



# XB1™

High-Performance 1U CubeSat Bus

Ready for your payload – right out of the box



#### Key Features

- ◆ High-precision pointing performance from Dual Micro Star Trackers
- ◆ Bus functionality for GN&C, EPS, Thermal, C&DH, RF Communication, SSR, and Flight Software
- ◆ Interfaces and control provided for propulsion, solar arrays, and multiple payloads
- ◆ Maximizes payload volume
- ◆ Supports configurations up to 27U

**Total Integrated Mission Solutions**



**XB1** provides a complete CubeSat bus solution in a highly integrated, precision spacecraft platform including: Ultra high-performance pointing accuracy, robust power system, command and data handling, RF communications, propulsion interfaces, and multiple flexible payload interfaces. Precision stellar-based attitude determination & control provided by dual star trackers. Supports precision orbit propagation of multiple target objects with flexible pointing commands to enable a wide range of missions. The **XB1 Flight Software** and simulation environment supports user-developed flight applications unique to your mission.



**XB1 Stacked Configuration**



**XB1 Side by Side Configuration**

	XB1 Parameter	Value/Notes
GN&C	Pointing Accuracy	$\pm 0.002^\circ$ (1-sigma), 3 axes, 2 Trackers
	Pointing Stability	1 arc-sec/sec
	Maneuver rate	10 deg/sec (typical 3U CubeSat)
	Orbit knowledge	4m, 0.05m/s
CDH	Data Interfaces	Serial: LVDS, RS-422, or SPI available
	Onboard Data Processing	Configurable via user loadable software
	Telemetry Acquisition	6 12bit Analog, 6 discrete inputs
	Commands	Real-time, stored, macro
EPS	Onboard Data Storage	32 Gbytes
	System Bus Voltage	10 – 20 V (battery and array dependent)
	Energy Storage	Standard: 25Whr, expandable
	Solar Panels	Customer or BCT Provided Solar Panels (Details available per request)
Comm	High Current Capability	Unregulated up to 60W
	Payload Power Feeds	QTY 6 (12, 5, 3.3V or Bus voltage)
	Frequency	UHF or SBand
	Uplink	CCSDS, SGLS
Prop	Downlink	250 kbps / 5 Mbps
	Encryption	AES 256
	Solid State Recorder Capacity	32 Gbytes
	Heater Controllers	Up to 6 independently controlled zones
	Propulsion System Drive	Or up to 6 Thruster drivers or Latch Valves Drivers
	Telem. Interfaces	2 Temperatures, 4 voltages, 6 discrete IO
	Mass / Volume	1.5 kg / 10 cm x 10 cm x 10 cm
	XACT-Bus Nominal Power	< 6.3W
	Orbit Altitude / Orbit Lifetime	LEO / > 3 years

**XB1 Modules** (5 x 10 x 10 cm) can be stacked or placed side-by-side

- Provides the highest-available pointing performance from Dual Micro Star Trackers
- Bus functionality for GN&C, EPS, Thermal, C&DH, SSR, RF Communication
- Interfaces and control provided for Payload, Propulsion, and Solar Arrays
- Supports configurations up to 27U
- Compatible with multiple CubeSat deployment systems



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