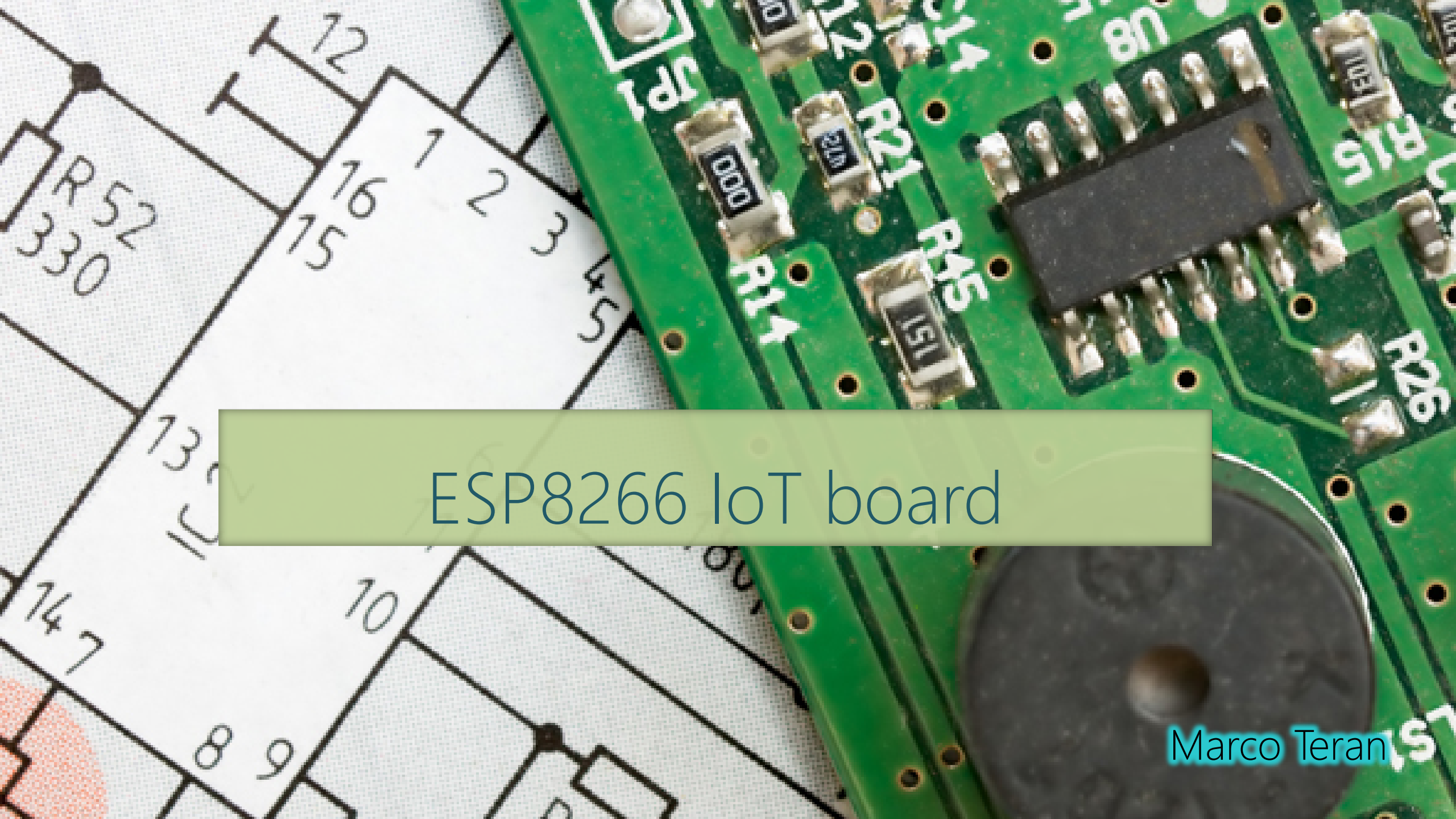
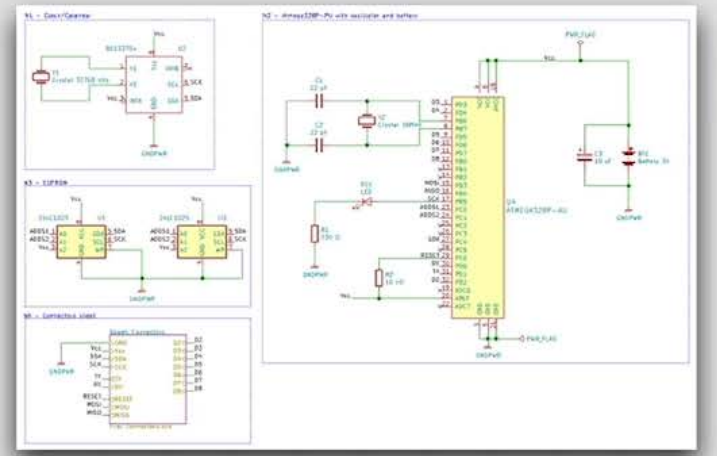
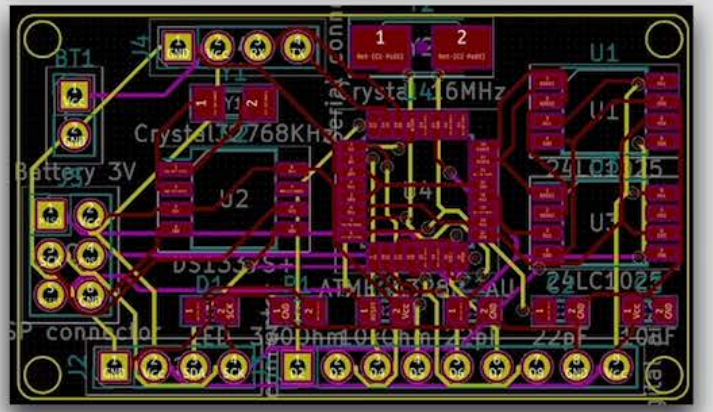


