



ESP8266 Thing Hookup Guide

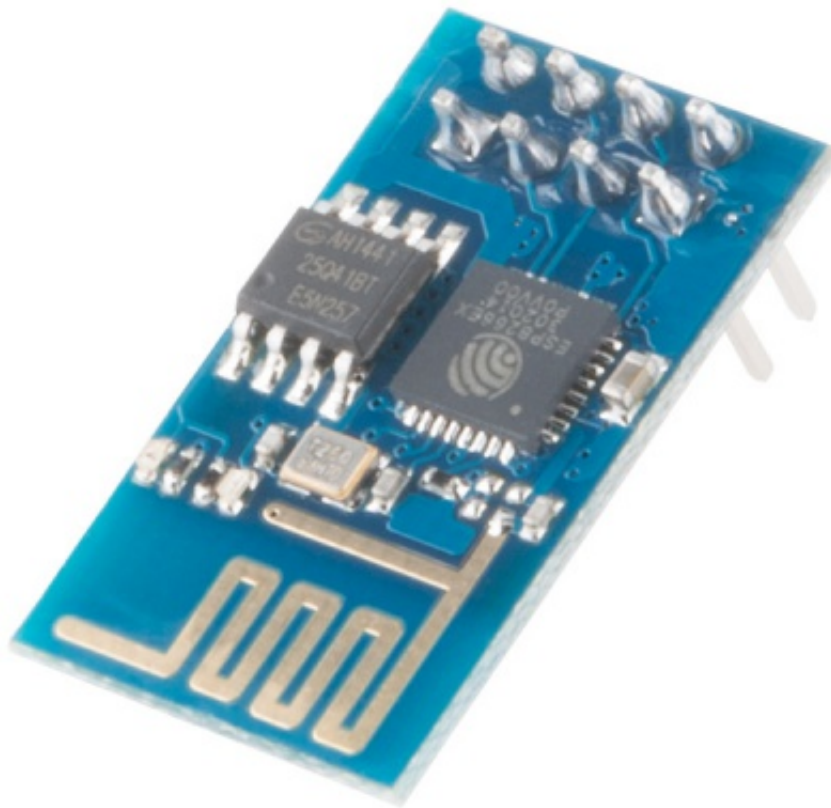
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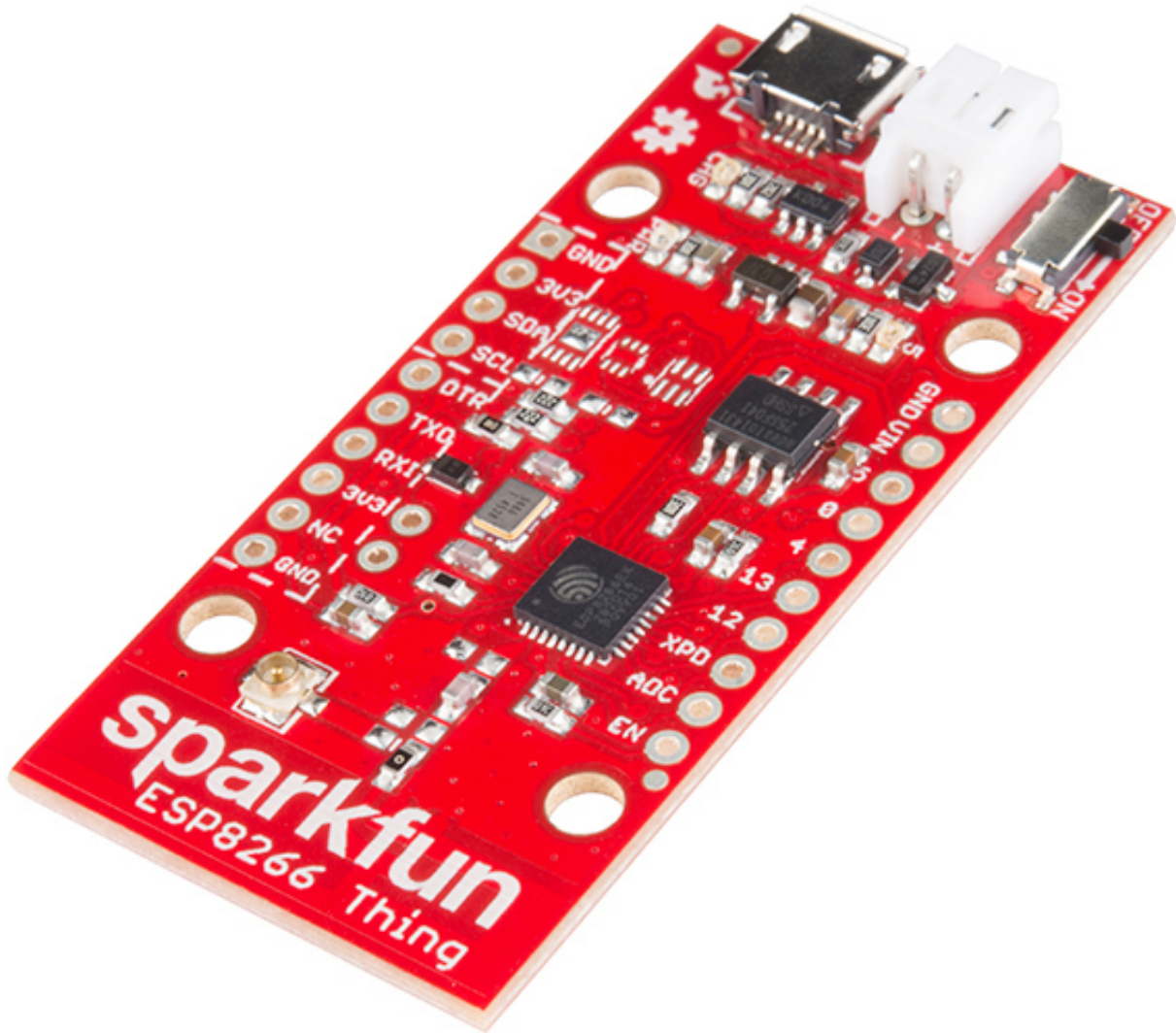
Introduction

