

DH-IPC-HDW2541EMP-AS-ANZ

5MP IR Fixed-focal Eyeball Network Camera



Launched by Dahua Technology, It 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, provides intelligent, simple and inclusive products and solutions.

Series Overview

With advanced deep learning algorithm, Dahua 2 Series network camera supports intelligent functions, such as perimeter protection and smart motion detection. With starlight technology, this series camera provides a better image effect in the condition of low illuminance.

Functions

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.

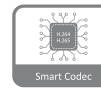
Smart H.265+ & Smart H.264+

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.

Perimeter Protection

With deep learning algorithm, Dahua Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire, intrusion) are largely reduced.

- 5-MP 1/2.7" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 5 MP (2960 × 1668) @20 fps, and supports 2688 × 1520 (2688 × 1520) @25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in IR LED, and the max. illumination distance is 30 m.
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- Intelligent monitoring: Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human).
- Abnormality detection: Motion detection, video tampering, audio detection, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, and voltage detection.
- Supports max. 256 G Micro SD card; built in MIC.
- 12 VDC/PoE power supply.
- IP67 protection.
- SMD Plus.



WDR

With advanced Wide Dynamic Range (WDR) technology, Dahua network camera provides clear details in the environment of strong brightness contrast. The bright and dark area can get clear video even in high brightness environment or with backlight shadow.

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 $\pm 30\%$ (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	2960 (H) × 1688 (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)
Illuminator On/Off Control	Auto; Manual
Illuminator Number	1 (IR LED)
Pan/Tilt/Rotation Range	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: 111°; V: 58°; D: 132° 3.6 mm: H: 92°; V: 45°; 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)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	63.6 m (208.66 ft)	25.4 m (83.33 ft)	12.7 m (41.67 ft)	6.4 m (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

IVS (Perimeter Protection)	Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and 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: 2960 × 1668@(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	2960 × 1668 (2960 × 1668); 2880 × 1620 (2880 × 1620); 2688 × 1520 (2688 × 1520); 3M (2048 × 1536); 2304 × 1296 (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	CBR/VBR
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	120 dB
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
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
Audio Compression	G.711a; G.711Mu; PCM; G.726

Alarm

Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; audio detection; voltage detection; SMD; security exception
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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; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; PPPoE; Bonjour; P2P
Interoperability	ONVIF (Profile S/Profile G/Profile T); CGI
User/Host	20 (Total bandwidth: 48 M)
Storage	FTP; SFTP; Micro SD card (support max. 256 GB); NAS

Browser	IE Chrome Firefox
Management Software	SmartPSS Lite; DSS; DMSS
Mobile Client	iOS; Android
Cyber Security	Configuration encryption; trusted execution; Digest; security logs; WSSE; account lockout; syslog; video encryption; 802.1x; IP/MAC filtering; HTTPS; trusted upgrade; trusted boot; firmware encryption; generation and importing of X.509 certification

Certification

Certifications	CE-LVD: EN62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU; FCC: 47 CFR FCC Part 15, Subpart B; UL/CUL: UL62368-1 & CAN/CSA C22.2 No. 62368-1-14
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Power

Power Supply	12 VDC/PoE (802.3af)
Power Consumption	Basic: 2.2 W (12 VDC); 2.9 W (PoE) Max. (H.265+ max. resolution + max. stream+ WDR + IR intensity + IVS): 4.1 W (12 VDC); 5.0 W (PoE)

