A&E Specification

O4T9 4MP IP Turret Camera with Advanced Analytics

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Division 28 Electronic Safety and Security

Section 28 00 00 Electronic Safety and Security

Section 28 20 00 Electronic Surveillance

Section 28 21 00 Surveillance Cameras

Section 28 21 13 IP Cameras

Notes to Security System Specifiers - This A&E specification is written according to Construction Specifications Institute (CSI) 3-Part Format, based on MasterFormat™ (2016 Edition) and The Project Resource Manual – CSI Manual of Practice. CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although adoption of MasterFormat 2016 is encouraged. All trademarks are properties of their respective owners.

Part 1 General

1.1. Summary of Requirements

A. O4T9 4MP IP Turret Camera with Advanced Analytics

1. The camera shall capture network IP video at up to 4MP (2592 x 1520) resolution at 30 fps, with audio, and deliver it over an Ethernet network for display, recording and distribution.
2. The camera shall be powered by built-in standard PoE (IEEE 802.3af) or 12VDC.
3. The camera shall be weather-resistant (IP67) and shall be supplied with a junction box.
4. The camera shall comply with NDAA Section 889 Part B guidelines.

B. Related Requirements

1. Section 28 05 00 Common Work Results for Electronic Safety and Security
2. Section 28 05 19.15 Network Video Recorders
3. Section 28 21 00 Surveillance Cameras
4. Section 28 21 13 IP Cameras
5. Section 28 23 00 Video Surveillance

1.2. References

A. Abbreviations

1. BLC Backlight Compensation
2. DDNS Dynamic Domain Name Server

3. DHCP Dynamic Host Configuration Protocol
4. DNR Digital Noise Reduction
5. DORI Detection, Observation, Recognition, Identification
6. DSCP Differentiated Services Code Point
7. FTP File Transfer Protocol
8. HLC Highlight Compensation
9. HTTP Hypertext Transfer Protocol
10. HTTPS Secure HTTP
11. IR Infrared
12. NTP Network Time Protocol
13. NVR Network Video Recorder
14. PoE Power over Ethernet
15. PPPoE Point-to-Point Protocol over Ethernet
16. QoS Quality of Service
17. ROI Region of Interest
18. RTSP Real-Time Streaming Protocol
19. SNMP Simple Network Management Protocol
20. SMTP Simple Mail Transfer Protocol
21. UDP User Datagram Protocol
22. UPnP Universal Plug and Play
23. VMS Video Management System
24. WDR Wide Dynamic Range

1.3. Certifications, Standards and Ratings

A. Reference Standards

1. Networking
   a. IEEE 802.3 Ethernet Standards
   b. IEEE 802.3af Power over Ethernet
   c. IEEE 802.1x Port-Based Network Access Control
   d. ONVIF Profiles G, M, S and T
2. Video
   a. ITU-T Recommendation H.264/H.265
3. Environmental
   a. IP67 ingress protection
4. Compliance
   a. NDAA Section 889 Part B

1.4. Submittals

A. Product Data

1. Provide manufacturer’s datasheets in printed or electronic form.
2. Provide manufacturer’s Installation and operating manuals/guides.
3. Provide manufacturer’s warranty statement.

1.5. Qualifications

A. Manufacturer

1. Company specializing in manufacturing products at least ten years experience.

B. Supplier

1. Authorized distributor of specified manufacturer with at least 5 years.

C. Installer

1. Authorized installer of specified manufacturer with at least 5 years experience.

1.6. Delivery, Storage and Handling

A. Delivery

1. Deliver materials in original, unopened and undamaged packaging in accordance with manufacturer's instructions.

B. Storage

1. Store and guard materials from environmental and temperature conditions in accordance with manufacturer's instructions.

C. Handling

1. Handle and operate products and systems in accordance with manufacturer's instructions.

1.7. Warranty

A. Warranty Period

1. Manufacturer shall warranty the camera for a period of 5 years for the repair or replacement of defective equipment.

1.8. Certifications

A. Certification Types

1. FCC
2. UL Listed
3. ONVIF Profiles G, M, S and T
4. NDAA Section 889 Part B compliant

1.9. Tech Support

A. Support

1. Technical support shall be based in North America.
2. Technical support shall be via email or toll-free phone number (1-800-645-5516).
3. Technical support shall be available weekdays from 6 a.m. to 6 p.m. EST.

Part 2 Product

2.1. Manufacturer

A. Manufacturer

1. Speco Technologies, 200 New Highway, Amityville, NY 11701
2. Tel. 1-800-645-5516, Fax. 1-631-957-3880
3. Web Site: www.specotech.com

B. Product

1. Model: O4T9

C. Product Description

1. A 4MP IP turret camera with a 2.8mm fixed lens, white housing, IR illumination and advanced analytics.

2.2. Product Description

A. General

1. All equipment and materials used shall be standard components, regularly manufactured, regularly utilized in the manufacturer's system.
2. All systems and components shall have been thoroughly tested and proven in actual use.
3. All systems and components shall be provided with the availability of a toll free technical support phone number from the manufacturer. The phone number shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.
4. All systems and components shall be provided with an explicit manufacturer warranty.

