

Hanwha Techwin is a global leading supplier of solutions for IP and analog video surveillance. Building on the company's history of innovation, Hanwha Techwin is dedicated to providing systems solutions with the highest levels of performance, reliability and cost-effectiveness. Hanwha Techwin is committed to the continued development of innovative systems products for professional security applications.

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**Network I/O Box**

**DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

**Notes to Specifier:**

1. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **<bold text>.**

2. Explanatory notes and comments are presented in **colored** text.

**Important: See further notes on the following page.**

**Important Note to Security Systems Specifiers**

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. The following is a guide to the MasterFormat numbers relevant to the product referenced in this specification.

**Primary Specification Area:**

MasterFormat 2014:

28 20 00 Electronic Surveillance

28 23 00 Video Surveillance

28 23 29 Video Surveillance Remote Devices and Sensors

MasterFormat 2016:

28 20 00 Video Surveillance

28 2x xx Surveillance Cameras

28 2x xx IP Cameras

**Related Requirements:**

MasterFormat 2014:

27 20 00 Data Communications

28 23 13 Video Surveillance Control and Management Systems

28 23 16 Video Surveillance Monitoring and Supervisory Interfaces

28 23 19 Digital Video Recorders and Analog Recording Devices

28 23 23 Video Surveillance Systems Infrastructure

MasterFormat 2016

27 15 01.xx Video Surveillance Communications Conductors and Cables

27 20 00 Data Communications

28 05 xx.xx PoE Power Sources for Electronic Safety and Security

28 05 xx Storage Appliances for Electronic Safety and Security

28 05 xx.xx Network Video Recorders

28 05 xx Cyber Requirements for Electronic Safety and Security

28 05 xx Safety and Security Network Communications Equipment

28 2x 00 Video Management System

**NETWORK I/O BOX**

1. **GENERAL**
   1. **SUMMARY**
      1. Section includes a Network I/O Box
      2. Product - A Network I/O box with 4 configurable I/O ports and Audio in/out ports

## Related Requirements

**Refer to MasterFormat notes at the beginning of this document to select requirements specific to the MasterFormat version being used in the specification.**

* 1. **REFERENCES**
     1. Abbreviations
        1. AGC Auto Gain Control
        2. AES Advanced Encryption Standard
        3. API Application Programming Interface
        4. ARP Address Resolution Protocol
        5. AWB Auto White Balance
        6. BLC Back light compensation
        7. CBR Constant Bit Rate
        8. CVBS Composite Video Blanking and Sync
        9. DHCP Dynamic Host Configuration Protocol
        10. DNR Digital Noise Reduction
        11. DNS Domain Name Server
        12. DDNS Dynamic Domain Name Server
        13. DSCP Differentiated Services Code Point
        14. fps frames per second
        15. FTP File Transfer Protocol
        16. GOV Group of Video
        17. GUI Graphical User Interface
        18. HD High Definition
        19. HTTP Hypertext Transfer Protocol
        20. HTTPS Secure HTTP
        21. ICMP Internet Control Message Protocol
        22. IGMP Internet Group Management Protocol
        23. IP Internet Protocol
        24. IR Infrared
        25. JPEG Joint Photographic Experts Group
        26. LAN Local Area Network
        27. LED Light Emitting Diode
        28. LDC Lens Distortion Correction
        29. LLDP Link Layer Discovery Protocol
        30. LPR License Plate Recognition
        31. MJPEG Motion JPEG
        32. MP Megapixel
        33. MPEG Moving Pictures Experts Group
        34. NAS Network Attached Storage
        35. NTP Network Time Protocol
        36. NVR Network Video Recorder
        37. PIM-SM Protocol Independent Multicast-Sparse Mode
        38. PoE Power over Ethernet
        39. PPPoE Point to Point Protocol over Ethernet
        40. QoS Quality of Service
        41. RTP Real-Time Transport Protocol
        42. RTCP Real-Time Control Protocol
        43. RTSP Real-Time Streaming Protocol
        44. SDK Software Development Kit
        45. SFP Small Form factor Pluggable
        46. SMTP Simple Mail Transfer Protocol
        47. SNMP Simple Network Management Protocol
        48. SSDR Super Smart Dynamic Range
        49. SSNR Super Smart Noise Reduction
        50. SSL Secure Sockets Layer
        51. TCP Transmission Control Protocol
        52. UDP User Datagram Protocol
        53. UPnP Universal Plug and Play
        54. VBR Variable Bit Rate
        55. VMS Video Management System
        56. WDR Wide Dynamic Range
     2. Reference Standards
        1. Network - IEEE
           1. 802.3 Ethernet Standards
           2. 802.1x Port-based Network Access Control
           3. IPv4 IP addressing version 4
           4. IPv6 IP addressing version 6
        2. EMC & Safety
           1. FCC 47 CFR Part 15 Subpart B

