



VoIP Singlewire-enabled Ceiling Speaker Operations Guide

Part Number
011102*, RAL 9002, Gray White, Standard
011103, RAL 9003, Signal White, Optional

*Replaces the 011065 number.

Document Part #930320G
for Firmware Version 2.0.9

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

VoIP Singlewire-enabled Ceiling Speaker Operations Guide 930320G

Part

011102*, RAL 9002, Gray White, Standard

011103, RAL 9003, Signal White, Optional

*Replaces the 011065 number.

COPYRIGHT NOTICE:

© 2014, 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.



Technical Support

The fastest way to get technical support for your VoIP product is to submit a VoIP Technical Support form at the following website:
<http://www.cyberdata.net/support/contactsupportvoip.php>

Phone: (831) 373-2601, Ext. 333

Email: support@cyberdata.net

Fax: (831) 373-4193



Company and product information is at www.cyberdata.net.

Revision History

Revision 930320G, released on April 28, 2014, corresponds to firmware version 2.0.9, and has the following changes:

- Adds the following warning to the following sections:
 - [Important Safety Instructions](#)
 - [Section 1.2, "Installation"](#)
 - [Section A.1, "Important Safety Instructions"](#)
- Warning Text: "The PoE connector is intended for intra-building connections only and does not route to the outside plant."

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.

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.

14. **WARNING: The Singlewire-enabled Speaker enclosure is not rated for any AC voltages!**

 GENERAL ALERT	Warning <i>Electrical Hazard:</i> This product should be installed by a licensed electrician according to all local electrical and building codes.
 GENERAL ALERT	Warning <i>Electrical Hazard:</i> To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.
 GENERAL ALERT	Warning The PoE connector is intended for intra-building connections only and does not route to the outside plant.

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	Megabytes per Second.
NTP	Network Time Protocol
PBX	Private Branch Exchange
PoE	Power over Ethernet (as per IEEE 802.3af standard)
RTP	Real-time Transport Protocol
RTFM	Reset Test Function Management
SIP	Session Initiated Protocol
Talkback	Two-way communication enabled
TFTP	Trivial File Transfer Protocol
u-law	A companding algorithm, primarily used in the digital telecommunication
UC	Unified Communications
VoIP	Voice over Internet Protocol

Contents

Chapter 1 Product Overview	1
1.1 How to Identify This Product	1
1.2 Installation	2
1.3 Product Features	3
1.4 Supported Protocols	3
1.5 Product Specifications	4
1.6 Dimensions	4
 Chapter 2 Installing the Singlewire-enabled Speaker	 5
2.1 Parts List	5
2.2 Set Up and Test the Speaker	6
2.2.1 Connect Power to the Speaker	6
2.2.2 Installation Options	9
2.2.3 Confirm that the Speaker is Operational and Linked to the Network	11
2.2.4 Confirm the IP Address, Test the Audio, and Check the Volume	12
2.2.5 Adjust the Volume	13
2.2.6 How to Set the Factory Default Settings	14
2.3 Configure the Speaker Parameters	15
2.3.1 Singlewire-enabled Speaker Web Page Navigation	16
2.3.2 Log in to the Configuration Home Page	17
2.3.3 Configure the Clock Parameters	19
2.3.4 Updating the Firmware	24
2.3.5 Reboot the Singlewire-enabled Speaker	26
2.4 Identifying and Testing a Ceiling Speaker when Using InformaCast 4.0 or Later	27
 Appendix A Mounting the Speaker	 33
A.1 Important Safety Instructions	33
A.2 Mount the Speaker	34
 Appendix B Setting up a TFTP Server	 37
B.1 Set up a TFTP Server	37
B.1.1 In a LINUX Environment	37
B.1.2 In a Windows Environment	37
 Appendix C Troubleshooting/Technical Support	 38
C.1 Frequently Asked Questions (FAQ)	38
C.2 Documentation	38
C.3 Contact Information	39
C.4 Warranty	40
C.4.1 Warranty & RMA Returns within the United States	40
C.4.2 Warranty & RMA Returns outside of the United States	40
C.4.3 Spare in the Air Policy	41
C.4.4 Return and Restocking Policy	41
C.4.5 Warranty and RMA Returns Page	41
 Index	 42

1 Product Overview

The CyberData Singlewire-enabled Speaker is a Power-over-Ethernet (PoE 802.3af) and Voice-over-IP (VoIP) public address loudspeaker that easily connects into existing local area networks with a single CAT5 cable connection. The speaker is compatible with Singlewire's InformaCast software. Its small footprint and low height allows the speaker to be discretely mounted almost anywhere.

Note The version of InformaCast needs to be 4.0 or higher.

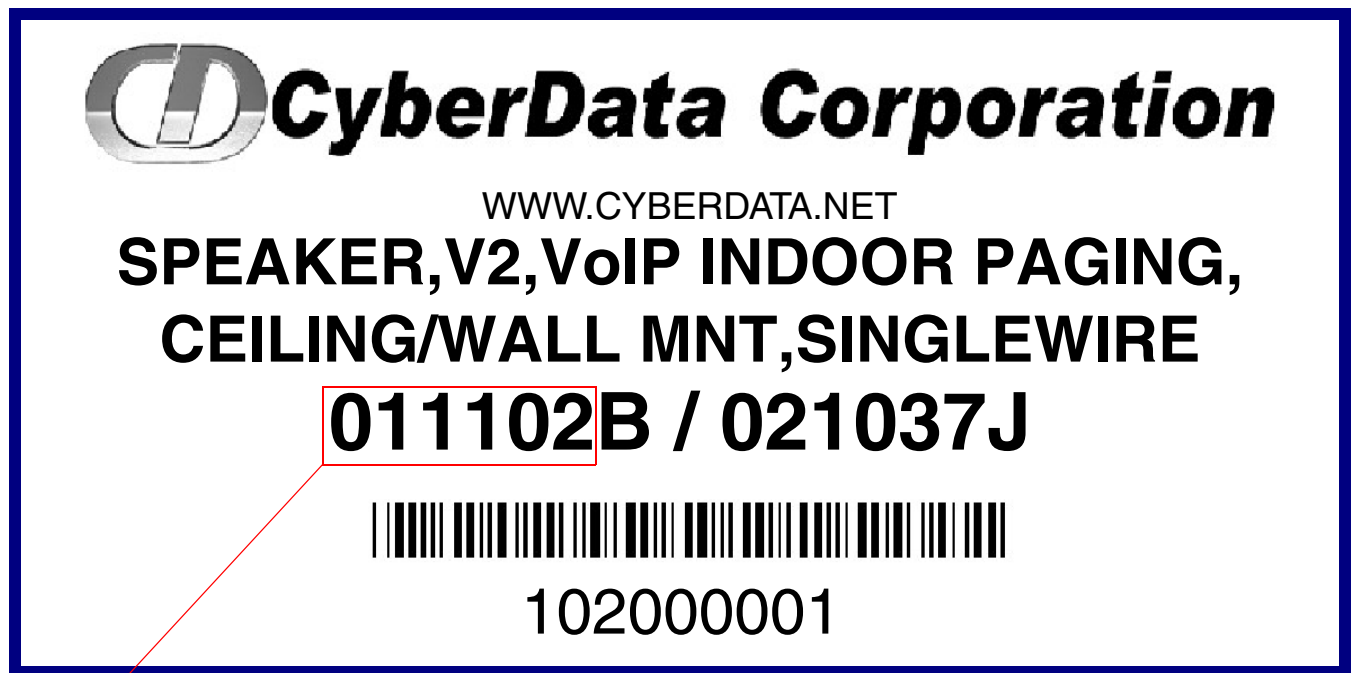
1.1 How to Identify This Product

To identify the VoIP Singlewire-enabled Ceiling Speaker, look for a model number label similar to the one shown in [Figure 1-1](#). The model number on the label should be one of the following:

- **011102***, RAL 9002, Gray White, Standard Color
- **011103**, RAL 9003, Signal White, Optional Color

*Replaces 011065.

Figure 1-1. Model Number Label

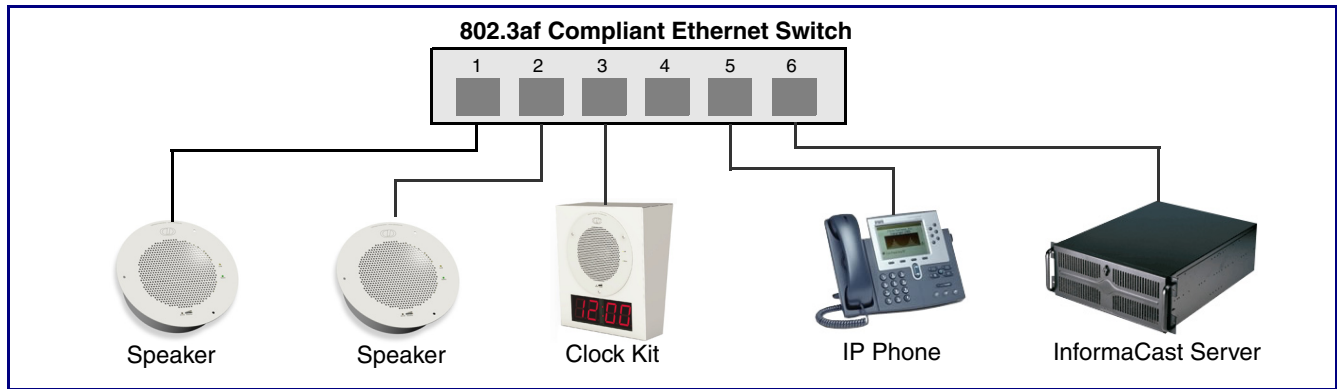


Model number

1.2 Installation

Figure 1-2 illustrates a typical configurations for the Singlewire-enabled Speaker.





Figure 1-2. Typical Installation



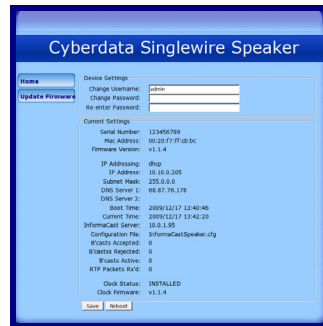
See the following sections for other installation options:

- [Section 2.2.1.3, "Running the Singlewire-enabled Speaker with Auxiliary Power"](#)
- [Section 2.2.2.1, "Singlewire-enabled Speaker with Extra Speaker Connection"](#)
- [Section 2.2.2.2, "Singlewire-enabled Speaker with Line Out"](#)

Note Prior to installation, create a plan for the locations of your speakers.

