



**GAI-TRONICS®**  
A HUBBELL COMPANY

# 370-901 SP2 to Page/Party® Bridge

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## Confidentiality Notice

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## General Information

The Model Model 370-901 SP2 to Page/Party bridge interfaces GAI-Tronics SP2 stations to existing Page/Party systems. The bridge integrates completely into a Page/Party system or ICS (Industrial Communication System). Audio detection and isolate functionality ensures proper operation of existing Page/Party accessories.

## Features

The SP2 to P/P bridge provides the following features:

- converts six 33-ohm audio lines to SP2 multicast channels (one page line and five party lines),
- indoor, wall-mount unit,
- six channel isolation inputs,
- configurable system isolation functionality, and
- six contact outputs.

## Option

SP2 to Page/Party redundancy.



Figure 1. SP2 to Page/Party® Bridge

# Installation

## Important Safety Instructions

- **Read, follow, and retain instructions**—Read and follow all safety and operating instructions, before operating this 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 GAI-Tronics, as they may cause hazards.

## Open the Enclosure

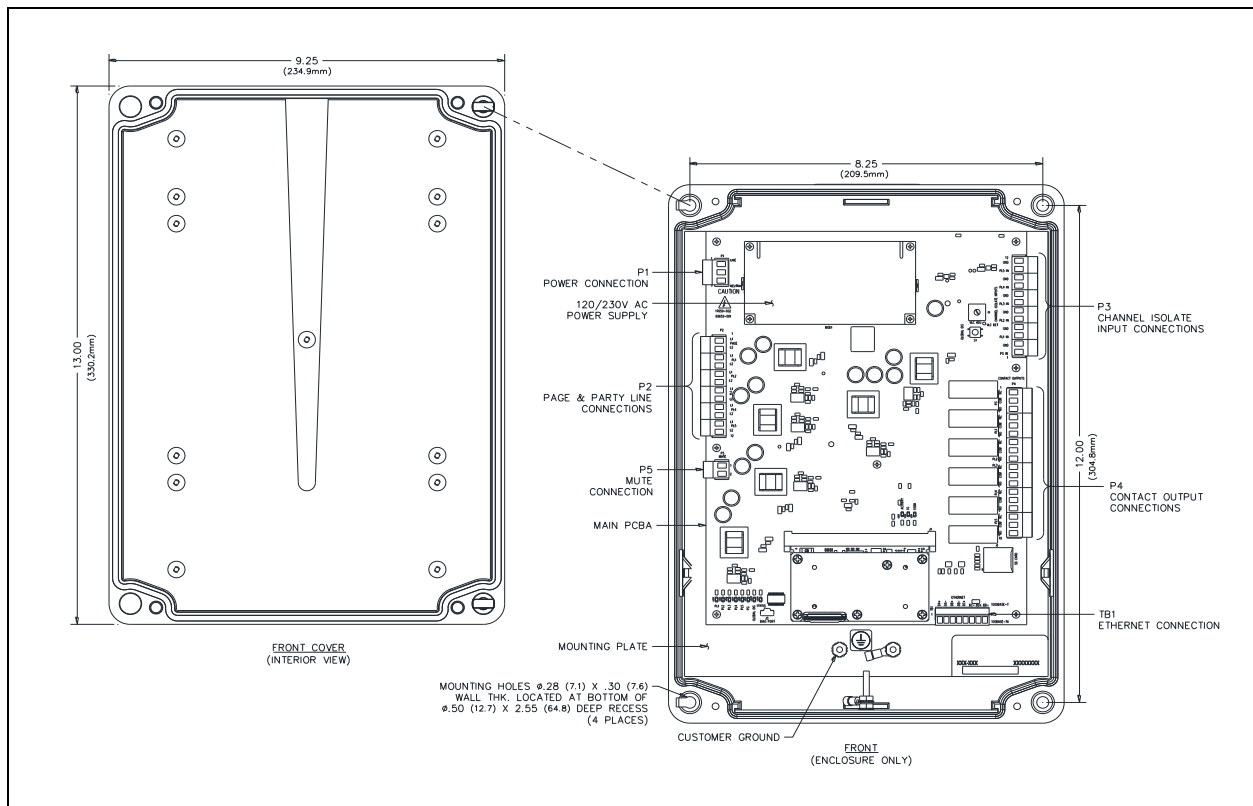


Figure 2. Model 370-901 SP2 to Page/Party Bridge

1. Remove and retain the four screws from the front cover.
2. Open the enclosure's hinged front cover and turn it to the left.



Warning: Observe precautions for handling electrostatic sensitive devices.

3. Pull up, on the left side of the enclosure front cover, until the hinge pins pull loose.
4. Separate the front and rear sections.
5. Set the front cover and the four screws aside.

## Mount the Enclosure

1. Determine the conduit or cable gland location(s), on the rear enclosure (see Figure 3).

**NOTE:** The drill spots, on the outside of the enclosure, do not line up with the center of the holes that must be drilled in the enclosure to accept the conduit.

