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SOLARMEMS TECHNOLOGIES

1st

IN SUN SENSOR TECHNOLOGIES

+4,500

FLIGHT UNITS DELIVERED

+30%

OF THE WORLD'S ADDRESSABLE SUN SENSOR MARKET

A Legacy of Reliability

Founded in 2009, SOLAR MEMS has established itself as a premier provider of high-performance sun sensors and star trackers for the global space industry. Our mission is to enhance satellite capabilities through unparalleled precision and flight-proven reliability.

EXPERIENCE

Integrated into more than 30 satellite constellations.

PARTNERSHIPS

Trusted by prime clients and renowned space agencies worldwide.

ENVIRONMENT

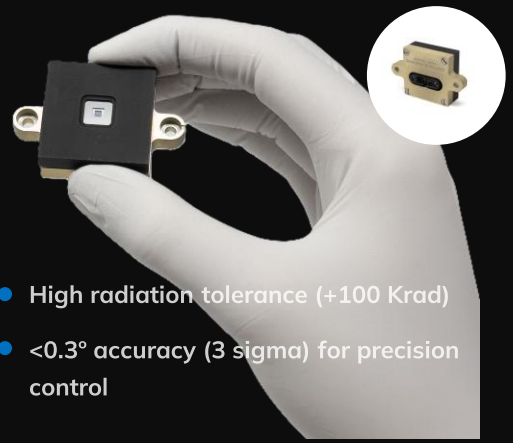
Sensors designed to perform in the most challenging conditions of space, from LEO to GEO.

The SSOC Series: Legacy Fine Sun Sensors

The Gold Standard Since 2009

SSOC A60

ANALOG



- High radiation tolerance (+100 Krad)
- <0.3° accuracy (3 sigma) for precision control

- Traditional space grade
- Fully enclosed housing
- Metal connector
- Qualification report available

EM & FM available

SSOC D60

DIGITAL



- Integrated microcontroller
- RS422 Interface protocol

Track Record

More than 450 units delivered and successfully operated in orbit.

450+

FLIGHT HERITAGE

The nanoSSOC Series: New Space Fine Sun Sensors

The Cubesat Standard Since 2016

nanoSSOC A60

ANALOG



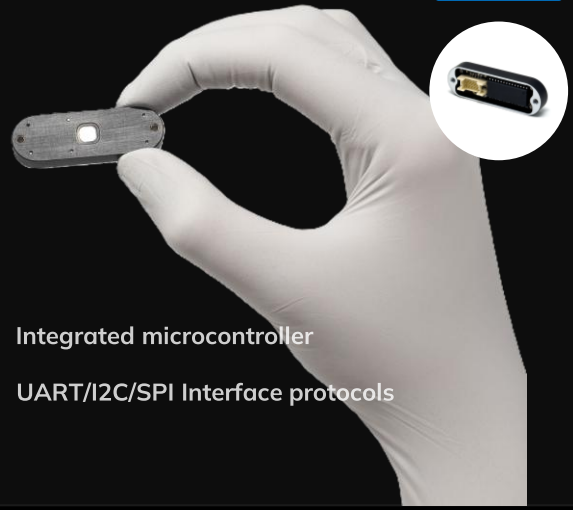
- High radiation tolerance (+100 Krad)
- Power supply 3.3 or 5V available

- New space grade
- Compact & lightweight
- Low-cost
- Flight heritage report available

EM & FM available

nanoSSOC D60

DIGITAL



- Integrated microcontroller
- UART/I2C/SPI Interface protocols

Track Record

More than 1,750 units delivered and successfully operated in orbit.

1,750+

FLIGHT HERITAGE

Coarse Sun Sensor (CSS/ACSS)

High-Volume Efficiency for satellite constellations

ANALOG

EM & FM available

1,800+

UNITS DELIVERED SINCE 2016

+ 1,200 more in production



Most widely deployed sun sensor in LEO

- Dual photodiode architecture for in-orbit redundancy
- Industrialized design optimized for high-volume manufacturing
- Coarse sun sensor Rad-tolerant for LEO (>200 krad TID)

SOLARMEMS TECHNOLOGIES

Scalable Production and Manufacturing Excellence

Meeting Global Constellation Demands

To support the rapid growth of the NewSpace sector and large-scale satellite constellations, SOLAR MEMS has optimized its manufacturing processes for high-volume delivery without compromising on quality.

1,600+
FM UNITS
OneWeb Satellites

1,100+
FM UNITS
MDA AURORA™

300+
UNITS/MONTH

Monthly Capacity

Over 300 sensors (Sun Sensors and Star Trackers) per month.