 GENERAL ALERT	<p>Warning</p> <p><i>Electrical Hazard:</i> The Singlewire-enabled Speaker enclosure is not rated for any AC voltages.</p>
 GENERAL ALERT	<p>Warning</p> <p><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</p> <p><i>Electrical Hazard:</i> To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.</p>
 GENERAL ALERT	<p>Warning</p> <p>The PoE connector is intended for intra-building connections only and does not route to the outside plant.</p>

1.3 Product Features



- *Web-based firmware upgradeable*
- *Small footprint*
- *High efficiency speaker driver*
- *PoE 802.3af Enabled (Powered-over-Ethernet)*
- *Network and external speaker volume control*
- *Auto detect for CyberData Clock kit*

1.4 Supported Protocols

The Singlewire-enabled Speaker supports:

- Multicast
- DHCP Client
Dynamically assigns IP addresses in addition to the option to use static addressing.
- InformaCast Version 4.0 and greater
- TFTP Client
Facilitates Web-based firmware upgrades of the latest speaker capabilities.
- RTP
- Audio Encodings
PCMU (G.711 mu-law)
PCMA (G.711 A-law)
Packet Time 20 ms

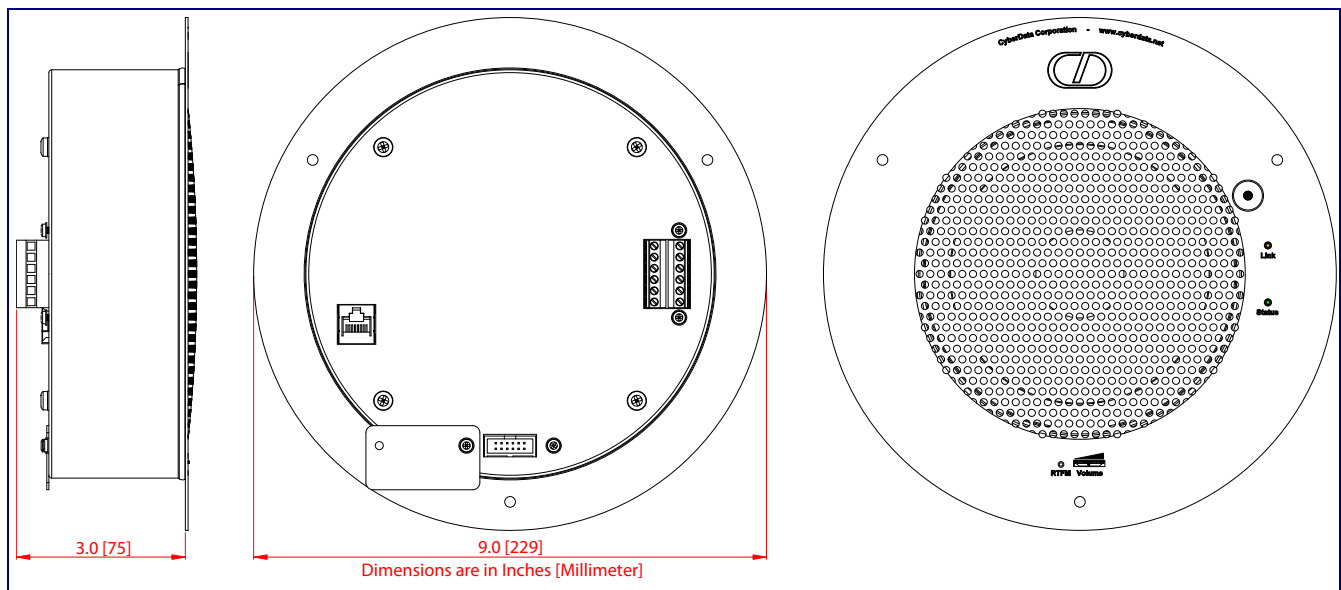
1.5 Product Specifications

Category	Specification
Sensitivity	96dB/1W/1M S.P. Level
Output	10 Watts Peak Power
Operating temperature	-30 to 55 C (-22 to 131 F)
Port baud rate	10/100 Mbps
Protocol	Singlewire InformaCast 4.0 and higher
Power Input	PoE 802.3af (as per IEEE 802.3af standard from a UL listed power source)
Payload types	G711, A-law and μ -law
Warranty	2 years limited
Dimensions	9" x 2.4"
Weight	2.8 lbs./shipping weight of 3.8 lbs. (1.3 kg/shipping weight of 1.7 kg)
Part number	011102

1.6 Dimensions

Figure 1-3 shows the dimensions for the Singlewire-enabled Speaker.

Figure 1-3. Dimensions



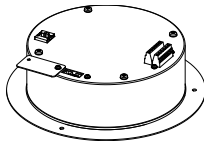
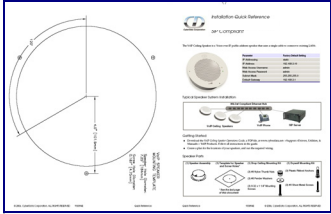

2 Installing the Singlewire-enabled Speaker

2.1 Parts List

Table 2-1 illustrates the parts for each speaker and includes kits for the drop ceiling and drywall mounting.

Note The installation template for the Singlewire-enabled Speaker is located on the *Installation Quick Reference Guide* that is included in the packaging with each speaker.

Table 2-1. Parts

Quantity	Part Name	Illustration
1	Singlewire-enabled Speaker Assembly	
1	Installation Quick Reference Guide	
1	Speaker Mounting Accessory Kit (Part #070054A)	

2.2 Set Up and Test the Speaker

Set up and configure each speaker *before* you mount it.

CyberData delivers each speaker with the following factory default values:

Table 2-2. Factory Network Default Settings—Default of Network

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.

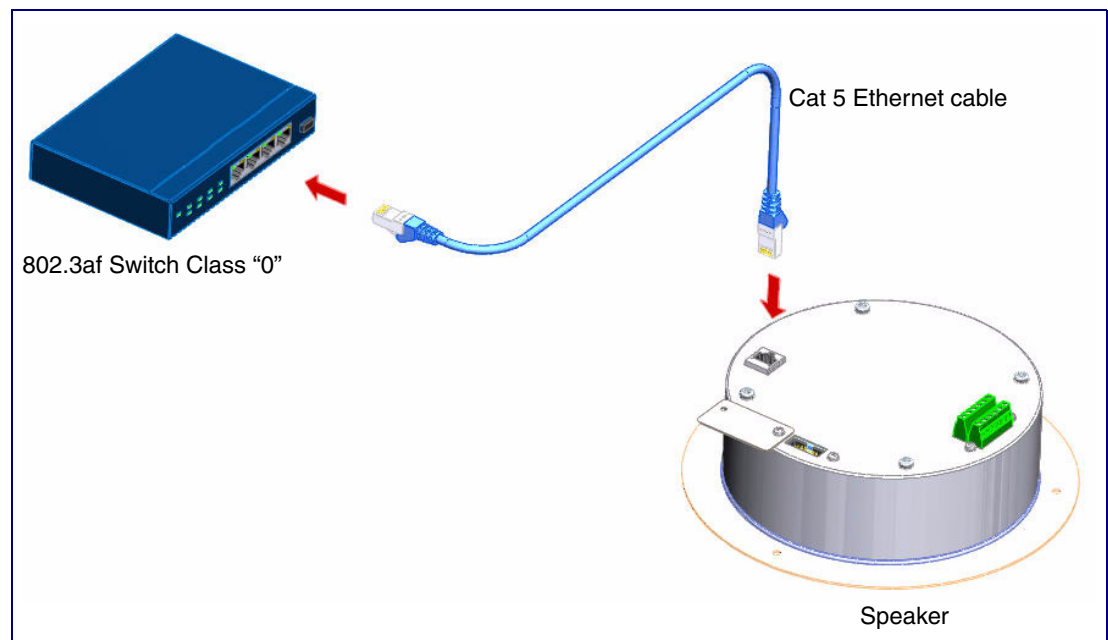
2.2.1 Connect Power to the Speaker

Figure 2-4 through Figure 2-6 illustrates how to connect power to the Singlewire-enabled Speaker.

2.2.1.1 Singlewire-enabled Speaker to a 802.3af Compliant PoE Switch

Figure 2-4 illustrates how to connect the Singlewire-enabled Speaker to a 802.3af compliant PoE switch via a Cat 5 Ethernet cable.

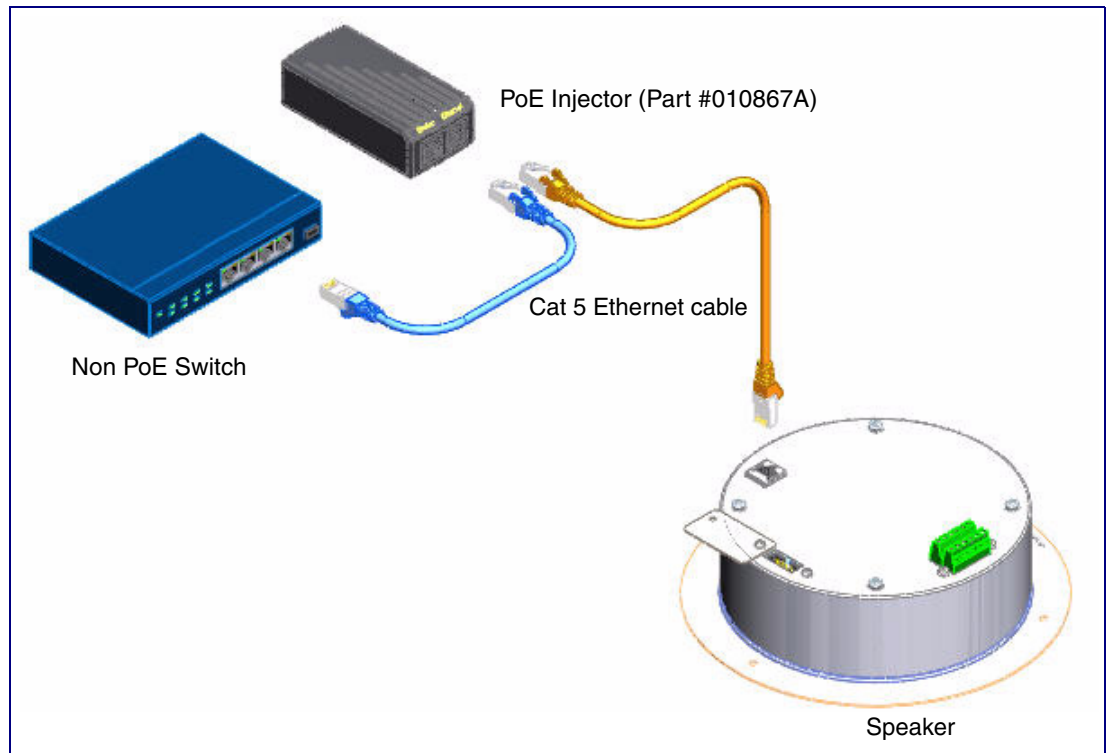
Figure 2-4. Singlewire-enabled Speaker to a 802.3af Compliant PoE Switch



2.2.1.2 Singlewire-enabled Speaker (with PoE Injector) to a 802.3af Compliant PoE Switch

In [Figure 2-5](#), if a PoE switch is not available, you will need a PoE Injector, part #010867A (ordered separately). A PoE Injector is a power supply solution for those who have a standard Non PoE Switch.

