ESP32 Dev Kit C V2

with CP2102 or CH340

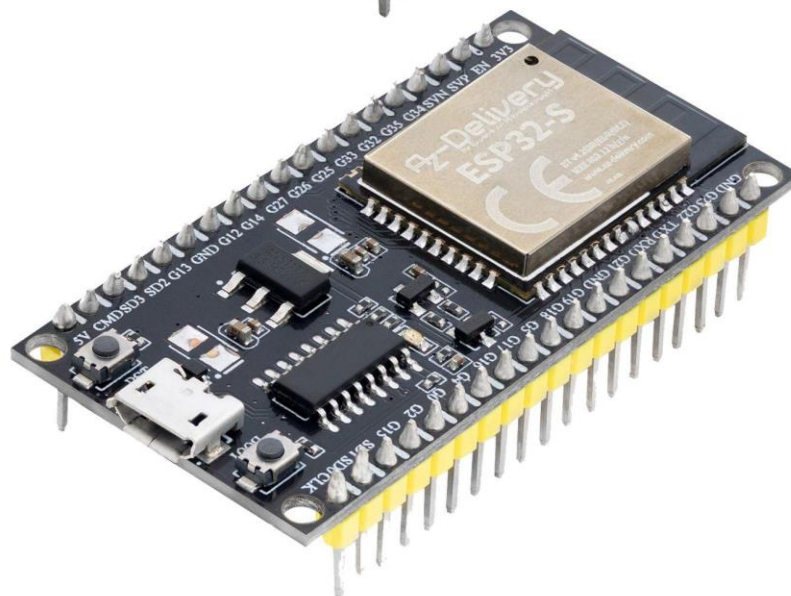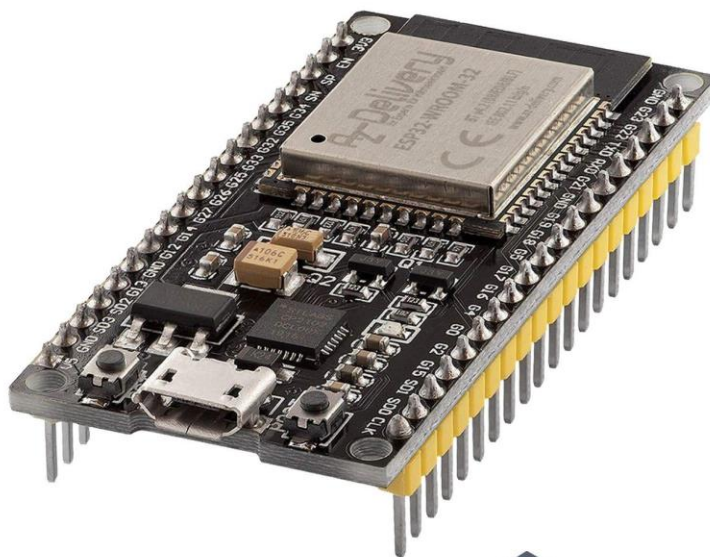# Table of Contents

Features

NodeMCU is an open source IoT platform. ESP32 is a series of low cost, low power system-on-chip (SoC) microcontrollers with integrated Wi-Fi 6 dual-mode Bluetooth.
The ESP32 series employs a Tensilica Xtensa LX6 microprocessor in both dual-core and single-core variations, with a clock rate of up to 240 MHz. ESP32 is highly integrated with built-in antenna switches, RF balun, power amplifier, low-noise receive amplifier, filters, and power management modules.

- Able to achieve ultra-low power consumption
- Built-in ESP-WROOM-32 chip
- Breadboard Friendly module
- Light Weight and small size
- On-chip Hall and temperature sensor
- Uses wireless protocol 802.11b/g/n
- Built-in wireless connectivity capabilities
- Built-in PCB antenna on the ESP32-WROOM-32
- Capable of PWM, 12C, SPI, UART , 1-wire, 1 analog pin
- Uses CP2102(CH340) USB Serial Communication interface module
- Programmable with ESP-IDF Toolchain, LuaNode SDK supports Eclipse project (C language)

Pinout

Value	Expected	Actual	Error %
10	0.13	0.21	2.4
20	0.26	0.33	2.1
127	1.64	1.63	-0.3
200	2.58	2.53	-1.5
240	3.11	3.01	-3
255	3.3	3.19	-3.3

NOTE: The absolute maximum current drawn per one GPIO is 10mA.

Specifications

Power supply voltage (USB)	5V DC
Input/Output voltage	3.3 V DC
Operating current required	min. 500 mA
SoC	ESP32-WROOM 32
CPU	Xtensa® single-dual-core 32-bit LX6
Clock frequency range	80 MHz / 240 MHz
RAM	512 kB
External flash memory	4 MB
I/O pins	34
ADC channels	18
ADC resolution	12-bit
DAC channels	2
DAC resolution	8-bit
Communication interfaces	SPI, I2C, I2S, CAN, UART, PWM, SDIO, GPIO, ADC, DAC
Wi-Fi protocols	802.11 b/g/n (802.11n up to 150 Mbps)
Wi-Fi frequency	2.4 GHz – 2.5 GHz
Wireless Network Type	Station / SoftAP / SoftAP + Station / P2P
Security Type	WPA / WPA2 / WPA2-Enterprise / WPS
Encryption Type	AES / RSA / ECC / SHA
Network Protocol	IPv4 / IPv6 / SSL / TCP / UDP / FTP / HTTP / MQTT
Firmware Upgrade	UART Download / OTA / Host

Bluetooth Protocol	V4.2 BR/EDR and BLE specification
Bluetooth Specifications	NZIF Receiver with -98dBm sensitivity Class-1, Class-2 and Class-3 transmitter AFH, CVSD and SBC
Wireless antenna	on-Board PCB antenna
Dimensions	56 × 28 × 13 mm (2.2 × 1.1 × 0.5 in)