



GAI-TRONICS®  
A HUBBELL COMPANY

# Model 10370-70x and 10370-80x VoIP Interface/Amplifier Assemblies Installation and Operation Manual

## TABLE OF CONTENTS

<b>Foreword</b> .....	<b>1</b>
<b>Scope of Manual</b> .....	<b>1</b>
<b>Nomenclature</b> .....	<b>1</b>
<b>Ordering Replacement Parts</b> .....	<b>1</b>
<b>Service and Repair</b> .....	<b>1</b>
<b>Confidentiality Notice</b> .....	<b>2</b>
<b>FCC Licensing Information</b> .....	<b>2</b>
<b>Computer Software Copyrights</b> .....	<b>3</b>
<b>Warranty</b> .....	<b>3</b>
<b>Safety and General Information</b> .....	<b>4</b>
<b>Operational Cautions</b> .....	<b>5</b>
<b>Safe Handling of CMOS Integrated Circuit Devices</b> .....	<b>6</b>
<b>General Information</b> .....	<b>7</b>
<b>Product Overview</b> .....	<b>7</b>
<b>Features and Functions</b> .....	<b>8</b>
<b>System Requirements and Limitations</b> .....	<b>8</b>
<b>Available Models</b> .....	<b>9</b>
<b>Replacement Parts and Kits</b> .....	<b>10</b>
<b>Performance Specifications</b> .....	<b>10</b>
<b>Programming and Set Up</b> .....	<b>12</b>
<b>Opening the VoIP Interface/Amplifier Assembly</b> .....	<b>12</b>
<b>First Time WiFi Interface Setup (Models 10370-801 and 10370-802)</b> .....	<b>13</b>
<b>Changing the WiFi Interface Configuration</b> .....	<b>16</b>
<b>VoIP PCBA Configuration</b> .....	<b>17</b>
VoIP PCBA Initial Network Configuration.....	17
<b>Closing the VoIP Interface/Amplifier Assembly</b> .....	<b>17</b>
<b>Installation</b> .....	<b>18</b>
<b>Safety and General Information</b> .....	<b>18</b>

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Outdoor Installation Product.....	18
Antenna Care .....	18
Electromagnetic Interference/Compatibility .....	18
<b>Mechanical Receipt Inspection .....</b>	<b>19</b>
<b>Cable Installation Safety Considerations.....</b>	<b>19</b>
<b>Required Tools .....</b>	<b>19</b>
<b>Amplifier Components .....</b>	<b>19</b>
<b>Mounting.....</b>	<b>20</b>
<b>Field Wiring.....</b>	<b>21</b>
Power Connection .....	21
Speaker Connection .....	22
Output Contact Connections .....	22
Audio Output Connections .....	22



# Model 10370-70x and 10370-80x VoIP Interface/Amplifier Assemblies

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## Foreword

### Scope of Manual

This manual offers descriptive data and service information for the VoIP Interface Assemblies.

### Nomenclature

The model number, located on the nameplate on top of the speaker, specifically identifies GAI-Tronics equipment.

### Ordering Replacement Parts

When ordering replacement parts or requesting equipment information, please include the complete identification number. This applies to all components, kits, and chassis. If the component part number is not known, the order should include the number of the chassis or kit of which it is a part and sufficient description of the desired component to identify it. Order parts from:

#### **Customer Service**

GAI-TRONICS®

3030 Kutztown Rd.

Reading, PA 19605

US: 800-492-1212

Outside US: 610-777-1374

### Service and Repair

Inoperative or malfunctioning equipment should be returned to the factory for repair. Please call **1-800-492-1212** or **610-777-1374** to obtain a Return Authorization number, published repair prices, and shipping instructions.

**NOTE:** A purchase order or credit card number is required prior to processing non-warranty repairs.

## Confidentiality Notice

This manual is provided solely as an operational, installation, and maintenance guide and contains sensitive business and technical information that is confidential and proprietary to GAI-Tronics. GAI-Tronics retains all intellectual property and other rights in or to the information contained herein, and such information may only be used in connection with the operation of your GAI-Tronics product or system. This manual may not be disclosed in any form, in whole or in part, directly or indirectly, to any third party.

## FCC Licensing Information

Your radio operates on General Mobile Radio Service (GMRS), Private Land Mobile Radio Service, Amateur Radio Service, Aeronautical Mobile, or Maritime Mobile Service frequencies and is subject to the Rules and Regulations of the Federal Communications Commission (FCC). The FCC requires that all operators using such frequencies obtain a radio license before operating their equipment. To obtain the FCC forms, go to <http://wireless.fcc.gov/services/personal/generalmobile/index.html> to obtain Forms **605** and **159**, which include all forms and instructions.

Changes or modifications not approved by GAI-Tronics Corporation may void the user's authority granted by the FCC to operate this radio and should not be made. To comply with FCC requirements, transmitter adjustments should be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services. Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

**NOTE:** Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

Federal Communications Commission (FCC)

1-202-418-0177 1-800-418-FORM

1-800-418-3676

1-888-CALL-FCC

1-888-225-5322

Or: <http://www.fcc.gov>

## Computer Software Copyrights

This product contains copyrighted computer programs stored in semiconductor memory. These programs are copyrighted by GAI-Tronics Corporation and may not be reproduced in any form without expressed written permission from GAI-Tronics.

## Warranty

GAI-Tronics warrants for a period of one (1) year from the date of shipment, that any GAI-Tronics equipment supplied hereunder shall be free of defects in material and workmanship, shall comply with the then-current product specifications and product literature, and if applicable, shall be fit for the purpose specified in the agreed-upon quotation or proposal document. If (a) Seller's goods prove to be defective in workmanship and/or material under normal and proper usage, or unfit for the purpose specified and agreed upon, and (b) Buyer's claim is made within the warranty period set forth above, Buyer may return such goods to GAI-Tronics' nearest depot repair facility, freight prepaid, at which time they will be repaired or replaced, at Seller's option, without charge to Buyer. Repair or replacement shall be Buyer's sole and exclusive remedy, and the warranty period on any repaired or replacement equipment shall be one (1) year from the date the original equipment was shipped. In no event shall GAI-Tronics' warranty obligations with respect to equipment exceed 100% of the total cost of the equipment supplied hereunder. The applicability of any such third-party warranty will be determined solely by GAI-Tronics.

**Services.** Any services GAI-Tronics provides hereunder, whether directly or through subcontractors, shall be performed in accordance with the standard of care with which such services are normally provided in the industry. If the services fail to meet the applicable industry standard, GAI-Tronics will, for a period of one (1) year from the date of completion, re-perform such services at no cost to the Buyer. Re-performance of services shall be Buyer's sole and exclusive remedy, and in no event shall GAI-Tronics' warranty obligations with respect to services exceed 100% of the total cost of services provided hereunder.

