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SPIRENT Inspired Innovation

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-frequencey, multi-antenna systems, can be readily supported.

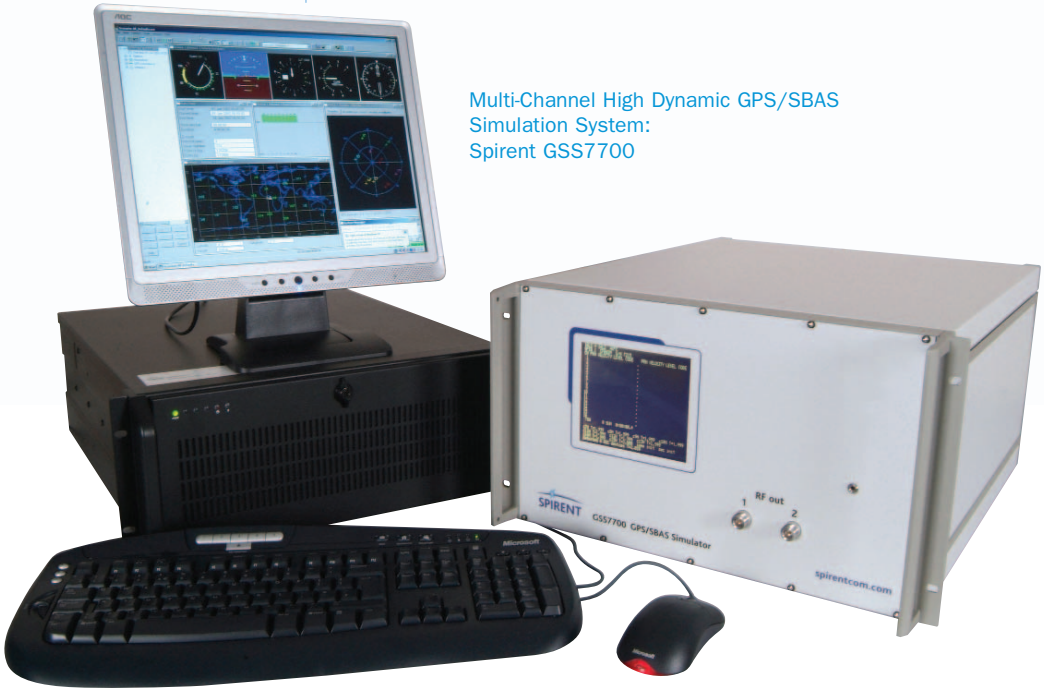
Key Features

- 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
- SA/A-S with SAASM compatibility (SimSAAS or SimCLASS option) and ICD-GPS-700 M-code (SimMCODE option) *Authorised users only*
- Up to 16 channels of in-band Embedded Interference at L1 frequency

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.



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

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

Multi-Channel High Dynamic GPS/SBAS Simulation System

Spirent GSS7700

SPECIFICATION

Output Frequency

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

Signal Dynamics

Max Velocity	±120,000 m/s
Max Acceleration	±4,450 m/s^2
Max Jerk	±890,000 m/s^3

Signal Accuracy

(RMS max over 1 minute)

Pseudorange	±0.01m
Pseudorange rate	±1 mm/s
Delta Pseudorange	±5mm
Interchannel bias	±0.05m (code) <±1mm (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)

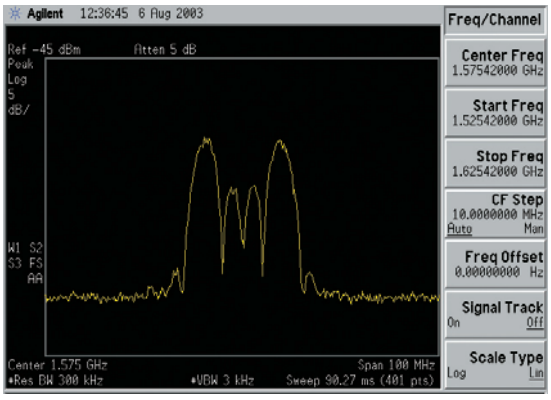
Signal Level

(Nominal, as appropriate)

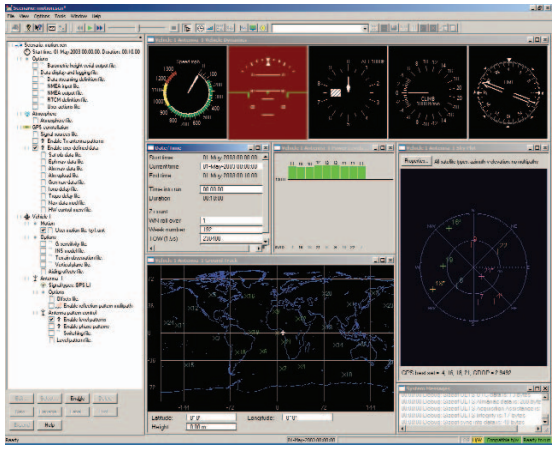
GPS L1 C/A	-130 dBm
GPS L1 P(Y)	-133 dBm
GPS L2	-136 dBm
GPS L5	-127.9 dBm
M-noise L1	-128.5 dBm
M-noise L2	-134.5 dBm

Signal Level Control

Range	±20 dB (-36 dB with reduced resolution)
Resolution	0.1 dB
Calibration Accuracy	±0.7 dB RSS
Embedded Interference J/S up to 70dB	



M-Code



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 21inches)
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

Poduct Specifications (MS3017/MS3008) are available on request

Performance figures and data in this document are typical and must be specifically confirmed in writing by Spirent Communications (SW) Ltd. before they become applicable to any particular order or contract.

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GSS7700 shown in 4 RF output configuration for attitude testing.



THE QUEEN'S AWARDS FOR ENTERPRISE: INTERNATIONAL TRADE 2004

ISO 14001 Reg. No. 059-C

ISO 9001 - 2000 Reg. No. 059-A

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MCD00041 11/06

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