ESP8266 IoT board

Marco Teran

The Kicad design workflow





Start

Rules check

Eeschema

Schematic library editor

Cvpcb

PCB footprint editor

Netlist

Design Rules Check

Pcbnew

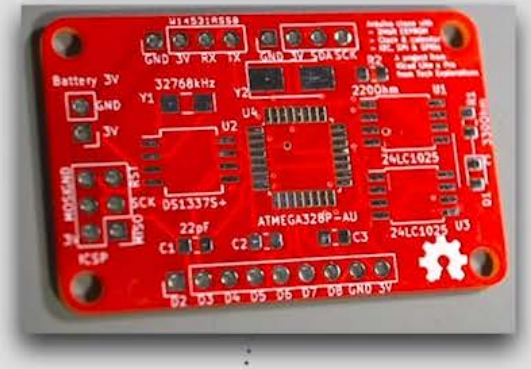
Footprint library editor

Gerber files

Gerber Test

Fabrication

Finish



Decripción

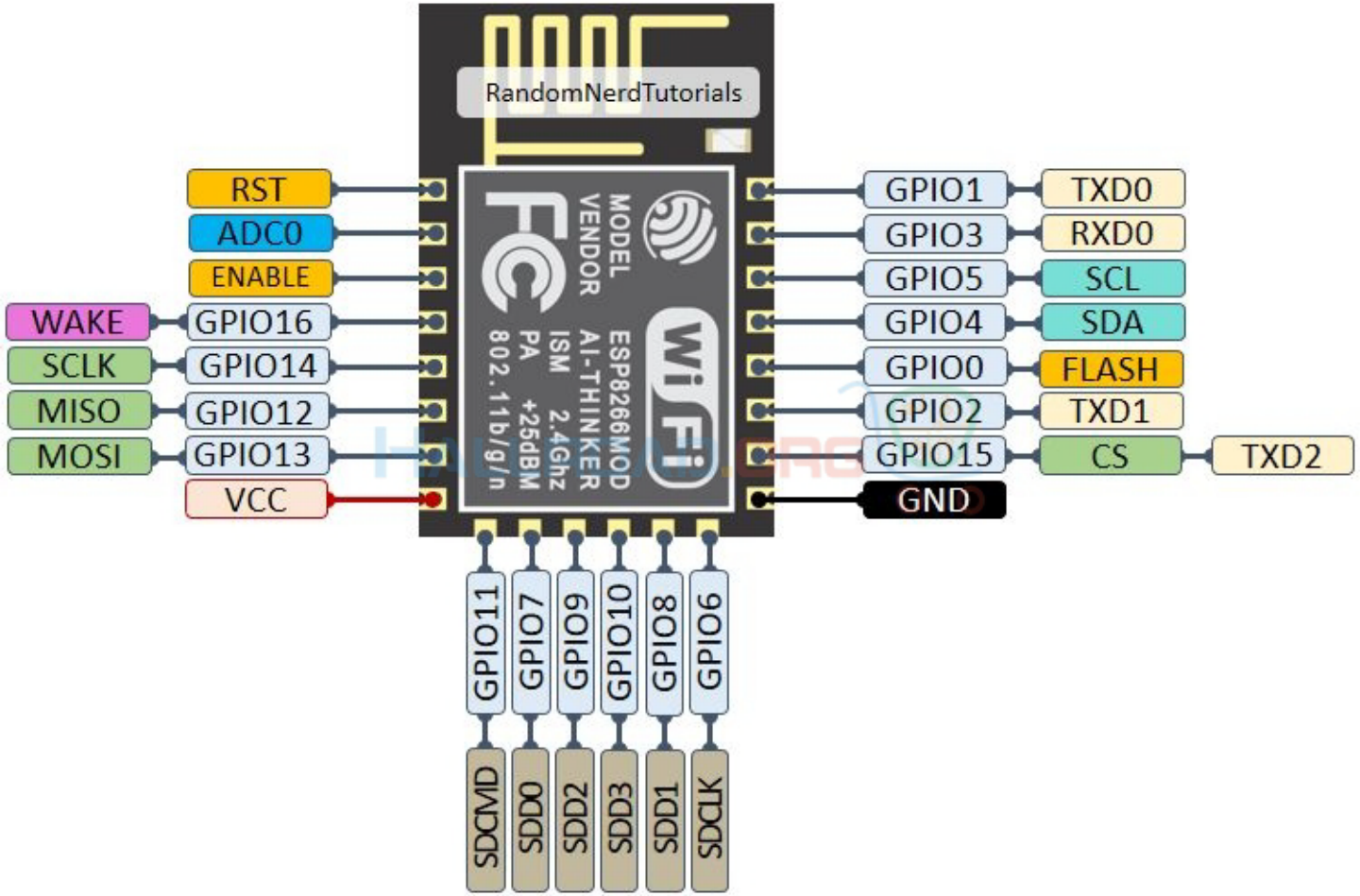
Board de desarrollo IoT habilitada para Wi-Fi que sirva como un nodo de sensado Wi-Fi endpoint .Debe tener un circuito de carga de batería Li-Po incorporado. el módulo se basa en un amplio rango de exploración del chip del sistema ESP8266 de expressif. Microcontrolador WiFi ESP8266 con un reloj de 80 MHz a un voltaje lógico de 3.3V. Este microcontrolador contiene un chip núcleo de Tensilica.

