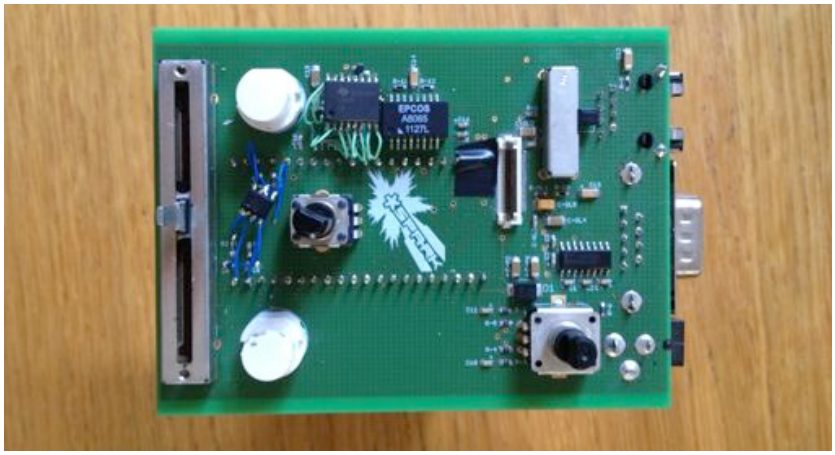
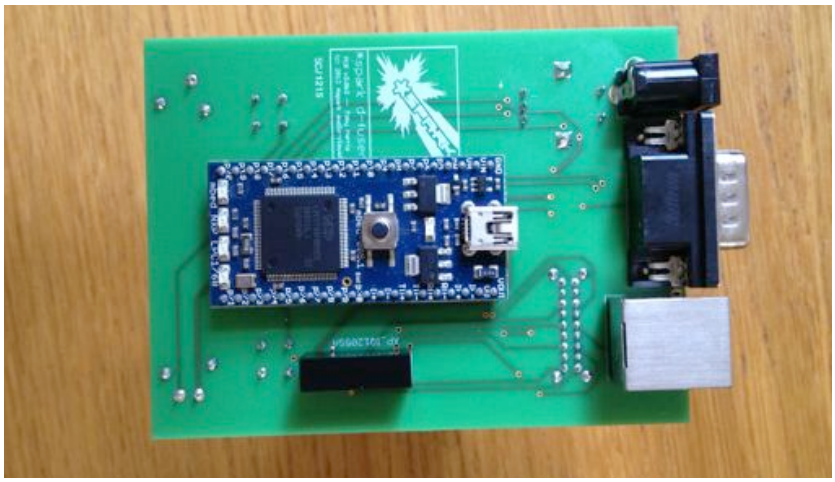
SPARK D-FUSER » PCB Assembly

Assembled PCB preview and notes v1.0



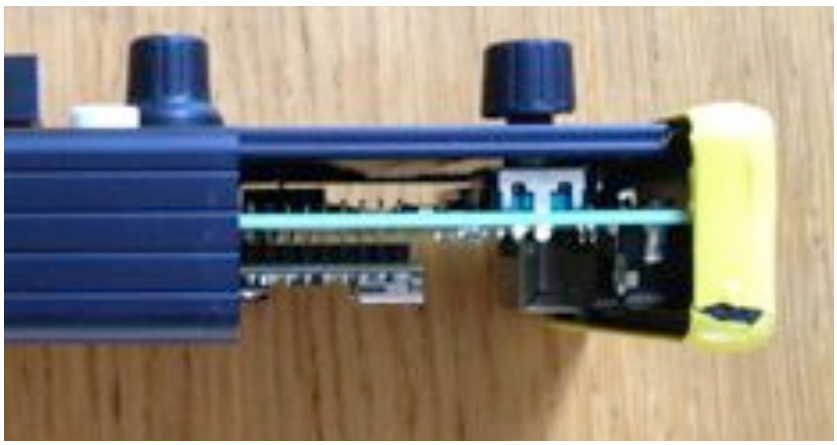
PCB Top

Shown: v30b3 after reworking
Production: v30b4; 2x SOIC shown flyleaded now properly placed, slight rearrangement of SMT parts.
Note: Two MBED pins trimmed and taped by FFC so foil cable can enter connector.



