5MP HDCVI Security System

12 x 5 MP HDCVI Eyeball Cameras with One (1) 16-channel 4K HDCVI DVR

5 MP HDCVI Cameras

- 5 MP[1] at 20 fps Resolution
- 2.8 mm Fixed Lens
- Maximum IR Length 30 m (98 ft) with Smart IR
- IP67 Environmental Protection

4K HDCVI DVR

- Embedded Processor
- 16 Channel Penta-brid Recorder
- Support for 16 + 16 IP Channels
- Smart H.265+ and Smart H.264+ Dual Codec
- 4K at 7 fps Recording Resolution on all HDCVI Channels
- Automatically Detects HDCVI, AHD, TVI, and CVBS Inputs
- 128 Mbps Incoming Bandwidth

System Overview

The Dahua HDCVI Security System provides all the components to quickly install, configure, and employ a complete video surveillance solution. The HDCVI cameras offer the clarity of 4K video, and the HDCVI DVR offers built-in motion detection algorithms, alarm triggers, and customized recording modes. The cameras and the HDCVI DVR supports multiple video outputs making the kit compatible with many existing systems. The kit features Dahua's HDCVI technology that leverages an existing coaxial infrastructure, saving time and costs from running networking and power cables.

Functions

Long Distance Transmission

HDCVI technology guarantees real-time transmission over long distances without loss of video quality. HDCVI cameras provide the same resolution as most IP network camera systems using existing RG-59, RG-6, or CAT 6 UTP cabling.

Simplicity

HDCVI technology seamlessly integrates traditional analog surveillance systems with upgraded, high-quality HD video, making it the best choice to protect security investments. The plug and play approach enables full HD video surveillance without the hassles of configuring a network.

Smart IR

With IR illumination, detailed images can be captured in low light or total darkness. The camera's Smart IR technology adjusts the intensity of camera's infrared LEDs to compensate the distance of an object. Smart IR technology prevents IR LEDs from whitening out images as they come closer to the camera. The camera's integrated infrared illumination provides high performance in extreme low-light environments.

Intelligent Video System (IVS)

The HDCVI DVR offers IVS, a built-in video analytic algorithm that delivers standard intelligent functions to monitor a scene for Tripwire violations,intrusion detection, and abandoned or missing objects. IVS quickly and accurately responds to monitoring events in a specific area. In addition, the HDCVI DVR feature face detection technology that identifies human faces in digital images.

Smart H.265+

The HDCVI DVR uses Smart H.265+ video compression to reduce bit rate and storage requirements by up to 70% when compared to standard H.265 video compression. Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network.

Multi-format Support

The camera and HDCVI DVR supports multiple video formats including, HDCVI, CVBS, AHD, and TVI. The camera can switch between these four formats via the OSD menu or the switch located on the video output cable making the camera compatible with not only HDCVI DVRs but also most existing HD/SD DVRs. The HDCVI DVR automatically recognizes the incoming signals of each attached camera without any setup, making installation easy and operation convenient.

Environmental

With a built-in heater and a temperature range of −40° C to +60° C (−40° F to +140° F), the cameras are designed for extreme temperature environments. The cameras, subjected to rigorous dust and water immersion tests, are certified to the IP67 rating making them suitable for demanding outdoor applications.

The HDCVI DVR features an operating temperature of −10° C to +55° C (+14° F to +131° F).

Technical Specification

A511K02 HDCVI Camera

Camera

Image Sensor	1/2.7-in. CMOS
Effective Pixels	2592 (H) x 1944 (V), 5 MP
Scanning System	Progressive
Electronic Shutter Speed	1/30 s to 1/100000 s
Minimum Illumination	Color: 0.02 Lux at F1.85 (30 IRE) 0 Lux with IR on
S/N Ratio	More than 65 dB
IR Distance	Up to 30 m (98.04 ft)
IR On/Off Control	Auto, Manual
IR LEDs	12

Lens

Lens Type	Fixed Lens / Fixed Iris
Mount Type	Board-in
Focal Length	2.8 mm
Max Aperture	F1.85
Horizontal Angle of View	103°
Close Focus Distance	900 mm (35.43 in.)

