

DHI-NVR4416-4KS2/I

16 Channel 1.5U 4HDDs 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

This AI network video recorder is a highly cost-effective product, providing functions such as local live view, multi-screen display, real-time storage on local HDD, fast operation by mouse, and remote management and control. This product is suitable for face detection and recognition at entrances and exits, and perimeter protection of people and vehicles.

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 (160 Mbps when Al function enabled)
- Max. decoding capability: 10 × 1080p@30 fps. Supports adaptive decoding
- Al 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
- Al by Camera: Face detection and recognition, perimeter protection; SMD Plus; ANPR; people counting; stereo analysis; heat map
- · Security baseline 2.1



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.

Al Search

Support AI seach 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 appeard.

Smart Fan

The NVR is equipped with a smart fan to achieve high cooling efficiency. It automatically turns on or turns off according to CPU and ambient temperature. The fan is long-lasting and low noise, reducing maintenance costs and improving the user experience.



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System Main Processor Main Processor Main Processor Industrial-grade embedded processor Decading Capability All for 1 Extramels 120/09/20 for 1 emails 120/09/20 for 1 f	Technical Specificati	on		Al off: 1 channel × 16MP@20 fps; 1 channel × 12MP@20	
Main Processor Industrial grade embedded processor Operating System Inhebited Linux Operating System Inhebited Linux Operation Interface Web, local CUI All All All All All All All Sace detection; lice recognition; perimeter protection; some and supplies from the face imperation states analysis, heat imperation of the face interpretation states analysis, heat imperation of the face interpretation states analysis, heat imperation of the face interpretation of the face interpretati					
Operating System Fine-edited Linux Video Output Video Output Video Output All Secretary Strongs (i.e., 2 cleared a Swing of Strong Control of Swing Contro		Industrial-grade embedded processor	Decoding Capability	Al on: 1 channel × 16MP@20 fps; 1 channel × 12MP@20	
Description Interface Web, local GUI All All All All All All All A				- 17	
All y Camera Al by Camera Alby Camera Alby Camera Alby Camera Alby Camera Alby Camera Alby Device Face detection: face recognition perimeter protection, 50D Plus ANTR, people counting, perimeter protection, 50D Plus Face Detection Face Detection Face Database Capacity Face Recognition F			Video Output	heterogeneous video sources output for VGA and HDMI	
All by Camera SAD Plus Affile people counting; stereo analysis, heat map Plansance; Supply Samurus, Aris, Pelco, Arecont, DINNT; map Plansance; Supply Samurus, Aris, Pelco, Aris, MIPS, Upp Plansance; Supply Samurus, Pelco, Dinnsance; Di	Al		Multi ceroon Display		
All by Device Staff Pilos Pare detection, face recognition, perimeter protection, Compression Video Smart H 2641; H 265; H264; MJPEG Perimeter Performance A Day Device(Number of Chamnels) Perimeter Performance of All Dy Device(Number of Chamnels) Perimeter Performance of All Dy Camera (Number of Chamnels) Perimeter Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Detection Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy Camera (Number of Chamnels) Face Recognition Performance of All Dy C			Width-screen Display		
Perimeter Protection Perimeter Protection Audio PCM; 67:134: 67:114; 67:26 Audio PCM; 67:134: 67:114; 67:124; 67:114; 67:114; 67:114; 67:114; 67:114; 67:114; 67:114; 67:114; 67:114; 67:114; 67:114; 67:114; 67:1	Al by Camera	, , , ,	Third Party Camera Access		
Perimeter Profection Perimeter Profection Perimeter Profection Perimeter Profection Perimeter Performance A by Device(Number of Channels) Perimeter Performance of A by Camera (Number of Channels) Perimeter Performance of B B Channels Performance of B B Channels (Number of Channels) Perimeter Performance of B B Channels Performance of A by Camera (Number of Channels) Pace Detection Pace Detection Performance of A by Device (1980P) (Number of Channels) Pace Detection Pace Detection Pace Detection Performance of A by Device (1980P) (Number of Channels) Pace Recognition Pace Detection Pace	AI by Device		Compression		
