**SECTION 27 32 26**

**RING-DOWN EMERGENCY TELEPHONES**

**PART 1 GENERAL**

**1.01 SUMMARY**

1. Equipment and materials used shall be standard components that are manufactured and available for purchase as standard replacement parts as long as the product is commercially available from the manufacturer.

**1.02 QUALITY ASSURANCE**

1. All call station installation, configuration, setup, programming, and related work shall be performed by electronic technicians thoroughly trained by the manufacturer in the installation and service of the equipment provided.
2. All equipment shall be warrantied against any defects in material and workmanship under normal use for a period of twenty-four (24) months from date of installation, provided that manufacturer receives a completed "Installation Certification" certifying the date on which the system has been installed. An "Installation Certification" card shall be enclosed with every unit. In the event that no "Installation Certification" is received by the manufacturer, the twenty-four (24) months will commence on the date of shipment by the manufacturer.

**1.03 CERTIFICATIONS AND STANDARDS**

1. The call station shall be designed to meet the following standards:
	1. Accessibility
		1. ADA: Standards for Accessible Design – 2010
		2. ANSI ICC A117.1 (2009): Accessible and Usable Buildings and Facilities
	2. Safety
		1. UL 60950-1
		2. UL 60950-22
	3. Networking:
		1. IEEE 802.3af (Power over Ethernet)
		2. TCP/IP (RFC 1122)
		3. IPv4 (RFC 791)
		4. SIP (RFC 3261)

**PART 2 PRODUCTS**

**2.01 GENERAL**

1. The call station shall:
	1. Consist of an outdoor-rated vandal resistant ADA-compliant hands-free speakerphone communications device with a bonded marine-grade stainless steel faceplate and metal button.
	2. Be full duplex in operation.
	3. Be programmable from a remote location.
	4. Have a five (5) number dialing capability, reverting to subsequent numbers in round robin fashion if any are busy or do not answer.

**2.02 HARDWARE**

1. The call station faceplate shall:
	1. Be constructed of an enhanced corrosion resistant 316 grade stainless steel base plate bonded with a:
		1. Enhanced corrosion resistant #4 brushed 316 grade stainless steel signage plate.
	2. Have a combined thickness of 0.086” (2.13mm).
	3. Measure 3.7” W x 6.387” H.
2. The call station faceplate primary signage shall:
	1. Be constructed of enhanced corrosion resistant 316 grade stainless steel with lettering and Braille raised for ADA compliance.
	2. Lettering shall be raised no less than 0.03125”.
	3. Braille shall be raised no less than 0.025”.
	4. Read “CALL”.
	5. Be printed black and have a UV-resistant finish.
3. The primary button shall:
	1. Be a high quality 0.78” diameter push button (1.10” overall diameter) and switch in a single assembly.
	2. The switch shall be mechanically rated to 50,000 cycles (typical).
	3. Provide tactile feedback.
	4. Have an operating temperature range of -40°F (-40°C) to +185°F (+85°C).
	5. Have an enclosure design that is watertight as per IP67 rating.
	6. Be constructed of an aluminum alloy, with a clear chromate finish.
	7. Have a metal cap, painted black with a UV-resistant finish.
4. The call station shall have a 3mm diameter red light emitting diode (LED).
5. The speaker shall:
6. Be a 2.5” round, RoHS compliant, outdoor rated speaker.
7. Have an operating temperature range of -67°F (-55°C) to +185°F (+85°C).
8. Be capable of withstanding a total immersion for 96 hours and operating without any deterioration of sound quality.
9. Have a speaker cone constructed of a corrosion resistant material.
10. Be constructed of a neodymium magnet and a solid aluminum voice coil and shall be adequately protected from ferrous and non-ferrous particles via a sealed design.
11. The microphone shall:
12. Be a 6mm diameter, aluminum construction, RoHS compliant, outdoor rated microphone.
13. Have an IP57 type enclosure to protect from dust and water.
14. Have an operating temperature range of -40°F (-40°C) to +158°F (+70°C).
15. Operate within ±3db of initial sensitivity after being placed in a chamber at +40°C and 90±5% relative humidity for 240 hours (tested after six (6) hours of conditioning at +25°C).
16. The call station shall weigh approximately 2.8 lbs.
17. The back box enclosure shall:
	1. Measure 4” W x 6.75” H.
	2. Be constructed of stainless steel.
	3. Be painted black.

