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**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**

1. **– GENERAL**
	1. SUMMARY
		1. 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
		2. 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. REFERENCES

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| STANDARD | FCC: 47 CFR FCC Part15, SubpartB, Class ACE-EMC: EN 55032:2015, Class A; EN IEC 61000-3-2:2019; EN 61000-3-3:2013+A1:2019; EN 55024:2010+A1:2015; EN 55035:2017; EN 50130-4:2011+A1:2014CE-LVD: EN 62368-1:2014+A11:2017 |

* 1. SYSTEM DESCRIPTION
		1. Section Includes
	2. SUBMITTALS

* + 1. 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.
		2. Dimensional Drawings; include
			1. Overall device dimensions.
			2. Dimensions specific for installation.
		3. Closeout Submittals
			1. User manual.
			2. Parts list.
			3. Maintenance requirements.
	1. QUALITY ASSURANCE
		1. Manufacturer:
			1. Minimum of [10] years of experience in manufacture and design Video Surveillance Devices.
		2. Video Surveillance System:
			1. List certifying bodies (FCC,CE, etc.)
			2. Provide evidence of compliance upon request.
		3. Installer:
			1. Minimum of [5] years of experience installing Video Surveillance System.
	2. DELIVERY, STORAGE AND HANDLING
		1. Comply with requirements.
		2. Deliver materials in manufacture’s original, unopened, undamaged containers; and unharmed original identification labels.
		3. Protect store materials from environmental and temperature conditions following manufacturer’s instructions.
		4. Handle and operate products and systems according to manufacturer’s instructions.
	3. WARRANTY
		1. Provide manufacturer’s warranty covering [3] years for replacement and repair of defective equipment. Warranty varies country to country.
	4. MAINTENANCE
		1. Make ordering of new equipment for expansions, replacements, and spare parts available to dealers and end users.
		2. Provide factory direct technical support via phone and e-mail.
1. **– PRODUCTS**
	1. MANUFACTURERS
		1. 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

* + 1. 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.]
	1. NETWORK VIDEO RECORDER | DHI-NVR2104-I2

