

# 1080p Penta-brid HDCVI DVR

Eight-Channel Mini 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 X51C Series HDCVI DVR offers 5M-N/1080p recording on each HDCVI channel and a host of advanced features and functions. The DVR 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.

#### **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.

#### 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.

- 5M-N/1080p Recording Resolution on All HDCVI Channels
- Available with a 2 TB, 4 TB, 6 TB, or 8 TB Pre-installed Hard Drive
- Dual-stream Video Recording
- Al Coding Technology for High-quality Human/Vehicle Video
- Auto-detection and Auto-configuration of Video Inputs
- 8 +4 IP Camera Channels, each channel up to 6 MP
- Maximum 64 Mbps Incoming Bandwidth
- Perimeter Protection and Smart Motion Detection (SMD)
- Long-distance Video Transmission
- Five-year Warranty\*



#### 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.

#### 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.

# Pro Series | X51C2E Series

Technical Specification		Interface	Interface		
System		Analog Camera	a Input	8 Channels, BNC	
, Main Processor	Embedded Processor	HDCVI		5 MP, 4 MP, 1080p, 720p	
Operating System	Embedded LINUX	AHD		5 MP, 4 MP, 1080p, 720p	
Analytics+ Perimeter Protection <sup>1,2</sup>		TVI		5 MP, 4 MP, 1080p, 720p	
,		CVBS		NTSC	
Performance	<ul> <li>Human and Vehicle object classification</li> <li>Decreased false alarms from leaves, lights, animals</li> <li>Configure function on two (2) analog channels</li> <li>10 Tripwire/Intrusion rules per channel</li> </ul>	IP Camera Input		8 +4 Channels, each channel up to 6 MP (The recording rate is dependent on the maximum resolution and frame rate of the connected IP camera.)	
Live View	<ul> <li>Configure Rule and Object Inspection area</li> <li>Display object classification, event types, trigger time, image snapshot, and object types</li> <li>Export event playback 10 seconds prior to or after event</li> </ul>	Audio		Input: Eight (8) Channels, RCA Output: One (1) Channel, RCA	
		Two-way Talk		Audio Input Channel 1 In/ Audio Output, RCA	
		Recording	Recording		
	• Search by channel, time, event type, and target type	Compression		Al Coding, Smart H.265+, H.265, Smart H.264+, H.264	
Playback	<ul> <li>Search event playback 10 seconds prior to or after event</li> <li>Snapshot capacity: 500,000</li> </ul>	Recording Resolution <sup>1</sup>		5 M-N, 4 M-N, 1080p, 1080N, 720p, 960H, D1, CIF (The recording rate is dependent on the maximum	
Analytics+ Smart Motion Detection <sup>1,2</sup>				resolution and frame rate of the connected IP camera.)	
Performance	<ul> <li>Detect motion based on object classification (human or vehicle)</li> <li>Decreased false alarms from leaves, lights, animals</li> </ul>	Record Rate	Main Stream	5 M-N at 10 fps 4 M-N or 1080p at 15 fps 1080N, 720p, 960H, D1, or CIF at 30 fps	
	Configure functions on eight (8) analog channels		Sub Stream	960H at 15 fps D1 or CIF at 30 fps	
Preview	Configure and inspect detection area	Max. Incoming Bandwid		64 Mbps	
Playback	<ul> <li>Search by channel, time, event type, and target type</li> <li>Search event playback 10 seconds prior to or after event</li> </ul>			32 Kbps to 6144 Kbps per Channel	
		Record Mode		Manual, Schedule (Regular, Continuous), MD (Video Detection: Motion Detection, Video Loss, Tampering), Alarm, Stop	
		Record Interva	I	1 to 60 minutes (default: 60 minutes), Pre-record: 1 s to 30 s, Post-record: 10 s to 300 s	

Audio Compression

Audio Sample Rate

Audio Bit Rate

G.711a, G.711Mu, PCM

64 Kbps per Channel

8 KHz, 16 bits per Channel

<sup>1.</sup> The recorder is capable of two (2) simultaneous Perimeter Protection channels, eight (8) SMD channels, or one (1) Perimeter Protection channel and seven (7) SMD channels. Perimeter Protection and SMD cannot be used on the same channel.

