



**GAI-TRONICS®**  
A HUBBELL COMPANY

# SMART Handset Telephone PCBA Replacement Kit

Model 12562-110

## 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.

## General Information

The Model 12562-110 SMART Handset Telephone PCBA Replacement Kit contains a printed circuit board assembly (PCBA) to be used in the following GAI-Tronics SMART Handset telephones:

<b>226-005</b>	<b>246-005</b>	<b>256-005</b>	<b>276-005</b>
<b>227-005</b>	<b>247-005</b>	<b>257-005</b>	<b>277-005</b>

The PCBA included in this kit can also be used as a replacement in the following GAI-Tronics telephone models:

<b>246-003</b>	<b>256-003</b>	<b>276-003</b>
<b>247-003</b>	<b>257-003</b>	<b>277-003</b>

## Important Note about TMA



The PCBA included in this kit requires the use of TMA version 7.4.1 or newer.

**Failure to upgrade an operating TMA system to version 7.4.1 will result in the newly upgraded telephone having a Configuration Synchronization error. Upgrading to TMA 7.4.1 eliminates this issue and will not affect the operation of existing SMART Telephones (2xx-003 Series).**

To upgrade an existing TMA system, please follow these instructions:

- Using the TMA computer, go to [www.gai-tronics.com](http://www.gai-tronics.com).
- Locate the TMA Upgrade button at the upper left side of the home page and click. This will take you to the upgrade page. Follow the instructions noted on this page.

# Installation

## 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.

## Models 246-003, 247-003, 256-003 & 257-003

### Removing the Old PCBA

1. Use a Phillips screwdriver to remove the four front panel screws and remove the panel from the enclosure after disconnecting the telephone line.
2. Disconnect the handset, hookswitch, push button, keypad (Models 246-003 and 256-003 only), and ringer cable(s) from the PCBA. Record the location of each connection for later reconnection.
3. Disconnect the red and green wires from the telephone line connection on the PCBA. Save the modular cord.
4. Depress the locking tab on each nylon standoff while lifting up on that corner of the PCBA to remove it.
5. Clip the tie wrap 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, maintaining proper orientation. See Figure 3 as an example.
2. Press firmly on each corner of the PCBA to lock in the standoffs.
3. Reconnect the red (ring) and green (tip) telephone wires to the PCBA.
4. Refer to Figure 1 for locations of the connectors on the new PCBA. (**NOTE:** Keypad connector is used in Models 246-003 and 256-003 only.)
5. Secure wires using tie wrap included.
6. Move jumper J12 from its current position to that shown in Figure 1.
7. Please refer to Pub. 42004-439, available at [www.gai-tronics.com](http://www.gai-tronics.com), for further information regarding board jumpers.

**MODEL 12562-110 SMART HANDSET TELEPHONE PCBA REPLACEMENT KIT**

Synchronize with TMA

After installing this replacement PCBA in any -003 telephone, use TMA to synchronize the TMA phone record to the telephone:

1. Right click on the TMA phone icon, select Quick Poll, choose the option None, and click OK.
2. Right click on the TMA phone icon, select Quick Poll, choose the option Send All, and click OK.

After poll call of step 1 completes, the phone's icon will change from being a Type B handset type showing a gray surface-mount 246-style (black background) to a view of a Type A type silver flush-mount faceplate with a black handset.

