

Power Budget for Motor - Raunak Singh

Team Number:	Team 201
Project Name:	Garden Buddy
Team Member Names:	Raunak Singh Chhabra, Isaiah Johnston, Jacob Alger, Rylee Wirt
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	
	Barrel Jack	PJ-102AH	24V	1	5000	5000	mA	
	5V regulator	LM7805T	7V to 35V	2	1500	3000	mA	
	Curiosity Nano Board	PIC18F57Q43	1.8V to 5.5V	1	500	500	mA	
	Motor	M1N1FB11G	1V to 6V	1	1100	1100	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 (1)	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit	
	Curiosity Nano Board	PIC18F57Q43	1.8V to 5.5V	1	500	500	mA	
						Subtotal	500	mA
						Safety Margin	25%	
						Total Current Required on +5V Rail	625	mA
	c3. Regulator or Source Choice	5V regulator	LM7805T	7V to 35V	1	1500	1500	mA
						Total Remaining Current Available on +5V Rail	875	mA
+5V Power Rail (2)	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit	
	Motor	M1N1FB11G	1V to 6V	1	1200	1200	mA	
						Subtotal	1200	mA
						Safety Margin	25%	
						Total Current Required on +5V Rail	1500	mA
	c2. Regulator or Source Choice	5V regulator	LM7805T	7V to 35V	1	1500	1500	mA
						Total Remaining Current Available on +5V Rail	0	mA
+9V Power Rail	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit	
	5V regulator	LM7805T	7V to 35V	1	1500	1500	mA	
	5V regulator	LM7805T	7V to 35V	1	1500	1500	mA	
	Subtotal					3000	mA	
	Safety Margin					25%		
	Total Current Required on +9V Rail					3750	mA	
c1. Regulator or Source Choice	Barrel Jack	PJ-102AH	24V	1	5000	5000	mA	
						Total Remaining Current Available on +9V Rail	1250	mA
C. For each power rail above,								

D. Select a specific external							
External Power Source 1	Component Name	Part Number	SupplyVoltageRange	Output Voltage	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	Plug-in Wall Supply	B09ZTKTLGW	110VAC	9V	15000	15000	mA
Power Rails Connected to	5V regulator	LM7805T	7V to 35V	5V	1500	1500	mA
	5V regulator	LM7805T	7V to 35V	5V	1500	1500	mA
	Barrel Jack	PJ-102AH	24V	9V	5000	5000	mA
	Total Remaining Current Available on External Power Source 1					7000	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	
						#REF!	
					Battery Life	#REF!	hours

Notes
be determined by the dropout
design (e.g., a base unit and

