

|                               | Consumption<br>+ 10% Margin<br>(Watt) | Duty / orbit<br>(Hour) | Energy / orbit<br>(Watt-Hour) | Command<br>Uplink/CW<br>Beacon | Image/TLN<br>Downlink | Operational Mission Mode<br>(Camera and APRS-DP /S&F) |                      |        |                 | Safe<br>Mode |
|-------------------------------|---------------------------------------|------------------------|-------------------------------|--------------------------------|-----------------------|---|----------------------|--------|-----------------|--------------|
|                               |                                       |                        |                               |                                |                       | Target  | Target<br>(Optional) | Normal | APRS-<br>DP/S&F |              |
| <b>On Board Computer</b>      | 0.22                                  | 1.5                    | 0.33                          | ON                             | ON                    | ON  | ON                   | ON     | ON              | ON           |
| <b>ADCS</b>                   | 0.25                                  | 0.167                  | 0.042                         | OFF                            | OFF                   | ON  | ON                   | OFF    | OFF             | OFF          |
| <b>COM-UHF TX (CW)</b>        | 0.33                                  | 0.367                  | 0.121                         | ON                             | OFF                   | OFF   | OFF                  | OFF    | OFF             | OFF          |
| <b>COM-UHF TX Downlink</b>    | 4.26                                  | 0.167                  | 0.7114                        | OFF                            | ON                    | OFF   | OFF                  | OFF    | OFF             | ON           |
| <b>COM-UHF (RX)</b>           | 0.22                                  | 1.5                    | 0.33                          | ON                             | OFF                   | ON  | ON                   | ON     | ON              | OFF          |
| <b>COM-VHF (RX)</b>           | 0.15                                  | 1.5                    | 0.225                         | OFF                            | ON                    | OFF   | OFF                  | OFF    | OFF             | OFF          |
| <b>APRS-DP / S&amp;F (RX)</b> | 0.43                                  | 0.25                   | 0.1075                        | OFF                            | OFF                   | OFF   | OFF                  | OFF    | ON              | OFF          |
| <b>APRS-DP / S&amp;F (TX)</b> | 2.05                                  | 0.25                   | 0.5125                        | OFF                            | OFF                   | OFF   | OFF                  | OFF    | ON              | ON           |

|  | Consumption<br>+ 10% Margin<br>(Watt) | Duty / orbit<br>(Hour) | Energy / orbit<br>(Watt-Hour) | Command<br>Uplink/CW<br>Beacon | Image/TLN<br>Downlink | Operational  |                      |              |                 | Safe Mode   |
|--|---------------------------------------|------------------------|-------------------------------|--------------------------------|-----------------------|--------------|----------------------|--------------|-----------------|-------------|
|  |                                       |                        |                               |                                |                       | Target       | Target<br>(Optional) | Normal       | APRS-<br>DP/S&F |             |
| <b>GPS</b>                                     | 0.198                                 | 0.25                   | 0.0495                        | OFF                            | OFF                   | OFF          | ON                   | OFF          | OFF             | OFF         |
| <b>CAMERA</b>                                  | 0.93                                  | 0.167                  | 0.155                         | OFF                            | OFF                   | ON           | ON                   | ON           | OFF             | OFF         |
| <b>EPS</b>                                     |                                       |                        |                               |                                |                       |              |                      |              |                 |             |
| <b>Total Energy Consumption (Watt-Hour)</b>    |                                       |                        |                               | <b>0.781</b>                   | <b>1.266</b>          | <b>0.857</b> | <b>0.906</b>         | <b>0.815</b> | <b>1.28</b>     | <b>0.66</b> |
| <b>Threshold Energy Generation (Watt-Hour)</b> |                                       |                        |                               | <b>1.27</b>                    |                       |              |                      |              |                 |             |

|                             |           |                               |                  |
|-----------------------------|-----------|-------------------------------|------------------|
| <b>Power Budget Part II</b> | Page 8/13 | Tabulated by: Joven C. Javier | Version: 1.0     |
|                             |           | Check by: BIRDS-2 member      | DATE: 03-17-2017 |