G-ROX

All-Frequency, All-Constellation RTK Reference Station

Advanced Navigation Solutions

Application

The G-ROX RTK reference station is a high-quality solution to ensure the best possible performance of your RTK positioning system without any service provider costs. It is a cloud based RTCM service ensuring usability independent of any company's network policy.

Technology

The G-ROX RTK reference station provides correction data in standard **RTCM 3.X** format to guarantee precise positioning in every situation without any integration effort. It only requires a power supply and connected GNSS antenna, thus it is ready to use after a short calibration phase.

The reference station can be initially calibrated using two technologies:

- With **RTK correction** from an external provider or existing ANavS G-ROX stations near-by.
- With **PPP correction data**, either from Galileo High Accuracy Service (HAS) by satellite signal or HAS-IDD source (terrestrial link), both free of charge

System configuration

The G-ROX system is built on a new modular hardware platform, delivering improved processing capabilities and upgraded interfaces. The system comes with a **survey-grade multi-frequency, multi-constellation GNSS receiver**. A powerful configuration and visualization software is implemented as a **web app**, easily accessible from different kinds of devices, including laptops and tablets. It is directly hosted on the system with no need for installation of software on your device.

Interfaces

The G-ROX system comes with an integrated **5G** module, providing access to RTK and PPP correction data and enabling remote view and system configuration user-friendly. Further interfaces are Wi-Fi, Gigabit Ethernet and USB-C.

Technical Specifications

GNSS FEATURES

Constellations
- Galileo, GPS, Beidou, Glonass
- SBAS (EGNOS, WAAS, GAGAN)

Concurrently used Constellations All

Signals
- GPS: L1C/A, L1C, L1PY, L2C, L2P, L5
- GAL: E1, E5a, E5b, E5 AltBoc, E6
- BDS: B1I, B1C, B2a, B2I, B3
- GLO: L1CA, L2CA, L2P, L3
- QZSS: L1C/A, L1C, L2C, L5, L6

Channels	448
GNSS data rate	up to 5 Hz
Jamming detection	Yes

PHYSICAL & ENVIRONMENTAL

Dimension	174 x 123 x 60 mm
Weight	1.2 kg
Input voltage	
Absolute	9 - 36 V
Nominal	12 - 24 V
Power Consumption	
Peak	16 W
Average	9 W
Operating Temperature	-20 to 65°C
IP-Rating	IP65

INTERFACES

Output Format

Standardized	RTCM 3.X, ROS 2
Proprietary	SBF

Storage 32 GB, expandable up to 2 TB

Communication
- Gigabit Ethernet
- Wi-Fi
- 5G 2x2 MIMO cellular network
- USB 3.1
- 4 GPIO, PPS and Sync-in

Powering
- LEMO connector
- USB-C Power Delivery (12-20V/3A)

ADDITIONAL HIGHLIGHTS

Highly adaptive and flexible for different needs due to its modular, M.2 card-based configuration structure

GPIOs: 4 configurable inputs or outputs to read in additional sensors, use event trigger or output status information

Precision-Time-Protocol (PTP): PTP-Master time server to synchronize all your systems in your network

NTRIP: Already included NTRIPv2 Client to stream RTK (RTCM 3, OSR) or PPP (RTCM3, SSR) correction data

No cable chaos: One unit - all functions ready

Intuitive and simple handling: No modems or other external devices required

ANavS GmbH
Gotthardstraße 40, 80686 Munich, Germany — www.anavs.com, info@anavs.de

ANavS Sensor Technologies GmbH
Snow Research Centre: Weißstraße 9, 6112 Wattens, Austria —info@anavs-sensor-tech.at

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DS-G-ROX-2026-05