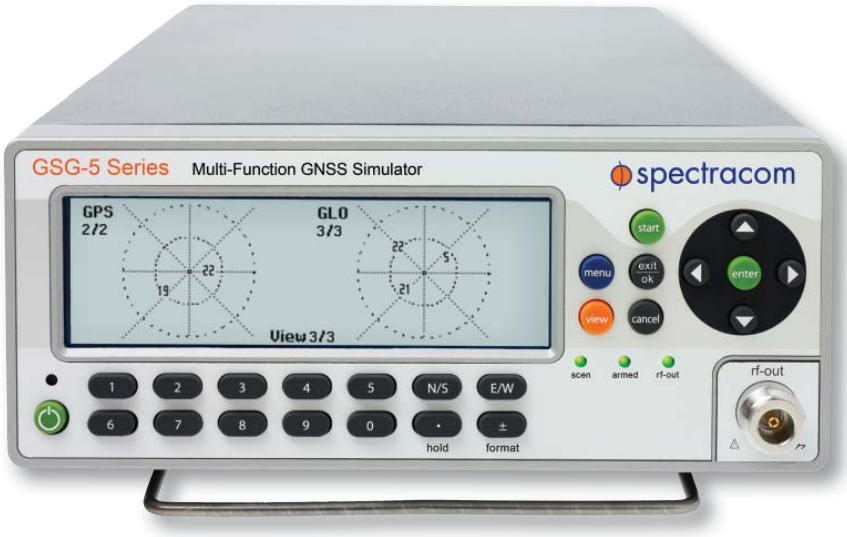
GSG-53

GLONASS+GPS 4-channel Simulator

ГЛОНАСС
GLONASS COMPATIBLE

- **Versatile 4-channel GLONASS+GPS signal generator with pre-configured test scenarios**
- **Operates with StudioView™ for easy scenario creation and file management**
- **Fully operational via front-panel, web-based remote control, or SCPI protocol**
- **Multiple interfaces for remote control**
- **Affordable, powerful, and easy-to-use**
- **SW upgradeable to more channels, more features, and other GNSS systems**



The GSG-53 is a GLONASS and GPS constellation simulator that provides the basic set of features for testing GNSS systems. With four channels, it can provide navigational fix and position testing, for in-line product testing or basic engineering and development testing.

Easy to Use

The GSG-53 user can configure scenarios on-the-fly without the need for an external PC and pre-compilation phase. Via the front panel, the user can swiftly modify parameters such as user position, time and power output. And using the optional StudioView™ software facilitates easily created scenarios via a Google Maps interface.

Flexibility

As the base model of the popular Series 5 GNSS Simulator family, this affordable unit can be upgraded at any time after purchase to increase the channel count up to 16, add receiver trajectory control, add advanced features such as SBAS (WAAS, EGNOS, MSAS, or GAGAN), white noise generation, or multipath simulation. Some restrictions apply. Your investment is protected as you can purchase now, and upgrade later, as needed, when your requirements change.

Connectivity Extends Ease of Use and Flexibility

The GSG-53 can be controlled via an Ethernet network connection, USB or GPIB. A built-in web interface allows complete operation of the instrument through front panel controls. With the optional GSG StudioView™ PC Software, you can build, edit, and manage the most complex scenarios, independent of the GSG-53, for later upload.

The Affordable Test Solution

The GSG-53 is a perfect fit for a wide-variety of test cases including:

- Test of receivers' sensitivity to loss of satellites, leap seconds, and atmospheric conditions.
- Fast production test of sensitivity and positioning receivers' accuracy (conducted or over-the-air).
- Test of receivers' dynamic range.
- Test of leap second transition.