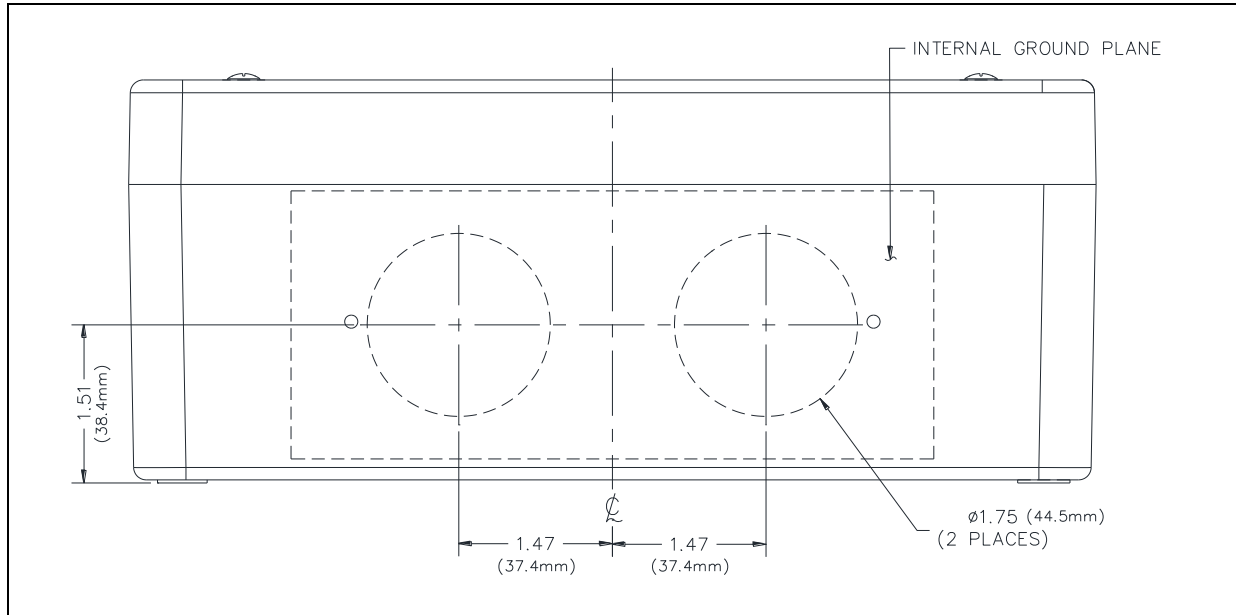


Figure 3. Ground Plate Hole Locations

2. Cut or punch the appropriate size hole(s) in the enclosure.  
The ground plate accepts two conduits up to 1.75-inches in diameter.
3. Secure the rear enclosure to the wall with screws or appropriate fasteners.  
The enclosure mounting holes are 0.280-inches in diameter.
4. Install conduit using Myers™ ST-4 (1.25-inch) Scru-Tite® hubs or equivalent.  
Use reducers for smaller conduit sizes to ensure proper contact with the supplied grounding plates.  
Connect all hubs to the conduit before connection to the enclosure.

## Field Terminations

The SP2 to Page/Party Bridge provides terminal blocks, on the main PCBA in the rear of the enclosure, for field wiring the power, 33-ohm Page/Party audio lines, Ethernet, channel isolation inputs, and contact outputs (see Figure 4)

## Earth Ground

The bridge must have an earth ground connection:

1. Pull the power supply cable or a separate green/yellow sheathed ground cable into the enclosure.
2. Install a #6 ring lug on the ground conductor.
3. Secure the ground conductor to the CUSTOMER GROUND lug, in the bottom of the rear enclosure (see Figure 2).

