	Power	Budget Te	eam 201				
Team Number:	201	, <u> </u>					
Project Name:	BevRight						
Team Member Names:	Hunter Janisch, Harry Z, Erik A,	Joseph P.					
Version:	1						
A. List ALL major components (a	ctive devices, integrated circu	uits, etc.) except	for power sou	rces, vo	Itage regulators, i	resistors, cap	<mark>acitors, or</mark>
All Major Components	Component Name	Part Number	Supply	#	Absolute	Total	Unit
Temperature Sensor	DS18B20 OneWire Temperature	1528-2149-ND	3-5V	1	250	250	mA
Humidity Sensor	SHT30-DIS-B2	1649-1009-2-ND	2.15-5.15V	1	1.5	1.5	mA
LCD Display	Character Display Module Transflective	NHD-C0220BIZ	2.7-3.6V	1	1500	500	mA
Heating Element	FIT0845	426-FIT0845	5V	1	500		mA
Cooling Unit	Peltier Module 51.4W @ 27°C 6 A 90°C	345-1739-	-15.4V	1	6000	6000	mA
Fan	Fan Tubeaxial 12VDC Square	603-1159-ND	7-12.6V	1	500	500	mA
							mA
B. Assign each major component	t above to ONE power rail bel	ow. Try to minim	ize the number	of diffe	rent power rails i	n the design.	
+12V Power Rail	Component Name	Part Number	Supply	#	Absolute	Total	Unit
Fan	Fan Tubeaxial 12VDC Square	603-1159-ND	7-12.6V	1	500	500	mA
Cooling Unit	Peltier Module 51.4W @ 27°C 6 A 90°C	345-1739-	-15.4V	1	6000	3000	mA
						0	mA
						0	mA
						0	mA
		3500	mA				
	Safety Margin						
	Total Current Required on +12V Rail						mA
c1. Regulator or Source Choice	12V/6A AC/DC Power ad	apter			6000	6000	mA
	Total Remaining Current Available on +12V Rail						mA
+5V Power Rail	Component Name	Part Number	Supply	#	Absolute	Total	Unit
Heating Element	FIT0845	426-FIT0845	5V	1		500	mA
						0	mA
						0	mA
					Subtotal	500	mA
	Safety Margin						
			Total Currer	t Reaui	red on +5V Rail	625	mA

	1410 457514# LTD	576-1550-2-ND	4.04) (		1000	1000	
c2. Regulator or Source Choice	MIC4575WU-TR		4-24V	1 1	1000	1000	
	_				le on +5V Rail	375	
+3.6V Power Rail	Component Name	Part Number	Supply	#	Absolute	Total	Unit
Humidity Sensor	SHT30-DIS-B2	1649-1009-2-ND	2.15-5.15V	1	1.5	1.5	mA
LCD Display	Character Display Module Transflect	NHD-C0220BIZ	2.7-3.6V	1	1500	500	mA
Temperature Sensor	DS18B20 OneWire Temperature	1528-2149-ND	3-5V	1	350	250	mA
						0	mA
					Subtotal	751.5	mA
					Safety Margin	25%	
		•	Total Curren	t Required	on +3.3V Rail	939.375	mA
c4. Regulator or Source Choice	MIC4575WU-TR	576-1550-2-ND	4-24V	1	1000	1000	mA
C. For each power rail above, sel	ect a specific voltage regula				le on 3.3V Rail component sele	60.625 ection. Confirm	
C. For each power rail above, sel  D. Select a specific external power.		ator using the same	process as	for major	component sele	ection. Confirm	that the
D. Select a specific external pow		ator using the same	process as	for major	component sele	ection. Confirm	that the
D. Select a specific external power External Power Source 1	er source (wall supply or ba	ator using the same	process as em, and cont	for major of	component sele	ection. Confirm	that the rs for all Unit
D. Select a specific external power External Power Source 1 Power Source 1 Selection	er source (wall supply or ba Component Name	ator using the same attery) for your syste Part Number	process as em, and cont Supply	for major of the firm that it of the firm that	component sele can supply all c	of the regulator Total	that the rs for all Unit