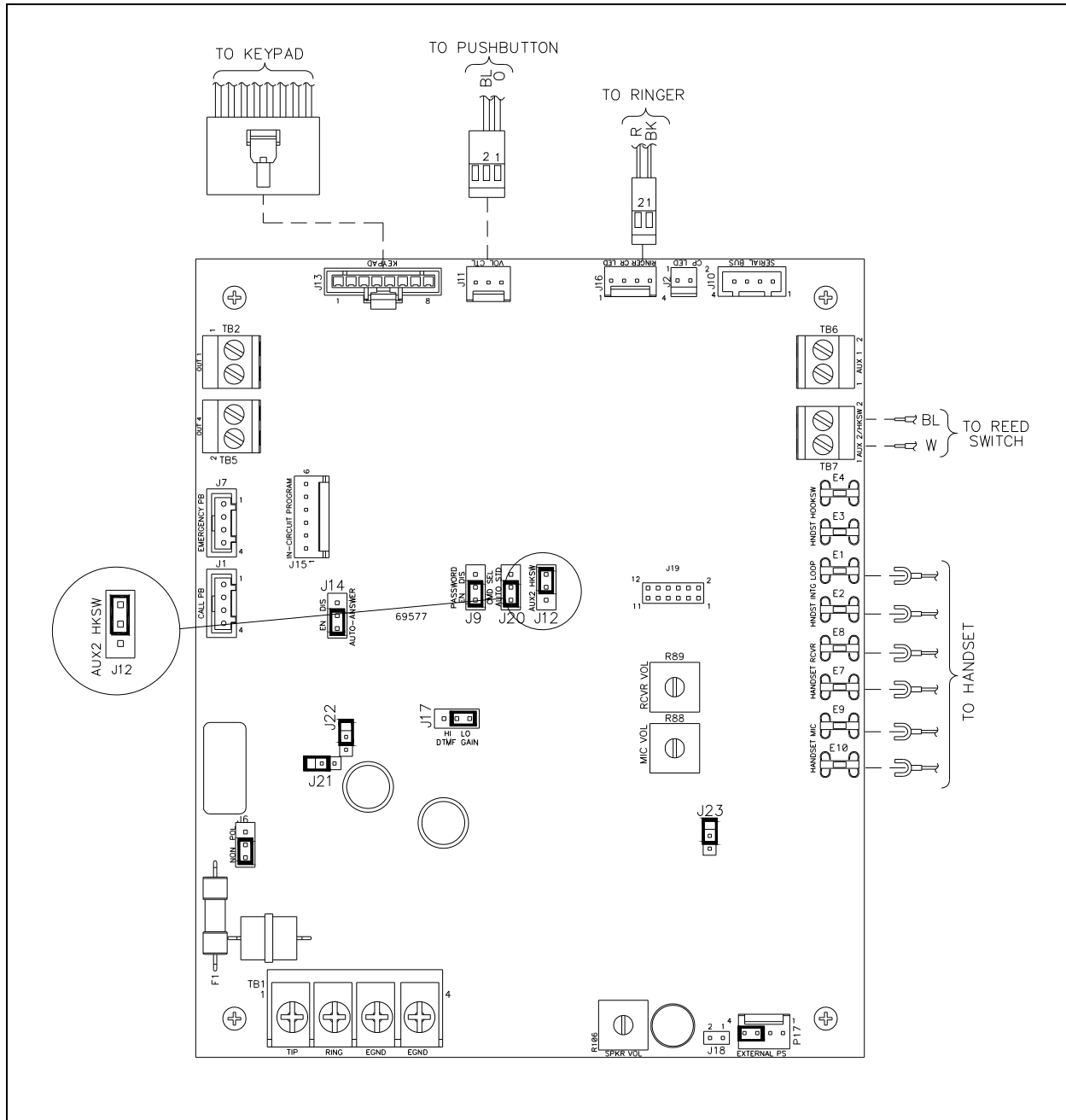


Figure 1.

## Models 276-003 and 277-003

### Removing the Old PCBA

1. Use the Model 233-001 Security Screwdriver to remove the six front panel screws and remove the panel from its back box after disconnecting the telephone line.
2. Disconnect the handset, hookswitch, push button, keypad (Model 276-003 only), and ringer cable(s) from the PCBA. Record the location of each connection for later reconnection.
3. Disconnect the red and green wires from the telephone line connection on the PCBA. Save the modular cord.
4. Depress the locking tab on each nylon standoff while lifting up on that corner of the PCBA to remove it.
5. Clip the tie wrap 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, maintaining proper orientation. See Figure 4 as an example.
2. Press firmly on each corner of the PCBA to lock in the standoffs.
3. Reconnect the red (ring) and green (tip) telephone wires to the PCBA.
4. Install the ring lug of the (longer) ground cable provided to the ground stud on the front panel, and the spade lug to the terminal block (TB1) EGND.
5. Refer to Figure 1 for locations of the connectors on the new PCBA. (**NOTE:** Keypad connector used in Model 276-003 only.)
6. Secure wires using tie wrap included.
7. Move jumper J12 from its current position to that shown in Figure 1.
8. Please refer to Pub. 42004-439, available at [www.gai-tronics.com](http://www.gai-tronics.com), for further information regarding board jumpers.

