**Product Guide Specification**

Specifier Notes:  This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, based on *MasterFormat 2016* and *The Project Resource Manual—CSI Manual of Practice. The Manufacturer is responsible for technical accuracy.*

The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code.  Words and sentences within brackets [ ] are choices to include or exclude a particular item or statement.  Coordinate this section with other specification sections and the Drawings.  Delete all "Specifier Notes" after editing this section.

**Electronic Safety and Security**
**Common Work Results for Electronic Safety and Security**
**Network Video Recorders**

**PART 1 – GENERAL**

1.1     SUMMARY

    A.    Section Includes
        1.    Storage Area Network Electronic Safety and Security
        2.    Cloud Based Storage for Electronic Safety and Security
        3.    Storage Management Software for Electronic Safety and Security
        4.    Communications Equipment for Electronic Safety and Security

    B.    Related Sections
        1.    [Security Detection, Alarm and Monitoring – Security Monitoring and Control – Security Monitoring and Control Software].

**********Specifier's note: Include those standards referenced elsewhere in this SECTION.

1.2     REFERENCES

| STANDARD | FCC: 47 CFR FCC Part15, SubpartB, Class A<br>CE-EMC: EN 55032:2015+A1:2020; EN IEC 61000-3-2:2019+A1:2021; EN 61000-3-3:2013+A1:2019+A2:2021; EN 55035:2017+A11:2020; EN 50130-4:2011+A1:2014<br>CE-LVD: EN 62368-1:2014 |
|---|---|

1.3     SYSTEM DESCRIPTION

    A.    Section Includes
        1.

1.4     SUBMITTALS

    A.  Product Data:
        1.  Manufacturer's data, user and installation manuals for all equipment and software programs including computer equipment and other equipment required for complete video management system.
    B.  Dimensional Drawings; include
        1.  Overall device dimensions.
        2.  Dimensions specific for installation.

    C.  Closeout Submittals
        1.  User manual.
        2.  Parts list.
        3.  Maintenance requirements.

1.5     QUALITY ASSURANCE

    A.  Manufacturer:
        1.  Minimum of [10] years of experience in manufacture and design Video Surveillance Devices.
    B.  Video Surveillance System:
        1.  List certifying bodies (FCC,CE, etc.)
        2.  Provide evidence of compliance upon request.
    C.  Installer:
        1.  Minimum of [5] years of experience installing Video Surveillance System.

1.6     DELIVERY, STORAGE AND HANDLING

    A.  Comply with requirements.
    B.  Deliver materials in manufacture's original, unopened, undamaged containers; and unharmed original identification labels.
    C.  Protect store materials from environmental and temperature conditions following manufacturer's instructions.
    D.  Handle and operate products and systems according to manufacturer's instructions.

1.7     WARRANTY

    A.  Provide manufacturer's warranty covering [3] years for replacement and repair of defective equipment. Warranty varies country to country.

1.8     MAINTENANCE

    A.  Make ordering of new equipment for expansions, replacements, and spare parts available to dealers and end users.

    B.  Provide factory direct technical support via phone and e-mail.

## PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:
Zhejiang Dahua Vision Technology Co., Ltd.
Address: No.1199 Bin'an Road, Binjiang District, Hangzhou, China
Tel: +86-571-87688883
Fax: +86-571-87688815
Email:overseas@dahuasecurity.com

B. Substitutions:
1. [All proposed substitutions must be approved by the Architect or Engineer professional.]
2. [Proposed substitutions must provide a line-by-line compliance documentation.]

2.2 NETWORK VIDEO RECORDER | DHI-NVR5216-EI

| System | Main Processor | Industrial-grade processor |
|---|---|---|
| System | Operating System | Embedded Linux |
| System | Operating Interface | Web, Local GUI |
| AI | AI by Recorder | Face detection; face recognition; perimeter protection; SMD Plus |
| AI | AI by Camera | Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); perimeter protection; SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map |
| Perimeter Protection | Perimeter Performance AI by Recorder (Number of Channels) | 4 channels, 10 IVS rules for each channel |
| Perimeter Protection | Perimeter Performance of AI by Camera (Number of Channels) | 16 channels |
| Face Detection | Face Attributes | Gender; age group; glasses; expressions; face mask; beard |
| Face Detection | Face Detection Performance of AI by Recorder (Number of Channels) | 2 channels (up to 12 face images/s each channel) |
| Face Detection | Face Detection Performance of AI by Camera (Number of Channels) | 16 channels |
| Face | Face Database | Up to 20 face databases with 20,000 images, |

| Recognition | Capacity | with a total capacity of 2.5 G. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image. |
|---|---|---|
| Face Recognition | Face Recognition Performance of AI by Recorder (Number of Channels) | 1. 16-channel FD (by camera) + FR (by recorder), image stream: 16 face images/s 2. 2-channe FD (by recorder) + FR (by recorder), video stream: 12 face images/s |
| Face Recognition | Face Recognition Performance of AI by Camera (Number of Channels) | 16 channels |
| SMD Plus | SMD Plus by Recorder | 8 channels: Secondary filtering for human and motor vehicle , reducing false alarms caused by leaves, rain and lighting condition change |
| SMD Plus | SMD Plus by Camera | 16 channels |
| Video Metadata | Metadata Performance of AI by Camera (Number of Channels) | 8 channels |
| Video Metadata | Motor Vehicle Attributes | License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle interior, vehicle registration location. |
| Video Metadata | Non-motor Vehicle Attributes | Vehicle model, vehicle color, number of persons, helmet. |
| Vehicle License Plate Comparison | ANPR by Camera (Number of Channels) | 8 channels |
| Vehicle License Plate Comparison | License Plate Database Capacity | 1. Create up to 20,000 plate numbers. 2. Blocklist and allowlist |
| Audio and Video | Access Channel | 16 |
| Audio and Video | Network Bandwidth | AI disabled: 384 Mbps incoming, 384 Mbps recording and 384 Mbps outgoing AI enabled: 200 Mbps incoming, 200 Mbps recording and 200 Mbps outgoing |
| Audio and Video | Resolution | 32 MP; 24 MP; 16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 1080p; 720p; D1; CIF; QCIF |
| Audio and Video | Decoding Capability | AI disabled: 2-channel 32 MP@20 fps; 2-channel 24 MP@20 fps; 4-channel 16 MP@30 fps; 5-channel 12 MP@30 fps;8-channel 8 MP@30 fps; 12-channel 5 MP@30 fps;16-channel 4 MP@30 fps AI enabled: 1-channel |

