



WT-ESP32-CAM

Version 1.0.1

Release Date: Jun.17, 2020

Disclaimer and Copyright Notice

Information in this paper, including URL references, is subject to change without prior notice.

This document is provided “as is” with no warranties whatsoever, including any warranty of merchantability, non-infringement, fitness for any particular purpose, or any warranty otherwise arising out of any proposal, specification or sample. All liability, including liability for infringement of any patent rights, relating to use of information in this document is disclaimed. No licenses, either express or implied, by estoppel or otherwise, to any intellectual property rights are granted herein.

All trade names, trademarks and registered trademarks mentioned in this document are property of their respective owners, and are hereby acknowledged.

Revision History				
Version	Author	Reviewer	Date	Notes
1.1.0	YANG		Jun.17, 2020	First release

Contents

1. Product Overviews	5
2. Main Features	5
3. Product Specifications	6
4. WT-ESP32-CAM Module Image Output Format\ Rate.....	7
5. WT-ESP32-CAM Pin Definitions	8
6. Minimum System Diagram.....	9
7. Configuration Description.....	10
8. Contact Us	10

1. Product Overviews



Front view



Back view

WT-ESP32-CAM is a small-size camera development board based on ESP32, which integrates WIFI+Bluetooth solution. The development board can work independently as a minimum system. The development board adopts DIP package, and users only need to directly plug in the bottom board to use, which effectively reduces the threshold of enterprise research and development, shortens the product development cycle, realizes the rapid production of products, and is convenient for various IoT hardware terminal occasions.

2. Main Features

*The product is highly integrated and powerful.

WT-ESP-CAM highly integrates the ultra-small 802.11 b/g/n WI-FI+BT/BLE SOC module, of which the main frequency is up to 240MHZ, the computing processing capacity reaches 600DMIPS, with TF card extension, supporting OV2640 and OV7670 cameras, and built-in flash. It is currently a very competitive small-size camera module in the industry.

*Image output and upload are simple and convenient

Support multiple image formats output: JPEG (only supported by OV2640) / BMP / GRAYSCALE. Wi-Fi image upload speed is fast.

*Easy to upgrade and maintain

Support serial port local upgrade and remote firmware upgrade (FOTA).

*Rich interfaces

Supports UART/SPI/I2C/PWM/ADC/DAC and other interfaces, which allows developers to use their imagination to perform secondary development.

3. Product Specifications

Module name	WT-ESP32-CAM
Package	DIP-16
Size	27*40.5*4.5 (± 0.2) mm
Camera	OV2640 (Factory default)
SPI Flash	32Mbit by default
RAM	Internal 520KB+External 8MB PSRAM
Bluetooth	Bluetooth 4.2 BR/EDR and BLE standard
Wi-Fi	802.11 b/g/n/e/i
Interfaces	UART, SPI, I2C, PWM
TF card supported	Maximum support 4G
IO ports	9
Series Rate	115200 bps by default
Image output format	JPEG(only supported by OV2640),BMP,GRAYSCALE
Frequency range	2400 ~2483.5MHz
Antenna type	On-board PCB antenna, gain 2dBi
TX power	802.11b: 17 ± 2 dBm (@11Mbps)
	802.11g: 14 ± 2 dBm (@54Mbps)
	802.11n: 13 ± 2 dBm (@MCS7)
Receiving sensitivity	CCK, 1 Mbps : -90dBm
	CCK, 11 Mbps: -85dBm
	6 Mbps (1/2 BPSK): -88dBm

	54 Mbps (3/4 64-QAM): -70dBm
	MCS7 (65 Mbps, 72.2 Mbps): -67dBm
Power consumption	Turn off the flash: 180mA@5V
	Turn on the flash and adjust the brightness to the maximum: 310mA@5V
	Deep-sleep: Minimum power consumption to 6mA@5V
	Moderm-sleep: Minimum to 20mA@5V
	Light-sleep: Minimum to 6.7mA@5V
Security	WPA/WPA2/WPA2-Enterprise/WPS
Power supply range	4.75-5.25V
Operating temperature	-20 °C ~ 70 °C
Storage environment	-40 °C ~ 125 °C , < 90%RH
Weight	10g

