



NVS TECHNOLOGIES AG

NV08C Series



- **Embedded Mini PCI Express GNSS Receiver**
- **Very quick and simple integration**
- **GPS, GLONASS, GALILEO, QZSS, COMPASS & SBAS L1**
- **Precise navigation, positioning and timing**
- **32 GNSS tracking channels**
- **200K correlators - Ensuring fast TTFF and high signal sensitivity**
- **Raw Data output - Pseudorange, Carrier phase and Doppler**
- **Individual GLONASS group delay calibration assuring very high accuracy**
- **Assisted GNSS (A-GNSS) support**
- **64 KB EEPROM for firmware upgrade and data storage**
- **NMEA 0183 / IEC 61162-1, binary (BINR) and RTCM SC-104 data protocols**
- **Receiver Autonomous Integrity Monitoring (RAIM)**
- **Industrial operating temperature range -40 to +85°C**

NV08C-MINI PCI-E

GPS/GLONASS/GALILEO/QZSS/COMPASS RECEIVER

The NV08C-Mini PCI-E is a fully integrated GNSS receiver module, optimised for Mini PCI Express (Mini-PCIe) based applications. Its key feature is its full compatibility with GPS, GLONASS, GALILEO, QZSS, COMPASS (GNSS), and EGNOS, WAAS, MSAS and GAGAN (SBAS).

It is specifically designed for use in a wide range of computer-based navigation, positioning and timing equipment enabled with a Mini-PCIe interface, demanding uncompromised GNSS performance.

Applications:

- **Mobile computing, in-vehicle and portable terminals**
- **Rugged notebooks, PCs, tablets and handheld computers**
- **Telematics, fleet management and marine navigation equipment**
- **Surveillance, security and public safety equipment**
- **Precise Positioning - GIS, survey, machine control and agriculture**

The NV08C-Mini PCI-E offers high sensitivity, high performance acquisition and tracking, NMEA and raw data outputs, plus Differential (D-GNSS) and Assisted GNSS (A-GNSS) functions.

Tracking satellites from multiple GNSS constellations ensures much higher availability of navigation signals, when compared to single constellation alternatives, and provides increased performance, accuracy and reliability.

It features 2 RF channels (GPS and GLONASS), 3-stage SAW filtration for high noise immunity, several interfaces, a supply voltage source for an active antenna, and an LNA for a passive antenna. This fully featured embedded Mini PCIe GNSS receiver is the quickest-to-market solution for mobile computing applications.



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Navigation Features

- Number of channels 32
- Satellite access mode All-in-view
- GPS/GALILEO/QZSS/COMPASS/SBAS
 - L1 1575.42 MHz
 - L1 1602.00 MHz
- GLONASS
- Accuracy (RMS)*
 - horizontal
 - autonomous mode <1.5 m
 - SBAS/differential mode <1 m
 - height <2 m
 - velocity 0.05 m/s
- Time to First Fix (TTFF)*
 - re-acquisition <1 s
 - hot start 3 s
 - cold & warm start 25 s
- Sensitivity
 - tracking and re-acquisition -160 dBm
 - acquisition -143 dBm
- Supported vehicle dynamics
 - velocity 500 m/s
 - acceleration 5 g
 - altitude 50,000 m
- Coordinate systems WGS-84, PZ-90
SK-42, SK-95

* Typical values

RF Functionalities

- RF structure 2x RF Front End chains:
GPS/GALILEO/QZSS/COMPASS/SBAS L1
GLONASS L1
- Antenna type Passive or Active¹
- RF Connectors 2x U.FL Male
- Internal clock 26 MHz TCXO

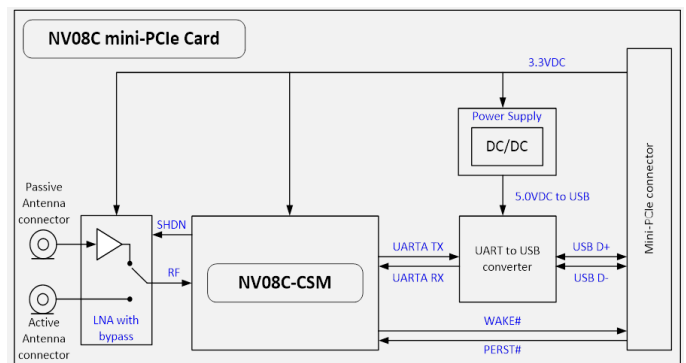
1 - Recommended active antenna: GPS/GLONASS L1, bandwidth: 35 MHz @ fc=1590 MHz, gain: including cable attenuation 20 to 30 dB, antenna noise figure: <2 dB, out-of-band signal attenuation: min. 35dB @ fc±70 MHz

Environmental Data

- Operating temperature -40 to +85°C
- Maximum operating humidity 98% @ 40°C
- RoHS compliant

Data Interfaces

- Data update/output rate 1, 2, 5, 10 Hz
- Data output rate in TTFF mode (1-60 s)⁻¹
- Supported protocols
 - NMEA 0183 / IEC 61162-1
 - BINR (proprietary binary)
 - RTCM SC 104 v2.3
- Data interface
 - USB Hardware / PCI-Express Standard Bus
 - Virtual COM-port device
- Data exchange rate
 - 4800 to 230 400 bits/s (default – 115 200 bits/s)
- Operating System Compatibility (with Virtual COM-port drivers):
 - Windows XP
 - Windows Vista
 - Windows 7
 - Windows CE
 - Linux



Electrical Specification

- Power supply voltage 3.0 to 3.6V
- Power consumption
 - Max current 120 mA
 - Continuous tracking mode:
 - GPS only 220 mW*
 - GNSS 270 mW*
 - Sleep mode 2 mA*

* Typical values