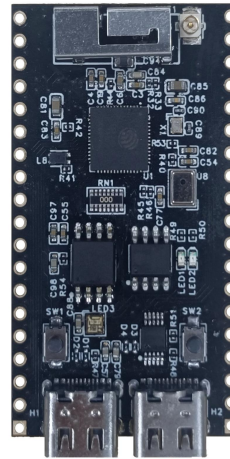
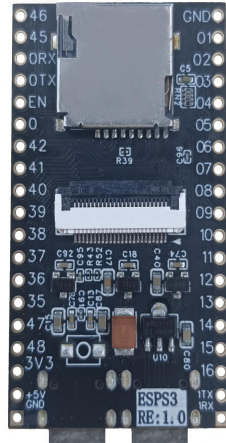


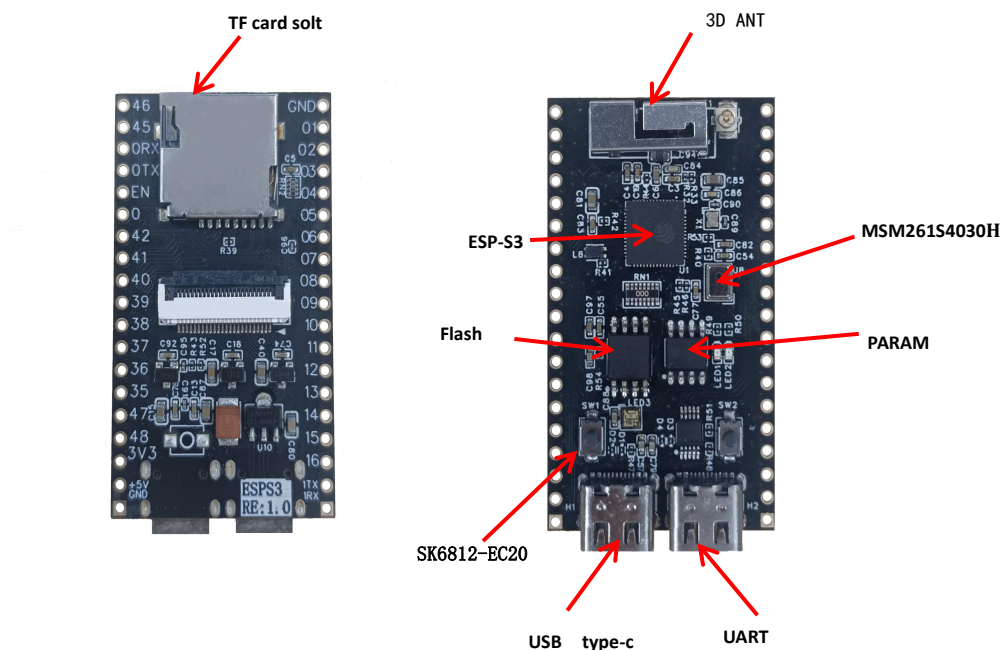
ESP32-S3 products

Module specification



Feature brief:ESP32-S3 is a low-power MCU system-on-chip (SoC) that supports 2.4 GHz Wi-Fi and Bluetooth® LE low energy wireless communications. The chip integrates a high-performance Xtensa® 32-bit LX7 dual-core processor, ultra-low-power coprocessor, Wi-Fi baseband, Bluetooth baseband, RF modules, and peripherals.

Module hardware layout



Feature overview

MCU:ESP32-S3	Xtensa®32LX7 dual-core processor, frequency adjustable between 2040MHz, integrated 2.4GHz Wi-Fi and Bluetooth dual-mode, 40nm process, integrated 512KB RAM and 384KB ROM memory (for program startup and core function call) FLASH support SPI, DualSPIQuadSPI, OctalSPI and RAM peripherals.
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, ESP32-CAM module uses CH340X to realize automatic download circuit, with USB can be easily written and debugged ESP32.
MSM261S4030HOR	Built-in complete 24bit I2S audio interface, no additional addition of codec, can be directly connected with DSP or MCU full digital signal, microphone collects audio signal and converts into analog voltage signal

