



EQUIPMENT SPECIFICATION

GAI-TRONICS MASS NOTIFICATION / PUBLIC ADDRESS SYSTEM COMPONENTS

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PART 1

1.0.0 Scope and Intent

This specification identifies and details the equipment, accessories, and peripherals necessary to broadcast live voice, pre-recorded voice messages, and/or alarm tones via distributed speakers. The specified equipment shall be suitable for both hard-wired installation applications and applications where wiring/cabling is not feasible, in a Mass Notification environment. It covers the furnishing of all labor, materials, and services in connection with the design, fabrication, and delivery of the equipment specified herein. This specification will identify Addressable Amplified Speaker (AAS), Audio Messenger Interface (AMI), Audio Control Center (ACC), Stanchion Broadcast Assembly (SBA), and Stanchion Broadcast Module (SBM) features and functionality as well as required or optional peripheral products.

All supporting documentation mentioned in this specification (literature and manuals) can be found on the GAI-Tronics Website: www.gai-tronics.com.

2.0.0 Seller Warranties

- 2.1.0 The Seller warrants the satisfactory and successful operation of all equipment furnished under this specification at the ratings, under the conditions, and for the type of service specified herein.
- 2.2.0 Goods manufactured by the seller are warranted to be free from defects in material and workmanship until one year after the date of shipment. Equipment supplied by but not manufactured by the seller shall be subject to the original equipment manufacturer's standard warranty.

3.0.0 Workmanship

All work shall be performed in accordance with the best modern practice in design, manufacture, and fabrication of all material and apparatus by this specification, notwithstanding any omission from the specifications or drawings.

4.0.0 Material and Construction

All materials used in the construction of the apparatus shall be new and selected as the best available for the intended purpose, considering long life and best engineering practices. Factors of safety shall be used throughout the design. Only heavy-duty industrial components rated to operate within the temperature ranges and other environmental conditions specified in Paragraph 7 shall be used.

5.0.0 Installation: Equipment and wiring to be installed by the Purchaser.

Seller shall provide technical guidance during installation and/or testing, via telephone, at no additional charge. After installation is completed, the Seller shall be prepared to perform a checkout of the system. If required by the buyer, a factory technician shall visit the job site to assist with system layout and design (pre-sale) or to make all necessary adjustments and instruct the operating and maintenance personnel on the proper use and care of the system (post-sale). Charges for the service are to be on a per diem basis (including travel time), plus all expenses on a cost plus basis.

6.0.0 Operation and Maintenance Instructions

All equipment requiring continued interaction, service, or support shall be provided with complete operation (user) and maintenance (service) manuals. All available documentation shall be packaged with the equipment and readily accessible via the manufacturer's website.

7.0.0 Environmental Conditions

Equipment shall be suitable for use in designated environmental conditions per the appropriately listed performance specification.

8.0.0 Equipment Operation

Specified equipment shall provide one-way Public Address broadcast (P.A.) capability from a UHF or VHF radio system and/or from a hard-wired, 600 Ohm input. The P.A. system shall be of a distributed design to eliminate the possibility of a single component failure that would disable the entire system or system segments (zones or groups). Additionally, the system shall be capable of allowing broadcasts to selected individual speakers, speaker groups, or all speakers. This selective broadcast capability shall be controlled via DTMF addresses initiated from a hard-wired and/or RF source or 2-Tone signal initiated from an RF source.

A head-end device shall be provided to control the generation of live voice and the activation of pre-recorded voice and/or pre-recorded alarm tones. This device (may be comprised of multiple items) shall provide a 600 Ohm output that can be connected directly to the system's public address speaker devices, distribution amplifiers, or to a radio base station for wireless transmission. It shall also be capable of providing a contact closure output to be used for push-to-talk functionality for radio operation. The head-end device shall have the capability to select an individual speaker, speaker groups, or all speakers for broadcasts. This selective broadcast capability shall be controlled via DTMF keypad, programmable one-button activation, or a combination of "zone/area" and "alarm" select buttons. The head-end device shall be capable of monitoring all alarms tones and voice broadcasts via an integral speaker.

Individual speakers and speaker clusters shall be provided to receive and broadcast transmitted live voice, pre-recorded voice, and/or pre-recorded alarm tones. The received signal shall be in the form of either a hard-wired, 600 Ohm and/or RF (UHF or VHF) audio signal input. The speaker clusters shall be integrally mountable to a 9-ft. high stanchion that shall also support an Emergency Telephone and Blue Strobe. The individual speakers shall be self-contained and suitable for surface or pole mounting. The individual speakers and speaker clusters shall be capable of being programmed to accept up to eight (8) different DTMF or 2-Tone (radio application) addresses for activation. These speakers shall also be capable of being programmed for a common (all speakers) broadcast operation. In either type of operation, each speaker and speaker cluster shall be capable of having its output volume adjusted through its full range via DTMF signaling. The individual speakers and speaker clusters shall be capable of providing a programmable output that can be used to activate/deactivate peripheral devices.

The head-end device shall also provide the capability of accepting a 600 Ohm, 0 dBm telephone line input, via a PBX extension or C.O. port, to provide telephone system access to the Mass Notification system. This telephone access shall be available only for live voice broadcasts but it shall provide the ability to address an individual speaker, speaker groups, and all speakers for broadcasting. The volume of each speaker device shall also be capable of being controlled via the telephone system, utilizing the same DTMF formatting as previously mentioned.

9.0.0 Field Wiring

All local power wiring shall conform to the specific equipment's installation instructions and local and national codes.

External antenna wiring (if applicable) shall be routed through a different enclosure entrance than any external power wiring, in compliance with the manufacturer's installation instructions.

10.0.0 Equipment

10.1.0 Addressable Amplified Speaker, 600-Ohm, 0dBm Input

10.1.1 Description

The Addressable Amplified Speaker (AAS) shall be considered a component of the Mass Notification/Public Address system. The AAS shall be designed for use in a hard-wired paging system, accepting any 600 Ohm, 0 dBm audio input. The AAS shall be capable of operating in two distinct modes. In one mode, the speaker shall broadcast any 600 Ohm, 0 dBm audio signal provided to it via a twisted wire pair. This mode shall also require a dedicated contact closure input (second twisted wire pair) to provide circuit activation. A second mode of operation shall allow access to the AAS via a DTMF address of 2-8 digits. This mode of operation shall require a single audio twisted wire pair. Each AAS shall be capable of accepting up to 8 different DTMF addresses for activation. The operation mode selection shall be PC-programmable.

The AAS shall contain audio amplifier circuitry for amplification of the received audio signal. This circuitry shall provide a minimum 8-Watt output, producing a maximum volume of 116dB SPL measured at 1-meter on axis. Maximum current draw at full power output with a nominal 13.8 V dc input shall be 875 mA. The AAS shall require a 12 V dc power input and shall be factory-shipped with a 120 V ac - 12 V dc plug-in power supply. The AAS shall be suitable for battery-only or battery back-up operation. The AAS shall also be suitable for direct or solar external power operation. A back-up battery shall be capable of being mounted directly inside the AAS assembly. It shall carry a minimum rating of 2.8Ah and shall be rechargeable via the AAS circuitry or external battery charger, providing continuous, full power output for a minimum of 2 hours on a full charge, when direct power is lost. An external battery shall be available for long-term, temporary operation. The external battery configuration shall carry a minimum rating of 18Ah and shall be rechargeable via the AAS circuitry or external battery charger, providing continuous, full power output for a minimum of 13 hours on a full charge. The AAS shall be capable of providing a low battery alert signal when the connected battery drops below 11.5 volts. A solar power option shall also be available for trickle-charging the 18Ah, long-term, battery. In addition to the provided plug-in power supply, a minimum 1.5 Ampere weatherproof power supply shall be available for providing power to the Addressable Amplified Speakers in outdoor applications. This power supply shall be capable of direct mounting to the exterior of the AAS.

Each AAS shall be capable of being PC-programmed for a specific volume level, remote volume control, or automatic volume control. Remote volume control shall be in the form of DTMF and shall be available in both operating modes. If programmed for automatic volume control, the AAS shall sample the surrounding ambient noise and automatically adjust its own speaker level output to a pre-programmed level above ambient. This mode shall be intended for situations where the ambient noise level changes with steady variations. Short duration changes such as sound "bursts" shall not be expected to affect the output volume level.

Each AAS shall be capable of providing a contact closure output for peripheral control. This shall be a single, controlled output that can be used in either non-addressable or addressable modes of operation. If the speaker is programmed to be non-addressable, the output shall be programmable on/off and for a momentary or maintained (time-out) operation. If the speaker is programmed to be addressable, each address shall be capable of having the output programmed on/off and for a momentary or maintained (time-out) operation. The contact rating shall be a minimum of 100 mA.

10.1.2 Interconnection

Interconnecting wiring shall be limited to audio and activation telephone wires (2-pair, if control pair is required), external 12 V dc power, and/or coaxial cable for external antenna connection. All external cabling shall be entered through the enclosure per the manufacturer's installation instructions. Required

external antenna cable shall be connectorized by the installer and connected directly to the RF source located inside the AAS enclosure. External power supply wiring shall be connected to a screw terminal located inside the AAS enclosure.

Each AAS shall be capable of providing hard-wired, feed-through audio and control to another AAS or peripheral device. If connected in this feed-through manner, a connected AAS shall be capable of being programmed to either duplicate the operation of the feeder or lead AAS or operating as an individual unit with no involvement of the lead AAS. Feed-through audio shall be a 600 Ohm, 0 dBm audio signal.

