

4K Penta-brid HDCVI DVR

16-Channel 1U Digital Video Recorder with Analytics+



Wiz Sense

WizSense Series devices combine Dahua's powerful Analytics+ with an intuitive and easy to use interface. WizSense devices offer Smart Motion Detection and Perimeter Protection functions that focus on human and vehicular images and ignore irrelevant images to capture important video while reducing false alarms. WizSense Series devices provide powerful general security for small to medium size businesses at a sensible price.

System Overview

The X82R Series HDCVI DVR offers 4K recording on each HDCVI channel and a host of advanced features and functions. The X82R takes advantage of HDCVI technology for easy integration into existing video security systems while leveraging existing networks, cabling, and cameras. Penta-brid access technology seamlessly records video from HDCVI, AHD, TVI, CVBS, and IP sources simultaneously, plus the DVR delivers 4K resolution on each HDCVI or IP channel.

Functions

Perimeter Protection

Dahua Analytics+ includes Tripwire and Intrusion functions that offer custom tripwires based on object type for automation in limited access areas. Perimeter Protection requires less pixels to detect an object to deliver improved accuracy and decreased false alarms due to lights, weather, trees, or animals.

Smart Motion Detection

Smart Motion Detection, a component of Dahua's Analytics+ technology, improves alarm accuracy and decreases the number of false alarms. The advanced SMD algorithm analyzes a scene for human or vehicle motion, while filtering out other motion due to trees, leaves, animals, weather, and triggers an alarm when detected.

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 15 fps Recording Resolution on All HDCVI Channels
- Available with a 4 TB, 6 TB, 8 TB, or 10 TB Pre-installed Hard Drive
- Dual-stream Video Recording
- AI Coding Technology for High-quality Human/Vehicle Video
- Auto-detection and Auto-configuration of Video Inputs
- 16 + 16 IP Camera Channels, each channel up to 8MP
- Maximum 128 Mbps Incoming Bandwidth
- Perimeter Protection and Smart Motion Detection (SMD)¹
- Long-distance Video Transmission
- Spot Output (HDMI or VGA Output)
- Five-year Warranty*



AI Coding

The AI Coding function puts recording emphasis on human or vehicular objects in the video scene. This technology, based on constant bit rate (CBR), dynamically allocates increased bit rate to the target object while reducing the bit rate allocated to background objects. AI Coding reduces bit rate and storage requirements by up to 50% when compared to the H.265 video compression standard.

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.

Long Distance Transmission

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

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.

Technical Specification	
System	
Main Processor	Embedded Processor
Operating System	Embedded LINUX
Analytics+ Perimeter Protection ^{2,3}	
Performance	<ul style="list-style-type: none">Human and Vehicle object classificationDecreased false alarms from leaves, lights, animalsConfigure function on six (6) channels10 Tripwire/Intrusion rules per channel
Live View	<ul style="list-style-type: none">Configure Rule and Object Inspection areaDisplay object classification, event types, trigger time, image snapshot, and object typesExport event playback 10 seconds prior to or after event
Playback	<ul style="list-style-type: none">Search by channel, time, event type, and target typeSearch event playback 10 seconds prior to or after eventSnapshot capacity: 500,000

Analytics+ Smart Motion Detection ^{2,3}	
Performance	<ul style="list-style-type: none">Detect motion based on object classification (human or vehicle)Decreased false alarms from leaves, lights, animalsConfigure functions on 16 channels
Preview	<ul style="list-style-type: none">Configure and inspect detection area
Playback	<ul style="list-style-type: none">Search by channel, time, event type, and target typeSearch event playback 10 seconds prior to or after event