**Limitations/Exclusions.** The warranty on any equipment supplied hereunder is subject to Customer's use in compliance with applicable FCC regulations and manufacturer specifications. The warranties herein shall not apply to, and GAI-Tronics shall not be responsible for, any damage to the goods or failure of the services supplied hereunder, to the extent caused by accident, misuse, abuse, neglect, system design, product modification, failure to follow instructions contained in the product manual, repair, or attempted repair by anyone not authorized by GAI-Tronics, improper installation, installation of parts that do not conform to the quality or specifications of the original parts or accessories, damage or loss occurred during shipment, or any unit which is not new when sold or upon which the serial number has been defaced, modified or removed. The warranty does not extend to damage incurred by natural causes including Force Majeure. The warranty does not cover microprocessors if failure is due to static damage or application of improper voltage. **THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

**Operational and Maintenance Procedures.** Buyer acknowledges that any improper use, maintenance, or modification of the equipment provided hereunder, or use of unqualified maintenance or service technicians will severely impair the operational effectiveness of the entire communication system. Buyer hereby agrees to indemnify, defend and hold GAI-Tronics harmless from and against any and all third party claims arising, in any manner, out of: (a) Buyer's neglect of the equipment; (b) Buyer's use of technicians not authorized by GAI-Tronics to service the equipment; or (c) Buyer's improper use or modification of the equipment or failure to follow the operational and maintenance procedures provided with the equipment.

**Limitation of Liability/Damages.** In no event (even should circumstances cause the exclusive warranties and remedies set forth in the Warranty section to fail of their essential purpose) shall either party be liable for any indirect, incidental, special or consequential damages (including, but not limited to, loss of use, loss of anticipated profits, or damages arising from delay) whether such claims are alleged to have arisen out of breach of warranty, breach of contract, strict or absolute liability in tort, or other act, error or omission, or from any other cause whatsoever, or any combination of the foregoing.

## Safety and General Information



Installation should only be performed by qualified service personnel in accordance with the National Electrical Code or applicable local codes.



**Power Sources** - Operate this unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact qualified service personnel.

- For units intended to operate from battery power, refer to operating instructions.
- For units intended to operate with External Power Supplies, use only the recommended approved power supplies.
- For units intended to operate with a limited power source, this power source must comply with EN60950. Substitutions may damage the unit or cause fire or shock.

### Outdoor Product:

**Power Lines** - An outdoor system should not be located in the vicinity of overhead power lines, electric lights, or power circuits, or where it may contact such power lines or circuits, as this contact might be fatal. Refer to the National Electrical Code Article 800 regarding installation.

### User Instructions

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### Exposure to Radio Frequency Energy

Your radio is designed to comply with the following standards and guidelines regarding exposure of human beings to radio frequency electromagnetic energy:

- FCC, Code of Federal Regulations; 47 CFR part 2 sub-part J
- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95.1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999

**Antenna Care**

Unauthorized antennas, modifications, or attachments could damage the radio and may violate FCC regulations.

**Do NOT hold the antenna when the radio is IN USE.** Holding the antenna affects the effective range.

**Approved Accessories**

Only use GAI-Tronics Corporation approved accessories. Please visit [www.gai-tronics.com](http://www.gai-tronics.com).

**Electromagnetic Interference/Compatibility**

Electronic equipment may be susceptible to electromagnetic interference. If you experience interference, visit the FCC website at <http://www.fcc.gov> for possible solutions.

## Operational Cautions

**Hospitals or Health Care Facilities**

To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices instruct you to do so. Hospital or health care facilities may be using equipment that is sensitive to external RF energy.

**Aircraft/Airports**

Airports may be using equipment that is sensitive to external RF energy. Any use of a radio must be in accordance with applicable regulations.

**Medical Devices - Pacemakers**

These recommendations are consistent with the independent research by, and recommendations of the U.S. Food and Drug Administration. Persons with pacemakers should:

- ALWAYS keep the radio more than six inches (15 cm) from their pacemaker when the radio is turned ON.
- Do NOT carry the radio in the breast pocket.
- Turn the radio OFF immediately if you have any reason to suspect that interference is taking place.

**Blasting Caps and Areas**

To avoid possible interference with blasting operations, turn off your radio when you are near electrical blasting caps, in a blasting area, or in areas posted: "Turn off two-way radio." Obey all signs and instructions.

## Safe Handling of CMOS Integrated Circuit Devices

Many of the integrated circuit devices used in communications equipment are of the Complementary Metal Oxide Semiconductor (CMOS) type. Because of their high open circuit impedance, CMOS integrated circuits are vulnerable to damage from static charges. Care must be taken handling, shipping, and servicing them and the assemblies in which they are used.

Even though protection devices are provided in CMOS integrated circuit inputs, the protection is effective only against overvoltage in the hundreds of volts range such as is encountered in an operating system. In a system, circuit elements distribute static charges and load the CMOS circuits, decreasing the chance of damage. However, CMOS circuits can be damaged by improper handling of the modules, even in a system.

To avoid damage to circuits, observe the following handling, shipping, and servicing precautions:

1. Prior to and while servicing a circuit module, particularly after moving within the service area, momentarily touch both hands to a bare metal, earth-grounded surface. This will discharge any static charge that may have accumulated on the person doing the servicing.  
**NOTE:** Wearing a conductive wrist strap will minimize static build-up during servicing.
2. Whenever possible, avoid touching any electrically conductive parts of the circuit module with your hands.
3. Power down the unit before installing or removing the circuit module.
4. When servicing a circuit module, avoid carpeted areas, dry environments, and certain types of clothing (silk, nylon, etc.) because they contribute to static build-up. Similarly, disconnect the test probe prior to removing the ground lead.
5. All electrically powered test equipment should be grounded. Apply the ground lead from the test equipment to the circuit module before connecting the test probe.
6. If a circuit module is removed from the system, it is desirable to lay it on a conductive surface (such as a sheet of aluminum foil) which is connected to ground through 100k of resistance.
7. When soldering, be sure the soldering iron is grounded and has a grounded tip.
8. Prior to connecting jumpers, replacing circuit components, or touching CMOS pins (if this becomes necessary in the replacement of an integrated circuit device), be sure to discharge any static build-up as described in procedure 1. Since voltage differences can exist across the human body, it is recommended that only one hand be used if it is necessary to touch pins on the CMOS device and associated board wiring.
9. When replacing a CMOS integrated circuit device, leave the device in its conductive rail container or conductive foam until it is to be inserted into the printed circuit module.
10. All low impedance test equipment (such as pulse generators, etc.) should be connected to CMOS device inputs after power is applied to the CMOS circuitry. Similarly, such low impedance equipment should be disconnected before power is turned off.
11. Replacement modules shipped separately from the factory will be packaged in a conductive material. Any modules being transported from one area to another should be wrapped in a similar material (aluminum foil may be used). **Never use non-conductive material** for packaging these modules.



# General Information

## Product Overview

The Model 10370-70x series VoIP Speaker Interface/Amplifier Assembly enables broadcasting to personnel throughout a facility over an existing network via an external speaker(s) or connection to a central amplifier speaker system. The Model 10370-80x series VoIP WiFi Speaker Interface/Amplifier Assembly provides the same capability as the Model 10370-70x series but allows connection to an existing wireless network. The interface/amplifier assemblies can easily be added to an existing network (10/100 baseT Ethernet) or wireless network (IEEE 802.11 b/g/n) with minimal cost or effort.

The -701 and -801 series speaker interface/amplifiers include an integrated speaker amplifier circuit that can supply up to 30 watts of output power to an existing 8-ohm speaker or combination of speakers equaling 8 ohms. The ability to utilize any speaker or horn/driver combination allows selection of speakers that meet the coverage and environmental requirements of a specific area. The -702 and -802 series interface/amplifiers also include an integrated speaker amplifier circuit but will instead provide a 70.7 or 100 V, 25-watt output, eliminating the need for a separate central amplifier for a smaller system applications.

