



GAI-TRONICS®
A HUBBELL COMPANY

VoIP and VoIP WiFi Telephone PCBA Replacement Kits

Models 12565-701, -702, & -802

Confidentiality Notice

This manual is provided solely as an installation, operation, and maintenance guide, which 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.

General Information

The Model 12565-701, -702, and -802 VoIP and VoIP WiFi Replacement Kits contain two interconnected circuit board assemblies (Carrier and VoIP) which serve as replacements for the PCB assemblies found in the GAI-Tronics VoIP Telephones listed in Table 1 below.

Table 1. Model Chart

| Kit Model | Applies to GAI-Tronics Telephones: |
|------------------|--|
| 12565-701 | 226-700, 246-700, 256-700, and 276-700 VoIP Telephones |
| 12565-702 | 295-702F, 295-702W, 393-700, 393AL-700, 394AL-702, 397-700, 397-701, 398-701, and 398-702 VoIP Hands-free Telephones |
| 12565-802 | 393-800A, 393AL-800A, 394AL-802A, 397-800A, 398-801A, and 398-802A VoIP WiFi Hands-free Telephones |

Electrostatic Discharge (ESD) Protection:

Your telephone may have an earth ground terminal provision. If so, ensure that it is connected to ground in accordance with all local safety regulations and the National Electrical Code (NEC). Grounding has to be ensured for safe and stable communications. Do not use long and coiled ground wires. Trim ground wires to the required length. Use a star configuration whenever possible.

Installation

Model 226-700

Remove the Old PCBA Assembly



Warning: Observe precautions for handling electrostatic sensitive devices.

1. Use the Model 233-001 Security Screwdriver to remove the eight front panel screws and remove the panel from the enclosure after disconnecting the Cat5 or CatE5 cable from the VoIP Circuit PCBA.
2. Disconnect the handset, hookswitch, volume control push button, keypad, and ringer cables from the PCBA.
3. Disconnect any optional (input/output) cables from the PCBA.
4. Depress the locking tab on each nylon standoff while lifting up on the corner of the PCBA to remove it.

Installing the New PCBA

1. Align the holes of the new PCBA with the snap-on nylon standoffs in the telephone, maintaining proper orientation. Refer to Figure 1 as an example.
2. Press firmly on each corner of the PCBA to lock the standoffs.
3. Reconnect the handset, hookswitch, volume control push button, keypad, and ringer cables to the PCBA. Refer to Figure 1.
4. Reconnect any optional (input/output) cables from the PCBA.
5. Use the Model 233-001 Security Screwdriver to install the eight front panel screws.

NOTE: For Model 226-700 VoIP Telephones purchased prior to December 2013, the ringer assembly and volume control push button assembly must be replaced for proper operation when the PCBAs in this kit are replaced.

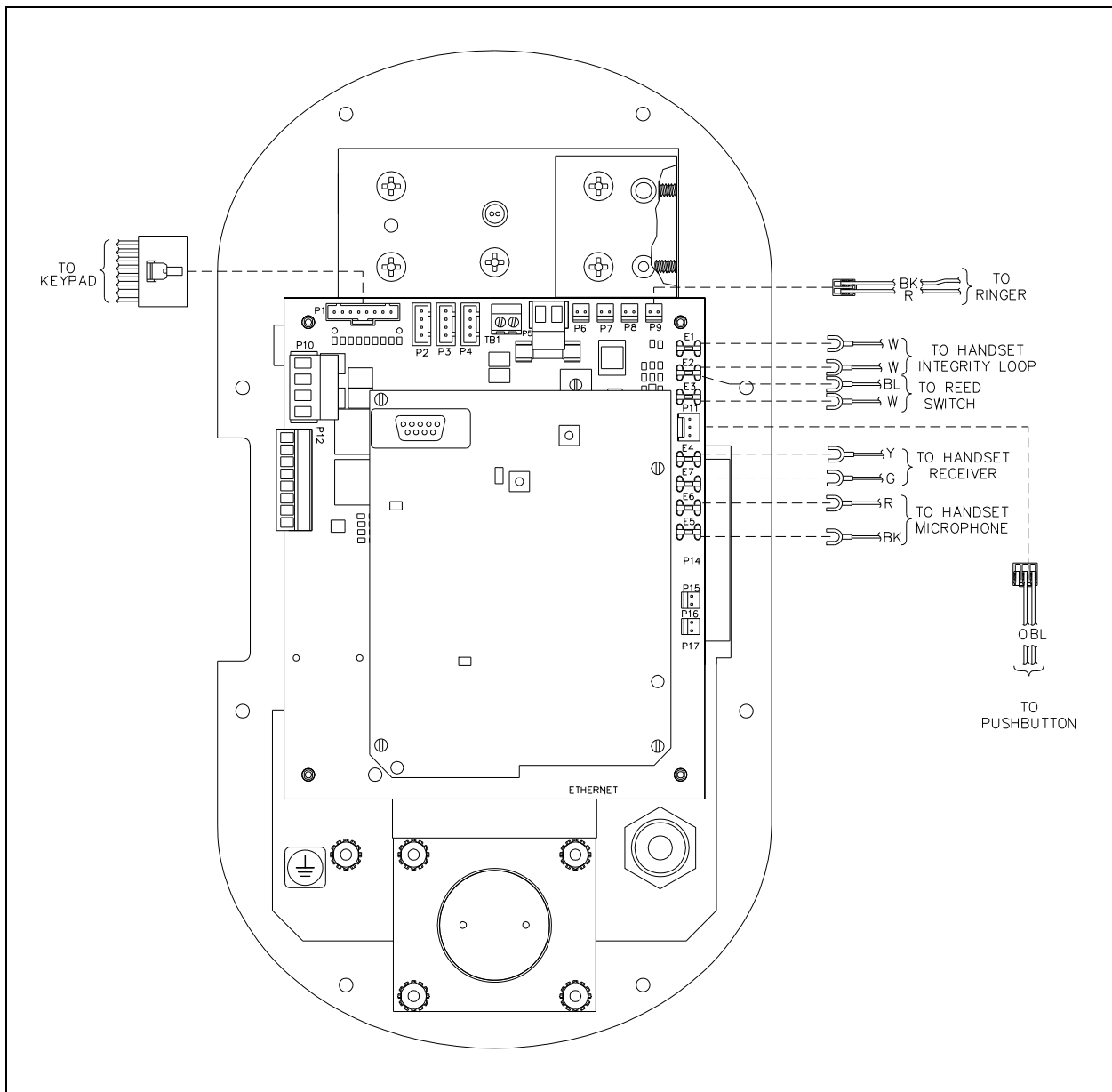


Figure 1. Model 226-700

Models 246-700 and 256-700

Remove the Old PCBA Assembly



Warning: Observe precautions for handling electrostatic sensitive devices.

