

## LabSat 3

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

- 3 constellations
- 8 simultaneous signals
- Up to 2-bit resolution
- Record external signals inc. CAN
- API available
- Record & Replay or Replay options



## 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

[labsat.co.uk/three](https://labsat.co.uk/three)

## 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 \$6,045

## 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.



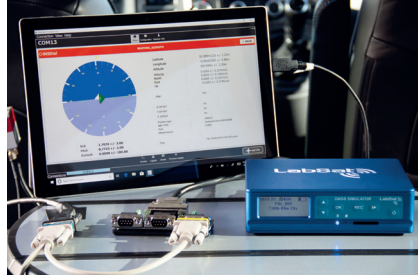
# Using LabSat as a GNSS test solution



## 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](https://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
	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		