Environment

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

Structure

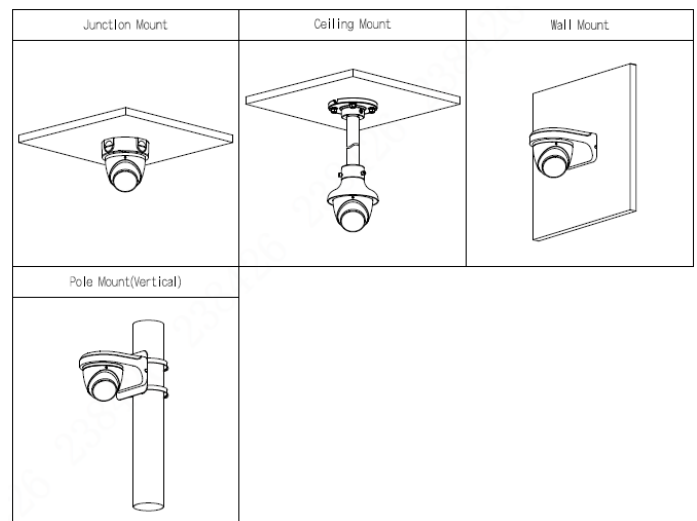
Casing Material	Inner core: Metal Cover: Metal Decoration ring: Plastic Quick install mounting plate: Metal
Product Dimensions	99.1 mm × Φ121.9 mm (3.90"× Φ4.80")
Net Weight	0.48 kg (1.06 lb)
Gross Weight	0.68 kg (1.50 lb)

Ordering Information

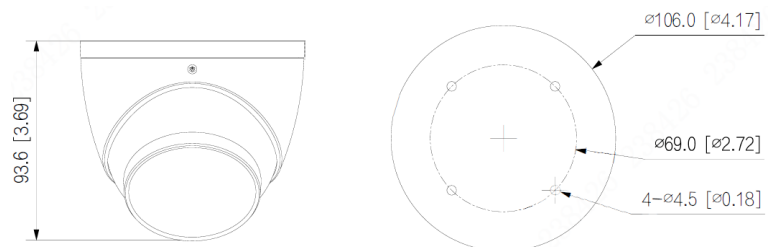
Type	Model	Description
5MP Camera	DH-IPC-HDW2541EMP-AS-ANZ	5MP IR Fixed-focal Eyeball Network Camera
Accessories (Optional)	PFA130-E	Water-proof Junction Box
	PFB205W-E	Wall Mount Bracket
	PFA152-E	Pole Mount Bracket
	PFA109	Mount Adapter
	PFB220C	Ceiling Mount Bracket
	PFM321D	12 VDC 1A Power Adapter
	PFM900-E	Integrated Mount Tester
	TF-P100	MicroSD Memory Card

Accessories

Optional:

PFA139
Junction BoxPFB204
Wall Mount BracketPFA152-E
Pole Mount BracketPFA106
Ceiling MountPFB220C
Ceiling Mount BracketPFM321D
12 VDC 1A Power AdapterPFM900-E
Integrated Mount TesterTF-P100
MicroSD Memory Card

Dimensions (mm[inch])



DHI-NVR4108HS-8P-AI/ANZ

8 Channels Compact 1U 8PoE 1HDD WizSense Network Video Recorder



WizSense

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-AI/ANZ 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 Detection

Face detection is to detect if there is any human face appearing in the video. This technology adopts a deep learning algorithm to support face detection, tracking, optimization and capturing, and then output the best face snapshot.

Face Recognition

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

Perimeter Protection

Automatically filtering out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to perform secondary recognition for the targets. Improving alarm accuracy.

- Smart H.265+/H.265/Smart H.264+/H.264/MJPEG decoding format.
- Access, storage or forwarding at 256 Mbps (180 Mbps when AI function enabled).
- 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; ANPR; 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

Support AI search by metadata of different targets or uploading face pictures to device and comparing them with recorded faces 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 appeared.

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 blacklist/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)	8 channels

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)	8 channels

Face Recognition

Face Database Capacity	Up to 10 face databases with 200,00 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)	8-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)	8 channels

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	8 channels

Vehicle License Plate Comparison

ANPR by Camera (Number of Channels)	4 channels
License Plate Database Capacity	1. Create up to 20,000 plate numbers. 2. Blocklist and allowlist

Audio and Video

Access Channel	8 channels
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Network Bandwidth	AI disabled: 256 Mbps incoming, 256 Mbps recording and 256 Mbps outgoing AI enabled: 180 Mbps incoming, 180 Mbps recording and 180 Mbps outgoing
Resolution	16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 3 MP; 1080p; 960p; 720p; D1
Decoding Capability	AI disabled: 2-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 4-channel 8 MP@30 fps; 6-channel 5 MP@30 fps; 8-channel 4 MP@30 fps AI enabled: 1-channel 16 MP@30 fps; 2-channel 12 MP@30 fps; 3-channel 8 MP@30 fps; 4-channel 5 MP@30 fps; 6-channel 4 MP@30 fps; 8-channel 1080p@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: 1/4/8/9 2nd Screen: 1/4/8/9
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; RTSP; 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 21.12(Profile T; Profile S; Profile G); CGI; SDK
Browser	Chrome; IE9 and later; Firefox

