

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 19.11: Digital Video Recorders

PENTA-BRID 4 MP DVR - 8/16-CHANNEL 4 MP 2 U DIGITAL VIDEO RECORDER

PART 1 – GENERAL

1.1 SUMMARY

A. 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

B. 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.

1.2 REFERENCES

A. Federal Communications Commission (FCC) (www.fcc.gov)

1. CFR 47, FCC Part 15, 2015
2. ANSI C63.4:2014

B. Underwriters Laboratories, Inc. (UL) (www.ul.com)

1. UL 60950-1 and CAN/CSA C22.2 No. 60950-1-07, Information Technology Equipment - Safety - Part 1: General Requirements

C. Conformance European(CE)

1. EN60950-1:2006+A1:2010+A11:2009+A12:2011+A2:2013

1.3 SYSTEM DESCRIPTION

A. Section Includes

1. Digital Video Recorders

B. Performance Requirements

1. The Penta-brid 4 MP DVR shall be an embedded processor with Embedded Linux operating system to record video from HDCVI, TVI, AHD, CVBS, and IP data sources.
2. The Penta-brid 4 MP DVR shall be capable of storing up to 64 TB of data from [eight (8) HDCVI/AHD/TVI/CVBS camera inputs and fifty-six (56) IP camera video inputs] [sixteen (16) HDCVI/AHD/TVI/CVBS camera inputs and forty-eight (48) IP camera video inputs] with up to 12 MP resolution for each IP input.
3. The Penta-brid 4 MP DVR shall use the Smart H.264+ and H.264 Video compression protocols.
4. The Penta-brid 4 MP DVR shall have a maximum bandwidth of [256] Mbps.
5. The Penta-brid 4 MP DVR shall automatically detect and recognize the transmission protocol (HDCVI/AHD/TVI/CVBS) of each attached analog camera.
6. The Penta-brid 4 MP DVR shall offer a selection of built-in recording options and schedules.

1.4 SUBMITTALS

- A. Submit under provisions of Section [01 33 00.]
- B. 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.
- C. Dimensional Drawings; include
 - 1. Overall device dimensions.
 - 2. Dimensions specific for installation.
- D. 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 (UL, 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 of Section 01 60 00.
- 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: [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.]

2.2 PENTA-BRID 4 MP DVR - 8/16-CHANNEL 4 MP 2U DIGITAL VIDEO RECORDER DHI-XVR8808S DHI-XVR8816S

- A. General Characteristics:
 - 1. The Penta-brid 4 MP DVR shall be an embedded processor with Embedded Linux operating system to record video from HDCVI, TVI, AHD, CVBS, and IP data sources.
 - 2. The Penta-brid 4 MP DVR shall be capable of storing up to 64 TB of data from [eight (8) HDCVI camera inputs and fifty-six(56) IP camera video inputs] [sixteen (16) HDCVI camera inputs and forty-eight (48) IP camera video inputs] with up to 12 MP resolution for each IP input
 - 3. The Penta-brid 4 MP DVR shall use the Smart H.264+ and H.264 Video compression protocols.
 - 4. The Penta-brid 4 MP DVR shall have a maximum bandwidth of [256] Mbps.
 - 5. The Penta-brid 4 MP DVR shall automatically detect and recognize the transmission protocol (HDCVI or TVI, AHD, CVBS) of each attached analog camera.
 - 6. The Penta-brid 4 MP DVR shall offer a selection of built-in recording options and schedules.
 - 7. The Penta-brid 4 MP DVR shall be powered by an [AC100-240V, 50/60Hz] power supply and consume less than 40 W of power (without HDD).

- B. Display
 - 1. The Penta-brid 4 MP DVR shall offer two (2) HDMI and one (1) VGA and one (1) TV display interface.
 - 2. The Penta-brid 4 MP DVR shall offer display resolutions of: 3840× 2160, 2560 × 1440, 1920 × 1080, 1280 × 1024, 1280 × 720, and 1024 × 768.
 - 3. The Penta-brid 4 MP DVR shall offer [1/4/8/9/16/25/36] multi-screen display.
 - 4. The Penta-brid 4 MP DVR shall offer an on-screen display that lists the camera title, time, video loss indication, camera lock indication, motion detection, and recording indicator.

