Integrate ADCS

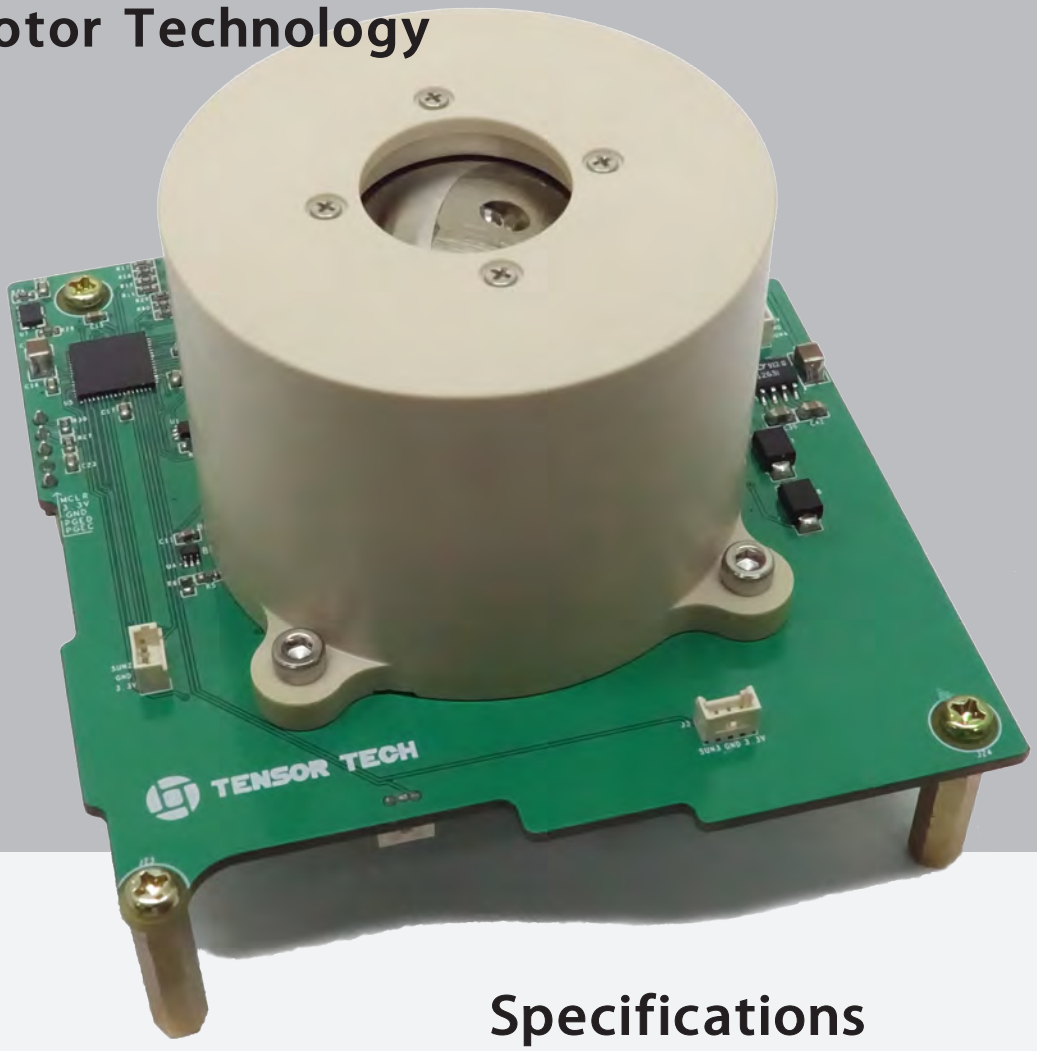
with Spherical Motor Technology

TENSOR TECH

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.

