SOLARMEMS TECHNOLOGIES

microST

Star Tracker for micro satellites

ITAR FREE
EXPECTED TRL 8 - JULY 2026
EXPECTED TRL 9 - DECEMBER 2026

Description

The microST of SOLAR MEMS is a high- precision, cost effective Star Tracker designed for microsatellite in LEO, with optional MEO/GEO compatibility.

It uses an internal **CMOS sensor** to capture star field images, indetifying stars and constellations to determine satellite attitude with high accuracy. It is **plug & play**, built with COTS and space grade parts.

Available in **standalone** configuration by default; **star camera version under request, with separate optical unit. Its** modular design supports up to 2-3 camera heads.

Standalone microST - Characteristics

Type	Star tracker for microsatellites
Attitude Accuracy	XY (3σ): 6 arcsec Z (3σ): 48 arcsec
Bias	< 0.1 deg (Alignment cube included)
Adquisition Time	< 2 s
Angular rate	< 3.0 deg/sec
Refresh rate	> 5Hz (up to 10Hz)
Earth exclusion angle	< 25 deg
Sun exclusion angle	<32 deg
Star magnitude limit	6.5 - 7
Operating temperature	-35 degC to 50 degC
Qualification temperature	-40 degC to 70 degC
TID hardness	>30 kRad
Mission life	>12 years LEO
Sine vibration	20g @ 20-150Hz
Random vibration	20gRMS
SRS	1500 @ 2000Hz
Communication	RS422
Power	5 V, < 8W
Volume	70x70x150 mm
Mass	<800 g
Mounting interface	(x4) M4 Bolts

CUSTOMIZATIONS

Optical HEAD

Type	Star Camera for microsatellites
Attitude Accuracy	XY (3σ): 6 arcsec Z (3σ): 48 arcsec
Bias	< 0.1 deg (Alignment cube included)
Communication	Spacewire
Power voltage	5 V, < 2W
Volume (OH)	60x60x110 mm
Mass (OH only)	<300 g
Mounting interface	(x4) M4 Bolts

Controller unit for 2 - 3 Optical Heads

Type	Controller unit for 2-3 Optical heads
Attitude Accuracy	XY (3σ): 6 arcsec Z (3σ): 6 arcsec
Bias	< 0.1 deg (Alignment cube included for each optical head)
Refresh rate	10 Hz
Communication	RS422
Power voltage	5 V, < 6W
Volume (OH)	100X100X30 mm
Mass (CU only)	<500 g
Mounting interface	(x4) M4 Bolts