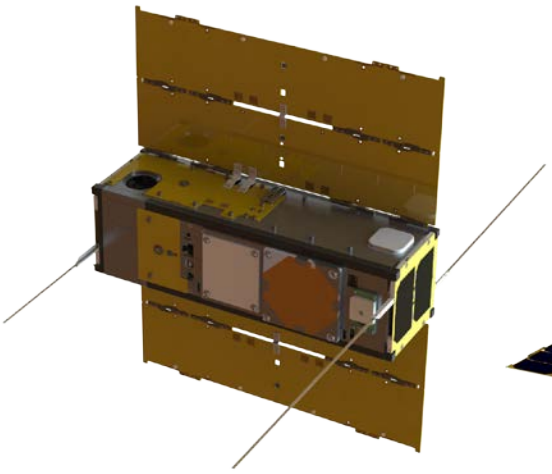
SUPERNOVA™

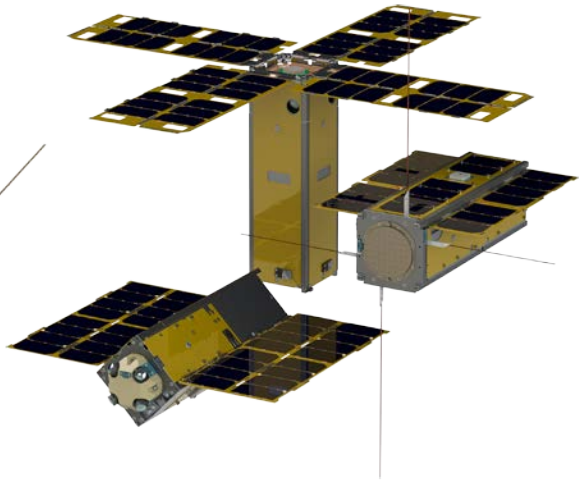
High Performance Nanosatellite Platforms

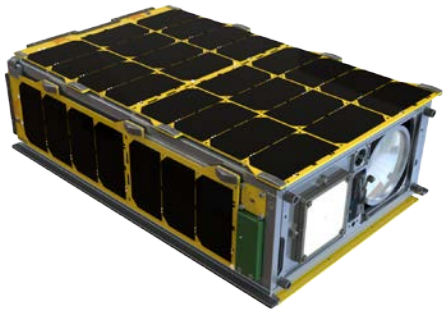
PUMPKIN
SPACE SYSTEMS

Key Features:

- o Open architecture enables wide range of end user specific customization
- o Best-in-class power, structures, and C&DH
- o High performance smart power systems
- o 1GHz Linux based flight computer
- o The most internal volume of any CubeSat structure
- o Multiple flight software solutions (Kubos , Bright Ascension)
- o Radiation tolerant to Low Earth Orbit levels
- o Designed to NASA's Systems Engineering Guidelines
- o Rapid payload integration
- o Knowledgeable, experienced staff ready to help you achieve your mission







Reliable, Proven Technology

Pumpkin leverages over 20 years of experience in the CubeSat industry to deliver Best-in-class small satellite systems. The SUPERNOVA line of CubeSats is in use by US government, commercial, and academic users worldwide.

Enabling Your Mission

SUPERNOVA's open architecture puts you in control of your satellite. As a payload developer and SUPERNOVA user you have full control over your spacecraft's configuration and Pumpkin will work with you optimize the bus for your mission.

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System Overview

SUPERNOVA Capabilities by Form Factor

PUMPKIN SPACE SYSTEMS

SUPERNOVA	3U/4U	6U	12U
Dispenser Compatibility	All common supported	CSD, NanoRacks	CSD, NanoRacks, Lightband
Solar Array Power	40W	64W	110W
Solar Panels	Mission Specific Fixed/Deployable/Articulated		
Payload Volume	1.5U	4U	9.5U
Power Distribution	8A @ 3.3V, 5V, 12V, 3-55V; 10A @ V_{BATT} (16.8V); 400W Max		
Energy Storage	100-200 Whr @ 16.8V		
Flash Memory	Up to 32GB		
Pointing Knowledge	20 arcsec		
Pointing Accuracy	.01° @ 0.001°/s	.01°@ 0.001°/s	1°@ 0.01°/s
Bus Telemetry & Telecommands	Consistent interface across all modules; Engineering units (mV, mA, 0.1K)		
C&DH Processor	1GHz Arm Processor; Linux Based OS		
Environmental	Flight certified under NASA GEVS		
Navigation	555 channels L1 GPS Standard, all other constellations and frequencies optional 4m position, 0.05 m/s velocity knowledge with on-board orbit propagator		
Data Bus	I2C, GPIO, UART, SPI, RS-422, RS-232, USB, Ethernet		
Communications	CCSDS, TCP-IP, UDP; UHF, L-/S-/X-band options available		
Data rates	9B/s (beacon), 9.6 kbps, 4/20/100 Mbps		
Encryption	AES256 and others		
Development Language	Python, C, C++		
Propulsions	Compatible with		
LEO Lifetime	Up to 5 years		
Flexibility	Bus specification tailored to customer requirements