For additional design flexibility, each interface/amplifier assembly also includes a 600-ohm, 0 dBm audio output. This output can be connected to the audio input of a central amplifier or any equipment that requires a 600-ohm audio input.

Each VoIP or VoIP WiFi Speaker Interface/Amplifier is capable of providing two dry contact type A (normally open) outputs. Each output is programmable for a variety of use such as activation of a strobe in a high noise area or initiating a door latch remotely.

The GAI-Tronics VoIP and VoIP Speaker Interface/Amplifiers provide the flexibility to address a diverse range of applications. A wide variety of functions can be achieved by altering the configuration data stored in the non-volatile memory. The configuration options include:

- Web page configuration
- Configuration file
- Command Line Interface (CLI)

## Features and Functions

The GAI-Tronics Models 10370-70x VoIP and 10370-80x VoIP WiFi Interfaces are equipped with the following features:

- Wired or WiFi VoIP
- One-way broadcasting from IP network
- Weatherproof enclosure
- 30-watt speaker amplifier (into an 8-ohm speaker load) 10370-x01 series
- 25-watt, 70.7V or 100V audio output, 10370-x02 series
- 600-ohm audio output (all models)
- Two dry contact closure outputs
- SIP compatible (RFC3261)
- Real-time alarm reporting via email, Syslog, or TMA software
- Configurable via web page, serial link or download
- Multicast capability, up to eight addresses

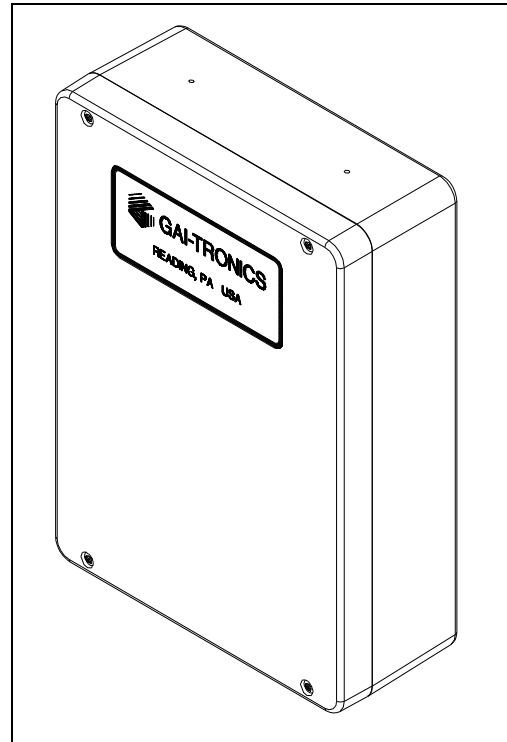


Figure 1. Model 10370 Series Outline Diagram

## System Requirements and Limitations

A 100 baseT Ethernet with SIP Server is required for systems containing three or more VoIP Speaker Interface/Amplifier Assemblies. The operation of this equipment is limited by the customer's LAN media capabilities and the services available at each end point. The performance of the VoIP Speaker Interface is dependent on the provision of sufficient bandwidth and prioritization on the network to give the quality of service required. In addition, the setup, installation, and software version of key components such as switches and routers can have a significant effect on the operation of this equipment. Improper connections or loose cables can also affect their operation.

The VoIP Speaker Interface/Amplifier Assemblies require a local 120/230 V ac power source for operation.

The following network facilities should be provided (This may vary widely depending on how your network is deployed):

- SIP proxy server (to route calls)
- SIP registrar server (frequently combined with proxy servers)
- TFTP server (for downloading configuration files).
- TCP Syslog server (for reporting alarms and external inputs)
- SMTP server (for reporting via email)
- STNP server (to synchronize the internal clock)
- STUN server (for NAT firewall traversal)

Dedicated systems, such as Gatekeepers, VoIP-enabled PABXs or soft PABXs may also provide these functions.

The GAI-Tronics VoIP Interfaces only support Session Initiation Protocol (SIP) to RFC3261 Call Control signaling.

In addition to direct access, peer-to-peer or via a SIP server, each interface/amplifier is capable of receiving a Multicast broadcast. Multicast allows a single audio stream to be sent to multiple end points simultaneously, to achieve multi-point paging or Public Address functionality over IP. Multicast requires the use of a SIP server that specifically supports Multicast functionality and each interface must be configured (enabled) to receive Multicast packets.

## Available Models

Table 1. VoIP Interface/Amplifier Assembly Model Chart

Part No.	Description
10370-701	VoIP Speaker Interface, 30 W (8-ohm load) and 600-ohm audio outputs
10370-702	VoIP Speaker Interface with 70.7 V/100 V Speaker and 600-ohm audio outputs
10370-801	VoIP WiFi Speaker Interface, 30 W (8-ohm load) and 600-ohm audio outputs
10370-802	VoIP WiFi Speaker Interface with 70.7 V/100 V Speaker and 600-ohm audio outputs

## Replacement Parts and Kits

Table 2. Spare Parts List

Part No.	Description	10370-701	10370-702	10370-801	10370-802
100-02-7013-000	VoIP PCBA	■	■	■	■
69625-001	VoIP Broadcast Carrier PCBA	■	■	■	■
69868-101	Ethernet Wireless Interface PCBA			■	■

## Performance Specifications

### Power Options

#### AC Power

Input voltage ..... 120/240 V ac, 50/60 Hz

Input current..... 0.35 A @ 120 V ac, 0.2 A @ 240 V ac

#### Power over Ethernet (PoE), -701 and -702 models only

Power ..... 802.3af compliant (via RJ45)

### Audio

#### Output

Speaker output power

With PoE ..... 8 W into 8-ohm load, or  
6 W into 70.7 V/100 V system

With 120/240 V ac input ..... 30 W into 8-ohm load, or  
24 W into 70.7 V/100 V system

Line out (into 600 ohms)..... 1.0 Vrms

Frequency response..... 300–3000 Hz

### Network (Ethernet)

Signaling ..... SIP (RFC3261 compliant) Loose routing

Configuration ..... Embedded web server  
Embedded Telnet server  
Configuration file download  
Configuration file building tool (Vconf.exe)  
Direct serial connection  
(Nine-way D-type female connector)  
Command line interface  
SNTP with time zone and daylight saving  
Automatic updating via TFTP  
Password protection

### Control Outputs

Output 1 (isolated solid state switch) ..... 50 milliamps @ 30 V ac/dc (resistive load)

Output 2 (isolated SPST relay) ..... 10 amps @ 30 V ac/dc (resistive load)

**WiFi Module, -801 and -802 models only**

Antenna (internal) .....	2.4 GHz, 2.0 dBi, 50-ohm, omni-directional, ¼ wavelength dipole configuration, VSWR ≤2.0
Standards.....	IEEE 802.11b/g/n Static IP provisioning or DHCP STUN client (NAT traversal)
Frequency.....	2.412–2.484 GHz

**Mechanical**

Physical dimensions.....	13.00 H × 9.25 W × 4.00 D inches; (330 × 235 × 102 mm)
Enclosure material .....	High-impact, glass-reinforced polyester
Connections.....	Four drill spots for location of conduit
Mounting.....	Surface-mounting: four 0.28-inch mounting holes
Color .....	Gray
<b>Shipping weights</b>	
Model 10370-701.....	6.0 lbs. (2.72 kg)
Model 10370-702.....	6.1 lbs. (2.77 kg)
Model 10370-801.....	6.5 lbs. (2.95 kg)
Model 10370-802.....	6.6 lbs. (2.99 kg)