10.1.3 Features

This Addressable Amplified Speaker shall provide the following standard features and functionality:

- **Built-in 8-Watt Amplifier**
- **Accepts 600-Ohm, 0dBm Audio Input**
- **Addressable (individual, zoned, all-page) via DTMF, 8 addresses**
- **Remote DTMF Volume Control, 83-116 dB SPL, in all operating modes**
- **12 V dc Input Power**
- **Battery Back-up Option w/ Low Battery Alert**
- **Feed-Through Audio connection**
- **Automatic Volume Level Control**
- **Addressable Output Control**
- **External Long-Life Battery Option**
- **Solar Panel Power Option**
- **Surface or Pole Mounting**
- **Rainproof Rating**
- **Power Saver Feature**
- **PC Programmable**

10.1.4 Performance Specification

This Addressable Amplified Speaker shall meet the following performance and physical specifications:

Electrical

Output Power: 4 mW to 8 watt continuous
Impedance: 8 ohms
Output Range (dB) 83-116 dB (@ 1 meter on axis)
Frequency Response: 450 Hz to 3000 Hz +/-5 dB
Dispersion: 90 degrees nominal horizontal coverage; +40, -60 vertical coverage

Mechanical

Mounting Direct wall mounting (pole mounting with kit)
Conduit Entry Dual 3/4" NPT female entry
Electrical Connections Terminal block
Housing Material Glass-reinforced polyester
Dimensions 9.52 (241.8) x 8.02 (203.7)W x 8.12 (206.2)D; inches (mm)
Net Weight 6.6 lbs.

Environmental

Temperature Range -20° C to +60° C
Weatherproof Rating Rainproof
Humidity 95% non-condensing

Power Requirements

Voltage (V dc) 12.6 min./13.8 typ./15 max.
Current Draw 100 mA/sleep mode to 875mA max. @ 13.8 V dc input/8W output

10.1.5 Peripheral Equipment and Accessories

The following peripheral equipment and accessories shall be offered in support of Addressable Amplified Speaker:

Battery Back-Up Kit shall be offered to provide power back-up in the case of the loss of direct power. The back-up time duration shall be a minimum of 120 minutes at continuous full output power. The kit shall provide the battery and any necessary mounting hardware for installation inside the AAS.

Long-Life Battery Enclosure shall be offered to house an 18Ah battery (ordered separately). The enclosure shall also be designed to house the solar charge regulator module found in the solar panel interface kit. The kit shall include a connection cable that plugs into a weather proof connector located on the enclosure’s side, with the other end terminating inside the AAS enclosure. Fully-charged, the 18Ah battery shall provide a minimum of 13 hours of AAS operation at full output (8W). Calculating the battery life based on 20-second duty-cycles, a fully charged battery shall provide over 3,000 cycles at maximum output.

Solar Panel Array shall be offered to provide trickle-charging of A.A.S. battery operation (long-life battery). The solar panel array shall provide a minimum 30-Watt output and shall include an integral connection cable that is minimally 15 feet in length. The solar panel shall interconnect with the long-life battery enclosure.

Solar Panel Interface Kit shall be offered to provide materials necessary to mount the solar panel array to a pole (max. 4-inches in diameter) or flat surface. The kit shall include all necessary hardware with the exception of mounting bands or U-bolts, which shall be provided by the installer. The kit shall also include a solar panel charge regulator module that shall mount inside the Long-Life Battery Enclosure.

Weatherproof Power Supply Kit shall be offered to provide external power to the AAS. The power supply shall provide a regulated 13.8 V dc and maximum 1.7 amperes to the AAS and shall be suitable for mounting via a 3/4” NPT pipe nipple and hub to the bottom of the AAS. The kit shall include all necessary mounting hardware, wire harnesses, power supply, and weatherproof enclosure. The power supply shall be capable of accepting an input of 90 – 250 V ac.

Programming Software and Cable shall be offered to perform programming of the AAS features, including but not limited to volume level, mode selection, and selective addresses.

Pole Mounting Kit shall be offered to mount the AAS to a pole with a maximum 4-inch diameter.

Free-standing Tripod shall be offered to provide easy set-up and tear-down for temporary public address applications.

Tripod Mounting Kit shall be offered for installation of an AAS to the specified tripod.

Pole Mounting Kit shall be offered to mount the Long-Life Battery Enclosure to a pole with a maximum 4-inch diameter.

Battery Charger shall be offered for recharging both the 2.8Ah and the 18Ah batteries in a battery-only or solar application.

Remote Volume Control shall be offered in the form of an L-pad with the capability of mounting to a single-gang outlet box and hardwiring to the AAS.

10.1.6 Equipment Manufacturer and Model Numbers

The Addressable Amplified Speaker shall be GAI-Tronics Model **13353**. AAS peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **BB133** Battery Back-up Kit
- **XB001** Long-Life Battery Enclosure
- **40201-008** 18Ah Battery
- **GTRFP7784-108** 30-Watt Solar Panel Array
- **SPK200** Solar Panel Interface Kit
- **190-002PS** External Power Supply Kit
- **XAC4000A** Programming Bundle CD
- **XAC0004A** Programming Cable
- **231-001** Pole Mounting Kit
- **230-001** Pole Mounting Kit for XB001
- **40408-009** Battery Charger for 2.8Ah battery
- **GT6432-006** Free-standing Tripod
- **TPD001** Tripod Mounting Kit
- **40408-011** Battery Charger for 18Ah battery
- **12506-001** Remote Volume Control L-Pad

10.2.0 Addressable Amplified RF Speaker, VHF/UHF Operation

10.2.1 Description

The Addressable Amplified RF Speaker (AAS) shall be considered a component of the Mass Notification/Public Address system. The AAS shall be designed for use in a radio system utilizing a licensed VHF (154-174 MHz) or UHF (450-470 MHz) frequency. The AAS shall be capable of operating in two distinct modes. In one mode, the speaker shall broadcast audio received on its programmed frequency and PL code (if applicable). In this mode, the carrier detect provided by the integral radio receiver circuit shall activate the broadcast circuitry. A second mode of operation shall allow access to the AAS via a DTMF address of 2-8 digits or 2-Tone address. The AAS shall be capable of being programmed for up to eight different addresses. This operation shall be either DTMF or 2-Tone, but not both. In this “selective” mode, the speaker broadcast circuitry will not activate until the required address is received via the RF airwaves.

Each RF AAS shall also be capable of being controlled by a hard-wired, 600 Ohm audio input, as described in section 10.1.1. This ability shall exist whether the AAS is operating in an “all-call” mode or in a selective, addressable mode. The “all-call” operation mode (generic) shall be expected to require a contact closure pair for circuit activation.

The AAS shall contain a receiver module with integral antenna and audio amplifier circuitry for amplification of the received audio signal. This circuitry shall provide a minimum 8-Watt output, producing a maximum volume of 116 dB SPL measured at 1-meter on axis. Maximum current draw at full power output with a nominal 13.8 V dc input shall be 1.0 Ampere. The AAS shall require a 12 V dc power input and shall be factory-shipped with a 120 V ac - 12 V dc plug-in power supply. The AAS shall be suitable for battery-only or battery back-up operation. The AAS shall also be suitable for direct or solar external power operation. A back-up battery shall be capable of being mounted directly inside the AAS assembly. It shall carry a minimum rating of 2.8 Ah and shall be rechargeable via the AAS circuitry or external battery charger, providing continuous, full power output for a minimum of 2 hours on a full

charge, when direct power is lost. An external battery shall be available for long-term, temporary operation. The external battery configuration shall carry a minimum rating of 18 Ah and shall be rechargeable via the AAS circuitry or external battery charger, providing continuous, full power output for a minimum of 13 hours on a full charge. The AAS shall be capable of providing a low battery alert signal when the connected battery drops below 11.5 volts. A solar power option shall also be available for trickle-charging the 18 Ah, long-term, battery. In addition to the provided plug-in power supply, a minimum 1.5 Ampere weatherproof power supply shall be available for providing power to the Addressable Amplified Speakers in outdoor applications. This power supply shall be capable of direct mounting to the exterior of the AAS.

Each AAS shall be capable of being PC-programmed for frequency, specific volume level, remote volume control, or automatic volume control. Remote volume control shall be in the form of DTMF and shall be available in both operating modes. If programmed for automatic volume control, the AAS shall sample the surrounding ambient noise and automatically adjust its own speaker level output to a pre-programmed level above ambient. This mode shall be intended for situations where the ambient noise level changes with steady variations. Short duration changes such as sound “bursts” shall not be expected to affect the output volume level.

Each AAS shall be capable of providing a contact closure output for peripheral control. This shall be a single, controlled output that can be used in either non-addressable or addressable modes of operation. If the speaker is programmed to be non-addressable, the output shall be programmable on/off and for a momentary or maintained (time-out) operation. If the speaker is programmed to be addressable, each address shall be capable of having the output programmed on/off and for a momentary or maintained (time-out) operation. The contact rating shall be a minimum of 100 mA.

These speakers shall also be capable of operating with an external antenna if required by the RF system layout.

10.2.2 Interconnection

Interconnecting wiring shall be limited to external 12 V dc power and/or external coaxial cable for antenna connection. All external cabling shall be entered through the enclosure per the installation instructions. Required antenna cable shall be connectorized by the installer and connected directly to the RF source located inside the AAS enclosure. External power supply wiring shall be connected to a screw terminal located inside the AAS enclosure.

Each AAS shall be capable of providing hard-wired, feed-through audio and control to another AAS or peripheral device. If connected in this feed-through manner, a connected AAS shall be capable of being programmed to either duplicate the operation of the feeder or lead AAS or operating as an individual unit with no involvement of the lead AAS. Feed-through audio shall be a 600 Ohm, 0 dBm audio signal.

