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

- 2 TB Pre-installed Hard Disk Drive
- 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 security 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 security 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 security 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 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

X51B1H2 1080p H.265 Penta-brid HDCVI DVR

System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

Interface

Analog Camera Input	Four (4) Channels, BNC
Preview Ability³	Channels 1 and 2: 5 M-N at 20 fps or 4 M-N, 1080p, 720p at 30 fps Other Channels: 4 M-N, 1080p, 720p at 30 fps
HDCVI	5 MP, 4 MP, 1080p at 30 fps, 720p at 60 fps, 720p at 30 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
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 Resolution¹		5 M-N (1296 x 1944), 4 M-N (1280 x 1440), 1080p, 1080N, 720p, 960H, D1, CIF
Record Rate³	Main Stream	5 M-N at 10 FPS, 4 M-N at 15 fps, 1080N/720p 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 (General, Continuous), MD (Video Detection: Motion Detection, Video Loss, Tampering), Alarm, Intel, 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 (3840 x 2160) One (1) VGA (1920 x 1080)
Native Output Resolution	1920 x 1080, 1280 x 1024, 1280 x 720
Maximum Decoding	4 Channels of 5 M-N at 10 fps 4 Channels of 1080p at 7 fps 4 Channels of 720p at 15 fps 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, HTTPS, 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

Alarms	
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, Intel, 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 6 TB capacity

Auxiliary Interface

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

Electrical

Power Supply	12 VDC, 1.5 A
Power Consumption	< 10 W, without HDD

3. 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.

Technical Specification - 1080p Penta-brid HDCVI DVR, cont.

Construction

Dimensions	
HDCVI DVR	Mini 1U, 325.0 mm x 255.0 mm x 55.0 mm (12.80 in. x 10.04 in. x 2.17 in.)
with PFH101 Rack Mount Tray	482.6 mm x 287.15 mm x 53.0 mm (19.0 in. x 11.31 in. x 2.09 in.)
Net Weight, without HDD	1.10 kg (2.43 lb)
Gross Weight	1.80 kg (3.97 lb)
Installation	Desktop or Rack-mount

Environmental

Operating Temperature	−10° C to +45° C (+14° F to +113° F), up to 55° C (131° F) with case fan, 10% to 90% RH
Storage Temperature	−20° C to +70° C (−4° F to +158° F), 0% to 90% RH

Certifications

Safety	UL 60950-1 CAN/CSA C22.2 No. 60950-1-07 EN 60950-1/IEC 60950-1
Electromagnetic Compatibility (EMC)	47 CFR FCC Part 15 Subpart B:2016 EN 55032:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 50130-4:2011 + A1:2014
Immunity	EN 55024:2010 + A1:2015

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
HDCVI DVR supports IVS features on only two (2) channels simultaneously. Each channel supports up to ten (10) IVS rules.

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.

Ordering Information

Type	Part Number	Description
1080p HDCVI Security System	C542E42A	
	• A211K02	1080p HDCVI IR Eyeball Cameras (x4)
	• X51B1H2	4 Analog/CVI Inputs, 4 + 2 IP Inputs, 2 TB (x1)
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
	EUHA+12120-070D	12 VDC, 0.7 A Power Adapter (x4)
	DH-PFM800-4K	4K Passive HDCVI Balun
HDCVI DVR Accessory, optional	PFH101	Rack Mount Tray

Package Contents (individual devices ship with the following:)

Product	Material
HDCVI Cameras	Printed Manual Printed Regulatory Guide Plastic Wall Anchors with Screws (x3) Mounting Template
Storage Device	Quick Network Guide Printed Manual Printed Regulatory Guide Mouse Adapter Power Adapter with Power Cord Ethernet Cable, RJ45 Alarm Cable Molex Units (x3) Screws (x4)

Camera Accessories

Optional:
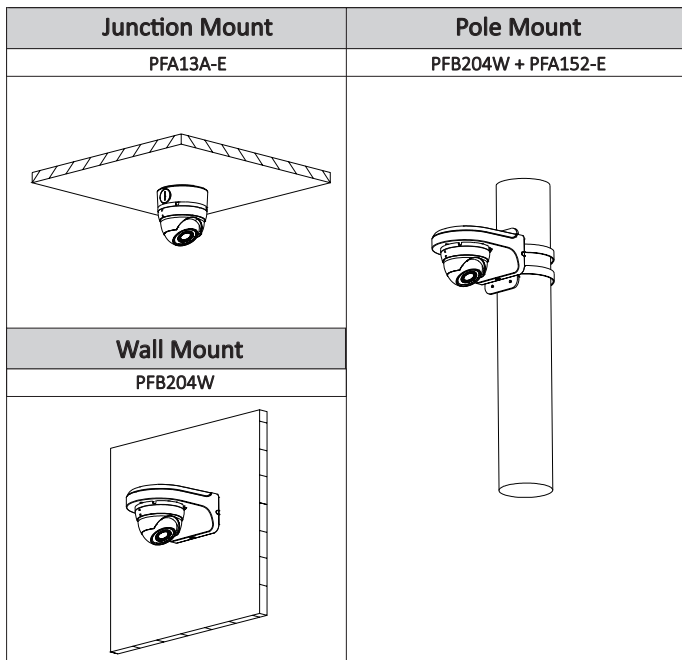

PFA13A-E
Junction Box

PFB204W
Wall Mount

PFA152-E
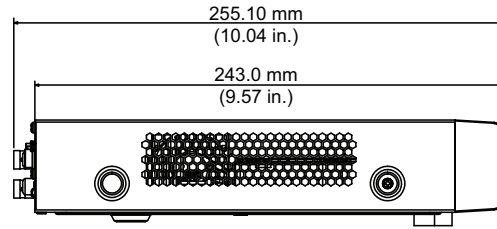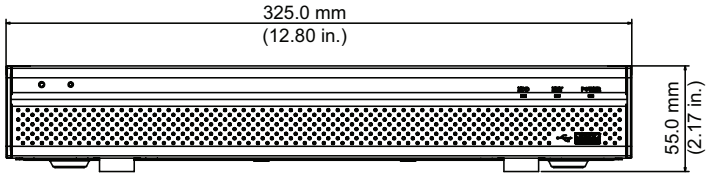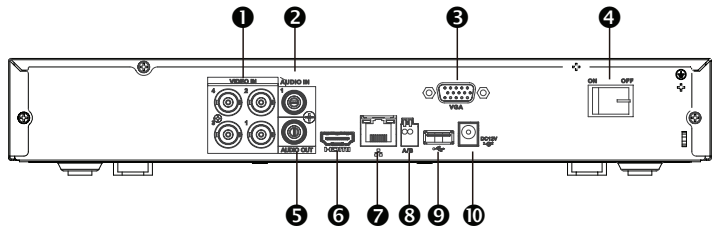Pole Mount

DH-PFM321D-US
Power Adapter

DH-PFM800-4K
4K HDCVI Balun

EUHA+12120-070D
Power Adapter

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

Wall Mount	
PFB204W	

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 Input, BNC x 4	6	HDMI Output
2	Audio Input, RCA	7	Network Port, RJ45
3	VGA Output	8	RS485 Port
4	Power Switch	9	USB Port
5	Audio Output, RCA	10	Power Input

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.)

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