

G A I - T R O N I C S C O R P O R A T I O N

REPLACEMENT PARTS KIT

**Model 12569-001
Model TS958 Tone/Speech Generator
PCBA Replacement**

NOTE: The replacement PCBA in this kit includes a programming update. Reference Step 13 for an explanation of this change.

Installing this kit will require complete reprogramming of the Model TS958's parameters. It is advisable to locate the installation manual originally shipped with the unit, where the original programmer should have recorded all programmed parameters. If unable to locate this information, the programmed parameters can be determined by going through each of the programming steps and reading the LEDs, which will indicate the TS958's settings.

Installation of Kit:

1. REMOVE POWER TO THE UNIT BEFORE INSTALLING THIS KIT. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY.
2. Remove the front cover by loosening the four (4) captive screws on the corners of the TS958 cover.
3. Swing the cover open. Remove the ribbon cable from J2 on the Power Supply/Termination PCBA Assembly. To remove the ribbon cable from J1 (Model 69105-001) or J2 (Models 69105-003/-004), push the latch eject levers to the side of the connector.
4. Remove the front panel completely by pulling the hinges out of the holes in the rear enclosure.
5. Remove the four (4) screws from the PCBA shield on the rear of the cover and set the shield aside.

NOTE: If the unit is equipped with a speech PCBA, remove this PCBA and plastic standoffs, retaining these parts for later use.

6. Unplug the power supply ribbon cable from J1 on PCBA 69102-001 and retain for later use. Unplug the LED ribbon cable from J2 on PCBA 69102-001. Remove the four (4) standoffs and one (1) screw securing the PCBA. Remove and discard old PCBA.
7. Use the existing standoffs and screw to secure the new PCBA. Replace the speech PCBA if applicable.
8. Plug in the power supply ribbon cable to J1 on PCBA 69102-001. Plug in the LED ribbon cable to J2 on PCBA 69102-001. Replace the four (4) PCBA shield screws and secure the shield in place.
9. Align the hinges from the front panel to the rear enclosure and reinstall the front panel.
10. Plug in the ribbon cable at J2 on the power supply/termination board.



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11. Resupply power to the unit. Reset the unit to the default parameters by setting the DIP switch (S1) on the inside front cover to CCCC (Closed, Closed, Closed, Closed). Press the Mode switch on the 69105-003 PCBA (SW8). The LEDs on the front cover will flash through three sweeps. This LED sequence notifies the programmer that the unit is resetting to the default parameters. Reset the DIP switches to OOOO (Open, Open, Open, Open.) The unit will now be set to the default parameters noted in the instruction manual originally shipped with the TS958. If you wish to change any parameters, refer to the instruction manual for further details.
12. If no parameters need to be changed, close the unit. Tighten the four captive screws in the four corners of the TS958 front panel.
13. The P.C. Board in this kit includes the following new feature: the ability to mute both tones and speech messages generated from the TS958 during a voice page. GAI-Tronics has changed the EPROM used to allow muting of tones and speech messages. Therefore, Step 6 in the Model TS958 Instruction Manual, Publication 42004-070, should read as follows:

6.Mute Attenuation and Duration

The mute feature serves two functions:

- 1) During speech messages, tones are automatically reduced by the amount programmed for mute attenuation. During speech messages, the tone muting is active for the length of the speech message. The tones return to full volume between speech messages;
- 2) When the mute input is activated, tones are reduced by the amount programmed in the Mute Attenuation section. Speech messages are suspended temporarily: speech messages will resume at the beginning of the message when the mute input is deactivated. **Activation of this mute input feature is accomplished by providing a contact closure on the unit's mute input.** For Page/Party stations to activate the mute feature (page override), additional equipment is required. For Centra-Page stations, the provision is included in the station and no additional equipment is required. During voice pages, tones will be audible just as they are during speech messages. This feature ensures that voice pages will be clearly heard over tones and that speech messages will not interfere with voice pages.

Mute attenuation sets the level to which tones are muted during the broadcast of programmed speech messages or live voice pages. The default setting is -7.0 dB; the setting can be changed as described in the programming instructions below. Eight different attenuation values are available. Refer to Figure 1 for additional information.

The **mute duration** value programmed is the same for all tones. A contact closure between TB2-20 and common (TB-22, -24, or -26) activates the mute function. The default setting for mute duration is "No Timeout." Voice pages are then made "over" the alarm tones and speech messages. Voice pages require additional equipment. Consult GAI-Tronics for information.

Because the mute function partially disables alarm tones and suspends speech messages, the maximum length of time mute can be activated for a single contact closure can be limited to 75 seconds, preventing emergency tones from being muted too long. The mute function is active until the contact closure is removed or the programmed mute duration elapses. The user may resume page override by reactivating the contact closure, resetting the mute duration. The user may also choose "No Timeout" for the mute duration. This setting allows muting of

Attenuation (dB)	LED pattern		
	5	6	7
Tone off	□	□	□
-13.0	□	□	■
-9.0	□	■	□
-7.0	□	■	■
-5.0	■	□	□
-3.3	■	□	■
-2.0	■	■	□
-0.6	■	■	■

Figure 1. Mute Attenuation

alarm tones and suspending of speech messages for an unlimited length of time.

Mute Attenuation and Duration Programming Instructions

1. Set S1 to CCOC. Indicator LEDs 4 through 7 will light in a pattern to designate the mute duration time. Figure 2 shows the duration time.
2. If the duration time needs to be changed, press program switches :
 - 1 to advance the time in 5 second intervals
 - 2 to advance the time in 50 second intervals
 (*Note: mute duration will advance to maximum, then reset to zero.*)
3. After setting mute duration, press the Mode switch once to program mute attenuation. LEDs 5 through 7 will show the current attenuation level. Refer to Figure 1 to translate the LED pattern.

Duration (seconds)	LED pattern			
	4	5	6	7
No Timeout	0	0	0	0
5	0	0	0	1
10	0	0	0	1
15	0	0	0	1
20	0	0	0	1
25	0	0	0	1
30	0	0	0	1
35	0	0	0	1
40	0	0	0	1
45	0	0	0	1
50	0	0	0	1
55	0	0	0	1
60	0	0	0	1
65	0	0	0	1
70	0	0	0	1
75	0	0	0	1

Figure 2. Mute Duration

4. To change the attenuation, press programming switch 3 to advance the attenuation setting (*Note: the attenuation will advance to maximum, then reset to zero.*)
5. Press the Mode switch to save the information. Observe LED sweeps for verification. Set S1 to OOOO.

NOTE: If a mute switch fails, through a short between contacts or a short on the mute switch interconnect cable, the maximum length of time muting will occur is limited to the time programmed (5 to 75 seconds). However, if "No Timeout" is selected for the mute duration, the muting will remain active until the short is removed.

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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.