

Unit CamS3-5MP

SKU:U174-B



Description

Unit CamS3-5MP is a streamlined camera unit based on the ESP32-S3 module that supports image transmission to the cloud via Wi-Fi. Equipped with 8 MB PSRAM and 16 MB flash, it features a customized **5 MP** PY260 camera with an 88° DFoV, capable of shooting photos at up to 2592 × 1944 resolution. The built-in microSD card slot can be used to store images and other data. A built-in PDM microphone enables audio recording. The bottom HY2.0-4P port brings out the ESP32-S3 internal D+/D- pins, allowing firmware updates or USB serial communication through a connected [Grove to USB-C](#) module. Two onboard 1 × 3 headers provide access to the ESP32-S3 download port. The factory firmware offers complete shooting and **EzData** upload capability, enabling free remote image monitoring with simple configuration. This product is suitable for applications such as remote monitoring, time-lapse photography, and industrial automation.

Tutorial



Getting Started with Arduino IDE

This tutorial shows you how to program and control the Unit CAMS3-5MP with the Arduino IDE.



Unit CamS3-5MP Factory Firmware Restore Guide

This tutorial explains how to flash firmware to the Unit CAMS3-5MP using M5Burner.

Features

- Based on ESP32-S3-WROOM-1-N16R8 module with Wi-Fi support
- Wi-Fi cloud EzData or serial transmission of image data
- Integrated 5 MP PY260 camera
- Built-in microSD card slot
- Built-in PDM microphone for audio recording
- Built-in programmable indicator LED

Includes

- 1 × Unit CamS3-5MP
- 1 × Grove2USB-C
- 2 × Male-to-Male Jumper Wires
- 1 × HY2.0-4P Grove Cable (20 cm)
- 1 × LEGO Adapter

Applications

- Remote monitoring
- Time-lapse photography
- Industrial automation

Specifications

Specification	Parameter
ESP32-S3-WROOM-1-N16R8	Dual-core 240 MHz, Wi-Fi, onboard antenna
PSRAM	8 MB PSRAM
Flash	16 MB Flash
Camera	5 MP PY260
Fixed Focus	0.6 m
Supported Output Format	JPEG
DFoV	88°
MIC	PDM Microphone MSM1261D4030HCPM
Supported Memory Card	microSD card
Operating Temperature	0 ~ 40 °C
Product Size	40.0 × 24.0 × 11.0 mm
Product Weight	11.1 g
Package Size	138.0 × 93.0 × 12.0 mm
Gross Weight	19.2 g