1. Use a Phillips screwdriver to remove the four front panel screws and remove the panel from the enclosure after disconnecting the Ethernet cable.
2. Disconnect the handset, hookswitch, push button, keypad, and ringer cables from the VoIP Carrier PCBA. Record the location of each connection for later reconnection. See Figure 2.
3. Depress the locking tab on each nylon standoff while lifting up that corner of the PCBA to remove it.
4. Clip any tie wraps securing the wires together.

Installing the New PCBA

1. Align the holes of the new PCBA with the snap-on nylon standoffs in the telephone. Refer to Figure 2 for correct PCBA orientation.
2. Press firmly on each corner of the PCBA to lock in the standoffs.
3. Reconnect the Ethernet cable.
4. Refer to Figure 2 for locations of the connectors on the new PCBA.
5. Secure wires as before using the tie wraps provided.
6. Use a Philips screwdriver to install the four front panel screws.

NOTE: For Model 246-700 and 256-700 VoIP Telephones purchased prior to December 2013, the ringer assembly and volume control push button assembly must be replaced for proper operation when the PCBAs in this kit are replaced.

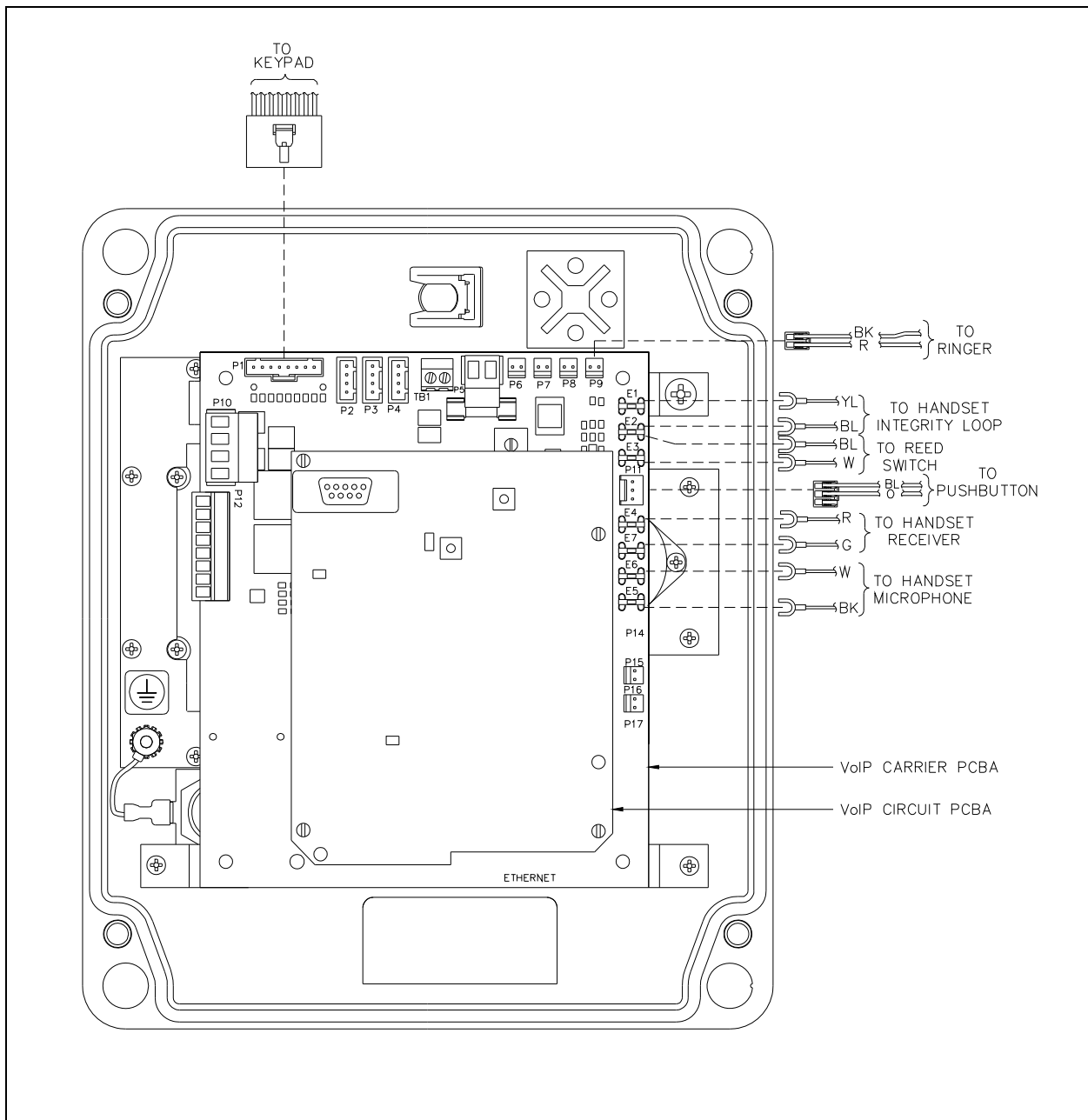


Figure 2. Models 246-700 and 256-700

Model 276-700



Warning: Observe precautions for handling electrostatic sensitive devices.

Remove the Old PCBA Assembly

1. Use the Model 233-001 Security Screwdriver to remove the six front panel screws and remove the panel from the enclosure after disconnecting the Cat5 or Cat5e cable from the VoIP Circuit PCBA.
2. Disconnect the handset, hookswitch, volume control push button, keypad, and ringer cables from the PCBA.
3. Disconnect any optional (input/output) cables from the PCBA.
4. Depress the locking tab on each nylon standoff while lifting up on the corner of the PCBA to remove it.

