

## 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 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 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 manufacturer'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-NVR5432-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-channel 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	32
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; 32-channel 1080p@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; 24-channel 1080p@30 fps
Audio and Video	Video Output	2-channel VGA, 2-channel HDMI video output. Heterogeneous video source output for HDMI1 and HDMI2 Simultaneous video source output for VGA1 and HDMI1 Simultaneous video source output for VGA2 and HDMI2 Supports 4K display
Audio and Video	Multi-screen Display	Main screen: 1/4/8/9/16/25/36 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
Network	Network Mode	Multi-address mode, load balance, fault tolerance and other network port binding modes
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	2-channel RCA
Port	Alarm Input	16 channels
Port	Alarm Output	6 channels (1-channel 12 V 1 A output)
Port	HDD Interface	4 SATA ports, up to 16 TB. The maximum HDD capacity varies with environment temperature.
Port	eSATA	1
Port	RS-232	1
Port	RS-485	1 (half-duplex serial communication)
Port	USB	3(1 front USB 2.0 port, 2 rear USB 3.0 ports)
Port	HDMI	2
Port	VGA	2
Port	Network Port	2 (10/100/1000 Mbps Ethernet port, RJ-45)
General	Power Supply	100–240 VAC, 50-60 Hz
General	Power Consumption	Total output of NVR is $\leq 13$ W (without HDD)
General	Net Weight	4.74 kg (10.45 lb)
General	Gross Weight	6.11 kg (13.47 lb)
General	Product Dimensions	440.0 mm $\times$ 415.1 mm $\times$ 70.0 mm (17.32" $\times$ 16.34" $\times$ 2.76") (W $\times$ D $\times$ H)
General	Packaging Dimensions	530.0 mm $\times$ 500.0 mm $\times$ 210.0 mm (20.87" $\times$ 19.69" $\times$ 8.27")(W $\times$ D $\times$ 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 DEMONSTRATION**

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

**END OF SECTION**