SATREV

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SATELLITES

SN-10

6U CubeSat Based on Raccoon platform with advanced Earth-Observation capabilities

Company Overview Presentation

SatRev (prev. SatRevolution) is a pioneering NewSpace company based in Wroclaw, Poland, offering complete nanosatellite systems and solutions, aimed at Earth-Observation services.

To date, SatRev has manufactured 18 satellites, where 16 of them were operated by the company on the Low Earth Orbit. As a leader in the Polish space industry, SatRev is dedicated to providing space sovereignty by democratizing access to Earth-Observation systems worldwide.

Summary of past and planned SatRev missions

SatRev has undertaken a number of missions and projects, including:

On-going mission: 6U XL standard satellite with optical payload designed for blue carbon monitoring. Launched 14th January 2025 with SpaceX Transporter-12 mission.

SOWA-1

6U CubeSat platform scheduled to launch in Q2 2025 with PSLV rocket. Earth-observation enabled satellite with dual optical payload, multispectral capability, on-board AI and image processing, and capacity for external payloads. In-orbit and downstream Earth-observation services.

STORK Constellation

A family of 7x nanosatellites in 3U standard with in-house made optical payload, launched in years 2021-2023. STORK is a pioneering, cost-efficient platform with medium resolution capabilities, pathing way to reach REC – Real-time Earth-observation Constellation project.

SW1FT

Innovative Earth-observation shared service mission deployed in April 2022. This 3U form-factor CubeSat provide space and capacity for rapid in-orbit demonstration and services for external payloads.

LabSat

3U CubeSat platform for in-orbit scientific experiments, launched in January 2022 by SpaceX Transporter-3 mission.

SteamSat-1 and **AuroraSat-1**

CubeSat based technology demonstrators for SatRev's customers, scheduled to launch in 2020 and 2021 respectively.

AMICal Sat

CubeSat based scientific mission designed for Auroras observations and studies. Payload provided by Grenoble University Space Centre (CSUG), launched in September 2020 by Vega small satellite mission service.

KRAKsat

1U CubeSat based Attitude control Proof of Concept. Experimental ferrofluid reaction wheel. Co-developed with AGH &UJ Universities. Deployed from ISS on July 3th 2019.

Światowid

SatRev's technology demonstration and first in house designed and developed Polish Earth Observation satellite. 4.6m GSD imaging capabilities. Deployed from ISS on July 3th 2019.

6U HERITAGE CUBESAT

ON **RACCOON** PLATFORM

SN-10 satellite with hosted-payload and advanced Earth-Observation capabilities. It is the fastest and easiest way to test your module in orbit and reach TRL 9. SatRev's satellites offer transparent and flexible operations tailored to your needs.

All 6U nanosatelites host up to a 3U volume for payloads (smaller form-factors are available) and allow for efficient module development and testing from our lab all the way to LEO. It is a space-proven nanosatellite bus architecture designed for hosted payload missions.

All SN-10 satellites are equipped with Vision 300, SatRev's state-of-the-art Earth-Observation payload. It is a space-proven module designed for nano- and microsatellite applications to provide med-resolution imagery.

Satellites mission details

- Fast track to getting to LEO
- GSD of 5.8m RGB + NIR spectra
- Typical launch to 500-550km SSO
- Image processing payload slot available
- Payload bay up to 3U (slots from 0.25U to 3U and a tuna-can external bay)

Applications

- Provision of space-based services and data
- Value-added Earth-Observation technologies
- Edge computing for on-board image processing
- Integration, flight qualification, and in-orbit demonstration of hosted payloads

SPECIFICATION 1/2

Sybsystem	Specifications
Overall description and features	SatRev offers a reliable service to get your payload to orbit. The PW6U CubeSat provides plug-and-play connection with your payload: ▪ Power system with 36 W of peak power for hosted payloads ▪ Typical launch to 500-550 km SSO ▪ Optical payload aimed 4m GSD
Business case	PW6U creates a unique value proposition in the following business cases: ▪ Edge computing for onboard image processing ▪ Demonstration of Earth-observation technologies ▪ Provision of space-based services and data ▪ Obtaining flight heritage for your subsystems
External payload capabilites	▪ Slots available: 0.25 U – 3UXL ▪ Additional deployables ▪ Custom API software interface ▪ Default Ethernet interface ▪ Edge connector
Structure	Space-proven Raccoon structure ▪ CNC-manufactured, made of aluminium 6061,7075 alloys ▪ Hard-anodized
Power	In house designed and space tested Electrical Power System ▪ Battery capacity: 120 Wh ▪ Power available: 36 W ▪ Power supply: unregulated line 10.0 V – 12.6 V ▪ Available limited power supply setting upon request
On-board computing	Space-proven Command and Data handling subsystem ▪ External program memory with hardware error correction

SPECIFICATION 2/2

Communications

Redundant UHF communication module (TT&C)

- Two independent radio transceivers
- Sable, reliable, low throughput communication
- Frequency range: 400-440 MHz

High-throughput Downlink module

- Frequency range:2200-2290 MHz or 2400-2459 MHz
- Typical transmitting data rate up to 1 Mb/s

Different communication options upon request

Guidance Navigation and control

The platform is equipped with following attitude determination and control subsystem

- 4x reaction wheels
- 3x magnetorquers
- Coarse Sun sensors
- Fine Sun sensor and fine Earth sensor
- Star tracker
- 3-axis magnetometer, opt. deployment
- GPS receiver with time and pps sync capabilities
- < 1° absolute positioning and pointing accuracy

Optical capabilites

SatRev's space-proven VISION 300 camera

- Focal length: 300 mm; F-number = 5.6 mm
- 4 spectral bands: R, G, B, NIR
- GSD 5.8 m @500 km
- Reduced requirements for transfer rate to Earth
- Up to 12-bit depth and high SNR imaging capability

Payload Services

- Payload design review
- Assembly, integration and testing
- Campaign management
- Launch service
- Payload commissioning
- Payload in-orbit operations
- On-demand data uplink, downlink and experiment execution

SatRev S.A.
NIP: 8943081944
REGON: 364960301

Adress:
Sky Tower, Second floor,
Gwiaździsta 62 street
53-413 Wroclaw

Contact:
+48 533 325 851
contact@satrev.space

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