



# DHI-NVR4216-16P-EI

16CH 1U 16PoE 2HDDs 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**

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 those in face database to recognize the person identity.

#### **Perimeter Protection**

Automatically filtering out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to perform secondary recognition for the targets. Improving 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 Alfunction enabled).
- $\cdot$  Max. decoding capability: 16  $\times$  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; 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.

#### AI Search

Support AI seach by metadata of different targets or uploading face pictures to device and comparing them with recorded faces by similarity. Enable operators to quickly and easily search through multi channels and long duration, efficiently find out when and where a person of interest appeard.

#### **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.

#### **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.

System   Mail Processor   Mail Processor   March and part of processor   Decoding Capability   Microsoft (America)   Mail Processor   America)   Microsoft (America)   Microso	Technical Specification			Al disabled: 2-channel 16 MP@30 fps; 2-channel 12
Main Processor Operating Pystem Operating Pystem Operating Interface Web, Doard OU Al Al Al Recorder New Pystem Operating Interface Web, Doard OU Al Al Problect Linux Web, Doard Ou All Compression Al All College Al Problect Linux Web, Doard Ou All College Al Problect Linux Web, Doard O				
Operating system   Findedect linux   Stockholm   Sto	Main Processor	Industrial-grade processor	Decoding Capability	Al enabled: 1-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 3-channel 8 MP@30 fps; 4-channel 5 MP@30 fps; 6-channel 4 MP@30 fps; 12-channel
A   A   A   A   A   A   A   A   A   A	Operating System	Embedded Linux		
All by Recorder  a Fase detection, fee recognition, perineter protection, and SMO Pinis  All by Camera  All by	Operating Interface	Web; Local GUI		
Aby Recorder  Face Enterction, face recognition perimeter protection, and 50PM Plus and secretary (Name 20 January 1996). Plus and secretary (Name 20 January 1996). Plus Protection (Name 20 January 1996). Perimeter Protection  Protection  Protection  Share Perimeter Protection  Protectio	Al			HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 ×
Aby Camera Perimeter Protection Perimeter Protection Perimeter Performance Al by Recorder (humber of Chames) Part Description Perimeter Performance Al by Recorder (humber of Chames) Part Description Perimeter Performance Al by Recorder (humber of Chames) Page Detection Perimeter Performance Al by Recorder (humber of Chames) Page Detection Perimeter Performance Al by Recorder (humber of Chames) Page Detection Perimeter Performance Al by Recorder (humber of Chames) Page Detection Perimeter Al by Recorder (humber of Chames) Page Detection Page Detection Page Detection Province Al by Recorder (humber of Chames) Page Detection Page D	Al by Recorder	and SMD Plus	Video Output VGA: *Simu	GA: $1920 \times 1080$ , $1280 \times 1024$ , $1280 \times 720$ Simultaneous/heterogeneous video sources output for
Permitter Protection by Recorder (Number of Channels) Profession Standard  Video Compression Standard  Network  Network  Network  Network  Network  Network  Network  Network  Network Protocol  Network  Network Protocol  Network  Network Protocol  Network P	Al by Camera		Multi-screen Display	1st Screen: 1/4/8/9/16
Access Caron Channels) Permeter Performance of Alby Recorder (Number of Channels) Face Detection Face Attributes Gender; age group; glasses, expressions; face mask; breath (up to 12 face images/s each channel) Face Detection Face Attributes Face Detection Face	Perimeter Protection		Third-narty Camera	
Perimeter Performance of At by Camera (Number of Channels) Allo Compression Audio Co	by Recorder (Number of	2 channels, 10 IVS rules for each channel	Access	Canon
Audio Compression G.711a; G.711u; PCM; G.726  Face Detection  Face Attributes beard  Sender; age group; glasses; expressions; face mask; beard performance of Al by Recorder (Number of Channels)  Face Detection  Face Recognition	·		·	
Face Detection  Face Attributes  Gender; age group; glasses; expressions; face mask; baard  Face Detection  Face Detection  Performance of Al by Recorder (Number of Channels)  Face Detection  Face Detection  Performance of Al by Recorder (Number of Channels)  Face Detection  Face Detection  Performance of Al by Recorder (Number of Channels)  Face Detection  Face D		8 channels	·	
Face Attributes  Gender; age group; glasses; expressions; face mask; beard  Face Detection Performance of Al by Recorder (Number of Channels)  1 channel (up to 12 face images/s each channel)  Face Detection Performance of Al by Camera (Number of Channels)  Face Detection  Face Detectio	·		Audio Compression	G.711a; G.711u; PCM; G726
