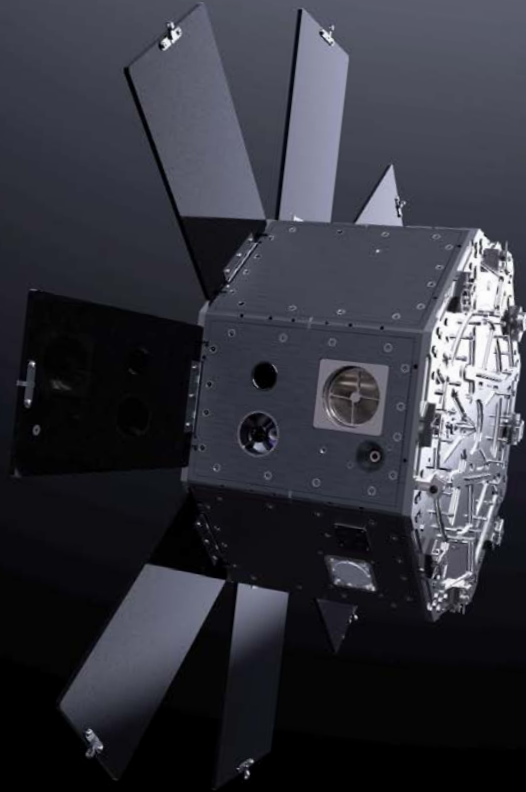


LIZZIESAT®



Multi-Mission Satellite for a Multi-Mission Constellation™

Space-rated Technology Readiness Level-9 (TRL-9) Composite
3D-printed Satellite Structure

- » 100 - 800 kg, 3/5/7 year mission life

Software Defined Satellite

- » Highly reconfigurable and reprogrammable, allowing operators to modify their functionality and performance post-launch and on-orbit

Multi-Mission Capable

- » Multi-mission capable with simultaneous multi-sensor (multispectral, AIS, optical and other sensors) data collection

Near Real-time, Actionable Data Transmission

- » Orlaith AI platform provides rapid on-orbit data analysis, pattern recognition, custom analytics, data fusion, and continuous modeling

Superior Unit Economics

- » Maximum capacity ranging from 124Mb/s – 800Mb/s data

Diverse Customer Base

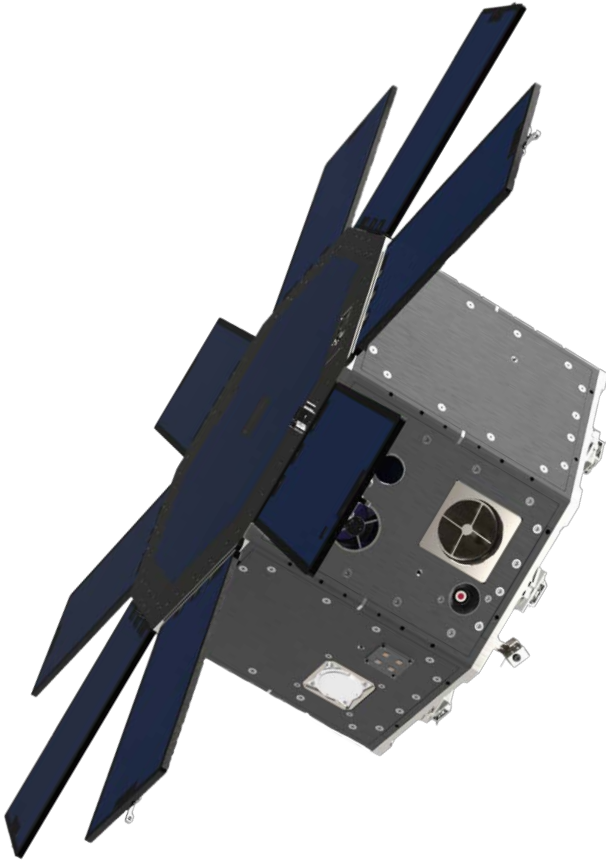
- » Serves government, defense, intelligence, and commercial sectors

Multi-Launch Rideshare

- » Multi-year, multi-launch cadence contract with SpaceX

Applications

- » Antennas
- » Command and Data Handling (C&DH) Hardware
- » Magnetometers and Magnetorquers
- » Microgravity and Radiation Exposure Testing
- » Propulsion
- » Radio Frequency Hardware
- » Reaction Wheels
- » Remote Sensors
- » Solar Cells
- » Star Trackers
- » Sun Sensors



Specifications

SIZE	
Class	Microsatellite
Mass	100 kg
Shape	Octagonal Prism
Volume	11,500 in ³ (188U)
DIMENSIONS	
Side Width	12.0 in.
Height	17.2 in.
Flat-to-Flat	29.0 in.
Tip-to-Tip	31.4 in.
PAYLOAD CAPACITY	
Available Mass	35 kg (without propulsion); 20 kg (with propulsion)
Available Volume	27 U (without propulsion); 18 U (with propulsion)
Available Power	28V (each)
ORBITAL PARAMETERS	
Altitude	300 - 650 km
Inclinations	30.0°, 45.0°, 51.6°, 63.4°, 92.0°, 98.6°
Orbital Period	90.4 - 97.6 minutes

ATTITUDE, DETERMINATION AND CONTROL (ADCS)

ADCS Type	3-Axis Control
Mean Accuracy	0.01° (3σ)
Pointing Knowledge	0.01° (3σ)
Mean High Frequency Jitter	(>20 Hz): 1.0e-6°/s (3σ)
Mean Low Frequency Vibration	(<20 Hz): 5.8e-6°/s (3σ)

POWER STORAGE

Battery Type	Lithium Ion
Energy Storage	1100-Wh [Two (2) 550-Wh battery assemblies]
Operating Voltage	24.0V - 33.6V

TELEMETRY, TRACKING AND COMMAND (TT&C)

Transmitter (Tx) Type	S-Band
Tx Frequency	2200 - 2300 Mhz
Tx Data Rate	2 Mbps
Tx RF Output Power	up to 30 dBm
Tx Protocol	CCSDS 131.0-B
Tx Modulation	QPSK, 8-PSK, 16-APSK, 32-APSK
Receiver (Rx)	S-Band
Rx Frequency	2025 - 2120 MHz
Rx Data Rate	256 kbps
Rx Protocol	CCSDS 231.0-B-3
Rx Modulation	BPSK, OQPSK

PAYLOAD DATA DOWNLINK

Transmitter Type	X-Band
Frequency Range	8.025 - 8.4 Ghz
Data Rate	150 Mbps
RF Output Power	27 - 33 dBm
Protocol	DVB-S2 - ETSI EN 302 307-1
Modulation	QPSK, 8-PSK, 16-APSK, 32-APSK

SOLAR PANELS

Power	400W
# Deployable Panels	8
# Mount Panels	1
Solar Cell	Triple Junction GaInP/GaAs/Ge on Ge Substrate
Panel Structure	Aluminum Honeycomb on Composite Skin

PROPULSION (OPTIONAL)

Type	Bi-propellant 1N Thruster
Propellant	Nitrous Oxide (N ₂ O) and Propylene (C ₃ H ₆)
Total Impulse	11.5 kNs
Total Delta-V (ΔV)	115 m/s