

4K Penta-brid HDCVI DVR

16-Channel 1U Digital Video Recorder with IoT Support



System Overview

The X72A Series HDCVI DVR offers 4K recording on each HDCVI channel and a host of advanced features and functions. The X72A takes advantage of HDCVI technology for easy integration into existing video surveillance systems while leveraging existing networks, cabling, and cameras. Penta-brid access technology seamlessly records video from HDCVI, AHD, TVI, CVBS, and IP sources simultaneously on each channel.

The X72A utilizes the Smart H.265+ Codec to significantly improve encoding efficiency and to reduce bandwidth and storage costs. In addition to the advanced codec, the X72A series supports Internet of Things (IoT) functionality and Point of Sale (PoS) integration. This recorder is the ideal solution for actively monitoring and recording video feeds in a wide range of applications including public venues, retail stores, transportation hubs and access ways, personal property and homes, and educational institutions.

Functions

Smart H.265+

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. Smart H.265+ technology reduces bit rate and storage requirements by up to 90% when compared to the H.264 video compression standard.

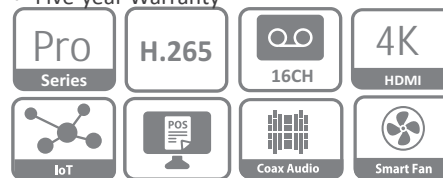
4K Resolution

The HDCVI DVR records 4K resolution on each HDCVI and IP channel. 4K is a revolutionary breakthrough in image processing technology. 4K delivers four times the resolution of standard HDTV 1080p cameras and offers superior picture quality and image details. 4K resolution improves the clarity of a magnified scene to view or record crisp forensic video from large areas.

HDCVI/AHD/TVI/CVBS Auto-detect

The HDCVI DVR automatically recognizes the incoming signals of each attached camera without any setup, making installation easy and operation convenient.

- 4K at 7 fps Recording Resolution on All HDCVI Channels
- Dual-stream Video Recording
- Smart H.265+ and H.264 Dual Codec
- Auto-detection and Auto-configuration of Video Inputs
- 16 + 16 IP Camera Channels, each channel up to 8 MP
- Maximum 128 Mbps Incoming Bandwidth
- Smart Search and Intelligent Video System
- Internet of Things (IoT) and Point of Sale (POS) Support
- Spot Output
- Five-year Warranty*



Internet of Things (IoT) Support

The HDCVI DVR integrates with HDCVI IoT devices to support multi-dimensional surveillance. This device records sensor data as well as the video from HDCVI IoT devices and can generate a detailed report based on the data.

Spot Output

The HDCVI DVR provides a spot output channel for a secondary monitor. This monitor allows the operator to view one monitor that is assigned to selected cameras or video inputs from high-security areas.

Point of Sale (POS)

Ideal for grocery and retail stores, the optional POS solution allows the HDCVI DVR to receive a POS transaction via corresponding video. This feature allows merchants to analyze specific transactions via the Fuzzy Search Algorithm.

Smart Fan Design

The HDCVI DVR automatically turns on or turns off the fan according to the CPU temperature. This function reduces fan noise and helps to conserve electricity.

Intelligent Video System (IVS)

IVS is 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.

Face Detection

This technology identifies human faces in digital images and then searches a database to identify the individual in the image.

Smart Search

Smart Search allows an operator to specify a region in the playback video to search for a motion detection event, saving time and manpower.

Technical Specification

System

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

Interface

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| 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

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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; 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 |
| | 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

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| 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 |
| | 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 7 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

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| 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

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

Playback and Backup

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| 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

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| Internal HDD | Two (2) SATA Ports, up to 10 TB capacity for each disk |
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Auxiliary Interface

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

Electrical

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

Construction

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| 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

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| 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 |

Third-party Support

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|---------------------|---|
| Third-party Support | Dahua, Arecont Vision, AXIS, Bosch, Brickcom, Canon, CP Plus, Dynacolor, Honeywell, Panasonic, Pelco, Samsung, Sanyo, Sony, Videotec, Vivotek, and others |
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Certifications

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| Safety | UL 60950-1 EN 60950-1 IEC 60950-1 |
| Electromagnetic Compatibility (EMC) | FCC Part 15 Subpart B EN 61000-3-2 EN 61000-3-3 EN 55032 EN 50130 EN 55024 |

Intelligence

The IVS features are operational only when the additional IP channel feature is not active. The HDCVI DVR supports only IVS or the additional IP channel inputs, both features cannot be in use simultaneously. IVS triggers an alarm and takes a defined action for the following events:

| Premium Features | |
|--------------------------|--|
| Tripwire | A target crosses a user-defined line. |
| Intrusion | A target enters or exits a defined perimeter. |
| Abandoned/Missing Object | A target leaves an object in designated area, or a target removes an object from the same designated area. |

Advanced Features (available only when Standard/Premium IVS features not in use)

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| Facial Detection | Detects and captures a snapshot of human face in a defined area within a scene. |
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IVS Feature Availability

The HDCVI DVR supports the following IVS availability:

- Four (4) Analog Channels of Standard/Premium IVS features, OR
- First Analog Channel Face Detection

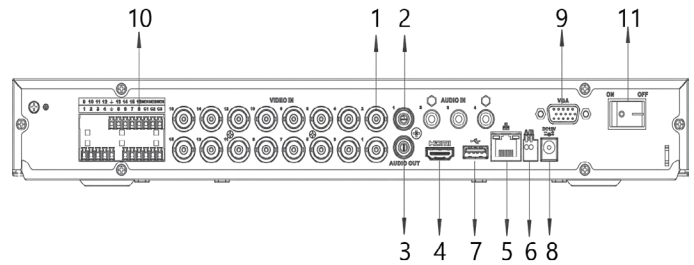
Ordering Information

| Type | Part Number | Description |
|-----------------------------------|-------------|---|
| 16-Channel HDCVI DVR ¹ | X72A3A | 16-Channel Penta-brid 4K 1U Digital Video Recorder |
| | X72A3A2 | 16-Channel Penta-brid 4K 1U, 2 TB Digital Video Recorder |
| | X72A3A4 | 16-Channel Penta-brid 4K 1U, 4 TB Digital Video Recorder |
| Accessory, optional | DH-PFH101 | Rack Mount Tray 482.60 mm x 281.20 mm x 43.7 mm (19.0 in. x 11.07 in. x 1.72 in.) |

1. Contact Dahua Sales Support for additional models with varying built-in storage.

Rear Panel

X72A3A



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| 1 | Video IN, BNC x 16 | 7 | USB Port |
| 2 | Audio IN, RCA | 8 | 12 VDC Power IN |
| 3 | Audio OUT, RCA | 9 | VGA OUT |
| 4 | HDMI OUT | 10 | Alarm IN/OUT |
| 5 | Network Port | 11 | Power Switch |
| 6 | RS485 Port | | |

Dimensions

