

# DHI-ITC952-SU2F-GQE-C2R1-LZF1640

Dahua 9MP Radar Video Camera



- GS-CMOS image sensor.
- 4096 × 2336@50 fps.
- Video compression standards: H.265, H.264M, H.264H and MJPEG.
- Works in poor lighting and does not smear.
- High-speed capture.
- A camera, illuminator, radar and more combined in one.
- IP66.
- 4G mobile network module.

## System Overview

With its high-performance AI processor, 9MP All-in-one AI Traffic Camera delivers high quality images even in the toughest weather conditions. For monitoring, it uses deep learning algorithms and GS-CMOS image sensors with a wide dynamic range and a high frame rate, making it ideal for traffic scenarios. With its advanced image technology, the white light supplements light at night to allow the camera to take vivid, full color images without using the external flashing light or strobe. A radar is also built into the device, allowing it to measure vehicle speed and sense data from a wide range of perspectives. For network transmission, the device only requires a single 4G card, eliminating the need for network cables.

## Functions

### Wireless 4G

The camera works with just a 4G card, eliminating the need for network cables. It is powered by its embedded high-performance 4G mobile network module, which also allows the camera to be added to the platform for remote control through auto registration, where it can then be used to transmit traffic violation data and ANPR data to the platform.

### Reduced Light Pollution

The illuminators supplement light when the camera captures license plates without using the external flashing light or strobe, significantly reducing light pollution.

### Ultra-high Frame Rate

Uses traffic-specific, high-performance GS-CMOS image sensors with a wide dynamic range, high frame rate, and high signal-to-noise ratio, displaying realistic video images in the day and night. This makes it ideal for traffic scenarios.

## Video Metadata

Deep learning algorithms and a high-performance AI processor allow the camera to detect and extract metadata on motor vehicles and non-motor vehicles, providing a reliable data source that can be used in making effective decisions.

## Applicable to Various Road Scenes

Ideal for scenarios where license plate recognition is needed, the camera is capable of capturing more than ten different types of traffic violations, and supports traffic information collection and event detection.

## Multi-dimensional Data Sensing

GPS positioning is supported, and used in time synchronization. A radar is also built into the device, allowing it to measure vehicle speed and sense data from a wide range of perspectives.

## Safe and Reliable Performance

Built to withstand the toughest conditions, this camera functions in a wide temperature and voltage range. It is designed with an IP66 case, which protects the camera and its internal components, such as the radar and illuminators, from receiving damage. Feel safe using it in all-weather types.

## Scene

The camera is ideal for use in intelligent traffic management and for smart city businesses. It is capable of detecting traffic violations, capturing license plates, generating passing vehicle records, collecting traffic data, and detecting events.

| Technical Specification               |                                                                                                                                                               |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Camera                                |                                                                                                                                                               |
| Image Sensor                          | 1.1" GS-CMOS                                                                                                                                                  |
| Shutter Mode                          | Single shutter; Double shutters; Three shutters                                                                                                               |
| Electronic Shutter Speed              | Auto/Manual 1/50 s–1/100,000 s                                                                                                                                |
| Noise Reduction                       | 3D NR                                                                                                                                                         |
| S/N                                   | 48 dB                                                                                                                                                         |
| WDR                                   | 120 dB                                                                                                                                                        |
| Minimum intensity                     | 0.001 lux                                                                                                                                                     |
| Day/Night                             | Supports ICR auto switch: IR cut-off filter (IRCF) with the polarizing filter is used during the daytime, and switches to the IR transmitting filter at night |
| Illuminator                           |                                                                                                                                                               |
| Illuminator Number                    | 16                                                                                                                                                            |
| Illumination Distance                 | 23 m–50 m (75.46 ft–164.04 ft) (adjustable brightness)                                                                                                        |
| Lane Coverage                         | Center mount: 4 lanes<br>Side mount: 3 lanes                                                                                                                  |
| Radar                                 |                                                                                                                                                               |
| Central Frequency                     | 24.05 GHz–24.25 GHz                                                                                                                                           |
| Speed Measurement Accuracy            | ±2 km/h                                                                                                                                                       |
| Speed Measurement Range               | 5 km/h–300 km/h                                                                                                                                               |
| Target Detection                      | Up to 64                                                                                                                                                      |
| Certification                         | OIML R91                                                                                                                                                      |
| Lens                                  |                                                                                                                                                               |
| Lens Type                             | Motorized vari-focal                                                                                                                                          |
| Focal Length                          | 16 mm–40 mm                                                                                                                                                   |
| Max. Aperture                         | F1.4                                                                                                                                                          |
| Aperture Type                         | P iris                                                                                                                                                        |
| Field of View                         | Horizontal: : 22.3°–53.0°<br>Vertical: 13.8°–32.3°<br>Diagonal: 26.0°–61.9°                                                                                   |
| Function                              |                                                                                                                                                               |
| Trigger Mode                          | Video trigger/Radar trigger                                                                                                                                   |
| OSD Overlay                           | Time, location, lane (number/direction), plate (number/color), and more.                                                                                      |
| Alarm Event                           | Storage full; storage error; external alarm; no storage card; license plate blacklist; illegal access; network disconnection; IP conflict                     |
| Automatic Network Replenishment (ANR) | Platform, FTP (TF card is required)                                                                                                                           |
| Power Transmission                    | 4G:<br>Power class3: 23 dBm ± 2 dB                                                                                                                            |
| 4G                                    | Yes<br>operating frequency band:<br>LTE FDD: Band 1,3,5,7,8,20,28<br>LTE TDD: Band 38,40,41<br>WCDMA/HSPA+: Band 1,5,8<br>GSM/GPRS/EDGE: 850/900/1800MHz      |