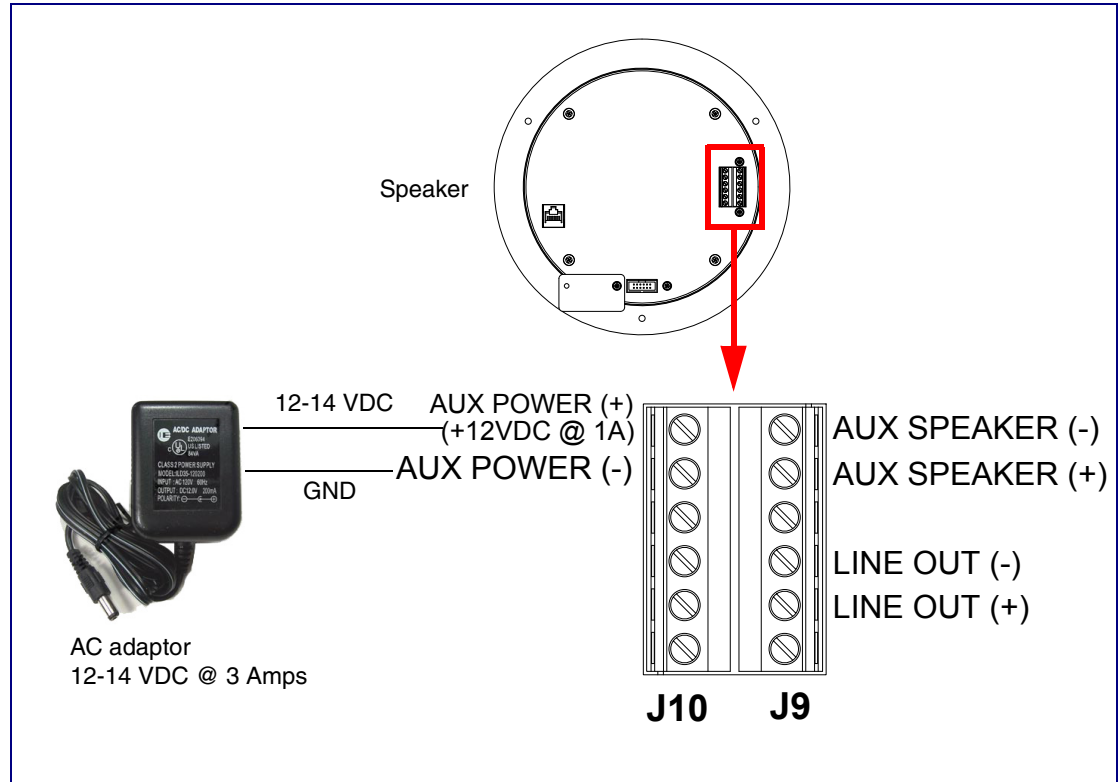
Figure 2-5. Singlewire-enabled Speaker Speaker (with PoE Injector) to a Non PoE Switch



2.2.1.3 Running the Singlewire-enabled Speaker with Auxiliary Power

In [Figure 2-6](#), the power for the Singlewire-enabled Speaker can either come from an 802.3af Network connection or from an external source.

Figure 2-6. Running the V2 Speaker with Auxiliary Power



2.2.2 Installation Options

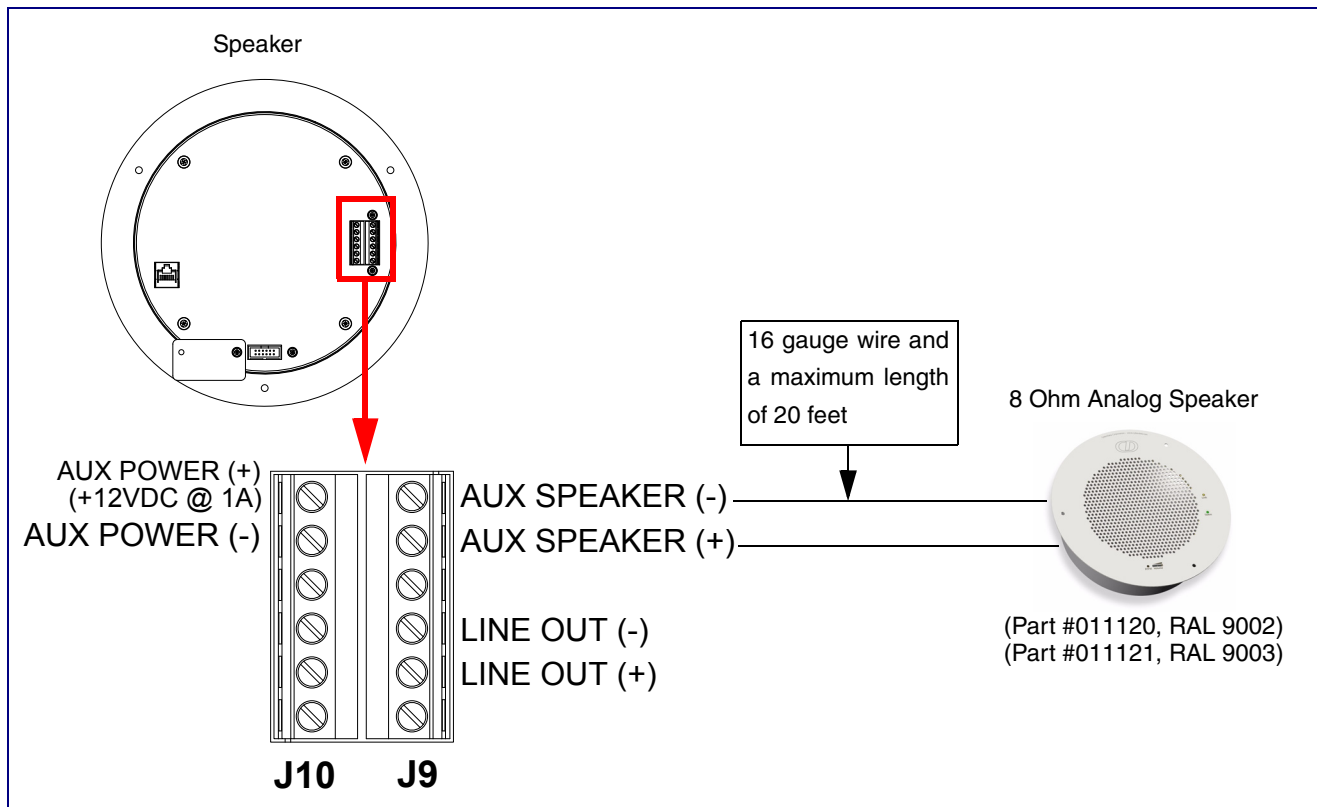
Figure 2-7 through Figure 2-8 illustrates various installation options for the Singlewire-enabled Speaker.

2.2.2.1 Singlewire-enabled Speaker with Extra Speaker Connection

In Figure 2-7, the Singlewire-enabled Speaker supports an amplified audio output for a second analog speaker. While the total speaker wattage is the same, by connecting a low cost analog speaker, additional coverage can be realized.

Speaker Setup When using the second speaker connection, the digital volume control needs to be set to less than level 8 while making pages. Some adjustment of this value may be required depending on the specific PoE switch.

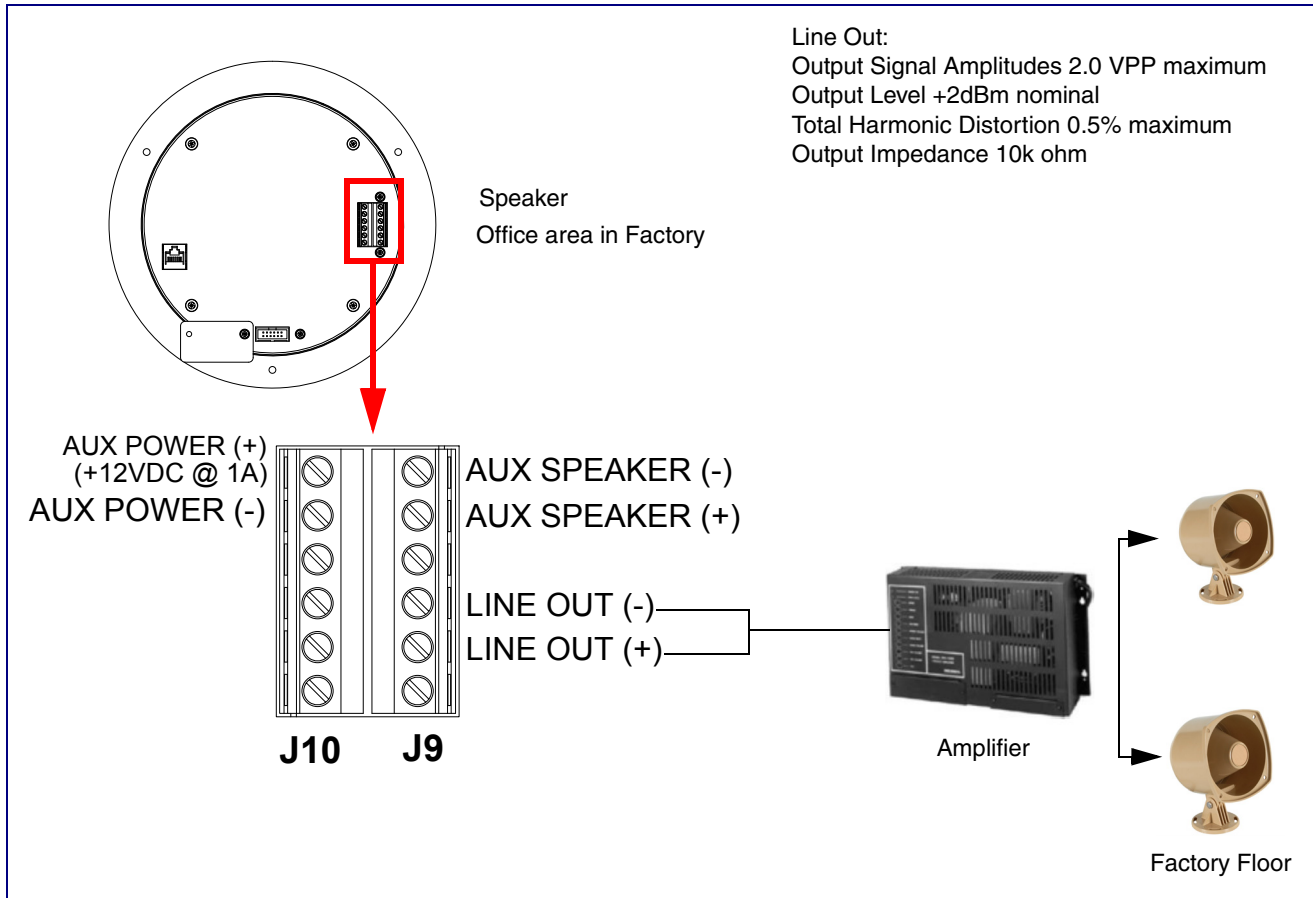
Figure 2-7. Singlewire-enabled Speaker with Extra Speaker Connection



2.2.2.2 Singlewire-enabled Speaker with Line Out

In [Figure 2-8](#), for areas that require more speaker volume, the Singlewire-enabled Speaker can be connected directly to an auxiliary amplifier to drive additional horns or speakers. This is done through the line-out connection.