**Environmental**

Temperature range .....	-4° F to +167° F (-20° C to +75° C)
Weatherproof rating.....	Rainproof
Humidity .....	Up to 95%, non-condensing

**Approval Standards**

USA .....	FCC Modular Approval, FCC ID: XM5-SM2144N1 CFR Title 47 FCC Part 15, Subpart B and C
Canada .....	Industry Canada Module Approval IC: 8516A-SM2144N2 Industry Canada ICES-003, RSS-Gen, RSS-210
EU .....	EN 300 328 (R&TTE Directive 1999/5/EC) EN 301 489 (EMC Directive 2004/108/EC)

## Programming and Set Up

**NOTE:** The 10370-70x and -80x VoIP Interface/Amplifier Assemblies include the same embedded browser as do GAI-Tronics' VoIP and WiFi telephones. There are many programmable parameters utilized by our telephones that are not utilized by the VoIP Interface/Amplifiers. All amplifiers are factory programmed for maximum operating proficiency. Please do not make any programming changes other than those directed in this manual.

### Opening the VoIP Interface/Amplifier Assembly

The VoIP Interface/Amplifier Assembly must be opened for programming and installation. **Bench programming and testing is recommended.** Remove the assembly from the carton and position on a flat surface with the front of the unit facing up. Loosen the four screws on the front cover until the hinge pins pull loose to separate the front and rear sections. Refer to Figure 2.

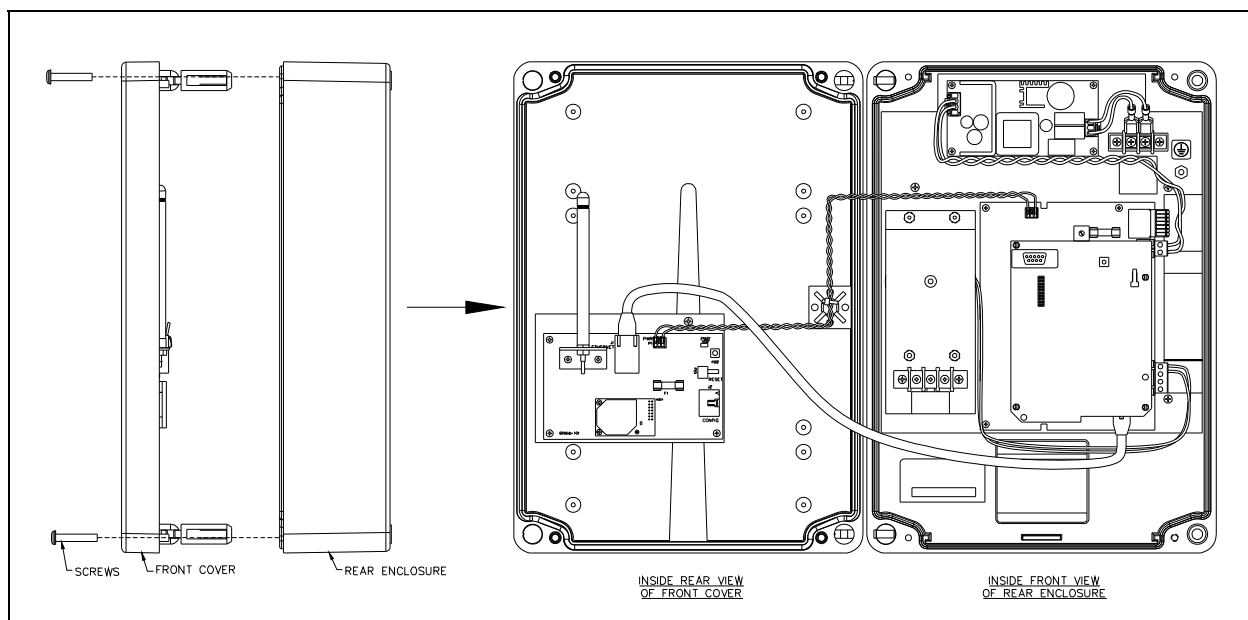


Figure 2: VoIP Interface/Amplifier Assembly (Model 10370-802 shown)

## First Time WiFi Interface Setup (Models 10370-801 and 10370-802)

The installer should ensure that the network is configured to allow VoIP communications (using the SIP protocol) between the desired locations before attempting to configure the GAI-Tronics VoIP Interface/Amplifier Assemblies.

Configuration of the WiFi Interface PCBA is required to set up security of the WLAN unit's connection.

For first time configuration of the WiFi interface, power the unit by connecting 24–48 V dc to P5.

While the VoIP Interface/Amplifier Assembly WiFi interface is still using the factory default configuration it will be an Access Point to a network called **HF-A11\_AP**. Using a PC/laptop with wireless capability, connect to the HF-A11\_AP network. When the PC shows that it is connected to the HF-A11\_AP network the yellow LED on the WiFi interface should be ON.

When you are connected to the HF-A11\_AP network, open a web browser on the PC and type **10.10.100.254** into the address field and press **Enter**. The HF-A11\_AP WiFi Log In Window will open. Enter **admin** for both the user and password, then log in. The Working Mode Configuration Web page will open. Select STA Mode, then click the **Apply** button.

If you are having a problem connecting to the HF-A11\_AP network verify that the PC's wireless network adapter is set to DHCP (Obtain an IP address automatically).

The screenshot shows a web interface for configuring the WiFi working mode. On the left is a sidebar with five menu items: [Mode Selection](#), [AP Interface Setting](#), [STA Interface Setting](#), [Application Setting](#), and [Device Management](#). The main content area has a title bar 'Working Mode Configuration'. Below the title bar, it says 'You may configure the Uart-WIFI module wifi mode and data transfor mode.' There are two radio button options: 'AP Mode: Access Point' (unselected) and 'STA Mode: Station Mode' (selected). Below these is a 'Data Transfor Mode' dropdown menu currently set to 'Transparent Mode'. At the bottom right, there are 'Apply' and 'Cancel' buttons.

Figure 3. WiFi Interface Working Mode Configuration Web page

After the configuration has updated, the Web page will show **Set Successfully, Restart to use new setting**. Then click on the **STA Interface Setting** selection. The STA Interface Setting Web Page will open.

