DHI-NVR4104HS-P-EI

4CH Compact 1U 4PoE 1HDD WizSense Network Video Recorder

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.

Series Overview

NVR4000-EI series is a new generation of network recorders that offers powerful decoding capabilities, and strong bandwidth. It features high-precision face recognition, perimeter protection, and SMD (Smart Motion Detection), which can distinguish target vehicles and humans from other types in real time. When connected with select IPC cameras, Quick Pick technology becomes available, allowing human and vehicle targets to be easily searched for and picked out. This network recorder is not only cost-effective, but also compatible with a wide variety of third-party devices, making it a great choice for small and medium-sized businesses.

Functions

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

Perimeter Protection
Automatically filters out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improves alarm accuracy.

- Smart H.265+/H.265/Smart H.264+/H.264/MJPEG decoding format
- Access, storage or forwarding at 80 Mbps
- Max. decoding capability: 16 × 1080p@30 fps. Supports adaptive decoding
- AI by NVR: 1-channel face detection and recognition; 2-channel perimeter protection; up to 10 face databases and 20,000 face images; 4-channel SMD Plus
- AI by Camera: Face detection and recognition, perimeter protection; SMD Plus; people counting; stereo analysis; heat map
- Connected to the third-party network cameras
- Security baseline 2.3

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.

AI Search
With AI search, operators can search for videos by the attributes of targets and event types, which helps them to quickly and efficiently investigate where and when targets appeared and events took place.

Heat Map by Camera
Dahua heat map technology is used to display the crowd density and people appearance probability. Export and display the crowd status by different colors. Generally, the crowd status is the statistics of people quantity in space and time dimensions.

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 blocklist/allowlist mode, searching target vehicles from recorded video.

Quick Pick
Dahua Quick Pick technology can enable users to quickly pick up the human/vehicle targets that they are interested in, which facilitates retrieval from SMD events.

Technical Specification

System

Main Processor	Industrial-grade processor
Operating System	Embedded Linux
Operating Interface	Web, Local GUI

AI

AI by Recorder	Face detection, face recognition, perimeter protection, and SMD Plus;
AI by Camera	Face detection; face recognition; perimeter protection; SMD Plus; ANPR; people counting; stereo analysis; heat map

Perimeter Protection

Perimeter Performance AI by Recorder (Number of Channels)	2 channels, 10 IVS rules for each channel
Perimeter Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

Face Detection

Face Attributes	Gender; age group; glasses; expressions; face mask; beard
Face Detection Performance of AI by Recorder (Number of Channels)	1 channel (up to 12 face images/s each channel)
Face Detection Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

Face Recognition

Face Database Capacity	Up to 10 face databases with 20,000 images, with a total capacity of 2.5 G. Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image.
Face Recognition Performance of AI by Recorder (Number of Channels)	4-channel FD (by camera) + FR (by recorder),image stream: 12 face images/s 1-channel FD (by recorder) + FR (by recorder), video stream: 12 face images/s
Face Recognition Performance of AI by Camera (Number of Channels)	All channels (8 targets/s)

SMD Plus

SMD Plus by Recorder	4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change
SMD Plus by Camera	All channels (16 targets/s)

Audio and Video

Access Channel	4 channels
Network Bandwidth	80 Mbps incoming, 80 Mbps recording and 80 Mbps outgoin

Resolution	16 MP; 12 MP; 8 MP; 6 MP; 5 MP; 4 MP; 3 MP; 1080p; 960p; 720p; D1; CIF
Decoding Capability	AI disabled: 2-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 4-channel 8 MP@30 fps AI enabled: 1-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 3-channel 8 MP@30 fps; 3-channel 6 MP@30 fps; 4-channel 5 MP@30 fps
Video Output	1 HDMI, 1 VGA HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720 VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 *Simultaneous/heterogeneous video sources output for VGA and HDMI is configurable.
Multi-screen Display	1st Screen: 1/4 2nd Screen: 1/4
Third-party Camera Access	Panasonic, Sony, Samsung, Axis, Pelco, Arecont, ONVIF, Canon

Compression Standard

Video Compression	Smart H.265+; H.265; Smart H.264+; H.264; MJPEG
Audio Compression	G.711a; G.711u; PCM; G726

Network

Network Protocol	HTTP; HTTPS; TCP/IP; IPv4/IPv6; UPnP; SNMP; UDP; SMTP; NTP; DHCP; DNS; IP Filter; PPPoE; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR; NVS; etc.); P2P; auto register
Mobile Phone Access	iOS; Android
Interoperability	ONVIF 22.06(Profile T; Profile S; Profile G); CGI; SDK
Browser	Chrome; IE9 and later; Firefox

