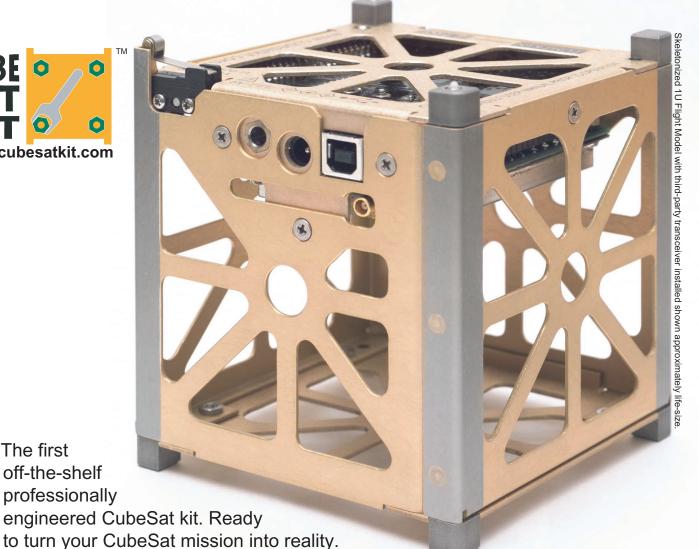


The first

off-the-shelf professionally



Benefits

- 300g total mass¹ maximizes available user payload.
- Provides hardware solutions for structure, C&DH, COM, mass storage, RBF and development / debug systems in a single commercial off-the-shelf (COTS) package.
- FM430 Flight Module and its powerful 16-bit RISC microcontroller can operate continuously while in orbit due to ultra-low power requirements.
- Wiring-free interconnect scheme accepts user modules and/or PC/104 modules as payload on standardized stacking connectors, thereby increasing reliability.
- Compatibility with any conforming transceiver eases COM integration.
- Included SalvoTM Pro multitasking RTOS and Flight Module libraries speed software design and reduce system complexity -- ideal for software design teams.
- +5Vdc primary supply for all on-board electronics simplifies power supply design.
- Available in multiple configurations (standard and custom) tailored to your mission.



- Add power, antenna, AD&C, payload and software to complete your CubeSat.
- Transition seamlessly from development / debug / test environment to your launchable CubeSat with included Development Board and Flight Model.
- Meet your launch date on time and under budget.

Features

- Rigid and lightweight aluminum construction with only three major assemblies and all-stainless fasteners.
- Structure is fully alodyned for electrical conductivity. Wear surfaces are hard-anodized.
- Available in standard 1U (10x10x10cm), ½U, 1½U, 2U, 3U and custom configurations.
- All flight components rated for -40 to +85 °C.
- Flight MCU is TI's 3.3V ultra-low-power MSP430F14x/16x/161x RISC microcontroller. 2-8mW typical, 10μW in standby / sleep. 2-10KB RAM, 60-48KB ROM, 48 I/O pins, 2 USARTs, 2 SPI, I²C, 12-channel 12-bit ADC, 2-channel 12-bit DAC, 3-channel DMA, multiple timers, 32.768kHz / 7.3728MHz / DCO clock sources, single-cycle16x16-bit multiply, JTAG interface and 4 low-power modes.
- 104-pin stackable CubeSat Kit Bus connects user modules without wires. Supports multiple stacking heights.
- Accepts up to 5 PC/104-sized user modules. COTS +5V PC/104 modules supported on separate bus.
- Configurable Remove-Before-Flight (RBF) and Launch switches rated at 10A each.²
- Kit can accommodate any +5V/+3.3V transceiver via adapters or as a user-designed module. Drop-in compatibility with Microhard Systems MHX series OEM transceivers.³
- Bus-powered USB interface for on-the-launcher monitoring, firmware upgrades, etc. On-board electronics can be powered directly from USB interface.⁴
- Requires only a single +5Vdc power supply -- also has external +5Vdc bus power connector.
- Development Board is electrically identical to FM430 Flight Module, with additional features for debugging.
- Kit contents⁵ are shown below. Requires only a Salvo-certified MSP430 compiler / toolset⁶ and a PC to begin development. Transceivers / modems / antennae / batteries / solar panels are **not** included.



Contact



750 Naples Street San Francisco, CA 94112 USA

tel: 415-584-6360 fax: 415-585-7948 web: www.cubesatkit.com

email: cubesatkit@pumpkininc.com

- Figure for complete skeletonized chassis, FM430 Flight Module, Microhard MHX-2400 transceiver and fastening hardware.
- 2: Each switch has NC and NO contacts available.
- 3: +5Vdc is available to power transceiver. User radios matching the MHX series' physical and electrical form factors can plug directly into the FM430 Flight Module. See http://www.microhardcorp.com for more information on the MHX series of spread-spectrum transceivers. User radios can also be implemented as PC/104-size modules that connect directly to the CubeSat Kit Bus.
- 4: 500mA max over USB. Multi-platform USB drivers included with kit.
- 5: CubeSat Kit shown with solid wall chassis Flight Model with transceiver installed. The appearance and specifications of some components shown may differ from current production.
- 6: Priced for every budget -- see http://www.pumpkininc.com for a list of certified MSP430 tools.

Specifications subject to change without notice. Made in USA

© 2000-2006 Pumpkin, Inc. All rights reserved. Pumpkin and the Pumpkin logo, Salvo and the Salvo logo, and the CubeSat Kit name and logo are trademarks of Pumpkin, Inc. All other trademarks are the property of their respective owners.