Installing the New PCBA

1. Align the holes of the new PCBA with the snap-on nylon standoffs in the telephone, maintaining proper orientation. Refer to Figure 3 as an example.
2. Press firmly on each corner of the PCBA to lock the standoffs.
3. Reconnect the handset, hookswitch, volume control push button, keypad, and ringer cables to the PCBA. Refer to Figure 3.
4. Reconnect the Cat5 or Cat5e cable to the VoIP Circuit PCBA. Refer to Figure 3.
5. Reconnect any optional (input/output) cables from the PCBA.
6. Use the Model 233-001 Security Screwdriver to install the six front panel screws.

NOTE: For Model 276-700 VoIP Telephones purchased prior to December 2013, the ringer assembly and volume control push button assembly must be replaced for proper operation when the PCBAs in this kit are replaced.

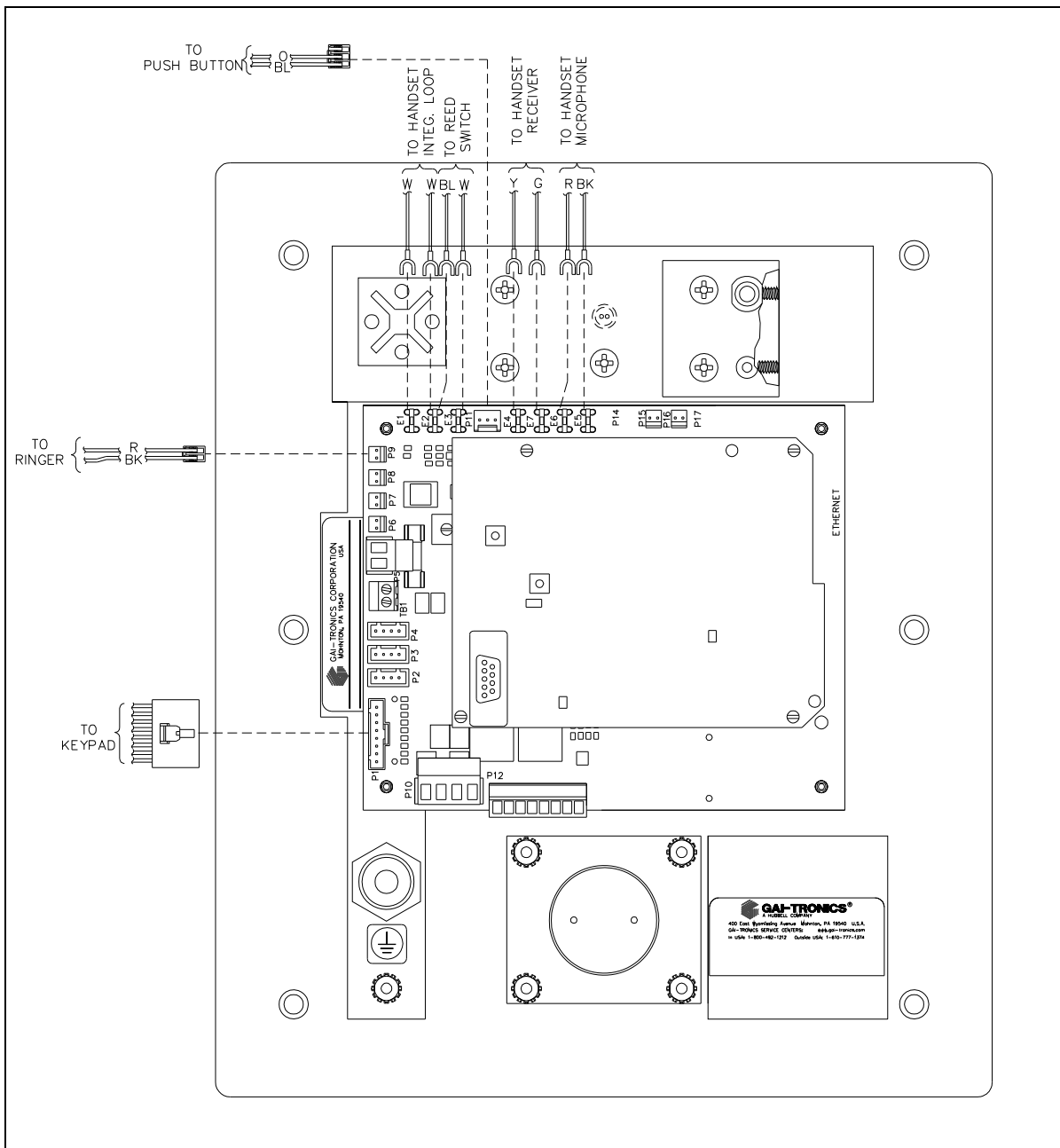


Figure 3. Model 276-700

Models 295-702F and 295-702W



Warning: Observe precautions for handling electrostatic sensitive devices.

Remove the Old PCBA Assembly

1. If power is supplied via a local 24–48 V dc power source, de-energize the power supply and tag it to prevent inadvertent power application to the device while servicing the unit.
2. Firmly press on the front cover and slide it up to clear the front cover pins from the keyhole shaped openings on the backbox, then pull the front cover outwards to remove it from the backbox.
3. If used, disconnect each respective connector from terminal blocks; P5 power input, P10 output connections, and/or P12 input connections.
4. Disconnect the grounding conductor from the ground terminal.
5. Disconnect the Cat 5 cable by pressing the tab on the RJ45 connector and pulling it from the Ethernet adapter on the VoIP Circuit PCBA.
6. Disconnect the push button (P2), keypad (P1), microphone (P14), LED (P7), and speaker cables (P17) from the VoIP Carrier PCBA. Record the location of each connection for later reconnection. See Figure 4.
7. Remove the four screws holding the VoIP carrier PCBA to the front panel. Retain the screws for reassembly.

Installing the New PCBA

1. Install the new PCBA assembly using the three #6–32 and one #4–40 screws removed in step 7 above.
2. Reconnect the pushbutton (P2), keypad (P1), microphone (P14), LED (P7), and speaker wires (P17) to the new PCBA assembly.
3. Reconnect the Category 5 cable, ground cable, power input cable (P5), output connections (P10), and input connections (P12) to the new PCBA assembly.
4. Align the standoffs on the front panel with the keyhole slots on the backbox. Press firmly and slide the front panel down to secure the front panel to the backbox.

