DH-XVR5416L-4KL-I3

16CH Penta-brid 4K Value/5MP 1.5U 4HDDs 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, XVR5000-4KL-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 conflicts with SMD Plus and Perimeter Protection.

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.

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.

AI Coding-ABR

Compared with H.265, AI coding-ABR can save 50% on storage costs, and save bit rate for complex scenes, which can prioritize image quality in dynamic scenes.

- 2-channel QuickPick 2.0 for analog channels which improves the efficiency of target retrieval.
- 1-channel Privacy Protection for analog channels which supports masking and restoring human faces that are detected in real time.
- 16-channel SMD Plus for analog channels or 32-channel SMD by camera which allows the device to trigger accurate alarms for humans and vehicles.
- 8-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 32-channel IP camera input and each channel can be up to 12 MP. The incoming bandwidth reaches 128 Mbps.
- Smart H.265+ and H.265 dual-stream video compression.



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.

Privacy Protection

Dahua Privacy Protection technology is capable of masking detected human faces and subsequently removing the mask, ensuring the privacy of specific individuals is protected.

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.

HDMI (4K)

The HDMI port can support up to 4K output, delivering clear and highly detailed images.

Technical Specification

System

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

Quick Pick

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 General Mode: 8 channels, 10 IVS rules for each channel

Face Detection

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

Privacy Protection

Privacy Protection Performance of AI by Recorder (Number of Channels)	1 channel

Face Recognition

Face Database Capacity	Up to 10 face databases with 20,000 images.
Face Recognition Performance of AI by Recorder (Number of Channels)	2 channels

SMD Plus

SMD Plus by Recorder	16 channels: Secondary filtering for human and vehicle, reducing false alarms caused by leaves, rain and lighting condition change
SMD Plus by Camera	32 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: 4K@25/30 fps; 4K@12.5/15 fps; 6 MP@20 fps; 5 MP@25 fps; 5 MP@20 fps; 4 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps; 720p@50/60 fps. 2. TVI: 4K@15 fps; 5 MP@20 fps; 4 MP@25/30 fps; 3 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps. 3. AHD: 4K@15 fps; 5 MP@20 fps; 4 MP@25/30 fps; 3 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps.
IP Camera Input	Up to 32 channels of IPC access 16 IP channels by default + 16 channels (analog channels are converted to IP channels) Incoming bandwidth: 128 Mbps, recording bandwidth: 128 Mbps and outgoing bandwidth: 128 Mbps *After IP extension is enabled, Video Quality Analytics, Scene Changing, Face Recognition, Face Detection, SMD, Perimeter Protection, QuickPick 2.0 and Privacy Protection cannot be used.
Encoding Capacity	Encode Enhancement disabled： Main stream: 4K@(1 fps–7 fps); 6 MP@(1 fps–10 fps); 5 MP@(1 fps–12 fps); 4K-N/4 MP/3 MP@(1 fps–15 fps); 4M-N/1080p/720p/960H/D1/CIF@(1 fps–25/30 fps) Sub stream: 960H@(1 fps–15 fps); D1/CIF@(1 fps–25/30 fps) Encode Enhancement enabled： Main stream: the 1st, 5th, 9th, 13th channel 4K@(1 fps–15 fps), others 4K@(1 fps–7 fps); the 1st, 5th, 9th, 13th channel 6 MP@(1 fps–20 fps), others 6 MP@(1 fps–10 fps); the 1st, 5th, 9th, 13th channel 5 MP@(1 fps–25 fps), others 5 MP@(1 fps–12 fps); the 1st, 5th, 9th, 13th channel 4K-N/4 MP/3 MP@(1 fps–25/30 fps), others 4K-N/4 MP/3 MP@(1 fps–15 fps); 4K/6 MP@(1 fps–10 fps);5 MP@(1 fps-12 fps); 4K-N/4 MP/3 MP@(1 fps–15 fps); 4M-N/1080p/720p/960H/D1/CIF@(1 fps–25/30 fps) Sub stream: 960H@(1 fps–15 fps); D1/CIF@(1 fps–25/30 fps) *When Encode Enhancement is enabled, Video Quality Analytics, Scene Changing, Face Recognition, Face Detection, Perimeter Protection, QuickPick 2.0 and Privacy Protection cannot be used.
Dual-stream	Yes
Video Bit Rate	32 kbps–6144 kbps
Audio Sampling	8 kHz, 16 bit
Audio Bit Rate	64 kbps
Video Output	2 HDMI, 1 VGA, 1 TV VGA/HDMI2: 1920 × 1080, 1280 × 1024, 1280 × 720 HDMI1: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720 *Heterogeneous video sources output for HDMI 2 is configurable.
Multi-screen Display	When IP extension mode not enabled: 1/4/8/9/16 When IP extension mode enabled: 1/4/8/9/16/25/36
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

