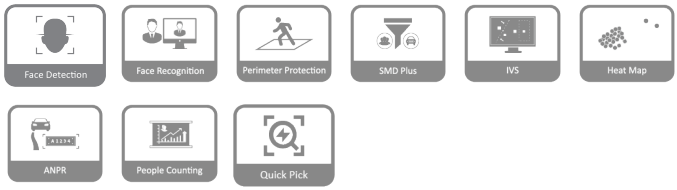
DHI-NVR4816-EI

16CH 2U 8HDDs WizSense Network Video Recorder



- Supports Smart H.265+, H.265, Smart H.264+, H.264 and MJPEG decoding formats.
- Max. 256 Mbps incoming/recording/outgoing bandwidth.
- Max. decoding capability: 16 × 1080p@30 fps or 4 × 8 MP@30 fps.
- Supports IP cameras with a resolution up to 16 MP.
- AI by Recorder supports 1-channel face detection and recognition, 2-channel perimeter protection, up to 10 face databases and 20,000 face images, 4-channel SMD.
- AI by Camera supports face detection and recognition, perimeter protection, SMD, ANPR, people counting, stereo analysis, heat map.
- Supports EPTZ, and one-click arming and disarming.



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

NVR4000-EI series is a new generation of network recorders that offers powerful decoding capabilities, and strong bandwidth. It features high-precision face recognition, perimeter protection, and SMD (Smart Motion Detection), which can distinguish target vehicles and humans from other types in real time. When connected with select IPC cameras, Quick Pick technology becomes available, allowing human and vehicle targets to be easily searched for and picked out. This network recorder is not only cost-effective, but also compatible with a wide variety of third-party devices, making it a great choice for small and medium-sized businesses.

Functions

Face Detection

Face detection is to detect if there is any human face appearing in the video. This technology adopts a deep learning algorithm to support face detection, tracking, optimization and capturing, and then output the best face snapshot.

Face Recognition

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

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 Search

With AI search, operators can search for videos by the attributes of targets and event types, which helps them to quickly and efficiently investigate where and when targets appeared and events took place.

Heat Map by Camera

Dahua heat map technology is used to display the crowd density and people appearance probability. Export and display the crowd status by different colors. Generally, the crowd status is the statistics of people quantity in space and time dimensions.

ANPR by Camera

With deep learning algorithm, Dahua ANPR technology can recognize the number plate information of vehicles in the image with ANPR cameras. Support blocklist/allowlist mode, searching target vehicles from recorded video.

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.

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; perimeter protection; SMD
AI by Camera	Face detection; face recognition; perimeter protection; SMD; ANPR; people counting; stereo analysis; heat map

Perimeter Protection

Perimeter Performance AI by Recorder (Number of Channels)	2 channels, 10 IVS rules for each channel
Perimeter Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

Face Detection

Face Attributes	6 attributes
Face Detection Performance of AI by Recorder (Number of Channels)	1 channel (up to 12 face images/s each channel)
Face Detection Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

Face Recognition

Face Database Capacity	Up to 10 face databases with 20,000 images, with a total capacity of 2.5 G. 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)	8-channel FD (by camera) + FR (by recorder),image stream: 12 face images/s; 1-channel FD (by recorder) + FR (by recorder), video stream: 12 face images/s
Face Recognition Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

SMD Plus

SMD Plus by Recorder	4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change
SMD by Camera	All channels (16 targets/s)

Audio and Video

Access Channel	16 channels
Network Bandwidth	AI disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing; AI enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing
Resolution	16 MP;12 MP;8 MP;6 MP;5 MP;4 MP;3 MP;1080p;720p;960p;D1;CIF
Decoding Capability	AI disabled: 2-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 4-channel 8 MP@30 fps; 4-channel 6 MP@30 fps; 6-channel 5 MP@30 fps; 8-channel 4 MP@30 fps; 16-channel 1080p@30 fps AI enabled: 1-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 3-channel 8 MP@30 fps; 3-channel 6 MP@30 fps; 4-channel 5 MP@30 fps; 6-channel 4 MP@30 fps; 12-channel 1080p@30 fps; 16-channel 720p@30 fps
Video Output	1 HDMI, 1 VGA; HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720; VGA: 1920 × 1080, 1280 × 1024, 1280 × 720; *Simultaneous/heterogeneous video sources output for VGA and HDMI is configurable
Multi-screen Display	1st Screen: 1/4/8/9/16; 2nd Screen: 1/4/8/9/16
Third-party Camera Access	Panasonic;Sony;Hanwha;Axis;Pelco;Arecont;ONVIF;Canon;RTSP

