SECTION 28 13 53.11

IP NETWORK COMPATIBLE INTERCOM (IX SYSTEM)

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\*\* NOTE TO SPECIFIER \*\* Aiphone Corp.; security and communication systems and products.
This section is based on the products of Aiphone Corp., which is located at:6670 185th Ave. NERedmond, WA 98052 Toll Free Tel: 800-692-0200Tel: 425-455-0510Fax: 425-455-0071Email: [request info (marketing@aiphone.com)](https://arcat.com/rfi?action=email&company=Aiphone%252BCorp.&message=RE%253A%2520Spec%2520Question%2520(13713aic)%253A%2520&coid=30204&spec=13713aic&rep=&fax=425-455-0071)
Web: <http://www.aiphone.com>
 [ [Click Here](https://arcat.com/company/aiphone-corp-30204) ] for additional information.
Aiphone has become the most respected and reliable brand of communication systems in the world. Aiphone Co. Limited in Nagoya, Japan exports to over 60 countries. Our North American marketing and sales distribution center near Seattle, Washington, was established in 1970.
Aiphone products range from simple do-it-yourself door answering units to sophisticated video entry security systems, complex microprocessor-based commercial systems, and luxury condo/apartment security and communication systems. Our products are unrivaled in design simplicity, technical excellence, and reliability. With over 25 standard systems, and additional manufacturing by special order, we can create a system for virtually any intercom application.
Every Aiphone system is the result of painstaking attention to detail, with contemporary European style design and the finest quality hardware and circuitry. All of our products are engineered and tested with reliability in mind.

1. GENERAL
	1. SECTION INCLUDES
		1. IP Video Intercom. (Aiphone IX Series)
	2. RELATED SECTIONS
		1. Section 33 82 00 - Communications Distribution.
		2. Section 28 18 00 - Security Access Detection Equipment.
		3. Section 28 13 53.10 - Security Video Intercom System.
	3. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American National Standards Institute (ANSI/TIA/EIA) 568 - Commercial Building Telecommunications Cabling Standard.
		2. International Organization for Standards (ISO) 9001:2000 - Quality Management Systems - Requirements.
	1. SYSTEM DESCRIPTION
		1. IP Network Compatible Video Intercom System: A network-based communication and security system featuring video entry security, internal communication, emergency stations, and paging. All units and app in the systems shall be able to unlock doors remotely on a network, assist onsite visitors from an offsite location, broadcast emergency announcements, and communicate using a PoE network.
			1. Power Source: Power over Ethernet (802.3af).
			2. Network Interface: 10 BASE-T / 100 BASE-TX Ethernet (RJ-45).
			3. Network Protocols: IPv4, IPv6, TCP, UDP, SIP, HTTP, HTTPS, MJPEG, RTSP, RTP, RTCP, IGMP, MLD, SMTP, DHCP, NTP, DNS.
			4. Bandwidth Usage:
				1. G.711: 64Kbps x 2 per video call.
				2. 64Kbps per monitor.
				3. H.264: 24Kbps ~ 2,048Kbps.
			5. Communication: Hands-free (VOX), push-to-talk (simplex), or handset (full-duplex).
			6. Video Display: 7-inch color LCD.
			7. Camera: Type: IX-DV, IX-DVF, IX-DVF-(2)RA, IX-DVF-L, IX-DVF-P, IX-DVF-HWCB
				1. 1/3-inch color CMOS. 1.23 Megapixels.
				2. View Area at 0-degree camera angle mounted at 4 feet 11 inches (1500 mm) AFF: 2 feet 3 inches (700 mm) vertical x 3 feet 9 inch (1150 mm) horizontal at 19 inches (500 mm).
			8. Camera: IX-DVM Type:
				1. 1/3-inch 8-type color CMOS. 720p HD, wide dynamic range
				2. View Area mounted at 4 feet 11 inches (1500 mm) AFF: 4 feet 3 inches (1300 mm) vertical and a range of 170 degrees in a 19 inch (500 mm) horizontal radius.
			9. Video Stream: ONVIF Profile S.
			10. Door Release: Programmable Form C dry contact, 24V AC/ DC, 1A (use RY-1824L for larger contact rating, which requires a 24V DC power supply) or use IXW-MA with 10 multipurpose relays.
			11. Wire Type: CAT-5e or CAT-6.
			12. Distance:
				1. Any station to Network Node: 330 feet (100 meters).
	2. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings: Submit the following:
			1. Wiring Diagrams: Indicate wiring for each item of equipment and interconnections between items of equipment.
			2. Include manufacturer's names, model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
		4. Installation and Operation Manuals:
			1. Submit manufacturer's installation and operation manual, including operation instructions and component wiring diagrams.
			2. Provide detailed information required for Owner to properly operate equipment.
		5. Warranty: Submit manufacturer's standard warranty.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
		2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: ISO 9001:2015 certified company.
		2. Installer Qualifications: Factory trained and experienced with system installations of scope and size required for the Project.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship is approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
		2. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
		3. Handling: Protect materials during handling and installation to prevent damage.
	2. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Aiphone Corp., which is located at:6670 185th Ave. NERedmond, WA 98052 Toll Free Tel: 800-692-0200Tel: 425-455-0510Fax: 425-455-0071Email: [request info (marketing@aiphone.com)](https://arcat.com/rfi?action=email&company=Aiphone%252BCorp.&message=RE%253A%2520Spec%2520Question%2520(13713aic)%253A%2520&coid=30204&spec=13713aic&rep=&fax=425-455-0071);Web: <http://www.aiphone.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
		3. IP Video Intercom System: IX Series Intercom System as manufactured by Aiphone Corporation.

