EQUIPMENT SPECIFICATION

GAI-TRONICS
ANALOG RUGGED TELEPHONE PRODUCTS

EQUIPMENT SPECIFICATION

GAI-TRONICS ANALOG
RUGGED TELEPHONE PRODUCTS

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227-001, 227-005	**10.4.0**
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354-001 (RD,OR,YL)	**10.9.0**
276-001, 276-005	**10.10.0**
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234-202WM	**11.1.0**
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12509-042, 12509-043, 12509-044	**11.4.0**
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1.0.0 Scope and Intent

This specification identifies and details GAI-TRONICS' Rugged Telephone products, accessories, and peripherals to provide two-way communications via connection to any conventional, analog telephone network.

Telephones shall be offered as Standard and Smart, with smart telephones having the capability of being monitored from a central location and reported for maintenance activity. Standard handset telephones shall operate with a minimum line current of 20 mA @ 24/48 Vdc and Smart telephones shall operate with a minimum line current of 24 mA at 48 Vdc.

All supporting documentation mentioned in this specification (literature and manuals) shall be capable of being located 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

The specified Rugged Telephone products shall be line powered and designed for connection to the following networks via standard telephone or Cat5/6 wire pairs:

- Central Office (C.O.) line to the Public Switched Telephone Network (PSTN)
- 24 V dc or 48 V dc analog station port of a Private Branch Exchange (PBX), Private Automatic Branch Exchange (PABX), or Key Service Unit (KSU).

A dedicated telephone line shall be required for each smart telephone. Models requiring vandal-resistant hardware shall be noted.

Standard telephones shall be suitable for installation in temperatures between -40° C and +60° C. Smart telephones shall be suitable for installation in temperatures between -20° C and +60° C. A plug-in power supply shall be offered for heating the smart telephone's circuitry for operation between -20° C and -40° C.

If required, 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 seller-provided factory technician shall visit the job site to assist with system layout and design (pre-sale) or to make necessary adjustments and instruct the operating and maintenance personnel on the proper use and care of the system (post-sale). Charges for these on-site services shall 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/or 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

Rugged Telephones shall be offered in the following configurations:

- Indoor Corridor, Standard Handset with Keypad or Autodial, Surface-mount
- Extremely Rugged, Standard Handset with Keypad or Autodial, Surface-mount
- Extremely Rugged, Smart Handset with Keypad or Autodial, Surface-mount
- Indoor, Standard Handset with Keypad or Autodial, Surface-mount
- Indoor, Smart Handset with Keypad or Autodial, Surface-mount
- Outdoor, Standard Handset with Keypad or Autodial, Surface-mount, NEMA 3R
- Outdoor, Smart Handset with Keypad or Autodial, Surface-mount, NEMA 3R
- Outdoor, Standard Handset with Keypad or Autodial, Surface-mount, NEMA 4X
- Indoor/Outdoor, Standard Handset with Keypad or Autodial, Flush-mount
- Indoor/Outdoor, Smart Handset with Keypad or Autodial, Flush-mount
- Indoor, Smart Handsfree Clean Room Telephone, Flush or Surface-mount

All Rugged Handset Telephones shall include:

- **Standard Telephone**: Handset pressbar volume control for raising and lowering the handset receiver volume level. **Smart Telephone**: Front panel pushbutton volume control for raising and lowering the handset receiver volume. Telephones shall be activated (off-hook condition) by lifting the handset from its cradle to obtain dial-tone.
- Non-moveable, magnetic reed hook-switch to limit usage failure
- Hearing aid-compatible handset with noise-cancelling microphone and Hytrel coiled cord or armored steel cord (as specified)
- Moisture-resistant keypad (if equipped)
- Conformally-coated PCBA

Placing a handset keypad call shall require:

1. Lift the handset from its cradle to take the telephone off-hook
2. Wait for dial tone
3. Adjust the receiver volume with the volume pushbutton
4. Use the keypad to dial the desired number
5. Return the handset to its cradle when the call has completed

Placing a handset autodial call shall require:

1. Lift the handset from its cradle to take the telephone off hook and automatically dial a pre-programmed number

2. Adjust the receiver volume with the volume control handset pressbar
3. Return the handset to its cradle when the call has completed

Each handset telephone's ringer shall sound when called, until the handset is removed from its cradle (taken off-hook) and a conversation can take place.

All Standard Telephones shall be capable of providing an auxiliary output while the handset is "off hook". The output shall be a volt-free closure capable of switch a maximum of 48 Vdc, 125 mA or: 28 Vdc, 80 mA.

All rugged Smart Telephones shall be capable of providing two (2) separate, isolated, solid-state switch outputs, each rated at 125 mA @ 48 V dc. Each output shall be capable of being programmed for activation (closure) during the following conditions:

- Call received (confirmed call connection)
- Call placed (activates at start of call, deactivates when confirmed call connection occurs)
- Answer Voice Call (becomes active at the start of a voice call received by the telephone)
- Track Ringing (active while telephone is generating a simulated ring-back tone)
- Non-Keypad Voice Call (active at the start of a voice call not dialed using the keypad)
- Keypad Voice Call (active at the start of a voice call dialed using the keypad)
- Any Call (active at the start of any call, inbound or outbound)
- Open Gate Contact (pulses active when telephone receives proper command
- Mirror Handset Hookswitch (output follows the state of the handset cradle hookswitch)

All rugged Smart telephones and handsfree telephones shall be capable of communicating with a central PC that hosts dedicated software designed for monitoring operation. Data shall be reported or made available via polling or call-in protocol. Said software shall be designed and provided by the emergency and assistance telephone manufacturer. Reported faults shall include:

- Line Integrity
- Microprocessor Health
- Stuck Buttons
- Cut handset cord (if applicable)
- Audio path verification
- Line Interrupt (power failure)

The operation of the rugged handsfree telephone shall be discussed in that telephone's specific section in this specification.

9.0.0 Field Wiring/Interconnection

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

10.0.0 Handset Rugged Telephones

10.1.0 Corridor, Handset Analog Keypad Telephone, Surface-mount, Stainless-steel

10.1.1 Description

The Corridor, Handset Analog Keypad Telephone shall be designed for use in an indoor environment. It shall include a handset with armored cord and pressbar volume control and a full keypad. Mounting hardware shall be concealed to deter vandalism and the telephone electronics shall be accessible by removing the front cover, which shall be attached with tamper-resistant

screws. The telephone shall be designed for surface mounting and the material shall be brushed stainless-steel. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation – standard telephone) of this specification.

The Corridor, Handset Analog Keypad Telephone shall measure less than four (4) inches in depth (including handset) from the mounting surface, for ADA corridor installation compliance. It shall include a ringer volume adjustment.

