SoftSpot

Real-Time Software GNSS Receiver

Locate And Be Located

Whether your business' domain is Aeronautics, Space, Research, IoT or Telecoms, as an OEM, you are faced with the need for performance, increased precision, versatility and cost effectiveness.

This is why Syntony has created SoftSpot, the only Real-Time Capable Software GNSS Receiver on the market designed for running on high-end embedded platform or mobile system or PC.

The reference version of SoftSpot runs in Real Time (C language) on PCs.

It can either be delivered as simple software running on our customer's hardware, or together with a hardware platform (reference, on PC) or be embedded (RF, Numeric, or both).

SoftSpot takes I/Q samples from the RF Stage at intermediate frequency, and can process signal correlation either by software or through FPGA correlators.

SoftSpot performs cold and warm acquisition, computes correlators results, processes signal tracking, generates pseudoranges, and at last, provides PVT solution.

- Multiple GNSS Signal Receiver
- 1, 2 or 3 RF channels
- High Performance GNSS reception
- Robust to vibration & temperature stress (-40 to 80°C)
- Full post delivery upgradability
  - Functional & Performance improvement
  - Compatibility enhance
- ADC 14 bits I/Q
- 100Mhz sampling rate (max)
- AGC 60db + 70db amplification (each channel)
- From L1 C/A only up to Multi-GNSS
- Single or Multi-frequency
- Single or Multi-antenna
- Autonomous module or RF + Software on processor board of customer

A Dedicated Pack is available for Laboratory configurations, where the PC is delivered (and configured), together with an "Off-The-Shelves" RF Stage for direct use of SoftSpot on the PC.

SoftSpot can also be used for Real Time deep signal analysis of the received signal, and display all issues like abnormal C/N0, unrealistic PVT solution, errors inside the navigation message, satellites out of order, etc.

Software Defined Radio makes the difference :

- Versatile, upgradeable, adaptable to customer's requirement
- Compatible with any future signal
- Allows improving functioning even after satellite launch
- Software can run on customer's board

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Specifications

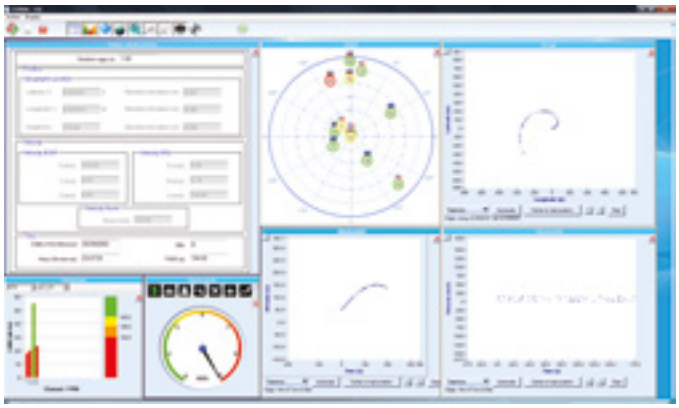
CONSTELLATIONS	
Signals	
GPS	L1 C/A; L1C; L2C; L5
GALILEO	E1-OS; E5a; E5b; E6-CS
GLONASS	G1 & G2
BEIDOU	B1 & B2
SBAS	WAAS; EGNOS; MSAS
Other signals or features	Military codes IRNSS Multi-antenna, GBAS, DGPS, etc.
Performance	
Channels	Depends on available proc. power
RF Channels	Up to 3 independent (PC version)
TTFF Cold Start	<40 sec
Restart Fix (warm)	Typ. <10 sec
Trajectories	Static (reference station), on Earth / in Space (subsonic or supersonic, LEO, GEO, launchers)
Antenna	Mono or multi-antenna (simultaneously)

RECEIVER	(embedded version)
Connectivity	
RF Input Connector(s)	SMA female
Data output	Serial (RS DB9 or equiv)

Hardware Specifications	
Size (W x H x D) in mm	131 x 106 x 25
Weight	500g
Input Voltage Range	12V
Power Consumption	10W
Operating Temp. Range	-40°C to +80°C

RECEIVER	(PC version)
RF Input	
Frequency Ranges	1164MHz to 1300MHz 1559MHz to 1610MHz
Antenna Power Supply	Filtered 5VDC, 100mA Max.
Connector	SMA Female
RF Quality	
Max. Gain (RF + Baseband)	52dB + 20dB
Baseband Bandwidth (I & Q)	80MHz
Max. Dynamic	60dB
AGC - Harmonic Spurious	< -60dB
AGC - RMS Jitter	< 150fs
AGC - Group Delay Variation	< 15ns
Group delay variation	< 15 ns
Synthesizer - Internal 10MHz Reference	
Stability	5x10-9 from +10°C to +40°C
Int. 10MHz Reference Output	BNC female
Aging	0.5ppb/day and 50ppb/year
Connector	SMA Female
Synthesizer - Internal 10MHz Reference Output	
Signal	Sinus
Impedance	50 Ohm
Level	6dBm
Connectivity	
RF Input Connector(s)	SMA female
Data output	Ethernet

SoftSpot's GUI provides real-time feedback at run-time, and gives access to all acquired information



SYNTONY GNSS

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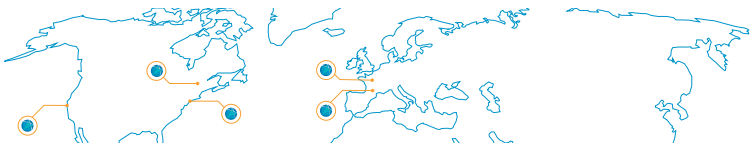

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More info on
syntony-gnss.com