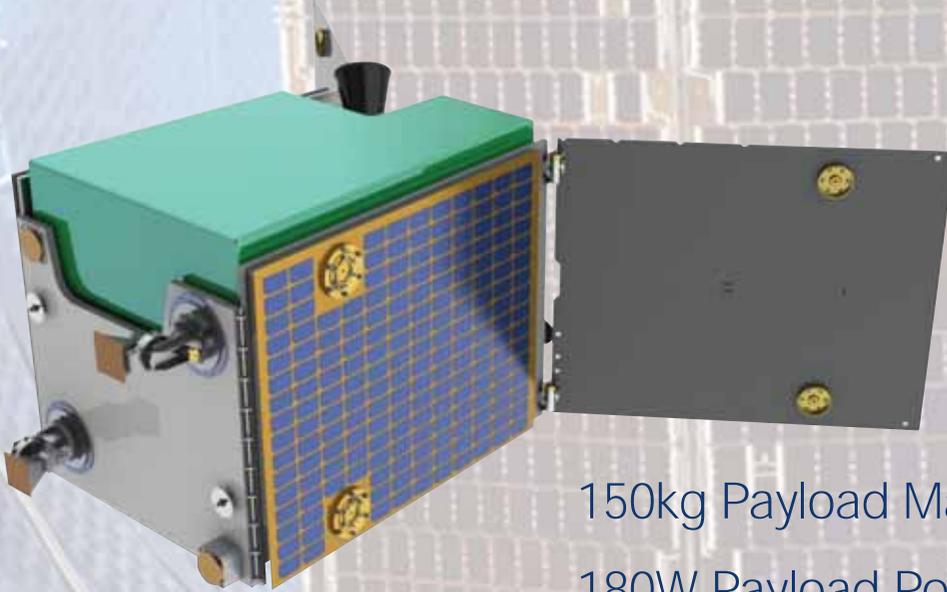


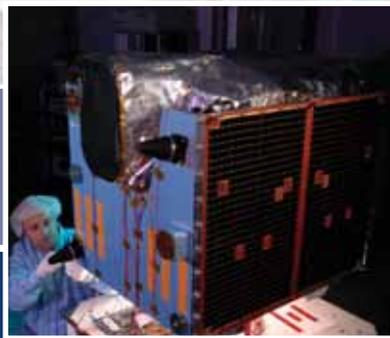
SSTL-300 Satellite Platform



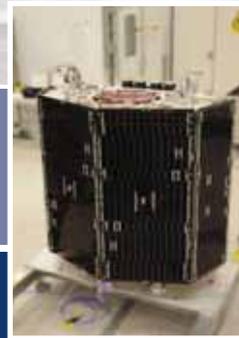
150kg Payload Mass
180W Payload Power (Peak)
5 to 7-Year Lifetime



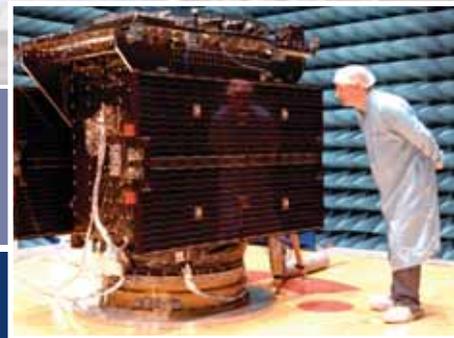
SSTL-100 :
15kg/24W



SSTL-150 :
50kg/50W



SSTL-300 :
150kg/140W



SSTL-600 :
200kg/386W

Surrey is a world leader in the provision of small satellite solutions, applications and services, with an unparalleled heritage and track record

- 34 spacecraft launched to date
- 100% mission success for 10 years
- Over 200 on-orbit years of experience
- Versatile modular platforms
- Customizable platforms to meet mission requirements
- In-house end-to-end capabilities
- Design, manufacture, integration, test, launch, operation

The Surrey SSTL-300 Platform

Surrey has developed its portfolio of small satellite platforms to meet demanding customer applications.

The SSTL-300 is an evolution of the heritage platform design used for Surrey's DMC +4, TopSat and RapidEye 5-satellite constellation missions which have accumulated over 13 years of in-orbit heritage, and the NigeriaSat-2 mission.

The SSTL-300 is an enhanced version of Surrey's SSTL-150 platform, offering a very flexible configuration which is capable of supporting a wide spectrum of implementations, payloads and structural configurations.

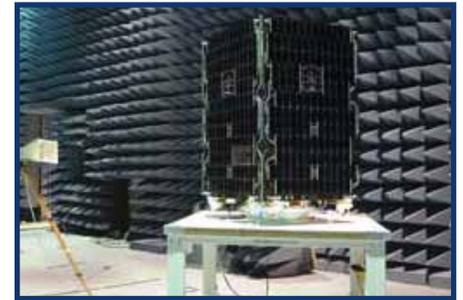
The SSTL-300 platform has a straightforward interface, making it ideally suited for use with customer supplied payloads. It provides versatile payload accommodation, is capable of carrying a wide range of payloads and delivers a 150kg/140W baseline capability.

