Dahua TECHNOLOGY

DHI-NVR4216-16P-I
16Channel 1U 16PoE AI Network Video Recorder

· 16 Channel IP video access
· Smart H.265+/H.265/Smart H.264+/H.264/MJPEG
· Up to 4 Channel perimeter protection
· Up to 2 Channel video stream face recognition/8 channel picture stream face recognition (with FD camera)
· Up to 12 face pictures /sec processing
· Up to 10 face databases with 20,000 face images in total
· 1-8 PoE Ports support ePoE & EoC

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, 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 new NVR4000-I network video recorder delivers excellent performance and high recording quality that is ideally suitable for IP video surveillance applications. This NVR adopts powerful processor, providing the capability of 4K resolution processing for applications where image details are highly required. Besides, the NVR supports input, recording and transmission functions. Additionally, the NVR can be served as edge storage, central storage or backup storage with an intuitive shortcut operation menu for remote management and control.

With build-in deep learning module, NVR4000-I 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, NVR4000-I allows users to focus on what matters most, improves event response time and helps make video actionable.

The NVR is compatible with numerous third-party devices, which make it the perfect solution for surveillance systems that work independently of video management system (VMS).

Functions

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.

Real Time Face Recognition
Video stream & picture stream real time face recognition. Facial attributes analysis features including gender, age, expression, glasses, moustache, mouth mask. Identify people and also capture, record faces with metadata. Facial feature filtering while real time display, only show faces with target features.

Face Database Management
Configurable multiple face databases. Powerful face database management. Face database can be applied to video channels independently. Name, gender, birthday, address, certificate type, certificate No., countries&regions and state can be added to each face picture.

Common/Stranger Mode
NVR4000-I supports common and stranger mode. In stranger mode, when NVR detects a strange face(not in device's face database), it can trigger alarm, buzzer, snapshot, record, etc. Similarity threshold can be set manually. This function is developed for important infrastructure sites for which access control is critical.

AI Search
Support seach 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 appeard.

ANPR
Automatic Number Plate Recognition available for convenient entrance/exit management. Support license plate recognition(working with Dahua ITC camera), black/white list import/export, add/delete B/W list number, search result from recorded video.

Onvif

AI Series | DHI-NVR4216-16P-I

Technical Specification

System

Main Processor	Multi-core embedded processor
Operating System	Embedded LINUX

Perimeter Protection

Performance	4 channel, 10 IVS rules for each channel
Object classification	Human/Vehicle secondary recognition for tripwire and intrusion
AI Search	Search by target classification (Human, Vehicle)

Face Recognition

Performance	Max 12 face pictures /sec processing
	2 channel video stream face recognition / 8 channel picture stream face recognition (with FD camera)
Stranger Mode	Detect strangers' faces(not in device's face database). Similarity threshold can be set manually.
AI Search	Up to 8 target face images search at same time, similarity threshold can be set for each target face image.
Database Management	Up to 10 face databases with 20,000 face images in total. Name, gender, birthday, address, certificate type, certificate No., countries&regions and state can be added to each face picture.
Database Application	Each database can be applied to video channels independently.
Trigger Events	Buzzer, Voice Prompts, Email, Snapshot, Recording, Alarm Out, PTZ Activation, etc.

Audio and Video

IP Camera Input	16 Channel
Two-way Talk	1 Channel Input, 1 Channel Output, RCA

Display

Interface	1 HDMI, 1 VGA
Resolution	HDMI/VGA: 3840 x 2160, 1920 × 1080 , 1280 × 1024, 1280 × 720 , 1024 × 768
Decoding Capability	2-ch@8MP(30fps), 8-ch@1080P(30fps)
Multi-screen Display	1/4/8/9/16

Recording

Bandwidth	200Mbps (80Mbps when AI function enabled, based on Dahua private protocol)
Compression	Smart H.265+/H.265/Smart H.264+/H.264/MJPEG
Resolution	12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080P, 1.3MP, 720P, D1 etc.
Record Mode	Manual, Schedule (Continuous, MD(Motion Detection) , Alarm, IVS)
Record Interval	1 ~ 120 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec

