DHI-IVD5148-1I

48CH 1U INTELLIGENT VIDEO DEVICE



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

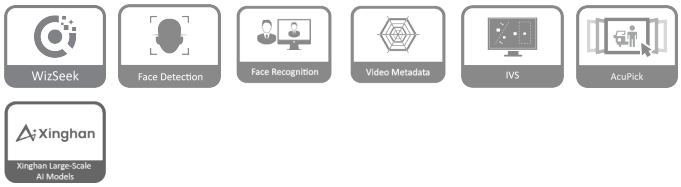
WizSeek

Powered by Xinghan large-scale AI model, WizSeek enables natural-language video search for human, vehicle, object, and event with high accuracy, while reducing investigation time by transforming manual reviews into instant results.

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.

- 64-bit High-performance multi-core processor
- Max 48-ch IP camera inputs
- Max 256/256/256 Mbps incoming/recording/outgoing bandwidth
- Intelligent analytics under Normal CPU Mode by default
- Up to 16-channel AI IVS
- Up to 16-channel face recognition with normal IPC
- Up to 32-channel face recognition with face detection IPC
- Up to 16-channel video metadata
- Up to 16-channel AcuPick with normal IPC
- Up to 100 face databases with 500,000 face pictures in total
- Up to 16-channel 1080p intelligent video compression
- 1 SATA bay, Max.20 TB
- 2 HDMI/1 VGA video output



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.

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.

Intelligent Video Compression

Dahua intelligent compression adopts the advanced self-adaptive bit rate control algorithm. It supports live view, playback and download by transmitting compressed streams through the network, to provide high-quality videos and reduce storage and network transmission costs.

Technical Specification

System

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

Intelligent CPU Mode

In Multimodal Large Model Engine	Supports all channels (16 targets/s) Wizseek with AcuPick camera
In Intelligent Analysis Engine	Supports up to 2 algorithms running simultaneously; Up to 8-ch 2 MP or 4-ch 4 MP or 2-ch 8 MP face recognition/IVS/Video Metadata/AcuPick by recorder; Up to 4-ch 2 MP or 4-ch 4 MP or 2-ch 8 MP PPE Detection/Work Behavior Analysis/People Behavior Analysis/Smart Object Detection by recorder
In Compression Engine	Up to 8-ch 2 MP/ 4-ch 4 MP/ 3-ch 5 MP/ 2-ch 8 MP/ 1-ch 12 MP intelligent video compression

AI Applications

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 16-channel 2 MP or 16-channel 4 MP resolution; 2. AI by Camera: Supports 32-channel 2 MP or 32-channel 4 MP resolution

WizSeek

Performance	AI by Recorder: 32-ch 2 MP or 32-ch 4 MP or 16-ch 8 MP WizSeek with AcuPick IP camera (1 AI card for WizSeek modeling); Each AI card for WizSeek modeling can analyze 16 targets/s
Search Language	English, Italian, Spanish, Russian, French, German, Portuguese, Polish, Czech, Dutch, Korean, Arabic, Turkish, Thai, Indonesian, Vietnamese, Traditional Chinese

Face Detection

Face Detection	1. AI by Recorder: Supports 16-channel 2 MP or 16-channel 4 MP resolution; 2. AI by Camera: Supports 32-channel 2 MP or 32-channel 4 MP resolution; 3. Supports 6 properties: Gender, age, glasses, expression, face mask, and beard

Face Recognition

Face Database Capacity	1. 100 human face databases with 500,000 face pictures in total; 2. 5 passerby databases with 500,000 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: 16-channel 2 MP or 16-channel 4 MP with normal IP camera; 32-channel 2 MP or 32-channel 4 MP with face detection IP camera (Totally 32 × 2 MP or 32 × 4 MP face pictures analyzed per second); 2. AI by Camera: 32-channel 2 MP or 32-channel 4 MP with face recognition IP camera; 3. Supports entries frequency alarm

Video Metadata

Video Metadata	1. AI by Recorder: Supports 16-channel 2 MP or 16-channel 4 MP resolution; 2. AI by Camera: Supports 32-channel 2 MP or 32-channel 4 MP resolution; 3. Object type: 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

Search by Image

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

Vehicle License Plate Comparison

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 32-channel 2 MP or 32-channel 4 MP resolution with ITC

IVS Analytics

IVS	1. AI by Recorder: Supports 16-channel 2 MP or 16-channel 4 MP resolution; 2. AI by Camera: Supports 32-channel 2 MP or 32-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

Video Diagnosis

Video Diagnosis	Normal CPU Mode: 1. Supports 1-channel tour detection; 2. Supports 13 detection items: blurry video; low contrast; video tampering; video jitter; abrupt image change; image freeze; overexposure detection; video loss; noise detection; scene changing; static noise; interference fringe and color cast; Intelligent CPU Mode: Not supported