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| --- | --- | --- |
| System | Main Processor | Industrial-grade embedded microcontroller |
| System | Operating System | Embedded Linux OS |
| System | Operating Interface | Web; Local GUI |
| AI | AI by Recorder | Face detection, face recognition, perimeter protection, and SMD Plus (AI by Recorder); |
| AI | AI by Camera | Face detection; face recognition; perimeter protection; SMD |
| Perimeter Protection | Perimeter Performance of AI by Camera (Number of Channels) | 4 |
| Face Detection | Face Attributes | 6 attributes: Gender, age group (6), glasses, expressions (8), masks and beard |
| Face Detection | Face Detection Performance of AI by Recorder (Number of Channels) | 1 (up to 12 faces per second for each channel at the same time) |
| Face Detection | Face Detection Performance of AI by Camera (Number of Channels) | 4 |
| Face Recognition | Face Database Capacity | Up to 10 face databases with 5,000 images. Total capacity: 640 M |
| Face Recognition | Face Recognition Performance of AI by Recorder (Number of Channels) | 1 (compare(s) up to 4 faces per second at the same time) |
| Face Recognition | Face Recognition Performance of AI by Camera (Number of Channels) | 4 |
| Audio and Video | Access Channel | 4 channel |
| Audio and Video | Network Bandwidth | 80 Mbps for access, 80 Mbps for storage and 60 Mbps for forwarding |
| Audio and Video | Resolution | 12M/8M/5M/4M/3MP/2M/720P/D1 |
| Audio and Video | Decoding Capability | AI off: 1ch@12MP@30fps/1ch@8MP@30fps/2ch@5MP@30fps/3ch@4MP@30fps/6ch@1080p@30fps；AI on: 1ch@8MP@30fps/1ch@5MP@30fps/2ch@4MP@30fps/4ch@1080p@30fps |
| Audio and Video | Video Output | 1 × VGA, 1 × HDMI (support simultaneous video sources output for VGA and HDMI) |
| Audio and Video | Multi-screen Display | 1, 4 views |
| Audio and Video | Third-party Camera Access | ONVIF; RTSP |
| Compression Standard | Video Compression | Smart H.265+/Smart H.264+/H.265/H.264/MJPEG |
| Compression Standard | Audio Compression | PCM; G711A; G711U; G726 |
| Network | Network Protocol | HTTP; HTTPS; TCP; IP; IPv4; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; IP Filter; DDNS; Alarm Server; IP Search (Support Dahua IP camera, DVR, NVS, etc.); P2P; Auto Registration |
| Network | Mobile Phone Access | Android; iOS |
| Network | Interoperability | ONVIF (Profile T/S/G); CGI; SDK |
| Network | Browser | Chrome; IE9 and later; Firefox |
| Recording Playback | Multi-channel Playback | Up to 4 channels |
| Recording Playback | Record Mode | Manual record; alarm recordings; motion detection recordings; scheduled recordings |
| Recording Playback | Backup Method | USB storage device |
| Alarm | General Alarm | Motion detection, privacy masking, video loss, PIR alarm, IPC external alarm |
| Alarm | Anomaly Alarm | Camera disconnection, storage error, disk full, IP conflict, MAC conflict, login locked, and cyber security exception |
| Alarm | Intelligent Alarm | Face detection and recognition, perimeter protection (intrusion and tripwire), IVS, and SMD alarms |
| Alarm | Alarm Linkage | Recording, snapshot, buzzer, log, preset, email, and tour |
| Port | Audio Input | 1 × RCA input |
| Port | Audio Output | 1 × RCA output |
| Port | HDD Interface | 1 SATA II ports, up to 10 TB for a single HDD. The maximum HDD capacity varies with environment temperature. Supports hot swapping |
| Port | USB | 2 rear USB 2.0 ports |
| Port | HDMI | 1 (supports up to 4K resolution output) |
| Port | VGA | 1 |
| Port | Network Port | 1 × RJ-45, 10/100 Mbps |
| General | Power Supply | 12 V DC, 1.5 A |
| General | Power Consumption | ≤ 10 W (HDD not included and idling) |
| General | Net Weight | 0.45 kg (0.99 lb) |
| General | Gross Weight | 1.07 kg (2.36 lb) |
| General | Product Dimensions | 204.6 mm × 206.4 mm × 48.1 mm (8.06" × 8.13" × 1.89") (W × L × H) |
| General | Packaging Dimensions | 96 mm × 364 mm × 261 mm (3.78" × 14.33" × 10.28") (W × L × H) |
| General | Operating Temperature | –10 °C to +55 °C (14 °F to +131 °F) |
| General | Storage Temperature | 0 °C to +40 °C (–32 °F to +104 °F) |
| General | Operating Humidity | 10%–93% (RH)  |
| General | Installation | Desktop |

1. **– EXECUTION**
	1. EXAMINATION
		1. Examine areas to receive devices and notify adverse conditions affecting installation or subsequent operation.
		2. Do not begin installation until unacceptable conditions are corrected.
	2. PREPARATION
		1. Protect devices from damage during construction.
	3. INSTALLATION
		1. Install devices in accordance with manufacturer’s instruction at locations indicated on the floor drawings plans.
		2. Perform installation with qualified service personnel.
		3. Install devices in accordance with the National Electrical Code or applicable local codes.
		4. Ensure selected location is secure and offers protection from accidental damage.
		5. Location must provide reasonable temperature and humidity conditions, free from sources of electrical and electromagnetic interference.
	4. FIELD QUALITY CONTROL
		1. Test snugness of mounting screws of all installed equipment.
		2. Test proper operation of all video system devices.
		3. Determine and report all problems to the manufacturer’s customer service department.
	5. ADJUSTING
		1. Make proper adjustment to video system devices for correct operation in accordance with manufacturer’s instructions.
		2. Make any adjustment of camera settings to comply with specific customer’s need.
	6. DEMOSTRATION
		1. Demonstrate at final inspection that video management system and devices functions properly.

END OF SECTION