DHI-NVR5816-EI2

16CH 2U 8HDDs WizSense Network 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

The NVR5000-EI2 delivers superior performance and advanced recording technology for IP surveillance systems. Featuring a powerful processor with high-speed data processing and robust decoding capabilities, it ensures smooth video streaming. The device incorporates an intuitive modular GUI NVR NEXT that simplifies workflows and enhances operational efficiency. Equipped with an integrated AI chip and Dahua's deep learning algorithms, it enables precise detection, efficient analytics, and reduced false alarms. Its AcuPick technology provides industry-leading one-click accuracy search. Supporting seamless integration with third-party devices and Video Management Software (VMS), the NVR5000-EI2 offers a versatile and scalable surveillance solution.

Functions

WizSeek

WizSeek enables natural-language video search for human, vehicle, object, and event with high accuracy, while reducing investigation time by transforming manual reviews into instant results.

AcuPick

This industry-leading search technology effectively utilizes both front-end and back-end intelligence to help with searching through massive video data to quickly and conveniently locate targets with greater precision.

- Supports Smart H.265+, H.265, Smart H.264+, H.264 and MJPEG decoding formats.
- Max. decoding capability: 40 × 1080p@30 fps or 10 × 8MP@30 fps.
- Max. 448/448/448 Mbps incoming/recording/outgoing bandwidth.
- Supports IP cameras with a resolution up to 32 MP.
- Supports 8K HDMI output.
- Supports N+M cluster and iSCSI.
- Provides full-channel WizSeek (max 4 targets per sec) when used with cameras that support AcuPick/IVS/Metadata.
- AI by Recorder supports 4-channel face detection and recognition, up to 20 face databases and 30,000 face images; 4-channel video metadata; 8-channel perimeter protection; 16-channel SMD Plus; 4-channel AcuPick.
- AI by Camera supports face detection and recognition, perimeter protection, SMD, metadata, AcuPick, ANPR, stereo analysis, heat map, people counting, PPE detection, smart object detection and smart sound detection.
- Supports EPTZ, and one-click arming and disarming.

NVR NEXT

With its enhanced system, the NVR introduces NVR NEXT, a user-friendly GUI featuring a modular design to improve operation efficiency and streamline workflows, catering to the needs of small and medium-sized businesses.

AI Features

Embedded with deep-learning algorithms, the NVR offers advanced AI capabilities, delivering precise detection, efficient analytics, and reduced false alarms.

Technical Specification

System

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

AI

AI by Recorder	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); perimeter protection; SMD Plus; AcuPick; WizSeek; Text-Defined Alarm
AI by Camera	Face detection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); perimeter protection; SMD; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map; PPE detection; smart object detection; smart sound detection; AcuPick
AcuPick Performance of AI by Recorder (Number of Channels)	4 channels
AcuPick Performance of AI by Camera (Number of Channels)	All channels (32 targets/s)

WizSeek

Performance	1. Compatible with cameras that support AcuPick/IVS/Metadata, it can meet full-channel WizSeek (Max 4 targets per sec) 2. Modeling capability: up to 345,600 targets per day
Search Language	English;TradChinese;Italian;Spanish;Japanese;Russian;French;German;Portugal;Turkey;Poland;Romanian;Hungarian;Finnish;Korean;Dansk;Czechish;Bulgaria;Slovenia;Dutch;Greek;Ukrainian;Swedis;Serbian;Arabic;Thai;Hebrew;Norwegian;SpanishEU;Indonesian;PortugalBR;Vietnam;Cambodia

Perimeter Protection

Perimeter Performance AI by Recorder (Number of Channels)	8 channels, 10 IVS rules for each channel
Perimeter Performance of AI by Camera (Number of Channels)	All channels (32 targets/s)

Face Detection

Face Attributes	Gender; age group; glasses; expressions; face mask; beard
Face Detection Performance of AI by Recorder (Number of Channels)	4 channels (up to 12 face images/s each channel)
Face Detection Performance of AI by Camera (Number of Channels)	All channels (32 targets/s)

Face Recognition

Face Database Capacity	Up to 20 face databases with 30,000 images, with a total capacity of 3.75 GB. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image.
Face Recognition Performance of AI by Recorder (Number of Channels)	1. 16-channel FD (by camera) + FR (by recorder), image stream: 24 face images/s 2. 4-channel FD (by recorder) + FR (by recorder), video stream: 24 face images/s
Face Recognition Performance of AI by Camera (Number of Channels)	All channels (32 targets/s)

