

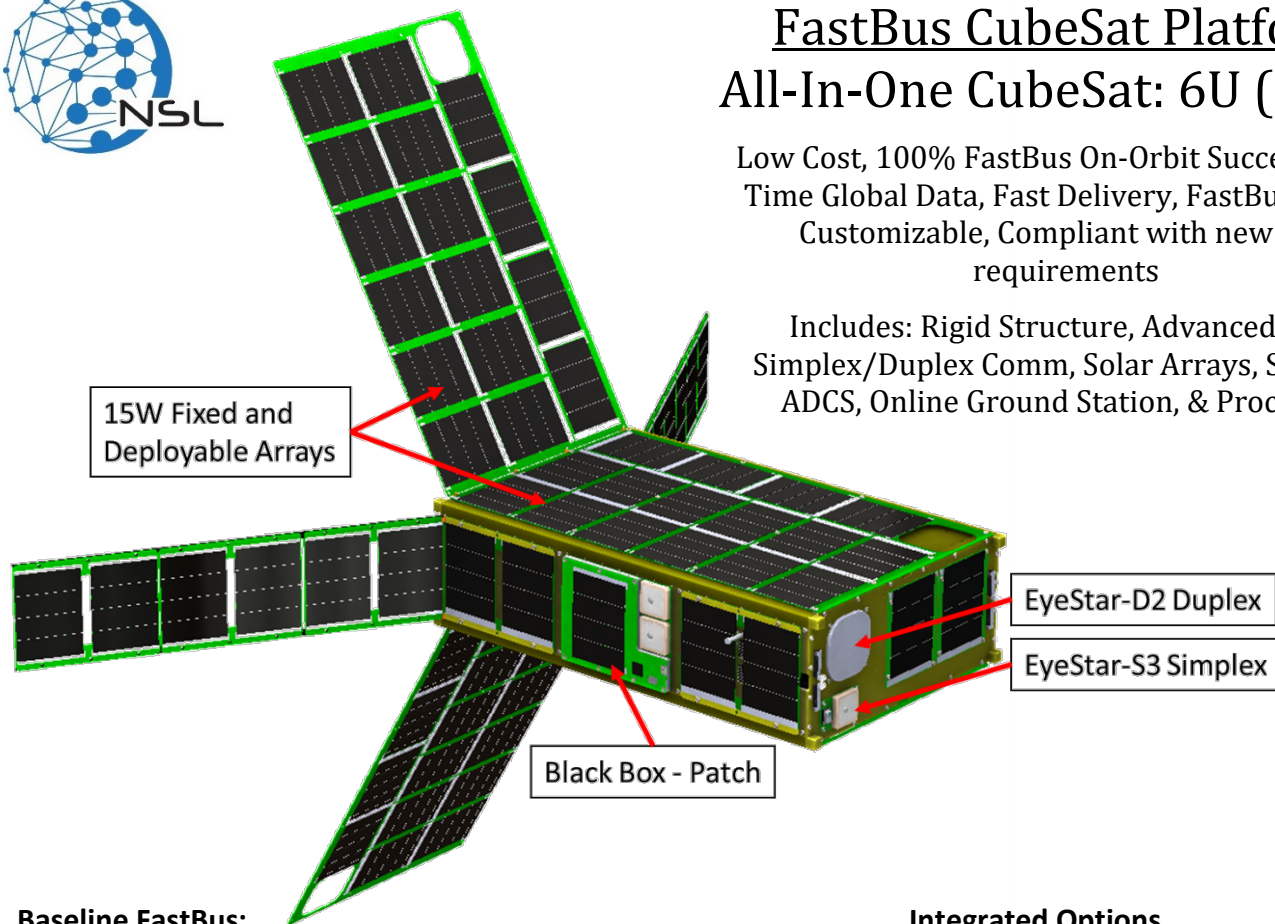


FastBus CubeSat Platform

All-In-One CubeSat: 6U (3x2U)

Low Cost, 100% FastBus On-Orbit Success, Real-Time Global Data, Fast Delivery, FastBus TRL 9, Customizable, Compliant with new FCC requirements

