dahua
TECHNOLOGY

1080p HDCVI Security System

Four (4) 1080p HDCVI Eyeball Cameras with One (1) 4-channel 1080p HDCVI DVR

HDCVI

HDCVI Cameras

- 1080p at 30 fps Maximum Resolution
- 2.8 mm Fixed Lens
- Maximum IR Length 30 m (98 ft) with Smart IR
- IP67 Environmental Protection

HDCVI DVR

- Embedded Processor
- Four (4) Channel Penta-brid Recorder
- Support for 4+2 IP Channels
- Smart H.265+ and Smart H.264+ Dual Codec
- 1080p at 15 fps Maximum Record Rate
- Automatically Detects HDCVI, AHD, TVI, and CVBS Inputs
- 24 Mbps Incoming Bandwidth

System Overview

The Dahua HDCVI Security System provides all the components to quickly install, configure, and employ a complete video surveillance solution. The HDCVI cameras offer the clarity of Full HD 1080p video, and the HDCVI DVR offers built-in motion detection algorithms, alarm triggers, and customized recording modes. The cameras and the HDCVI DVR supports multiple video outputs making the kit compatible with many existing systems. The kit features Dahua's HDCVI technology that leverages an existing coaxial infrastructure, saving time and costs from running networking and power cables.

Functions

Long Distance Transmission

HDCVI technology guarantees real-time transmission over long distances without loss of video quality. HDCVI cameras provide the same resolution as most IP network camera systems using existing RG-59, RG-6, or CAT 6 UTP cabling.

Simplicity

HDCVI technology seamlessly integrates traditional analog surveillance systems with upgraded, high-quality HD video, making it the best choice to protect security investments. The plug and play approach enables full HD video surveillance without the hassles of configuring a network.

Smart IR

With IR illumination, detailed images can be captured in low light or total darkness. The camera's Smart IR technology adjusts the intensity of camera's infrared LEDs to compensate the distance of an object. Smart IR technology prevents IR LEDs from whitening out images as they come closer to the camera. The camera's integrated infrared illumination provides high performance in extreme low-light environments up to 30 m (98 ft).

Flexible Recording

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

Smart H.265+

The HDCVI DVR uses Smart H.265+ video compression to reduce bit rate and storage requirements by up to 70% when compared to standard H.265 video compression. 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.

Multi-format Support

The camera and HDCVI DVR supports multiple video formats including, HDCVI, CVBS, AHD, and TVI. The camera can switch between these four formats via the OSD menu or the switch located on the video output cable making the camera compatible with not only HDCVI DVRs but also most existing HD/SD DVRs. The HDCVI DVR automatically recognizes the incoming signals of each attached camera without any setup, making installation easy and operation convenient.

Environmental

With a built-in heater and a temperature range of −40° C to +60° C (−40° F to +140° F), the cameras are designed for extreme temperature environments. The cameras, subjected to rigorous dust and water immersion tests, are certified to the IP67 rating making them suitable for demanding outdoor applications.

The HDCVI DVR features an operating temperature of −10° C to +55° C (+14° F to +131° F).

Technical Specification

A211K02 1080p HDCVI Camera

Camera

Image Sensor	1/2.7-in. CMOS
Effective Pixels	1920(H) x 1280(V), 2 MP
Scanning System	Progressive
Electronic Shutter Speed	1/30 s to 1/100000 s
Minimum Illumination	Color: 0.02 Lux at F1.85 (30 IRE) 0 Lux with IR on
S/N Ratio	More than 65 dB
IR Distance	Up to 30 m (98.04 ft)
IR On/Off Control	Auto, Manual
IR LEDs	12

Lens

Lens Type	Fixed Lens / Fixed Iris
Mount Type	Board-in
Focal Length	2.8 mm
Max Aperture	F1.85
Horizontal Angle of View	103°
Close Focus Distance	900 mm (35.43 in.)