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Perimeter Performance of Al by Camera (Number of Channels) Face Detection Face Detection Face Attributes 6 attibutes: Gender, age group (6); glasses, expressions (8); mouth mask; beard Face Detection Performance of Al by Camera (Number of Channels) Face Recognition Face Rec		2	Audio	PCM; G.711A; G.711U; G.726	
Network Protocol SMIP; NIP; DRC; PMS; Filter, PPG; DMS; FIFT; Channels Face Detection	The state of the s	2	Network		
Mobile Phone Access Android; IOS Face Attributes (8); mouth mask; beard (16); glasses; expressions (8); mouth mask; beard (16); mouth mask; beard (180P); Number of Channels (18	AI by Camera (Number of Channels)	8	Network Protocol	SMTP; NTP; DHCP; DNS; IP Filter; PPPoE; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR;	
Interoperability DNVIF [profile Tys/G), CGI; SDK	Face Detection		Mobile Phone Access	Android; iOS	
Performance of Al by Device (1308P) (Number of Channels) Face Detection Face Recognition F	Face Attributes		Interoperability	ONVIF(profile T/S/G); CGI; SDK	
Device (1080P) (Number of Channels) Face Detection Performance of Al by Camera (Number of Channels) Face Recognition Face Database Capacity Face Recognition Performance of Al by Device (1080P) (Number of Channels) 8 Alarm General Alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Camera (Number of Channels) SMD Plus by Device 4 SMD Plus by Camera SMD Plus by Camera ANPR ANPR ANPR ANPR ANPR ANPR ANPR ANPR by Camera (10 to 12 face images/second) 8 Multi-channel Playback Manual; schedule (general; MD; alarm; MD & alarm; intelligent) Storage Method Local HDD; network Manual; schedule (general; MD; alarm; MD & alarm; intelligent) Storage Method Local HDD; network Alarm: Alarm Anomaly Alarm Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked, and cybersecurity exception SMD Plus by Camera Alarm Linkage Record Mode Intelligent Alarm Alarm Linkage Record Sangbhot; IPC external alarm output; audio; buzzer, log; preset; email Part Linkage Record Mode Manual; schedule (general; MD; alarm; MD & alarm; MD & apacity varies with environment temperature USB 1 front USB 2.0 port, 1 rear USB 3.0 port HDMI 1 (max. resolution: 4K) Video Aloff: Access: 256 Mbps; Storage: 256 Mbps; Forward: 256 Mbps Aloff: Access: 256 Mbps; Storage: 256 Mbps; Forward: Playback Mode Modito detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm output; audio; buzzer, log; preset; email Local HDD; alarm; MD Capacity varies with environment temperature USB Local HDD; alarm;			Browser	Chrome; IE9 or later; firefox	
Performance of Al by Camera (Number of Channels) Face Recognition Face Database Capacity Up to 10 face databases with 20,000 images Backup USB device Face Recognition Face Recognition Face Recognition Face Recognition Playback Function Playback Func	Device (1080P) (Number	1 (up to 12 face images/second)	Record Playback	Record Playback	
Record Mode Manual; schedule (general; MD; alarm; MD & alarm; intelligent)			Multi-channel Playback	Up to 16 channels	
Face Database Capacity Face Recognition Performance of AI by Device (1080P) (Number of Channels) SMD Plus SMD Plus by Device 4 16-channel SMD Plus (AI by camera) SMD Plus by Camera 16-channel SMD Plus (AI by camera): Detects tripwire and intrustion of human or vehicle; filters false alarms caused by leaves, raindrops and change of brightness away ANPR ANPR by Camera 4 Aloff: Access: 256 Mbps; Storage: 256 Mbps; Storage: 256 Mbps; Forward: Playback Function Playback Function Play, pause; stop; fast forward; fast backward; rewind; play by frame 2. Full screen; backup (cut/file); partially enlarge; audio on/off Alarm General Alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm Motion detection; privacy masking; video loss; scene changing; PR alarm; IPC external alarm	Camera (Number of	8	Record Mode		
Face Recognition Performance of Al by Device (1080P) (Number of Channels) Face Recognition Performance of Al by Camera (Number of Channels) SMD Plus SMD Plus by Device 4 Included by Including and Channels of Device and Intrustion of human or vehicle; filters false alarms caused by leaves, raindrops and change of brightness away ANPR by Camera 4 ANPR by Camera 4 Al off: Access: 256 Mbps; Storage: 256 Mbps; Forward: Al off: Access: 256 Mbps; Access: 256 Mbps; Forward: Al off: Access: 256 Mbp	Face Recognition		Storage Method	Local HDD; network	