DORI[2] Distance

Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
63 m (207 ft)	25 m (82 ft)	13 m (43 ft)	6 m (20 ft)

Installation Angle

Range	Pan: 0° to 360° Tilt: 0° to 90° Rotation: 0° to 360°

Video

Resolution[1]	5 MP (2592 x 1944)
Frame Rate	5 MP at 20 fps, 4 MP at 30 fps, 1080p at 30 fps
Video Output	One (1) BNC HDCVI High-definition Channel or One (1) BNC CVBS, AHD or TVI Channel, switchable
Video Transmission[3]	RG-59/U Coax	720p: 800 m (2624.67 ft) 1080p: 500 m (1640.42 ft) 4 MP: 500 m (1640.42 ft)
	RG-6/U Coax	720p: 1200 m (3937.01 ft) 1080p: 800 m (2624.67 ft) 4 MP: 700 m (2296.59 ft)
	CAT 6 UTP (balun required)	720p: 450 m (1476.38 ft) 1080p: 300 m (984.25 ft) 4 MP: 300 m (984.25 ft)
Day/Night	Auto (ICR), Manual
OSD Menu	Multi-language
BLC Mode	BLC, HLC, DWDR
WDR	Digital WDR
Gain Control	AGC
Noise Reduction	2D
White Balance	Auto, Manual
Smart IR	Auto, Manual

Certifications

Safety	EN55032, EN55024, EN50130-4 UL60950-1+CAN/CSA C22.2 No.60950-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 FCC Part 15 Subpart B ANSI C63.4-2014

Electrical

Power Supply	12 VDC ±30%
Power Consumption	Maximum 3.6 W (12 VDC with IR on)

Environmental

Operating Conditions	−40° C to +60° C (−40° F to +140° F), Less than 95% RH Initiate startup above −40° C (−40° F)
Storage Conditions	—40° C to +60° C (−40° F to +140° F), Less than 95% RH
Ingress Protection	IP67

Construction

Casing	Aluminium
Dimensions	ø93.40 mm × 79.40 mm (ø3.68 in. x 3.13 in.)
Net Weight	0.28 kg (0.62 lb)
Gross Weight	0.38 kg (0.84 lb)

1. Default camera resolution is set to 4 MP. The camera is capable of transmitting 5 MP video. Use the OSD menu to change the camera's resolution to 5 MP.
2. The DORI distance is a measure of the general proximity for a specific classification to help pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specifications and lab test results according to EN 62676-4 , the standard that defines the criteria for the Detect, Observe, Recognize and Identify classifications.
3. Transmission distance results verified by real-scene testing in Dahua's test laboratory. Actual transmission distances may vary due to external influences, cable quality, and wiring structures.

Technical Specification

X72A3A4 4K HDCVI DVR

System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

Interface

Analog Camera Input	16 Channels, BNC
HDCVI	8 MP, 6 MP, 4 MP, 1080p at 30 fps, 720p at 60 fps, 720p at 30 fps
AHD	5 MP, 4 MP, 3 MP, 1080p at 30 fps, 720p at 30 fps
TVI	5 MP, 4 MP, 3 MP, 1080p at 30 fps, 720p at 30 fps
CVBS	NTSC
IP Camera Input	16+16 Channels, each channel up to 8 MP
Audio	Input: Four (4) Channels, RCA Output: One (1) Channel, RCA
Two-way Talk	Reuse Audio In/Out, RCA

