

# DHI-NVR4216-EI

## 16CH 1U 2HDDs WizSense Network Video Recorder



### Wiz Sense

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.

##### 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.

- Smart H.265+/H.265/Smart H.264+/H.264/MJPEG decoding format.
- Access, storage or forwarding at 256 Mbps (180 Mbps when AI function enabled).
- Max. decoding capability: 16 × 1080p@30 fps. Supports adaptive decoding.
- AI 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.
- AI 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.



#### AI Search

Support AI search 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 appeared.

#### 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.

**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, and SMD Plus;  |
| AI by Camera   | Face detection; face recognition; perimeter protection; SMD Plus; 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) | 8 channels                                |

**Face Detection**

|   |   |
|---|---|
| Face Attributes   | Gender; age group; glasses; expressions; face mask; beard |
| 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)   | 8 channels  |

**Face Recognition**

|   |  |
|---|--|
| Face Database Capacity  | Up to 10 face databases with 200,00 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<br>1-channel FD (by recorder) + FR (by recorder), video stream: 12 face images/s   |
| Face Recognition Performance of AI by Camera (Number of Channels)   | 8 channels   |

**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 Plus by Camera   | 8 channels  |

**Audio and Video**

|                   |   |
|-------------------|---|
| Access Channel    | 16 channels   |
| Network Bandwidth | AI disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing<br>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; 960p; 720p; D1; CIF  |

|                           |   |
|---------------------------|---|
| Decoding Capability       | AI disabled: 2-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 4-channel 8 MP@30 fps; 6-channel 5 MP@30 fps; 8-channel 4 MP@30 fps; 16-channel 1080p@30 fps<br>AI 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 1080p@30 fps |
| Video Output              | 1 HDMI, 1 VGA<br>HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720<br>VGA: 1920 × 1080, 1280 × 1024, 1280 × 720<br>*Simultaneous/heterogeneous video sources output for VGA and HDMI is configurable.   |
| Multi-screen Display      | 1st Screen: 1/4/8/9/16<br>2nd Screen: 1/4/8/9/16  |
| Third-party Camera Access | Panasonic, Sony, Samsung, Axis, Pelco, Arecont, ONVIF, Canon  |

**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; UPnP; SNMP; UDP; SMTP; NTP; DHCP; DNS; IP Filter; PPPoE; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR; NVS; etc.); P2P; auto register |
| Mobile Phone Access | iOS; Android  |
| Interoperability    | ONVIF 22.06(Profile T; Profile S; Profile G); CGI; SDK  |
| Browser             | Chrome; IE9 and later; Firefox  |

**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**

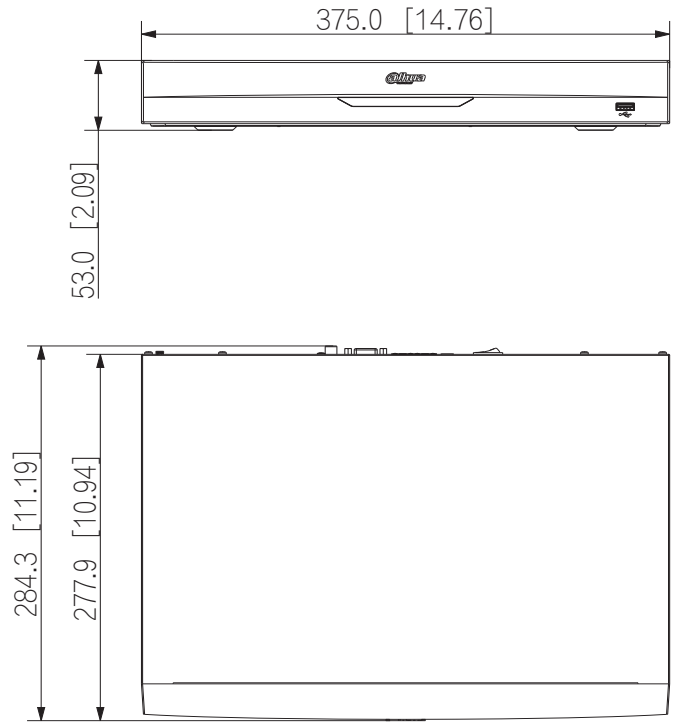
|                   |  |
|-------------------|--|
| General Alarm     | Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm                         |
| Anomaly Alarm     | Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked; and cybersecurity exception |
| Intelligent Alarm | Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map         |
| 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    |
| Alarm Output | 2 channels    |

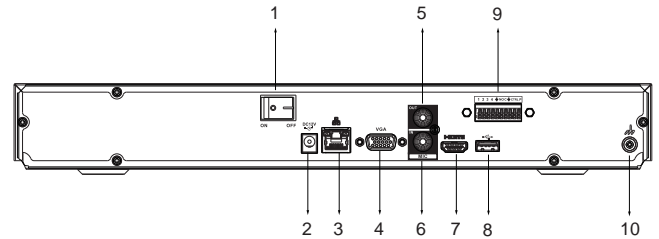
|                       |  |
|-----------------------|--|
| HDD Interface         | 2 SATA ports, up to 16 TB.The maximum HDD capacity varies with environment temperature.  |
| USB                   | 2 (1 front USB 2.0 port, 1 rear USB 2.0 port)  |
| HDMI                  | 1  |
| VGA                   | 1  |
| Network Port          | 1 (10/100/1000 Mbps Ethernet port, RJ-45)  |
| <b>General</b>        |  |
| Power Supply          | 12 VDC, 4 A  |
| Power Consumption     | <10 W(without HDD)   |
| Net Weight            | 1.51 kg (3.33 lb)  |
| Gross Weight          | 2.76 kg (6.08 lb)  |
| Product Dimensions    | 375 mm × 284.3 mm × 53 mm (14.76" × 11.19" × 2.09")<br>(W × L × H)   |
| Packaging Dimensions  | 433 mm × 141 mm × 366 mm (17.05" × 5.55" × 14.41")<br>(W × L × 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<br>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<br>CE-LVD: EN 62368-1:2014 |

**Dimensions (mm[inch])**



**Panels**

| <b>Ordering Information</b> |                |   |
|-----------------------------|----------------|---|
| Type                        | Model          | Description                                   |
| 16 Channels<br>WizSense NVR | DHI-NVR4216-EI | 16CH 1U 2HDDs WizSense Network Video Recorder |



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