Power Budget

Team Number:	#211
Project Name:	EGR 304 Plant Irrigation System
Team Member Names:	Hafsa Kaysan, Michael Kim, Levi Addink, Kelton Jensen
Version:	v1

A. List ALL major components (active devices, integrated circuits, etc.) except for power sources, volt

All Major Components	Component Name	Part Number	olyVoltageRan	#
	Microcontroller	PIC18F57Q43	+1.8V - 5.5V	1
	IR Reflective Sensor	OPB732	+3.3V - 5V	1
	Pressure Sensor	SEN0257	+5V	1
	Opamp	MC6004	+1.8V - 6V	1

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

+5V Power Rail	Component Name	Part Number	olyVoltageRan	#
	Pressure Sensor	SEN0257	+5V	1
	Opamp	MC6004	+1.8V - 6V	1
	IR Reflective Sensor	OPB732	+3.3V - 5V	1
	Microcontroller	PIC18F57Q43	+1.8V - 5.5V	1
			Total Current Requir	
c2. Regulator or Source Choice	+5V Regulator	LM7805	+5V - 35V	1
			Total Remaining Current Availab	

C. For each power rail above, select a specific voltage regulator using the same process as for major

D. Select a specific external power source (wall supply or battery) for your system, and confirm that

External Power Source 1	Component Name	Part Number	olyVoltageRan	Output
Power Source 1 Selection	Plug-in Wall Supply	(full part number)	9VAC	+9V
	+5V Regulator (Board 1)	LM7805	+5V - 35V	1
Power Rails Connected to	+5V Regulator (Board 2)	LM7805	+5V - 35V	1
External Power Source 1	+5V Regulator (Board 3)	LM7805	+5V - 35V	1
	+5V Regulator (Board 4)	LM7805	+5V - 35V	1
			Total Remaining Current Available on External P	

E. Calculate Battery Life (if applicable). For each battery, also check the worst-case lifetime of the b

	Component Name	Part Number	olyVoltageRange	
	N/A			

Notes

External Supply Voltage should be determined by the dropout voltage for highest-voltage regulator (e.
If you have multiple units in your design (e.g., a base unit and remote unit) then you need a separate p

tage regulators, resistors, capacitors, or		
MaximumCurre	**talCurrent(mA)**	**Unit**
500	500	mA
100	100	mA
10	10	mA
30	30	mA
ferent power rails in the design.		
MaximumCurre	**talCurrent(mA)**	**Unit**
10	10	mA
30	30	mA
100	100	mA
500	500	mA
	0	mA
Subtotal	640	mA
Safety Margin	25%	
ed on +5V Rail	800	mA
1000	1000	mA
ole on +5V Rail	200	mA
component selection. Confirm that the		
it can supply all of the regulators for all		
MaximumCurre	**talCurrent(mA)**	**Unit**
5000	5000	mA
1000	1000	mA
1000	1000	mA
1000	1000	mA
1000	1000	mA
ower Source 1	1000	mA
attery by		
Capacity(mAh)	**iredByRegulators**	
Battery Life	#REF!	hours

.g., +14V for a +12V regulator).
power budget for each unit