10.2.3 Features

These Addressable Amplified Speakers shall provide the following standard features and functionality:

- **Built-in 8-Watt Amplifier**
- **Built-in VHF or UHF Receiver Module with Antenna**
- **Accepts 600-Ohm, 0dBm Audio Input**
- **Addressable (individual, zoned, all-page) via DTMF or 2-Tone, 8 addresses**
- **Remote DTMF Volume Control, 83-116 dB SPL, in all operating modes**
- **12 V dc Input Power**
- **Battery Back-up Option w/ Low Battery Alert**
- **Feed-Through Audio connection**

- **Automatic Volume Level Control**
- **Addressable Output Control**
- **External Long-Life Battery Option**
- **Solar Panel Power Option**
- **Surface or Pole Mounting**
- **Rainproof Rating**
- **Power Saver Feature**
- **PC Programmable**

10.2.4 Performance Specification

This Addressable Amplified Speaker shall meet the following performance and physical specifications:

Electrical

Output Power: 8 watt continuous
 Impedance: 8 ohms
 Output Range (dB) 83-116 dB (@ 1 meter on axis)
 Frequency Response: 450 Hz to 3000 Hz +/-5 dB
 Dispersion: 90 degrees nominal horizontal coverage; +40, -60 vertical coverage

Mechanical

Mounting Direct wall mounting (pole mounting with kit)
 Conduit Entry Dual 3/4" NPT female entry
 Electrical Connections Terminal block
 Housing Material Glass-reinforced polyester
 Dimensions 9.52 (241.8) x 8.02 (203.7)W x 8.12 (206.2)D; inches (mm)
 Net Weight 7.3 lbs.

Environmental

Temperature Range -20° C to +60° C
 Weatherproof Rating Rainproof
 Humidity 95% non-condensing

Power Requirements

Voltage (V dc) 12.6 min./13.8 typ./15 max.
 Current Draw 100 mA/sleep mode to 1.0A max. @ 13.8 V dc input/8W output

RF Modules

General

Frequency Range VHF: 154-174 MHz
 UHF: 450-470 MHz
 Antenna Impedance 50 Ohms
 Operating Voltage 9-18 V dc, 12 V dc nominal
 Encoder/Decoder CTCSS/CDCSS

Receiver (measurement procedures made per ANSI/TIA/EIA-603)

Sensitivity (12 dB SINAD), UHF and VHF @ 25KHz spacing 0.28 μ V
 @ 12.5KHz spacing 0.30 μ V
 Intermodulation >60 dB
 Spurious Rejection (100KHz-4GHz) >60 dB

Approvals

FCC Identifier VHF: AIERT 17-142
 UHF: AIERT 17-442
 FCC Compliance Part 90

VHF Antenna (Helical)

Mounting	BNC
Impedance	50 Ohms

UHF Antenna (Helical)

Mounting	BNC
Impedance	50 Ohms

10.2.5 Peripheral Equipment and Accessories

The following peripheral equipment and accessories shall be offered in support of the Addressable Amplified RF Speaker:

Battery Back-Up Kit shall be offered to provide power back-up in the case of the loss of direct power. The back-up time duration shall be a minimum of 120 minutes for the UHF and 600 Ohm input models and 75 minutes for the VHF model, at continuous full output power. The kit shall provide the battery and any necessary mounting hardware for installation inside the A.A.S.

Long-Life Battery Enclosure shall be offered to house an 18Ah battery (ordered separately). The enclosure shall also be designed to house the solar charge regulator module found in the solar panel interface kit. The kit shall include a connection cable that plugs into a weather proof connector located on the enclosure’s side, with the other end terminating inside the A.A.S. enclosure. Fully-charged, the 18Ah battery shall provide a minimum of 15 hours of AAS operation (UHF model) and a minimum of 12 hours of AAS operation (VHF model), at full output (8W). Calculating the battery life based on 20 second duty-cycles, a fully charged battery shall provide over 3,000 cycles at maximum output.

Solar Panel Array shall be offered to provide trickle-charging of AAS battery operation (long-life battery). The solar panel array shall provide a minimum 30-Watt output and shall include an integral connection cable that is minimally 15 feet in length. The solar panel shall interconnect with the long-life battery enclosure.

Solar Panel Interface Kit shall be offered to provide materials necessary to mount the solar panel array to a pole (max. 4-inches in diameter) or flat surface. The kit shall include all necessary hardware with the exception of mounting bands or U-bolts, which shall be provided by the installer. The kit shall also include a solar panel charge regulator module that shall mount inside the Long-Life Battery Enclosure.

Weatherproof Power Supply Kit shall be offered to provide external power to the AAS. The power supply shall provide a regulated 13.8 V dc and maximum 1.7 amperes to the AAS and shall be suitable for mounting via a ¾” NPT pipe nipple and hub to the bottom of the AAS. The kit shall include all necessary mounting hardware, wire harnesses, power supply, and weatherproof enclosure. The power supply shall be capable of accepting an input of 90 – 250 V ac.

Programming Software and Cable shall be offered to perform programming of the RF receiver module’s operating frequency and PL code and the AAS features, including but not limited to volume level, mode selection, and selective addresses.

Free-standing Tripod shall be offered to provide easy set-up and tear-down for temporary public address applications.

Tripod Mounting Kit shall be offered for installation of an AAS to the specified tripod.

Pole Mounting Kit shall be offered to mount the AAS to a pole with a maximum 4-inch diameter.

Pole Mounting Kit shall be offered to mount the Long-Life Battery Enclosure to a pole with a maximum 4-inch diameter.

Battery Charger shall be offered for recharging both the 2.8Ah and the 18Ah batteries.

Radio equipment provided by others.

10.2.6 Equipment Manufacturer and Model Numbers

The Addressable Amplified RF Speaker shall be GAI-Tronics Models **13363** (VHF) and **13373** (UHF). AAS peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **BB133** Battery Back-up Kit
- **XB001** Long-Life Battery Enclosure
- **GTRFP7784-108** 30-Watt Solar Panel Array
- **SPK200** Solar Panel Interface Kit
- **190-002PS** External Power Supply Kit
- **19101-024** RF Module Programming Kit
- **XAC4000A** Programming Bundle CD
- **XAC0004A** Programming Cable
- **GT6432-006** Free-standing Tripod
- **TPD001** Tripod Mounting Kit
- **231-001** Pole Mounting Kit for AAS
- **230-001** Pole Mounting Kit for XB001
- **40408-009** Battery Charger for 2.8Ah battery
- **40408-011** Battery Charger for 18Ah battery
- **12506-001** Remote Volume Control L-Pad

10.3.0 Stanchion Broadcast Assembly

10.3.1 Description

The Stanchion Broadcast Assembly (SBA) shall be considered a component of the Mass Notification/Public Address system. The SBA shall be a free-standing device, suitable for withstanding the rigors of a physically demanding environment. The SBA shall be designed to house a flush-panel emergency telephone (P.O.T.S. or VoIP) or RF Call Box for two-way communications, a blue L.E.D. strobe with constant on design, 1 to 4 public address broadcast speakers (one on each of its four sides) for one-way announcements, and necessary amplifier circuitry. The SBA shall provide a 360° dispersion, with four (4) speakers installed. The two-way communication operation and one-way public address operation shall be completely independent operations. Only the speakers and strobe shall be located in the top portion of the SBA. All electronics shall be readily accessible at the bottom portion of the SBA. All SBA components shall be provided in kit form for field installation. The Stanchion Broadcast Assembly shall be UL listed for outdoor installation and shall be ADA compliant with all components installed.

The SBA shall be designed for use in either a hard-wired paging system, accepting any 600 Ohm, 0 dBm audio input or for use in a radio system utilizing a licensed VHF (154-174 MHz) or UHF (450-470 MHz) frequency. Each operation shall be discussed separately.

The 600 Ohm, 0 dBm audio input version of the SBA shall be capable of operating in two distinct modes. In one mode, the SBA speakers shall broadcast any 600 Ohm, 0 dBm audio signal provided to it via a twisted wire pair. This mode shall also require a dedicated contact closure input (second twisted wire pair) to provide circuit activation. A second mode of operation shall allow access to the SBA via a DTMF

address of 2-8 digits. This mode of operation shall require a single audio twisted wire pair. Each SBA shall be capable of accepting up to 8 different DTMF addresses for activation. The operation mode selection shall be PC-programmable.

The RF version of the SBA shall be designed for use in a radio system utilizing a licensed VHF (154-174 MHz) or UHF (450-470 MHz) frequency. The RF SBA shall be capable of operating in two distinct modes. In one mode, the SBA speakers shall broadcast audio received on its programmed frequency and PL code (if applicable). In this mode, the carrier detect provided by the integral radio receiver circuit shall activate the broadcast circuitry. A second mode of operation shall allow access to the SBA via a DTMF address of 2-8 digits or 2-Tone address. The AAS shall be capable of being programmed for up to eight different addresses. This operation shall be either DTMF or 2-Tone, but not both. In this "selective" mode, the speaker broadcast circuitry will not activate until the required address is received via the RF airwaves.

Each RF SBA shall also be capable of being controlled by a hard-wired, 600 Ohm audio input, as described in paragraph 1 of this section. This ability shall exist whether the SBA is operating in an "all-call" mode or in a selective, addressable mode. The "all-call" operation mode (generic) shall be expected to require a contact closure pair for circuit activation.

