## **Power Budget Template**

## Fill in the mass budget content as required for your experimental apparatus.

**Table 1:** Power budget template

| **Component** | **QTY** | **Voltage [V]** | **Current [A]** | **Idle Operation** | | **Science Operation** | | **Verification Method** | **Note(s)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Duty Cycle [%]** | **Power**  **[W]** | **Duty Cycle [%]** | **Power**  **[W]** |
| RF module | 4 | 5 VDC | 0.035 | 0 | 0.00 | 100 | 0.70 | E |  |
| Laptop power supply | 1 | 120 VAC | 2.000 | 100 | 230 | 100 | 230 | M1 |  |
| Robotic manipulator | 1 | 12 VDC | 1.650 | 0 | 0.00 | 100 | 19.80 | M2 |  |
| Micorcontroller | 2 | 3.3 VDC | 0.750 | 5 | 0.25 | 100 | 4.95 | M1 |  |
| **Total Power Consumed: [W]** | | | | | 230.25 |  | 255.45 |  |  |
| **Total Available Power [W]** | | | | | 600.00 |  | 600.00 |  |  |
| **Power Margin [W]** | | | | | +369.752 |  | +344.55 |  |  |

| **Verification Method Legend**  E = Estimated Mass  M0 = Calculated based on density and volume properties, using a 3D solid model (SolidWorks, Fusion360, Pro-Engineer, etc.)  M1 = Taken from a manufacturer specification sheet  M2 = Measured using a scale |
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