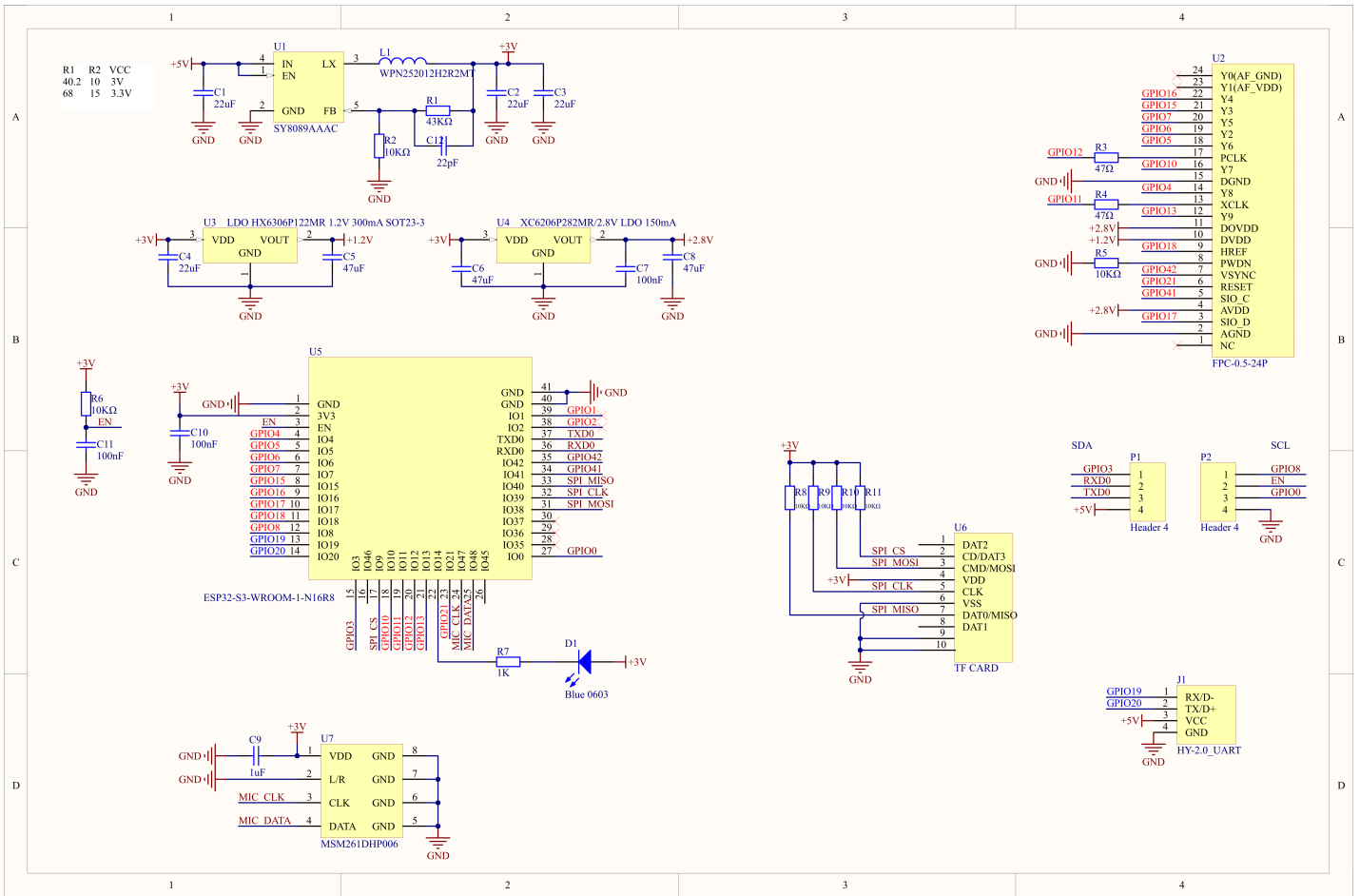
Learn

Program Download

When downloading via the supplied [Grove2USB-C](#), short the G0 and GND pins on the header with the supplied jumper wires before powering on to enter download mode.

Schematics

- [Unit CamS3-5MP Schematics PDF](#)



PinMap

HY2.0-4P

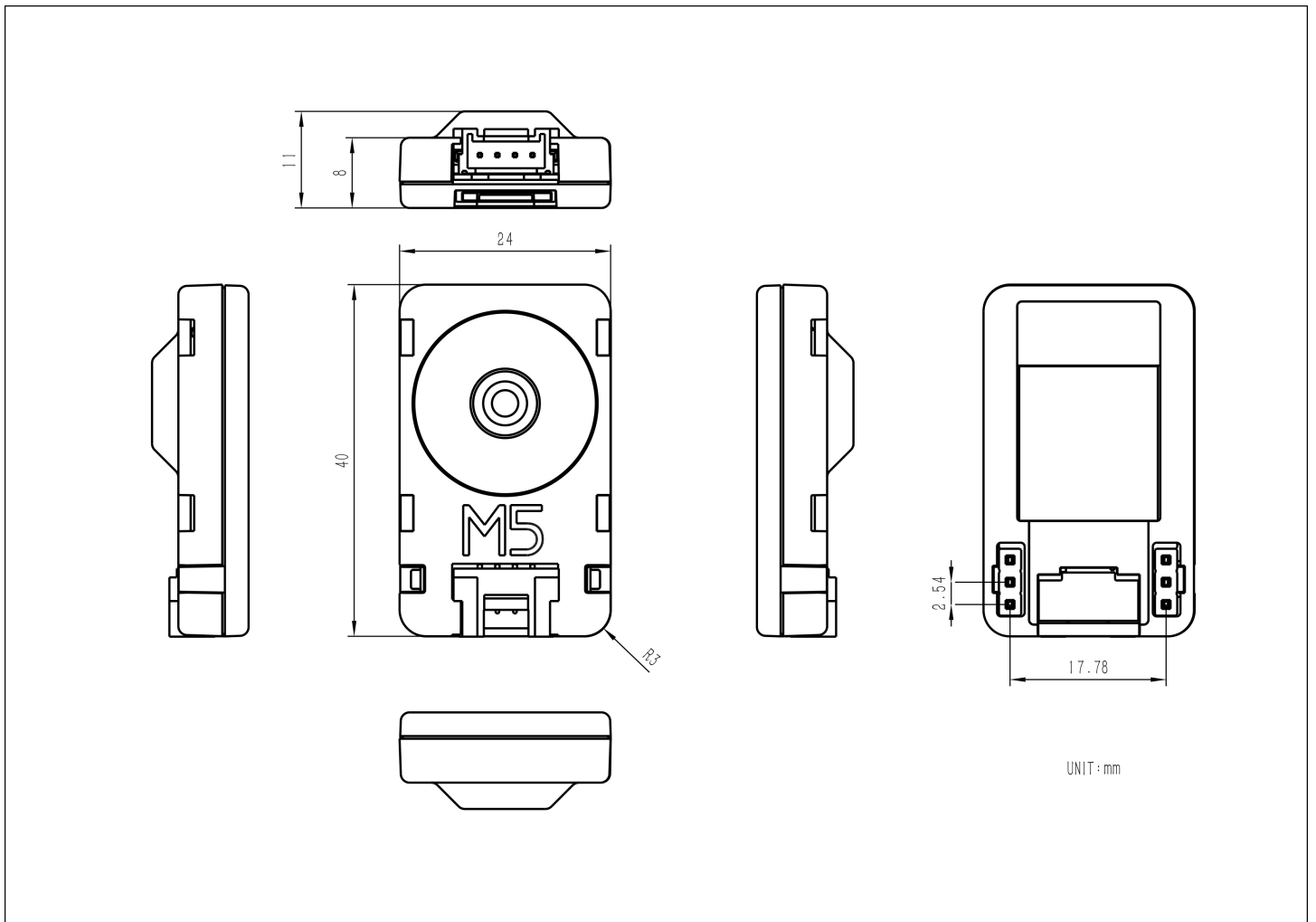
HY2.0-4P	Black	Red	Yellow	White
UART PORT	GND	5V	G20	G19