PCB Bottom

Shown: v30b3
Production: v30b4; End sockets now spaced further apart.



PCB Bottom - MBED

MBED has to sit higher off board than the foot of its pins. It needs to clear soldered and clipped through-hole leads from top side rotary pot. It cannot however protrude further from board than RJ45 socket to ensure fit within case.

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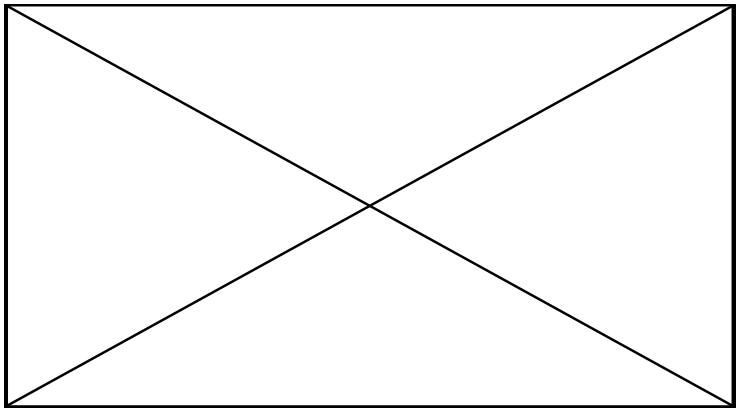
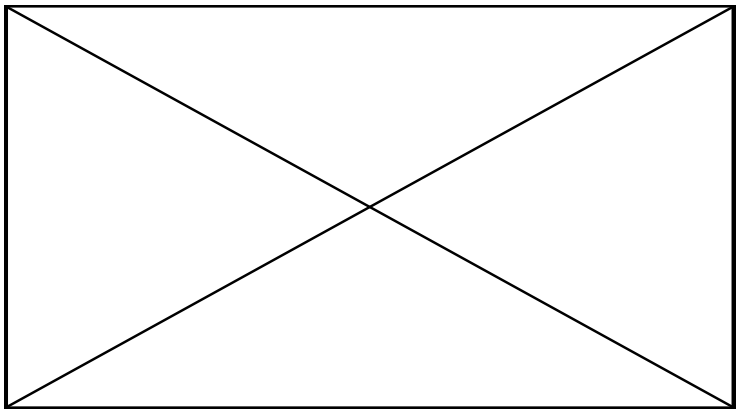
SPARK D-FUSER » Controller Assembly

Version 1.1 of assembly procedure



0.1 Prepare PCB

Trim down and tape over MBED pins in path of foil cable between display and PCB FFC.



0.2 Load firmware

Connect right angle mini-USB cable to MBED. On PC, ‘MBED’ drive will appear. Copy across supplied files. Eject drive from PC. Disconnect mini-USB cable from MBED.

1. PCB to end plate

1.1 Place on and fix with hex screws

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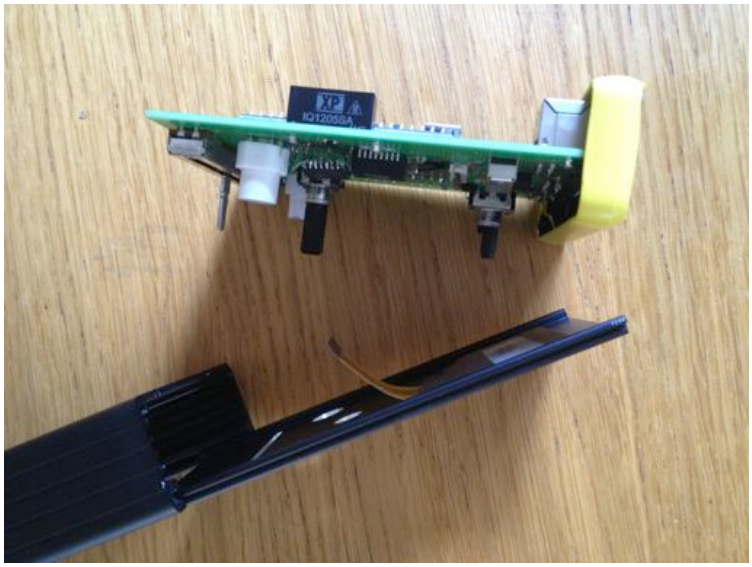
2 Display stuck to Top Plate

