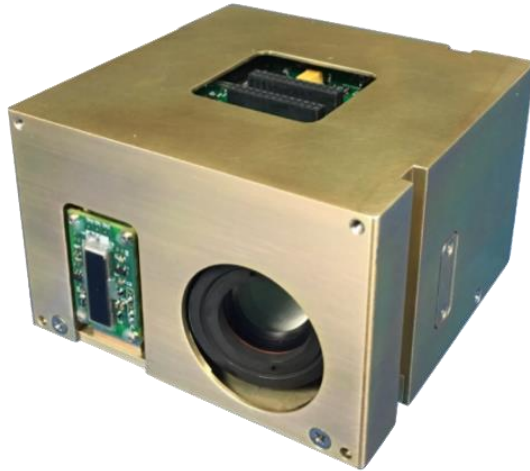


MAI-500

0.6U CubeSat ADACS+Star Tracker



This 0.6U (10cm x 10cm x 5.59cm) Attitude Determination and Control System features three reaction wheels, a 3-axis magnetometer, one or two Star Trackers, three electromagnets and an ADACS computer for a stand-alone, Plug-and-Play attitude control system for small satellites. The configuration is compatible with the CubeSat standard. It can be placed either at the bottom or the top of a CubeSat stack. The Star Trackers are angled upward at 24 degrees. Other mounting angles are available.

Specifications

Performance Item	Specification
Dimensions	10 x 10 x 5.59 cm
Mass	694 g
Momentum Storage @10000 RPM	11.076 mNms
Max Torque	0.635 mNm
Magnetic Dipole Moment	0.108 (0.15 @72% Duty Cycle) Am ²
Magnetometer	+/- 900 μ T
Operating Voltage	5.0 V
Power Consumption	
Minimum Power	1.82 W (0.164 A)
Avg. Power Use in Nadir Pointing	2.13 W (0.226 A)
1 RW Low Speed Max Torque Power Use	3.05 W (0.41 A)
1 RW High Speed Max Torque Power Use	2.10 W (0.22 A)
Max Instantaneous Current	1.603 A
Star Tracker	
Accuracy (cross boresight)	0.0042°
Max Acquisition Time	250 msec
Max Slew Rate ($P_{acq}=0.5$)	1.0°/sec
Star Catalog	6.0 VM
Command/TLM Interface	RS232, SCI/UART (3.3 V)
Sun Sensor Interface	6 Analog Channels (0 – 3.3 V)
Operating Temperature	-20 to 60 °C
Launch Environment Vibration Spec	14 G rms