**2.03 AUDIO**

1. The call station shall support full duplex audio using G.711, G.722, and G.729 compression.
2. The call station shall support acoustic echo cancellation.
3. The call station shall have adaptive jitter filter.

**2.04 FUNCTIONALITY**

1. Web Server
	1. The call station shall contain a built-in web server making configuration available to multiple clients in a standard operating system and browser environment using HTTP or HTTPS, without the need for additional software.
	2. The web server shall require authentication with username and password.
2. IP Address
	1. The call station shall support both fixed IP addresses and dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server.
	2. The call station shall support IPv4.
3. Voice over Internet Protocol (VoIP)
	1. The call station shall be configurable with a SIP registrar. The registrar can be configured for:
		1. SIP Username
		2. SIP Password
		3. SIP Registrar IP Address
4. Telephone Calls
	1. The call station shall be programmable with up to seven (7) different telephone numbers for each of three (3) telephone number lists.
		1. If the first number does not answer or is busy, the call station shall automatically call the second number.
		2. If the second number does not answer or is busy, the call station shall automatically call the third number.
		3. The call station shall continue dialing in round robin fashion until the call is answered or the call conversation timer limit expires.
	2. When the call is finished, the call station shall automatically terminate the call.
	3. The call station shall be capable of auto answering any call placed to it from another telephone.
5. Hearing Impairment Aid (LED)
6. The LED shall flash when calling party has placed a call or when there is an incoming call.
7. The LED shall be illuminated when the remote attendant has answered the call.
8. Voice Messages
9. The call station shall be programmable with up to five (5) unique voice messages.
10. The call station shall be capable of automatically notifying the remote attendant of the emergency phone location via a recorded message that plays at the beginning of the phone conversation.
11. The voice messages shall be configured as responses to event triggers.
12. Event Functionality
13. The call station shall be equipped with integrated event functionality which can be triggered by:
	* 1. Call initiation
		2. DTMF tone
		3. Call termination
14. The responses to triggers shall include:
15. Activating the auxiliary output
16. Notification using TCP (ASCII format)
17. Activation of voice message
18. Event functions shall be configurable from the web interface.
19. Protocol Support
20. The call station shall incorporate support for at least IPv4, DHCP, SIP, SNMP, NTP, HTTPS, TCP, UDP, and RTP.
21. Installation and Maintenance
22. The call station shall allow updates of the software (firmware) over the network through the use of TFTP.
23. Customer-specific settings, including statically assigned IP address, the local time and date, event functionality, and audio configuration, shall be stored in non-volatile memory and shall not be lost during power cuts or soft reset.

**2.05 INTERFACES**

1. Auxiliary Output
	1. The call station shall be equipped with one auxiliary output.
		1. The output is rated up to 2A @ 250VAC/220VDC.
2. Network Interface
	1. The call station shall be equipped with one 10/100 Base-T Ethernet port.

**2.07 POWER REQUIREMENTS**

1. The call station shall be powered by one of the following power sources:
	1. Power over Ethernet according to IEEE 802.3af – Class 0
	2. 16 to 48 VDC, dedicated line-regulated power supply – Idle: 1.8W; Maximum: 12W

**2.08 ENVIRONMENTAL**

1. The call station shall:
	1. Operate in a temperature range of -40°F (-40°C) to + 158°F (+70°C).
	2. Operate in a humidity range up to 95% RH (non-condensing).

**2.09 MANUFACTURED UNITS**

1. The call station shall be a Talkaphone VOIP-221C Compact IP Call Station.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

1. The installer shall carefully follow instructions in the documentation provided by the manufacturer to ensure all steps have been taken to provide a reliable, easy-to-operate system.
2. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.
3. All firmware found in products shall be the latest and most up-to-date provided by the manufacturer.
4. All equipment requiring users to log on using a password shall be configured with user/site-specific password(s). No system/product default passwords shall be allowed.

**END OF SECTION**