Pub. 42004-794C

GAI-TRONICS®
A HUBBELL COMPANY

SP2 PoE Remote Subset/Speaker Amplifier Station

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SP2 POE Remote Subset/Speaker Amplifier Station

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General Information

Product Overview

The GAI-Tronics SP2 station is a modular industrial multicast VoIP (Voice over Internet Protocol) communication system. The standard PoE remote subset SP2 configuration is an indoor handset/speaker amplifier station using PoE power with RTU control. The SP2 remote subset handset/speaker amplifier station is designed for use with a remote subset (see the Subsets section). They are constructed of cold rolled steel with a gray or safety orange powder coat finish. Several options are available to add to or modify station capabilities (see the Features and Options sections).

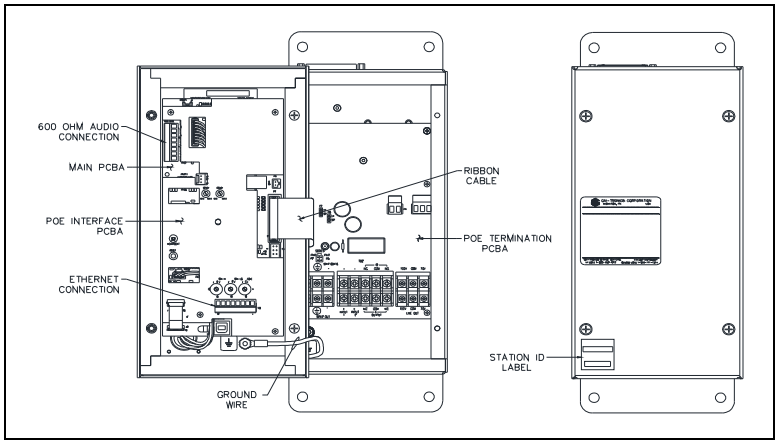

Figure 1. SP2 PoE Remote Subset/Speaker Amplifier Front Panel

SP2 stations connect to an Ethernet network so the loss of a single station will not adversely affect the entire system. The stations require a 100 Mbps link to a switch or router using Category 5e or better Ethernet cable. Isolate SP2 network traffic from other network devices to ensure the quality of SP2 audio. Properly configure network switches and routers for IGMP (Internet Group Management Protocol) snooping and multicast filtering. Maximum cable runs between SP2 stations and network switches are limited to 100 meters to comply with Ethernet standards.

Features

- flexible and highly configurable SMART technology featuring ALS (ambient level sensing), real time self-diagnostics, and available remote monitoring
- real-time operation providing instantaneous page and party line communication
- no SIP server or conference bridge requirement
- one-way live paging and alarm annunciation over system speakers
- distributed amplifier topology—loss of an individual amplifier will not adversely affect the system as a whole
- mutual provisioning mode allows easy system deployment
- high efficiency (>80%) Class D paging amplifier provides up to 14 watts of speaker output at 8 Ω when powered by POE Plus, 6 watts of speaker output when powered via POE.
- five configurable multicast channels for full-duplex conference communication with party line selector switch
- eight configurable multicast channels for receiving page announcements
- one isolated output for beacon activation
- two contact inputs
- 600-ohm audio I/O with control
- configurable priority scheme allows urgent/emergency pages to override less important pages
- configuration stored in non-volatile memory
- field adjustable volume control for handset earpiece, headset earpiece, and speaker amplifier
- configurable local and nearby speaker mutual muting to prevent acoustic feedback of live pages
- configurable pre-announcement tone
- off-hook and page switch timeout functionality
- configurable virtual zoning ability
- USB interface for field or bench configuration
- durable, high visibility, safety orange powder coat finish.

Options

All SP2 station options are factory installed.

- speaker amplifier only (no remote subset)
- 70-volt/100-volt speaker connections (requires factory installation of the 70-volt/100-volt toroid on the termination PCBA)
- conformal coating for PCBA
- gray powder-coat finish

Subsets

For proper operation, the SP2 remote subset handset/speaker amplifier station must be installed with a remote subset configuration from the following list:

- single or multi-party desktop subset
- single or multi-party desk-edge subset
- single or multi-party flush-mount subset

Mount the SP2 remote subset within 10 feet of the amplifier enclosure due to the subset cable length. In addition, mount the amplifier enclosure in an indoor location—the amplifier enclosure is not designed for outdoor use.

Installation

Important Safety Instructions

- **Read, follow, and retain instructions**—Read and follow all safety and operating instructions before installing or operating the unit. Retain instructions for future reference.
- **Heed warnings**—Adhere to all warnings on the unit and in the operating instructions.
- **Attachments**—Do not use attachments not recommended by the product manufacturer, as they may cause hazards.
- **Servicing**—Do not attempt to service this unit. Opening or removing covers may expose dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

⚠ **ATTENTION** ⚠ —Install equipment without modification and according to all applicable local, national, and international electrical codes. North America—Consult the National Electrical Code (NFPA 70), Canadian Standards Association (CSA 22.1), and local codes for specific requirements regarding your installation. Install Class 2 circuit wiring in accordance with the NEC.

⚠ **WARNING** ⚠ —**Do not disconnect equipment while energized.**
Insure proper grounding to protective earthing.

Only trained, qualified, and competent personnel must install these enclosures. Installation must comply with state and national regulations, as well as safety practices for this type of equipment.

Enclosure Mounting and Cable Entries

Mount the enclosure to a flat surface that provides proper clearance, rigidity, and strength to support the enclosure and all contained devices.

NOTE: Install the enclosure within 10 feet of the remote subset.

1. Mount the enclosure using the four 0.312-inch (8 mm) diameter holes located on the mounting flanges with ¼-inch (M6) hardware (see Figure 2).
   - The suggested mounting height for all station enclosures is 48 inches (1219 mm) to the center of the bottom mounting holes of the enclosure.
   - SP2 stations are not supplied with conduit or cable openings.
2. Remove the front panel (see the Open the Station section).
3. Drill or punch entry openings in the rear section of the enclosure (see Figure 2).
   - The station is suitable for bottom and/or top entry.
   - Using 70-volt/100-volt line audio requires bottom entry.
   - Bottom entry is recommended to prevent moisture from dripping onto the termination board.
   - There must be a minimum of ½ inch (13 mm) of material between entry holes.

NOTE: Do not use top entries with 70-volt/100-volt speakers.