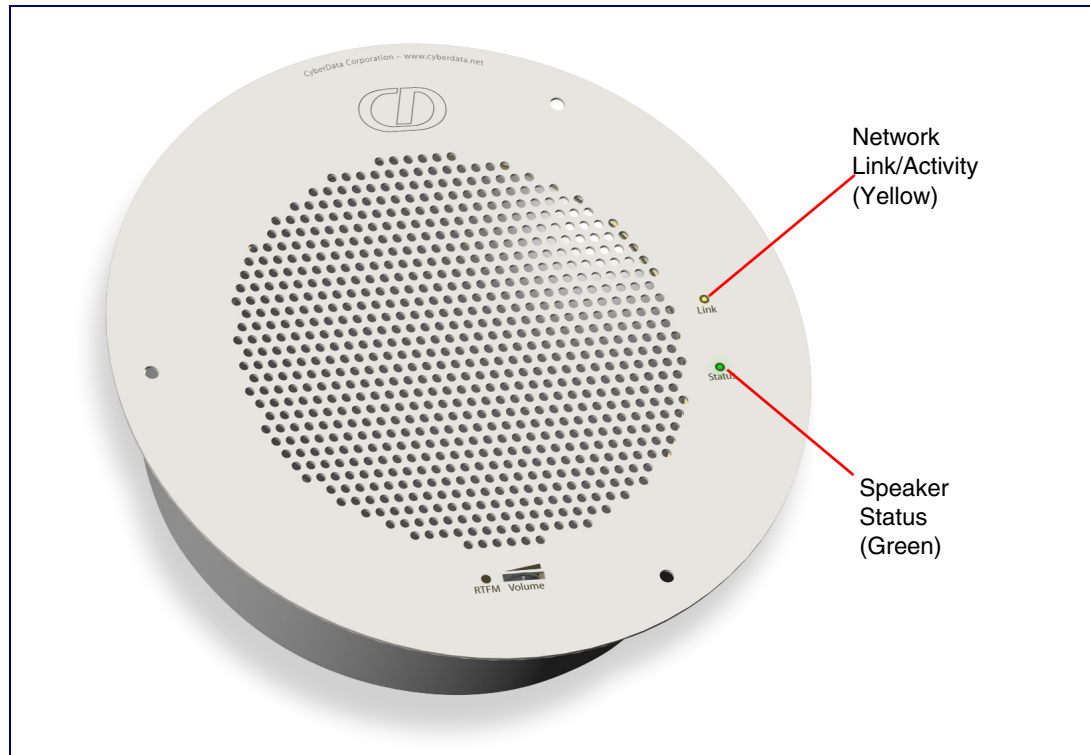
Figure 2-8. Singlewire-enabled Speaker with Line Out



2.2.3 Confirm that the Speaker is Operational and Linked to the Network

After connecting the speaker to the 802.3af compliant Ethernet hub, the LEDs on the speaker face confirm that the speaker is operational and linked to the network.

Figure 2-9. Status and Activity LEDs



2.2.3.1 Status LED

After supplying power to the speaker:

1. The green power/status LED and the yellow network LED comes on immediately.
2. After about 23 seconds with a static IP address (or 27 seconds if the board is set to use DHCP), the green LED will blink twice to indicate that the board is fully booted.

Note If the board is set to use DHCP and there is not a DHCP server available on the network, it will try five times with a three second delay between tries and eventually fall back to the programmed static IP address (by default 10.10.10.10). This process will take approximately 80 seconds.

2.2.3.2 Link LED

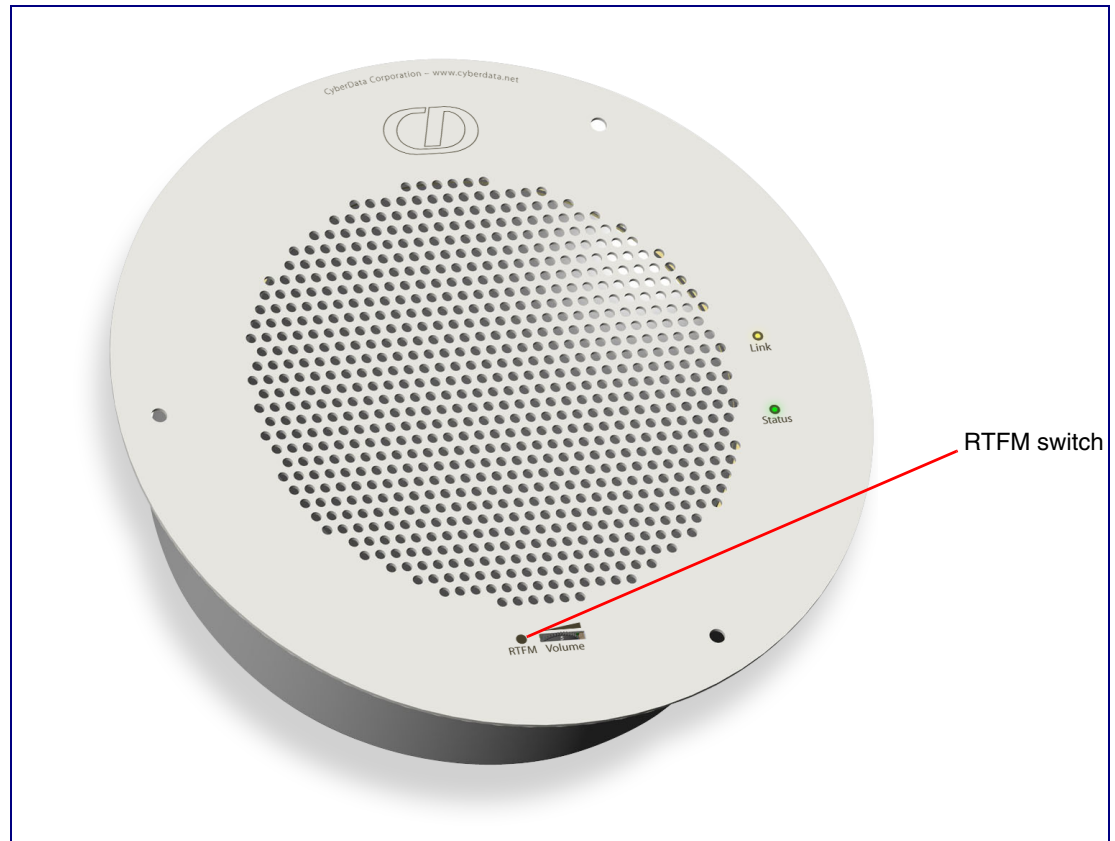
- The **Link** LED is illuminated when the network link to the speaker is established.
- The **Link** LED blinks to indicate network traffic.

2.2.4 Confirm the IP Address, Test the Audio, and Check the Volume

2.2.4.1 Reset Test Function Management (RTFM) Switch

When the speaker is operational and linked to the network, use the Reset Test Function Management (RTFM) switch (Figure 2-10) on the speaker face to announce and confirm the speaker's IP Address, test that the audio is working, and check the volume.

Figure 2-10. RTFM Switch



To announce a speaker's current IP address:

1. Press and release the RTFM switch within a five second window.
2. When you hear the IP address announcement, check the speaker volume.

Note The speaker 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).

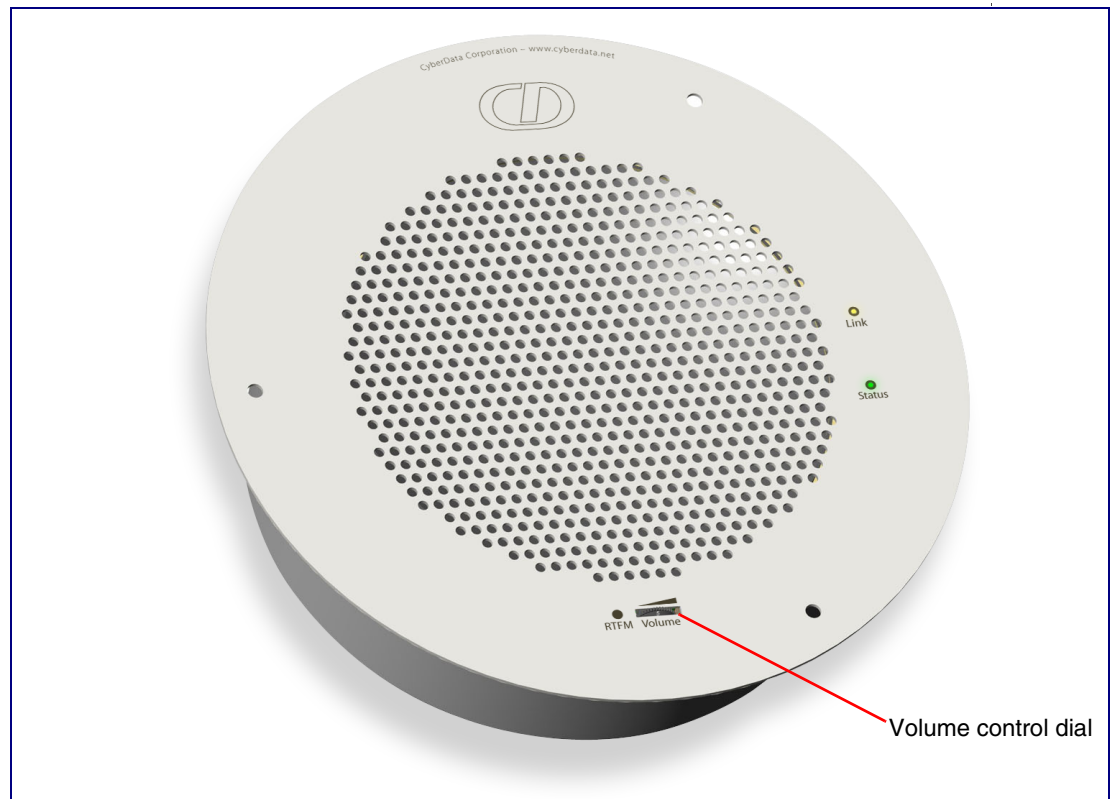
Note Pressing and holding the RTFM switch for longer than five seconds will restore the speaker to the factory default settings.

2.2.5 Adjust the Volume

To adjust the speaker volume, turn the **Volume** control dial (Figure 2-11) on the speaker face.

Note The Singlewire-enabled Speaker has two volume controls: **Networked-based** (as controlled by the Singlewire protocol from InformaCast) and **External** (volume knob).

