

Intelligent Video Surveillance Server

MODEL : WIVS-161

256CH 4U Intelligent Video Surveillance Server



- 64-bit High-performance multi-core processor
- 256-channel IP video access
- Max 768/768/768 mbps incoming / recording / outgoing bandwidth
- Up to 256-channel AI IVS
- Up to 256-channel face recognition with normal IPC
- Up to 256-channel 2 MP or 256-channel 4 MP face recognition with face detection IPC
- Up to 256-channel video metadata
- Up to 256-channel AcuPick with normal IPC
- Up to 100 face databases with 500,000 face pictures in total
- Up to 256-channel 1080p intelligent video compression
- 24 bays, supports RAID 0/1/5/6/10/50/60
- 4 HDMI/1 VGA video output

Launched by WATASHI Technology, WATASHI is a full portfolio of solutions composed of project-oriented products including IPC, WIVS, 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

WATASHI WIVS goes beyond ordinary NVR products. It is an Intelligent Video Surveillance Server that combines video management features with traditional video storage functions in one device. Aside from the basic functions of a network video recorder, WIVS also has a variety of powerful AI features, such as face recognition, video metadata and industrial algorithms to meet the needs of different scenes.

Functions

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.

Intelligent Video Compression

WATASHI 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

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.

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.

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 frontend and back-end intelligence to help with searching through massive video data to quickly and conveniently locate targets with greater precision.



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Technical Specification

System

Main Processor	64-bit multi-core processor
Operating System	Embedded Linux OS
Operating Interface	Web (PCAPP), local GUI
AI Card	16, AI card mode is switchable

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; SMD
AI by Recorder	Face detection; face recognition; entries frequency; video metadata (human; vehicle; non-motor vehicle); metadata attributes alarm by recorder; IVS;
AcuPick	1.AI by Recorder: Supports 256-channel 2 MP or 256-channel 4 MP resolution(16-channel for each AI card). 2.AI by Camera: Supports 160-channel 2 MP or 80-channel 4 MP resolution

Multimodal Large Models

WizSeek	AI by Recorder: • 160-ch 2 MP or 80-ch 4 MP or 40-ch 8 MP WizSeek with AcuPick IP camera (Min. 1 AI card for WizSeek modeling), • 224-ch 2 MP or 224-ch 4 MP or 112-ch 8 MP WizSeek with normal IP camera (14 AI cards for AcuPick by recorder, 2 AI cards for WizSeek modeling) • Each AI card for WizSeek modeling can analyze 16 targets/s Search Language: English,Traditional Chinese
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Face Detection

Face Detection	1. AI by Recorder: 256-channel 2 MP or 256-channel 4 MP with normal IP camera(16-channel for each AI card); 2. AI by Camera: 256-channel 2 MP or 256-channel 4 MP resolution with face detection IP camera; 3. Supports 6 properties: Gender, age, glasses, expression, face mask, and beard
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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: 256-channel 2 MP or 256-channel 4 MP with normal IP camera(16-channel for each AI card); 256-channel 2 MP or 256-channel 4 MP with face detection IP camera; 2. AI by Camera: 160-channel 2 MP or 80-channel 4 MP with face recognition IP camera; 3. Supports entries frequency alarm

Video Metadata

Video Metadata	1. AI by Recorder: Supports 256-channel 2 MP or 256-channel 4 MP resolution 2. AI by Camera: Supports 160-channel 2 MP or 80-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
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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.
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Vehicle License Plate Comparison

License Plate Database Capacity	1. 50 plate databases with 500,000 plate numbers in total 2. Supports allowlist and blocklist
Vehicle License Plate Comparison	Supports 160-channel 2 MP or 80-channel 4 MP resolution with ITC

IVS Analytics

IVS	1. AI by Recorder: Supports 256-channel 2 MP or 256-channel 4 MP with normal IP camera(16-channel for each AI card) 2. AI by Camera: Supports 160-channel 2 MP or 80-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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Intelligent Task Analytics

Intelligent Task Analytics	Local video records, import DAV videos from external devices for analysis
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Video Diagnosis

Video Diagnosis	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
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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.
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Industrial Algorithms

Industrial Algorithms	The industrial algorithm is an optional installment.
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Intelligent Video Surveillance Server

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Technical Specification

Work Behavior Analysis	1. AI by Recorder: Without large model (by default): 128-channel 2 MP/4 MP/8 MP (8-channel for each AI card) With large model(optional): 64-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: 128-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: 128-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): 128-channel 2 MP/4 MP/8 MP (8-channel for each AI card) With large model(optional): 32-channel 2 MP/4 MP/8 MP (2-channel for each AI card) 2. Rules: AI by Recorder: fighting detection, fall detection, running detection and tailing detection

