TRAPSat
Launch Readiness Review (LRR)
Capitol Technology University
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Nathan Weideman,
Zach Richard, Keegan Moore,
Pierce Smith, Chris Murray
July 11 2016
Updated Power Budget

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Voltage (V)</th>
<th>Max Current (A)</th>
<th>Start Time (min)</th>
<th>Time On (min)</th>
<th>Max Watts</th>
<th>Ah</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE-1 Power Converter</td>
<td>28.0</td>
<td>0.73</td>
<td>-3</td>
<td>8.5</td>
<td>20.36</td>
<td>0.10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>0.73</td>
<td></td>
<td></td>
<td>20.36</td>
<td>0.10</td>
</tr>
<tr>
<td><strong>Total Power Capacity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.50</td>
</tr>
<tr>
<td><strong>Over/Under</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td><strong># of Flights Margin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.7</td>
</tr>
</tbody>
</table>
### TRAPSat Weight Budget

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Total Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Payload</td>
<td>454g = 1.001 lbs</td>
</tr>
<tr>
<td>Flight box Payload</td>
<td>2604g = 5.751 lbs</td>
</tr>
<tr>
<td>External Camera</td>
<td>14.49g = 0.0319 lbs</td>
</tr>
<tr>
<td>RockSat Plate</td>
<td>3.425 lbs</td>
</tr>
<tr>
<td>Fastener Hardware</td>
<td>2.358 lbs</td>
</tr>
<tr>
<td>Pre Ballast Weight</td>
<td>12.557 lbs</td>
</tr>
<tr>
<td>Ballast Weight</td>
<td>2.443 lbs</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15.01 lbs</strong></td>
</tr>
<tr>
<td><strong>Over/Under</strong></td>
<td><strong>.25 lbs</strong></td>
</tr>
</tbody>
</table>
## User Guide Compliance

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Status/Reason (if needed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center of gravity in 1&quot; plane of plate?</td>
<td>(4mm, 1mm)</td>
</tr>
<tr>
<td>Weight 30.0 +/- 1.0 (15.0 +/- 0.5) lbs?</td>
<td>15 lbs</td>
</tr>
<tr>
<td>Max Height &lt; 10.75” (5.13”)</td>
<td>4 ⅞ from top of plate</td>
</tr>
<tr>
<td>Bottom of deck has flush mount hardware?</td>
<td>compliant</td>
</tr>
<tr>
<td>Within Keep-Out Zone</td>
<td>compliant</td>
</tr>
<tr>
<td>Using &lt; 10 A/D Lines</td>
<td>N/A</td>
</tr>
<tr>
<td>Using/Understand Parallel Line</td>
<td>YES, PRS Frequency at 5000Hz</td>
</tr>
<tr>
<td>Using/Understand Asynchronous Line</td>
<td>YES, at 19200 Baud</td>
</tr>
<tr>
<td>Using X GSE Line(s)</td>
<td>YES, GSE 1</td>
</tr>
<tr>
<td>Using X Non-Redundant PWR Lines (TE-1, TE-2, TE-3)</td>
<td>YES, TE-1</td>
</tr>
<tr>
<td>Using X Redundant Power Lines (TE-R)</td>
<td>NO</td>
</tr>
<tr>
<td>Using &lt; 0.5 Ah</td>
<td>YES, Total at 0.14Ah</td>
</tr>
<tr>
<td>Using &lt;= 28 V</td>
<td>YES</td>
</tr>
<tr>
<td>Using RF (If yes, list frequency and TX Power)</td>
<td>NO</td>
</tr>
<tr>
<td>Using deployable?</td>
<td>NO</td>
</tr>
<tr>
<td>Whole team consists of US Persons</td>
<td>YES</td>
</tr>
<tr>
<td>Using ITAR and/or Export Controlled hardware</td>
<td>NO</td>
</tr>
</tbody>
</table>
June Results

- We experienced great success of experiment functionality throughout testing
- We did not receive any damages resulting from testing
- The only error that occurred throughout testing was our Telemetry pin being wired incorrectly. After the adapter was made there was no experiment errors.
Changes since Integration

- There are no damages or errors to be fixed
- 1 Change is to re-apply our mylar cover after visual inspection of the aerogel
- No changes to our mission objectives/requirements

add before and after of mylar cover
Readiness to Launch in August

- We are at a high level of confidence that we will be ready for final integration week at WFF
- (Post results of our most recent FMS)
- Re-apply mylar cover, will be completed when we seal our payload up for the last time (7/12/16)
After the events from the June Test Week, TRAPSat has decided to offramp the RBF Cover. We believe that it is an unnecessary precaution thus we will be removing before rocket integration.