Recording Playback

Multi-channel Playback	Up to 8 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 (face and motion detection)

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

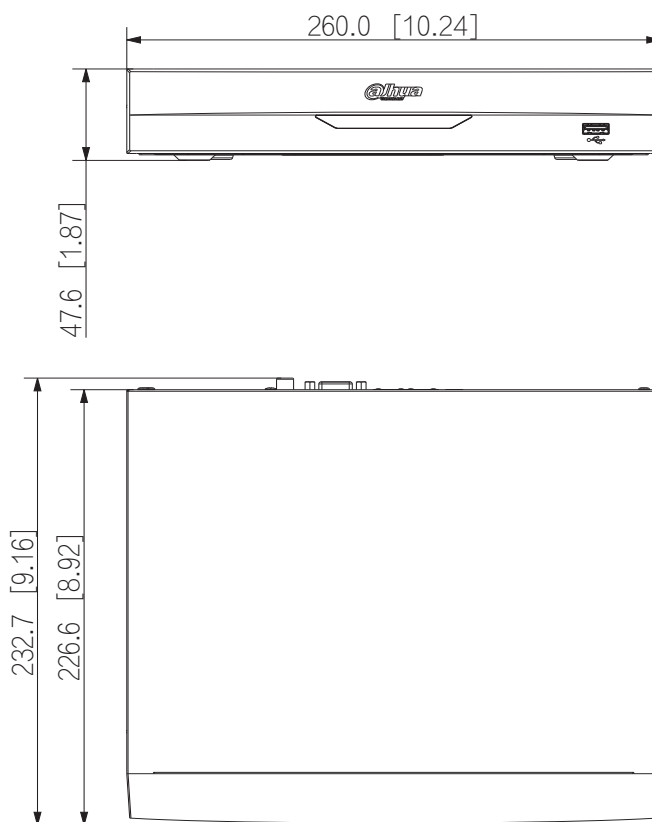
Audio Input	1-channel RCA
Audio Output	1-channel RCA
HDD Interface	1 SATA port, up to 16 TB. The maximum HDD capacity varies with environment temperature.

USB	2 (1 front USB 2.0 port, 1 rear USB 2.0 port)
HDMI	1
VGA	1
Network Port	1 (10/100/1000 Mbps Ethernet port, RJ-45)
PoE Port	8 ports, 10/100 Mbps, IEEE 802.3 af/at

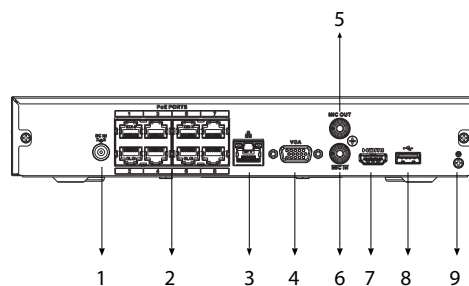
General

Power Supply	53 VDC, 1.812 A
Power Consumption	Total output of NVR is <10 W(without HDD) Total output power of PoE is 72W,the maximum output power of asingle port is 25.5W
Net Weight	0.92 kg (2.03 lb)
Gross Weight	2.05 kg (4.52 lb)
Product Dimensions	260 mm × 232.7 mm × 47.6 mm (10.24" × 9.16" × 1.87") (W × L × H)
Packaging Dimensions	372 mm × 117 mm × 308 mm (14.65" × 4.61" × 12.13") (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)
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

Dimensions (mm[inch])



Panels



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

Ordering Information

Type	Model	Description
8 Channels WizSense NVR	DHI-NVR4108HS-8P-AI/ANZ	8 Channels Compact 1U 8PoE 1HDD WizSense Network Video Recorder