4. WT-ESP32-CAM Module Image Output Format\ Rate

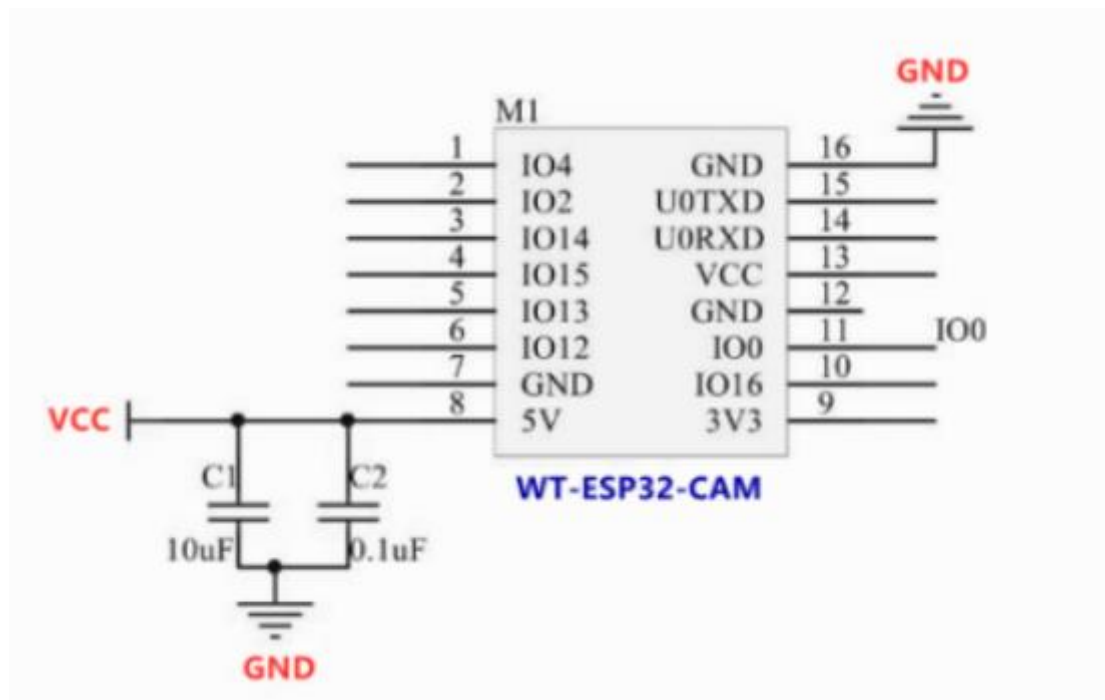
Format \ Size	QQVGA	QVGA	VGA	SVGA
JPEG	6	7	7	8
BMP	9	9	—	—
GRAYSCALE	9	8	—	—

Note: test environment: camera model: OV2640 XCLK: 20MHz, the module transmits pictures to the computer browser through WiFi.

5. WT-ESP32-CAM Pin Definitions

CAM	ESP32	SD	ESP32
D0	PIN5	CLK	PIN14
D1	PIN18	CMD	PIN15
D2	PIN19	DATA0	PIN2
D3	PIN21	DATA1/闪光灯	PIN4
D4	PIN36	DATA2	PIN12
D5	PIN39	DATA3	PIN13
D6	PIN34		
D7	PIN35		
XCLK	PIN0		
PCLK	PIN22		
VSYNC	PIN25		
HREF	PIN23		
SDA	PIN26		
SCL	PIN27		
POWER PIN	PIN32		

6. Minimum System Diagram



7. Configuration Description