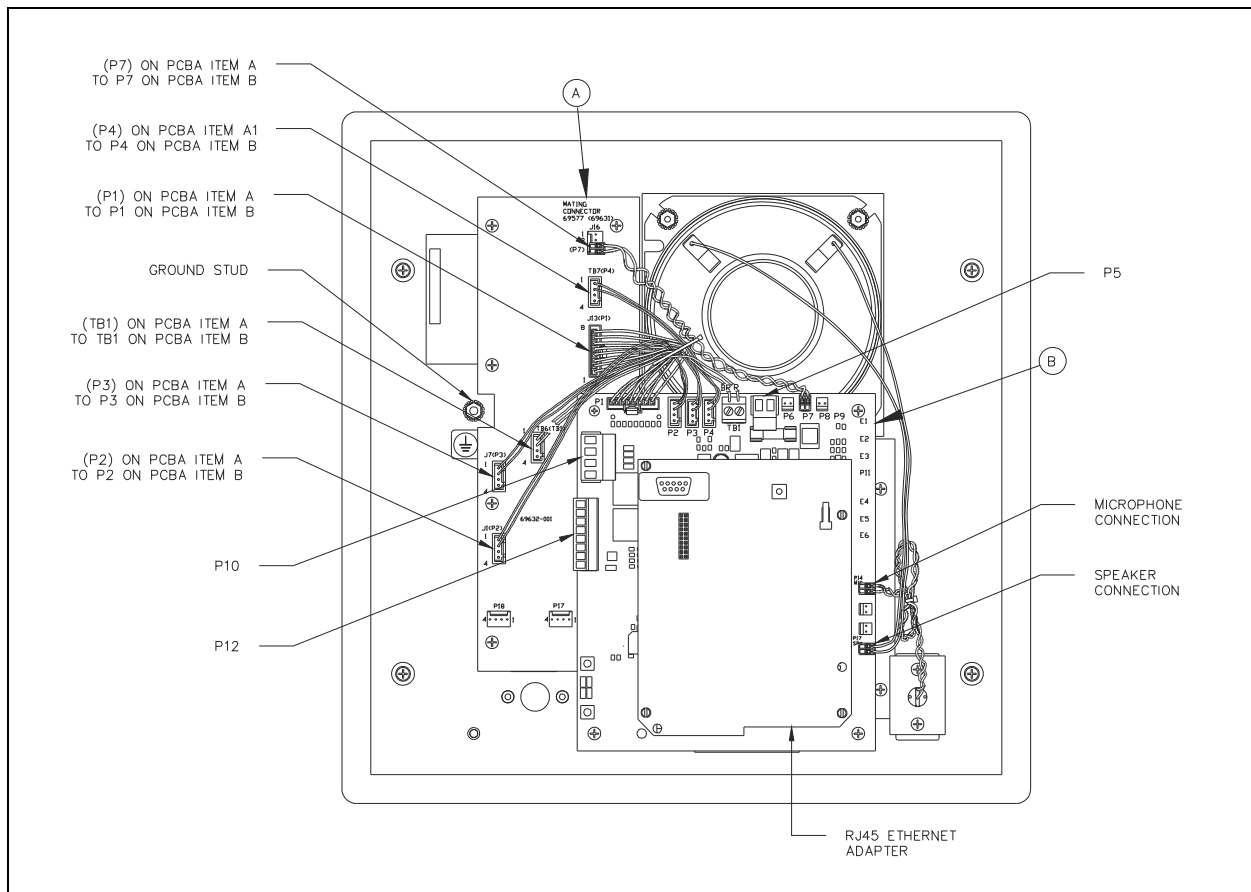


Figure 4. No. 295-702F and 295-702W

Models 393-700, 393AL-700 and 394AL-702



Warning: Observe precautions for handling electrostatic sensitive devices.

Remove the Old PCBA Assembly

1. Use the Model 233-001 Security Screwdriver to remove the four front cover screws; then remove the front cover after disconnecting the Ethernet cable and ground wire, if applicable.
2. Disconnect the microphone, speaker, LED indicator, and push-button switch cables from the PCBA.
NOTE: For Model 394AL-702 there will also be a second push-button switch connection and a keypad cable connection. Record the location of each connection for later reconnection.
See Figure 5.
3. Unscrew the four screws securing the PCBA. Save the screws for later reassembly.
4. If necessary, clip any tie wraps securing the wires together.

Installing the New PCBA

1. Align the holes in the four corners of the new PCBA with the standoffs in the telephone, maintaining proper orientation. See Figure 5.
2. Use the screws (from step 3 in the previous section) to secure the PCBA.
3. Reconnect the microphone, speaker, LED indicator, and push-button switch cable.
NOTE: For Model 394AL-702, there will also be a second push-button switch connection and a keypad cable connection.
4. Secure wires as before using the tie wraps provided.
5. Reconnect the Ethernet cable and ground wire, if applicable.
6. Use the Model 233-001 Security Screwdriver to install the four front cover screws.

