

GPS/SBAS Signal Generator GSS4100

Features

The GSS4100 GPS/SBAS Simulator is a complete, low-cost Single-Channel RF generator for testing satellite navigation equipment, especially in a manufacturing environment, in the laboratory or in the field.

The GSS4100 generates either a GPS L1 C/A code signal or a Space Based Augmentation System (SBAS) signal (WAAS/EGNOS/MSAS).

Standard IEEE-488 (GPIB) and USB interfaces provide the mechanism for integrating the GSS4100 into a user's test environment. The GSS4100 also supports synchronization to other systems via its 1PPS / Trigger and Frequency Standard inputs and its 1PPS output.

Control is provided over all aspects of the signal generated, including PRN, power level, Doppler, time of the simulation and signal/message content. This capability is accessed either in a stand-alone interactive mode, using the supplied SimCHAN software for Microsoft® Windows® via USB, or in a fully integrated ATE mode via the documented GPIB control interface.

Typical applications include GPS and Wireless Location production test ATE, fault analysis, parametric evaluation, and prototype transmitters.

Highlights

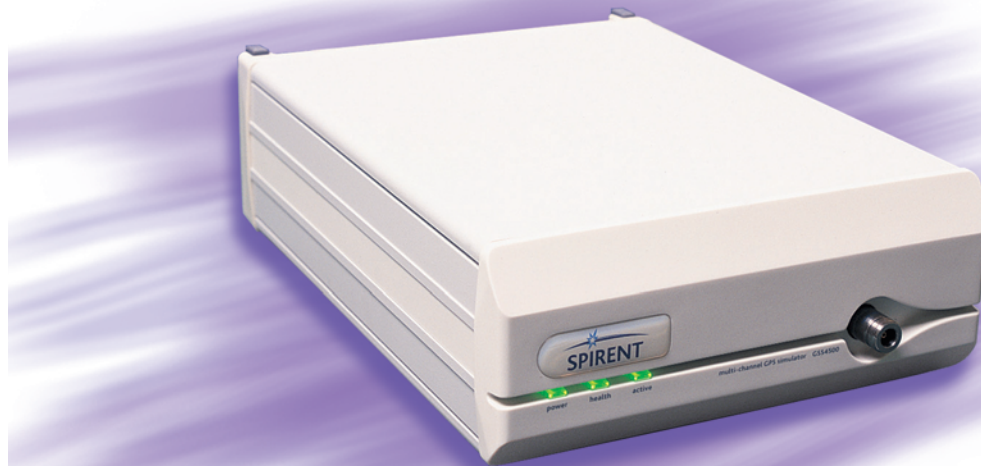
- Supports both GPS and SBAS signals in a single package
- Full control over signal content and dynamics
- Integrated ATE and stand-alone instrument modes
- Fully user-definable data messages using SimCHAN software
- Stable and accurate all-digital FPGA architecture
- Industry-standard GPIB (compatible with STR4775 product)
- Low cost
- Rack mount kit available

**Spirent
Communications
GSS**

4050 Sandshell Drive
Fort Worth
Texas 76137
USA
Telephone:
(817) 847 7311
Fax:
(817) 847 7235
Email: sales-usa@
spirentcom.com

**Spirent
Communications
GSS**

Aspen Way
Paignton
Devon TQ4 7QR
England
Telephone:
+44 (0)1803 546300
Fax:
+44 (0)1803 546301
Email: sales-uk@
spirentcom.com



Specification

Output Frequency

■ Nominal	L1 @ 1575.42 MHz
■ Doppler Range	± 15,000 m/s
■ Stability	<5 x 10 ⁻¹⁰ per day <1 x 10 ⁻⁸ over temperature range

May also be frequency locked to an external standard of 1, 5 or 10 MHz

Signal Quality

■ Spurious(in GPS band)	<-30 dBc
■ Carrier Phase Noise	0.1 rad RMS typical integrated, 10 Hz to 10 kHz offset

Signal Level

■ Nominal	-130 dBm (Front panel RF connector) -70 dBm (Rear panel RF connector-typical)
■ Range	± 20 dB
■ Resolution	0.1 dB

Signal Content

■ Ranging Code	PRN 1-37 GPS PRN 120-138 SBAS (All 1023 G1/G2 codes supported) On/Off control
■ Data message (Content user definable)	50 bps for GPS 250 bps for SBAS, with FEC to 500 sps

Connections

■ RF Output	Type N female co-axial (Front) Type SMA female co-axial (Rear)
■ External Standard	In BNC female co-axia
■ External Trigger	In BNC female co-axial
■ Internal	10MHz Out BNC female co-axial
■ Other Signals available	15-way 'D' connector (1PPS in/out, Chip Clock, Range Code, Navigation Data bits, Code epochs)

Size

■ (HxWxD overall)	99x254x345mm (3.9" x 10" x 13.6")
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Weight

■ 5-kg (11lb) approx.

Product Specification (MS 2997) is available on request

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

**Spirent
Communications
GSS**
4050 Sandshell Drive
Fort Worth
Texas 76137
USA
Telephone:
(817) 847 7311
Fax:
(817) 847 7235
Email: sales-usa@
spirentcom.com

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GSS**
Aspen Way
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Devon TQ4 7QR
England
Telephone:
+44 (0)1803 546300
Fax:
+44 (0)1803 546301
Email: sales-uk@
spirentcom.com