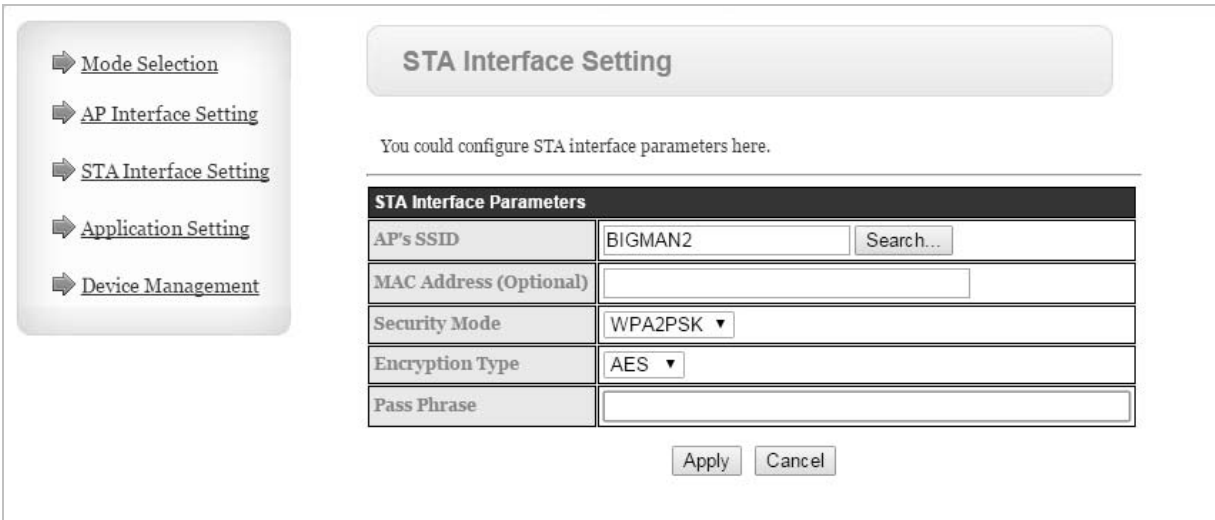


Figure 4. WiFi Interface STA Interface Setting Web Page

Find the WiFi network for the VoIP Interface/Amplifier Assembly by clicking the **Search** button in the AP's SSID section. The Site Survey Web page will open showing all available networks. Select the desired network and click the **Apply** button.

Site Survey							
	SSID	BSSID	RSSI	Channel	Encryption	Authentication	Network Type
<input type="radio"/>	TP-LINK_LAB	a0:f3:c1:a8:db:fc	60%	1	NONE	OPEN	Infrastructure
<input type="radio"/>	BIGMAN2	40:16:7e:5b:6e:78	100%	6	AES	WPA2PSK	Infrastructure
<input type="radio"/>	HP-Print-18-LaserJet 400 color	bc:85:56:ed:fd:18	39%	6	NONE	OPEN	Infrastructure
<input type="radio"/>	BIGMAN3	c8:d7:19:f4:99:99	5%	6	TKIP	WPAPSK	Infrastructure
<input type="radio"/>	Test	00:0f:66:75:88:96	5%	7	NONE	OPEN	Infrastructure
<input type="radio"/>	BigmanAP	00:0d:3a:28:c5:1b	29%	9	WEP	OPEN	Infrastructure
<input type="radio"/>	Hubbell-Guest	6c:f3:7f:dc:c8:81	0%	11	NONE	OPEN	Infrastructure

Apply Refresh

Figure 5. WiFi Interface Site Survey Web Page

A reminder window for entering the WEP Key will pop up. Click the OK button.

When the STA Interface Setting Web page opens again, the AP's SSID, Security Mode and Encryption Type fields will automatically be filled in. Now enter the WEP Key or Pass Phrase for the selected network and click the **Apply** button.



If the VoIP Interface/Amplifier Assembly being configured is not within the range of its wireless network, manually fill in the AP's SSID, Security Mode, Encryption Type and WEP Key or Pass Phrase fields before you click the Apply button.

After the configuration has updated, the Web page will show **Set Successfully, Restart to use new setting**. Then click on the **Device Management** selection. The Device Management Web Page will open. Click the **Restart** button in the Restart Module section.

The screenshot shows the 'Device Management' web page. On the left is a navigation menu with options: Mode Selection, AP Interface Setting, STA Interface Setting, Application Setting, and Device Management (selected). The main content area has a title 'Device Management' and the IP address '4.02.11.15'. Below the title is a message: 'You may configure administrator account and password, load default setting or update firmware.' There are four main sections:

- Administrator Settings:** A table with two rows: 'Account' with a text input containing 'admin', and 'Password' with a text input containing 'admin'. Below the table are 'Apply' and 'Cancel' buttons.
- Restart Module:** A table with one row: 'Restart Module' with a 'Restart' button.
- Load Factory Defaults:** A table with one row: 'Load Default Button' with a 'Load Default' button.
- Update Firmware:** A table with one row: 'Location:' with a 'Choose File' button and the text 'No file chosen'. Below the table is an 'Apply' button.

Figure 6. WiFi Interface Device Management Web page

When the WiFi module is restarting, the web page will show **Rebooting....** Both LEDs on the RJ-45 Jack J2 will turn OFF for several seconds while the WiFi interface is restarting. The green LED will turn ON first when the WiFi interface is done restarting. The yellow LED will turn ON if the WiFi interface can connect to the newly configured network.



If the VoIP Interface/Amplifier Assembly does not connect to the wireless network due to an incorrect WEP Key or Pass Phrase, follow the instructions in the “Changing the WiFi Interface Configuration” section of this manual.

**NOTE:** The WiFi module is no longer an Access Point to its own network (HF-A11\_AP). The WiFi module should now be connected to, or trying to connect to, the newly configured wireless network. The browser Web page will not change from showing Rebooting because the PC is no longer connected to the HF-A11\_AP network.

## Changing the WiFi Interface Configuration

To change the configuration of the WiFi interface first press the RLOAD button (PB1) for 10 seconds to return the WiFi interface to its default settings. The RLOAD button is located on the VoIP PCBA near the WiFi module and J2. Both LEDs on the RJ-45 Jack (J2) will turn OFF for several seconds while the WiFi interface is resetting. Wait for the green LED to turn ON before trying to connect to the HF-A11\_AP network.

With the default settings loaded and the green LED on the RJ-45 Jack (J2) ON follow the instructions in the “First Time WiFi Interface Setup” section to connect the HF-A11\_AP network and change the configuration settings.

 **WARNING**  If the VoIP Interface/Amplifier Assembly has been configured for DHCP, after changing the WiFi Interface configuration the power must be cycled before it will connect to the wireless network. After power is reapplied and the green and yellow LEDs on the RJ-45 Jack (J2) are ON and the HEART BEAT LED on the VoIP PCBA is flashing you can go to the next section, “VoIP PCBA Configuration” and start setting up the VoIP Interface/Amplifier Assembly configuration.

## VoIP PCBA Configuration

For the first time configuration of the VoIP PCBA, power the unit by connecting +24 V dc to TB101 and connect Ethernet port of the VoIP PCBA to a 10/100 base-T Ethernet Network. Refer to Figure 8.

Verify the PC is connected to the same network as the VoIP Interface/Amplifier Assembly.

The easiest way to get started is to make a network connection to the unit and log on via a web browser. The unit is initially set with a static IP address:

**IP address**      **192.168.1.2**

A user name and password will be requested. The initial factory settings are:

User Name      **user**

Password        **password**

Changing the user name and password is recommended. This security measure helps to prevent unauthorized changes to the VoIP PCBA Interface's configuration.

**NOTE: The audio output level is set by configuring the Hands-free Output on the Audio Settings webpage during the configuration of the speaker.**

### VoIP PCBA Initial Network Configuration

Each VoIP PCBA must be set up for the network prior to installation. Assign a local ID, domain, proxy, and registrar.

Assign a host name      The host name provides identification of the different VoIP PCBAs on the network.

Test                      Verify that calls can be made successfully.

Maintain                Monitor alarms. Set up auto-updates.

**Refer to Pub. 42004-482 for detailed programming instructions of this VoIP device.**

## Closing the VoIP Interface/Amplifier Assembly

Assemble the front and rear sections and tighten the front panel screws to 16 to 20 in-lbs. of torque.