Intelligent Video Compression

Intelligent Video Compression	1. Compressed preview, playback and download of source stream on the platform; 2. Supports origin/compression dual stream live view and storage; 3. Supports compressing a variety of third-party code streams (ONVIF/RTSP); 4. Compression Resolution: 12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/1.3 MP/720p/D1; 5. Each AI card supports up to 2-channel 12 MP/4-channel 8 MP/6-channel 5 MP/8-channel 4 MP/16-channel 2 MP and below

Industrial Algorithms

Industrial Algorithms	The industrial algorithm is an optional installment
Work Behavior Analysis	1. AI by Recorder: Without large model (by default): 8-channel 2 MP/4 MP/8 MP (8-channel for each AI card); With large model (optional): 4-channel 2 MP/4 MP/8 MP (4-channel for each AI card); 2. Rules: AI by Recorder: calling, using mobile phone, sleeping while on duty, leave post detection, smoking and abnormal number of people
PPE Detection	1. AI by Recorder: 8-channel 2 MP/4 MP/8 MP (8-channel for each AI card); 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
Smart Object Detection	1. AI by Recorder: 8-channel 2 MP/4 MP/8 MP (8-channel for each AI card); 2. Rules: AI by Recorder: smart missing object and smart abandoned object; 3. Object Type: non-motor vehicles, luggage, bags and boxes
People Behavior Analysis	1. AI by Recorder: Without large model (by default): 8-channel 2 MP/4 MP/8 MP (8-channel for each AI card); With large model(optional): 4-channel 2 MP/4 MP/8 MP (4-channel for each AI card); 2. Rules: AI by Recorder: fighting detection, fall detection, running detection and tailing detection

Audio and Video

Access Channel	48-channel
Network Bandwidth	Incoming bandwidth: 256 Mbps Recording bandwidth: 256 Mbps Outgoing bandwidth: 256 Mbps
Resolution	32 MP;24 MP;16 MP;12 MP;8 MP;6 MP;5 MP;4 MP;3 MP;1080p;720p
Decoding Capability	Normal CPU Mode: 1-channel 32 MP; 1-channel 24 MP; 2-channel 16 MP; 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; Intelligent CPU Mode: 4-channel 1080p@30 fps
Video Output	Normal CPU Mode: 1-channel VGA output; 2-channel HDMI output; VGA 1/HDMI 1 outputs the same video source; Intelligent CPU Mode:
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

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

Network

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

Recording Playback

Multi-channel Playback	16 channels
Record Mode	Video detection;AI event;Thermal;All Video;Instant record;External alarm;Smart motion detection
Storage Method	Local hard disk
Backup Method	Hard disk;External 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

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

Alarm

General Alarm	Motion detection;Video tampering;Local alarm;IPC external alarm;Fire alarm;Temperature alarm;Temperature contrast 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; smart tracking. Disarming alarm linkage action by period or one-click sync disarm config with channels

Port

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	2 × rear-mounted USB 3.0 ports;2 × front-mounted USB 2.0 ports
HDMI	2 ports. Port 1 supports 4K output
VGA	1
Network Port	2 RJ-45 10/100/1000 Mbps self-adaptive Ethernet ports
Power	Single supply

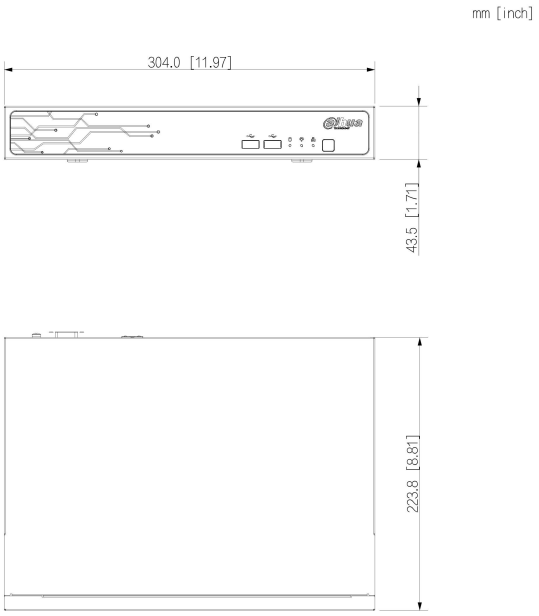
General

Disk Bay	1
Form Factor	1U
Power Supply	12 VDC, 5 A
Power Consumption	18 W (without HDD, idling); 25 W (all HDDs connected)
Fan	Intelligent speed controlling 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

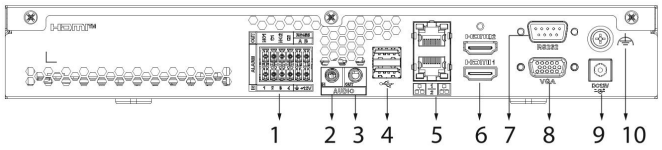
Ordering Information

Type	Model	Description
INTELLIGENT VIDEO DEVICE	DHI-IVD5148-1I	48CH 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

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