

256-channel Intelligent Video Surveillance Server

3U 16 HDD AI Network Video Recorder



- Intel Quad-core Processor
- Maximum 512 Mbps Incoming Bandwidth
- 256 IP Channel Video Access
- Facial Database Management, Stores up to 100,000 Faces
- Facial Recognition Processing on Up to 16 Channels
- Stranger Mode to Detect Faces not Stored in Database
- Search by Image
- Supports RAID 0/1/5/10
- SAS 3.0 for Storage Extension
- Three (3) HDMI and One (1) VGA Video Outputs
- Redundant Power
- Five-year Warranty*



System Overview

The Dahua Intelligent Video Surveillance Server Series (IVSS) combines Deep Learning algorithms, a powerful Graphics Processing Unit (GPU), and an advanced Network Video Recorder (NVR) into an all-in-one Artificial Intelligence server. Dahua built the IVSS series from the ground-up as a dedicated AI surveillance server that eliminates the complications of browser updates, incompatible camera plug-ins, incompatible flash memory, and outdated Web technology.

The integrated GPU module and advanced deep learning algorithms perform powerful video structure analysis with metadata, achieve precision human facial analysis, and support 16 channels of real-time face recognition based on a database that stores up to 100,000 faces. IVSS technology captures, records and categorizes various facial features, including age, gender, expression, and whether the target face wears glasses or sports facial hair; compares the data to faces in the database, and displays real-time facial recognition data.

IVSS offers advanced features to customize the powerful Artificial Intelligence for different applications. For example, facial feature filtering displays only those faces that meet target criteria and Stranger Mode detects a face not stored in the database and triggers an alarm, takes a snapshot, or records the face for further scrutiny. The IVSS is ideal for applications that require entrance/exit management, where knowing who is coming and going is a valuable asset.

Functions

Real-time Face Recognition

The IVSS7016 performs real-time facial recognition on up to 16 channels simultaneously. The server captures and analyzes facial features to determine gender, age, expression, glasses, moustache, and mask, and then can record the faces and store the associated structured data. The server also filters incoming video to display faces that match target features.

Stranger Mode

IVSS supports two facial detection modes: Regular and Stranger. In Stranger mode, when IVSS detects a face not stored in the device's database, it can trigger an alarm, a buzzer, take a snapshot, or initiate recording. IVSS also incorporates a Similarity Threshold, where the server triggers an alarm for a face that does not match a minimum recognition level. The Stranger Mode and the Similarity Threshold are designed for critical infrastructure sites where access control is of vital importance.

Efficient Search

IVSS searches images by facial features to improve search efficiency. The server support uploading and storing 100,000 facial images for comparison with recorded faces. This search capability allows operators to quickly and easily search multiple channel recordings to determine when and where a person of interest appeared in a recording.

Face Database Management

In addition to the 100,000 facial images, the IVSS database also stores names, genders, birthdays, nationality, address, and ID information associated with each facial image. IVSS offers powerful and configurable database management features that can be applied to each face recognition channel independently.

High Efficiency Video Coding (H.265)

The H.265 (ITU-T VCEG) video compression standard offers double the data compression ratio at the same level of video quality, or substantially improved video quality at the same bit rate, as compared to older video compression technologies. H.265 offers such impressive compression by expanding the pattern comparison and difference-coding, improving motion vector prediction and motion region merging, and incorporating an additional filtering step called sample-adaptive offset filtering.