Características

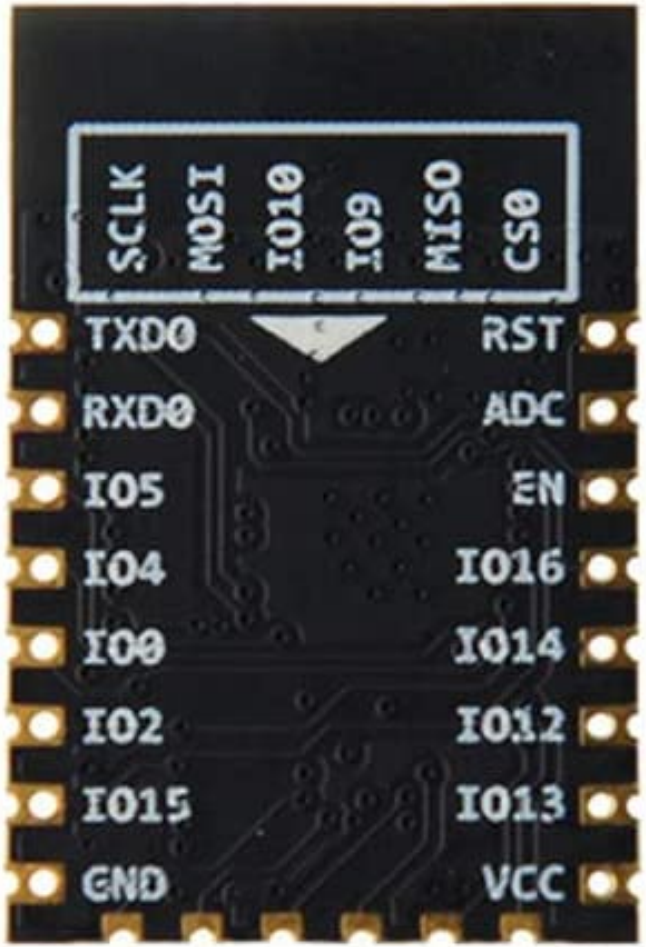
- ESP8266 @ 80MHz with 3.3V logic/power
- 4MB of FLASH (32 MBit)
- Regulador de 3,3V con salida de corriente máxima de 500mA
- 4 Convertidor USB-Serial a bordo CP2104
- 9 pines GPIO (pueden ser usados como I2C y SPI)
- 1 entrada analógica (1.0V máx)
- Cargador LiPoly de 100mA incorporado con LED indicador de estado de carga
- LED de propósito general. LED azul para funciones de sistema.
- Pin de activación de alimentación
- 4 agujeros de montaje
- Botón de reinicio

