



MAI-6000

6U CubeSat Bus

The MAI-6000 is a cost effective, flexible, and reliable 6U CubeSat Bus providing users with up to 4,000 cubic centimeters of payload volume and a Payload Orbit Average Power of 20W. MAI has teamed with Innoflight, Inc. to incorporate their SCR-100 CubeSat Flight Transceiver, configurable to downlink at rates of 2.0 Mbps or more in S-Band using either AES-256 or National Security Agency approved Type-1 encryption. The MAI-6000 incorporates our fixed or single-hinge deployed solar array, or the MMA HaWK single-axis gimbaled solar array. The MAI-6000 comes equipped

with our own flight-proven MAI-400 Attitude Determination and Control System (ADACS) capable of providing 0.01 degree pointing knowledge and 0.1 degree pointing control using our star tracker. The satellite is compatible with the Planetary Systems Corporation Canisterized Satellite Dispenser, the NanoRacks DoubleWide Deployer, and can be adapted to other deployers.

Specifications

Performance Item	Specification
Data Interfaces	Multiple Serial Interfaces (e.g. UART, I2C, SPI, RS-422), Discrete Interfaces, Analog Interfaces
Payload Orbit Average Power	20W
Battery	4, 8 or 12 Li-Ion Cells => 46, 92 or 138 Watt Hours @ 14.4V
Payload Power Interface	Switched 5V and 12 V Regulated, Bus Unregulated (12.0-16.8V)
Solar Arrays	AMA or MMA HaWK (fixed or gimbal)
Attitude Knowledge	0.01 degree (Star Tracker) or 1 degree (Earth Limb Sensor)
Attitude Control	0.1 degree (Star Tracker) or 1.1 degree (Earth Limb Sensor)
Type of Pointing	Multiple pre-programmed pointing modes
Dimensions	10 x 20 x 30 cm (nominal)
System Mass	Up to 12 kg (8 kg available for payload)
Payload Volume	Up to 4U
Construction	Machined 7075 and 6061 Aluminum
Mission Design Life	1-3 years in Low Earth Orbit (LEO)
Orbit Capability	LEO: 350-850km, 0-98.8 degree inclined orbit
Frequency	S-Band, X-Band, UHF
Downlink	Up to 2.0 Mbps (using S-Band)
Encryption	AES-256 or NSA Type-1 available