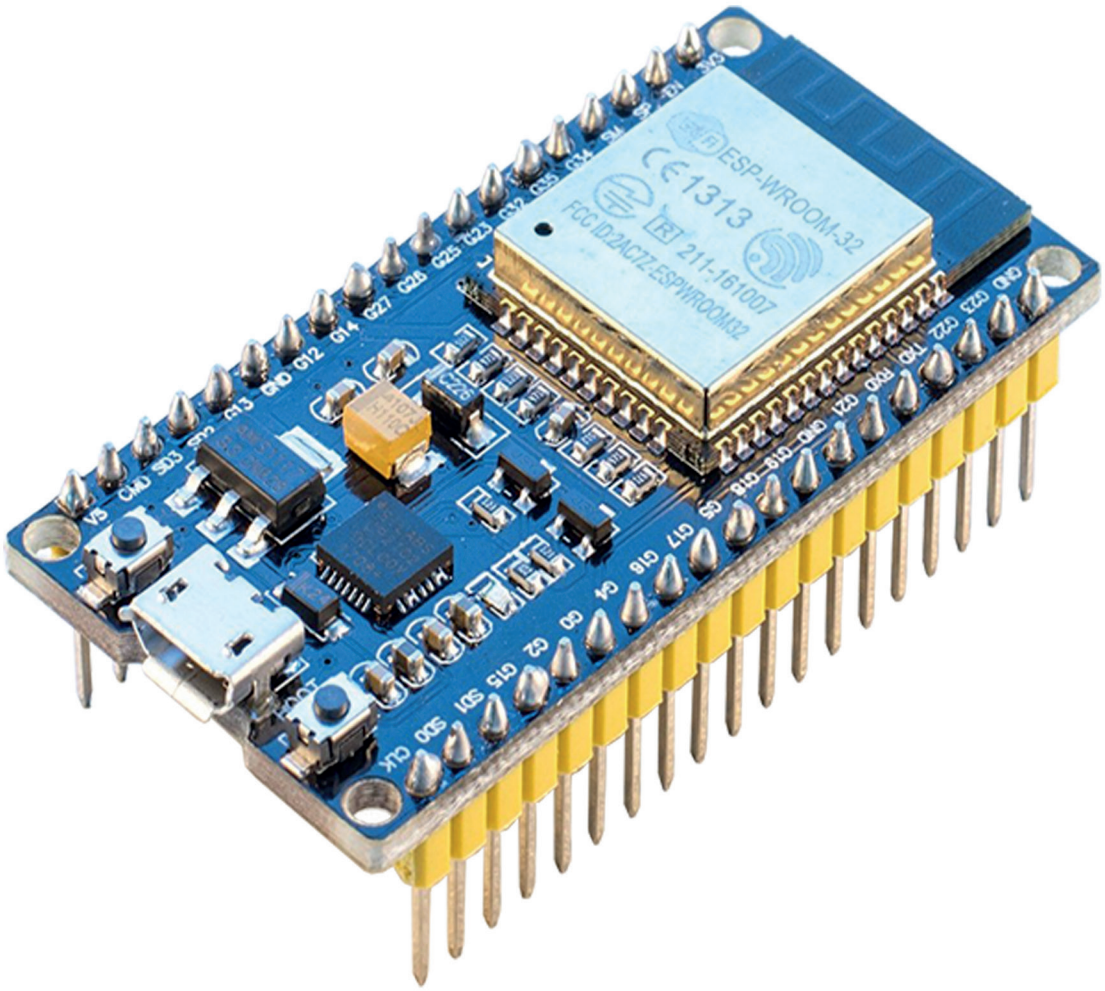
AZ-Delivery

Ihr Experte für Mikroelektronik!