Includes: Rigid Structure, Advanced EPS, Simplex/Duplex Comm, Solar Arrays, Sensors, ADCS, Online Ground Station, & Processor



Baseline FastBus:

- Structure: Rigid, Hard Anodized, Al 6061-T6
- EPS: Smart functionality with switched outputs, short circuit protection, inhibits, boost converters, etc.
- Batteries: Configurable up to 100+ Whrs
- Flight Processor: Simple serial/analog interface with option of running payload Con Ops
- ADCS: Active and passive magnetic systems
- Solar Arrays: Up to 48W total, flexible cells (ISS compatible)
- EyeStar-S3 Simplex: 8 bytes/s, 24/7 downlink with global coverage
- EyeStar-D2 Duplex: 700 bytes/s duplex real time link
- Sensor Suite: Particles, IR, temperature, horizon, 9-axis IMU
- Access to Globalstar's 20+ Ground Stations
- Access to NSL Online Console: View, analyze, and download data live streaming online

Basic Specifications

- Size (LxWxH): 10 x 22.63 x 36.6 cm
- Mass: 3.2 kg
- Payload Volume: ~5U

Integrated Options

- Black Box – Patch: Live, independent RF link with downlink and uplink
- Deployable Solar Arrays: Up to 42W
- GPS + Antenna: For precise location knowledge
- Precision ADCS: Increase precision of pointing for certain experiments
- Propulsion: Low power, ISS safe
- Sensors: Plasma Probe, Camera, Micro-meteor, magnetometer, etc.
- Structural mass reduction

NSL Technical Merit

- 350+ Total Systems flown in space
- 100% Mission Success
- DOD Certified

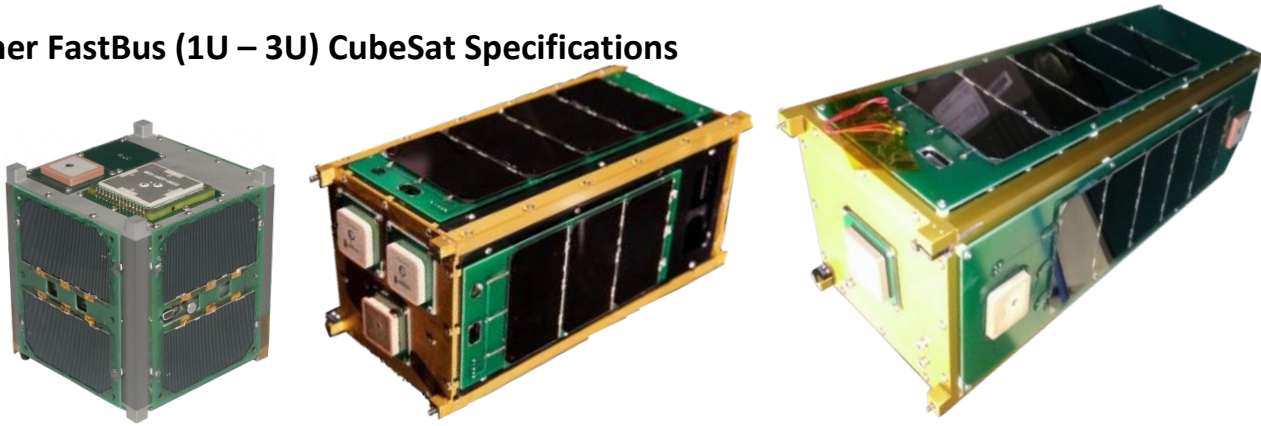
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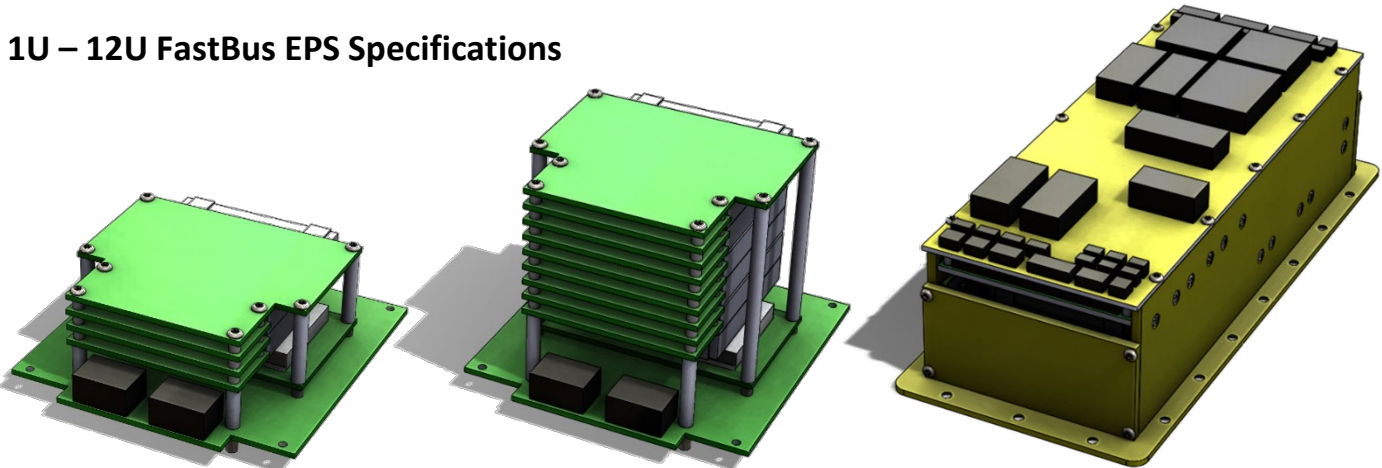
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Other FastBus (1U – 3U) CubeSat Specifications