\*\* NOTE TO SPECIFIER \*\* IP based IX Series system. Up to 500 units can be connected. At least one IX-MV7 or IX-SOFT master must be included in your system. Network devices required to connect an IX system are not included in this specification and must be purchased separately. Not available from Aiphone. The IX system is PoE powered only. Please ensure all devices are connected to PoE switches or injectors. For additional information contact your Network Administrator or Aiphone Technical Support at (800) 692-0200. Edit the system description as required for the project. Consult Aiphone Corporation for more information.

* 1. SYSTEM DESIGN

\*\* NOTE TO SPECIFIER \*\* Station where communication is initiated and controlled. Insert number of master stations required. Up to 500 ONVIF Profile S compliant cameras can be viewed by each master station, but not included in this specification. Paging amplifier can connect to door or emergency station via 600 ohm output. Indicate number of master stations required.

* + 1. Master Stations:
			1. Model IX-MV7-HB (Black chassis - Handset): Provide \_\_\_.
			2. Model IX-MV7-B (Black chassis - Hands Free): Provide \_\_\_.
			3. Model IX-MV7-HW (White Chassis - Handset): Provide \_\_\_.
			4. Model IX-MV7-W (White Chassis - Hands Free): Provide \_\_\_.
			5. Model IX-SOFT (Software-based Master Station): Provide \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Audio/Video Door stations: Audio video door stations provide audio, video and door release capability. All door stations feature call in indicators and provide a Form "C" relay for door release activation. Door stations will call up to 20 master stations. Programmable dry contacts are available at the door station. The contacts are Form C 1A, 24V AC/DC. Door release wiring from the door station is separate from the network connection to the door station and is not included in this specification. Door strikes and their power sources are not included in this specification and are notavailable from Aiphone. An amplifier or self-amplified speaker can be connected to the 600 ohm output from any door station (except IX-DVM and IX-SS-2G) to increase outgoing volume. Communication from the door station to the master will still be transmitted from the door station's microphone. Amplifier is not included in this specification. Continuous audio and video to a Network Video Recorder is available. The IP address of the NVR will need to be supplied when programming the door station. The NVR is not included in this specification. Delete door station not required. Indicate number of selected door stations required.

* + 1. Audio Video Door Stations:
			1. Model IX-EA (Video Door Station - Surface Mount - Plastic): Provide \_\_\_.
			2. Model IX-DV (Video Door Station - Surface Mount - Vandal Resistant): Provide \_\_\_.
			3. Model IX-DVF (Video Door Station - Flush Mount - Vandal Resistant): Provide \_\_\_.
			4. Model IX-DVF-P (Video Door Station - Flush Mount - HID RP10 Reader): Provide \_\_\_.
			5. Model IX-DVF-RA (Video Door Station - Flush Mount - Emergency Call Button): Provide \_\_\_.
			6. Model IX-DVF-2RA (Video Door Station - Flush Mount - Call Button - Emergency Call Button): Provide \_\_\_.
			7. Model IX-DVF-L (Video Door Station - Flush Mount - T-Coil hearing aid support): Provide \_\_\_.
			8. Model IX-DVF-HWCB (Video Door Station - Surface Mount - Touchless Call Switch): Provide \_\_\_
			9. Model IX-DVM (Video Door Station - Surface Mount - Contactless Call Sensor): Provide \_\_\_

\*\* NOTE TO SPECIFIER \*\* Audio only door stations: Audio only door stations provide audio and door release capability. Door stations will call up to 20 master stations.

