

Team Apple: Power Budget v3.5.2

5 Volt Modules						Datasheet Values			Calculated Values		
Part Name	Idle Current(mA)	Typical Current(mA)	Max Current(mA)	Measured Current(mA)	Average Power(mW)						
Arduino	0.0001	20	50	32	160						
DC Current Sensor	0.006	0.7	1	0.74	3.7						
GPS Sensor	4	12	20	21.15	105.75						
Humidity/Temperature Sensor	0.0003	0.028	1	0.28	1.4						
Pressure Sensor	0.001	0.65	1	0.01	0.05						
Solar Irradiance	0.0001	0.15	0.3	0.23	1.15						
Roof Temperature	Not Currently Implemented										
<b>Total</b>	<b>4.0075</b>	<b>33.528</b>	<b>73.3</b>	<b>54.41</b>	<b>272.05</b>						

  

3.3 Volt Modules						Datasheet Values			Calculated Values		
Part Name	Idle Current(mA)	Typical Current(mA)	Max Current(mA)	Average Current(mA)		Average Power(mW)					
Xbee	0.0035	15	220	29.5		0.000001262415					

  

Overall Power					
Total Idle Current	Total Typical Current	Total Max Current	Total Average Current Draw(mA)	Total Average Power(mW)	
4.011	48.528	293.3	83.91	272.0500013	

  

Battery Supply			
Part Name	Supply Voltage(V)	Discharge Rate(mAh)	Usable Energy
3.7V 6600 mAh	3.7	6600	65%

  

XBee Characteristics	
Idle Time	99.9891%
Transmit Time	0.01093%

  

Calculated Run Time				
Energy(mWh)	Usable Energy	Max Power Consumed(mW)	Max Current Run Time of Usable Energy(Hours)	Average Current Run Time of Usable Energy(Hours)
18650	65%	366.5909005	33.06819668	44.55982336