**DAHUA** TECHNOLOGY

# 5MP HDCVI Security System

Six (6) 5 MP HDCVI Eyeball Cameras with One (1) 8-channel 4K HDCVI DVR

**HDCVI**



### 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
- 8 Channel Penta-brid Recorder
- Support for 8 + 8 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
- 64 Mbps Incoming Bandwidth

## System Overview

The Dahua HDCVI Security System provide all the components to quickly install, configure, and employ a complete video surveillance solution. The HDCVI cameras offer the clarity of 5 MP 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)<br>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.) |

### DORI² Distance

| Detect<br>(8 ppf) | Observe<br>(19 ppf) | Recognize<br>(38 ppf) | Identify<br>(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°<br>Tilt: 0° to 90°<br>Rotation: 0° to 360° |

### Video

| | |
|---|---|
| Resolution¹ | 5 MP (2592 x 1944) |
| Frame Rate | 5 MP at 20 fps,<br>4 MP at 30 fps,<br>1080p at 30 fps |
| Video Output | One (1) BNC HDCVI High-definition Channel or<br>One (1) BNC CVBS, AHD or TVI Channel, switchable |

| | | |
|---|---|---|
| Video Transmission³ | RG-59/U Coax | 720p:  800 m (2624.67 ft)<br>1080p: 500 m (1640.42 ft)<br>4 MP: 500 m (1640.42 ft) |
| | RG-6/U Coax | 720p:  1200 m (3937.01 ft)<br>1080p: 800 m (2624.67 ft)<br>4 MP: 700 m (2296.59 ft) |
| | CAT 6 UTP<br>(balun required) | 720p:  450 m (1476.38 ft)<br>1080p: 300 m (984.25 ft)<br>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<br>UL60950-1+CAN/CSA C22.2 No.60950-1 |
| Electromagnetic Compatibility (EMC) | FCC CFR 47 FCC Part 15 Subpart B<br>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),<br>Less than 95% RH<br>Initiate startup above −40° C (−40° F) |
| Storage Conditions | —40° C to +60° C (−40° F to +140° F),<br>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

### X72A2A3 4K HDCVI DVR

#### System

| | |
|---|---|
| Main Processor | Embedded Processor |
| Operating System | Embedded LINUX |

#### Interface

| | |
|---|---|
| Analog Camera Input | 8 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 | 8+8 Channels, each channel up to 8 MP |
| Audio | Input: Four (4) Channels, RCA<br>Output: One (1) Channel, RCA |
| Two-way Talk | Reuse Audio In/Out, RCA |

#### Recording

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|---|---|
| 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;<br>6 MP at 10 fps, 5 MP at 12 fps, 4 MP or 3 MP at 15 fps;<br>4 M-N, 1080p, 720p, 960H, D1, CIF or QCIF at 30 fps |
| Record Rate — Sub Stream | 960H at 15 fps;<br>D1 or CIF at 30 fps |
| Maximum Incoming Bandwidth | 64 Mbps |
| Bit Rate | 32 Kbps to 6144 Kbps per Channel |
| Record Mode | Manual, Schedule (Regular, Continuous),<br>MD (Video Detection: Motion Detection, Video Loss, Tampering), Alarm, Stop |
| Record Interval | 1 to 60 minutes (default: 60 minutes),<br>Pre-record: 1 to 30 s,<br>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)<br>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 | Four (4) Channels of 4K at 7 fps<br>Four (4) Channels of 6 MP at 10 fps<br>Four (4) Channels of 5 MP at 12 fps<br>Eight (8) Channels of 4 MP/3 MP at 15 fps<br>Eight (8) Channels of 4 M-N, 1080p, 720p, 960H at 30 fps |
| Multi-screen Display | IP extension mode disabled: 1/4/8/9<br>IP extension mode enabled: 1/4/8/9/16 |
| 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 |
| 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<br>Unit ships with a pre-installed 3 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, 4 A |
| Power Consumption | < 10 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 | 1.70 kg (3.70 lb) |
| Gross Weight | 3.0 kg (6.60 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 |