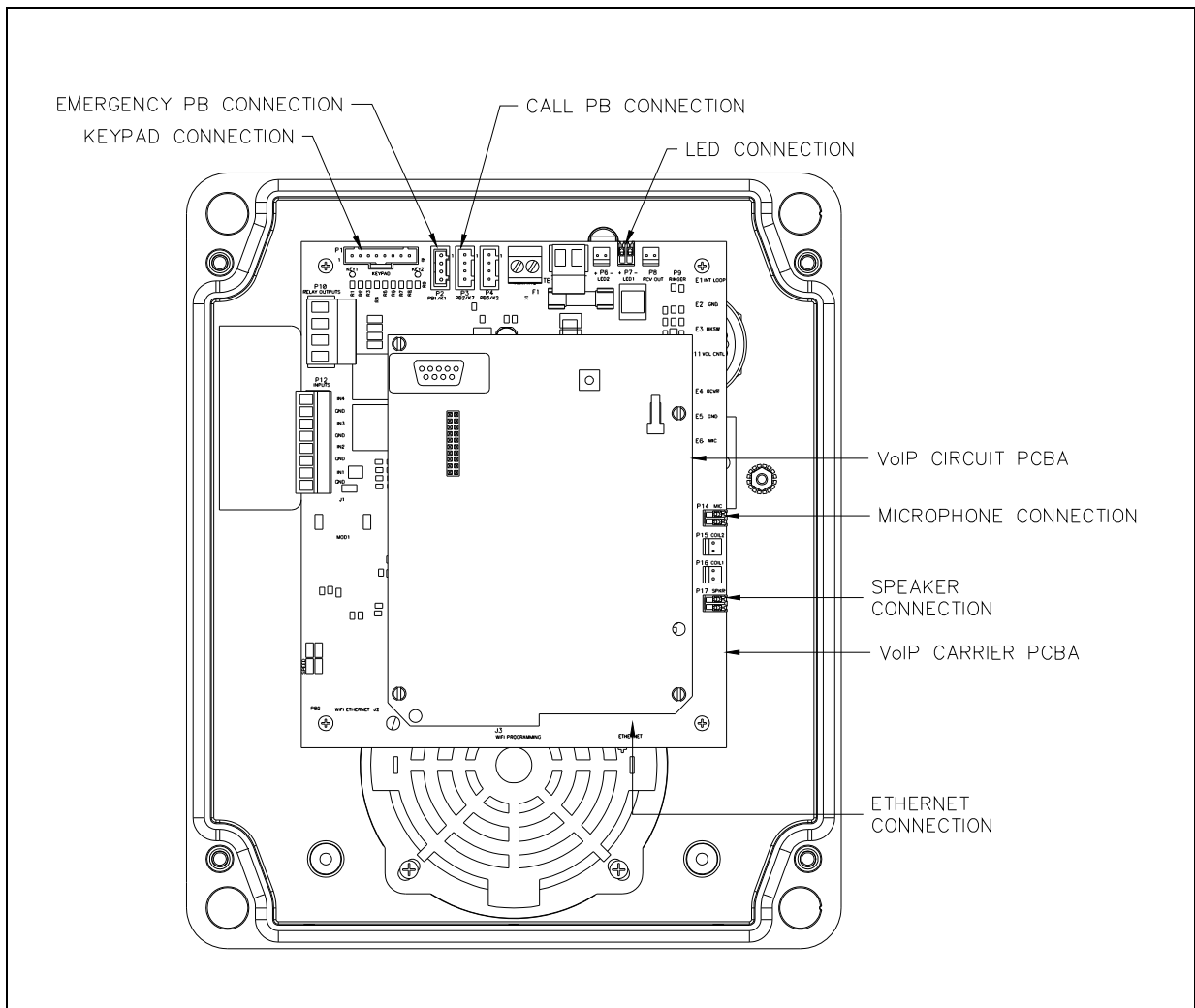


Figure 5. Models 393-700, 393AL-700 and 394AL-702

Models 397-700, 397-701, 398-701, and 398-702



Warning: Observe precautions for handling electrostatic sensitive devices.

Remove the Old PCBA

1. Use the Model 233-001 Security Screwdriver to remove the six front panel screws; then remove the front cover after disconnecting the Ethernet cable, ground wire, and any applicable input/output, or local power connection cables from the PCBA. See Figure 6 and Figure 10.
2. Disconnect the microphone, speaker, LED indicator, and push-button switch cables from the PCBA.
 - a. Model 397-701: There will also be a second push-button switch cable.
 - b. Model 398-701: There will also be a keypad cable connection.
 - c. Model 398-702: There will be a second push-button switch cable and a keypad cable connection. Record the location of each connection for later reconnection. See Figure 6.
3. Unscrew the four screws securing the PCBA. Save the screws for later reassembly.
4. If necessary, clip any tie wraps securing the wires together.

Installing the New PCBA

1. Align the holes in the four corners of the new PCBA with the standoffs in the telephone, maintaining proper orientation. See Figure 6.
2. Use the screws (from step 3 in previous section) to secure PCBA.
3. Reconnect the microphone, speaker, LED indicator and push-button switch cable. Make note in step 2 above of any additional connections for each model.
4. Reconnect the Ethernet cable, ground wire and any additional external wires. Refer to Figure 10 on Page 18.
5. Secure wires as before using the tie wraps provided.
6. Use the Model 233-001 Security Screwdriver to install the six front cover screws.