Recording

Compression	Smart H.265+, H.265, Smart H.264+, H.264
Recording Resolution	8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 4 M-N (1280 x 1440), 1080p, 720p, 960H, D1, CIF
Record Rate — Main Stream	8 MP at 7 fps; 6 MP at 10 fps, 5 MP at 12 fps, 4 MP or 3 MP at 15 fps; 4 M-N, 1080p, 720p, 960H, D1, CIF or QCIF at 30 fps
Record Rate — Sub Stream	960H at 15 fps; D1 or CIF at 30 fps
Maximum Incoming Bandwidth	128 Mbps
Bit Rate	32 Kbps to 6144 Kbps per Channel
Record Mode	Manual, Schedule (Regular, Continuous), MD (Video Detection: Motion Detection, Video Loss, Tampering), Alarm, Stop
Record Interval	1 to 60 minutes (default: 60 minutes), Pre-record: 1 to 30 s, Post-record: 10 to 300 s
Audio Compression	AAC (first channel only), G.711A, G.711U, PCM
Audio Sample Rate	8 KHz, 16 bits per Channel
Audio Bit Rate	64 Kbps per Channel

Display

Interface	One (1) HDMI (3840 x 2160) One (1) VGA (1920 x 1080)
Spot Output	HDMI or VGA, configurable
Native Output Resolution — HDMI	3840 x 2160, 2560 x 1440, 1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768
Native Output Resolution — VGA	1920 x 1080, 1280 x 1024, 1280 x 720
Maximum Decoding	Eight (8) Channels of 4K at 7 fps Eight (8) Channels of 6 MP at 10 fps Eight (8) Channels of 5 MP at 12 fps 16 Channels of 4 MP/3 MP at 15 fps 16 Channels of 4 M-N/1080p at 15 fps 16 Channels of 720p, 960H at 30 fps
Multi-screen Display	IP extension mode disabled: 1/4/8/9/16 IP extension mode enabled: 1/4/8/9/16/25
On-screen Display	Camera Title, Time, Video Loss, Camera Lock, Motion Detection, Recording

Network

Interface	One (1) RJ45 (1000 Mbps) Port
Network Function	HTTP, TCP/IP, IPv4/IPv6, UPnP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPoE, DDNS, FTP, Alarm Server, P2P, IP Search (Supports Dahua IP cameras, DVRs, NVS)
Max. User Access	128 Users
Mobile Operating System	IOS, Android
Interoperability	ONVIF 16.12, CGI Conformant

Video Detection and Alarm

Trigger Events	Recording, PTZ, Tour, Video Push, Email, FTP, Snapshot, Buzzer and Screen Tips
Video Detection	Motion Detection, MD Zones: 396 (22 × 18), Video Loss, Tampering and Diagnosis
Alarm Input	16 Channels
Relay Output	Three (3) Channels

Playback and Backup

Playback	1/4/9/16
Search Mode	Time/Date, Alarm, MD and Exact Search (accurate to 1 second)
Playback Function	Play, Pause, Stop, Rewind, Fast Play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, and Digital Zoom
Backup Mode	USB Device/Network

Storage

Internal HDD	Two (2) SATA Ports, up to 10 TB capacity for each disk Unit ships with a pre-installed 4 TB HDD

Auxiliary Interface

USB	One (1) USB 2.0 Port and One (1) USB 3.0 Port
RS485	One (1) Port for PTZ Control

Electrical

Power Supply	12 VDC, 5 A
Power Consumption	< 20 W, without HDD

Construction

Dimensions	
HDCVI DVR	1U, 375.0 mm x 287.15 mm x 53.0 mm (14.80 in. x 11.31 in. x 2.09 in.)
with PFH101 Rack Mount Tray	482.6 mm x 287.15 mm x 53.0 mm (19.0 in. x 11.31 in. x 2.09 in.)
Net Weight	1.80 kg (3.97 lb)
Gross Weight	3.2 kg (7.05 lb)
Installation	Desktop or Rack-mount

Environmental

Operating Conditions	−10° C to +55° C (+14° F to +131° F), 10% to 90% RH
Storage Conditions	−20° C to +70° C (−4° F to +158° F), 0% to 90% RH