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

Recording		
Compression		AI Coding, Smart H.265+, H.265, Smart H.264+, H.264
Recording Resolution		8MP, 6MP, 5MP, 4K-N, 4MP, 3MP, 1080p, 720p, 960H, D1, CIF
Record Rate	Main Stream	8MP at 15 fps; 6MP or 5MP at 25 fps, 4K-N, 4MP, 3MP, 1080p, 720p, 960H, D1, CIF at 30 fps
	Sub Stream	960H, D1 or CIF at 30 fps
Max. Incoming Bandwidth		128 Mbps
Bit Rate		32 Kbps to 8192 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		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) One (1) BNC
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
	VGA	1920 x 1080, 1280 x 1024, 1280 x 720
Maximum Playback Decoding		Eight (8) Channels of 4K at 7 fps Eight (8) Channels of 6MP at 10 fps Eight (8) Channels of 5MP at 12 fps 16 Channels of 4MP/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: 1/4/8/9/16/25/36
Fisheye Dewarp		Supported via Web Interface
On-screen Display		Camera Title, Time, Video Loss, Camera Lock, Motion Detection, Recording

Network	
Interface	One (1) RJ-45 (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

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

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

1. The Analytics+ functions operate only on HDCVI channels, the functions are not available on IP channels.
2. The Analytics+ functions are disabled when the additional IP channels are active.
3. The DVR is capable of processing six (6) channels of Perimeter Protection or 16 channels of SMD at one time.

Electrical

Power Supply	12 VDC, 5 A
Power Consumption	< 32 W, without HDD

Construction

Dimensions	
HDCVI DVR	1U, 375.0 mm x 332.0 mm x 53.0 mm (14.76 in. x 13.0 in. x 2.09 in.)
with PFH101 Rack Mount Tray	482.6 mm x 332.0 mm x 53.0 mm (19.0 in. x 13.0 in. x 2.09 in.)
Net Weight	2.40 kg (5.40 lb)
Gross Weight	4.0 kg (8.80 lb)
Installation	Desktop or Rack-mount

Video Transmission Distance

RG-59/U Coax	720p:	800 m (2624.67 ft)
	1080p:	500 m (1640.42 ft)
	4K/4MP:	500 m (1640.42 ft)
RG-6/U Coax	720p:	1200 m (3937.01 ft)
	1080p:	800 m (2624.67 ft)
	4K/4MP:	700 m (2296.59 ft)
CAT 6 UTP (balun required)	720p:	450 m (1476.38 ft)
	1080p:	300 m (984.25 ft)
	4K/4MP:	300 m (984.25 ft)

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

Third-party Support

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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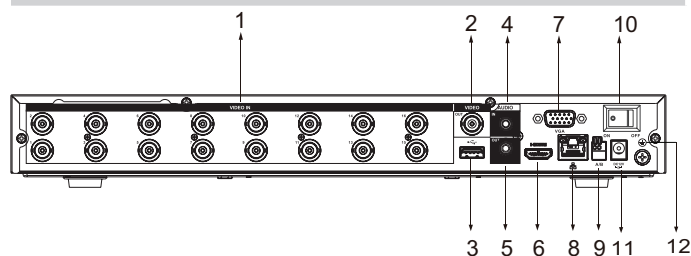
Certifications

Safety	EN 60950-1 IEC 60950-1
Electromagnetic Compatibility (EMC)	CFR 47 FCC Part 15 Subpart B EN 61000-3-2 EN 61000-3-3 EN 55032 EN 50130 EN 55024

Ordering Information

Type	Part Number	Description
4K HDCVI DVR with Analytics+	X82R3N	16-Channel Penta-brid 4K 1U, Digital Video Recorder, no pre-installed HDD
	X82R3N4	16-Channel Penta-brid 4K 1U, 4 TB Digital Video Recorder
	X82R3N6	16-Channel Penta-brid 4K 1U, 6 TB Digital Video Recorder
	X82R3N8	16-Channel Penta-brid 4K 1U, 8 TB Digital Video Recorder
	X82R3N10	16-Channel Penta-brid 4K 1U, 10 TB Digital Video Recorder
Accessory, optional	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.)

Rear Panel



1	Video Input (x16 BNC)	7	VGA Output
2	Video Out	8	RJ-45 Ethernet Port (1000 Mbps)
3	USB Port	9	RS485 Port
4	Audio Input (x1 RCA)	10	Power Switch
5	Audio Output (x1 RCA)	11	Power Input
6	HDMI Output	12	Ground

Dimensions (mm/in.)