D. Select a specific external power External Power Source 1 Power Source 1 Selection Power Rails Connected to	er source (wall supply or ba Component Name	ator using the same attery) for your syste Part Number	process as em, and cont Supply	for major of the firm that it of the firm that	component sele can supply all c	of the regulator Total	that the rs for all Unit mA
D. Select a specific external power External Power Source 1 Power Source 1 Selection Power Rails Connected to	er source (wall supply or ba Component Name Plug-in Wall Supply	ator using the same attery) for your syste Part Number (full part number)	em, and cont Supply 110VAC	for major of the firm that it Output +12v	component sele can supply all c Absolute 6000	of the regulator Total 6000	rs for all Unit mA mA mA
D. Select a specific external power External Power Source 1 Power Source 1 Selection Power Rails Connected to	er source (wall supply or ba Component Name  Plug-in Wall Supply  +5V Regulator  +3.6V Regulator	ator using the same attery) for your syste Part Number (full part number)  MIC4575WU-T	em, and cont Supply 110VAC +4-24V +4-24V	for major of the form that it  Output  +12v  1 1	component sele can supply all of Absolute 6000 1000	of the regulator Total  0 1000	rs for all Unit mA mA mA mA
D. Select a specific external power External Power Source 1 Power Source 1 Selection Power Rails Connected to External Power Source 1	er source (wall supply or baccomponent Name Plug-in Wall Supply  +5V Regulator +3.6V Regulator  Total R	ettery) for your system Part Number (full part number)  MIC4575WU-T MIC4575WU-T MIC4575WU-T	em, and cont Supply 110VAC +4-24V +4-24V vailable on E	for major of the firm that it Output +12v	component sele can supply all c Absolute 6000 1000 1000 cower Source 1	of the regulator Total 6000 0 1000	that the rs for all Unit mA mA mA mA
D. Select a specific external power External Power Source 1 Power Source 1 Selection Power Rails Connected to External Power Source 1	er source (wall supply or background by Component Name Plug-in Wall Supply  +5V Regulator +3.6V Regulator  Total Recable). For each battery, alse	ettery) for your system Part Number (full part number)  MIC4575WU-T MIC4575WU-T MIC4575WU-T	em, and contour Supply 110VAC  +4-24V +4-24V vailable on E	for major of the firm that it Output +12v	component sele can supply all of Absolute 6000 1000 1000 cower Source 1	of the regulator Total 6000  1000 1000 4000	that the rs for all Unit mA mA mA mA
	er source (wall supply or baccomponent Name Plug-in Wall Supply  +5V Regulator +3.6V Regulator  Total Recable). For each battery, also	Part Number  MIC4575WU-T  MIC45WU-T  MIC45WU-T	em, and conf Supply 110VAC +4-24V +4-24V vailable on E	for major of the bat	component sele  can supply all of Absolute 6000 1000 1000 power Source 1 tery by Capacity	of the regulator Total 6000  1000 1000 4000  Required	that the  rs for all  Unit  mA  mA  mA  mA
D. Select a specific external power External Power Source 1 Power Source 1 Selection Power Rails Connected to External Power Source 1	er source (wall supply or background by Component Name Plug-in Wall Supply  +5V Regulator +3.6V Regulator  Total Recable). For each battery, alse	Attery) for your system Part Number (full part number)  MIC4575WU-T MIC4575WU-T Pemaining Current A	em, and contour Supply 110VAC  +4-24V +4-24V vailable on E	for major of the firm that it Output +12v	component sele can supply all of Absolute 6000 1000 1000 cower Source 1	of the regulator Total 6000  1000 1000 4000	rs for all Unit mA mA mA mA mA

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