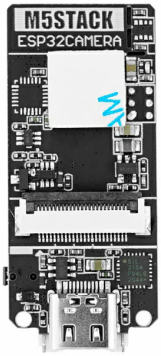
ESP32-CAM PSRAM

SKU:U017-PCBA



Description

ESP32CAM-PSRAM is a fisheye wide-angle image recognition development board with a field of view of 150°, integrating an ESP32 (4MB Flash + 520KB RAM + 4MB PSRAM) chip and a 2MP camera (OV2640). It supports WiFi image transmission and USB port debugging.

The hardware comes pre-installed with firmware, and you can develop programs using ESP-IDF to run WiFi camera applications. The default program outputs an image size of **600 x 800**, but you can optimize the program to output larger sizes.

Usage process:

- Turn on your phone's Wi-Fi, scan and connect to the AP hotspot starting with "m5stack-".
- Open the browser on your phone and visit `192.168.4.1` to enter the monitoring page and get real-time video.
- The video frame rate is approximately 5-6 frames per second.

Since the development board can generate a WIFI hotspot AP, you can use a phone, PC, or other devices to wirelessly obtain camera images via WIFI, or you can obtain camera images via the wired HY2.0-4P interface on the development board.

Features

- Designed based on ESP32
- WIFI image transmission
- CP2104 USB TTL
- 150° wide-angle lens
- OV2640 vision sensor

Includes

- 1 x ESP32-CAM PSRAM
- 1 x Camera (OV2640)

Applications

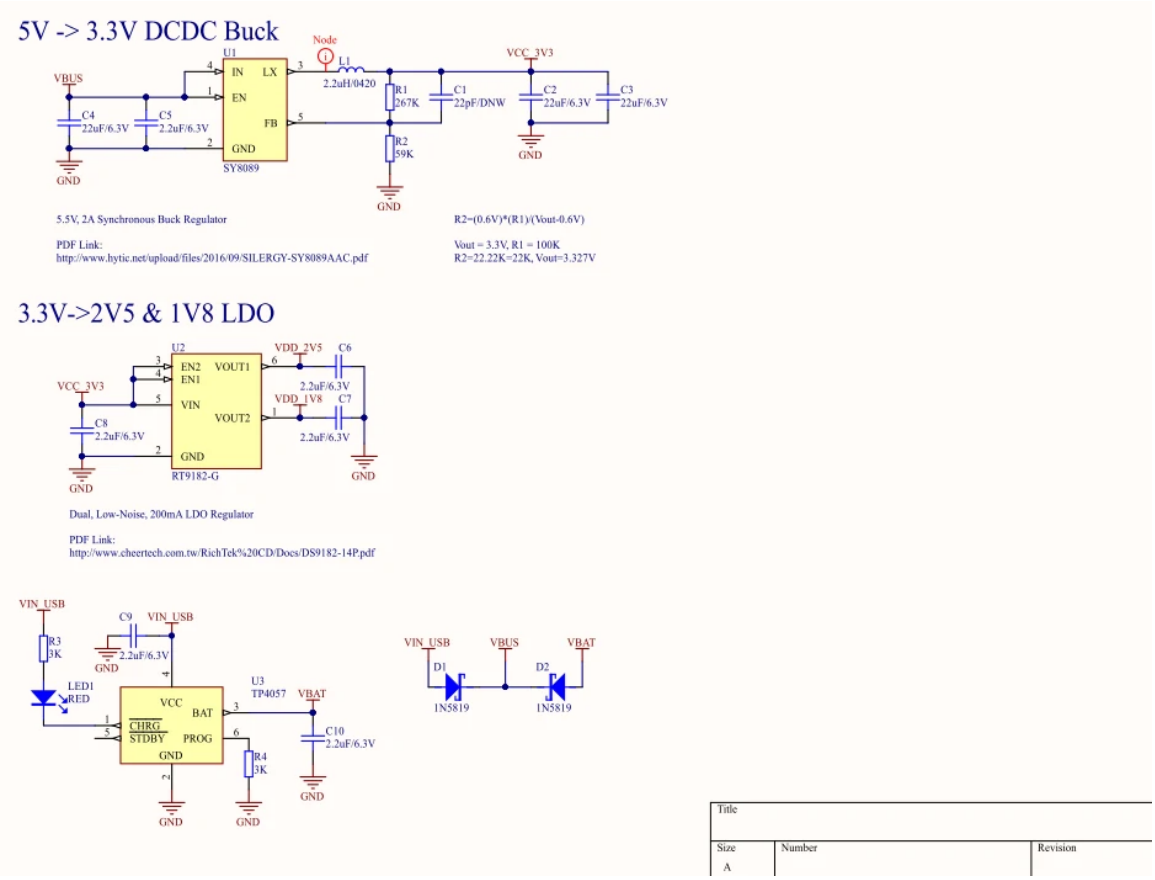
- DIY projects
- Time-lapse photography
- IoT monitoring