Face Detection Face Recognition  Face Recognition  Up to 10 face databases with 20,000 images, with a total capacity of 2.5 G. Name, general, byte precipital by control by control by control by control byte precipital byte. General Byte, precipital byte, credibility of the preci		Gender: age group: glasses: expressions: face mask:	Network	
Mobile Phone Access IOS; Android  Face Detection Face Recognition  Up to 10 face databases with 20,000 images, with a total canacity of 2.5 G. Name, gender, birthday, address, credential type, credential Nov, contential No. Countries & Recording Playback  Face Database Capacity  Face Recognition  Face Recognition  Brace Recognition  Sachannel ED (by camera) + FR (by recorder), indee stream; 22 face images/s 1-channel ED (by cerorder), video stream; 22 face images/s 1-channel ED (by cerorder), video stream; 22 face images/s 1-channel ED (by recorder), video stream;	Face Detection Performance of AI by	beard	Network Protocol	SMTP; NTP; DHCP; DNS; IP Filter; PPPoE; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR;
Performance of Al by Camera (Number of Channels)  Face Database Capacity  Up to 10 face databases with 20,000 images, with a total capacity of 2.5 G. Name, gender, birthday, address, total capacity, address, total	·		Mobile Phone Access	iOS; Android
Face Recognition Face Recognition Face Recognition  Face Recognition  Face Recognition  Face Recognition  Face Recognition  Face Recognition  Face Recognition  Face Recognition  Face Recognition  Performance of Al by Recorder (Number of Channels)  Face Recognition  Face Recognition	Performance of AI by	8 channels	Interoperability	ONVIF 22.06(Profile T; Profile S; Profile G); CGI; SDK
Face Database Capacity Face Database Capacity Face Database Capacity Face Postabase Capacity Face Recognition Performance of Al by Recorder (Number of Channels)  Face Recognition Performance of Al by Recorder (Number of Channels)  SMD Plus  SMD Plus  SMD Plus by Recorder  SMD Plus by Camera  B channels  Audio and Video  Access Channel  I 6 channels  Al disabled: 256 Mbps incoming, 256 Mbps recording and Al enabled: 180 Mbps outgoing  Resolution  Resolution  Resolution  B channels  Up to 16 fachannels  Multi-channel Playback  General, motion detection; intelligent; alarm  Secord Mode  General, motion detection; intelligent; alarm  Backup Method  USB device and network  Backup Method  USB device and network  Instant playback, general playback, event playback, tag playback, smart playback, smart playback, smart playback, smart playback, smart playback stream: 12 face images/S  Storage  Disk Group  Yes  Alarm  General Alarm  Motion detection; privacy masking: video loss; scene changing: PIR alarm; IPC external alarm  Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked; and cybersecurity exception  Intelligent Alarm  Face detection; face recognition, perimeter protection; SMD Plus; people counting; stereo analysis, heat map  Aldio and Video  Access Channel  I 6 channels  Al disabled: 256 Mbps incoming, 256 Mbps recording and Al enabled: 180 Mbps outgoing  Al enabled: 180 Mbps sugging  Al enabled: 180 Mbps sugging  Al enabled: 180 Mbps incoming, 180 Mbps recording and 256 Mbps outgoing  Al one of the privacy masking and playback, smart playback whole  Backup Method  USB device and network  Playback Mode  Instant playback, smart playback, smart playback, smart playback, smart playback, smart playback, smart playback and playback playback, smart playback and playback, smart playback and playback playback playback playback playback	,		Browser	Chrome; IE9 and later; Firefox
Face Database Capacity Face Patabase Capacity Face Recognition Performance of Al by Recorder (Number of Channels) Face Recognition Performance of Al by Recorder (Number of Channels)  SMD Plus  SMD Plus  A channels:  SMD Plus by Recorder  A channels:  Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change  SMD Plus by Camera  A channels  A chan	Face Recognition		Recording Playback	
redential type, credential type, credential type, credential for, countries & regions and state can be added to each face image.  Face Recognition Performance of Al by Recorder (Number of Channels)  Face Recognition Performance of Al by Camera (Number of Channels)  SMD Plus  SMD Plus  SMD Plus by Recorder  SMD Plus by Recorder  A channels  SMD Plus by Recorder  A channels  Alchannels  Al		total capacity of 2.5 G. Name, gender, birthday, address, credential type, credential No., countries & regions and	Multi-channel Playback	Up to 16 channels
Recorder (Number of Channels of Al by Recorder (Number of Channels)   Recorder (Number of Channels)	Face Database Capacity		Record Mode	General, motion detection; intelligent; alarm
Performance of Al by Recorder (Number of Channels)  Storage  Face Recognition Performance of Al by Camera (Number of Channels)  SMD Plus  SMD Plus by Recorder  A channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change  SMD Plus by Camera  SMD Plus by Camera  8 channels  A channels  A channels  A channels  A channels  A channels  A channels  SMD Plus by Camera  8 channels  A channels  A channels  A channels  A channels  A channels  B channels  A channels  B channels  A channels  A channels  A channels  A channels  B channels  A channels  A channels  B channels  A channels  A channels  B channels  A channels  B channels  A channels  B channels  A channels  B channels  A channel	Face Recognition	stream: 12 face images/s 1-channel FD (by recorder) + FR (by recorder), video	Backup Method	USB device and network
