**EQUIPMENT SPECIFICATION**

**GAI-TRONICS**

**VOICE OVER INTERNET PROTOCOL (VoIP) RUGGED TELEPHONE PRODUCTS**

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**GAI-TRONICS VOICE OVER INTERNET PROTOCOL (VoIP)**

**RUGGED TELEPHONE PRODUCTS**

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**Model Number Section**

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**227-710 10.2.0**

**246-710 10.3.0**

**247-710 10.4.0**

**210-712 10.5.0**

**256-710 10.6.0**

**257-710 10.7.0**

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**277-710 10.11.0**

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**240WM-001, 240WM-001DC, 11.2.0**

**240WM-002, 240WM-002DC**

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**238-001**

**12509-042, 12509-043, 12509-044 11.4.0**

**540-001, 541-001 11.5.0**

* 1. **Scope and Intent**

This specification identifies and details GAI-TRONICS’ VoIP Rugged telephone products, accessories, and peripherals to provide two-way communications. Each VoIP telephone shall be considered an “end device”, designed for installation into an existing SIP compatible VoIP system. All servers, hubs, power supplies, and other active VoIP system/network devices shall be the responsibility of others.

**2.0.0 Seller Warranties**

* 1. 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. 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. **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.

* 1. **Installation**

The specified VoIP Rugged Telephone products shall be design for installation on an existing ethernet network and shall provide an RJ45 connection to that network. These telephones are intended to be connected to a SIP-compatible PBX or server for internal (within the network) and external (outside the network) dialing. Equipment and wiring shall be installed by the Purchaser.

Models requiring vandal-resistant hardware shall be noted.

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.

* 1. **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.

* 1. **Environmental Conditions**

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

* 1. **Equipment Operation**

VoIP Rugged Telephones shall be offered in the following configurations:

* Indoor, Standard Handset with Keypad or Autodial, Surface-mount
* Outdoor, Standard Handset with Keypad or Autodial, Surface-mount
* Indoor/Outdoor, Standard Handset with Keypad or Autodial, Flush-mount
* Indoor, Handsfree Clean Room Telephone, Flush or Surface-mount

All VoIP Rugged Telephones shall provide DTMF, ring, and dial comfort tones. Each telephone shall include the following features:

* SIP compatible (RFC3261)
* Weather resistant (if outdoor rated)
* Real-time alarm reporting via SNMP, syslog, or dedicated monitoring software
* Power-over-Ethernet (PoE) compatible
* Configurable via web page, serial link, or download
* Two, programmable volt-free contact outputs (rated at min. 5A @ 250V ac / 30 V dc)
* Direct peer-to-peer dialing (point-to-point)

All VoIP Rugged Handset Telephones shall include:

* Pushbutton, front-panel mounted, volume control for raising and lowering the handset receiver volume level. 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
* Moisture-resistant keypad (if equipped)

Placing a handset keypad call shall require:

1. Lifting the handset from its cradle to take the telephone off-hook
2. Wait for dial tone
3. Adjust the receiver volume with the volume control pushbutton
4. Use the keypad to dial the desired number

Placing a handset autodial call shall require:

1. Lifting 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 pushbutton

All handset calls shall be terminated by placing the handset back in the cradle, the receiving caller hangs up, a defined timeout of the call duration is exceeded, or via the SIP server.

The VoIP 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.

VoIP Rugged Telephones shall provide dial-up (autodial or manual), two-way communications over 10/100 BaseT Ethernet (RJ45) network. The system shall provide Call Control/Set-up Signaling via Signal Initiated Protocol (SIP), RFC3261.

All specified VoIP Telephones shall meet the following technical requirements:

**Codes and Audio:** G.711 A-Law G.711 µ-Law G.722 G.729 G.723.1 MP-MLQ G.723.1 ACELP; Codec preference sequence, DTMF in band/out of band (RFC2883), configurable comfort tones (nation specific)

**Call Set-up Protocol:** Session Initiation Protocol (SIP), RFC3261 compliant

**WiFi Network (when required):** IEEE 802.11 a/b/g/n; Static IP provisioning or DGCP STUN client

**Security:** Password protected

**Reliability:** MTBF of greater than 50,000 hours, using MIL-HDBK-217F Notice 2

**Quality of Service:** Priority of IP Packets according to TOS and DiffServ VLAN Priority according to IEEE8021.p/802.1q.