Figure 2-11. Volume Control

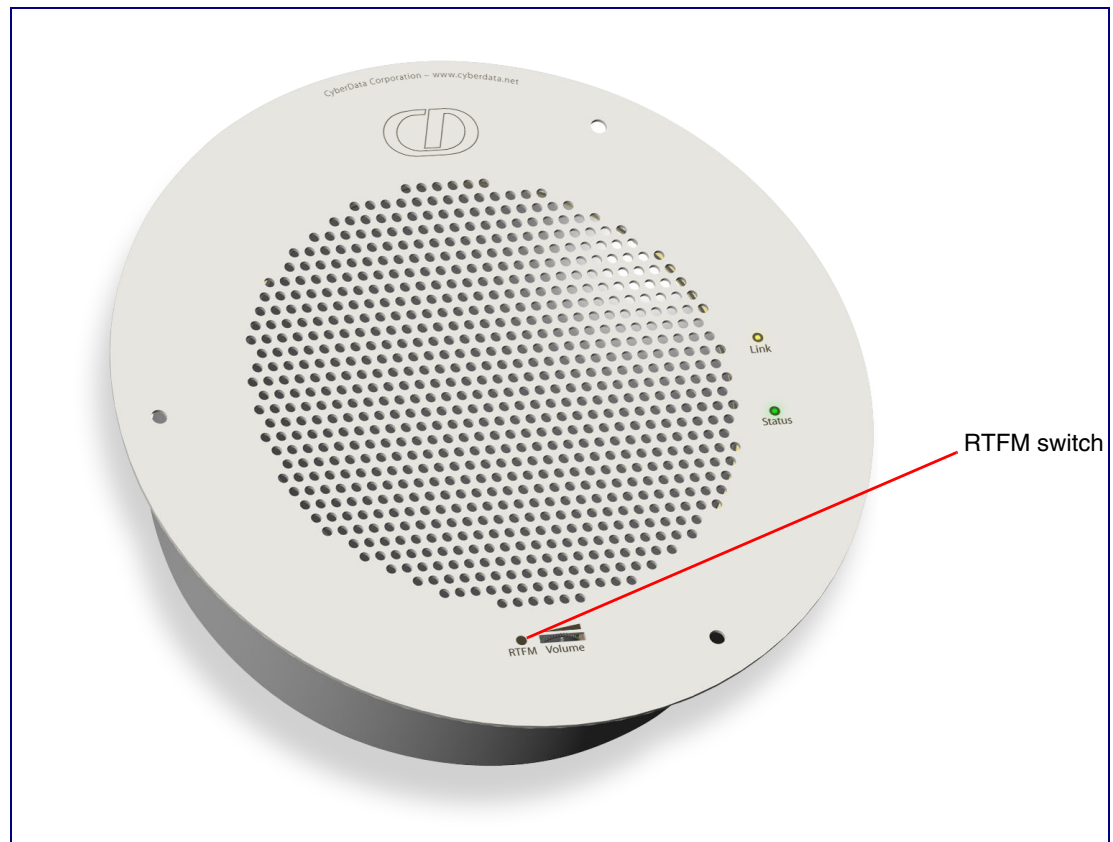


2.2.6 How to Set the Factory Default Settings

2.2.6.1 RTFM Switch

When the speaker is operational and linked to the network, use the Reset Test Function Management (RTFM) switch (Figure 2-12) on the speaker face to set the factory default settings.

Figure 2-12. RTFM Switch



To set the factory default settings:

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

Note The speaker 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).

2.3 Configure the Speaker Parameters

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

Configuration of the speaker is taken care of by the InformaCast server. If an InformaCast server can not be found, the speaker will return to factory defaults as shown in [Table 2-3](#).

Table 2-3. Factory Network Default Settings—Default of Network




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 Singlewire-enabled Speaker Web Page Navigation

Table 2-4 shows the navigation buttons that you will see on every Singlewire-enabled Speaker web page.

Table 2-4. V2 Paging Amplifier Web Page Navigation

Web Page Item	Description
	Link to the Home page.
	Link to the Clock Configuration page. ^a
	Link to the Update Firmware page.

a. This page is used only if the CyberData Clock Kit (part number 011023 [wall-mounted version] or 011024 [flush-mounted version]) is installed.

2.3.2 Log in to the Configuration Home Page

1. Open your browser to the Singlewire-enabled Speaker IP address. This can be found within the InformaCast Server Test Menu.

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 Singlewire-enabled Speaker.

2. When prompted, use the following default **Web Access Username** and **Web Access Password** to access the **Home Page** (Figure 2-13):

Web Access Username: **admin**

Web Access Password: **admin**

Figure 2-13. Home Page

CyberData Singlewire Speaker

Home
Clock Config
Update Firmware

Device Settings

Change Username:
 Change Password:
 Re-enter Password:

Current Settings

Serial Number: 102000617
 Mac Address: 00:20:f7:02:07:58
 Firmware Version: v2.0.9

IP Addressing: dhcp
 IP Address: 10.10.1.176
 Subnet Mask: 255.0.0.0
 DNS Server 1: 10.20.20.20
 DNS Server 2:
 Boot Time: 2013/07/15 10:30:11
 Current Time: 2013/07/15 10:32:07
 InformaCast Server: 10.0.1.95
 Configuration File: InformaCastSpeaker.cfg
 B'casts Accepted: 0
 B'castss Rejected: 0
 B'casts Active: 0
 RTP Packets Rx'd: 0

Clock Status: INSTALLED
 Clock Firmware: Ver=1.37

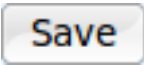
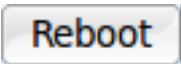
Miscellaneous Settings

Beep on Initialization: ☒ Yes ☐ No
 Disable Volume Control Dial: ☐

* You need to reboot for changes to take effect

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 Settings	
Change Username	Type in this field to change the username (25 character limit).
Change Password	Type in this field to change the password (19 character limit).
Re-enter Password	Type the password again in this field to confirm the new password (19 character limit).
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.
DNS Server 1	Shows the current DNS Server 1 address.
DNS Server 2	Shows the current DNS Server 2 address.
Boot Time	Shows the boot time.
Current Time	Shows the current time.
InformaCast Server	Shows the InformaCast Server IP address.
Configuration File	Shows the configuration file.
B'casts Accepted	Shows the number of B'casts accepted.
B'casts Rejected	Shows the number of B'casts rejected.
B'casts Rejected	Shows the number of active B'casts.
RTP Packets Rx'd	Shows the number of RTP packets Rx'd.
Clock Status	Shows the current clock status.
Clock Firmware	Shows the current clock firmware version.
Miscellaneous Settings	
Beep on Initialization	Select either Yes or No to indicate if you want to hear a beep when the unit is powered up.
Disable Volume Control Dial	When selected, the volume control dial will be disabled.
	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 Clock Parameters

Click the **Clock Config** button to open the **Clock Configuration** page.
See [Figure 2-14](#).

Note The **Clock Configuration** page is always visible. If a clock is not installed, the **Clock Status** will indicate **NOT INSTALLED**. Otherwise it shows **INSTALLED**.

Figure 2-14. Clock Configuration Page

CyberData Singlewire Speaker

Home **Clock Configuration**

Clock Config Clock Status: INSTALLED
Clock Firmware: Ver=1.37

Update Firmware

Clock Settings

Clock Brightness (0-14):

Use Ambient Light Sensor: ☒

Clock Colon Type: ☐ Off ☒ On ☐ Blink

Clock Time Format: ☒ 12 Hour ☐ 24 Hour

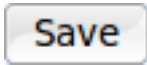
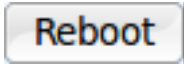
Current Time

Current Time in 24 hour format (HHMMSS): 103048

* You need to reboot for changes to take effect

Table 2-6 shows the web page items on the **Clock Configuration** page.

Table 2-6. NTP Server and Clock Configuration

Web Page Item	Description
Clock Status	Displays the current clock status.
Clock Firmware	Displays the current clock firmware version.
Clock Settings	
Clock Brightness (0-14)	Allows you to select the clock brightness level (0-14) (2 character limit)
Use Ambient Light Sensor	Enables or disables the ambient light sensor.
Clock Colon Type	Allows you to select the clock colon type (Off , On , or Blink)
Clock Time Format	Allows you to select the clock format (12 or 24 hour)
Current Time	
Current Time in 24 hour format (HHMMSS)	Allows you to input the current time in the 24 hour format. (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.

2.3.3.1 Time Zone Strings

The posix time zone string tells the internal date and time utilities how to handle daylight savings time for different time zones. [Table 2-7](#) shows some common strings.

Table 2-7. Common Time Zone Strings

Time Zone	Time Zone String
US Pacific time	PST8PDT,M3.2.0/2:00:00,M11.1.0/2:00:00
US Mountain time	MST7MDT,M3.2.0/2:00:00,M11.1.0/2:00:00
US Eastern Time	EST5EDT,M3.2.0/2:00:00,M11.1.0/2:00:00
Phoenix Arizona ^a	MST7
US Central Time	CST6DST,M3.2.0/2:00:00,M11.1.0/2:00:00

a. Phoenix, Arizona does not use daylight savings time.

[Table 2-8](#) shows a breakdown of the parts that constitute the following time zone string:

- ***CST6DST,M3.2.0/2:00:00,M11.1.0/2:00:00***

Table 2-8. Time Zone String Parts

Time Zone String Part	Meaning
CST6CDT	The time zone offset from GMT and three character identifiers for the time zone.
CST	Central Standard Time
6	The (hour) offset from GMT/UTC
CDT	Central Daylight Time
M3.2.0/2:00:00	The date and time when daylight savings begins.
M3	The third month (March)
.2	The 2nd occurrence of the day (next item) in the month
.0	Sunday
/2:00:00	Time of day to change
M11.1.0/2:00:00	The date and time when daylight savings ends.
M11	The eleventh month (November)
.1	The 1st occurrence of the day (next item) in the month
.0	Sunday
/2:00:00	Time of day to change

Time Zone String
Examples

Table 2-9 has some more examples of time zone strings.

Table 2-9. Time Zone String Examples

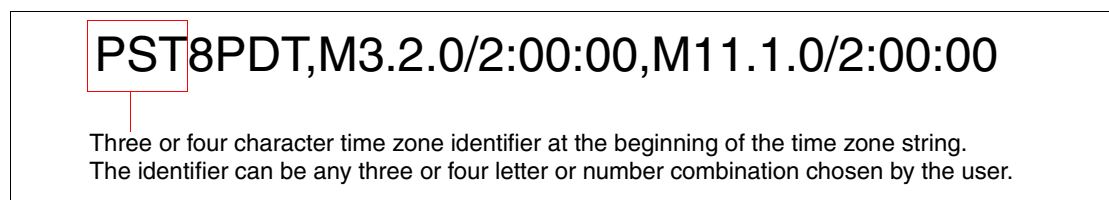
Time Zone	Time Zone String
Tokyo ^a	IST-9
Berlin ^b	CET-1MET,M3.5.0/1:00,M10.5.0/1:00

a. Tokyo does not use daylight savings time.

b. For Berlin, daylight savings time starts on the last Sunday in March at 01:00 UTC, and ends on the last Sunday in October at 01:00 UTC, and is one hour ahead of UTC.

Time Zone Identifier A user-definable three or four character time zone identifier (such as PST, EDT, IST, MUT, etc) is needed at the beginning of the posix time zone string to properly set the time. However, the specific letters or numbers used for the time zone identifier are not important and can be any three or four letter or number combination that is chosen by the user. However, the time zone identifier cannot be blank.

Figure 2-15. Three or Four Character Time Zone Identifier



You can also use the following URL when a certain time zone applies daylight savings time:

<http://www.timeanddate.com/time/dst/2011.html>

World GMT Table

Table 2-10 has information about the GMT time in various time zones.

Table 2-10. World GMT Table

Time Zone	City or Area Zone Crosses
GMT-12	Eniwetok
GMT-11	Samoa
GMT-10	Hawaii
GMT-9	Alaska
GMT-8	PST, Pacific US
GMT-7	MST, Mountain US
GMT-6	CST, Central US
GMT-5	EST, Eastern US
GMT-4	Atlantic, Canada
GMT-3	Brazilia, Buenos Aries
GMT-2	Mid-Atlantic
GMT-1	Cape Verdes

Table 2-10. World GMT Table (continued)

Time Zone	City or Area Zone Crosses
GMT	Greenwich Mean Time, Dublin
GMT+1	Berlin, Rome
GMT+2	Israel, Cairo
GMT+3	Moscow, Kuwait
GMT+4	Abu Dhabi, Muscat
GMT+5	Islamabad, Karachi
GMT+6	Almaty, Dhaka
GMT+7	Bangkok, Jakarta
GMT+8	Hong Kong, Beijing
GMT+9	Tokyo, Osaka
GMT+10	Sydney, Melbourne, Guam
GMT+11	Magadan, Solomon Is.
GMT+12	Fiji, Wellington, Auckland

2.3.4 Updating the Firmware

Note Updating from firmware versions earlier than 2.0.0 require a factory reset after the update has been completed. This is due to a change in the way that the speaker stores its configuration file.

