

Moisture Sensor Power Budget

Team Number:	201
Project Name:	Garden Buddy
Team Member Names:	Isaiah Johnston
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
	Curiosity Nano	PIC18F57Q43		1.8V-5.5V	1	20	20	mA
	Op-amp buffer	MCP6022-I/P		2.5V - 5.5V	1	5	5	mA
	filter capacitor	C430C104K3G5TA-ND		N/A	1	0	0	mA
	Schottky clamp diode	BAT85S-TAP		N/A	1	0	0	mA
	5V buck regulator	TSR 1-2450E		+6.5V- 36V	1	1000	1000	mA
	8-pin IDC connector	215570-8		N/A	1	0	350	mA
	Battery pack	RadioMaster 2S 7.4 V Li-ion 5000 mAh		+8.4V-6V	1	5000		
+5V Power Rail		Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
	Curiosity Nano	PIC18F57Q43		1.8V-5.5V	1	20	20	mA
	Op-amp buffer	MCP6022-I/P		2.5V - 5.5V	1	5	5	mA
							0	mA
							0	mA
							0	mA
							0	mA
							25	mA
							25%	
						Total Current Required on +5V Rail	31.25	mA
c2. Regulator or Source Choice	5V buck regulator	TSR 1-2450E		+6.5V- 36V	1	1000	1000	mA
						Total Remaining Current Available on +5V Rail	968.75	mA
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 power sources,								
External Power Source 1		Component Name	Part Number	SupplyVoltageRange	Outpu	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	Battery pack	RadioMaster 2S 7.4 V Li-ion 5000 mAh		+8.4V-6V	+7.4V	5000	5000	mA
Power Rails Connected to External Power Source 1	5V buck regulator	TSR 1-2450E		+6.5V- 36V	1	1000	1000	mA
							4000	mA
Total Remaining Current Available on External Power Source 1								
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	
	Battery pack	RadioMaster 2S 7.4 V Li-ion 5000 mAh		+8.4V-6V		5000	31.25	
						Battery Life	160	hours
Notes								