* + 1. Audio Only Door Stations:
			1. Model IX-SSA (Audio Door Station - Flush Mount - Vandal Resistant): Provide \_\_\_.
			2. Model IX-SSA-RA (Audio Door Station - Flush Mount - Emergency Call Button): Provide \_\_\_.
			3. Model IX-SSA-2RA (Audio Door Station - Flush Mount - Emergency Call Button): Provide \_\_\_.
			4. Model IX-SS-2G (Audio Door Station - 2 Gang - Vandal Resistant): Provide \_\_\_.

\*\* NOTE TO SPECIFIER \*\* Optional features. Delete features not required.

* + 1. Provide Selective Door/Gate Release.
		2. Provide Audio/video streaming via ONVIF Profile S.
		3. Provide ONVIF Profile S camera input (max 500).
		4. Provide Overhead paging.
		5. Provide Contact input at door station.

\*\* NOTE TO SPECIFIER \*\* Edit the components to correspond to the system design.

* 1. FUNCTIONAL COMPONENTS:
		1. Functional Components: As indicated on the drawings or as required to complete system.
			1. Video Master Station Series IX-MV7:
				1. Model IX-MV7-HB (Master Station - Black w/Handset).
				2. Model IX-MV7-HW-JP (Master Station - White w/Handset).
				3. Model IX-MV7-B (Master Station - Black, Hands Free).
				4. Model IX-MV7-W (Master Station - White, Hands Free).
				5. An IP addressable video master station with a 7-inch color LCD monitor. It can be wall or desk mounted (desk stand included). The IX-MV7 offers handset (duplex) and hands-free (VOX/PTT) communication and call up to 500 other IX stations. It connects directly to a network using CAT-5e/6 cable. This station requires an 802.3af compliant Power-over-Ethernet network.
			2. Software Master Station IX-SOFT:
				1. A software-based master station for Windows based PCs. It can receive calls and communicate with up to 500 other IX stations across a network. An interactive map provides a visual means of selecting and interacting with stations. Device check and Line Supervision functions are available through the software to verify the status of IX stations in the system. Can record video conversations. Requires a single, transferrable license per PC.
			3. Substation Series IX-RS:
				1. Model IX-RS-W (White Handset Substation)
				2. Model IX-RS-B (Black Handset Substation)
			4. IP Programmable Relay Adaptor IXW-MA:
				1. 4 contact inputs and10 relay outputs.
			5. 2-Wire Network Adapter Model IX-1AS:
				1. One 2-wire input with 2 built-in contact outputs; door release and camera call-up. Powered via PoE, Compatible with Aiphone's LE and NE series audio door or substations for connection to Video Master Station Model IX-MV7 over a network.
			6. 2-Wire Network Adapter Model IX-10AS (Ten IX-1AS adaptors in a rack mounted enclosure):
				1. Ten 2-wire inputs with ten, 2 built-in contact outputs; door release and camera call-up. Powered via PoE, Compatible with Aiphone LE and NE series audio door or substations for connection to Video Master Station Model IX-MV7 over a network.

\*\* NOTE TO SPECIFIER \*\* Modular towers are not sold in sections, but by model number which is a complete tower; then add top portion, lettering and mounting kit. Refer to the manufacturer's Tower Design Guide for information. Delete if not required.

* + - 1. Emergency and Assistance Modular Towers: TW-Series.
				1. Modular tower design available in two configurations:

2-Module, mid-level tower.

3-Module, high-level tower.

\*\* NOTE TO SPECIFIER \*\* Available in blue with white lettering. Custom color and lettering choices are available on request.

* + - * 1. Color: Blue.
				2. Lettering Color: White. For assistance and emergency signage.
				3. Top Cover:

Light cage with blue beacon and strobe.

