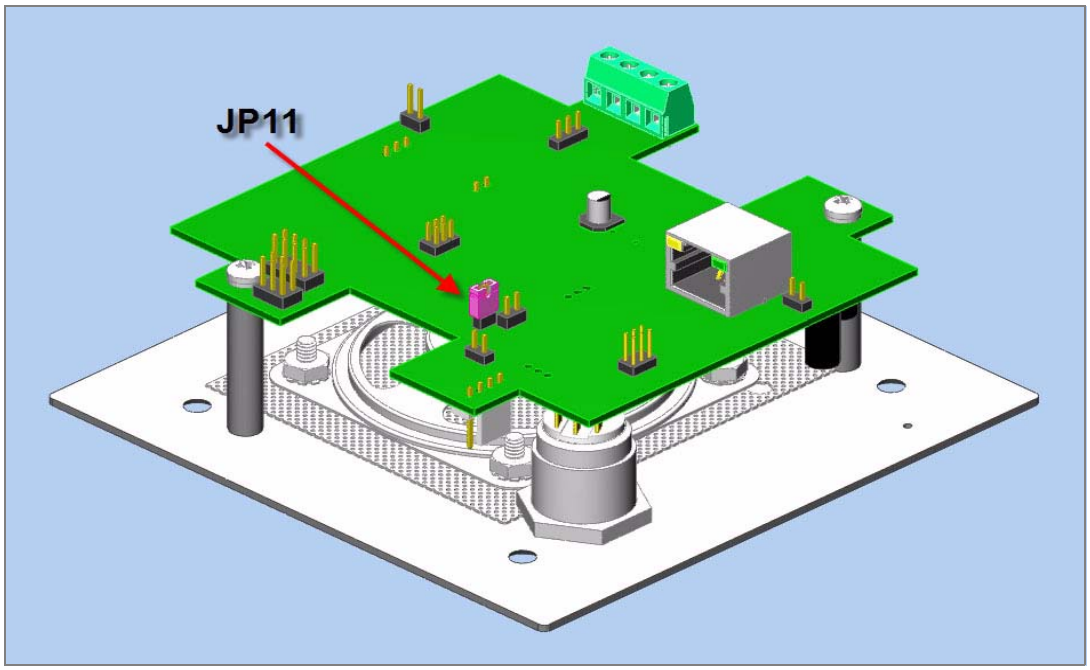
Note When you use the RTFM switch, the factory default settings are restored for *only* the parameters indicated in Table 2-3. The other parameters in the current Intercom configuration will remain unchanged.

Table 2-3. Factory Default Settings

Parameter	Factory Default Setting
IP Addressing	static
IP Address	192.168.3.10
Web Access Username	admin
Web Access Password	admin
Subnet Mask	255.255.255.0

To restore these parameters to the factory default settings:

Figure 2-13. RTFM Switch Jumper



To announce an Intercom's current IP address:

1. Install the RTFM jumper.
2. After two seconds, the IP address will be announced.

Note If you installed the RTFM jumper, and if you press the call button for 10 seconds, the default factory settings will be initiated.

2.2.7 Adjust the Volume

You will be only able to adjust the volume through the network configuration page.

2.3 Configure the Intercom Parameters

To configure the Intercom online, use a standard web browser.

Configure each Intercom and verify its operation *before* you mount it. When you are ready to mount an Intercom, refer to Chapter A, "Mounting the Intercom" for instructions.

All Intercoms are initially configured with the following default IP settings:

When configuring more than one Intercom, attach the Intercoms 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	static
IP Address	192.168.3.10
Web Access Username	admin
Web Access Password	admin
Subnet Mask	255.255.255.0
Default Gateway	192.168.3.1

2.3.1 Log in to the Configuration Home Page

1. Open your browser to the Intercom IP address.

   For the initial configuration of the Intercom, open your browser to the default IP address:

   http://192.168.3.10

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

2. When prompted, use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 2-14):

   Web Access Username: **admin**

   Web Access Password: **admin**

Figure 2-14. Home Page

3. On the **Home Page**, review the setup details and navigation buttons described in Table 2-5.

Table 2-5. Home Page Overview

Web Page Item	Description
Device Name	Shows the device name.
Serial #	Device serial number.
Ethernet Address	Device ethernet address.
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 1address.
DNS Server 2	Shows the current DNS server 2address.
Speaker Volume (0-9)	Shows the current volume level.
Microphone Gain (0-9)	Shows the current microphone gain level.
Primary Dial-Out	Shows the current primary dial-out number
Intercom Setup	Link to the **Intercom Setup** web page.
Network Setup	Link to the **Network Setup** web page.

