Power Budget for Actuator Subsystem

Team Number:	**310**
Project Name:	**MQTT Communication**
Team Member:	**Kirk Volin**
Version:	**1**

All Major Components	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum rrent (mA) [1]	Total Current (mA)	Unit
Microcontroller	ESP32 S3	ESP32-S3-WROC	3.0-3.6	1	355	355	mA
3.3V Switching Regulator	LM2595S-3.3	LM2676S-3.3/NOF	4.5-36V	1	1000mA	1000mA	mA
							mA
							mA
							mA

+3.3V Power Rail	Component Name	Part Number	Supply Voltage Range	#	Absolute Maximum Current (mA)	Total Current (mA)	Unit
Microcontroller	ESP32 S3	ESP32-S3-WROC	3.0-3.6	1	355	355	mA
						0	mA
						0	mA
						0	mA
						0	mA
						0	mA
					Subtotal	355	mA
					Safety Margin	25%	
					Total Current Required on +5V Rail	443.75	mA
c2. Regulator or Source Ch	3.3V Switching Regulator			1	1000	1000	mA

					Total Remaining Current Available on +3.3V Rail	556.25	mA
External Power Source 1	**Component Name**	**Part Number**	**Supply Voltage Range**	**Output Voltage**	**Absolute Maximum Current (mA)**	**Total Current (mA)**	**Unit**
Power Source 1 Selection	+12V 3A Plug-in Wall Supply		9V	9V	3000	3000	mA
Power Rails Connected to External Power Source 1	+3.3V Switching Regulator		5-9V	3.3V	1000	1000	mA
						0	mA
					Total Remaining Current Available on External Power Source 1		mA

[1] For inductive loads (e.g., motors, solenoids) this is often called "stall current" on the data sheet