10.1.2 Performance Specifications

The Corridor, Handset Analog Keypad Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA_{RMS}
Ringer Volume . . . . . Volume typical max. < 90 dB @ 1 meter on axis (depends on installation location) with 15 dB adjustment
Network Signaling . . . . . DTMF

Mechanical

Construction . . . . . 16-gauge (.060-inch) Type 304 brushed stainless-steel
Cable Entry. . . . . Through rear mounting plate
Handset/cord . . . . . G-style with 29-inch armored cord; noise-cancelling microphone
Braille dial pad . . . . . Chrome-plated zinc
Dimensions . . . . . 10.00 H x 5.50 W x 3.27 D inches (254 x 139.7 x 83.1 mm)
Weight . . . . . 5.5 lbs. (2.5 kg)

Environmental

Operating Temperature. . . . . -40º F to + 140º F (-40º C to +60º C)
Relative Humidity . . . . . Up to 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment. . . . . UL 60950 and CSA C22.2 No. 60950

FCC Information

FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . . IC: 822A-11754
Ringer Equivalence Number (REN. 1.0A
Connecting Method CA11A

10.1.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of Corridor, Handset Analog Keypad Telephone:

Security Screwdriver shall be offered to permit installation, access, and removal of Corridor, Handset Analog Keypad Telephone.

10.1.4 Equipment Manufacturer and Model Numbers

The Corridor, Handset Analog Keypad Telephone shall be GAI-TRONICS Model Number **210-001 Standard Corridor, Handset Analog Keypad Telephone.** Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **233-001** Security Screwdriver

10.2.0 Corridor, Handset Analog Autodial Telephone, Surface-mount, Stainless-steel

10.2.1 Description

The Corridor, Handset Analog Autodial Telephone shall be designed for use in an indoor environment. It shall include a handset with armored cord and pushbutton volume control and a full keypad. Mounting hardware shall be concealed to deter vandalism and the telephone electronics shall be accessible by removing the front cover, which shall be attached with tamper-resistant screws. The telephone shall be designed for surface mounting and the material shall be brushed stainless-steel. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation – standard telephone) of this specification.

The Corridor, Handset Analog Autodial Telephone shall measure less than four (4) inches in depth (including handset) from the mounting surface, for ADA corridor installation compliance. It shall include a ringer volume adjustment.

10.2.2 Performance Specifications

The Corridor, Handset Analog Autodial Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA_{RMS}

Ringer Volume . . . . . Volume typical max. < 90 dB @ 1 meter on axis (depends on installation location) with 15 db adjustment
Network Signaling . . . . . DTMF

Mechanical

Construction . . . . . 16-gauge (.060-inch) Type 304 brushed stainless-steel
Cable Entry. . . . . Through rear mounting plate
Handset/cord . . . . . G-style with 29-inch armored cord; noise-cancelling microphone

Dimensions . . . . . .10.00 H x 5.50 W x 3.27 D inches (254 x 139.7 x 83.1 mm)
Weight . . . . . 5.5 lbs. (2.5 kg)

Environmental
Operating Temperature. . . . . -40º F to + 140º F (-40º C to +60º C)
Relative Humidity . . . . . Up to 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards
Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment……UL 60950 and CSA C22.2 No. 60950

FCC Information
FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)
IC Certification Number. . . . . IC: 822A-11754
Ringer Equivalence Number (REN. 1.0A
Connecting Method CA11A

10.2.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of Corridor, Handset Analog Autodial Telephone:

Security Screwdriver shall be offered to permit installation, access, and removal of Corridor, Handset Analog Autodial Telephone.

10.2.4 Equipment Manufacturer and Model Numbers

The Corridor, Handset Analog Autodial Telephone shall be GAI-TRONICS Model Number **210-003 Standard Corridor, Handset Analog Autodial Telephone.** Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **233-001** Security Screwdriver

10.3.0 Extremely Rugged, Handset Analog Keypad Telephone, Aluminum, Surface-mount

10.3.1 Description

The Extremely Rugged, Handset Analog Keypad Telephone be designed for use in extremely harsh indoor or outdoor environments. It shall include a handset with armored cord, full keypad, a pressbar volume control, and a spring-loaded, hinged door. The enclosure shall be designed for surface mounting, constructed from cast aluminum, and shall offer a concealed mounting configuration with security mounting hardware to deter vandalism. The color shall be a gray epoxy finish. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation) of this specification.

10.3.2 Performance Specifications

The Extremely Rugged, Handset Analog Keypad Telephone shall meet the following performance and physical specifications:

Electrical
Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA

Phone Line Requirements . . . .Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . .24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . ..48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA $_{RMS}$
Handset Receiver Volume Gain. . . . . +18 dB in 3dB increments
Network Signaling . . . . . DTMF

Mechanical

Mounting . . . . . Direct surface/wall mounting
Cable Entry. . . . . Two ½-inch NPT conduit entrances (top and bottom)
Construction
Enclosure. . . . . Thick-walled cast aluminum with protective gray epoxy coating
Panel . . . . . 0.125-inch brushed aluminum
Handset/cord . . . . . .G-style with 15-inch armored cord and internal lanyard; noise-cancelling microphone
Braille dial pad . . . . . Chrome-plated zinc
Dimensions . . . . . 13.50 H x 9.70 W x 6.15 D inches (342.9 x 246.4 x 156.2 mm)
Mounting . . . . . Eight 0.39-inch diameter holes
Weight . . . . . 14.5 lbs. (6.58kg)

Environmental

Operating Temperature
SMART. . . . . -4º F to + 140º F (-20º C to +60º C)
Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)
Weatherproof Rating . . . . . NEMA 3R
Relative Humidity . . . .95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment……..UL 60950 and CSA C22.2 No. 60950
Enclosures for Electrical Equipment……Type 3R

FCC Information

FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . .IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.3.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of Extremely Rugged, Handset Analog Keypad Telephone:

Telephone Management Application Software as referenced in section 11.4.0 of this specification.

Pole Mounting Kit shall be offered for mounting the telephone to a pole with a maximum 4-inch diameter.

Security Screwdriver shall be offered to permit installation, access, and removal of Extremely Rugged, Handset Analog Keypad Telephone.

10.3.4 Equipment Manufacturer and Model Numbers

The Extremely Rugged, Handset Analog Keypad Telephone shall be GAI-TRONICS Model Number **226-001 Standard Tough Phone Handset Analog Keypad Telephone** and Model Number **226-005 SMART Tough Phone Handset Analog Keypad Telephone.** Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **12509-042** Telephone Management Application (TMA) Software Package
- **232-001** Pole Mounting Kit
- **233-001** Security Screwdriver

10.4.0 Extremely Rugged, Handset Analog Autodial Telephone, Aluminum, Surface-mount

10.4.1 Description

The Extremely Rugged, Handset Analog Autodial Telephone be designed for use in extremely harsh indoor or outdoor environments. It shall include a handset with armored cord, full keypad, a pushbutton volume control, and a spring-loaded, hinged door. The enclosure shall be designed for surface mounting, constructed from cast aluminum, and shall offer a concealed mounting configuration with security mounting hardware to deter vandalism. The color shall be a gray epoxy finish. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation) of this specification.