| | | 32 MP@20 fps; 1-channel 24 MP@20 fps; 2-channel 16 MP@30 fps; 4-channel 12 MP@30 fps;4-channel 8 MP@30 fps; 8-channel 5 MP@30 fps; 12-channel 4 MP@30 fps |
|---|---|---|
| Audio and Video | Video Output | 1-channel VGA, 1-channel HDMI video output. Heterogeneous video source output for HDMI and VGA Supports 4K display |
| Audio and Video | Multi-screen Display | Main screen: 1/4/8/9/16 Sub screen: 1/4/8/9/16 |
| Audio and Video | Third-party Camera Access | ONVIF; Panasonic; Sony; Axis; Arecont; Pelco; Canon; Samsung |
| Compression Standard | Video Compression | Smart H.265+; H.265; Smart H.264+; H.264; MJPEG |
| Compression Standard | Audio Compression | G.711a; G.711u; PCM; G726 |
| Network | Network Protocol | HTTP; HTTPS; TCP/IP; IPv4/IPv6; RTSP; UDP; SNMP; NTP; DHCP; DNS; SMTP; UPnP; IP Filter; PPPoE; FTP; DDNS; Alarm Server; IP Search (Supports Dahua IP camera, DVR, NVS, etc.); Multicast; P2P; Auto Registration |
| Network | Mobile Phone Access | iOS; Android |
| Network | Interoperability | ONVIF 21.12(Profile T; Profile S; Profile G); CGI; SDK |
| Network | Browser | Chrome IE 9 or later Firefox |
| Recording Playback | Multi-channel Playback | Up to 16 channels |
| Recording Playback | Record Mode | General, motion detection; intelligent; alarm; POS |
| Recording Playback | Backup Method | USB device and network |
| Recording Playback | Playback Mode | Instant playback, general playback, event playback, tag playback, smart playback (face and motion detection) |
| Storage | Disk Group | Yes |
| Alarm | General Alarm | Motion detection; privacy masking; local alarm |
| Alarm | Anomaly Alarm | Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan; cybersecurity exception |
| Alarm | Intelligent Alarm | Face detection; perimeter protection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map |
| Alarm | Alarm Linkage | Record; snapshot (panoramic); local alarm |

| | | output; IPC external alarm output; access controller; audio; buzzer; log, preset; email |
|---|---|---|
| Port | Audio Input | 1-channel RCA |
| Port | Audio Output | 1-channel RCA |
| Port | Alarm Input | 4 channels |
| Port | Alarm Output | 2 channels |
| Port | HDD Interface | 2 SATA ports, up to 16 TB. The maximum HDD capacity varies with environment temperature. |
| Port | RS-232 | 1 |
| Port | RS-485 | 1 |
| Port | USB | 2 (1 front USB 2.0 port, 1 rear USB 3.0 port) |
| Port | HDMI | 1 |
| Port | VGA | 1 |
| Port | Network Port | 1(10/100/1000 Mbps Ethernet port, RJ-45) |
| General | Power Supply | 12 VDC, 4 A |
| General | Power Consumption | Total output of NVR is ≤ 10 W (without HDD) |
| General | Net Weight | 1.57 kg (3.46 lb) |
| General | Gross Weight | 2.73 kg (6.02 lb) |
| General | Product Dimensions | 375.0 mm × 284.4 mm x 56.0mm (14.76" × 11.20" × 2.20") (W × D × H) |
| General | Packaging Dimensions | 433.0 mm × 141.0 mm × 366.0 mm (17.04" × 5.55" × 14.41") (W × D × H) |
| General | Operating Temperature | –10 °C to +55 °C (14 °F to +131 °F) |
| General | Storage Temperature | –20 °C to +60 °C (–4 °F to +140 °F) |
| General | Operating Humidity | 10%–93% (RH) |
| General | Installation | Rack or desktop |

## PART 3 – EXECUTION

### 3.1 EXAMINATION

A. Examine areas to receive devices and notify adverse conditions affecting installation or subsequent operation.

B. Do not begin installation until unacceptable conditions are corrected.

### 3.2 PREPARATION

A. Protect devices from damage during construction.

### 3.3 INSTALLATION

A. Install devices in accordance with manufacturer's instruction at locations indicated on the floor drawings plans.

B. Perform installation with qualified service personnel.

C. Install devices in accordance with the National Electrical Code or applicable local codes.

D. Ensure selected location is secure and offers protection from accidental damage.

E. Location must provide reasonable temperature and humidity conditions, free from sources of electrical and electromagnetic interference.

### 3.4 FIELD QUALITY CONTROL

A. Test snugness of mounting screws of all installed equipment.

B. Test proper operation of all video system devices.

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

### 3.5 ADJUSTING

A. Make proper adjustment to video system devices for correct operation in accordance with manufacturer's instructions.

B. Make any adjustment of camera settings to comply with specific customer's need.

### 3.6 DEMOSTRATION

A. Demonstrate at final inspection that video management system and devices functions properly.

END OF SECTION