Penta-brid 1080p Mini DVR

4/8/16-Channel Penta-brid 1080p Mini 1U Digital Video Recorder

- Embedded Processor
- Smart H.264+ / H.264 Dual-stream Video Compression
- Offers 720p (real-time) and 1080p (15 fps) Resolutions
- 4, 8, or 16 HDCVI/AHD/TVI/CVBS Channels
- 4 + 2, 8 + 4, or 16 + 8 IP Channels, up to 5 MP per Channel
- Maximum 24/48/96 Mbps Incoming Bandwidth
- Built-in Smart Search
- Intelligent Video System (one IP channel)

System Overview

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

The XVR offers advanced options such as built-in motion detection algorithms, alarm triggers, and customized recording modes. XVR 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 analog/CVI camera inputs and IP camera inputs simultaneously. The X21A series supports a maximum of 24 channels, with up to 16 channels of HDCVI/AHD/TVI/CVBS inputs and up to an additional 8 channels of IP inputs. The flexibility of the XVR allows all 24 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 XVR). In addition, the XVR supports a maximum of 16 local live-view channels and 16 playback channels.

Flexible Recording

The XVR offers a variety of configurable recording options and schedules that saves HDD space and active monitoring time. The XVR monitors incoming video and can be programmed to record if motion is detected or if an alarm is triggered. The XVR 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

Spot Output (X21A3E only)

The XVR features Spot Output, allowing an operator to view a secondary monitor assigned to select cameras or video inputs in a high-security area.

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.

HDCVI/AHD/TVI/CVBS Auto-detect

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

5 MP Resolution

The XVR supports 5 MP resolution (2560 x 1920) on IP camera inputs for recording and live viewing.

Intelligent Video System (IVS)

IVS is a built-in video analytic algorithm that 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. The camera also offers tamper detection by recognizing a dramatic scene change and generating a warning message to inspect the camera.

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.

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Technical Specification

System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

Display

Interface	One (1) HDMI and One (1) VGA		
Spot Output (Video Matrix) (X21A3E only)	HDMI or VGA Interface, configurable		
Resolution	1920 × 1080, 1280 × 1024, 1280 × 720, 1024 × 768		
Multi-screen Display	X21A1E	X21A2E	X21A3E
	1/4/6	1/4/8/9/16	1/4/8/9/16/25
On-screen Display Options	Camera Title, Time, Video Loss, Camera Lock, Motion Detection, and 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	X21A1E	X21A2E	X21A3E
	8	8	16
Relay Output	Three (3)		

Playback and Backup

Playback	X21A1E	X21A2E	X21A3E
	1/4	1/4/9	1/4/9/16
Search Mode	Time / Date, Alarm, Motion Detection, 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	One (1) SATA Port, up to 8 TB capacity
HDD Mode	Single

Auxiliary Interface

USB	X21A1E	X21A2E	X21A3E
	Two (2) USB 2.0 Ports	One (1) USB 2.0 Port One (1) USB 3.0 Port	
RS485	One (1) Port, for PTZ Control		

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

Audio and Video

Camera Inputs	Model	Analog Inputs	IP Inputs
	X21A1E	4	4 + 2
	X21A2E	8	8 + 4
	X21A3E	16	16 + 8
Resolution		1080p at 15 fps per channel	Up to 5 MP per channel
Audio Connections	Model	Audio IN	Audio OUT
	X21A1E	4	1
	X21A2E	8	1
	X21A3E	16	1
Two-way Talk	Reuse Audio In (channel 1)/ out, RCA		

Recording

Compression	Smart H.264+ / H.264
Resolution	1080p, 720p, 960H, D1, HD1, BCIF, CIF, QCIF
Record Rate	
Main Stream	1080p at 1 to 15 fps or 1080N, 720p, 960H, D1, HD1, BCIF, CIF, QCIF at 1 to 30 fps
Sub Stream	D1, CIF, QCIF at 1 to 30 fps
Bit Rate	1 Kbps to 6144 Kbps per channel
Record Mode	Manual, Schedule (Regular, Continuous), Motion Detection (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

Network

Interface	X21A1E / X21A2E	X21A3E
	One (1) RJ-45 Port (100 M)	One (1) RJ-45 Port (1000 M)
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 and Android	
Interoperability	ONVIF 2.4.1, CGI Conformant	

Electrical

Power Supply	12 VDC, 2 A
Power Consumption	< 10 W, without HDD

Environmental

Operating Conditions	-10° C to +55° C (+14 °F to +131 °F), 86 to 106 kpa
Storage Conditions	0° C to +50° C (+32 °F to +122 °F), 0 to 90% RH

