

Power Budget

Team Number:	208
Project Name:	JECK
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Version:	2

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-ARP-B	2.4 - 5.5V	1	0.6	0.6	mA
	IC OP-AMP	MCP6004-I/P	1.8 - 5.5V	1	30	30	mA
	Red LED	N/A	1.8 - 2.2V	1	10	10	mA
	5V Regulator	LM7805T	7 - 35V	1	1500	1500	mA
B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.							
+5V 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
	IC OP-AMP	MCP6004-I/P	1.8 - 5.5V	1	30	30	mA
	Red LED	N/A	1.8 - 2.2V	1	10	10	mA
						Subtotal	40.6
					Safety Margin	25%	
					Total Current Required on +5V Rail	50.75	mA
c2. Regulator or Source Choice	5V regulator	LM7805T	7V - 35V	1	1500	1500	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 above is							
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 multiple							
External Power Source 1	Component Name	Part Number	SupplyVoltageRange	Output	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	Plug-in Wall Supply	Model: 0930	240VAC	9V	3000	3000	mA
Power Rails Connected to External Power Source 1	5V Regulator	LM7805T	7 - 35V	5V	1500	1500	mA
	Total Remaining Current Available on External Power Source 1					1500	mA

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