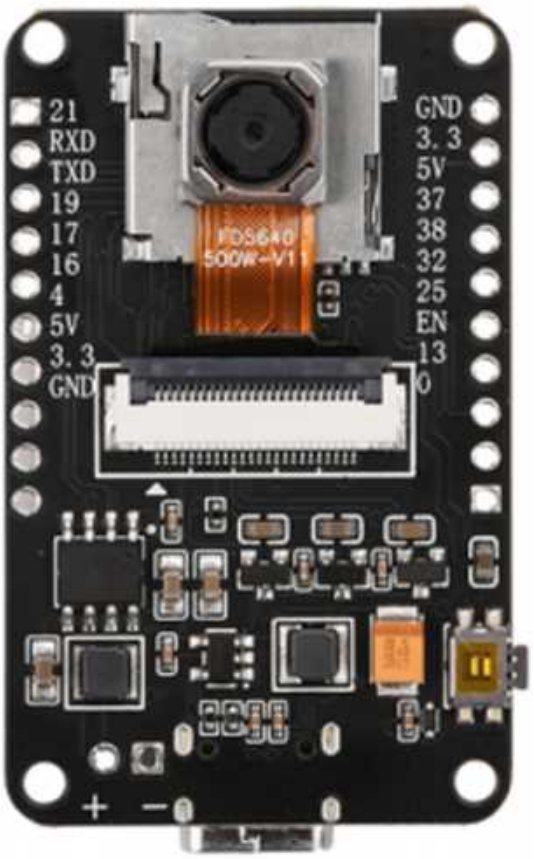
ESP32 CAM Development Board



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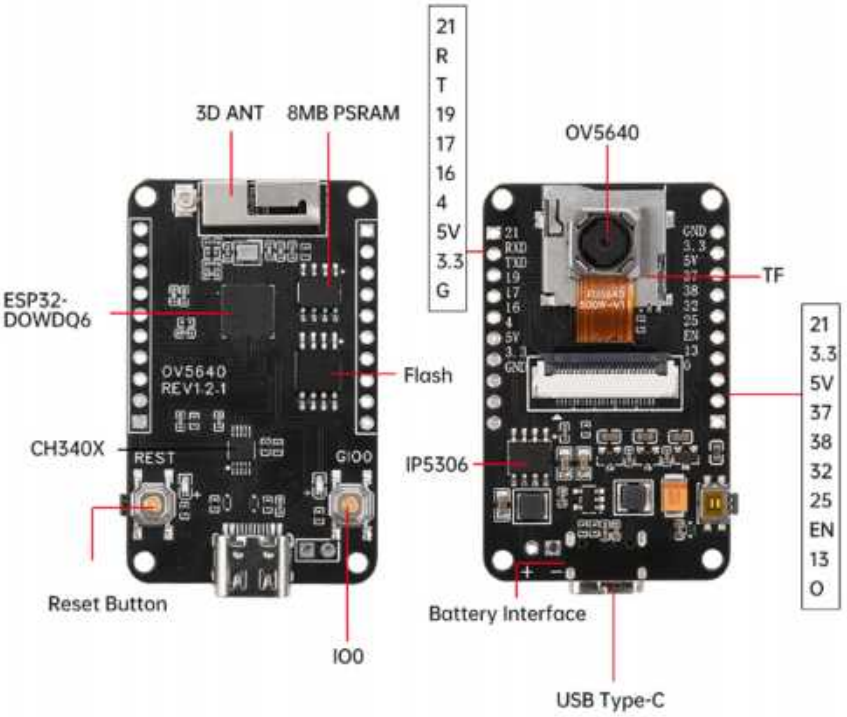
Product Introduction

