

GEOSCAN

Geoscan's educational nanosatellites of the CubeSat standard

The platform allows combination
of components and adaptation
to specific payloads

Geoscan 3U

Geoscan's educational nanosatellite
of the CubeSat standard

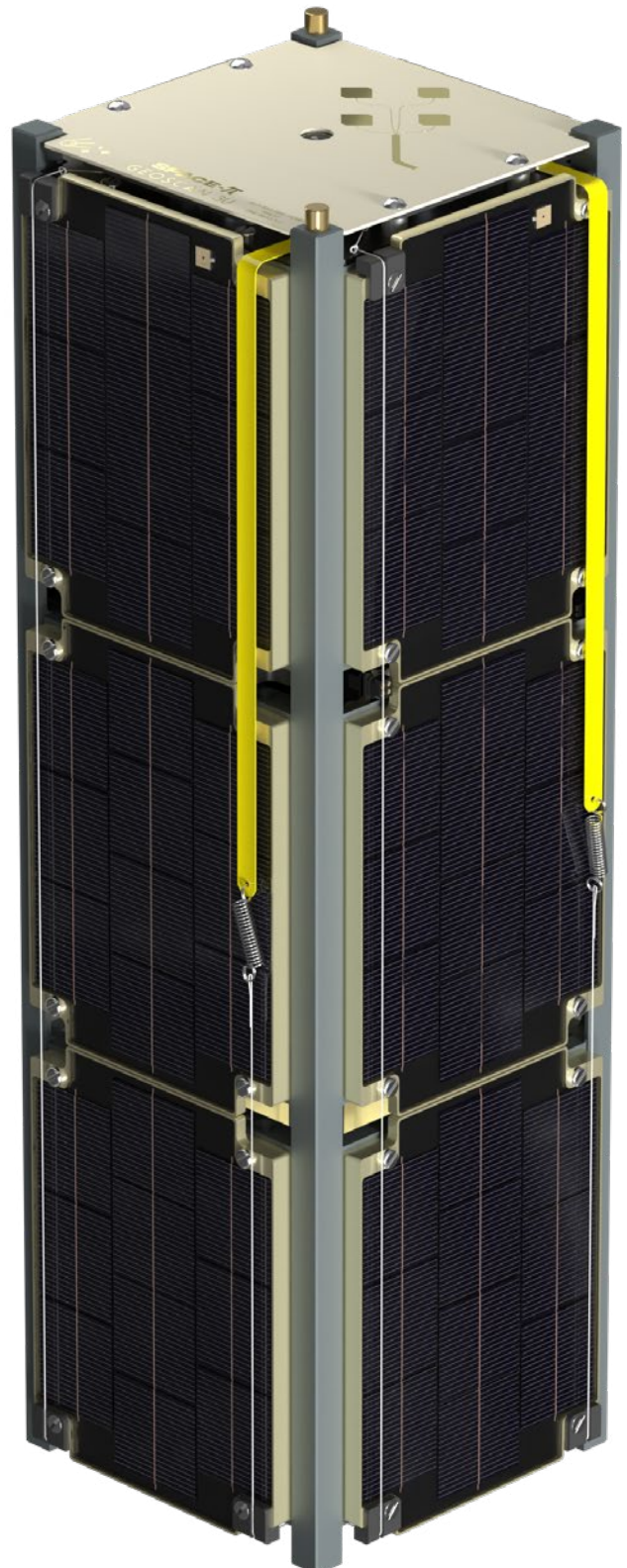


Table. Geoscan 3U specifications

| Specification | Modification 1 (truncated configuration) | Modification 2 (full set) |
|--|--|------------------------------|
| Assembled weight (without a payload), kg | 1,8 | 2,3 |
| Maximum weight of a payload, kg | 4,2 | 3,7 |
| Maximum weight including a payload, kg | 6 | 6 |
| Dimensions folded (with separation system locked), mm | 100×100×340,5 (100×100×376,5 with Tuna Can) | |
| Available volume for a payload, mm | 95×95×180 (~2U) | |
| Radiation protection | aluminum sheet 1,2 mm | |
| Available supply for a payload | stabilized 3,3...12 B / 2 A, unstabilized 7...8,4 B / 2 A | |
| Payload average power at LEO (specified for a specific orbit), W | 2 | |
| Available maximum output of a payload (specified for a specific orbit), W | 15 | |
| Storage battery capacity, W*h | 50 | |
| Battery type | Li-ion 2S 7200 mAh | |
| Number of solar panels, pcs. | up to 12 (silicon) | |
| Peak output produced on 1 solar panel in LEO, W | at least 1 | |
| Onboard interface | CAN | |
| Payload interface | CAN / UART / SPI, others on request | |
| Low-speed radio channel frequency, MHz | 435–438 | |
| Data transmission speed through low-speed radio channel, bit/s | 2400, 9600, 57600 | |

| Specification | Modification 1 (truncated configuration) | Modification 2 (full set) |
|---|--|---|
| High-speed transmitter frequency, GHz | — | 10,45–10,5 |
| High-speed radio channel data rate, Mbit/s | — | up to 250 |
| Radio command channel signal modulation type | frequency | |
| Type of modulation of a high-speed radio channel signal | — | phase |
| Antenna type of low-speed radio channel | turnstile | turnstile |
| Antenna type of high-speed radio channel | — | antenna array |
| Maximum transmitter power, dBm | 30...32 | |
| Orientation system | magnetometers, solar sensors, horizon sensor, inertial module | magnetometers, solar sensors, horizon sensor, inertial module, GNSS receiver |
| Attitude support system | magnetic coils | magnetic coils, flywheels |
| Stabilization modes | B-Dot | B-Dot triaxial orientation: • in the sun, • at nadir, • to a point on Earth |
| Orientation accuracy | up to 1° | |
| Attitude system accuracy | — | up to 1° |
| Additionally | 2 MP technology camera, software update via low-speed radio channel, management of small spacecraft for 1 year after launch | |
| Documentation | passport, manual | |

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Geoscan is one of the leading Russian developers and manufacturers of unmanned aerial systems (UAS) for aerial photography and geological exploration. The company engaged in the development of small spacecrafts in 2021. CubeSat standard small satellites are developed under the educational Space-π project of the Foundation for Assistance to Innovations. The company's main task in developing satellites is to increase permissible mass and volume payload.

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