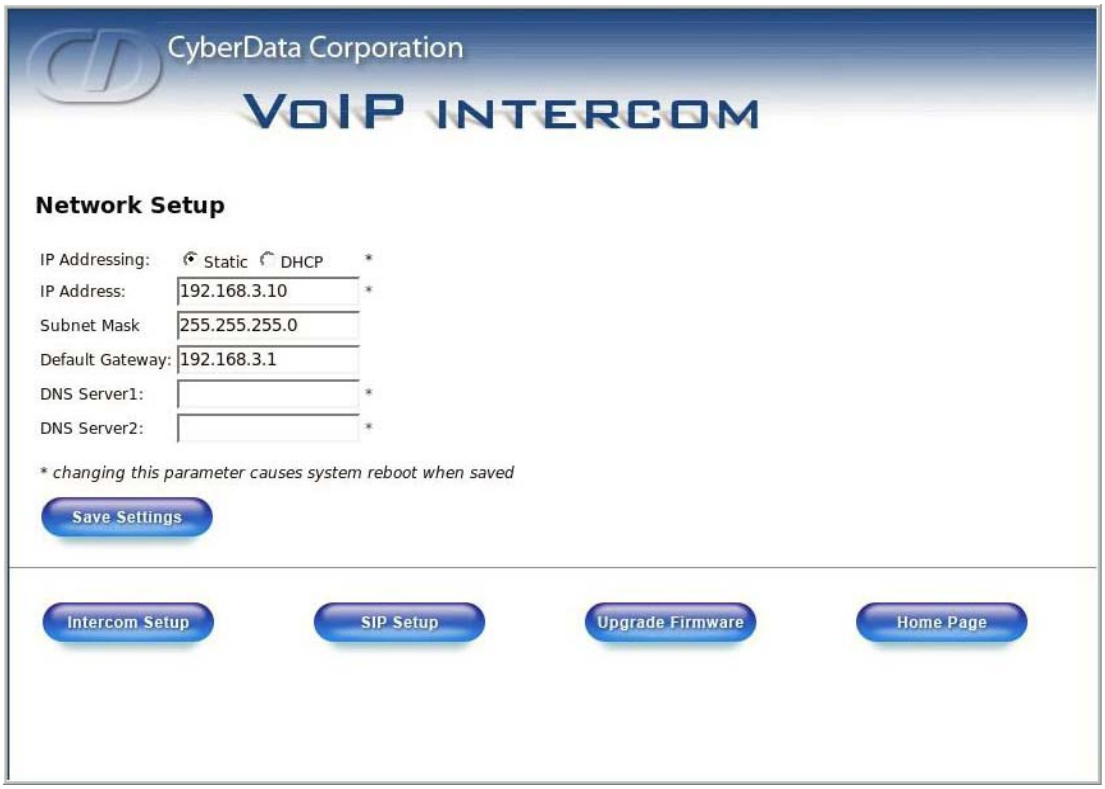
Table 2-5. Home Page Overview

Web Page Item	Description
	Link to the **SIP Setup** web page.
	Link to the **Upgrade Firmware** web page.

2.3.2 Configure the Network Parameters

1. Click the **Network Setup** button to open the **Network Setup** page (Figure 2-15).

Figure 2-15. Network Setup Page



2. On the **Network Setup** page, enter values for the parameters indicated in Table 2-6.

Table 2-6. Network Setup 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 2-6. If you select **DHCP**, go to Step 3.
IP Address*	Enter the Static IP address.

Table 2-6. Network Setup Parameters

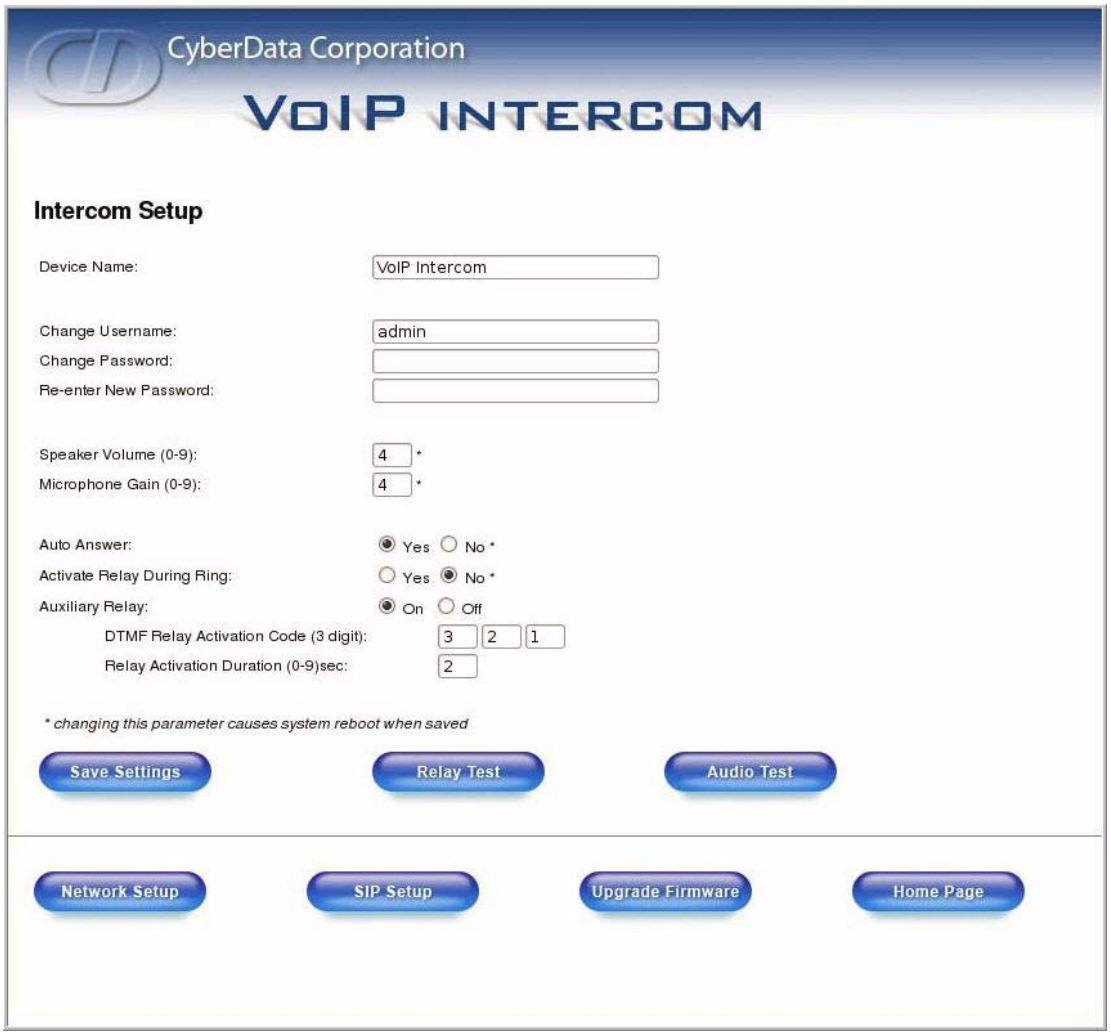
Web Page Item	Description
Subnet Mask	Enter the Subnet Mask address.
Default Gateway	Enter the Default Gateway address.
DNS Server 1*	Enter the DNS Server 1 address.
DNS Server 2*	Enter the DNS Server 2 address.
	Click this button to save your configuration settings. Changing a parameter that has an asterisk next to it will cause a system reboot when saved.
	Link to the **Intercom Setup** page.
	Link to the **SIP Setup** page.
	Link to the **Upgrade Firmware** page.
	Link to the **Home** page.

