

# Small Satellite

## Testing Capabilities

### NOVA Testing

SDL's Nanosat Operation Verification and Assessment (NOVA) test facility is designed specifically for end-to-end testing of small spacecraft, subsystems, and components from CubeSats to ESPA-class spacecraft. SDL leverages standard form factors and interfaces.

#### **ADCS** - [\$9,000]

NOVA supports polarity tests of actuators and sensors, actuator torque measurements, full functional subsystem tests, and hardware-in-the-loop tests. Facilities include a Helmholtz cage with magnetometer, air bearing with encoder, and sun simulator lights.

#### **Star Tracker** - [\$3,500]

NOVA's star field simulator provides independent verification of attitude lock for star trackers using a Hipparcos-based simulated star field. This includes static fields and simulated slew maneuvers.

#### **Comm** - [\$6,000]

NOVA supports cabled or over-the-air testing of UHF-band or S-band flight radios, including hardware-in-the-loop or day-in-the-life tests. SDL also provides default support for Cadet and Innoflight radios, with options for other CubeSat-class radios.

#### **Mass** - [\$3,000]

NOVA mass properties test stands support high accuracy measurements of small satellite payloads, CubeSats, and small satellites, up to 113 kg for moment of inertia and 136 kg for center of mass. Typical accuracies for a 12U CubeSat are < 0.5% for mass, +/- 1.5 mm for COM, and < 1% for MOI.

**Power** - [\$6,000]

NOVA facilities include an 8-channel or discrete automated battery tester and simulator, 2-channel solar array simulators, programmable loads, and steady-state AMO class B/B/A solar simulator. These support the functional testing of batteries, solar arrays, or power control electronics, as well as end-to-end power system testing. Temperature, voltage, and current logging is available for all tests.

**GPS** - [Add-on]

NOVA enables independent verification of position for GPS receivers using indoor GPS reradiator for a fixed local position, or a GPS simulator for fixed or orbital positions. *This is available for use independently or as part of another test.*

## Environmental Testing

**TVAC** - [\$4,000]

Small satellite thermal vacuum testing capabilities include several vacuum chambers capable of hot cycles up to +100 C and below -100C for powered or unpowered tests. SDL also provides rapid pump-down chamber and outgassing measurement capabilities.

**Vibe** - [\$6,000]

SDL offers vibration test services for small satellites and components, supporting qualification or acceptance three-axis tests with random vibration, sine sweep, and sine burst capabilities.

**Full System Characterization & Test** - [Request a quote]

*These are notional prices for SDL small satellite testing services. All tests can be performed in a clean environment.*

*Contact us for a quote at [nova@sdl.usu.edu](mailto:nova@sdl.usu.edu).*

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