* + - * 1. UL Listed electrical box included in base module.
				2. Material: 1/4 inch (6.4 mm) zinc treated steel powder coated exterior.
				3. Camera arm module option with universal pipe threading (1-1/2 inch NPT Threading x 1 inch (25 mm) long).
				4. Elongated access panel on back of each module for easier installation and wiring.
				5. Mounting studs in both top and base modules for internal product (power supply, relay, etc.).
				6. Weather and vandal resistant.
				7. Mounting: L-brackets, anchor bolts to foundation meeting size requirements of manufacturer.
				8. Compatible with IX-Series emergency and assistance stations.
				9. Beacon / Strobe is always lit; flashes during emergency call-in (Requires 24 VDC).
				10. LED light for station illumination in middle module (Requires 24 VDC).
				11. Call button mounting height and signage meet ADA regulations.
				12. Compatibility: Use with IX-DVF-2RA, IX-DVF-RA, IX-SSA-2RA, and IX-SSA-RA emergency and assistance substations.
				13. Compatibility with Non-Emergency Call Stations when using the TW-SPL: IX-DVF and IX-SSA.
			1. 30 Degree Angle Box Model SBX-IXDV30:
				1. Designed for use with IX-DV video door station.
			2. Mullion Mounting Bracket Model IX-MB:
				1. Bracket designed for mullion mounting the IX-DV door station.
			3. Stainless Steel Security Lock Box Model LB-SDVFA.
				1. Lockable enclosure for IX-DVF and IX-SSA flush mount door stations.
			4. Stainless Steel Enclosure Model SBX-IDVF:
				1. 18-Gauge Stainless Steel Surface Mount Box for IX-SSA and IX-DVF.
				2. Size: 10-7/16 inches x 5-15/16 inches x 3-5/16 inches (top); 2-5/16 inches (bottom) (265 mm x 151 mm x 84 mm (top); 59 mm (bottom).
				3. Weather resistant.
				4. Vandal resistant.
				5. Inside space for cabling.
				6. Mounts to flat wall surface.
				7. Opening at bottom for drainage.
			5. Stainless Steel Enclosure Model SBX-IDVFRA:
				1. 18-Gauge Stainless Steel Surface Mount Box for IX-DVF-(2)RA, IX-SSA-(2)RA, IX-DVF-P, and IX-DVF-L.
				2. Size: 11-11/16 inches x 7 inches x 3-5/16 inches (top); 2-5/16 inches (bottom) (297 mm x 178 mm x 84 mm (top); 59 mm (bottom).
				3. Weather resistant.
				4. Vandal resistant.
				5. Inside space for cabling.
				6. Mounts to flat wall surface.
				7. Opening at bottom for drainage.
			6. Stainless Steel Enclosure Model SBX-2G/A
				1. 18-Gauge Stainless Steel Surface Mount Box for IX-SS-2G
				2. Size: 4-13/16 inches x 4-7/8 inches x 4 inches (top); 3-9/16 inch (bottom) (122 mm x 124 mm x 102 mm (top); 91 mm (bottom)).
				3. Weather resistant.
				4. Vandal resistant.
				5. Inside space for cabling.
				6. Mounts to flat wall surface.
				7. Opening at bottom for drainage.
		1. Wall Boxes:
			1. Product: WB-CA Stainless Steel Wall Mount Box with Blue Assistance Signage and a Light Cage.
				1. ADA (28 CFR Part 36 section 4.4.1) compliant.
				2. Lettering: Reflective lettering on both sides of box.
				3. Blue Beacon and Strobe: Mounted on top, enclosed in vandal resistant cage.
				4. Material: 12-gauge stainless steel.
				5. UL Listed electrical box included. 1-gang pattern internal mounting above UL box
				6. Surface Mounting: 4-inch (102 mm) depth, ADA compliant.
				7. Voltage: 24V DC.
				8. Current: 200 mA.
				9. Service: Vandal and weather resistant.
				10. Compatibility: IX-DVF-2RA, IX-DVF-RA, IX-SSA-2RA, and IX-SSA-RA emergency and assistance substations.
			2. Product: WB-CE Stainless Steel Wall Mount Box with Red Emergency Signage and a Light Cage.
				1. ADA (28 CFR Part 36 section 4.4.1) compliant.
				2. Lettering: Reflective lettering on both sides of box.
				3. Blue Beacon and Strobe: Mounted on top, enclosed in a vandal resistant cage.
				4. Material: 12-gauge stainless steel.
				5. UL Listed electrical box included. 1-gang pattern internal mounting above UL box
				6. Surface Mounting: 4 inch (102 mm) depth, ADA compliant.
				7. Voltage: 24V DC.
				8. Current: 200 mA.
				9. Service: Vandal and weather resistant.
