

DHI-IVD3116-1I

16CH 1U INTELLIGENT VIDEO DEVICE



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

Dahua IVD is an AI edge computing device that combines traditional video management with intelligent video analytics. It provides real-time AI monitoring and high-speed data processing on-site. With its built-in deep learning module, this series offers high-precision AI functions including human face recognition, video metadata, and industrial algorithms, making it widely applicable to various industries and the perfect solution for upgrading traditional CCTV systems in the most cost-effective way.

Functions

Face Detection

Empowered by deep-learning algorithms, the device supports face detection, tracking, and capture, and outputs the best face snapshots. It supports analysis of up to 6 face attributes.

Face Recognition

Supports recording faces with incredible accuracy through metadata and real-time cross-check to recognize faces with target features. With Regular and Stranger face modes, the device triggers a wide variety of alarm actions to suit different situations.

- 64-bit High-performance multi-core processor
- Max 16-ch IP camera inputs
- Max 96/96/96 incoming/recording/outgoing bandwidth
- Up to 8-channel AI IVS
- Up to 8-channel face recognition with normal IPC
- Up to 12-channel face recognition with face detection IPC
- Up to 8-channel video metadata
- Up to 8-channel AcuPick with normal IPC
- Up to 100 face databases with 300,000 face pictures in total
- 1 SATA bay, Max.20 TB
- 1 HDMI/1 VGA video output



Video Metadata

Metadata is the information on the features and attributes that is extracted from target objects which can be used for data retrieval. Currently, there are 4 main kinds of metadata in the security industry: Human face, human body, and motor vehicle and non-motor vehicle metadata.

IVS

Within specified restricted areas, intelligent detections are carried out, such as tripwire, intrusion, parking, people loitering and gathering. Driven by deep learning algorithms, IVS can provide precise person and vehicle classification detection, and accurately trigger alarms based on object types (pedestrians and vehicles), to greatly reduce the generation of false alarms. In addition, some basic functions including tripwire and intrusion are also referred to as perimeter protection.

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.

Technical Specification

System

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| Main Processor | 64-bit high-performance multi-core processor |
| Operating System | Embedded Linux OS |
| Operating Interface | Web (PCAPP); local GUI |
| AI Card | 1, AI card mode is switchable |

AI Applications

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|----------------|---|
| AI by Camera | Face detection; face recognition; video metadata (human; vehicle; non-motor vehicle); IVS; license plate comparison; tripwire people counting; regional people counting; abnormal number of people in queue; smoking detection; call detection; face & body detection |
| AI by Recorder | Face detection; face recognition; video metadata (human; vehicle; non-motor vehicle); IVS |
| AcuPick | 1. AI by Recorder: Supports 8-channel 2 MP or 4-channel 4 MP resolution. 2. AI by Camera: Supports 12-channel 2 MP or 6-channel 4 MP resolution |

Face Detection

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| Face Detection | 1. AI by Recorder: supports 8-channel 2 MP or 4-channel 4 MP resolution 2. AI by Camera: supports 12-channel 2 MP or 6-channel 4 MP resolution 3. Supports 6 properties: Gender, age, glasses, expression, face mask, and beard |
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Search by Image

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| Search by Image | Search by image in the face database, search by face or human body images, and 1:1 face recognition. |
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Face Recognition

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| Face Database Capacity | 1. 100 human face databases with 300,000 face pictures in total 2. 5 passerby databases with 300,000 face pictures in total The human face database and the passerby database share the total capacity and number of face images. |
| Face Recognition | 1. AI by Recorder: 8-channel 2 MP or 4-channel 4 MP with normal IP camera; 12-channel 2 MP or 6-channel 4 MP with face detection IP camera (Totally 12 × 2 MP or 6 × 4 MP face pictures analyzed per second); 2. AI by Camera: 16-channel 2 MP or 16-channel 4 MP with face recognition IP camera; 3. Supports entries frequency alarm |

Vehicle License Plate Comparison

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| License Plate Database Capacity | 1. 50 plate databases with 300,000 plate numbers in total 2. Supports allowlist and blocklist |
| Vehicle License Plate Comparison | Supports 12-channel 2 MP or 6-channel 4 MP resolution with ITC |