10.4.2 Performance Specifications

The Extremely Rugged, Handset Analog Autodial Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA_{RMS}

Handset Receiver Volume Gain. . . . . +18 dB in 3dB increments
Network Signaling . . . . . DTMF

Mechanical

Mounting . . . . . Direct surface/wall mounting
Cable Entry. . . . . Two ½-inch NPT conduit entrances (top and bottom)
Construction
Enclosure. . . . . Thick-walled cast aluminum with protective gray epoxy coating
Panel . . . . . 0.125-inch brushed aluminum
Handset/cord . . . . . G-style with 15-inch armored cord and internal lanyard; noise-cancelling microphone
Braille dial pad . . . . . Chrome-plated zinc
Dimensions . . . . . 13.50 H x 9.70 W x 6.15 D inches (342.9 x 246.4 x 156.2 mm)

Mounting . . . . . Eight 0.39-inch diameter holes
Weight . . . . . 14.5 lbs. (6.58kg)

Environmental
Operating Temperature
SMART. . . . . -4º F to + 140º F (-20º C to +60º C)
Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)
Weatherproof Rating . . . . . NEMA 3R
Relative Humidity . . . . . 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards
Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment……..UL 60950 and CSA C22.2 No. 60950
Enclosures for Electrical Equipment……Type 3R

FCC Information
FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)
IC Certification Number. . . . . IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.4.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of Extremely Rugged, Handset Analog Autodial Telephone:

Telephone Management Application Software as referenced in section 11.4.0 of this specification.

Pole Mounting Kit shall be offered for mounting the telephone to a pole with a maximum 4-inch diameter.

Security Screwdriver shall be offered to permit installation, access, and removal of Extremely Rugged, Handset Analog Autodial Telephone.

10.4.4 Equipment Manufacturer and Model Numbers

The Extremely Rugged, Handset Analog Autodial Telephone shall be GAI-TRONICS Model Number **227-001 Standard Tough Phone Handset Analog Autodial Telephone** and Model Number **227-005 SMART Tough Phone Handset Analog Autodial Telephone.** Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **12509-042** Telephone Management Application (TMA) Software Package
- **232-001** Pole Mounting Kit
- **233-001** Security Screwdriver

10.5.0 Indoor Handset Analog Keypad Telephone, Non-metallic, Surface-mount

10.5.1 Description

The Indoor Handset Analog Keypad Telephone shall be designed for use in an indoor environment. It shall include a handset, full keypad, and pushbutton volume control. The handset cord shall be coiled and coated with a material suitable for harsh environments. Mounting hardware shall be

concealed to deter vandalism. The telephone electronics shall be accessible by removing the front cover. The enclosure shall be designed for surface mounting and the material shall be a non-corrosive, non-metallic material. The color shall be gray. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation) of this specification.

10.5.2 Performance Specifications

The Indoor Handset Analog Keypad Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA_{RMS}

Handset Receiver Volume Gain. . . . . +18 dB in 3dB increments
Network Signaling . . . . . DTMF

Mechanical

Mounting . . . . . Direct surface/wall mounting
Cable Entry. . . . . Field-determined
Construction. . . . . Non-metallic (engineered plastic) material
Handset/cord . . . . . G-style with 6-foot Hytrel® coiled cord; noise-cancelling microphone
Braille dial pad . . . . . Chrome-plated zinc
Dimensions . . . . . 9.50 H x 8.00 W x 6.90 D inches (241.3 x 203.2 x 175.3 mm)
Mounting . . . . . Four 0.28-inch diameter holes
Weight . . . . . 6.0 lbs. (2.7 kg)

Environmental

Operating Temperature
SMART. . . . . -4º F to + 140º F (-20º C to +60º C)
Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)
Relative Humidity . . . . . Up to 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment. . . . . UL 60950 and CSA C22.2 No. 60950

FCC Information

FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . . IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.5.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Indoor Handset Analog Keypad Telephone

Telephone Management Application Software as referenced in section 11.4.0 of this specification.

Pole Mounting Kit shall be offered for mounting the telephone to a pole with a maximum 4-inch diameter.

10.5.4 Equipment Manufacturer and Model Numbers

The Indoor Handset VoIP Keypad Telephone shall be GAI-TRONICS Model Number **246-001 Standard Indoor Handset Analog Keypad Telephone** and **246-005 SMART Indoor Handset Analog Keypad Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **12509-042** Telephone Management Application (TMA) Software Package
- **231-002** Pole Mounting Kit

10.6.0 Indoor Handset Analog Autodial Telephone, Non-metallic, Surface-mount

10.6.1 Description

The Indoor Handset Analog Autodial Telephone shall be designed for use in an indoor environment. It shall include a handset and pushbutton volume control. The handset cord shall be coiled and coated with a material suitable for harsh environments. Mounting hardware shall be concealed to deter vandalism. The telephone electronics shall be accessible by removing the front cover. The enclosure shall be designed for surface mounting and the material shall be a non-corrosive, non-metallic material. The color shall be gray. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation) of this specification.

10.6.2 Performance Specifications

The Indoor Handset Analog Autodial Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA_{RMS}
Handset Receiver Volume Gain. . . . . +18 dB in 3dB increments
Network Signaling . . . . . DTMF

Mechanical

Mounting . . . . . Direct surface/wall mounting
Cable Entry. . . . . Field-determined
Construction. . . . . Non-metallic (engineered plastic) material
Handset/cord . . . . . G-style with 6-foot Hytrel® coiled cord; noise-cancelling microphone

Dimensions . . . . . 9.50 H x 8.00 W x 6.90 D inches (241.3 x 203.2 x 175.3 mm)
Mounting . . . . . Four 0.28-inch diameter holes
Weight . . . . . 6.0 lbs. (2.7 kg)

Environmental

Operating Temperature
SMART. . . . . -4º F to + 140º F (-20º C to +60º C)
Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)
Relative Humidity . . . . . Up to 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment……..UL 60950 and CSA C22.2 No. 60950

FCC Information

FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . . …IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.6.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Indoor Handset Analog Autodial Telephone

Telephone Management Application Software as referenced in section 11.4.0 of this specification.

Pole Mounting Kit shall be offered for mounting the telephone to a pole with a maximum 4-inch diameter.

10.6.4 Equipment Manufacturer and Model Numbers

The Indoor Handset Analog Autodial Telephone shall be GAI-TRONICS Model Number **247-001 Standard Indoor Handset Analog Autodial Telephone** and **247-005 SMART Indoor Handset Analog Autodial Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **12509-042** Telephone Management Application (TMA) Software Package
- **231-002** Pole Mounting Kit

10.7.0 Outdoor Handset Analog Keypad Telephone, Non-metallic, Surface-mount

10.7.1 Description

The Outdoor (NEMA 3R) Handset Analog Keypad Telephone shall be designed for use in a harsh indoor or outdoor environment. It shall include a hinged door, handset, full keypad, and pushbutton volume control. The handset cord shall be coiled and coated with a material suitable for harsh environments. Mounting hardware shall be concealed to deter vandalism. Access to the telephone electronics shall be by removing the front cover. The enclosure shall be designed for surface mounting and the material shall be a non-corrosive, non-metallic material. The color shall be gray. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation) of this specification.