Shown: 2x strips of insulation tape, display positioned by eye. Black vinyl sticker with placement cut marks a possibility.



Top plate into PCB assembly

PCB and top plate are not fixed together, top plate just has to be loosely hooked over encoder shaft and into end cap.

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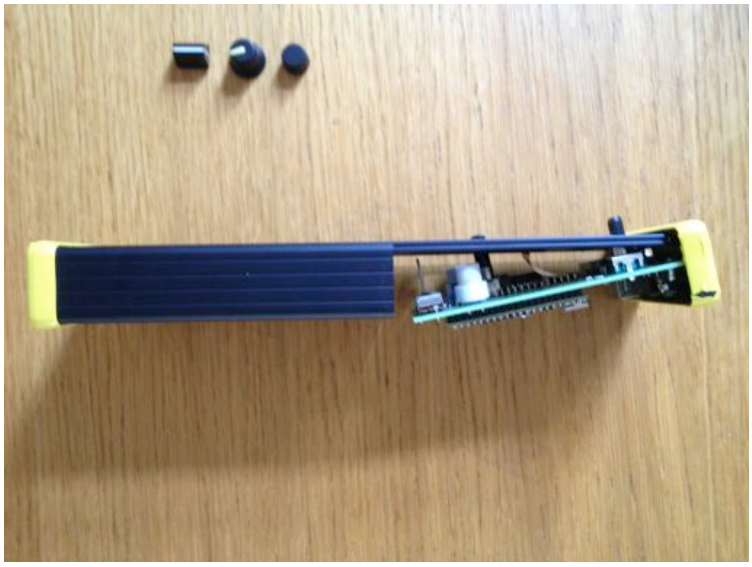
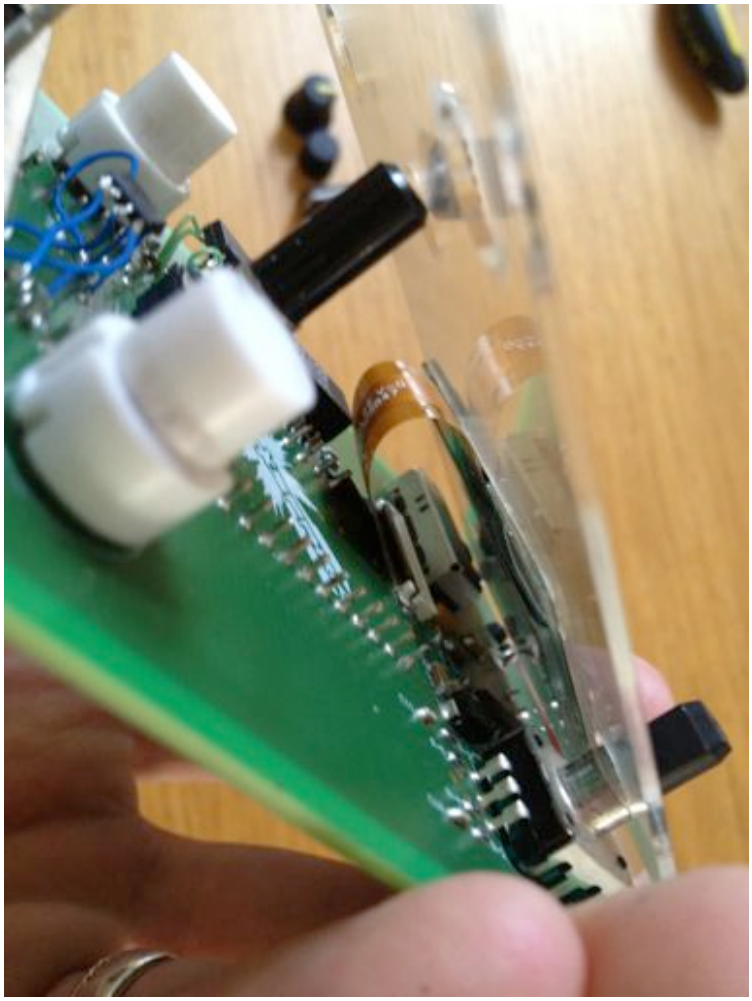
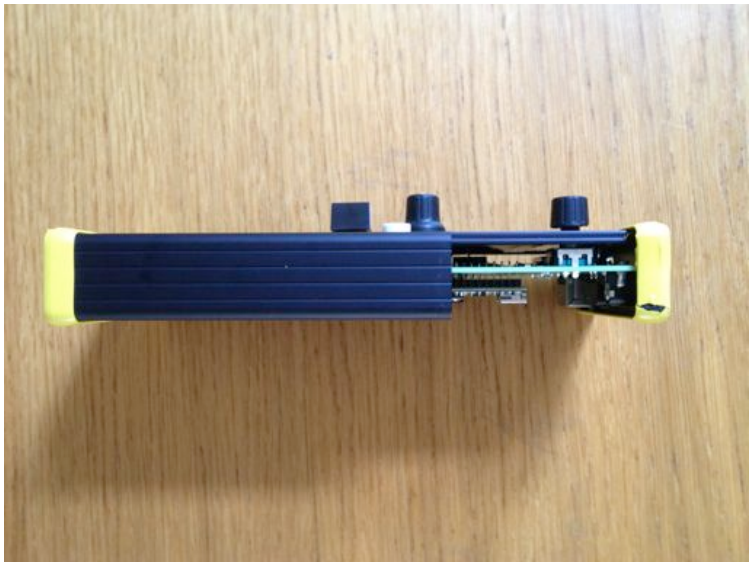


