Dahua TECHNOLOGY

DHI-ITC431-RW1F-IRL8

4MP IR AI Enforcement Camera

- Impressive image quality: Adopts ultra starlight CMOS image sensor with high sensitivity, high SNR, and excellent WDR, providing lifelike images 24/7.
- Complete intelligence: High-performance CPU processor helps extract and analyze vehicle metadata, providing vehicle feature details for business decision-making.
- Multiple scenarios: Ideal for multiple traffic scenarios with the functions of road conditions monitoring, traffic flow statistics, and event detection. Supports IR mode at night for reduced light pollution.
- High-level protection: Integrated design with low power consumption, built-in lightning protection module, and IP67 protection grade, suitable for various harsh environments.

System Overview

This 4MP IR AI enforcement camera is designed with high-sensitivity sensor and high-performance AI processor, and it also integrates deep learning algorithm to read and analyze vehicle metadata in real time, make statistics of traffic flow, detect events and violations, ensuring traffic safety. It supports IR mode at night for reduced light pollution.

Scene

The camera is ideal for intelligent traffic management and safe city businesses with its capacities of traffic violations capturing, passing vehicle records, traffic data collection, event detection, and more.

Functions

Intelligent traffic monitoring
Traffic violations capturing, passing vehicle records, traffic data collection, event detection, and more.

Various video compression standards
H.265, H.264M, H.264H, H.264B, and MJPEG.

Wide dynamic range
Adopts industry-leading WDR technology to obtain clear and detailed information even in the conditions of strong brightness contrast. Clear videos can be captured in high-brightness environments, backlight shadows, and bright and dark areas under strong light sources.

High-level protection
IP67 high-level protection.

Multiple modes of power supply
Supports PoE and 12V DC-36V DC power output, meeting power supply needs of different customers.

Onvif

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Technical Specification

System

Main Processor	High-performance embedded processor

Basic

Image Sensor	1/1.8'' CMOS
Shutter Mode	Single shutter
Electronic Shutter Speed	1/25 s–1/100000 s (manual/auto)
Exposure Mode	Full auto, customized auto, customized
Iris Control	Fixed iris/manual iris/auto iris/P iris
Image Resolution	2688 × 1520 (OSD black strip excluded)
Video Resolution	4M (2688 × 1520)/1080P (1920 × 1080)/UXGA (1600 × 1200)/720P (1280 × 720)/D1 (704 × 576)/CIF (352 × 288)
Video Frame Rate	Maximum 25fps; main stream (2688 × 1520@25fps), sub stream (1600 × 1200@25fps)
Video Bit Rate	H.264: 32kbps–32767kbps H.265: 32kbps–32767kbps MJPEG: 512kbps–32767kbps
Video Compression	H.265/H.264M/H.264H/H.264B/MJPEG
Picture Encoding Format	JPEG
WDR	90 dB
White Balance	Auto/outdoor/manual/local white balance/natural light/ street light
Noise Reduction	2DNR/3DNR
HLC	Yes
Bad Pixel Correction	Yes
Edge Enhancement	Yes
Illuminator Number	4 illuminators (850nm IR LED illuminators, brightness adjustable)

Function

Composite Image	Supports composing 1, 2, 3, or 4 pictures
Trigger Mode	Video detection/radar
OSD Overlay	Motor vehicles: Time, location (video channel location), lane (number, direction), plate (number and color), speed, region, vehicle color, vehicle logo, vehicle type Non-motor vehicles: Helmet, passenger overloading
Storage	FTP, TF card (maximum 256GB@Class10)
Alarm Event	Storage full, storage error, external alarm, no storage card, license plate blocklist, illegal access, network disconnection, and IP conflict
Automatic Network Replenishment (ANR)	Platform, FTP (TF card is required)
Image Tampering Prevention	Yes. Watermark and verification are available for videos and pictures
Time Synchronization	Yes. NTP
Security	Authorized username and password, MAC address binding, HTTPS encryption, and network access control
Drawing Detection Line	Supports automatically drawing detection lines
Auto Registration	Yes

Intelligence

Target Detection	Motor vehicles and non-motor vehicles
Face Detection	Face cutout of driver and front-seat passenger of motor vehicles, and non-motor vehicle driver
License Plate Recognition	Adopts self-developed algorithm to recognize license plates combining numbers and letters
Vehicle Type Recognition	Vehicle head: Coach bus, medium bus, SUV, MPV, pickup, heavy truck, medium truck, car, van, and light truck Vehicle tail: SUV, car, van, coach bus, pickup, cargo truck, mini truck, tank truck, and mixer truck
Vehicle Color Recognition	White, pink, black, red, yellow, gray, blue, green, amber, purple, brown, silver gray (color cannot be recognized in IR mode during nighttime)
Motor Vehicle Violation Capture	Overspeed, underspeed, wrong-way driving, illegal lane change
Non-motor Vehicle Violation Capture	Overloading, not wearing a helmet
Traffic Flow Detection	Statistics of vehicle flow, average speed, vehicle type, lane occupancy, average time headway, average queue length, road status, and more; statistics can be exported in Excel
Traffic Event Detection	Parking violations of motor vehicles, wrong-way driving, and traffic congestion
Video Metadata	Motor vehicle: License plate, vehicle type, vehicle color, license plate color, vehicle logo, and more (color cannot be recognized in IR mode during nighttime) Non-motor vehicle: Type (two-wheelers, three-wheelers), color, wearing a helmet or not, passenger (1, 2, 3, or more passengers)

Port

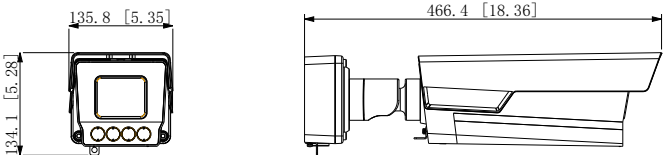|	
Network	1 RJ-45 Ethernet port, 10/100/1000M network transmission
Storage	1, supports maximum 256GB TF card local storage
RS-485	1, connecting to devices such as radar
RS-232	2 ports. G T R for serial debugging, and G T1 R1 for connecting to radar
Alarm Input	3 channels
Alarm Output	2 channels. 1 for relay, and 1 for optocoupler
Audio Input	1
Audio output	1

General

Power Supply	12V DC, 36V DC, PoE
Power Consumption	≤ 8W
Operating Temperature	−40°C to +65°C (−40°F to +149°F)
Operating Humidity	10%–90%
Protection Grade	IP67
Dimensions	466.4 mm × 135.8 mm × 134.1 mm (18.36'' × 5.35'' × 5.28'') (L × W × H)
Net Weight	2.8 kg (6.17 lb)
Gross Weight	4.5 kg (9.92 lb)
Certifications	CE, FCC, UL

DHI-ITC431-RW1F-IRL8

Installation	Supports installation with universal mounting bracket, or side-mounted on pole with mounting bracket
Lens	Built-in 10 mm–40 mm motorized vari-focal lens

Ordering Information

Type	Model	Description
4MP Camera	DHI-ITC431-RW1F-IRL8	4MP IR AI Enforcement Camera
Accessory	8018	3-dimensional universal mounting bracket, needs to be purchased separately
	PFA150	Mounting bracket, needs to be purchased separately

Dimensions (mm[inch])

135.8 [5.35] 134.1 [5.28] 466.4 [18.36]

Installation