Recording Playback

Multi-channel Playback	Up to 4 channels
Record Mode	General, motion detection; intelligent; alarm
Backup Method	USB device and network
Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback

Alarm

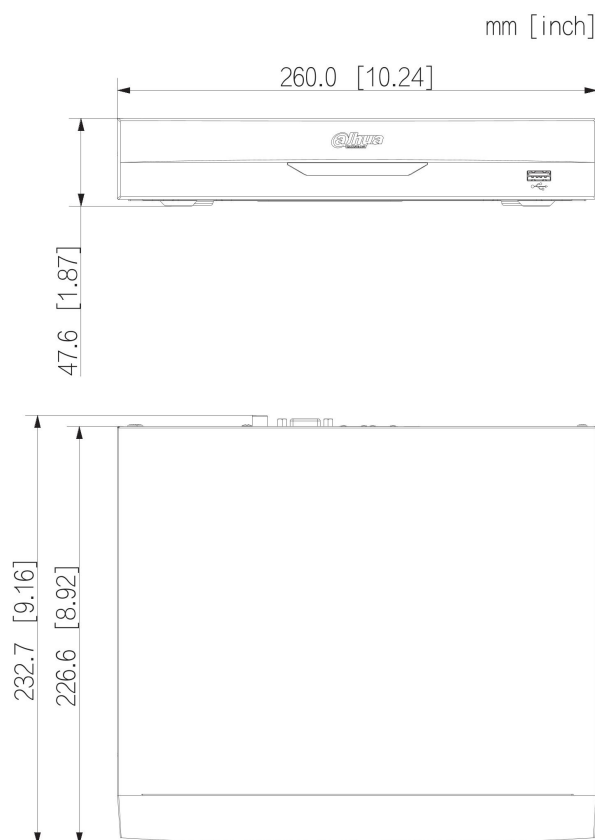|	
General Alarm	Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm
Anomaly Alarm	Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked; and cybersecurity exception
Intelligent Alarm	Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map
Alarm Linkage	Record; snapshot; IPC external alarm output; audio; buzzer; log; preset; email

Port

Audio Input	1-channel RCA
Audio Output	1-channel RCA
Disk Interface	1 SATA port, up to 16 TB.The maximum HDD capacity varies with environment temperature.
USB	2 (1 front USB 2.0 port, 1 rear USB 2.0 port)
HDMI	1

VGA	1
Network Port	1 (10/100 Mbps Ethernet port, RJ-45)
PoE Port	4 ports, 10/100 Mbps, IEEE 802.3 af/at

General

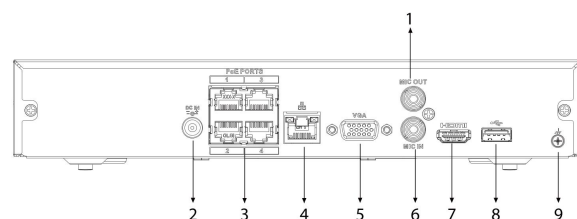| Power Supply	53 VDC, 1.226 A
Power Consumption	Total output of NVR is <10 W(without HDD) Total output power of PoE is 36W,the maximum output power of asingle port is 25.5W
Net Weight	0.86 kg (1.90 lb)
Gross Weight	1.88 kg (4.14 lb)
Product Dimensions	260 mm × 232.7 mm × 47.6 mm (10.24" × 9.16" × 1.87") (W × L × H)
Packaging Dimensions	333 mm × 89 mm × 315 mm (13.11" × 3.50" × 12.40") (W × L × H)
Operating Temperature	−10 °C to +55 °C (14 °F to +131 °F)
Storage Temperature	−20 °C to +60 °C (−4 °F to +140 °F)
Operating Humidity	10%–93% (RH), non-condensing
Installation	Rack or desktop
Certifications	FCC: 47 CFR FCC Part15, SubpartB, Class A CE-EMC: EN 55032:2015+A1:2020; EN IEC 61000-3-2:2019+A1:2021; EN 61000-3-3:2013+A1:2019+A2:2021; EN 55035:2017+A11:2020; EN 50130-4:2011+A1:2014 CE-LVD: EN 62368-1:2014

Ordering Information

Type	Model	Description
NETWORK VIDEO RECORDER	DHI-NVR4104HS-P-EI	4CH Compact 1U 4PoE 1HDD WizSense Network Video Recorder

Dimensions (mm[inch])

Panels

1	AUDIO OUT, RCA Connector	2	Power Input
3	PoE Ports	4	Network Port
5	VGA Port	6	AUDIO IN, RCA Connector
7	HDMI Port	8	USB Port
9	Ground		

DH-IPC-HDW1639T-A-IL

6MP Entry Smart Dual Light Fixed-focal Eyeball Network Camera

Series Overview

With features of simple installation, easy operation, and high performance-cost ratio, Dahua Entry series network camera is applicable to small and medium-sized scenes, such as homes/residences, small-sized retail stores, and other small and medium-sized enterprises.

