# DH-XVR5116H-I3

## 16CH Penta-brid 5MP Value/1080P Mini 1U 1HDD WizSense Digital Video Recorder

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

## Series Overview

Dahua Technology, a world-leading video-centric smart IoT solution and service provider, debuted its new XVR series, XVR5000-I3 Series featuring max.full-channel SMD Plus to benefit customers from AI upgrade (The number of channels differs depending on the model. Please refer to the specifications below for information on the number of channels.). This series has been developed to reduce false-alarm rates and the cost of human surveillance, thus bringing great value to customers in search of products with accurate human/vehicle alarm to raise the security level of various indoor and outdoor facilities.

## Functions

### Face Recognition

Dahua Face Recognition technology extracts the features of captured faces and compares them with that in face database.

*Face Recognition takes effect when Face is selected in AI Mode.

### Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improves alarm accuracy.

*Perimeter Protection takes effect when IVS&SMD is selected in AI Mode.

- 2-channel QuickPick 2.0 for analog channels which improves the efficiency of target retrieval.
- 16-channel SMD Plus for analog channels or 24-channel SMD by camera which allows the device to trigger accurate alarms for humans and vehicles.
- 4-channel perimeter protection for analog channels which supports tripwire and intrusion detection powered by AI.
- 2-channel face recognition for analog channels which supports face comparison.
- 16-channel AI Coding saves on storage and bandwidth while maintaining the details of targets in videos.
- Supports HDCVI, AHD, TVI, CVBS and IP video input.
- Supports up to 24-channel IP camera input and each channel can be up to 6 MP. The incoming bandwidth reaches 128 Mbps.
- Smart H.265+ and H.265 dual-stream video compression.
- IoT and POS capabilities.

### SMD Plus

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

*SMD Plus takes effect when SMD or IVS&SMD is selected in AI Mode.

### QuickPick 2.0

By employing the back-end perimeter protection algorithm, QuickPick 2.0 not only retains the capability to identify the color of clothing and vehicles, which was offered by its predecessor QuickPick 1.0, but it also possesses the enhanced ability to detect various types of hats, clothing and vehicles, thus greatly improving the accuracy of the search function.

*QuickPick 2.0 takes effect when Quick Pick is enabled in AI Mode.

### Irregular Black Block Masking

Dahua's black block masking function supports the use of irregular shapes for masking, ensuring privacy in public and private locations.

## Technical Specification

### System

| | |
|---|---|
| Main Processor | Industrial-grade processor |
| Operating System | Embedded Linux |
| Operating Interface | Web; Local GUI |

### QuickPick 2.0

| | |
|---|---|
| QuickPick 2.0 AI by Recorder (Number of Channels) | 2 channels |

### Perimeter Protection

| | |
|---|---|
| Perimeter Performance AI by Recorder (Number of Channels) | Advanced Mode: 2 channels, 10 IVS rules for each channel<br>General Mode: 4 channels, 10 IVS rules for each channel |

### Face Detection

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|---|---|
| Face Attributes | 6 attributes |
| Face Detection Performance of AI by Recorder (Number of Channels) | 2 channels(up to 12 face images/s each channel) |

### Face Recognition

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|---|---|
| Face Database Capacity | Up to 10 face databases with 10,000 images. |
| Face Recognition Performance of AI by Recorder (Number of Channels) | 2 channels |

### SMD Plus

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|---|---|
| SMD Plus by Recorder | 16 channels:<br>Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change |
| SMD Plus by Camera | 24 channels |

### AI Video Quality Analytics

| | |
|---|---|
| AI Video Quality Analytics by Recorder | 16 channels: Supports detecting brightness levels, color cast, defocus, overexposure, contrast levels, black and white |

### Scene Changing

| | |
|---|---|
| Scene Changing by Recorder | 1 channel |

### Irregular Black Block Masking

| | |
|---|---|
| Irregular Black Block Masking by Recorder | 1 channel |

### Audio and Video

| | |
|---|---|
| Analog Camera Input | 16 BNC ports, supports HDCVI/AHD/TVI/CVBS auto-detect |
| Camera Input | 1. CVI: 5 MP@25 fps; 5 MP@20 fps; 5 MP@10/12.5 fps; 4 MP@25/30 fps; 1080p@25/30 fps; 720p@50/60 fps; 720p@25/30fps.<br>2. TVI: 5 MP(2560 x 1944)@20 fps; 5 MP(2960 x 1665)@20 fps; 4 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps.<br>3. AHD: 5 MP@20 fps; 4 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps. |
| IP Camera Input | Up to 24 channels of IPC access<br>8 IP channels by default + 16 channels (analog channels are converted to IP channels)<br>incoming bandwidth: 128 Mbps, recording bandwidth: 128 Mbps and outgoing bandwidth: 128 Mbps<br>*After IP extension is enabled, Video Quality Analytics, Scene Changing, Face Recognition, Face Detection, SMD, Perimeter Protection and QuickPick 2.0 cannot be used. |
| Encoding Capacity | Main stream:<br>5 MP Mode: 4-ch 5 MP@(1 fps-6 fps); others 5M-N@(1 fps-12 fps)<br>5M-N Mode: 5M-N@(1 fps –12 fps); 4M-N/1080p@(1 fps–15 fps); 1080N/720p/960H/D1/CIF@(1 fps–25/30 fps)<br>Sub stream: D1/CIF@(1 fps–15 fps) |
| Dual-stream | Yes |
| Video Bit Rate | 32 kbps–6144 kbps |
| Audio Sampling | 8 kHz, 16 bit |
| Audio Bit Rate | 64 kbps |
| Video Output | 1 HDMI, 1 VGA<br>VGA: 1920 × 1080, 1280 × 1024, 1280 × 720<br>HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720<br>It changes to 1920 × 1080, 1280 × 1024, 1280 × 720 when Face, IVS&SMD or Quick Pick is selected in AI Mode. |
| Multi-screen Display | When IP extension mode not enabled: 1/4/8/9/16<br>When IP extension mode enabled: 1/4/8/9/16/25 |
| Third-party Camera Access | Panasonic; Sony; Hanwha; Axis; Arecont; ONVIF |

