

LabSat3



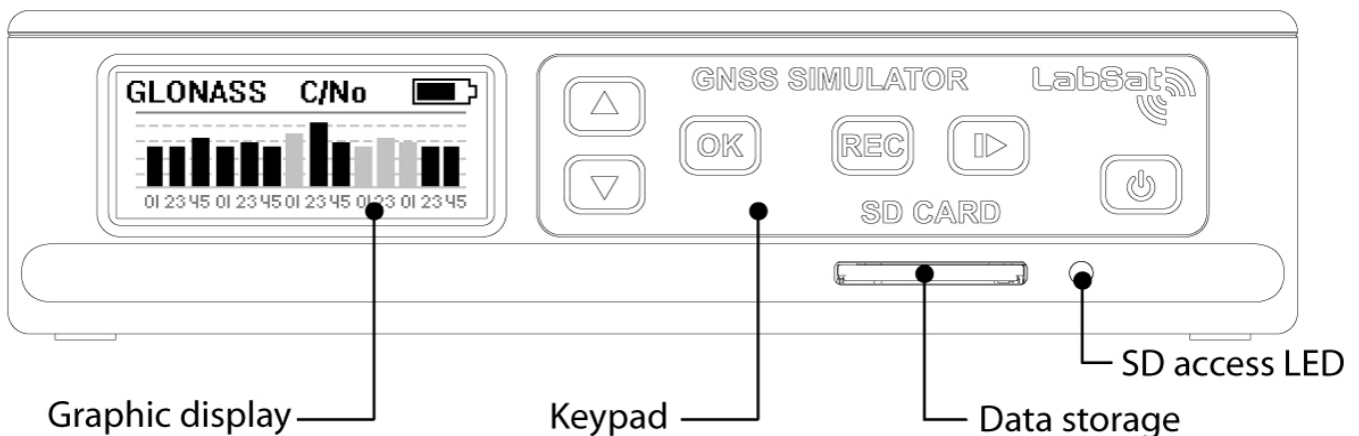
LabSat 3 is a standalone, two channel simulator for testing devices based on satellite navigation systems; it is capable of recording and replaying multiple raw satellite navigation RF signals including GPS, GLONASS, Galileo, BeiDou, QZSS and SBAS. The optional SatGen software package can be used to generate simulated satellite signals from a user defined trajectory, allowing tests to be carried out simulating any time, date or place around the world.



Features

- Available for GPS L1, GLONASS L1, Galileo E1, BeiDou B1, QZSS and SBAS
- Compact, lightweight and portable
- Fully standalone
- Single or dual channels
- Battery life up to 2 hours
- Simple to use one touch recording

The **LabSat 3** product range supports a number of powerful features for use in industries such as automotive, aerospace and performance sports analysis. It includes dual RF channels for multiple constellation testing, Dual CAN Bus recording, digital event capture and inertial sensor logging.



Model Range

Part Number	Description	Signal Band	GNSS Antenna
RLLS03-1P	Single Channel Replay Only	1 x GPS L1/SBAS/Galileo/QZSS, GLONASS L1 or BDS B1	-
RLLS03-1RP	Single Channel Record & Replay	1 x GPS L1/SBAS/Galileo/QZSS, GLONASS L1 or BDS B1	RLACS198 Quad Constellation Antenna
RLLS03-2P	Dual Channel Replay Only	2 x GPS L1/SBAS/Galileo/QZSS, GLONASS L1 or BDS B1	-
RLLS03-2RP	Dual Channel Record & Replay	2 x GPS L1/SBAS/Galileo/QZSS, GLONASS L1 or BDS B1	RLACS198 Quad Constellation Antenna

All units types can be factory upgraded to any other version.



Technical Specifications

	LabSat 3 Single Channel	LabSat 3 Dual Channel
Constellation	1 of GPS, Galileo, SBAS, QZSS, GLONASS or BeiDou	2 of GPS, Galileo, SBAS, QZSS, GLONASS or BeiDou
Output Signal Level	Adjustable -83dBm to -115dBm	Adjustable -83dBm to -107dBm
RF Channels	1	2
RF Channel 1 Centre Frequency	1561.098/ 1575.4/1602.00 MHz	
RF Channel 2 Centre Frequency	-	1561.098/ 1575.4/1602.00 MHz
Number of Satellites Observed	All in view	
Sampling frequency	16.368 MHz	
Bandwidth	9.66 MHz	
Quantisation	1 or 2-bit	2xchannels at 1-bit or 1xchannel at 2-bit
Data Format	I & Q	
User Control	6 Button Membrane Keypad	
Display	Backlit LCD Dotmatrix	
Additional Logging	-	2 channels of CAN, RS232 or Digital
Removable Battery Pack	Record & Replay version only	Both versions
Battery Type	Varta Easypack Li_Polymer 2260mAh	
Media Storage Included	32 Gb SD Card & 500GB USB HDD	
SD Card Media	Class 10 max size 128Gbyte (FAT32)	
Active Antenna Voltage Supply	2.85V	
Reference Oscillator	16.368 MHz Temperature controlled +/- 2.5 ppm or OCXO option	
Operating Voltage	8V to 30VDC	
Size	167mm x 128mm x 43mm	
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 (charger shuts down outside this range). Unit will shut down outside operating temperature range.	
Storage Temperature	-20°C to +60°C Note: Battery will discharge whilst in storage and discharge rate will increase at higher storage temperatures.	