Analytics+ functions on all HDCVI channels are disabled if an IP camera is enabled on channel 9 through 12.

The M-N resolution refers to technology that allows a 1080p HDCVI DVR to accept a video signal from a 5 MP or a 4 MP camera by sampling every other pixel on a horizontal line from the camera. The resulting recording resolutions are: 5 M-N: 1296 x 1944; 4 M-N: 1280 x 1440.

## Pro Series | X51C2E Series

Display		Electrical		
Interface	One (1) HDMI (1920 x 1080) Ports One (1) VGA (1920 x 1080) Port	Power Supply	12 VDC, 2 A	
		Power Consumption	< 7 W, without HDD	
Native Output HDMI/ Resolution VGA	1920 x 1080, 1280 x 1024, 1280 x 720	Construction		
Maximum Playback Decoding	Eight (8) Channels of 5M-N at 10 fps Eight (8) Channels of 4M-N at 15 fps Eight (8) Channels of 1080N/720p at 30 fps Four (4) Channels of 5M-N at 20 fps Four (4) Channels of 4M-N at 30 fps One (1) Channel of 6 MP at 30 fps When IP extension mode not enabled: 1/4/8/9	Dimensions	Mini 1U, 325.0 mm x 257.10 mm x 55.0 mm (12.80 in. x 10.12 in. x 2.17 in.)	
		Net Weight	1.20 kg (2.70 lb)	
		Gross Weight	1.90 kg (4.20 lb)	
		Installation	Desktop	
		Video Transmission Distance		
Multi-screen Display	When IP extension mode enabled: 1/4/8/9/16 Camera Title, Time, Video Loss, Camera Lock,	RG-59/U Coax	720p: 800 m (2624.67 ft) 1080p: 500 m (1640.42 ft) 4K/4MP: 500 m (1640.42 ft)	
On-screen Display	Motion Detection, Recording		720p: 1200 m (3937.01 ft)	
Network		RG-6/U Coax	1080p: 800 m (2624.67 ft) 4K/4MP: 700 m (2296.59 ft)	
Interface	One (1) RJ-45 (100 Mbps) Port	CAT 6 UTP	720p:         450 m (1476.38 ft)           1080p:         300 m (984.25 ft)           4K/4MP:         300 m (984.25 ft)	
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)	(balun required)		
Maximum User Access	128 Users	Environmental		
Mobile Operating System	IOS, Android	Operating Conditions	-10° C to +55° C (+14° F to +131° F), 0% to 90% RH	
Interoperability	ONVIF 16.12, CGI Conformant	Storage Conditions	-20° C to +70° C (-4°F to +158° F), 0% to 90% RH	
Video Detection and Alarm		Third-party Support		
Trigger Events	Recording, PTZ, Tour, Video Push, Email, FTP, Snapshot, Buzzer and Screen Tips	Third-party Support	Dahua, Arecont Vision, AXIS, Bosch, Brickcom, Canon, CP           Third-party Support         Plus, Dynacolor, Honeywell, Panasonic, Pelco, Samsung, Sanyo, Sony, Videotec, Vivotek, and others	
Video Detection	Motion Detection, MD Zones: 396 (22 × 18), Video Loss, Tampering, and Diagnosis	Certifications		
Alarm Input	Eight (8) Channels			
Relay Output	Three (3) Channels	Safety         EN 60950-1           IEC 60950-1		
Playback and Backup			CFR 47 FCC Part 15 Subpart B	
Playback	1/4/9	Electromagnetic	EN 61000-3-2 EN 61000-3-3	
Search Mode	Time/Date, Alarm, MD and Exact Search (accurate to 1 second)	Compatibility (EMC) EN 55032 EN 50130		
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		EN 55024	
Backup Mode	USB Device/Network			
Storage				
Internal HDD	One (1) SATA Port, up to 10 TB capacity			

Auxiliary Interface

USB	Two (2) USB 2.0 Ports
RS485	One (1) Port for PTZ Control

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