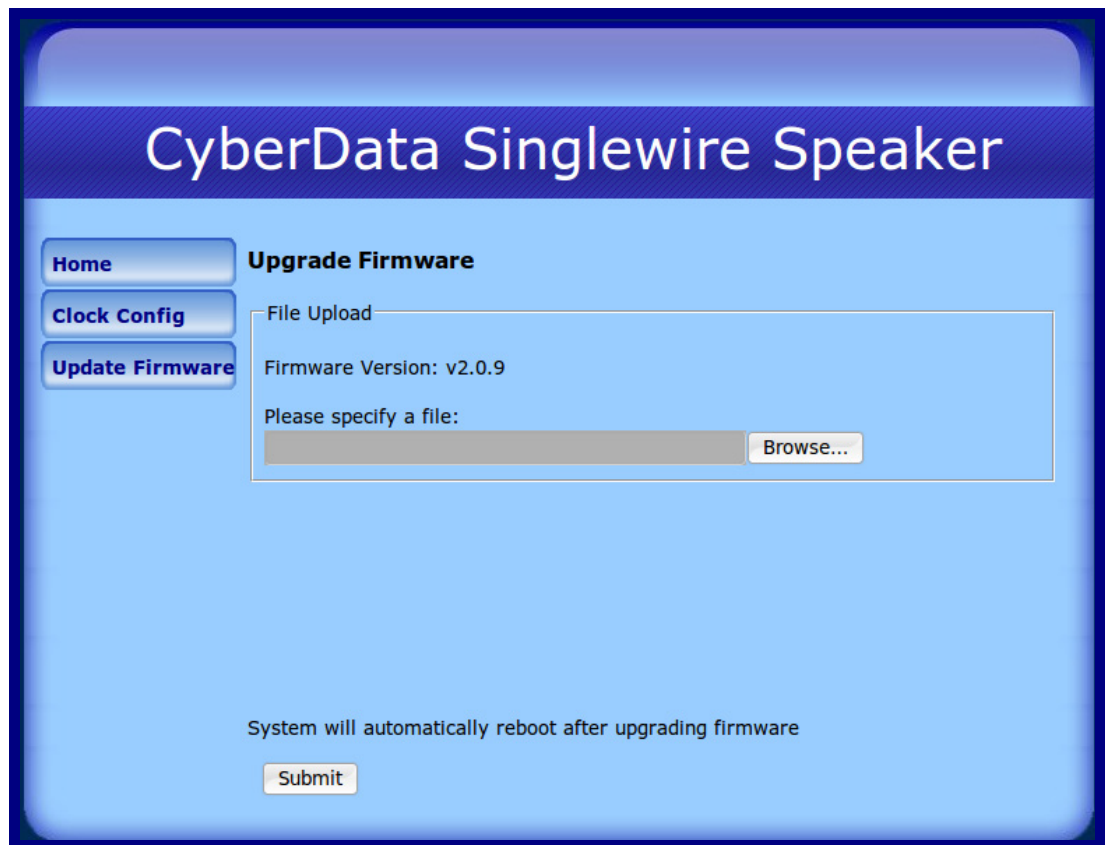
To update the firmware from your computer:

1. Please contact VoIP Technical Support to obtain the latest Singlewire-enabled Speaker firmware file by submitting a contact form at the following website:

<http://www.cyberdata.net/support/contactsupportvoip.php>

2. Log in to the Singlewire-enabled Speaker home page as instructed in [Section 2.3.2, "Log in to the Configuration Home Page"](#).

Figure 2-16. Upgrade Firmware Page





3. Select **Browse**, and then navigate to the location of the Singlewire-enabled Speaker firmware file.
4. Click **Submit**.

Note Do not reboot the board after pressing the **Submit** button.

Note This starts the update process. Once the Singlewire-enabled Speaker has updated the file, the **Firmware** countdown page appears, indicating that the firmware is being written to flash. The Singlewire-enabled Speaker 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 2-11 shows the web page items on the **Upgrade Firmware** page.

Table 2-11. 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 firmware file that you want to upload.
	Click on the Submit button to automatically upload the selected firmware and reboot the system.

2.3.5 Reboot the Singlewire-enabled Speaker

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

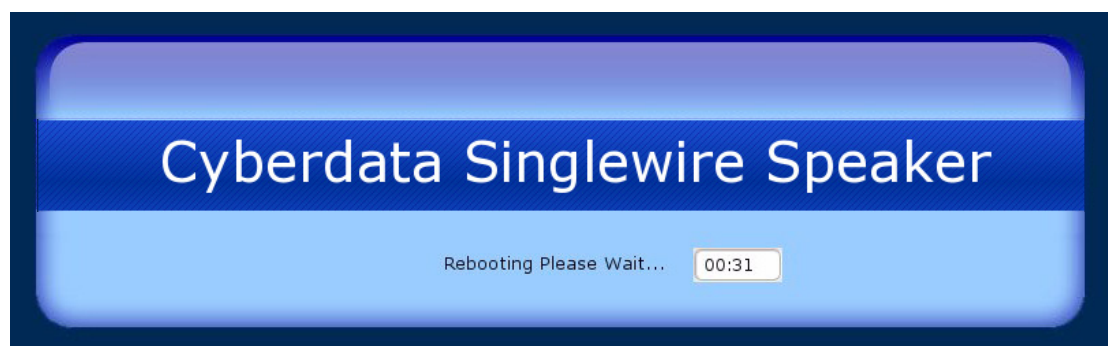
1. Click the **Reboot** button ([Figure 2-17](#)).

Figure 2-17. Reboot Button

Reboot button

2. Click **Reboot**. A normal restart will occur and you will see the following **Reboot** page.

Figure 2-18. Reboot Page



2.4 Identifying and Testing a Ceiling Speaker when Using InformaCast 4.0 or Later

This section describes the basic process for identifying and testing the CyberData IP Ceiling speaker when using Singlewire's InformaCast software version 4.0 or later.

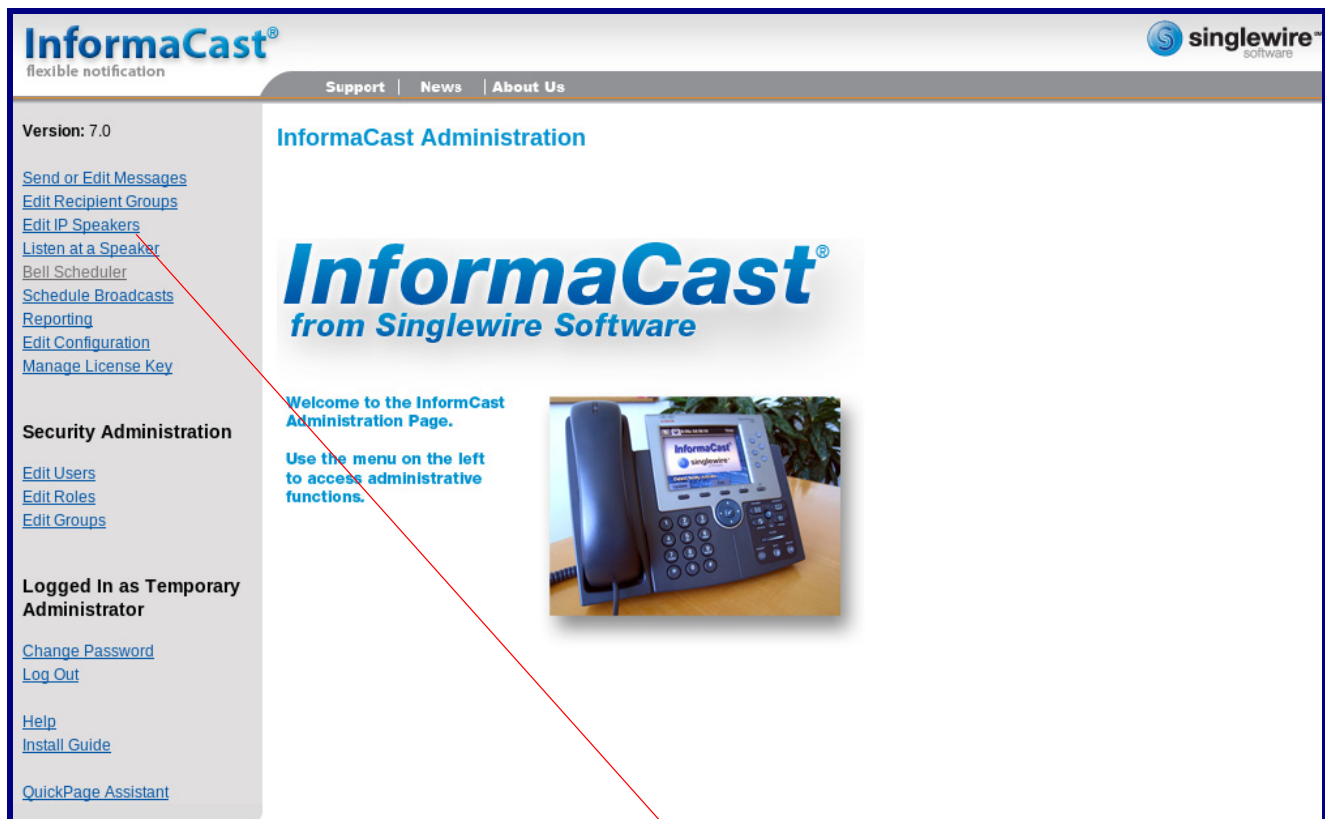
Note If you have questions or need help, please consult your InformaCast documentation and or contact the CyberData support team.

Note CyberData's support is limited to IP endpoint functionality when used with an InformaCast system.

To add the Singlewire-enabled Speaker to the InformaCast server:

1. Click **Edit IP Speakers** on the **Main Screen** of the **Singlewire Informacast Server Web Interface**.

Figure 2-19. Main Screen of the Singlewire InformaCast Server Web Interface



Edit IP Speakers

2. On the **IP Speaker Configuration** page, InformaCast will indicate that it has detected new speakers. Click **View**.

Figure 2-20. IP Speaker Configuration Page

InformaCast
flexible notification

singlewire
software

Support | News | About Us

Version: 7.0

[Send or Edit Messages](#)
[Edit Recipient Groups](#)
[Edit IP Speakers](#)
[Listen at a Speaker](#)
[Bell Scheduler](#)
[Schedule Broadcasts](#)
[Reporting](#)
[Edit Configuration](#)
[Manage License Key](#)

Security Administration
[Edit Users](#)
[Edit Roles](#)
[Edit Groups](#)

Logged In as Temporary Administrator
[Change Password](#)
[Log Out](#)
[Help](#)
[Install Guide](#)
[QuickPage Assistant](#)

InformaCast Administration: IP Speaker Configuration

InformaCast has detected new IP Speakers on the network. [View](#)

Filter:

There are no IP Speakers known to InformaCast. [Add](#)

You can reboot IP speakers using these options:

Only selected speakers will be rebooted. The number of selected speakers is shown above.