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

2.3.3 Set up the Intercom

1. Click the **Intercom Setup** button to open the **Intercom Setup** page. See Figure 2-16.

Figure 2-16. Intercom Setup

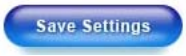


2. On the **Intercom Setup** page, enter values for the parameters indicated in Table 2-7.

Table 2-7. Intercom Setup Parameters

Web Page Item	Description
Device Name	Enter a descriptive name for this device (if desired).
Change Username	Use this field to change the Web Access Username
Change Password	Use this field to change the Web Access Password
Re-enter New Password	Use this field to re-enter a new password
Speaker Volume (0 - 9)	Shows the current volume level.
Microphone Gain (0 - 9)	Shows the current microphone gain level.

Table 2-7. Intercom Setup Parameters

Web Page Item	Description
Auto Answer	When **Auto Answer** is **Off**, the Intercom will play a ringtone through the speaker until someone presses the button.
Activate Relay During Ring	With the **Activate Relay During Ring** option, the relay will be activated for as long as the phone is ringing. **NOTE**: When the phone is set to **Auto Answer**, it will not ring and this option does nothing.
Auxiliary Relay	Allows you to enable or disable the auxiliary relay.
DTMF Relay Activation Code (3 digits)	Use this field to enter the DTMF relay activation code.
Relay Activation Duration (0 - 9 seconds)	Use this field to enter the relay activation duration.
	Click on this button to save your configuration settings.
	Click on this button to do an audio test. Generates a voice message for testing the Intercom audio quality and volume.
	Link to the **Network Setup** page.
	Link to the **SIP Setup** page.
	Link to the **Upgrade Firmware** page.
	Link to the **Home** page.

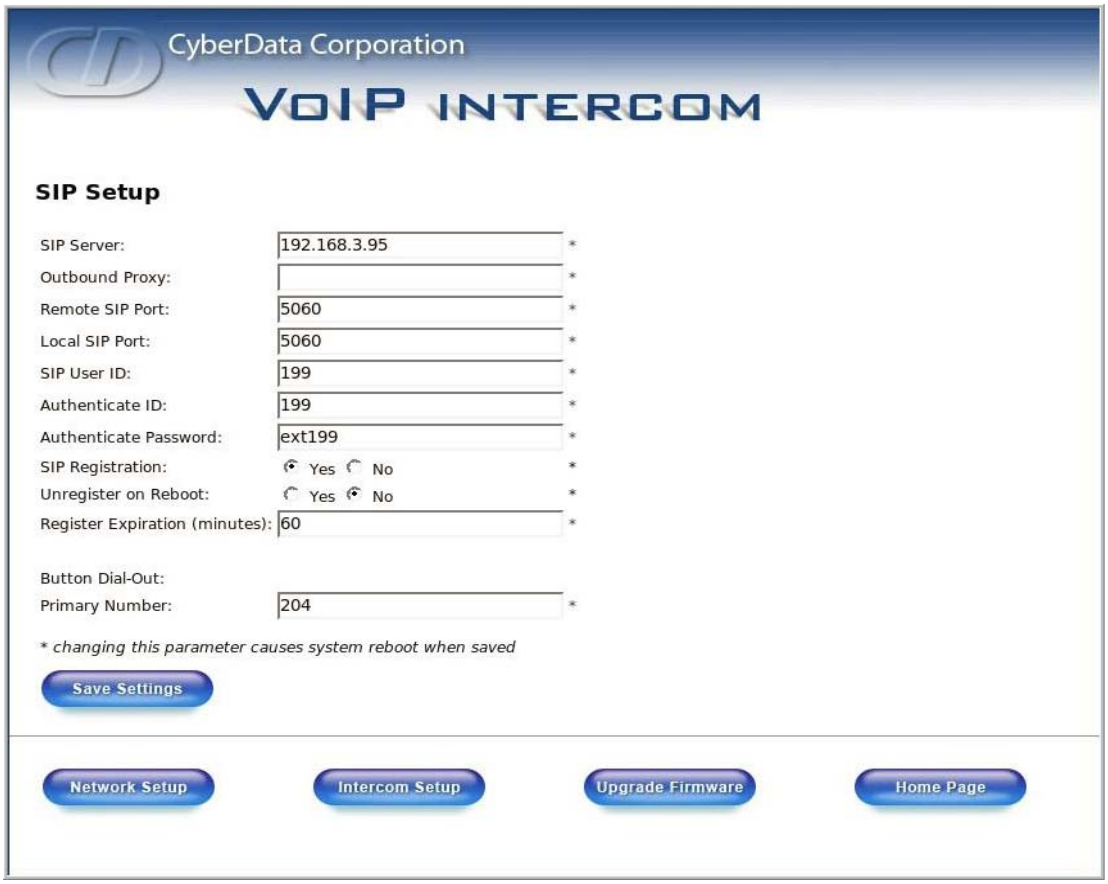
3. After changing the parameters, click **Save Settings**.