Face Recognition Performance of Al by Camera (Number of Channels)  SMD Plus  SMD Plus  4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change  SMD Plus by Camera  8 channels  Intelligent Alarm  Alarm Linkage  Port  Alarm Linkage  Port  Audio Input  1-channel RCA  Audio Output  1-channel RCA  Alarm Input  4 channels  Alarm Input  4 channels  Storage  Disk Group  Yes  Alarm  Yes  Alarm  Camera disconnection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm  Camera disconnection; storage error; disk full; IP conflict; login locked; and cybersecurity exception  Intelligent Alarm  Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map  Alarm Linkage  Port  Audio Input  1-channel RCA  Audio Output  1-channel RCA  Alarm Input  4 channels	Performance of AI by Recorder (Number of		Playback Mode	
Performance of Al by Camera (Number of Channels)  SMD Plus  4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change  SMD Plus by Recorder  SMD Plus by Camera  8 channels  Intelligent Alarm  Alarm Linkage  Port  Aldisabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al enabled: 180 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing  Resolution  Possible Alarm Input  Alarm Input  Alarm Input  Alarm Input  Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm  Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm  Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm  Camera disconnection; storage error; disk full; IP conflict; login locked; and cybersecurity exception  Intelligent Alarm  Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map  Alarm Linkage  Port  Audio Input  1-channel RCA  Audio Output  1-channel RCA  Alarm Input  4 channels			Storage	
Camera (Number of Channels)  SMD Plus  SMD Plus  4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change  SMD Plus by Camera  8 channels  Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm changing; PIR alarm; IPC external alarm conflict; MAC conflict; Iogin locked; and cybersecurity exception  Intelligent Alarm  Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map  Audio and Video  Access Channel  16 channels  Al disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al enabled: 180 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing  Resolution  Alarm Linkage  Port  Audio Input  1-channel RCA  Audio Output  1-channel RCA  Alarm Input  4 channels	Performance of AI by	8 channels	Disk Group	Yes
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 Plus by Camera  8 channels  Intelligent Alarm  Anomaly Alarm  Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map  Audio and Video  Access Channel  16 channels  Al disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing  Alone Mere and Alarm Linkage  Port  Audio Input  1-channel RCA  Audio Output  1-channel RCA  Alarm Input  4 channels	•		Alarm	
SMD Plus by Recorder vehicle, reducing false alarms caused by leaves, rain and lighting condition change  SMD Plus by Camera 8 channels  Audio and Video  Access Channel 16 channels  Al disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al 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; 960p; 720p; D1; CIF  Anomaly Alarm Conflict; MaC conflict; login locked; and cybersecurity 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 4 channels	SMD Plus		General Alarm	, , , , , , , , , , , , , , , , , , , ,
Audio and Video  Access Channel  Al disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing  Audio Output  1-channel RCA  Audio Output  4 channels	SMD Plus by Recorder	vehicle, reducing false alarms caused by leaves, rain and	Anomaly Alarm	conflict; MAC conflict; login locked; and cybersecurity
Access Channel  16 channels  Al disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing Al 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; 960p; 720p; D1; CIF  Alarm Linkage  buzzer; log; preset; email  1-channel RCA  Audio Input 1-channel RCA  Alarm Input 4 channels	SMD Plus by Camera	8 channels	Intelligent Alarm	
Access Channel  Al disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing  Resolution  Audio Input  1-channel RCA  Audio Output  1-channel RCA  Alarm Input  4 channels	Audio and Video		Alarm Linkage	
Network Bandwidth     and 256 Mbps outgoing Al enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing     Audio Input     1-channel RCA       Resolution     16 MP; 12 MP; 8 MP; 6 MP; 5 MP; 4 MP; 3 MP; 1080p; 960p; 720p; D1; CIF     Alarm Input     4 channels	Access Channel		Port	Sacret, 108, preset, email
180 Mbps outgoing Audio Output 1-channel RCA  16 MP; 12 MP; 8 MP; 6 MP; 5 MP; 4 MP; 3 MP; 1080p; 960p; 720p; D1; CIF Alarm Input 4 channels	Network Bandwidth	and 256 Mbps outgoing	Audio Input	1-channel RCA
960p; 720p; D1; CIF  Alarm Input  4 channels			Audio Output	1-channel RCA
Alarm Output 2 channels	Resolution		Alarm Input	4 channels
			Alarm Output	2 channels

