



Skeletalized 1U CubeSat Kit Flight Model with Solar Panel Clips, FM430 Flight Module and Microhard MFX transceiver installed. Shown approximately life-size.

Profile

- The affordable, space-proven off-the-shelf professionally engineered CubeSat kit. Ready to turn your CubeSat mission into reality.

Benefits

- 300g total mass¹ maximizes available user payload.
- Provides hardware solutions for structure, C&DH, RTC, mass storage, RBF and development / debug systems in a single commercial off-the-shelf (COTS) package.
- User-selectable Pluggable Processor Modules (PPMs) with powerful 8- and 16-bit microcontrollers can operate continuously in orbit due to 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 Salvo™ Pro multitasking RTOS, EDFS-THIN FAT-compatible SD Card software and CubeSat Kit software speed software development and reduce system complexity -- ideal for software design teams.²
- +5Vdc primary supply for all on-board electronics simplifies power supply design.

You

- Add COM, EPS, antenna(s), mission software and internal and/or external payloads.
- 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 alodined for electrical conductivity. Wear surfaces are hard-anodized.
- Available in standard 1U (10x10x10cm), 0.5U, 1.5U, 2U, 3U and custom configurations.
- All flight components rated for -40 to +85 °C.
- Available Flight MCUs include:
 - PPM A1/A2/A3, 7.3728-16MHz: TI's ultra-low-power 16-bit MSP430F1612/1611/2618 MCUs
 - PPM B1, 100MIPS@100MHz: Silicon Labs® 8-bit C8051F120 MCU
 - PPM D1, 16MIPS@32MHz: Microchip® 16-bit PIC24FJ256GA110 MCU
 - PPM D2, 40MIPS@80MHz: Microchip® dsPIC33FJ256GP710 DSC
- Each processor family provides a minimum of multiple timers, 2xUART, 2xSPI, 1xI2C, 8xADC, Flash, RAM, low-power modes and JTAG/debug interfaces. See individual PPM datasheets for more information.
- 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 for COM. 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 Motherboard+PPM, with additional features for debugging.



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1. Figure for complete Rev D skeletonized chassis, Rev C FM430 Flight Module, Microhard MHX-2400 transceiver and fastening hardware.
2. A C compiler compatible with the selected processor family and Pumpkin's Salvo RTOS, EFFS-THIN and CubeSat Kit software is required. See price list for details.
3. Each switch has C, NC and NO contacts available.
4. +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.
5. 500mA max over USB. Multi-platform USB drivers included with kit.
6. Contents are subject to change without notice. CubeSat Kit shown with Rev C solid-wall 1U structure with optional transceiver installed. The appearance and specifications of some components shown may differ from current production.

Specifications subject to change without notice. Made in USA.

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