DORI[1] Distance

Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
37 m (121 ft)	15 m (49 ft)	8 m (26 ft)	4 m (13 ft)

Installation Angle

Range	Pan: 0° to 360° Tilt: 0° to 78° Rotation: 0° to 360°

Video

Resolution	1080p (1920 x 1080)
Frame Rate	1080p at 30 fps 720p at 30/60 fps
Video Output	One (1) BNC HDCVI High-definition Channel or One (1) BNC CVBS, AHD or TVI Channel, switchable

Video Transmission[2]	RG-59/U Coax	720p: 800 m (2624.67 ft) 1080p: 500 m (1640.42 ft)
	RG-6/U Coax	720p: 1200 m (3937.01 ft) 1080p: 800 m (2624.67 ft)
	CAT 6 UTP (balun required)	720p: 450 m (1476.38 ft) 1080p: 300 m (984.25 ft)

Day/Night	Auto (ICR), Manual
OSD Menu	Multi-language
BLC Mode	BLC, HLC, DWDR
WDR	Digital WDR
Gain Control	AGC
Noise Reduction	2D
White Balance	Auto, Manual
Smart IR	Auto, Manual

Certifications

Safety	EN55032, EN55024, EN50130-4 UL60950-1+CAN/CSA C22.2 No.60950-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 FCC Part 15 Subpart B ANSI C63.4-2014

Electrical

Power Supply	12 VDC ±30%
Power Consumption	Maximum 3.3 W (12 VDC with IR on)

Environmental

Operating Conditions	−40° C to +60° C (−40° F to +140° F), Less than 90% RH Initiate startup above −40° C (−40° F)
Storage Conditions	−40° C to +60° C (−40° F to +140° F), Less than 90% RH
Ingress Protection	IP67

Construction

Casing	Aluminium
Dimensions	ø93.40 mm × 79.40 mm (ø3.68 in. x 3.13 in.)
Net Weight	0.27 kg (0.60 lb)
Gross Weight	0.34 kg (0.75 lb)

1. The DORI distance is a measure of the general proximity for a specific classification to help pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specifications and lab test results according to EN 62676-4 , the standard that defines the criteria for the Detect, Observe, Recognize and Identify classifications.
2. Transmission distance results verified by real-scene testing in Dahua's test laboratory. Actual transmission distances may vary due to external influences, cable quality, and wiring structures.

Technical Specification

X51A1H2 HDCVI DVR

System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

Interface

Analog Camera Input	Four (4) Channels, BNC
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	4+2 Channels, each channel up to 6 MP
Audio	
Input	One (1) Channel, RCA
Output	One (1) Channel, RCA
Two-way Talk	Reuse Audio In/Out, RCA

Recording

Compression		Smart H.265+, H.265, Smart H.264+, H.264
Recording Resolution		5 M-N, 4 M-N, 1080p, 1080N, 720p, 960H, D1, CIF
Record Rate	Main Stream	Channel 1: • 5 M-N at 10 fps Channels 2 to 4: • 4 M-N or 1080p at 15 fps • 1080N, 720p, 960H, D1, or CIF at 30 fps
	Sub Stream	D1 or CIF at 15 fps
Maximum Incoming Bandwidth		24 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	One (1) HDMI (1920 x 1080) One (1) VGA (1920 x 1080)
Native Output Resolution	1920 x 1080, 1280 x 1024, 1280 x 720
Maximum Decoding	One (1) Channel of 6 MP at 30 fps Four (4) Channels of 1080p at 7 fps Four (4) Channels of 720p at 15 fps Four (4) Channels of 960H at 30 fps
Multi-screen Display	IP extension mode disabled: 1/4 IP extension mode enabled: 1/4/6
On-screen Display	Camera Title, Time, Video Loss, Camera Lock, Motion Detection, Recording

Network

Interface	One (1) RJ45 (100 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

Playback and Backup

Playback	1/4
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	One (1) SATA Port, up to 10 TB capacity for each disk Unit ships with a pre-installed 2 TB HDD

Auxiliary Interface

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

Electrical

Power Supply	12 VDC, 2 A
Power Consumption	< 10 W

Construction

Dimensions	
HDCVI DVR	Mini 1U, 325.0 mm x 255.10 mm x 55.0 mm (12.80 in. x 10.04 in. x 2.20 in.)
with PFH101 Rack Mount Tray	482.60 mm x 287.0 mm x 56.0 mm (19.0 in. x 11.30 in. x 2.20 in.)
Net Weight	1.0 kg (2.20 lb)
Gross Weight	1.90 kg (4.20 lb)
Installation	Desktop

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

Certifications

Safety	UL 60950-1, CE-LVD: EN 60950-1/IEC 60950-1
Electromagnetic Compatibility (EMC)	FCC Part 15 Subpart B 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

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 Features

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

IVS Feature Availability

The HDCVI DVR supports the following IVS availability:
- Tripwire and Intrusion available on 2 channels.
- Abandoned and Missing Object available on channel 1 and 2.
- Facial Detection available on one channel.