Over the past year, the ESP8266 has been a growing star among IoT or WiFi-related projects. It's an extremely cost-effective WiFi module, that – with a little extra effort – can be programmed just like any microcontroller. Unfortunately, the ESP8266 has mostly only been available in a tiny, modular form, which, with limited I/O and a funky pin-out, can be difficult to build a project around.



The original ESP8266 WiFi module. Great for piggybacking onto an Arduino, hard to build a project around.

SparkFun's new development board for the ESP8266 breaks out all of the module's pins, and comes equipped with a LiPo charger, power supply, and all of the other supporting circuitry it requires. We lovingly call it the Thing – it's the perfect foundation for your Internet of Things.



Covered in this Tutorial

This tutorial will familiarize you with all things SparkFun Thing. It's split into sections, which cover:

- Hardware Overview – A quick rundown of the Thing's **components and pinout**.
- Powering the Thing – The Thing can be powered through either USB or a LiPo battery.
- Programming the Thing – Interface a 3.3V FTDI Basic with the Thing to program it.
- Hardware Assembly – Tips and recommendations on what to solder to the Thing's I/O pins.
- Installing the ESP8266 Arduino Addon – The Thing can be programmed using Arduino! Just follow the instructions here to install the board definitions.
- Example Sketch: Posting to Phant – Our first example shows how you can use the Thing to post data to data.sparkfun.com.
- Example Sketch: AP Web Server – Set the Thing up as an access point and use it to serve web pages.
- Example Sketch: Goodnight Thing (Sleep Mode) – Put the Thing to sleep to save that sweet battery juice.
- Using the Arduino Addon – There are a few key differences between programming the Thing and any other Arduino board.

Required Materials

To follow along with this tutorial, and get up-and-running with the Thing, you may need a few extra tools and materials. This wishlist includes everything we use in this tutorial to program and use the Thing:

ESP8266 Thing Hookup Guide SparkFun Wish List



SparkFun ESP8266 Thing

WRL-13231

The SparkFun ESP8266 Thing is essentially a breakout and development board for the ESP8266 WiFi S...



SparkFun Cerberus USB Cable - 6ft

CAB-12016

You've got the wrong USB cable. It doesn't matter which one you have, it's the wrong one. But what if yo...



SparkFun FTDI Basic Breakout - 3.3V

DEV-09873

This is the newest revision of our [FTDI Basic](http://www.sparkfun.com/commerce/product_info.php?pro...



(2) Arduino Stackable Header - 10 Pin

PRT-11376

This is a 10-pin female header, with extra long legs -- great for stacking R3-compatible Arduino shields! ...



Polymer Lithium Ion Battery - 850mAh

PRT-00341

These are very slim, extremely light weight batteries based on the new Polymer Lithium Ion chemistry. T...

Suggested Reading

Before continuing on with this tutorial, you may want to familiarize yourself with some of these topics if they're unfamiliar to you:

- How to Power a Project
- Logic Levels
- Serial Communication
- How to Solder

[← PREVIOUS PAGE](#)[VIEW AS A SINGLE PAGE](#)[NEXT PAGE →
HARDWARE OVERVIEW](#)