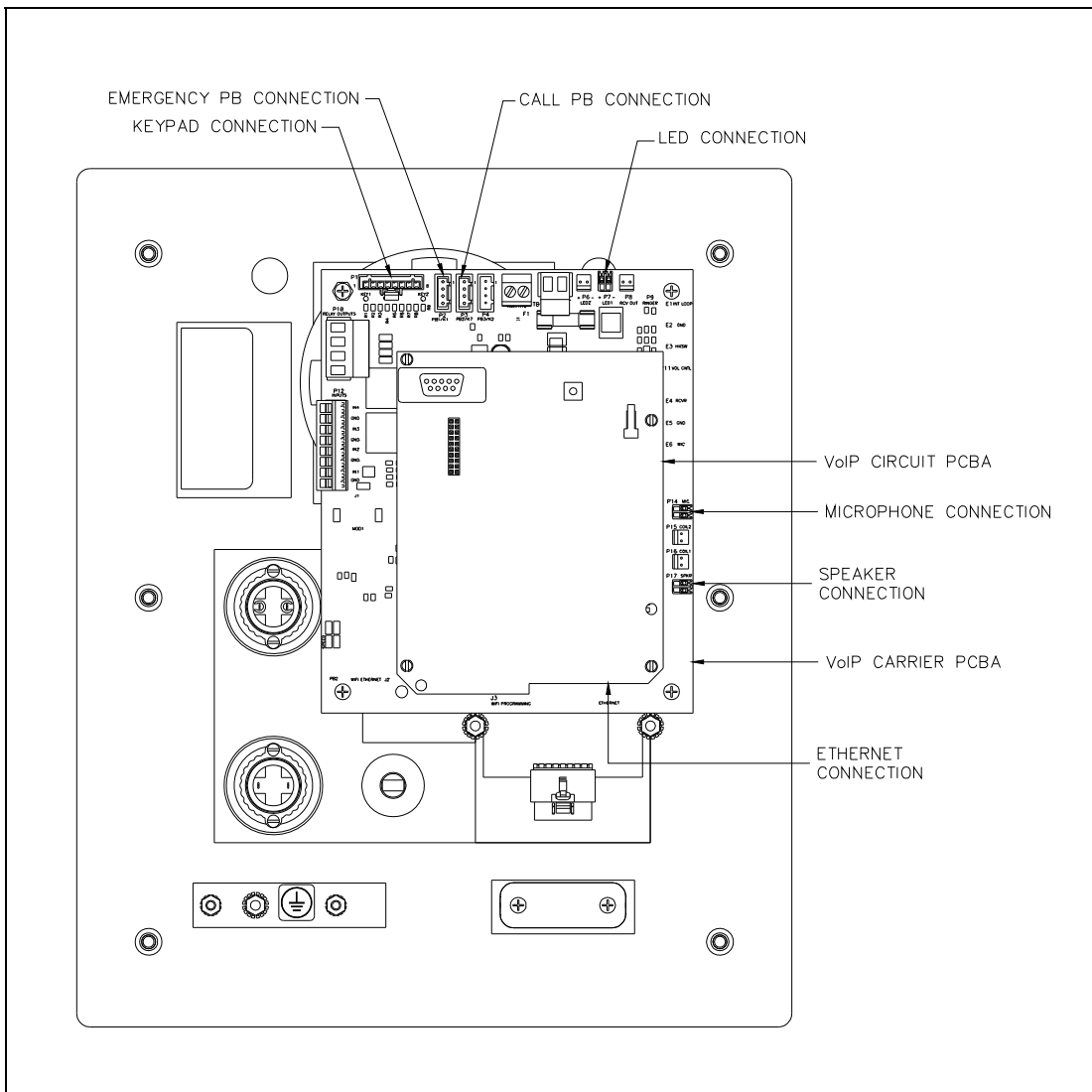


Figure 6. Models 397-700, 397-701, 398-701, and 398-702

Models 393-800A, 393AL-800A and 394AL-802A



Warning: Observe precautions for handling electrostatic sensitive devices.

Remove the Old PCBA Assembly

1. Use the Model 233-001 Security Screwdriver to remove the four front cover screws.
2. For Models 393AL-800A and 394AL-802A, gently pull the front cover away from the back box. Disconnect the antenna cable from the antenna connection mounted on the PCBA. See Figure 7.
3. Disconnect ground wire.
4. Disconnect the microphone, speaker, LED indicator, and push-button switch cables from the PCBA. **NOTE:** For Model 394AL-802, there will also be a second push-button switch connection and a keypad cable connection. Record the location of each connection for later reconnection. See Figure 7.
5. Unsnap the U.FL connection from the WiFi Module on the Carrier PCBA. Unplug the Cat5 cable from the J2 connector on the carrier PCBA. Remove the two screws securing the bracket with the RF cable assembly mounted to it from the Carrier PCBA, and set aside for later reassembly. **NOTE:** For Model 393-800A, the antenna is attached to this bracket/cable assembly. See Figure 8.
6. Unscrew the three remaining screws securing the PCBA. Save all the screws for later reassembly.
7. If necessary, clip any tie wraps securing the wires together.

Installing the New PCBA

1. Align the holes in the four corners of the new PCBA with the standoffs in the telephone, maintaining proper orientation. See Figure 7. Unplug the Cat5 cable from the J2 connector on the carrier PCBA.
2. Reattach the bracket with the RF cable assembly (with antenna for the Model 393-800A) to the lower left hand corner of the PCBA. Plug the Cat5 Cable into J2 on the carrier PCBA.
3. Use the screws (from step 6 in previous section) to secure PCBA.
4. Secure wires as before using the tie wraps provided.
5. Snap the U.FL connector to the WiFi module located on the carrier PCBA.
6. Reconnect the microphone, speaker, LED indicator and push-button switch cable. **NOTE:** For Model 394AL-702 there will also be a second push-button switch connection and a keypad cable connection.
7. For Models 393AL-800A and 394AL-802A reconnect the antenna cable and ground wire.
8. Use the Model 233-001 Security Screwdriver to install the four front cover screws.