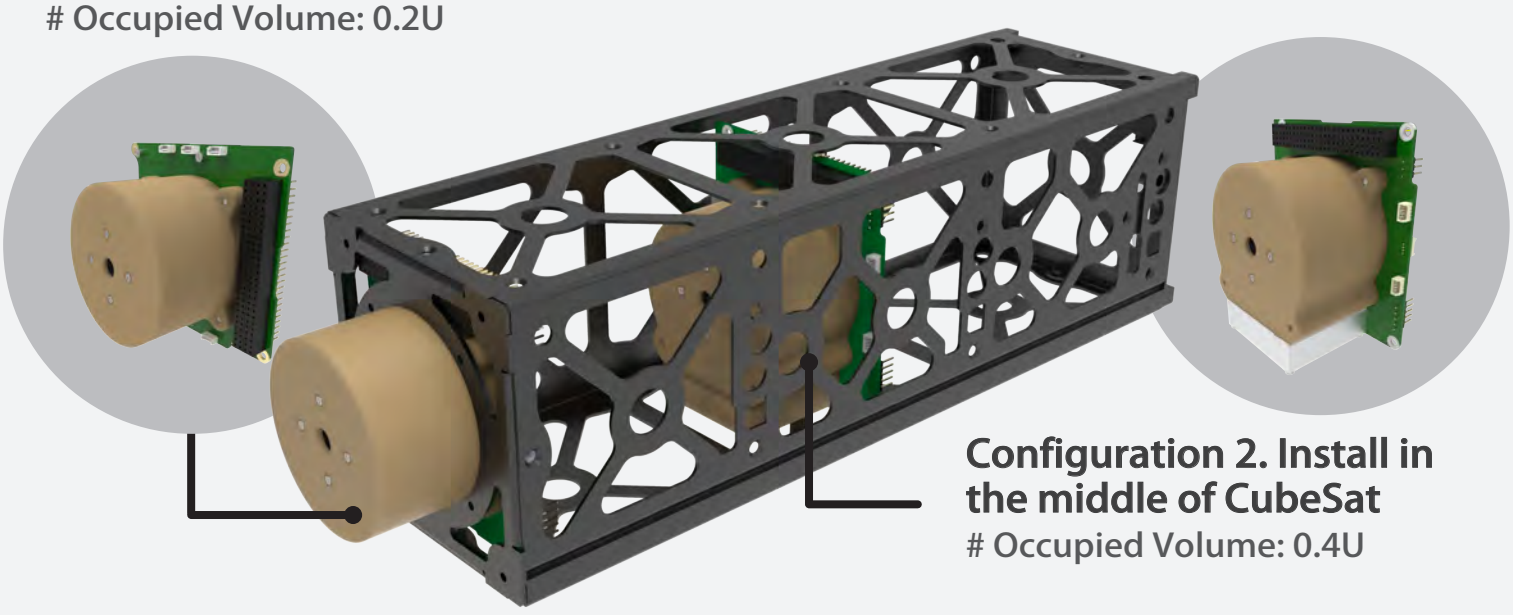
Specifications

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 mNms
6. Max. Torque: 1mNm
7. Interface: I2C, UART
8. Lead Time: 4 weeks

Installation Interfaces

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

Occupied Volume: 0.2U



Configuration 2. Install in the middle of CubeSat

Occupied Volume: 0.4U

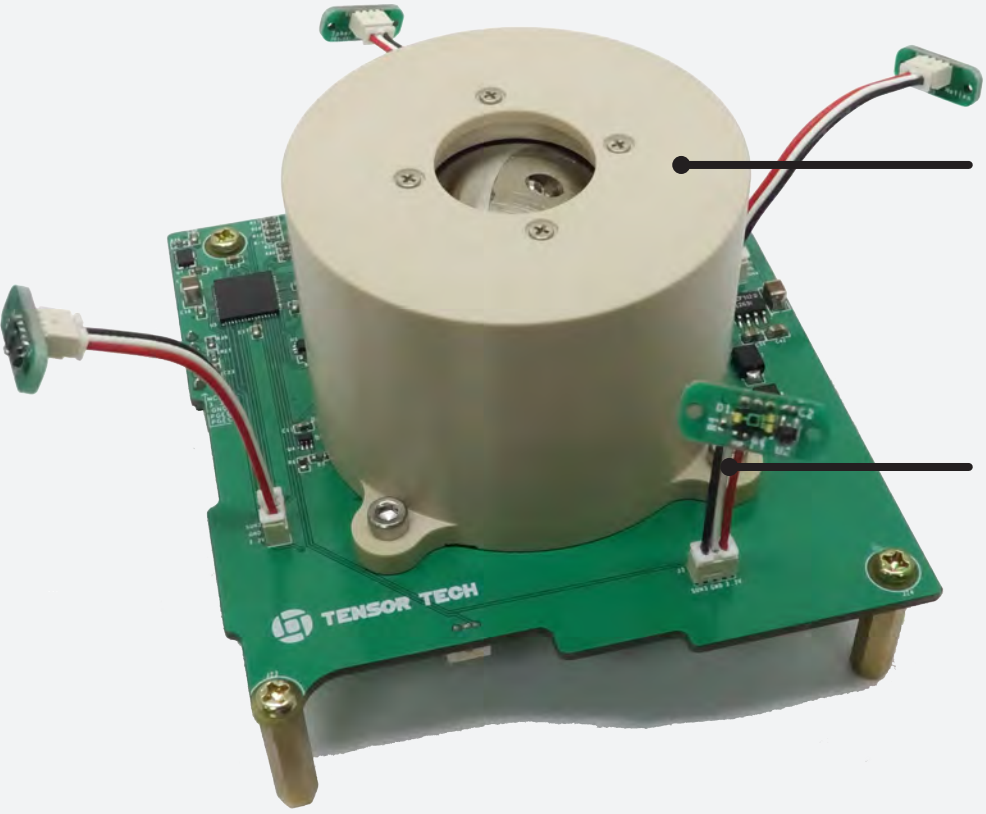
Spherical Motor Technology

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.

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

TENSOR TECH

Your best partner toward Satellite Minimization