

Integrate ADCS

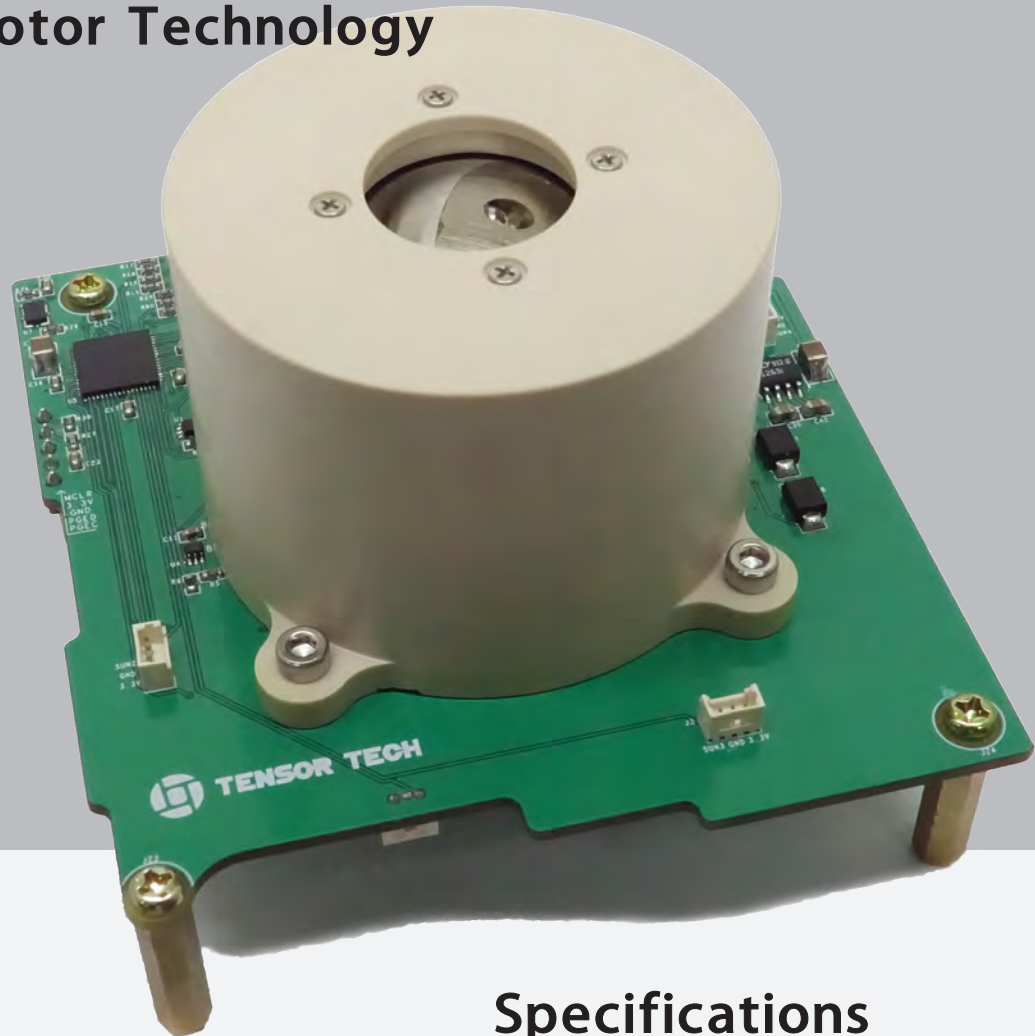
with Spherical Motor Technology



Environmental Tests
following ESA QB50

1 Spherical Motor serves
as 3 single-axis reaction
wheels and 3 torquers

Sun sensor, and Tactical
Grade Gyro included



Description

With patented magnetic field design and control methodology, this device is capable of providing angular momentum and magnetic dipole in 3 axis. This brings your satellite ADCS same performance but one-third of the weight, volume, and power consumption compared to the traditional system.