ESP8266 ESP-12

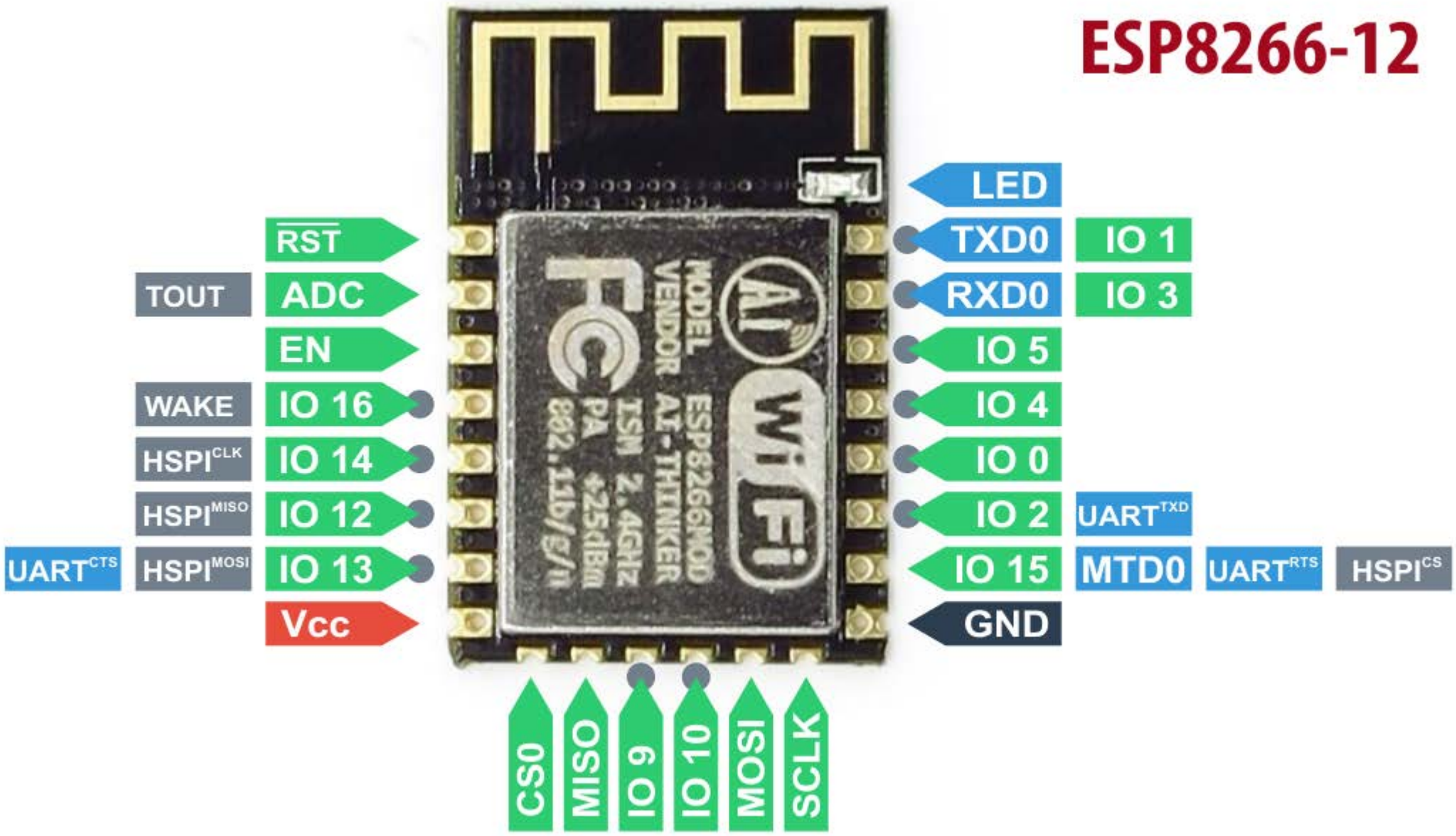
ESP8266 ESP-12



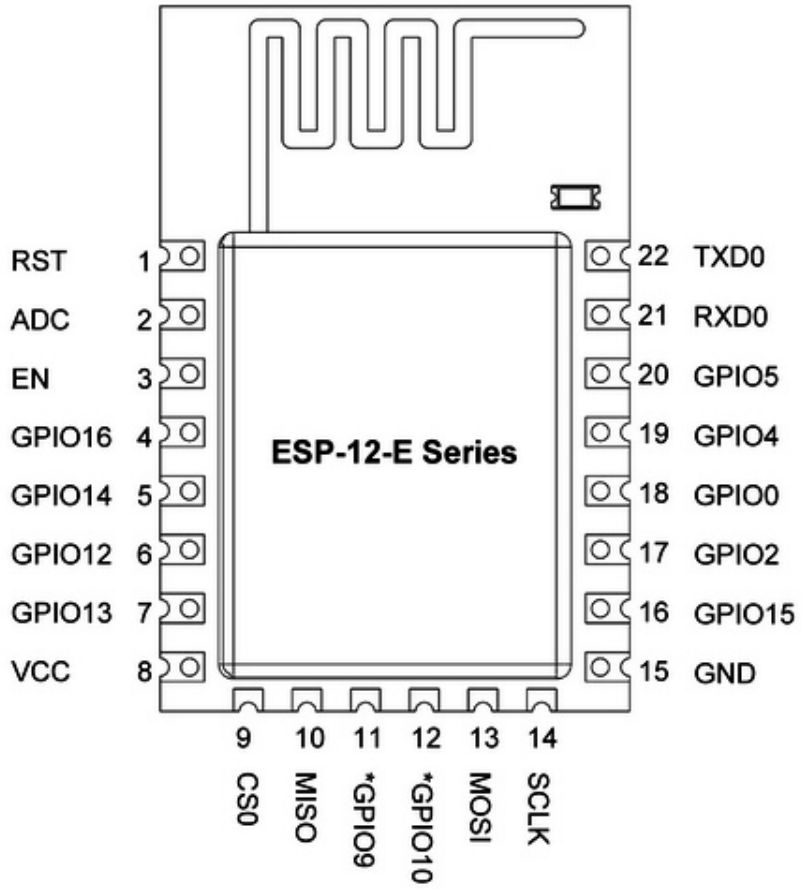
ESP8266 ESP-12

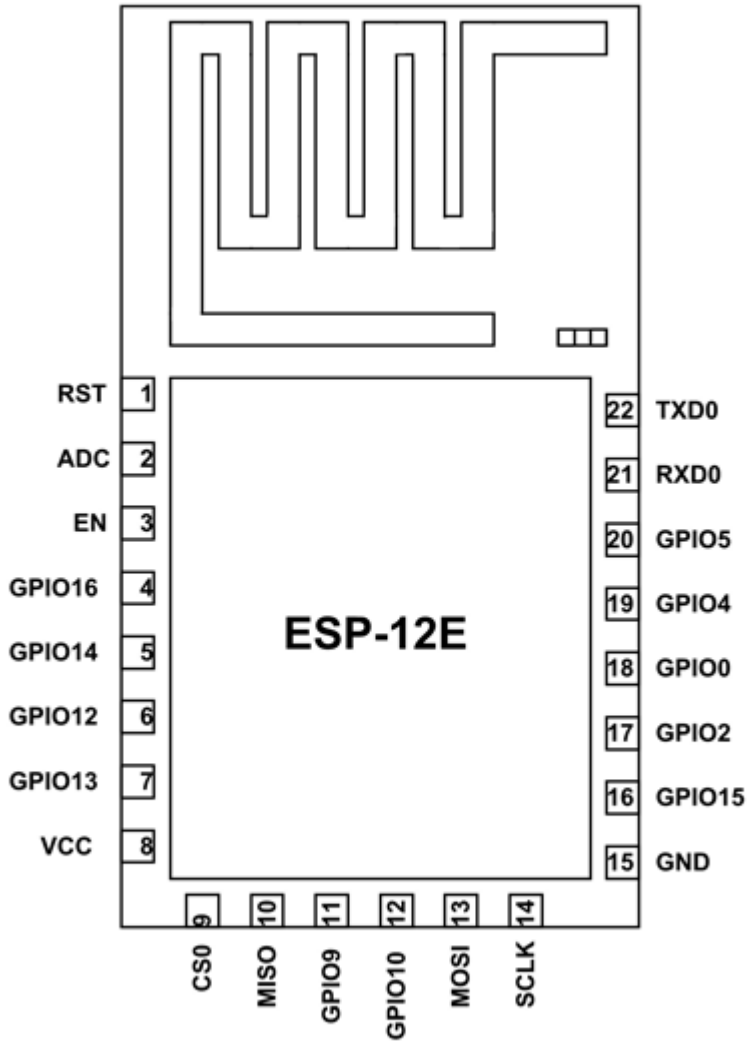


