** alhua** TECHNOLOGY

DH-HAC-HDW1500TM-A-POC
5MP Starlight HDCVI POC IR Eyeball Camera

* The parameters and datasheets below can only be applied to 1500-S2 series.

· Max 25 fps@5MP (16:9 video output)

· CVI/CVBS/AHD/TVI switchable

· 2.8mm fixed lens(3.6mm, 6mm optional)

· Bulit-in mic

· Max. IR length 60 m, Smart IR

· IP67, PoC (only CVI)/12V±30% DC

Lite Series | **5Mp** | **60mIR** | **Starlight** | **DC 12V** | **IP67** | **Audio**

System Overview

Experience 5MP full HD video and the simplicity of using existing cabling infrastructure with HDCVI. The Lite series 5MP HDCVI camera features a compact design and offers a high quality image at a friendly price. It offers various motorized/fixed lens models with a multi-language OSD and HD/SD switchable output. Its structural flexibility and high cost-performance make the camera an ideal choice for SMB solutions.Besides, this model is a PoC camera which can be powered by PoC XVR over a single coaxial cable with video, requiring no separate power supplies. PoC reduces time and cost for users, making it an ideal choice for applications with complex deployment but a tight budget.

Functions

4 Signals over 1 Coaxial Cable
HDCVI technology supports 4 signals to be transmitted over 1 coaxial cable simultaneously, i.e. video, audio*, data and power. Dual-way data transmission allows the HDCVI camera to interact with the XVR, such as sending control signal or triggering alarm. Moreover, HDCVI technology supports PoC for construction flexibility.

* Audio input is available for some models of HDCVI cameras.

Long Distance Transmission
HDCVI technology guarantees real-time transmission at long distance without any loss. It supports up to 700 m for 5MP HD video through coaxial cable, and up to 300 m through UTP cable.*

 *Actual results verified by real-scene testing in Dahua's test laboratory.

Simplicity
HDCVI technology inherits the born feature of simplicity from traditional analog surveillance system, making itself a best choice for investment

protection. HDCVI system can seamlessly upgrade the traditional analog system without replacing existing coaxial cabling. The plug and play approach enables full HD video surveillance without the hassle of configuring a network.

Smart IR
The camera is designed with IR LED illumination for best lowlight performance. Smart IR is a technology to ensure brightness uniformity in B/W image under low illumination. Dahua's unique Smart IR adjusts to the intensity of camera's infrared LEDs to compensate for the distance of an object, and prevents IR LEDs from overexposing images as the object comes closer to the camera.

Multi-formats
The camera supports multiple video formats including HDCVI, CVBS and other two common HD analog formats in the market. The four formats can be switched over through OSD menu. This feature makes the camera compatible with most end users' existing HD/SD DVRs.

Starlight
With the adoption of large sized high performance sensor and large aperture lens, the camera is able to provide incomparable performance even under extreme lowlight environment. The starlight feature allows more details to be captured and accurate color to be recognized at night or in scenes with limited illumination.

Protection
The camera's outstanding reliability is unsurpassed due to its rugged design. The camera is protected against water and dust with IP67 ranking, making it suitable for indoor or outdoor environments.
With working temperature range of –40 °C to +60 °C (–40 °F to +140 °F), the camera is designed for extreme temperature environments. Supporting ±30% input voltage tolerance, this camera suits even the most unstable power supply conditions. Its 4kV lightning rating provides protection against the camera and its structure from the effects of lightning.

Technical Specification

Camera

Image Sensor	1/2.7 inch CMOS
Max. Resolution	2880 (H) × 1620 (V)
Pixel	5MP
Scanning System	Progressive
Electronic Shutter Speed	PAL: 1/25 s–1/100,000 s NTSC: 1/30 s–1/100,000 s
S/N Ratio	> 65 dB
Min. Illumination	0.005 Lux/F1.6, 30IRE, 0 Lux IR on
Illumination Distance	60 m (196.9 ft)
Illuminator On/Off Control	Auto; manual
Illuminator Number	2
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–78° Rota on: 0°–360°

