

DHI-IVSS7024DR-16I

4U 24HDD AI Network Video Recorder



AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc.

The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and platform management products. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

System Overview

Dahua IVSS goes beyond the ordinary NVR products. It is an Intelligent Video Surveillance Server combines video management functions with traditional video storage operations in one device. Besides the basic functions as network video recorder, IVSS is integrated with features such as face detection, face recognition for different business and industrial applications.

With build-in deep learning module, IVSS series products adopt video image structuring technology based on deep learning algorithms, achieving high-precision human face recognition and perimeter protection. By applying deep learning artificial intelligence, IVSS allow users to focus on what matters most, improve event response time and help make video actionable.

An all new UI design supports device operation and maintenance management, improving the value and experience of surveillance view, and servicing the era of security big data.

- Industry embedded micro-controller
- Max 512Mbps incoming bandwidth
- 256-channel IP video access
- Up to 256-channel perimeter protection
- Up to 96-channel face recognition by device
- Up to 256-channel face recognition by camera
- Up to 64-channel Video Metadata
- Up to 50 face databases with 300,000 face pictures in total
- Supports RAID 0/1/5/6/10
- SAS3.0 for storage extension
- 3HDMI/1VGA video output
- Redundant power



Functions

Face Recognition

Support record faces by structured data and real-time crosscheck with incredible accuracy to figure out the face with target features. With regular/Stranger mode to trigger kinds of alarm actions for different applications.

Perimeter Protection

Automatically filtering out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improving alarm accuracy.

Video Metadata

Metadata is feature attribute information extracted from a target object which can be used for data retrieval. Currently, there are four main kinds of metadata in the security industry: human face, human body, and motor vehicle and non-motor vehicle metadata.

AI Search

Support search by metadata of human and vehicles. Support uploading face pictures to NVR and compare them with recorded faces in NVR 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.

Technical Specification

System

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|---------------------|------------------------------------|
| Main Processor | Industry embedded micro-controller |
| Operating System | Embedded Linux OS |
| Operation Interface | WEB (PCAPP), local GUI |

AI Applications

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|--------------|---|
| AI by Camera | Supports AI by camera function: Human face detection, human face recognition, video metadata (human/vehicle/non-motorized vehicle), perimeter protection |
| AI by Device | Supports AI by IVSS function: Human face detection, human face recognition, video metadata (human/vehicle/non-motorized vehicle), perimeter protection, plate recognition |

Perimeter Protection

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|-----------------------------------|-------------|
| Perimeter Function (AI by device) | 256-channel |
| Perimeter Function (AI by camera) | 256-channel |

Human Face Detection

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| Human Face Properties | Supports 6 properties: Gender, age range (6 levels), glasses, expression (8 types), mouth mask, and beard |
| Face Detection Performance (AI by device) (1080P) (Channel Amount) | 96-channel, one channel max. supports 12 human faces |
| Face Detection Performance (AI by camera) (Channel Amount) | 256-channel |

Human Face Recognition

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|---|---|
| Face Database Capacity | Max. 50 human face databases, 300000 pictures, each database contains 300000 pictures |
| Human Face Recognition Performance (AI by device) (1080P)(Channel Amount) | 96-channel, 320 face pictures per second processing |
| Human Face Recognition Performance (AI by camera) (Channel Amount) | 256-channel |

Plate Recognition

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| Plate Database Capacity | Max. 50 plate databases, each database contains 300000 plate numbers Support black list/white list |
| Plate Detection Performance by ITC Camera (Channel Amount) | 64-channel |

Video Metadata

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|--|---|
| Human Body Properties | Top color, top type, bottom color, bottom type, cap, bag, age, gender, and umbrella |
| Vehicle Properties | Supports 9 properties: Plate, plate color, vehicle body, vehicle brand, driver calling, seatbelt status, decoration object in the vehicle, and vehicle registration place |
| Non-motorized Vehicle Properties | Supports 4 properties: Vehicle type, vehicle color, people amount, and helmet |
| Metadata Performance (AI by device) (1080P) (Channel Amount) | 64-channel |

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|--|------------|
| Metadata Performance (AI by camera) (Channel Amount) | 64-channel |
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Video Parameters