ESP8266 ESP-12

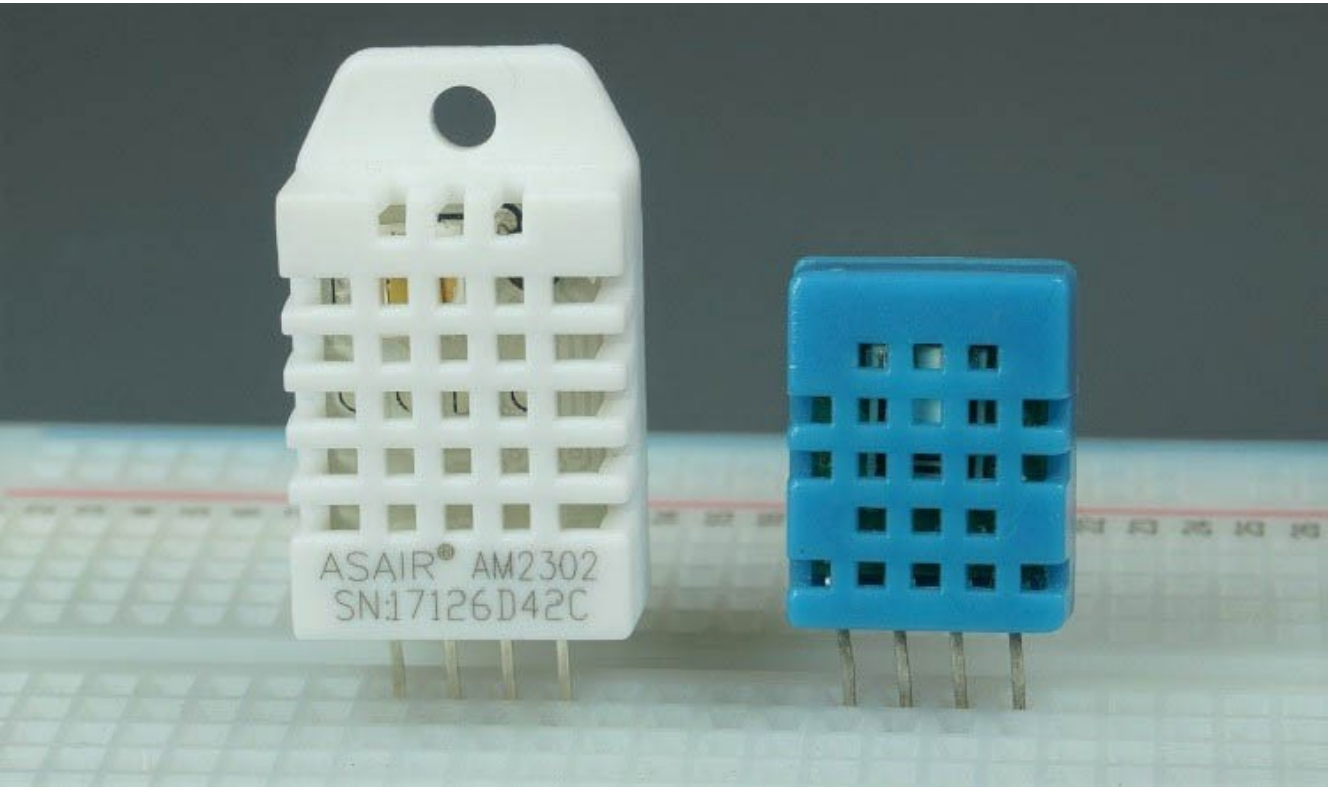


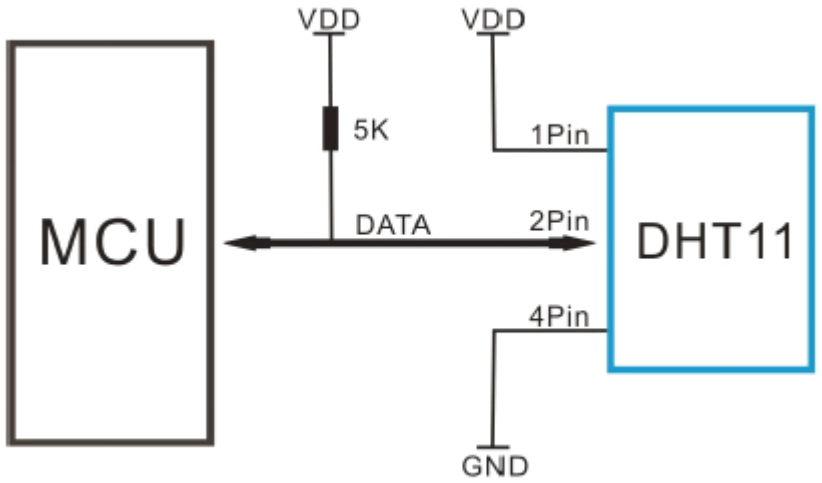
ESP8266 ESP-12





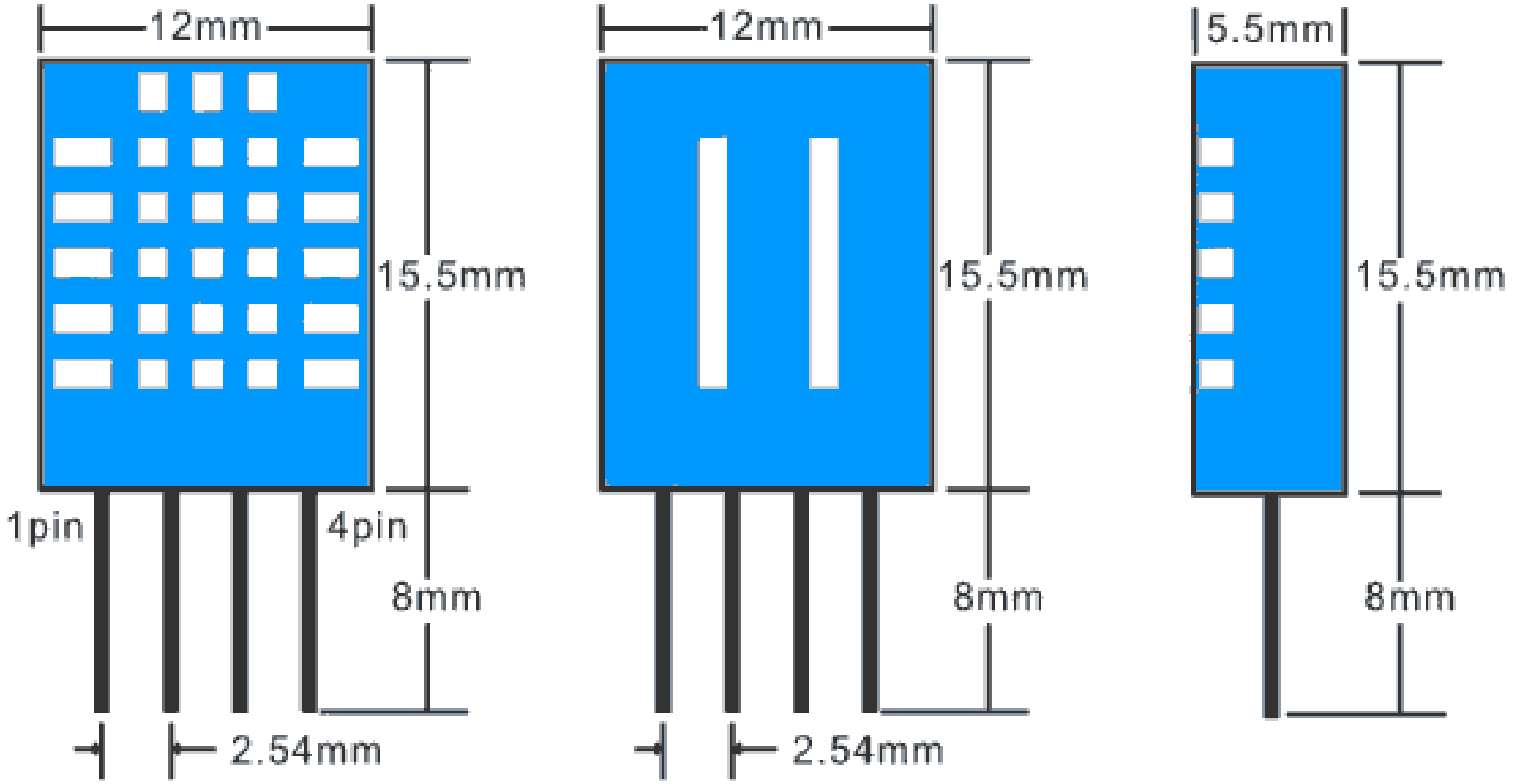
