The EXA TITAN is a 1U-sized power bank module built from 7 battery arrays designed to provide the highest energy capacity and redundancy: Its power capacity is 50 Whr per battery module, giving a total of 350 Whr. For missions from 3U Cubesats to Microsatellites.

TITAN enables your system to perform longer and better and pack as much power as a microsatellite configuration. All our batteries are fully customizable to your mission’s need in terms of output, cable, connectors or interfaces.

**FLIGHT HERITAGE**

TITAN is the design advancement of the BA0x line, which has flight heritage since 2013 in 6 missions in orbit and have been selected to fly in 10 more upcoming U.S. missions from 2020 to 2029.

**HIGH ENERGY DENSITY**

TITAN packs 350Whr and 84000mAh in a 1U package, delivering ultra-high power from 3U+ CubeSats to Micro Satellites.

**SCALABLE AND USER CONFIGURABLE**

Our batteries can be connected in series or parallel between them and the output is user configurable on each battery to supply 4.2V or 8.4V depending on the user needs. More voltages are available up to 52V and mode modules can be connected for more power.

**REUSE YOUR OWN HEAT**

Our unique Thermal Transfer Bus based on carbon nanotubes and graphite allows you to route the waste heat from your electronics and use it to warm your batteries without using active heaters and at the same time cooling your payload. The combination of graphite and lithium in the batteries also turns them into an excellent radiation shields, protecting your electronics from harsh radiation environment, allowing a 10-fold cost reduction on your mission’s financial budget.

**PROPERTIES**

<table>
<thead>
<tr>
<th>Mass (depends on configuration)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Module</td>
</tr>
</tbody>
</table>

**PERFORMANCE**

<table>
<thead>
<tr>
<th>Performance:</th>
<th><strong>@BOL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td><strong>Voltage (max)</strong></td>
</tr>
<tr>
<td>Total</td>
<td>4.2/8.4V</td>
</tr>
<tr>
<td>Module</td>
<td>4.2/8.4V</td>
</tr>
</tbody>
</table>
High Energy Density: 350Whr in a 1U package
Powerful: Can power from 2U to 24U missions
Unique containment technology prevents swelling in vacuum
Configurable: As serial or parallel (4.2V or 8.4V).
Other voltages available upon request up to 52V
Multiple redundant cells ensures mission survivability
Multiple BA0x modules can be link-chained to expand power capabilities.
Designed for LEO missions and requirements and beyond.
Stand alone charge port, overcharge and undercharge built-in protection
Made from BA0x battery modules with flight heritage (TRL-9) since 2013
Manufactured with space grade materials according to space standards and custom mission design
Functional, performance, thermal bake out and vibration tests provided with documentation.
Compatible with ISIS and Pumpkin Structures and compliant to CubeSat Standard
Charging cables provided by default and custom Interface available

Typical internal resistance:
1 to 7 milliohms @ 25°C, Total impedance < 50 milliohms
High discharge rate:
2C @ 30 mins, 4C @ 10 mins, 10C @ 2 seconds
High speed charge rate:
2 times the nominal capacity
Operating Temperature:
-30 to +80°C w/o CN/TTB option
-60 to +120°C w/ CN/TTB option
Radiation Tolerance:
2 years minimum in LEO, 10 years if S/C has NEMEA shielding
Outgass data:
TML < 1%, CVCM < 0.05%
Interface:
Normally Molex PicoBlade/PicoSpox inline 2 pin/4 pin connector with gold plated contacts or Samtec multi pin gold coated interface.
PTFE (Teflon) space grade cables, single strand, silver plated copper (AWG22 to AWG24)

Each TITAN is tailored to the mission needs with customer’s choice of cables, connectors, harness, shielding and output. Detailed blueprints, 3D PDFs, STEP and SolidWorks files can be provided on demand.

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