ESP8266 ESP-05 WiFi Wireless Transceiver Module

ESP8266 Serial WiFi Module (ESP-05) is a new player in this field: it's tiny (25mm x 15mm), with simple pin connections (standard 2×4 pin headers), using serial TX/RX to send and receive Ethernet buffers, and similarly, using serial commands toquery and change configurations of the WiFi module. This is quite convenient as it only requires two wires (TX/RX) to communicate between a microcontroller and WiFi, but more importantly, it offloads WiFi-related tasks to the module, allowing the microcontroller code to be very light-weighted.

ESP8266 Serial WiFi Transceiver Module (ESP-05) is a cheap and easy way to connect any small micro-controller platform, like Arduino, wirelessly to Internet. ESP8266 has powerful on-board processing and storage capabilities that allow it to be integrated with the sensors and other application specific devices through its GPIOs with minimal development up-front and minimal loading during runtime. Its high degree of on-chip integration allows for minimal external circuitry, and the entire solution, including front-end module, is designed to occupy minimal PCB area.

ESP8266 Serial WiFi Transceiver Module (ESP-05) is addressable over SPI and UART, making this an exceptionally easy choice for anyone wanting to build an Internet of Things thing. You can use AT commands to connect to WiFi networks and open TCP connections without need to have TCP/IP stack running in your own micro controller: You can simply connect any micro controller to this module and start pushing data up to the Internet.

FEATURES:

- Serial UART Interface
- It run LWIP
- 802.11 bgn
- WIFI Direct (P2P), SOFT-AP
- Built-in TCP/IP
- The AT command is perfect, efficient, concise
- Support three modes: AP, STA and AP+STA coexistence mode
- UFL Antenna Connector
- Berg strip connectable
- Breadboard Compatible.

SPECIFICATIONS:

- WIFI Direct (P2P), SOFT-AP
- The AT command is perfect, efficient, concise
- Support three modes: AP, STA and AP+STA coexistence mode the TCP/IP protocol suit
- Integrated TCP/IP protocol stack
- Integrated TR switch, balun, LNA, power amplifier and matching network
- Integrated PLLs, regulators, DCXO and power management units
- +19.5dBm output power in 802.11b mode
- Power down leakage current of <10uA
- Integrated low power 32-bit CPU could be used as application processor
- SDIO 1.1/2.0, SPI, UART
- STBC, 1×1 MIMO, 2×1 MIMO
- A-MPDU & A-MSDU aggregation & 0.4ms guard interval
- Wake up and transmit packets in < 2ms
- Standby power consumption of < 1.0mW (DTIM3)
- ESP-05 SMD package, only leads to serial and RST pin, small external antenna.

FUNCTIONAL DESCRIPTION:

- **Operating Voltage**

The ESP8266 chip and ESP-05 module operate at a voltage of 3.3V (working range is 3.0V to 3.6V). I/O pins including the UART pins operate with 3.3V logic.

The chip and module I/O and UART pins are NOT 5V tolerant.

- **Current Consumption**

A operating current average value of 80mA.

The ESP8266 Wi-Fi module needs 3.3V power supply and may draw current in the order of 500mA.

Note that this current value is for the Espressif modules and not the ESP-05, but it does give some idea of the current that some modules can draw. The following current consumption values are for the EXP8266 chip when transmitting and receiving.

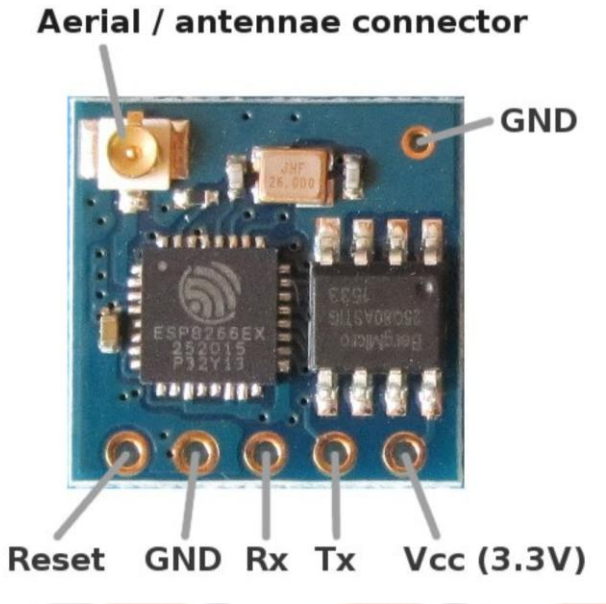
- **Transmit Current**

The highest typical current consumption of 170mA under the following conditions: Tx802.11b, CCK 11Mbps, P OUT=+17dBm.

- **Receive Current**

The highest typical current consumption of 56mA under the following conditions: Rx 802.11g, 1024 bytes packet length, -70dBm.

PIN FUNCTION:



The 5pin version of the ESP8266 ESP-05 Serial WIFI Module has the following connections on the 5pin header:

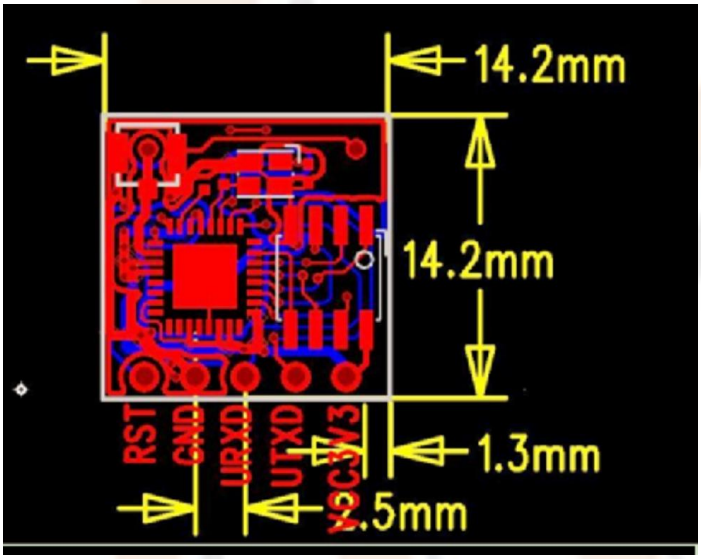
- Reset – active low reset (apply low voltage level to reset), EXT_RSTB pin 32 on ESP8266 chip
- GND – GND or 0V of power supply
- Rx – UART receive pin (3.3V logic level)
- Tx – UART transmit pin (3.3V logic level)
- Vcc – 3.3V power supply Vcc connection

There is an aerial or antennae connector at the top left of the board for an external aerial / antennae.

APPLICATIONS:

- Widely used in networking, smart home project when it is connected to the wifi router.
- It can be used for remote monitoring of home appliances, bedroom temperature and humidity, and controlling home appliances by the mobile phone.

DIMENSION:



PACKAGE INCLUDES:

- 1 x ESP8266 ESP-05 Serial WIFI Module
- 1 x 2.4GHz Antenna