

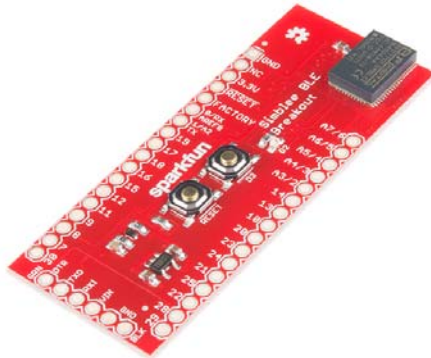


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# Simblee Breakout Board Hookup Guide

## Introduction

The SparkFun Simblee Breakout Board is a programmable board that allows you to add mobile app functionality via Bluetooth Low Energy (BLE, or Bluetooth 4.0) to your embedded projects. Unlike other BLE solutions, the Simblee requires no specialized app development skills to realize the phone-side interface; all the necessary coding is done in the Arduino environment and then uploaded to a browser app on the phone.



If you want to skip directly to writing code, we have another tutorial covering coding concepts that are common to all Simblee products. If you're looking for a sewable solution, check out our Simblee LilyPad Board.

## Recommended Reading

There are a few topics you may want to be sure you understand before you go any further.

- [Bluetooth Basics](#) - While Bluetooth 4.0 is quite different to previous versions of Bluetooth, our Basics tutorial will give you some insight into the methods and goals of Bluetooth in general.
- [Serial Communication](#) - You'll want to make sure you understand serial communication, as that will be a major means of debugging your Simblee sketch during development.
- [Logic Levels](#) - The Simblee runs at 3.3V. Make sure you understand the difference between 3.3V and 5V logic levels before you start connecting things to the Simblee or you may damage it!

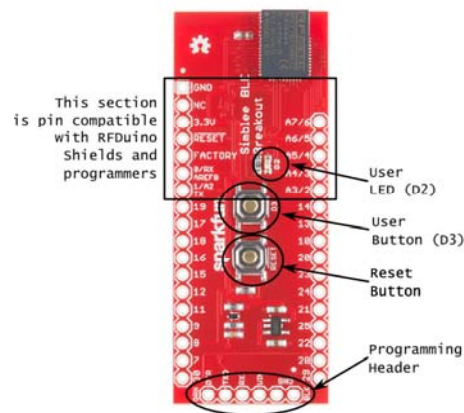
## Simblee Hardware Overview

There are two really important facts in this tutorial, highlighted here:

We recommend using either the LilyPad FTDI Basic or the 5V FTDI Basic for programming the Simblee LilyPad. **Do not use the 3.3V FTDI Basic**, as it may not be able to source enough current from the 3.3V rail.

If you've used Arduino boards before, you're probably used to connecting LEDs to the pins as output signals. A normal Arduino can light up many LEDs at once, and several per pin; for the Simblee, you shouldn't try more than **ONE** per pin, with an additional recommendation of **don't try to turn on more than three at a time** across all pins. The processor inside the Simblee module cannot drive enough current to light up more LEDs than this.

Here's a rundown of the features you'll find on the Simblee breakout board:

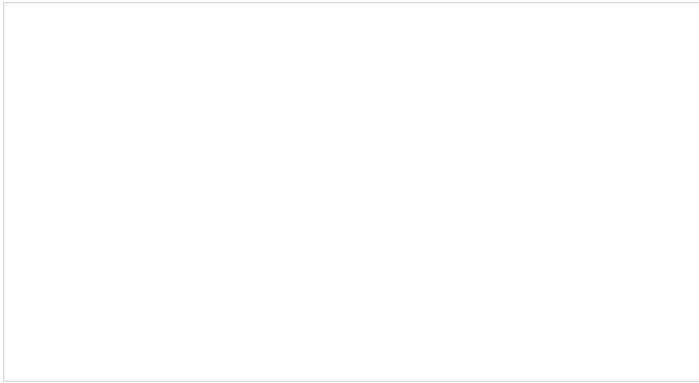


- **RFDuino compatible pin section** – The top section is compatible with the RFDuino shields and programmers.
- **User LED** – We've provided a user controllable LED on pin D2. This allows you to get some feedback without any additional hardware at all.
- **User button** – Similarly, we've provided a button on pin D3. Don't forget to use `INPUT_PULLUP` when setting the mode for that pin in the code!
- **Programming header** – While you can use the RFDuino programmer, we've provided a standard 6-pin FTDI breakout programming header as well. This allows the profile of the board to remain low unless necessary. We recommend using either the LilyPad FTDI Basic or the 5V FTDI Basic for programming the Simblee LilyPad. **Do not use the 3.3V FTDI Basic.**

## Resources and Going Further

That concludes the Hardware overview for the Simblee Breakout. For more information on using the Simblee to create your own applications for embedded project, visit our Simblee Concepts tutorial.

**New!**



## Simblee Concepts

FEBRUARY 4, 2016

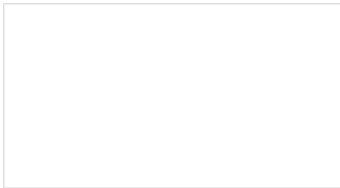
The Simblee module is a powerful but easy to use Bluetooth 4.0 device which allows you to create a GUI from directly within your Arduino code!

For more info on the Simblee module itself, please have a look at the **Simblee User's Manual**.

Here are a few more resources for the Simblee:

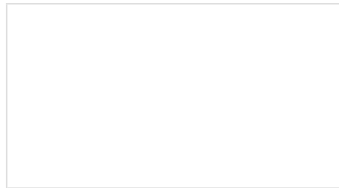
- [Simblee product homepage](#)
- [Simblee for Mobile reference](#) – PDF covering the basics of using the Simblee for Mobile Library to make a UI on a host device.
- [Simblee Eagle Files](#)
- [Simblee Schematic](#)

For more Bluetooth fun, check out these other SparkFun tutorials.



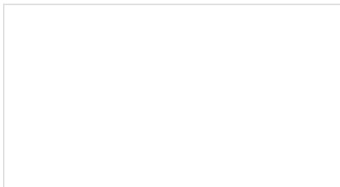
### RN-52 Bluetooth Hookup Guide

A hookup guide to get you started with the RN-52 Audio Bluetooth Module Breakout Board.



### MetaWatch Teardown and Arduino Hookup

Tearing down the nifty bluetooth-enabled MetaWatch. Then building an Arduino sketch to control it.



### Teardown: Misfit Shine Activity Tracker

A quick tear down of the popular fitness tracking device, the Misfit Shine.



### Simblee Concepts

The Simblee module is a powerful but easy to use Bluetooth 4.0 device which allows you to create a GUI from directly within your Arduino code!