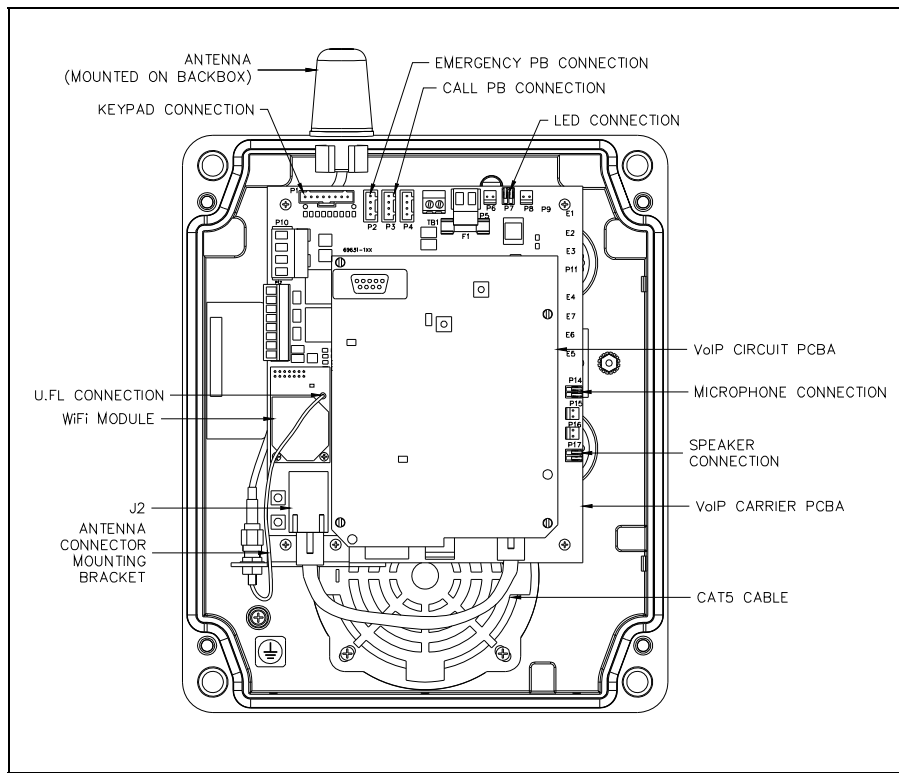


Figure 7. Models 393AL-800A and 394AL-802A

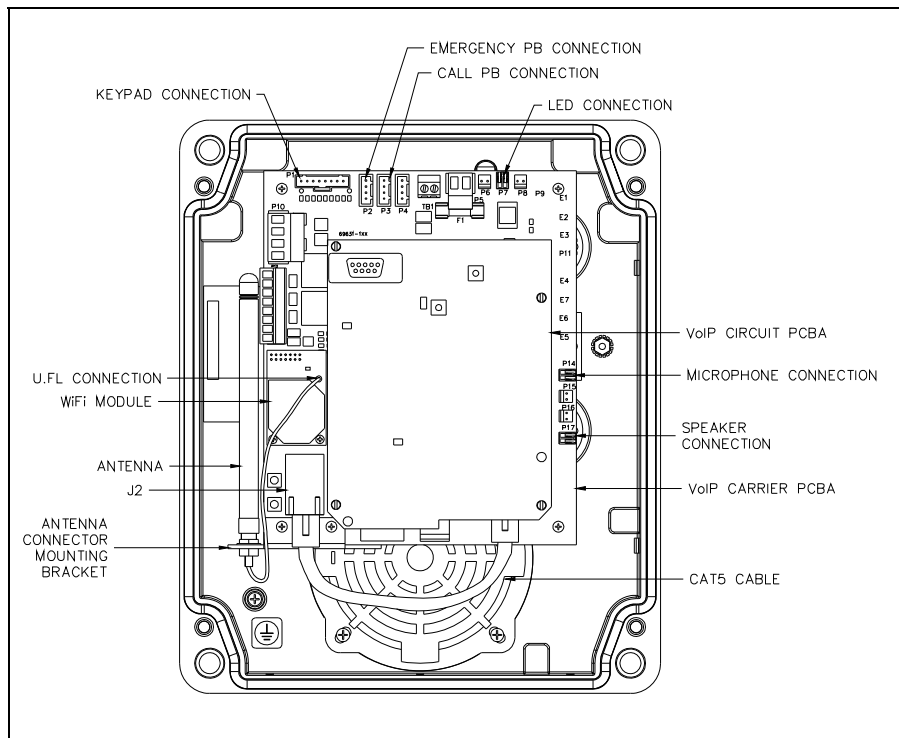


Figure 8. Model 393-800A

Models 397-800A, 397-801A, 398-801A, and 398-802A

Warning: Observe precautions for handling electrostatic sensitive devices.

Remove the Old PCBA

1. Use the Model 233-001 Security Screwdriver to remove the six front panel screws; then remove the front cover after disconnecting the ground wire and any applicable external cables to the PCBA, antenna cable, input/output or local power connections. Refer to Figure 10 on Page 18.
2. Disconnect the microphone, speaker, LED indicator, and push-button switch cables from the PCBA.
3. Model 397-801A: There will also be a second push-button switch cable.
 - a. Model 398-801A: There will also be a keypad cable connection.
 - b. Model 398-802A: There will be a second push-button switch cable and a keypad cable connection. Record the location of each connection for later reconnection. See Figure 9.
4. Unsnap the U.FL connection from the WiFi Module on the Carrier PCBA. Unplug the Cat5 cable from the J2 connector on the Carrier PCBA. Remove the two screws securing the bracket with the RF cable assembly mounted to it from the carrier PCBA. Set aside for later reassembly.
5. Unscrew the three remaining screws securing the PCBA. Save the screws for later reassembly.
6. If necessary, clip any tie wraps securing the wires together.

Installing the New PCBA

1. Align the holes in the four corners of the new PCBA with the standoffs in the telephone, maintaining proper orientation.
2. Unplug the Cat5 cable from the J2 connector on the carrier PCBA. See Figure 9.
3. Reattach the bracket with the RF cable assembly to the lower left hand corner of the PCBA. Plug the Cat5 cable into J2 on the carrier PCBA.
4. Use the screws (from step 3 in previous section) to secure PCBA.
5. Snap the U.FL connector to the WiFi Module located on the Carrier PCBA.
6. Secure wires as before using the tie wraps provided.
7. Reconnect the microphone, speaker, LED indicator and push-button switch cable. Note in step 2 of the previous section the additional connections for each model. See Figure 9.
8. Use the screws (from step 4 in previous section) to secure PCBA.
9. Reconnect the ground wire and any external connections previously used.
10. Use the Model 233-001 Security Screwdriver to install the six front cover screws.

