

SOLO EPS

TRL 9

MODULAR CUBESAT POWER UNIT

2NDSpace products derived from a decade of experience of the 2NDSpace team in the design of space systems and successful nanosatellites missions. All 2NDSpace products are conceived to offer excellence combined with customization-as-a-standard approach and reduced lead time.

SOLO is a **modular EPS** configurable according to mission and platform requirements offering high versatility from **1U to 16U** CubeSat combined with high performances for platform subsystem and demanding payload units.

Modular configuration

Fault tolerant power-continuity architecture

12 to 24 Customizable power outputs

6 wider range solar panel inputs

Full battery protections

Modular battery pack

Flexible power delivery unit



PRODUCT PORTFOLIO

| | SOLO-EPS 4 (PDCU + 4xBMS) | SOLO-EPS 8 (PDCU + 4xBMS) | SOLO-EPS X4 (2PDCU + 4xBMS) | SOLO-EPS X8 (2PDCU + 8xBMS) |
|--|--|---|--|---|
| Dimensions [mm] | 97x92x48 | 97x92x48 | 97x92x68 | 97x92x68 |
| Mass [g] | 340g | 340g | 500g | 500g |
| Number of channels [n] | 4x | 4x | 8x | 8x |
| Number of controllable outputs [n] (3x outputs per channel) | 12x | 12x | 24x | 24x |
| Channels Voltage Output [V] | Custom Standard 3.3 / 5 / 12 / 17 | Custom Standard 3.3 / 5 / 12 / 17 | Custom Standard 3.3 / 5 / 12 / 17 | Custom Standard 3.3 / 5 / 12 / 17 |
| Peak current output(channel) [A] | 3.3(6)A@3.3V 3.3(6)A@5V 3.3(6)A@12V 3.3(6)A@16.8V Custom | 3.3(6)A@3.3V 3.3(6)A@5V 3.3(6)A@12V 3.3(10)A@16.8V Custom | 3.3(6)A@3.3V 3.3(6)A@5V 3.3(6)A@12V 3.3(6)A@16.8V Custom | 3.3(6)A@3.3V 3.3(6)A@5V 3.3(6)A@12V 3.3(10)A@16.8V Custom |
| Overall Peak Power output [W] | 104W | 160W | 104W | 160W |
| Power Storage [Wh] | 50 Wh | 100 Wh | 50 Wh | 100 Wh |
| Independent MPPT inputs | 6 | 6 | 6 | 6 |
| Communication Interfaces | RS485/UART/CAN/I2C | | | |
| Features | OV,UV,OC protection; Controllable output; Integrated MCU; Latch-up protected outputs | | | |

QUALIFICATION AND ACCEPTANCE TEST

| | Functional/AIT | Electrical control | Vibration test | Mechanical Shock | TVAC Test |
|---------------------------|-----------------------|---------------------------|---|---|---|
| Qualification Test | ✓ | ✓ | NASA GEVS: GSFC-STD-7000A ESA ECSS-E-ST-10-03C | NASA GEVS: GSFC-STD-7000A ESA ECSS-E-ST-10-03C | NASA GEVS: GSFC-STD-7000A ESA ECSS-E-ST-10-03C |
| Acceptance Test | ✓ | ✓ | | | |

SOLO is designed to meet the needs of CubeSats platforms from 1 to 16U offering high versatility and composed by **SOLO-PDCU** (single or double) and **SOLO-BM4/BM8**.

- **PDM (Power Delivery Module):** configurable power outputs for subsystems ranging from 12x to 24x at **configurable** voltage levels.
- **SACU (Solar Array Conditioning Unit)** 6 independent MPPT for harvesting power from solar panels
- **BMS (Battery Management System):** battery charging and protection unit capable of handling up to 3x battery pack 4S (in standard version).
- **C&DH (Command & Data Handling Module):** include a dedicated microcontroller for system management and control with multiple data interfaces available
- **PLI (Power and Launch Interface):** external interfaces with platform peripherals for system managing during pre-launch operations (RBF, Inhibits, Umbilical)



**FLIGHT
HERITAGE**