B. Description

1. Camera shall meet the requirements of business, government and general security surveillance applications, indoors and outdoors.
2. Camera shall use a 1/3" progressive scan CMOS image sensor with a maximum resolution of 2592 x 1520 (4MP).
3. Camera shall provide a 2.8mm fixed lens with a field of view of 95.3° horizontal, 53.2° vertical and 115° diagonal.
4. Camera shall provide a minimum illumination of 0.005 lux (AGC on) and 0 lux with the IR LEDs on.
5. Camera shall provide true day/night operation using an IR cut filter, with adaptive (Smart IR) LEDs to reduce IR saturation and an IR range of up to 100 ft., depending on scene reflection.
6. Camera shall provide true WDR (120dB), BLC and HLC compensation, 3D digital noise reduction, an electronic shutter speed of 1/3 to 1/100000 sec., and white balance modes of auto, indoor, outdoor and manual.
7. Camera shall employ H.265 and H.264 (high, main and baseline profiles) compression, and MJPEG, and shall support three simultaneous video streams.

8. Camera shall provide main stream resolutions of 2592x1520, 2560x1440, 2304x1296, 1920x1080 and 1280x720 at up to 30 fps; sub stream resolutions of 720P, D1 and CIF; and third stream resolutions of D1, CIF and 480x240.
9. Camera shall provide VBR and CBR bitrate control from 64 Kbps to 10 Mbps.
10. Camera shall provide video settings including region of interest, privacy masking, brightness, contrast, hue, saturation, denoise, antiflicker, day/night mode, infrared settings, exposure, gain, corridor pattern and image flip/mirror.
11. Camera shall support audio via a mono 3.5mm microphone input and a built-in microphone, using G.711A or G.711U encoding.
12. Camera shall provide a microSD card slot supporting cards of up to 256GB (card not included) for on-board recording and snapshot storage, with scheduled recording, pre-record and cycle writing.
13. Camera shall support smart analytics including motion detection, exception detection, line crossing, loitering, sound detection, region intrusion, object detection, vehicle/people detection, face detection, people/vehicle counting, region entrance, region exiting, region statistics and heat map and tampering detection. All listed analytics shall be capable of being triggered simultaneously, except face detection.
14. Camera shall provide alarm triggers of analytics and SD card error, and alarm events of FTP upload and email upload. Camera shall be capable of triggering alarm out, SD card snapshot, SD card recording, email and FTP on event.
15. Camera shall provide 1 alarm input and 1 alarm output.
16. Camera shall provide image settings including watermark, IP address filtering, video mask and password protection.
17. Camera shall provide an Ethernet port (10/100 Mbps) with built-in standard PoE (IEEE 802.3af), and shall alternatively be powered by 12VDC through a DC jack.
18. Camera shall support the following network protocols: UDP, IPv4, IPv6, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP, SNMP, 802.1x, UPnP, HTTP and HTTPS, as well as ONVIF, RTMP and QoS (DSCP).
19. Camera shall support Speco's free DDNS service.
20. Camera shall provide security features including user ID and password protection, IP/MAC address filtering and digest authentication. The camera shall prompt the user to change the default password on first login, and shall support configurable password strength levels, multiple users with configurable permissions, and lockout after repeated failed login attempts.
21. Camera shall support a maximum of 10 simultaneous users; the actual number of users may vary depending on bandwidth.
22. Camera shall support time zone selection, daylight saving time (DST) and time synchronization via NTP.
23. Camera shall be accessible via web browser (Google Chrome®, Edge®, Safari, Firefox®, and Internet Explorer® 8 and up), PC application (Speco Blue VMS and SecureGuard® CMS), and mobile devices (SecureGuard® Client and Speco Blue app on iOS® and Android™).
24. Camera shall be discoverable on the local network using the SecureGuard IP Scanner utility, and shall default to DHCP addressing.
25. Camera shall support configuration backup and restore, scheduled reboot, local firmware upgrade and an operation log.

26. Camera shall be integrated with CHeKT and Immix.
27. Camera shall be supplied with a junction box compatible with NPT/BSP specifications.
28. Camera shall be compatible with optional accessories JB3 junction box, PSW5 12VDC power supply, CMT1 corner mount, PMT1 pole mount, CLTX1 and CLTX2 ceiling mount extensions, WMT1 wall mount and CLT3 ceiling mount.