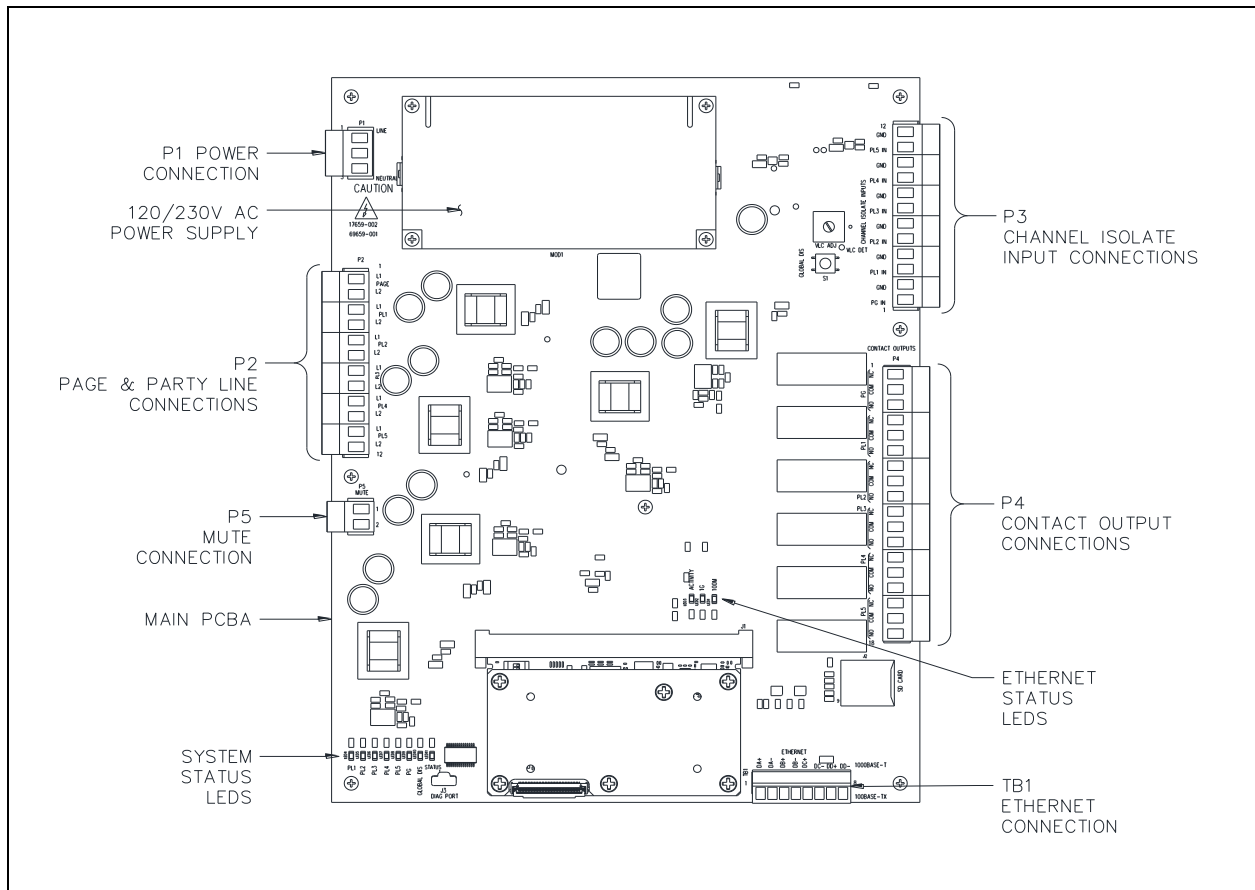


Figure 4. Main PCBA

**Ethernet—TB1**

Terminate the Ethernet connection to terminal block TB1.

1. Pull a Category 5 or better Ethernet cable through the conduit and into the enclosure.
2. Install ferrules onto the wire ends.
3. Connect the Ethernet cable to the 8-position pluggable terminal block TB1 (see [Figure 4](#) and [Table 1](#)).
4. Connect the pluggable terminal block to terminal block receptacle TB1.

Table 1. Ethernet Connector Wiring—TB1

<b>1000Base-T Signal (Label)</b>	<b>100Base-TX Signal (Label)</b>	<b>Wire Color</b>	<b>Wire Color Designator</b>
DA+	TX+	Orange Stripe	o
DA-	TX-	Solid Orange	O
DB+	RX+	Green Stripe	g
DB-	RX-	Solid Green	G
DC+		Solid Blue	B
DC-		Blue Stripe	b
DD+		Brown Stripe	br
DD-		Solid Brown	BR

**Page/Party 33-Ohm Audio  
Connections—P2**Table 2. Page and Party Line  
33-Ohm Audio Connections—P2

Terminal block P2 provides connections for six, 33-ohm audio lines (typically one page and five party lines). Connect the six Page/Party audio lines to the six, two-position pluggable terminal blocks P2 as follows:

1. Pull the Page/Party system cable through the conduit and into the enclosure.
2. Install ferrules onto the wire ends of each page and party line audio pair.
3. Connect each audio pair to one of the two-position terminal blocks (see [Figure 4](#) and [Table 2](#)).
4. Connect the six P2 terminal blocks to the terminal block receptacle P2 (see [Figure 4](#)).

Terminal	Label	Wire Size/Color
P2-1	PAGE	L1
P2-2		L2
P2-3	PL1	L1
P2-4		L2
P2-5	PL2	L1
P2-6		L2
P2-7	PL3	L1
P2-8		L2
P2-9	PL4	L1
P2-10		L2
P2-11	PL5	L1
P2-12		L2

See the 60029  
Series System Cable  
section below

PLn := Party Line 1..5

**60029 Series Page/Party System Cable**

Always connect Page/Party stations using GAI-Tronics No. 60029 Series 16 conductor system cable ([Table 3](#) provides the Page/Party system cable color codes):

Table 3. No. 60029 Series Page/Party System Cable

Color Code	Function
Black	120 V ac Line
White	120 V ac Neutral
Green/Yellow	Ground
Red/Blue	Page Line (L1)
Blue/Red	Page Line (L2)
Red	Party Line 1 (L1)
Tan/Red	Party Line 1 (L2)
Violet	Party Line 2 (L1)

Color Code	Function
Tan/Violet	Party Line 2 (L2)
Blue	Party Line 3 (L1)
Tan/Blue	Party Line 3 (L2)
Brown	Party Line 4 (L1)
Tan/Brown	Party Line 4 (L2)
Yellow	Party Line 5 (L1)
Tan/Yellow	Party Line 5 (L2)
Orange	Spare

### Channel Isolation Inputs—P3

Channel isolation inputs independently isolate SP2 multicast channel audio from each of the six Page/Party audio lines. Activation of an input disconnects the SP2 and Page/Party audio signals in the bridge for that audio channel. This prevents audio from traversing the bridge to the receiving system.

Terminate the six channel isolation inputs to terminal block P3 (see Figure 4). P3 is a 12-position terminal block. There are six, two-position terminal plugs; one for each channel isolation input.

Complete the terminations as follows:

1. Pull the cable(s) for the channel isolation inputs through the conduit and into the enclosure.
2. Install ferrules onto the wire ends.
3. Connect each channel pair to the two-position pluggable terminal block for that channel (see Figure 4 and Table 4).
4. Plug the six two-position pluggable blocks into terminal block P3.