Functions

Smart Dual Light

Dahua Smart Dual Light technology adopts smart algorithm to detect targets. Usually, the IR illuminator is on at night; when the target appears in the monitoring area, the white light is on, and the camera records the full-color video and information of key events. That is, the camera links snapshot and video with full-color image. When the target is out of the monitoring area, the white light is off and the IR illuminator is on, which reduces light pollution efficiently.

Human Detection

Dahua intelligent algorithms extract moving human targets from videos and filters out alarms that are triggered by non-human targets to increase the accuracy and effectiveness of alarms.

Smart H.265+ & Smart H.264+

With advanced scene-adaptive rate control algorithm, Dahua smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

Image Flip

For narrow and long scenes, Dahua image flip technology flips the image by 90°/180°/270° to realize better surveillance in rotation mode.

* The parameters and datasheets below can only be applied to 1639-S6 series.

- 1/2.7" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 6 MP (3200 × 1800) @20 fps, and supports 2688 × 1520@25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in Multi-core Light, the max. IR distance is 30 m and the max. warm light distance is 30 m.
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, DWDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- Built in Mic.
- 12 VDC/PoE power supply, easy for installation.
- IP67 protection.
- Supports human detection.

Cyber Security

Dahua network cameras employ a series of security technologies, including security authentication and authorization, access control protocols, trusted protection, encrypted transmission and encrypted storage. These technologies improve the camera's defense against external cyber threats and prevent malicious programs from compromising the device.

Protection (IP67, Wide Voltage)

IP67: The camera passes a series of strict test on dust and soak. It has dust-proof function, and the enclosure can work normally after soaking in 1 m deep water for 30 minutes.
Wide voltage: The camera allows ±30% (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Technical Specification

Camera

Image Sensor	1/2.7" CMOS
Max. Resolution	3200 (H) × 1800 (V)
ROM	128 MB
RAM	256 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.007 lux@F1.6 (Color, 30 IRE); 0.0007 lux@F1.6 (B/W, 30 IRE); 0 lux (Illuminator on)
S/N Ratio	＞56 dB
Illumination Distance	Up to 30 m (98.43 ft) (IR) Up to 30 m (98.43 ft) (Warm light)
Illuminator On/Off Control	Auto;Manual
Illuminator Number	1 (Multi-core (IR + warm) light)
Angle Adjustment	Pan: 0°–360°; Tilt: 0°–78°; Rotation: 0°–360°

Lens

Lens Type	Fixed-focal
Lens Mount	M12
Focal Length	2.8 mm; 3.6 mm
Max. Aperture	F1.6
Field of View	2.8 mm: H: 110°; V: 58°; D: 132° 3.6 mm: H: 91°; V: 46°; D: 110°
Iris Control	Fixed
Close Focus Distance	2.8 mm: 1.1 m (3.61 ft) 3.6 mm: 1.7 m (5.58 ft)

	Lens	Detect	Observe	Recognize	Identify
DORI Distance	2.8 mm	63.6 m (208.66 ft)	25.4 m (93.33 ft)	12.7 m (41.67 ft)	6.4m (21.00 ft)
	3.6 mm	85.4 m (280.18 ft)	34.2 m (112.20 ft)	17.1 m (56.10 ft)	8.5 m (27.89 ft)

*DORI (Detect, Observe, Recognize, Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the video to distinguish persons or objects within a covered area. The numbers in this table do not reflect intelligent function distances. For intelligent function distances, refer to installation and commissioning manual/project design tool.

Intelligence

Human Detection	Support the classification and accurate detection of human
Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos

Video

Video Compression	H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream)
Smart Codec	Smart H.265+; Smart H.264+

Video Frame Rate	Main stream: 3200 × 1800@(1–20 fps)/2688 × 1520@(1–25/30 fps) sub stream: 704 × 576@(1–25 fps)/704 × 480@(1–30 fps) *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.
Stream Capability	2 streams
Resolution	6M (3200 × 1800); 4M (2880 × 1620/2688 × 1520); 3M (2048 × 1536/2304 × 1296); 1080P (1920 × 1080); 1.3M (1280 × 960); 720P (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Bit Rate Control	VBR;CBR
Video Bit Rate	H.264: 32 kbps–8192 kbps; H.265: 12 kbps–8192 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	DWDR
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Auto/Manual
Noise Reduction	3D NR
Motion Detection	OFF/ON (4 areas, rectangular)
Region of Interest (RoI)	Yes (4 areas)
Smart Illumination	Yes
Smart Dual Light	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)
Mirror	Yes
Privacy Masking	4 areas

