

HIGH- PERFORMANCE NANOSATELLITE SUN SENSOR



NanoSSOC-D60 is a AAC SpaceQuest developed two-axis low-cost analog sun sensor for high accurate sun-tracking, pointing and attitude determination.

nanoSSOC-A60 has minimum size, weight, and power consumption to be the perfect ADCS solution for nano-satellite The Sun Sensor on a Chip (SSOC) architecture, achieved through a MEMS fabrication process, results in a highly integrated sensing structure providing accurate and reliable sun-tracking, pointing, and attitude determination. The SSOC-A60 device measures the incident angle of the sun's rays in two orthogonal axes, leveraging the geometrical dimensions of the design to provide high sensitivity in a form factor perfect for small satellites. Every analog sensor is calibrated, characterized, and provided with a look-up table. The use of a metal shield and cover glass over the optical eye minimizes aging in higher radiation environments.

KEY HIGHLIGHTS:

- $\pm 60^\circ$ Field of View
- $< 0.5^\circ$ (3sigma) Accuracy
- UART, I2C, or SPI Output
- 3.3V or 5V Input Voltage
- $< 23\text{mA}$ Consumption
- 6.5g Total Mass



PERFORMANCE

The nanoSSOC-D60 includes a processor that provides measurements of sunlight incident angles and other information useful for attitude determination, via client optional UART, I2C or SPI communication protocol.



RELIABLE

SSOC technology has been qualified on different tests, including radiation (absorbed dose and proton beam), random vibration, shock response, outgassing, thermal and EMC.



HERITAGE

With over 630 units delivered, and flight heritage on-orbit accumulating since 2009.

TECHNICAL SPECIFICATIONS

Technical Characteristics:	
Type	2 orthogonal axes
Field of View	±60°
Accuracy	< 0.5 ° (3sigma) < 0.1 ° (precision)
Electrical interface	UART, I2C or SPI 10-pin micro-connector
Power supply	3.3V / 5V < 2mA consumption
Mechanical interface	43 x 14 x 5.9 mm 6.5 g
Housing	Aluminum 6082 Black anodizing

Qualification Data and Flight Heritage:	
Operating Temperature	-30° to +85° Celsius
Radiation	30 kRad (gamma) 6 MeV 3000 kRad (protons)
Random vibration	14,1g @ 20-2000 Hz
Shock	3000 g @ 1-100 ms



To make an enquiry, request a quotation or learn about AAC Clyde Space's other products and services, please contact:

enquiries@aac-clydespace.com



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