# Installation

## Safety and General Information

Install equipment without modification and according to all applicable local and national electrical codes. Consult the National Electrical Code (NFPA 70), Canadian Standards Association (CSA 22.1), and local codes for specific requirements regarding your installation. Class 2 circuit wiring must be performed in accordance with NEC 725.55.

Read, follow, and retain instructions – All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.

 **WARNING**  **This product can contain hazardous voltages. Always remove power to this station and any associated equipment before beginning any installation.**

 **CAUTION**  **Do not install this equipment in areas other than those indicated on the approval listing in the “Specifications” section of this manual. Such installation may cause a safety hazard and consequent injury or property damage.**

**Heed warnings** – Adhere to all warnings on the unit and in the operating instructions.

**Attachments** – Attachments not recommended by the product manufacturer should not be used, as they may cause hazards.

**Servicing** – Do not attempt to service this unit by yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

This permanently connected apparatus must have an ALL-POLE MAINS switch with a contact separation of at least 3 mm in each pole incorporated in the electrical installation of the building.

### Outdoor Installation Product

**Power lines** - An outdoor system should not be located in the vicinity of overhead power lines, electric lights, or power circuits, where it may contact such power lines or circuits, as this contact might be fatal. Refer to the National Electrical Code Article 800 regarding installation.

### Antenna Care

Unauthorized antennas, modifications, or attachments could damage the radio and may violate FCC regulations.

### Electromagnetic Interference/Compatibility

Electronic equipment may be susceptible to electromagnetic interference. If you experience interference, visit the FCC website at <http://www.fcc.gov> for possible solutions.

## Mechanical Receipt Inspection

The Speaker Interfaces are shipped in a cardboard container, protected from movement and distress by a self-forming packaging material. Thoroughly inspect it as soon as possible after delivery. In-transit damage should be immediately reported to the transportation company.

## Cable Installation Safety Considerations

Interconnecting, communications, and Class 2 dc power cables should be separated from electrical light or other Class 1 circuits by at least 2 inches. The exception is where Class 1 wiring or power circuits are run in a raceway, or are metal-sheathed or metal-clad, or are permanently separated from the conductors of the other circuitry by a continuous and firmly fixed nonconductor such as porcelain tubes or flexible tubing in addition to the insulation on the wire. Communications cables and in-building wiring should be listed and marked for the purpose according to NEC Article 800.

## Required Tools

- #1 Phillips screwdriver
- 1/16-inch flat blade screwdriver (for TB101, TB1 and TB3 connections only)

## Amplifier Components

The Model 10370-801 and 10370-802 WiFi Speaker Interfaces contain the following components:

Table 3.

Part No.	Description
69868-001	WiFi Module PCBA
69625-001	VoIP Amplified Speaker PCBA
100-02-7013-000	VoIP PCBA
	120/240 V ac input, switching power supply, 60 W, 24 V dc output

The Model 10370-701 and 10370-702 VoIP Speaker Interfaces contain the following components:

Table 4.

Part No.	Description
69625-001	VoIP Amplified Speaker PCBA
100-02-7013-000	VoIP PCBA
	120/240 V ac input, switching power supply, 60 W, 24 V dc output

## Mounting

1. Loosen the four screws on the front cover. Open the front cover of the enclosure to the left.
2. Remove the cable connections between the front panel and rear enclosure.
3. Pull on the left side of the enclosure until the hinge pins pull loose to separate the front and rear sections. Set the front half of the enclosure aside.



Warning: Observe precautions for handling electrostatic sensitive devices.

4. Determine the conduit or cable gland location on the rear enclosure. Drill spots have been provided on top and bottom for use with either a chassis punch or hole saw. Cut or punch the appropriate size hole(s) in the enclosure.
5. Use Myers ST-4 (1.25 inches) Scru-Tite hubs or equivalent. The hub(s) must be connected to the conduit before being connected to the enclosure.
6. Each mounting hole in the enclosure is 0.280 inch in diameter. See Figure 7. Secure the rear enclosure on the wall with screws or appropriate fasteners.
7. Route the ac power, speaker, input/output, and Ethernet cable through the conduit and into the enclosure allowing adequate cable length to access terminal blocks. Secure any loose cabling making sure loose wire does not contact the antenna.
8. Re-install the hinged front cover and re-connect the cables to the front cover.

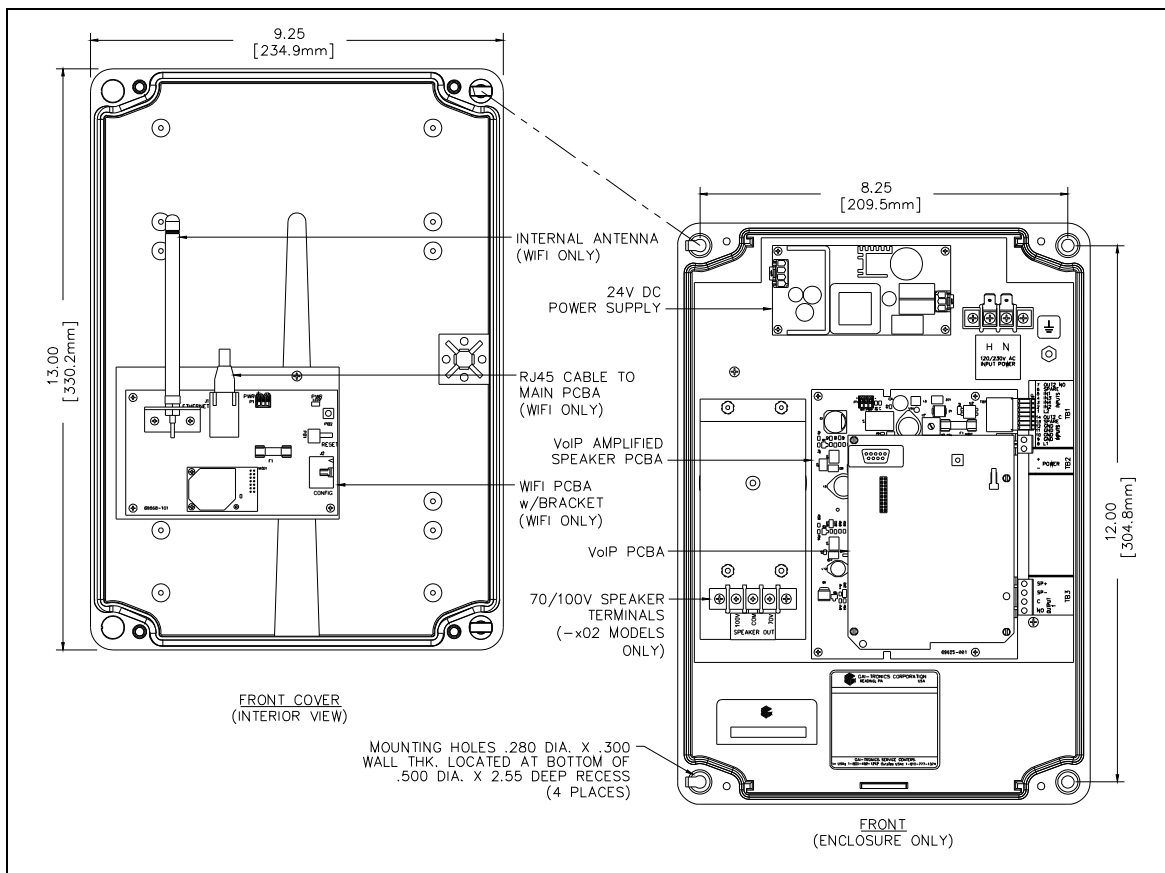




Figure 7. Unit Component Identification

## Field Wiring

 **WARNING**  **Do not apply power until all the connections have been wired.**



Warning: Observe precautions for handling electrostatic sensitive devices.

