

# NVR4216/4232-16P-4KS2

16/32 Channel 1U 16PoE 4K&H.265 Lite Network Video Recorder



- H.265/H.264 codec decoding
- Max 200Mbps Incoming Bandwidth
- Up to 8MP Resolution for Preview and Playback
- HDMI/VGA simultaneous video output
- Support IPC UPnP, 16PoE ports
- Support ANR technology to enhance the storage reliability when the network break down



## System Overview

Dahua's NVR4000-4KS2 is the first Lite series NVRs which can support 4K and H.265. And, it has the most reasonable price and best quality. This Lite NVR provides up to 8MP resolution. For applications where details are critical for identification, it provides a powerful image performance with up to 4K resolution. Additionally, the NVR features a mouse shortcut operation menu, remote management and control, centre storage, edge storage, and back up storage.

Designed as a cost-effective, easy installation, this NVR is ideal for a wide range of applications such as public safety, water conservancy, transportation, city centers, education, and financial institutions.

The NVR is compatible with numerous third-party devices making it the perfect solution for surveillance systems with or without a video management system (VMS). Its open architecture supports multi-user access and is compatible with ONVIF 2.4, enabling interoperability when combined with IP cameras.

## Functions

### 4K Resolution

The NVR supports 4K ultra HD resolution (3840 x 2160) for recording, live viewing and playback.

### Intelligent Video System (Optional)

Working with built-in intelligent video analytics IP cameras, the NVR has the ability to detect and analyze moving objects for improved video surveillance. The NVR provides optional standard intelligence at the edge allowing detection of multiple object behaviors such as abandoned or missing objects. IVS also supports Tripwire analytics, allowing the camera to detect when a pre-determined line has been crossed, People Counting, ideal for business intelligence, and Face Detection, for searching or identification of individuals.

### Smart Add

With the Smart Add function, the installation of IP system is as easy as an analog system, no matter the NVR with or without a PoE switch embedded. It should be noted that the NVR has to be in the same router as cameras.

### ANR (Automatic Network Replenishment Technology)

Video record in SD card in IP cameras when the network breaks down, and after the network recovered, the video will be transferred to NVR and then recorded in it.

### Easy4ip

You can monitor at anytime and anywhere with Easy4ip. With this function, you can manage your devices more convenient.

## Technical Specification

### System

Main Processor	Quad-core embedded processor
Operating System	Embedded LINUX

### Display

Interface	1 HDMI, 1 VGA
Resolution	3840×2160, 1920×1080, 1280×1024, 1280×720, 1024×768
Multi-screen Display	1/4/8/9/16
OSD	Camera title, Time, Video loss, Camera lock, Motion detection, Recording

### Video Detection and Alarm

Trigger Events	Recording, PTZ, Tour, Alarm out, Video Push, Email, FTP, Snapshot, Buzzer & Screen tips
Video Detection	Motion Detection, MD Zones: 396(22×18), Video Loss & Tampering
Alarm input	4 Channel, Low Level Effective, Green Terminal Interface
Relay Output	2 Channel, NO/NC Programmable, Green Terminal Interface

### Playback and Backup

Playback	1/4/8/16
Search Mode	Time/Date, Alarm, MD & Exact search (accurate to second), Smart search
Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, Digital Zoom
Backup Mode	USB Device/Network

### Storage

Internal HDD	2 SATA III Port, Up to 6 TB capacity for each HDD
HDD Mode	Single
eSATA	N/A

### Auxiliary Interface

USB	2 USB Ports (1 USB2.0, 1 USB3.0)
RS232	N/A
RS485	N/A

### Third-party Support

Third-party Support	Dahua, Arecont Vision, AXIS, Bosch, Brickcom, Canon, CP Plus, Dynacolor, Honeywell, Panasonic, Pelco, Samsung, Sanyo, Sony, Videotec, and more
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## Audio and Video

IP Camera Input	16/32 Channel
Two-way Talk	1 Channel Input, 1 Channel Output, RCA

## Recording

Compression	H.265/H.264
Resolution	8Mp/ 6Mp/ 5MP/ 4MP/ 3MP/ 1080P/ 1.3MP/ 720P etc.
Record Rate	200Mbps
Bit Rate	16Kbps ~ 20Mbps Per Channel
Record Mode	Manual, Schedule (Regular, Continuous), MD (Video detection: Motion Detection, Tampering, Video Loss), Stop
Record Interval	1 ~ 120 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec

## Network

Interface	1 RJ-45 Port (10/100/1000Mbps)
Ethernet Port	1 Independent 1000Mbps Ethernet Port
PoE	16 ports (IEEE802.3at/af)
Network Function	HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPoE, DDNS, FTP, IP Search (Support Dahua IP camera, DVR, NVS, etc.), Easy4ip
Max. User Access	128 users
Smart Phone	iPhone, iPad, Android
Interoperability	ONVIF 2.4, CGI Conformant

