

Individual Power Budget

Team Number:
Project Name:
Team Member Names:
Version:

210
VibeWater
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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
	PIC Discovery Nano	PIC18F577Q43	1.8V - 5.0V	1	500	500	mA
	Operational Amplifier	MCP601-I/P	2.7V - 6.0V	1	2	2	mA
							mA
							mA
							mA
B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.							
+12V Power Rail	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
						0	mA
						0	mA
						0	mA
						0	mA
						0	mA
						0	mA
						25%	
						0	mA
c1. Regulator or Source Choice						0	mA
						0	mA
						0	mA
+5V Power Rail							
	PIC Discovery Nano	PIC18F577Q43	1.8V - 5.0V	1	500	500	mA
	Operational Amplifier	MCP601-I/P	2.7V - 6.0V	1	2	2	mA
						0	mA
						0	mA
						0	mA
						502	mA
						25%	
						627.5	mA
c2. Regulator or Source Ch	+5V Regulator	LM1084IT-5.0/NOPB	1.5V - 25V	1	5000	5000	mA
						4372.5	mA
						0	mA
-5V Power Rail							
						0	mA
						0	mA
						0	mA
						0	mA
						0	mA
						25%	
						0	mA
						0	mA
c3. Regulator or Source Choice						0	mA
						0	mA
						0	mA
+3.3V Power Rail							
						0	mA
						0	mA
						0	mA
						0	mA
						0	mA
						25%	
						0	mA
						0	mA
c4. Regulator or Source Choice						0	mA
						0	mA
						0	mA
C. For each power rail above, select a specific voltage regulator using the same process as for major component selection. Confirm that the Total Remaining Current Available on each rail above is							
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 all of the power rails simultaneously. If you need multiple							
External Power Source 1	Component Name	Part Number	SupplyVoltageRange	Output	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	9V batteries	PC1604BKD	9.0V	9.0V	5000	5000	mA
Power Rails Connected to External Power Source 1	+5V Regulator	LM1084IT-5.0/NOPB	1.5V - 25V	1	627.5	627.5	mA
						0	mA
						4372.5	mA
External Power Source 2	Component Name	Part Number	SupplyVoltageRange	Output	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 2 Selection						0	mA
Power Rails Connected to External Power Source 2						0	mA
						0	mA
						0	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	
	9V batteries	PC1604BKD	9.0V		692	627.5	
					Battery Life	1.102788845	hours
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