

GSG-L1

GPS Signal Generator



- Very accurate one-channel GPS signal generator
- Ideal for GPS receiver production test purposes
- Wide RF output power range enables both conducted and air-to-air testing
- Fully programmable with easy to use I/O protocol
- Communicates via USB or RS232
- Affordable



GSG-L1

The GSG-L1 is a GPS signal generator that emulates a single GPS L1 signal. The main application is a simple but very fast manufacturing test, to assure that the assembly is correct, that the antenna is properly connected, and that the receiver can receive and identify a satellite signal.

GSG-L1 provides a fast and cost-effective solution for production test of GPS-receivers in e.g. mobile phones with integrated GPS-receivers. Thanks to the wide RF level range from -70 to

-170 dBm (-70 to -150 dBm calibrated), the sensitivity of all types of GPS receivers can be verified with a minimum of delay.

The GSG-L1 GPS Signal Generator generates an RF-signal, an L1 carrier that is BPSK modulated with the C/A code and navigation signal. The navigation data is transferred to the GSG-L1 via the RS232 interface port from a host computer SW. A PC control program is supplied, with an utility able to generate GPS subframes from existing RINEX files.

Input and Output Specifications

RF signal GPS L1

Number of output channels: 1

Data format/Frame structure:

50 bps (GPS) or 250 bps (SBAS)

Spurious transmission: <30 dBc

Output signal level:

-70 to -150 dBm calibrated (± 1 dBm); (-150 to -170 dBm uncalibrated); 0.1 dB resolution

Frequency

1575.42 MHz

Freq adjust range/Doppler range

± 5 kHz TCXO, 1 Hz resolution

Interface

RS232 and USB (via supplied converter)

Built-in Timebase

Internal timebase

TCXO

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Settings controlled via RS232/USB

Satellite PRN number:

1-37 (GPS) or 120-158 (SBAS)

Zcounts: timestamp of message info

Navigation/Ephemeris subframe

message: user definable

RF mode: OFF, continuous, un-modulated, pulsed (RTCM 104)

General Specifications

Dimensions

WidthxHeightxDepth:

140 x 140 x 70 mm (5.5" x 5.5" x 2.8")

Weight: approx 1 kg (approx. 2 lb)

Optional Antenna

Frequency: 1575.42 ± 2 MHz

Impedance: 50 Ω

VSWR: <2:1 (typ)

Op. Temperature: -40°C to +85°C

Connector: SMA male

Dimensions: 12 mm diameter x 38 mm length

Environmental

Temperature:

-20°C to +65°C (operating)

-55°C to +85°C (storage)

Power

100-240 V, 50/60 Hz, $\pm 10\%$

Ordering Information

Basic Model

GSG-L1: GPS Signal Generator; 1 channel

Included with instrument:

Antenna cable, 1.5 m

PC control program (Windows Vista/XP/2000)

RS232 cable

USB to RS232 converter

Options

Option 01/70: Antenna

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Specifications subject to change or improvement without notice.

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