Power Budget

Team Number:	202	Project Name:	Hydroelectric Dam		Frank Wade

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	17HS08-1004S	5V-12V	1	1000	1000	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	17HS08-1004S	5V-12V	1	1	1000	mA
						0	mA
						0	mA
						0	mA
						0	mA
					Subtotal	1000	mA
					Safety Margin	25%	
					Total Current Required on +5V Rail	1250	mA
c2. Regulator	(+)3.3V Regulator	LM2575D2T	4.75V-40V	1	1000	1000	mA
					Total Remaining Current Available on +5V Rail	-250	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 Powe	**Component Name**	**Part Number**	**ıpplyVoltageRange**	**Outpu**	**eMaximumCurrent**	**otalCurrent(mA)**	**Unit**
Power Source	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 Powe	**Component Name**	**Part Number**	**ıpplyVoltageRange**	**Outpu**	**eMaximumCurrent**	**otalCurrent(mA)**	**Unit**
Team Power			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