This will attempt to reboot all speakers that have registered with InformaCast, whether they are listed on this page or are "new" speakers.

You can adjust IP speaker volume using these options:

Volume Adjustment:

Only selected speakers will have their volume adjusted. The number of selected speakers is shown above.

This will attempt to adjust the volume of all configured speakers.

If you have many IP Speakers to define, they can be imported from a Comma Separated Values file, exported from a spreadsheet. Please refer to the InformaCast documentation regarding the format of the CSV file, or visit the [Help Page](#) (under "Tools") to find an Excel spreadsheet you can start.

InformaCast has detected new speakers.

View

3. The **IP Speaker Configuration** page will show four newly detected speakers. Click **Test**.

Figure 2-21. IP Speaker Configuration Page

InformaCast
flexible notification

Support | News | About Us

Version: 7.0

[Send or Edit Messages](#)
[Edit Recipient Groups](#)
[Edit IP Speakers](#)
[Listen at a Speaker](#)
[Bell Scheduler](#)
[Schedule Broadcasts](#)
[Reporting](#)
[Edit Configuration](#)
[Manage License Key](#)

Security Administration
[Edit Users](#)
[Edit Roles](#)
[Edit Groups](#)

Logged In as Temporary Administrator
[Change Password](#)
[Log Out](#)
[Help](#)
[Install Guide](#)
[QuickPage Assistant](#)

InformaCast Administration: IP Speaker Configuration

0

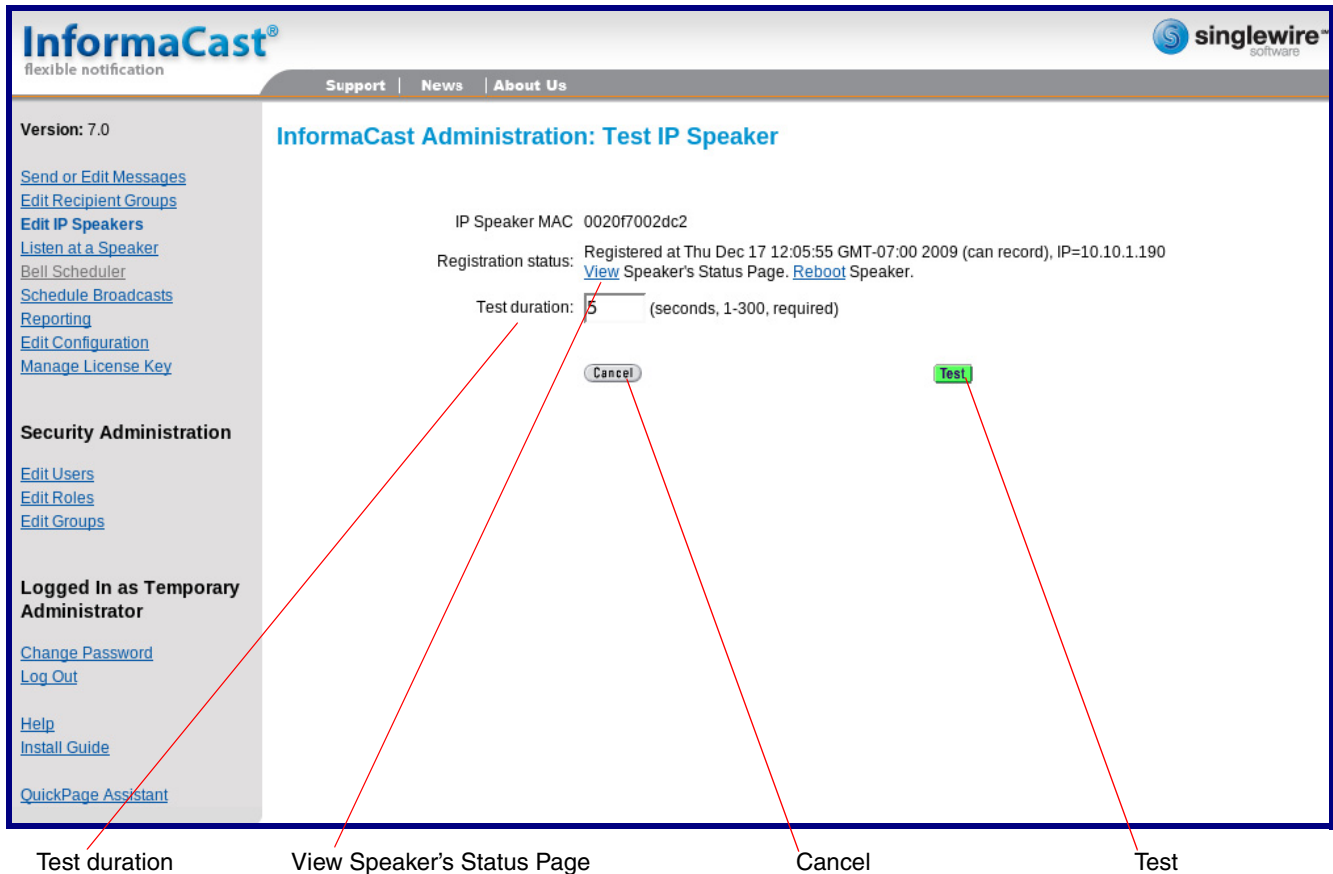
MAC address	Registration Status	Action
0020f7002dc2	Registered at Thu Dec 17 12:05:55 GMT-07:00 2009 (can record), IP=10.10.1.190	Add Test
0020f7002dc3	Registered at Thu Dec 17 12:05:52 GMT-07:00 2009 (can record), IP=10.10.0.192	Add Test
0020f7002dc4	Registered at Thu Dec 17 12:06:12 GMT-07:00 2009 (can record), IP=10.10.1.191	Add Test
0020f7002dc5	Registered at Thu Dec 17 12:05:59 GMT-07:00 2009 (can record), IP=10.10.0.193	Add Test

[View](#) configured speakers.

Test

4. On the **Test IP Speaker** page, Enter a number into the **Test duration** field.
5. Click **Test**.
6. You will hear a tone from the speaker being testing.
7. After the test, click **Cancel** to return to the **IP Configuration** page.

Figure 2-22. Test IP Speaker Page



Note When viewing the speaker's status page via Informacast, Informacast links to the wrong port and path.

Informacast expects our speaker's status page to be at:

<http://<ipaddr>:10004/status>.

The status page is actually at:

[http://<ipaddr>/ \(port 80\)](http://<ipaddr>/ (port 80))

Therefore, if a user clicks the link to view the status page and is directed to:

<http://10.10.10.10:1004/status>

The user will need to edit the url in the address bar to:

<http://10.10.10.10/>

8. On the **IP Speaker Configuration** page, Click **Add** to add a speaker to the InformaCast server.

Figure 2-23. IP Configuration Page

The screenshot displays the InformaCast Administration interface for IP Speaker Configuration. The left sidebar contains navigation links for various system functions. The main content area shows a table of registered speakers. A red arrow originates from the 'Add' button in the table's action column and points to the 'Add' button located at the bottom of the page.

InformaCast
flexible notification

Support | News | About Us

Version: 7.0

[Send or Edit Messages](#)
[Edit Recipient Groups](#)
[Edit IP Speakers](#)
[Listen at a Speaker](#)
[Bell Scheduler](#)
[Schedule Broadcasts](#)
[Reporting](#)
[Edit Configuration](#)
[Manage License Key](#)

Security Administration
[Edit Users](#)
[Edit Roles](#)
[Edit Groups](#)

Logged In as Temporary Administrator
[Change Password](#)
[Log Out](#)
[Help](#)
[Install Guide](#)
[QuickPage Assistant](#)

InformaCast Administration: IP Speaker Configuration

0

MAC address	Registration Status	Action
0020f7002dc2	Registered at Thu Dec 17 12:05:55 GMT-07:00 2009 (can record), IP=10.10.1.190	Add Test
0020f7002dc3	Registered at Thu Dec 17 12:05:52 GMT-07:00 2009 (can record), IP=10.10.0.192	Add Test
0020f7002dc4	Registered at Thu Dec 17 12:06:12 GMT-07:00 2009 (can record), IP=10.10.1.191	Add Test
0020f7002dc5	Registered at Thu Dec 17 12:05:59 GMT-07:00 2009 (can record), IP=10.10.0.193	Add Test

[View](#) configured speakers.

[Add](#)

9. On the **Add IP Speaker** page, Fill out appropriate fields and click **Add**.

Figure 2-24. Add IP Speaker Page

The screenshot displays the InformaCast Administration interface for adding a new IP speaker. The left sidebar contains navigation links for various system functions. The main content area is titled 'InformaCast Administration: Add IP Speaker' and contains a form with the following fields:





- IP Speaker Name:** TestSpeaker001 (required)
- Speaker Description:** First Test Speaker
- Dial Code:** 9999 (numeric shortcut for optional phone interface)
- MAC Address:** 0020f7002dc2 (required, 12 hex digits)
- Volume:** 10

Below the form are 'Cancel' and 'Add' buttons. A red arrow points from the 'Add' button to the word 'Add' in the text below the screenshot.

Your speaker is now registered to the InformaCast server. You now can configure this device as part of the InformaCast system setup as required.

Appendix A: Mounting the Speaker

A.1 Important Safety Instructions

 GENERAL ALERT	Warning <i>Electrical Hazard:</i> The Singlewire-enabled Speaker enclosure is not rated for any AC voltages.
 GENERAL ALERT	Warning <i>Electrical Hazard:</i> This product should be installed by a licensed electrician according to all local electrical and building codes.
 GENERAL ALERT	Warning <i>Electrical Hazard:</i> To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.
 GENERAL ALERT	Warning The PoE connector is intended for intra-building connections only and does not route to the outside plant.

A.2 Mount the Speaker

Before you mount the speaker, make sure that you have received all the parts for each speaker. Refer to [Table A-1](#) and [Table A-2](#).