Lens

Lens Type	Fixed-focal
Mount Type	M12
Focal Length	2.8 mm; 3.6 mm; 6 mm
Max. Aperture	F1.6
Field of View	2.8 mm: 132° × 111° × 58° (diagonal × horizontal × vertical) 3.6 mm: 109° × 92° × 48° (diagonal × horizontal × vertical) 6 mm: 65° × 57° × 30° (diagonal × horizontal × vertical)
Iris Type	Fixed iris
Close Focus Distance	2.8 mm: 0.9 m (3.0 ft) 3.6 mm: 1.6 m (5.2 ft) 6 mm: 3.1 m (10.2 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8 mm	63.6 m (208.7 ft)	25.4 m (83.3 ft)	12.7 m (41.7 ft)	6.4 m (21.0ft)
	3.6 mm	80 m (262.5 ft)	32 m (105.0 ft)	16 m (52.5 ft)	8 m (26.2 ft)
	6 mm	120 m (393.7 ft)	48 m (157.5 ft)	24 m (78.7 ft)	12m (39.4 ft)

Video

Frame Rate	CVI: PAL: 5M@25 fps; 4M@25 fps; 1080P@25 fps; NTSC: 5M@25 fps; 4M@30 fps; 1080P@30 fps AHD: PAL: 4M@25 fps; NTSC: 4M@30 fps TVI: PAL: 4M@25 fps; NTSC: 4M@30 fps CVBS: PAL: 960H; NTSC: 960H
Resolution	5M (2880 × 1620); 4M (2560 × 1440); 1080P (1920 × 1080); 960 H (960 × 576/960 × 480)
Day/Night	Auto switch by ICR

BLC	BLC/HLC/DWDR
WDR	DWDR
White Balance	Auto; manual
Gain Control	Auto; manual
Noise Reduction	2D NR
Smart IR	Yes
Mirror	Off/On
Privacy Masking	Off/On (8 areas, rectangle)

Certifications

Certifications	CE (EN55032:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN55024:2010+A1:2015, EN 55035:2017, EN50130-4:2011+A1:2014, EN 62368-1:2014+A11:2017) FCC (CFR 47 FCC Part 15 subpartB, ANSI C63.4-2014) UL (UL60950-1+CAN/CSA C22.2 No.60950-1)

Port

Audio Interface	One channel built-in mic
Video Output	Video output choices of CVI/TVI/AHD/CVBS by one BNC port

Power

Power Supply	PoC (only CVI)/12V±30% DC
Power Consumption	Max 5.2W (12V DC, IR on) PoC (AF)

Environment

Operating Temperature	−40°C to +60°C (−40°F to 140°F); < 95% (non-condensa on)
Storage Temperature	−40°C to +60°C (−40°F to 140°F); < 95% (non-condensa on)
Protect on Grade	IP67

Structure

Casing	Metal dome+metal cover
Camera Dimensions	φ106 mm × 69.0 mm (φ4.17" × 2.72")
Net Weight	0.55 kg (1.21 lb)
Gross Weight	0.71 kg (1.57 lb)

Ordering Information

Type	Part Number	Description
5MP Camera	DH-HAC-HDW1500TMP-A-POC 2.8 mm	5MP Starlight HDCVI POC IR Eyeball Camera -
	DH-HAC-HDW1500TMN-A-POC 2.8 mm	
	DH-HAC-HDW1500TMP-A-POC 3.6 mm	
	DH-HAC-HDW1500TMN-A-POC 3.6 mm	
	DH-HAC-HDW1500TMP-A-POC 6 mm	
	DH-HAC-HDW1500TMN-A-POC 6 mm	

Accessories	PFA130-E	P66 Junction on box
	PFB20W	Wall Mount Bracket (For use alone or with PFA152-E)
	PFA152-E	Pole Mount Bracket (For use with PFB205W)
	PFM321D	12V 1A Power Adapter
	PFM904	Integrated Mount Tester

