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
Specification

Output Frequency
- Nominal: L1 @ 1575.42 MHz
- Doppler Range: ± 15,000 m/s
- Stability: < 5 x 10^-12 per day
- < 1 x 10^-9 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)
- Data message: 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-axial
- External Trigger: In BNC female co-axial
- Internal 10 MHz 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): 99x254x345 mm
  (3.9" x 10" x 13.6")

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