

# DHI-NVR616DRH-128-XI

128CH 3U 16HDDs WizMind Network Video Recorder



WizMind

Launched by Dahua Technology, Dahua WizMind is a full portfolio of solutions composed of project-oriented products including IPC, IVSS, NVR, PTZ, XVR, Thermal and software platform which adopts industry-leading deep learning algorithms. Focusing on customer's requirements, WizMind provides precise, reliable and comprehensive AI solutions for verticals.

## Series Overview

As a new generation of network video recorders, NVR600-XI series offers high-grade recording technology and has AI capabilities that are ideal for IP video surveillance applications. This enterprise-level NVR has a powerful processor, built-in deep learning modules, and video metadata technology. It also comes with high-precision human face recognition, perimeter protection and 4K resolution, which together shorten the response time to events and provide critical information that allows surveillance personnel to take immediate action. This NVR is compatible with numerous third-party devices, making it a perfect solution for surveillance systems with or without a video management system.

## Functions

### 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.

### 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.

- Supports Smart H.265+, H.265, Smart H.264+, H.264 and MJPEG decoding formats.
- Max. decoding capability: 40 × 1080p@30 fps.
- Max. 1280/1280/1024 Mbps incoming/recording/outgoing bandwidth.
- AI by Recorder supports 8-channel face detection and recognition, up to 40 face databases and 300,000 face images; 8-channel metadata; 8-channel AcuPick; 4-channel PPE Detection; 32-channel perimeter protection; 32-channel SMD Plus.
- AI by Camera supports face detection and recognition, perimeter protection, SMD Plus, metadata, ANPR, stereo analysis, heat map, people counting, AcuPick and PPE Detection.
- Supports LCD screen, redundant power, N+M cluster, Raid 0/1/5/6/10, ISCSI, Drawer-like chassis design allows for HDD hot swapping.
- Supports EPTZ, One-click Arming & Disarming.



### Video Metadata

With deep learning algorithm, Dahua Video Metadata technology can detect, track, capture vehicle, non-motor vehicle and people, and select the best images, and extract attributes.

### PPE Detection

Detects and identifies the features of work uniforms and hats, and triggers the alarm for matches and mismatches. It also recognizes whether the work wear of personnel complies with security protection regulations.

## 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; PPE Detection                                                                  |
| 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; heat map; PPE detection; AcuPick |
| AcuPick Performance of AI by Recorder (Number of Channels) | 8 channels                                                                                                                                                                                                                |
| AcuPick Performance of AI by Camera (Number of Channels)   | All channels (64 targets/s)                                                                                                                                                                                               |

### Perimeter Protection

|                                                            |                                                                                                                                                                                                     |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Perimeter Performance AI by Recorder (Number of Channels)  | Simultaneous mode: 32 channels, 10 IVS rules for each channel<br>Heterogeneous mode: 24 channels, 10 IVS rules for each channel<br>Refer to the information on video output for details on the mode |
| Perimeter Performance of AI by Camera (Number of Channels) | All channels (64 targets/s)                                                                                                                                                                         |

### Face Detection

|                                                                   |                                                                                                                                                                                                                 |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Face Attributes                                                   | 6 attributes                                                                                                                                                                                                    |
| Face Detection Performance of AI by Recorder (Number of Channels) | Simultaneous mode: 8 channels (up to 12 face images/s each channel)<br>Heterogeneous mode: 5 channels (up to 12 face images/s each channel)<br>Refer to the information on video output for details on the mode |
| Face Detection Performance of AI by Camera (Number of Channels)   | All channels (64 targets/s)                                                                                                                                                                                     |

### Face Recognition

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Face Database Capacity                                              | Up to 40 face databases with 300,000 images, with a total capacity of 48 G.                                                                                                                                                                                                                                                                                                                                                           |
| Face Recognition Performance of AI by Recorder (Number of Channels) | Simultaneous mode: 32-channel FD (by camera) + FR (by recorder), image stream: 32 face images/s; 8-channel FD (by recorder) + FR (by recorder), video stream: 16 face images/s<br>Heterogeneous mode: 16-channel FD (by camera) + FR (by recorder), image stream: 16 face images/s; 5-channel FD (by recorder) + FR (by recorder), video stream: 10 face images/s<br>Refer to the information on video output for details on the mode |

|                                                                   |                             |
|-------------------------------------------------------------------|-----------------------------|
| Face Recognition Performance of AI by Camera (Number of Channels) | All channels (64 targets/s) |
|-------------------------------------------------------------------|-----------------------------|

### SMD Plus

|                      |                                                                                                                                          |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| SMD Plus by Recorder | 32 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change |
| SMD by Camera        | All channels (128 targets/s)                                                                                                             |

### Video Metadata

|                                                             |                                       |
|-------------------------------------------------------------|---------------------------------------|
| Metadata Performance of AI by Recorder (Number of Channels) | 8 channels, 23 attributes extraction. |
| Metadata Performance of AI by Camera (Number of Channels)   | All channels (64 targets/s)           |
| People Attributes                                           | 9 human body attributes               |
| Motor Vehicle Attributes                                    | 9 attributes                          |
| Non-motor Vehicle Attributes                                | 4 attributes                          |

### Vehicle License Plate Comparison

|                                     |                                                              |
|-------------------------------------|--------------------------------------------------------------|
| ANPR by Camera (Number of Channels) | All channels (64 targets/s)                                  |
| License Plate Database Capacity     | 1. Up to 20,000 plate numbers.<br>2. Blocklist and allowlist |

