# ESP8266 WiFi Module (WRL-17146)



Name	Power
Ground	Control
Serial	GPIO
Arduino	

D7	GPIO1	ТХ	2- TXO		
		Chip Enable	4- CHPD		PC
		Reset	6- RST		ΰ
		3.3V	8- 3V		Ą
		GND	1- GND	6 5	nter
	D2/SDA	GPIO2	3- GPIO2	87 ****	na
	D0	<b>GPIO0</b>	5- GPIO0		ш
D8	GPIO3	RX	7- RXI	5 Series with an and the series of the	

#### 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

#### **I/O Features**

Integrated TCP/IP Integrated TR switch, LNA, balun

#### Memory/Speed Features

80MHz 64KB instruction RAM 96KB data RAM 64K boot ROM 4MB\* 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 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 =  $AT+\langle x \rangle = \langle ... \rangle$  - Sets the value Inquiry =  $AT+\langle x \rangle$ ? - See what the value is set at Test =  $AT + \langle x \rangle = ?$  - See the possible options Execute = AT+<x> - Execute a command

Commands with \* have been depreciated 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 multichanel 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 timout 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