**Airbus and Intuitive Machines Top supplier award 2023 & 2024*

SOLARMEMS TECHNOLOGIES

NEXT GENERATION

FDSS: The Fine Digital Sun Sensor

Superior Accuracy & Albedo immunity



TRL 8

Technical Maturity

Currently at Technology Readiness Level 8 with 5 units already delivered for upcoming missions.

TRL 9

Expected in end of 2026

Mission scheduled for Q4 2026

Think Rad-Hard: sun sensors for GEO, MEO and Deep Space

SOLARMEMS TECHNOLOGIES

For missions in Medium Earth Orbit (MEO) and Geostationary Orbit (GEO), radiation tolerance is the primary design driver. SOLAR MEMS offers specialized Rad-Hard variants of our most popular sensors.

EM & FM available



ACSS RH

Advanced Coarse Sun Sensor with enhanced shielding and component selection.

15 years in GEO/MEO

nanoSSOC D60 RH

Bringing the digital efficiency of the nano line to high-radiation environments.

Deep Space

Reliability: Designed to mitigate Single Event Effects (SEE) and Total Ionizing Dose (TID) degradation.

SOLARMEMS TECHNOLOGIES

nanoST

Standalone Star Tracker for Nanosats

EM & FM available

10+

Heritage

Over 10 units delivered since its 2024 debut.

Integration

Optimized for 1U to 12U CubeSats.

Dual Baffle

2 available baffles, for cubesat and sun exclusion enhanced



*EA+ baffle

PRECISION ATTITUDE DETERMINATION

microST

SOLARMEMS TECHNOLOGIES

EM & FM available

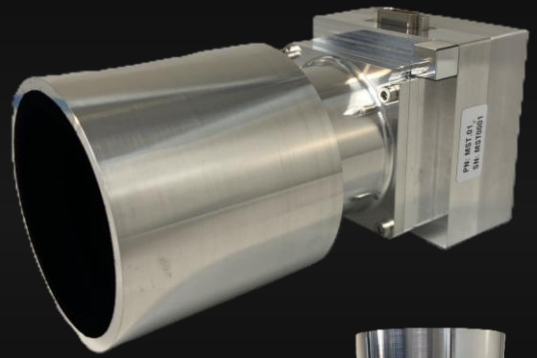
Plug & Play Star Tracker for Microsats

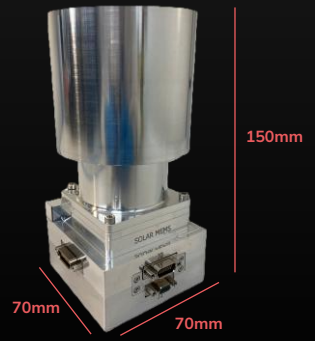
TRL 8 — **Technical Maturity**
Currently at Technology Readiness Level 8

TRL 9 — **Expected in end of 2026**
2x Missions scheduled for Q4 2026

Integration
Optimized for microsatellites LEO

Modular architecture
Available separate 2-3 camera heads and control unit.





Acuracy	XY (3σ): < 6 arcsec Z (3σ): < 48 arcsec	Update rate	5 Hz, 10 Hz	Power supply	5 V, 3.5 W
Communication	RS422, CAN bus or Ethernet	Angular rate	Nominal: 0.5 deg/s Without LiS: 2.5 deg/s Max.: 3.5 deg/s	Design LIfetime	>12 years in LEO

OGSE

SOLARMEMS TECHNOLOGIES

LS3

LIGHT STIMULATOR FOR SUN SENSORS
ENGINEERING ACTIVITIES AND TVAC TESTING





DQS3

SPECIFIC CHECK-OUT EQUIPMENT FOR SUN SENSORS
AIT ACTIVITIES IN FAL



STAR S SIMULATOR STATIC

STAR TRACKER STATIC TESTER
ENGINEERING ACTIVITIES AND TVAC TESTING



STAR D SIMULATOR DYNAMIC

STAR FIELD DYNAMIC SIMULATOR
STAR TRACKER PERFORMANCE TESTER



A Broader Technology Base Beyond Sun Sensors and Star Trackers

SOLARMEMS TECHNOLOGIES

In-house R&D capabilities ready to support emerging mission needs, from optical communications to micropropulsion.

Optical Pointing Systems

Optoelectronic devices for inter-satellite links (ISL), enabling high-bandwidth space communications.

Quantum Communication

Advanced quantum technologies for next-generation space systems Secure solutions for civil and defence missions.