Table 4. Channel Isolation Input Connections—P3

Channel	Label	Description
Page Line	PG IN	Page In +
	GND	Page In –
Party Line 1	PL1 IN	Party Line 1 +
	GND	Party Line 1 –
Party Line 2	PL2 IN	Party Line 2 +
	GND	Party Line 2 –
Party Line 3	PL3 IN	Party Line 3 +
	GND	Party Line 3 –
Party Line 4	PL4 IN	Party Line 4 +
	GND	Party Line 4 –
Party Line 5	PL5 IN	Party Line 5 +
	GND	Party Line 5 –

### Contact Outputs—P4

The SP2 to Page/Party bridge provides six relay contact outputs (see Figure 4). Outputs become active upon detection of a digital audio signal on the associated SP2 audio channel. These outputs may then actuate field devices when SP2 page or party-lines go off-hook.

The outputs terminate at terminal block P4. P4 is an 18-position terminal block. Each output has a three-position pluggable terminal block to simplify the output connections:

1. Pull the cable(s) for the contact outputs through the conduit and into the enclosure.
2. Install ferrules onto the wire ends.
3. Connect each set of output contact wires to the appropriate three position pluggable terminal block (see Figure 4 and Table 5).
4. Connect each three-position pluggable terminal block to terminal block P4.

Table 5. Contact Outputs—P4

Output	Label	Description
Page Line	NC	normally closed page contact
	COM	page output common
	NO	normally open page contact
Party Line 1	NC	normally closed PL1 contact
	COM	PL1 output common
	NO	normally open PL1 contact
Party Line 2	NC	normally closed PL2 contact
	COM	PL2 output common
	NO	normally open PL2 contact
Party Line 3	NC	normally closed PL3 contact
	COM	PL3 output common
	NO	normally open PL3 contact
Party Line 4	NC	normally closed PL4 contact
	COM	PL4 output common
	NO	normally open PL4 contact
Party Line 5	NC	normally closed PL5 contact
	COM	PL5 output common
	NO	normally open PL5 contact

PL<sub>n</sub> := Party Line 1–5



## Mute Connection—P5

The muting conductor, in the Page/Party system cable, has no function in the SP2 to Page/Party bridge. Terminal block P5 provides a dead-end termination for the Page/Party system cable's muting conductor (see [Figure 4](#)):

1. Install a ferrule onto the end of the orange wire.
2. Connect the wire to pin one on pluggable terminal block P5.
3. Connect the pluggable terminal block to terminal block P5.

## Power—P1

The SP2/Page/Party bridge operates from a 120/230 V ac, 50/60 Hz power source. Connect ac power to terminal block P1:

1. Pull the cable from the power source into the enclosure.
2. Install ferrules onto the wire ends.
3. Connect the line, and neutral, conductors to the pluggable terminal block (see [Figure 4](#) and [Table 6](#)).
4. Connect the pluggable terminal block to terminal block P1

Table 6. AC Power—P1

Pin	Label	Description
P1-1	LINE	ac hot
P1-2		no connection
P1-3	NEUTRAL	neutral

## Close the Enclosure

1. Reconnect the front cover to the rear enclosure by pushing the hinge pins on the front cover into the holes on the left side of the rear enclosure until a click is heard.
2. Rotate the front cover to close the enclosure.
3. Install and tighten the four screws on the front cover.

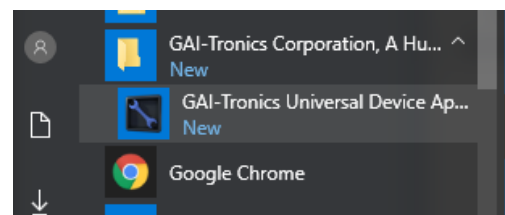
## Configuration

The SP2 to Page/Party bridge is factory configured with the following IP information:

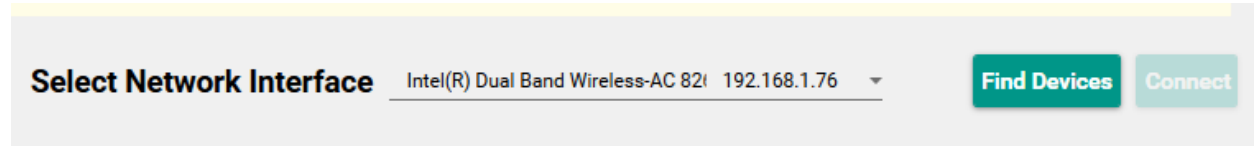
- IP Address—192.168.100.100
- Subnet Mask—255.255.255.0
- Default Gateway—192.168.100.200

Use the GUDA (GAI-TRONICS Universal Device Application) software (available at [www.gai-tronics.com](http://www.gai-tronics.com)) to configure the SP2 to Page/Party bridge. Install the GUDA software and run it to configure Page/Party® bridges as follows:

