LabSat 3

Cost-effective, portable and versatile multi-constellation GNSS Simulator for reliable, repeatable and consistent testing.

- 3 constellations
- 8 simultaneous signals
- 4 bit resolution
- Record external signals inc. CAN
- API available
- Cost effective solution

The easiest way to record and replay GPS/GNSS signals

If you are selling, testing or developing products incorporating satellite navigation chipsets, then you'll find **LabSat 3** makes your job easier, quicker and more cost effective. **LabSat 3** is simple to use and requires no specialist training.

Small, battery powered and simple to operate, **LabSat 3** allows you to quickly gather detailed, real world satellite data and replay these signals on your test bench.

LabSat 3 can record and replay combinations of the following signals:

- GPS: L1
- GLONASS: L1
- BeiDou: B1
- QZSS: L1
- Galileo: E1
- SBAS: WAAS, EGNOS, GAGAN, MSAS, SDCM

Product Features

Easy To Use
LabSat 3 is simple to use and requires no specialist training

Portable
Compact and lightweight for use in and out of the lab

Multi-Constellation
Record & Replay the major GNSS RF signals

External Signals
Record external signals: CAN bus, serial and digital data

API Available
API available to allow you to design your own customised software controller

Fully Standalone
Use straight out of the box; LabSat 3 comes with a pre-recorded library of simulations

Internal Battery
Powered using mains power or by using its internal battery which has a 2 run time

Cost Effective
Options to suit any budget - starting from $5,495

Configuring a LabSat 3

One touch Record & Replay makes **LabSat 3** extremely simple to operate. With its rugged construction and in-built battery it is very easy to use a **LabSat 3** in the same environment as your products will be used in.

LabSat 3 comes as a single, dual or triple constellation system, and can be purchased with the option to Replay Only or Record and Replay scenarios.

- 1575.420 MHz - GPS L1, Galileo E1, SBAS, QZSS
- 1602.000 MHz - GLONASS L1
- 1561.098 MHz - BeiDou B1

Record & Replay additional signals

LabSat 3 can record a range of additional signals, synchronised to the GNSS input: CAN bus, RS232, and digital inputs are simultaneously captured. This allows for products which use these signals to be tested with absolute convenience on the test bench.
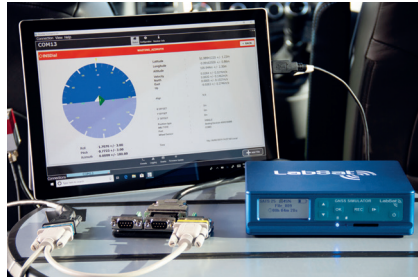
Using LabSat as a GNSS test solution

Record

Record live-sky GNSS signals anywhere in the world to create test scenarios that replicate the device under test's use in the real-world.

Compact and portable for recording on the move with the option of recording additional synchronised data.

Replay

Replay live-sky recordings or simulated scenarios for repeatable and consistent testing directly from your test bench.

Automate test programmes by using the available API to design your own customised software controller.

Simulate

Create custom scenarios at any time, date and location using **SatGen** simulation software, to test how a device would perform in any conditions.

Scenarios can feature multi-stop routes and include the crossing of time zones, leap seconds and roll-overs.

Test and develop for a wide range of applications

LabSat 3 is used across the world by companies and organisations that span a wide variety of industry sectors. Specialist features for industry specific applications include:

- Synchronisation with a **VBOX VIDEO** to record and replay a video of the test route to monitor performance against exact external conditions
- Use of an RF splitter to allow multiple devices to receive the same scenario from a single **LabSat**
- Space simulation scenarios with automated elevation mask to follow the true horizon
- Addition of timed stops to scenarios to simulate multi-stop routes

Visit **labsat.co.uk/industry-sectors** to discover how **LabSat** can solve the GNSS testing needs of your industry sector.

Product Specifications

	Single Constellation	Dual Constellation	Triple Constellation
Simultaneous RF Constellations	1	2	3
Constellations	GPS / Galileo / GLONASS / BeiDou / SBAS & QZSS		
Constellation Centre Frequency	1575.4 MHz / 1602.00 MHz / 1561.098 MHz		
RECORD			
Number of Satellites	All in view		
Sampling Frequency	16.368 Mhz		
Bandwidth	9.66 MHz per constellation		
Quantisation modes per channel — Single Constellation	1 bit I&Q 2 bit I&Q	1 bit I&Q 2 bit I&Q	1 bit I&Q 2 bit I&Q
Quantisation modes per channel — Multiple Constellations	N/A	1 bit I&Q	1 bit I&Q
Data Format	I&Q		
Active Antenna Voltage Supply	2.8 - 3.3 Volts		
REPLAY			
Output Quadrature Phase Error	1 degree RMS		
Output Signal Level	-73 dBm MHz to -103 dBm in 1dB steps		
SYSTEM			
Reference Oscillator	TCXO Temperature Stability +/- 2.5 ppm	OXCO Temperature Stability +/- 0.05 ppm	
External Reference Input	10MHz 50Ω 0.5V to 3V p-p		
Additional Logging	1x CAN channel, 1x Digital channel	2x CAN channel, 2x Digital channel	
Removable Battery Pack	Li Polymer 2260 mAh		
Media Storage Included	32 GB SD Card & 1TB USB HDD		
SD Card Media	Class 10 max size 512GB (FAT32)		
Operating Voltage	8V to 30VDC		
Size	167 mm x 128 mm x 43 mm		
Weight	960g with battery (910g without battery)		
Operating Temperature	-20°C to +60°C Note: Battery will not charge below 0°C or above +45°C		