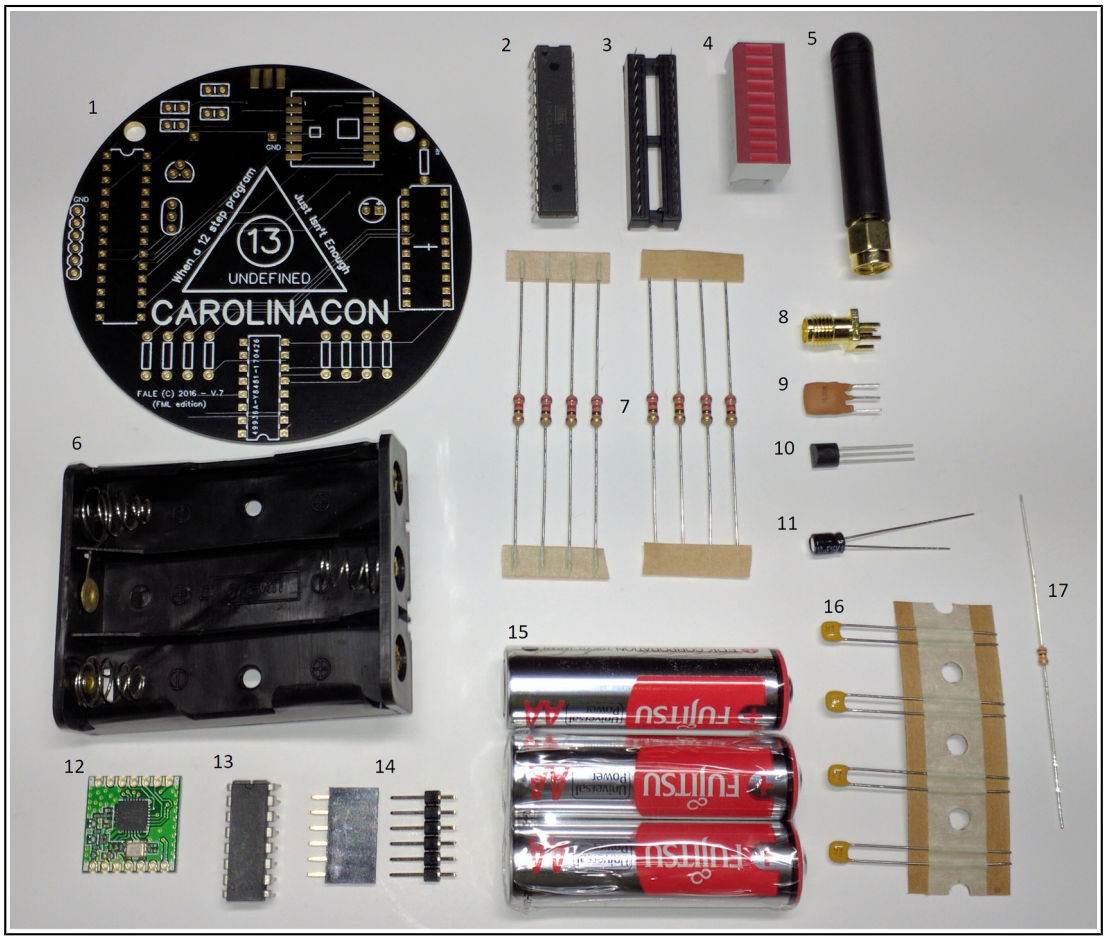
CarolinaCon 13
Badge Guide

Brought to you by Ollie

Hello you lovely hackers, crackers, and slackers. Welcome to another year of CarolinaCon.

We'll skip over the 'how to solder' portion of the guide. If you've never soldered before don't feel bad as there should be plenty of folks in the Hardware Hacking Village willing to walk you along.