### Compression Standard

| | |
|---|---|
| Video Compression | AI Coding; Smart H.265+; H.265; Smart H.264+; H.264 |
| Audio Compression | G.711a; G.711u; PCM |

### Network

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|---|---|
| Network Protocol | HTTP; HTTPS; TCP/IP; IPv4; IPv6; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; IP Filter; FTP; DDNS; SNMP; Alarm Server; P2P; Auto Registration; IP Search (Supports IP camera, DVR, NVS, etc.) |
| Mobile Phone Access | iOS; Android |
| Interoperability | ONVIF 24.06 (Profile T; Profile S; Profile G); CGI; SDK |
| Browser | Chrome; IE; Safari; Edge; Firefox |

### Recording Playback

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|---|---|
| Record Mode | General; alarm; motion detection; intelligent; POS |
| Recording Playback | 1/4/9/16<br>It changes to 1/4/9 split when Face or IVS&SMD is selected in AI Mode. |
| Backup Method | USB device and network |
| Playback Mode | Instant playback; general playback; event playback; tag playback; smart playback |

### Alarm

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|---|---|
| General Alarm | Motion detection; HDCVI alarm; camera external alarm; network alarm; PIR alarm |

| | |
|---|---|
| Anomaly Alarm | Error (no disk, disk error, low space, low quota space; network disconnection; IP conflict; MAC conflict); video loss; video tampering; camera offline |
| Intelligent Alarm | Face detection; face recognition; perimeter protection; SMD Plus |
| Alarm Linkage | Record; snapshot (panoramic); IPC external alarm output; audio; buzzer; log; preset; email |

## Ports

| | |
|---|---|
| Audio Input | 1-channel RCA<br>16-channel BNC (Coaxial Audio) |
| Audio Output | 1-channel RCA |
| Two-way Talk | Yes (share the same audio input with the first channel) |
| Disk Interface | 1 SATA port, up to 16 TB. This limit varies depending on the environment temperature. |
| RS-485 | 1 |
| USB | 2 (1 front USB 2.0 port, 1 rear USB 3.0 port) |
| HDMI | 1 |
| VGA | 1 |
| Network Port | 1 (10/100/1000 Mbps Ethernet port, RJ-45) |

## General

| | |
|---|---|
| Power Supply | 12 VDC, 2 A |
| Power Consumption | <12 W(without HDD) |
| Net Weight | 1.15 kg (2.54 lb) |
| Gross Weight | 1.95 kg (4.30 lb) |
| Product Dimensions | 325.0 mm × 257.1 mm × 55.0 mm (12.80" × 10.12" × 2.17") (W × D × H) |
| Packaging Dimensions | 372.0 mm × 117.0 mm × 308.0 mm (14.65" × 4.61" × 12.13") (W × D × H) |
| Operating Temperature | –10 °C to +55 °C (+14 °F to +131 °F) |
| Storage Temperature | –20 °C to +60 °C (–4 °F to +140 °F) |
| Operating Humidity | 10%–90% (RH), non-condensing |
| Installation | Desktop |
| Certifications | CE: CE-LVD: EN 60950-1/IEC 60950-1<br>CE-EMC: EN 61000-3-2, EN 61000-3-3, EN 55032, EN 50130, EN 55024<br>FCC: Part 15 Subpart B |

## Ordering Information

| Type | Model | Description |
|---|---|---|
| DIGITAL VIDEO RECORDER | DH-XVR5116H-I3 | 16CH Penta-brid 5MP Value/1080P Mini 1U 1HDD WizSense Digital Video Recorder |

## Accessories

Optional:

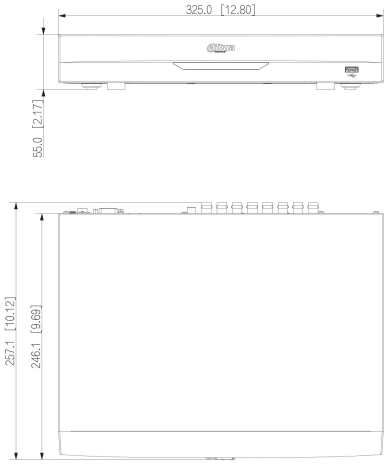
DHI-SSD-V800S256G
SSD

DHI-SSD-V800S512G
SSD

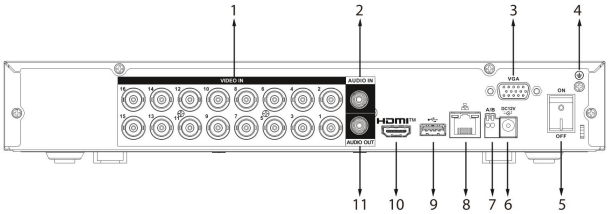
DHI-SSD-V800S1TB
SSD

DHI-ARB1606
Alarm Box

## Dimensions (mm[inch])




## Panels




1 VIDEO IN
2 AUDIO IN, RCA Connector
3 VGA Port
4 Ground
5 Power Switch
6 Power Input
7 RS-485 Port
8 Network Port
9 USB Port
10 HDMI Port
11 AUDIO OUT, RCA Connector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