Video Metadata

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| Video Metadata | 1. AI by Recorder: Supports 8-channel 2 MP or 4-channel 4 MP resolution 2. AI by Camera: Supports 12-channel 2 MP or 6-channel 4 MP resolution 3. Object type: |
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| Video Metadata | Human body: Gender, age, sleeves length, top color, bottom type, bottom color, bag, rain coat, umbrella, hat, hairstyle, direction, hold a baby, face mask Vehicle: Plate No., vehicle type, vehicle color, plate color, logo, calling, seatbelt, ornament Non-motorized Vehicle: Non-motor vehicle type, non-motor vehicle color, number of passengers, umbrella, rain coat, bag, sleeve, length, top color, hat, hair style, face mask 4. Supports match or mismatch attributes alarm for video metadata |
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IVS Analytics

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| IVS | 1. AI by Recorder: Supports 8-channel 2 MP or 4-channel 4 MP resolution 2. AI by Camera: Supports 12-channel 2 MP or 6-channel 4 MP resolution 3. Rules: AI by Recorder: climbing detection, tripwire, intrusion, parking detection, crowd gathering, stay detection and loitering detection AI by Camera: tripwire, intrusion, abandoned object, missing object, fast moving, crowd gathering, loitering, parking and fence-crossing |
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Video Diagnosis

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| Video Diagnosis | 1. Supports 1-channel tour detection 2. Supports 12 detection items: blurry video, low contrast, video tampering, video jitter, image freeze, overexposure detection, video loss, noise detection, scene changing, static noise, interference fringe and color cast |
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Industrial Algorithms

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| Industrial Algorithms | The industrial algorithm is an optional installment. |
| PPE Detection | 1. AI by Recorder: 4-channel 2 MP/4 MP or 2-channel 8MP 2. Rules: AI by Recorder: hat/safety helmet detection, Balaclava, workwear detection (detect by color attributes or registered database), face mask detection, goggles detection, seatbelt detection, safety vest detection, shoes detection, gloves detection, mask detection, exposed hair detection and arm band detection |

Audio and Video

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|---------------------------|--|
| Access Channel | 16-channel |
| Network Bandwidth | Incoming bandwidth: 96 Mbps Recording bandwidth: 96 Mbps Outgoing bandwidth: 96 Mbps |
| Resolution | 16 MP;12 MP;8 MP;6 MP;5 MP;4 MP;3 MP;1080p;720p |
| Decoding Capability | 1-channel 16 MP; 1-channel 12 MP@20 fps; 1-channel 12 MP@15 fps; 2-channel 8 MP@30 fps; 2-channel 8 MP@15 fps; 3-channel 6 MP@30 fps; 3-channel 5 MP@30 fps; 3-channel 5 MP@25 fps; 4-channel 4 MP@30 fps; 6-channel 3 MP@25 fps; 4-channel 1080p@60 fps; 9-channel 1080p@30 fps; 16-channel 720p@30 fps |
| Video Output | 1-channel VGA output, 1-channel HDMI output, VGA 1/HDMI 1 outputs the same video source. |
| Multi-screen Display | Max. 16-channel local live view Max. 16-channel PCAPP live view |
| Third-party Camera Access | ONVIF, RTSP, Sony, Panasonic, Axis, Arecont, Pelco, Canon, Samsung |

Compression Standard

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| Video Compression | Smart H.265+;H.265;Smart H.264+;H.264 |
| Audio Compression | G.711a;G.711u;PCM;G.726 |

Network

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| Network Protocol | HTTP;HTTPS;TCP/IP;IPv4;RTSP;UDP;SMTP;NTP;DHCP;DNS;DDNS;P2P;IPv6;UPnP;SNMP |
| Mobile Phone Access | DMSS |
| Interoperability | ONVIF (Profile S, T and G); CGI; SDK |
| Browser | Chrome; PCAPP; IE9 or higher; Firefox |
| Network Mode | Multiple-address mode;Load balance;Fault-tolerance;Link aggregation |

Recording Playback

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| Multi-channel Playback | Max. 16-channel playback |
| Record Mode | Search auto; manual; video detection; IO alarm; thermal imaging; intelligent event; all record file |
| Storage Method | Internal HDD |
| Backup Method | HDD, peripheral USB storage device |
| Playback Function | 1. Play; Pause; Stop; Fast forward; Fast backward; Reverse play; Frame by frame; 2. Full-screen; Backup (clip and file); Snapshot; Digital zoom; Audio on and off |

Storage

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| Record Management | Supports record control (continuous, event-based, scheduled, scheduled & event-based) |
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Alarm