Ordering Information

Type	Part Number	Description
1080p HDCVI Security System	C542E42	• 4 x 1080p HDCVI IR Eyeball Cameras • 1 x 1080p 4-channel HDCVI DVR, 2 TB
Camera Accessories, optional	PFA13A-E	Junction Box (For use alone)
	PFA152-E	Pole Mount (For use with PFB204W wall mount)
	PFB204W	Wall Mount (For use alone or with PFA152-E pole mount)
	DH-PFM321D-US	12 VDC, 1 A Power Adapter
	DH-PFM800-4K	4K Passive HDCVI Balun
HDCVI DVR Accessory, optional	PFH101	Rack Mount Tray

Camera Accessories

Optional:

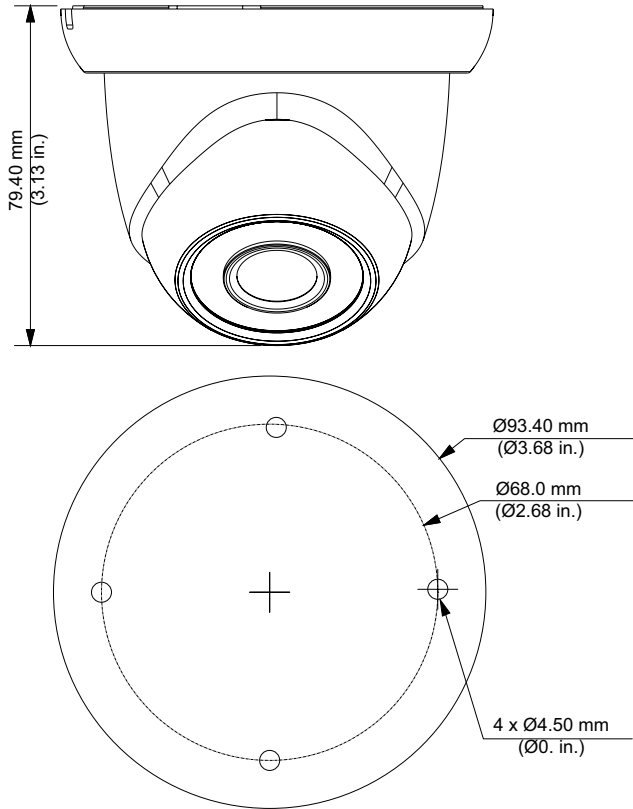PFA13A-E
Junction Box

PFB204W
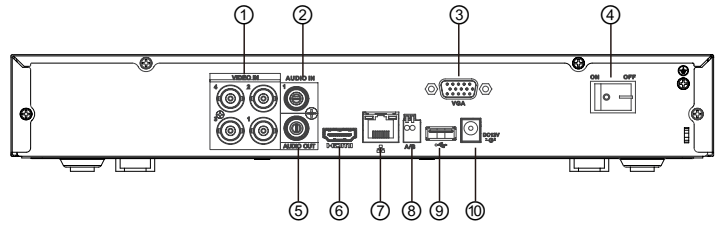Wall Mount

PFA152-E
Pole Mount

DH-PFM321D-US
Power Adapter

DH-PFM800-4K
4K HDCVI Balun

Junction Mount	Pole Mount
PFA13A-E	PFB204W + PFA152-E
Wall Mount	
PFB204W	

Dimensions (mm/in.) - 1080p HDCVI Camera

79.40 mm
(3.13 in.)

Ø93.40 mm
(Ø3.68 in.)

Ø68.0 mm
(Ø2.68 in.)

4 x Ø4.50 mm
(Ø0. in.)

Dimensions (mm/in.) - HDCVI DVR

325.0 mm
(12.80 in.)

55.0 mm
(2.17 in.)

255.10 mm
(10.04 in.)

243.0 mm
(9.57 in.)

Rear Panel - HDCVI DVR

1	Video IN, BNC x 4	6	HDMI OUT
2	Audio IN, RCA x 1	7	Network Port
3	VGA OUT	8	RS485 Port
4	Power Switch	9	USB Port
5	Audio OUT, RCA x 1	10	12 VDC Power IN

dahua
TECHNOLOGY