

UMPPT – SOLAR PANEL JOINER/ADDER MODULE

PRODUCT NAME

UMPPT - SOLAR PANEL JOINER/ADDER MODULE

SUMMARY

The EXA UMPPT Solar Panel Joiner/Adder Module is a sub-EPS module that allows you to connect up to four (4) independent solar panel and joins/adds their power yield, no matter their orientation and state of illumination, providing a unified multiple power point track service.

Unlike common MPPT modules, The EXA UMPPT module adds the power yield of all solar panels, not only the ones in full illumination or with the maximum power point, but all at once, providing the maximum power yield possible by your solar panel configuration, boosting your power production in orbit and securing the best positive power budget for your mission.

It also provides telemetry output for each solar panel connected to the module.

FEATURES

- Flight heritage since 2013
- 4 independent Direct Solar Channel processors
- Input proportionally bright LEDs eases engineering diagnostics on ground
- Each DSC is capable to handle up to 32W
- Total power output rated at 128W with proper passive cooling
- Allows the sum of all solar panels output at the same time, no matter their illumination state
- Very small footprint and low mass
- Provides telemetry for each solar panel connected to the module
- Designed for LEO missions and requirements
- Manufactured according to NASA and ESA space standards and materials
- Functional, performance, thermal bake out and vibration tests provided w/documentation.
- Compatible and compliant with CubeSat Standard

PERFORMANCE

- Inputs:
 - 4 DSC channels
 - Each input is capable of 16V@2A
 - Minimum input voltage: 1.5V
 - Maximum input voltage: 16V
- Output:
 - 1 output of custom selectable voltage
 - Output voltage range from 2v to 16V at up to 2A
 - Conversion efficiency 92%
 - Maximum power output: 128W with proper passive cooling
- Pilot LEDs:
 - Bright Proportional to solar input intensity
 - 2 blue, 2 green
 - Can be disconnected for space flight

PRODUCT PROPERTIES

- Dimensions:
 - 45 x 45 x 7.2mm
- Connectors:
 - Input: 4 Molex 53261-2 or 2 Molex 53261-4
 - Output: 1 Molex 87438-4 or 1 Molex 87438-2
 - Telemetry: 1 Molex 53261-5
- Mass: 11.58 grams
- Operating Temperature: -40 to +85°C
- Radiation Tolerance: 4 years minimum in LEO

MATERIALS

- Only TML and CVCM < 1% materials used, NASA and ESA approved
- PCB Material: FR4-6

TESTING

All boards are provided with tests reports regarding:

- Thermal Bake out (10E-5 mbar @ 50C for 72 hours)
- Full vibration test for Falcon 9, Electron, Soyuz, Dnepr and Long March 2D
- QT and AT is performed on the unit to be shipped

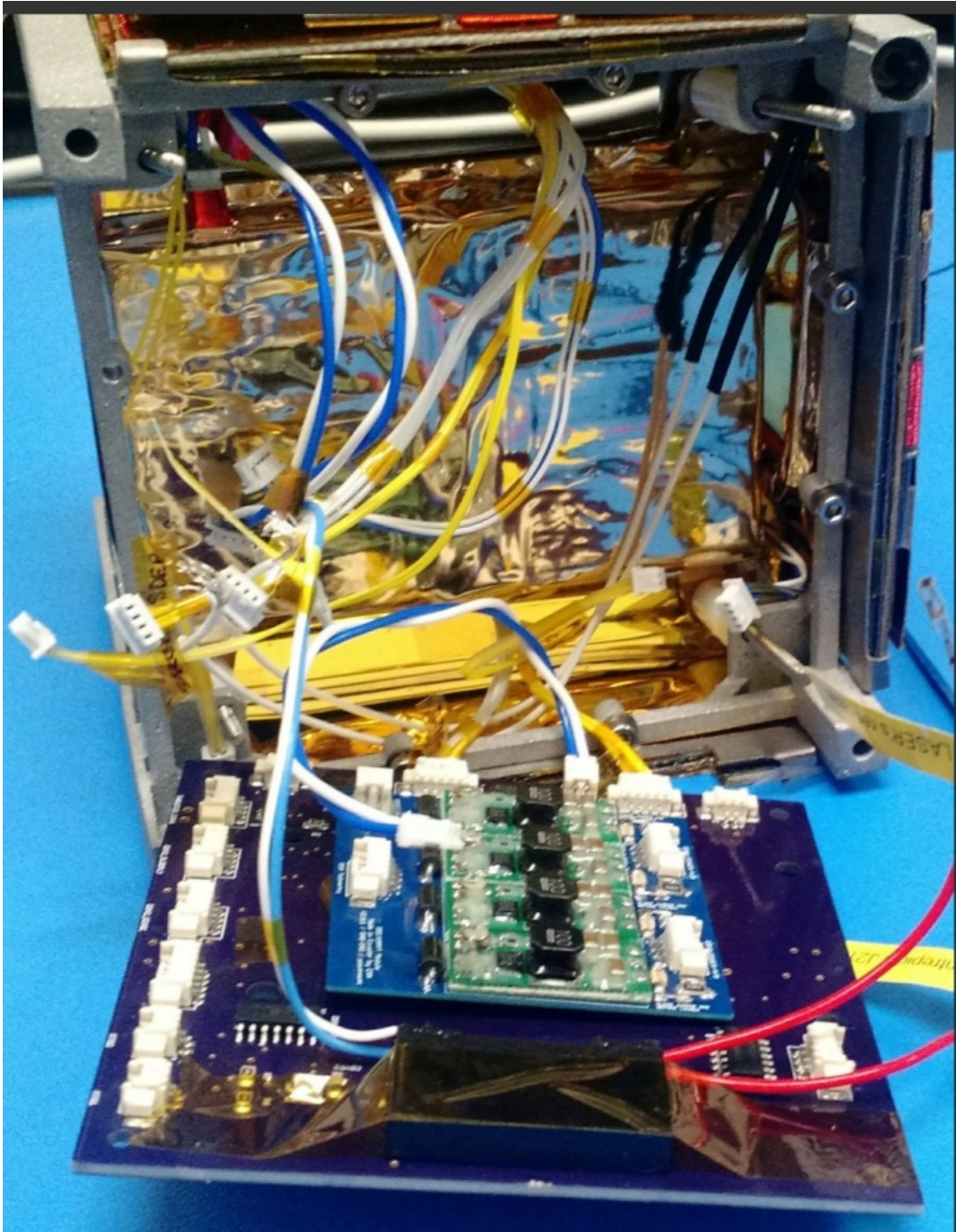
Test	QT	AT
Functional	✓	✓
Vibration		✓
Thermal Cycling		✓
Thermal Vacuum		✓
Power yield	✓	✓

CONFIGURATION and PRICES

- UMPPT Solar Panels power joiner/adder: € 1,850

AVAILABILITY:

- Immediately



UMPPT Module installed on IRVINE02, launched on 2018