Construction

Dimensions	
NVR	Mini 1U, 325.0 mm × 255.10 mm × 55.0 mm (12.80 in. x 10.0 in. x 2.20 in.)
NVR with PFH101 Rack Mount Tray	482.60 mm x 281.20 mm x 55.0 mm (19.0 in. x 11.10 in. x 2.20 in)
Net Weight	1.50 kg (3.30 lbs), without HDD
Gross Weight	2.0 kg (4.40 lbs)
Installation	Desktop installation

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Certifications

Safety	UL 60950-1 CAN/CSA C22.2 No. 60950-1-07
Electromagnetic Compatibility (EMC)	FCC Part 15 Subpart B ICES 003 Issue 6 EN 55032: 2012+AC:2013 (Class B) EN 50130-4: 2011 EN 61000-3-2 : 2014 EN 61000-3-3 : 2013
Immunity	EN 55024 : 2010

Intelligence

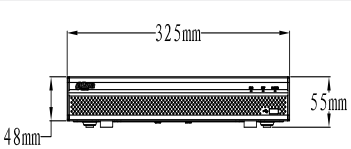
IVS triggers an alarm and takes a defined action for the following events:

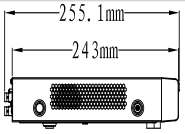
Standard Features	• Tampering with the camera. • Error writing to an onboard Micro SD card. • Error sending or receiving data over the network. • Unauthorized access to the camera.
Premium Features	
Motion	An object moves through any part of the scene.
Tripwire	A target crosses a user-defined line.
Intrusion	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.

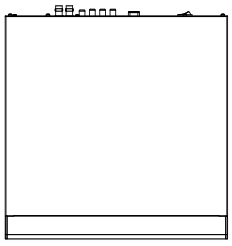
Ordering Information

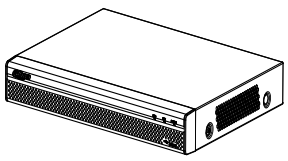
Description	Part Number	Description
4-channel HDCVI DVR	X21A1E	4 Analog/CVI Inputs, 4 + 2 IP Inputs, 0 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A1E1	4 Analog/CVI Inputs, 4 + 2 IP Inputs, 1 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A1E2	4 Analog/CVI Inputs, 4 + 2 IP Inputs, 2 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A1E3	4 Analog/CVI Inputs, 4 + 2 IP Inputs, 3 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A1E4	4 Analog/CVI Inputs, 4 + 2 IP Inputs, 4 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A1E6	4 Analog/CVI Inputs, 4 + 2 IP Inputs, 6 TB 8 Alarm Inputs, 3 Alarm Outputs
8-channel HDCVI DVR	X21A2E	8 Analog/CVI Inputs, 8 + 4 IP Inputs, 0 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A2E1	8 Analog/CVI Inputs, 8 + 4 IP Inputs, 1 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A2E2	8 Analog/CVI Inputs, 8 + 4 IP Inputs, 2 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A2E3	8 Analog/CVI Inputs, 8 + 4 IP Inputs, 3 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A2E4	8 Analog/CVI Inputs, 8 + 4 IP Inputs, 4 TB 8 Alarm Inputs, 3 Alarm Outputs
	X21A2E6	8 Analog/CVI Inputs, 8 + 4 IP Inputs, 6 TB 8 Alarm Inputs, 3 Alarm Outputs
16-channel HDCVI DVR	X21A3E	16 Analog/CVI Inputs, 16 + 8 IP Inputs, 0 TB 16 Alarm Inputs, 3 Alarm Outputs, Spot Output
	X21A3E1	16 Analog/CVI Inputs, 16 + 8 IP Inputs, 1 TB 16 Alarm Inputs, 3 Alarm Outputs, Spot Output
	X21A3E2	16 Analog/CVI Inputs, 16 + 8 IP Inputs, 2 TB 16 Alarm Inputs, 3 Alarm Outputs, Spot Output
	X21A3E3	16 Analog/CVI Inputs, 16 + 8 IP Inputs, 3 TB 16 Alarm Inputs, 3 Alarm Outputs, Spot Output
	X21A3E4	16 Analog/CVI Inputs, 16 + 8 IP Inputs, 4 TB 16 Alarm Inputs, 3 Alarm Outputs, Spot Output
	X21A3E6	16 Analog/CVI Inputs, 16 + 8 IP Inputs, 6 TB 16 Alarm Inputs, 3 Alarm Outputs, Spot Output
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.)

Dimensions (mm)









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