### Synchronize with TMA

After installing this replacement PCBA in any -003 telephone, use TMA to synchronize the TMA phone record to the telephone:

1. Right click on the TMA phone icon, select Quick Poll, choose the option None, and click OK.
2. Right click on the TMA phone icon, select Quick Poll, choose the option Send All, and click OK.

After poll call of step 1 completes, the phone's icon will change from being a Type B handset type showing a gray surface-mount 246-style (black background) to a view of a Type A type silver flush-mount faceplate with a black handset.

## Models 226-005 and 227-005

### Removing the Old PCBA

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 telephone line.
2. Disconnect the handset, hookswitch, push button, keypad (Model 226-005 only), and ringer cable(s) from the PCBA. Record the location of each connection for later reconnection.
3. Disconnect the red and green wires and ground wire (if present) from the telephone line connection on the PCBA. Save the modular cord.
4. Depress the locking tab on each nylon standoff while lifting up on that 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 2 as an example.
2. Press firmly on each corner of the PCBA to lock in the standoffs.
3. Reconnect the red (ring) and green (tip) telephone wires to the PCBA.
4. Reconnect the handset, hookswitch, push button, keypad (Model 226-005 only), and ringer cable(s) to the PCBA.
5. If not previously installed, attach the ring lug of the (shorter) ground cable provided to the ground stud on the front panel; and the spade lug to terminal block TB1. See Figure 2.  
If the ground wire was present, reconnect it to TB1.
6. Use the Model 233-001 Security Screwdriver to install the eight front panel screws.
7. Press firmly on each corner of the PCBA to lock in the standoffs.
8. Reconnect the red (ring) and green (tip) telephone wires to the PCBA.
9. Reconnect the handset, hookswitch, push button, keypad (Model 226-005 only), and ringer cable(s) to the PCBA.
10. Use the Model 233-001 Security Screwdriver to install the eight front panel screws.