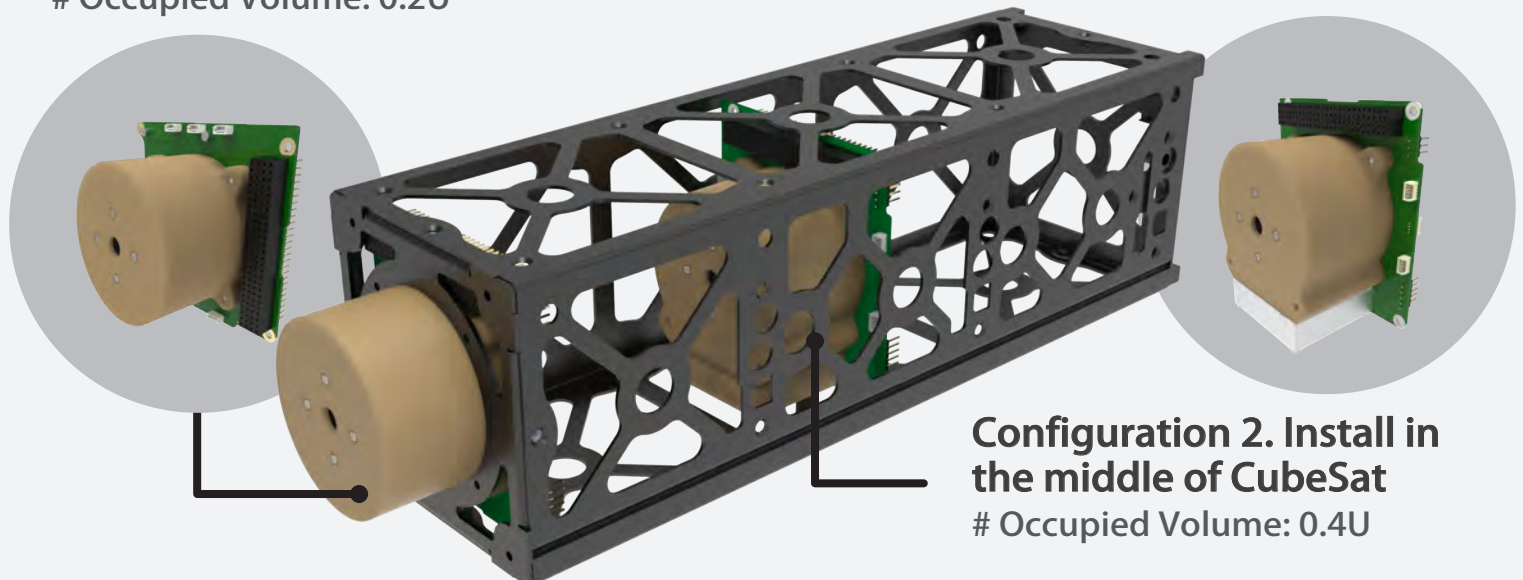
Installation Interfaces

**Configuration 1. Install in the bottom of
3U+ / 6U+ Satellite (Hockey Part)**

Occupied Volume: 0.2U

Specifications

1. Weight: < 400g
2. Dynamic Balance: < G0.4
3. Max. Power Consumption: 1W
4. Pointing Accuracy: 0.2 deg when the sun is capturable; 1 deg when the sun is not capturable
5. Max. Momentum: 10 mNm
6. Max. Torque: 1mNm
7. Interface: I2C, UART
8. Lead Time: 4 weeks



**Configuration 2. Install in
the middle of CubeSat**

Occupied Volume: 0.4U

Spherical Motor Technology

Unlike traditional single-axis reaction wheel motor, 1 spherical motor is capable of providing angular momentum in 3 axes. In addition, by applying bias currents, it acts as 3 single-axis magnetorquers as well. In terms of rotational dynamics, it is actually a control moment gyro. While the algorithms including:

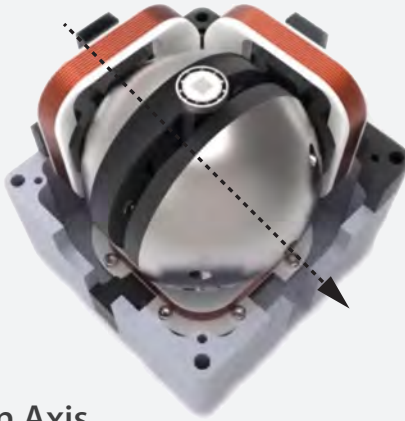
(1) De-tumbling (2) Attitude Sensor Calibration (3) Attitude Determination to (4) 3-axis Pointing Control

are all embedded in our controller, all you need to do is giving attitude command from satellite OBC via I2C or UART in a standard PC104 port.

