

LabSat 3 Wideband

Compact yet powerful multi-constellation, multi-frequency GNSS simulator for reliable, repeatable and consistent testing.

- All GNSS constellations
- 3 simultaneous frequency bands
- 56 MHz bandwidth
- 6 bit resolution
- HTML interface
- API available



Record & Replay more GNSS signals than ever before

With three channels, a bandwidth of up to 56 MHz and 6 bit sampling (3 bit I & 3 bit Q), **LabSat 3 Wideband** can handle almost any combination of constellation and signal that exists today, with plenty of spare capacity for future planned signals.

Small, battery powered and with a removable solid state disk, **LabSat 3 Wideband** allows you to quickly gather detailed, real world satellite data and replay these signals on your bench.



LabSat 3 Wideband can record and replay the following signals:

- GPS: L1 / L2 / L5
- GLONASS: L1 / L2 / L3
- BeiDou: B1 / B2 / B3
- QZSS: L1 / L2 / L5
- Galileo: E1 / E5a / E5b / E6
- NavIC: L1 / L5 / S
- SBAS: WAAS, EGNOS, GAGAN, MSAS, SDCM

Product Features



Wide Bandwidth

LabSat 3 Wideband RF bandwidth recording at up to 56 MHz



Multi-Frequency

Record & Replay all GNSS signals in the upper and lower L Band



Multi-Constellation

Record & Replay RF signals from every GNSS constellation



External Signals

Record a range of additional signals synchronised to the GNSS input



API Available

API available for development teams



Portable

Compact yet powerful for easy testing on the move



Internal Battery

Up to 2 hours runtime for remote working or field testing



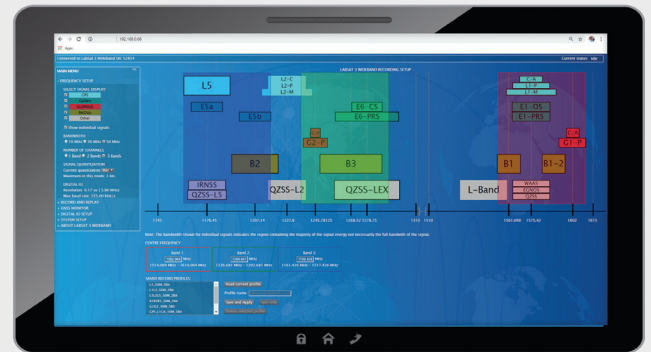
Easy to Use

One touch Record & Replay with simple configuration

Configuring a LabSat 3 Wideband

LabSat 3 Wideband has an internal web server to simplify configuration. This can be easily accessed via a standard web browser on your PC.

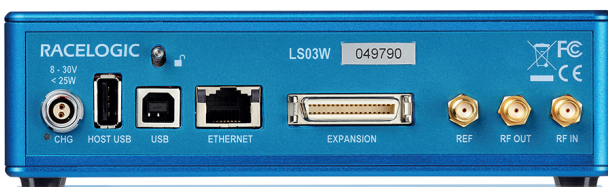
The image (right) shows an example test setup within the LabSat 3 Wideband web server. All GNSS signals and three signal bands are selected, with a bandwidth of 56 MHz and a current quantisation of 1.



Dual-CAN

RS232

Digital Inputs



Record & Replay additional signals

LabSat 3 Wideband can record a range of additional signals, synchronised to the GNSS input, including dual-CAN, RS232, and digital inputs.

This allows for products which use these signals to be tested with absolute convenience on the bench; without the need for costly field trials. NMEA data is also captured using the inbuilt GNSS receiver.

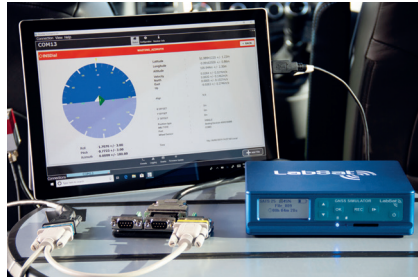
Using LabSat as a GNSS test solution



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.

Automate test programmes using the available API and use ethernet connectivity to deliver global testing from a centralised point of control.



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 Wideband 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

Constellations	GPS L1, L2, L5; Galileo E1, E5a/b, E6; GLONASS L1, L2, L3; BeiDou B1, B2, B3; QZSS L1, L2, L5; NavIC L1, L5 & S; In Band SBAS Further signals in the upper and lower L band can be configured with the internal webserver. Bespoke requirements like Iridium & Sirius XM radio frequencies are available on request	
Nominal Output Signal Level	-73dBm/MHz @ 0dB Variable attenuator provides between +20 dB & -69 dB of adjustment during replay	
RF Channels	3	
RF Channel 1 Centre Frequency	Selectable	
RF Channel 2 Centre Frequency	Selectable	
RF Channel 3 Centre Frequency	Selectable	
Number of Satellites Observed	All in view	
Sampling Frequency	10.23 MHz, 30.69 MHz, 58 MHz	
Quantisation	1, 2 or 3 bit (I & Q)	
Data Format	I & Q	
Additional Logging	2x CAN channels, 4x Digital channels	
Removable Battery Pack	Yes	
Media Storage Included	1TB SSD & 8GB SD card (SD card for firmware upgrade only)	
Active Antenna Voltage Supply	2.8 - 4.6V	
Reference Oscillator	TCXO Temperature Stability +/- 2.5 ppm Frequency Stability +/- ppm over first year	OXCO Temperature Stability +/- 0.05 ppm Frequency Stability +/- 0.3ppm over first year
Operating Voltage	8V to 30 VDC	
Size	167 mm x 128 mm x 46 mm	
Weight	1.2 kg	