Accessories

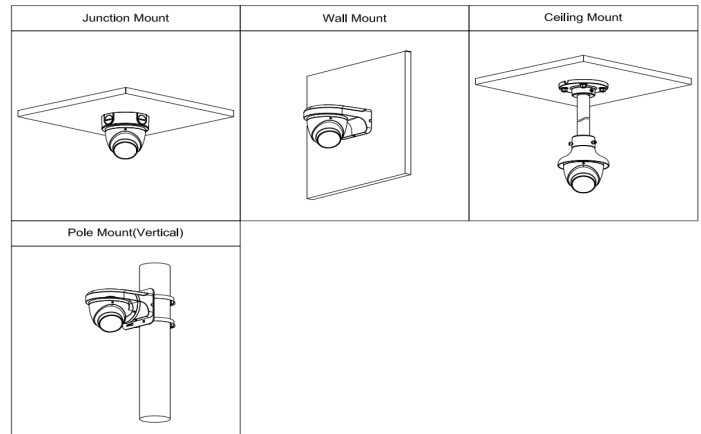**Optional:**

PFA130-E
P66 Junction on box

PFB204W
Wall mount

PFA152-E
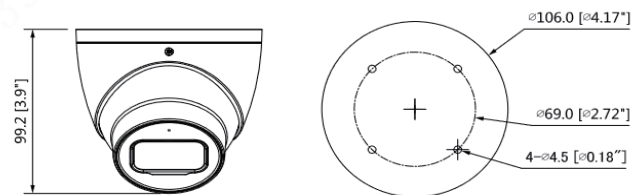Pole Mount Bracket
(For use with PFB204W)

PFM321D
12V 1A Power Adapter

PFM904
Integrated Mount Tester

Junction Mount	Wall Mount	Ceiling Mount

Pole Mount(Vertical)		

Dimensions (mm[inch])

99.2 [3.9"]

∅106.0 [∅4.17"]

∅69.0 [∅2.72"]

4−∅4.5 [∅0.18"]

DH-XVR5104H-4KL-I3-4P

4CH Penta-brid 4K Value/5MP Mini 1U 1HDD WizSense Digital 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

Dahua Technology, a world-leading video-centric smart IoT solution and service provider, debuted its new XVR series, XVR5000-4KL-I3 Series featuring max.full-channel SMD Plus to benefit customers from AI upgrade (The number of channels differs depending on the model. Please refer to the specifications below for information on the number of channels.). This series has been developed to reduce false-alarm rates and the cost of human surveillance, thus bringing great value to customers in search of products with accurate human/vehicle alarm to raise the security level of various indoor and outdoor facilities.

Functions

PoC

By transmitting power over the same coaxial cable with video, HDCVI PoC technology further simplifies the deployment of HDCVI system, and therefore reduces installation time and labor costs. Balun could be connected for compatibility with UTP transmission when PoC function is disabled.

Face Recognition

Dahua Face Recognition technology extracts the features of captured faces and compares them with that in face database.
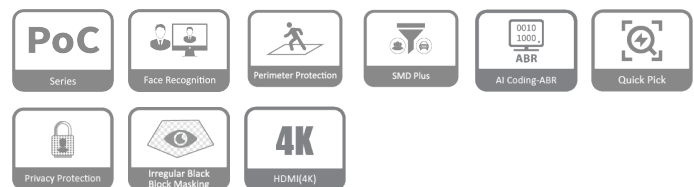*Face Recognition conflicts with SMD Plus and Perimeter Protection.

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.

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.

- 4-channel SMD Plus for analog channels or 8-channel SMD by camera which allows the device to trigger accurate alarms for humans and vehicles.
- 4-channel perimeter protection for analog channels which supports tripwire and intrusion detection powered by AI.
- 2-channel face recognition for analog channels which supports face comparison.
- 4-channel AI Coding saves on storage and bandwidth while maintaining the details of targets in videos.
- Supports HDCVI, AHD, TVI, CVBS and IP video input.
- Supports up to 8-channel IP camera input and each channel can be up to 8 MP. The incoming bandwidth reaches 64 Mbps.
- Smart H.265+ and H.265 dual-stream video compression.
- IoT and POS capabilities.
- All the channels support PoC AT and PoC AF cameras, and the XVR auto recognizes PoC cameras that have different power consumption levels.

AI Coding-ABR

Compared with H.265, AI coding-ABR can save 50% on storage costs, and save bit rate for complex scenes, which can prioritize image quality in dynamic scenes.

QuickPick 2.0

By employing the back-end perimeter protection algorithm, QuickPick 2.0 not only retains the capability to identify the color of clothing and vehicles, which was offered by its predecessor QuickPick 1.0, but it also possesses the enhanced ability to detect various types of hats, clothing and vehicles, thus greatly improving the accuracy of the search function.

Privacy Protection

Dahua Privacy Protection technology is capable of masking detected human faces and subsequently removing the mask, ensuring the privacy of specific individuals is protected.