First off make sure your bag has the proper bits:



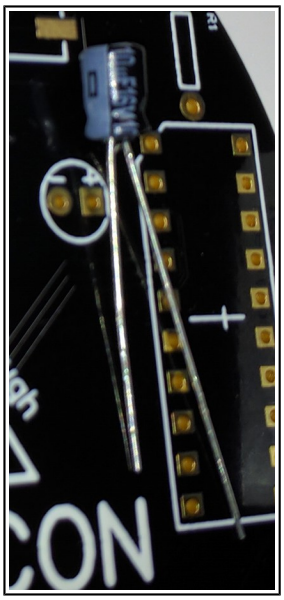
1. Badge*
2. Atmel Chip
3. Chip Socket
4. LED Array
5. Antenna
6. Battery Holder
7. 8x 220ohm Resistor
8. Connector for Antenna**
9. Timing Crystal
10. 3.3v Regulator
11. Electrolytic Capacitor
12. Transceiver Chip
13. Shift Register
14. Male & Female Headers
15. 3x AA Batteries
16. 4x Polymer Capacitors
17. 10k Resistor

Replacements are available for missing or broken parts but quantity is limited on some items.

* Yours most likely isn't as cool as this one, probably green or something.

** If you were late to reregistration you may regretfully have gotten a bag without a SMA Connector for the Antenna. Your badge can still play with the others but you will have a wire Antenna instead.

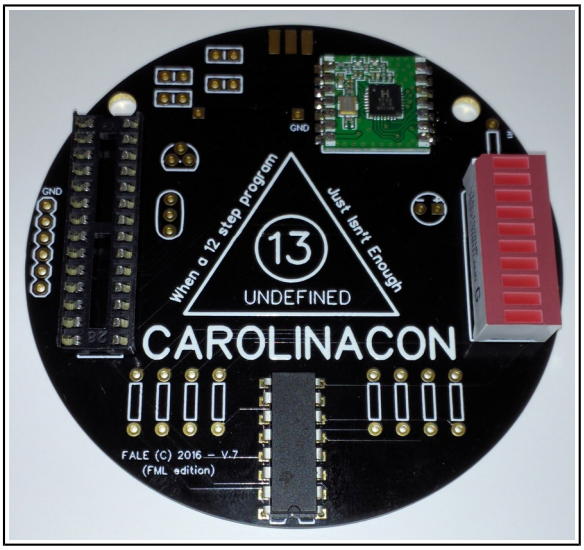
These parts can be soldered in any order but I would suggest the ones that are directional first.



The Chip Socket, Shift Register, Led Array, and Transceiver Chip all have illustrations on the board to ensure that they are set in the right direction.