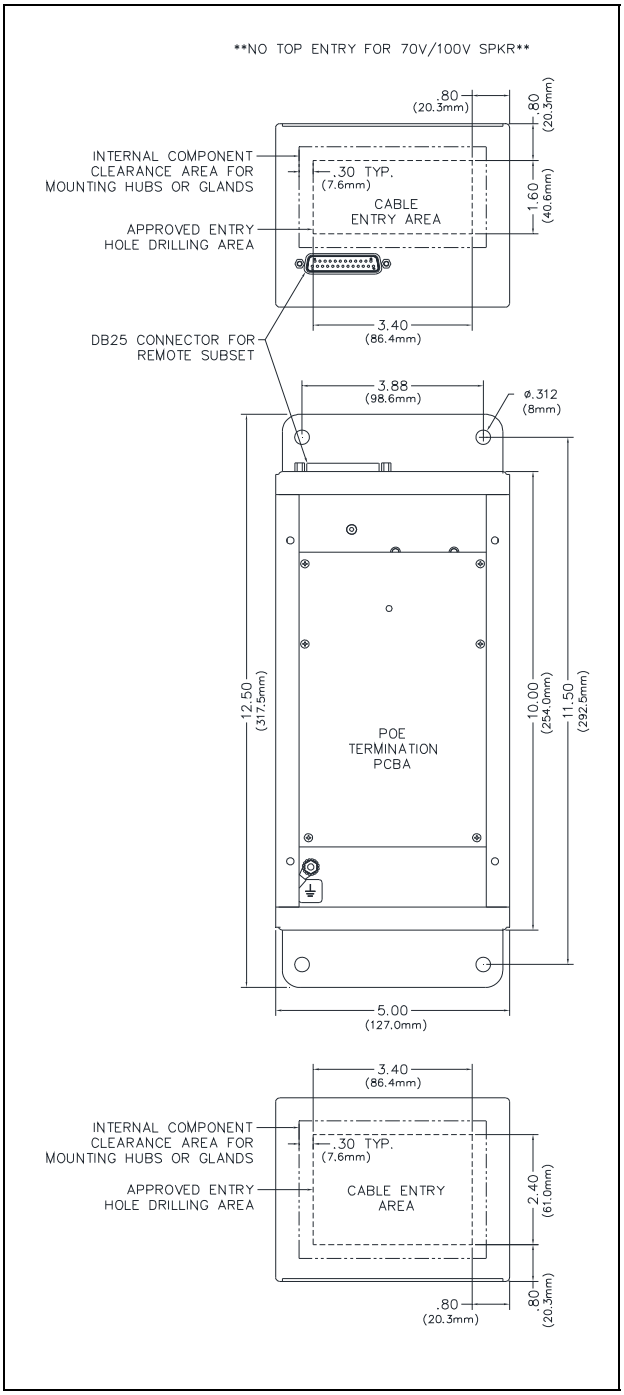

Figure 2. Suggested Wire Entry Locations

Open the Station

1. Remove the four screws from the front panel and turn it to the left.
2. Keep the wiring and ribbon cables connected.
3. Mount the front panel to the back-box's left-side mounting holes using two of the screws just removed.

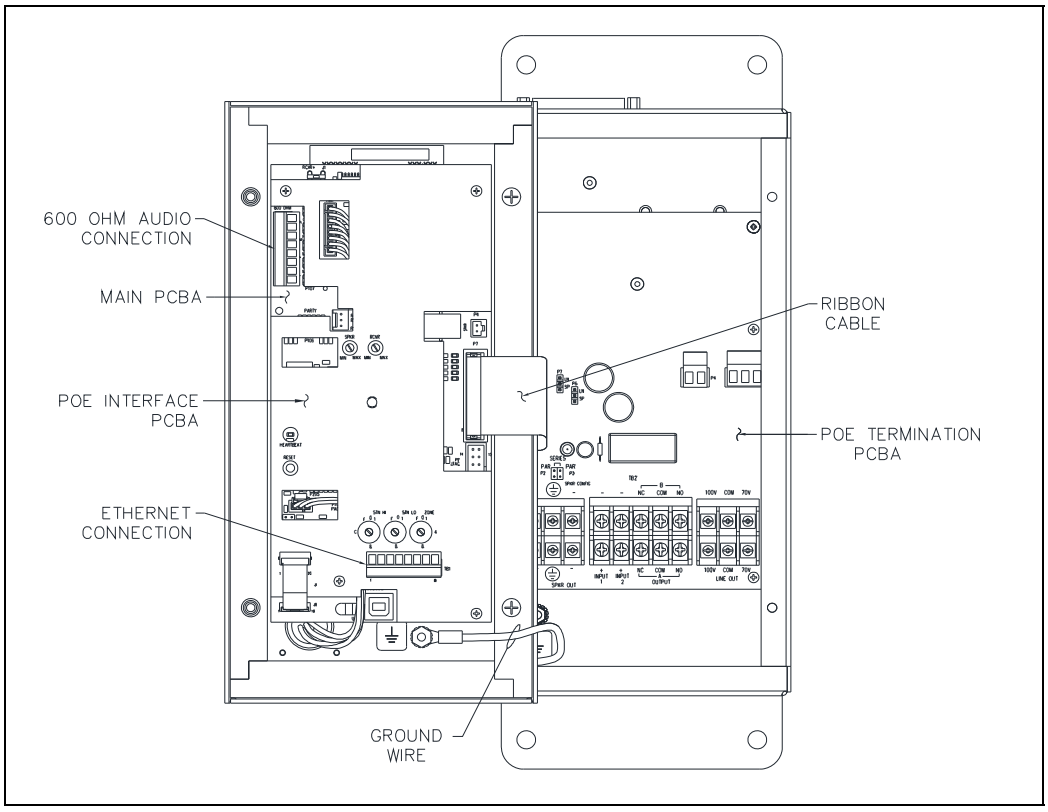

Figure 3. SP2 PoE Remote Subset Station—Interior View

Field Wiring and Configuration

The remote subset PoE SP2 station provides terminal blocks on the termination PCBA, located in the rear of the enclosure, for field wiring the speaker, input/output connections, and optional 70-volt/100-volt speakers. The main PCBA, mounted to the back of the front panel, contains the 600-ohm audio connection. The Ethernet connection is on the POE interface PCBA, mounted on top of the main PCBA.

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 the NEC.

Station Ground

Connect the station enclosure to earth ground:

1. Install a #6 ring lug on the ground conductor.
2. Secure it to the ground terminal located in the lower left corner at the back of the rear enclosure (see Figure 3).

