# GNSS Production Line Testing

Spirent™

Success in competitive industries depends on the quality and reliability of the products that roll off the production line. With the increasing capabilities and dependencies of many location-aware devices, production line testing is a growing challenge for both industry leaders and emerging challengers.

Spirent has over 30 years' experience in helping our customers keep the promise of accuracy, stability and performance that their users demand. We understand the different challenges facing teams at different points of the product journey, and are ideally placed to help production lines meet their specific challenges and goals.

How Can Spirent help?

Spirent's test solutions have been utilised in areas ranging from research & development through to production line testing for three decades. Our range of solutions offers a variety of options to customers tailored to their specific requirements. Built on established and reliable architecture, and supported by a global team of experts, Spirent simulators can keep your production line running at full capacity 24/7.
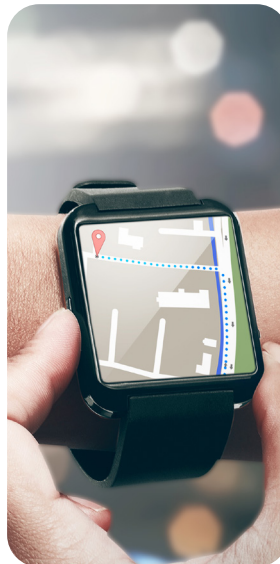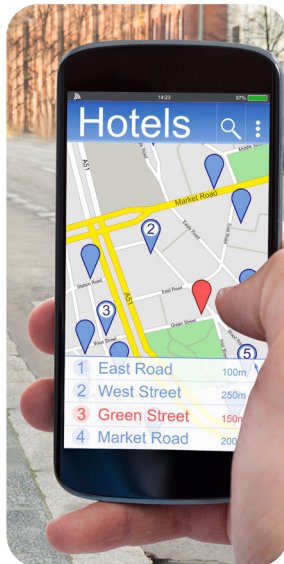
Key Challenges

Multi-frequency GNSS adoption in mainstream consumer applications is growing. Whether it is L1/L5 in consumer devices, L1/L2 in automotive applications, or any other combination—meeting this test requirement is rendering many existing test systems obsolete.

Multi-constellation GNSS is on much the same curve as multi-frequency. Many existing production test systems do not have the capability to generate required signals across each of the utilised constellations. Modern production lines demand greater flexibility than ever.

Cost is a constant challenge in competitive industries. Higher production costs can lead to products being uncompetitive in their marketplace. Keeping costs low whilst meeting each of the requirements is a difficult balance to strike.

Speed and efficiency are important components of any production line. Maximising productivity without risking defects slipping through is a particular challenge with the variety of signals now being utilised.

Simulation

The case for simulation in production testing is much the same as in R&D. Live signals are not repeatable, and will always yield different results in different places and at different times. This can lead to false positives. Simulation enables testers to conduct controlled and repeatable tests, and offers the choice between conducted and over-the-air (OTA) testing. Simulation also guarantees that all required signals are available and in direct view at any given time.

GSS7000

- Available as either a multi-channel simulator with 3 differing software levels, or Single Channel Utility
- Fully field upgradable via feature keys
- GPS / GLONASS / Galileo / BeiDou / SBAS / QZSS / IRNSS—any combination, with up to 4 concurrent frequencies, up to 256 channels
- All key parameters user-controlled—test location, date & time, signal strength, and much more
- Built-in controller
- Single Channel Utility: Simulate one channel per constellation with specified signal parameters. Switch signals and codes on/off via remote command.
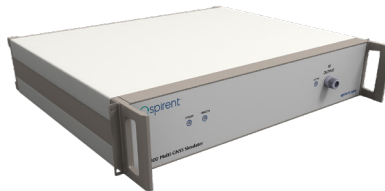
GSS6300

- Single Channel GPS / GLONASS / Galileo / SBAS / QZSS Signal Generator
- Designed for ultra-quick C /No, doppler estimation and sensitivity testing
- Used to provide a Go / No-Go result
- Industry standard as specified by major chipset vendors
- 1 channel per constellation
- Wide RF power range
- User defined pseudorange
- Simple to use and in-rack calibration
- Calibrated to ISO 17025 at purchase
- Rack mount 2U chassis for easy integration into manufacturing environment
- Remote control via SimCHAN or IEEE-488, USB or RS-232 control interfaces
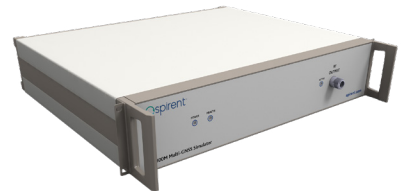
GSS6300M

- Multi-Channel GPS / GLONASS / Galileo / SBAS / QZSS Signal Generator
- Designed for manufacturing test where a PVT fix is required
- Available as a field upgrade to existing GSS6300 systems
- 4 or 8 channels per constellation
- User-defined test location
- Signal strength control
- Edit date/time
- Circular or realistic SV orbits
- Simulation data viewer
- Calibrated to ISO 17025 at purchase
- Rack mount 2U chassis for easy integration into manufacturing environment
- Remote control via SimTEST or IEEE-488, USB or RS-232 control interfaces

Automation

Several of the key challenges faced by production test teams can be addressed via automation. Automating a testbed can:

- Reduce critical engineer hours-per-unit
- Reduce the cost of production testing per unit
- Remove any possibility of human error

Spirent's bespoke GNSS test automation tool, PNT TestBench, enables users to run more tests in less time. With the capability to schedule and run multiple independent tests consecutively, with unlimited iterations of each test, PNT TestBench adds real value to any testbed.

Americas 1-800-SPIRENT
+1-800-774-7368
sales@spirent.com

US Government & Defense
info@spirentfederal.com
spirentfederal.com

Europe and the Middle East
+44 (0) 1293 767979
emeainfo@spirent.com

Asia and the Pacific
+86-10-8518-2539
salesasia@spirent.com

◯spirent™