

SM SOLAR PANELS

DESIGN

SM-SP is a family of Solar Panels designed by NPC SPACEMIND in order to provide a modular and flexible solution for nanosatellite applications.

The product is designed to be fully compliant with SM CubeSat Structures as well as with commercial of the shelf and custom-made CubeSat components.

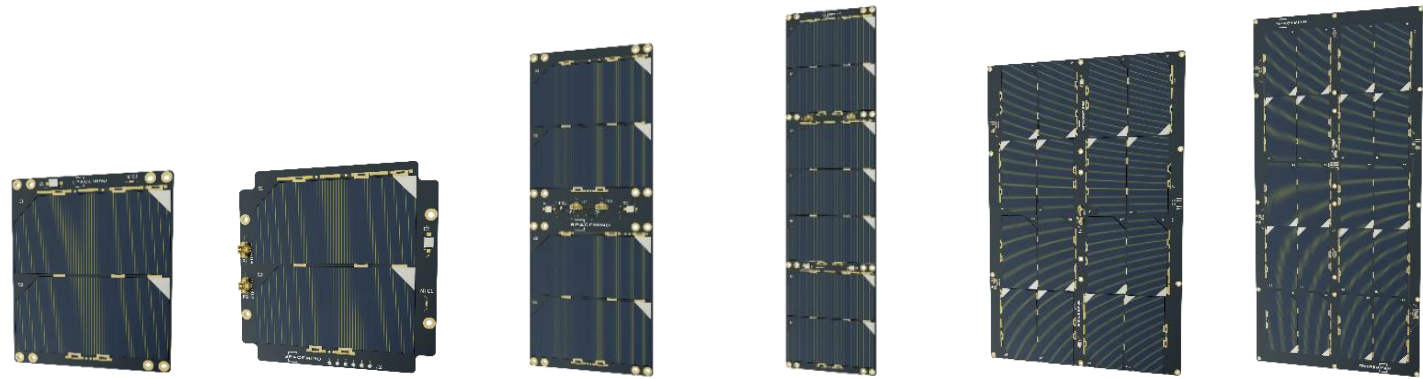
SM Solar panels can be equipped with optional thermal and coarse sun sensors, as well as the possibility to add an inertial module and a magnetic sensor.

In case of specific mission requirement specific solutions can be realized both in terms of electrical performances and specific panels shape and cutout.



Refined through extensive in-orbit experience and customer-driven feedback, the latest generation of SPACEMIND solar panels offers greater flexibility and enhanced compatibility.

For the first time, users can choose the communication protocol of digital sensors, selecting between SPI and I²C, ensuring improved adaptability compared to previous versions.



PRODUCT	SP1X	SP1Z	SP2X	SP3X	SP6X	SP8X
Side	XY	Z	XY	XY	XY	XY
Compatibility	1U	1U/2U/3U/4U	2U	3U/6U	6U/12U	8U/16U
Mass [g]	40	45	80	110	300	400
P Max	2.3 - 2.5 W	2.3 - 2.5 W	4.6 - 5 W	8 - 8.8 W	18.4 - 20 W	23 - 25 W
Imp	500 - 520 mA	500 - 520 mA	500 - 520 mA	500 - 520 mA	1 - 1.04 A	1 - 1.04 A
Vmp	4.6 - 5 V	4.6 - 5 V	9.2 - 10 V	16 - 17.5 V	18.4 - 20 V	23 - 25 V
Voc	5.2 - 5.5 V	5.2 - 5.5 V	10.4 - 11 V	18.2 - 19.3 V	20.8 - 22 V	26 - 27.5 V
Power connectors	2 x parallel	2 x parallel	2 x parallel	2 x parallel	4 x parallel	4 x parallel
Configurable cells connection			✓		✓	✓
SENSORS ADD-ON CONFIGURATION						
Digital Temperature Sensor (SPI / I ² C)	✓	✓	✓	✓	✓	✓
NTC Temperature Sensor	✓	✓	✓	✓	✓	✓
Coarse Sun sensor	✓	✓	2	2	2	2
IMU (3D Acc + 3D Gyro)	✓	✓	✓	✓	✓	✓
Magnetic Sensor (3 axis)	✓	✓	✓	✓	✓	✓
RBF		✓	✓	✓	✓	✓
Umbilical		✓				