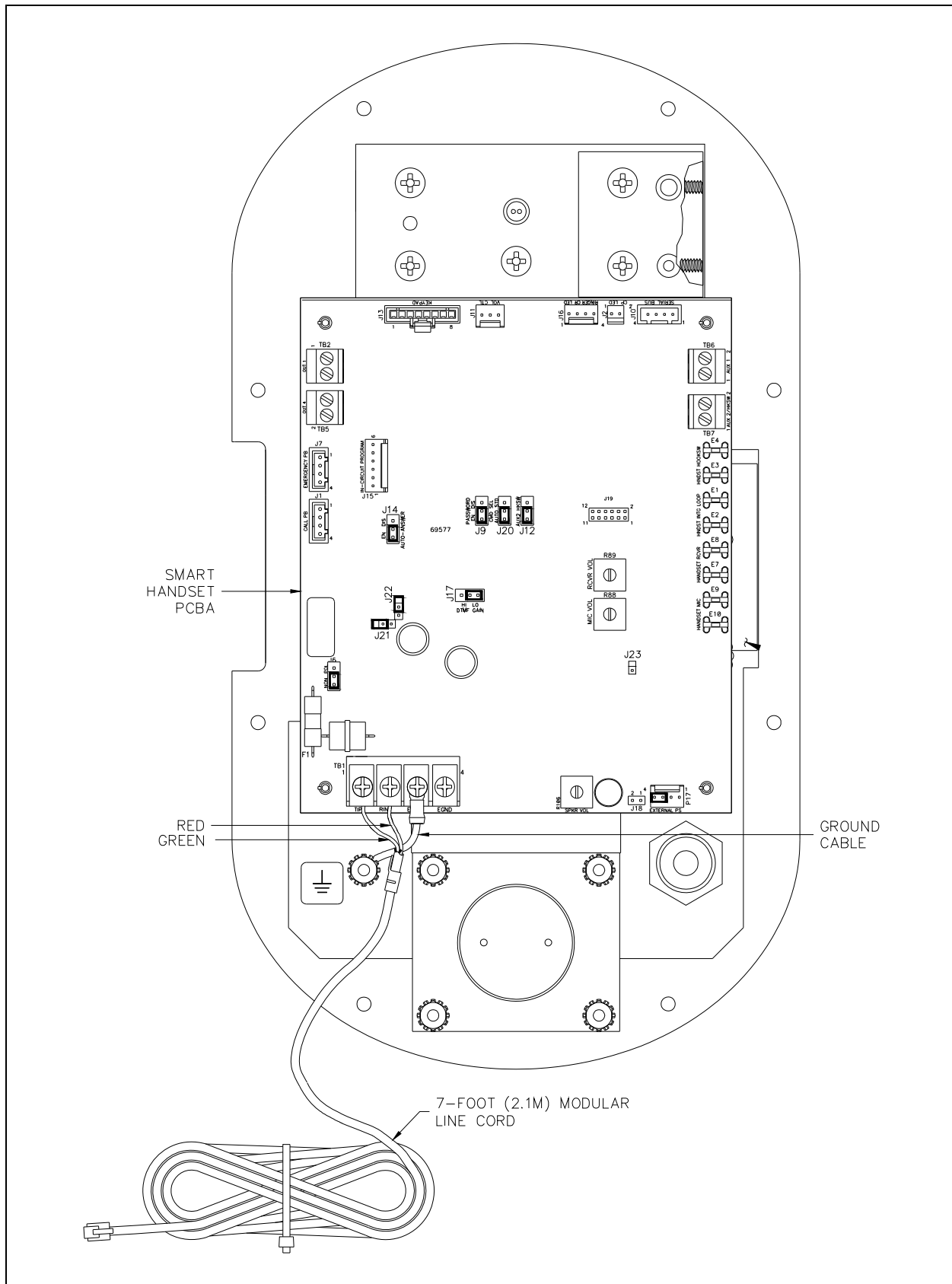


Figure 2. PCBA Connections for Models 226-005 and 227-005

## Models 246-005, 247-005, 256-005, and 257-005

### Removing the Old PCBA

1. Use a Phillips screwdriver to remove the four front panel screws and remove the panel from the enclosure after disconnecting the telephone line.
2. Disconnect the handset, hookswitch, push button, keypad (Models 246-005 and 256-005 only), and ringer cable(s) from the PCBA. Record the location of each connection for later reconnection.
3. Disconnect the red and green wires from the telephone line connection on the PCBA. Save the modular cord.
4. Depress the locking tab on each nylon standoff while lifting up on that 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. See Figure 3.
2. Press firmly on each corner of the PCBA to lock in the standoffs.
3. Reconnect the red (ring) and green (tip) telephone wires to the PCBA.
4. Reconnect the handset, hookswitch, push button, keypad (Models 246-005 and 256-005 only), and ringer cable(s) to the PCBA.
5. Use a Phillips screwdriver to install the four front panel screws.

