

Power Budget

Team Number:	202	Project Name:	Hydroelectric Dam		Frank Wade
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A. List ALL major components (active devices, integrated circuits, etc.) except for power sources, voltage regulators,

All Major Components	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (mA)	Unit
	Motor Driver	IFX9201SGAUMA	5V to 36V	2	13	26	mA
	3.3V Regulator	LM2575D2T	4.75V-40V	1	1000	1000	mA
	Microcontroller	PIC18F47Q10	1.8V-5.5V	1	50	50	mA
	Stepper Motor	26M048B1B	5V-12V	1	250	250	mA

B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails

+5V Power Rail	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (mA)	Unit
	Stepper Motor	26M048B1B	5V-12V	1	250	250	mA
						0	mA
						0	mA
						0	mA
						0	mA
	Subtotal					250	mA
	Safety Margin					25%	
	Total Current Required on +5V Rail					312.5	mA
c2. Regulator	(+)3.3V Regulator	LM2575D2T	4.75V-40V	1	1000	1000	mA
	Total Remaining Current Available on +5V Rail					687.5	mA

+3.3V Power Rail	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (mA)	Unit
	Motor Driver	IFX9201SGAUMA	5V to 30V	2	13	26	mA
	Microcontroller	PIC18F47Q10	1.8V-5.5V	1	50	50	mA
						0	mA
						0	mA
	Subtotal					76	mA
	Safety Margin					25%	
	Total Current Required on +3.3V Rail					95	mA
c4. Regulator	(+)3.3V Regulator	LM2575D2T	4.75V-40V	1	1000	1000	mA
	Total Remaining Current Available on 3.3V Rail					905	mA
C. For each power rail above, select a specific voltage regulator using the same process as for major component							
D. Select a specific external power source (wall supply or battery) for your system, and confirm that it can supply all							
External Power Source	Component Name	Part Number	Supply Voltage Range	Output	Maximum Current	Total Current (mA)	Unit
	Plug-in Wall Sup	Model:0930	100-240V	9	3000	27000	mA
Power Rails Connected to External						0	mA
	3.3V Regulator	LM2575D2T	4.75V-40	1	1000	1000	mA
						0	mA
	Total Remaining Current Available on External Power Source 1					26000	mA
External Power Team Power	Component Name	Part Number	Supply Voltage Range	Output	Maximum Current	Total Current (mA)	Unit
			9V	3.3	3000	9900	mA
						0	mA
	Total Remaining Current Available on External Power Source 2					9900	mA

Notes

External Supply Voltage should be determined by the dropout voltage for highest-voltage regulator (e.g., +14V for a +12V
 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