The RF version of the SBA shall include a receiver module with integral antenna. All SBA models shall include audio amplifier circuitry for amplification of the received audio signal. This circuitry shall provide a minimum 8-Watt output, producing a maximum volume of 110 dB SPL from each speaker position, measured at 1-meter on axis. Maximum current draw at full power output with a nominal 120 V ac input shall be 1.1 Ampere. The SBA shall be provided with a back-up battery capable of being mounted directly inside the AAS assembly. It shall carry a minimum rating of 2.8 Ah and shall be rechargeable via the SBA circuitry, providing continuous, full power output for a minimum of 1 hour on a full charge, when direct power is lost. The SBA shall be capable of providing a low battery alert signal when the connected battery drops below 11.5 volts

Each SBA shall be capable of being PC-programmed for frequency, specific volume level, or remote volume control. Remote volume control shall be in the form of DTMF and shall be available in all operating modes.

Each SBA shall be capable of providing a contact closure output for peripheral control. This shall be a single, controlled output that can be used in either non-addressable or addressable modes of operation. If the speaker is programmed to be non-addressable, the output shall be programmable on/off and for a momentary or maintained (time-out) operation. If the SBA is programmed to be addressable, each address shall be capable of having the output programmed on/off and for a momentary or maintained (time-out) operation. The contact rating shall be a minimum of 100 mA.

SBA speakers shall be rated "submersion-proof" and shall include an epoxy paint coating to protect against corrosion. Each speaker shall be provided as a kit for field installation as required. If less than four (4) speakers are required, a gasketed blank cover plate shall be provided for each vacated speaker location. Each speaker assembly shall include a pre-connected wiring harness for connection to the associated amplifier electronics.

10.3.2 Interconnection

Interconnecting wiring shall be limited to standard telephone or cat 5/6e twisted pairs and appropriately gauged power triplet for 120 V ac connection. Required telephone pair connections shall include telephone extension or C.O. line, broadcast audio and activation (2-pair, if control pair is required), and any desired spare pairs. All external cabling shall be entered through the bottom of the SBA, insuring proper

separation of audio and power conductors. All wiring shall connect to its designated components via screw-down terminal strips or wire nuts/crimps.

10.3.3 Features

The Stanchion Broadcast Assembly shall provide the following standard features and functionality:

- **Built-in 8-Watt Amplifier**
- **Accepts 600-Ohm, 0dBm Audio Input**
- **Accepts VHF (154-174 MHz) or UHF (450-470 MHz) RF signal (if required)**
- **Supports Installation of 1 to 4 Submersion-proof Speakers**
- **Addressable (individual, zoned, all-page) via DTMF or 2-Tone, 8 addresses**
- **Remote DTMF Volume Control, 77-110 dB SPL, in all operating modes**
- **120 V ac Input Power**
- **Addressable Output Control**
- **Back-up Battery w/ Low Battery Alert**
- **ADA Compliant**
- **UL Listed**
- **NEMA 3R or Equivalent**
- **Power Saver Feature**
- **Support L.E.D. Strobe Mounting**
- **Support Flush-panel Emergency Telephone Mounting**
- **PC Programmable**

10.3.4 Performance Specification

The Stanchion Broadcast Assembly shall meet the following performance and physical specifications:

Electrical (Speaker & Associated Electronics)

Output Power:	4 mW to 8 W continuous
Impedance:	8 ohms
Output Range (dB)	77-110 dB (@ 1 meter on axis)
Frequency Response:	450 Hz to 3000 Hz +/-5 dB
Dispersion (each speaker):	82 degrees

Mechanical

Finish	Powder Coat Epoxy, Architectural Bronze
Material	3/16" Cold Rolled Steel
Cable Entry	Opening in base, 3.25" hole
Dimensions	10.0" W x 10.0" D x 114" H
Shipping Weight (stanchion body only)	Approx. 225 lbs.

Environmental

Temperature Range	- 4 ° F to + 140 ° F (-20° C to +60° C)
Weatherproof Rating	NEMA 3R
Humidity	95% non-condensing

Power Requirements

Voltage (V ac)	120/230 V ac, 50/60 Hz
Current Draw	1.0 A/sleep mode to 2.0 A max. @ 120 V ac input / 8W output

Receiver, when applicable

(measurement procedures made per ANSI/TIA/EIA-603)

Sensitivity (12 dB SINAD), UHF and VHF	@ 25KHz spacing 0.28 μV @ 12.5KHz spacing 0.30μV
Intermodulation	>60 dB
Spurious Rejection (100KHz-4GHz)	>60 dB

Approvals

FCC Identifier	VHF: AIERT 17-142 UHF: AIERT 17-442
FCC Compliance	Part 90

VHF Antenna (Helical)

Mounting	BNC
Impedance	50 Ohms

UHF Antenna (Helical)

Mounting	BNC
Impedance	50 Ohms

10.3.5 Peripheral Equipment, Accessories, and Sub-components

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Stanchion Broadcast Assembly:

Stanchion Body measuring 114” H and 10.0” W x 10.0” D; constructed of 3/16” cold-rolled steel, painted with Powder Coat Epoxy, Architectural Bronze color. The body shall include openings to provide mounting locations for installing up to four (4) speakers, a telephone/call box panel light, a flush-mount telephone or RF Call Box, and rear access. A gasketed access panel measuring 7” W x 18” H shall be include with the stanchion body. The body shall include provisions to install a strobe assembly via a ¾” male NPT coupling and a protective lens assembly at the top of the unit. The body shall include provisions for internal installation of a mounting plate designed for field-installation of peripheral equipment. Additionally, a minimum of two (2) internal mounting brackets shall be provided for installing back-up batteries.

Mounting Kit shall be provided for securing the stanchion body to prepared concrete. The kit shall include necessary J-bolts and installation instructions.

Panel Light Assembly shall be provided for installation directly above the installed flush-mount telephone or RF Call Box in the stanchion body. The Panel Light shall provide illumination over the face of the flush-mount unit and shall require a power input voltage of 120 V ac. All necessary mounting hardware shall be provided.

Speaker Kit shall include a single, submersion-proof speaker installed on a gasketed mounting plate. The mounting plate be manufactured from .125” aluminum and shall measure 8.5” x 8.5”. The mounting plate with speaker shall be designed for installation at the top of the stanchion body and shall include a wiring harness that is 15 feet long, for connecting to the amplifier circuitry. Installation hardware shall be included. The speaker and associated mounting plate shall be epoxy painted Architectural Bronze.

Speaker Vacancy Kit shall include a gasketed, blank plate designed to cover the speaker opening in the stanchion body when no speaker is desired. The plate shall be manufactured from .125” aluminum, shall measure 8.5” x 8.5”, and shall be epoxy painted Architectural Bronze. The kit shall include necessary mounting hardware.

Electronics Paging Module shall receive and reproduce the public address audio signal and provide an amplified output to connected speakers. The module shall require a 120 V ac input and shall be suitable for accepting a 600 Ohm, 0 dBm audio input, RF (UHF or VHF) audio input, or both 600 Ohm and RF audio inputs. If required, the Electronics Paging Module shall be capable of receiving VoIP audio via a cat 5/6 cable or WiFi input. The module shall be capable of providing a programmable control output for activation of peripheral equipment such as a strobe. The module shall be considered the heart of the SBA and shall be PC-programmable for all feature functionality. The Electronics Paging Module shall physically install on the inside of the stanchion body's access panel.

L.E.D. Strobe shall be designed with a combined constant-on and flashing operation. The strobe shall include a single L.E.D. tower to provide both functions. The estimated life expectancy of the L.E.D. tower shall be 100,000 hours. The constant-on operation will occur when 120 V ac power is applied. The strobe shall connect to a control output of the flush-mount telephone or electronics paging module that will initiate the flashing operation when the telephone or module is active. The flashing operation will cease when the telephone or module no longer provide the control output. The L.E.D. strobe shall include a ¾" female NPT for mounting to the stanchion body and shall be considered weatherproof with a protective blue lens. The L.E.D. Strobe shall be UL/cUL listed.

Clear Lens shall be provided for mounting to the top of the stanchion body, giving the L.E.D. strobe additional protection. The lens shall attach to the stanchion body with tamper-resistant screws.

Dual-Frequency Antenna/Lens Kit shall provide a clear lens that includes a pre-installed antenna ground plane and mounting boot, a 17-ft. pre-connectorized coaxial cable assembly, and dual-band antenna (150/450 MHz range). The lens shall attach to the top of the stanchion body with tamper-resistant screws.

Back-up Battery shall be rated at 2.8 Ah and will provide the Stanchion Broadcast Assembly with back-up power for a period of no less than 30 minutes when operating at full-power output.

Programming Software and Cable shall be offered to perform programming of the SBA features, including but not limited to volume level, mode selection, and selective addresses.

Field Installation Mounting Panel shall provide the installer a location to install peripheral equipment such as a power outlet, VoIP gateway, etc. The panel shall be fabricated from .125" aluminum and shall measure 15" H x 7" W. It shall include four (4) clearance mounting holes for installation inside the stanchion body (accessible with communication device removed).

Radio equipment provided by others.

