

Multi-Channel High Dynamic GPS/SBAS Simulation System Spirent GSS7700

Whatever your GNSS test requirement, Spirent aims to have a GSS7700 solution to meet your needs now and in the future. The flexibility and scalability of the GSS7700 ensures a wide range of applications, from L1-only to multi-frequency, multi-antenna systems, can be readily supported.

Key Features

- 4 – 32 channels per chassis
- GPS L1 supports C/A + P code + M-noise*
- GPS L2 supports C/A or P code + L2C + M-noise*
- GPS L5 supports L5 I and L5 Q
- Complete flexibility over test scenarios using comprehensive SimGEN for Windows® software
- Real time remote control and remote vehicle trajectory for hardware-in-the-loop testing
- Class-leading accuracy, fidelity and reliability
- Multiple RF outputs at GPS L1/L2/L5 available for differential and attitude control testing
- Upgrades available for existing Spirent STR4760 series customers
- SA/A-S with SAASM compatibility (SimSAAS or SimCLASS option) and ICD-GPS-700 M-code (SimMCODE option) *Authorised users only*

The GSS7700 signal generator's digital architecture enhances Spirent's legendary accuracy and reliability with exceptional fidelity and resolution across a wide range of test applications.

SimGEN for Windows® is a comprehensive and feature-rich software suite incorporating over 20 years of GPS simulation experience in one easy-to-use package with the familiar Windows® GUI. SimGEN allows the user complete flexibility to write and edit test scenarios, defining satellite constellations up to 32 GPS and 8 SBAS, satellite errors, atmospheric signal degradation, obscurations, multipath and antenna characteristics. The software maps these effects onto user-specified dates, times and geographic locations modified by vehicle motion with six degrees of freedom.

SimGEN is also equipped as standard with the ability to capture, manipulate and present data from both the simulator itself and receivers equipped with NMEA-0183 output, and offers a hardware-in-the-loop capability with high update rates, over a number of interfaces such as IEEE-488 and Ethernet.



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*M-noise is a spectrally correct representation of M-code with arbitrary data message.
AES M-code is available as an option.

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SPECIFICATION

Output Frequency

- GPS/SBAS L1 1575.42 MHz
- GPS L2 1227.60 MHz
- GPS L5 1176.45 MHz

Signal Dynamics

- Max Velocity $\pm 120,000$ m/s
- Max Acceleration $\pm 3,600$ m/s²
- Max Jerk $\pm 5,000$ m/s³

Signal Accuracy

(RMS max over 1 minute)

- Pseudorange ± 0.01 m
- Pseudorange rate ± 1 mm/s
- Delta Pseudorange ± 5 mm
- Interchannel bias ± 0.05 m (code)
 $< \pm 1$ mm (carrier)

Signal Quality

- Spurious (Max) -30 dBc
- Harmonics -40 dBc
- Phase Noise (Max) 0.02 rad RMS
 (1Hz-10kHz offset)
- Frequency Stability $\pm 5 \times 10^{-10}$ per day
 (after 24 hour warm-up)

Signal Level

(Nominal, as appropriate)

- GPS L1 C/A -130 dBm
- GPS L1 P(Y) -133 dBm
- GPS L2 -136 dBm
- GPS L5 -127.9 dBm
- M-noise L1 -128.5 dBm
- M-noise L2 -134.5 dBm

Signal Level Control

- Range ± 20 dB
- Resolution 0.1 dB
- Calibration Accuracy ± 0.7 dB RSS



SimGEN for Windows® User Interface

Signal Generator Unit

- Generator Channels 4 to 16 (each carrier)
- Physical Size (HxWxD) 265 x 450 x 530mm
 (10.5 x 17.75 x 21 inches)
- Weight (Approximate) 23.5 to 30 kg (51 to 66 lb)
- Power 100-250V, 600W, 48-62 Hz
- Built-in Self Test Standard to module level

PC

- Application software SimGEN for Windows®
- Operating System Microsoft® Windows® Professional

Product Specifications (MS3017/MS3008) are available on request

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For current product data, visit the Spirent websites at www.spirentcom.com or www.spirentfederal.com

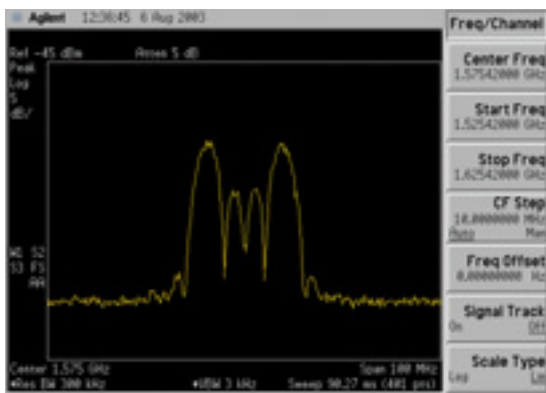


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M-Code

GSS7700 shown in 4 RF output configuration for attitude testing.