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Auto Registration                    | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Intelligence                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Target Detection                     | Motor vehicle; motorcycle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Face Detection                       | Detects the driver and front-seat passenger of motor vehicles, and motorcycle drivers; extracts face images                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ANPR                                 | Adopts developed algorithms to recognize license plate numbers and letters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Vehicle Type Recognition             | Vehicle head: SUV, Large bus, sedan, light truck, pickup, heavy truck, medium truck, van, medium bus, MPV<br>Vehicle tail: SUV, large bus, sedan, light truck, pickup, heavy truck, medium truck, van                                                                                                                                                                                                                                                                                                                                                                                 |
| Vehicle Color Recognition            | White, pink, black, red, yellow, gray, blue, green, dark orange, purple, brown, and silver gray                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Vehicle logo                         | Vehicle head mode: Acura, Alfaromeo, Ashokleyland, Astonmartin, Audi, Baic, Bently, Benz, BMW, Buick, BYD, Cadillac, Chery, Chevrolet, Chrysler, Citroen, Dacia, Daihatsu, Datsun, Dodge, DS, Ferrari, Fiat, Force, Ford, Foton, Geely, GMC, Greatwall, Hino, Honda, Hyundai, Infiniti, Isuzu, Iveco, Jac, Jaguar, Jeep, Kia, Kinglong, Land, Lexus, Lifan, Lincoln, Mahindra, MAN, Maserati, Mazda, Mercury, MG, Mini, Mitsubishi, Nissan, Opel, Peugeot, Porsche, Renault, Rollsroyce, Saab, Scania, Seat, Skoda, Smart, Subaru, Suzuki, Tata, Tesla, Toyota, UD, Volkswagen, Volvo |
| Motor Vehicle Violation Snapshot     | ANPR mode: Wrong-way driving, overspeed, driving slow, crossing the solid white line, crossing the solid yellow line, illegal lane change, not wearing seatbelt, calling while driving, smoking while driving<br>E-Police mode: Running a red light, overspeed, wrong-way driving, crossing the solid white line, crossing the solid yellow line, disobeying the direction arrow, illegal left turn, illegal right turn, illegal U-turn (not supported by side-mounted cameras), and crossing the stop line                                                                           |
| Motorcycle vehicle Violation Capture | Captures traffic violations including carrying passenger, not wearing helmet, and wrong-way driving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Traffic Flow Detection               | Generates statistics on vehicle flow, queue length, average speed, lane occupancy, and more                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Traffic Event                        | Detects parking violations of motor vehicles, wrong-way driving, and traffic congestion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Video                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Video Compression                    | H.265; H.264M; H.264H; MJPEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Video Resolution                     | 4096 (H) × 2336 (V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Video Frame Rate                     | 50Hz: Maximum 50 fps; default main stream (4096 × 2336@12.5fps), sub stream (1600 × 1200@12.5 fps)<br>30Hz: Maximum 30 fps; default main stream (4096 × 2336@15 fps), sub stream (1600 × 1200@15 fps)                                                                                                                                                                                                                                                                                                                                                                                 |
| Video Bit Rate                       | H.264: 32 kbps–32768 kbps<br>H.265: 32 kbps–32768 kbps<br>MJPEG: 512 kbps–32768 kbps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Bit Rate Control                     | CBR; VBR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| White Balance                        | Auto/night/custom color temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Edge Enhancement                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| HLC                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| BLC                                  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Bad Pixel Correction                 | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Gain Scope                           | 0–100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Image

|                            |                                                                |
|----------------------------|----------------------------------------------------------------|
| Composite Image            | Supports combining up to 4 images into a composite image       |
| Image Resolution           | 4096 (H) × 2336 (V) (OSD black strip excluded)                 |
| Image Encoding Format      | JPEG                                                           |
| Image Tampering Prevention | Watermark and verification are available for videos and images |

