M5Camera `SKU:U017`

Description

M5Camera is a development board for image recognition. It features an ESP32(4M Flash + 520K RAM) chip and 2-Megapixel carmera(OV2640).M5Camera offers plenty of storage, with an extra 4 Mbyte PSRAM. It also supports image transmission via Wi-Fi and debugging through USB Type-C port.

The hardware comes preloaded software, programmed by ESP-IDF. It is an application to run Wi-Fi camera. The output image is size 600*800, since it's 2-Maga camera, you sure can optimize the software to output the maximum size of photos.
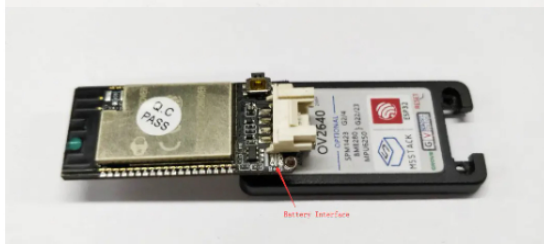
what this software can do?

Power the board via USB type -C or GROVE
Use your phone to Wi-Fi scan an AP name start with 'm5stack -' and click to connect this AP.
Open up web browser on your phone and visit `192.168.4.1`
Then here comes the picture. Video is about 5-6 frames per senconds. not super fast.

!!! Extended use of the camera module is not recommended due to its tendency to overheat.

Filming in short bursts is recommended.

Product Features

CP2104 USB-to-TTL converter

ESP32 - WROVER (PCB Antenna)
WIFI image transmission
OV2640 sensor

Include

1x M5Camera
4x LEGO block
1x Type - C USB(20cm)

Specification

Resources	Parameter
Flash	4M
RAM	4MB
Image Sensor	OV2640
Maximum resolution	200w pixel
Output format	YUV(422/420)/YCbCr422,RGB565/555,8-bit compressed data,8-/10-bit Raw RGB data
Maximum image transmission rate	UXGA/SXGA: 15fps, SVGA: 30fps, CIF: 60fps
FOV	65°
CCD Size	1/4 inch
net weight	17g
Gross weight	41g
Product Size	40*48*11mm
Package Size	75*45*30mm

EasyLoader

click to download EasyLoader

1.EasyLoader is a simple and fast program burner. Every product page in EasyLoader provides a product-related case program. It can be burned to the master through simple steps, and a series of function verification can be performed. .

After downloading the software, double - click to run the application, connect the M5 device to the computer through the data cable, select the port parameters, click **"Burn"** to start burning. (**For M5StickC burning, please Set the baud rate to 750000 or 115200**)

3. Currently EasyLoader is only suitable for Windows operating system, compatible with M5 system adopts ESP32 as the control core host. Before installing for M5Core, you need to install CP210X driver (you do not need to install with M5StickC as controller) Click here to view the driver installation tutorial

PinMap

Camera Interface PinMap

Interface	Camera Pin	M5Camera
SCCB Clock	SIOC	IO23
SCCB Data	SIOD	IO22
System Clock	XCLK	IO27
Vertical Sync	VSYNC	IO25
Horizontal Reference	HREF	IO26
Pixel Clock	PCLK	IO21
Pixel Data Bit 0	D2	IO32

Pixel Data Bit 1	D3	IO35
Pixel Data Bit 2	D4	IO34
Pixel Data Bit 3	D5	IO5
Pixel Data Bit 4	D6	IO39
Pixel Data Bit 5	D7	IO18
Pixel Data Bit 6	D8	IO36
Pixel Data Bit 7	D9	IO19
Camera Reset	RESET	IO15
Camera Power Down	PWDN	/
Power Supply 3.3V	3V3	3V3
Ground	GND	GND

GROVE Interface

Grove	M5Camera
SCL	IO13
SDA	IO4
5V	5V
GND	GND

LED Interface

LED	M5Camera
LED_Pin	IO14

The following tables are Reserved Chip Interfaces

BME280 Interface

I2C address 0x76.

BMP280	M5Camera
SCL	IO23
SDA	IO22

MPU6050 Interface

I2C address 0x68.

MPU6050	M5Camera
SCL	IO23
SDA	IO22

MIC(SPM1423) Interface

MIC(SPM1423)	M5Camera
CLK	IO4
DATA	IO2

NOTE:

Camera Power Down pin does not need to be connected to ESP32 GPIO. Instead it may be pulled down to ground with 10 kOhm resistor.

We have several patterns of camera board, the following figures shows the main differece

Related Link

Example

Firmware

M5Camera

Code

Face recognition

Serial communication-M5Camera

Serial communication-M5Core (The serial communication routine is the communication between the camera and the M5Core.)

QRcode

MPU6050 (Gyro Example after soldering MPU6050)

Source Code

M5Camera

Schematic

Power circuit

Chip peripheral circuit

USB to serial port part of the circuit

Video

M5Camera Case - Image transmission between M5Camera and M5Core