ANSI C63.4-2014 Class A

* + - * 1. IC Regulation ICES-003:2016

ANSI C63.4-2014 Class A

* + - * 1. CE EMC-Directive 2014/30/EU

EN 55032:2012/ac:2013 Class A

EN 50130-4:2011+A1:2014

* + - * 1. VCCI-CISPR 32: Class A
        2. AS/NZS CISPR32:2015 Class A
        3. UL 62368-1, 2nd Ed., Issue Date: 2014-12-01
  1. **SUBMITTALS**
     1. Product Data
        1. Manufacturer’s printed or electronic data sheets
        2. Manufacturer’s installation and operation manuals
        3. Warranty documentation
  2. **QUALIFICATIONS**
     1. Manufacturer shall have a minimum of five years’ experience in producing IP video equipment.
     2. Installers shall be trained and authorized by the Manufacturer to install, integrate.
  3. **DELIVERY, STORAGE AND HANDLING**
     1. Deliver the camera in the manufacturer’s original, unopened, undamaged container with identification labels intact.
     2. Store the camera in a temperature environment specified in section 2.04 Detailed Specification, protected from mechanical and environmental conditions as designated by the manufacturer.
  4. **WARRANTY, LICENSING AND SUPPORT**
     1. Manufacturer shall provide at least a limited 3 year warranty for the product to be free of defects in material and workmanship.
     2. Manufacturer shall provide embedded camera video analytics free of license charges.

END OF SECTION

1. **PRODUCTS**
   1. **EQUIPMENT**
      1. Manufacturer: Hanwha Techwin

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* + 1. Model SPM-4210
    2. Alternates: None
  1. **GENERAL DESCRIPTION**
     1. Configurable Input/Output Control – The device shall have the following properties relating to the input/output signal control
        1. The device shall have 4 configurable input/output ports
           1. 4 ports shall be able to configured as input or output signal
           2. Each ports shall be able to configured as normal open and normal close
           3. 12V DC output, max load 50mA will be supported
        2. The device shall have 1 audio input and 1 audio output ports
        3. The device shall have 1 RJ45 network port
     2. The device shall possess the following further characteristics:
        1. Built-in web server, accessed via non-plugin browsers including Google Chrome, IE11, MS Edge, Mozilla Firefox and Apple Safari.
        2. PoE capable
  2. **DEVICE SOFTWARE**
     1. The device shall have a built in web server which supports non-plugin browsers including Google Chrome, IE11, MS Edge, Mozilla Firefox and Apple Safari from a PC or Mac.
     2. The web viewer shall provide a web user interface to access to the following functions:
        1. Input/Output port configuration
        2. Audio In/Out setting
        3. Date and time
        4. Network settings and IP version
           1. IP filtering
           2. SSL, including certificate management
           3. 802.1x authentication
           4. Auto IP configuration
     3. Client requirements
        1. Acceptable Operating Systems: Windows 7 / 8.1 / 10, MAC OS X 10.12, 10.13, 10.14
        2. Acceptable browsers:
           1. Non-plugin WebViewer Google Chrome, IE11, MS Edge,

Mozilla Firefox (Window 64bit only), Safari (Mac OS X only)

* 1. **DETAILED SPECIFICATIONS**
     1. Operational Functions (Alarms available when the device is connected to Wisenet PTZ Plus cameras)
        1. Alarm I/O Configurable Input / Output 4ea
        2. Alarm Triggers Alarm input
        3. Audio I/O Audio in : Selectable (mic in/line in)

Audio out : Line out, Max. Output level : 1Vrms

* + - 1. Internal Memory 4G RAM, 256MB Flash
    1. Network
       1. Connectivity – 10/100 Base-T Ethernet via RJ-45 connector
       2. Protocol
          1. IP v4 / v6, TCP, UDP
          2. Configuration: DHCP, LLDP
          3. Web service: HTTP, HTTPS
          4. Network Service: ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMP v1/2c/3 – MIB-2, UPnP
          5. Media: RTP, RTCP, RTSP
          6. Remote Access: PPPoE
       3. Security Feature
          1. User password protection
          2. The device shall not provide a manufacture default password. Default password change shall be required to access the camera.
          3. A minimal level of password complexity shall be required by the camera.
          4. The camera shall not have a manufacture back-door password.
          5. The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
          6. IP address filtering – List of allowed or blocked IP addresses
          7. HTTPS(SSL) login authentication
          8. HTTPS(SSL) secured communication
          9. Digest login authentication
          10. User access log
       4. Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
       5. Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
       6. Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
    2. Electrical
       1. Power
          1. Input Voltage / Current PoE (IEEE 802.3af, Class3)
          2. Power Consumption PoE : Max. 4.5W
    3. Mechanical And Environmental
       1. Color White
       2. Dimensions 143mm x 73mm x 27.3mm
       3. Weight 171 g
       4. Temperature
          1. Operating -40°C ~ +60°C (-40°F ~ +140°F)
          2. Storage -50°C ~ +60°C (-58°F ~ +140°F)
       5. Humidity Less than 90% RH(Non-condensing)

END OF SECTION

1. **EXECUTION**
   1. **INSTALLERS**

Contractor personnel shall comply with all applicable state and local licensing requirements.

* 1. **PREPARATION**

The network design and configuration shall be verified for compatibility and performance with the camera(s).

Network configuration shall be tested and qualified by the Contractor prior to camera installation.

All firmware found in products shall be the latest and the most up-to-date provided by the manufacturer, or of a version as specified by the provider of the VMS or NVR.

All equipment requiring users to log on using a password shall be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.

* 1. **INSTALLATION**

The contractor shall carefully follow instructions in documentation provided by the manufacturer to insure all steps have been taken to provide a reliable, easy-to-operate system.

All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.

Before permanent installation of the system, the contractor shall test the system in conditions simulating the final installed environment.

* 1. **STORAGE**

The hardware shall be stored in an environment where temperature and humidity are in the range specified by the manufacturer.

END OF SECTION