Connections

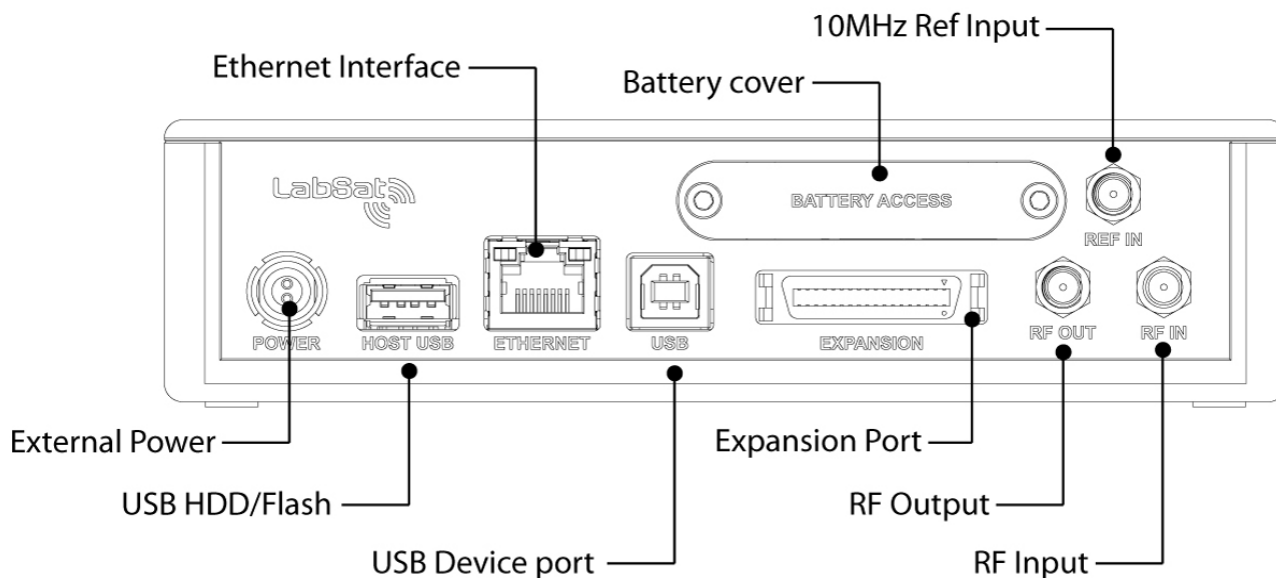
Name	Connection	Description
Power	2 pin LEMO	8 to 30VDC Power Supply input
HOST USB	USB	For connection of USB Storage devices
ETHERNET	RJ45	Remote access and control (Available in future updates)
USB	USB	For future updates



Connections continued...

Name	Connection	Description
RF Out	SMA	Output for RF signal replay for connection to receiver under test
RF IN	SMA	RF signal input from antenna (RP models only)
REF IN	SMA	10 MHz Reference Clock Input
Expansion	36 Way MDR	1-PPS, Digital I/O, CAN Bus, RS232 *

*Model dependent



System Package Contents

Unit	Part Number
LabSat 3 UNIT	RLLS03
LabSat 3 CARRY CASE (RLLS03-1RP & RLLS03-2RP only)	RLACS197
LabSat 3 SCENARIO 500 GB HARD DISK DRIVE (RLLS03 -2P & RLLS03-2RP only)	LS03HDD
VBOX MAINS ADAPTER	RLVBACS020
32GB SDHC Card	RLACS199
LEMO 2 WAY TO 12V CIGAR LIGHTER LEAD – 2M	RLCAB010L
GNSS QUAD CONSTELLATION MAGNETIC MOUNT ANTENNA (RLLS03-1RP & RLLS03-2RP only)	RLACS198
SMA-SMA CABLE – 1M	RLCAB071-1
SMA PLUG TO MCX PLUG CABLE – 1M	RLCAB082-1
SMA PLUG TO MMCX PLUG CABLE – 1M	RLCAB083-1
SMA PLUG TO TNC PLUG CABLE – 1M	RLCAB084-1
LabSat 3 BATTERY (Not supplied with RLLS03-1P)	RLACS201
LabSat 3 EXPANSION CONNECTOR ADAPTER (RLLS03 -2P & RLLS03-2RP only)	RLACS202
LabSat 3 MANUAL	LS03MAN
LabSat 3 CABLE IDENTIFICATION SHEET	LS03-CABIDEN
LabSat 3 QUICK START GUIDE	LS03GUIDE