

Multi-Channel High Dynamic GPS/SBAS Simulation Systems

STR4760 Series

The STR4760 GPS/SBAS Simulator series from Spirent GSS is designed to dramatically reduce the need to perform expensive and time-consuming field trials when testing, evaluating or qualifying receiver equipment.

The signal generator employs a patented architecture that eliminates the drift associated with analog techniques whilst avoiding the quantization pseudorange noise associated with some all-digital modulation schemes. The result is a highly accurate and stable generator capable of exceptional fidelity and resolution.

Configuration options include L1, L1/L2, C/A and P(Y) codes with up to 32 independent signal channels per chassis. Systems with multiple RF outputs are available to support real-time differential and attitude determination testing. The STR4760 can also be combined with generators from the STR4780 GLONASS series to form an integrated GNSS test bench with a common controller.

SimGEN for VMS enables users to create an accurate and dynamic GPS and SBAS environment. This powerful software suite is supplied pre-installed on the associated computer workstation. SimGEN includes models that operate in real time for satellite constellations (up to 32 GPS and 8 SBAS), satellite errors, atmospheric signal degradation, terrain obscuration, multipath and antenna characteristics. The software maps these models onto user-specified dates and 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. Public domain SA models are provided, as is an RTCM-SC104 differential correction model.

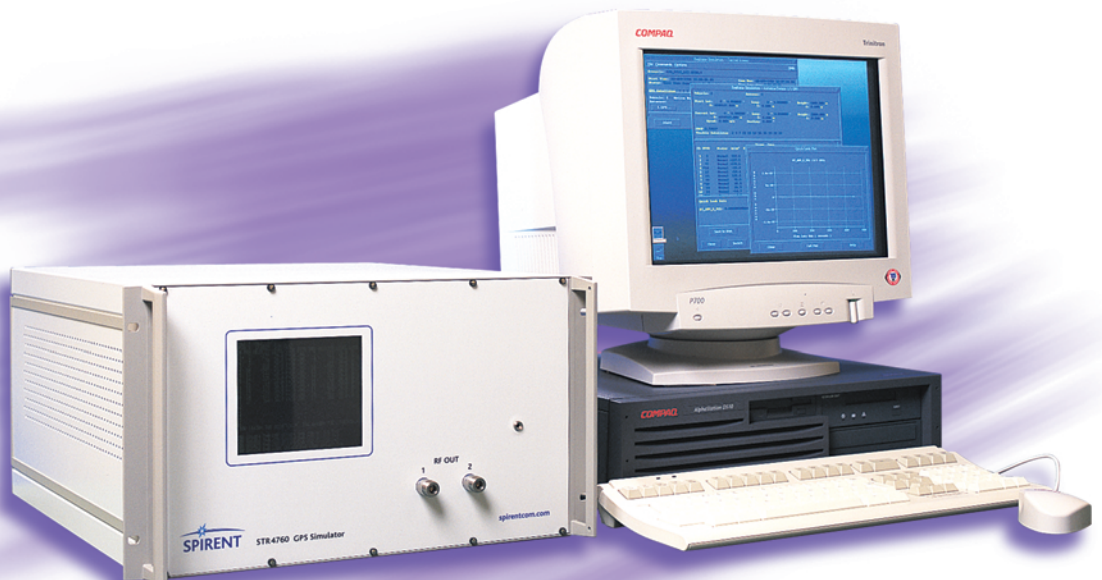
Optional extras for the STR4760 series include **SimSEC**, an approved SA-A/S package for authorized users.

Features

- Turnkey system includes signal generator(s) plus computer workstation
- Comprehensive SimGEN software suite with unrivalled power, flexibility and ease of use
- Supports land-based, marine, aviation and space applications as standard
- Modular architecture provides flexible, cost-effective configuration and upgrade path
- Patented and proven digital signal generation technology for unmatched accuracy
- All configurations support GPS, WAAS, EGNOS and MSAS as standard
- Integrates with STR4780 GLONASS simulator for complete GNSS capability

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Specification

All Systems

- Output Frequency L1 @ 1575.42 MHz
- (as appropriate) L2 @ 1227.60 MHz

Signal Dynamics

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

Signal Accuracy

- (RMS max over 1 minute)
- Pseudorange ± 0.01m
 - Pseudorange rate ± 1mm/s
 - Delta-Pseudorange ± 5mm
 - Interchannel bias ± 0.05m (code), ±0.265mm (carrier)

Signal Quality

- Spurious (Max) - 30dBc
- Harmonics (Max) - 40dBc
- Phase Noise (Max) 0.02 rad RMS (1 Hz-10kHz offset)
- Frequency Stability ± 5x10⁻¹⁰ per day (after 24 hour warm-up)

Signal Level

- (Nominal, as appropriate)
- L1 C/A -130 dBm
 - L1 P (Y) -130 dBm
 - L2 P (Y) or C/A -136 dBm

Signal Level Control

- (All signals)
- Range + 20/-36 dB
 - Resolution 0.1 dB
 - Accuracy ±0.7 dB RSS

Signal Generator Unit

- Generator Channels (L1 & L2) 8 to 32, independent
4 to 16, independent
- Size (HxWxD) 265 x 450 x 530mm
(10.5" x 17.75" x 21")
- Weight (config. dependent) 23.5 to 28 kg (51 to 62 lb.)
- Power 100 – 250V, 600W, 48-62 Hz
- Built-in-self Test Standard to module level

Computer Workstation

- Operating System Open VMS
- Processor ALPHA
- Tape Streamer DAT
- Interfaces IEEE-488, RS232, Ethernet, Parallel
- Power 115V/230V @ 450W, 50/60Hz

Product Specification (MS 1634) is available on request

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

The publication of information in this document does not imply freedom from patent or other rights of Spirent or others.

For current product data visit the GSS website at www.spirentcom.com

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