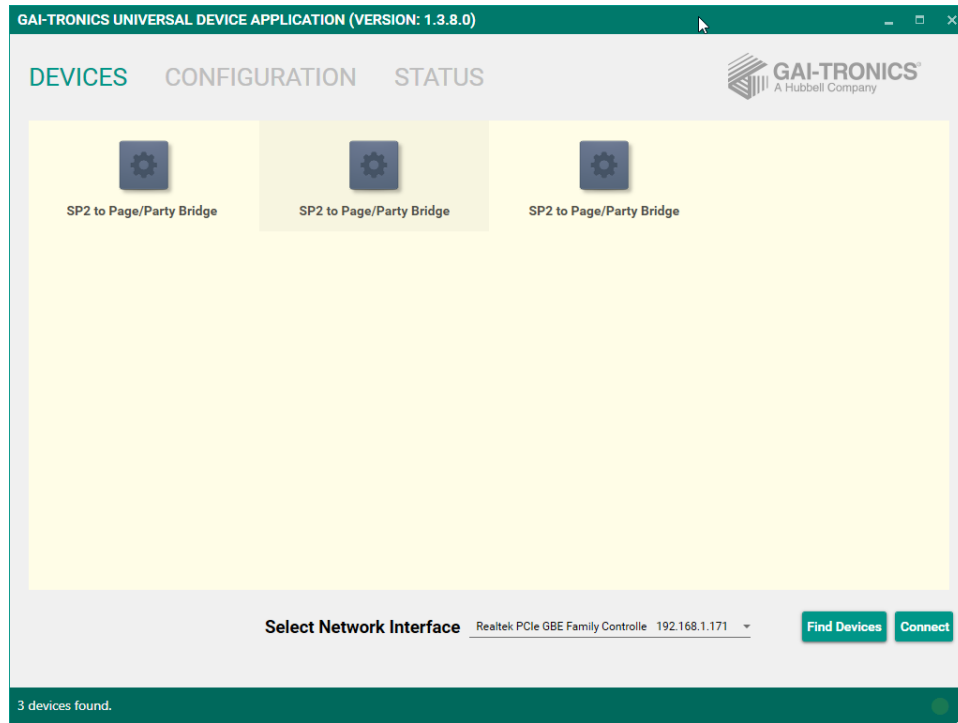
1. Configure the network interface of the PC with the GUDA so that it is on the same class C network as the SP2 to Page/Party bridge's default IP address.
2. Launch the GUDA application by clicking the GAI-TRONICS UNIVERSAL DEVICE APPLICATION shortcut from the start menu.



- Choose the network interface that is on the same network as the bridge to perform the discovery.



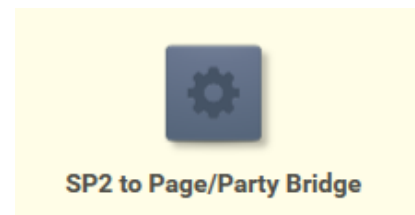
- Click the FIND DEVICES button to perform a device discovery from the GUDA screen:



- Double click the SP2 TO PAGE/PARTY BRIDGE to configure, from the list of devices displayed:

Bridges that are not configured appear as follows:

- Enter the default user name (shown) and password (PAGEPARTY) in the DEVICE LOGIN box, then click LOGIN:



### Device Login

*SP2 to Page/Party Bridge*

User Name:

Password:

- Change the password on first login.

This is required on the initial connection. Change the password at a future time from the admin screen in the GUDA (see the [GUDA Device Administrator Options](#) section).

## Interface Configuration

The CONFIGURATION screen appears with the INTERFACE properties shown:

GAI-TRONICS UNIVERSAL DEVICE APPLICATION (VERSION: 1.3.9.0)

DEVICES CONFIGURATION STATUS

GAI-TRONICS  
A Hubbell Company

Interface

- Channels
  - Channel 1
  - Channel 2
  - Channel 3
  - Channel 4
  - Channel 5
  - Channel 6

Interface

Interface Name SP2 to Page/Party Bridge

Address Mode  Static  DHCP

Control TTL 5 + -

Control Port 64020 + -

IP Address 192.168.1.6

Netmask 255.255.255.0

Default Gateway 0.0.0.0

Primary DNS 0.0.0.0

Secondary DNS 0.0.0.0

NTP Server 0.0.0.0

Allow HW Disable Yes

Interface Mode Standalone

Redundancy ID \_\_\_\_\_

LOGOUT ADMIN UPDATE

Connected to SP2 to Page/Party Bridge

Configure the following properties for the bridge's NIC:

- **Interface Name**—name for the SP2 to Page/Party® Bridge
- **Address Mode**—select Static or DHCP
- **Control TTL**—time to live for control packets
- **Control Port**—memory address of the control service
- **IP Address**—client network address, leave blank for DHCP clients
- **Netmask**—subnet mask, leave blank for DHCP clients
- **Default Gateway**—IP address of router to other networks, leave blank for DHCP clients
- **Primary DNS**—primary DNS server, leave blank for DHCP clients
- **Secondary DNS**—secondary DNS server, leave blank for DHCP clients
- **NTP Server**—network time protocol server IP address, leave blank for DHCP clients
- **Allow HW Disable**—Yes or No
- **Interface Mode**—Standalone, Primary, or Backup
- **Redundancy ID**—unique name for redundant bridges—must be identical on the primary and secondary bridges configured for redundancy

## Channel Configuration

Click on each channel and configure the properties below. Click the UPDATE button in the lower right corner to confirm and commit the changes.

