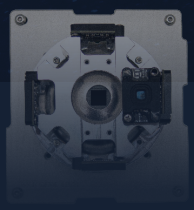
space satellite



tensor tech

together
we go further

ADCS

attitude

determination

control

system

together
we go further

tensor tech is an innovator of satellite attitude determination and control systems, with expertise in guidance, navigation, and control.

we offer a suite of space-qualified products ranging from flight-proven subsystems to highly reliable components and scalability based on customer requirements.

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FSS-15

fine sun sensor

flight heritage since jan. 2022

FSS-15M with magnetometer
FSS-15D higher update rate

dimension

specifications

- 2-axis digital sun sensor embedded with calibration error table and micro-controller
- embedded firmware for radiation-caused transient error detection and recovery

field of view (FOV)	± 60 deg; 45 deg for optimal performance
accuracy	± 0.1 deg with 45 deg FOV (1-sigma); ± 0.5 deg with 60 deg FOV (1-sigma)
sampling rate	2, 4, 8, and 16 Hz adjustable by the user
current consumption @ sampling	< 2 mA
current require @ IDLE	< 0.5 mA
mechanical	22.00 × 15.00 × 5.26 mm (< 4 g)
radiation tolerance	> 10 krad
interface	I2C and UART (adjustable)

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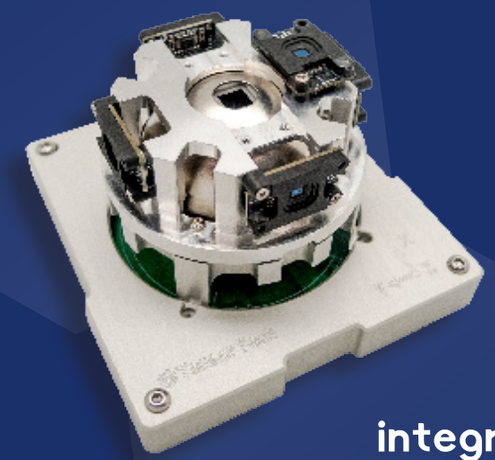
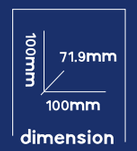
ADCS



integrated
attitude
determination
and
control
system

flight heritage since jan. **2022**



tensor tech's **ADCS** uses variable speed control moment gyroscopes (**CMG**) for pointing and tracking, which is more power effective than reaction wheels.

actuators are fully scalable through various **CMG** configurations. the **ADCS** includes estimator and control algorithms with a wide variety of sensors for all **ADCS** control modes.

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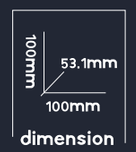
CMG

control
moment
gyroscope

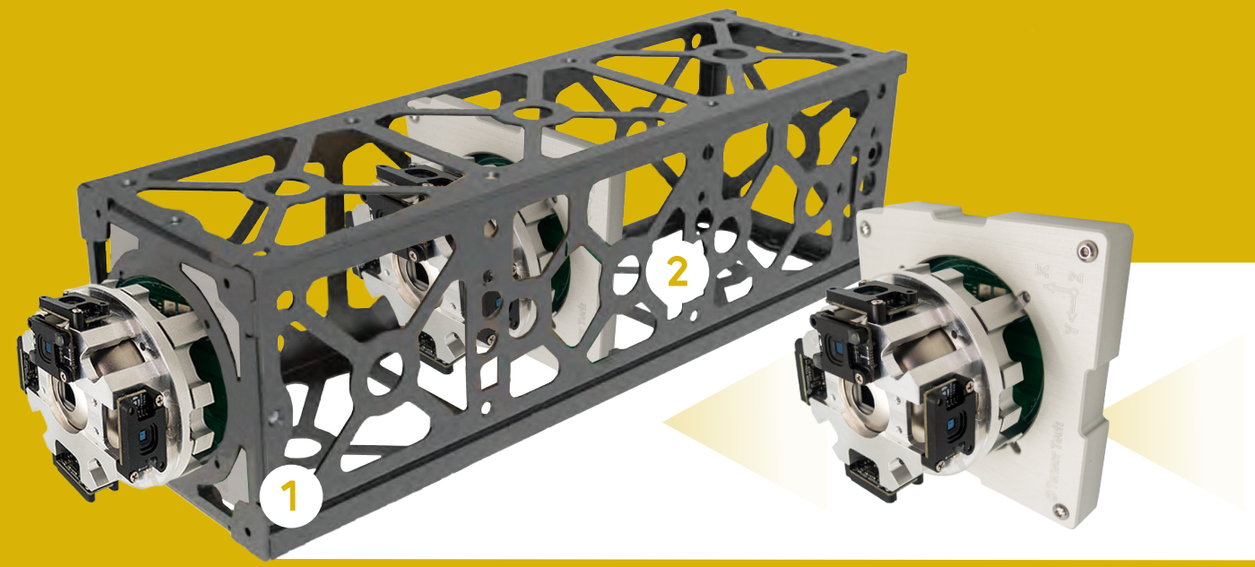


flight heritage since jan. **2022**

tensor tech's minimized variable speed control moment gyroscope (**CMG**) features its lower mass, smaller volume, and more power effective compared with reaction wheels.

the **CMG** includes speed and torque modes, allowing users to control the **CMG** directly by simply setting speed or torque output values.

installation interfaces



installing the **ADCS** or **CMG** in tuna-can (**configuration 1**) is recommended, as this takes up the least space in the satellite.

however, it is feasible to install the **ADCS** or **CMG** whithin the cubesat structure shown in **configuration 2**.

configuration 1.
install in the bottom of 3U+/6U+ satellite
#occupied volume : **0.2U**

configuration 2.
install in the middle of cubesat
#occupied volume : **0.4U**

together
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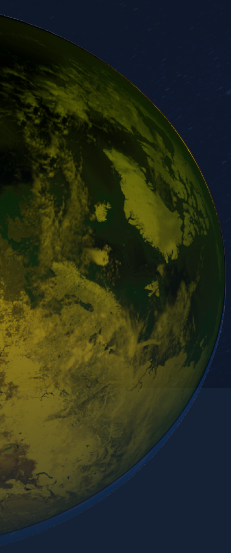
space has defined some of humanity's most outstanding achievements, and it continues to shape our future today.

we are motivated by the impact we can have by bringing reliable technologies to our customers, as the company's core spirit," together, we go further".

our service

- **ADCS** hardware in the loop
- **ADCS** integration
- **AOCS** performance analysis
- mass properties measurement
- jitter analysis and measurement
- processor in the loop
- original equipment manufacturing
- original design manufacturing



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