



Spirent

The World's Leading GPS/GNSS
Simulator Provider

History of “*Simulators*”



1980's



1990's

Same original team –
but many obsolete
business cards!



1997 ~ present



The very first simulator

Model 9237

Rubidium
frequency source



HP436-A power meter

Each chassis is 1
satellite channel –
6 channels in total
(up to 10 max)

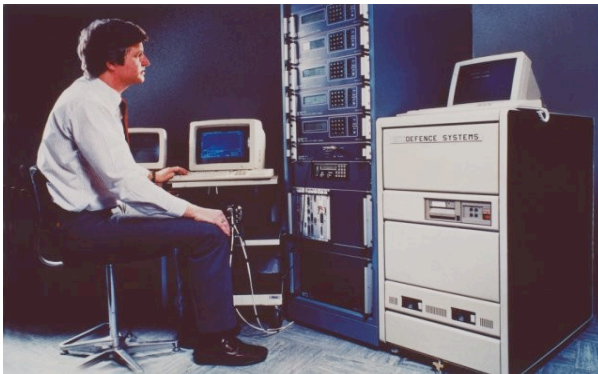
Signal Combiner

UUT data Interface

2 Jammers (max. 6)

History

- ✦ Team Started in 1985
- ✦ Now World's Largest Supplier of GNSS test equipment
- ✦ Product range covers all GNSS applications
- ✦ Approximately 100 staff in Europe, Asia and the Americas



1980's

- ✦ Initially Single-channel GPS systems
- ✦ Multi-channel (1987) SA/AS (1989)

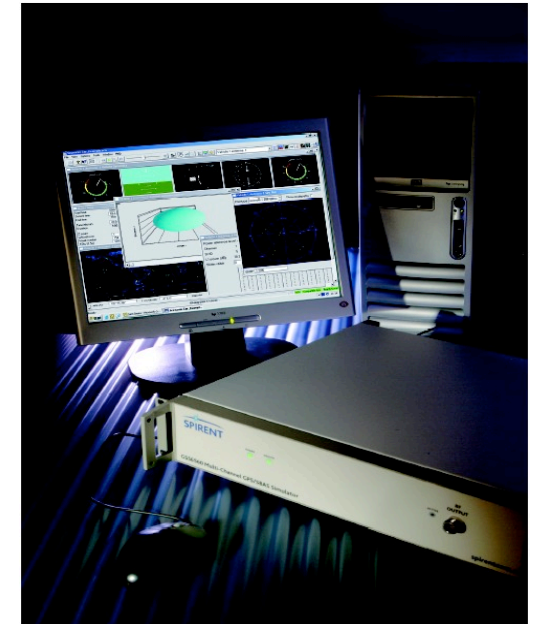
1990's

- ✦ Massive technology lead with the STR2760
- ✦ Introduced other GNSS Systems test
 - ✦ SBAS (1996), GLONASS (1997)



Spirent Now - 20 years on

- ⊠ Commercial GNSS test products
- ⊠ Single-channel production systems
- ⊠ Special Application products
 - ⊠ Telecoms/Automotive/etc



- ⊠ Continuous enhancements for new developments
 - ⊠ Galileo, GPS Modernisation, GLONASS
 - ⊠ Multi-Constellation Unit

Testing using a GNSS simulator

- ✦ A Simulator is a hi-fidelity Signal Generator controlled from a sophisticated software suite
- ✦ Realistic environment for developing and testing GNSS devices, including
 - ✦ GNSS Constellation parameters
 - ✦ Atmospheric conditions
 - ✦ Receiver under test motion
 - ✦ Errors and extraordinary events

✦ Advantages

- ✦ Calibrated tests
- ✦ Controllable and Flexible
- ✦ Repeatable exactly
- ✦ Test errors and extremes
- ✦ Whole System test
- ✦ Cost effective



Simulator Range

GPS C/A Code

All Signals, Modular

Hardware



GSS6100



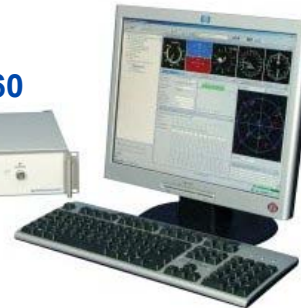
GSS4200



STR4500



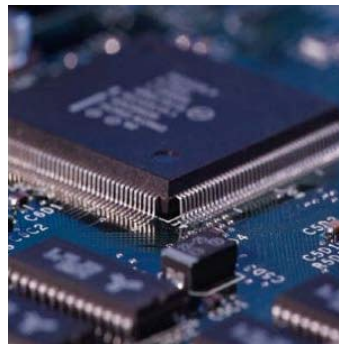
GSS6560



Production Test

Integratio.

R&D Test



Inspired Innovation

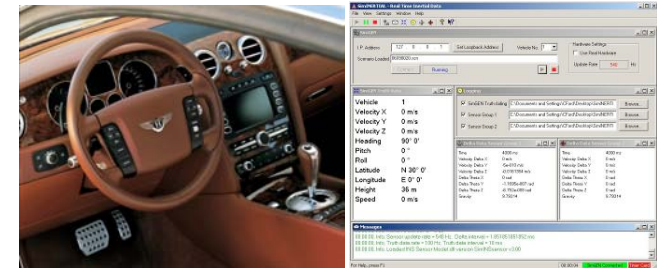
GPS 16ch L1/L2/L5 +
GLONASS 12ch L1 +
Galileo 16ch L1/E5ab/E6
OS, CS, SoL + Interference

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Spirent Business Areas

- ✦ GPS/GNSS is not always a suitable for use as a standalone navigation solution.
 - ✦ Whole 'Navigation System' needs to be tested depending on application (IVNS, INS A-GPS etc)
 - ✦ Spirent has a range of test solutions available for various business areas.
- ✦ Members of the navigation community often need specialised solutions
 - ✦ Spirent has a dedicated team for developing bespoke solutions.
- ✦ Spirent offer training and support.
 - ✦ Speak to your Sales Manager for details of the option of full training and extended support for your GNSS Simulator

System Testing eg. IVNS, Inertial/GPS, A-GPS



Tailored Solutions



Services eg. training, support, repair



A Few Spirent Customers



Industry Expansion

2007

- ✦ GPS L1 C/A and P
- ✦ GPS L2 P
- ✦ GLONASS L1
- ✦ WAAS

2012

- ✦ GPS L1 C/A, P, C
- ✦ GPS L2 C, P
- ✦ GPS L5
- ✦ GLONASS L1, L2
- ✦ Galileo L1, E5ab, E6
 - ✦ Open Service
 - ✦ Commercial Service
 - ✦ Safety of Life
 - ✦ Public Regulated Service
- ✦ Compass
- ✦ QZSS
- ✦ EGNOS
- ✦ WAAS, MSAS

Augmentation

- ✦ IVNS
- ✦ Inertial Sensors
- ✦ A-GPS
- ✦ LAAS
- ✦ Pseudolite
- ✦ WiFi triangulation
- ✦ Wireless Basestation Triangulation
- ✦ DGPS

All available today
in the GSS8000



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exhibition area

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