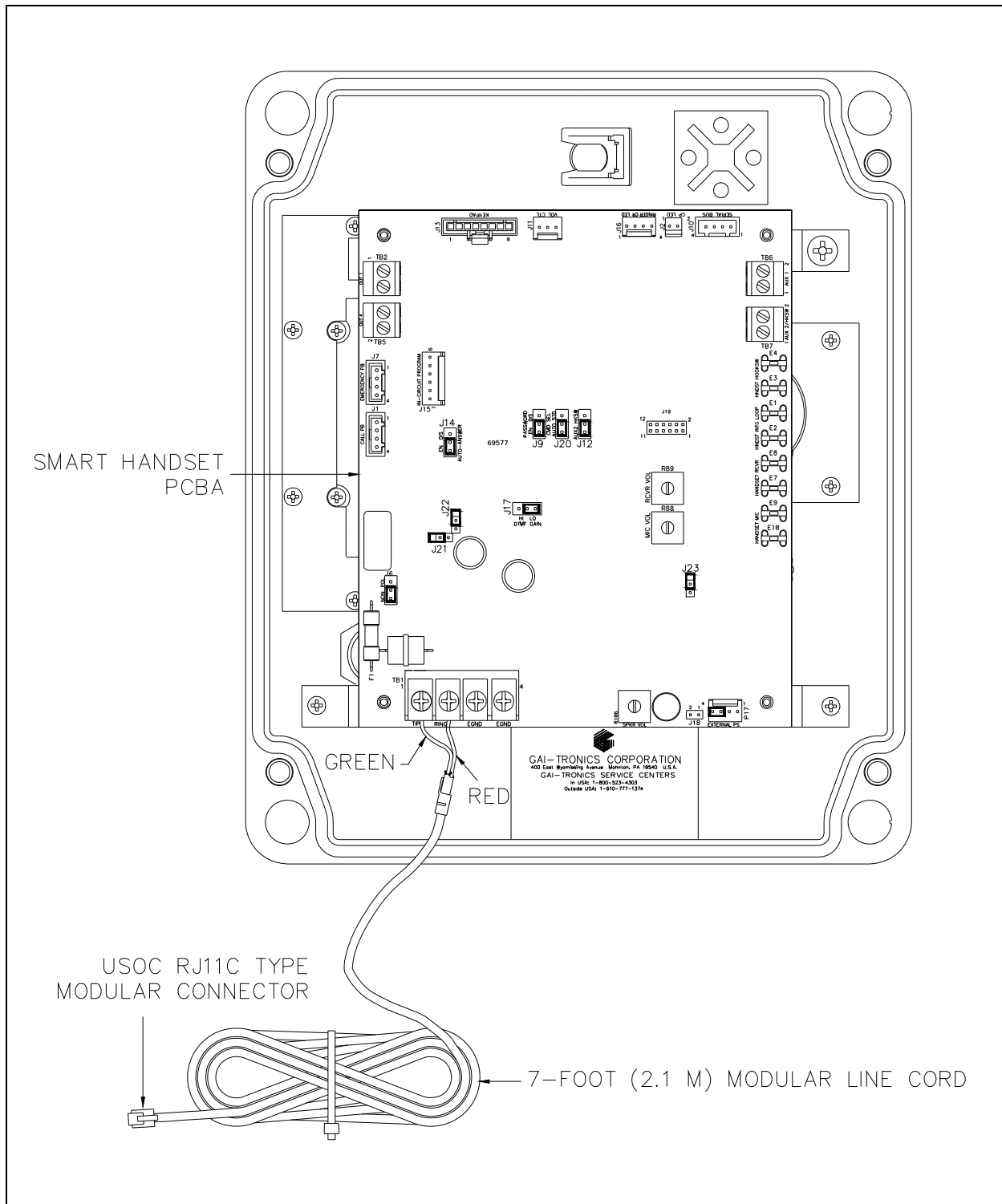


Figure 3. PCBA Connections for Models 246-005, 247-005, 256-005, and 257-005



## Models 276-005 and 277-005

### Removing the Old PCBA

1. Use the Model 233-001 Security Screwdriver to remove the six front panel screws and remove the panel from its back box after disconnecting the telephone line.
2. Disconnect the handset, hookswitch, push button, keypad (Model 276-005 only), and ringer cable(s) from the PCBA. Record the location of each connection for later reconnection.
3. Disconnect the red and green wires and ground wire (if present) from the telephone line connection on the PCBA. Save the modular cord.
4. Depress the locking tab on each nylon standoff while lifting up on that 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. See Figure 4.
2. Press firmly on each corner of the PCBA to lock in the standoffs.
3. Reconnect the red (ring) and green (tip) telephone wires to the PCBA.
4. If not previously installed, attach the ring lug of the (longer) ground cable provided to the ground stud on the front panel and the spade lug to terminal block TB1. See Figure 4.  
If the ground wire was present, reconnect to TB1.
5. Reconnect the handset, hookswitch, push button, keypad (Model 276-005 only), and ringer cable(s) to the PCBA.
6. Use the Model 233-001 Security Screwdriver to install the six front panel screws.