10.7.2 Performance Specifications

The Outdoor (NEMA 3R) Handset Analog Keypad Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA_{RMS}
Handset Receiver Volume Gain. . . . . +18 dB in 3dB increments
Network Signaling . . . . . DTMF

Mechanical

Mounting . . . . . Direct surface/wall mounting
Cable Entry. . . . . Field-determined
Construction. . . . . Non-metallic (engineered plastic) material
Handset/cord . . . . . G-style with 6-foot Hytrel® coiled cord; noise-cancelling microphone
Braille dial pad . . . . . Chrome-plated zinc
Dimensions . . . . . 13.20 H x 9.40 W x 7.40 D inches (335.4 x 238.8 x 188.0 mm)
Mounting . . . . . Four 0.28-inch diameter holes
Weight . . . . . 8.2 lbs. (3.72 kg)

Environmental

Operating Temperature
SMART. . . . . -4º F to + 140º F (-20º C to +60º C)
Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)
Weatherproof Rating . . . . . NEMA 3R
Relative Humidity . . . . . Up to 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment……UL 60950 and CSA C22.2 No. 60950
Enclosures for Electrical Equipment……Type 3R

FCC Information

FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . . IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.7.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Outdoor (NEMA 3R) Handset Analog Keypad Telephone:

Telephone Management Application Software as referenced in section 11.4.0 of this specification.

Pole Mounting Kit shall be offered for mounting the telephone to a pole with a maximum 4-inch diameter.

10.7.4 Equipment Manufacturer and Model Numbers

The Outdoor (NEMA 3R) Handset Analog Keypad Telephone shall be GAI-TRONICS Model Number **256-001 Standard Outdoor Handset Analog Keypad Telephone** and **256-005 SMART Outdoor Handset Analog Keypad Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **12509-042** Telephone Management Application (TMA) Software Package
- **230-001** Pole Mounting Kit

10.8.0 Outdoor Handset Analog Autodial Telephone, Non-metallic, Surface-mount

10.8.1 Description

The Outdoor (NEMA 3R) Handset Analog Autodial Telephone shall be designed for use in a harsh indoor or outdoor environment. It shall include a hinged door, handset, and pushbutton volume control. The handset cord shall be coiled and coated with a material suitable for harsh environments. Mounting hardware shall be concealed to deter vandalism. Access to the telephone electronics shall be by removing the front cover. The enclosure shall be designed for surface mounting and the material shall be a non-corrosive, non-metallic material. The color shall be gray. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation) of this specification.

10.8.2 Performance Specifications

The Outdoor (NEMA 3R) Handset Analog Autodial Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA $_{RMS}$
Handset Receiver Volume Gain. . . . . +18 dB in 3dB increments
Network Signaling . . . . . DTMF

Mechanical

Mounting . . . . . Direct surface/wall mounting
Cable Entry. . . . . Field-determined
Construction. . . . . Non-metallic (engineered plastic) material
Handset/cord . . . . . G-style with 6-foot Hytrel® coiled cord; noise-cancelling microphone
Dimensions . . . . . 13.20 H x 9.40 W x 7.40 D inches (335.4 x 238.8 x 188.0 mm)
Mounting . . . . . Four 0.28-inch diameter holes
Weight . . . . . 8.2 lbs. (3.72 kg)

Environmental

Operating Temperature
SMART. . . . . -4º F to + 140º F (-20º C to +60º C)
Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)

Weatherproof Rating . . . . NEMA 3R
Relative Humidity . . . . . Up to 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . Conformal Coated

Approval Standards
Compliance to Standards . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment…….……..UL 60950 and CSA C22.2 No. 60950
Enclosures for Electrical Equipment……Type 3R

FCC Information
FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)
IC Certification Number. . . . .IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.8.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Outdoor (NEMA 3R) Handset Analog Autodial Telephone:

Telephone Management Application Software as referenced in section 11.4.0 of this specification.

Pole Mounting Kit shall be offered for mounting the telephone to a pole with a maximum 4-inch diameter.

10.8.4 Equipment Manufacturer and Model Numbers

The Outdoor (NEMA 3R) Handset Analog Autodial Telephone shall be GAI-TRONICS Model Number **257-001 Standard Outdoor Handset Analog Keypad Telephone** and **257-005 SMART Outdoor Handset Analog Keypad Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **12509-042** Telephone Management Application (TMA) Software Package
- **230-001** Pole Mounting Kit

10.9.0 Outdoor (NEMA 4X) Handset Analog Keypad Telephone (non-metallic), Surface-mount,

10.9.1 Description

The Outdoor (NEMA 4X) Handset Analog Keypad Telephone shall be designed for use in a harsh indoor or outdoor environment. It shall include a hinged door, handset, full keypad, and pushbutton volume control. The handset cord shall be coiled and coated with a material suitable for harsh environments. The door shall provide a weatherproof seal when closed and latched. Access to the telephone electronics shall be accomplished by removing the front cover security screws. The enclosure shall be designed for surface mounting and the material shall be a non-corrosive, non-metallic material. The color shall be offered in gray, red, yellow, and orange. It shall comply with Sections 1.0.0 (Scope and Intent) and 8.0.0 (Equipment Operation) of this specification.

10.9.2 Performance Specifications

The Outdoor (NEMA 4X) Handset Analog Keypad Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response . . . . . 300-3,000 Hz
Inter-digit Pause. . . . . 100 ms
Minimum Loop Current . . . . . 20 mA
Phone Line Requirements . . . . . Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF) . . . . . 100 ms tone duration
Supervisory dc Current . . . . . Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage . . . . . 24-60 V dc (not polarity sensitive)
Network Interface . . . . . Loop start
Auxiliary Output (isolated solid-state switch. . . . . 48 V dc @ 125 mA
28 V_{RMS} ac @ 80 mA_{RMS}
Handset Receiver Volume Gain. . . . . +18 dB in 3dB increments
Network Signaling . . . . . DTMF

Mechanical

Mounting . . . . . Direct surface/wall mounting
Cable Entry. . . . . Field-determined
Construction
Enclosure. . . . . Non-metallic (engineered plastic) material
Panel. . . . . 14-gauge, brushed 316 stainless-steel
Handset/cord . . . . . G-style with 6-foot Hytrel® coiled cord; noise-cancelling microphone
Braille dial pad . . . . . Chrome-plated zinc with protective rubber boot
Dimensions . . . . . 14.6 H x 10.9 W x 10.5 D inches (371 x 276 x 267 mm)
Mounting . . . . . Four 0.44-inch (11 mm) diameter holes
Weight . . . . . 12.0 lbs. (6.58 kg)

Environmental

Operating Temperature. . . . . -40º F to + 140º F (-40º C to +60º C)
Weatherproof Rating . . . . . NEMA 4X
Relative Humidity . . . . . Up to 90% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment…….....UL 60950 and Can/CSA C22.2 No. 60950-00
Enclosures for Electrical Equipment……..…UL 50 TYPE 4X with door closed and latched

FCC Information

FCC Registration Number. US:ADGTE10A4-6048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . . IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.9.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Outdoor (NEMA 4X) Handset Analog Keypad Telephone:

Pole Mounting Kit shall be offered for mounting the telephone to a pole with a maximum 4-inch diameter.