Technical Specification

System

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|------------------|---------------------------|
| Main Processor | Intel Quad-core Processor |
| Memory | 16 GB, up to 64 GB |
| Operating System | Embedded LINUX |

Artificial Intelligence

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|----------------------|---|
| Face Recognition | Up to 16 Channels |
| Metadata | Structured data for gender, age, expression, glasses, moustache, and mask |
| Stranger Mode | <ul style="list-style-type: none"> • Detects a face not stored in the IVSS database. • Similarity Threshold set manually. |
| Trigger Events | Buzzer, snapshot, recording |
| Search by Image | <ul style="list-style-type: none"> • Up to ten (10) target face image searches simultaneously. • Supports Similarity Threshold for each target face image. |
| Database Management | <ul style="list-style-type: none"> • 20 Face Databases • 100,000 total face images. • Stores name, gender, birthday, nationality, address, ID information for each face picture. |
| Database Application | Each database can be applied to video channels independently. |

Audio and Video

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| IP Camera Input | 256 Channels |
| Audio | Input: One (1) Channel, 3.5 mm Jack Output: (1) Channel, 3.5 mm Jack |

Display

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| Interface | Three (3) HDMI Outputs One (1) VGA Output | |
| Native Output Resolution | HDMI (all outputs) | 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720 |
| | VGA | 1920 × 1080, 1280 × 1024, 1280 × 720 |
| Maximum Decoding | 24 Channels of 1080p at 30 fps | |
| Multi-screen Display | Up to 36 Splits for each screen | |
| On-screen Display | Camera Title, Time, Camera Lock, Motion Detection, Recording | |

Recording

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|--------------------------------|---|
| Compression | H.265, H.264, MJPEG, MPEG4 |
| Supported IP Camera Resolution | 32 MP, 12 MP, 8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 1080p |
| Maximum Incoming Bandwidth | 512 Mbps |
| Maximum Recording Bandwidth | 450 Mbps |
| Record Mode | Schedule (Regular, Motion Detection, Alarm) |

Video Detection and Alarm

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|-----------------|--|
| Trigger Events | Recording, Snapshot, Buzzer |
| Video Detection | Motion Detection, MD Zones: 396 (22 × 18); Tampering |
| Alarm Inputs | 16 Channels |
| Relay Outputs | Eight (8) Channels |

Playback and Backup

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|---------------|--|
| Sync Playback | Up to 16 Channels Synchronous Playback, 128 Mbps Playback Bandwidth |
| Search Mode | Time and Date, Video Detection, Face and Exact Search (accurate to one second) |
| Backup Mode | USB Device, Network |

Third-party Support

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| Third-party Support | AXIS, Panasonic, and Sony cameras that support CGI |
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Network

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| Interface | Four (4) RJ-45 Ports (10/100/1000 Mbps) |
| Network Port Mode | Independent Ethernet Ports, Load Balance, Fault-Tolerance, Link Aggregation |
| Network Function | HTTP, HTTPS, TCP/IP, UDP, RTSP, IPv4, NTP, DHCP, DNS, IP Filter, IP Search (Support Dahua IP camera, DVR, NVR), P2P |
| Interoperability | ONVIF 2.4, SDK, CGI |

Storage

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| Internal HDD | 16 SAS/SATA HDDs, Up to 10 TB capacity for each Disk, Independent HDD Bracket, Hot-swappable |
| HDD Mode | Single, RAID 0/1/5/10 (Enterprise-level HDDs are recommended), Supports Global HDD Hot-spare |
| eSATA | One (1) eSATA Port ¹ |
| SAS | Two (2) SAS 3.0 Ports |

Auxiliary Interface

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|-------------|--|
| Front Cover | 7-in. HD LCD (1920 × 1080 or 1280 × 1024), Hot-swappable |
| USB | Two (2) USB 2.0 Ports Two (2) USB 3.0 Ports |
| RS232 | One (1) Port for PC Communication |
| RS485 | One (1) Port for PTZ Control |

Electrical

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| Power Supply | 100 VAC to 240 VAC, 50/60 Hz Hot-swappable, Redundant |
| Power Consumption | < 120 W, without HDD |
| Fan | 12 Dual Ball Bearing Fans, Hot-swappable |

Environmental

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| Operating Conditions | 0° C to +50° C (32° F to 122° F), 86 kpa to 106 kpa |
| Storage Conditions | -20° C to +70° C (-4° F to 158° F), 0% to 90% RH |