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| General Alarm | Motion detection; tampering; IPC external alarm; heat alarm; temperature alarm; temperature difference alarm; hot spot alarm; cold spot alarm |
| Anomaly Alarm | IPC offline alarm; storage error; HDD full; IP conflict; MAC conflict; login lock; AI module temperature alarm; AI module offline; fan malfunction; no HDD; power exception |
| Alarm Linkage | Record; snapshot (full image); alarm uploading; remote device alarm output; camera audio; buzzer; log; preset; email, and smart tracking. Disarming alarm linkage action by period or one-click sync disarm config with channels |

Port

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| Audio Input | 1 channel |
| Audio Output | 1 channel |
| Alarm Input | 4 channels |
| Alarm Output | 2 channels |
| Disk Interface | 1 slot, SATA. Max.20 TB/HDD |
| RS-232 | 1 port |
| RS-485 | 1 port |
| USB | 4 ports. 2 USB2.0 ports at the front panel and 2 USB3.0 ports at the rear panel. |
| HDMI | 1 port. |

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| VGA | 1 port |
| Network Port | 2 RJ-45 10/100/1000Mbps self-adaptive Ethernet ports |
| Power | Single supply |

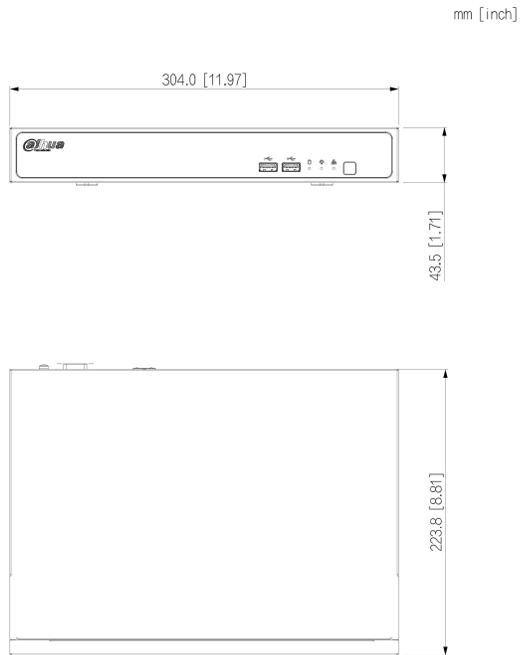
General

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|-----------------------|--|
| Disk Bay | 1 |
| Form Factor | 1U |
| Power Supply | 12 VDC,5 A |
| Power Consumption | 12 W (without HDD, idling) 19 W(all HDDs connected) |
| Fan | Intelligent speed regulation fan |
| Net Weight | 1.75 kg (3.86 lb) |
| Gross Weight | 2.78 kg (6.13 lb) |
| Product Dimensions | Chassis: 304 mm × 223.8 mm × 43.5 mm (11.97" × 8.11" × 1.71") (W × D × H) |
| Packaging Dimensions | With packaging: 399 mm × 304 mm × 133 mm (15.71" × 11.97" × 23.58") (W × D × H) |
| Operating Temperature | -10 °C to +55 °C (+14 °F to +131 °F) |
| Operating Humidity | 10%–90% (RH), non-condensing |
| Operating Altitude | ≤5,000 m (16,404.20 ft) |
| Installation | Desktop; Rack |
| Certifications | CE-LVD : EN 62368-1 CE-EMC : EN IEC 61000-3-2 , EN 61000-3-3 , EN 55032 , EN 50130-4 , EN 55035 |

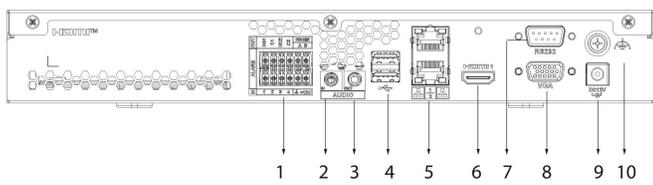
Ordering Information

| Type | Model | Description |
|--------------------------|----------------|----------------------------------|
| INTELLIGENT VIDEO DEVICE | DHI-IVD3116-1I | 16CH 1U INTELLIGENT VIDEO DEVICE |

Dimensions (mm[inch])



Panels



- | | |
|----------------|-------------|
| 1 Alarm In/Out | 2 AUDIO IN |
| 3 AUDIO OUT | 4 USB Port |
| 5 Network Port | 6 HDMI Port |
| 7 RS-232 Port | 8 VGA Port |
| 9 Power Input | 10 Ground |