



# DHI-NVR4416-16P-EI

# 16CH 1.5U 16PoE 4HDDs WizSense Network Video Recorder





Launched by Dahua Technology, WizSense is a series of Al products and solutions that adopt independent Al 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 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.

- · Smart H.265+/H.265/Smart H.264+/H.264/MJPEG decoding format
- Access, storage or forwarding at 256 Mbps (180 Mbps when Al function enabled)
- Max. decoding capability: 16 x 1080p@30 fps. Supports adaptive decoding
- Al by NVR: 1-channel face detection and recognition; 2-channel perimeter protection; up to 10 face databases and 20,000 face images; 4-channel SMD Plus
- Al by Camera: Face detection and recognition, perimeter protection; SMD Plus; ANPR; people counting; stereo analysis; heat map
- · Connected to the third-party network cameras
- · Security baseline 2.3



















## 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.

#### Al 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.

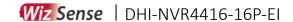
## ANPR by Camera

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.

#### **Quick Pick**

Dahua Quick Pick technology can enable users to quickly pick up the human/vehicle targets that they are interested in, which facilitates retrieval from SMD events.

Technical Specification			Audio and Video		
System			Access Channel	16 channels	
Main Processor	Industrial-grade processor			Al disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing	
Operating System	Embedded Linux		Network Bandwidth		
Operating Interface	Web, Local GUI			16 MP; 12 MP; 8 MP; 6 MP; 5 MP; 4 MP; 3 MP; 1080p;	
Al			Resolution	960p; 720p; D1; CIF	
Al by Recorder	Face detection, face recognition, perimeter protection, and SMD Plus;  Face detection; face recognition; perimeter protection;			Al 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 Al enabled: 1-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 3-channel 6 MP@30 fps; 4-channel 5 MP@30 fps; 6-channel 4	
Al by Camera	SMD Plus; ANPR; people counting; stereo analysis; heat map		Decoding Capability		
Perimeter Protection				MP@30 fps; 12-channel 1080p@30 fps; 16-channel 720p@30 fps	
Perimeter Performance AI by Recorder (Number of Channels)	2 channels, 10 IVS rules for each channel		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.	
Perimeter Performance of Al by Camera (Number of Channels)	All channels (8 targets/s)				
Face Detection			Multi-screen Display	1st Screen: 1/4/8/9/16 2nd Screen: 1/4/8/9/16	
Face Attributes	Gender; age group; glasses; expressions; face mask; beard		Third-party Camera Access	Panasonic, Sony, Samsung, Axis, Pelco, Arecont, ONVIF, Canon	
Face Detection Performance of AI by	1 channel (up to 12 face images/s each channel)		Compression Standard		
Recorder (Number of Channels)			Video Compression	Smart H.265+; H.265; Smart H.264+; H.264; MJPEG	
Face Detection	All channels (8 targets/s)		Audio Compression	G.711a; G.711u; PCM; G726	
Performance of AI by Camera (Number of			Network		
Channels) Face Recognition			Network Protocol	HTTP; HTTPS; TCP/IP; IPv4/IPv6; UPnP; SNMP; RTSP; UDP; SMTP; NTP; DHCP; DNS; IP Filter; PPP0E; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR; NVS; etc.); P2P; auto register	
	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.		Mobile Phone Access	iOS; Android	
Face Database Capacity			Interoperability	ONVIF 22.06(Profile T; Profile S; Profile G); CGI; SDK	
Face Recognition	-		Browser	Chrome; IE9 and later; Firefox	
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		Recording Playback	ck	
			Multi-channel Playback	Up to 16 channels	
Face Recognition	All channels (8 targets/s)		Record Mode	General, motion detection; intelligent; alarm	
Performance of AI by Camera (Number of			Backup Method	USB device and network	
Channels) SMD Plus			Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback	
	4 channels: Secondary filtering for human and motor		Storage		
SMD Plus by Recorder	vehicle, reducing false alarms caused by leaves, rain and lighting condition change		Disk Group	Yes	
SMD Plus by Camera	All channels (16 targets/s)		Alarm		
Vehicle License Plate Comparison			General Alarm	Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm	
ANPR by Camera (Number of Channels)	All channels (4 targets/s)		Anomaly Alarm	Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked; and cybersecurity	
License Plate Database Capacity	Create up to 20,000 plate numbers.     Blocklist and allowlist			exception	



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		
Disk Interface	$4\ \text{SATA}$ ports, up to $16\ \text{TB.The}$ maximum HDD capacity varies with environment temperature.		
RS-232	1		
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)		
PoE Port	16 ports, 10/100 Mbps, IEEE 802.3 af/at		
General			
Power Supply	100–240 VAC, 50-60 Hz		
Power Consumption	Total output of NVR is <10 W(without HDD)  Total output power of PoE is 150W,the maximum output power of a single port is 25.5W		
Net Weight	4.82 kg (10.63 lb)		
Gross Weight	6.78 kg (14.95 lb)		
Product Dimensions	440.0 mm × 415.6 mm x 76.0 mm (17.32" × 16.36" × 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%–93% (RH), non-condensing		
Installation	Rack or desktop		
	FCC: 47 CFR FCC Part15, SubpartB, Class A		

Ordering Information					
Туре	Model	Description			
NETWORK VIDEO RECORDER	DHI-NVR4416-16P-EI	16CH 1.5U 16PoE 4HDDs WizSense Network Video Recorder			

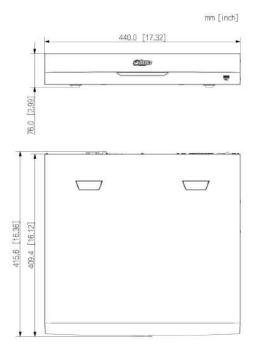
CE-LVD: EN 62368-1:2014

CE-EMC: EN 55032:2015+A1:2020;

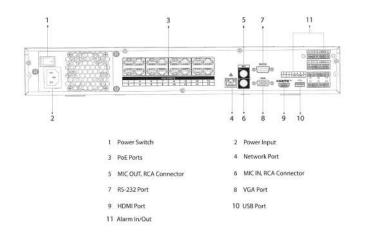
EN IEC 61000-3-2:2019+A1:2021;

EN 61000-3-3:2013+A1:2019+A2:2021; EN 55035:2017+A11:2020; EN 50130-4:2011+A1:2014

# Dimensions (mm[inch])



## Panels



Certifications