SPIRENT GSS6425

MULTIPLE CONSTELLATION RECORD & PLAYBACK SYSTEM

The GSS6425 Multiple Constellation Record Playback System (RPS) from Spirent is a simple and efficient way to capture real world GNSS signals and replay them in the laboratory. Spirent's GSS6425 represents the best value, most flexible, and easiest to use solution on the market. With the GSS6425 available in two variants (L1 only and L1\L2\L5), you can choose to process all GNSS signals in L1, L2 and L5 bands with its three record-and-playback channels.

Key Features

- Multiple Constellations and Frequencies*
  - GPS, GLONASS, Galileo, BeiDou, QZSS
  - L1, L2, L5
- Self contained portable unit
- No PC or external drives required
- Control from front panel, webserver or scripts
- OCXO used on record and playback for frequency stability
- Internal 1TB hard drive
- Additional removable 1TB hard drive (optional)
- Synchronization of two units in master/slave configuration to support record & playback of 6 frequencies.

Recorder

- Record any 3 signals simultaneously
- Internal battery (up to 1.5hr) and vehicle DC power adapter
- 2-bit quantisation
- Single touch record
- Synchronous and asynchronous storage of external data
- Event markers

Playback

- Attenuation control per channel
- Browser control over network
- Multiple file playback
- Start at any point in a file
- Scripts allow inclusion in automatic test routines

See Specification for full list

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 GSS6425 RPS, it's simple and quick to record real GNSS signals in your specific test environment. The flexibility of the GSS6425 to record multiple constellations allows GNSS chipsets and devices to be tested in automotive, navigation, aerospace, defence and survey applications. Once RF data 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 GSS6425 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. 2-bit sampling is required in order to adequately capture the detail of the real signals.

Unbeatable Value

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. With the GSS6425 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 GSS6425 comes complete with an internal 1TB hard drive and a removable 1TB hard drive, meaning that recording in the field can take place interrupted, and data can be shared easily.

GSS6425 Record Playback System
Self contained unit is easy to use with one touch record & playback, internal and removable storage and battery

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SPECIFICATION

Frequencies supported*	GPS - L1,L2,L5
	Galileo - E1, E5a\b
	GLONASS - L1, L2, L3
	BeiDou - B1, B2
	QZSS - L1, L2
	SBAS (eg. OmniSTAR, StarFire)
Quantisation	2 bit
Internal HDD	1 TB
Removable HDD	1 TB
Output attenuation	30 dB
Record capability (per TB)	1 channel 10MHz—50hrs
	3 channel 30MHz– 5.6 hrs
Bandwidth	10 or 30 MHz
Power	Internal Li-Ion battery
	Up to 1.5hr
(external)	12 – 16 V DC
External Power	90—260V AC adapter supplied
OCXO	For playback and record
Antenna	Antenna supplied
Size	342x 250 x 102mm
Weight	5 kg

*GSS6425 L1 only variant supports record and playback for all constellations (GPS\SBAS, GLONASS, Galileo, BeiDou, QZSS) operating in L1 RF band only

Applications:

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

Application Sectors:

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

Technical

The GSS6425 can record any three frequencies at any one time with 30MHz bandwidth. Some frequencies can also be recorded with 10 MHz bandwidth to increase recording times. The GSS6425 uses 2-bit signal sampling to achieve signal dynamic range suitable for testing high sensitivity GNSS receivers. During playback the system up converts the sampled data to the original GNSS frequencies.

Frequency MHz	Constellations supported
1176.45	GPS L5
	Galileo E5a
	QZSS
1227.6	GPS L2, P and M codes
	QZSS
1246	GLONASS L2
1561.098	BeiDou B1
1575.42	GPS L1 C/A, P and M codes
	Galileo E1A, E1B, E1C
	QZSS
1602	GLONASS L1
1207.4	BeiDou B2, Galileo E5b, GLONASS L3
1542	SBAS

An OCXO is used to provide a stable carrier frequency and accurate data playback, so preserving the code/carrier relationships of the original recorded signal. The OCXO can be locked to an external 10 MHz source for increased accuracy.

Record and Playback External Data

The GSS6425 records and replays serial data from a wide range of external data sources. Inertial sensors, DR sensors, reference receivers, 1pps and even CAN bus data can be recorded coherently with the GNSS embedded within the data file to guarantee synchronization. Additionally, the GSS6425 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 GSS6425 can record.

Control

The unit is controlled directly from the front panel keypad 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.

Testing can be automated using simple HTTP commands with the GSS6425, or by executing test scripts on the on-board Linux platform.

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