**Configuration/IP Address:** Via configuration file or on-board password protected web page server; Static IP address or Dynamic Host Configuration Protocol (DHCP)

**Monitoring:** Automatic fault reporting via SNMP or Syslog messaging; Real-time over TCP/IP proprietary Syslog Application; Scheduled reporting via system polling by central PC software

**Update Server:** Configuration and Firmware update via TFTP

**Redundancy:** Supports up to 4 SIP proxys

**Time/Date:**  Simple Network time protocol with time zone and daylight saving; date format – European / U.S.

All specified VoIP telephones shall be capable of reporting connection and equipment faults via SNMP, the Syslog, or by being monitored from a central PC that hosts dedicated software designed for monitoring operation via polling or call-in protocol. Said software shall be designed and provided by the emergency and assistance telephone manufacturer. Reported faults, at minimum, shall include:

* **Configuration Error** –Signal that the configuration file currently used by the unit has one entry errors which have been ignored.
* **Cold Reset** – Signal the unit has been reset due to a power cycle (failure)
* **Warm Reset** – Signal the unit has reset due to an internal software command or error
* **Keypad Error** – Signal that a key has remained pressed for the entire usage period
* **Register Fail** – Signal a failure to register with the Proxy server for a period in excess of the usage period
* **Audio Path Test** - Signal a failure in the handset or microphone/speaker operation
	1. **Field Wiring/Interconnection**

Power shall be provided to each VoIP telephone device via 24V min., 53V max. dc or IEEE Compliant Power-Over-Ethernet (PoE), over spare pairs only. Telephones shall draw a maximum of 12W.

VoIP network cable shall comply with Cat5 or Cat5e UTP Static IP provisioning or DHCP STUN client standards and connect to each VoIP Telephone via RJ45 connector.

**10.0.0 Handset VoIP Rugged Telephones**

10.1.0 Extremely Rugged, Handset VoIP Keypad Telephone, Aluminum, Surface-mount

10.1.1 Description

The Extremely Rugged, Handset VoIP Keypad 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.

10.1.2 Performance Specifications

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Keypad . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . .. . . . . . . . . . . . 3 x 4 matrix

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Keypad, push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Two ½-inch NPT conduit entrances (top and bottom)

Electrical Connections . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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

# Temperature Range

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

 Storage . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

Enclosures for Electrical Equipment…………….…………………………………………………………Type 3R

10.1.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of Extremely Rugged, Handset VoIP 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 The VoIP Tough Phone Handset Telephone.

* + 1. Equipment Manufacturer and Model Numbers

The Extremely Rugged, Handset VoIP Keypad Telephone shall be GAI-TRONICS Model Number **226-710 Tough Phone Handset VoIP Telephone.** Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **232-001** Pole Mounting Kit
* **233-001** Security Screwdriver

10.2.0 Extremely Rugged, Handset VoIP Autodial Telephone, Aluminum, Surface-mount

10.2.1 Description

The Extremely Rugged, Handset VoIP Autodial Telephone shall be designed for use in extremely harsh indoor or outdoor environments. It shall include a handset with armored cord, 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.

10.2.2 Performance Specifications

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ………….push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Two ½-inch NPT conduit entrances (top and bottom)

Electrical Connections . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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

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

# Temperature Range

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

 Storage . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

Enclosures for Electrical Equipment…………….…………………………………………………………Type 3R

10.2.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of Extremely Rugged, Handset VoIP 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 The VoIP Tough Phone Handset Telephone.

10.2.4 Equipment Manufacturer and Model Numbers

The Extremely Rugged, Handset VoIP Autodial Telephone shall be GAI-TRONICS Model Number **227-710 Tough Phone Handset VoIP Telephone.** Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **232-001** Pole Mounting Kit
* **233-001** Tamper-resistant Screwdriver

10.3.0 Indoor Handset VoIP Keypad Telephone, Non-metallic, Surface-mount

10.3.1 Description

The Indoor Handset VoIP 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.