Termination PCBA Connections

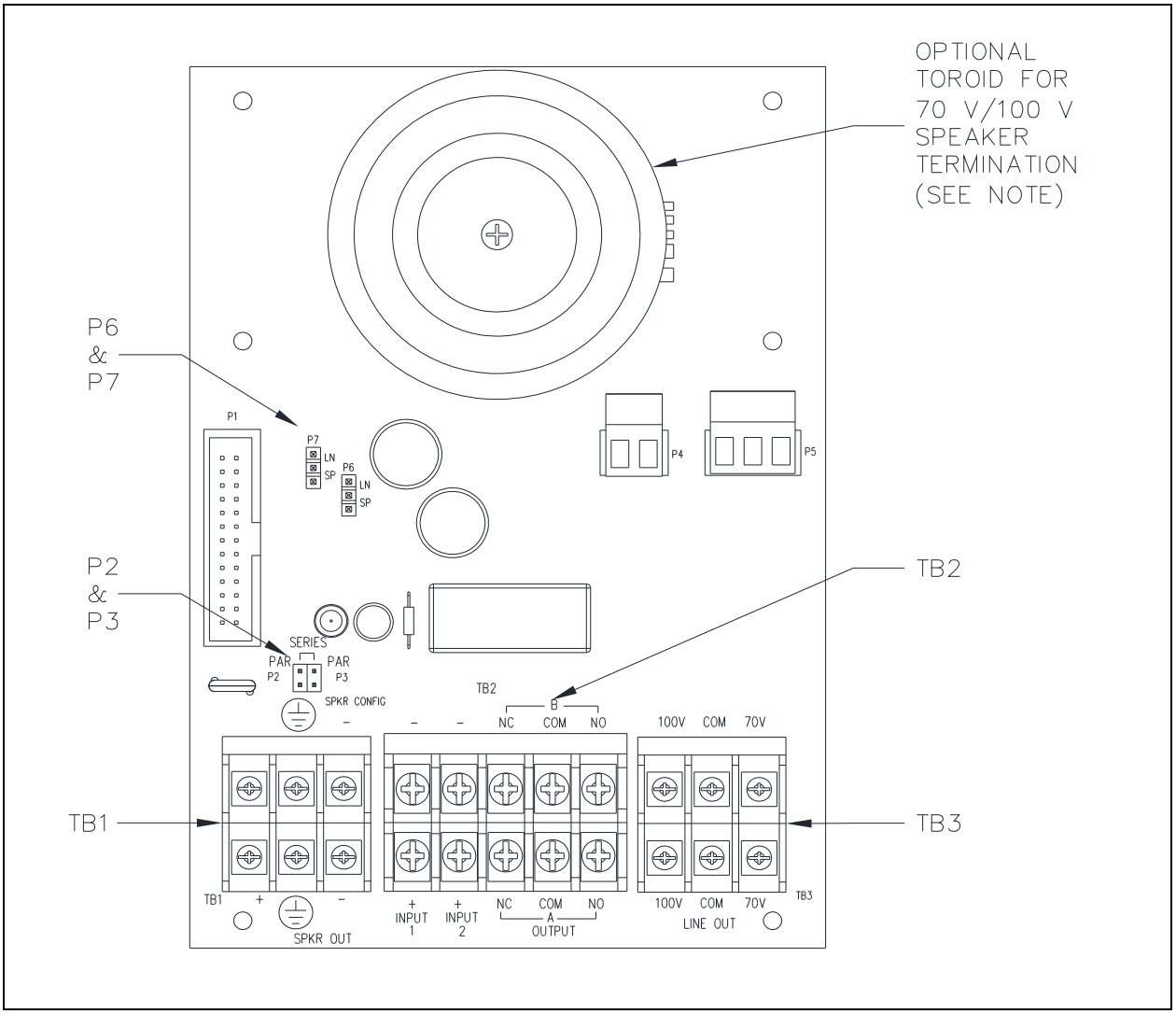

Figure 4. SP2 Termination PCBA (POE Stations)

NOTE: Installation of 70-volt/100-volt speakers requires factory installation of the 70-volt/100-volt toroid on the termination PCBA.

Direct Speaker Connection and Jumper Settings

Terminal block TB1 provides termination for the station's 8 or 16-ohm remote speaker(s).

1. Pull the speaker cable(s) into the enclosure.
2. Install spade lugs on the wires.
3. Connect the speaker wires to terminal block TB1 (see Table 1).
4. Torque the terminal block screws to 8–10 in·lb (0.90–1.13 N·m).
5. Configure the speaker jumpers; P2 and P3, for the appropriate impedance for use with 8-ohm or 16-ohm speakers (see Figure 4 and Figure 5).
6. Configure the LN/SP jumpers P6 and P7 by placing both jumpers in the SP position (see Figure 4).

A redundant set of terminals enables connection of a second speaker branch connected in series or parallel with the primary speaker.

Table 1. Direct Speaker Connections—TB1

Pin	Label	Description
TB1-1	+	Parallel/SPEAKER A Series—Output
TB1-2	⏚	Earth Reference
TB1-3	–	Parallel/SPEAKER A Series—Output
TB1-4	+	Parallel/SPEAKER B Series—Output
TB1-5	⏚	Earth Reference
TB1-6	–	Parallel/SPEAKER B Series—Output