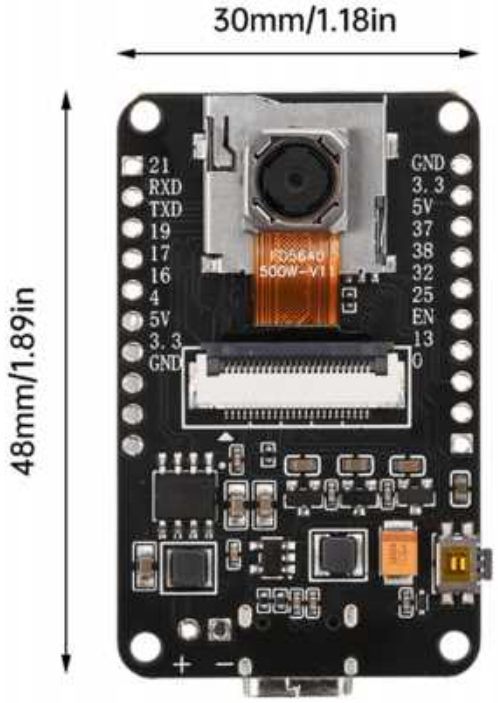
This ESP32-CAM development board is a low-power, high-performance upgraded version based on ESP32, with built-in 8MB PSRAM and TF card slot, supporting up to 32G memory card. The MCU uses ESP32-D0WDQ6, the frequency can be adjusted between 80-240MHz, integrated 2.4GHz Wi-Fi and Bluetooth dual-mode, internally integrated 520KB RAM and onboard 8MB PSRAM, using SPI protocol communication, the rate is up to 40M. The USB interface uses CH340X automatic download circuit, compatible with MCS51 instruction set, the average instruction speed is 8~15 times faster than the standard MCS51, which is convenient for writing and debugging programs. The module is equipped with OV5640 camera by default, which can reach up to 30FPS in VGA format, supports multiple image formats and processing functions, and the best shooting distance is 20-250CM. In terms of power management, two power supply modes are provided: USB and external battery. By default, no battery is installed. Users can connect an external 3.7V lithium-ion battery. The module is equipped with an IP5306 power management chip, which supports power detection and charging status monitoring. Click the reset button to turn on the device, and double-click to shut down the device. The HY2.0 cable interface is reserved, and multi-functional applications can be expanded through the I2C bus. This development board is suitable for IoT node devices, secondary development monitoring, video, photography and other application scenarios. It is a low-cost and efficient camera solution, such as the development of face recognition projects for supermarket lockers.

Performance parameters:
MCU:ESP32-D0WDQ6: The frequency can be adjusted between 80-240MHz, integrated 2.4GHz Wi-Fi and Bluetooth dual-mode, 40nm process, internal integrated 520KB RAM and onboard 8MB PSRAM, using SPI protocol communication, the speed is up to 40M.
USB: CH340X: Automatic download circuit, with E8051 core compatible with MCS51 instruction set, the average instruction speed is 8~15 times faster than the standard MCS51. The ESP32-CAM module uses CH340X to realize the automatic download circuit, and can be easily programmed and debugged with USB.
CMOS: OV5640 Camera: Provides the complete functions of a single-chip JXGA (1632x1232) camera and image processor, and provides full-frame sampling, zooming or windowing 8-bit/10-bit images in various formats through the serial camera control bus (SCCB) interface, with the best image distance of 20-250CM.
Dual power supply mode: USB and external battery: Reserved battery welding points, no battery by default, users can connect an external 3.7v lithium-ion battery by themselves, the module is equipped with IP5306 power management chip to detect the battery power/charging status, double-click the reset button to shut down in battery power mode, and single-click the reset button to start up.
HY2.0 cable interface: A HY2.0 cable interface is reserved and mounted on the internal I2C bus, so that it can be expanded through I2C to achieve multi-functions to meet different application scenarios. Trans-flash Card: Supports up to 32G storage card Sensor category: optical sensor Working current: 0.15A Working voltage: 5V Size: 48mm*30mm Module application scenarios: Secondary development of monitoring, video, photography and other Aolt applications Low-cost camera solution IoT node equipment Product list: 1X development board 1X OV5640 camera 1X heat sink

