DHI-ITC413-PW4D Series

Dahua Access ANPR Camera

System Overview

Using deep learning algorithms, Smart ANPR Camera can recognize vehicles, license plates, vehicle brands and vehicle colors. It can be used in scenarios that require vehicle detection and recognition. It also supports using IVS to detect events, and triggers sound and light alarms. The camera can perform various functions without being connected to other devices, which not only greatly improves the security of factories and compounds, but also simplifies the installation process. The camera is dustproof, waterproof, and tamper-proof, and is IP67 rated and IK10 rated.

Functions

Vivid Images

With its intuitive CMOS image sensor, the camera has WDR, a high signal-to-noise ratio, and is highly sensitive, producing vivid images 24/7, making it ideal for use in the traffic industry.

Impressive Performance

The high-performance CPU processor extracts and analyzes information on motor and non-motor vehicles in real time, providing valuable information on their features. This information is useful for effective decision making.

High-level Protection

Resilient and versatile, the camera is uniquely designed with an illuminator, junction box and more integrated into its structure. It is IP67 rated and has low power consumption, making it suitable for harsh environments.

Easy Installation

Highly convenient, the device can be configured through a single network port and supports floor-standing installation, making it easy to install and commission.

- High-performance CMOS image sensor and processor that supports continuously extracting metadata 24/7.
- Adopts intelligent deep learning algorithms and supports recognition of unlicensed vehicles and the type, brand and color of vehicles.
- Built-in signal port, data port, communication port and remote controllers assist in controlling external devices such as entry and exit barriers.
- Built-in LED for simplified installation and commissioning.
- All-in-one structure with junction box and bracket, and it is also low power consumption.
- IP67 and IK10 rated.
- Supports intrusion and loitering detection and triggers light and voice alarms when perimeter events occur to actively deter targets. Custom audios can also be imported and edited.
- Easily adapts to scenarios through its motorized vari-focal lens.

Scene

Suitable for shopping malls, hospitals, schools, communities, office buildings and stations.

Technical Specification

Camera

Image Sensor	1/1.8" CMOS
Image Resolution	2688 × 1520
Electronic Shutter Speed	Auto/Manual 1/25 s–1/100,000 s
Max. Detection Speed	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1:80 km/h DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3:120 km/h
Min. Illumination	DHI-ITC413-PW4D-Z1,DHI-ITC413-PW4D-IZ1: 0.0004 Lux@F1.4 (Color, 30 IRE); 0.0001 Lux@F1.4 (B/W, 30 IRE); 0 Lux (Illuminator on) DHI-ITC413-PW4D-Z3,DHI-ITC413-PW4D-IZ3: 0.001 Lux@F1.6 (Color, 30 IRE); 0.0002 Lux@F1.6 (B/W, 30 IRE); 0 Lux (Illuminator on)
ROM	4 GB
RAM	1 GB
S/N Ratio	>56 dB
Scanning System	progressive scanning

Lens

Focal Length	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1: 2.7 mm–12 mm DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3: 8 mm–32 mm
Field of View	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1: H: 92° (W)—46.1° (T) V: 49° (W)—26.0° (T) D: 109° (W)—52.8° (T) DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3: H: 39.9° (W)—15.1° (T) V: 21.8° (W)—8.5° (T) D: 46.6° (W)—17.4° (T)
Focus Control	Auto, area focus, manual
Number of Lens	1
Lens Type	Motorized Vari-focal
Max. Aperture	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1:1.4 DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3:1.6
Iris Control	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1:DC-Iris DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3:P-Iris

	Lens	Detect	Observe	Recognize	Identify
DORI Distance	W: (DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1)	60.4 m (198.16 ft)	24.2 m (79.40 ft)	12.1 m (39.70 ft)	6.0 m (19.68 ft)
	T: (DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1)	128.7 m (422.24 ft)	51.5 m (168.96 ft)	25.7 m (84.32 ft)	12.9 m (42.32 ft)
	W: (DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3)	160.0 m (524.93 ft)	64.0 m (209.97 ft)	32.0 m (104.99 ft)	16.0 m (52.49 ft)
	T: (DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3)	406.9 m (1334.97 ft)	162.8 m (534.12 ft)	81.4 m (267.06 ft)	40.7 m (133.53 ft)

