- 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.
### Navigation Features

- **Number of channels**: 32
- **Satellite access mode**: All-in-view
- **GPS/GALILEO/QZSS/COMPASS/ SBAS**
  - L1 1575.42 MHz
- **GLONASS**
  - L1 1602.00 MHz
- **Accuracy (RMS)**
  - Horizontal: <1.5 m
  - Autonomous mode: <1 m
  - SBAS/differential mode: <2 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
- **Antenna type**: Passive or Active
- **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)
- **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)

### 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