FastBus Specifications	1U	2U	3U
Size (LxWxH)	10 x 10 x 11.35 cm	10 x 10 x 22.7 cm	10 x 10 x 34.05 cm
Mass	0.7 kg	1.1 kg	1.6 kg
Payload Volume	490 cm ³ (~0.5U)	1300 cm ³ (~1U)	2100 cm ³ (~2U)
Solar Arrays	4x 2 W in Sun (Min)	3x 4 W in Sun (Min)	3x 6 W in Sun (Min)
Battery Capacity	16.3 Whrs	48.8 Whrs	48.8 Whrs
Comm System	Simplex + Receive	Simplex + Receive	Simplex + Receive
Ground Station	Online Console	Online Console	Online Console
Optional Comms	900 MHz, 2.4 GHz	900 MHz, 2.4 GHz, Full Duplex	900 MHz, 2.4 GHz, Full Duplex
Optional Power	Deployable Solar	Deployable Solar + Battery	Deployable Solar + Battery

1U – 12U FastBus EPS Specifications



EPS Specifications	1U	2U - 4U	5U - 12U
Capacity	16.3 Whrs	48.8 Whrs	146.5 Whrs
Output Voltage	5 V, 3.3 V, BUSS+	5 V, 3.3 V, BUSS+	10 V Nominal
# Switched Outputs	5 - 15	5 - 15	15 (isolated)
Output Power	Up to 40 W	Up to 40 W	> 100 W
A/D Inputs	6 Analogs, 2 Digitals	6 Analogs, 2 Digitals	36 Analogs
Size (LxWxH)	8.7 x 9.0 x 3.3 cm	8.7 x 9.0 x 6.5 cm	20.0 x 8.8 x 5.5 cm
I/O Interface	6 x DF13	6 x DF13	< 32 x DF13
Input Voltage	7 – 16 V	7 – 16 V	7 – 35 V
# of MPPTs	6	12-16	6
1-Wire Temp	6	6	7

- NSL Inc. is a certified **Value Added Reseller (VAR)** of Globalstar Satellite radios with its approved FCC, EMI, and Globalstar EyeStar products (<http://www.globalstar.com/en/index.php?cid=2560>).
- For CubeSat quotes, contact NSL: 765-998-8942 or nsl@nearspacelaunch.com
- Specifications subject to change without notice (please check with us for updated information)