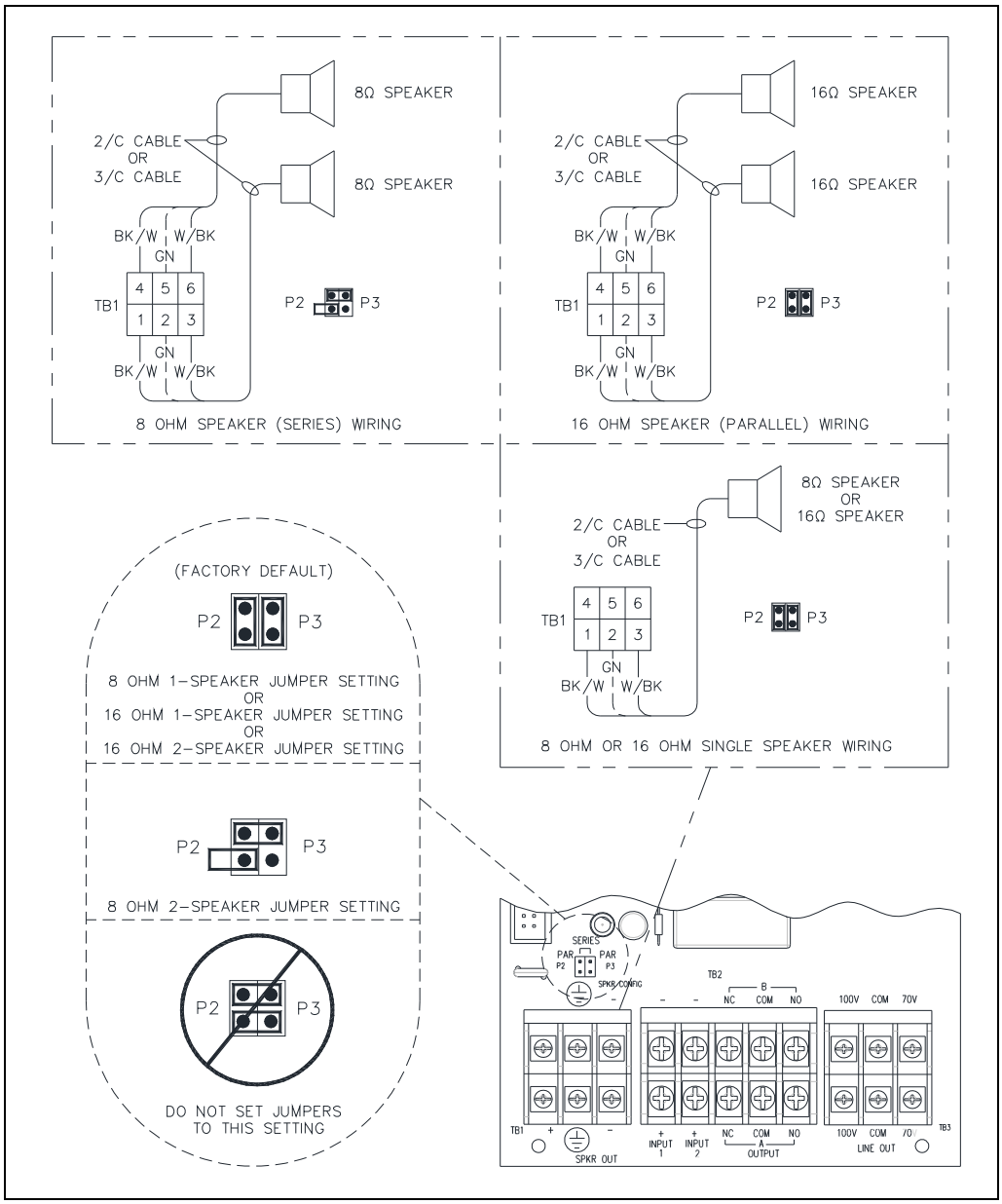

Figure 5. 8/16-ohhm Speaker Impedance Configuration

RTU Inputs

The termination PCBA contains two unsupervised auxiliary RTU inputs. Terminate these inputs at terminal block TB2 (see Figure 4).

1. Pull the RTU input cable(s) into the enclosure.
2. Install spade lugs on the wires.
3. Connect the RTU input wires to terminal block TB2 (see Table 2).
4. Torque the terminal block screws to 8–10 in·lb (0.90–1.13 N·m).

Table 2. RTU Input Termination—TB2

Pin	Label	Function
TB2-1	+ RTU 1 INPUT	RTU Input 1 +
TB2-2	–	RTU Input 1 –
TB2-3	+ RTU 2 INPUT	RTU Input 2 +
TB2-4	–	RTU Input 2 –

RTU Output

A single output relay provides two form C contacts to switch external power to a beacon. (see Figure 6). Terminate this output at terminal block TB2 (see Figure 4).

1. Pull the RTU output and external power source cables into the enclosure.
2. Install spade lugs on the wires.
3. Connect the RTU output and power source wires to terminal block TB2 (see Table 3 and Figure 6).
4. Torque the terminal block screws to 8–10 in·lb (0.90–1.13 N·m).

Table 3. RTU Output Contacts—TB2

Pin	Label	Description
TB2-5	NC A	Normally Closed Output A
TB2-6	NC B	Normally Closed Output B
TB2-7	COM A	Common Output A
TB2-8	COM B	Common Output B
TB2-9	NO A	Normally Open Output A
TB2-10	NO B	Normally Open Output B

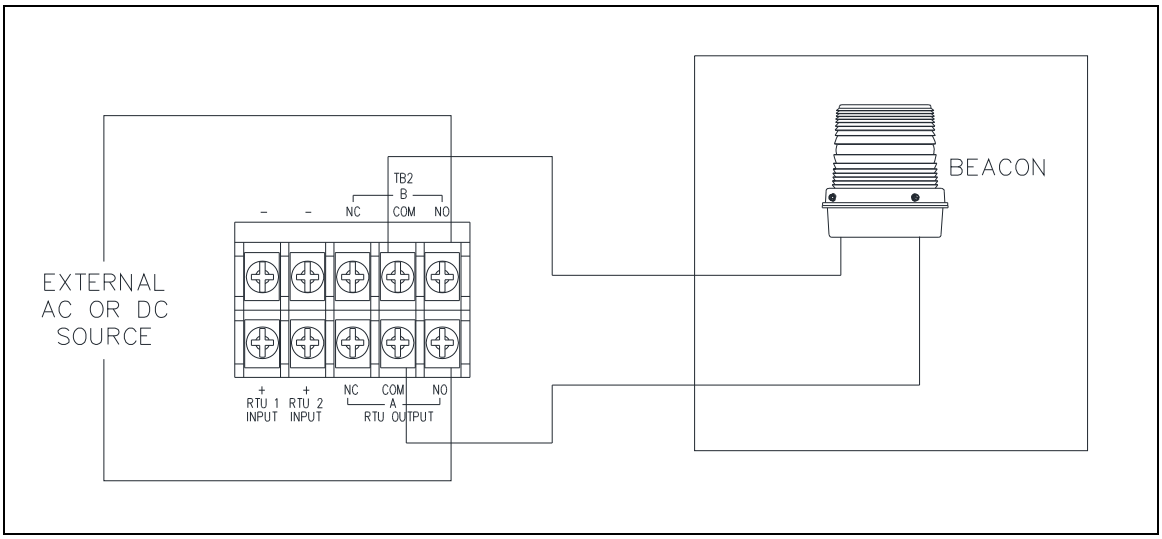

Figure 6. RTU Output Wiring—TB2

Optional 70 V/100 V Speaker Termination

Terminal block TB3 permits connection of 70-volt and/or 100-volt speaker arrays to the station. Wire all speakers in parallel (see Figure 4 and Table 4).

NOTE: Installation of 70-volt/100-volt speakers requires factory installation of the 70-volt/100-volt toroid on the termination PCBA.