Performance of Al by Device (1080P) (Number of Channels) Face Recognition Performance of Al by Camera (Number of Channels) SMD Plus SMD Plus by Device 4 Intelligent Alarm Alarm Linkage Alarm Lin	Face Database Capacity	Up to 10 face databases with 20,000 images	Backup	USB device	
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Camera (Number of Channels) General Alarm Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm SMD Plus SMD Plus by Device 4 Intelligent Alarm Anomaly Alarm Face detection; face recognition; perimeter protection; SMD Plus; 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 ANPR by Camera 4 HDD 4 SATA ports, up to 10 TB. The maximum HDD capacity varies with environment temperature Video USB 1 front USB 2.0 port, 1 rear USB 3.0 port HDMI 1 (max. resolution: 4K) Network Bandwidth Al off: Access: 256 Mbps; Storage: 256 Mbps; Forward: 256 Mbps; Forward: 256 Mbps	_			Alarm	
SMD Plus by Device 4 Intelligent Alarm MAC conflict; login locked; and cybersecurity exception in the protection; face recognition; perimeter protection; SMD Plus people counting; stereo analysis; heat map and intrustion of human or vehicle; filters false alarms caused by leaves, raindrops and change of brightness away ANPR ANPR by Camera 4 ANPR by Camera 5 Al arm Linkage 8 Record; snapshot; IPC external alarm output; audio; buzzer; log; preset; email 4 External Port ANPR by Camera 7 ANPR by Camera 8 Al arm Linkage 8 Becord; snapshot; IPC external alarm output; audio; buzzer; log; preset; email 4 Box Camera 6 ANPR by Camera 7 Al arm Linkage 8 Becord; snapshot; IPC external alarm output; audio; buzzer; log; preset; email 4 Box Camera 7 Al arm Linkage 8 Becord; snapshot; IPC external alarm output; audio; buzzer; log; preset; email 4 Box Camera 7 Al arm Linkage 8 Becord; snapshot; IPC external alarm output; audio; buzzer; log; preset; email 4 Box Camera 7 Al arm Linkage 8 Becord; snapshot; IPC external alarm output; audio; buzzer; log; preset; email 4 Box Camera 7 Al arm Linkage 8 Box Camera 7 Al arm Linkage 9 Box Camera 7 Al arm L	Camera (Number of	8	General Alarm	, , , , , , , , , , , , , , , , , , , ,	
SMD Plus by Camera 16-channel SMD Plus (Al by camera): Detects tripwire and intrustion of human or vehicle; filters false alarms caused by leaves, raindrops and change of brightness away ANPR ANPR by Camera 4 Between the protection; SMD Plus; people counting; stereo analysis; heat map and intrustion of human or vehicle; filters false alarms caused by leaves, raindrops and change of brightness away Alarm Linkage External Port HDD 4 SATA ports, up to 10 TB. The maximum HDD capacity varies with environment temperature Video USB 1 front USB 2.0 port, 1 rear USB 3.0 port HDMI 1 (max. resolution: 4K) Network Bandwidth Network Bandwidth VGA 1	SMD Plus		Anomaly Alarm		
ANPR ANPR by Camera 4	SMD Plus by Device		Intelligent Alarm	, , , , , , , , , , , , , , , , , , , ,	
ANPR by Camera 4 SATA ports, up to 10 TB. The maximum HDD capacity varies with environment temperature Video USB 1 front USB 2.0 port, 1 rear USB 3.0 port HDMI 1 (max. resolution: 4K) Al off: Access: 256 Mbps; Storage: 256 Mbps; Forward: 256 Mbps Network Bandwidth	SMD Plus by Camera	caused by leaves, raindrops and change of brightness	Alarm Linkage		
Video Video USB 1 front USB 2.0 port, 1 rear USB 3.0 port Access Channel 16 channels HDMI 1 (max. resolution: 4K) Al off: Access: 256 Mbps; Storage: 256 Mbps; Forward: 256 Mbps VGA 1			External Port	External Port	
Video Access Channel 16 channels HDMI Al off: Access: 256 Mbps; Storage: 256 Mbps; Forward: 256 Mbps VGA 1 front USB 2.0 port, 1 rear USB 3.0 port 1 (max. resolution: 4K) VGA 1	ANPR by Camera	4	HDD		
Access Channel 16 channels HDMI 1 (max. resolution: 4K) Al off: Access: 256 Mbps; Storage: 256 Mbps; Forward: 256 Mbps VGA 1	Video		USB	· ·	
Al off: Access: 256 Mbps; Storage: 256 Mbps; Forward: 256 Mbps VGA 1	Access Channel	16 channels			
Network Randwidth	Network Bandwidth				
160 Mbps Network 2 RJ-45 10/100/1000 Mbps self-adaptive Ethernet ports		Al on: Access: 160 Mbps; Storage: 160 Mbps; Forward:			
Resolution 16MP; 12MP; 8MP; 5MP; 4MP; 3MP; 2MP; 720p; D1 RCA Input 1	Resolution	16MP; 12MP; 8MP; 5MP; 4MP; 3MP; 2MP; 720p; D1	RCA Input	1	



