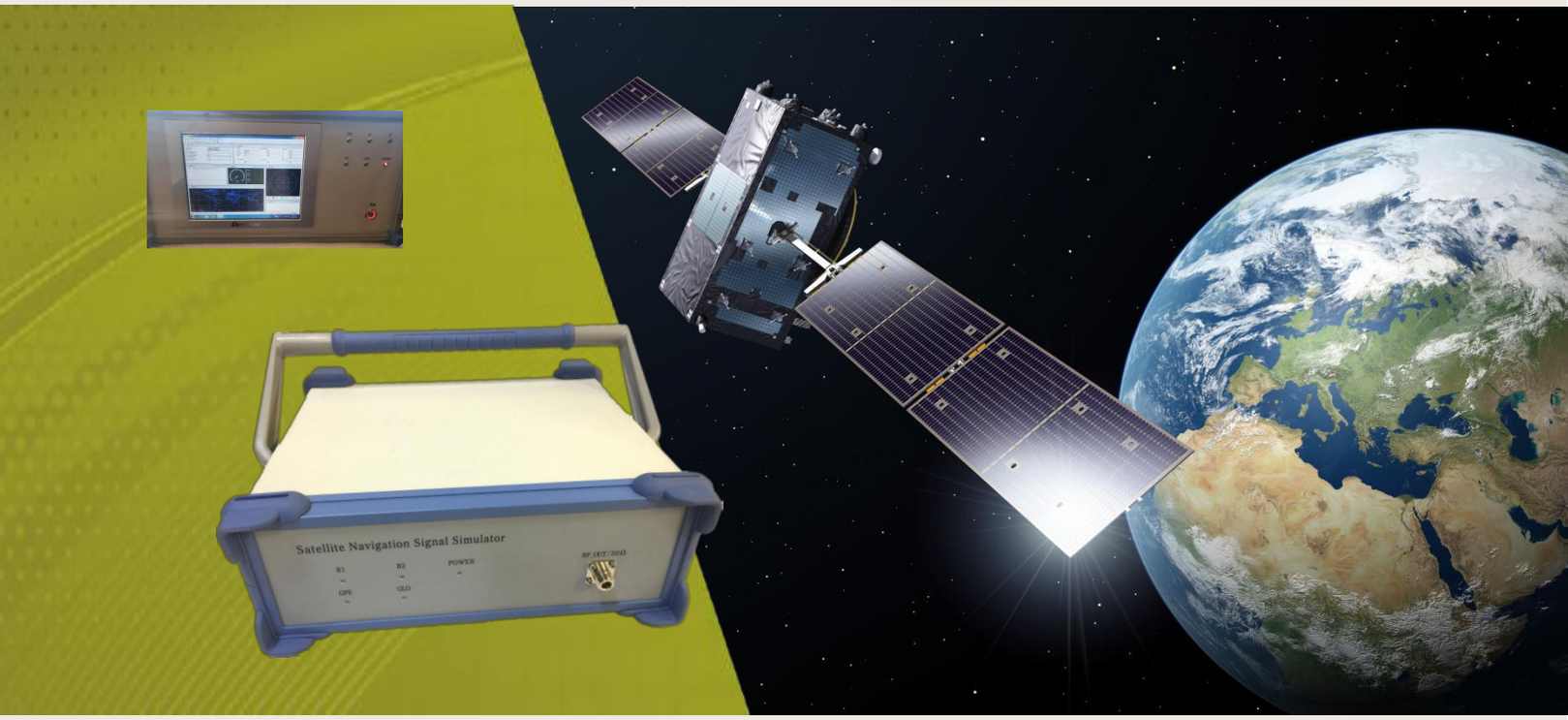
GS-SIM200 GNSS Simulator

GNSS Signal Simulation

Gran Stal Solutions Ltd.



The GS-SIM200 GNSS Simulator supports all possible scenarios, from simple setups with static satellites all the way to flexible scenarios generated in real-time with up to 80 dynamic GPS, Glonass and BeiDou satellites.

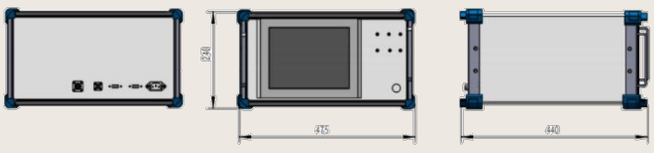
Key Features

+ Support of GPS L1/L2 (C/A code), Glonass L1/L2 and BeiDou2 B1/B2/B3, including hybrid constellations

+ Signal attenuation control

+ Real-time status display, satellite status, motion trajectory view

+ RF cable interface, forward antenna interface, optional wireless mode or wired mode



Testing GNSS receivers reliably

The signal strength of individual satellites can be controlled in real-time in order to simulate conditions of restricted satellite visibility. The set of satellites to be simulated is continually calculated based on the number of available channels, the satellite visibility and the constellation geometry. The satellite visibility can be influenced by the user by configuring an elevation mask.

Simulation of realworld conditions

Ionospheric effects, tropospheric influences, signal obscuration and multipath effects are among the key factors that can impact the quality and availability of GNSS signals. Using the GS-SIM200, such influences can be quickly and easily configured to obtain a realistic simulation of receiving conditions.

GS-SIM200 GNSS Simulator

SYSTEM SPECIFICATIONS

Output Frequency

- GPS L1: 1575.42MHz
- GLONASS L1: 1602 MHz ± 10MHz
- BeiDou B1: 1561.098MHz ± 2.046MHz
- BeiDou B2: 1207.140MHz ± 2.046MHz
- BeiDou B3: 1268.52MHz ±10.23MHz

Simulation of real-world conditions

- Ensuring realistic conditions for receiver tests
- Simulation of atmospheric effects
- Customizable antenna characteristics
- Realistic vehicle dynamics, including attitude simulation
- Urban canyon simulations with multipath and signal obscuration
- Configurable noise and interference simulation

Data from the satellite:

- Date/Time via the clock parameters

- Satellite ID (PRN code)

- Ephemeris and almanac

Conditions as seen by the receiver:

- Number of satellite signals

- Power level

- Atmospheric and antenna errors through models

- Multi-path conditions

Position of the receiver

- Start position (latitude, longitude and elevation)

- Trajectory (motion path)

SYSTEM CONFIGURATION

Signal Accuracy

Pseudorange	< 5 mm
Pseudorange Rate	< 5 mm/s
Interchannel Bias	< 5 mm

Signal Quality

Harmonics	< -40 dB
Frequency Stability	≤ 2.0×10^{-10} per day

Signal Level Control

Range	0 ~ 60 dB
Resolution	1 dB
RF Output Range	-130 ~ -70 dBm

Maximum Dynamics

Velocity	± 15000 m/s
Acceleration	± 500 m/s^2
Jerk	± 500 m/s^3

SYSTEM CONFIGURATION

Size	200 x 150 x 80 mm 7.9” x 5.9” x 3.1”
Weight	5 kg
Power Required	220V AC, 50Hz

Connectivity

2 PPS output / 2 RS232	
Signal Output Port	2 N-KF5
Ethernet	10/100Mbps

Specifications subject to change without notice. Certain features and specifications may not apply to all models. © 2021 GRAN STAL CO.,Ltd. All rights reserved.

China

Suit 16/F, NO.99 SX West Road, Tongzhou District, Beijing, China

Tel: +86-1831-0915-100 Fax: +86-10-56683291

Web: www.gnssmart.com Email: info@granstal.com

Gran Stal Solutions Ltd.