



SPACEMANIC

Solar panel RA

SM-SP-RA-1U

Using the power of mighty God RA! First class solar panels for nanosatellite and small satellite missions.

FEATURES

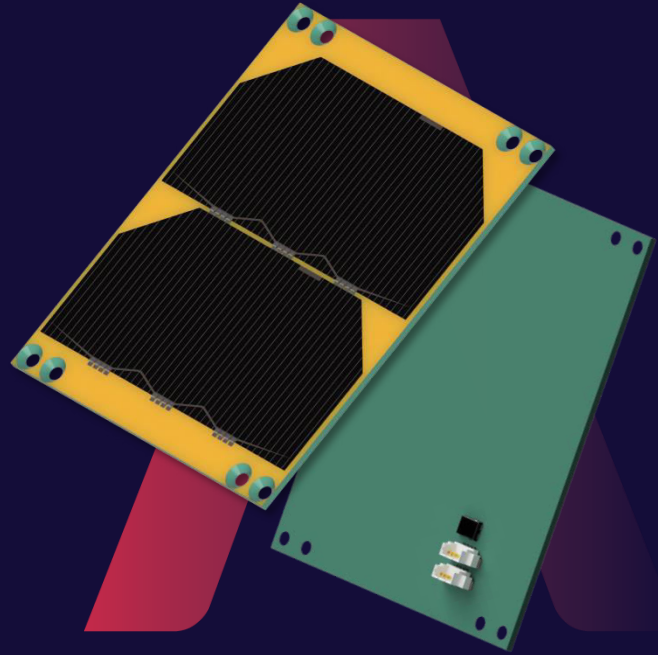
- Two AZUR Space 30% Triple Junction GaAs Junction Solar Cell in series configuration
- LEO rated at 2.3 Watts (1U side panel)
- Compliant to CubeSat standard
- Options for sensor and interface accommodation
- Compatible with several CubeSat vendor structures and EPS
- Integrated temperature sensor TI TMP112
- Integrated SLCD-61N8 photodiode
- Space grade protection diodes

PRODUCT PROPERTIES

- Operating temperature: $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
- Mass: 50g (1U)
- Thickness: $1.6\text{mm} \pm 10\%$
- Photodiode: 5° heading accuracy
- Substrate material: FR4 with Kapton overlay

FUNCTIONAL CHARACTERISTICS

- Open circuit voltage (Voc): 5.4 V
- Short circuit current (Isc): 0.52 A
- Max power voltage (Vmp): 4.82 V
- Max power current (Imp): 0.5 A



INTERFACES

- Molex® PicoBlade connectors for power lines
- I2C for temperature sensor and photodiode communication

TESTING & HERITAGE

- Flight Heritage Hardware
- Vibration/Mechanical Shock/Thermal Vacuum tests
- Radiation Tolerance: 2 years minimum in LEO
- Test reports on demand

AVAILABLE OPTIONS

- Size: 1U – 12U (side, top)
- Custom design with different cell layout, sensor mounts
- Option with integrated patch antenna for S band communication, GNSS receiver or Iridium/Globalstar satellite communication system
- Option with integrated electromagnetic coil for detumbling
- Extra copper layer for radiation shielding
- Fake panel (without solar cells)
- STL model for 3D printer