DHT11 and DHT22 Sensors





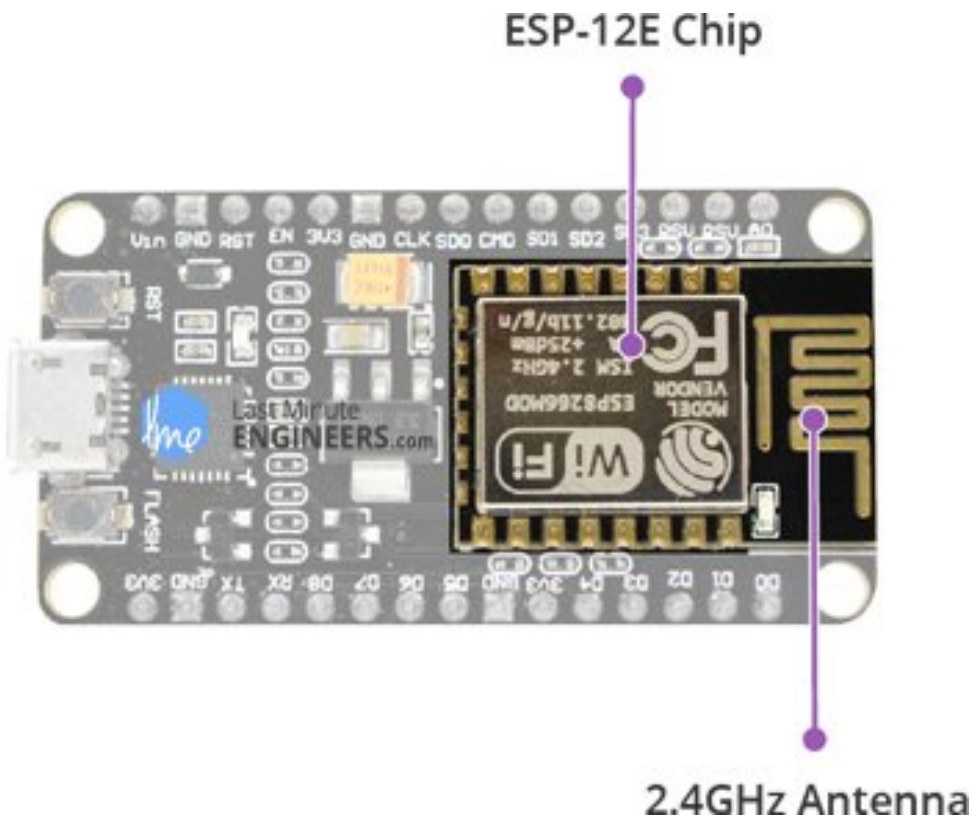
The DHT11 and DHT22 sensors are used to measure temperature and relative humidity.

