Power Budget Example

Team Number:	208
Project Name:	**JECK**
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Version:	**1**

A. List ALL major components (active devices, integrated circuits, etc.) except for power sources, voltage regulators, resistors, capacitors, or passive elements

All Major Components	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
	Humidity/Temperature Sensor	SHT31-DIS-F2.5KS	2.15 - 5.5V	1	0.6	0.6	mA
	Buck Switching regulator	TPS63030DSKR	1.8 - 5.5V	1	800	800	mA
	OLED Screen	B0FKYVZ9W8	3.3 - 5V	1	18.2	18.2	mA
	Red LED		1.8 - 2.2V	1	10	10	mA
	MOSFET P-CH	NTR4101PT1G	0 - 20V	1	0.006	0.006	mA

B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.

+3.3V Power Rail	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
	Humidity/Temperature Sensor	SHT31-DIS-F2.5KS	2.15 - 5.5V	1	0.6	0.6	mA
	OLED Screen	B0FKYVZ9W8	3.3 - 5V	1	18.2	18.2	mA
	Red LED		1.8 - 2.2V	1	10	10	mA
	MOSFET P-CH	NTR4101PT1G	0 - 20V	1	0.006	0.006	mA
						0	mA
					Subtotal	28.806	mA
					Safety Margin	25%	
					Total Current Required on +3.3V Rail	28.806	mA
c4. Regulator or Source Choice	Buck Switching regulator	TPS63030DSKR	1.8 - 5.5V	1	800	800	mA
					Total Remaining Current Available on 3.3V Rail	771.194	mA

C. For each power rail above, select a specific voltage regulator using the same process as for major component selection. Confirm that the Total Remaining Current Available on each rail

D. Select a specific external power source (wall supply or battery) for your system, and confirm that it can supply all of the regulators for all of the power rails simultaneously. If you need

External Power Source 1	Component Name	Part Number	SupplyVoltageRange	Output	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	Battery Pack (3 AA 1.5V batteries)		4.5V	-4.5V	8000	8000	mA
Power Rails Connected to External Power Source 1	Buck Switching regulator	TPS63030DSKR	1.8 - 5.5V		800	800	mA
					Total Remaining Current Available on External Power Source 1	7200	mA

E. Calculate Battery Life (if applicable). For each battery, also check the worst-case lifetime of the battery by indicating the capacity in mAh.

Component Name	Part Number	SupplyVoltageRange	Capacity(mAh)	RequiredByRegulators	
Battery Pack (3 AA 1.5V batteries)	(full part number)	4.5V	2500	800	
			Battery Life	3.125	hours

Notes

External Supply Voltage should be determined by the dropout voltage for highest-voltage regulator (e.g., +14V for a +12V regulator).
If you have multiple units in your design (e.g., a base unit and remote unit) then you need a separate power budget for each unit