# Wiz Sense | DHI-NVR4216-16P-EI

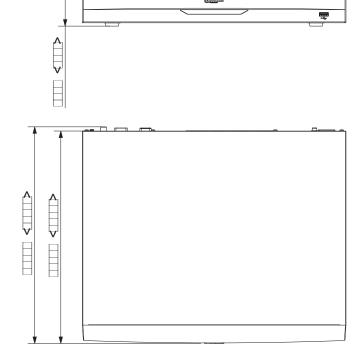
HDD Interface	2 SATA ports, up to 16 TB.The maximum HDD capacity varies with environment temperature.		
RS-232	1		
USB	2 (1 front USB 2.0 port, 1 rear USB 2.0 port)		
HDMI	1		
VGA	1		
Network Port	1 (10/100/1000 Mbps Ethernet port, RJ-45)		
PoE Port	16 ports, 10/100 Mbps, IEEE 802.3 af/at		

# General

Power Supply	100–240 VAC, 47-63 Hz		
Power Consumption	Total output of NVR is <10 W(without HDD) Total output power of PoE is 130W,the maximum output power of asingle port is 25.5W		
Net Weight	2.60 kg (5.73 lb)		
Gross Weight	3.80 kg (8.38 lb)		
Product Dimensions	375.0 mm × 329.3 mm x 53.0 mm (14.76" × 12.96" × 2.09") (W × L × H)		
Packaging Dimensions	451.0 mm $\times$ 425.0 mm $\times$ 147.0 mm (17.75" $\times$ 16.73" $\times$ 5.79") (W $\times$ L $\times$ 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)		
Installation	Rack or desktop		
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		

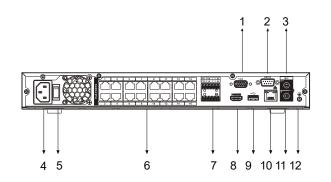
Ordering Information					
Туре	Model	Description			
16 Channels WizSense NVR	DHI-NVR4216- 16P-EI	16CH 1U 16PoE 2HDDs WizSense Network Video Recorder			

# Dimensions (mm[inch])



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# **Panels**



- 1 VGA Port
- 3 AUDIO OUT, RCAConnector
- 5 Power Switch
- 7 Alarm In/Out
- 9 USBPort
- 11 AUDIO IN, RCAConnector

- 2 RS-232 Port
- 4 PowerInput
- 6 PoEPorts
- 8 HDMI Port
- 10 Network Port
- 12 Ground