## Electrical

Power Supply	AC100V ~ 240V, 50 ~ 60 Hz
Power Consumption	NVR: <13.2W (Without HDD) PoE: Max 25.5w for single port, 130w in total

## 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×327.5mm×53mm (14.8" x 12.9" x 2.1")
Net Weight	2.7kg (6.0 lb) (without HDD)
Gross Weight	4.4kg(9.7lb)(without HDD)

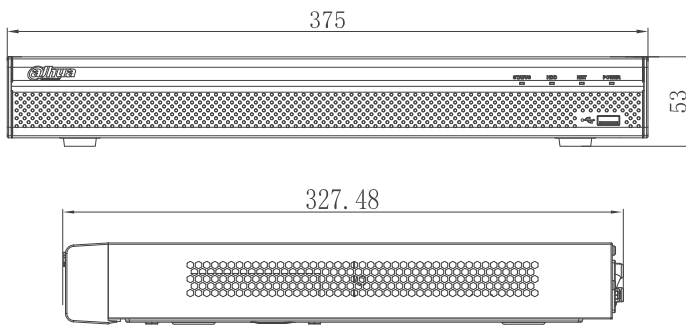
## Certifications

CE	EN55032, EN55024, EN50130-4, EN60950-1
FCC	Part 15 Subpart B, ANSI C63.4-2014
UL	UL60950-1+CAN/CSA C22.2 No.60950-1

### Ordering Information

Type	Part Number	Description
16 Channel NVR	NVR4216-16P-4KS2	16 Channel 1U 16PoE 4K&H.265 Lite Network Video Recorder
32 Channel NVR	NVR4232-16P-4KS2	32 Channel 1U 16PoE 4K&H.265 Lite Network Video Recorder
Accessories	N/A	N/A

### Dimensions (mm)



# DH-IPC-HDW2531EM-AS-S2

5MP Lite IR Fixed-focal Eyeball Network Camera



- 5MP, 1/2.7" CMOS image sensor, low illuminance, high image definition
- Outputs max. 5MP (2592 × 1944) @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, max IR distance: 30 m
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments
- Rotation mode, WDR, 3D DNR, HLC, BLC, digital watermarking, applicable to various monitoring scenes
- Intelligent detection: Intrusion, tripwire
- Abnormality detection: Motion detection, video tampering, no SD card, SD card full, SD card error, network disconnected, IP conflict, illegal access, voltage detection
- Supports max. 256 GB Micro SD card, built-in MIC
- 12V DC/PoE power supply
- IP67 protection



## Series Overview

With upgraded H.265 encoding technology, Dahua Lite series camera has efficient video encoding capacity, which saves bandwidth and storage space. This camera adopts the latest starlight technology and displays better colorful image in the environment of low illumination. It supports SD card storage, waterproof function, dust-proof function, complying to the standards of IP67.

## Functions

### 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.

### 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.

### Starlight

Dahua Starlight technology mainly applies to the environment of low illuminance, and it can provide clear colorful video. Even in the environment of ultra-low illuminance, the technology can guarantee the good image effect.

### IVS

With advanced video algorithm, Dahua IVS technology supports intelligent functions, such as tripwire and intrusion.

### 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 works normal after soaking in 1 m deep water for 30 minutes.

Wide voltage: The camera allows  $\pm 30\%$  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" 5Megapixel progressive CMOS
Max. Resolution	2592 (H) × 1944 (V)
ROM	128 MB
RAM	256 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100000 s
S/N Ratio	0.008 Lux @ F1.6
Min. Illumination	> 56 dB
Illumination Distance	30 m (98.43 ft)
Illuminator On/Off Control	Auto/Manual
Illuminator Number	2 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–78° Rotation: 0°–360°

#### Lens

Lens Type	Fixed-focal				
Mount Type	M12				
Focal Length	2.8 mm 3.6 mm				
Max. Aperture	F1.6 F1.6				
Field of View	2.8 mm: Horizontal 103° × Vertical 71° × Diagonal 132° 3.6 mm: Horizontal 84° × Vertical 58° × Diagonal 110°				
Iris Type	Fixed				
Close Focus Distance	2.8 mm: 0.9 m (2.95 ft) 3.6 mm: 1.6 m (3.61 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	56 m (183.73 ft)	22.4 m (73.49 ft)	11.2 m (36.75 ft)	5.6 m (18.37 ft)
	3.6 mm	80 m (262.47 ft)	32.0 m (104.99 ft)	16.0 m (52.49 ft)	8.0 m (26.25 ft)