After all the field wires are pulled through the rear enclosure, install all connections as indicated below. Refer to Figure 9 for wiring details. Refer to Table 5 on page 23 and Table 6 on page 23 for the recommended conductor sizes and the termination chart.

**NOTE:** Consult the National Electrical Code (NFPA 70), Canadian Standards Association (CSA 22.1), and local codes for the specific requirements regarding your installation. Install all equipment without modification and according to the local and national codes. Class 2 circuit wiring must be performed in accordance with NEC 725.55.

### Power Connection

#### Power over Ethernet (PoE)

The device can be powered from the network cable assuming the speaker output requirement is less than 8 watts. PoE works across standard network cabling (i.e. Cat5) to supply power directly from the data ports where the device is connected. Connect the LAN cable (Cat5 or Cat5e UTP cable) into the RJ45 connector on the VoIP daughter board. **NOTE:** PoE is not applicable to Model 10370-80x series. Refer to Figure 9 and Table 6.

#### Local Power

If a speaker output requirement is greater than 8 watts, the device must be powered from a 120 or 240 V ac power source. Connect the power conductors to terminal block TB101 located in the upper right corner of the housing. **NOTE:** External power supply usage is required for Model 10370-80x series. Refer to Figure 8 and Table 6.

#### Ground

The unit must be connected to earth ground. Install a #6 ring lug on the incoming ground wire and secure it to the ground stud located in the upper right corner of the housing.

Speaker Connection

**8-Ohm Output**

Connect an 8-ohm speaker to connector TB3 terminals 1 and 2 (Models 10370-701 and 10370-801 only). Refer to Figure 8 and Table 6.

**70.7 V or 100 V Output**

Connect the speaker audio wiring to the appropriate terminals (70 V and Com. or 100 V and Com.) at TB102 located on the transformer assembly. Refer to Figure 8.

Output Contact Connections

Two relay contact sets are available on connector TB3 and TB1. Each contact set is a Form “A” type normally open (N.O.). Refer to Figure 9 and Table 6.

Audio Output Connections

**600-Ohm Audio** – Connect the 600-ohm audio output wiring to connector TB1, terminals 1 and 8. Refer to Figure 9 and Table 6.