1. Pull the 70-volt and/or 100-volt speaker cable(s) into the enclosure.
2. Install spade lugs on the wires.
3. Connect 100-volt speakers between the 100V and COM terminals on TB3. Connect 70-volt speakers between the 70V and COM terminals onTB3.

   Two sets of terminals exist for the 70-volt and 100-volt speaker loops, providing termination for additional speaker loops.
4. Torque the terminal block screws to 8–10 in·lb (0.90–1.13 N·m).
5. Configure the LN/SP jumpers P6 and P7 by placing both jumpers in the LN position (see Figure 4).

NOTE: The combined wattage (tap settings) for the connected speakers must be less than or equal to 20 watts for 70-volt speakers or 36 watts for 100-volt speakers.

Table 4. 70 V/100 V Speaker Connections—TB3

Pin	Label	Description
TB3-1	100V	100 V Parallel Speakers—Output
TB3-2	COM	Common
TB3-3	70V	70 V Parallel Speakers—Output
TB3-4	100V	100 V Parallel Speakers—Output
TB3-5	COM	Common
TB3-6	70V	70 V Parallel Speakers—Output

Main PCBA—600-Ohm Audio I/O with Control

SP2 stations have a 600-ohm audio input to broadcast line level audio over the page line. The station broadcasts the 600-ohm input audio stream upon closure of a normally open dry contact input control. SP2 stations also provide a 600-ohm audio output for sending page line audio to a remote audio amplifier. A solid-state dry contact relay controls when the remote amplifier plays the audio.

1. Pull the cable for the 600-ohm audio I/O into the enclosure.
2. Install ferrules onto the wire ends.
3. Connect the 600-ohm audio wires to the pluggable terminal block for the 600-ohm audio I/O connection (see Table 5 and Figure 7).
4. Connect the pluggable terminal block to terminal block receptacle TB1.

Table 5. 600-Ohm Audio I/O Interface Connections—TB1

Pin	Label	Description
TB1-1	IN CT1+	Input Control Positive
TB1-2	IN CT1−	Input Control Negative
TB1-3	IN AUD+	Input Audio Positive
TB1-4	IN AUD−	Input Audio Negative
TB1-5	OUT AUD+	Output Audio Positive
TB1-6	OUT AUD−	Output Audio Negative
TB1-7	OUT CT1+	Output Control Positive
TB1-8	OUT CT1−	Output Control Negative

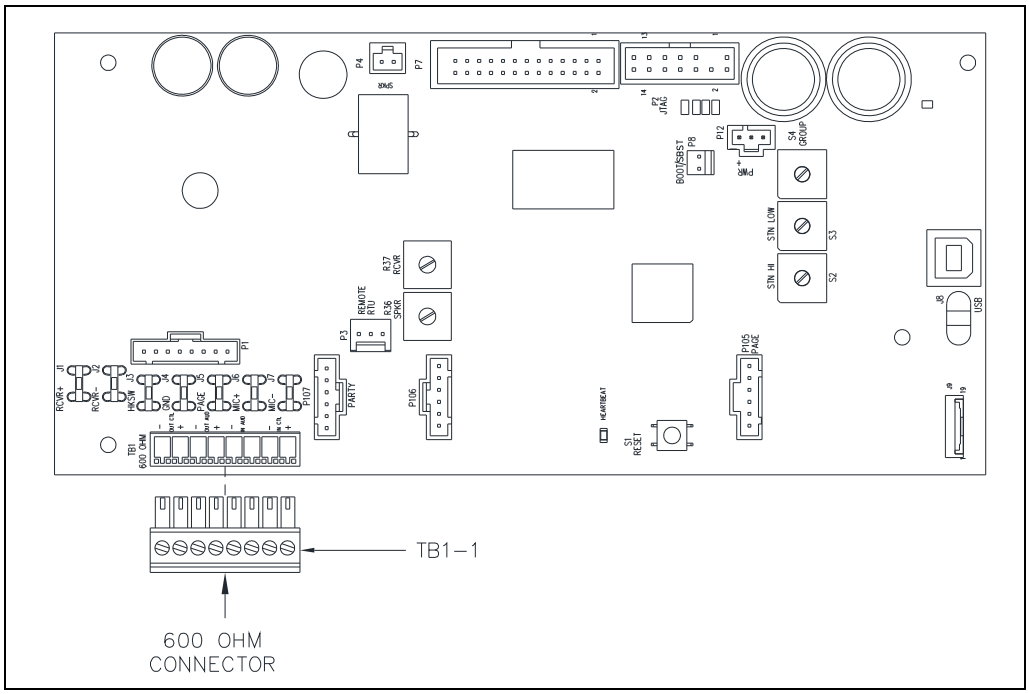

Figure 7. SP2 Main PCBA (PoE)

POE Interface PCBA

The PoE interface PCBA mounts to the top of the main PCBA. Terminate the Ethernet cable to terminal block TB1 on the PoE interface PCBA (see Figure 8).

1. Pull a dedicated Category 5e or better Ethernet cable into the rear enclosure.

   Maximum PoE cable length is 100 m.

2. Install ferrules onto the wire ends.
3. Connect the Ethernet cable to the 8-position pluggable terminal block (see Table 6).
4. Connect the pluggable terminal block to the POE interface PCBA (see Figure 8).
5. Connect the other end of the Ethernet cable to an 802.af (POE) or 802.at (POE Plus) compliant switch.

NOTE: SP2 stations require shielded Ethernet cable or metallic conduit.