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 23.12 (Profile T; Profile S; Profile G); CGI; SDK
Browser	Chrome; IE; Safari; Edge; Firefox

Recording Playback

Record Mode	General; alarm; motion detection; intelligent; POS
Recording Playback	1/4/9/16
Backup Method	USB device and network
Playback Mode	Instant playback; general playback; event playback; tag playback; smart playback

Storage

Disk Group	Yes

Alarm

General Alarm	Motion detection; local alarm; alarm box; 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); local alarm output; IPC external alarm output; audio; buzzer; log; preset; email

Ports

TV Output	1 channel
Audio Input	4-channel BNC 16-channel BNC (Coaxial Audio)
Audio Output	1-channel BNC
Two-way Talk	1-channel BNC
Alarm Input	16 channels
Alarm Output	6 channels
Disk Interface	4 SATA ports. Each disk can contain up to 16 TB. This limit varies depending on the environment temperature.
eSATA	1
RS-232	1
RS-485	1
USB	3 (1 front USB 2.0 port, 2 rear USB 3.0 ports)
HDMI	2
VGA	1
Network Port	1 (10/100/1000 Mbps Ethernet port, RJ-45)

General

Power Supply	AC100V ~ AC240V 50±2%Hz
Power Consumption	<20 W (without HDD)
Net Weight	4.7 kg (10.36 lb)
Gross Weight	6.9 kg (15.21 lb)
Product Dimensions	440.0 mm × 420.2 mm × 76.0 mm (17.32" × 16.54" × 2.99") (W × D × H)
Packaging Dimensions	529.0 mm × 499.0 mm × 211.0 mm 20.83" × 19.65" × 8.31" (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 CE-EMC: EN 61000-3-2, EN 61000-3-3, EN 55032, EN 50130, EN 55024 FCC: Part 15 Subpart B

Ordering Information

Type	Model	Description
DIGITAL VIDEO RECORDER	DH-XVR5416L-4KL-I3	16CH Penta-brid 4K Value/5MP 1.5U 4HDDs WizSense Digital Video Recorder

Accessories

Optional:



DHI-SSD-V800S256G
SSD



DHI-SSD-V800S512G
SSD

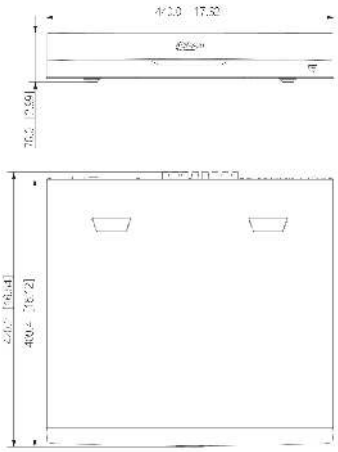


DHI-SSD-V800S1TB
SSD

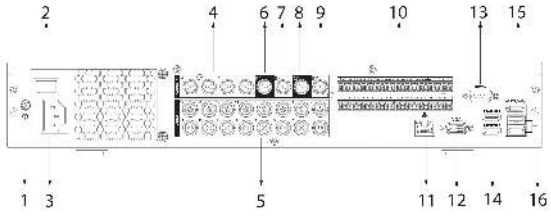


DHI-ARB1606
Alarm Box

Dimensions (mm[inch])



Panels



1	Ground	2	Power Switch
3	Power Input	4	AUDIO IN, BNC Connector
5	VIDEO IN	6	MIC IN, BNC Connector
7	MIC OUT, BNC Connector	8	AUDIO OUT, BNC Connector
9	VIDEO OUT	10	Alarm In/Out
11	Network Port	12	VGA Port
13	RS-232 Port	14	HDMI Ports
15	eSATA Port	16	USB Ports

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