

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							mA
	+5V Regulator	LM7805T	5V - 18V	5V	1500	1500	mA

External Power Source 1									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									

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