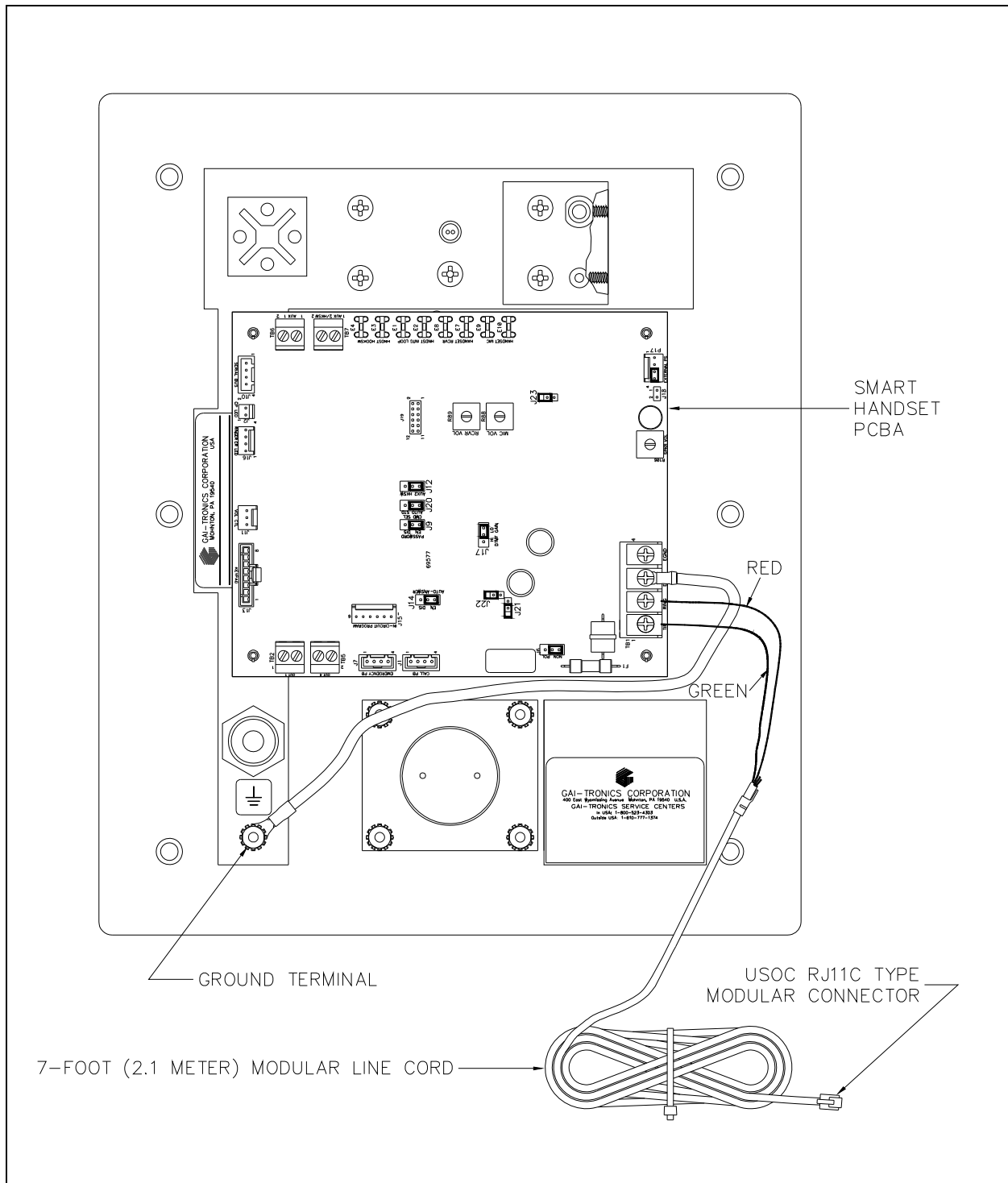


Figure 4. PCBA Connections for Models 276-005 and 277-005

# 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.