Specifications

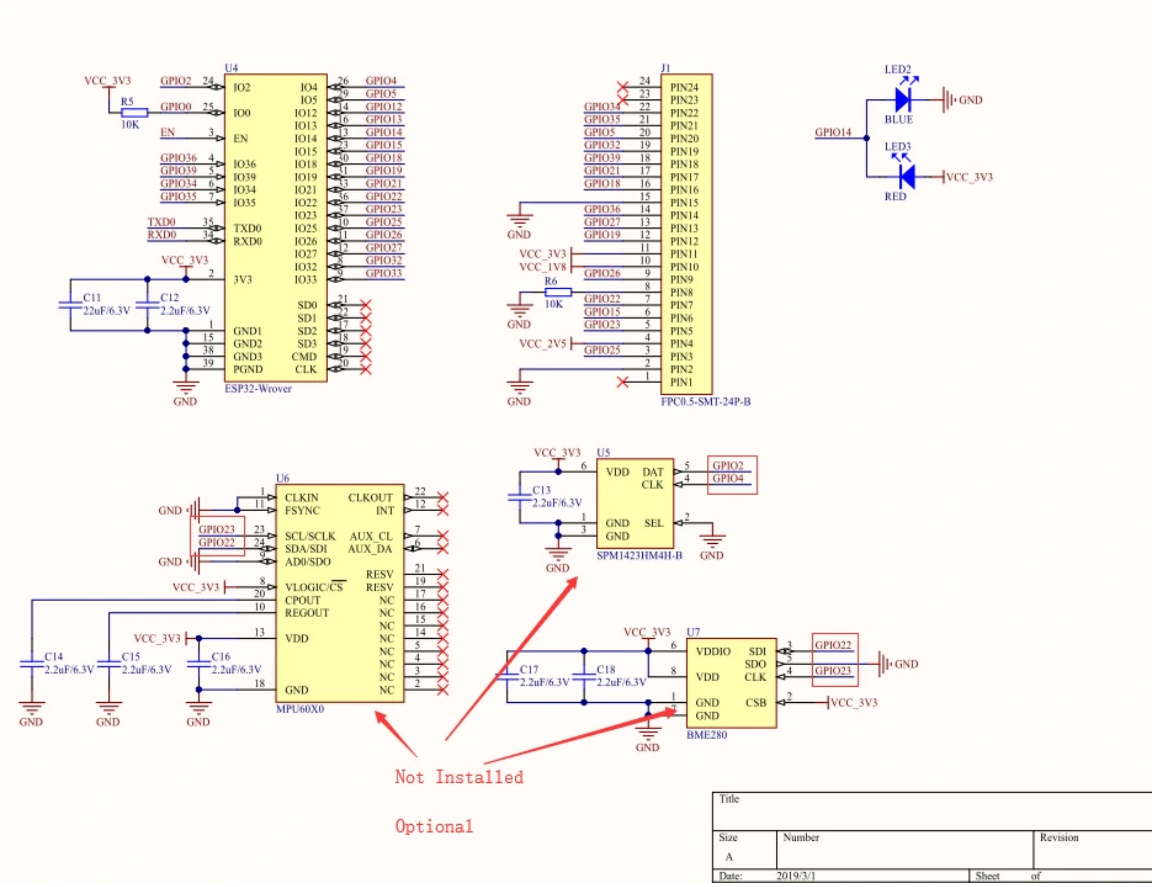
Specification	Parameter
Flash/RAM	4MB/500KB
PSRAM	4MB PSRAM
Image Sensor	OV2640
Max Resolution	2MP
Output Format	YUV (422/420) /YCbCr422, 8-bit compressed data, RGB565/555, 8-/10-bit Raw RGB data
Field of View	150°
CCD Size	1/4 inch
Product Size	47 x 20 x 10mm
Package Size	136 x 92 x 13mm
Product Weight	9.4g
Gross Weight	11.8g

