

NAVX®-NSR – GPS/GALILEO NAVIGATION SOFTWARE RECEIVER

| EXCELLENCE IN SATELLITE NAVIGATION |

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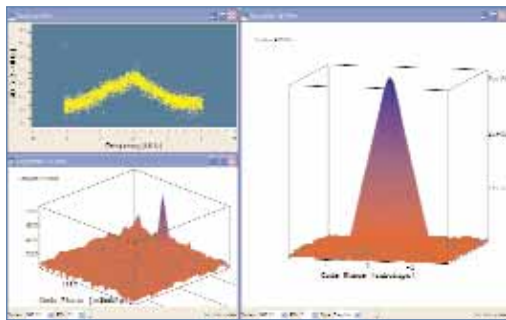


The NavX®-NSR is the first interactive GPS/Galileo software receiver, where IFEN is crossing the frontier of GNSS receiver technologies. The NSR is combining live software configurability, advanced signal processing and a high-bandwidth RF front-end to establish a new generation of software receiver utilities.

GPS/Galileo Receiver Software

All signal processing tasks are performed in software, e.g. acquisition and tracking, correlation and signal conditioning. Contrary to traditional hardware receivers even low-level parameters are adaptable like sensitivity, tracking loop bandwidth, spreading codes, multipath mitigation scheme or intermediate frequency.

Integration of user specific algorithms is much easier than with hardware receivers.



The NSR software offers both, a real-time mode as well as post-processing mode, which is able to work with stored IF sample files. It provides all standard outputs of a GPS receiver in geodetic quality, like pseudorange, carrier phase and instantaneous Doppler shift together with position and velocity. Output of all data is possible in standardized formats like RINEX 3.0 and proprietary output formats (tracking channel, multi-correlator).

In its current implementation, the NSR supports combined GPS/Galileo L1 signals together with state of the art signal/navigation processing.

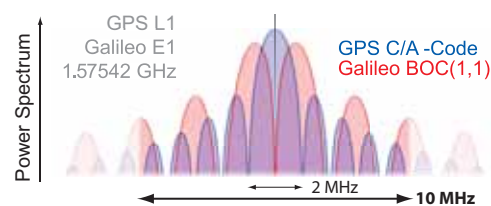
Today the NSR outperforms available high-sensitivity GNSS chips and additionally allows precise code and carrier-phase measurements. It will be extended also for upcoming GNSS signals.

System Requirements

Minimum requirement is a standard Personal Computer with Intel Pentium™ 4 (2.4GHz+) processor, 1024 MB RAM and Microsoft® Windows XP Professional, as well as an USB2.0 port for real-time processing.

RF Front-End

The RF front-end provides wide-band access to Galileo and GPS signals on L1. The sophisticated buffering inside the compact and rugged USB device allows to process the data in real-time or to log the data to a file for later post-processing. The data format used is open and described in the NSR user manual. High RF-bandwidth means a sharply edged autocorrelation function, a necessity for high-quality GNSS signal processing. The unprecedented 10 MHz RF-bandwidth opens the door to the advanced techniques of the NSR.



Application Programming Interfaces

The NavX®-NSR product series gives full expandability in real-time and post-processing mode with optional C-APIs:

- IF Sample API
- Baseband extension API (acquisition and tracking)
- Navigation extension API

Receiver Software

- + Real-time and post-processing mode
- + Fully configurable during run-time
- + FFT acquisition (equivalent to several 100 thousands of correlators)
- + 2-dimensional multi-correlator for correlation function and waveform analysis
- + GPS, Galileo and user defined signals
- + Aiding via SP3/SP3c data
- + Standard data output (RINEX 2.11/3.0, NMEA)
- + Application extensions via C-API or MATLAB®
- + High-precision GPS/Galileo configuration
- + GPS high-sensitivity configuration

System Requirements

- + Microsoft Windows XP Prof.
- + 1024 MB RAM
- + Intel Pentium 4, 2.4+ GHz
- + USB 2.0 Port

RF Front-End

- + RF-Bandwidth: 10 MHz
- + LNA noise figure: 1.5 dB
- + Frequency: L1
- + ADC: 1.5 bit @ 23.1 MHz
- + IF: 4.35 MHz
- + Antenna power selectable: 3.3 & 5 VDC
- + SMA antenna connector
- + USB bus-powered



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