



Low Cost Multi-Channel GPS/SBAS Simulation System

STR4500

The use of a multi-channel simulator as the core of any test approach for systems with a GPS receiving capability yields tremendous benefits in verification and evaluation of all aspects of equipment performance.

The STR4500 multi-channel GPS simulator from Spirent GSS represents a real breakthrough in technology, and provides an easy-to-use but powerful solution for a wide range of testing requirements.

Application areas where the STR4500 excels are vehicle tracking and telematics, civil aviation, marine, personal navigation, telecommunications and space. The STR4500 is particularly suited to a production environment, running standard tests, but is equally at home when performing tests in the field, during incoming goods inspection or generating statistical data from multiple test runs.

A quality test environment requires a simulator to provide accurate and repeatable signals, where the user is in control and where the data needed to assess almost any possible scenario is available at any time. The STR4500 GPS simulator meets or exceeds all these requirements.

The simulator offers exceptional repeatability, wide dynamic capability in both Doppler and power level, low phase noise, code/carrier coherence and a large number of signal channels to support all-in-view and multi-path environments.

In addition, full Satellite Based Augmentation System (SBAS) functionality for WAAS, EGNOS and MSAS is included.

The simulator is supplied with Spirent's graphical *Simplex* software pre-installed on a high-performance Windows®2000 desktop or laptop computer controller.

A comprehensive range of pre-prepared simulations is supplied on CD-ROM, and additional variations of these can be obtained from Spirent GSS via our website. For maximum flexibility, users of STR2760 & STR4760 simulators can develop scenarios for download to an STR4500 via a range of media.

Features

- GPS L1 C/A code and SBAS generation
- 12 independent signal channels
- Low cost and compact
- High fidelity, accuracy, repeatability and dynamics
- Interactive control facilities
- Multiple vehicle types with comprehensive error effects
- Wide selection of pre-loaded test scenarios
- Capture receiver data plus simulation truth data in NMEA-0183 format
- RTCM-SC104 differential corrections via serial port

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Specification

Output Frequency

- L1 @ 1575.42MHz

Signal Dynamics

- Max Velocity ±15,000m/s
- Max Acceleration ±450m/s²
- Max jerk ±500m/s³

Signal Accuracy

(RMS max over 1 minute)

- Pseudorange ±10cm including interchannel bias
- Pseudorange rate ±1cm/s
- Delta-pseudorange ±5mm
- Interchannel bias ±2cm (code), ±0.265mm (carrier)

Signal Quality

- Spurious (Max) -30dBc
- Harmonics (Max) ±35dBc
- Phase Noise (Max) 0.02 rad RMS (10Hz-10kHz offset)
- Frequency Stability ±5x10⁻¹⁰ per day (after 24 hour warm-up)

Signal Level

- L1 C/A code -130dBm nominal

Signal Level Control

- Range +15dB, -20dB
- Resolution 0.5dB
- Accuracy ±1.0dB RSS uncertainty (-15dB to +15dB)

Signal Generator Unit

- Generator channels 12
- Channel type GPS C/A with data @ 50bps (independent) or SBAS with data @ 500sps
- Size (HxWxD) 99 x 254 x 345mm (3.9" x 10" x 13.6")
- Weight 5kg (11 lb.)
- Power 100-264V, 70W (max), 48-62Hz

Computer Controller

- Operating system Microsoft® Windows® 2000
- Processor (Min) 750 MHz
- Video (Min) 1024 x 768, 256 color
- Hard Disk (Min) 4Gbyte
- Memory (Min) 64Mbyte
- Peripherals (Min) CD-ROM, 1 x USB, 1 x RS232, 1 x parallel, mouse, keyboard, Ethernet Power 115/230V, 50/60Hz

Product Specification (MS2980) is 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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For current product data visit the GSS website at www.spirentcom.com

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