3.1 Display-PCB FFC connected

Need to hold insert FFC with PCB and top plate held steady, and a spudger to flip the FFC closed.

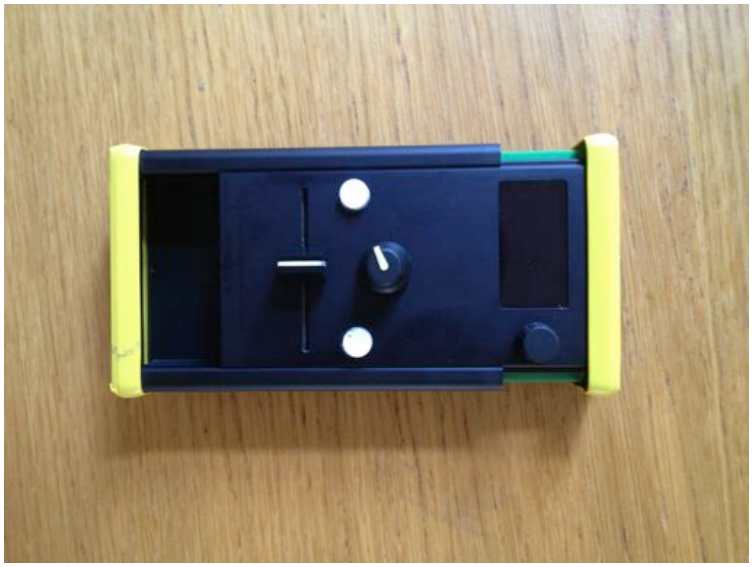


3.1 Display-PCB FFC connected detail



4 PCB Assembly into case

Top plate and PCB fit into grooves



4.1 Knobs attached

1x Slider push-on knob

1x Pot push-on knob

1x Rotary Encoder push-on knob

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4.2 End plates screwed into case

4x Screws on each end, 8 total

5 Power up and test

Display should show menu. Test procedure follows in the next section.