One of the most capable platforms in its class, the SSTL-300 platform provides flexible payload capability and mission performance.

Baseline Performance Specification

The SSTL-300 platform provides a capable and flexible baseline solution with the potential to enhance platform performance to meet customer-specific requirements.

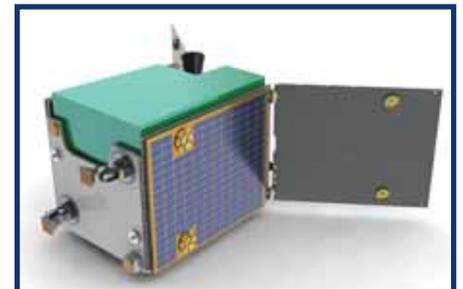
Mission Compatibility	
Orbit Average Payload Power	140W (180W peak) EOL
Maximum Payload Mass	150kg
Bus Dry Mass	218 kg without payload
Science Data Downlink	105 Mbps, X-Band
Science Data Storage	16 Gbytes capacity, dual-redundant mass memory
Pointing Knowledge	72 arcsec (1 sigma) all 3 axes
Pointing Control	360 arcsec (1 sigma) all 3 axes
Pointing Stability (Jitter)	2 arcsec/sec
Slewwrate	0.75 deg/sec
Position Knowledge	10m
Mission Design Life	7 years, Ps= 92%
Compatible Launch Vehicles	Falcon 1e, Atlas, Delta, Athena and other launchers
Types of Orbits Available	LEO 400km to 2000km, any inclination
External Payload Volume	730mm x 455mm x 1000mm
Internal Payload Volume	279.5mm x 231.5mm x 252.5mm
Bus Description	
Attitude Control System	3-axis control with reaction wheels and magnetorquers
Batteries	Li-ion cells providing 15 Ah capacity
Solar Arrays	Triple-junction GaAs cells, total area 2.44m ²
Main Bus Voltage Range	28V-33V range
C&DH Bus Architecture	Dual-redundant Controller Area Network (CAN) bus
Communication Up\Downlink Band	S-Band uplink/S-Band downlink
Structure	Aluminum and aluminum-skinned honeycomb panels
Propulsion	Hot gas Xenon resistojet
Delta V	15m/s
Thermal Control	Primarily passive, plus limited use of heaters
Heritage & Programmatic Information	
Heritage missions	RapidEye, DMC + 4, TopSat, NigeriaSat-2
Nominal schedule from Order	31 months to payload integration, 37 months to launch



CFESat



CFESat, panels deployed in flight configuration



SSTL-300 in flight configuration



SSTL-300 baseline configuration



Surrey Mission Control

Surrey Facilities

Surrey has length and breadth of experience in integrating several instruments into a single core spacecraft and has the capabilities to successfully deliver multiple concurrent missions.

SST-US will draw on the world-leading capabilities and heritage of the whole Surrey group. SST-US will contract with SSTL for the provision of the satellite platform, under strict information controls. The tested and accepted platform will be shipped to the US for payload integration.

Payload Integration, Observatory-level testing, launch support and operations will be conducted by SST-US personnel, using SST-US facilities. Environmental tests will be performed at local commercially-available test facilities.

Mission-Specific Modifications

Surrey's modular, flexible and adaptable platforms are designed to accommodate a wide range of mission-specific requirements. Our collaborative style of working with customers supports the development of innovative solutions to enhance baseline bus performance, at an incremental cost, in areas such as:

- **Payload Accommodation:** Increased mass, volume or CoG
- **Attitude and Orbit Control Systems:** Enhanced agility, control and knowledge
- **Power:** Increased power generation or challenging operational power usage
- **Mission:** Orbit, launch vehicle compatibility, delivery schedule
- **Customization:** CCSDS compatibility, platform customization, etc

Costed Contractual Options

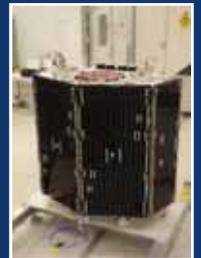
- **SmallWheel 200SP Reaction Wheel:** Wheel Momentum of 12Nms
- **X-band Antenna Pointing Mechanism:** ± 110 deg elevation, ± 270 deg azimuth
- **Ground Station provision:** S/X-band mini-rack and Mission Control Suite

Platform Customization

Surrey's approach and platform architecture lends itself to adaptations and modifications to provide custom solutions, as done for many of Surrey's customers, in order to fulfill specific payload or mission requirements.



RapidEye: Standard
SSTL-150 configuration



NigeriaSAT2:
SSTL-300
Customized
Mechanical
configuration



GIOVE-A: Modified subsystem
configuration of SSTL-600 for
MEO mission



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