

# DFR1154 Product Manual

## Product Introduction

ESP32-S3 AI CAM is an intelligent camera module designed based on the ESP32-S3 chip. It is specifically built for video image processing and voice interaction, making it suitable for AI projects such as video surveillance, edge image recognition, and voice dialogue. Equipped with high-performance neural network computing and signal processing capabilities, the ESP32-S3 endows devices with powerful image recognition and voice interaction functions.

## Product Specifications

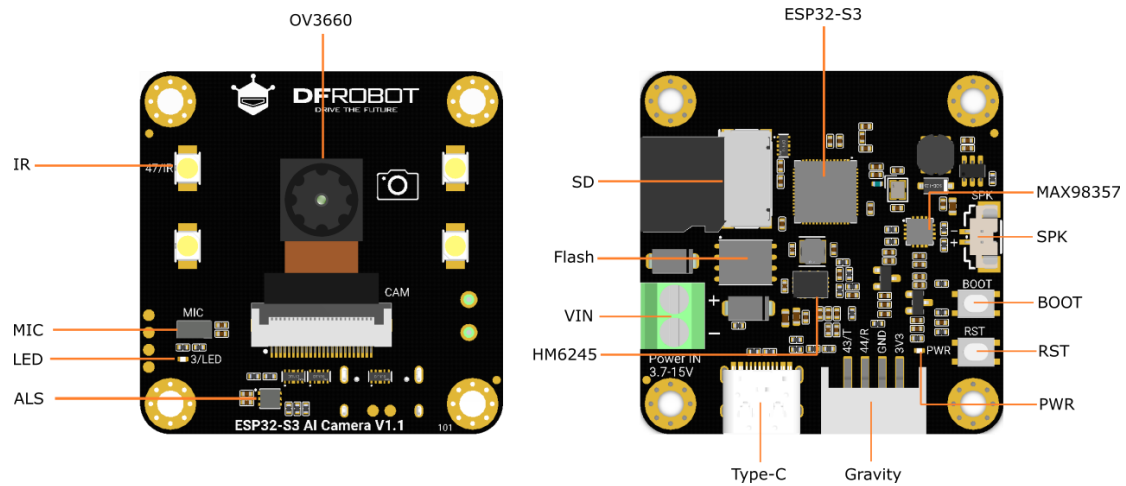
### Basic Parameters:

- Operating Voltage: 3.3V
- Type-C Input Voltage: 5V DC
- VIN Input Voltage: 3.7-15V DC
- Operating Temperature: -10~60°C
- Module Size: 42\*42mm

### Camera Specifications

- Sensor Model: OV3660
- Pixels: 2 Megapixels
- Sensitivity: Visible light, 940nm infrared
- Field of View: 160°
- Focal Length (EFL): 0.95
- Aperture (F/No.): 2.0
- Distortion: <8%

## Functional Indicators



- OV3660: 160° wide-angle infrared camera
- IR: Infrared illumination (GPIO47)
- MIC: I2S PDM microphone
- LED: Onboard LED (GPIO3)
- ALS: LTR-308 ambient light sensor
- ESP32-S3: ESP32-S3R8 chip
- SD: SD card slot
- Flash: 16MB Flash
- VIN: 3.7-15V DC input
- HM6245: Power chip
- Type-C: USB Type-C interface for power and code uploading
- Gravity
  - 3V3: 3.3V output
  - GND: GND
  - 44: GPIO44, native RX for ESP32-S3
  - 43: GPIO43, native TX for ESP32-S3
- PWR: Power indicator light
- RST: Reset button
- BOOT: BOOT button (GPIO0)

- SPK: MX1.25-2P speaker interface
- MAX98357: I2S amplifier chip

### **FCC Warning Statement**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### **FCC Radiation Exposure Statement**

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located for operating in conjunction with any other antenna or transmitter.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.