Intermediate Electronics
Grades

Lab Project **Group**

Iteration 1: Week 1 **Individual**
Culmination of Week 1 assignments (ending with Storyboards)

Includes: Observation, Ideation (3 ideas), Concept Sketches (sketch of 1 idea), and Storyboard

Graded based on completeness, quality, and timeliness
Prototyping Examples of the Day

“Works Like”
Prototyping Examples of the Day
Prototyping Examples of the Day
Prototyping Examples of the Day

“Looks Like”
Iteration 2

Create 3 Prototypes of a *single concept*:

- Works-like
  - Addresses technical questions
- Looks-like
  - Addresses issues of look and feel
- Experience-like
  - Addresses user experience questions
Intermediate Arduino
## Electronics Resources

### Where to buy?

<table>
<thead>
<tr>
<th>In Person</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Shack (basic sensors, components)</td>
<td>Digikey</td>
</tr>
<tr>
<td>Microcenter (kits and shields)</td>
<td>Sparkfun</td>
</tr>
<tr>
<td></td>
<td>Adafruit</td>
</tr>
</tbody>
</table>
SparkFun BLE Mate 2
WRL-13019 ROHS

Description: This is the SparkFun BLE Mate 2, an efficient and reliable Bluetooth 4.0 development board. The BLE Mate 2 closely resembles a breakout board, in that nearly every pin on the on-board BC118 module is made available to access. This board is actually a close cousin to our Gold and Silver Bluetooth Mates and functions in a very similar way but, as the name implies, operates as Bluetooth Low Energy instead of Bluetooth 2.0.

The BLE Mate 2 offers a six-pin header on the end opposite the BC118 module which is used as a "host" serial pinout, the same as that on the FTDI Basic boards, which allows the BLE Mate 2 to be connected directly to any device with a matching header, such as the SparkFun Arduino Pro and Pro Mini. Coupled with the FTDI SmartBasic, you can even develop your code without having to swap cables! The board has built-in level translation, so it can be used with boards of higher voltage than the 3.3V default used by the BC118.

Each BLE Mate 2 offers BC118 module that is capable of accepting and transmitting via the UART at 9600bps (default) with a frequency band of 2,402 MHz to 2,480 MHz.

The SparkFun BLE Mate 2 only supports Bluetooth 4.0; it won’t connect to older devices. It’s also worth noting that BLE does not support a Serial Port Protocol as older versions of Bluetooth did; that makes interoperability between BLE dongles, devices, and modules harder than their predecessors.
Features:

- Bluetooth Certified 4.0 (BLE)
- Supply Voltage: 3.3V to 4.7 VDC
- Low power consumption : 16mA avg
- Frequency Band: 2,402 MHz to 2,480 MHz
- Operating Range: 30m
- Built-in antenna

Documents:

- Schematic
- Eagle Files
- Hookup Guide
- Datasheet (BC118)
- Command Set Manual
- GitHub (Example Code & Design Files)
### Through Hole Resistors

**Results matching criteria:** 262,804

To select multiple values within a box, hold down 'Ctrl' while selecting values within the box.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Packaging</th>
<th>Series</th>
<th>Resistance (Ohms)</th>
<th>Tolerance</th>
<th>Power (Watts)</th>
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<tbody>
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<td>Jumper</td>
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<tr>
<td>Bourns Inc.</td>
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<td>Digi-Reel®</td>
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<td>±0.0025%</td>
<td>0.1W, 1/10W</td>
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<td>Tray</td>
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<td>0.005</td>
<td>±0.01%</td>
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<td>5063JD Spacemiser</td>
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<td>±0.02%</td>
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<td>Stackpole Electronics Inc</td>
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<td>±0.05%</td>
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<td>TE Connectivity</td>
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<td>90</td>
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<td>±0.1%</td>
<td>0.2W, 1/5W</td>
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<tr>
<td>TT Electronics/IRC</td>
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<td>±0.2%</td>
<td>0.25W, 1/4W</td>
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<td>Wirewound</td>
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<td>Thick Film</td>
<td>Thin Film</td>
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<td>Wirewound</td>
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</table>

**To see real-time pricing, click either the Digi-Key part number or unit price link.**

Enter the quantity that you are interested in and press submit. The unit price for the quantity will display for all products in the table. Any products that cannot be purchased at the entered quantity due to minimum order quantities will be pushed to the bottom of the results.

**Quantity**

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Results per Page: 25  ▼  Page 1/10,513 (1 2 3 4 5 6 7 8 9 10 ... Last Next)
Electronics Resources

Ordering from Digikey
• through-hole (NOT SMD)
• minimum quantity
• In stock
Electronics Resources

Tutorials
• arduino
• Sparkfun.com
• ladyada.net
• bildr.org
• itp.nyu.edu/physcomp
CHOOSE EXPEDITED SHIPPING
Peter’s Lecture
Fritzing Tutorial
Project Consultations
<table>
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<th>Team</th>
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<tr>
<td>12:10</td>
<td>Bedroom</td>
</tr>
<tr>
<td>12:20</td>
<td>Kitchen</td>
</tr>
<tr>
<td>12:30</td>
<td>Bathroom</td>
</tr>
<tr>
<td>12:40</td>
<td>Workspace</td>
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Soldering Tutorial - Tomorrow
Fritzing is an open-source hardware initiative that makes electronics accessible as a creative material for anyone. We offer a software tool, a community website and services in the spirit of Processing and Arduino, fostering a creative ecosystem that allows users to document their prototypes, share them with others, teach electronics in a classroom, and layout and manufacture professional PCBs.

Download and Start
Download our latest version 0.9.1b released on Dec. 2, 2014 and start right away.

Get a Creator Kit
Just got into interactive electronics and still need the basic tools? We created an "all-you-need-to-get-going" Fritzing Creator Kit with the Arduino UNO.
Shop Hours 6-8 PM