10.3.6 Equipment Manufacturer and Model Numbers

The Stanchion Broadcast Assembly shall be GAI-Tronics Series **234SBA**. Peripherals, accessories, and sub-components shall be GAI-Tronics models numbers, specified as:

- **84509-201** Stanchion Body
- **84504-201** Mounting Kit for 234 Stanchion
- **84503-201** Panel Light Assembly
- **12538-201** Speaker Kit
- **12539-201** Speaker Vacancy Kit
- **10458-101** Electronics Paging Module, 600 Ohm
- **10458-102** Electronics Paging Module, 600 Ohm/VHF
- **10458-103** Electronics Paging Module, 600 Ohm/UHF
- **XAC4000A** Programming Bundle CD

- **XAC0004A** Programming Cable
- **19101-024** RF Module Programming Kit
- **530-001** L.E.D. Strobe Assembly
- **84502-201** Clear Lens
- **12234-100** Dual-Frequency Antenna/Lens Kit
- **12234-102** WiFi Antenna/Lens Kit
- **40201-010** Back-up Battery, 2.8 Ah
- **84508-001** Field Installation Mounting Plate

10.4.0 Stanchion Broadcast Module

10.4.1 Description

The Stanchion Broadcast Module (SBM) shall be considered a component of the Mass Notification/Public Address system. The SBM shall be suitable for installation on top of a GAI-Tronics Model 234 series stanchion to provide public address broadcasting capability to existing installations. The SBM shall be designed to support a blue L.E.D. strobe with constant on design, 1 to 4 public address broadcast speakers (one on each of its four sides) for one-way, public address broadcasts, and a clear protective lens. Necessary amplifier circuitry shall be included for installation in the stanchion body base. The SBM shall provide a 360° dispersion, with four (4) speakers installed. The one-way public address operation shall be completely independent from two-way communications pre-existing in the installed stanchion. All SBM components shall be provided in kit form for field installation.

The SBM shall be designed for use in either a hard-wired paging system, accepting any 600 Ohm, 0 dBm audio input or for use in a radio system utilizing a licensed VHF (154-174 MHz) or UHF (450-470 MHz) frequency. Each operation shall be discussed separately.

The 600 Ohm, 0 dBm audio input version of the SBM shall be capable of operating in two distinct modes. In one mode, the SBM speakers shall broadcast any 600 Ohm, 0 dBm audio signal provided to it via a twisted wire pair. This mode shall also require a dedicated contact closure input (second twisted wire pair) to provide circuit activation. A second mode of operation shall allow access to the SBM via a DTMF address of 2-8 digits. This mode of operation shall require a single audio twisted wire pair. Each SBM shall be capable of accepting up to 8 different DTMF addresses for activation. The operation mode selection shall be PC-programmable.

The RF version of the SBM shall be designed for use in a radio system utilizing a licensed VHF (154-174 MHz) or UHF (450-470 MHz) frequency. The RF SBM shall be capable of operating in two distinct modes. In one mode, the SBM speakers shall broadcast audio received on its programmed frequency and PL code (if applicable). In this mode, the carrier detect provided by the integral radio receiver circuit shall activate the broadcast circuitry. A second mode of operation shall allow access to the SBM via a DTMF address of 2-8 digits or 2-Tone address. The SBM shall be capable of being programmed for up to eight different addresses. This operation shall be either DTMF or 2-Tone, but not both. In this “selective” mode, the speaker broadcast circuitry will not activate until the required address is received via the RF airwaves.

Each RF SBM shall also be capable of being controlled by a hard-wired, 600 Ohm audio input, as described in paragraph 1 of this section. This ability shall exist whether the SBM is operating in an “all-call” mode or in a selective, addressable mode. The “all-call” operation mode (generic) shall be expected to require a contact closure pair for circuit activation.

The RF version of the SBM shall include a receiver module with integral antenna. All SBM models shall include audio amplifier circuitry for amplification of the received audio signal. This circuitry shall provide

a minimum 8-Watt output, producing a maximum volume of 110 dB SPL from each speaker position, measured at 1-meter on axis. Maximum current draw at full power output with a nominal 120 V ac input shall be 1.1 Ampere. The SBM shall be provided with a back-up battery capable of being mounted directly inside the AAS assembly. It shall carry a minimum rating of 2.8 Ah and shall be rechargeable via the SBM circuitry, providing continuous, full power output for a minimum of 1 hour on a full charge, when direct power is lost. The SBM shall be capable of providing a low battery alert signal when the connected battery drops below 11.5 volts

Each SBM shall be capable of being PC-programmed for frequency, specific volume level, or remote volume control. Remote volume control shall be in the form of DTMF and shall be available in all operating modes.

Each SBM shall be capable of providing a contact closure output for peripheral control. This shall be a single, controlled output that can be used in either non-addressable or addressable modes of operation. If the speaker is programmed to be non-addressable, the output shall be programmable on/off and for a momentary or maintained (time-out) operation. If the SBM is programmed to be addressable, each address shall be capable of having the output programmed on/off and for a momentary or maintained (time-out) operation. The contact rating shall be a minimum of 100 mA.

SBM speakers shall be rated "submersion-proof" and shall include an epoxy paint coating to protect against corrosion. Each speaker shall be provided as a kit for field installation as required. If less than four (4) speakers are required, a gasketed blank cover plate shall be provided for each vacated speaker location. Each speaker assembly shall include a pre-connected wiring harness for connection to the associated amplifier electronics.

10.4.2 Interconnection

Interconnecting wiring shall be limited to standard telephone or cat 5/6e twisted pairs and appropriately gauged power triplet for 120 V ac connection. Required telephone pair connections shall include telephone extension or C.O. line (for existing telephone), broadcast audio and activation (2-pair, if control pair is required), and any desired spare pairs. All external cabling shall be entered through the bottom of the existing stanchion body, insuring proper separation of audio and power conductors. All wiring shall connect to its designated components via screw-down terminal strips or wire nuts/crimps.

Internal wiring connections shall be limited to speaker wire connections from the SBM speakers and/or strobe to the electronics located in the base of the existing stanchion body.

10.4.3 Features

The Stanchion Broadcast Module shall provide the following standard features and functionality:

- **Built-in 8-Watt Amplifier**
- **Accepts 600-Ohm, 0dBm Audio Input**
- **Accepts VHF (154-174 MHz) or UHF (450-470 MHz) RF signal (if required)**
- **Supports Installation of 1 to 4 Submersion-proof Speakers**
- **Addressable (individual, zoned, all-page) via DTMF or 2-Tone, 8 addresses**
- **Remote DTMF Volume Control, 77-110 dB SPL, in all operating modes**
- **120 V ac Input Power**
- **Addressable Output Control**
- **Back-up Battery w/ Low Battery Alert**
- **NEMA 3R or Equivalent Rating**
- **Power Saver Feature**

- **Support L.E.D. Strobe Mounting**
- **PC Programmable**

10.4.4 Performance Specifications

The Stanchion Broadcast Module shall meet the following performance and physical specifications:

Electrical (Speaker & Associated Electronics)

Output Power: 4 mW to 8 W continuous
 Impedance: 8 ohms
 Output Range (dB) 77-110 dB (@ 1 meter on axis)
 Frequency Response: 450 Hz to 3000 Hz +/-5 dB
 Dispersion (each speaker): 82 degrees

Mechanical

Finish Powder Coat Epoxy, Architectural Bronze
 Material 3/16" Cold Rolled Steel
 Dimensions 10.0" W x 10.0" D x 18" H
 Shipping Weight (stanchion body only) Approx. 42 lbs.

Environmental

Temperature Range - 4 ° F to + 140 ° F (-20° C to +60° C)
 Weatherproof Rating NEMA 3R
 Humidity 95% non-condensing

Power Requirements

Voltage (V ac) 120/230 V ac, 50/60 Hz
 Current Draw 1.0 A/sleep mode to 2.0 A max. @ 120 V ac input / 8W output

Receiver, when applicable

(measurement procedures made per ANSI/TIA/EIA-603)

Sensitivity (12 dB SINAD), UHF and VHF @ 25KHz spacing 0.28 µV
 @ 12.5KHz spacing 0.30µV
 Intermodulation >60 dB
 Spurious Rejection (100KHz-4GHz) >60 dB

Approvals

FCC Identifier VHF: AIERT 17-142
 UHF: AIERT 17-442
 FCC Compliance Part 90

VHF Antenna (Helical)

Mounting BNC
 Impedance 50 Ohms

UHF Antenna (Helical)

Mounting BNC
 Impedance 50 Ohms

10.4.5 Peripheral Equipment, Accessories, and Sub-components

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Stanchion Broadcast Module:

Stanchion Module Body measuring 18" H and 10.0" W x 10.0" D; constructed of 3/16" cold-rolled steel, painted with Powder Coat Epoxy, Architectural Bronze color. The body shall include openings to provide mounting locations for installing up to four (4) speakers. A gasketed access panel measuring 7" W x 18" H or 7"W x 10" H (depending on age of existing stanchion body) shall be include with the SBM. This panel

shall include provisions for mounting the Electronics Paging Module. The body shall include provisions to install a strobe assembly via a 3/4" male NPT coupling and a protective lens assembly at the top of the unit.

Speaker Kit shall include a single, submersion-proof speaker installed on a gasketed mounting plate. The mounting plate be manufactured from .125" aluminum and shall measure 8.5" x 8.5". The mounting plate with speaker shall be designed for installation at the top of the stanchion body and shall include a wiring harness that is 15 feet long, for connecting to the amplifier circuitry. Installation hardware shall be included. The speaker and associated mounting plate shall be epoxy painted Architectural Bronze.

Speaker Vacancy Kit shall include a gasketed, blank plate designed to cover the speaker opening in the stanchion body when no speaker is desired. The plate shall be manufactured from .125" aluminum, shall measure 8.5" x 8.5", and shall be epoxy painted Architectural Bronze. The kit shall include necessary mounting hardware.

Electronics Paging Module shall receive and reproduce the public address audio signal and provide an amplified output to connected speakers. The module shall require a 120 V ac input and shall be suitable for accepting a 600 Ohm, 0 dBm audio input, RF (UHF or VHF) audio input, or both 600 Ohm and RF audio inputs. The module shall be capable of providing a programmable control output for activation of peripheral equipment such as a strobe. The module shall be considered the heart of the SBA and shall be PC-programmable for all feature functionality. The Electronics Paging Module shall physically install on the inside of the existing stanchion body's replacement access panel.

