Power Budget Example

Team Number:	302
Project Name:	**U.C.C**
Team Member Names:	**Jason Klinkbeil, Justin Hanson, Alijah Williams, Evan Lininger**
Version:	**1**

All Major Components	**Component Name**	**Part Number**	**Supply**	**#**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	Microcontroller	PIC18F57K42-I/PT	1.8V - 3.6V	1	350	350	mA
	Temperature Sensor	TC74A4-3.3VCTTR	2.7V - 5.5V	1	0.35	0.35	mA
	Fan	MF80251V1-1000U-A99	4.5V - 13.8V	1	120	120	mA
	12V Regulator	BDJ2GC0WEFJ-E2	4.5V - 14V	1	1000	1000	mA
	3.3V Regulator	LM3671MF-3.3/NOPB	2.7V - 5.5V	1	600	600	mA
	Motor controller	296-42660-2-ND	6.5V - 45V	1	10	10	mA
	Humidity Sensor	SHT40-AD1B-R3	1.8V-3.6V	**1**	100	100	**mA**

+12V Power Rail	**Component Name**	**Part Number**	**SupplyVoltageRange**	**#**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
	Fan	MF80251V1-1000U-A99	4.5V - 13.8V	1	120	120	mA
						0	mA
						0	mA
						0	mA
						0	mA
					Subtotal	120	mA
					Safety Margin	25%	
					Total Current Required on +12V Rail	150	mA
	12V Regulator	BDJ2GC0WEFJ-E2	4.5V - 14V	1	1000	1000	mA
					Total Remaining Current Available on +12V Rail	850	mA

+3.3V Power Rail						**TotalCurrent(mA)**	**Unit**
	Microcontroller	PIC18F57K42-I/PT	1.8V - 3.6V	1	350	350	mA
	Temperature Sensor	TC74A4-3.3VCTTR	2.7V - 5.5V	1	0.35	0.35	mA
	Motor controller	296-42660-2-ND	6.5V - 45V	1	10	10	mA
	Humidity Sensor	SHT40-AD1B-R3	1.8V-3.6V	**1**	100	100	mA
						0	mA
					Subtotal	460.35	mA
					Safety Margin	25%	
					Total Current Required on +5V Rail	575.4375	mA
	3.3V Regulator	LM3671MF-3.3/NOPB	2.7V - 5.5V	1	600	600	mA
					Total Remaining Current Available on +5V Rail	24.5625	mA

External Power Source 1	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Outpu**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
Power Source 1 Selection	12V Battery Pack (x8 AA)	EN91	12V	12V	12V	2000	mA

Power Rails Connected to External Power Source 1	12V Regulator	BDJ2GC0WEFJ-E2	4.5V - 14V	1	1000	1000	mA
						0	mA
						0	mA
					Total Remaining Current Available on External Power Source 1	1000	mA
External Power Source 2	**Component Name**	**Part Number**	**SupplyVoltageRange**	**Outpu**	**AbsoluteMaximumCurrent (mA)**	**TotalCurrent(mA)**	**Unit**
Power Source 2 Selection	4.5V Battery Pack	EN91	4.5V	4.5V	4.5V	1500	mA
Power Rails Connected to External Power Source 2	3.3V Regulator	LM3671MF-3.3/NOPB	2.7V - 5.5V	1	600	600	mA
					Total Remaining Current Available on External Power Source 2	900	mA
	Component Name	**Part Number**	**SupplyVoltageRange**		**Capacity(mAh)**	**RequiredByRegulators**	
	4.5V Battery Pack	EN91	4.5V		1500	600	
					Battery Life	2.5	hours
	12V Battery Pack	EN91	12V		2000	1000	
					Battery Life	2	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