SMD

SMD Plus by Recorder	16 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change
SMD by Camera	All channels (64 targets/s)

Video Metadata

Metadata Performance of AI by Recorder (Number of Channels)	4 channels, 22 attributes extraction.
Metadata Performance of AI by Camera (Number of Channels)	All channels (16 targets/s)
People Attributes	Top color, top type, bottom color, bottom type, hat, bag, age, gender and umbrella
Motor Vehicle Attributes	License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle interior, vehicle registration location
Non-motor Vehicle Attributes	Vehicle model, vehicle color, number of persons, helmet

Vehicle License Plate Comparison

ANPR by Camera (Number of Channels)	All channels (8 targets/s)
License Plate Database Capacity	1. Create up to 20,000 plate numbers. 2. Blocklist and allowlist

Audio and Video

Access Channel	16 channels
Network Bandwidth	AI disabled: 448 Mbps incoming, 448 Mbps recording and 448 Mbps outgoing AI enabled: 200 Mbps incoming, 200 Mbps recording and 200 Mbps outgoing
Resolution	32 MP;24 MP;16 MP;12 MP;8 MP;6 MP;5 MP;4 MP;3 MP;1080p;720p;960p;D1;CIF;QCIF
Decoding Capability	AI disabled: 2-channel 32 MP@25 fps; 2-channel 24 MP@25 fps; 5-channel 16 MP@30 fps; 6-channel 12 MP@30 fps; 10-channel 8 MP@30 fps; 13-channel 6 MP@30 fps; 16-channel 5 MP@30 fps AI enabled: 1-channel 32 MP@25 fps; 2-channel 24 MP@25 fps; 4-channel 16 MP@30 fps; 5-channel 12 MP@30 fps; 8-channel 8 MP@30 fps; 10-channel 6 MP@30 fps; 12-channel 5 MP@30 fps; 16-channel 4 MP@30 fps

Video Output	2 VGA, 2 HDMI VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 HDMI: 7680×4320, 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720 Heterogeneous video source output for HDMI1 and HDMI2 Simultaneous video source output for VGA1 and HDMI1 Simultaneous video source output for VGA2 and HDMI2
Multi-screen Display	Main Screen: 1/4/8/9/16 Sub Screen: 1/4/8/9/16
Third-party Camera Access	ONVIF; Panasonic; Sony; Axis; Arecont; Pelco; Canon; Hanwha

Compression Standard

Video Compression	Smart H.265+; H.265; Smart H.264+; H.264; MJPEG
Audio Compression	G.711a; G.711u; PCM; G726

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.); iSCSI; RTMP
Mobile Phone Access	iOS; Android
Interoperability	ONVIF 25.12 (Profile T; Profile S; Profile G; Profile M); CGI; SDK
Browser	Chrome; IE; Safari; Edge; Firefox
Network Mode	Multi-address; load balance; fault tolerance; link aggregation

Recording Playback

Multi-channel Playback	Up to 16 channels
Record Mode	General, motion detection; intelligent; alarm; POS
Backup Method	USB device and network
Playback Mode	Instant playback, general playback, event playback, target Video, video clip, tag playback, smart playback (face and motion detection)

Storage

Disk Group	Yes
RAID	RAID 0/1/5/6/10

Alarm

General Alarm	Motion detection; local alarm; alarm box; camera external alarm; network alarm; scene changing; PIR alarm; thermal alarm
Anomaly Alarm	Error (no disk, disk error, low space, RAID exception, low quota space; abnormal disk health; network disconnection; IP conflict; MAC conflict; abnormal fan speed); video loss; video tampering; camera offline; audio detection; alarm box offline
Intelligent Alarm	Face detection; perimeter protection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); SMD Plus; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map; PPE detection; smart object detection; smart sound detection
Alarm Linkage	Record; snapshot (panoramic); local alarm output; IPC external alarm output; audio; buzzer; log, preset; email

