

Power Budget

Team Number:	308
Project Name:	Underwater Explorer
Team Member Names:	Sam B, Sam M, Jacob D., Andrew, Adrian,
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
	ESP32	ESP32-S3-WOORM	3.3V	1	500	500	mA
	OLED	NHD-2.7-12864WDV	3.3V	1	15	15	mA
	Joystick	THB001P	3.3V	2	50	100	mA
	3.3V regulator	AZ1117CH-3.3TRG1	3.3V		1350	1350	mA
B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.							
+3.3V Power Rail	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
	ESP32	ESP32-S3-WOORM	3.3V	1	500	500	mA
	OLED	NHD-2.7-12864WDV	3.3V	1	15	15	mA
	Joystick	THB001P	3.3V	2	50	100	mA
					Subtotal	615	mA
					Safety Margin	25%	
					Total Current Required on +5V Rail	768.75	mA
c2. Regulator or Source Ch	3.3V regulator	AZ1117CH-3.3TRG1	3.3V		1350	1350	mA
					Total Remaining Current Available on +3.3V Rail	581.25	mA
C. Power Supply							
External Power Source 1	Component Name	Part Number	SupplyVoltageRange	Output	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	Plug-in Wall Supply	C/DC ADAPTOR 093	100-240VAC	+9V	3000	3000	mA
Power Source 2 Selection	USB Port		5V	5V	2000	2000	
Power Source 3 Selection	Battery	LP503030JU+PCM+	3.7V	3.7V	450	1000	
Power Rails Connected to External Power Source 1							
	3.3V regulator	AZ1117CH-3.3TRG1	3.3V	1	1350	1350	mA
					Total Remaining Current Available on External Power Source 1	1650	mA
Power Rails Connected to External Power Source 2							
	3.3V regulator	AZ1117CH-3.3TRG1	3.3V	1	1350	1350	mA
					Total Remaining Current Available on External Power Source 2		
						650	mA
Power Rails Connected to External Power Source 3							
	3.3V regulator	AZ1117CH-3.3TRG1	3.3V	1	1350	1350	mA

External Power Source 3							
	Total Remaining Current Available on External Power Source 3					-350	mA