Video Detection and Alarm

Trigger Events	Alarm Out, Video Push, Email, Recording, PTZ, Tour, Snapshot, Voice Prompt, Buzzer and Screen Tips
Video Detection	Motion Detection, MD Zones: 396 (22 × 18), Video Loss, Tampering and Scene Change
Alarm Input	4 Channel
Alarm Output	2 Channel

Playback and Backup

Sync Playback	1/4/9/16
Search Mode	Time /Date, Alarm, MD and Exact Search (accurate to second)
Backup Mode	USB Device/Network

Third-party Support

Third-party Support	Arecont Vision, Airlive, AXIS, Canon, Dynacolor, JVC, LG, Panasonic, Pelco, Xunmei, Samsung, Sanyo, Sony, Watchnet and more

Network

Interface	1 RJ-45 Port (10/100/1000Mbps)
PoE	16 ports (IEEE802.3af/at) 1-8 ports support ePoE & EoC
Network Function	HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, SNMP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPoE,DDNS, FTP, Alarm Center, IP Search (Support Dahua IP camera, DVR, NVS, etc.), P2P
Max. User Access	128 users
Mobile App	iPhone, iPad, Android
Interoperability	ONVIF (Profile S), SDK, CGI

Storage

Internal HDD	2 SATA III Ports, Up to 8 TB capacity for each HDD
eSATA	NA

Auxiliary Interface

USB	2 USB Ports (1 Rear USB 2.0 , 1 Front USB 2.0)
RS232	1 Port, for PC Communication and Keyboard
RS485	NA

Electrical

Power Supply	Single, AC100-240V, 3.5A
Power Consumption	NVR: <6.1W (Without HDD)
	PoE: Max 25.5W for single port 130W total rated power

Environmental

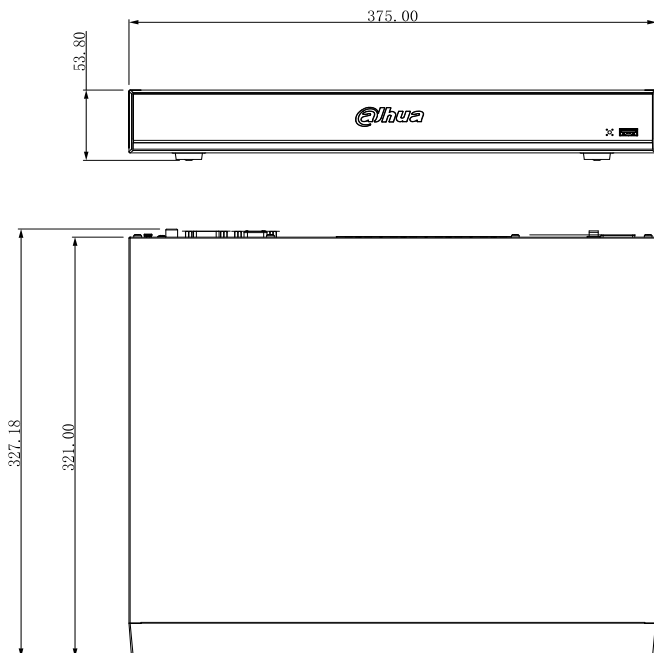|	
Operating Conditions	-10°C ~ +55°C (+14°F ~ +131°F), 86 ~ 106kpa
Storage Conditions	-20°C ~ +70°C (-4°F ~ +158°F), 0 ~ 90% RH

Construction

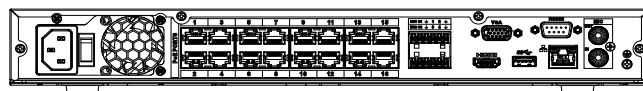|	
Dimensions	1U, 375mm x 321mm x 53.8mm ; (14.8" x 12.6" x 2.1")
Net Weight	2.68kg (5.9lb) (without HDD)
Gross Weight	4.02kg (8.9lb) (without HDD)

Certifications

CE	EN55035, EN55032, EN55024, EN50130-4, EN60950-1
FCC	Part 15 Subpart B, ANSI C63.4-2014
UL	UL 60950-1

Dimensions (mm)

Rear Panel

Ordering Information

Type	Part Number	Description
16 Channel AI NVR	DHI-NVR4216-16P-I	16 Channel 1U 16PoE AI Network Video Recorder