L.E.D. Strobe shall be designed with a combined constant-on and flashing operation. The strobe shall include a single L.E.D. tower to provide both functions. The estimated life expectancy of the L.E.D. tower shall be 100,000 hours. The constant-on operation will occur when 120 V ac power is applied. The strobe shall connect to a control output of the flush-mount telephone or electronics paging module that will initiate the flashing operation when the telephone or module is active. The flash rate shall be 240 flashes per minute. The flashing operation will cease when the telephone or module no longer provide the control output. The L.E.D. strobe shall include a 3/4" female NPT for mounting to the stanchion body and shall be considered weatherproof with a protective blue lens. The L.E.D. Strobe shall be UL/cUL listed.

Clear Lens shall be provided for mounting to the top of the stanchion body, giving the L.E.D. strobe additional protection. The lens shall attach to the stanchion body with tamper-resistant screws.

Dual-Frequency Antenna/Lens Kit shall provide a clear lens that includes a pre-installed antenna ground plane and mounting boot, a 17-ft. pre-connectorized coaxial cable assembly, and dual-band antenna (150/450 MHz range). The lens shall attach to the top of the stanchion body with tamper-resistant screws.

Programming Software and Cable shall be offered to perform programming of the SBM features, including but not limited to volume level, mode selection, and selective addresses.

Back-up Battery shall be rated at 2.8 Ah and will provide the Stanchion Broadcast Assembly with back-up power for a period of no less than 30 minutes when operating at full-power output.

10.4.6 Equipment Manufacturer and Model Numbers

The Stanchion Broadcast Module shall be GAI-Tronics series **234SBM**. Peripherals, accessories, and sub-components shall be GAI-Tronics models numbers, specified as:

- **84507-201** Stanchion Module Body
- **12538-201** Speaker Kit
- **12539-201** Speaker Vacancy Kit
- **10458-101** Electronics Paging Module, 600 Ohm

- **10458-102** Electronics Paging Module, 600 Ohm/VHF
- **10458-103** Electronics Paging Module, 600 Ohm/UHF
- **XAC4000A** Programming Bundle CD
- **XAC0004A** Programming Cable
- **19101-024** RF Module Programming Kit
- **530-001** L.E.D. Strobe Assembly
- **84502-201** Clear Lens
- **12234-100** Dual-Frequency Antenna/Lens Kit
- **12234-102** WiFi Antenna/Lens Kit
- **40201-010** Back-up Battery, 2.8 Ah

10.5.0 Audio Control Center Deskset

10.5.1 Description

The Audio Control Center deskset (ACC) shall be a head-end component of the Mass Notification/Public Address system. The ACC shall offer a user-friendly solution for controlling alarms and voice messages to be broadcast throughout the system. The ACC shall be in a desktop configuration but shall also be suitable for wall-mounting. The deskset shall include an integral handset with pressbar, microphone, and speaker. The ACC shall be PC-programmable and capable of initiating pre-recorded alarm tones and voice messages via an Audio Messenger Interface. The ACC shall also be capable of selective determining broadcast location (individual, zones, all call) via a DTMF keypad or programmable single button activations. The ACC shall include a 32-character LCD display to view system status and shall be capable of monitoring all broadcasted audio. A plug-in power supply shall be included. The system shall be designed to include a second, hot-standby ACC deskset for use if the main deskset suffers a catastrophic failure. This unit shall be intended only for back-up operation, not for dual deskset operation. The hot-standby unit shall connect to the same Audio Messenger Interface as does the main unit. Both desksets shall not be installed further than 50 feet from the Audio Messenger Interface due to RS232 limitations.

10.5.2 Interconnection

All signal/audio connections to and from the ACC deskset shall be in the form of modular connectors. Power connection shall match the power supply provided with the deskset.

10.5.3 Features

The Audio Control Center deskset shall include the following standard features and functionality:

- **Initiates up to 125 Tone/Voice Messages via Audio Messenger Interface**
- **Generate Live Voice Broadcast via Handset, Integral Microphone, or Optional Desk Microphone**
- **Live Voice Broadcast Override of Active Alarm Tone/Messages**
- **Zone/Alarm Select Buttons**
- **Stop/Clear Buttons**
- **Programmable Alarm Activation Buttons (8)**
- **DTMF Keypad for Addressable Broadcast Capability**
- **System Monitoring via Integral Speaker with Volume Control**
- **32-Character LCD Display, Indicating Zone, Alarm, Time, and Operator Instructions**
- **Time Display**
- **Zone/Alarm Alias Display**
- **Alarm Deactivation Control**
- **RS232 Connection to Audio Messenger Interface**
- **PC Programmable**
- **Plug-in Power Supply Included**

10.5.4 Performance Specifications

Color	Black
Dimensions	7.6" W x 8.9" L x 4.7"H
Weight	3.2 lbs. min.
Temperature	-35° to +70° C
Humidity	95% at 50° C non-condensing
Power Input	10.5 to 16 V dc, 400 mA maximum
Frequency Response	±3 dB from 300-3000 Hz
Audio Output to Speaker	1 Watt minimum
Audio Distortion	Less than 3% THD
Audio/Data Connections	Modular

10.5.5 Peripheral Equipment and Accessories

The following peripheral equipment and accessories shall be offered in support of the Audio Control Center deskset:

Addressable Amplified Speaker per sections 10.1.0 and 10.2.0 of this specification.

Stanchion Broadcast Assembly per section 10.3.0 of this specification.

Stanchion Broadcast Module per section 10.4.0 of this specification.

Audio Messenger Interface per section 10.6.0 of this specification.

AMI to Deskset Interface per section 10.7.0 of this specification.

Programming Software and Cable shall be offered to perform programming of the ACC features and functionality.

10.5.6 Equipment Manufacturer and Model Numbers

The Audio Control Center Deskset shall be GAI-Tronics Model **ACC2500**. Peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **13353** Addressable Amplified Speaker, 600 Ohm
- **13363** Addressable Amplified RF Speaker, VHF (154-174 MHz)
- **13373** Addressable Amplified RF Speaker, UHF (450-740 MHz)
- **234SBA** Series Stanchion Broadcast Assembly (600 Ohm, UHF, or VHF)
- **234SBM** Series Stanchion Broadcast Module (600 Ohm, UHF, or VHF)
- **10959-203** Audio Messenger Interface
- **12612-002** AMI to Deskset Interface
- **XAC4000A** Programming Software Bundle
- **XAC0004A** Programming Cable

10.6.0 Audio Messenger Interface

10.6.1 Description

The Audio Messenger Interface (AMI) shall be considered a head-end component of the Mass Notification/Public Address system. The AMI shall be a self-contained unit that interconnects and communicates directly with the Audio Control Center deskset via RS232, providing up to 125 different pre-recorded tone, speech, or

tone/speech audio outputs for emergency or mass notification applications. The audio output signal shall be at a 600 Ohm, 0 dBm level. In addition to the audio output, the AMI shall provide a voltage-free, dry contact closure output when an output is active, if required. All audio outputs shall be initiated by the Audio Control Center deskset.

There shall be no need for the burning of EPROM's in order to program the unit. The Audio Messenger Interface shall be customer configurable by use of the Configuration Software application tool. Customer shall be able to set all parameters of the unit as well as create and program both tones and speech messages. Speech messages shall be created in an MP3 format. Both tones and speech messages shall be programmable for duration or repeat interval. The unit's configuration shall be stored on a CompactFlash® card.

The AMI shall provide a dry contact closure output when the unit's audio output is active, if required.

A Telephone Interface shall be available to allow users to access the system via a telephone network. The Audio Messenger Interface shall auto-answer and provide a live audio path to the system. The AMI shall be capable of accepting a either an analog extension line or C.O. line input.

10.6.2 Interconnection

All connections to and from the Audio Messenger Interface shall be via a maximum of 18 AWG wire and shall terminate via screw-type terminal strip inside the unit.

10.6.3 Features

The Audio Messenger Interface shall include the following standard features:

- **Up to 125 Pre-recorded Alarm Tones, Speech Messages, or Tone/Speech Messages**
- **MP3 Recording Format stored on a CompactFlash® card**
- **RS232 Data Communication with Audio Control Center deskset**
- **600 Ohm, 0 dBm Output**
- **Isolated Dry Contact Closure Output When Audio is Active**
- **UL Listing**
- **Telephone Line Access**
- **Configuration Tool**

10.6.4 Performance Specifications

Power Supply Requirements

Voltage.....12 to 24 V dc (UL listed) Class 2 power source
 (plug-in 12 V dc power supply included with AMI)
 Current1 amp minimum
 Power consumed 10 watts maximum

Audio

Speech capacity..... 500 minutes with 512 Mb CompactFlash® card
 Frequency response..... 250–6500 Hz, +0/-3 dB ref. to 1 kHz
 Distortion <1% THD @ 1 kHz @ nominal settings

Outputs

600 Ohm output..... 1 Vrms nominal
 Isolated outputDry contact closure

Inputs

Phone line input (extension or C.O.) 600 Ohm, 0 dBm nominal

Communications

ADVANCE..... RS-232
Telephone lineAnalog, DTMF

Mechanical

Enclosure materialHigh-impact, glass-reinforced polyester, gray
Mounting.....Wall mounting; four 0.28 mounting holes
Connections.....Screw-type Terminal, Four drill spots for location of conduit
Dimensions13.00 H x 9.25 W x 4.00 D inches; (330 x 235 x 102 mm)
Weight..... 5 lbs. (2.27 kg)

Environmental

Temperature range+32° F to +122° F (0° C to +50° C)
Humidity20-80%, non-condensing

FCC Information

Complies with CFR47, Part 15 Class A

Approvals

Safety of Information Technology Equipment.....UL 60950, CAN/CSA-C22.2 No. 60950-00, IEC 60950

10.6.5 Peripheral Equipment and Accessories

The following peripheral equipment and accessories shall be offered in support of the Audio Messenger Interface:

Audio Control Center Deskset shall be provided to control alarm activation and live voice broadcasts via the AMI, per section 10.5.0 of this specification.

