# ESP8285 M4 wifi based IoT Module


Basically an ESP8285 module is an ESP8266 Module with additional 1 MB of Flash memory and the ESP8285 can even bear high temperature upto 125℃ (the one for ESP8266 is just 85℃). More important, the code programmed in ESP8266 can also be used for ESP8285.

The core processor of the **ESP8285 M4 IoT module** uses the cost-effective chip ESP8285. The chip integrates an enhanced version of Tensilica's L106 Diamond Series 32-bit core processor in a smaller package with on-chip SRAM. The ESP8285 has a full Wi-Fi network capability that can be used independently or as a slave to other host MCUs. When the ESP8285 hosts an application, it can be launched directly from external Flash. The built-in cache helps improve system performance and optimizes the storage system. In addition, the ESP8285 can be used as a Wi-Fi adapter via the SPI/SDIO interface or I2C/UART port for any microcontroller-based design.

The **ESP8285 M4 wifi module** supports the standard IEEE 802.11 b/g/n/e/i protocol and the full TCP/IP protocol stack. Users can use this module to add networking capabilities to existing devices or to build separate network controllers. The ESP-M4 module provides Zui's great utility at low cost, providing unlimited possibilities for Wi-Fi functionality to be embedded in other systems.

The main technical parameters of the module are as follows:

**Wi-Fi**

- Frequency Range: 2.4G~2.5G (2400M~2483.5M)
- Transmit power: 802.11b: +20 dBm
  802.11g: +17 dBm
  802.11n: +14 dBm
- Receiving sensitivity: 802.11b: -91 dbm (11Mbps)
  802.11g: -75 dbm (54Mbps)
  802.11n: -72 dbm (MCS7)
- antenna: PCB onboard antenna
- CPU: Tensilica L106 32 bit microcontroller
- Peripheral: UART/SDIO/SPI/I2C/I2S/IR remote control
- GPIO/ADC/PWM/SPI/I2C/I2S
- Operating Voltage: 2.5V ~ 3.6V

**Hardware**

- Working current Average current: 80 mA
- Operating temperature: -40°C ~ 125°C
- Ambient temperature range: -40°C ~ 125°C
- Wi-Fi mode: Station/SoftAP/SoftAP+Station
- Security Mechanism: WPA/WPA2
- Encryption type: WEP/TKIP/AES
- Upgrade firmware: UART Download/OTA (via network)

**Software**

- Software development: Non-RTOS/RTOS/Arduino IDE, etc.
- Network protocol: IPv4, TCP/UDP/HTTP/FTP/MQTT
- User configuration: AT+ instruction set / cloud server / androids / ioses APP