



# SPIRENT PT TESTBENCH

## GNSS TEST AUTOMATION AND RESULTS REPORTING

### Testing GNSS and GPS performance just got much easier

Constructing and executing an effective GNSS test plan takes specialist knowledge, deep experience – and time.

If you need to characterise the fundamental GNSS performance of your device, or assess its resilience to interference, PT TestBench simplifies and accelerates the entire process.

Load up a pre-prepared test suite, and with a single mouse-click PT TestBench will execute test cases sequentially; interact with devices under test; analyse the results; and generate a report.

### The challenge of GNSS/GPS testing

Testing a device's GNSS/GPS performance can be slow, confusing and expensive. You need to know what to test, and how many times. As well as fundamental performance characteristics, you also need to consider testing for resilience to interference such as jamming and spoofing.

To make things even tougher, the capabilities you want from a receiver will vary depending on its intended use. A short Time to First Fix may be vital in automotive applications, for example, but less so for static position surveying. Re-acquisition is important in applications where tunnels and bridges frequently block signals, but less so when there is little external signal obscuration.

Once you've decided what to test for and developed a plan, running the tests manually can take hours – as can collating and analysing the results.

### Spirent PT TestBench: 30+ years of Spirent expertise in your lab

Spirent PT TestBench is a test automation solution that makes GNSS/GPS testing fast and simple. It's been developed by Spirent drawing on our 30+ years of test experience and expertise.

You can choose from pre-created Test Suites – selecting customisable tests that match your device's key GNSS capabilities, and executing them with a single click.

PT TestBench then controls the device under test automatically through remote commands, while logging the data it creates.

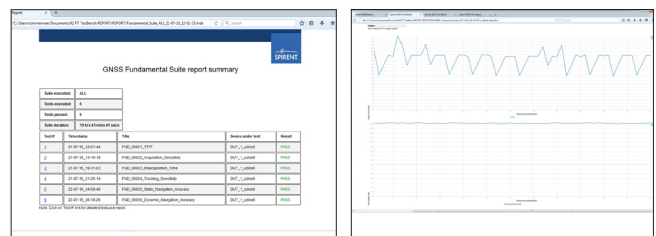
Finally, it takes the hard work out of analysing your results, conducting the statistical interpretation for you, and giving you a simple pass/fail based on criteria of your choice.

### Maximise your test efficiency with fully automated PNT testing

Effective GNSS testing demands each test be re-run dozens of times. This is the only way to get statistically meaningful results when there are so many parameters involved.

But such intensive, repetitive testing can take hours, and increase the probability of errors.

PT TestBench saves time and promotes accuracy with automated testing. It does the test iterations for you, then presents you with the results as customisable reports and charts.



Name	Value	Description
parameter_list	Receiver_List	List of Devices Under Test to be used. For multiple receivers use space delimiter (DUT_1 DUT_2)
Postlog_EnableDUT_IP_address	127.0.0.1	IP address of the host where the Postlog engine is installed. Remote commands will be sent through Suite to be executed. Supported options: ALL, TIME, SENS or ACCUR.
Report_Parameters	DUT_1_Parameters	Enable satellite elevation check.
Power_Level	0	(dBm) Reference level value. Range: -173 - 0
Scenario_Time	30	(seconds) Scenario initial length. Range: 30 - 360
Simulation_Start_Time	01-Jan-2016	(YYYY-MM-DD) Scenario start time. Required format: Maximum: Eg: 01-01-2016
Simulation_Start_Time	00:00:00	(HH:MM:SS) Scenario start time. Required format: Maximum: Eg: 01:01:00
Initial_Latitude	0	(degrees) Scenario initial latitude. Range: -90 - 90
Initial_Longitude	0	(degrees) Scenario initial longitude. Range: -180 - 180
Initial_Altitude	0	(metres) Scenario initial height. Range: 1000 - 2000
Randomize_receiver_location	Yes	(Yes/No) Randomize receiver location for each measurement.
Maximum_horizontal_position_variation	10000	(metres) Maximum horizontal variation to be used when randomizing position. Range: 1 - 100000
Maximum_vertical_position_variation	3000	(metres) Maximum vertical variation to be used when randomizing position. Range: 1 - 100000

PT TestBench Graphic User Interface (GUI) and reports

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### Test Suites

#### Test Suite 1: GNSS Fundamentals

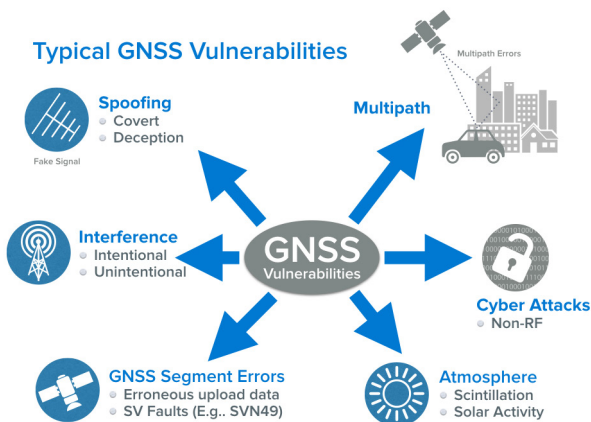
A suite of essential basic tests for GNSS-enabled systems. Load, select, customise and repeat test cases and scenarios to answer the key questions about GNSS performance:

- Time to first fix and reacquisition
- Acquisition & tracking sensitivity
- Static & dynamic navigation accuracy

#### Test Suite 2: Vulnerabilities & Threats

See how your device behaves in the presence of signal interference including jamming, spoofing, segment errors, space weather, multipath and other threats. Test your device with re-creations of real-world interference events, accessible in the constantly updated PT Cloud Library:

- Real interference waveform signatures
- Observed space weather and scintillation
- Recent spoofing and jamming attacks



#### Test Suite 3: Any Test You Need

If your test case is not covered in our built-in test suites, Spirent Professional Services can tailor tests cases in PT TestBench to meet your specific needs.

### Key features

- Configurable Test Parameters
- Receiver Logging and Control
- Automated Test Execution
- Report Generation

#### SALES AND INFORMATION

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### Supported software

PT TestBench is designed to operate with:

- SimGEN / SimREPLAYplus / SimREPLAY v5.07 SR01 or SimCHAN v3.03 SR05
- Only iTest v4.4

**NOTE:** GNSS Vulnerabilities & Threats Test Suite is currently not supported with SimCHAN.

### Supported hardware

PT TestBench is designed to operate with the following Spirent GNSS signal generators:

- GSS9000-series
- GSS6700
- GSS6300-family (multi-channel systems only)

Spirent GSS7765 Interference Simulation System can be used for Radio-Frequency Interference tests.

### Supported devices under test

GNSS receivers are configured and controlled via a USB or RS-232 serial communications link. Receiver drivers must be installed so the Windows OS can assign a COM port to the device.

Following GNSS receivers are supported:

- u-blox EVK-4, EVK-6, EVK-M8 (RS-232 only)
- Javad Delta (RS-232 only)
- Septentrio PolaRx4

The integration of one receiver is included with PT TestBench. Additional receivers can be integrated / supported as a professional service. Please speak to your Spirent sales representative for more information.

### Find out more

To learn more about accelerating your GNSS testing with PT TestBench, contact your Spirent sales representative.