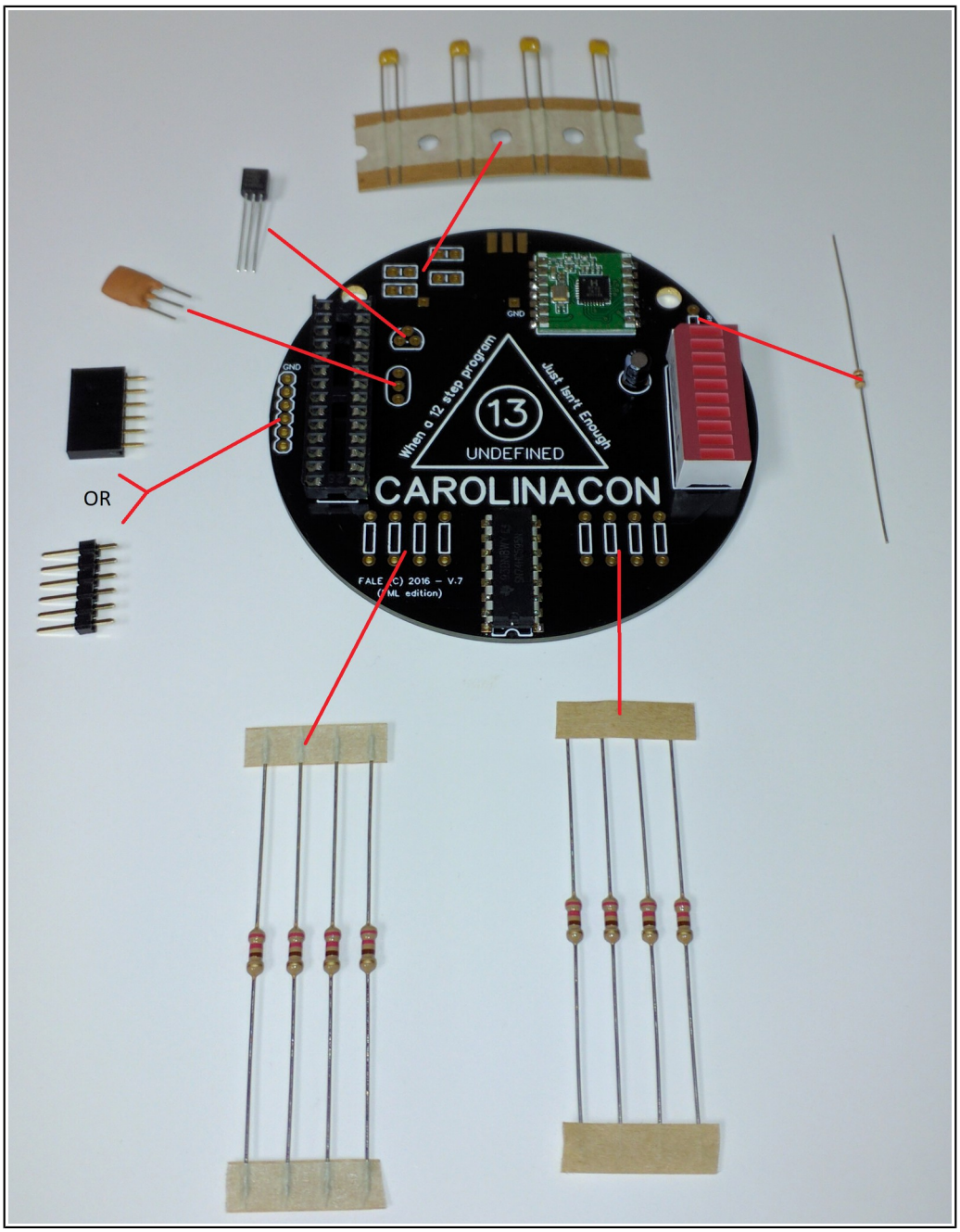
The Electrolytic Capacitor has a gray bar down one side that indicates the negative lead.

Finished product:



It should be noted that it is not a good idea to insert the Atmel Chip into the socket until the rest of the badge is finished and the Atmel Chip has had its boot loader installed. This can be done by the guys in the Hardware Hacking Village.

