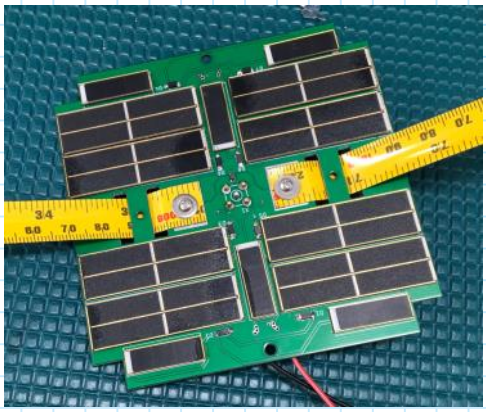
Energy harvesting board testing 1112

2019年11月11日 星期一 15:35

1. Apparatus:

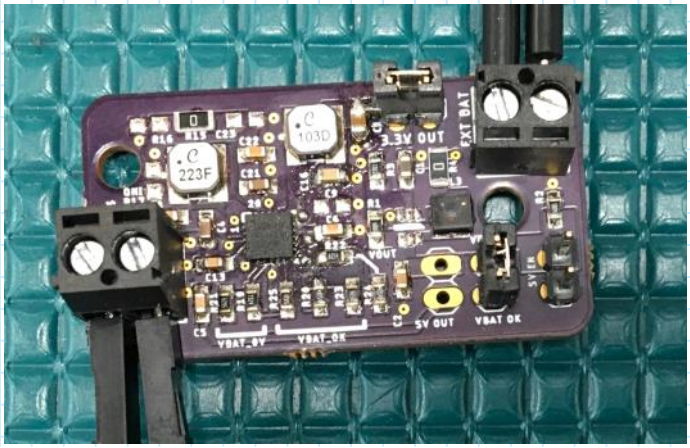
Solar cell 1:

Solar cell 2:

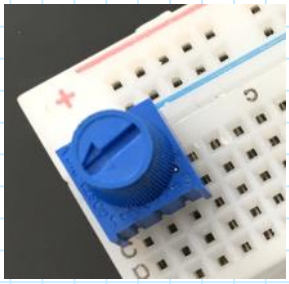


Battery:

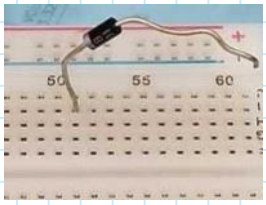
Energy Harvesting Board:



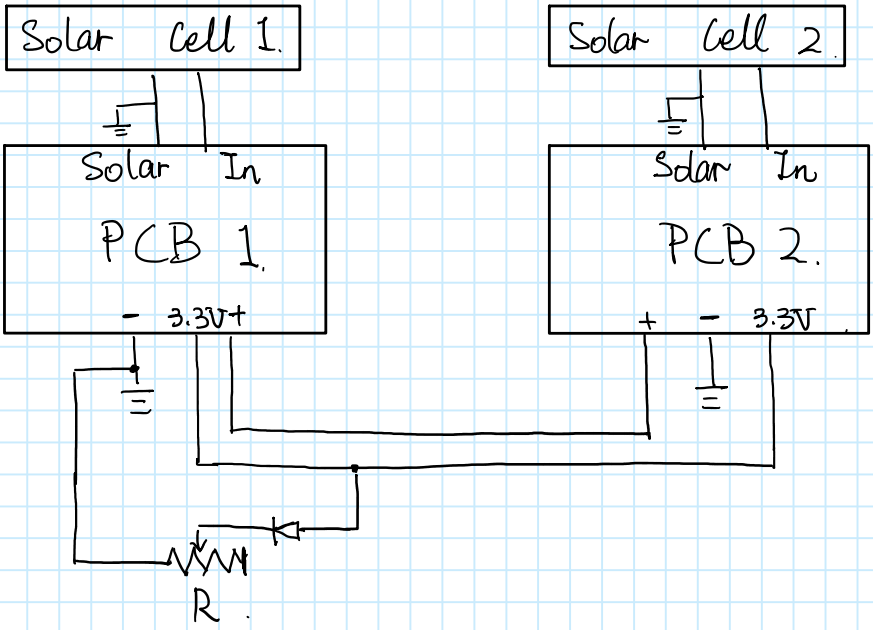
Potentiometer.