Security Screwdriver shall be offered to permit installation, access, and removal of the front panel

10.9.4 Equipment Manufacturer and Model Numbers

The Outdoor (NEMA 4X) Handset Analog Keypad Telephone shall be GAI-TRONICS Model Numbers:

- **354-001 Standard NEMA 4X Handset Analog Keypad Telephone, Gray**
- **354-001RD Standard NEMA 4X Handset Analog Keypad Telephone, Red**
- **354-001OR Standard NEMA 4X Handset Analog Keypad Telephone, Orange**
- **354-001YL Standard NEMA 4X Handset Analog Keypad Telephone, Yellow**

Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **230-001** Pole Mounting Kit
- **233-001** Security Screwdriver

10.10.0 Flush-mount Handset Analog Keypad Telephone

10.10.1 Description

The Flush-mount Handset Analog Keypad Telephone shall be designed for use in harsh indoor or outdoor environments. It shall include a handset, full keypad, and pushbutton volume control. Access to the telephone electronics shall be protected with security hardware. The telephone shall be designed for flush mounting on a flat surface or in a suitable surface-mount enclosure and the material shall be a stainless-steel panel with painted protective back box.

10.10.2 Performance Specifications

The Flush-mount Handset Analog Keypad Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response	300-3,000 Hz
Inter-digit Pause	100 ms
Minimum Loop Current	20 mA
Phone Line Requirements	Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF)	100 ms tone duration
Supervisory dc Current	Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage	24-60 V dc (not polarity sensitive)
Network Interface	Loop start
Auxiliary Output (isolated solid-state switch	48 V dc @ 125 mA 28 V_{RMS} ac @ 80 mA_{RMS}
Handset Receiver Volume Gain	+18 dB in 3dB increments
Network Signaling	DTMF

Mechanical

Mounting	Flush-mounting
Cable Entry	Rear back-box
Construction	
Front Panel	14-gauge (0.075-inch) type304 brushed stainless steel
Back Box	16-gauge (0.060-inch) cold-rolled steel with black polyurethane finish
Handset/cord	G-style with 29-inch armored cord and internal lanyard; noise-cancelling microphone
Braille dial pad	Chrome-plated zinc
Dimensions	
Front Panel	12.00 H x 10.00 W inches (304.4 x 254.0)
Back Box (overall)	10.06 H x 8.43 W x 2.50 D inches (255.5 x 214.1 x 193.8 mm)
Cutout for mounting back box	10.13 H x 7.63 W inches (257.3 x 193.8 mm)

Weight . . . . . 7.0 lbs. (3.18 kg)

Environmental

Operating Temperature

SMART. . . . . -4º F to + 140º F (-20º C to +60º C)

Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)

Weatherproof Rating . . . . . NEMA 3R

Relative Humidity . . . . . Up to 95% non-condensing

PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15

Safety of Information Technology Equipment……UL 60950 and CSA C22.2 No. 60950

Enclosures for Electrical Equipment……Type 3R

FCC Information

FCC Registration Number. US:ADGTE10A-46048HAC

Ringer Equivalence Number (REN. 1.0A/1.3B

Network Connection (USOC) RJ11

Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . .IC: 822A11754

Ringer Equivalence Number (REN. 1.0A/1.3B

Connecting Method CA11A

10.10.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Flush-mount Handset Analog Keypad Telephone:

Elite Wall-mount Communication Station, as referenced in section in section 11.1.0 of this specification.

Economy Wall-mount Communication Station, as referenced in section 11.2.0 of this specification.

Pole Mounting Kit shall be offered for mounting the communication station to a pole with a maximum 4-inch diameter.

Surface Mount Enclosure options, as referenced in section 11.3.0 of this specification.

Security Screwdriver shall be offered to permit installation, access, and removal of the Emergency and Assistance telephones.

Telephone Management Application Software, as referenced in section 11.4.0 of this specification .

10.10.4 Equipment Manufacturer and Model Numbers

The Flush-mount Handset Analog Keypad Telephone shall be GAI-TRONICS Model Number **276-001 Standard Flush-mount Handset Analog Keypad Telephone** and **276-005 SMART Flush-mount Handset Analog Keypad Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **234WM-202** Wall-mount Elite Communication Station, including panel light assembly
- **240WM-00x** Wall-mount Economy Communication Station, including panel light assembly and blue L.E.D. strobe, 120 Vac

- **240WM-00xDC** Wall-mount Economy Communication Station, including panel light assembly and blue L.E.D. strobe, 12-24 Vdc
- **241WM-00x** Wall-mount Economy Communication Station, including blue L.E.D. strobe, 120 Vac
- **241WM-00xDC** Wall-mount Economy Communication Station, including blue L.E.D. strobe, 12-24 Vdc
- **231-003** Pole-mount Kit for Wall-mount Economy Communication Stations
- **236-001xx** Surface-mount Enclosure (xx= RD red, BK black, YL yellow) to provide surface mounting of a flush-mount emergency telephone
- **238-001** Surface Mount Enclosure (brushed stainless steel) to provide surface mounting of a flush-mount emergency telephone
- **233-001** Security Screwdriver
- **12509-042** Telephone Management Application (TMA) Software Package

10.11.0 Flush-mount Handset Analog Autodial Telephone

10.11.1 Description

The Flush-mount Handset Analog Autodial Telephone shall be designed for use in harsh indoor or outdoor environments. It shall include a handset, full keypad, and pushbutton volume control. Access to the telephone electronics shall be protected with security hardware. The telephone shall be designed for flush mounting on a flat surface or in a suitable surface-mount enclosure and the material shall be a stainless-steel panel with painted protective back box.