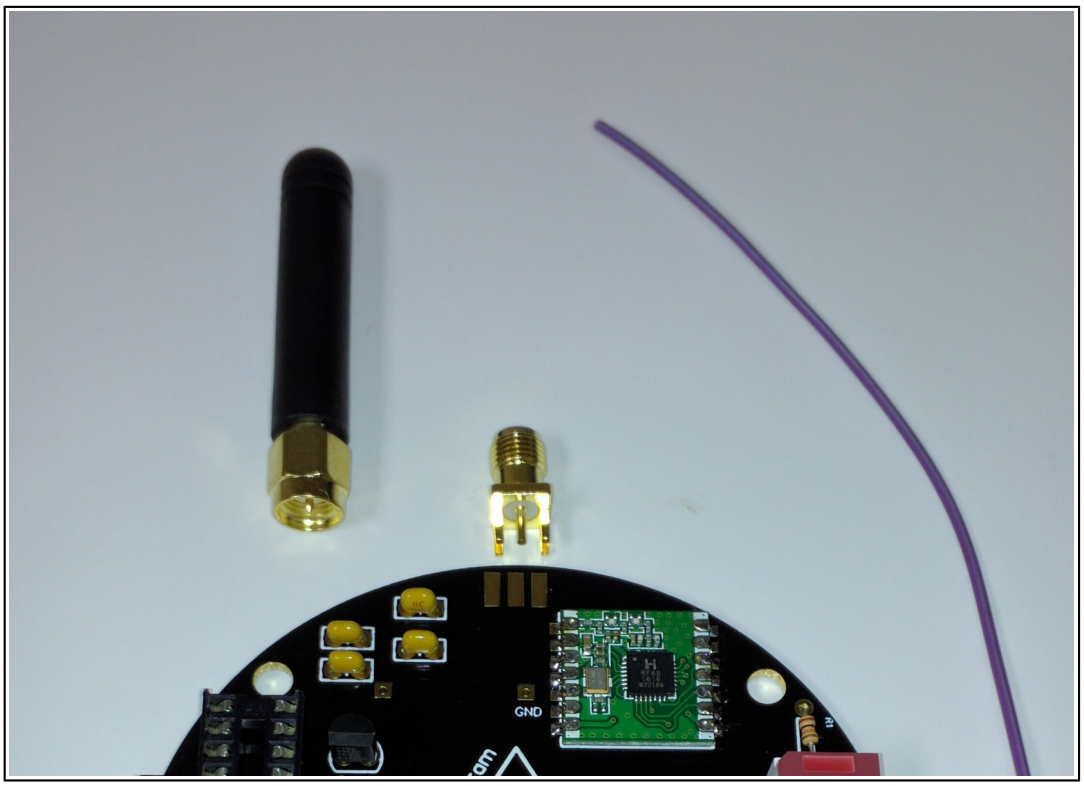
Next step is the rest of the badge:



On the Voltage Regulator make sure the middle leg goes to the single pin well towards the top of the badge and the outer legs go to their respective pin wells bellow it. The Timing Crystal, Resistors, and Polymer Capacitors can be inserted in any direction.

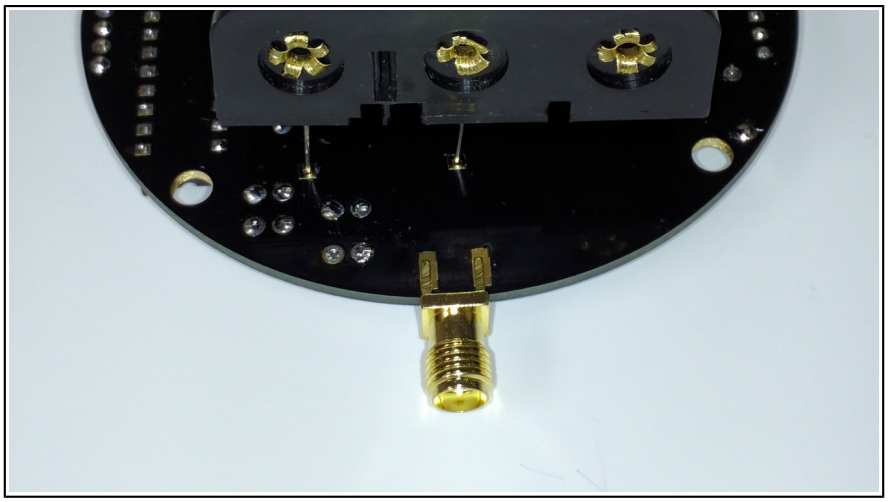
Use the Female Header if you want to program the badge using the equipment provided. Use the Male Header if you have your own ideas for the badge.

Next step is the antenna:



If you have the SMA connector solder the side with three prongs to the strip of three solder points at the top of the badge. If you only have a wire antenna, strip a 1/8th inch section and solder that to the middle solder joint on the top. Liberal use of adhesive is suggested to keep the wire antenna attached by more than just the solder.

Next is the battery pack:



On the reverse side of the badge you will only have two pin wells left, the battery pack leads go through here. You can also solder the other side of the SMA connector at this time. Double sided tape will be available at the Hardware Hacking Village to secure the battery pack to the badge.

Your badge is finished as far as the hardware is concerned, now all that’s left is to flash some software, either what our volunteers have provided or some home brew of your own.

Have fun and welcome to CC13.

- Ollie the Miniature Australian Shepherd.