	output, through the codec ADC into digital signal and encoding by the main control chip for audio processing.
TF card slot	The module has a TF card slot on board, which is compatible with most standard TF cards on the market, supports up to 16GB, and can realize functions such as photo storage, and playback with the camera.
SK6812-EC20	The SK6812-EC20 is a digitally programmable color LED with integrated LED and control circuitry. It is available in a surface mount technology (SMD) package for compact size and reliable performance. The SK6812-EC20 LED is a digitally programmable RGB LED.
OV2640 Camera	Provides a complete power over the serial camera control bus (SCCB) interface for single-chip JXGA (1632x1232) cameras and image processors, providing YUV(422/420)/YCbCr422 full-frame sampling, scaling, or windowing of 8-bit/10-bit images. THE BEST IMAGE DISTANCE IS 20-250CM.
TYPE-C 16PIN 2MD	Two electrical connectors for Type-C interface devices are available, with high-speed transmission, reversible pluggability, and multifunctional expansion. Among them, USB2 is automatically downloaded with CH340 connection. USB1 is connected to the ESP32-S3 chip.

Module application scenarios

DIY secondary development
Low-cost camera solutions
IoT node devices

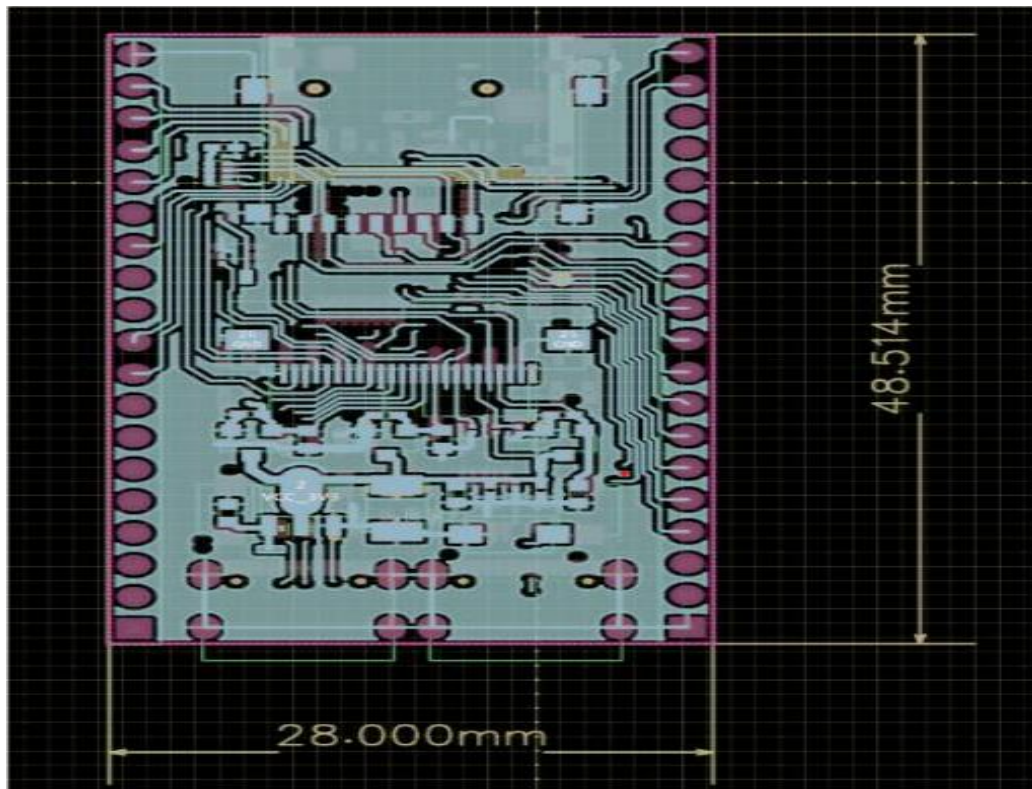
Size information

28.00X48.514X10mm

Support software development

C++ / Esp-IDF / Ardiuno-IDE / Vscode / Microphython

Module size drawing



Unit: mm (mm)