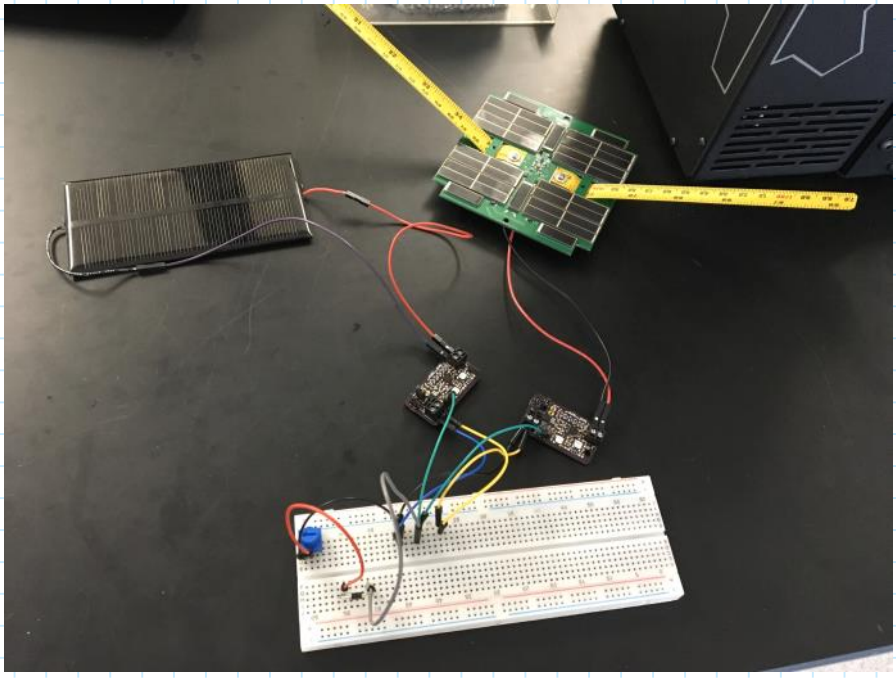


Diode.



2. Test 2 PCBs with sun light and diode.





Case 1: R = 146.4 [Ω].

Solar Cell 1: 3.98 [V]

Solar Cell 2: 3.98 [V].

1) Before connect diode & resistor.

PCB 1: EXT BAT : 4.1 [V]

3.3V OUT : 3.22 [V].

PCB 2: EXT BAT : 4.1 [V]

3.3V OUT : 3.25 [V].

2) After connect resistor.

PCB 1: EXT BAT : 4.1 [V]

3.3V OUT : 3.255 [V].

PCB 2: EXT BAT : 4.1 [V]

3.3V OUT : 3.27 [V].

3) After connect resistor and diode.

Solar Cell 1: 3.85 [V]

Solar Cell 2: 3.96 [V].

PCB 1: EXT BAT : 4.1 [V]

3.3V OUT : 3.28 [V].

PCB 2: EXT BAT : 4.1 [V]

3.3V OUT : 3.28 [V].

a) Only with PCB1.

PCB 1: EXT BAT : 4.1 [V]

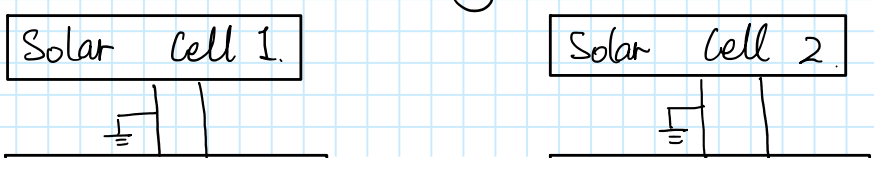
3.3V OUT : 3.28 [V].