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RCA Output	1
Alarm Input	16
Alarm Output	4
RS-232	1 channel, used to debug and pass through serial data
RS-485	1 channel, used to control PTZ, and it supports multiple protocols

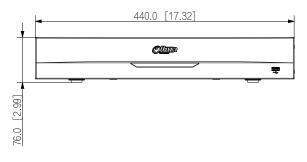
General Parameter

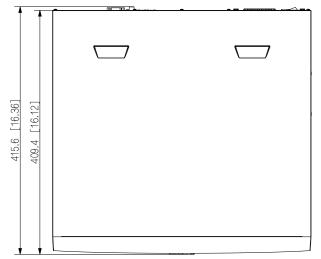
Power Supply	Single, 100 V–240 V AC, 50 Hz–60 Hz	
Power Consumption	Total output of NVR is ≤ 8 W (without HDD)	
Net Weight	4.25 kg (9.35 lb)	
Gross Weight	6.48 kg (18.41 lb)	
Product Dimensions	440.0 mm × 415.6 mm x 76.0 mm (17.32" × 16.36" × 2.99") (W × L × H)	
Package Dimensions	529.0 mm × 499.0 mm × 211.0 mm (20.83" × 19.65" × 9.31") (W × L × H)	
Operating Conditions	-10 °C to +55 °C (+10 °F to +131 °F)	
Storage Conditions	0 °C to +40 °C (32 °F to 104 °F)	
Operating Humidity	10%-93%	
Storage Humidity	30%-85%	
Operating Altitude	3,000 m (9,843 ft)	
Installation	Desktop/Rack mount	
Certifications	FCC:47 CFR FCC Part15,SubpartB,Class A CE-EMC:EN 55032:2015,Class A;EN IEC 61000- 3-2:2019;EN 61000-3-3:2013+A1:2019;EN 55024:2010+A1:2015;EN 55035:2017;EN 50130- 4:2011+A1:2014 CE-LVD:EN 62368-1:2014+A11:2017	

Ordering Information

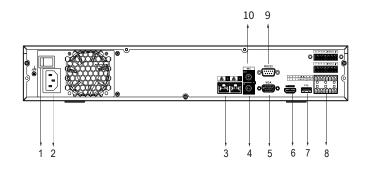
Туре	Model	Description
16 Channel	DHI-NVR4416-	16 Channel 1.5U 4HDDs WizSense
WizSense NVR	4KS2/I	Network Video Recorder

Dimensions (mm[inch])





Panels



- 1 Power Switch
- 3 Network Ports
- 5 VGA Port
- 7 USB Port9 RS-232 Port
- 2 Power Input
- 4 AUDIO IN, RCA Connector
- 6 HDMI Port
- 8 Alarm In/Out
- 10 AUDIO OUT, RCA Connector



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