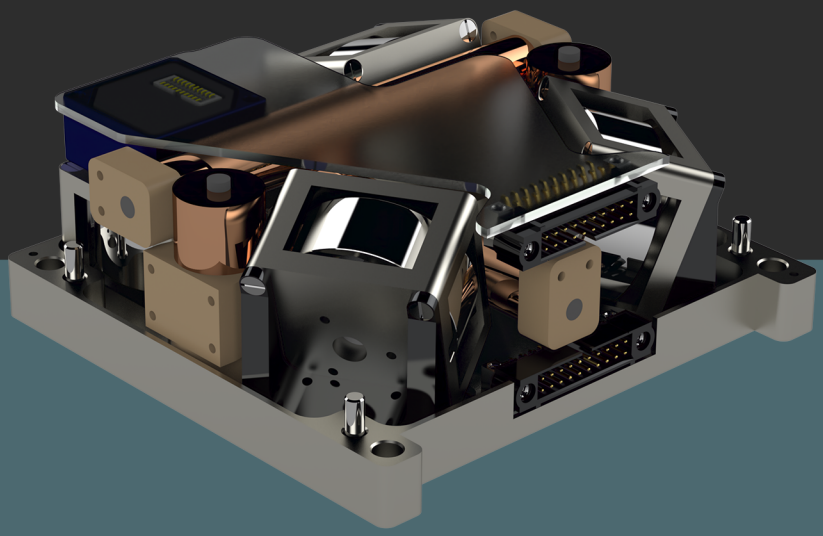
SATELLITE MODULES - ADCS-R3

NEWS

FACTS SHEET - *PRELIMINARY*

The ADCS-R3 is an integrated attitude control solution for 2-6 kg satellites. It includes four momentum wheels in tetrahedron configuration, three magnetorquer rods, gyro, accelerometer and ADCS computer in a very compact and rugged package. It is designed to operate with external attitude sensors connected via CAN bus such as sun sensors, star trackers and others.



FEATURES

4 momentum wheels in tetrahedron configuration:
- Specs for each wheel:
- Max 30,000 rpm
- 15 mNms (nominal 7.5 mNms)
- 2 mNm

3 magnetorquer rods:
- 0.2 Am2 per axis
- Fine dipole moment control

Gyro:
- Stability: 1.2 o/hr
- Random walk: 0.08 o/√hr
- Repeatability: 0.01 o/s
- Noise: 0.002 o/s √Hz

Accelerometer:
- Stability: 8 µg
- Random walk: 0.02 m/s √hr
- Repeatability: 3 mg
- Noise: 48 µg/√Hz

Attitude control precision is dependent on external sensors

7-28V power supply

CAN bus with CSP protocol:
- Interface to satellite bus
- Interface to external sensors (not supplied):
  - Sun sensors
  - Magnetometers
  - Star trackers

Cortex-M7 based ADCS computer:
- Extended Kalman filter
- Controllers: Ground tracking, inertial pointing, detumbling, momentum dumping

Reliability:
- Radiation total dose tested EEE parts
- Vibration rated for all launch vehicles

High-quality Enclosure:
- PC-104 compatible mounting holes

94 x 91 x 37.5mm / 600 gram

NYBROGADE 14, ST. • 9000 AALBORG • DENMARK • INFO@SPACE-INVENTOR.COM • WWW.SPACE-INVENTOR.COM