10.3.2 Performance Specifications

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Keypad . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . .. . . . . . . . . . . . 3 x 4 matrix

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Keypad, push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Field-determined

Electrical Connections . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. 4.8 lbs. (2.18 kg)

# Environmental

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

10.3.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Indoor Handset VoIP 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.

10.3.4 Equipment Manufacturer and Model Numbers

The Indoor Handset VoIP Keypad Telephone shall be GAI-TRONICS Model Number **246-710 Indoor Handset VoIP Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **231-002** Pole Mounting Kit

10.4.0 Indoor Handset VoIP Autodial Telephone, Non-metallic, Surface-mount

10.4.1 Description

The Indoor Handset VoIP Autodial 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.

10.4.2 Performance Specifications

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . …………. . . Push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Field-determined

Electrical Connections . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. 4.8 lbs. (2.18 kg)

# Environmental

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

10.4.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Indoor Handset VoIP 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.

10.4.4 Equipment Manufacturer and Model Numbers

The Indoor Handset VoIP Autodial Telephone shall be GAI-TRONICS Model Number **247-710 Indoor Handset VoIP Telephone**. Peripherals and accessories shall GAI-TRONICS model numbers, specified as:

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **231-002** Pole Mounting Kit

10.5.0 Corridor, Handset VoIP Autodial Telephone, Surface-mount, Stainless-steel

10.5.1 Description

The Corridor, Handset VoIP Autodial Telephone shall be designed for use in an indoor environment. It shall include a handset with armored cord and a pushbutton volume control. 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 enclosure 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) of this specification.

10.5.2 Performance Specifications

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . …………. . . Push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting via mounting plate

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Through rear of box, via mounting plate

Electrical Connections . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

Construction. . . . . . . . . . . . . . . . . .. . . . . . . .. …. . 14-gauge (0.075 inch) type 304 brushed stainless-steel

Handset/cord . . . . . . . . . . . .. …… . . .G-style with 29-inch armored cord and 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

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

10.5.3 Peripheral Equipment and Accessories

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

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

**Security Screwdriver** shall be offered to permit installation, access, and removal of the front cover.

10.5.4 Equipment Manufacturer and Model Numbers

The Corridor, Handset VoIP Autodial Telephone shall be GAI-TRONICS Model Number **210-712 Corridor Handset VoIP Autodial Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **233-001** Security Screwdriver

10.6.0 Outdoor (NEMA 3R) Handset VoIP Keypad Telephone (non-metallic), Surface-mount,

10.6.1 Description

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Keypad . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . .. . . . . . . . . . . . 3 x 4 matrix

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Keypad, push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Field-determined

Electrical Connections . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . .. 10.0 lbs. (4.54 kg)

# Environmental

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

Enclosures for Electrical Equipment………………………………………………………………………Type 3R

10.6.3 Peripheral Equipment and Accessories

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

10.6.4 Equipment Manufacturer and Model Numbers

The Outdoor (NEMA 3R) Handset VoIP Keypad Telephone shall be GAI-TRONICS Model Number **256-710 Outdoor Handset VoIP Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **230-001** Pole Mounting Kit

10.7.0 Outdoor (NEMA 3R) Handset VoIP Autodial Telephone (non-metallic), Surface-mount,

10.7.1 Description

The Outdoor (NEMA 3R) Handset VoIP Autodial Telephone shall be designed for use in a harsh indoor or outdoor environment. It shall include a hinged door, handset, and pushbutton handset 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 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.

10.7.2 Performance Specifications

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ………….. Push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Field-determined

Electrical Connections . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . .. 10.0 lbs. (4.54 kg)

# Environmental

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

Enclosures for Electrical Equipment………………………………………………………………………Type 3R

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 VoIP 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.

10.7.4 Equipment Manufacturer and Model Numbers

The Outdoor (NEMA 3R) Handset VoIP Autodial Telephone shall be GAI-TRONICS Model Number **257-710 Outdoor Handset VoIP Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **230-001** Pole Mounting Kit

10.8.0 Outdoor (NEMA 4X) Handset VoIP Keypad Telephone (non-metallic), Surface-mount,

10.8.1 Description

The Outdoor (NEMA 4X) Handset VoIP 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.