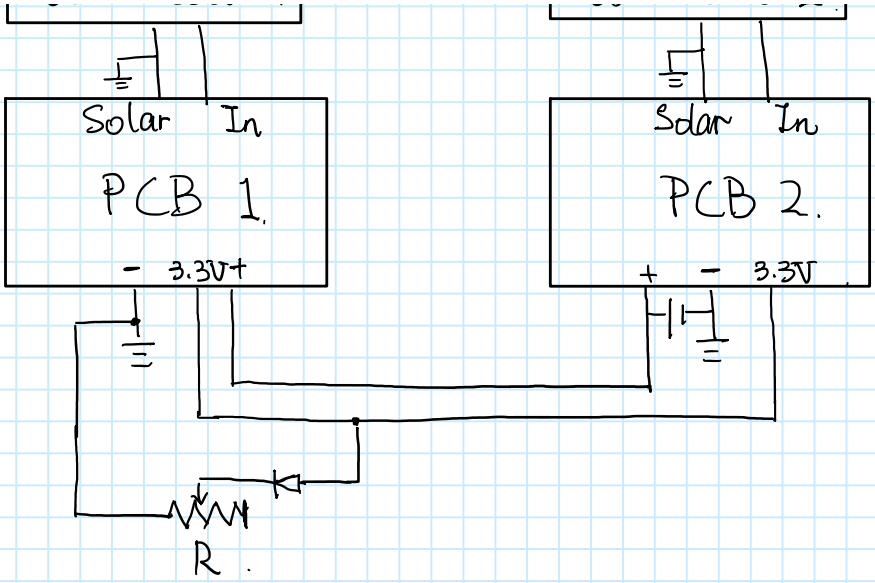
b) Only with PCB2.

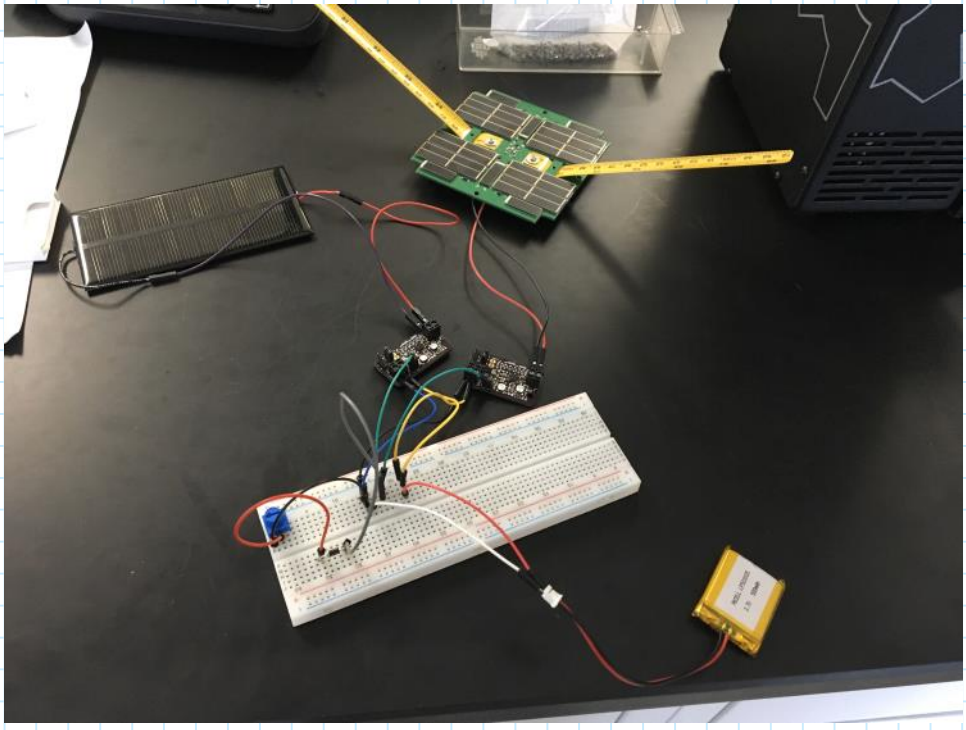
PCB 2: EXT BAT : 3.4-3.7 [V]

3.3V OUT : 1.3 – 1.5 [V].

3. Charge battery with sunlight and diode.







Case 1: R = 146.4 [Ω].

PCB 1: EXT BAT : 3.735 [V]
3.3V OUT : 3.291 [V].

PCB 2: EXT BAT : 3.729 [V]
3.3V OUT : 3.288. [V].

Battery Voltage:
Before connect. : 3.720 [V].
During connect : 3.729 [V].

Before connect. : 3.120 [V].
During connect : 3.729 [V].
After connect : (5 mins) 3.722 [V].

After charging 5 mins, charging current = 14.7 [mA].