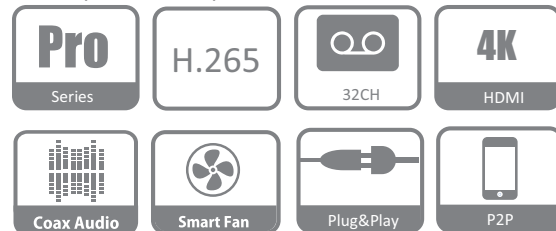**DAHUA** TECHNOLOGY

1080p H.265 HDCVI Penta-brid DVR
32-Channel H.265 1.5U HDCVI Digital Video Recorder

- Embedded Processor
- Smart H.265+ and Smart H.264+ Dual Codec
- Dual-stream Recording
- 5 M-N (1296 x 1944) at 20 fps Maximum Recording Resolution
- 32 HDCVI, AHD, TVI, CVBS or IP Channels
- Up to 8 MP per IP Channel
- 128 Mbps Incoming Bandwidth
- Built-in Smart Search
- Spot Monitor Output on HDMI 2
- Intelligent Video System
- Four (4) SATA HDD Ports, up to 10 TB per Hard Disk Drive
- Five-year Warranty*

Pro Series	H.265	32CH	4K HDMI
Coax Audio	Smart Fan	Plug&Play	P2P

System Overview

The X54A Series HDCVI DVR offers 1080p recording on each HDCVI channel and a host of advanced features and functions. The X54A 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.

The X54A utilizes the Smart H.265+ Codec to significantly improve encoding efficiency and to reduce bandwidth and storage costs. 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.

Camera Connections
Record and monitor video from analog/HDCVI camera inputs and IP camera inputs simultaneously. The X54A series supports a maximum of 32 channels, with up to 32 channels of HDCVI/AHD/TVI/CVBS/IP inputs. The flexibility of the HDCVI DVR allows all 32 channels to record input from IP cameras, or from a combination of input from analog and IP sources (not to exceed the maximum number of analog cameras allowed per recorder).

Flexible Recording
The HDCVI DVR offers a variety of configurable recording options and schedule that saves HDD space and active monitoring time. The recorder monitors incoming video and can be programmed to record if motion is detected or if an alarm is triggered. The recorder can also be programmed to record on a schedule or at different intervals. The recording options and schedules can be set for each individual camera or copied to all cameras.

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.

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.

Intelligent Video System (IVS)
With built-in IVS analytics on up to 16 channels, the HDCVI DVR delivers intelligent functions to monitor a scene for Tripwire violations, intrusion detection, and abandoned or missing objects. A device with IVS quickly and accurately responds to monitoring events in a specific area.

Face Detection
The HDCVI DVR offers Face Detection of the first analog channel. This technology detects and captures a snapshot of a human face in a defined area within a scene.

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.

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.

ONVIF

Technical Specification

System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

Interface

Analog Camera Input	32 Channels, BNC
Preview Ability	Channels 1 and 2: • 5 M-N (1296 x 1944) at 20 fps or • 4 M-N (1280 x 1440) at 30 fps Channels 3 to 32: • 4 M-N (1280 x 1440) at 30 fps
HDCVI	5 MP, 4 MP, 1080p at 30 fps; 720p at 60 fps
AHD	5 MP, 4 MP, 1080p at 30 fps; 720p at 30 fps
TVI	5 MP, 4 MP, 1080p at 30 fps; 720p at 30 fps
CVBS	NTSC
IP Camera Input	32 Channels, each channel up to 8 MP
Audio	Input: Four (4) Channels, BNC Output: One (1) Channel, BNC
Two-way Talk	Input: One (1) Microphone, BNC Output: One (1) Speaker, BNC

Recording

Compression	Smart H.265+, H.265, Smart H.264+, H.264	
Recording Resolution	5 M-N (1296 x 1944), 4 M-N (1280 x 1440), 1080p, 1080N, 720p, 960H, D1, CIF	
Record Rate	Main Stream	Channel 1: • 5 M-N (1296 x 1944) at 20 fps Channels 2 to 32: • 4 M-N (1280 x 1440) at 7 fps / Channels 1 and 2: • 5 M-N (1296 x 1944) at 10 fps Channels 3 to 32: • 4 M-N (1280 x 1440) at 15 fps
	Sub Stream	D1 or CIF at 15 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 s to 30 s, Post-record: 10 s 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

Interface	Two (2) HDMI, One (1) VGA, One (1) BNC	
Native Output Resolution	HDMI 1	3840 x 2160, 2560 x 1440, 1920 x 1080, 1280 x 1024, 1280×720
	HDMI 2/VGA	1920 x 1080, 1280 x 1024, 1280 x 720
Maximum Decoding	16 Channels of 4 M-N at 15 fps 8 Channels of 4 M-N at 30 fps 1 Channel of 6 MP at 30 fps	
Multi-screen Display	1/4/8/9/16/25/36	
On-screen Display	Camera Title, Time, Video Loss, Camera Lock, Motion Detection, Recording	