#### Smart event

General IVS Analytics	Tripwire; intrusion
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#### Video

Video Compression	H.265; H.264; H.264B; MJPEG (only supported by the sub stream)
Smart Codec	Smart H.265+ / Smart H.264+
Video Frame Rate	Main stream: 2592 × 1944 (1 fps–20 fps) 2688 × 1520 (1 fps–25/30 fps) Sub stream: 704 × 576 (1 fps–25 fps) 704 × 480 (1 fps–30 fps)
Stream Capability	2 streams

Resolution	2592×1944(2592×1944); 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 DNR
Motion Detection	OFF/ON (4 areas, rectangular)
Region of Interest(Roi)	Yes (4 areas)
Smart Illumination	Yes
Image Rotation	0°/90°/180°/270° (Supports 90°/270° with 2592 × 1944 resolution and lower.)
Mirror	Yes
Privacy Masking	4 areas

#### Audio

Built-in MIC	Yes
Audio Compression	G.711A; G.711Mu; G.726; AAC

#### 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; security exception
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#### Network

Network	RJ-45 (10/100 Base-T)
SDK and API	Yes
Protocol	IPv4; IPv6; HTTP; HTTPS; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; PPPoE; 802.1x; Bonjour
Interoperability	ONVIF(Profile S/Profile G/Profile T);CGI; P2P; Milestone; Genetec
User/Host	20
Storage	Dahua Cloud; FTP; SFTP; Micro SD Card (support max. 256 GB); NAS
Browser	IE Chrome Firefox
Management Software	Smart PSS; DSS; DMSS
Mobile Phone	iOS; Android

Certification

Certifications	CE-LVD: EN62368-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07
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Power

Power Supply	12V DC/PoE (802.3af)
Power Consumption	< 7.2W

Environment

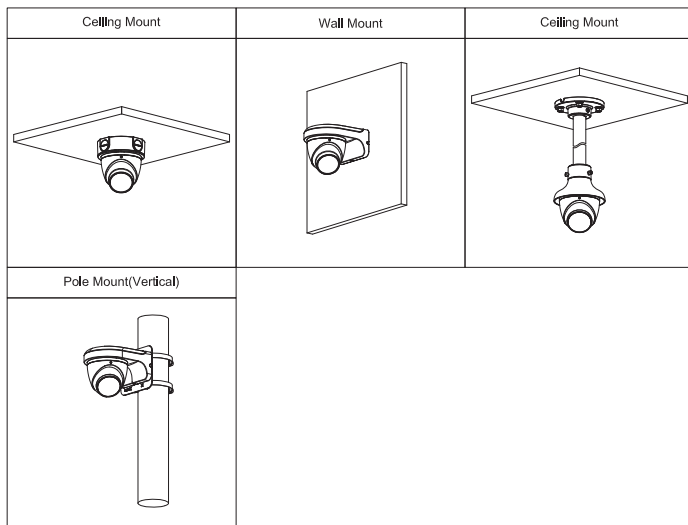
Operating Conditions	-40°C to +60°C (-40°F to +140°F)/less than ≤ 95%
Storage Temperature	-40°C to +60°C (-40°F to +140°F)
Protection Grade	IP67

Structure

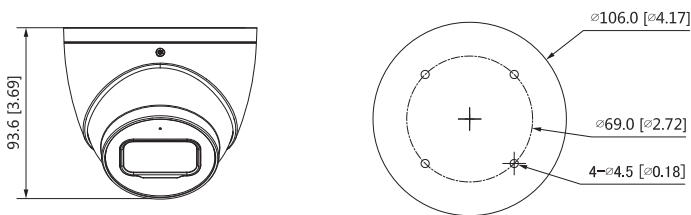
Casing	Metal
Dimensions	93.6 mm × Φ106 mm (3.7" × Φ4.2")
Net Weight	530 g (1.1 lb)
Gross Weight	800 g (1.7 lb)

Ordering Information

Type	Part Number	Description
5MP Camera	DH-IPC-HDW2531EM-AS-S2	5MP Lite IR Fixed-focal Eyeball Network Camera, PAL
Accessories (optional)	PFA130-E	Junction Box
	PFB204W	Wall Mount
	PFA152-E	Pole Mount
	PFA106	Mount Adapter
	PFB220C	Cell Mount
	PFM321D	DC12V1A Power Adapter
	LR1002-1ET/1EC	Single-port Long Reach Ethernet over Coax Extender
	PFM900-E	Integrated Mount Tester
	PFM114	TLC SD Card



Dimensions (mm[inch])



Accessories

Optional:



PFA130-E  
Junction Box



PFB204W  
Wall Mount



PFA152-E  
Pole Mount