Audio and Video

Access Channel	256-channel
Network Bandwidth	Incoming bandwidth: 768 Mbps Recording bandwidth: 768 Mbps Outgoing bandwidth: 768 Mbps
Resolution	32 MP;24 MP;16 MP;12 MP;8 MP;6 MP;5 MP;4 MP;3 MP;1080p;720p
Decoding Capability	1-channel 32 MP@30 fps; 2-channel 24 MP@30 fps; 3-channel 24 MP@24 fps; 4-channel 16 MP@25 fps; 7-channel 12 MP@20 fps; 7-channel 8 MP @30 fps; 14-channel 8 MP@15 fps; 9-channel 6 MP@30 fps; 11-channel 5 MP@30 fps; 13-channel 5 MP@25 fps; 14-channel 4 MP@30 fps; 22-channel 4 MP@20 fps; 18-channel 3 MP @30 fps; 22-channel 3 MP @25 fps; 14-channel 1080p@60 fps; 28-channel 1080p@30 fps; 63-channel 720p@30 fps
Video Output	1-channel VGA output, 4-channel HDMI output, VGA 1/HDMI 1 outputs the same video source.
Multi-screen Display	1st Screen: Max.64-channel; 2nd Screen: Max.16-channel; 3rd Screen: Max.1-channel; 4th Screen: Max.1-channel
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;ISCSI; IPv6;UPnP;SNMP
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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

Multi-channel Playback	Max. 16-channel playback
Record Mode	Search 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

Disk Group	Yes
Network Disk	iSCSI
RAID	RAID0;RAID1;RAID5;RAID6;RAID10;RAID50;RAID60
Record Management	Supports record control (continuous, event-based, scheduled, scheduled & event-based).

Alarm

General Alarm	Motion detection; tampering; local alarm; IPC external alarm; fire 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

Audio Input	1 channel
Audio Output	1 channel
Alarm Input	16 channels
Alarm Output	8 channels
Disk Interface	24 slots, SATA. Max.20 TB/HDD, hot swapping, CMR, support enterprise-grade HDD
eSATA	1 port
RS-232	1 port, for debug or COM data transmission
RS-485	1 port, control peripheral PTZ and so on. Supports various protocols.
USB	4 ports. 2 USB2.0 ports at the front panel and 2 USB3.0 ports at the rear panel.
HDMI	4 ports. HDMI 1 supports 4K output.
VGA	1 port



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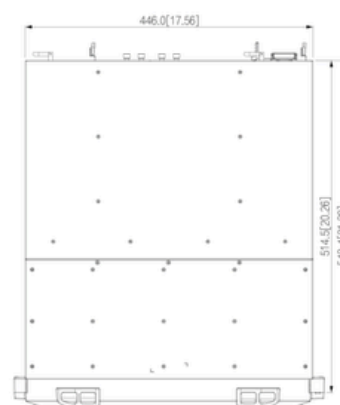
Technical Specification

Network Port	4 RJ-45 ports 10/100/1000/2500Mbps self-adaptive Ethernet ports
Power	1+1 redundant power supply
Network Port Extension	4 RJ-45 ports 10/100/1000/2500Mbps self-adaptive Ethernet ports; 2 × 10-GbE optical fiber ports (optional)

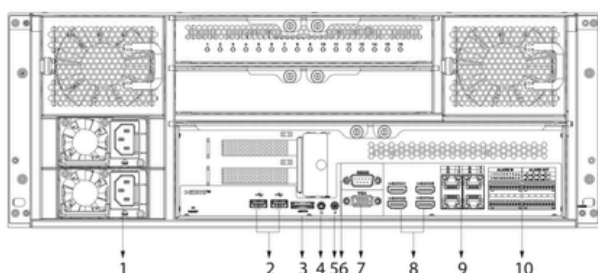
General

Disk Bay	24
Form Factor	4U
Power Supply	100–127/200–240 VAC, 50/60 Hz, 5/2.5 A (× 2)
Power Consumption	Working(all HDDs connected): ≤ 420 W (1433 BTU/hr) Working(without HDD): ≤ 150 W (512 BTU/hr) Rated: ≤ 800 W (2730 BTU/hr)
Fan	Intelligent speed regulation fan
Net Weight	23.00 kg (50.71 lb)
Gross Weight	37.83 kg (83.40 lb)
Product Dimensions	Chassis: 446 mm × 543.4 mm × 175 mm (17.56" × 21.39" × 6.89") (W × D × H) Max. size: 482.6 mm (with hanger) × 543.4 mm × 175 mm (19.00" × 21.39" × 6.89") (W × D × H)
Packaging Dimensions	With packaging: 689 mm × 779 mm × 552 mm (27.13" × 30.67" × 21.73") (W × D × H)
Operating Temperature	0 °C to +45 °C (+32 °F to +113 °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

Dimensions (mm[inch])



Panels



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