Network

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)
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 × 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, and Digital Zoom
Backup Mode	USB Device/Network

Storage

Internal HDD	Four (4) SATA Ports, up to 10 TB capacity for each disk

Auxiliary Interface

USB	One (1) USB 2.0 Port and Two (2) USB 3.0 Ports
RS232	One (1) Port for PC Communication and Keyboard
RS485	One (1) Port for PTZ Control
RS422	One (1) port for PTZ Control

Electrical

Power Supply	100 VAC to 240 VAC, 50/60 Hz
Power Consumption	< 35 W

Construction

Dimensions	1.5U, 440.0 mm x 417.0 mm x 76.0 mm (17.30 in. x 16.40 in. x 3.0 in.)
Net Weight	5.0 kg (11.0 lb), without HDD
Gross Weight	7.0 kg (15.43 lb)
Installation	Desktop or Rack-mount

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

1. 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.

Certifications

Safety	UL 60950-1 EN 60950-1, IEC 60950-1
Electromagnetic Compatibility (EMC)	FCC Part 15 Subpart B ICES 003 Issue 6 EN 55032 EN 50130 EN 61000-3-2 EN 61000-3-3
Immunity	EN 55024 : 2010

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:
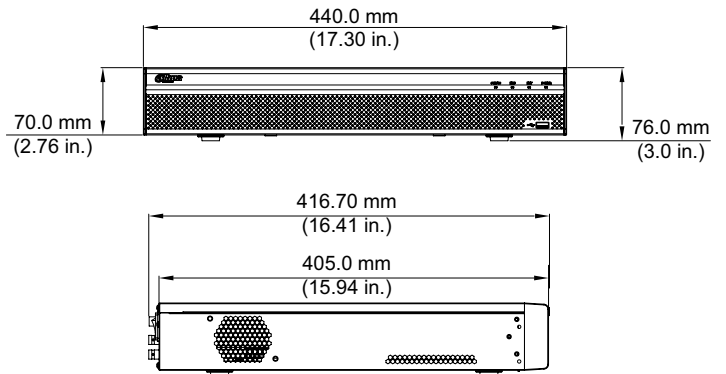
Premium Features
Channels 1 through 16: Support Tripwire and Intrusion Detection
Channels 1 and 2: Additionally support Abandoned/Missing Object Detection

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 Feature
Available on Analog Channel 1
(feature not available if an IP camera is connected as Camera 1)

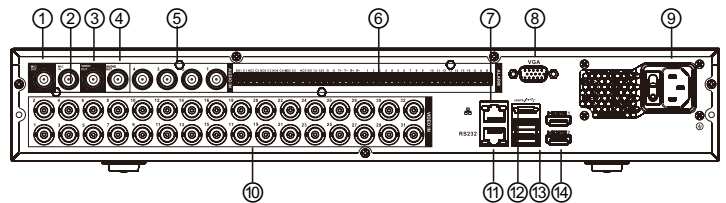|	
Face Detection	Detects and captures a snapshot of a human face in a defined area within a scene.

Ordering Information

Type	Part Number	Description
Penta-brid HDCVI DVR	X54A5L2	32 Analog/IP Inputs, 1080p Penta-brid, 16 Alarm Inputs, 6 Alarm Outputs, 1.5U HDCVI Digital Video Recorder, 2 TB
	X54A5L4	32 Analog/IP Inputs, 1080p Penta-brid, 16 Alarm Inputs, 6 Alarm Outputs, 1.5U HDCVI Digital Video Recorder, 4 TB
	X54A5L8	32 Analog/IP Inputs, 1080p Penta-brid, 16 Alarm Inputs, 6 Alarm Outputs, 1.5U HDCVI Digital Video Recorder, 8 TB

Dimensions (mm/in.)

440.0 mm (17.30 in.)
70.0 mm (2.76 in.)
76.0 mm (3.0 in.)
416.70 mm (16.41 in.)
405.0 mm (15.94 in.)

Rear Panel

1	Microphone OUT, BNC x 1	8	VGA OUT
2	Microphone IN, BNC x 1	9	Power Input
3	Video OUT, BNC x 1	10	Video IN, BNC x 32
4	Audio OUT, BNC x 1	11	RS232 Port
5	Audio IN, BNC x 4	12	eSATA Port
6	Alarm I/O, RS485, RS422	13	USB 3.0 x 2
7	Network Port	14	HDMI 1 and HDMI 2 OUT