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;UPnP;SNMP;UDP;SMTP;NTP;DHCP;DNS;IPFilter;PPPoE;DDNS;FTP;AlarmServer;IPSearch(SupportDahuaIPcamera,DVR,NVS,etc.);P2P;AutoRegistration;RTMP
Mobile Phone Access	iOS;Android
Interoperability	ONVIF 26.06 (Profile T; Profile S; Profile G; Profile M); CGI; SDK
Browser	Chrome;Firefox;IE;Safari;Edge

Recording Playback

Multi-channel Playback	Up to 16 channels
Record Mode	General, motion detection; intelligent; alarm
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; alarm box; camera external alarm; network alarm; scene changing; PIR alarm

Anomaly Alarm	Error (no disk; disk error; low space; low quota space; abnormal disk health; network disconnection; IP conflict; MAC conflict); video loss; video tampering; camera offline; audio detection
Intelligent Alarm	Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map
Alarm Linkage	Record; snapshot; IPC external alarm output; audio; buzzer; log; preset; email

Port

Audio Input	1-channel RCA
Audio Output	1-channel RCA
Alarm Input	16 channels
Alarm Output	4 channels (3-channel relay output, 1-channel 12 V 1 A output)
Disk Interface	8 SATA ports. Each disk can contain up to 20 TB. This limit varies depending on the environment temperature
RS-232	1
RS-485	1
USB	3 (2 front USB 2.0 ports, 1 rear USB 3.0 port)
HDMI	1
VGA	1
Network Port	2 (10/100/1000 Mbps Ethernet port, RJ-45)

General

Power Supply	100–240 VAC, 50-60 Hz
Power Consumption	<10 W (without HDD)
Net Weight	6.34 kg (13.98 lb)
Gross Weight	8.80 kg (19.40 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	FCC: 47 CFR FCC Part15, SubpartB, Class A; 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-NVR4816-EI	16CH 2U 8HDDs WizSense Network Video Recorder
Accessories (Optional)	DHI-ARB1606	Alarm Box
	DHI-RailBracket60/L-Shaped	Dahua Server Cabinet Rail Bracket

Accessories

Optional:

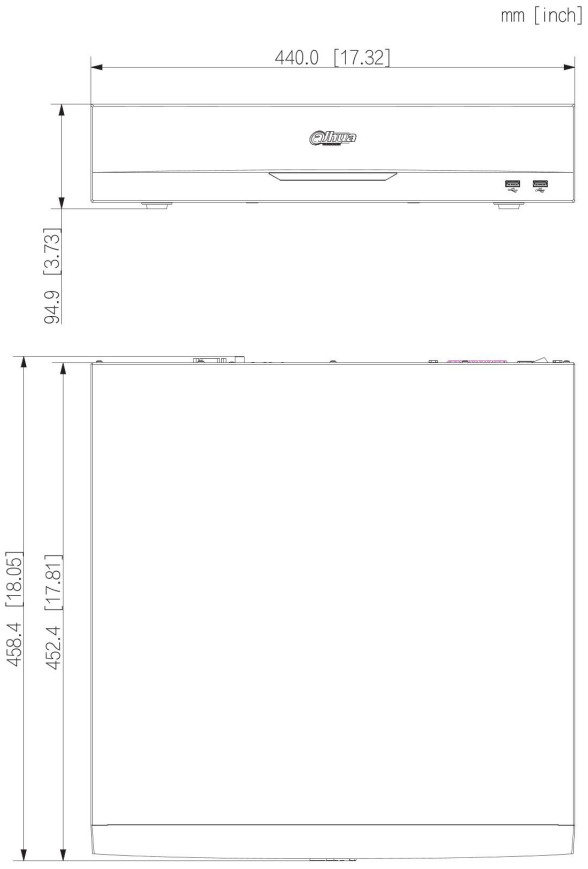


DHI-ARB1606
Alarm Box

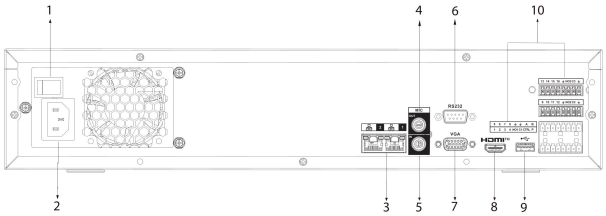


DHI-RailBracket60/L-Shaped
Dahua Server Cabinet Rail Bracket

Dimensions (mm[inch])



Panels



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

Rev 002.000 ©2026 Dahua. All rights reserved. Design and specifications are subject to change without notice.
Pictures in the document are for reference only, and the actual product shall prevail.