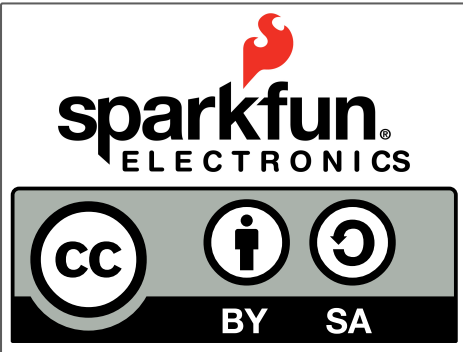
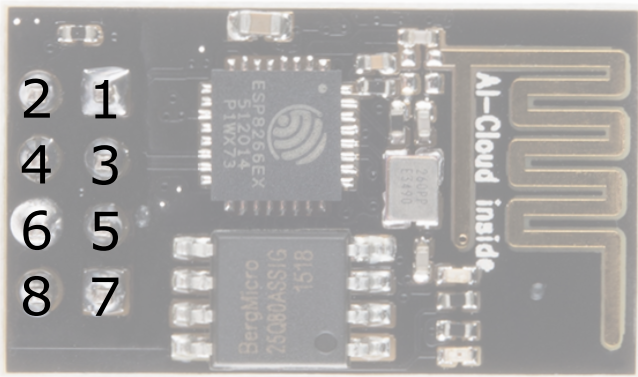


# ESP8266 Module (WRL-13678)



D7	GPIO1	TX	2- TXO
		Chip Enable	4- CHPD
		Reset	6- RST
		3.3V	8- 3V
		GND	1- GND
	D2/SDA	GPIO2	3- GPIO2
	D0	GPIO0	5- GPIO0
D8	GPIO3	RX	7- RXI



PCB Antenna

**Power**  
 VCC-3.0-3.6V  
 Standby ~ 0.9uA  
 Running ~60-215mA,  
 Average ~ 80mA

**Wifi Features**  
 802.11 b/g/n  
 2.4GHz  
 WPA/WPA2  
 Wifi Direct

+20dBm output power (802.11b)

**I/O Features**  
 Integrated TCP/IP  
 Integrated TR switch, LNA,  
 balun

**Memory/Speed Features**  
 80MHz  
 64KB instruction RAM  
 96KB data RAM  
 64K boot ROM  
 1MB\* Flash Memory

**Basic Connection**  
 VCC - 3.3V  
 GND - GND  
 TX - RX on Arduino or FTDI  
 RX - TX on ARduino or FTDI  
 Chip Enable - 3.3V

**Default Baud Rate**  
 115200\* 8N1

**LEDs**  
 Red: Power  
 Blue: TX

\*mileage may vary on different version of the board

## AT Command Usage

Commands are case sensitive and should end with /r/n

Commands may use 1 or more of these types  
 Set = AT+<x>=<...> - Sets the value  
 Inquiry = AT+<x>? - See what the value is set at  
 Test = AT+<x>=? - See the possible options  
 Execute = AT+<x> - Execute a command

Commands with \* have been deprecated in favor of COMMAND\_CUR and COMMAND\_DEF. CUR will not write the value to flash, DEF will write the value to flash and be used as the default in the future.

## AT Command List

AT - Attention  
 AT+RST - Reset the board  
 AT+GMR - Firmware version  
 AT+CWMODE\* - Operating Mode  
 1. Client  
 2. Access Point  
 3. Client and Access Point  
 AT+CWJAP\*=<ssid>,<pwd> - Join network  
 AT+CWLAP - View available networks  
 AT+CWQAP - Disconnect from network  
 AT+CWSAP\*=<ssid>,<pwd><chl><ecn> - Set up access point  
 0. Open. No security  
 1. WEP  
 2. WPA\_PSK  
 3. WPA2\_PSK  
 4. WPA\_WPA2\_PSK  
 AT+CWLIF - Show assigned IP addresses as access point  
 AT+CIPSTATUS - Show current status as socket client or server  
 AT+CIPSTART=<type>,<addr>,<port> - Connect to socket server  
 IP is fixed at 192.168.4.1, mask is fixed at 255.255.255.0  
 if CIPMUX is set to multichannel add <id> to beginning of string  
 AT+CIPCLOSE - Close socket connection  
 AT+CIFSR - Show assigned IP address when connected to network  
 AT+CIPMUX=<mode> - Set connection  
 0. Single Connection  
 1. Multi-Channel Connection  
 AT+CIPSERVER=<mode>[,<port>](AT+CIPMUX=1) - Default port is 333  
 0. Close the Socket Server  
 1. Open the Socket Server  
 AT+CIPMODE=<mode> - Set transparent mode  
 Data received will be sent to serial port as  
 0. +IPD,<connection channel>,<length>format (AT+CIPMUX=[0,1])  
 1. Data stream (AT+CIPMUX=0)  
 AT+CIPSTO=<time> - Set auto socket client disconnect timeout  
 from 1-28800s

Example commands  
 AT+CWMODE=? //View options for mode (test)  
 AT+CWMODE=3 //Set mode to client and access modes (set)  
 AT+CWLAP //View available networks (execute)  
 AT+CWJAP = "ssid","password" //Join network (set)  
 AT+CWJAP? //View the current network (inquiry)  
 AT+CIFSR //Show IP address (execute)  
 AT+CWQAP //Disconnect from network (execute)  
 AT+CWSAP="apoint","pass",11,0//Setup an open access point (set)  
 AT+CWLIF //Show devices connected to access point