Port

Audio Input	1-channel RCA
Audio Output	2-channel RCA
Alarm Input	16 channels
Alarm Output	8 channels (1-channel 12 V 1 A output)
Disk Interface	8 SATA ports, each disk can contain up to 26 TB. This limit varies depending on the environment temperature.
eSATA	1
RS-232	1
RS-485	1
RS-422	1
USB	4 (2 front USB 2.0 port, 2 rear USB 3.0 port)
HDMI	2
VGA	2
Network Port	2 (10/100/1000 Mbps Ethernet port, RJ-45)

General

Power Supply	100–240 VAC, 50/60 Hz
Power Consumption	Total output of NVR is ≤ 13 W (without HDD)
Net Weight	6.27 kg (13.82 lb)
Gross Weight	8.75 kg (19.29 lb)
Product Dimensions	440.0 mm × 458.4 mm × 94.9 mm (17.32" × 18.05" × 3.73") (W × D × H)
Packaging Dimensions	570.0 mm × 570.0 mm × 226.0 mm (22.44" × 22.44" × 8.90") (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%–93% (RH), non-condensing
Certifications	CE-EMC: EN 55032:2015+A1:2020; EN IEC 61000-3-2:2019+A1:2021; EN 61000-3-3:2013+A1:2019+A2:2021; EN 55035:2017+A11:2020; EN 50130-4:2011+A1:2014 CE-LVD: EN 62368-1:2014

Ordering Information

Type	Model	Description
NETWORK VIDEO RECORDER	DHI-NVR5816-EI2	16CH 2U 8HDDs WizSense Network Video Recorder
Accessories (Optional)	ESS1504C	4 Bay eSATA Extension Cabinet
	DHI-ARB1606	Alarm Box
	DHI-RailBracket60/L-Shaped	Dahua Server Cabinet Rail Bracket

Accessories

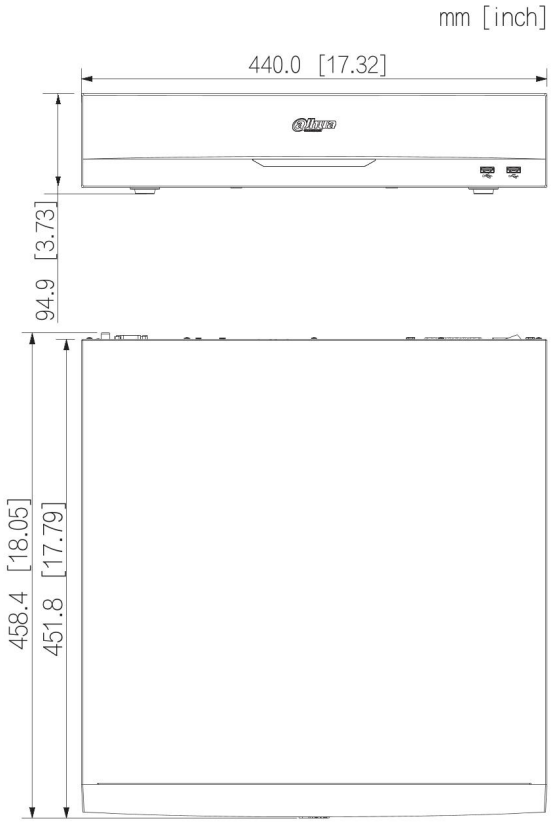
Optional:

ESS1504C
4 Bay eSATA Extension Cabinet

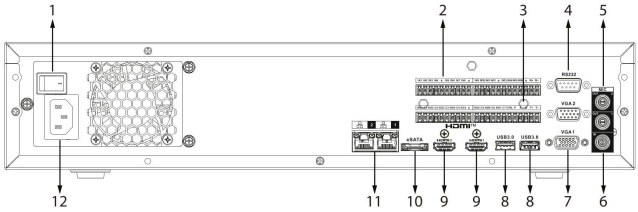
DHI-ARB1606
Alarm Box

DHI-RailBracket60/L-Shaped
Dahua Server Cabinet Rail Bracket

Dimensions (mm[inch])



Panels



1 Power Switch	2 Alarm In/Out
3 RS-485 Port	4 RS-232 Port
5 AUDIO OUT, RCA Connector	6 AUDIO IN, RCA Connector
7 VGA Port	8 USB 3.0 Port
9 HDMI Port	10 eSATA Port
11 Network Ports	12 Power Input

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