2U Nano Satellite Configuration Report

Configuration Name: 2U
Description: 10 x 10 x 20 cm: Offers double the capacity of 1U, enabling slightly more complex payloads. Suitable for communication systems or basic imaging.

User Selected Configurations for Nano Satellite:

Payload Mass: 1 kg
Payload Volume Envelope: 2 U
Pointing Precision: base
Propulsion: with propulsion
Downlink Data Rate: High - 80-200Mbps
Payload Duty Cycle: 1%
Payload Power Consumption: 2 W

Subsystem Configuration:

Component	*Light Config*	*Mid Config*	*Max Config*
Solar Panel	Output: 8W, 15x15 cm	Output: 16W, 25x25 cm	Output: 32W, 50x50 cm
Battery	Capacity: 3000mAh, Voltage: 3.7V	Capacity: 6000mAh, Voltage: 7.4V	Capacity: 12000mAh, Voltage: 11.1V
Transmitter	Frequency: 600MHz, Power: 0.75W	Frequency: 900MHz, Power: 1.25W	Frequency: 1400MHz, Power: 2.5W
Antenna	Gain: 3dBi, Circular Polarization	Gain: 5dBi, Linear Polarization	Gain: 7dBi, Circular Polarization
Gyroscope	Range: ±300°/s, Sensitivity: 0.004°/s	Range: ±600°/s, Sensitivity: 0.002°/s	Range: ±1200°/s, Sensitivity: 0.001°/s
Reaction Wheel	Torque: 0.015Nm, Speed: 3500RPM	Torque: 0.03Nm, Speed: 7000RPM	Torque: 0.045Nm, Speed: 10500RPM

Component	*Light Config*	*Mid Config*	*Max Config*
Magnetorquer	Dipole: 0.15Am², Power: 0.15W	Dipole: 0.25Am², Power: 0.25W	Dipole: 0.35Am², Power: 0.35W
Star Tracker	Accuracy: ±0.015°, FOV: 12°	Accuracy: ±0.007°, FOV: 18°	Accuracy: ±0.003°, FOV: 24°
Thermal Control	MLI Passive, -30°C to 85°C	Heater Active, -40°C to 105°C	Active + MLI, -50°C to 130°C
Payload Camera	8MP, FOV: 100°	15MP, FOV: 130°	25MP, FOV: 160°