10.11.2 Performance Specifications

The Flush-mount Handset Analog Autodial Telephone shall meet the following performance and physical specifications:

Electrical

Frequency Response	300-3,000 Hz
Inter-digit Pause	100 ms
Minimum Loop Current	20 mA
Phone Line Requirements	Loop start, central office (CO), or Analog station port (PBX, PABX, or KSU)
Signaling Tone (DTMF)	100 ms tone duration
Supervisory dc Current	Minimum 20 mA dc; maximum 60 mA dc
Supervisory dc Voltage	24-60 V dc (not polarity sensitive)
Network Interface	Loop start
Auxiliary Output (isolated solid-state switch	48 V dc @ 125 mA 28 V_{RMS} ac @ 80 mA_{RMS}
Handset Receiver Volume Gain	+18 dB in 3dB increments
Network Signaling	DTMF

Mechanical

Mounting	Flush-mounting
Cable Entry	Rear back-box
Construction	
Front Panel	14-gauge (0.075-inch) type304 brushed stainless steel
Back Box	16-gauge (0.060-inch) cold-rolled steel with black polyurethane finish
Handset/cord	G-style with 29-inch armored cord and internal lanyard; noise-cancelling microphone
Braille dial pad	Chrome-plated zinc
Dimensions	
Front Panel	12.00 H x 10.00 W inches (304.4 x 254.0)
Back Box (overall)	10.06 H x 8.43 W x 2.50 D inches (255.5 x 214.1 x 193.8 mm)

Cutout for mounting back box . . . . . 10.13 H x 7.63 W inches (257.3 x 193.8 mm)
Weight . . . . . 7.0 lbs. (3.18 kg)

Environmental

Operating Temperature
SMART. . . . . -4º F to + 140º F (-20º C to +60º C)
Standard . . . . . -40ºF to + 140ºF (-40º C to +60º C)
Weatherproof Rating . . . . . NEMA 3R
Relative Humidity . . . . . Up to 95% non-condensing
PCBA (Printed Circuit Board Assembly) . . . . . Conformal Coated

Approval Standards

Compliance to Standards . . . . . FCC CRF 47 Part 15
Safety of Information Technology Equipment……..UL 60950 and CSA C22.2 No. 60950
Enclosures for Electrical Equipment……Type 3R

FCC Information

FCC Registration Number. US:ADGTE10A-46048HAC
Ringer Equivalence Number (REN. 1.0A/1.3B
Network Connection (USOC) RJ11
Meets hearing aid compatibility magnetic field intensity and volume control technical standards per FCC Sections 68316 and 38.317.

IC Information (Canada)

IC Certification Number. . . . .IC: 822A11754
Ringer Equivalence Number (REN. 1.0A/1.3B
Connecting Method CA11A

10.11.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Flush-mount Handset Analog Autodial Telephone:

Elite Wall-mount Communication Station, as referenced in section in section 11.1.0 of this specification.

Economy Wall-mount Communication Station, as referenced in section 11.2.0 of this specification.

Pole Mounting Kit shall be offered for mounting the communication station to a pole with a maximum 4-inch diameter.

Surface Mount Enclosure options, as referenced in section 11.3.0 of this specification.

Security Screwdriver shall be offered to permit installation, access, and removal of the Emergency and Assistance telephones.

Telephone Management Application Software, as referenced in section 11.4.0 of this specification .

10.11.4 Equipment Manufacturer and Model Numbers

The Flush-mount Handset Analog Autodial Telephone shall be GAI-TRONICS Model Number **277-001 Standard Flush-mount Handset Analog Keypad Telephone** and **277-005 SMART Flush-mount Handset Analog Keypad Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **234WM-202** Wall-mount Elite Communication Station, including panel light assembly

- **240WM-00x** Wall-mount Economy Communication Station, including panel light assembly and blue L.E.D. strobe, 120 Vac
- **240WM-00xDC** Wall-mount Economy Communication Station, including panel light assembly and blue L.E.D. strobe, 12-24 Vdc
- **241WM-00x** Wall-mount Economy Communication Station, including blue L.E.D. strobe, 120 Vac
- **241WM-00xDC** Wall-mount Economy Communication Station, including blue L.E.D. strobe, 12-24 Vdc
- **231-003** Pole-mount Kit for Wall-mount Economy Communication Stations
- **236-001xx** Surface-mount Enclosure (xx= RD red, BK black, YL yellow) to provide surface mounting of a flush-mount emergency telephone
- **238-001** Surface Mount Enclosure (brushed stainless steel) to provide surface mounting of a flush-mount emergency telephone
- **233-001** Security Screwdriver
- **12509-042** Telephone Management Application (TMA) Software Package

11.0.0 Peripheral Equipment

11.1.0 Elite Wall-mount Communication Station

11.1.1 Description

The Wall-mount Communication Station shall be designed to house the following components:

- Flush-mount Emergency or Access Telephone
- Blue-light Strobe with constant-on feature (120 V ac or 24 V dc)
- Telephone panel light to provide lighting over the face of the installed telephone (AC or DC)

The Elite Wall-mount Communication Station shall be constructed of 1/8-inch aluminum and painted with safety yellow polyurethane enamel. The body shall accommodate the installation of a flush-mount, emergency telephone and telephone panel light (if required) and shall include provisions to install a strobe assembly via a ¾" male NPT coupling. Safety glass shall be included to protect the installed strobe.

The Elite Wall-mount Communication Station shall include a mounting plate that can be separated from the body for ease of installation. The station shall be designed for surface mounting on any flat surface. A 120 V ac L.E.D. telephone panel light shall be included with the station.

The Elite Wall-mount Communication Station shall include the following assemblies:

- Station housing and mounting plate
- Safety glass
- L.E.D. Panel light assembly to provide illumination over the installed telephone (AC and DC versions shall be offered).

The referenced blue-light strobe and flush-mount telephone shall be purchased separately.

11.1.2 Features

The Elite Wall-mount Communication Station shall include the following features:

- UL/cUL listed for outdoor installations
- Powder-coated epoxy finish
- Rugged construction for longevity and durability

- Suitable for AC or DC power applications

11.1.3 Interconnection

Interconnecting wiring shall be limited to standard telephone or cat 5/6e twisted telephone pairs and appropriately gauged power triplet for 120 V ac or 24 V dc connections. All external cabling shall be entered through the stanchion mounting plate, 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.

11.1.4 Performance Specifications

The Elite Wall-mount Communication Station shall meet the following performance and physical specifications:

Dimensions..... 40.5H x 10.0 W x 9.5D inches (1028.7 x 254 x 241.3 mm)

Construction .....1/8-inch aluminum

Finish/Color ..... Polyurethane Enamel, Safety Yellow

Power Rating

Strobe Nominal Current . . . . . 0.39 amperes at 120 V ac
1.1 amperes at 12 V dc
0.5 amperes at 24 V dc

L.E.D. Panel light.....AC @ 25 mA, 120-230 V ac
DC @ 40 mA, 12-24 V dc

Terminations

Strobe (AC/DC power, control, auxiliary contact) ..... 15-foot, No. 18 AWG wire (stripped, tinned leads)

L.E.D. Panel light.....Screw lug terminals

Shipping weight .....Approx. 40 lbs.

Approvals:…….. UL/ cUL listed OUTDOOR telephone stanchion:
Canadian Electrical Code, Part 1 (CE Code, Part 1), and the
ANSI/NFPA 70 National Electrical Code (NEC)

11.1.5 Peripheral Equipment and Accessories

The following peripheral equipment shall be offered in support of the Elite Wall-mount Communication Station:

L.E.D. Strobe, 120 V ac, Constant-on Feature, Blue, as referenced in section 11.5.0 of this specification.