Schematics

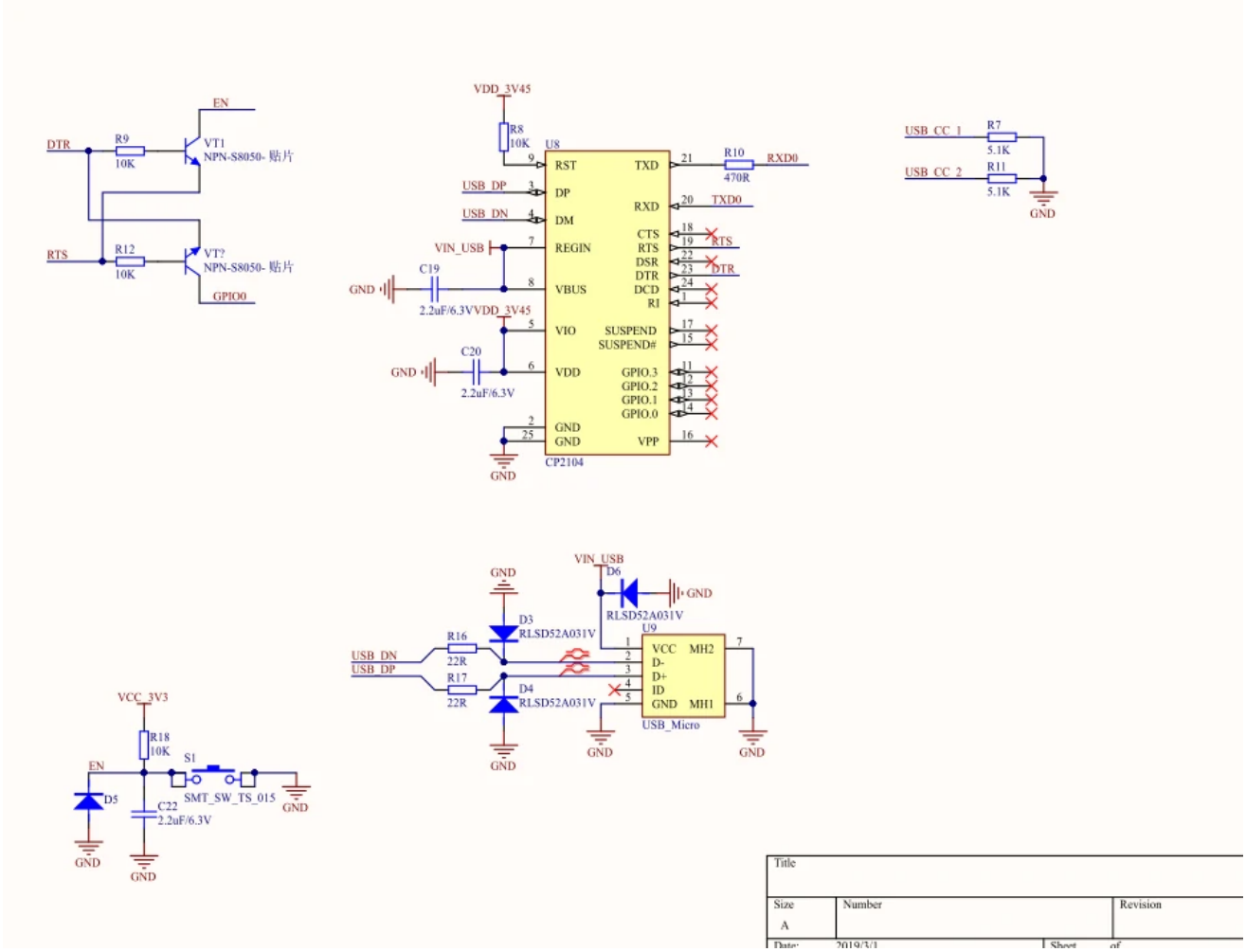
Power Circuit



Chip Peripheral Circuit



USB to Serial Circuit



PinMap

Camera

Interface	Camera Pin	ESP32CAM-PSRAM
SCCB Clock	SIOC	G23
SCCB Data	SIOD	G22
System Clock	XCLK	G27
Vertical Sync	VSYNC	G25
Horizontal Reference	HREF	G26
Pixel Clock	PCLK	G21
Pixel Data Bit 0	D2	G32
Pixel Data Bit 1	D3	G35
Pixel Data Bit 2	D4	G34
Pixel Data Bit 3	D5	G5
Pixel Data Bit 4	D6	G39
Pixel Data Bit 5	D7	G18
Pixel Data Bit 6	D8	G36
Pixel Data Bit 7	D9	G19
Camera Reset	RESET	G15
Camera Power Down	PWDN	see Note 1
Power Supply 3.3V	3V3	3V3
Ground	GND	GND

