Nano Satellite Configuration Report

Configuration Name: 9U
Description: 10 x 20 x 45 cm: Optimized for scientific experiments and multi-payload setups with high demands for volume and power.
User Selected Configurations for Nano satellite
Payload Mass: 2 kg
Pointing Precision: base
Propulsion: No propulsion
Downlink Data Rate: Base - 3Mbps
Payload Duty Cycle: 32%
Payload Power Consumption: 4 W

Subsystem Configuration:

Component	Light Config	Mid Config	Max Config
Solar Panel	Output: 35W, 55x55 cm	Output: 70W, 90x90 cm	Output: 140W
Battery	Capacity: 14000mAh, Voltage: 3.7V	Capacity: 28000mAh, Voltage: 7.4V	Capacity: 56000mAh, Voltage: 14.8V
Transmitter	Frequency: 2000MHz, Power: 2.5W	Frequency: 2600MHz, Power: 3.5W	Frequency: 3200MHz, Power: 5W
Antenna	Gain: 10dBi, Circular Polarization	Gain: 12dBi, Linear Polarization	Gain: 15dBi, Circular Polarization
Gyroscope	Range: ±900°/s, Sensitivity: 0.0004°/s	Range: ±1800°/s, Sensitivity: 0.0002°/s	Range: ±3600°/s, Sensitivity: 0.0001°/s
Reaction Wheel	Torque: 0.055Nm, Speed: 7000RPM	Torque: 0.11Nm, Speed: 14000RPM	Torque: 0.22Nm, Speed: 28000RPM
Magnetorquer	Dipole: 0.5Am², Power: 0.5W	Dipole: 0.8Am², Power: 0.8W	Dipole: 1.2Am², Power: 1.2W
Star Tracker	Accuracy: ±0.06°, FOV: 35°	Accuracy: ±0.05°, FOV: 40°	Accuracy: ±0.02°, FOV: 45°
Thermal Control	MLI Passive, 30°C to 150°C	Heater Active, 20°C to 170°C	Active Cooling, 10°C to 190°C
Payload Camera	30MP, FOV: 170°	60MP, FOV: 200°	100MP, FOV: 240°