



MAI-25

1/4U Micro ADACS

Sub Miniature Nadir Pointing ADACS
Stock #: MAI-000-00000010

The MAI-25 Micro ADACS is a complete Attitude Determination and Control System in 1/4U. It is suitable for cost sensitive applications where SWaP is at a premium. The unit contains a single reaction wheel and 3 Torque Rods with a magnetometer as the only sensor. Just apply power and the system fully autonomously detumbles, acquires attitude and points the spacecraft to nadir. A vastly simplified command protocol is used that minimizes management by the spacecraft or the ground.

Specifications

Performance Item	Specification
Nadir Pointing Accuracy	1 deg roll/pitch, 3 deg yaw (typical)
Dimensions	50 mm x 50 mm x 70 mm
Weight	250 gm
Supply Voltage	4-6 VDC
Power Consumption	3.5W @ 5VDC (Peak) 0.25W @ 5VDC (Steady State) 0.15W @ 5VDC (Idle)
Operating Temperature	-40 to 80 °C
Interface	3.3V UART

J1 Pin Description

Pin No.	Name	Type	Description
1	Vin	Pwr	4-6VDC supply
2	Vin	Pwr	4-6VDC supply
3	GND	Pwr	Ground.
4	GND	Pwr	Ground.
5	P2_10	I	Reserved for programming use only. Do not connect for flight.
6	GND	Pwr	Ground.
7	TXD1	O	UART transmit.
8	RXD1	I	UART receive.
9	SCL1	I	I2C clock input.
10	SDA1	I/O	I2C data
11	3V3	Pwr	3.3V output from internal regulator. Connect to magnetometer
12	/RST	I	Active low reset. Internally pulled up.
13	MOSIO	O	SPIO Master Out Slave In. Connect to magnetometer
14	MISO0	I	SPIO Master In Slave Out. Connect to magnetometer
15	SCK0	O	SPIO clock output
16	DRDY	I	Magnetometer data ready
17	SS_A/G	O	Accelerometer/Gyro Chip Select
18	SS_M	O	Magnetometer Chip Select
19	GND	Pwr	Ground.
20	GND	Pwr	Ground.

