WHO WE ARE?

SPUTNIX is the Russian private company, manufacturing high-tech nano- and microsateellite components and platforms, as well as ground equipment for small satellite testing, ground-based satellite stations and equipment for aerospace education. The company is a resident of the Skolkovo Innovation Center.

SPUTNIX offers whole services list for the space mission

**COMPONENTS**
We produce all basic small satellite and microsateellite components.

**ASSEMBLING**
Our specialists provide assembling services for small satellite platforms.

**PAYLOAD INTEGRATION**
Your payload on our platform.

**TESTING**
We allow to conduct studies of the dynamics of space vehicles, to check the algorithms and software of the motion control system.

**LAUNCH BROKERAGE**
We arrange launches for customer by working with launch providers.

**OPERATION**
Our Mission Control Center (MCC) provides the necessary functionality for receiving data from the satellite - both telemetry on the operation of the on-board systems and payload data.

**TRAINING AND SUPPORT**
We provide assistance and technical support at all stages of your space mission.

Research and development (R&D)

SPUTNIX employees are high-class, ambitious specialists in math and programming, structure and PCB designers united in the team and able to solve various complex tasks from developing single devices up to system integration and mission development. SPUTNIX specialists have a sufficient experience in electronics, software, algorithms for different devices and reinforce these skills with deep research and math modeling of systems and processes.

- Current design customization – platforms and systems developed according to customers’ needs and wishes.
- Mission Design
- Custom hardware and software
MAIN COMPETENCES

Industry

Universities

Starter education

Microsatellites, Test benches

CubeSat Satellites, Mission Control Center, Software

Satellite mockups, Equipment for Aerospace Education

Satellites in orbit

Since the moment of a company establishment, a number of satellites was created and launched into space with participation of SPUTNIX team.

Chibis-M

Purpose: Scientific sat
Weight: 34.4 kg
On October 30, 2011 was launched into space on “Progress M-13M” cargo.
On January 25, 2012 it was separated from the cargo ship and sent into orbit.

SiriusSat-1
SiriusSat-2

Purpose: Ed-Scientific sat
Weight: 1.45 kg
On July 10, 2018 were launched to the station on board the Progress-MS-09.
The satellites are deployed during EVA from ISS on 2018 August 15.

TabletSat-Aurora

Purpose: Remote sensing
Weight: 26 kg
On June 19, 2014, was launched into a low earth orbit, becoming the first Russian private remote sensing microsatellite.

Al-Farabi-1

Purpose: Ed-Tech sat, RS
Weight: 2 kg
On February 15, 2017 was launched into space on Indian rocket PSLV-C37.
OUR MISSION

• We work to provide cost-effective solution
• High level of technical support at all stages of the product life cycle
• Attention to the customer's requirements
• To work on time and to offer reliable solution with flexible pricing
• Integrated approach for aerospace education

Domestic technology, own experience and long-term approach are the basis of all our key developments.

Complete cross-platform technology

OrbiCraft
Educational Satellite kit

CubeSat
1U, 3U, 6U CubeSat-format satellites

SmallSat
Microsatellite Kit
Platforms are
the set of on-board systems and structural elements sufficient to develop 10...200 kg small satellites, providing integration and operation of various payloads.

Platform ideology
Unification of mechanical, data and power interfaces reduces time and financial costs of the development, assembling and testing of a spacecraft.

Possible missions
Earth Remote Sensing (up to 0,6 m), Communications, Internet of Things, Objects Monitoring, Space Science, Technological experiments, Education, Biomedical, Custom Payload

Flight qualification
Platform obtained flight heritage due to TabletSat-Aurora technological demonstration satellite spaceflight in June 2014.
EXAMPLES OF SPUTNIX MICROSATELyte PLATFORM DEVICES

- Magnetic torquers control unit
- Onboard computer
- Magnetometer + Gyroscope
- SpaceWire router
- Reaction wheels
- GPS/GLONASS receiver
- UHF transceiver
- Sun sensor
- Reaction wheels
- Star tracker

Structures:
- Si or AsGa Solar panels
- On-board computers
- Structures
One of the main specializations of SPUTNIX company is development of CubeSat nanosatellites. Specialists of SPUTNIX scale the technologies of large spacecraft to the nanoplatform. The platform contains all the necessary service subsystems and user feature libraries for rapid development. All devices of service boards of the CubeSat platform OrbiCraft-Pro are created in SPUTNIX company.

**SPUTNIX can offer the following range of services:**

- Complete turn-key solution
- OrbiCraft-Pro Platforms
- Systems and components
- Research and development (R&D) activities
- Additional services
OUR FEATURES

**Basic**
- Structures
- On-board computers
- Si or AsGa Solar panels
- Power supply system
- UHF communication system

**Advanced**
- ADCS
- X-band transmitter
- Charged particle detector (optional)
- Sun sensors

**Development Tools**
- Payload Integration baseboard reference design with IDE
- Development kit
SPUTNIX developed mission control centers designed to transmit control commands and receive telemetry and payload data from satellites.

"Viewnok" is an educational complex that allows receiving radio signals from spacecraft. It is based on the so-called software-defined radio.

"Zavitok" complex provides two-way communication with small spacecraft. In addition to all the functionality of the "Viewnok" complex in terms of receiving data, the complex also allows sending control commands to a satellite in accordance with the rules of amateur radio communication.

The station also provides much better reception at a satellite low altitude above the horizon.

X-band Ground Station receives data transmitted from the Earth remote sensing satellites and spacecraft scientific payloads.

- Receiving satellite data in real time
- Receipt images from satellites on different radio-bands
- Remote sensing of the Earth activity
- ISS amateur radio band broadcasts
- Acquiring post-processing and information analysis skills
SPUTNIX provides educational equipment and lessons for beginners

“OrbiCraft” satellite functional kit is delivered to learn the basics of a spacecraft design, assembly and testing. Instead of separate development of every system the kit helps to concentrate on mission design, quickly obtain a working prototype and implement the control algorithms.

"OrbiCraft-Pro" is advanced educational equipment. It allows to transfer educational skills into real space missions. It is the next stage of "OrbiCraft" satellite functional kit development.
ADCS testing

The test bench for Attitude Determination and Control Systems (ADCS) ground tests produced by SPUTNIX provides many prospects for ground testing of ADCS including its software. Peculiarity of such tests is to create conditions simulating space environment such as dynamic magnetic field, sun radiation, zero-gravity, star field via appropriate simulators. Test bench can be equipped either with the satellite or with separated ADCS devices. Test bench is developed to test TabletSat devices, but SPUTNIX is ready to integrate your ADCS to the test bench.

**Activities can be done:**
- ADCS functional test implementation and software optimization,
- Preservation of the correct satellite operation during orbital flight and failure risk mitigation,
- Studying the work of ADCS units and subsystems,
- Simulation and experimental fine-tuning of contingencies,
- Verification of computer simulation using full-scale model

**Contains:**
- Light air bearing
- Mobile platform
- Magnetic field simulator
- Stationary sun simulator
- Autonomous measurement unit
- GPS signal simulator
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