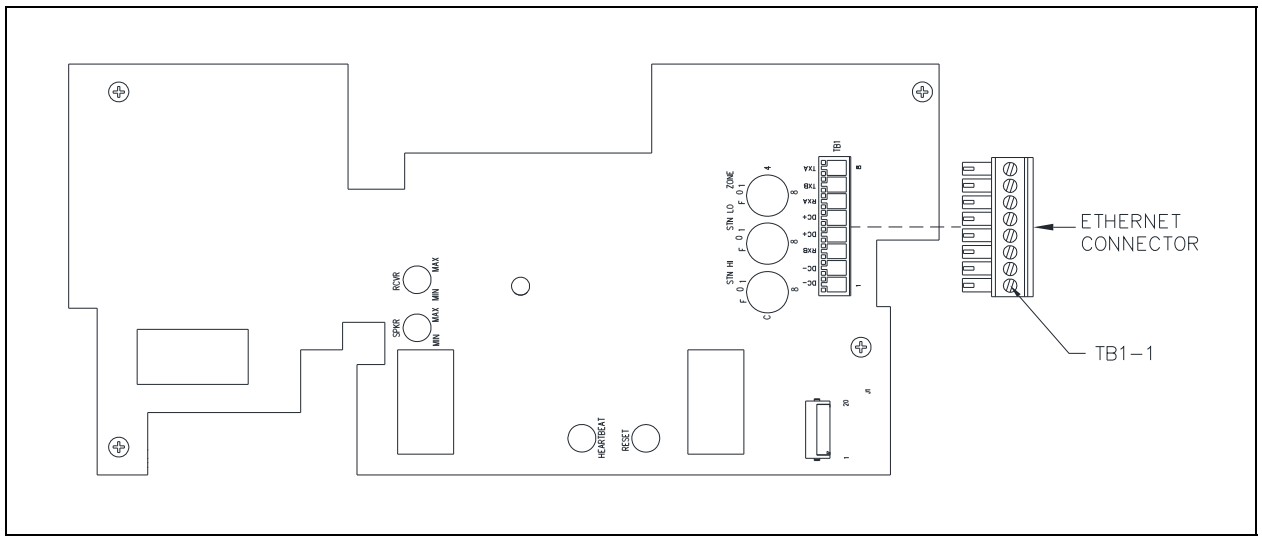

Figure 8. POE Interface PCBA

Table 6. Ethernet Connection—TB1

Pin	Label	Description
TB1-1	DC−	Negative dc voltage
TB1-2	DC−	Negative dc voltage
TB1-3	RXB	Data Receive −
TB1-4	DC+	Positive dc voltage
TB1-5	DC+	Positive dc voltage
TB1-6	RXA	Data Receive +
TB1-7	TXB	Data Transmit −
TB1-8	TXA	Data Transmit +

Settings and Adjustments

Open the Station

1. Remove the four screws from the front panel and turn it to the left to expose the interior surfaces.
2. Keep the wiring and ribbon cables connected.
3. Mount the front panel to the rear enclosure using two of the screws just removed (see Figure 9).

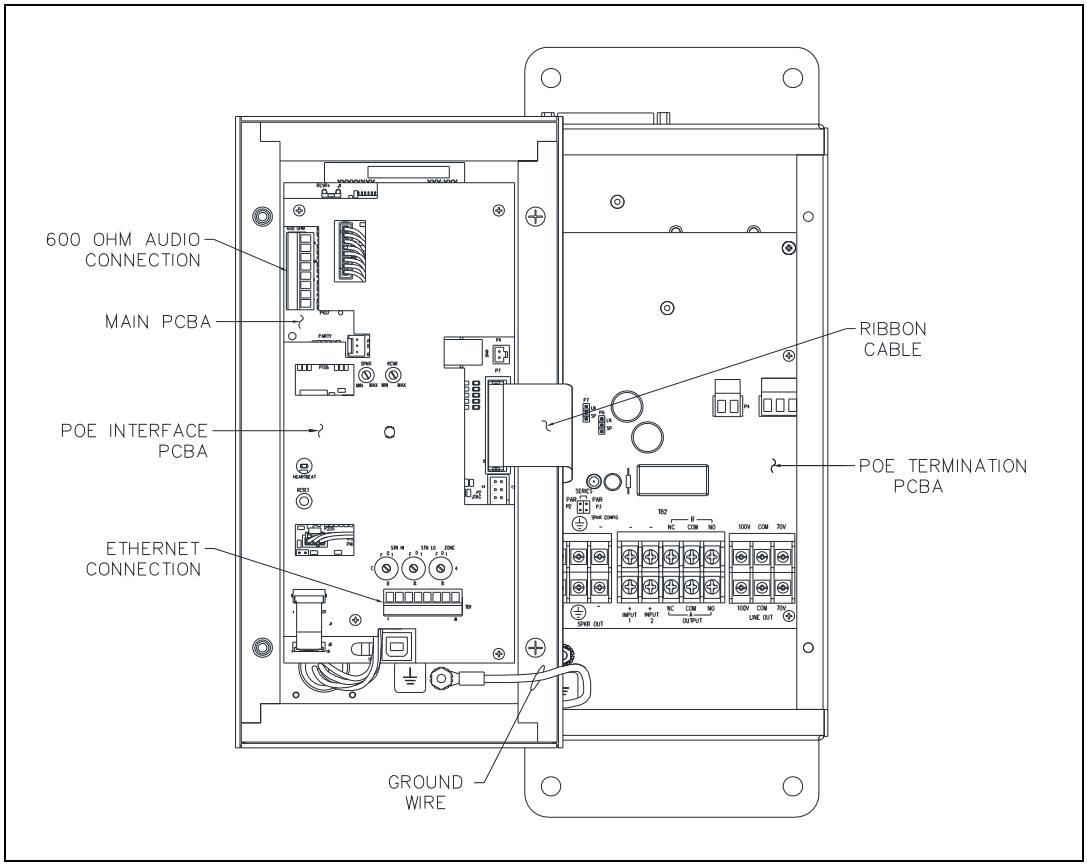

Figure 9. SP2 PoE Remote Subset Station—Interior View

Main PCBA Configuration

Refer to Figure 10 for the switch, jumper, and LED locations on the main PCBA.

Write Protect (EEPROM) Jumper

NOTE: Do not adjust this jumper in the field.

WDOG Enable (Watchdog) Jumper

Watchdog jumper, P11, enables a watchdog feature for software purposes. Do not adjust this jumper in the field. The default setting is shorted.

Reset Switch

Reset switch, S1, reboots the station to its initial state. All configuration settings remain programmed.