AMI to Deskset Interface per section 10.7.0 of this specification.

10.6.6 Equipment Manufacturer and Model Numbers

The Audio Messenger Interface shall be GAI-Tronics Model **10959-203**. Peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **ACC2500** Audio Control Center Deskset
- **12612-002** AMI to Deskset Interface

10.7.0 AMI to Deskset Interface

10.7.1 Description

The AMI to Deskset Interface shall be a passive device that provides ease of connectivity between the Audio Messenger Interface (AMI) and Audio Control Center deskset (ACC). The AMI to Deskset Interface shall include two modular cable assemblies for connection to the ACC deskset. The AMI to Deskset Interface shall be capable of accepting the modular connections from the cable assemblies as inputs. It shall also be designed to accept an 8-pin modular connection for cat 5e cabling from the AMI. This cabling shall be provided by the installer.

10.7.2 Interconnection

All connections to the AMI to Deskset Interface shall be via modular connectors.

10.7.3 Peripheral Equipment, Accessories, and Sub-components

The following peripheral equipment and accessories shall be offered in support of the AMI to Deskset Interface:

Audio Control Center Deskset shall be provided to control alarm activation and live voice broadcasts via the AMI, per section 10.5.0 of this specification.

Audio Messenger Interface per section 10.6.0 of this specification.

10.7.4 Equipment Manufacturer and Model Numbers

The AMI to Deskset Interface shall be GAI-Tronics Model **12612-002**. Peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **ACC2500** Audio Control Center Deskset
- **10959-203** Audio Messenger Interface

10.8.0 Audio Distribution Assembly

10.8.1 Description

The Audio Distribution Assembly (ADA) shall be considered a component of the Mass Notification/Public Address system and shall be designed for use with the Audio Messenger Interface (AMI). The ADA shall be intended for use with hard-wired, 600 Ohm system designs. The ADA shall accept a 600 Ohm, 0 dBm audio signal from the AMI, amplify the signal, and provide 24 separate circuit outputs to up to four (4) 600 Ohm audio broadcast devices per circuit (depending on cable length). The ADA shall also provide an accompanying dry contact closure output when audio is present. The ADA shall include output audio level adjustment capability to provide maximum system performance.

10.8.2 Interconnection

All connections to and from the Audio Distribution Assembly shall be via a maximum of 20 AWG wire (preferably solid) and 12 AWG for power and shall terminate via screw-type terminal strip (power) and type-66 punch-down (audio) inside the unit.

10.8.3 Features

- **Wall-mount, 3-Section Cabinet (20.5" H x 20.63" W x 18.5" D), Indoor Mounting Only**
- **Dual 1/2" and 3/4" Conduit Knockouts on Top and Bottom of Rear Section (6)**
- **Accepts single 600 Ohm, 0 dBm Audio Signal Input from AMI**
- **Provides up to 24 Amplified 600 Ohm, Audio Signal Output Circuits (up to four 600 Ohm broadcast devices per circuit)**
- **Dry Contact Closure output with audio present**
- **120 V ac Power Input**

10.8.4 Peripheral Equipment and Accessories

The following peripheral equipment and accessories shall be offered in support of the Audio Distribution Assembly:

Audio Messenger Interface per section 10.6.0 of this specification.

Addressable Amplified Speaker per sections 10.1.0 and 10.2.0 of this specification.

Stanchion Broadcast Assembly per section 10.3.0 of this specification.

Stanchion Broadcast Module per section 10.4.0 of this specification.

10.8.5 Equipment Manufacturer and Model Numbers

The Audio Distribution Assembly shall be GAI-Tronics Model **GTG08071**. Peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **10959-203** Audio Messenger Interface
- **13353** Addressable Amplified Speaker, 600 Ohm
- **13363** Addressable Amplified RF Speaker, VHF (154-174 MHz)
- **13373** Addressable Amplified RF Speaker, UHF (450-740 MHz)
- **234SBA** Series Stanchion Broadcast Assembly (600 Ohm, UHF, or VHF)
- **234SBM** Series Stanchion Broadcast Module (600 Ohm, UHF, or VHF)

10.9.0 Audio Distribution Paging Assembly (ADPA)

10.9.1 Description

The Audio Distribution Paging Assembly (ADPA) shall be considered a component of the Mass Notification/Public Address system and shall be designed for connecting directly to the telephone network. The ADPA shall be required when the Mass Notification/Public Address system does not require alarm or pre-recorded speech announcements but does require live voice broadcasts. The ADPA shall provide users access to the system via a dial-up telephone network, accepting either an analog extension line or C.O. line input. The ADPA shall auto-answer and provide a live audio path to the system. The audio shall be amplified and provided as 24 separate circuit outputs to up to four (4) 600 Ohm audio broadcast devices per circuit (depending on cable length). The ADPA shall also provide an accompanying dry contact closure output when audio is present. The ADPA shall include output audio level adjustment capability to provide maximum system performance.

10.9.2 Interconnection

All connections to and from the Audio Distribution Paging Assembly shall be via a maximum of 20 AWG wire (preferably solid) and 12 AWG for power and shall terminate via screw-type terminal strip (power) and type-66 punch-down (audio) inside the unit. All wire terminations shall be performed on the rear section of the cabinet.

10.9.3 Features

- **Wall-mount, 3-Section Cabinet (20.5" H x 20.63" W x 18.5" D), Indoor Mounting Only**
- **Dual 1/2" and 3/4" Conduit Knockouts on Top and Bottom of Rear Section (6)**
- **Accepts Single, Analog Telephone Line (Extension or C.O.) Input**
- **Provides up to 24 Amplified 600 Ohm, Audio Signal Output Circuits (up to four 600 Ohm broadcast devices per circuit)**
- **Dry Contact Closure output with audio present**
- **120 V ac Power Input**

10.9.4 Peripheral Equipment and Accessories

The following peripheral equipment and accessories shall be offered in support of the Audio Distribution Paging Assembly:

Addressable Amplified Speaker per sections 10.1.0 and 10.2.0 of this specification.

Stanchion Broadcast Assembly per section 10.3.0 of this specification.

Stanchion Broadcast Module per section 10.4.0 of this specification.

10.9.5 Equipment Manufacturer and Model Numbers

The Audio Distribution Assembly shall be GAI-Tronics Model **GTG08069**. Peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **13353** Addressable Amplified Speaker, 600 Ohm
- **13363** Addressable Amplified RF Speaker, VHF (154-174 MHz)
- **13373** Addressable Amplified RF Speaker, UHF (450-740 MHz)
- **234SBA** Series Stanchion Broadcast Assembly (600 Ohm, UHF, or VHF)
- **234SBM** Series Stanchion Broadcast Module (600 Ohm, UHF, or VHF)

10.10.0 Public Address Interface (600 Ohm)

10.10.1 Description

The Public Address Interface (PAI) shall be considered a component of the Mass Notification/Public Address system. The PAI shall be designed for use in a hard-wired paging system, accepting any 600 Ohm, 0 dBm audio input. The PAI shall be capable of operating in two distinct modes. In one mode, a received 600 Ohm, 0 dBm audio signal output shall be passed through as an output. This mode shall also require a dedicated contact closure input (second twisted wire pair) to provide circuit activation. A second mode of operation shall allow access to the PAI via a DTMF address of 2-8 digits. This mode of operation shall require a single audio twisted wire pair. Each PAI shall be capable of accepting up to 8 different DTMF addresses for activation. The operation mode selection shall be PC-programmable.

The Public Address Interface shall be designed to receive the 600 Ohm audio signal from the Mass Notification System/Public Address system and provide a 600 Ohm, 0 dBm output to a peripheral system or product such as a central amplifier. Its intended use shall be to interface the Mass Notification/Public Address system to a secondary public address system that will accept a 600 Ohm audio signal input. The design of the PAI shall be to provide addressability, allowing it to function as other components within the system, if desired.

The Public Address Interface shall require a 12 V dc power input and shall be factory-shipped with a 120 V ac - 12 V dc plug-in power supply. Each PAI shall be capable of providing a contact closure output for peripheral control. This shall be a single, controlled output that can be used in either non-addressable or addressable modes of operation. If the PAI is programmed to be non-addressable, the output shall be programmable on/off and for a momentary or maintained (time-out) operation. If the PAI is programmed to be addressable, each address shall be capable of having the output programmed on/off and for a momentary or maintained (time-out) operation. The contact rating shall be a minimum of 100 mA.

10.10.2 Interconnection

All connections to and from the Public Address Interface shall be via a maximum of 12 AWG wire and shall terminate via screw-type terminal strip inside the unit.

10.10.3 Performance Specifications

Power Supply Requirements

Voltage..... 12 V dc
Power consumed 12 watts maximum

Electronic

Audio input level..... 700 mVrms
Audio output level..... 700 mVrms
Frequency response..... 450 Hz - 3000 Hz +/-5 dB

Mechanical

Enclosure materialHigh-impact, glass-reinforced polyester, gray
Mounting.....Wall mounting; four 0.28 mounting holes
Dimensions 13.00 H x 9.25 W x 4.00 D inches; (330 x 235 x 102 mm)
Weight..... Approximately 4lbs.

