

## SPIRENT GSS6450

### RF Record & Playback System

The GSS6450 RF Record Playback System (RPS) from Spirent takes RF recording and playback systems to a whole new level of performance and flexibility, while being housed in a small (216 x 200 x 76mm), battery powered (1.5hr), portable case (2.5kg). The GSS6450 can record any GNSS signals currently available with bit depths up to 16 bits (I&Q) and bandwidths of up to 50MHz. The flexible product structure allows the system complexity to grow with your testing needs.

#### Key Features

- Multiple Constellations and Frequencies\*
  - GPS, GLONASS, Galileo, BeiDou, QZSS
  - L1, L2, L5, B3, E6
- Flexible Product structure\*
  - Base product - GNSS L1, 30 MHz, 4bits, 2 x 1TB SSD
  - Options: Additional frequencies (e.g. L2, L5, B3, E6)
  - Greater bit depth (8, 16 bits)
  - Increased bandwidth (50 MHz)
  - 2TB SSD
- Control from front panel Touch Screen, over WiFi, webserver or scripts
- Highly Portable, complete with shoulder strap
- No PC or external drives required
- OCXO used on record and playback for frequency stability
- Record & playback of up to 4 video streams using webcams
- USB 3.0 supported : Record & playback more data to/from external SSD.
- In-built GNSS receiver

#### Recorder

- Record any 4\* signals simultaneously
- Internal battery (up to 1.5hr) and vehicle DC power adapter
- Single touch record
- Synchronous and asynchronous storage of external data
- Event markers

#### Playback

- Attenuation control per channel
- Browser control over network
- Batch file playback
- Configure files to play
- File start/stop times
- Attenuation settings
- Start at any point in a file
- Scripts allow inclusion in automatic test routines

\* See specification for full list for configurations of bandwidths, frequencies and bit depths

**A Simple Way to Test GNSS:** Testing navigation and positioning systems under real world conditions can be complex and expensive - Not any more! With the Spirent GSS6450 RPS, it's simple and quick to record real GNSS signals in your specific test environment. The flexibility of the GSS6450 to record multiple constellations allows GNSS chipsets and devices to be tested in automotive, navigation, aerospace, defense and survey applications. Once RF data is captured, the Record Playback System is used in the lab to replay the captured environment time and time again to the device or software under test. You save project, travel and engineering costs while improving product performance, quality and time to market.

**High Fidelity Record and Playback:** The GSS6450 is designed to capture complex environments with the fidelity to ensure that playback results in the laboratory are truly representative of captured real world conditions. Different bit depths are available to suit your requirements. 4 bit sampling is suitable for commercial applications testing while keeping data storage levels down, and the full 16 bit sampling provides 96dB of dynamic range for interference and jamming testing scenarios.

**Unbeatable Performance, in a Compact Rugged Box:** The self contained unit has everything you need to start testing. Many other systems require peripherals such as personal computers, hard drives, external power and cabling. Weighing only 2.5kg and supplied with a shoulder strap the GSS6450 can be used in a vehicle or be carried. To operate it's simply a case of connecting the supplied antenna and pressing the one touch record button. When done, select the required file and press the play button and the captured data is replayed at RF. The GSS6450 comes complete with an internal 1TB hard drive and a removable 1TB hard drive (2 TB as options), meaning that recording in the field can take place uninterrupted, and data can be shared easily.



GSS6450 Record Playback System

# Spirent GSS6450

RF Record & Playback

## Specification

Frequencies supported*	GPS - L1,L2,L5 Galileo - E1, E5a/b, E6 GLONASS - L1, L2, L3 BeiDou - B1, B2, B3 QZSS - L1, L2 IRNSS - L5
■ Quantisation	4,8,16 bits
■ Internal SSD	1 TB (2TB option)
■ Removable SSD	1 TB (2TB option)
■ Output attenuation	30 dB
■ Record capability (per TB)	3 channel, 30MHz, 4 bits - 2.5 hrs 2 channel 30MHz - 16 bits - 1.1 hrs
■ Bandwidth	10, 30 or 50 MHz
■ Power - Internal Li-Ion battery	Up to 1.5hr (external) 12 - 18 V DC
■ External Power	90 - 260V AC adapter supplied
■ OCXO	For playback and record
■ Antenna	Antenna supplied
■ Size	216 x 200 x 76mm
■ Weight	2.5 kg

Contact Spirent with regards to recording Galileo E1a and / or Galileo E6a signals.

## Applications:

- Software and Hardware Testing
  - Repeatability tests
  - Manufacturing test
  - Performance analysis
- System trials
- Algorithm studies
  - Position
  - Multipath
  - Sensitivity
  - Interference Monitoring and jamming

## Application Sectors:

- GNSS chip and board design
- Aerospace and Defence
- Survey
- Research
- Product Manufacturers

## SALES AND INFORMATION

Spirent Communications plc, Aspen Way, Paignton, Devon TQ4 7QR, UK  
T: +44 1803 546325 [globalsales@spirent.com](mailto:globalsales@spirent.com) | [spirent.com/positioning](http://spirent.com/positioning)

US Government & Defense: Spirent Federal Systems Inc. 1402 W. State Rd, Pleasant Grove, UT 84062

T: +1 801 785 1448 [info@spirentfederal.com](mailto:info@spirentfederal.com) | [spirentfederal.com](http://spirentfederal.com)

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**Technical:** The GSS6450 is very flexible in its recording capabilities. It can record up to 4 GNSS signals, at variable bit depths (4, 8 or 16), and at a choice of three bandwidths (10, 30 or 50 MHz). The GSS6450 can record any four GNSS frequencies at any one time with 30MHz bandwidth, and 8 bits depth, or four frequencies at 50MHz and 4 bits depth. Lower bit depths allow for longer recording times, but provide less dynamic range. At high bit depths (16 bits) the number of signals recorded or the bandwidths are reduced. During playback the system up converts the sampled data to the original GNSS frequencies.

**Record and Playback External Data:** The GSS6450 records and replays serial data from a wide range of external data sources. Inertial sensors, DR sensors, reference receivers, 1pps can be recorded coherently with the GNSS embedded within the data file to guarantee synchronization. Additionally, the GSS6450 can log serial data into separate files for subsequent analysis or post processing. NMEA logs or Wi-Fi war-drive data are amongst the types of file that the GSS6450 can record. An external 8TB RAID drive is available as an optional extra.

The inbuilt GNSS receiver's determined NMEA position and satellite CNo's can be stored synchronously to the GNSS RF data, which can then be played back in the lab and shown on Google Maps. The data can also be stored into a log file for subsequent export.

**Control:** The unit is controlled directly from the front panel Touch Screen or from a web browser to access the unit's built-in webserver. The webserver allows the unit to be controlled or monitored remotely over the Network. The GSS6450 can also be easily controlled from a laptop, PDA or tablet over Wi-Fi by connecting a USB Wi-Fi dongle.

Testing can be automated using simple HTTP commands with the GSS6450, or by executing test scripts on the on-board Linux platform.



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