Product Pin Description

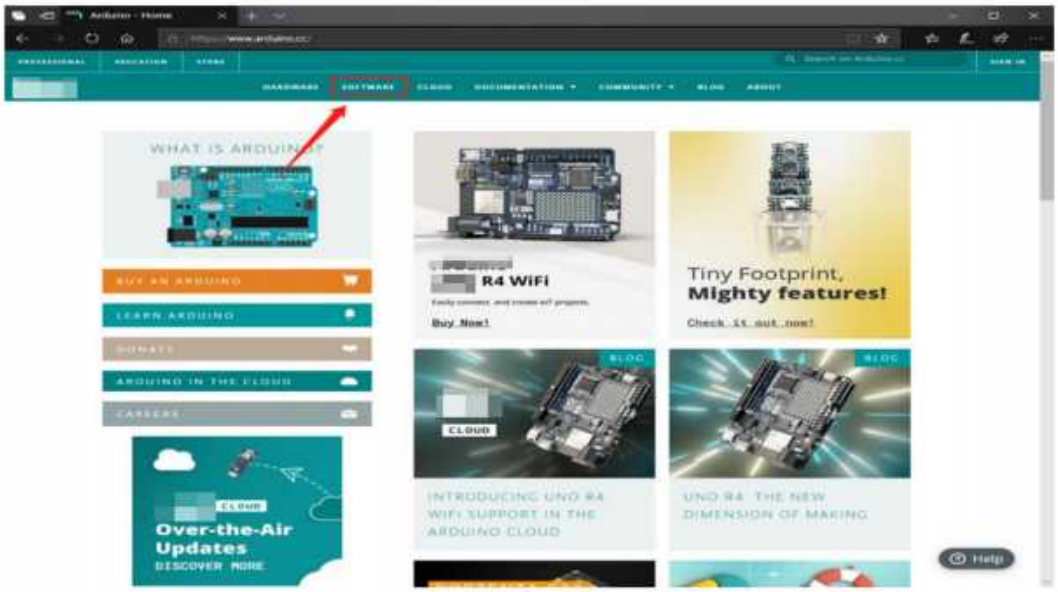


Product size



Instructions

Arduino IDE installation tutorial:
Download and installation: Official website download address, please click here and then open the software