2.3.4 Configure the SIP Parameters

1. Click **SIP Setup** to open the **SIP Setup** page (Figure 2-17).

Note For specific server configurations, go to the following URL:
http://www.cyberdata.net/support/voip/intercom.html

Figure 2-17. SIP Setup Page



2. On the **SIP Setup** page, enter values for the parameters indicated in Table 2-8.

Table 2-8. SIP Setup Parameters

Web Page Item	Description
SIP Server*	Enter the SIP server represented as either a numeric IP address in dotted decimal notation or the fully qualified host name (FQHN) up to 64 characters.
Outbound Proxy	Enter the Outbound Proxy as either a numeric IP address in dotted decimal notation or the fully qualified host name (FQHN) up to 64 characters.
Remote SIP Port*	Enter the **Remote SIP Port** number (default 5060).
Local SIP Port*	Enter the **Local SIP Port** number (default 5060).
SIP User ID*	Enter the **SIP User ID** (up to 25 alphanumeric characters).

Table 2-8. SIP Setup Parameters

Web Page Item	Description
Authenticate ID*	Enter the **Authenticate ID** (up to 25 alphanumeric characters).
Authenticate Password*	Enter the **Authenticate Password** (up to 25 alphanumeric characters).
SIP Registration*	Enable/Disable SIP Registration.
Unregister on Reboot*	• Select **Yes** to automatically unregister the Intercom when it is rebooted. • Select **No** to keep the Intercom registered when it is rebooted.
Register Expiration*	Enter the SIP Registration lease time in minutes (default 60 minutes).
Button Dial-Out: Primary Number	Enter the button dial-out primary number.
	Click this button to save your configuration settings. Changing a parameter that has an asterisk next to it will cause a system reboot when saved.
	Link to the **Intercom Setup** page.
	Link to the **Network Setup** page.
	Link to the **Upgrade Firmware** page.
	Link to the **Home** page.

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

2.4 Upgrade the Firmware and Reboot the Intercom

To upload the Intercom firmware from your PC:

1. Set up a TFTP server.

   If you do not already have a TFTP server running on your network, see Appendix B, “Setting up a TFTP Server”.

2. Retrieve the latest Intercom firmware from the CyberData website:
   http://www.cyberdata.net/support/voip/intercom.html

3. Unzip the Intercom version file. This file may contain the following:
   - Firmware file: **100-uImage-intcm**
   - Release notes

4. Copy the firmware files to be upgraded to the appropriate TFTP server directory:
   - c:\tftp-root\for Windows
   - /tftpboot/for Linux

5. Log in to the Intercom home page as instructed in Section 2.3.1, "Log in to the Configuration Home Page".

6. Click the **Upgrade Firmware** button to open the **Firmware Upgrade** page. See Figure 2-18.

Figure 2-18. Firmware Upgrade Page

7. Enter the IP address of your TFTP server into the **TFTP Server IP** parameter field.

8. Enter the firmware filename of the file to be uploaded into the **New Filename** parameter field.

   For example, kernel filename "201-image-spk-sip.bin".

9. Click **Upload File**.

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

10. Repeat steps 8 and 9 if you are uploading the **Kernel** and **Application** files.

    For example, **Application** filename "201-romdisk-spk-sip.img".

    Table 2-9 shows the web page items on the **Firmware Upgrade** page.