10.8.2 Performance Specifications

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Keypad . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . .. . . . . . . . . . . . 3 x 4 matrix

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Keypad, push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Field-determined

Electrical Connections . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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

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

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º C)

Weatherproof Rating . . . .. . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . NEMA 4X

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/CSA 60950

Enclosures for Electrical Equipment………………………………………………………………………Type 4X

10.8.3 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Outdoor (NEMA 4X) Handset VoIP 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 the front panel

10.8.4 Equipment Manufacturer and Model Numbers

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

* **354-710 NEMA 4X Handset VoIP Keypad Telephone, Gray**
* **354-710RD NEMA 4X Handset VoIP Keypad Telephone, Red**
* **354-710OR NEMA 4X Handset VoIP Keypad Telephone, Orange**
* **354-710YL NEMA 4X Handset VoIP Keypad Telephone, Yellow**

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

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **230-001** Pole Mounting Kit
* **233-001** Security Screwdriver

10.9.0 Outdoor (NEMA 4X) Handset VoIP Autodial Telephone (non-metallic), Surface-mount,

10.9.1 Description

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ………….. Push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Direct surface/wall mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Field-determined

Electrical Connections . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . .. 10.0 lbs. (4.54 kg)

# Environmental

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . .-40ºF to + 158ºF ( -40º C to +70º C)

Weatherproof Rating . . . .. . . . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . . . NEMA 4X

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/CSA 60950

Enclosures for Electrical Equipment………………………………………………………………………Type 4X

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 VoIP 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 the front panel

10.9.4 Equipment Manufacturer and Model Numbers

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

* **354-711 NEMA 4X Handset VoIP Autodial Telephone, Gray**
* **354-711RD NEMA 4X Handset VoIP Autodial Telephone, Red**
* **354-711OR NEMA 4X Handset VoIP Autodial Telephone, Orange**
* **354-711YL NEMA 4X Handset VoIP Autodial Telephone, Yellow**

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

* **12509-044** Telephone Management Application (TMA) Package for VoIP Telephones
* **230-001** Pole Mounting Kit
* **233-001** Security Screwdriver

10.10.0 Flush-mount Handset VoIP Keypad Telephone

10.10.1 Description

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

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Keypad . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . . . . .. . . . . . . . . . . . 3 x 4 matrix

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Keypad, push-button inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . Flush-mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . …. . . Rear back-box

Electrical Connections . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . .. . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

Enclosures for Electrical Equipment………………………………………………………………………Type 3R

10.10.4 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Flush-mount Handset VoIP 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.

**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.

10.10.5 Equipment Manufacturer and Model Numbers

The Flush-mount Handset VoIP Keypad Telephone shall be GAI-TRONICS Model Number **276-710 Flush-mount Handset VoIP Keypad Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **234WM-202** Wall-mount Elite Communication Station, including panel light assembl**y**
* **240WM-00x** Wall-mount Economy Communication Station, including panel light assembly and blue L.E.D. strobe
* **241WM-00x** Wall-mount Economy Communication Station, including blue L.E.D. strobe
* **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
* **12509-044** Telephone Management Application (TMA) software package for VoIP Telephones

10.11.0 Flush-mount Handset VoIP Autodial Telephone

10.11.1 Description

The Flush-mount Handset VoIP Autodial Telephone shall be designed for use in harsh indoor or outdoor environments. It shall include a 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 VoIP Autodial Telephone shall meet the following performance and physical specifications:

**Electrical**

Network Power: . . . . . . . . . . . . . . . . . . . . . . . . . . . …….Power-over-Ethernet, 802.3af compliant (via RJ45)

 Local Power Requirements. . . . . . . . . . .. . . . . . . . . .. ……. . . . . . .24-48 V dc (a separate, isolated power supply must be provided for each telephone)

Power Consumption. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … . . . . . . 6 watts, max.