Irregular Black Block Masking

Dahua's black block masking function supports the use of irregular shapes for masking, ensuring privacy in public and private locations.

HDMI (4K)

The HDMI port can support up to 4K output, delivering clear and highly detailed images.

Technical Specification

System

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

Quick Pick

QuickPick 2.0 AI by Recorder (Number of Channels)	2 channels

Perimeter Protection

Perimeter Performance AI by Recorder (Number of Channels)	Advanced Mode: 2 channels, 10 IVS rules for each channel General Mode: 4 channels, 10 IVS rules for each channel

Face Detection

Face Attributes	6 attributes
Face Detection Performance of AI by Recorder (Number of Channels)	2 channels (up to 8 face images/s each channel)

Privacy Protection

Privacy Protection Performance of AI by Recorder (Number of Channels)	1 channel

Face Recognition

Face Database Capacity	Up to 10 face databases with 20,000 images.
Face Recognition Performance of AI by Recorder (Number of Channels)	2 channels

SMD Plus

SMD Plus by Recorder	4 channels: Secondary filtering for human and vehicle, reducing false alarms caused by leaves, rain and lighting condition change
SMD Plus by Camera	8 channels

AI Video Quality Analytics

AI Video Quality Analytics by Recorder	4 channels: Supports detecting brightness levels, color cast, defocus, overexposure, contrast levels, black and white

Scene Changing

Scene Changing by Recorder	1 channel

Irregular Black Block Masking

Irregular Black Block Masking by Recorder	1 channel

Audio and Video

Analog Camera Input	4 BNC ports, supports HDCVI/AHD/TVI/CVBS auto-detect

Camera Input	1. CVI: 4K@25/30 fps; 4K@12.5/15 fps; 6 MP@20 fps; 5 MP@25 fps; 5 MP@20 fps; 4 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps; 720p@50/60 fps. 2. TVI: 4K@15 fps; 5 MP@20 fps; 4 MP@25/30 fps; 3 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps. 3. AHD: 4K@15 fps; 5 MP@20 fps; 4 MP@25/30 fps; 3 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps.
IP Camera Input	Up to 8 channels of IPC access 4 IP channels by default + 4 channels (analog channels are converted to IP channels) Incoming bandwidth: 64 Mbps, recording bandwidth: 64 Mbps and outgoing bandwidth: 64 Mbps *After IP extension is enabled, Video Quality Analytics, Scene Changing, Face Recognition, Face Detection, SMD, Perimeter Protection, QuickPick 2.0 and Privacy Protection cannot be used.
Encoding Capacity	Encode Enhancement disabled： Main stream: 4K@(1 fps–7 fps); 6 MP@(1 fps–10 fps); 5 MP@(1 fps–12 fps); 4K-N/4 MP/3 MP@(1 fps–15 fps); 4M-N/1080p/720p/960H/D1/CIF@(1 fps–25/30 fps) Sub stream: 960H@(1 fps–15 fps); D1/CIF@(1 fps–25/30 fps) Encode Enhancement enabled： Main stream: the 1st channel 4K@(1 fps–15 fps), others 4K@(1 fps–7 fps); the 1st channel 6 MP@(1 fps–20 fps), others 6 MP@(1 fps–10 fps); the 1st channel 5 MP@(1 fps–25 fps), others 5 MP@(1 fps–12 fps); the 1st channel 4K-N/4 MP/3 MP@(1 fps–25/30 fps), others 4K-N/4 MP/3 MP@(1 fps–15 fps); 4K/6 MP@(1 fps–10 fps);5 MP@(1 fps-12 fps); 4K-N/4 MP/3 MP@(1 fps–15 fps); 4M-N/1080p/720p/960H/D1/CIF@(1 fps–25/30 fps) Sub stream: 960H@(1 fps–15 fps); D1/CIF@(1 fps–25/30 fps) *When Encode Enhancement is enabled, Video Quality Analytics, Scene Changing, Face Recognition, Face Detection, Perimeter Protection, QuickPick 2.0 and Privacy Protection cannot be used.
Dual-stream	Yes
Video Bit Rate	32 kbps–6144 kbps
Audio Sampling	8 kHz, 16 bit
Audio Bit Rate	64 kbps
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	When IP extension mode not enabled: 1/4 When IP extension mode enabled: 1/4/8/9
Third-party Camera Access	Panasonic; Sony; Hanwha; Axis; Arecont; ONVIF

