October 2018

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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.

**Section 28 00 00: Electronic Safety and Security**

**Section 28 05 00: Common Work Results For Electronic Safety and Security**

**Section 28 05 19.15: Network Video Recorders**

**4-CHANNEL 4K COMPACT 1U WIFI NETWORK VIDEO RECORDER**

1. **– GENERAL**
	1. SUMMARY
		1. Section Includes
			1. Section 28 05 23: Storage Area Network Electronic Safety and Security
			2. Section 28 05 25: Cloud Based Storage for Electronic Safety and Security
			3. Section 28 05 29: Storage Management Software for Electronic Safety and Security
			4. Section 28 05 31: Communications Equipment for Electronic Safety and Security
		2. Related Sections
			1. [Section 28 33 15: 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
		1. Federal Communications Commission (FCC) ([www.fcc.gov](http://www.fcc.gov))
		2. Underwriters Laboratories, Inc. (UL) (www.ul.com)
	2. SYSTEM DESCRIPTION
		1. Section Includes
			1. WiFi Network Video Recorders
		2. Performance Requirements
			1. The WiFi NVR shall be a dual-core embedded processer with Embedded Linux operating system to record video from WiFi-enabled cameras.
			2. The WiFi NVR shall be capable of storing up to 6 TB of data from four (4) IP video cameras with up to 8 MP resolution.
			3. The WiFi NVR shall use the Smart H.265+ and Smart H.264+ video compression protocols.
			4. The WiFi NVR shall have a maximum incoming bandwidth of
				1. 80 Mbps for wired connections.
				2. 24 Mbps for wireless connections.
			5. The WiFi NVR shall support IEEE 802.11b/g/n 2.4 GHz wireless protocols.
			6. The WiFi NVR shall come with two (2) antennae to offer a strong wireless signal.
			7. The WiFi NVR shall be a wireless access point (WAP).
			8. The WiFi NVR shall conform to the ONVIF 2.4 standard.
	3. SUBMITTALS

* + 1. Submit under provisions of Section [01 33 00.]
		2. 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.
		3. Dimensional Drawings; include
			1. Overall device dimensions.
			2. Dimensions specific for installation.
		4. 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 (UL, CSA, 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 of Section 01 60 00.
		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 [2] 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:

Dahua Technology USA Inc.

23 Hubble, Irvine, CA 92618

Tel: (949) 679-7777

Fax: (949) 679-5760

Email: sales.usa@dahuatech.com]

* + 1. Substitutions: [Not permitted.] [Under provisions of Division 1.]
			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. 4-CHANNEL 4K COMPACT 1U WIFI NETWORK VIDEO RECORDER N41B1W

		1. General Characteristics:
			1. The WiFi NVR shall be a dual-core embedded processer with Embedded Linux operating system to record video from WiFi-enabled cameras.
			2. The WiFi NVR shall be capable of storing up to 6 TB of data from four (4) IP video cameras with up to 8 MP resolution.
			3. The WiFi NVR shall use the Smart H.265+ and Smart H.264+ video compression protocols.
			4. The WiFi NVR shall have a maximum incoming bandwidth of
				1. 80 Mbps for wired connections.
				2. 24 Mbps for wireless connections.
			5. The WiFi NVR shall support IEEE 802.11b/g/n 2.4 GHz wireless protocols.
			6. The WiFi NVR shall come with two (2) antennae to offer a strong wireless signal.
			7. The WiFi NVR shall be a wireless access point (WAP).
			8. The WiFi NVR shall conform to the ONVIF 2.4 standard.
			9. The WiFi NVR shall be powered by a DC12 V, 2 A power supply and consume less than 6.6 W of power.
		2. Display
			1. The WiFi NVR shall offer one (1) HDMI and one (1) VGA display interfaces.
			2. The WiFi NVR shall offer display resolutions of: 3840×2160, 1920 x 1080, 1280 x 1024, 1280 x 720, and 1024 x 768.
			3. The WiFi NVR shall offer 1/4 multi-screen display.
			4. The WiFi NVR shall offer an on-screen display that lists the camera title, time, video loss indication, camera lock indication, motion detection, and recording indicator.
		3. Interface
			1. The WiFi NVR shall have four (4) IP video channels.
			2. The WiFi NVR shall offer two auxiliary (2) USB 2.0 ports.
		4. Recording
			1. The WiFi NVR shall employ the Smart H.265+, H.265, Smart H.264+, and the H.264 video compression protocols.
			2. The WiFi NVR shall support IP camera resolutions of 8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 1080p, 720p, D1, CIF.
			3. The WiFi NVR shall offer a record rate (bandwidth) of:
				1. 80 Mbps for wired camera connections.
				2. 24 Mbps for wireless camera connections.
			4. The WiFi NVR shall allow a bit rate between 16 Kbps to 20 Mbps per channel.
			5. The WiFi NVR shall offer the following built-in recording modes:
				1. Manual
				2. Schedule, regular or continuous
				3. Motion Detection
				4. Stop
			6. The WiFi NVR shall offer a recording interval between 1 minute and 120 minutes. In addition, the WiFi NVR shall offer a pre-record interval of between 1 second to 30 seconds, and a post-record interval of between 10 seconds to 300 seconds.
			7. The WiFi NVR shall be capable of recording from third-party devices, including: Dahua, Arecont Vision, AXIS, Bosch, Brickcom, Canon, CP Plus, Dynacolor, Honeywell, Panasonic, Pelco, Samsung, Sanyo, Sony, Videotec, and Vivotek.
		5. Storage
			1. The WiFi NVR shall come with one (1) SATA III port for an internal hard-disk drive.
			2. The WiFi NVR shall support up to a 6 TB hard-disk drive.
		6. Playback and Backup
			1. The WiFi NVR shall allow recorded video searches by time/date, motion detection event and Exact Search.
			2. The WiFi NVR shall offer the following playback functions: Play, Pause, Stop, Rewind, Fast Play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, and Digital Zoom.
			3. The WiFi NVR shall allow data backup via a USB device or another network.
		7. IP Connectivity
			1. The WiFi NVR shall allow full NVR control and configuration capabilities via a TCP/IP network.
			2. The WiFi NVR shall support the IEEE 802.11b/g/n standard, 2.4 GHz.
			3. The WiFi NVR shall offer one (1) RJ-45 port (10/100 Mbps).
			4. The WiFi NVR shall support a maximum of 128 user access points.
			5. The WiFi NVR shall conform to the ONVIF 2.4 standard.
			6. The WiFi NVR shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.
			7. The WiFi NVR shall support the IOS and the Android mobile operating systems.
		8. Installation Requirements
			1. The WiFi NVR shall be capable of operating in temperatures between
			0° C to +40° C (+32° F to +104° F), 86 to 106 kpa.
			2. The WiFi NVR shall receive power from a DC12V power source and consume less than 6.6 W of power.
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