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|----------------------|---|
| Remote Connection | 256-channel |
| Network Bandwidth | Incoming bandwidth: 512Mbps recording bandwidth: 384Mbps outgoing bandwidth: 128Mbps |
| Resolution | 12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080P/960P/720P/D1/CIF/QCIF |
| Decoding Capability | 24-channel 1080P@ 30fps |
| Video Output | 1-channel VGA output, 3-channel HDMI output, VGA 1/HDMI 1 outputs the same video source Supports 4K output |
| Multi-screen Display | Customized display Max. 36-channel local live view Max.16-channel PCAPP live view |
| Third-party Support | Onvif, RTSP, Sony, Panasonic, Axis, Arecont, Pelco,Canon, Samsung |
| Operating System | Embedded Linux OS |
| Operation Interface | WEB(PCAPP), local GUI |

Compression

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|-------------------|---------------------------------------|
| Video Compression | Smart H.265+/Smart H.264+/H.265/H.264 |
| Audio Compression | G.711A/G.711U/PCM/G726 |

Network

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|------------------|--|
| Protocol | HTTP, HTTPS, TCP/IP, IPv4, RTSP, UDP, SMTP, NTP, DHCP, DNS, DDNS, P2P |
| Mobile Phone | iOS, Android |
| Interoperability | ONVIF (profile S), CGI, SDK |
| Browser | Chrome, PCAPP, IE9 or higher, Firefox |
| Network Mode | NIC binding mode such as multiple-address mode, load balance, fault-tolerance, etc |

Record Playback

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| Multiple-channel Playback | Max. 16-channel playback |
| Record Mode | Search video detection/manual record/IO alarm/intelligent event/all record file |
| Storage Mode | Internal HDD, SAS disk array enclosure |
| Backup Mode | HDD, peripheral USB storage device |
| Playback | Play, pause, stop, fast forward, fast backward, reverse play, frame by frame play Full-screen, backup (clip/file), snapshot, digital zoom, audio on/off |

Storage

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|--------------|-----------------|
| HDD Group | 24 |
| RAID | RAID 0/1/5/6/10 |
| Storage Pool | N/A |

Alarm

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| General Alarm | Motion detect, tampering, local 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 |

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|-------------------|--|
| Intelligent Alarm | Human face detection, human face recognition, video metadata (person/vehicle/non-motorized vehicle),perimeter protection (intrusion, tripwire),plate recognition |
| Alarm Linkage | Record, snapshot (full image), local external alarm output, IPC external alarm output, access & control, audio prompt, buzzer, log, preset, email |

Peripheral Interface

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|--------------|---|
| Audio Input | 1-channel (reserved) |
| Audio Output | 1-channel, speaker output, audio linkage output |
| Alarm Input | 16-channel |
| Alarm Output | 8-channel |
| Internal HDD | 24 slots, SATA3.0/SAS. Max.10T/HDD |
| eSATA | 1 port (reserved) |
| SAS | 2 SAS3.0 ports |
| RS-232 | 1 port, for debug or transparent COM data |
| RS-485 | 1 port, control peripheral PTZ and so on Supports various protocols |
| USB | 4 ports 2 USB2.0 port at the front panel and 2 USB3.0 port at the rear panel |
| HDMI | 3 ports. 4K output |
| VGA | 1 port |
| Network | 4 RJ-45 10/100/1000Mbps self-adaptive Ethernet ports |
| Power | 2 ports |
| PoE | N/A |

General Parameters

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| Power Supply | 100V AC~240V AC 50±2%Hz |
| Power Consumption | 144W (Without HDD, idling) |
| Net Weight | 17 kg (37.48 lb) |
| Gross Weight | 18 kg (39.68 lb) |
| Dimensions (W × L × H) | Chassis: 446 mm × 543.4 mm × 175 mm (17.56 " × 21.39 " × 6.89 ") Max. size: 482.6 mm (with hanger) × 543.4 mm × 175 mm (with feet mat) (19.00 " × 21.39 " × 6.89 ") |
| Packaging Dimensions (W × L × H) | 689 mm × 779 mm × 552 mm (27.13 " × 30.67 " × 21.73 ") |
| Operating Conditions | 0 °C to 45 °C (+32 °F to +113 °F)/10%RH~90% RH |
| Storage Conditions | 0 °C to 40 °C (+32 °F to +104 °F)/30%RH~85% RH |
| Operating Altitude | 5000 m (16404.20 ft) |
| Installation Mode | Desktop/rack |
| Certifications | CE: CE-LVD: EN 60950-1/IEC 60950-1 CE-EMC: EN55024,EN55035, EN50130-4,EN60950-1 FCC: Part 15 Subpart A UL: 60950-1 and CAN/CSA C22.2 No. 60950-1-07 |

Dimensions(mm/inch)

