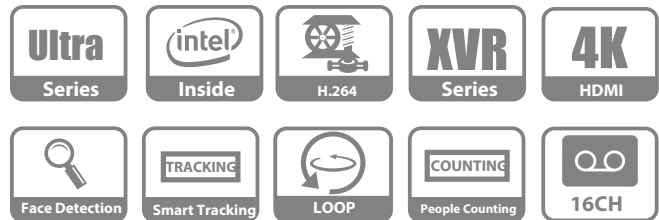# 4K Penta-brid HDCVI DVR

16-channel 2U HDCVI DVR

- Embedded Intel Multi-core Processor
- Dual-stream Video Recording
- Smart H.264+ Video Compression
  (Smart H.265+ IP Camera Compatibility)
- Auto-detect and Auto-configuration of HDCVI/AHD/CVBS/TVI/IP cameras
- 16 + 48 IP Camera Channels, each channel up to 12 MP
- Maximum 256 Mbps Incoming Bandwidth, Maximum 384 Mbps Forwarding Bandwidth
- Smart Search and Intelligent Video System
- Supports HDCVI/CVBS Loop Out

Ultra Series	**intel** Inside	**H.264**	**XVR** Series	**4K** HDMI
Face Detection	**TRACKING** Smart Tracking	**LOOP**	**COUNTING** People Counting	**16CH**

System Overview

Dahua, a global leader in security systems, introduces HDCVI DVR technology- the perfect affordable solution to upgrade existing video surveillance systems while leveraging existing networks, cabling, and cameras. The HDCVI DVR technology utilizes Penta-brid access technology to seamlessly record video from HDCVI, AHD, TVI, CVBS, and IP sources simultaneously.

The storage device offers advanced options such as built-in motion detection algorithms, alarm triggers, and customized recording modes. HDCVI DVR technology is the ideal solution for actively monitoring and recording video feeds in wide range of applications including public venues, retail stores, transportation hubs and access ways, personal property and homes, and educational institutions.

Camera Connections

Record and monitor video from compatible camera inputs simultaneously. The X58A series supports 64 cameras, up to 16 of which can be HDCVI/AHD/TVI/CVBS cameras and the remainder IP cameras.

Function

HDCVI/TVI/AHD/CVBS Full Compatibility

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

Smart Tracking

Smart tracking can track people or objects automatically within a scene provided by a connected fixed or PTZ camera.

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.

Smart H.264+

The Smart H.264+ video compression standard can reduce bit rate and storage requirements by up to 70% without having to invest in new cameras.

Intelligent Video System (IVS)

With built-in intelligent video analytics, on up to six channels, the HDCVI DVR has the ability to detect and analyze moving objects for improved video surveillance and perform actionable detection of edge camera tampering or malfunction. IVS also supports Tripwire analytics, allowing the HDCVI DVR to detect when a pre-determined line has been crossed. IVS also offers facial detection- to detect and capture a snapshot of human face in a defined area within a scene- and people counting to measure the number of customers, visitors or passengers in a surveillance scene.

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.

Loop Out

The HDCVI DVR provides BNC Loop Out connectors for each camera input and sends the video signal from a particular camera to a second device without disturbing the video recording.

ONVIF

Technical Specification

System

Main Processor	Embedded Processor
Operating System	Embedded Linux

Display

Interface	Two (2) HDMI ports (HDMI 1 output up to 4K, 2K) One (1) VGA port One (1) TV Output port, BNC (spot output)
Spot Output (Matrix Video)	TV Interface (HDMI-2 sub-port)
Native Output Resolution	3840 × 2160, 2560 × 1440, 1920 × 1080, 1280 × 1024, 1280 × 720, 1024 × 768
Multi-screen Display	1/4/8/9/16/25/36
Privacy Masking	Four (4) Rectangular Zones (each camera)
On-screen Display	Camera Title, Time, Video Loss, Camera Lock, Motion Detection, Recording

Video Detection and Alarm

Trigger Events	Recording, PTZ, Tour, Alarm Out, 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	Six (6) Channels

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, Digital Zoom
Backup Mode	USB Device and Network

Storage

Internal HDD	8 SATA Ports, up to 8 TB capacity for each disk
eSATA	One (1)

Auxiliary Interface

USB	Two (2) USB 2.0 ports Two (2) USB 3.0 ports
Serial/RS232	RS232: PC Communication/Keyboard Control
	RS422/485: PTZ Control
RS485	One (1) Port
LOOP	HDCVI, CVBS 16 BNC Connectors

Audio and Video

HDCVI Camera Input	16 Channels
IP Camera Input	16 + 48 Channels, each channel up to 12 MP
Audio	Input: 16 Channels, BNC Output: One (1) Channel, BNC
Two-way Talk	Input: One (1) Microphone In, BNC Output: One (1) Speaker Out, BNC