Table 2-9. Firmware Upgrade Parameters

Web Page Item	Description
System Configuration	Shows the current configuration.
BootLoader	Shows the current boot loader filename.
Firmware	Shows the firmware for partition 1 and 2.
TFTP Server IP	Enter the TFTP Server IP address.
New Filename	Use this field to enter the new file name for the kernel or application firmware file that you are uploading.
	Click on this button to automatically upload the selected firmware and reboot the system.
	Link to the **Network Setup** page.
	Link to the **Intercom Setup** page.
	Link to go to the **SIP Setup** page.
	Link to the **Home** page.
	Click on this button to reboot the system.

2.4.1 Reboot the Intercom

To reboot a Intercom, log in to the web page as instructed in Section 2.3.1, "Log in to the Configuration Home Page".

1. Click **Upgrade Firmware** to open the **Firmware Upgrade** page (Figure 2-19).

Figure 2-19. Reboot System Section

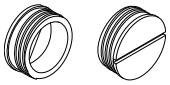
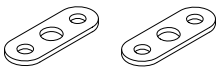
2. Click **Reboot**. A normal restart will occur.

Appendix A: Mounting the Intercom

A.1 Mount the Intercom

Before you mount the Intercom, make sure that you have received all the parts for each Intercom. Refer to Table A-1.

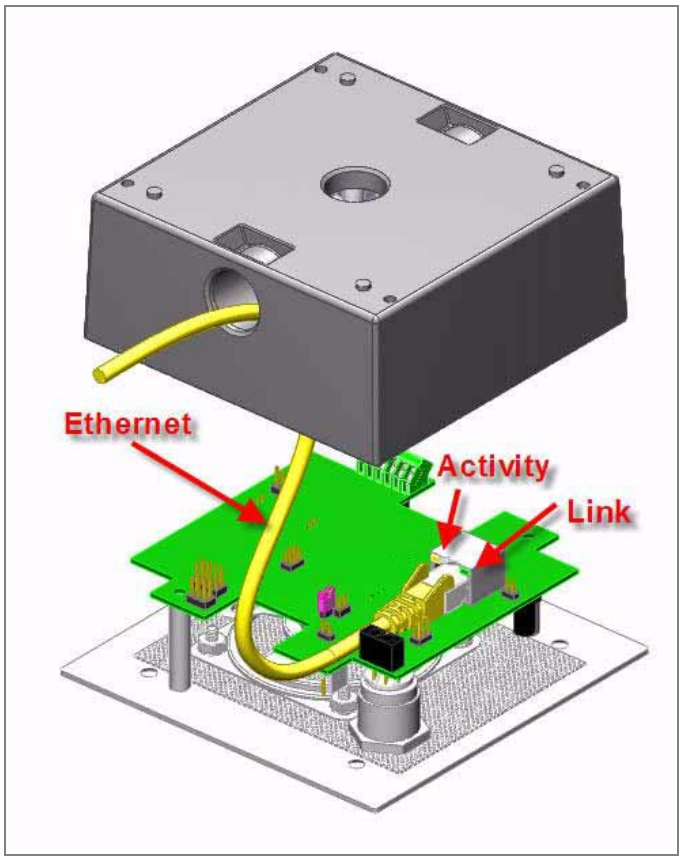
Table A-1. Drop Ceiling Mounting Components (Part of the Accessory Kit)

Quantity	Part Name	Illustration
2	Outlet Box Plugs	
2	Flush Mounting Plate	
2	8-32 x 1/4" Flat Head Phillips Machine Screw	
1	10-24 x 5/16" Pan Head Phillips Machine Screw	

To mount the Intercom:

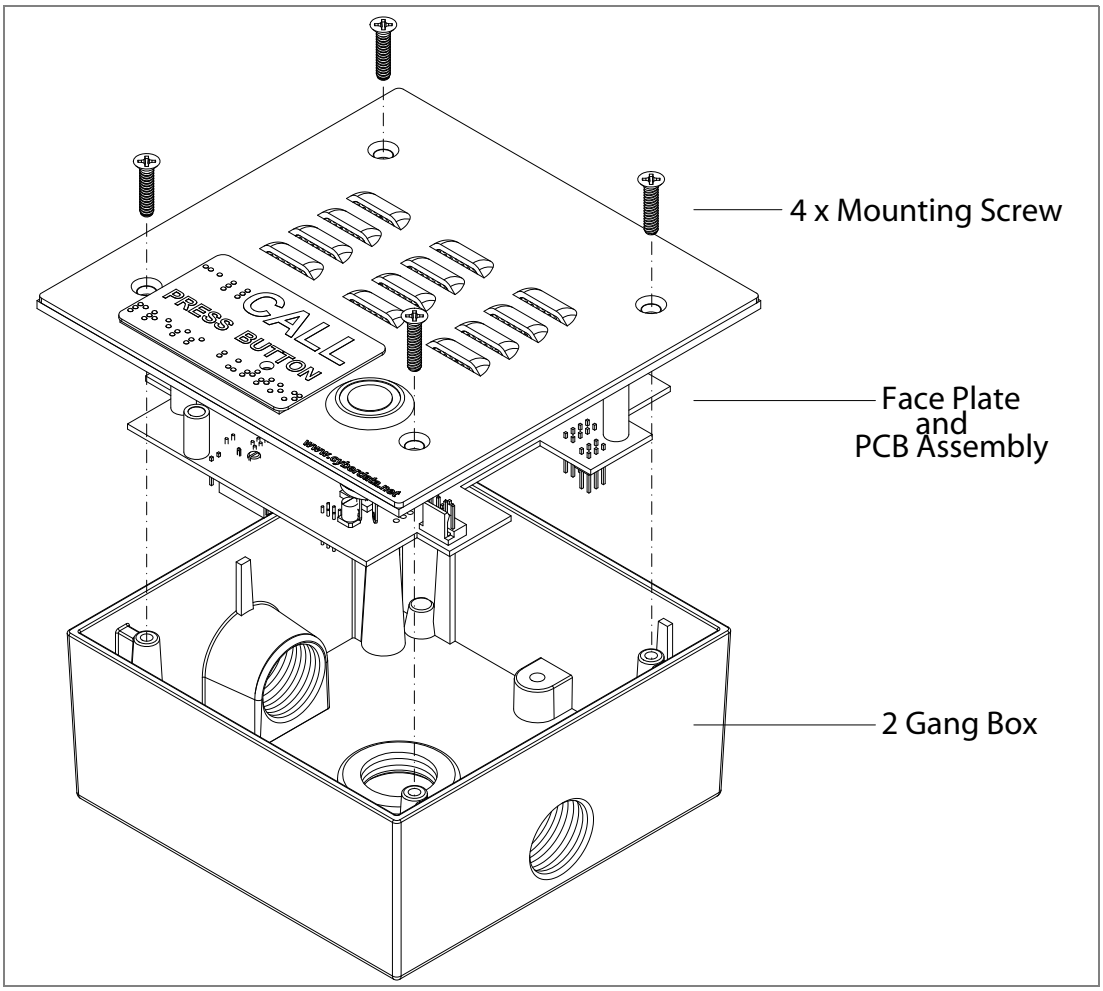
1. Plug the Ethernet cable into the Intercom Assembly (see Figure A-1). Section 2.2.5, "Network Connectivity, and Data Rate" explains how the **Link** and **Status** LEDs work.