https://gndtovcc.home.blog/2020/04/16/complete-guide-for-dht11-dht22-humidity-and-temperature-sensor-with-arduino/
https://lastminuteengineers.com/dht11-dht22-arduino-tutorial/


12mm
15.5mm
1pin
4pin
8mm
2.54mm
12mm
15.5mm
8mm
2.54mm
5.5mm
15.5mm
8mm

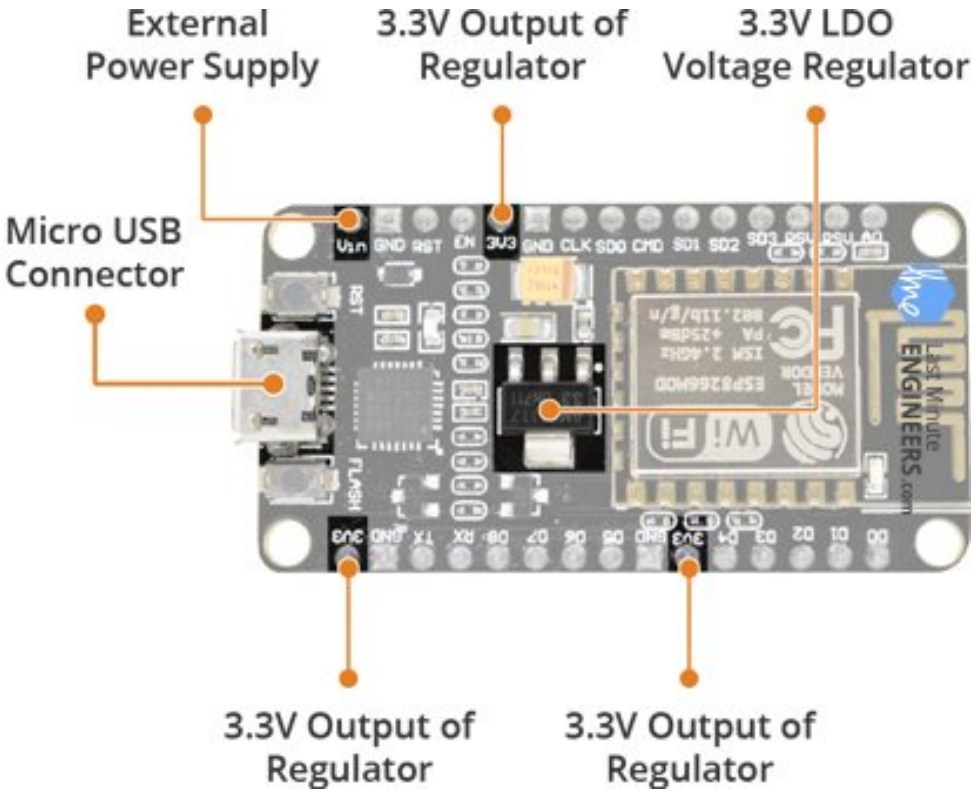
ESP-12E Module

ESP-12E Chip
Tensilica Xtensa® 32-bit LX106
80 to 160 MHz Clock Freq.
128kB internal RAM
4MB external flash
802.11b/g/n Wi-Fi transceiver