### Audio and Video

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Access Channel      | 128 channels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Network Bandwidth   | AI disabled: 1280 Mbps incoming, 1280 Mbps recording and 1024 Mbps outgoing<br>AI enabled: 640 Mbps incoming, 640 Mbps recording and 512 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Decoding Capability | AI disabled: 2-channel 32 MP@30 fps; 3-channel 24 MP@30 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; 20-channel 4 MP@30 fps; 40-channel 1080p@30 fps; 90-channel 720p@30 fps; 128-channel D1@30 fps<br>AI enabled: 1-channel 32 MP@30 fps; 1-channel 24 MP@30 fps; 2-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 4-channel 8 MP@30 fps; 5-channel 6 MP@30 fps; 6-channel 5 MP@30 fps; 8-channel 4 MP@30 fps; 16-channel 1080p@30 fps; 36-channel 720p@30 fps; 80-channel D1@30 fps |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Output              | 2 VGA, 4 HDMI; VGA: 1920 × 1080, 1280 × 1024, 1280 × 720; HDMI1&2: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720; HDMI3: 7680 × 4320, 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720; HDMI4: 1920 × 1080, 1280 × 1024, 1280 × 720<br>Simultaneous mode (simultaneously outputs video sources for all the HDMI1-4 and VGA1-2 ports)<br>Max. resolution of VGA1 and VGA2 is 1080p; max. resolution of HDMI1 and HDMI2 is 4K; max. resolution of HDMI3 is 8K; max. resolution of HDMI4 is 1080p<br>Heterogeneous mode (simultaneously outputs video sources for the VGA1 and HDMI1, or VGA2 and HDMI2. It also outputs heterogeneous video sources for HDMI1-4)<br>Max. resolution of VGA1 and VGA2 is 1080p; max. resolution of HDMI1, HDMI2 and HDMI3 is 4K; max. resolution of HDMI4 is 1080p |
| Multi-screen Display      | Main Screen: 1/4/8/9/16/25/36/64<br>Sub Screen: 1/4/8/9/16/25/36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 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 |
| Audio Compression | G.711a; G.711u; PCM; G726                |

## Network

|                     |                                                                                                                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Protocol    | HTTP; HTTPS; TCP/IP; IPv4; IPv6; UDP; SNMP; NTP; DHCP; DNS; SMTP; UPnP; IP Filter; PPPoE; FTP; DDNS; Alarm Server; IP Search (Supports IP camera, DVR, NVS, etc.); Multicast; P2P; Auto Registration; iSCSI |
| Mobile Phone Access | iOS; Android                                                                                                                                                                                                |
| Interoperability    | ONVIF 22.06(Profile T; Profile S; Profile G); CGI; SDK                                                                                                                                                      |
| Browser             | Chrome; IE; Safari; Edge; Firefox                                                                                                                                                                           |
| Network Mode        | Multi-address; load balance; fault tolerance                                                                                                                                                                |

## 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; tag playback; smart playback |

## Storage

|              |                 |
|--------------|-----------------|
| Disk Group   | Yes             |
| RAID         | RAID 0/1/5/6/10 |
| Hot Swapping | Yes             |

## 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 |
| Intelligent Alarm | Face detection; face and body detection; face recognition; perimeter protection; SMD; video                                                                                                                                       |

|                   |                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------|
| Intelligent Alarm | metadata; stereo analysis, crowd distribution; ; ANPR; heat map                                                |
| 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    | 32 channels                                                                                                   |
| Alarm Output   | 16 channels                                                                                                   |
| Disk Interface | 16 SATA ports, each disk can contain up to 20 TB. This limit varies depending on the environment temperature. |
| eSATA          | 1                                                                                                             |
| RS-232         | 1                                                                                                             |
| RS-485         | 2 (1 port for half-duplex serial communication, 1 port for full-duplex serial communication)                  |
| USB            | 4 (2 front USB 2.0 ports, 2 rear USB 3.0 ports)                                                               |
| HDMI           | 4                                                                                                             |
| VGA            | 2                                                                                                             |
| Network Port   | 4 (10/100/2500 Mbps Ethernet port, RJ-45)                                                                     |

## General

|                       |                                                                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply          | 100–240 VAC, 50±2% Hz                                                                                                                                                            |
| Redundant Power       | Yes                                                                                                                                                                              |
| Power Consumption     | <25 W (without HDD)                                                                                                                                                              |
| Net Weight            | 13.91 kg (30.67 lb)                                                                                                                                                              |
| Gross Weight          | 17.58 kg (38.76 lb)                                                                                                                                                              |
| Product Dimensions    | 485.0 mm × 542.6 mm × 133.2 mm (19.09" × 21.46" × 5.24") (W × D × H)                                                                                                             |
| Packaging Dimensions  | 634.0 mm × 709.0 mm × 429.0 mm(24.96" × 27.91" × 16.89") (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        | 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                                       |
|---------------------------|----------------------|---------------------------------------------------|
| AI Network Video Recorder | DHI-NVR616DRH-128-XI | 128CH 3U 16HDDs<br>WizMind Network Video Recorder |

| Type                   | Model                      | Description                       |
|------------------------|----------------------------|-----------------------------------|
| 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

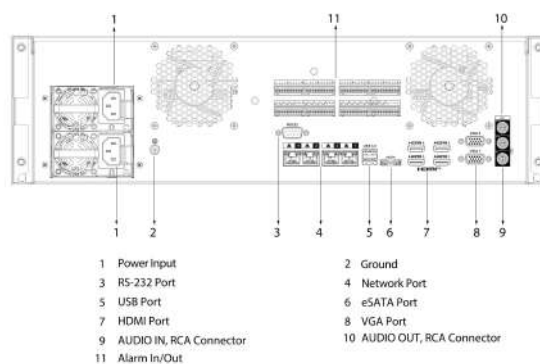


DHI-ARB1606  
Alarm Box



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

## Panels



## Dimensions (mm[inch])