Figure A-1. Network Connector Prior to Installation



2. To fasten the Intercom:
   - For wall mounting, use the two **8-32 X 1/4" FLAT HEAD PHILLIPS MACHINE SCREW** and the one **10-24 X 5/16" PAN HEAD PHILLIPS MACHINE SCREW** to secure the Intercom.

Figure A-1. VoIP Intercom Assembly



If the thread on the conduit is longer than 3/8 inch, then a **stop nut** (not supplied) is required. Otherwise, use the **outlet box plug** to plug the exit hole.

Figure A-2. Mounting the VoIP Intercom Assembly

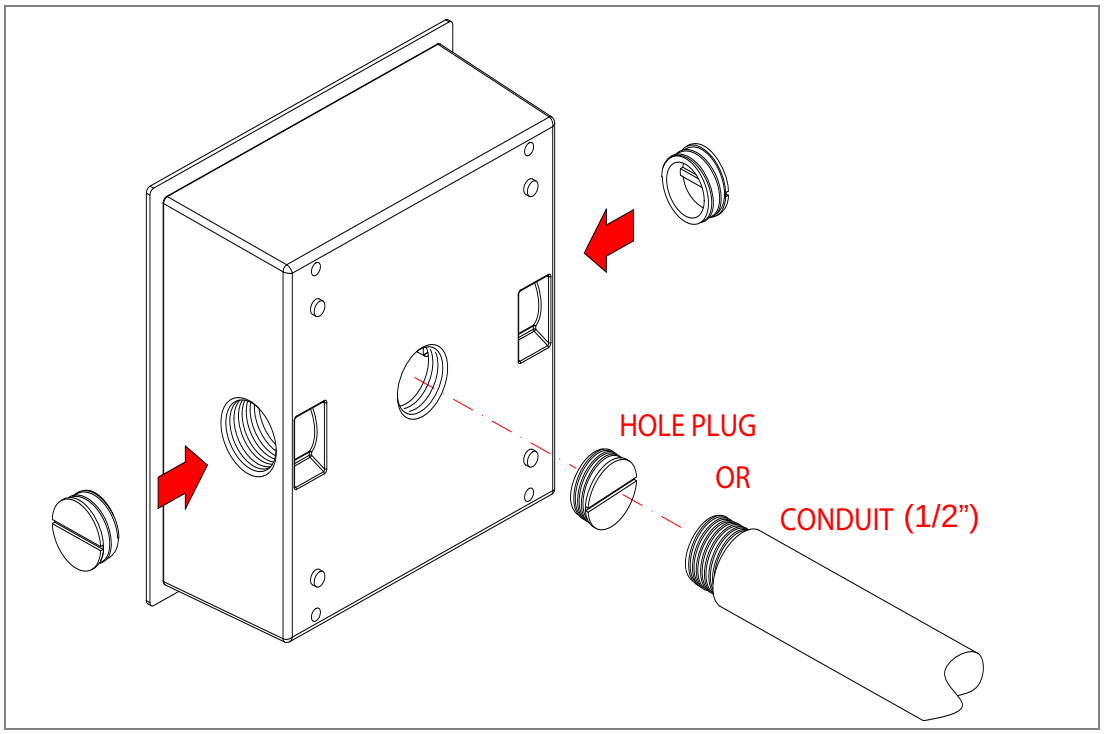


Figure A-3 shows the restrictions of the conduit going into the box.