Recording

Analog Compression	Smart H.264+, H.264
Recording Resolution	4K (8 MP), 4 MP, 1080p, 720p, 960H, D1, HD1, BCIF, CIF, QCIF
IP Camera Compatibility	Smart H.265+, H.265, Smart H.264+, H.264
Record Rate	Main Stream	1st and 9th channels: • 4K at 15 fps or 4 MP at 15 fps Other Channels: • 4 MP at 15 fps; • 1080p, 720p, 960H, D1, HD1, BCIF, CIF, QCIF at 30 fps
	Sub Stream	960H/D1/CIF/QCIF at 30 fps
Maximum Incoming Bandwidth	256 Mbps
Bit Rate	1 Kbps to 12288 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

Network

Interface	Two (2) RJ-45 Ports (1000 Mbps)
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 2.4.1, CGI Conformant

Electrical

Power Supply	100 to 240 VAC, 50/60 Hz
Power Consumption	< 40 W, without HDD

Environmental

Operating Conditions	−10 °C to +55 °C (+14 °F to +131 °F), 86 to 106 kpa
Storage Conditions	−20 °C to +70 °C (−4 °F to +158 °F), 0 to 90% RH

Construction

Dimensions	2U, 440.0 mm x 455.10 mm x 94.90 mm (17.30 in. x 17.90 in. x 3.70 in.)
Net Weight	8.24 kg (18.17 lb), without HDD
Gross Weight	9.48 kg (20.90 lb), without HDD
Installation	Desktop or Rack-mount Installation

Certifications

Safety	UL 60950-1 EN 60950-1:2006+A11:2009+A1:2010+A12:2011 +A2:2013 CAN/CSA C22.2 No. 60950-1-07
Electromagnetic Compatibility (EMC)	FCC Part 15, Subpart B: 2015
Immunity	EN 55024:2010+A1:2015

Intelligence

IVS triggers an alarm and takes a defined action for the following events:
(Standard and Premium IVS features available on up to six (6) channels)

Standard Features	• Tampering with the camera. • Error writing to an onboard Micro SD card. • Error sending or receiving data over the network. • Unauthorized access to the camera.

Premium Features

Motion	An object moves through any part of the scene.
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.
Scene Change	A person or object moves the camera to change the scene or covers the camera to obscure the scene.
Abandoned/Missing Object	A target leaves an object in designated area, or a target removes an object from the same designated area.

Advanced Features (number of channels dependent on HDMI output, see below)

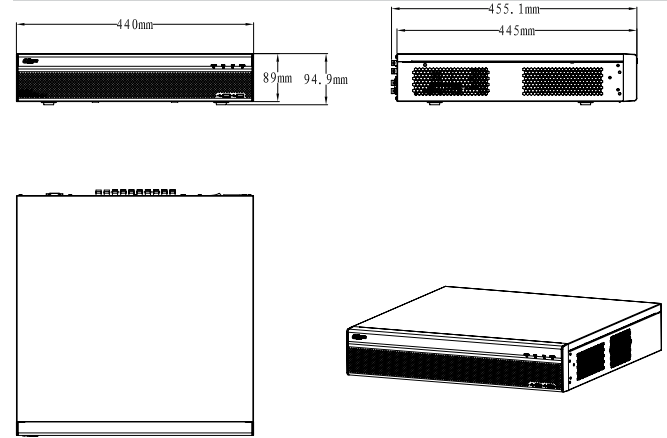| Facial Detection	Detects and captures a snapshot of human face in a defined area within a scene.
People Counting	Measure the number of customers, visitors or passengers in a surveillance scene.

IVS Feature Availability
The availability of the Advanced IVS features depends on the use of the HDMI-2 port.

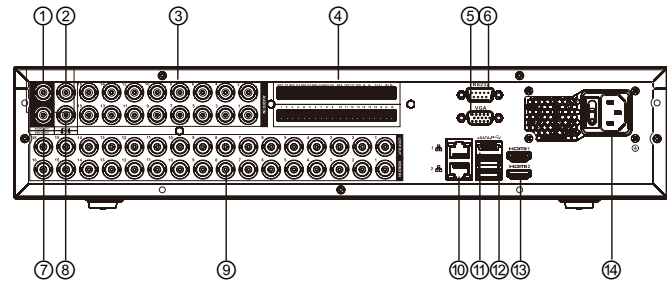|	HDMI-2 Port	
	Not in Use	**In Use**
Standard/Premium	Six Channels	
Standard/Premium with:		
People Counting, only	1 Channel	
Facial Detection, only	4 Channels	2 Channels
Facial Detection+ People Counting	Facial Detection x 3 Channels People Counting x 1 Channel	Facial Detection x 1 Channels People Counting x 1 Channel

Ordering Information

Type	Part Number	Description
16-channel HDCVI DVR	X58A3S	16-channel Penta-brid 4K (8 MP) 2U, HDCVI Digital Video Recorder

Dimensions

Rear Panel

#		#	
1	Audio OUT, BNC x 1	8	Mic OUT, BNC x 1
2	Mic IN, BNC x 1	9	Video IN, BNC x 16 Loop OUT, BNC x 16
3	Audio IN, BNC x 16	10	RJ45 Port x 2
4	Alarm I/O and RS485	11	eSATA
5	VGA OUT	12	USB 3.0 x 2
6	RS232	13	HDMI OUT x 2
7	TV Video OUT, BNC x 1	14	Power Input