X - AXIS



Y - AXIS

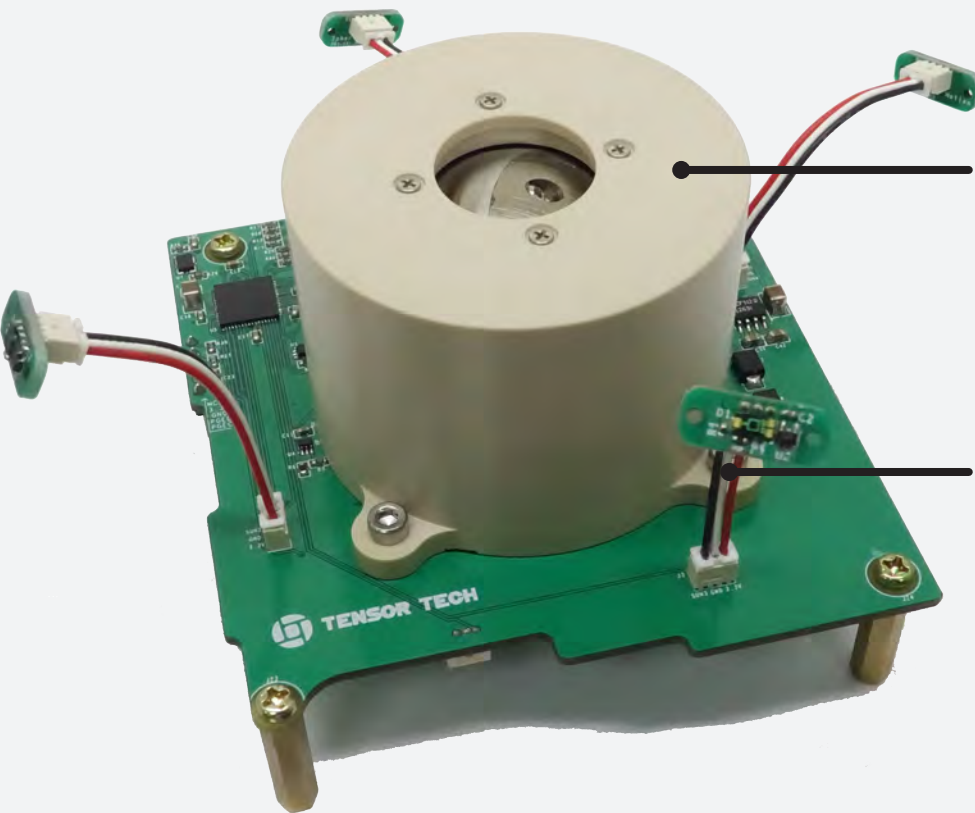


Z - AXIS



←..... Spin Axis

Selling Options & Services



Option A. Integrate ADCS

Hardware Included:

- (1) Fine Sun Sensors*6
- (2) Tactical Grade Gyro*1
- (3) Spherical Motor*1

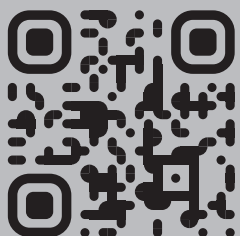
Option B. Spherical Motor

- # Max. Momentum: 10mNms
- # Max. Torque: 1mNm
- # Power Consumption: <1W
- # Weight: <400g
- (No ADCS algorithm embedd)

Option C. Fine Sun Sensor

- # Pointing Knowledge: 0.1 deg (3-sigma), no albedo
- # Current Consumed: <5mA
- # Interface: I2C

Option D. ADCS Integration & Testing on the spherical air bearing platform in Tensor



Tensor Tech CO., LTD.

E-mail: info@tensortech.com.tw

Website: tensortech.com.tw

Your best partner toward Satellite Minimization



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