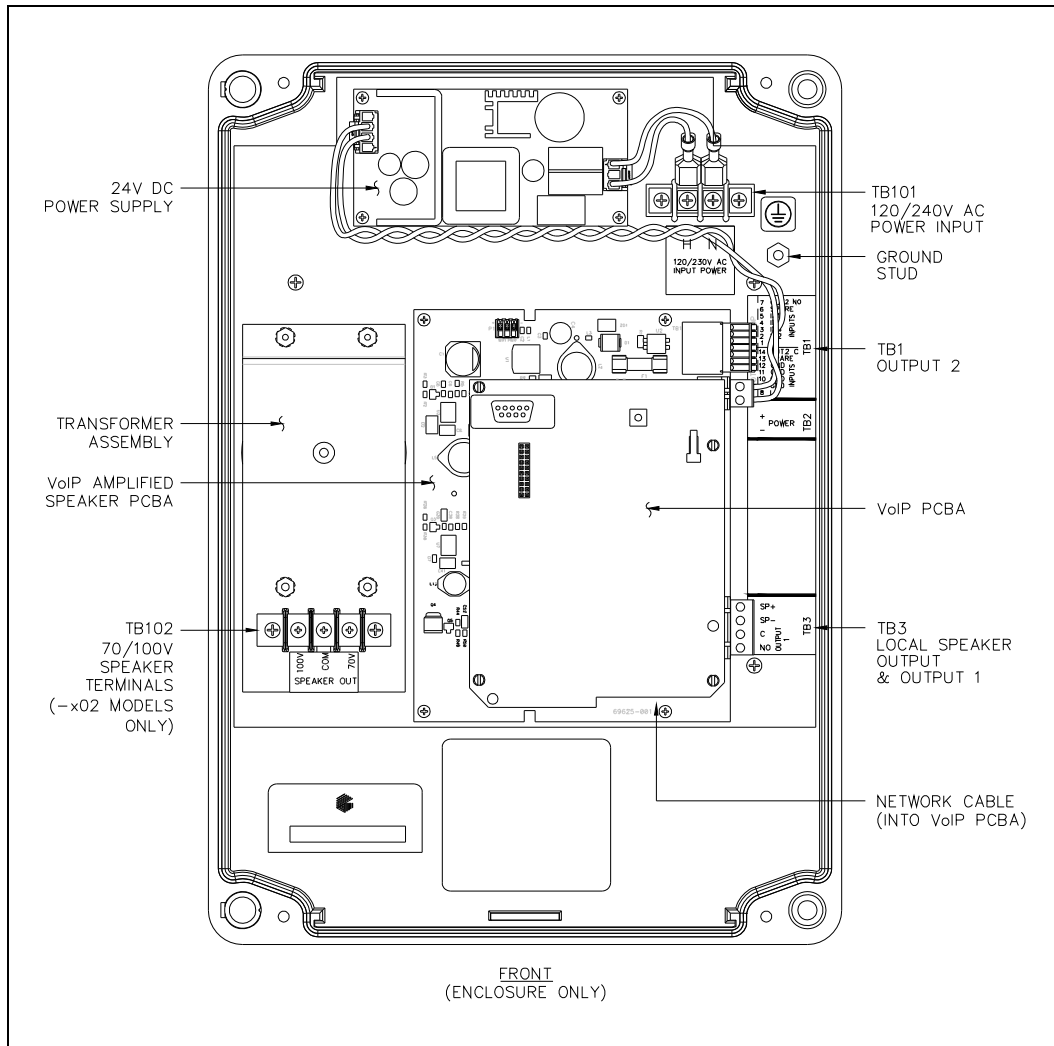


Figure 8. Field Wiring Connections



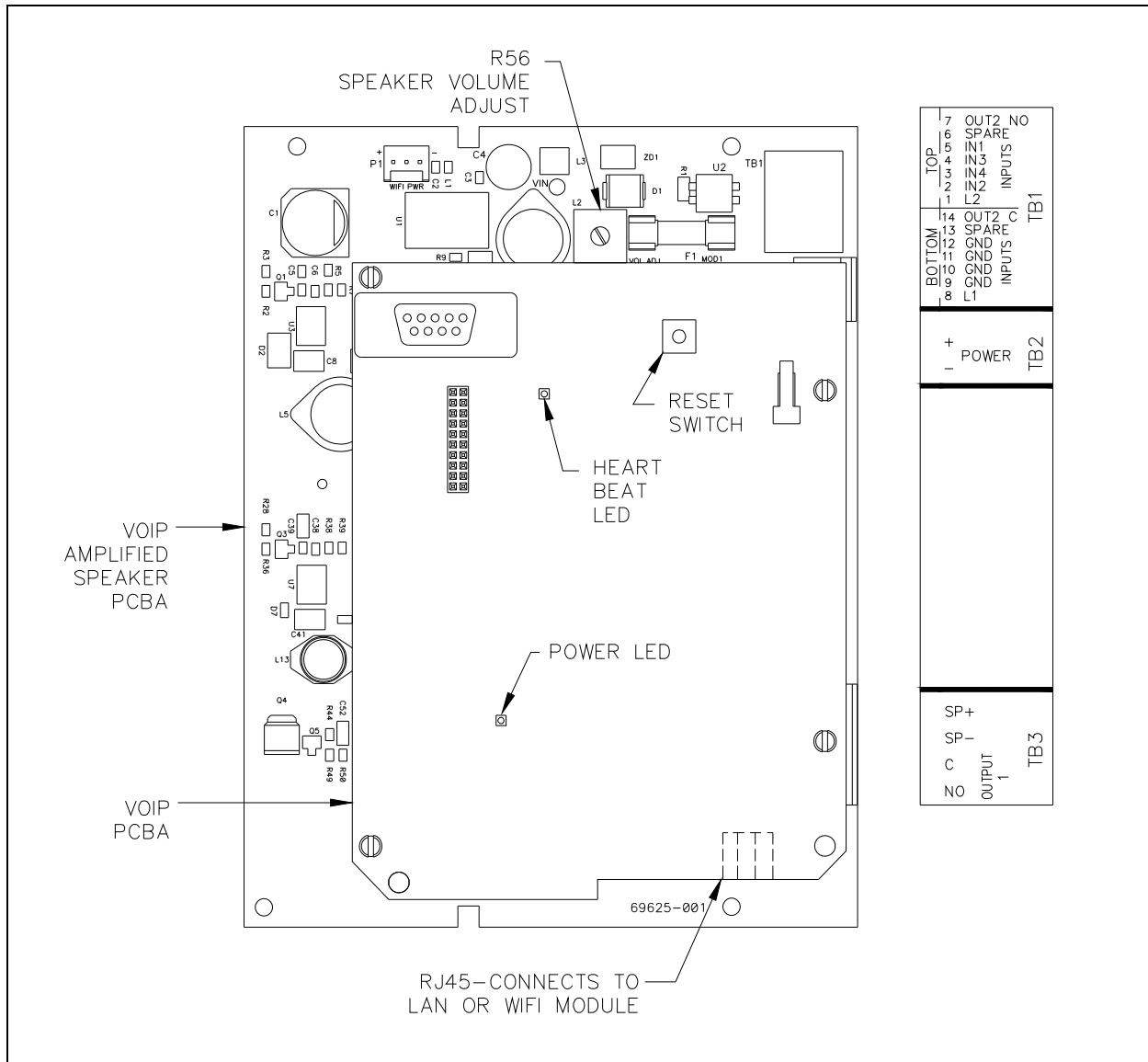
Table 5. Recommended Cabling

Cable Use	Recommended Size	Conductor Range
LAN	Cat5 or Cat5e UTP cable with an RJ45 connector	
Power	Two-conductor, No. 18 AWG is typical	No. 28–12 AWG
Speaker	Two-conductor twisted pair, No. 18 AWG is typical	No. 30–12 AWG
600-ohm audio line	Two-conductor, twisted pair, No 22 AWG is typical	No. 28–20 AWG
Output contacts	Two or three-conductor, No. 18 AWG is typical	No. 28–20 AWG

Table 6. Customer Terminations

Cable	Terminals	Function
LAN	LAN (on VoIP Interface PCBA)	
Power	TB101-1 TB101-2 Ground stud	Hot Neutral Earth
Speaker	TB3-1 TB3-2	Speaker + Speaker –
600-ohm audio line out	TB1-1 TB1-8	Audio L2 Audio L1
Isolate relay	TB3-3 TB3-4	Out 1 C Out 1 N.O.
Opto-coupler	TB1-7 TB1-14	Out 2 N.O. Out 2 C

**NOTE:** Out 1 and Out 2 are configurable for one of two modes of operation: Direct call or Multicast



TOP	7	OUT2_NO	TB1
	6	SPARE	
	5	IN1	
	4	IN3	
	3	IN4	
	2	IN2	
	1	L2	
BOTTOM	14	OUT2_C	
	13	SPARE	
	12	GND	
	11	GND	
	10	GND	
	9	INPUTS	
	8	L1	
	+	POWER	TB2
	-		
	SP+	TB3	
	SP-		
	C		
	NO OUTPUT 1		

Figure 9. VoIP PCBA – Component Locations

# Warranty

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Equipment. GAI-Tronics warrants for a period of one (1) year from the date of shipment, that any GAI-Tronics equipment supplied hereunder shall be free of defects in material and workmanship, shall comply with the then-current product specifications and product literature, and if applicable, shall be fit for the purpose specified in the agreed-upon quotation or proposal document. If (a) Seller's goods prove to be defective in workmanship and/or material under normal and proper usage, or unfit for the purpose specified and agreed upon, and (b) Buyer's claim is made within the warranty period set forth above, Buyer may return such goods to GAI-Tronics' nearest depot repair facility, freight prepaid, at which time they will be repaired or replaced, at Seller's option, without charge to Buyer. Repair or replacement shall be Buyer's sole and exclusive remedy. The warranty period on any repaired or replacement equipment shall be the greater of the ninety (90) day repair warranty or one (1) year from the date the original equipment was shipped. In no event shall GAI-Tronics warranty obligations with respect to equipment exceed 100% of the total cost of the equipment supplied hereunder. Buyer may also be entitled to the manufacturer's warranty on any third-party goods supplied by GAI-Tronics hereunder. The applicability of any such third-party warranty will be determined by GAI-Tronics.

Services. Any services GAI-Tronics provides hereunder, whether directly or through subcontractors, shall be performed in accordance with the standard of care with which such services are normally provided in the industry. If the services fail to meet the applicable industry standard, GAI-Tronics will re-perform such services at no cost to buyer to correct said deficiency to Company's satisfaction provided any and all issues are identified prior to the demobilization of the Contractor's personnel from the work site. Re-performance of services shall be Buyer's sole and exclusive remedy, and in no event shall GAI-Tronics warranty obligations with respect to services exceed 100% of the total cost of the services provided hereunder.

Warranty Periods. Every claim by Buyer alleging a defect in the goods and/or services provided hereunder shall be deemed waived unless such claim is made in writing within the applicable warranty periods as set forth above. Provided, however, that if the defect complained of is latent and not discoverable within the above warranty periods, every claim arising on account of such latent defect shall be deemed waived unless it is made in writing within a reasonable time after such latent defect is or should have been discovered by Buyer.

Limitations / Exclusions. The warranties herein shall not apply to, and GAI-Tronics shall not be responsible for, any damage to the goods or failure of the services supplied hereunder, to the extent caused by Buyer's neglect, failure to follow operational and maintenance procedures provided with the equipment, or the use of technicians not specifically authorized by GAI-Tronics to maintain or service the equipment. **THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

## Return Policy

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If the equipment requires service, contact your Regional Service Center for a return authorization number (RA#). Equipment should be shipped prepaid to GAI-Tronics with a return authorization number and a purchase order number. If the equipment is under warranty, repairs or a replacement will be made in accordance with the warranty policy set forth above. Please include a written explanation of all defects to assist our technicians in their troubleshooting efforts.

Call 800-492-1212 (inside the USA) or 610-777-1374 (outside the USA) for help identifying the Regional Service Center closest to you.