Illuminator

Illuminator Number	4
Illuminator On/Off Control	Auto, manual
Illuminator Type	DHI-ITC413-PW4D-IZ1, DHI-ITC413-PW4D-IZ3:IR (850 nm) DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-Z3:Dual Illuminators (730 nm IR/warm light)
Illumination Distance	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1: ANPR: 10 m (32.81 ft) Video monitoring: 30 m (98.43 ft) DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3: ANPR: 30 m (98.43 ft) Video monitoring: 60 m (196.85 ft)
Smart Illumination	According to the brightness of the environment, the camera automatically adjusts the intensity of its light to reveal the details of moving targets. Devices with warm light can automatically adjust the light intensity according to the time.
Infrared Wavelength	DHI-ITC413-PW4D-IZ1, DHI-ITC413-PW4D-IZ3:850 nm DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-Z3:730 nm

Video

Video Resolution	Main stream: 4M (2688 × 1520)/1080p (1920 × 1080)/720p (1280 × 720) Sub stream: 720p (1280 × 720)/960H (960 × 576, 960 × 480)/D1 (704 × 576, 704 × 480)/CIF (352 × 288, 352 × 240)
Stream	PAL: Main stream (2688 × 1520@25 fps, 1920 × 1080@25 fps, 1280 × 720@25 fps), sub stream (1280 × 720@25 fps, 960 × 576@25 fps, 704 × 576@25 fps, 352 × 288@25 fps); NTSC: Main stream (2688 × 1520@30 fps, 1920 × 1080@30 fps, 1280 × 720@30 fps), sub stream (1280 × 720@30 fps, 960 × 480@30 fps, 704 × 408@30 fps, 352 × 240@30 fps)
Video Compression	H.264H; H.264B; H.264M by default; H.265; MJPEG; H.264M
Video Bit Rate	H.264B: 2,179 kbps–13,074 kbps H.264M: 2,179 kbps–13,074 kbps H.264H: 2,179 kbps–13,074 kbps H.265: 2,179 kbps–13,074 kbps MJPEG: 6,537 kbps–39,223 kbps
Scene Self-adaptation (SSA)	Yes
Gain Control	Manual; Auto
Noise Reduction	3D NR
Region of Interest (RoI)	Yes, 3
Image Tampering Prevention	Yes. Watermarks can be added to videos and images. The watermark can also be verified.
Bit Rate Control	CBR; VBR

Function

Storage	Bult-in TF card port. Supports Kingston 16 G, 32 G, 128 G, 256 G; Dahua card 16 G, 32 G, 128 G, 256 G; SanDisk 16 G, 32 G, 128 G, 256 G
Restricted List/Trusted List	Allowlist: 110,000 Blocklist: 110,000
IVS	Intrusion detection, loitering detection, up to 4 areas can be set.
Basic Event	Alarms for events of defocus, no storage card, storage card no space, storage card error, network disconnection, IP conflict, and illegal access.

Sound and Light Alarm	Yes, blue & red indicator, and supports broadcasting custom audio.
Alarm Linkage	Upload to FTP/Memory card, notify monitoring center, send e-mail, trigger alert output, snapshot and active deterrence
Automatic Network Replenishment (ANR)	Yes, platform/FTP
Capture Distance	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1: 3 m–8 m (9.84 ft–26.25 ft) DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3: 8 m–30 m (26.25 ft–98.43 ft)
Detected Width	DHI-ITC413-PW4D-Z1, DHI-ITC413-PW4D-IZ1: 3 m–4 m (9.84 ft–13.12 ft) DHI-ITC413-PW4D-Z3, DHI-ITC413-PW4D-IZ3: 6 m–8 m (19.69 ft–26.25 ft)