GAI-TRONICS UNIVERSAL DEVICE APPLICATION (VERSION: 1.3.9.0)

DEVICES CONFIGURATION STATUS

GAI-TRONICS  
A Hubbell Company

Interface

- Channels
  - Channel 1
  - Channel 2
  - Channel 3
  - Channel 4
  - Channel 5
  - Channel 6

**Channel 1**

Channel Name

Enabled

Multicast Group

Multicast Port

Multicast TTL

Analog VOX Threshold (mV)

Analog Output Level

Digital Output Level

VLC Enabled

Digital VLC Level

Invert Off-hook Contact

Isolate Input Enable

Invert Isolate Input

Channel Direction

Full Duplex

LOGOUT ADMIN UPDATE

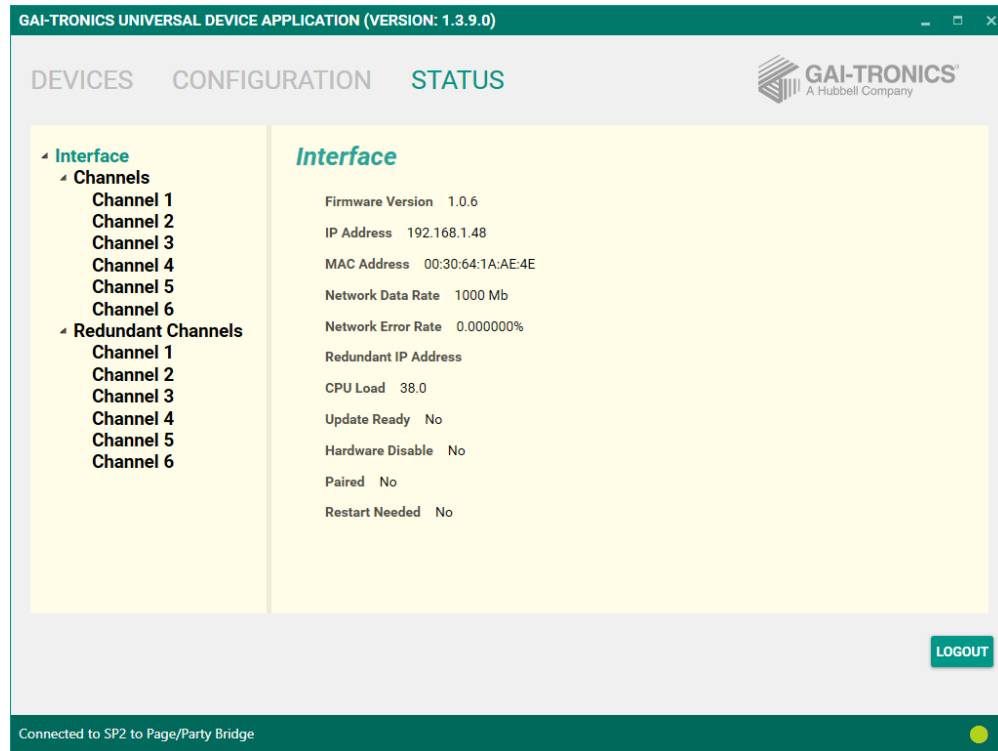
Connected to SP2 to Page/Party Bridge

- **Channel Name**—name for the connected audio channel
- **Enabled**—YES or NO
- **Multicast Group**—multicast IP address for the audio channel
- **Multicast Port**—multicast service port address for the audio channel
- **Multicast TTL**—time to live for multicast network traffic
- **Analog VOX Threshold (mV)**—signal voltage where the VOX circuit picks up (1–100 mV).
- **Analog Output Level**—–12 to 12 dB gain
- **Digital Output Level**—–12 to 12 dB gain
- **VLC Enabled**—YES or NO
- **Digital VLC Level**—volume level for VLC controlled audio
- **Invert Off-hook Contact**—YES or NO
- **Isolate Input Enable**—YES or NO
- **Invert Isolate Input**—YES or NO
- **Channel Direction**—Bi-Directional, Digital to Analog, Analog to Digital, or ISOLATED.
- **Full Duplex**—Yes or No, for single or bi-directional audio. Set to NO for page line audio channels.

## GUDA Status

Click on the STATUS tab, on the main GUDA screen, to obtain status for the bridge or redundant bridge configuration.

