



XACT Lite™

Attitude Control for CubeSats

3-axis attitude determination in a micro-package



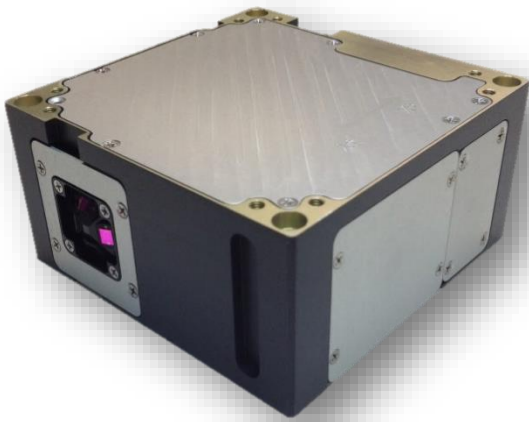
Key Features

- ★ Low cost 3-axis attitude determination
- ★ 0.5U Micro-package
- ★ Multiple pointing reference frames: Inertial, LVLH, Earth-fixed, Solar
- ★ Low jitter 3-axis reaction wheel control (also sold as single wheel)
- ★ User-friendly software for simulation, integration and customization
- ★ Self-calibrating reaction wheels, with advanced digital controls, provide unparalleled torque precision

Total Integrated Mission Solutions



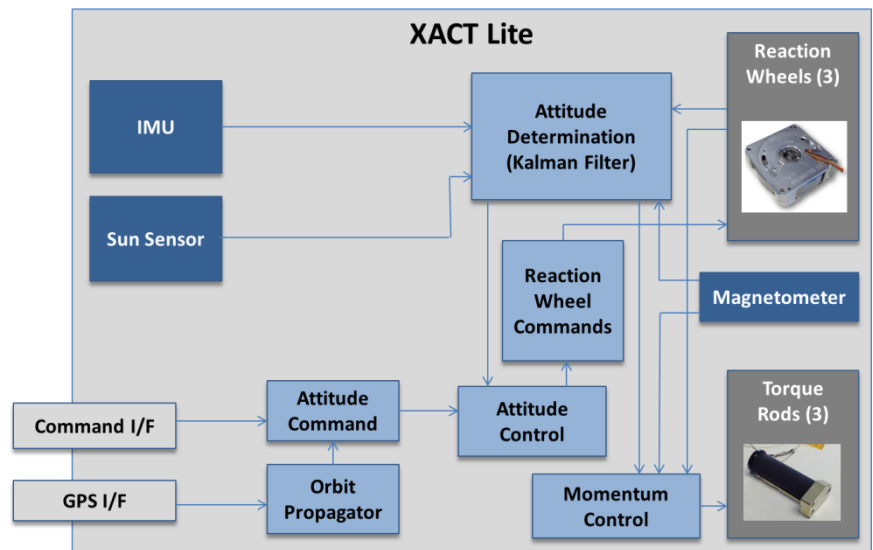
XACT Lite is a lower cost and lighter version of the BCT XACT. The XACT Lite is for those missions that don't need the exquisite pointing of the stellar-based XACT, but want to utilize all of its other flexible, capable features. It is a reliable CubeSat attitude control system compatible with a variety of configurations and missions. The highly integrated XACT architecture leverages a powerful processing core with BCT's Micro Reaction Wheel assemblies to enable a new generation of highly capable, miniaturized spacecraft. XACT features 3-axis Attitude Determination in a micro-package. Built-in flexible commanding allows for multiple pointing reference frames: Inertial, LVLH, Earth-Fixed, and Solar. Precise 3-axis control is provided by low jitter reaction wheels, torque rods and integrated control algorithms. Software is available to support simulation, system integration, and customization of the ADCS functionality.



XACT Lite Capability

Specification	Performance
Spacecraft Pointing Accuracy	± 1.0 deg (1-sigma)
Spacecraft Lifetime	3 Years (LEO)
XACT Lite Mass	0.7 kg
XACT Lite Volume	10 x 10 x 5 cm (0.5U)
XACT Lite Electronics Voltage	5V
XACT Lite Reaction Wheel Voltage	12V
Data Interface	RS-422 (can support SPI)
Slew Rate (8kg, 3U CubeSat)	≥ 10 deg/sec

Operational Case	Power (W)
XACT (5 Hz operation)	0.75
XACT + 3 TR (ON STATE)	1.50
XACT + 3 RW (@ 600 rpm)	0.89
XACT + 3 RW (@ 600 rpm) + 3 TR (ON STATE)	1.64
XACT + 3 RW (@ 1500 rpm)	1.90
XACT + 2RW (@600 rpm) + 1 RW (max speed @6000 rpm)	2.53



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