Download Windows Zip file

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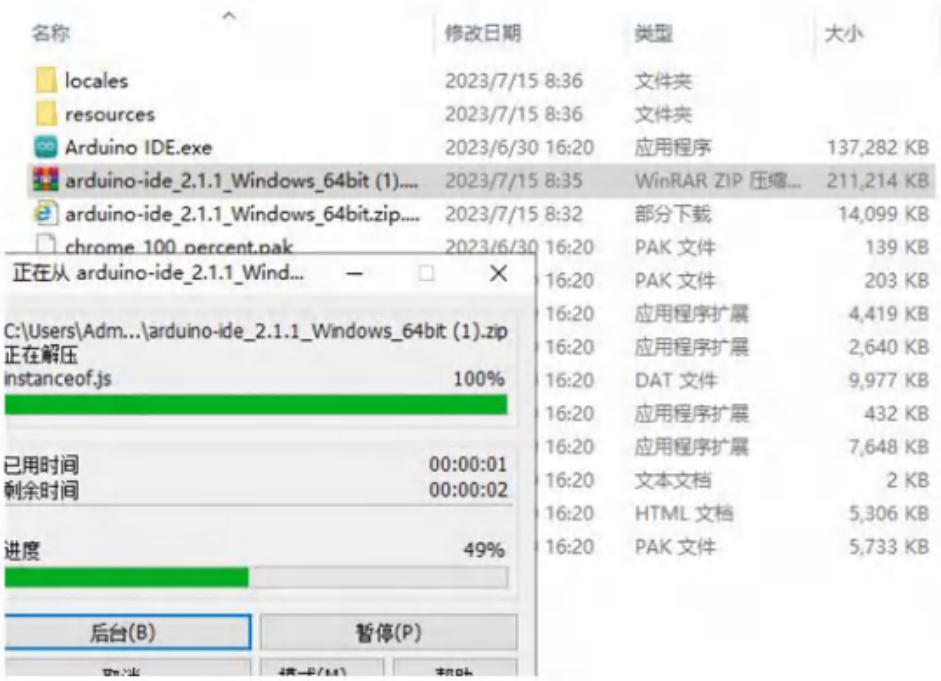
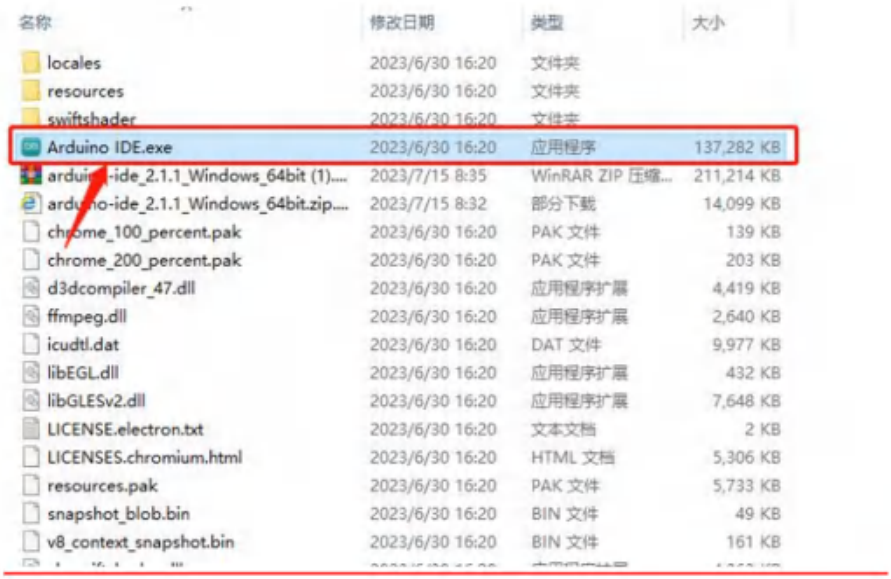
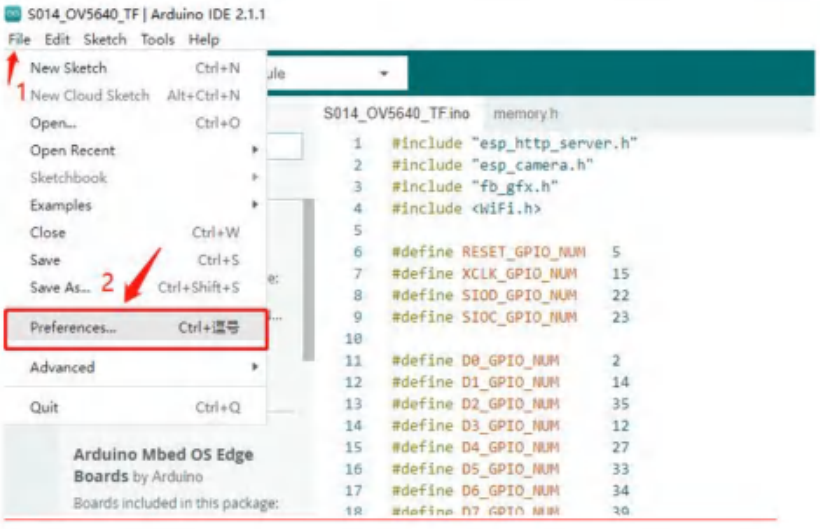
Unzip arduino-ide_2.1.1_Windows_64bit