Compression Standard

Video Compression	AI Coding; Smart H.265+; H.265; Smart H.264+; H.264
Audio Compression	G.711a; G.711u; PCM

Network

Network Protocol	HTTP; HTTPS; TCP/IP; IPv4; IPv6; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; IP Filter; FTP; DDNS; SNMP; Alarm Server; P2P; Auto Registration; IP Search (Supports IP camera, DVR, NVS, etc.)
Mobile Phone Access	iOS; Android
Interoperability	ONVIF 23.12 (Profile T; Profile S; Profile G); CGI; SDK
Browser	Chrome; IE; Safari; Edge; Firefox

Recording Playback

Record Mode	General; alarm; motion detection; intelligent; POS
Recording Playback	1/4
Backup Method	USB device and network
Playback Mode	Instant playback; general playback; event playback; tag playback; smart playback

Alarm

General Alarm	Motion detection; alarm box; HDCVI alarm; camera external alarm; network alarm; PIR alarm
Anomaly Alarm	Error (no disk, disk error, low space, low quota space; network disconnection; IP conflict; MAC conflict); video loss; video tampering; camera offline
Intelligent Alarm	Face detection; face recognition; perimeter protection; SMD Plus
Alarm Linkage	Record; snapshot (panoramic); IPC external alarm output; audio; buzzer; log; preset; email

Ports

Audio Input	1-channel RCA 4-channel BNC (Coaxial Audio)
Audio Output	1-channel RCA
Two-way Talk	Yes (share the same audio input with the first channel)
Disk Interface	1 SATA port. up to 16 TB. This limit varies depending on the environment temperature.
RS-485	1
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)

General

Power Supply	53 VDC , 1.13 A
Power Consumption	<7 W (without HDD)
Net Weight	1.10 kg (2.43 lb)
Gross Weight	2.15 kg (4.74 lb)
Product Dimensions	325.0 mm × 257.1 mm × 55.0 mm (12.80" × 10.12" × 2.17") (W × D × H)
Packaging Dimensions	372.0 mm × 117.0 mm × 308.0 mm (14.65" × 4.61" × 12.13") (W × D × 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%–90% (RH), non-condensing
Installation	Desktop
Certifications	CE: CE-LVD: EN 62368-1 CE-EMC: EN 61000-3-2, EN 61000-3-3, EN 55032, EN 50130, EN 55024 FCC: Part 15 Subpart B

Ordering Information

Type	Model	Description
DIGITAL VIDEO RECORDER	DH-XVR5104H-4KL-I3-4P	4CH Penta-brid 4K Value/5MP Mini 1U 1HDD WizSense Digital Video Recorder

Accessories

Optional:
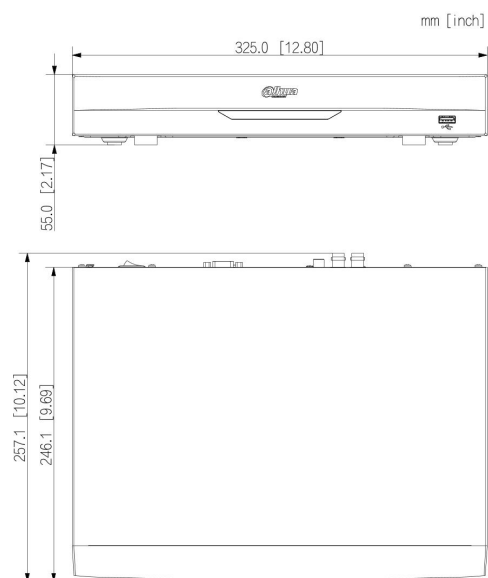

DHI-SSD-V800S256G SSD

DHI-SSD-V800S512G SSD

DHI-SSD-V800S1TB SSD

DHI-ARB1606 Alarm Box

Dimensions (mm[inch])

Panels

1	VIDEO IN	2	AUDIO OUT, RCA Connector
3	HDMI Port	4	Network Port
5	RS-485 Port	6	USB Port
7	Power Input	8	AUDIO IN, RCA Connector
9	VGA Port	10	Power Switch
11	Ground		