Spirent **PNT 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 characterize the fundamental GNSS performance of your device, or assess its resilience to interference, PNT TestBench simplifies and accelerates the entire process.

Load up a pre-prepared test suite, and with a single mouse-click PNT 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.

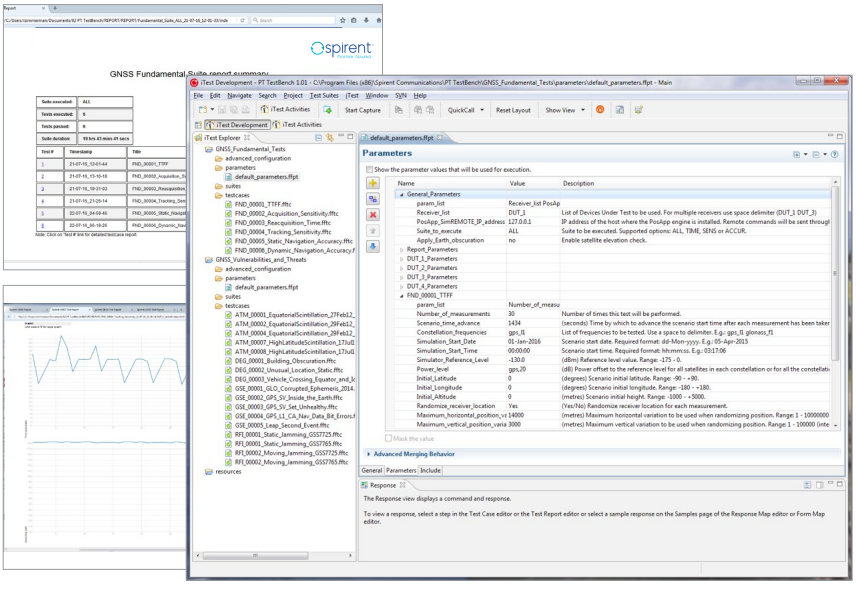
Spirent PNT TestBench: 30+ Years of Spirent Expertise in Your Lab

Spirent PNT 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 customizable tests that match your device's key GNSS capabilities, and executing them with a single click.

PNT 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 analyzing your results, conducting the statistical interpretation for you, and giving you a simple pass/fail based on criteria of your choice.



PNT TestBench Graphic User Interface (GUI) and reports

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

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Test Suites

Test Suite 1: GNSS Fundamentals

A suite of essential basic tests for GNSS-enabled systems. Load, select, customize 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:

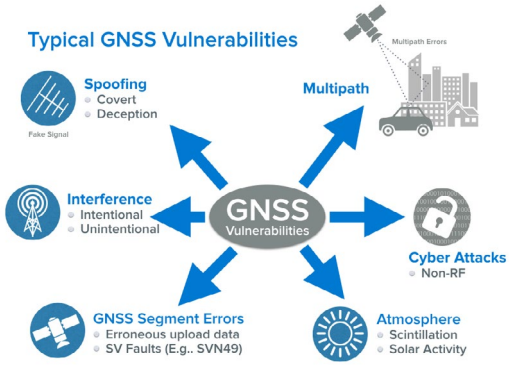
- Real interference waveform signatures
- Observed space weather and scintillation
- Recent spoofing and jamming attacks

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 PNT TestBench to meet your specific needs.

Key Features

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



Supported Software

PNT TestBench is designed to operate with:

- SimGEN / SimREPLAYplus / SimTEST
- v6.05 and later supported

Supported Hardware

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

- GSS9000-series
- GSS7000
- GSS6700
- GSS6300-family (multi-channel systems only)

Spirent GSS7725 and GSS7765 Interference Generators can be used for Radio-Frequency Interference tests.

Supported Devices Under Test

GNSS receivers are configured and controlled via a USB or RS232 serial communication link. Receiver drivers must be installed for Windows OS to assign a COM port to the device.

Supports all NMEA and Android compatible receivers. Assured to work with:

- U-Blox EVK-4, EVK-6, EVK-M8
- Javad Delta (RS232 only)
- Septentrio PolaRx4

PNT Testbench supports a wide range of GNSS receivers, with common parameters such as serial encoding and NMEA protocol versions supported as user defined properties off the shelf. For 'bespoke' requirements we include a receiver integration service and will aim to provide this with configurable properties for flexible product line testing.

Find Out More

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

Contact Us

For more information, call your Spirent sales representative or visit us on the web at www.spirent.com/ContactSpirent.

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