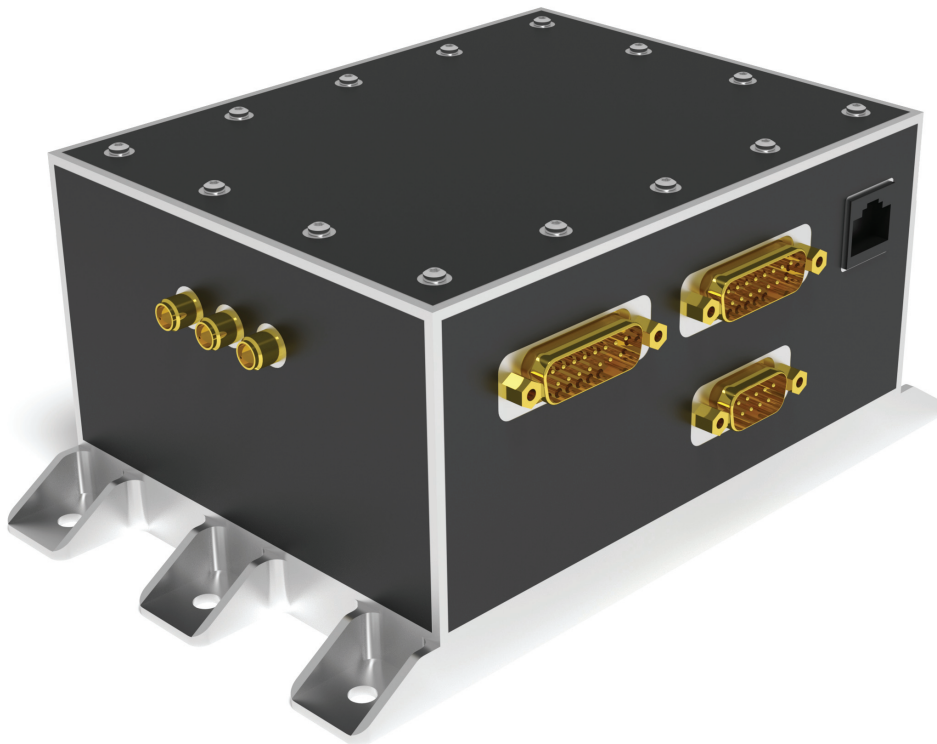


# Small Satellite GNSS Receiver

The Small Satellite GNSS receiver is one of the high quality products that offer a solution for cost effective applications. The receiver uses GPS and Galileo signals to calculate the position of the spacecraft within 3.5 meter 3D. The receiver performs fast acquisition providing a navigation solution within 4½ minutes after power on autonomously without guidance and within 60s after a warm start.



## Key Features

- Multiconstellation single frequency receiver optimized for low earth orbit
- Tracks signals from GPS L1 and Galileo E1 and provides position, velocity and time
- No configuration needed
- Possible to use with and without external LNA
- 1-3 Antenna inputs

## Specification

- Better than 3.5m RMS 3D position accuracy
- Better than 0.1 m/s RMS 3D velocity accuracy
- PPS Time error < 1µs RMS
- Time to first fix:
  - 60 s warm start
  - 4½ min cold start
- Communication: UART, SpaceWire or CAN
- PPS output
- Less than 10W

## Data Products

- Navigation solution based on GPS & Galileo Constellations
  - o Position
  - o Velocity
  - o Time
- Navigation solution update rate 1Hz or 10Hz.
- PPS output synchronized with GPS/Galileo second
- Support Data
  - o Tracking State
  - o Geometric Dilution of Precision

## Budgets

|                   |                             |
|-------------------|-----------------------------|
| Size (W x D x H)  | 175 x 110 x 65 mm incl.feet |
| Power consumption | < 10 W                      |

## Environment

- Operating temperature: -30° C to +60° C (qualification level)
- Minimum switch-on temperature: -40° C (qualification level)
- All memories with error correction codes
- Sustains total dose up to 10 years in low earth orbit

## Interfaces

- SMA connector
- GNSS RF Interface

- DSUB connectors
- Power supply 19-38 Vdc
  - PPS RS422 output
  - UART RS422 interface

## RUAG Space Heritage

- Extensive heritage in GNSS receivers and radio occultation instruments. GNSS receivers in orbit since 2006
- >70 GNSS navigation receivers for satellites
- >3000 failure free equipment years in orbit
- >300 Launcher On-Board Computers
- >120 Satellite Data Handling Systems

## Options

- Supply for external LNA
- LNA
- Antenna



*Photo of passive antenna*