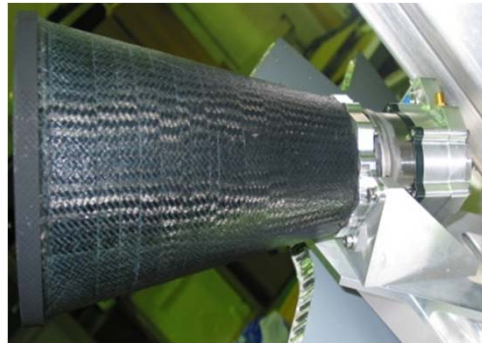


STAR TRACKER

ALTAIR HB+

Applications

- LEO Missions and Constellations
- Targeted at Cost-Effective Missions Requiring High Performance
- Three-Axis Control Systems
- Agile Spacecraft



CHU and Baffle

The ALTAIR HB+ is a third-generation star tracker, designed specifically in support of cost-effective missions requiring accurate, reliable, and autonomous 3-axis attitude estimation.

The camera head unit (CHU) is based on CCD sensor technology, delivering a cost-effective solution, while keeping mass and power to a minimum. The Star Tracker outputs bore sight vectors in the J2000 frame as a quaternion with an associated time stamp.

Features

- Autonomous
- Modular design with separate CHU and processing electronics (DPU & CCE)
- 7-year design life

Heritage

- More than 10 units flown
 - BILSAT-1 (2003)
 - UK-DMC (2005)
 - CFESAT (2007)
 - RapidEye (2008)

Interfaces

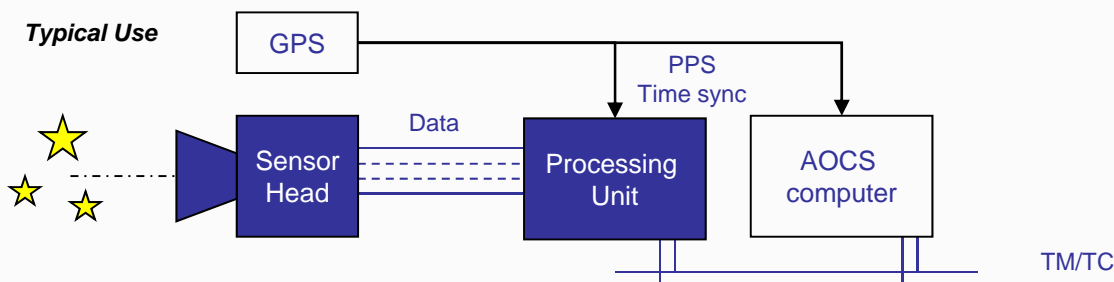
- Dual-redundant RS422/RS485 TM/TC interface
- 16 – 50 V power

SSTL is ISO9001:2008 certified

Subsystems are manufactured to:

- ECSS Q-ST-70-08C
- ECSS Q-ST-70-38C
- All work overseen by ESA-trained assembly staff

Typical Use



STAR TRACKER

ALTAIR HB+

Options

- CAN TM/TC interface

Other ADCS products

- Next-Generation High-Performance RIGEL Star Tracker
- Complete ADCS suite
- Magnetometers & Sun Sensors
- Magnetorquer Rods
- Reaction Wheels
- GPS Navigation Receiver

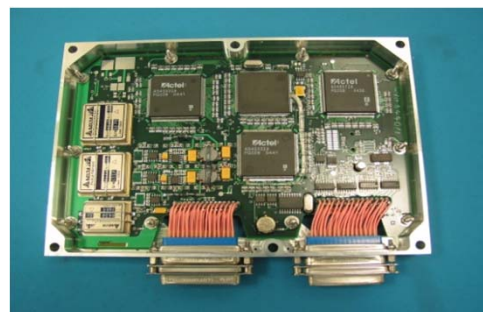
Availability

- 12 month lead time

Standard delivery service includes:

- Compliance testing
- Vibration test
- Thermal cycling
- User manual
- Electrical, mechanical and environmental ICDs
- Test results
- Export license and shipping
- Thermal vacuum testing available

| | | |
|--|---------------------------|--|
| Attitude Accuracy (1-σ) | | |
| Relative Accuracy | | X/Z < 10 arcsec |
| EOL for a single CHU, | | Y < 60 arcsec |
| DPU & CCE operating at | | Tracking 10 or more stars |
| 0.5 Hz update rate | | with the CHU temp < 10°C |
| Update Rate | | 0.5 Hz – 1 Hz |
| Maximum Tracking Rate | | 0.2 deg/s, 0.05 deg/s ² |
| Exclusion Angles | | Sun: 60 deg Earth: 45 deg Moon: 45 deg |
| Interface | | CAN/RS422/ RS485 |
| Mass / Volume | | |
| | DPU | 33 x 178 x 316 mm, 1.0 kg |
| | CCE | 22 x 135 x 190 mm, 0.45 kg |
| | CHU | 77 x 104 x 104 mm, 0.85 kg |
| | Baffle | 150 (D) x 185 (L) mm, 0.30 kg |
| | CHU length with Baffle | 275 mm |
| Power | | |
| | Single CHU with CCE & DPU | Supply 16 – 50 V 12 W at 28 V |
| Vibration | | |
| | DPU | 15 g _{rms} |
| | CHU | 15 g _{rms} |
| Operating Temperature | | |
| | DPU | 0 to +50°C |
| | CCE | -20 to +50°C |
| | CHU | -20 to +50°C |
| Radiation | | >10 kRad |



Processing Unit (DPU)

Surrey Satellite Technology

Surrey Satellite Technology (SST) has launched over 30 satellites gaining almost 200 years in-orbit experience. SST draws on its world-class expertise in both small satellite platform technology and high and medium resolution imagers. SST provides complete turnkey system solutions: spacecraft, ground station, launch, operations, and image data processing.

SST is unique in the space industry—able to design, manufacture, and integrate multiple satellites in-house in its three specifically designed facilities in the United Kingdom, with this capability soon to be replicated in the U.S.A.

Changing the economics of space

www.sst-us.com