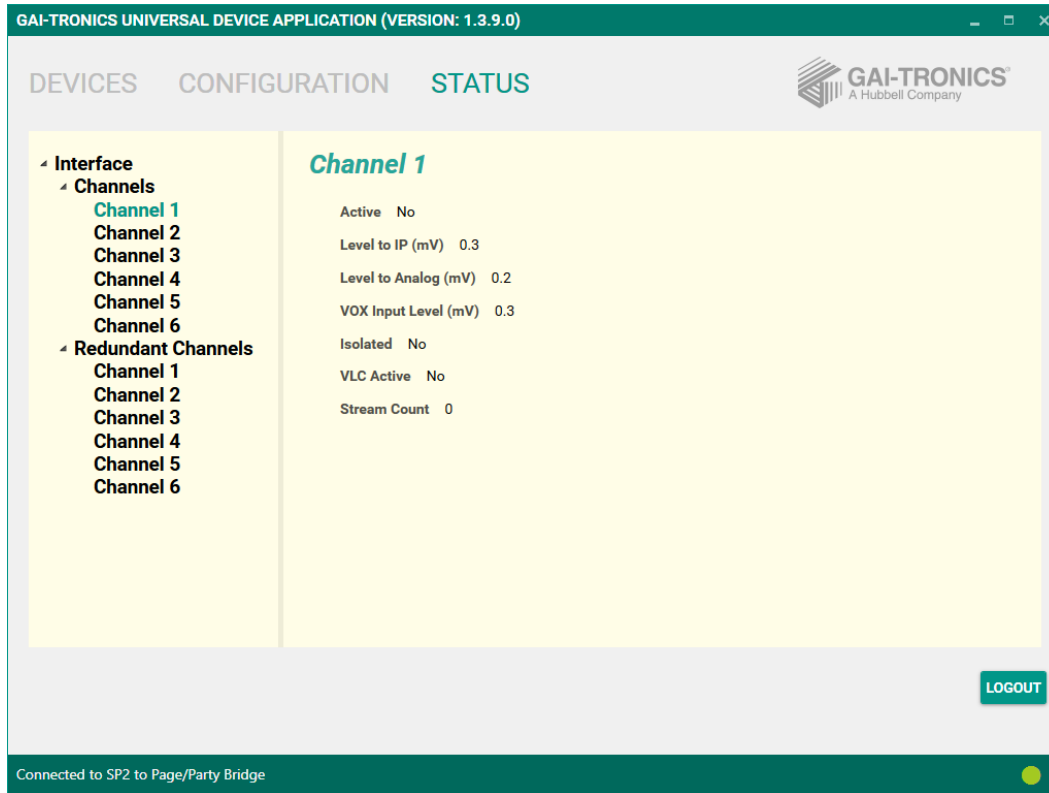
## Interface Status



The INTERFACE STATUS screen provides the following information:

- **Firmware Version**—bridge firmware version
- **IP Address**—IP address currently assigned to the bridge
- **MAC Address**—MAC address of the bridge
- **Network Data Rate**—bandwidth of the bridge’s Ethernet link
- **Network Error Rate**—percent of errors in network packets
- **Redundant IP Address**—IP address of the redundant bridge (when configured in redundancy mode)
- **CPU Load**—current load on the CPU in percent
- **Hardware Disable**—YES or NO
- **Paired**—YES or NO
- **Restart Needed**—YES or NO

## Channel and Redundant Channel Status



The CHANNEL STATUS and REDUNDANT CHANNEL STATUS screens provide the following information for each channel:

- **Active**—YES or NO
- **Level to IP (mV)**—audio signal level to SP2 system in millivolts
- **Level to Analog (mV)**—signal level to Page/Party® system in millivolts
- **VOX Input Level (mV)**—signal level for voice activation in millivolts
- **Isolated**—YES or NO
- **VLC Active**—YES or NO
- **Stream Count**—number of simultaneous audio streams passing through the bridge

## Operation

The SP2 to Page/Party® Bridge provides real-time audio communication between SP2 and Page/Party® systems. No user interaction is required after the bridge is installed and configured. The bridge is equipped with eight status LEDs to provide indication of the bridge's operation. A global disable button is also provided to completely isolate the connected SP2 and Page/Party® systems.

## Global Disable

Press and release the GLOBAL DIS press-button switch (**S1**) to completely isolate the SP2 and Page/Party® systems from each other. The switch operates as a toggle. Press the button to isolate the two systems. Press the button again to enable bridging the two systems. The switch state is logically tied to the setting configured in the GUDA software.

## System Reset

Hold the GLOBAL DIS press-button switch (S1) on the main PCBA for 8 seconds to reset the SP2 to Page/Party® Bridge to factory default settings.

## System Status LEDs

There are eight status LEDs, in the lower left corner, on the main PCBA (see [Figure 4](#)). The status LEDs provide indication that audio is present on each of the six audio lines, the state of the global *disable-feature*, and PCBA board status. All eight status LEDs are red. The audio line detection LEDs turn on immediately when an audio channel on the Page/Party® system is active. The LEDs do not turn off instantly when the audio channel is closed; a VOX circuit keeps the channel open to ensure that the channels are not disconnected with a pause in conversation.

Table 7. System Status LEDs

LED	State	Description
PL1	On	activity on party line one
PL2	On	activity on party line two
PL3	On	activity on party line three
PL4	On	activity on party line four
PL5	On	activity on party line five
PG	On	activity on page line
GLOBAL DIS	On	bridge is disabled
STATUS	Blinking	heartbeat LED blinks every five seconds

## Ethernet Status LEDs

The bridge provides three Ethernet status LEDs (see [Figure 4](#) and [Table 8](#)).

Table 8. Ethernet Status LED Indication

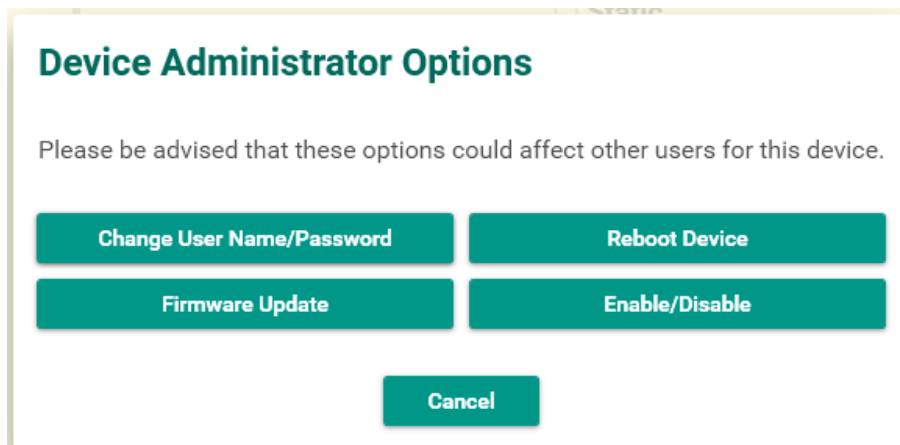
LED	Color	State	Description
ACTIVITY	yellow	blinking	Ethernet network status—The bridge is sending and/or receiving packets on the Ethernet network.
1G	green	On	1000 Mb connection link
100M	green	On	100 Mb Ethernet link

## Maintenance

The SP2 to Page/Party Bridge contains no user serviceable parts. There are no adjustments necessary after device configuration, using the GUDA application. There are several options in the ADMIN box of the GUDA application for maintenance of the bridge.

