VN-ICS9338FT-8I

Intelligent Computing Server

Deep-learning analytics combine network video recording with intelligent monitoring. Face, person and vehicle analysis supports targeted investigations across connected cameras, while central recording and search provide an integrated video storage and retrieval workflow for large surveillance installations.

Series Overview

VN-ICS9338FT-8I brings video management, network recording and AI analysis into one server. In addition to conventional recorder functions, it supports face recognition, video metadata and industrial detection algorithms. These tools allow operators to review events, retrieve relevant footage and manage surveillance data from a single system.

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.

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.

AI Search

Large-scale AI models enable natural-language searches for people, vehicles, objects and events in recorded video. Search descriptions help locate relevant results and reduce the time spent reviewing footage manually.

Features:

- 64-bit High-performance multi-core processor 256-channel IP video access
- Max 768/768/768 Mbps incoming/recording/outgoing bandwidth Up to 128-channel AI IVS
- Up to 128-channel face recognition with normal IP Camera
- Up to 160-channel 2 MP or 80-channel 4 MP face recognition with face detection IP Camera
- Up to 128-channel video metadata
- Up to 128-channel Smart Search with normal IP Camera
- Up to 100 face databases with 500,000 face pictures in total Up to 128-channel 1080p intelligent video compression
- 16 bays, supports RAID 0/1/5/6/10/50/60
  4 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.

Smart Search

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

Adaptive bitrate control reduces storage and network requirements while maintaining video quality. Compressed streams support live viewing, playback and downloading, allowing video to be reviewed and transferred efficiently across the network.

Technical Specification

System

Main Processor	64-bit multi-core processor
Operating System	Embedded Linux OS
Operating Interface	Web (PC client), local GUI
AI Card	8, 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;
Smart Search	1. AI by Recorder: Supports 128-channel 2 MP or 128-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

AI Search	AI by Recorder: • 160-ch 2 MP or 80-ch 4 MP or 40-ch 8 MP AI Search with Smart Search IP camera (Min.1 AI card for AI Search modeling), • 112-ch 2 MP or 112-ch 4 MP or 56-ch 8 MP AI Search with normal IP camera (7 AI cards for Smart Search by recorder, 1 AI card for AI Search modeling) • Each AI card for AI Search modeling can analyze 16 targets/s Search Language: English

Face Detection

Face Detection	1. AI by Recorder: 128-channel 2 MP or 128-channel 4 MP with normal IP camera(16-channel for each AI card); 2. AI by Camera: 160-channel 2 MP or 80-channel 4 MP resolution with face detection IP camera; 3. Supports 6 properties: Gender, age, glasses, expression, face mask, and beard

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.

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.

Intelligent Task Analytics

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

Face Recognition	1. AI by Recorder: 128-channel 2 MP or 128-channel 4 MP with normal IP camera(16-channel for each AI card); 160-channel 2 MP or 80-channel 4 MP with face detection IP camera (Totally 160 × 2 MP or 80 × 4 MP face pictures analyzed per second); 2. AI by Camera: 160-channel 2 MP or 80-channel 4 MP with face recognition IP camera; 3. Supports entries frequency alarm

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

Video Metadata

Video Metadata	1. AI by Recorder: Supports 128-channel 2 MP or 128-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 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

IVS Analytics

IVS	1. AI by Recorder: Supports 128-channel 2 MP or 128-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

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.

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

Industrial Algorithms

Industrial Algorithms	The industrial algorithm is an optional installment.
Work Behavior Analysis	1. AI by Recorder: Without large model (by default): 64-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 (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: 64-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, seat belt detection, safety vest detection, shoes detection, gloves detection, mask detection, exposed hair detection and arm band detection
Smart Object Detection	1. AI by Recorder: 64-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): 64-channel 2 MP/4 MP/8 MP (8-channel for each AI card) With large model(optional): 16-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
Mobile Phone Access	mobile client
Interoperability	ONVIF (Profile S, T and G); CGI; SDK
Browser	Chrome; PC client; 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	IP Camera 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	16 SATA 3.0 slots; max. 20 TB per HDD; hot swapping; enterprise-grade CMR HDDs

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 a the rear panel.
HDMI	4 ports. HDMI 1 supports 4K output.
VGA	1 port
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	16
Form Factor	3U
Power Supply	100–127/200–240 VAC, 50/60 Hz, 5/2.5 A (× 2)
Power Consumption	Working(all HDDs connected): ≤ 250 W (853 BTU/hr) Working(without HDD): ≤ 150 W (512 BTU/hr) Rated: ≤ 550 W (1877 BTU/hr)
Fan	Intelligent speed regulation fan
Net Weight	20.05 kg (44.20 lb)
Gross Weight	33.01 kg (72.77 lb)
Product Dimensions	Chassis: 444.8 mm × 539.4 mm × 133.2 mm (17.51" × 21.24" × 5.24") (W × D × H) Max. size: 485 mm (with hanger) × 539.4 mm × 133.2 mm (19.09" × 21.24" × 5.24") (W × D × H)
Packaging Dimensions	With packaging: 689 mm × 779 mm × 464 mm (27.13" × 30.67" × 18.27") (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, EN61000-3-3，EN 55032，EN 50130-4，EN 55035

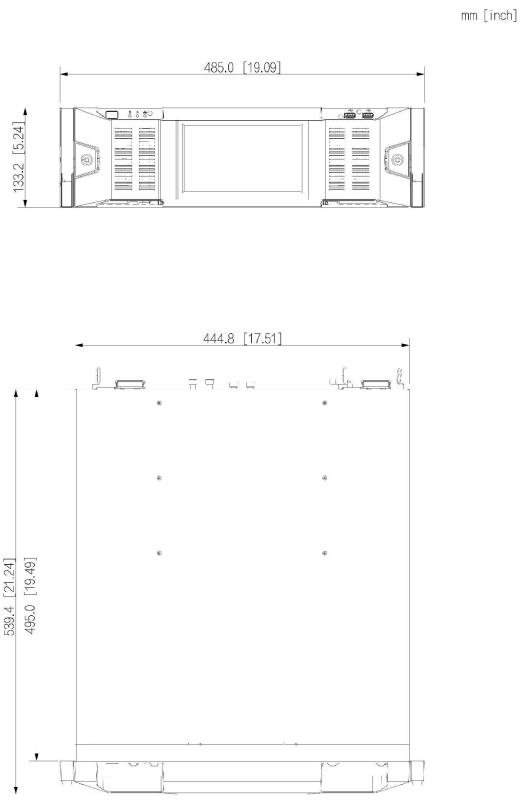
Ordering Information

Type	Model	Description
Intelligent Computing Server	VN-ICS9338FT-8I	256CH 3U Intelligent Computing Server

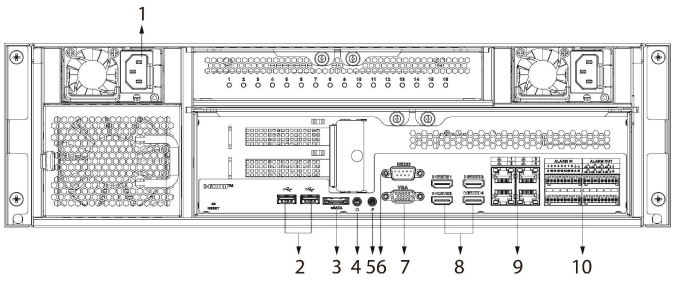
Storage Configuration

Analysis Result Retention	At least 6 months in central storage

Dimensions (mm[inch])



Panels



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	Networt Ports	10	Alarm In/Alarm Out