



LabSat

GNSS Test Enclosure

Fully screened device RF test enclosure

Test GPS, Galileo, GLONASS, BeiDou, SBAS & QZSS RF signals

Test any GNSS device with/without internal antenna

An RF screened portable test enclosure that blocks outside signals for secure, reliable and affordable GNSS smart device testing.

If you need to troubleshoot, tune, align, and test a device in an RF free environment incorporating Global Navigation Satellite System chipsets, then you'll find the **LabSat** GNSS Test Enclosure makes your job easier, quicker and more cost effective.

Why use a fully screened test enclosure?

LabSat Test Enclosure allows for secure screened testing away from any live RF signals. When testing a product with an internal antenna for example, it is essential that it is not able to receive any live signals: a rebroadcast of simulator signal must be separated from live GNSS signals.

Retransmission of GNSS signals in an open environment has some important issues associated:

- The test is subject to interference from other RF sources (including real GNSS signals).
- In many countries, radiation of GNSS signals is not legal.
- Radiation may interfere with other equipment and systems.
- There is little control for consistent results.
- Tests may be subject to considerable multipath from nearby reflective surfaces.

Normally RF isolation can be achieved with a direct cable connection from the **LabSat 3** to the device under test. However, many wearable devices and Smartphones do not have external antenna connectors like a boxed receiver. By using a screened environment a fast, secure, and repeatable signal acquisition is easily achieved.

A fully screened RF room is very expensive to install and use so the portable **LabSat** GNSS Test Enclosure offers a very convenient, controlled, and affordable alternative test solution.

LabSat 3 connects to the external SMA connector on the test enclosure I/O board for RF file replay. The enclosure also includes a screened USB 2.0 connector to allow for test device remote control and data acquisition. A full **LabSat 3** SDK is available for remote computer control.



A high quality portable test enclosure

The **LabSat Test Enclosure** is meticulously constructed of .090 Aluminium, with exactly machined tolerances throughout to maintain an RF-Tight environment.

Signal isolation is ensured through 'double lip' sealing, heavy-duty hinge covers that open precisely with use of an air piston, and an RF absorbent foam lining with 24dB attenuation. Access to the equipment inside – which can be clearly observed through the large viewing window – is via ultra-fine mesh gloves that provide high manual dexterity.

A pair of low voltage lamps, powered by the RF filtered AC supply, illuminate the interior, and a precision machined I/O panel contains RF SMA and USB connections.

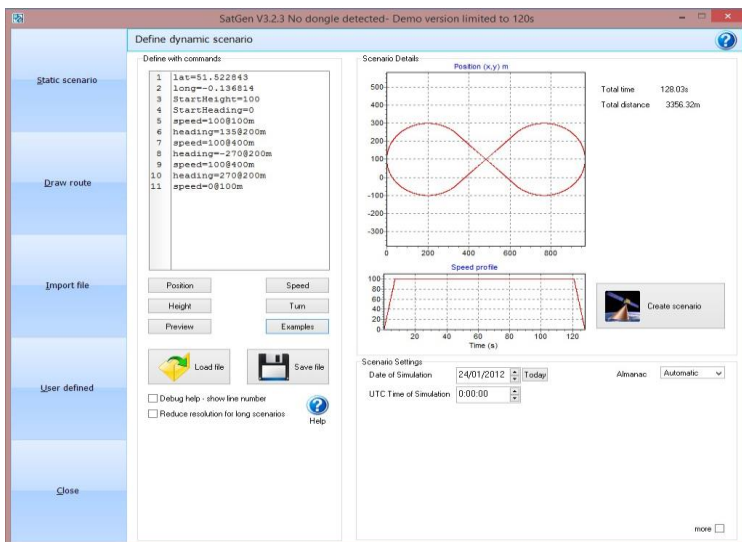
To allow for accurate and consistent testing a GNSS average length dipole antenna and an application note detailing correct test procedures, together with an 8 GBSD memory card containing a **SatGen v3** GPS artificial scenario to allow for GPS testing down to -150 dB are included.



Can I generate my own test scenarios?

If you want to create your own custom test scenario using artificial signals, **SatGen v3** software allows you to quickly draw a route using Google Maps, and then automatically creates an RF file which can then be transferred to an SD card and replayed on a **LabSat 3**.

Multiple satellites and multiple constellations can be simulated, and the user can also have precise control over velocity, heading and height profiles.



A suitable almanac can be automatically downloaded, or defined by the user. **SatGen v3** can also import KML and NMEA files, and the time, date and dynamics are fully user definable.

A 30 day demo version of **SatGen v3**, limited to 2 minutes GPS scenarios, is available for download from the **LabSat** website.

Description	LabSat GNSS Test Enclosure
RF Absorbent Liner	24 dB Attenuation
RF Secure Double Lip Gasket	✓
RF Sealed Cover with Precision Air Piston	✓
Internal Lighting with RF Filtered Power Supply	✓
Silver Impregnated Gloves for Test Device Control	✓
I/O Panel with SMA to SMA to SMA Filtered Connector	✓
I/O Panel with Screened USB 2.0 connector	✓
6 outlet Universal Plug Strip c/w Universal Mains Power	✓
Capacitive Touch Screen Capable Wand	✓
250V AC Power Supply with Male Kettle Connector	✓
GNSS Dipole antenna	✓
Internal Size	8.0" H x 17.0" W x 10.5" D
Exterior Size	12.8" H x 18.0" W x 12.0" D
Weight	10.43 Kg

LabSat is designed and manufactured by **RACELOGIC Ltd.**, experts in the field of GPS Testing and Data Logging, based in the UK with offices in Germany and the USA. **RACELOGIC** is an ISO 9001 company that supplies specialised GPS based test equipment to major OEMs in over 90 countries around the world. Racelogic has recently won three Queen's Awards for Enterprise and was founded in 1992.