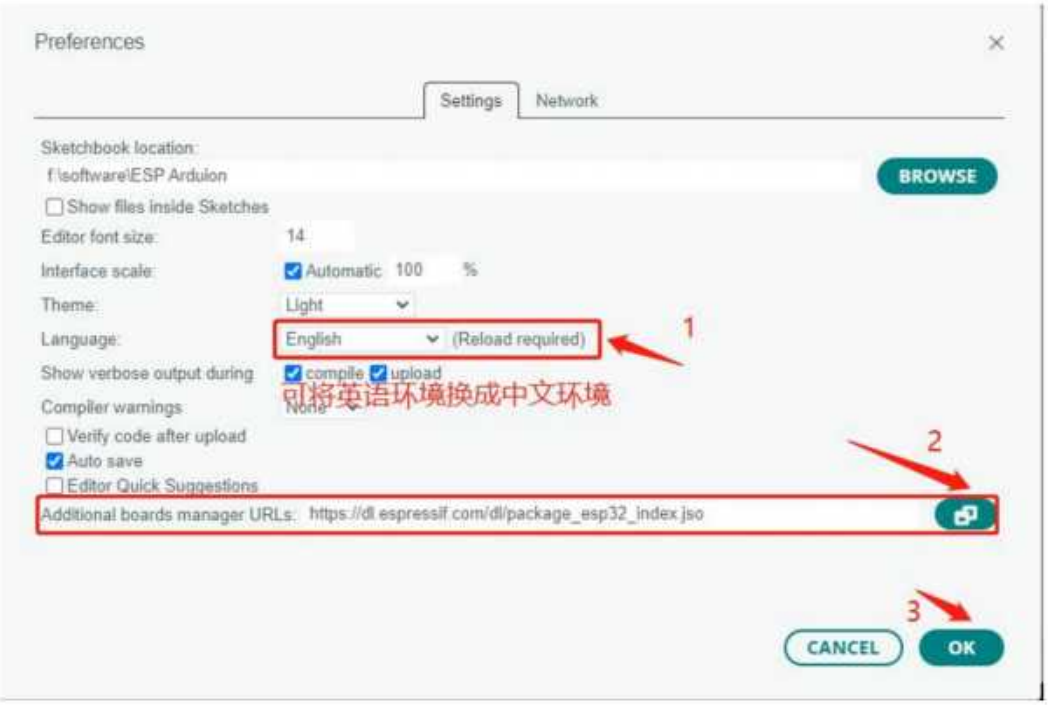
Open and install Arduino IDE, then just keep clicking Next to successfully install it



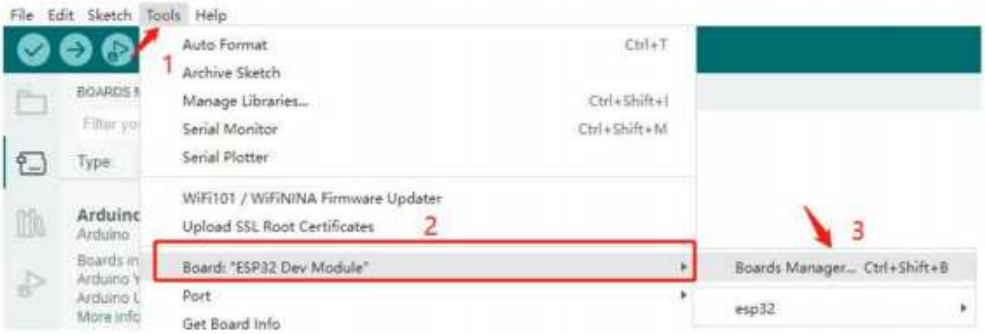
Configure the environment
Open Arduino IDE and select File-preference.



In the Additional boards manager URLs: add the following URL and click OK https://dl.espressif.com/dl/package_esp32_index.json



