

# Power Budget Example

Team Number:	Team 206
Project Name:	Photoresistor Subsystem
Team Member Names:	Adrian, Zane, Mihir
Version:	1

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

All Major Components	Component Name	Part Number	Supply	#	Absolute	Total	Unit
	PIC18F57Q43 Curiosity Nano	DM164150	+1.8V - 5.1V	1	100	100	mA
	Photoresistor	NSL-5162	+5V	1	100	100	mA
	Op-Amp	MCP6004-I/P	+1.8V - 6V	1	0.1	0.1	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	Supply	#	Absolute	Total	Unit
	PIC18F57Q43 Curiosity Nano	DM164150	+1.8V - 5.1V	1	100	100	mA
	Photoresistor	NSL-5162	+5V	1	100	100	mA
	Op-Amp	MCP6004-I/P	+1.8V - 6V	1	0.1	0.1	mA
						Subtotal	200.1 mA
						Safety Margin	25%
						Total Current Required on +5V Rail	250.125 mA
c2. Regulator or Source Choice	+5V Regulator	LM7805T	5V - 18V	5V	1500	1500	mA
						Total Remaining Current Available on +5V Rail	1249.875 mA

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

**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**

External Power Source 1	Component Name	Part Number	Supply	Output	Absolute	Total	Unit
Power Source 1 Selection	Plug-in Wall Supply	L6R36-090	100-240VAC	9V	3000	3000	mA
Power Rails Connected to External Power Source 1	+5V Regulator	LM7805T	5V - 18V	5V	1500	1500	mA

<b>Total Remaining Current Available on External Power Source 1</b>	1500	mA
<b>Notes</b>		

## **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

[1] For inductive loads (e.g., motors, solenoids) this is often called "stall current" on the data sheet