Network: . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .10/100 BaseT Ethernet RJ45, Cat5 or Cat5e

 UTP Static IP provisioning or DHCP STUN client

Call Control Signaling . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . … SIP (RFC3261 compliant)

Configuration . . . . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Embedded web server;

 Configuration file download

 Direct serial connection; Password protection

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Call Diversion . . . . . . . . . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries)

 with comfort tones, diverts to next in list if the call fails

**Inputs**

Push Buttons. . . . . . . . . . . . . . . . . . . . .. . . . . . …………. . . . . . . . . …. . . . . . . . . … . . . . . . Volume control

**Outputs**

Output control (2) contact rating.. . . . . . . .. . . . . . . . . . . . . . . . . . . . . . . . . 8 A @ 30 V ac/dc (resistive load)

**Controls**

External . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . …………… Pushbutton inputs

Internal . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Receiver volume, mic bias, reset switch

**Indicators**

Internal on VoIP PCBA . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Power, Heartbeat & EACT L.E.D.s

Codecs and audio . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ……. G.711 A-Law, G.711 μ-Law, G.722, G.729,

 G.723.1 MP-MLQ, G.723.1 ACELP

Configuration . . . . . . . . . . . . . . …….Web page, configuration file, static IP address provisioning or DHCP

 monitoring and reporting real-time over TCP/IP proprietary Syslog

 application or email Embedded SMTP client automatic fault reporting

Call Diversion . . . . . . .. . . . . . . . . . . . . . . . . . . . . .Configurable call list Numbers or URIs (max 20 entries) with comfort tones, diverts to next in list if the call fails

**Mechanical**

Mounting . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . . Flush-mounting

Cable Entry. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . …. . . Rear back-box

Electrical Connections . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . RJ45 and Terminal block

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

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

Temperature Range

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

 Storage . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .. . . . . . . .. . . . . .-40ºF to + 158ºF ( -40º C to +70º 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/CSA 60950

Enclosures for Electrical Equipment………………………………………………………………………Type 3R

10.11.4 Peripheral Equipment and Accessories

The following peripheral equipment, accessories, and sub-components shall be offered in support of the Flush-mount Handset VoIP 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.

**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.

10.11.5 Equipment Manufacturer and Model Numbers

The Flush-mount Handset VoIP Autodial Telephone shall be GAI-TRONICS Model Number **277-710 Flush-mount Handset VoIP Autodial Telephone**. Peripherals and accessories shall be GAI-TRONICS model numbers, specified as:

* **234WM-202** Wall-mount Elite Communication Station, including panel light assembl**y**
* **240WM-00x** Wall-mount Economy Communication Station, included panel light assembly and blue L.E.D. strobe
* **241WM-00x** Wall-mount Economy Communication Station, including blue L.E.D. strobe
* **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
* **12509-044** Telephone Management Application (TMA) software package for VoIP Telephones

**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 specified in section 11.5.0 of this specification.

**L.E.D Strobe, 12-24 V dc, Constant-on Feature, Blue**, as specified 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 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 VoIP Telephone Management Application (TMA) Package

11.4.1 Description

The VoIP 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 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 Telephones in the system, each on a common Ethernet network.

The VoIP TMA shall be designed to poll each VoIP Telephone in the system to determine health status and activity, via software embedded in a required security key, with no additional cabling requirement.

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

* **Configuration Error** –Signal that the configuration file currently used by the unit has one entry errors which have been ignored.
* **Cold Reset** – Signal the unit has been reset due to a power cycle (failure)
* **Warm Reset** – Signal the unit has reset due to an internal software command or error
* **Keypad Error** – Signal that a key has remained pressed for the entire usage period
* **Register Fail** – Signal a failure to register with the Proxy server for a period in excess of the usage period
* **Audio Path Test** - Signal a failure in the microphone/speaker operation

The TMA shall be flexible in its provisions for adding, changing, and deleting 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 VoIP Telephones added to the system. It shall also allow manual entry of newly added Emergency Telephones. All TMA entries shall be done only by authorized personnel, controlled by a system security key.

Each VoIP Telephone shall take approximately 20 seconds to poll. In lieu of polling, 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 VoIP TMA shall require only a USB security key for network connection.

11.4.3 Material Provided

The VoIP TMA package shall include the following material:

* Security Key
* USB Flash Disk

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 Equipment Manufacturer and Model Numbers

The VoIP Telephone Management Application (TMA) package shall be GAI-TRONICS Model **12509-044**.

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**.