Network

Network Protocol	HTTP; Https; 802.1x; TCP; ARP; RTSP; RTP; UDP; RTCP; SMTP; FTP; DHCP; DNS; IPv4/v6; NTP; SFTP;DDNS; SNMP; PPPoE
API	Yes
SDK	Yes
Interoperability	ONVIF (Profile S/Profile T/Profile M); CGI; ITSAPI; P2P
Management Software	DSS Pro; DSS Express; Cybercity; Smart PSS;DMSS
Security	Username and password; MAC address; HTTPS; IEEE 802.1x; network access control
Browser	Plug in: IE 9, 10, 11. Chrome 52 and earlier versions Firefox 42 and earlier versions No plug in: Chrome 92 and later versions

Image

Image Encoding Format	JPEG
Image Setting	Brightness; contrast; saturation; gamma; sharpness; gain; white balance
Day/Night	IR filter, support three modes: color/B/W/auto
WDR	140 dB
HLC	Yes
BLC	Yes
White Balance	Auto; Regional Custom; Manual; Outdoor; Natural; Street Lamp
Digital Detail Enhancement (DDE)	Yes
OSD Overlay	Supports overlay of time; address (position of channel), lane (number/direction), plate (number and color), vehicle (color, type)

Audio

Audio Port	Yes
Built-in MIC	Yes; Pick-up distance: 3 m (9.84 ft), Sampling Rate: 48 k.
Built-in Speaker	Yes; Power: 2 W

Port

Audio Output	1 channel (RCA port)
Network Port	RJ-45 (10/100 Mbps Ethernet port)
Alarm Input	2, optocoupler input (wet node on-off value: 5 V)
Alarm Output	2, relay output (2A 30 VDC/0.5A 125 VAC), which can connect to devices such as barriers
RS-485	2 (half duplex,Transparent,DHRS,Push Data through Serial Port)
Reset Button	Yes
Wiegand	1 channel, SHA-1 26 bit

Performance

Maximum Number of Passed Vehicles	10,000
Max. Number of Connections	10

Intelligence

AI Recognition	Recognizes vehicle types, vehicle signs, vehicle color, vehicle plate, plate, vehicle without plate.
Video Metadata	Displays the intelligent frame, plate and vehicle paths.
Vehicle Brand	Recognizes 147 vehicle logos.
Vehicle Color	Recognizes 12 colors: Grey, black, white, silver, blue, green, purple, red, orange, pink, brown, and yellow.
Vehicle Type Recognition	Recognizes 10 vehicle types: Large Bus, Heavy Truck, Medium Truck, Sedan, Van, Light Truck, Medium Bus, SUV, MPV, Pickup
Country and Region Supported by ANPR	Baseline support: 10 options (85 countries) General: Supports universal characters GCC (U.A.E., Saudi Arabia, Morocco, Oman, Iraq, Egypt, Jordan, Qatar, Kuwait, Bahrain, Lebanon) South Africa: South Africa, Tanzania, Mozambique, Zambia, Uganda, Equatorial Guinea, Mauritius, Kenya South Asia Region (India Region) : India, Maldives Europe (Netherlands, France, Germany, Britain, Italy, Poland, Belgium, Bulgaria, Serbia, Slovakia, Spain, Denmark, Turkey, Israel, Czech Republic, Bosnia and Herzegovina, Switzerland, Austria, Hungary, Romania, Lithuania, Latvia, Sweden, Estonia, Portugal, Greece, Slovenia, Luxembourg, Palestine, Lebanon, Ireland, Finland, Norway, Croatia, North Macedonia) South American Economies Collection (Uruguay, Paraguay, Brazil, Argentina, Chile, Colombia, Peru, Ecuador, Guyana, Bolivia) Mexico and other countries: Mexico, Costa Rica, Curacao, Guatemala Eurasian Collection (Russia, Ukraine, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Moldova, Georgia, Azerbaijan, Turkmenistan) North America (United States, Canada) North Africa Region Collection: Tunisia, Morocco, Algeria, Libya The baseline algorithm is supported for the following 19 countries: Republic of Korea, Indonesia, Singapore, Cambodia, Australia, Thailand, Bassett, Nigeria, Pakistan, Viet Nam, Mongolia, Bangladesh, Myanmar, Philippines, Laos, Iraq, Japan, Maldives, Nepal
Capture Rate	In the recommended installation and lighting condition, the vehicle capture rate ≥ 99%
Recognition Rate	In the recommended installation and lighting condition, the recognition rate for positive and departing vehicles≥ 96%; the recognition rate for European vehicle plates ≥ 98%