## GUDA Device Administrator Options

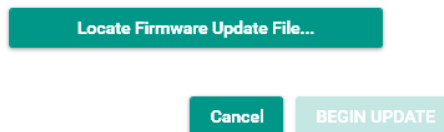
The following options are available after clicking the ADMIN button, in the lower right corner of the GUDA configuration screen area:



- **Change User Name/Password**—set a new user name and/or password.
- **Reboot Device**—reboots the SP2 to Page/Party Bridge.
- **Firmware Update**—opens the following box:

### Device Firmware Update

Select the firmware update file for the connected device to use and select BEGIN UPDATE to transfer the file.



Click the LOCATE FIRMWARE UPDATE FILE... button to open a standard Windows® OPEN dialog box. Browse to the desired folder and open the desired firmware file, and then click BEGIN UPDATE in the DEVICE FIRMWARE UPDATE box to update the devices firmware.

- **Enable/Disable**—toggles the isolation of all SP2 and Page/Party audio channels. This toggle is logically tied to the enable/disable GLOBAL DIS press-button switch (S1), located on the main PCBA.
- **Cancel**—close the box and return to the main screen of the GUDA.

## Save Configuration Locally



Click the SAVE CONFIGURATION LOCALLY button to save a copy of the bridge configuration on a local disk drive.

**NOTE:** Only designated values that are not device specific are saved.

A standard Windows® SAVE AS dialog box opens. Save the file in the desired location.



## Import Saved Configuration



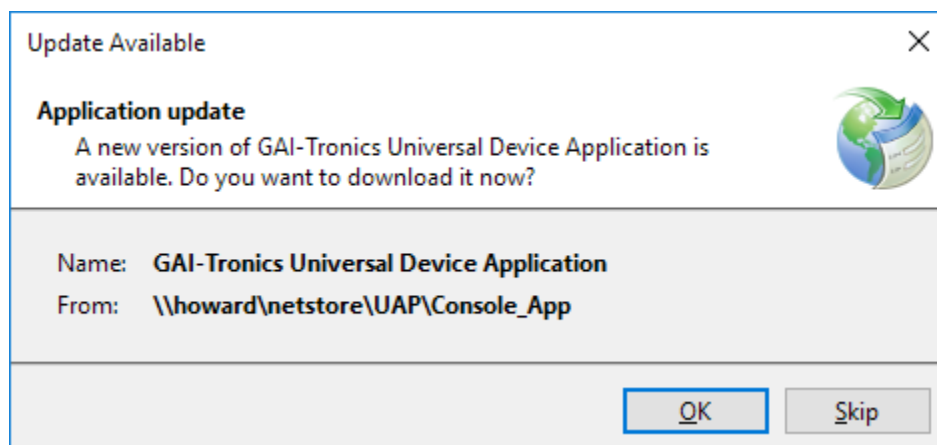
Click the IMPORT SAVED CONFIGURATION button to load a saved configuration to the bridge.

**NOTE:** Only designated values that are not device specific are imported.

A standard Windows® OPEN dialog box opens. Browse to the desired folder and open the desired configuration file. Click the UPDATE button for the imported configuration to take effect.

## GUDA Software Updates

Click OK to install updates to the GUDA software when the UPDATE AVAILABLE box appears after launching the GUDA application. Updates are made available for automatic download and installation upon launching the GUDA.



## Troubleshooting

Problem	Solution
Any problem with station performance	Always review all steps of installation, ensuring that you correctly followed <b>all</b> steps. Check all terminations on the board and in the Line Balance Assembly before proceeding to any other adjustments.
Crosstalk	One or more system cable pairs may be improperly terminated. Visually inspect the system cable for accidental crossing of cable pairs or grounds.

## Service and Spare Parts

If the equipment requires service or spare parts, contact your Regional Service Center for assistance. If service is required, a return authorization number (RA#) will be issued. 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 GAI-TRONICS' warranty policy. 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 Regional Service Center closest to you.

Table 9. Spare Parts

Model Number	Description
69659-001	PCBA, SP2 to Page/Party® Interface
40404-105	replacement ac power supply

## Specifications

### Electrical

Supply voltage ..... 90–264 V ac  
 Input frequency range ..... 50/60 Hz  
 Maximum power consumption ..... 15 W  
 Ethernet ..... 100Base-TX/1000Base-T with IGMP  
 Output relay contact rating ..... 1 A @ 30 V dc  
 Channel isolation inputs ..... dry contact

### Ethernet

Cable ..... Category 5 or better  
 Speed ..... 100 Mbps (minimum)  
 Maximum stations ..... 4096

### Mechanical

Construction ..... high-impact glass reinforced polyester, gray  
 Dimensions ..... 13.0 H × 9.25 W × 4.00 D in (330 × 325 × 102 mm)  
 Mounting ..... wall mount, four 0.28 in holes

### Environmental

Temperature range ..... +32 °F to +122 °F (0 °C to +50 °C)  
 Relative humidity ..... 95%, non-condensing

### Audio

Frequency response ..... 250–3,000 Hz, +0/–3 dB ref. to 1 kHz  
 Distortion ..... <1.5% THD @ 1 kHz

**FCC & ICES Information:** 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 their own expense.

# 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.