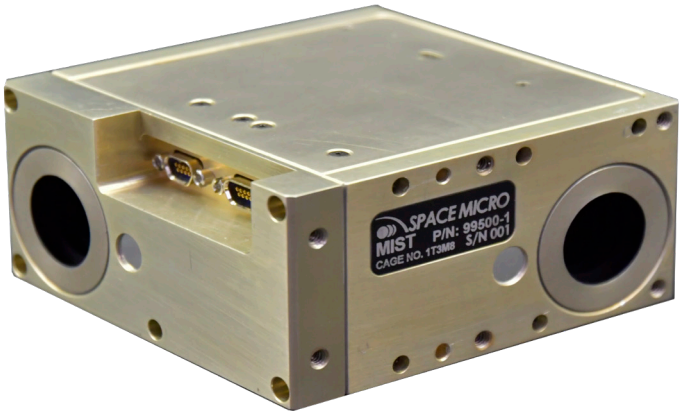
MIST™ MINIATURE INTEGRATED STAR TRACKER

SPACE MICRO

USA-sourced and manufactured, the radiation-tolerant MIST™ Miniature Integrated Star Tracker is a small form factor (.5U) integrated star tracker featuring dual heads and flight-proven high-performance processor, electronics and software. Compliant with National Defense Authorization Act domestic sourcing specifications.



APPLICATIONS

- Satellite Attitude and Rate Determination
- Satellite Orbits: LEO, MEO, GEO
- Extended Missions: Radiation Hardened Optics and Electronics

SOFTWARE FEATURES

- Space-Flight-Proven Software
- Star Identification Based on Pyramid Code
  - Quaternion and Rate Output
  - Attitude and Rate Determination
  - Integrated Systematic Error Correction
  - Real-Time On-Orbit Calibration
  - Extended Kalman Filtering Option
  - Less Sensitive to False Stars

SPECIFICATIONS

DETECTOR	High QE CMOS FPA
ACQUISITION TIME	< 1 sec
STAR MAGNITUDE (SENSITIVITY)	6.5
OUTPUTS	Attitude & Rate Determination Quaternions Raw Images
ATTITUDE KNOWLEDGE ERROR	5 arcsec (1 sigma)
SLEW TOLERANCE (NO DEGRADATION) SLEW TOLERANCE (WITH DEGRADATION)	1 deg/sec 5 deg/sec
UPDATE RATE	10 Hz
AVAILABILITY	> 99%
INTERFACES	SpaceWire RS422

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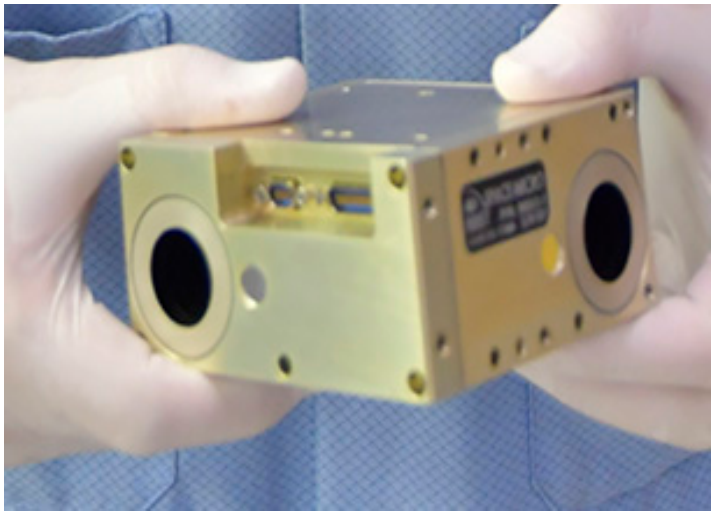
LENS DESIGN



Field of View	14°
Focal Length	22 mm
Imager	1280 X 1024
Pixels	5.3 microns
iFOV	.014 deg/pixel
Solar Exclusion Angle	45°

EXCLUSION ANGLES	Solar Exclusion Angle: 45° Lunar Exclusion Angle: 0° Earth Limb Exclusion Angle: 15°
ENVIRONMENT	
Temperature Range	-24°C to +61°C baseplate
Vibration	14 Grms Acceptance; 20 Grms Qualification
Parts Level Options	Commercial Space, NASA Level 1, 2, 3
Suitability	LEO: 10 years; GEO: 18 Years; MEO: 12+ years
COOLING	Passive
SWAP	
Mass	550 g (with baffle)
Power Consumption	3.8 W (Maximum)
Input Voltage	5 V (Other Options Available)
Dimensions	10cm x 10cm x 5cm (0.5U)

For higher accuracy Star Tracker, please reference µSTAR-250™ Star Tracker

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