A21CG02 2megapixels IR 2.8 mm HDCVI Eyeball

- 1/2.8-in. 2 MP Progressive-scan CMOS Sensor
- 1080p at 30 fps Maximum Resolution
- 2.8 mm Fixed Lens
- Multi-format Output (HDCVI, CVBS, AHD, and TVI)
- HD and SD Output, Switchable
- Starlight Technology for Low-light Applications
- Maximum IR Length 50 m (164 ft), Smart IR
- Built-in Microphone
- IP67 Ingress Protection
- Five-year Warranty*

System Overview

Experience the superior clarity of Dahua's 2 MP HDCVI cameras for vast coverage and superior image details. The 2 MP HDCVI series leverages existing coax infrastructures to deliver forensic-level images seamlessly and over long distances. The camera uses a progressive-scan CMOS sensor and next-generation ISP chip technology developed by Dahua to deliver stunning video with a wide field of view. This home-grown ISP features the latest image processing algorithms and is optimized for surveillance camera operations. With total control of the ISP features and production, Dahua can offer the latest security systems at a cost-effective price.

Functions

Three Signals over One Coaxial Cable

HDCVI technology simultaneously transmits three signals (video, power, and data) over a single coaxial cable. Dual-way data transmission allows the HDCVI camera to communicate with an HCVR to send control signals or to trigger alarms. HDCVI along with PoC technology delivers power[1] to devices at the edge, simplifying installation.

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.

Starlight Technology

For challenging low-light applications, Dahua's Starlight low light Technology offers best-in-class light sensitivity, capturing details in low light applications. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

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 the camera's infrared LEDs to compensate for 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 50 m (164 ft).

Broadcast-quality Audio

Audio information is used as supplementary evidence in video surveillance applications. This HDCVI camera transmits audio signals over the coaxial cable, eliminating the need for separate audio wiring. In addition, the camera uses unique audio processing and transmission technology that eliminates noise to best duplicate source audio, guaranteeing high-quality and highly effective audio information.

Multi-format Support

The camera 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

Environmental

With a built-in heater and a temperature range of –40 °C to +60 °C (–40 °F to +140 °F), the camera is designed for extreme temperature environments. Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications. Supporting a ±30% input voltage tolerance, this camera suits even the most unstable power supply conditions. Its 4KV lightning rating provides protection against the camera and its structure from the effects of lightning.

1. Requires PoC Transceivers for each channel and an external 24 VDC or 36 VDC power supply for each transceiver.

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Technical Specification

Camera

Image Sensor	1/2.8-in. CMOS
Effective Pixels	1920(H) x 1080(V), 2 MP
Scanning System	Progressive
Electronic Shutter Speed	1/30 to 1/100,000 s
Minimum Illumination	Color: 0.005 lux at F1.6 (30 IRE) 0 lux with IR on
S/N Ratio	More than 65 dB
IR Distance	Up to 50.0 m (164.04 ft)
IR On/Off Control	Auto, Manual
IR LEDs	One (1)

Lens

Lens Type	Fixed lens, Fixed iris
Mount Type	Board-in
Focal Length	2.8 mm
Max Aperture	F1.6
Horizontal Angle of View	106.0°
Close Focus Distance	600.0 mm (23.60 in.)

DORI[2] Distance

Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
39 m (127 ft)	15 m (51 ft)	8 m (25 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[3]	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	
On-screen Display Menu	Multi-language (Chinese, English, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, and Spanish)	
BLC Mode	BLC, HLC, DWDR	
WDR	Digital WDR	
Gain Control	AGC	
Noise Reduction	2D	
White Balance	Auto, Manual	
Smart IR	Auto, Manual	

Certifications

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

Interface

Audio	Built-in Microphone[4]

Electrical

Power Supply	12 VDC ±30%
Power Consumption	4.7 W Maximum (12 VDC, 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	ø106.0 mm x 93.70 mm (ø4.17 in. x 3.69 in.)
Net Weight	0.44 kg (0.97 lb)
Gross Weight	0.62 kg (1.37 lb)

2. 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.
3. 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.
4. The Dahua X21A, X22A, and the X32A Series HDCVI Digital Video Recorders do not support this camera's audio over coax feature.

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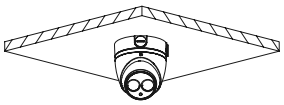
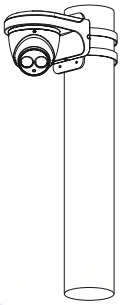
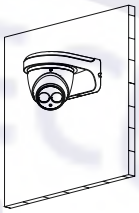
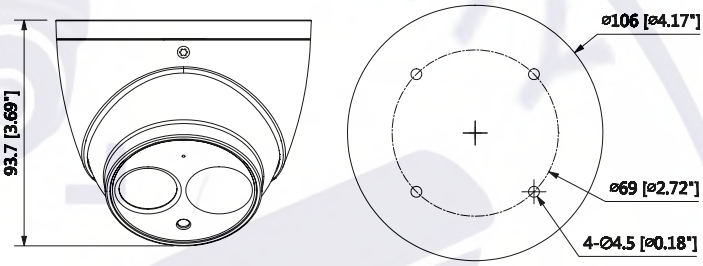
Ordering Information

Type	Part Number	Description
2 MP Camera	A21CG02	2 MP Starlight HDCVI IR Eyeball Camera
Accessories, optional	PFA106	Mount Adapter (For use with PFB305W and PFB220C)
	PFA130-E	Junction Box
	PFA151	Corner Mount Bracket (For use with PFB305W wall mount)
	PFA152-E	Pole Mount (For use with PFB204W wall mount)
	PFB204W	Wall Mount (For use with PFA152-E pole mount)
	PFB220C	Ceiling Mount (For use with PFA106 mount adapter)
	PFB305W	Wall Mount (For use with PFA106 mount adapter)
	PFM800-E	Passive HDCVI Balun
	PFM800-4K	Passive 4K Video Balun
	PFM810	PoC Transceiver
	DH-PFM321D-US	12 VDC, 1 A Power Adapter
	DH-PFM320D-US	12 VDC, 2 A Power Adapter

Junction Mount	Pole Mount
PFA130-E	PFB204W + PFA152-E
	
Wall Mount	
PFB204W	
	

Dimensions (mm/inch)



Accessories

Optional:

PFA106
Mount Adapter

PFA130-E
Junction Box

PFA151
Corner Mount

PFA152-E
Pole Mount

PFB204W
Wall Mount

PFB220C
Ceiling Mount

PFB305W
Wall Mount

PFM800-E
Passive HDCVI Balun

PFM800-4K
Passive Video Balun

PFM810
PoC Transceiver

DH-PFM321D-US
Power Adapter

DH-PFM320D-US
Power Adapter