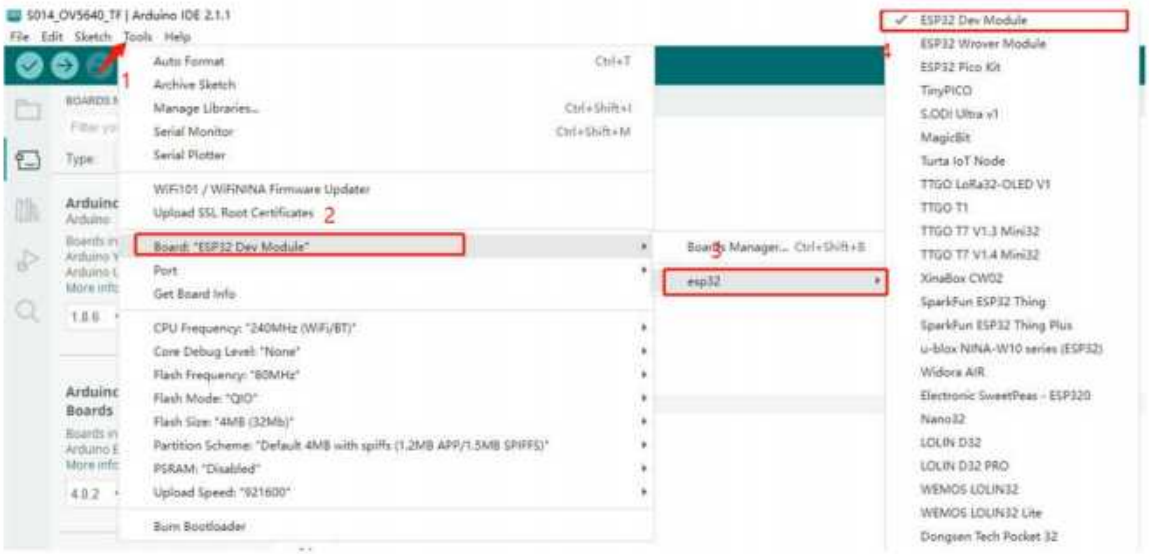
Follow the steps in the picture to open Boards Manager..



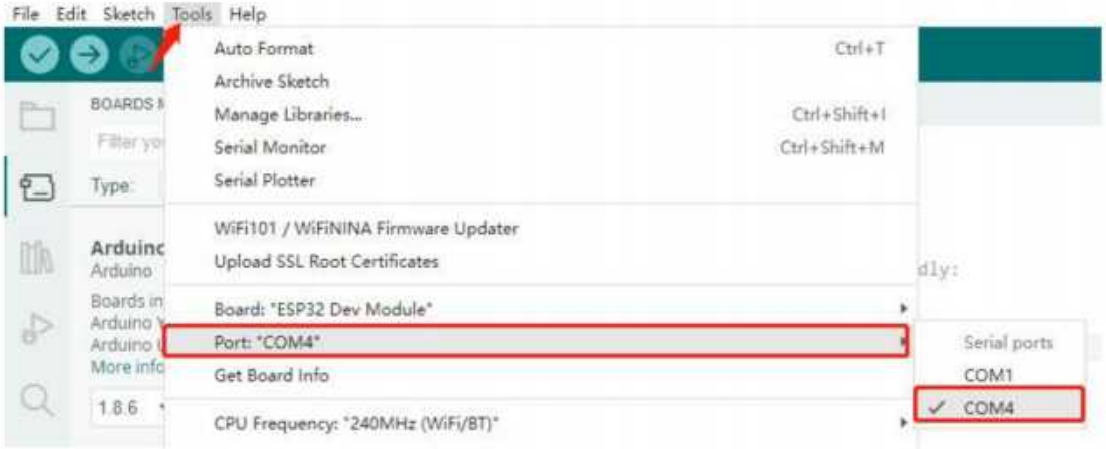
Type esp32 and find esp32 by Espressif Systems to install it.

Run the Hello Arduino example

Connect the ESP32 to your computer and select the development version ESP32 Dev Module



Select the correct port (the port number is related to your computer)



Manually enter the Hello Arduino code

```
1  void setup() {
2  // put your setup code here, to run once:
3  Serial.begin(115200);
4  }
5  void loop() {
6  // put your main code here, to run repeatedly:
7  Serial.println("Hello Arduino.");
8  delay(1000);
9  }
```

Click the Upload button

After the upload is successful, open the serial port monitor and you can view the Hello Arduino