Camera

Interface	Camera Pin	ESP32-S3
SCCB Clock	SIO_C	G41
SCCB Data	SIO_D	G17
System Clock	XCLK	G11
Vertical Sync	VSYNC	G42
Horizontal Reference	HREF	G18
Pixel Clock	PCLK	G12
Pixel Data Bit 0	Y2	G6
Pixel Data Bit 1	Y3	G15
Pixel Data Bit 2	Y4	G16
Pixel Data Bit 3	Y5	G7
Pixel Data Bit 4	Y6	G5
Pixel Data Bit 5	Y7	G10
Pixel Data Bit 6	Y8	G4
Pixel Data Bit 7	Y9	G13
Camera Reset	RESET	G21
Camera Power Down	PWDN	GND
Power Supply	AVDD / DOVDD	2.8 V
Power Supply	DVDD	1.2 V
Ground	GND	GND

Unit	G19	G20	G9	G38	G39	G40	G14	G47	G48
Grove	RX/D-	TX/D+							
SD Card Socket			CS	MOSI	CLK	MISO			
Programma ble LED							LED		
Mic								CLK	DATA

Model Size



Datasheets

- o [ESP32-S3-WROOM-1-N16R8](#)

- [MSM1261D4030HCPM \(PDM Mic\)](#)

Softwares

ESP-IDF

- [Unit CamS3-5MP User Demo](#)

Compatibility

The Unit CamS3-5MP camera is not compatible with programs for the Unit CamS3.

EasyLoader

Easyloader	Download	Note
Unit CamS3-5MP Firmware Easyloader	Download	/

After flashing, connect your computer or phone to the hotspot named **UnitCAMS3-wiFi**, enter 192.168.4.1 in the browser, and click **Stream** to view the image. Built-in EzData features include cloud viewing, audio recording, SD card storage, and more.

Video

- Unit CamS3-5MP basic function introduction and configuration tutorial

[9b258811e7e5a229195bc3b521f3f1c2.mp4](#)

Product Comparison

Product	SoC	Memory & Flash	Camera	Microphone	Download Tool	Download Method
Unit CAM (U109)	ESP32-WROOM-32E	520 KB SRAM, 4 MB SPI flash	OV2640 2 MP	/	ESP32- Downloader	USB-TTL
Unit CAMS3 (U174)	ESP32-S3-WROOM-1- N16R8	8 MB PSRAM, 16 MB Flash	OV2640 2 MP	MSM1261D4030 HCPM	Grove2USB-C	CDC
Unit CAMS3 5MP (U174-B)	ESP32-S3-WROOM-1- N16R8	8 MB PSRAM, 16 MB Flash	PY260 5 MP	MSM1261D4030 HCPM	Grove2USB-C	CDC

To compare information on the Unit CAM series products, you can visit the [Product Selection Table](#), check the target products, and get the comparison results. The selection table covers key information such as core parameters and functional features, and supports comparison of multiple products simultaneously.