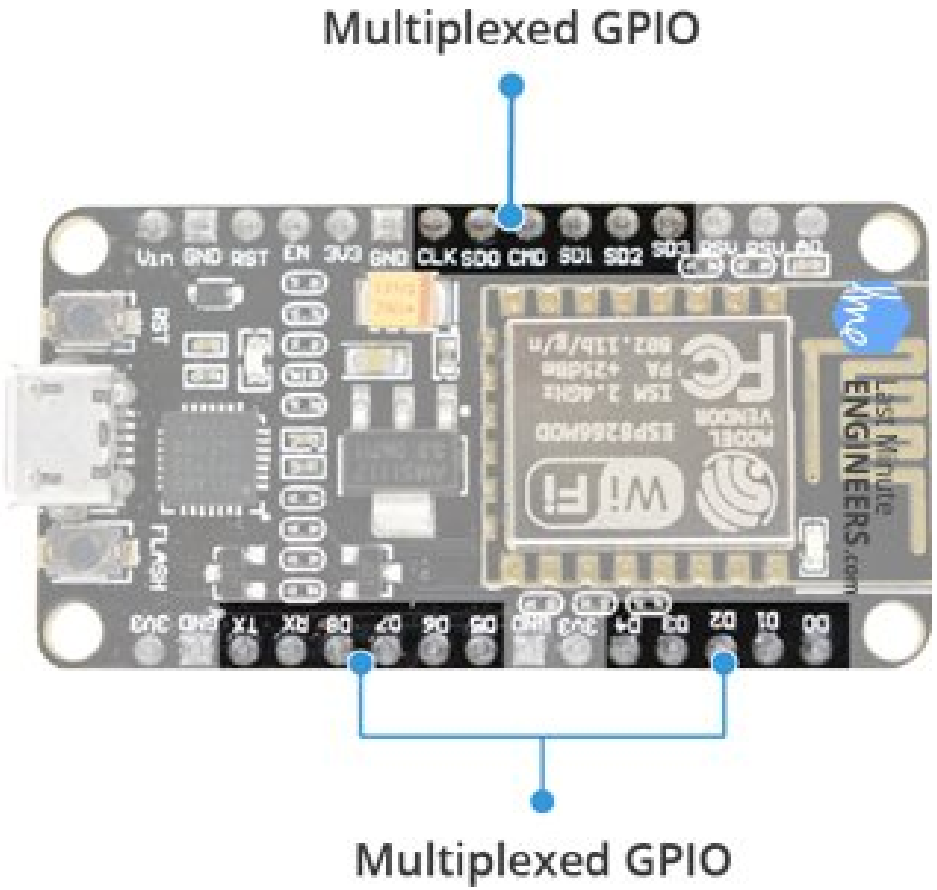
Power Requirement

Operating Voltage: 2.5V to 3.6V
On-board 3.3V 600mA regulator
80mA Operating Current
20 µA during Sleep Mode



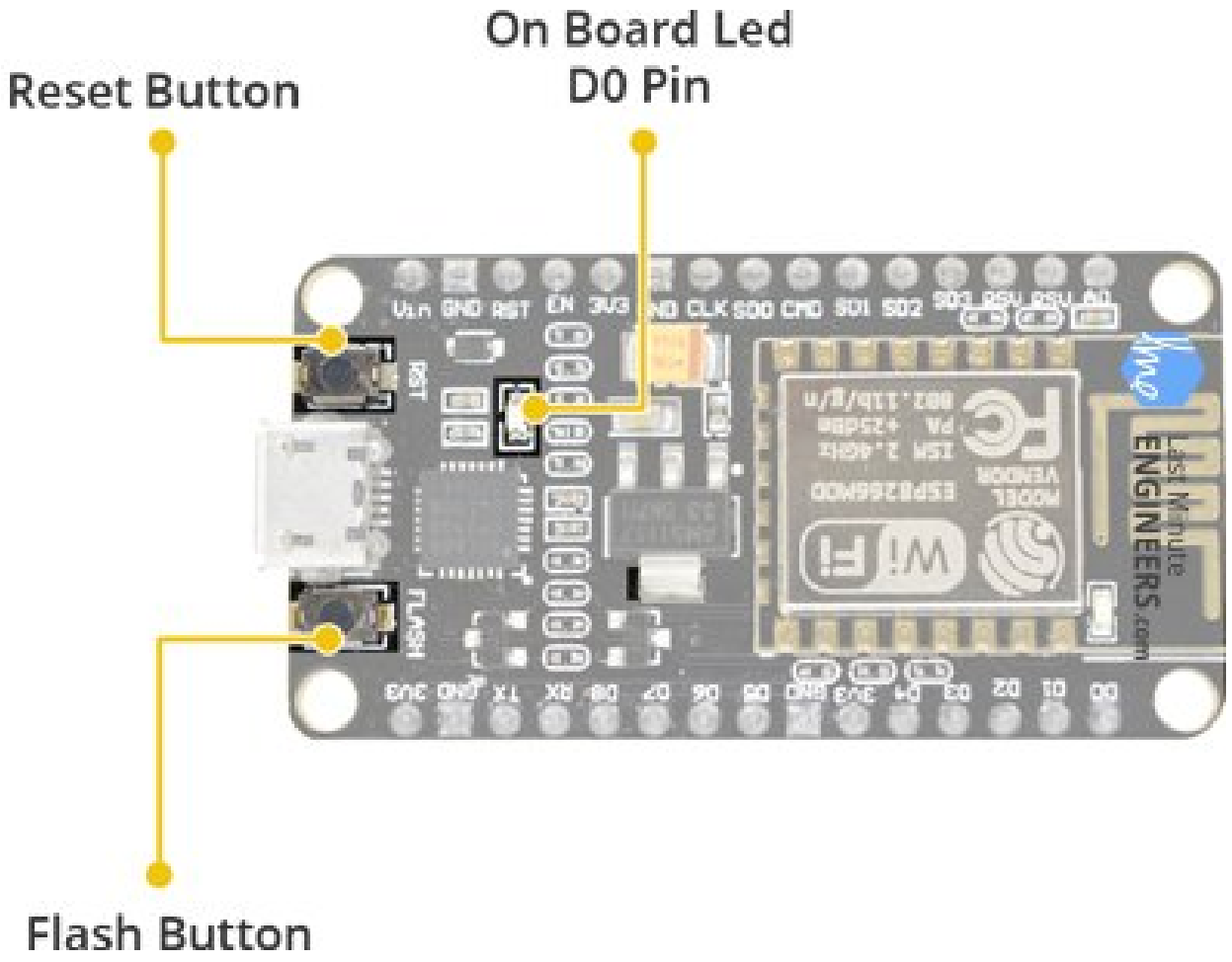
Peripherals and I/O

1 ADC channels
2 UART interfaces
4 PWM outputs
SPI, I2C & I2S interface



On-board Switches & LED Indicato

Switches & Indicators
RST – Reset the ESP8266 chip
FLASH – Download new programs
Blue LED – User Programmable



Serial Communication

CP2102 USB-to-UART converter
4.5 Mbps communication speed
Flow Control support