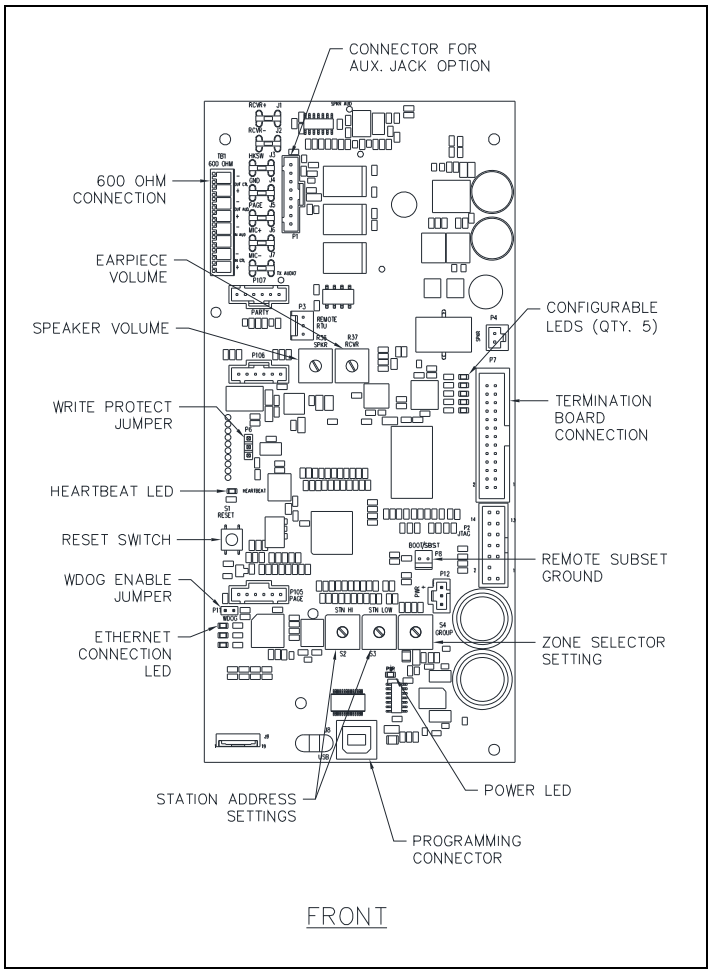

Figure 10. Main PCBA—PoE Remote Subset SP2 Station

Speaker and 600-ohm Audio Output Volume

The speaker volume potentiometer, R36, adjusts the signal level to the speaker from the page line. When also connecting the 600-ohm audio output, R36 adjusts the volume for both. Configure the 600-ohm audio output volume via the CLI (Command Line Interface) when using 600-ohm audio without an external speaker. The default setting is 4 watts from an 8-ohm speaker and 2 watts from a 16-ohm speaker.

⚠**WARNING**⚠ —Maximum output power may exceed rated speaker wattage resulting in speaker damage.

To adjust the speaker or speaker and 600-ohm output volume:

1. Turn the speaker volume potentiometer, R36, fully counterclockwise (see Figure 10).

   The speaker emits an audible test-tone.

2. Slowly turn R36 clockwise to obtain the desired output volume.

   The test-tone ceases three seconds after making no adjustments.

This setting is configurable via USB or Ethernet connection using the CLI.

NOTE: Configuring this setting with the SP2 Console in a mutually provisioned system overrides this setting on the station. See the SP2 Configuration Guide, Pub. 42004-784 (see the Reference Documentation section).

Receiver Volume

Use the receiver volume potentiometer, R37 (see Figure 10), to adjust the volume for the handset:

1. Remove the handset from the cradle.
2. Turn the receiver volume potentiometer, R37, fully counterclockwise.

   The receiver emits an audible test-tone.
3. Slowly turn R37 clockwise to obtain the desired output volume.

   The test-tone ceases three seconds after making no adjustments.

This setting is configurable via USB or Ethernet connection using the CLI.

NOTE: Configuring this setting with the SP2 Console in a mutually provisioned system overrides this setting on the station. See the SP2 Configuration Guide, Pub. 42004-784 (see the Reference Documentation section).

Group and Station Number Selector Switches

One *group-number* and two *station-number* hex-selector switches configure SP2 stations for *mutual provisioning* (see Figure 10). Each hex switch has a small arrow that indicates the current setting.

1. Adjust the position of the group-number selector switch to the desired group [0–F].
2. Adjust the two station-number switches to assign the station number [00–FF].

NOTE: Do not assign the same group/station number to more than one station.

Configure at least one SP2 station as a *master station* to utilize *mutual provisioning* in an SP2 system. Assign addresses [0.01], [0.02], or [0.03] to the master stations using the selector switches. Master station(s) store the configuration for all SP2 stations on the network. Each SP2 station retrieves the mutual provisioning configuration from the master station as it powers up. See Pub. 42004-784, SP2 Configuration Guide, for detailed information on configuring SP2 stations and SP2 system mutual provisioning (see the Reference Documentation section).

Main PCBA Indicators

Power LED

The POWER LED illuminates when power is applied to the station, indicating the main board power supply is operational (see Figure 10).

Heartbeat LED

The HEARTBEAT LED flashes when network communication is established, indicating the microprocessor is operational (see Figure 10).

Ethernet Connection LEDs

Three Ethernet connection LEDs are located on the main PCBA; link (LNK), link speed (SPD), and activity (ACT). The LNK LED is blue, the SPD LED is green, and the ACT LED is yellow. The LNK and SPD LEDs indicate an active 100 Mbps Ethernet link when **off**. The activity LED, ACT, blinks yellow to indicate Ethernet data activity (see Figure 10).

Five Configurable LEDs

Configure the five LEDs (see Figure 10) through firmware. Information for configuring these LED indicators is in the SP2 Configuration Guide, Pub. 42004-784 (see the Reference Documentation section).

Front Cover Installation

After all adjustments are complete:

1. Place the front cover onto the rear enclosure

   Do not pinch any cables.

2. Secure the front cover using the four screws and washers provided.

3. Torque the screws to 50 in·lb (5.65 N·m).

Programming

SP2 stations are factory configured to provide basic Page/Party functions upon power-up. The stations may need to be reconfigured for custom configurations and larger system designs. Refer to Pub.42004-784 , SP2 Configuration Guide.

Remote Subset Operation

Standard Handset Paging

Complete the following steps to make a page announcement from an SP2 handset station:

1. Lift the handset from the cradle.

2. *If requesting conversation*: rotate the party-line selector switch to select an unoccupied party line.

3. Press and hold the handset pressbar (not necessary when using the optional ALL-CALL button).

4. After hearing the short *preannouncement* tone (if configured), speak directly into the microphone to broadcast the page/announcement.

   NOTE: SP2 stations incorporate a noise-canceling microphone to reduce transmitted ambient noise. This requires the user to place the microphone as close as possible to their mouth.

5. *If requesting conversation*:

   1. Designate the party line selected in Step 2.
   2. Release the handset pressbar.
   3. Wait for the designated individual(s) to respond.

   Full-duplex communication takes place on the party line without broadcasting over the system's speakers.

6. Replace the handset in the cradle.

Party Line Communication

To respond to a page:

1. Turn the party-line selector switch on any SP2 station in the system to the requested party line.

2. Pick up the station handset.

   Full-duplex communication takes place on the party line without broadcasting over the system's speakers.

   NOTE: SP2 stations incorporate a noise-canceling microphone to reduce transmitted ambient noise. This requires the user to place the microphone as close as possible to their mouth.

