

## Power Budget

Team Number:	208
Project Name:	JECK
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Version:	3

<b>A. List ALL major components (active devices, integrated circuits, etc.) except for power sources, voltage regulators, resistors, capacitors, or passive elements</b>							
All Major Components	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (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
	PIC18F57Q43 Curiosity Nano	PIC18F57Q43	1.8 - 5.1V	1	500		500 mA

<b>B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.</b>							
+5V Power Rail	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (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
	PIC18F57Q43 Curiosity Nano	PIC18F57Q43	1.8 - 5.1V	1	500		500 mA
					<i>Subtotal</i>	540.6	mA
					<i>Safety Margin</i>	25%	
					<i>Total Current Required on +5V Rail</i>	675.75	mA
c2. Regulator or Source Choice	5V regulator	LM7805T	7V - 35V	1	1500		1500 mA

<b>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</b>							
<b>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</b>							
External Power Source 1	Component Name	Part Number	Supply Voltage Range	Output	Absolute Maximum Current (mA)	Total Current (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
					<i>Total Remaining Current Available on External Power Source 1</i>	1500	mA

Notes
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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