C. Electrical Specification

1. Power Input: PoE (IEEE 802.3af) or 12VDC (power supply not included)
2. Power Consumption: < 7W

D. Environmental Specification

1. Operating Temperature: -40° to 140°F (-40° to 60°C)
2. Operating Humidity: Less than 95% (non-condensing)
3. Ingress Protection: IP67

E. Physical Specification

1. Dimensions: 4.39” (diameter) x 3.92” (height)
2. Weight: 1.47 lb.
3. Housing: White

F. Mechanical Specification

1. Camera
   a. Image Sensor: Progressive scan 1/3” CMOS, 4MP
   b. Maximum Resolution: 2592 x 1520
   c. Lens: 2.8mm fixed
   d. Field of View: 95.3° (H), 53.2° (V), 115° (D)
   e. Minimum Illumination: 0.005 lux, AGC on; 0 lux, IR LED on
   f. Day/Night: Smart IR with IR cut filter; IR range up to 100 ft.
   g. White Balance: Auto, indoor, outdoor, manual
   h. Compensation: True WDR (120dB), BLC, HLC
   i. Electronic Shutter Speed: 1/3 to 1/100000 sec.
   j. DNR: 3D DNR
2. Video
   a. Compression: H.265, H.264 (HP/MP/BP), MJPEG
   b. Main Stream: 2592x1520 / 2560x1440 / 2304x1296 / 1920x1080 / 1280x720 at 30 fps
   c. Sub Stream: 720P / D1 / CIF
   d. Third Stream: D1 / CIF / 480x240
   e. Bitrate Control: VBR, CBR (64 Kbps to 10 Mbps)
   f. Multiple Streaming: 3 streams
3. Audio
   a. Codec: G.711A / G.711U
   b. Input: Mono 3.5mm + built-in microphone
   c. Output: None
4. Interfaces

a. Ethernet: 10/100 Mbps (PoE)
b. Power: DC jack
c. Card Slot: MicroSD, up to 256GB (card not included)
d. Alarm: 1-CH alarm input; 1-CH alarm output
e. Reset: Yes

5. Network
   a. Protocols: UDP, IPv4, IPv6, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP, SNMP, 802.1x, UPnP, HTTP, HTTPS
   b. DDNS Support: Speco DDNS (free of charge)
   c. Security: User ID and password protection, IP/MAC address filtering, digest authentication
   d. User Access: Maximum 10 simultaneous users
6. Analytics
   a. Types: Motion, exception, line crossing, loitering, sound detection, region intrusion, object detection, vehicle/people detection, face detection, people/vehicle counting, tampering detection
   b. Alarm Triggers: Analytics, SD card error
   c. Alarm Events: FTP upload, email upload
   d. Image Settings: Watermark, IP address filtering, video mask, password protection
7. Client
   a. Web Browser: Google Chrome®, Edge®, Safari, Firefox®, Internet Explorer® 8 and up
   b. PC Application: Speco Blue VMS, SecureGuard® CMS
   c. Mobile: SecureGuard® Client, Speco Blue (iOS® and Android™)
8. D.O.R.I.
   a. Detection (25 px/m): 199 ft. (60.7 m)
   b. Observation (63 px/m): 80 ft. (24.3 m)
   c. Recognition (125 px/m): 40 ft. (12.1 m)
   d. Identification (250 px/m): 20 ft. (6.1 m)

Part 3 Execution

3.1 Examination

A. Device shall be inspected for physical and cosmetic defects.

B. Package box shall include the camera, junction box, installation accessories bag, Quick Start Guide and user manual.

3.2 Preparation

A. ESD-sensitive parts shall be properly protected against static buildup through the use of static shielding material.

B. Package box shall contain adequate padding to prevent damage to device and parts during shipping.

3.3 Installation

A. Device shall be installed in accordance with the manufacturer’s installation guide provided.

B. Device shall be installed by qualified service professionals.

C. Device shall be installed in accordance with the National Electric Code or applicable local codes.

D. Device shall be installed in locations which adequately support the device's environmental and electrical requirements.

E. When powered by 12VDC, a certified/listed Class 2 power supply shall be used, and PoE and 12VDC power shall not be connected at the same time.

F. Device shall be installed on a stable surface and grounded, and all weatherproofing hardware shall be used to minimize weather intrusion.

3.4 Field Quality Control

A. Test for proper communication between device and supporting devices.

B. Test for proper operation of device's system software and related software programs.

C. Determine and report all problems to the manufacturer's customer service representatives.

3.5 Adjusting

A. Make all necessary adjustments to the device and supporting devices to ensure the proper operation of the device.

B. Make all necessary adjustments to the devices to satisfy end-user requirements.

3.6 Demonstration and Training

A. Perform final inspection to validate and ensure proper functioning of device.