USA | 1565 Jefferson Road, Suite 460 | Rochester, NY 14623 | +1.585.321.5800 | sales@spectracomcorp.com
FRANCE | 3 Avenue du Canada | 91974 Les Ulis, Cedex | +33 (0)1 64 53 39 80 | sales@spectracom.fr
UK | 6A Beechwood | Chineham Park | Basingstoke, Hants, RG24 8WA | +44 (0)1256 303630 | info@spectracom.co.uk

Input and Output Specifications

RF Signal GLONASS+GPS L1

Connector: Type N female
DC Blocking: internal, up to 7 VDC; 470 Ω nominal load
Frequency: 1575.42 MHz (L1)
Number of output channels: 4
Channel configuration:
4 GPS or GLONASS satellites, any combination GPS L1 or GLONASS freq ch -7 to +6
Data format:
50 bits/s, GPS and GLONASS frame structure
PRN codes: 1 to 210
Spurious transmission: <-40 dBc
Harmonics: <-40 dBc
Output signal level: -65 to -160 dBm; 0.1 dB resolution down to -150 dBm; 0.3 dB down to -160 dBm.
Power accuracy: ±1.0 dB
Pseudorange accuracy: 1mm
Inter-channel bias: Zero
Inter-channel range: >54 dB
Limits:

- Altitude: 18,240 m (60,000 feet)
- Acceleration: 4.0 g
- Velocity: 515 m/s (1000 knots)
- Jerk: 20 m/s^3

External Frequency Reference Input

Connector: BNC female
Frequency: 10 MHz nominal
Input signal level: 0.1 to 5Vrms
Input impedance: >1kΩ

Frequency Reference Output

Connector: BNC female
Frequency: 10 MHz sine
Output signal level: 1Vrms in to 50 Ω load

Built-in Timebase

Internal Timebase – High Stability OCXO

Ageing per 24 h: $<5x10^{-10}$
Ageing per year: $<5x10^{-8}$
Temp. variation 0...50°C: $<5x10^{-9}$
Short term stability (Adev @1s): $<5x10^{-12}$

Auxiliary Functions

Interface

GPIB (IEEE-488.2), USB 1.X or 2.X (USB-TMC-488), Ethernet (100/10 Mbps)

Settings

Predefined scenarios: 12; User can change date, time, position,trajectory, number of satellites, satellite power level and atmospheric model
User defined scenarios: Unlimited

General Specifications

Certifications

Safety: Designed and tested for Measurement Category I, Pollution Degree 2, in accordance with EN/IEC 61010-1:2001 and CAN/CSA-C22.2 No. 61010-1-04 (incl. approval)
EMC: EN 61326-1:2006, increased test levels per EN 61000-6-3:2001 and EN 61000-6-2:2005

Dimensions

WxHxD: 210 x 90 x 395 mm (8.25" x 3.6" x 15.6")
Weight: approx. 2.7 kg (approx. 5.8 lb)

Optional Antenna

Frequency: 1575.42 ±2MHz
Impedance: 50 Ω
VSWR: <2:1 (typ)
Connector: SMA male
Dimensions: 12 mm diameter x 38 mm length

Environmental

Class: MIL-PRF-28800F, Class 3
Temperature: 0°C to +50°C (operating); -40°C to +70°C non-condensing @ <12,000 m (storage)
Humidity:
5-95 % @ 10 to 30°C
5-75 % @ 30 to 40°C
5-45 % @ 40 to 50°C

Power

Line Voltage: 90-265 Vrms, 45-440 Hz
Power Consumption: <25 W

Ordering information

Basic Models

GSG-53: GLONASS+GPS 4-channel simulator; with high stability OCXO timebase
Included with instrument

- User manual and GSG StudioView software (30-day trial) on CD
- RF cable, 1.5 m
- SMA to Type N adapter
- USB cable
- Certificate of calibration
- 3-year warranty[1]

[1]The warranty period may be dependent on country.

Optional Accessories

Option 01/70: Helix Antenna
Option 22/90: Rack-mount kit
Option 27H: Heavy-duty hard transport case
Option 90/54: Calibration Certificate with Protocol
Option 95/05: Extended warranty to 5 years
OM-54: Users Manual (printed)
GSG StudioView PC Software: License key enables full functionality, one key required per machine (file transfer functionality is available without a key)

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