L.E.D Strobe, 12-24 V dc, Constant-on Feature, Blue, as referenced in section 11.5.0 of this specification.

11.1.6 Equipment Manufacturer and Model Numbers

The Elite Wall-mount Communication Station shall be GAI-TRONICS Model **234WM-202**. Options, peripherals, and accessories shall be GAI-TRONICS models numbers, specified as:

- **540-001** 120 V ac, L.E.D. Strobe Assembly with constant-on feature
- **541-001** 12-24 V dc, Low Voltage Strobe with programmable constant-on feature

11.2.0 Economy Wall-mount Communication Station

11.2.1 Description

The Economy Wall-mount Communication Station shall be designed to mount the following components:

- Flush-mount Emergency or Access Telephone
- Blue-light Strobe with constant-on feature (120 V ac or 24 V dc)
- Telephone panel light to provide lighting over the face of the installed telephone (AC or DC), if required

The Economy Wall-mount Communication Station shall be constructed of 1/8-inch aluminum, painted with a safety yellow or silver powder coat epoxy. The body shall accommodate the installation of a flush-mount, emergency telephone and telephone panel light (if required) and shall include provisions to install a strobe assembly via a ¾" male NPT coupling.

The Economy Wall-mount Communication Station shall include a mounting plate that can be separated from the body for ease of installation. The station shall be designed for surface mounting on any flat surface and shall be rated for outdoor use.

The Economy Wall-mount Communication Station shall include the following integral assemblies:

- Station housing and mounting plate
- L.E.D. Panel light assembly to provide illumination over the installed telephone (120 Vac and 12-24 Vdc versions shall be offered), if required
- L.E.D. Blue strobe mounted to the top of the station (120 Vac and 12-24 Vdc versions shall be offered)

The referenced flush-mount telephone shall be purchased separately.

11.2.2 Features

The Economy Wall-mount Communication Station shall include the following features:

- UL/cUL listed for outdoor installations
- Powder-coated epoxy finish
- Rugged construction for longevity and durability
- Suitable for AC or DC power applications

11.2.3 Interconnection

Interconnecting wiring shall be limited to standard telephone or cat 5/6e twisted telephone pairs and appropriately gauged power triplet for 120 V ac or 12-24 V dc connections. All external cabling shall be entered through the stanchion mounting plate, 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.

11.2.4 Performance Specifications

The Economy Wall-mount Communication Station shall meet the following performance and physical specifications:

Mechanical

Dimensions..... 40.25 H x 10.31 W x 6.81 D inches (1022.4 x 261.9 x 170.3 mm)

Construction .....1/8-inch aluminum

Finish/Color ..... Powder-coat epoxy, yellow (-001) or silver (-002)

Weight .....Approx. 30 lbs.

Electrical

Strobe Nominal Current . . . . . 0.39 amperes at 120 V ac
1.1 amperes at 12 V dc
0.5 amperes at 24 V dc

L.E.D. Panel light.....AC @ 25 mA, 120 V ac
DC @ 40 mA, 12-24 V dc

Terminations

Strobe (AC/DC power, control, auxiliary contact) ..... 15-foot, No. 18 AWG wire (stripped, tinned leads)

L.E.D. Panel light.....Screw lug terminals

Approvals

Standards for Luminaires……..……..UL 1598 and CSA C22.2 No. 250.0

Environmental

Weather Rating……Indoor/Outdoor – Suitable for Wet Locations

11.2.5 Peripheral Equipment and Accessories

The following peripheral equipment shall be offered in support of the Elite Wall-mount Communication Station:

Pole Mounting Kit shall be designed to allow mounting of the Economy Wall-mount Communication Stations to a pole with a maximum diameter of 4-inches.

11.2.6 Equipment Manufacturer and Model Numbers

The Economy Wall-mount Communication Station shall be GAI-TRONICS Models **240WM** or **241WM** series, specified as:

- **240WM-001** Wall-mount Station, yellow, with L.E.D. strobe and panel light; 120 Vac
- **240WM-002** Wall-mount Station, silver, with L.E.D. strobe and panel light; 120 Vac
- **240WM-001DC** Wall-mount Station, yellow, with L.E.D. strobe and panel light; 12-24 Vdc
- **240WM-002DC** Wall-mount Station, silver, with L.E.D. strobe and panel light; 12-24 Vdc
- **241WM-001** Wall-mount Station, yellow, with L.E.D. strobe; 120 Vac
- **241WM-002** Wall-mount Station, silver, with L.E.D. strobe; 120 Vac
- **241WM-001DC** Wall-mount Station, yellow, with L.E.D. strobe; 12-24 Vdc
- **241WM-002DC** Wall-mount Station, silver, with L.E.D. strobe; 12-24 Vdc

Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

- **231-003** Pole-mount Kit for Wall-mount Economy Communication Stations

11.3.0 Surface-mount Enclosures

11.3.1 Description

Surface-mount Enclosures shall be offered to provide surface mounting of flush-mount emergency and access telephones. Enclosures shall be offered in a painted, hooded design and a non-hooded, brushed stainless steel design. When installed in either Surface-mount Enclosure design, the emergency and access telephones shall meet Type-3R weatherproof standards.

11.3.2 Interconnection

Interconnecting wiring shall be limited to standard telephone or cat 5/6e twisted telephone pairs. All external cabling shall be entered through the rear of the Surface-mount enclosure. All wiring shall connect to the telephone via screw-down terminal strips or RJ11 modular connector (4-conductor).

11.3.3 Performance Specifications

This Surface-mount Enclosures shall meet the following physical specifications:

Hooded Design
Dimensions..... 12.3 H x 10.31 W x 6.37 D inches (312 x 262 x 162 mm)
Construction .....0.063-inch aluminum
Finish/Color ..... Polyurethane paint (Red, Yellow, or Black)
Mounting .....Four 5/16-inch (0.312 mm) diameter mounting holes in mounting bosses
Cable Entry .....Customer-provided (rear or bottom)
Shipping weight ..... 3.5 lbs. max.
Labeling .....Handset symbol on left and right sides

Non-hooded Design
Dimensions..... 12.13 H x 10.18 W x 2.65 D inches (308 x 259 x 67 mm)
Construction .....Type 304 stainless steel, 0.063 thickness
Finish/Color ..... Brushed and passivated
Mounting .....Four 5/16-inch (0.312 mm) diameter mounting holes in mounting bosses
Cable Entry .....1-inch entry in rear of enclosure
Shipping weight ..... 5.0 lbs. max.
Labeling.....None

11.3.4 Equipment Manufacturer and Model Numbers

The Surface-mount Enclosures shall be GAI-TRONICS models:

- **236-001RD** Hooded surface-mount enclosure, red
- **236-001YL** Hooded surface-mount enclosure, yellow
- **236-001BK** Hooded surface-mount enclosure, black
- **238-001** Surface-mount Enclosure, brushed stainless steel

11.4.0 Telephone Management Application (TMA) Package

11.4.1 Description

The Telephone Management Application (TMA) package shall be designed as a maintenance data collection and reporting tool to allow users to view and report the health of the SMART Telephones in the system. TMA shall be a Windows 10® based software application and shall be intended for use on a dedicated PC. TMA shall be designed to monitor individual SMART Telephones in the system, each on a dedicated analog line or on a common Ethernet network.

