

System Parameters (defined by hardware)
from the datasheets

Profiles (usage of each component)

"off"

"sensing"

Processor

Active	798 mW
Idle	83.6 mW
Sleep	0.532 mW

0%	20%
0%	80%
100%	0%

LED

On	10 mW
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0%	5%
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Sensor

On	37 mW
Idle	4.95 mW
Off	1 mW

0%	50%
0%	50%
100%	0%

Display

On	25 mW
Off (leakage)	1 mW

0%	0%
100%	100%

Radio

Data Rate	300 bps
Standby Power	3.3 mW
TX Power	206 mW
RX Power	55 mW

0%	0%
0%	97%
0%	2%
0%	1%

12	10
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Battery

Capacity	2500 mAh
Nominal Voltage	3.7 V
Regulator Efficiency	87%

REFLECTIONS : WHAT DID YOU LEARN FROM ANALYZING YOUR POWER. TALK ABOUT SOME THINGS YOU LEARNED.
I estimated "days of use" by calculating the power consumption of each component and factoring in sleep mode.

onent mode - defined by software and usage)

"interactive"

30%
60%
0%

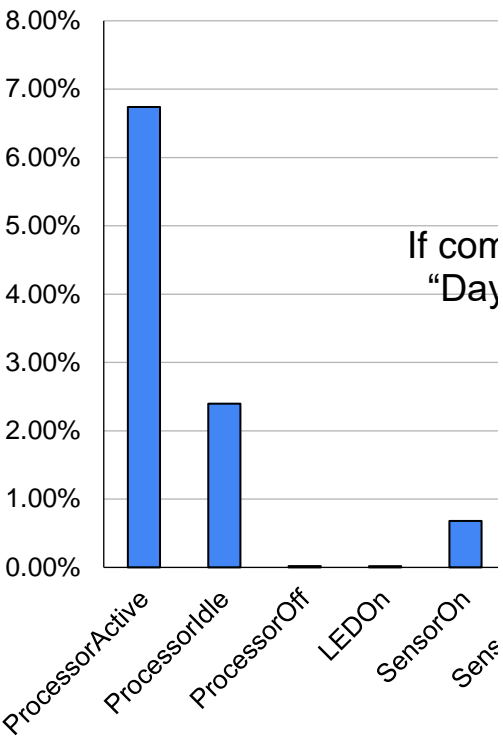
5%

50%
50%
0%

100%
0%

0%
97%
2%
1%

2 hours/day typical usage



If corr
"Day

Total power in profile (mw)	
"off"	2.532
"sensing"	256.826
"interactive"	343.906

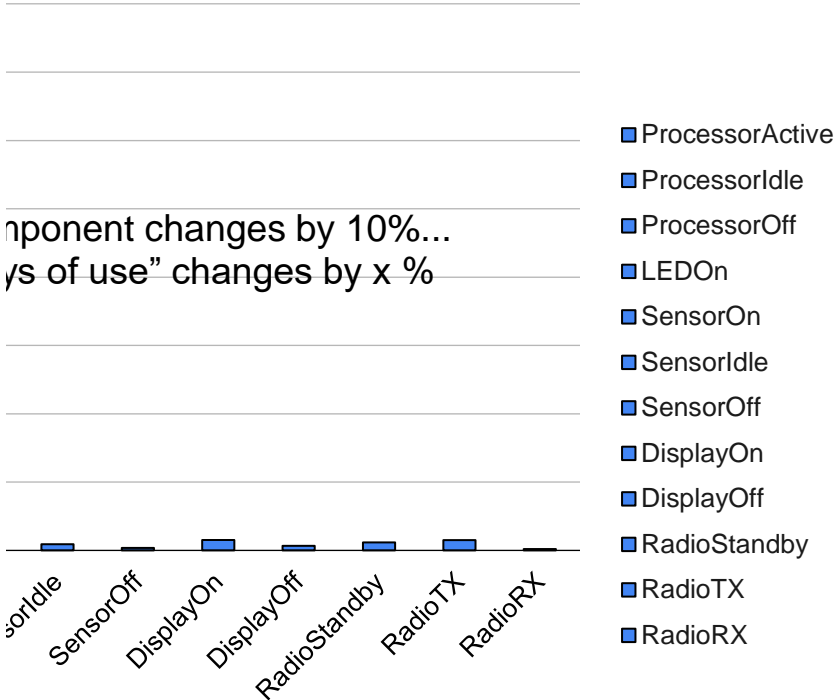
Effective Battery Capacity
8047.5

Days of Use	2.45
Hours of Use	58.77

ME POTENTIAL TRADEOFFS.

sep modes and duty cycles. A 2500mAh battery seems be more than enough. Reducing GPS updates and using

Sensitivity Analysis



	Maximum Time
mW	3178.3 hours
mW	31.3 hours
mW	23.4 hours

mW*h

days
hours

deep sleep can improve efficiency, but this may impact responsiveness in my use case. I learned that power op

Optimization is a tradeoff between performance and longevity. I realized choosing between a smaller device with st

Shorter battery life or a bulkier but longer-lasting tracker can be a tough design decision.