Construction

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|--------------|---|
| Dimensions | 3U, 485.0 mm x 539.40 mm x 133.20 mm (19.10 in. x 21.24 in. x 5.20 in.) |
| Net Weight | 17.45 kg (38.47 lb), without HDD |
| Installation | Standard 19-in. Rack-mount |

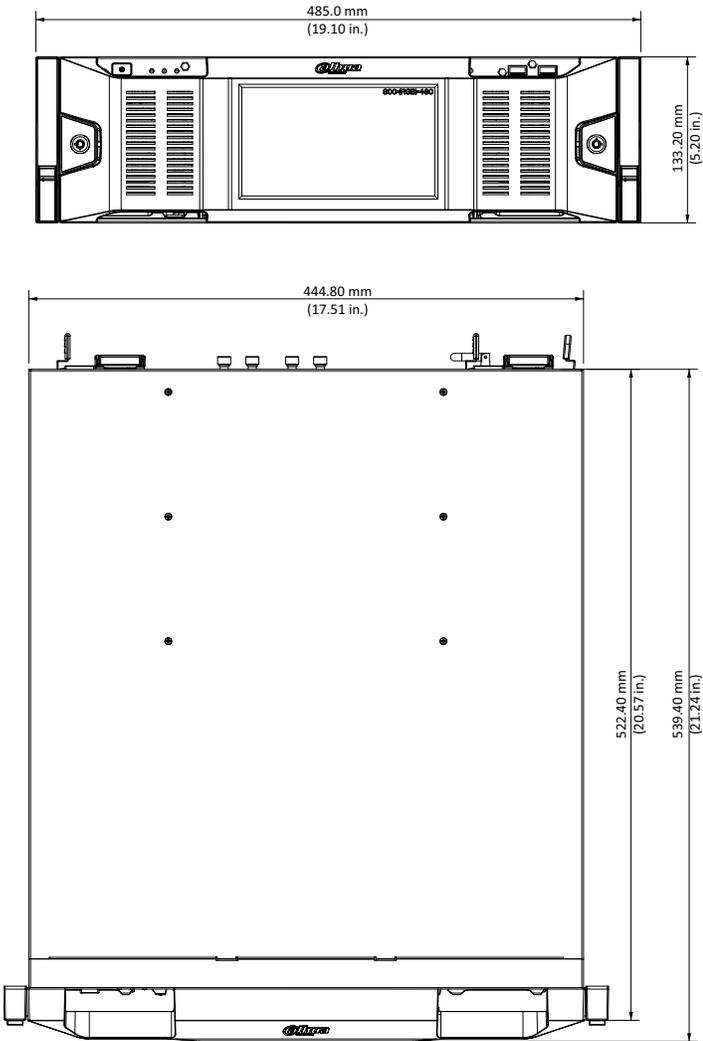
Certifications

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|-------------------------------------|---|
| Safety | UL 60950-1, EN60950-1 |
| Electromagnetic Compatibility (EMC) | FCC Part 15 Subpart B, ANSI C63.4-2014, EN55032, EN55024, EN50130-4 |

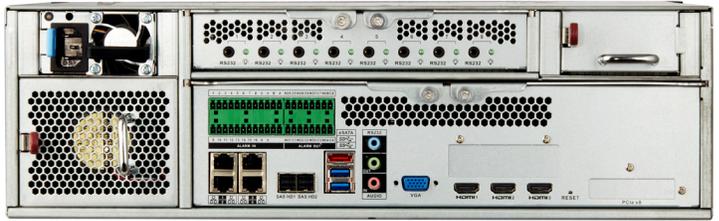
Ordering Information

| Type | Part Number | Description |
|------|-------------------|---|
| IVSS | DHI-IVSS7016DR-4T | 3U 16 HDD Intelligent Video Surveillance Server with Redundant Power, LCD screen and 16 Channel Back-end Face Recognition |

Dimensions(mm/in.)



Rear Panel



1. Contact Dahua Technical Support to confirm compatible devices.