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



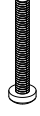
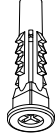
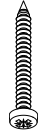
Quantity	Part Name	Illustration
3	#8 Nylon Thumb Nuts	
3	#8 Fender Washers	
3	8-32 x 1 1/4" Mounting Screws	

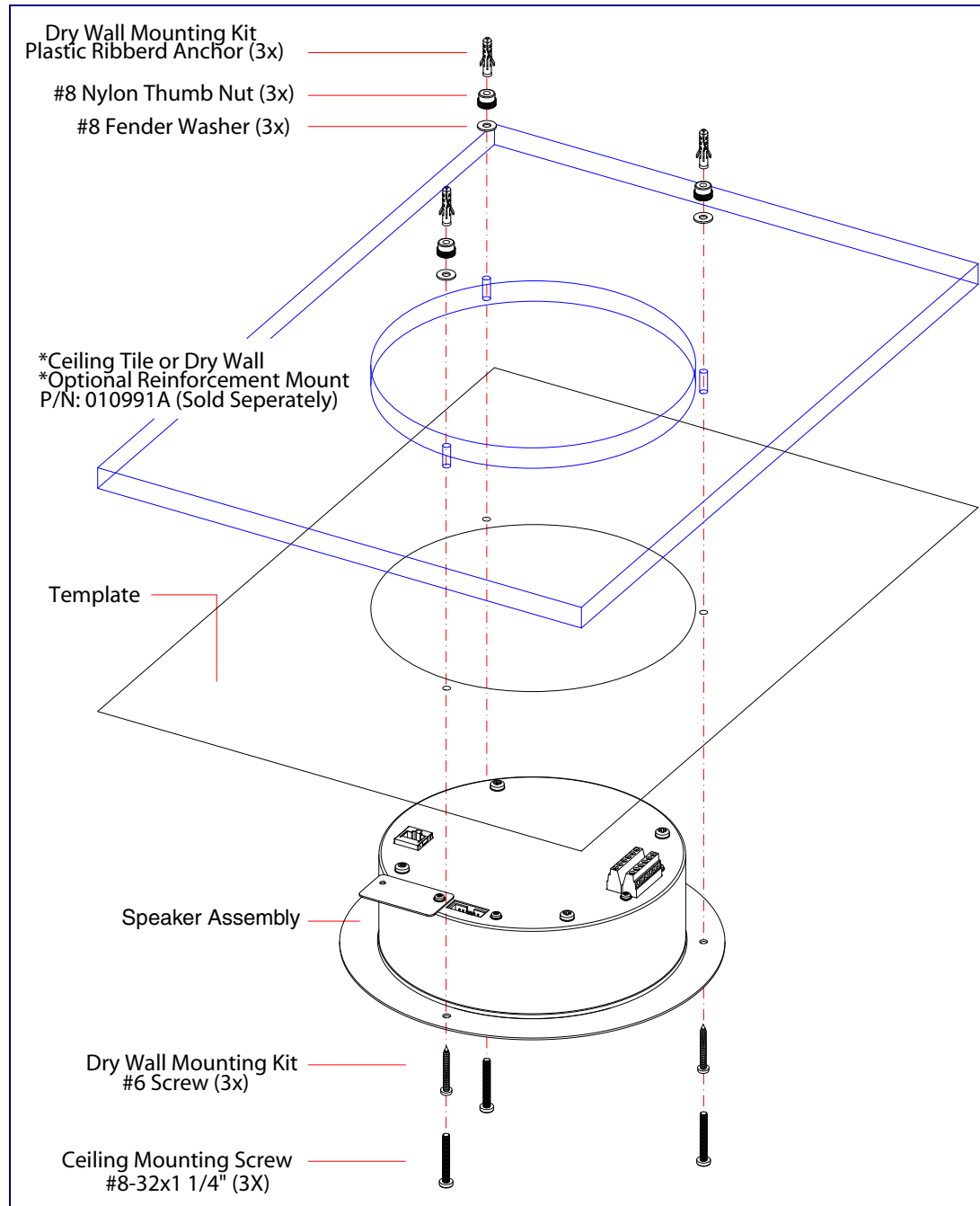
Table A-2. Drywall Mounting Components (Part of the Accessory Kit)

Quantity	Part Name	Illustration
3	Plastic Ribbed Anchors	
3	#8 Sheet Metal Screws	

To mount the speaker:

1. Use the **TEMPLATE** to cut the speaker hole and prepare holes for the screws (**Figure A-1**). This template is located on the back page of the *Installation Quick Reference Guide* that is delivered with each speaker.

Figure A-1. VoIP Speaker Assembly



2. Plug the Ethernet cable into the Speaker Assembly. [Section 2.2.3, "Confirm that the Speaker is Operational and Linked to the Network"](#) explains how the **Link** and **Status** LEDs work.
3. At this point:
 - For *drop ceiling mounting*, position the **VoIP SPEAKER ASSEMBLY** in the ceiling so that its screw holes align with those you prepared.
 - For *drywall mounting*, place the three **PLASTIC RIBBED ANCHORS** in the holes you prepared, and position the **VoIP SPEAKER ASSEMBLY** over them, aligning the screw holes in the assembly with the anchors.
4. To fasten the speaker:
 - For *drop ceiling mounting*, use the three **8-32 x 1 1/4" MOUNTING SCREWS, #8 NYLON THUMB NUTS**, and **#8 FENDER WASHERS** to secure the speaker.

Note For weak ceiling tile, CyberData offers a reinforcing mount (CyberData part number 010991A).

- For *drywall mounting*, use the three **#8 SHEET METAL SCREWS** to secure the speaker.

Appendix B: Setting up a TFTP Server

B.1 Set up a TFTP Server

Upgrading the 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.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)

To see a list of frequently asked questions, go to the following URL:

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

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 by going to the following URL:

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

C.3 Contact Information

Contact	<p>CyberData Corporation 3 Justin Court Monterey, CA 93940 USA www.CyberData.net Phone: 800-CYBERDATA (800-292-3732) Fax: 831-373-4193</p>
Sales	<p>Sales 831-373-2601 Extension 334</p>
Technical Support	<p>The fastest way to get technical support for your VoIP product is to submit a VoIP Technical Support form at the following website:</p> <p>http://www.cyberdata.net/support/contactsupportvoip.php</p> <p>The Support Form initiates a ticket which CyberData uses for tracking customer requests. Most importantly, the Support Form tells us which PBX system and software version that you are using, the make and model of the switch, and other important information. This information is essential for troubleshooting. Please also include as much detail as possible in the Comments section of the Support Form.</p> <p>Phone: (831) 373-2601, Ext. 333 Email: support@cyberdata.net</p>
Returned Materials Authorization	<p>To return the product, contact the Returned Materials Authorization (RMA) department:</p> <p>Phone: 831-373-2601, Extension 136 Email: RMA@CyberData.net</p> <p>When returning a product to CyberData, an approved CyberData RMA number must be printed on the outside of the original shipping package. Also, RMA numbers require an active VoIP Technical Support ticket number. A product will not be accepted for return without an approved RMA number. Send the product, in its original package, to the following address:</p> <p>CyberData Corporation 3 Justin Court Monterey, CA 93940 Attention: RMA "your RMA number"</p>
RMA Status Form	<p>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:</p> <p>http://www.cyberdata.net/support/rmastatus.html</p>

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 Warranty, CyberData will repair or replace the product free of charge. This warranty includes all parts and labor.

Should the product fail Out of the Warranty period, a flat rate repair charge of one half of the purchase price of the product will be assessed. Repairs that are Within Warranty period but are damaged by improper installation, modification, or abuse are deemed Out of Warranty and will be charged at the Out of Warranty rate. A device is deemed Out of Warranty when its purchase date is longer than two years or when the device has been damaged due to human error during installation, modification, or abuse. A replacement unit will be offered at full cost if the device cannot be repaired.

End of Life Devices are included under this policy. End of Life devices are devices that are no longer produced or sold. Technical support is still available for these devices. However, no firmware revisions or updates will be provided. If an End of Life device cannot be repaired, the replacement offered may be the current version of the device.

Products shipped to CyberData, both within and out of warranty, are shipped at the expense of the customer. CyberData will pay return shipping charges for repaired products.

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>

Index

Symbols

#8 fender washers 34, 36
 #8 nylon thumb nuts 34, 36
 #8 sheet metal screws 34, 36

Numerics

8-32 x 1 1/4" mounting screws 34, 36

A

AC voltages 2
 AC voltages, intercom enclosure is not rated 33
 address, configuration login 17
 adjusting volume 12
 ambient operating temperature 4
 announcing a speaker's IP address 12, 14
 audio test 12

C

clock configuration page 19
 clock status 19
 configurable parameters 18
 configuration
 device 6
 using Web interface 15
 configuration home page 17
 confirming IP address 12
 contact information 39
 contact information for CyberData 39
 CyberData contact information 39
 CyberData Singlewire-enabled Speaker
 overview 1
 CyberData support limited to IP endpoint
 functionality 27

D

default
 gateway 6, 15
 IP address 6, 15
 subnet mask 6, 15

username and password 6, 15
 web login username and password 17
 default gateway 6, 15
 default login address 17
 device configuration 6
 dimensions 4
 drivers 38
 drop ceiling mounting of speaker 36
 drywall mounting of speaker 36

E

enable night ring events 19
 Ethernet cable 36

F

factory default settings
 how to set 14
 faqs 38
 features 3
 firmware upgrades 37
 frequently asked questions (faqs) 38

G

GMT table 22
 GMT time 22

H

home page 17

I

identifier names (PST, EDT, IST, MUT) 22
 identifying the speaker (when using InformaCast 4.0) 27
 identifying your product 1
 illustration of speaker mounting process 34
 InformaCast
 Add IP Speaker Page 32
 IP Speaker Configuration page 28
 Test IP Speaker Page 30

testing and identifying a Singlewire-enabled ceiling speaker 27

Informacast linking to the wrong port and path 30

InformaCast needs to be 4.0 or higher 1

installation, typical speaker system 2

IP address 6, 15

IP addressing

- default
- IP addressing setting 6, 15

L

link LED 36

Linux, setting up a TFTP server on 37

log in address 17

M

mounting a speaker 34

N

navigation (web page) 16

navigation table 16

network link activity, verifying 11

O

output 4

overview 1

P

parts

- #8 fender washers 34
- #8 nylon thumb nuts 34
- #8 sheet metal screws 34
- 8-32 x 1 1/4" mounting screws 34
- plastic ribbed anchors 34

password

- login 17
- restoring the default 6, 15

pdf copies 38

plastic ribbed anchors 34, 36

port baud rate 4

power requirement 4

power, connecting to speaker 6

product

- configuring 15
- mounting 34
- parts list 5

product features 3

product overview 1

- product features 3
- product specifications 4

product specifications 4

R

reboot 26

Reset Test Function Management (RTFM) switch 12, 14

restoring the factory default settings 14

return and restocking policy 41

RMA returned materials authorization 39

RMA status 39

RTFM switch 12, 14

S

sales 39

Second Speaker Setup 9

sensitivity 4

service 39

setting up a TFTP server 37

Singlewire Informacast Server Web Interface 27

Singlewire-enabled Ceiling Speaker

- how to identify 1

Singlewire-enabled Speaker

- installation 2

Singlewire-enabled Speaker (with PoE Injector) to a 802.3af Compliant PoE Switch 7

Singlewire-enabled Speaker to a 802.3af Compliant PoE Switch 6

Singlewire-enabled Speaker with Extra Speaker Connection 9

Singlewire-enabled Speaker with Line Out 10

Spare in the Air Policy 41

speaker configuration page

- configurable parameters 18

status LED 36

subnet mask 6, 15

T

tech support 39

technical support 38

technical support, contact information 39

template for speaker and screw holes 35

- testing audio 12
- testing the speaker (when using InformaCast 4.0) 27
- TFTP server 37
- time zone string examples 22
- time zone strings 21
- typical system installation 2

U

- username
 - default for web configuration access 17
 - restoring the default 6, 15
- utilities 38

V

- verifying
 - network link and activity 11
 - power on to speaker 11
- VoIP speaker assembly 36
- volume, adjusting 12

W

- warranty 40
- warranty & RMA returns outside of the United States 40
- warranty and RMA returns page 41
- warranty policy at CyberData 40
- web access password 6, 15
- web access username 6, 15
- web configuration log in address 17
- web page
 - navigation 16
- web page navigation 16
- web-based speaker configuration 15
- weight 4
- Windows, setting up a TFTP server on 37