Space Domain Awareness

On-orbit camera systems supporting collision avoidance and space traffic management.

In-Orbit Servicing

Advanced maneuvering systems extending satellite lifetimes and enabling debris removal.

Micro-Thrusters

MEMS-based integrated micropropulsion for compact, precise nanosatellite attitude and orbit control.

Advanced Manufacturing

Industrialized production technologies for mass manufacturing of next-generation constellation components.

Development stage and TRL vary by technology — details available on request.

Customers


SMT
aerospacelab
AIRBUS
DEFENCE & SPACE
ThalesAlenia
a Thales / Leonardo company
Space
INTUITIVE
MACHINES
MDA
SPACE
VAST
MILLENNIUM
SPACE SYSTEMS
A Boeing Company
Honeywell
NORTHROP GRUMMAN
LOCKHEED MARTIN
U.S. ARMY
KAIST
SI
SATREC INITIATIVE
Hanwha
Aerospace
INDRA
ICEYE
ST Engineering
CESIUM ASTRO
SPACE & DEFENSE SYSTEMS
NASA
esa
European Space Agency
DLR
cnes
CENTRE NATIONAL
D'ÉTUDES SPATIALES
JAXA
مركز محمد بن راشد للفضاء
MOHAMMED BIN RASHID SPACE CENTRE
TÜBİTAK
UZAY
JOHNS HOPKINS
UNIVERSITY
JPL
Jet Propulsion Laboratory
DHRUVA
SPACE
creotech
OPEN COSMOS
ASTROBOTIC
Astroscale
USPACE
ispace
pixxel
SITAEL
AAC
CLYDE
SPACE
ArkEdge
Space
D-ORBIT
argotec
SPACE FOR AMBITIONS
KEPLER
True Anomaly

One Technology Core, Two Markets

STELION's navigation systems build on the same flight-proven stellar attitude-determination core as our space sensor product line.

STELION by SOLAR MEMS TECHNOLOGIES

Space Heritage

- Sun sensors and star trackers flight-proven since 2009
- 25+ satellite constellations
- 1,750+ units delivered and operating in orbit

Defense Navigation (air, maritime, ground segments)

- STELION resilient-navigation systems (SHS, SNS, SGS-N, SGS-DN)
- Same stellar attitude-determination core, applied to GPS-denied, autonomous, and contested environments

Same company, same flight-proven core technology — applied to two markets.

STELION

SOLARMEMS TECHNOLOGIES

Resilient Navigation & Threat Detection Solutions

Advanced technological capabilities in resilient positioning, air threat detection, situational awareness, SWARM, SLAM, and time synchronization for defense and aerospace applications

Resilient PNT | Threat Detection | Situational Awareness | SWARM & SLAM | Time Sync

STELION

SOLARMEMS TECHNOLOGIES

The 3 pillars

Key demands driving advanced technological solutions in defense and aerospace

GPS-Denied Navigation

- Growing need for resilient Positioning, Navigation, and Timing (PNT) solutions
- Traditional GPS/GNSS signals increasingly degraded, jammed, or spoofed
- Operational continuity required in contested electromagnetic environments
- Accuracy and reliability demands for military platforms and autonomous vehicles

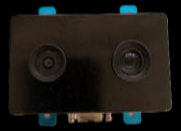
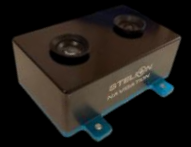
Autonomous Systems

- Coordination challenges for swarms of drones and autonomous platforms
- Need for advanced SLAM (Simultaneous Localization and Mapping) technology
- Reduced human oversight requirements for complex missions

Threat Detection

- Comprehensive air threat detection in complex battlespaces
- Enhanced situational awareness capabilities for warfighters
- Detection and tracking of UAVs, and electronic jamming

Technology Roadmap & Development Plans

Developments	2025	2026	2027	2028
SHS: Stellar Heading Sensor Delivers heading GPS dependent	Prototype	Prod Units		
SNS: Stellar Navigation Sensor Delivers: heading, attitude & coarse position Additional functionalities such as situational awareness & swarming Not GPS dependent	Prototype	Prod Units		
SGS-N: Stellar Geolocation System Night Ops Delivers fine position. Not GPS dependent	Prototype	Prod Units		
SGS-DN: Stellar Geolocation System Day/Night Ops Delivers fine position. Not GPS dependent	Prototype			

SOLARMEMS
TECHNOLOGIES

SPACE & DEFENCE STELLAR NAVIGATION SINCE 2009

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