Environmental

Temperature range -20° C to +60° C
Humidity 95% non-condensing

10.10.4 Peripheral Equipment and Accessories

The following peripheral equipment and accessories shall be offered in support of the Public Address Interface:

Audio Distribution Assembly per sections 10.8.0 and 10.9.0 of this specification.

Audio Messenger Interface per section 10.6.0 of this specification.

10.10.5 Equipment Manufacturer and Model Numbers

The Public Address Interface shall be GAI-Tronics Model **GTH08025**. Peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **GTG08069** Audio Distribution Paging Assembly
- **GTG08071** Audio Distribution Assembly
- **10959-203** Audio Messenger Interface

10.11.0 RF Public Address Interface

10.11.1 Description

The RF Public Address Interface (RFP AI) shall be considered a component of the Mass Notification/Public Address system. The RFP AI shall be designed for use in a radio system utilizing a licensed UHF (450-470 MHz) frequency. The RFP AI shall be capable of operating in two distinct modes. In one mode, the RFP AI shall pass through audio received on its programmed frequency and PL code (if applicable), in the

form of a 600 Ohm, 0 dBm output. In this mode, the carrier detect provided by the integral radio receiver circuit shall activate the circuitry. A second mode of operation shall allow access to the RFP AI via a DTMF address of 2-8 digits or 2-Tone address. The RFP AI shall be capable of being programmed for up to eight different addresses. This operation shall be either DTMF or 2-Tone, but not both. In this “selective” mode, the audio circuitry will not activate until the required address is received via the RF airwaves.

The RF Public Address Interface shall be designed to receive UHF signal from the Mass Notification System/Public Address system and provide a 600 Ohm, 0 dBm output to a peripheral system or product such as a central amplifier. Its primary intended use shall be to interface the RF Mass Notification/Public Address system to a secondary public address system that will accept a 600 Ohm audio signal input. The design of the RFP AI shall be to provide addressability, allowing it to function as other components within the system, if desired.

Each RFP AI shall also be capable of being controlled via a hard-wired, 600 Ohm audio input, as described in section 10.10.1. This ability shall exist whether the RFP AI is operating in an “all-call” mode or in a selective, addressable mode. The “all-call” operation mode (generic) shall be expected to require a contact closure pair for circuit activation.

The RFP AI shall contain a receiver module with integral antenna connector and audio circuitry for passing through the received audio signal. This circuitry shall provide a 600 Ohm, 0 dBm output for connection to peripheral equipment. The RFP AI shall require a 12 V dc power input and shall be factory-shipped with a 120 V ac - 12 V dc plug-in power supply. The RFP AI shall include a twist-on, helical antenna (BNC) but an installer-provided, external antenna shall be acceptable.

Each RFP AI shall be capable of being PC-programmed. The RFP AI shall be capable of providing a contact closure output for peripheral control. This shall be a single, controlled output that can be used in either non-addressable or addressable modes of operation. If the RFP AI is programmed to be non-addressable, the output shall be programmable on/off and for a momentary or maintained (time-out) operation. If the RFP AI is programmed to be addressable, each address shall be capable of having the output programmed on/off and for a momentary or maintained (time-out) operation. The contact rating shall be a minimum of 100 mA.

10.11.2 Interconnection

All connections to and from the Public Address Interface shall be via a maximum of 12 AWG wire and shall terminate via screw-type terminal strip inside the unit. External antenna connection shall be via a BNC connection.

10.11.3 Performance Specifications

Power Supply Requirements

Voltage..... 12 V dc
 Power consumed 12 watts maximum

Electronic

Audio input level..... 700 mVrms
 Audio output level..... 700 mVrms
 Frequency response..... 450 Hz - 3000 Hz +/-5 dB

Mechanical

Enclosure materialHigh-impact, glass-reinforced polyester, gray
 Mounting.....Wall mounting; four 0.28 mounting holes
 Dimensions 13.00 H x 9.25 W x 4.00 D inches; (330 x 235 x 102 mm)

Weight..... Approximately 4lbs.

Environmental

Temperature range -20° C to +60° C

Humidity 95% non-condensing

RF Module - General

Frequency range.....UHF: 450–470 MHz

Antenna impedance..... 50 Ω

Antenna mounting.....BNC connector (female)

Operating voltage..... 8–15 V dc, 12.0 V dc nominal

Encoder/decoder CTCSS/CDCSS

10.11.4 Peripheral Equipment, Accessories, and Sub-components

The following peripheral equipment and accessories shall be offered in support of the RF Public Address Interface:

Audio Distribution Assembly per sections 10.8.0 and 10.9.0 of this specification.

Audio Messenger Interface per section 10.6.0 of this specification.

Radio equipment provided by others.

10.11.5 Equipment Manufacturer and Model Numbers

The RF Public Address Interface shall be GAI-Tronics Model **GTG08081**. Peripherals and accessories shall be GAI-Tronics models numbers, specified as:

- **GTG08069** Audio Distribution Paging Assembly
- **GTG08071** Audio Distribution Assembly
- **10959-203** Audio Messenger Interface

PART 2

11.0.0 Quantity Specification

The products described in Part 1 of this specification establish a standard of quality. The following format establishes quantity:

11.1.0 Addressable Amplified Speakers

_____ Addressable Amplified Speaker, 600-Ohm, 0dBm Input in accordance with section 10.1.0
GAI-Tronics Model 13353

_____ Addressable Amplified RF Speaker, VHF (154-174 MHz), in accordance with section 10.2.0
GAI-Tronics Model 13363

_____ Addressable Amplified RF Speaker, UHF (450-470 MHz), in accordance with section 10.2.0
GAI-Tronics Model 13373

11.2.0 Stanchion Broadcast Assembly

_____ Addressable Amplified Speaker, 600-Ohm, 0dBm Input in accordance with section 10.3.0
GAI-Tronics Model 234SBA Series

11.3.0 Stanchion Broadcast Module

_____ Stanchion Broadcast Module in accordance with section 10.4.0
GAI-Tronics Model 234SBM Series

11.4.0 Audio Control Center Deskset

_____ Audio Control Center Deskset in accordance with section 10.5.0
GAI-Tronics Model ACC2500

11.5.0 Audio Messenger Interface

_____ Audio Messenger Interface in accordance with section 10.6.0
GAI-Tronics Model 10959-203

11.6.0 AMI to Deskset Interface

_____ AMI to Deskset Interface in accordance with section 10.7.0
GAI-Tronics Model 12612-002

11.7.0 Audio Distribution Assembly

_____ Audio Distribution Assembly in accordance with section 10.8.0
GAI-Tronics Model GTG08071

11.8.0 Audio Distribution Paging Assembly

_____ Audio Distribution Paging Assembly in accordance with section 10.9.0
GAI-Tronics Model GTG08069

11.9.0 Public Address Interface (600 Ohms)

_____ Public Address Interface (600 Ohms) in accordance with section 10.10.0
GAI-Tronics Model GTH08025

11.10.0 RF Public Address Interface

RF Public Address Interface in accordance with section 10.11.0
GAI-Tronics Model GTG08081

11.11.0 Peripheral Equipment and Accessories

AAS Battery Back-up Kit in accordance with sections 10.1.6 and 10.2.6
GAI-Tronics Model BB133

Long-Life Battery Enclosure in accordance with sections 10.1.6 and 10.2.6
GAI-Tronics Model XB001

Long-Life Battery, 18Ah in accordance with sections 10.1.6 and 10.2.6
GAI-Tronics Model 40201-008

Solar Panel Array in accordance with sections 10.1.6 and 10.2.6
GAI-Tronics Model RFP7784-108

Solar Panel Interface Kit in accordance with sections 10.1.6 and 10.2.6
GAI-Tronics Model SPK200

Weatherproof Power Supply Kit in accordance with sections 10.1.6 and 10.2.6
GAI-Tronics Model 190-002PS

Programming Software Bundle in accordance with sections 10.1.6, 10.2.6, 10.3.6, 10.4.6.,
and 10.5.6 **GAI-Tronics Model XAC4000A**

Programming Cable in accordance with sections 10.1.6, 10.2.6, 10.3.6, 10.4.6, and 10.5.6
GAI-Tronics Model XAC0004A

RF Module Programming Kit in accordance with section 10.2.6, 10.3.6, 10.4.6
GAI-Tronics Model 19101-024

Free-Standing Tripod in accordance with section 10.1.6 and 10.2.6
GAI-Tronics Model GTRFP6432-006

Tripod Mounting Kit in accordance with section 10.1.6 and 10.2.6
GAI-Tronics Model TPD001

Pole Mounting Kit for XB001 in accordance with section 10.1.6 and 10.2.6
GAI-Tronics Model 230-001

Pole Mounting Kit for AAS in accordance with section 10.1.6 and 10.2.6
GAI-Tronics Model 231-001

Battery Charger for BB133 Battery Back-up Kit in accordance with section 10.1.6 and
10.2.6 **GAI-Tronics Model 40408-009**

L.E.D. Strobe in accordance with sections 10.3.6 and 10.4.6
GAI-Tronics Model 530-001

Back-up Battery, 2.8 Ah, in accordance with sections 10.3.6 and 10.4.6
GAI-Tronics Model 40201-010

Battery Charger for 40201-008 18Ah Battery in accordance with sections 10.1.6 and 10.2.6
GAI-Tronics Model 40408-011