Figure A-3. Conduit Restrictions

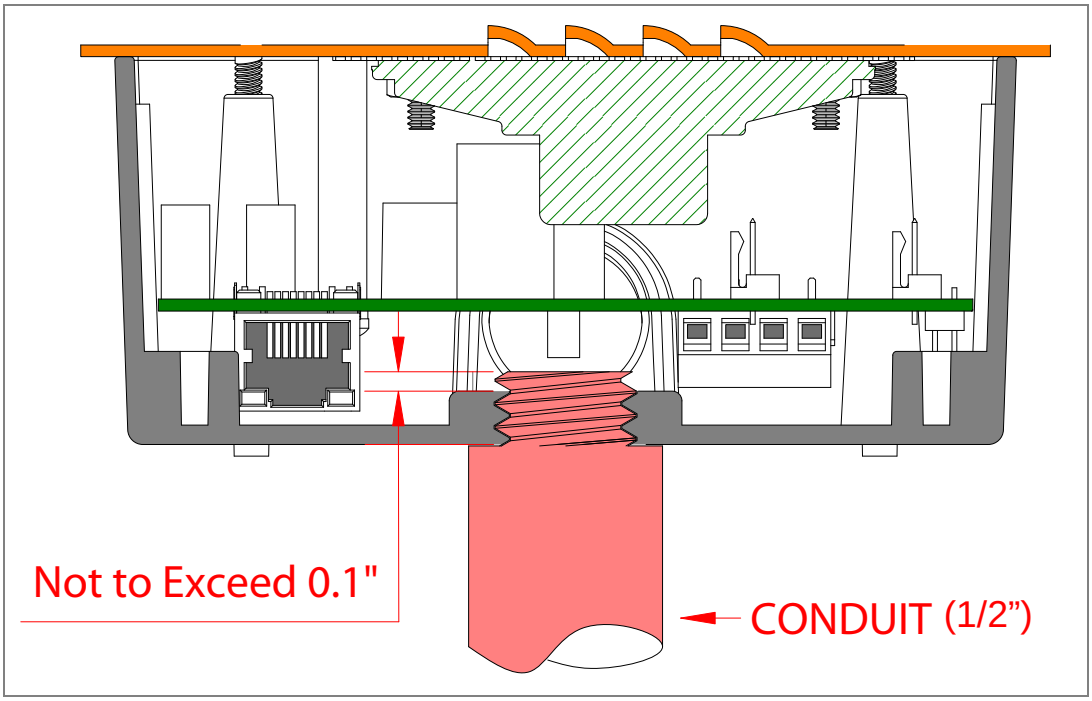
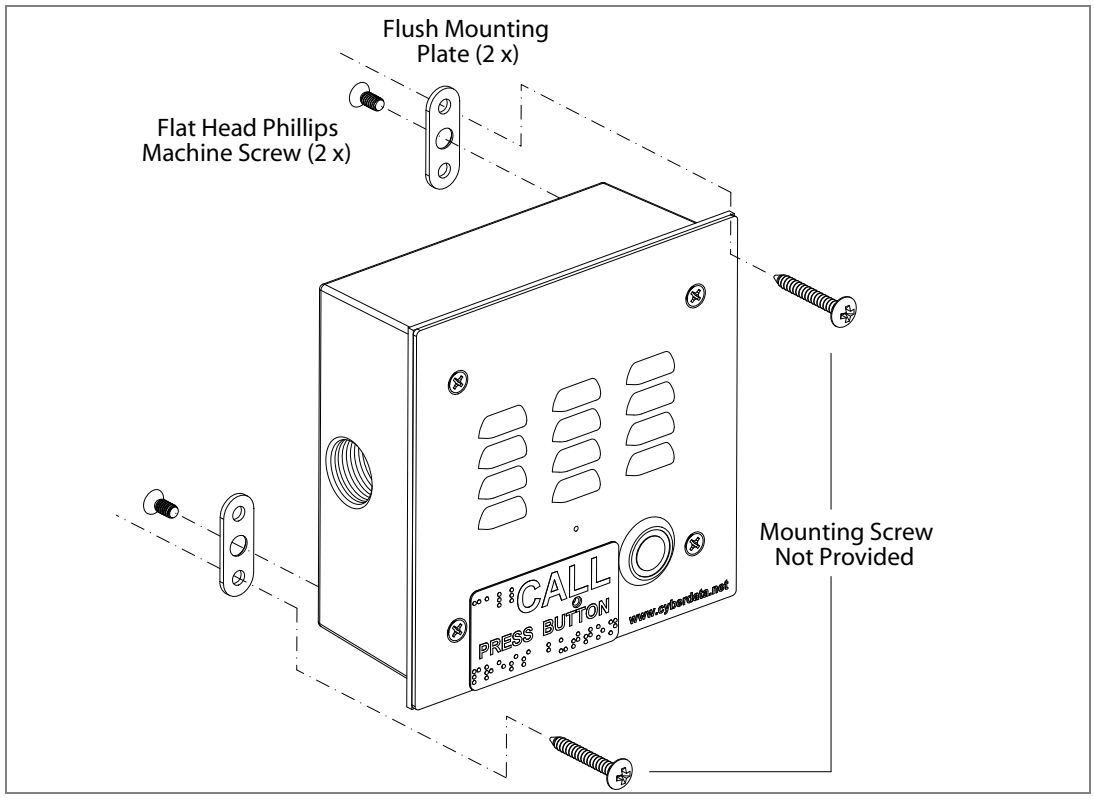


Figure A-4 shows how to properly mount the VoIP Intercom.