# ESP-32 NodeMCU Developmentboard Datenblatt



## Contents:

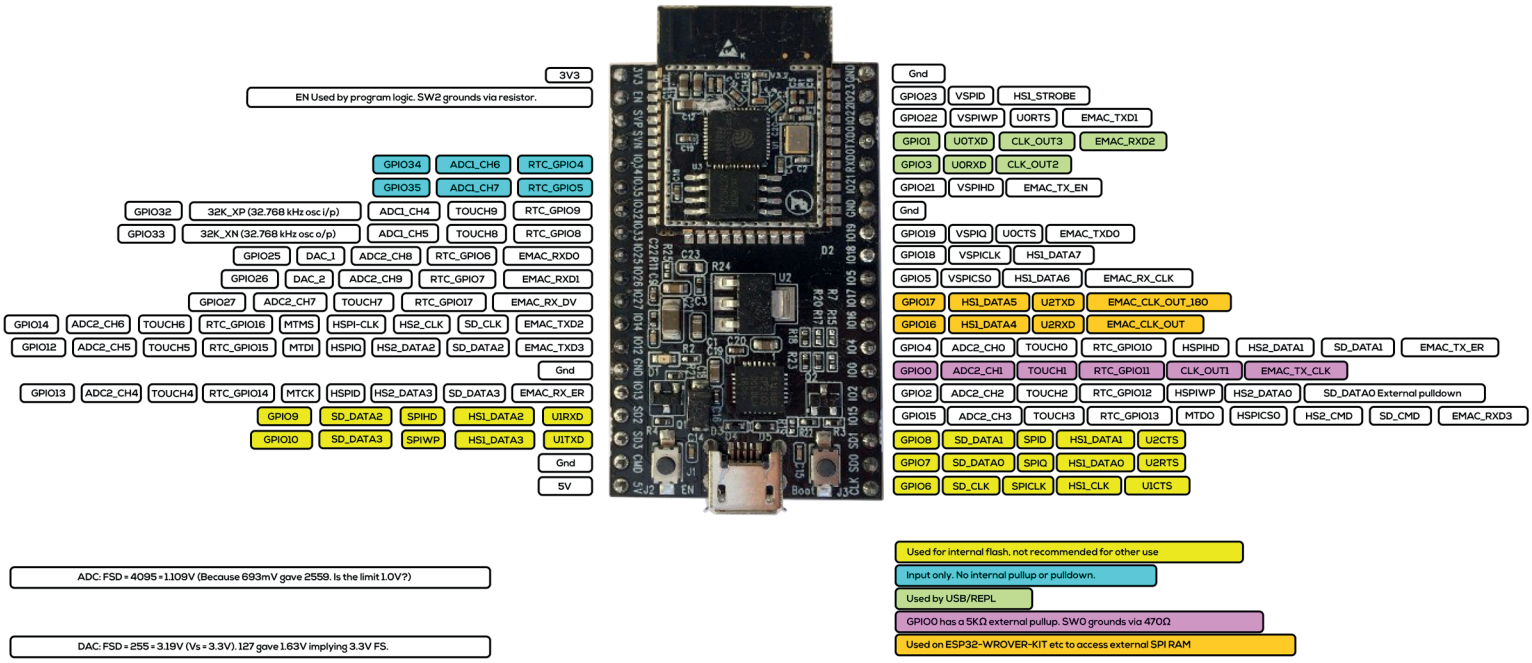
# 1. Features

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 & 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.

## Features:

- 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, I2C, SPI, UART, 1-wire, 1 analog pin.
- Uses CP2102 USB Serial Communication interface module.
- Programmable with ESP-IDF Toolchain, LuaNode SDK supports Eclipse project (C language).

## 2. 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 |

Remapping peripherals:
uart = machine.UART(1,baudrate=115200,tx=25,rx=26)

ESP32-D2WD is the chip with embedded 2MB flash and the internal flash is connected to different pins (GPIO16, GPIO17, SD_CMD, SD_CLK, SD_DATA_0 and SD_DATA_1 )

**Safety Precaution:**

**All GPIO runs at 3.3V !!!**

## 3. Specifications

| | |
|---|---|
| **Wireless Standard** | FCC/CE/IC/TELEC/KCC/SRRC/NCC |
| **Wireless Protocol** | 802.11 b/g/n/d/e/l/k/r |
| **Frequency Range** | 2.4 - 2.5 GHz |
| **Bluetooth Protocol** | Bluetooth v4.2 BR/EDR and BLE specification |
| **Bluetooth Specifications** | NZIF Receiver with -98dBm sensitiivity<br>Class-1, Class-2 and Class-3 transmitter<br>AFH, CVSD and SBC |
| **Memory** | 16MB Flash, 520KB SRAM |
| **Wireless Form** | On-board PCB Antenna |
| **IO Capability** | UART, I2C, SPI, I2S, PWM, SDIO, GPIO, ADC, DAC |
| **Electrical Characteristic** | 3.3 V Operated<br>15 mA output current per GPIO pin<br>80 mA average working current |
| **Operating Temperature** | -40 to +125 ºC |
| **Wireless Network Type** | Station / SoftAP / SoftAP + Station / P2P |
| **Security Type** | WPA / WPA2 / WPA2-Enterprise / WPS |
| **Encryption Type** | AES / RSA / ECC / SHA |
| **Firmware Upgrade** | UART Download / OTA / Host |
| **Network Protocol** | IPv4, IPv6, SSL, TCP / UDP / FTP / HTTP / MQTT |
| **User Configuration** | AT + Order Set, Web Android / iOS, Cloud Server |