- C. Interface
 - 1. The Penta-brid 4 MP DVR shall have [eight (8) HDCVI camera inputs and fifty-six (56) IP camera video inputs] [16 HDCVI camera inputs and forty-eight (48) IP camera video inputs].
 - 2. The Penta-brid 4 MP DVR shall offer two (2) USB 2.0 auxiliary port and two (2) USB 3.0 auxiliary port.
 - 3. The Penta-brid 4 MP DVR shall offer one (1) RS485 port and one (1) RS422 port for PTZ control.
 - 4. The Penta-brid 4 MP DVR shall offer one (1) RS232 port for PC communication & keyboard.
 - 5. The Penta-brid 4 MP DVR shall offer [eight (8) Audio In port and one (1) Audio Out port] [sixteen (16) Audio In port and one (1) Audio Out port].
 - 6. The Penta-brid 4 MP DVR shall offer one (1) Mic In port and one (1) Mic Out port for two-way talk.
 - 7. The Penta-brid 4 MP DVR shall offer [sixteen (16) alarm inputs and six (6) relay outputs].

- D. Storage
 - 1. The Penta-brid 4 MP DVR shall come with eight (8) SATA ports that can each support a 8 TB HDD.

- E. Playback and Backup
 - 1. The Penta-brid 4 MP DVR shall allow recorded video searches by time/date, motion detection event, Exact Search, and Smart Search.
 - 2. The Penta-brid 4 MP DVR 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 Penta-brid 4 MP DVR shall allow data backup via a USB device or another network.

- F. Recording
 - 1. The Penta-brid 4 MP DVR shall employ the Smart H.264+ and the H.264 video compression protocols.
 - 2. The Penta-brid 4 MP DVR shall offer video recording resolutions of 4 MP, 1080p, 720p, 960H, D1, HD1, BCIF, CIF, and QCIF.
 - 3. The Penta-brid 4 MP DVR shall allow a bit rate between 1 Kbps to 12288 Kbps per channel.
 - 4. The Penta-brid 4 MP DVR shall offer dual recording at the following rates:

- a. Main Stream: HDCVI/AHD 4 MP(1st and 9th channels 1/16 to 25/30 fps ,others 1/16 to 15 fps) ,HDCVI/AHD/TVI 1080p/720p/960H/D1/HD1/BCIF/CIF/QCIF (1/16 to 25/30 fps)
- b. Sub Stream: 960H/D1/CIF/QCIF(1/16 to 25/30 fps)
- 5. The Penta-brid 4 MP DVR shall offer the following built-in recording modes:
 - a. Manual
 - b. Schedule, regular or continuous
 - c. Motion Detection
 - d. Video Loss
 - e. Tampering
 - f. Alarm
 - g. Stop
- 6. The Penta-brid 4 MP DVR shall offer a recording interval between 1 minute and 60 minutes. In addition, the Penta-brid 4 MP DVR 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 Penta-brid 4 MP DVR 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.

G. IP Connectivity

- 1. The Penta-brid 4 MP DVR shall allow full control and configuration capabilities via a TCP/IP network.
- 2. The Penta-brid 4 MP DVR shall offer two (2) RJ-45 port (1000 M).
- 3. The Penta-brid 4 MP DVR shall support a maximum of 128 user access points.
- 4. The Penta-brid 4 MP DVR shall conform to the ONVIF 2.4.1 and to the CGI standard.
- 5. The Penta-brid 4 MP DVR shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.
- 6. The Penta-brid 4 MP DVR shall support the IPv4/ IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter.
- 7. The Penta-brid 4 MP DVR shall support the IOS and the Android mobile operating systems.

H. Installation Requirements

- 1. The Penta-brid 4 MP DVR shall be capable of operating in temperatures between -10°C to +55°C (+14°F to +131°F), 86 to 106 kpa.
- 2. The Penta-brid 4 MP DVR shall receive power from an [AC100-240V, 50/60Hz] power source and consume less than 40 W of power (without HDD).

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