HY2.0-4P Interface

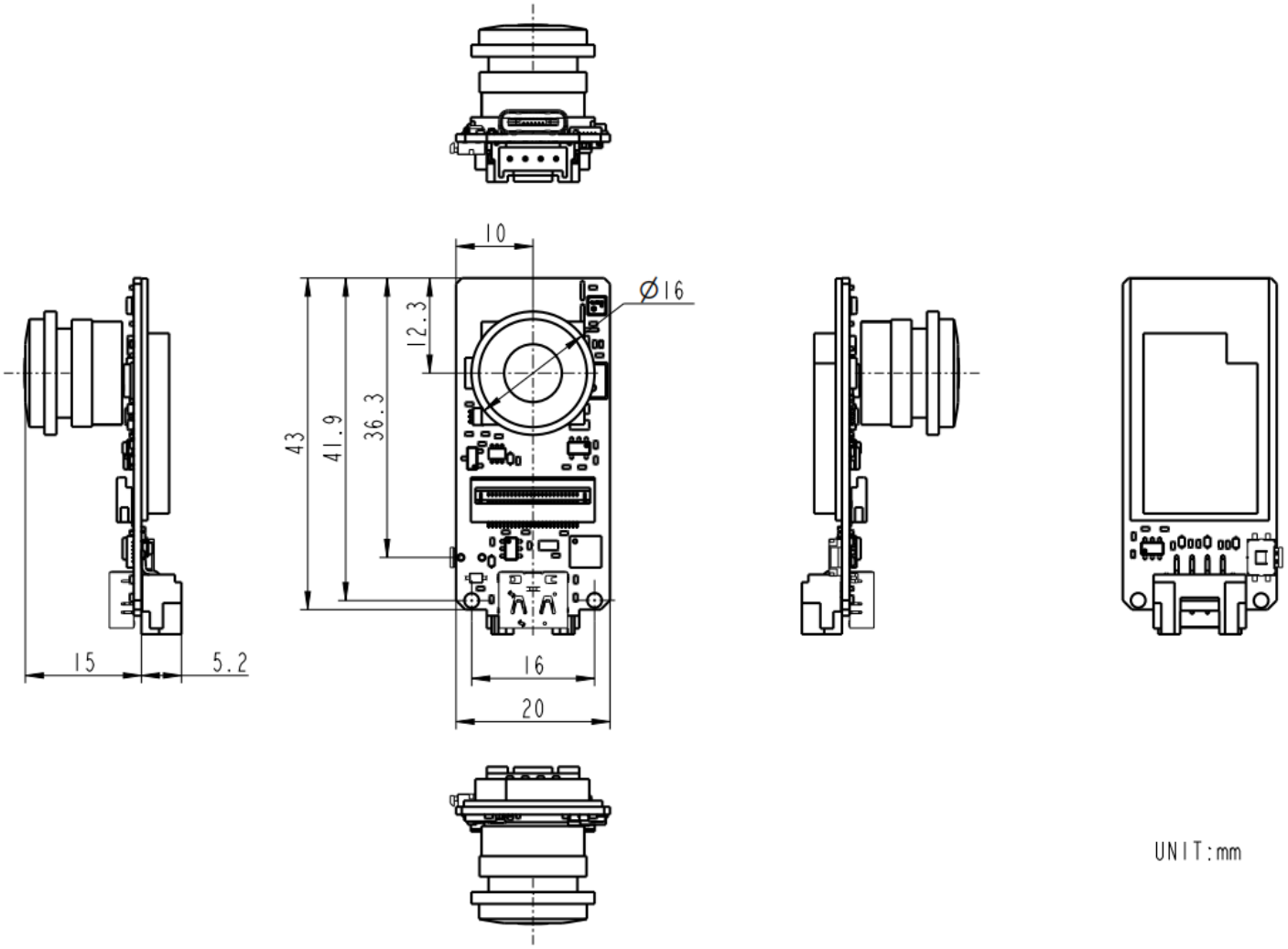
HY2.0-4P	ESP32CAM-PSRAM
SCL	G13
SDA	G4
5V	5V
GND	GND

LED

LED	ESP32CAM-PSRAM
LED_Pin	G14

The **PIN8 (PDWN)** pin of the OV2640 chip is an enable pin, which is enabled in this board by connecting to ground through a 12KΩ pull-down resistor, entering working mode. When the PIN8 (PDWN) pin is pulled high, it will enter **Camera Power Down** mode.

Model Size



Datasheets

- ESP32
- OV2640

Softwares

ESP-IDF

- M5Stack-Camera

Arduino

- ESP32-CAM PSRAM Camera WebServer Example

EasyLoader

Easyloader	Download Link	Note
ESP32-CAM PSRAM Test Easyloader	download	/

Product Comparison

View M5 Camera Series/Product Differences