Figure A-4. Mounting



Appendix B: Setting up a TFTP Server

B.1 Set up a TFTP Server

Upgrading the VoIP Intercom firmware requires a TFTP server on which you access the Web interface where you can upload the firmware files.

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 at:

`http://www.tucows.com/preview/326445`

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.

B.1.3 In a Solarwinds Server Environment

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

`http://www.cyberdata.net/support/voip/solarwinds.html`

Appendix C: Troubleshooting/Technical Support

C.1 Frequently Asked Questions (FAQ)

Go to the following URL to see CyberData's list of frequently asked questions:

http://www.CyberData.net/support/voip

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 at:

www.CyberData.net—>Support—>Drivers, Utilities & Manuals—>VoIP Products

C.3 Contact Information

Contact	CyberData Corporation 2555 Garden Road 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 Email: support@CyberData.net
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 2555 Garden Road Monterey, CA 93940 Attention: RMA "your RMA number"

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.

If the product is out-of-warranty and fails, a flat rate repair charge of one half the product purchase price will be assessed. Repair costs for products that are in warranty, but damaged by improper modifications or abuse, will be charged at the out-of-warranty rate. Products returned to CyberData, both in and out-of-warranty, are shipped to CyberData at the expense of the customer. Charges for shipping repaired products back to the customer will be paid by CyberData.

Index

Numerics

100 Mbps indicator light 11

A

AC voltages 2, 7
act light 12
activate relay during ring 21
address, configuration login 16
announcing a intercom's IP address 13, 14, 15
asterisk 19
audio encodings 4
auto answer 21
auxiliary relay 21
auxiliary relay wiring diagram 7
auxiliary relay, connecting a device to 7

B

baud rate
    verifying 11

C

changing
    the web access password 20
conduit restrictions 30
configurable parameters 17, 18, 20, 22, 25
configuration
    default IP settings 16
    network 18
    SIP 22
    using Web interface 16
configuration home page 16
CyberData contact information, corporate, sales, tech support, service 35

D

default
    gateway 16
    intercom settings 37
    IP address 14, 16
    subnet mask 14, 16
    username and password 14, 16
    web login username and password 16
default gateway 16, 19
default intercom settings 14
default IP settings 16
default login address 16
DHCP Client 3
DHCP IP addressing 18
dimensions 4
DNS server 19
dual speeds 11

E

ethernet cable 28
expiration time for SIP server lease 23

F

factory default settings 14
firmware upgrades 33

G

green link light 11

H

home page 16
http web-based configuration 3

I

illustration of intercom mounting process 27
installation, typical intercom system 1
intercom configuration
    default IP settings 16
intercom configuration page
    configurable parameters 17, 18, 20, 22, 25
intercom operations, verifying 20
intercom setup 20
IP address 14, 16, 18, 25

IP addressing 18
default setting 14, 16

L

lease, SIP server expiration time 23
link LED 28
link light 11
Linux, setting up a TFTP server on 33
local SIP port 22
log in address 16

M

mounting an intercom 27

N

network activity, verifying 12
network configuration of intercom 18
network rate 4
Network Setup 18

O

orange link light 11
outbound proxy 22

P

packet time 4
part number 4
parts list 5
password
changing for web configuration access 20
for SIP server login 23
login 16
restoring the default 14, 16
port
local SIP 22
remote SIP 22
power requirement 4
product
configuring 16
mounting 27
parts list 5
product features 3
product overview
product features 3
product specifications 4
supported protocols 3
supported SIP servers 4
typical system installation 1
product specifications 4
protocols supported 3

R

reboot 25
registration and expiration, SIP server lease 23
remote SIP port 22
reset test function management switch 13
resetting the IP address to the default 27, 35
restoring factory default settings 14, 37
RJ-45 9
RMA returned materials authorization 35
RTFM jumper 9, 13, 15
RTFM jumper switch 13
RTFM switch 13, 14
RTP/AVP 4

S

server address, SIP 22
setting up a TFTP server 33
setting up an intercom 6
settings, default 14
SIP (session initiation protocol) 3
SIP Configuration 22
SIP configuration
SIP Server 22
SIP registration 23
SIP server 22
SIP servers supported 4
solarwinds 33
speaker output 4
static IP addressing 18
status LED 28
subnet mask 14, 16, 19
supported protocols 3

T

technical support, contact information 35
TFTP server 3, 33

U

unregister, from SIP server 23
user ID
    for SIP server login 23
user ID, SIP 22
username
    changing for web configuration access 20
    default for web configuration access 16
    restoring the default 14, 16

V

verifying
    baud rate 11
    intercom operations 20
    network activity 12
    network connectivity 11

W

warranty 36
web access password 14, 16
web access username 14, 16
web configuration log in address 16
web-based intercom configuration 16
weight 4
Windows, setting up a TFTP server on 33

Y

yellow act light 12
yellow link light 11