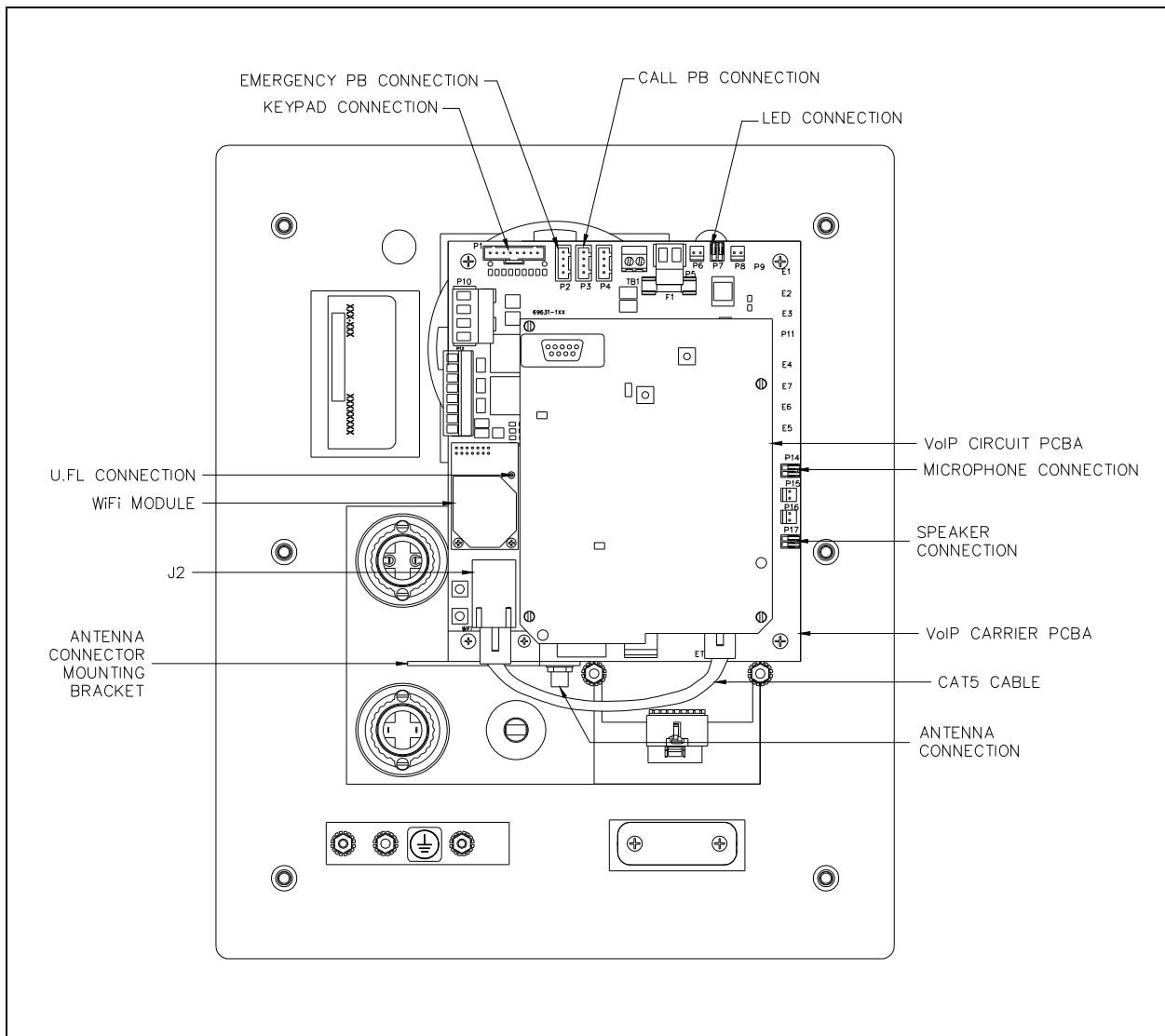


Figure 9. Models 397-800A, 397-801A, 398-801A, and 398-802A

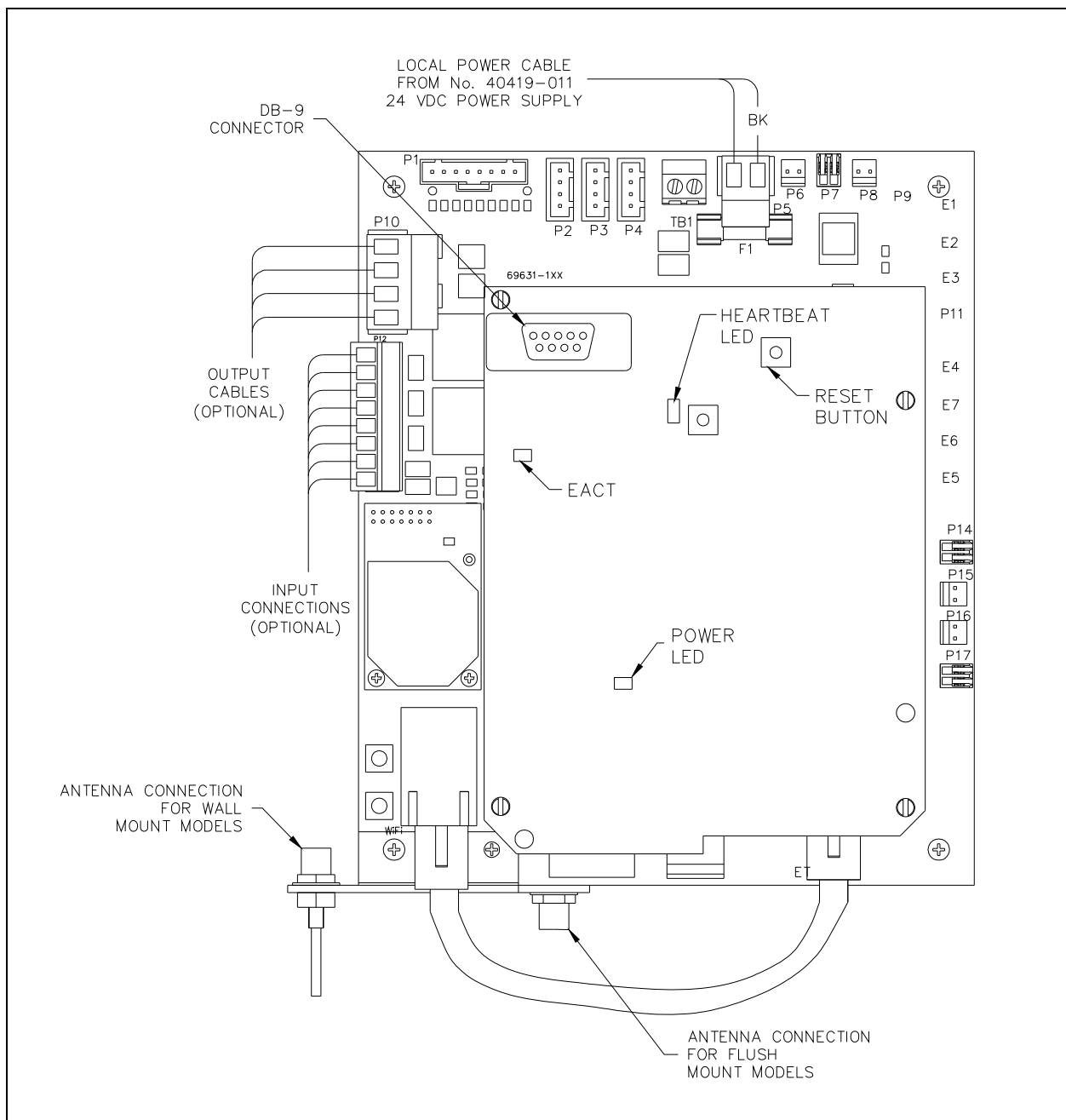


Figure 10. VoIP/WiFi shown
 (VoIP has the same input/output and local power connections)

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.