				10. Compatibility: IX-DVF-2RA, IX-DVF-RA, IX-SSA-2RA, and IX-SSA-RA emergency and assistance substations.
			3. Product: WB-HA Stainless Steel Wall Mount Box with Blue Assistance Signage and a Hooded Light.
				1. ADA (28 CFR Part 36 section 4.4.1) compliant.
				2. Lettering: Reflective lettering on both sides of box.
				3. Blue Beacon and Strobe: Mounted on top, enclosed in a vandal resistant stainless-steel hood with clear polycarbonate lens.
				4. Material: 12-gauge stainless steel.
				5. UL Listed electrical box included. 1-gang pattern internal mounting above UL box
				6. Surface Mounting: 4-inch (102 mm) depth, ADA compliant.
				7. Voltage: 24V DC.
				8. Current: 200 mA.
				9. Service: Vandal and weather resistant.
				10. Compatibility: IX-DVF-2RA, IX-DVF-RA, IX-SSA-2RA, and IX-SSA-RA emergency and assistance substations.
			4. Product: WB-HE Stainless Steel Wall Mount Box with Red Emergency Signage and a Hooded Light.
				1. ADA (28 CFR Part 36 section 4.4.1) compliant.
				2. Lettering: Reflective lettering on both sides of box.
				3. Blue Beacon and Strobe: Mounted on top, enclosed in a vandal resistant stainless-steel hood with clear polycarbonate lens.
				4. Material: 12-gauge stainless steel.
				5. UL Listed electrical box included. 1-gang pattern internal mounting above UL box
				6. Surface Mounting: 4-inch (102 mm) depth, ADA compliant.
				7. Voltage: 24V DC.
				8. Current: 200 mA.
				9. Service: Vandal and weather resistant.
				10. Compatibility: IX-DVF-2RA, IX-DVF-RA, IX-SSA-2RA, and IX-SSA-RA emergency and assistance substations.
1. EXECUTION
	1. EXAMINATION
		1. Examine areas to receive integrated security and communication system.
		2. Notify Architect of conditions that would adversely affect installation or subsequent use.
		3. Do not begin installation until unacceptable conditions are corrected.
	2. PREPARATION
		1. Verify the following compliance before starting installation.
			1. The unit turns inoperative during power failure.
			2. Keep the intercom wires at least 1 foot (30 cm) away from strong electrical wiring (AC 100-240 V) including, in particular, wiring for inverter electrical appliances. Noise and malfunction could result.
			3. If a strong light shines on the main unit screen, the picture may turn white or only silhouettes will be visible.
			4. Other manufacturer's devices (such as sensor, detectors, door releases) used with this system, comply with the manufacturer's installation requirements.
			5. The LCD panel is manufactured with very high precision techniques, inevitably will have a very small portion of its picture elements always lit or not lit at all. This is not considered a unit malfunction. Please be aware of this in advance.
	3. INSTALLATION
		1. Install integrated security and communication system in accordance with manufacturer's instructions at locations indicated on the Drawings.
		2. Mount equipment plumb, level, square, and secure. For video entrance stations and video door stations, comply with manufacturer's design requirements to provide optimum picture quality of station monitoring.
	4. SET-UP AND ADJUSTING
		1. Adjust integrated security and communication system for proper operation in accordance with manufacturer's instructions.
	5. DEMONSTRATION AND TRAINING
		1. Demonstration:
			1. Demonstrate that integrated security and communication system functions properly.
			2. Perform demonstration at final system inspection by qualified representative of manufacturer.
		2. Instruction and Training:
			1. Provide instruction and training of Owner's personnel as required for operation of integrated security and communication system.
			2. Provide hands-on demonstration of operation of system components and complete system, including user-level program changes and functions.
			3. Provide instruction and training by qualified representative of manufacturer.
	6. PROTECTION
		1. Protect installed integrated security and communication system from damage during construction.

END OF SECTION