## Network

|                      |                                                                                                                                                 |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Port         | 1 × RJ-45 Ethernet port, 10/100/1000 M network transmission                                                                                     |
| SDK and API          | Yes                                                                                                                                             |
| Security             | Authorized username and password, MAC address binding, HTTPS, and network access control                                                        |
| Protocol             | IPv4; IPv6; HTTP; TCP; IP; UDP; NTP; DHCP                                                                                                       |
| Interoperability     | ONVIF (Profile S/Profile G/Profile T)                                                                                                           |
| Browser              | IE: IE 9–IE 11<br>Chrome: Chrome 41 and earlier<br>Firefox: Firefox 49 and earlier<br>Win10 needs to open the browser with administrator rights |
| Positioning          | GPS                                                                                                                                             |
| Time Synchronization | NTP; GPS                                                                                                                                        |

## Port

|                       |                                                                                                                         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------|
| Frequency Source Sync | 1, supports synchronizing the camera with the mains electricity                                                         |
| Peripheral Light      | 5, optocoupler signal output (can be configured as flashing light or LED strobe sync output port, frequency adjustable) |
| RS-485                | 1, connects to devices such as signal detector, strobe, continuous light, and all-in-one illuminator                    |
| Alarm Output          | 1 (can be configured as an alarm output port)                                                                           |
| Alarm In              | 1                                                                                                                       |

## General

|                       |                                                                                                                                                    |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply          | 100–240 VAC, 50 Hz/60 Hz                                                                                                                           |
| Power Consumption     | ≤55 W                                                                                                                                              |
| Operating Temperature | –40 °C to +65 °C (–40 °F to +149 °F)                                                                                                               |
| Storage Temperature   | –40 °C to +70 °C (–40 °F to +154 °F)                                                                                                               |
| Operating Humidity    | 10%-90% (RH)                                                                                                                                       |
| Storage Humidity      | 10%-90% (RH)                                                                                                                                       |
| Product Dimensions    | 435.4 mm × 416.0 mm × 173.8 mm (17.14" × 16.38" × 6.84") (L × W × H)                                                                               |
| Certifications        | CE LVD: EN62368<br>CE EMC: EN55032; EN55035; EN61000-3-2; EN61000-3-3<br>CE RED: EN301511; EN301908; EN300440; EN62311; EN301489; EN303413<br>IP66 |
| Net Weight            | 9.3 kg (20.50 lb)                                                                                                                                  |
| Gross Weight          | 14.3 kg (31.53 lb)                                                                                                                                 |
| Installation          | Center mount; Side mount                                                                                                                           |

## Ordering Information

| Type                   | Model                           | Description                              |
|------------------------|---------------------------------|------------------------------------------|
| AI Enforcement Camera  | DHI-ITC952-SU2FGQE-C2R1-LZF1640 | 9MP all-in-one AI Traffic camera         |
| Accessories (Optional) | PFA150                          | Pole Mount Bracket (purchase separately) |
|                        | 3012                            | Wall Mount Bracket (purchase separately) |

## Accessories

Optional:



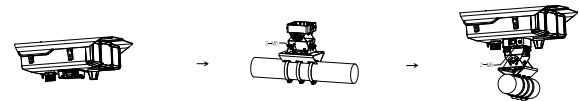
PFA150  
Pole Mount Bracket  
(purchase separately)



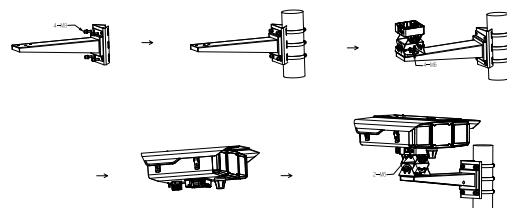
3012  
Wall Mount Bracket  
(purchase separately)

## Installation

(1)



(2)



Dimensions (mm[inch])