Wireless

Sub 1G Modulation Type	FSK
Sub 1G Frequency Range	433.82–434.02 MHz; 868.2–868.4 MHz

Sub 1G Power Transmission	433.82–434.02 MHz@10 dBm; 868.2–868.4 MHz@10 dBm

General

Remote control	Yes
Communication Band	433 MHz; 868 MHz
Remote Control Distance	15 m (49.21 ft) (In an open, undisturbed environment)
Power Supply	12 VDC, 2 A and POE:802.3at,Type 2,Class 4,(44V to 57V), 0.455A to 0.351A,max.20W
Power Consumption	Power consumption in different conditions: No lighting < 6 W Lighting <12 W Speaker and Red/Blue Light Warning on < 17 W
Protection	IK10; IP67
Material	Aluminum alloy body+Plastic
Product Dimensions	395.0 mm × 120.8 mm × 127.8 mm (15.55" × 4.76" × 5.03") (L × W × H)
Packaging Dimensions	447.0 mm × 240.0 mm × 233.0 mm (17.60" × 9.45" × 9.17")
Net Weight	2.3 kg (5.07 lb)
Gross Weight	3.2 kg (7.05 lb)
Storage Humidity	≤ 95% (non-condensing)
Storage Temperature	–40 °C to +70 °C (–40 °F to +158 °F)
Operating Temperature	–30 °C to +65 °C (–22 °F to +149 °F)
Operating Humidity	10%–90% (non-condensing)
Certifications	CE-EMC; CE-LVD; CE-RED; FCC

Ordering Information

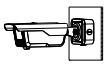
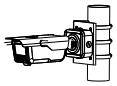
Type	Part Number	Description
Smart ANPR Camera	DHI-ITC413-PW4D-Z1	4MP Smart ANPR Camera (Dual Illuminators,2.7 mm-12 mm,433 MHz)
		4MP Smart ANPR Camera (Dual Illuminators,2.7 mm-12 mm,868MHz)
	DHI-ITC413-PW4D-IZ1	4MP Smart ANPR Camera (IR illuminator,2.7 mm-12 mm,433 MHz)
		4MP Smart ANPR Camera (IR illuminator,2.7 mm-12 mm,868MHz)
	DHI-ITC413-PW4D-Z3	4MP Smart ANPR Camera (Dual Illuminators,8 mm-32 mm,433 MHz)
		4MP Smart ANPR Camera (Dual Illuminators,8 mm-32 mm,868MHz)
	DHI-ITC413-PW4D-IZ3	4MP Smart ANPR Camera (IR illuminator,8 mm-32 mm,433 MHz)
		4MP Smart ANPR Camera (IR illuminator,8 mm-32 mm,868MHz)
Accessories (Optional)	PFA150	Pole Mount
	IPMECB-1121-12	Bracket

Accessories

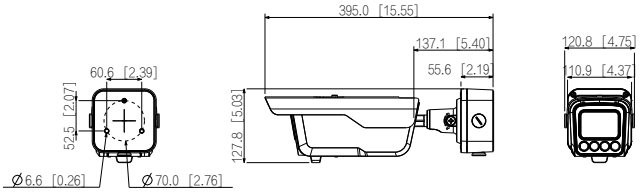
Optional:

PFA150
Pole Mount

IPMECB-1121-12
Bracket

Ceiling Mount	Wall Mount	Pole Mount(Vertical)	Pole Mount
			

Dimensions (mm [inch])



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