

Simon Assembly Instructions

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Step	Name	Purpose	Side	Polarized?	Marking
Power Supply					
1	NCP1400	DC to DC Step up	Bottom	No	Make sure to line it up with pads on board
2	22uH	Inductor	Bottom	No	Make sure the pads on the inductor line up with pads on board
3	MBRA140	Diode	Bottom	Yes	Line on diode matches line on silkscreen
4	47uF	Tantalum Cap	Bottom	Yes	Line on capacitor goes on rounded end of silkscreen
5	10uF	Tantalum Cap	Bottom	Yes	Line on capacitor goes on rounded end of silkscreen
6	Power Switch		Top	No	Keep iron tip away! Plastic melts easy
7	Clip x 2	Battery Holder	Top	Yes	Push hard! Make sure the clips are pushed flat against the PCB. Make sure clips point towards each other to accept AA battery.

**Before proceeding – insert AA battery and test output voltage. Should be 5V.
Remove battery before proceeding**

Controller					
8	ATmega168	Microcontroller	Bottom	Yes	Corner of IC has small circle on top side – matches silkscreen circle
9	0.1uF	IC decoupling	Bottom	No	In general, ceramic caps are not polarized and do not have an up/down

LEDs					
10	330 x 4	LED limiter	Bottom	No	In general, resistors are not polarized but have a label on the top side
11	Red – Green – Blue – Yellow	LED	Top	Yes	LED housing *may not* match the silkscreen. Make sure the long leg of the LED goes into the hole next to the round side of the silkscreen indicator.

Sound					
12	Sound Switch		Top	No	Keep iron tip away! Plastic melts easy
13	Buzzer	Sound	Bottom	Yes	+ on buzzer matches silkscreen

Mechanical					
14	Button pad	Buttons	Top	No	Lay rubber pad over LEDs. Lay black frame on top rubber pad. Insert 4 screws through frame. Attach 4 stand offs to screws. Hold screw in place and twist stand off onto screw.
15	Stand offs	Stand offs		No	

Once assembled – Test that there is **not** continuity between pins labeled 5V and GND.
Once assembled – bring to Matt or Nathan for programming