3. Return the handset to the cradle following the party line conversation.

The system speakers do not broadcast party line conversations. Other individuals can join the conversation at any time by picking up a handset and rotating the party-line selector switch to the party line in use.

Maintenance

Troubleshooting

The following table provides aid for qualified service personnel when troubleshooting problems with an SP2 station.

Problem	Solution
station not functional	• check wiring and cable terminations • check power supply voltage at TB3 on termination PCBA • Power LED on main PCBA illuminated • Heartbeat LED blinking once per second for normal operation
network communication not functional	• verify LNK LED on main PCBA is off • verify SPD LED on main PCBA is off • verify IP connection settings using telnet • ping station IP address from an admin PC • verify network switch settings for IGMP snooping and multicast filtering
remote subset handset receiver audio too high/low	• adjust the receiver volume • check potentiometer R37 setting • check handset connections • check cable terminations between the termination and main PCBAs • check hookswitch operation • replace handset
external speaker volume too high/low	• adjust the speaker and 600-ohm audio output volume • check potentiometer R36 setting • P2 and P3 termination PCBA jumper positions incorrect (see Figure 5) • check speaker wiring configuration on TB1 • replace the speaker or driver
RTU output not functional	• verify no monitored output faults exist • check fuse F1 on the termination PCBA • check connected device operation
RTU input not functional	• verify no monitored input faults exist • check RTU Inputs on TB2 • Check operation of connected device.

Service and Spare Parts

Contact GAI-Tronics' regional service center if the equipment requires service or spare parts. An RA# (Return Authorization Number) will be issued if service is required. Ship equipment prepaid to GAI-Tronics with an RA# and a purchase order number. Repairs or a replacement are made in accordance with GAI-Tronics' warranty policy if the equipment is under warranty. 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 with identifying the nearest regional service center.

Table 7. Replacement Parts

Part No.	Description
12508-002	Screw Kit (Qty. 32)

Reference Documentation

GAI-Tronics' product documentation is located on the GAI-Tronics website at https://www.gai-tronics.com.

SP2 Configuration Guide 42004-784

Specifications

Power Consumption

POE, IEEE 802.23af Class 0 ..... 4 W/12.95 W (idle/maximum)
POE Plus, IEEE 802.3at Class 4 ..... 4 W/25.5 W (idle/maximum)

Ethernet

Cable ..... Category 5e or better
Speed ..... 100 Mbps
Maximum Stations 4096
Maximum Cable Length ..... 100 m

RTU

Output Control

Maximum load current ..... 8 A
Maximum in-rush current ..... 15 A
Maximum voltage ..... 250 V ac

Input Control

Switch type ..... NO or NC dry contacts
Cable resistance ..... 100 Ω maximum loop resistance
Contact closure resistance ..... 1 kΩ maximum

Audio

Handset Amplifier

Frequency response..... 250–3,000 Hz, +0/–3 dB ref. to 1 kHz
Distortion ..... <1.5% THD @ 1 kHz
Receiver level..... 200 mV nominal, adjustable 100–350 mV

Speaker Amplifier

Maximum output:
8-ohm speaker*
PoE Plus..... 14 W +/−1.0 dB into 8-Ω load with −6 dBFs data signal, default: 4 W @ 8 Ω
PoE..... 6 W +/−1.0 dB into 8-Ω load with −6 dBFs data signal, default: 4 W @ 8 Ω
16-ohm speaker*
PoE Plus..... 7 W +/−1.0 dB into 16-Ω load with −6 dBFs data signal, default: 2 W @ 16 Ω
PoE..... 3 W +/−1.0 dB into 16-Ω load with −6 dBFs data signal, default: 2 W @ 16 Ω
Frequency response..... 250–3,000 Hz, +0/−3 dB ref. to 1 kHz
Distortion ..... <3% THD @ 1 kHz to 14 W
* 100 m maximum cable length with category 5e cable.

70-volt Line Audio Output

Audio Level
POE Plus..... 53 V_{RMS} (typical)
POE ..... 36 V_{RMS} (typical)
Minimum Load
POE Plus..... 249 Ω
POE ..... 249 Ω
Maximum Wattage (XFMR Tap Setting)
POE Plus..... 20 W (11.2 W typical)
POE ..... 20 W (5.5 W typical)

100-volt Line Audio Output

Audio Level
POE Plus..... 56 V_{RMS} (typical)
POE ..... 38 V_{RMS} (typical)
Minimum Load
POE Plus..... 277 Ω
POE ..... 263 Ω
Maximum Wattage (XFMR Tap Setting)
POE Plus..... 36 W (11.3 W typical)
POE ..... 36 W (5.5 W typical)

600-ohm Audio Input

Audio Level ..... 1 V_{RMS} maximum
Control type .....NO dry contact
Control cable resistance ..... 1 kΩ maximum loop resistance

600-ohm Audio Output

Frequency response.....250–3,000 Hz, +0/−3 dB reference to 1 kHz
Distortion .....<1% THD @ 1 kHz to 1 V_{RMS} into 600 Ω
Audio level.....adjustable 100 mV_{RMS} to1 V_{RMS} into 600 Ω
Control type ..... NO solid-state relay, maximum on resistance; 35 Ω
Control maximum load current..... 100 mA
Control maximum load voltage.....24 V ac/dc

Mechanical

Construction/finish..... 16-gauge cold-rolled steel; safety orange polyurethane
Mounting.....wall or column, four 0.31-inch (7.8 mm) mounting holes
Termination connections..... screw-type barrier terminal blocks for speaker, RTU, and 70 V/100 V audio
Phoenix connector pluggable terminals for 600-Ω and Ethernet
Dimensions:
Enclosure.....10.00 H × 5.00 W × 4.00 D in (254.0 × 127.0 × 101.6 mm)
Overall.....12.50 H × 5.25 W × 7.34 D in (317.5 × 133.4 × 188.4 mm)
Net weight.....standard amplifier: 6.0 lb
70V/100V amplifier: 7.0 lb
multi-party and options stations: 7.0 lb
70V/100V multi-party and option stations: 8.0 lb
Shipping weight .....standard amplifier: 7.0 lb
70V/100V amplifier: 8.0 lb
multi-party and options stations: 8.0 lb
70V/100V multi-party and option stations: 9.0 lb

Environmental

Temperature range (operation and storage) ..... −22 ºF to 140 ºF (−30 ºC to 60 ºC)
Humidity ..... 95% non-condensing

Approvals

NRTL certified for use in US and Canada.....UL/CSA 60950
CE Mark

Warranty

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

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.