## Spacecraft Power Budget

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Components</th>
<th>Voltage</th>
<th>Operating Typ. Current</th>
<th>Max. Current</th>
<th>Consumption (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;DH</td>
<td>On-board Computer (2)</td>
<td>5V</td>
<td>200mA</td>
<td>400mA</td>
<td>1W (2W)</td>
</tr>
<tr>
<td>Attitude Control</td>
<td>Magnetic Torquer (3)</td>
<td>5V</td>
<td>100mA</td>
<td>300mA</td>
<td>0.5W (1.5W)</td>
</tr>
<tr>
<td></td>
<td>Magnetic Sensor</td>
<td>9V</td>
<td>30mA</td>
<td></td>
<td>0.27W</td>
</tr>
<tr>
<td></td>
<td>Gyro Sensor (3)</td>
<td>5V</td>
<td>50mA</td>
<td>170mA</td>
<td>0.25W (0.75W)</td>
</tr>
<tr>
<td>Optics</td>
<td>CMOS Sensor</td>
<td>3.3V</td>
<td>240mA</td>
<td></td>
<td>0.792W</td>
</tr>
<tr>
<td>Engine</td>
<td>Power Supply</td>
<td>12V</td>
<td>240mA</td>
<td>500mA</td>
<td>2.5W</td>
</tr>
<tr>
<td>Communication</td>
<td>1) FM Transmitter</td>
<td>5V</td>
<td>600mA</td>
<td>650mA</td>
<td>3W</td>
</tr>
<tr>
<td></td>
<td>2) CW Transmitter</td>
<td>5V</td>
<td>95mA</td>
<td>120mA</td>
<td>0.475W</td>
</tr>
<tr>
<td></td>
<td>3) FM Receiver</td>
<td>5V</td>
<td>26mA</td>
<td></td>
<td>0.13W</td>
</tr>
<tr>
<td>Power Supply</td>
<td>1) Battery</td>
<td>3.7V</td>
<td>1200mA</td>
<td></td>
<td>4W</td>
</tr>
<tr>
<td></td>
<td>2) Solar Panel</td>
<td>630mV</td>
<td>1125mA</td>
<td></td>
<td>0.55W</td>
</tr>
</tbody>
</table>

*1) Including communication controller.  
*2) Lithium Ion Battery  
*3) Values per 6cm * 4cm solar cell

### Summary

<table>
<thead>
<tr>
<th>Subsystem</th>
<th>Voltage</th>
<th>Typ. Current</th>
<th>Consumption&amp; Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;DH</td>
<td>5V</td>
<td>400mA</td>
<td>2W</td>
</tr>
<tr>
<td>Attitude Control</td>
<td>5-9V</td>
<td>480mA</td>
<td>2.52W</td>
</tr>
<tr>
<td>Optics</td>
<td>3.3V</td>
<td>240mA</td>
<td>0.792W</td>
</tr>
<tr>
<td>Engine</td>
<td>12V</td>
<td>240mA</td>
<td>2.5W</td>
</tr>
<tr>
<td>Communication</td>
<td>5V</td>
<td>721mA</td>
<td>3.608W</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>11.42W</td>
</tr>
<tr>
<td>Power Supply</td>
<td></td>
<td></td>
<td>15W</td>
</tr>
</tbody>
</table>

*4) Assumed that 20 solar panels will operate.