Audio

Built-in MIC	Yes, built-in Mic
Audio Compression	G.711a; G.711Mu; PCM; G.726

Alarm

Alarm Event	Network disconnection; IP conflict; illegal access; motion detection; video tampering; audio detection; SMD (human); security exception

Network

Network Port	RJ-45 (10/100 Base-T)
SDK and API	Yes
Network Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; DHCP; DNS; DDNS; NTP; Multicast; ICMP; IGMP; P2P
Interoperability	ONVIF (Profile S & Profile T); CGI
User/Host	20 (Total bandwidth: 48 M)
Storage	FTP
Browser	IE; Chrome; Firefox
Management Software	Smart PSS Lite; DSS; DMSS; DoLynk Care

Mobile Client	iOS;Android
Cyber Security	Video encryption;Configuration encryption;Digest;WSSE;Account lockout;Security logs;Generation and importing of X.509 certification;HTTPS;Trusted boot;Trusted execution;Trusted upgrade

Certification

Certifications	CE-LVD: EN62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU

Power

Power Supply	12 VDC/PoE (802.3af)
Power Consumption	Basic: 2 W (12 VDC), 2.9 W (PoE); Max. : 4 W (12 VDC); 5.3 W (PoE) (H.265 + intelligence on+ DWDR + illuminator intensity)

Environment

Operating Temperature	−40 °C to +60 °C (−40 °F to +140 °F)
Operating Humidity	≤95%(RH), non-condensing
Storage Temperature	−40 °C to +60 °C (−40 °F to +140 °F)
Storage Humidity	≤95%(RH), non-condensing
Protection	IP67

Structure

Casing Material	Metal
Product Dimensions	85.6 mm × Φ94.0 mm (3.37" × Φ3.7")
Net Weight	0.34 kg (0.75 lb)
Gross Weight	0.45 kg (0.99 lb)

Ordering Information

Type	Model	Description
IP CAMERA	DH-IPC-HDW1639T-A-IL	6MP Entry Smart Dual Light Fixed-focal Eyeball Network Camera
Accessories (Optional)	DH-PFB220C	Ceiling Mount Bracket
	DH-PFA106	Mount Adapter
	DH-PFA151	Corner mount bracket
	DH-PFB305W	Wall mount bracket
	DH-PFA150	Pole Mount Bracket
	DH-PFB204W	Wall mount bracket
	DH-PFA152-E	Pole Mount Bracket
	DH-PFA13A-E	Anti-corrosion Junction box
	DH-PFM321-EN	DC12V1A power adapter
	DH-PFM321D-EN	DC12V 1A power adapter
	DH-PFM320D-EN	DC12V2A power adapter
	PFM900-E	Integrated Mount Tester

Accessories

Optional:

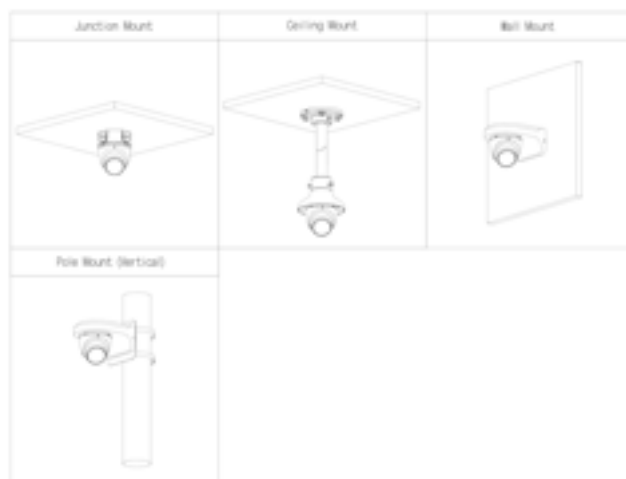| DH-PFB220C Ceiling Mount Bracket	DH-PFA106 Mount Adapter	DH-PFA151 Corner mount bracket
DH-PFB305W Wall mount bracket	DH-PFA150 Pole Mount Bracket	DH-PFB204W Wall mount bracket
DH-PFA152-E Pole Mount Bracket	DH-PFA13A-E Anti-corrosion Junction box	DH-PFM321-EN DC12V1A power adapter
DH-PFM321D-EN DC12V 1A power adapter	DH-PFM320D-EN DC12V2A power adapter	PFM900-E Integrated Mount Tester

Dimensions (mm[inch])

mm [inch]