alhua TECHNOLOGY

DHI-NVR4416-16P-I

16Channel 1.5U 16PoE WizSense Network Video Recorder

Wiz Sense

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

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).
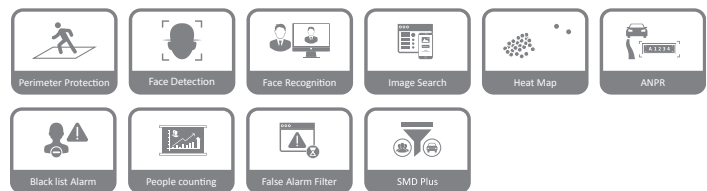
Functions

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.

Face Recognition
Dahua Face Recognition technology extracts the features of captured faces and compares them with that in face database to recognize the person identity.

- 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

Perimeter Protection	Face Detection	Face Recognition	Image Search	Heat Map	ANPR
Black list Alarm	People counting	False Alarm Filter	SMD Plus		

SMD Plus
With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

ANPR by Camera
With deep learning algorithm, Dahua ANPR technology can recognize the number plate information of vehicles in the image with ANPR cameras. Support block/allowlist mode, searching target vehicles from recorded video.

Fisheye Dewarping
Fisheye dewarping solves the problem of distortion in the circular panoramic view. The device offers various dewarping modes for different installations and configurations that enhance the video, in both live or playback modes. Each dewarping mode offers options to adjust each scene.

People Counting by Camera
With deep learning algorithm, Dahua People Counting technology can track and process moving human body targets to realize the accurate statistics of enter No., leave No., and In Area No. Working with management platform, it outputs yearly/monthly/weekly/daily reports to meet your requirements.

DMSS
The DMSS app is available on the iOS App Store and Google Play. It makes surveillance easy and simple, allowing you to remotely access back-end devices, view live video, receive event push notifications, and search for recorded videos from an iPhone, iPad, or Android phone at anytime from virtually anywhere.

Onvif

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

Recording

Bandwidth	200 Mbps (80 Mbps 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	16 Channel
Alarm Output	4 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	Panasonic, Sony, Samsung, Axis, Pelco, Arecont, Onvif, Canon and more

Network

Interface	1 RJ-45 Port (10/100/1000 Mbps)
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	4 SATA III ports, up to 10 TB for a single HDD. The maximum HDD capacity varies with environment temperature
eSATA	NA

Auxiliary Interface

USB	2 USB Ports (1 Rear USB 3.0 , 1 Front USB 2.0)
RS232	1 Port, for PC Communication and Keyboard
RS485	1 Port, for PTZ Control

Electrical

Power Supply	Single, AC100-240V, 4A
Power Consumption	NVR: <8.2W (Without HDD)
	PoE: Max 25.5W for single port 150W total rated power

Environmental

Operating Conditions	-10°C to +55°C (+14°F to +131°F), 86–106kpa
Storage Conditions	0°C to +40°C (+32°F to +104°F), 30–85% RH

Construction

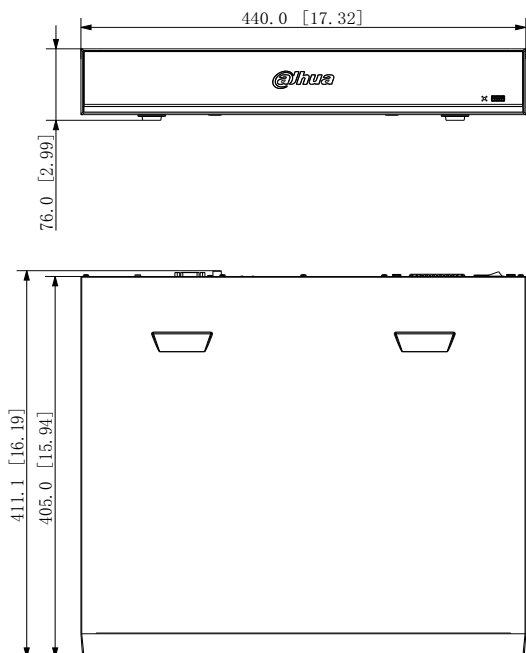|	
Dimensions	1.5U, 440.0 mm × 411.1 mm × 76.0 mm (17.32" × 16.19" × 2.99")
Net Weight	4.79 kg (10.6 lb) (without HDD)
Gross Weight	7.11 kg (15.7 lb) (without HDD)

Certifications

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

Ordering Information

Type	Model	Description
16 Channel WizSense NVR	DHI-NVR4416-16P-I	16 Channel 1.5U 16PoE WizSense Network Video Recorder

Dimensions (mm[inch])

440.0 [17.32]

76.0 [2.99]

411.1 [16.19]

405.0 [15.94]

Panels