**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

### Technical Specifications: GSG-L1

- **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**
    - Width x Height x Depth: 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
  - **Connectors**
    - 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, ±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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