

# 4K Penta-brid HDCVI DVR

## 16-Channel 1.5U Digital Video Recorder with WizSense



### 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 surveillance for small to medium size businesses at a sensible price.

#### System Overview

The X84R Series HDCVI DVR offers 4K recording on each HDCVI channel and a host of advanced features and functions. The X84R 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, 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

The 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.

- 4K at 15 fps Recording Resolution on All HDCVI Channels
- Dual-stream Video Recording
- Smart H.265+ and Smart H.264+ Dual Codecs
- Auto-detection and Auto-configuration of Video Inputs
- 32 IP Camera Channels, each channel up to 12 MP
- Maximum 128 Mbps Incoming Bandwidth
- Analytics+ Functions: Perimeter Protection and Smart Motion Detection
- Spot Output (HDMI 2 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.

#### 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.

#### 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.

### Technical Specification

#### System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

#### Analytics+ Perimeter Protection<sup>1</sup>

Performance	<ul style="list-style-type: none"> <li>Human and Vehicle object classification</li> <li>Decreased false alarms from leaves, lights, animals</li> <li>Configure function on 6 channels</li> <li>10 Tripwire/Intrusion rules per channel</li> </ul>
Object Classification	<ul style="list-style-type: none"> <li>Human or Vehicle</li> <li>Secondary Recognition for Tripwire and Intrusion</li> </ul>
Search	<ul style="list-style-type: none"> <li>Search by object classification (human or vehicle)</li> </ul>

#### Analytics+ Smart Motion Detection<sup>1</sup>

Performance	<ul style="list-style-type: none"> <li>Detect motion based on object classification (human or vehicle)</li> <li>Decreased false alarms from leaves, lights, animals</li> <li>Configure functions on 16 channels</li> </ul>
Search	<ul style="list-style-type: none"> <li>Search by target classification</li> </ul>

#### Interface

Analog Camera Input	16 Channels, BNC
HDCVI	8 MP, 6 MP, 5 MP, 4 MP, 1080p at 30 fps, 720p at 60 fps
AHD	8 MP, 5 MP, 4 MP, 3 MP, 1080p, 720p at 30 fps
TVI	8 MP, 5 MP, 4 MP, 3 MP, 1080p, 720p at 30 fps
CVBS	NTSC
IP Camera Input	16+16 Channels, each channel up to 12 MP
Audio	Input: Four (4) Channels, BNC Output: One (1) Channel, BNC
Two-way Talk	Input: One (1) Microphone, BNC Output: One (1) Channel, BNC

#### Recording

Compression	AI Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B	
Recording Resolution	8 MP, 6 MP, 5 MP, 4 K-N, 4 MP, 3 MP, 1080p, 720p, 960H, D1, CIF	
Record Rate	Main Stream	8 MP at 15 fps 6 MP or 5 MP at 25 fps, 4 K-N, 4 MP, 1080p, 720p, 960H, D1, or CIF 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 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 s to 30 s, Post-record: 10 s to 300 s	

#### Audio

Audio Compression	G.711a, G.711Mu, PCM
Audio Sample Rate	8 KHz, 16 bits per Channel
Audio Bit Rate	64 Kbps per Channel

#### Display

Interface	Two (2) HDMI (3840 x 2160) ports One (1) VGA (1920 x 1080) port One (1) TV port, BNC	
Spot Output	HDMI 2	
Native Output Resolution	HDMI 1	3840 x 2160, 2560 x 1440, 1920 x 1080, 1280 x 1024, 1280 x 720
	HDMI 2 / VGA	1920 x 1080, 1280 x 1024, 1280 x 720
Maximum Playback Decoding	16 Channels of 1080p at 15 fps 16 Channels of 720p/960H at 30 fps Eight (8) Channels of 4K at 7 fps Eight (8) Channels of 6 MP/5 MP at 13 fps Eight (8) Channels of 5 MP at 12 fps Eight (8) Channels of 4K-N/4 MP/3 MP at 15 fps Eight (8) Channels of 1080p/720p/960H at 30 fps Four (4) Channels of 4K at 15 fps Four (4) Channels of 6 MP at 20 fps Four (4) Channels of 5 MP at 25 fps Four (4) Channels of 4K-N/4 MP/3 MP/1080P/720P/960H at 30 fps One (1) Channel of 4K at 30fps	
Multi-screen Display	IP extension mode not enabled: 1/4/8/9/16 IP extension mode enabled: 1/4/8/9/16/25/36	
On-screen Display	Camera Title, Time, Video Loss, Camera Lock, Motion Detection, Recording	

#### Network

Interface	One (1) RJ-45 (1000 Mbps) Ports
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)
Maximum 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 x 18), Video Loss, Tampering, and Diagnosis
Alarm Input	16 Channels
Relay Output	Six (6) Channels

1. The HDCVI DVR allows the following maximum simultaneous analytic functions: 16 channels with SMD or six (6) Perimeter Protection.

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	Four (4) SATA Ports, up to 10 TB capacity for each disk
eSATA	One (1) Port

Auxiliary Interface

USB	One (1) USB 2.0 Port and Two (2) USB 3.0 Ports
RS485	One (1) Port for PTZ Control
RS232	One (1) Port for PC Communication and Keyboard

Electrical

Power Supply	100 VAC to 240 VAC, 50/60 Hz
Power Consumption	< 30 W, without HDD

Construction

Dimensions	1.5U, 440.0 mm x 415.70 mm x 76.0 mm (17.32 in. x 16.37 in. x 2.99 in.)
Net Weight	4.90 kg (10.70 lb), without HDD
Gross Weight	7.10 kg (15.70 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), 0% 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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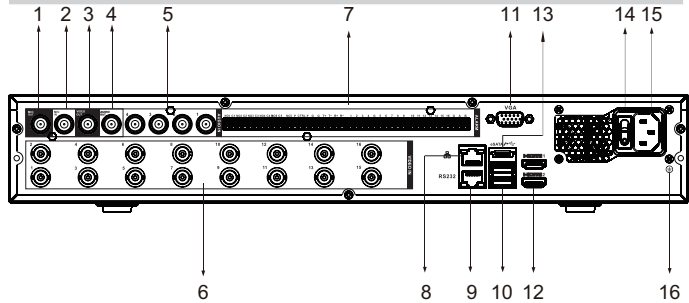
Certifications

Safety	EN 60950-1 IEC 60950-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 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+	X84R3L4	16-channel Penta-brid 4K 1.5U, 4 TB Digital Video Recorder with Analytics+
	X84R3L6	16-channel Penta-brid 4K 1.5U, 6 TB Digital Video Recorder with Analytics+
	X84R3L8	16-channel Penta-brid 4K 1.5U, 8 TB Digital Video Recorder with Analytics+
	X84R3L10	16-channel Penta-brid 4K 1.5U, 10 TB Digital Video Recorder with Analytics+

Rear Panel



1	Two-way Talk Output, BNC	9	RS232 Port
2	Microphone Input, BNC	10	USB Port (x2)
3	Video Output, BNC	11	VGA Output
4	Audio Output, BNC	12	HDMI 1 Output HDMI 2 Output
5	Audio Input, BNC (x4)	13	eSATA Port
6	Video Input, BNC (x16)	14	Power Switch
7	Alarm I/O, RS485, RS422	15	Power Input
8	Ethernet Port, RJ-45	16	Ground

Dimensions