The TMA shall be designed to poll each SMART Telephone in the system to determine health status and activity. The TMA shall route all analog telephone polling activity through a transceiver designed and manufactured by the TMA software designer. Each transceiver shall poll one telephone at a time, but TMA shall be capable of supporting eight analog (8) line inputs, allowing

eight different telephones to be polled simultaneously. A TMA transceiver shall be required for each connected line.

When polled, each SMART Telephone shall report the following to the TMA:

- Line integrity
- Microprocessor health
- Stuck buttons
- Microphone/speaker circuit integrity
- Line interrupt (power failure)

The TMA shall be flexible in its provisions for adding, changing, and deleting SMART Telephones within the system. It shall provide a variety of reports minimally in the form of call activity, exception reports (faults), and complete status reports. TMA shall provide an auto-discovery feature to detect and record new Emergency Telephones added to the system. It shall also allow manual entry of newly added SMART Telephones. All TMA entries shall be done only by authorized personnel, controlled by a system security key.

Each SMART Telephone shall take approximately 90 seconds to poll and gather data. In lieu of polling, SMART Telephones shall be capable of being programmed to “call in” to the TMA. This method shall be expected to require multiple system dial-in numbers if more than one Telephone is required to call-in at a time.

11.4.2 Interconnection

The TMA transceiver shall connect to the host PC via USB connector and to the telephone line via 4-pin modular connector (RJ11). A VoIP only TMA shall require only a USB security key for network connection.

11.4.3 Material Provided

The TMA package shall include the following material:

- (1) Transceiver Unit
- Software CD-ROM
- Security Key
- Telephone Cable (4-conductor) for connection to PBX line
- USB Cable for connecting host PC to Transceiver Unit

11.4.4 System Requirements

The customer-provided, TMA host PC shall meet the minimum operating requirements:

- Intel® Pentium™ or AMD® 32-bit or 64-bit Processor
- Windows® 10 operating system
- RAM, hard disk space, and processor speed is dependent on the operating system's recommended requirements
- CD-ROM Drive
- One USB port for the security key
- One USB port per TMA DTMF Transceiver
- One printer port

11.4.5 Peripheral Equipment and Accessories

The following peripheral equipment, options, and accessories shall be offered in support of the Telephone Management Application and the SMART Rugged Telephone system.

TMA Expansion Kit shall provide a transceiver and interconnecting cables for connection to the telephone system and host PC for the purpose of providing the capability to poll via an additional line.

11.4.6 Equipment Manufacturer and Model Numbers

The Telephone Management Application package shall be GAI-TRONICS Model **12509-042**. The TMA Expansion Kit shall be GAI-TRONICS Model **12509-043**.

11.5.0 L.E.D Strobe (120 Vac or 12-24 Vdc)

11.5.1 Description

The 120 Vac L.E.D. Strobe shall provide a constant-on glow when power is applied. The input power shall be routed directly to the strobe and not through the controlling Emergency Telephone. When the strobe receives a dry contact closure from a connected Emergency Telephone, the constant-on glow shall flash at a rate of 240 times per minute. This flash shall remain active until the contact closure provided by the connected telephone is removed. Upon contact closure removal, the strobe shall return to its constant-on state.

The 12-24 Vdc L.E.D. Strobe shall be field-programmable to provide a constant-on glow when power is applied or to be off until activated. The input power shall be routed directly to the strobe and not through the controlling Emergency Telephone. When the strobe receives a dry contact closure from a connected Emergency Telephone, the strobe shall flash at a rate of 240 times per minute. This flash shall remain active until the contact closure provided by the connected telephone is removed. Upon contact closure removal, the strobe shall return to its constant-on state or turn off, depending on the programming.

Both L.E.D. Strobes shall provide a high visibility, even in daylight and shall have a minimum life expectancy of up to 100,000 hours. The outer lens of the strobes shall be blue in color, creating a uniform blue “glow” when energized. The strobes shall provide a secondary dry contact closure output, rated at 2 amperes, when in flash mode. This contact closure output shall be used to activate ancillary devices and shall disengage when the strobes return to their original state.

The L.E.D. Strobes shall be capable of being mounted onto a male, ¾” pipe thread. The strobes shall connect to the telephones via a pre-connected wire pair.

11.5.2 Features

The L.E.D. Strobe shall include the following features:

- High visibility, even in daylight
- 100,000-hour L.E.D. life
- Low power consumption
- “Outdoor Wet” weatherproof rating
- Low operating temperature
- Constant-on feature
- 240 Flashes per minute
- UL/cUL listing
- Dry contact closure output (rated at 2 amperes)

11.5.3 Performance Specifications

The L.E.D. strobes shall meet the following performance specification:

Electrical

Nominal Current . . . . . 0.39 amperes at 120 V ac
1.1 amperes at 12 V dc
0.5 amperes at 24 V dc
Rated L.E.D. life . . . . . Up to 100,000 hours
Flashes per minute 240
Auxiliary contact maximum rating . . . . . 2 amps @ 30 Vdc, 2 amps @ 240 Vac
Termination (ac, control, auxiliary contact) . . . . . 15-foot, 18 AWG wire

Environmental

Operating (environment) temperature range . . . . -40° C to +66° C (-40° F to + 150° F)
Environmental……..UL listed for “Outdoor Wet” Locations

Mechanical

Base. . . . . Die-cast aluminum (light gray or black baked enamel finish)
Dome . . . . . Polycarbonate (blue)
Dimensions . . . . . 7.75 H x 8.25 W inches (196.85 x 209.55 mm)
Shipping weight 6.5lbs
Mounting . . . . . 3/4-14NPT female

Approvals. . . . . .UL 1638A / CSA C22.2 No. 205-17

11.5.4 Interconnection

The L.E.D. Strobe shall include a minimum 12-foot wiring harness for the following connections:

- Control pair (dry contact closure from connected Emergency Telephone)
- Output pair (dry contact closure to ancillary device)
- 120 V ac power input

All wire leads shall be stripped and tinned and suitable for wire nut or screw terminal installation.

11.5.5 Peripheral Equipment and Accessories

The following peripheral equipment shall be offered in support of the L.E.D. Strobe.

Mounting Kit shall provide the ability to mount the strobe on a wall or flat surface.

11.5.6 Equipment Manufacturer and Model Numbers

The L.E.D. Strobe shall be GAI-TRONICS **540-001 (120 Vac)** or **541-001 (12-24 Vdc)**. The Strobe Mounting Kit shall be GAI-TRONICS **4115A**.