

## PROJECTS



For details on the Innovative Satellite Technology Demonstration Program, please refer to the JAXA website.

# RAPIS-1

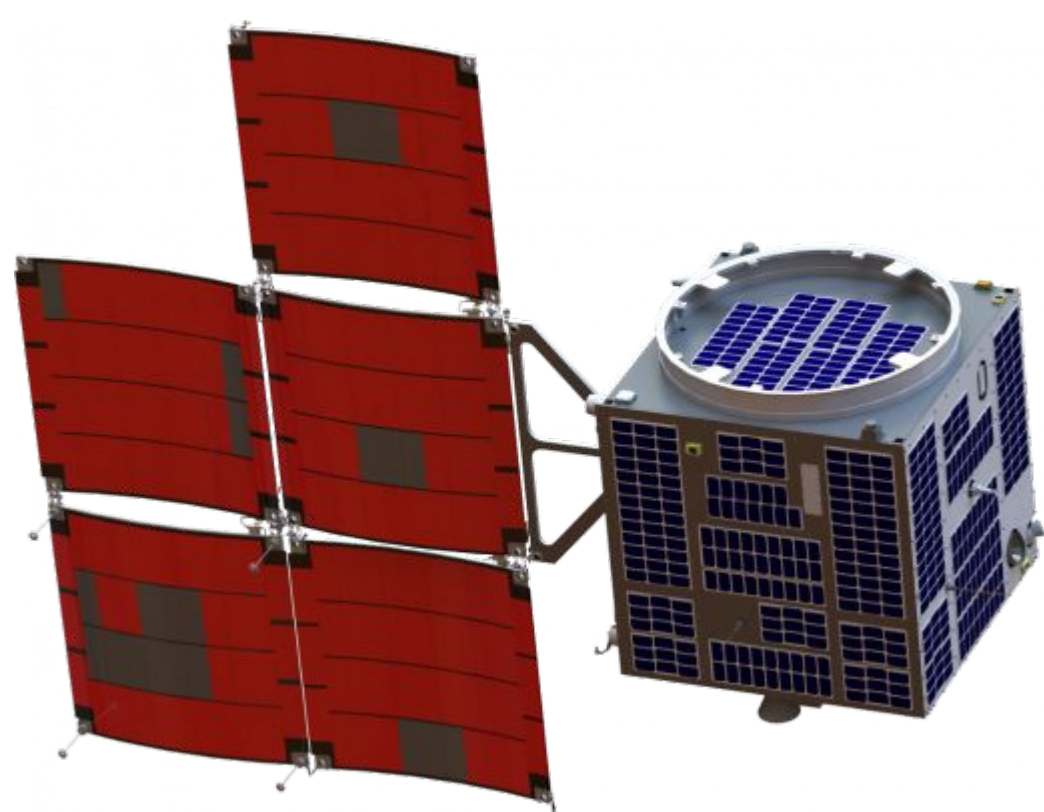
## Space innovation starts here

### Mission Complete

Operation terminated on June 24, 2020

RAPid Innovative payload demonstration Satellite 1 (RAPIS-1) is the first demonstration mission in Japan Aerospace Exploration Agency (JAXA)'s Innovative Satellite Technology Demonstration Program. It is designed to carry new components developed by Japanese private companies, universities and research institutes, allowing them to demonstrate their capabilities in the actual space environment. Axelspace is responsible for the design, construction and in-orbit operation of the satellite.

EXPERIMENT PAYLOADS    BUS    LAUNCH



Demonstration Theme Title	Institution
Evaluation of space environment tolerance of an innovative FPGA on the orbit	NEC
2-3 Gbps X-band downlink in-orbit demonstration	Keio University
Green Propellant Reaction Control System (GPRCS) in-orbit demonstration	Japan Space Systems
Space Particle Monitor (SPM) in-orbit demonstration	
Innovative deep learning attitude sensor/star tracker development	Tokyo Institute of Technology
Light-weight solar panel apparatus	JAXA
Miniaturized low-power GNSS receiver in-orbit demonstration	Chubu University

<b>Dimensions</b>	1022 × 1082 × 1060mm
<b>Mass</b>	about 200kg about 35kg for payloads
<b>Downlink rate</b>	10Mbps
<b>Attitude control</b>	Three-axis control (Earth-pointing, Sun-pointing, ground point tracking, despin modes)
<b>Attitude stability</b>	within 300arcsec (allowed time 0.2sec)
<b>Bus power generation</b>	about 100W
<b>Payload power generation</b>	about 100W
<b>Payload power consumption</b>	about 56W in average, max 130W

The bus system of this satellite is designed for high independence between mission systems and bus systems. It is thus an optimal setup for experimental components and is easily adaptable for future enhancements in functionality.

<b>Launch Date and Time</b>	January 18, 2019 9:50:20 AM (Japan Standard Time)
<b>Launch Vehicle</b>	Enhanced Epsilon rocket
<b>Launch Base</b>	Uchinoura Space Center, Japan
<b>Orbit</b>	Sun synchronous, 500±20km altitude