



# 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

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## Specification

### Output Frequency

■ Nominal	L1 @ 1575.42 MHz
■ Doppler Range	± 15,000 m/s
■ Stability	<5 x 10 <sup>-10</sup> per day <1 x 10 <sup>-8</sup> 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.
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### Product Specification (MS 2997) is available on request

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For current product data visit the GSS website at [www.spirentcom.com](http://www.spirentcom.com)

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