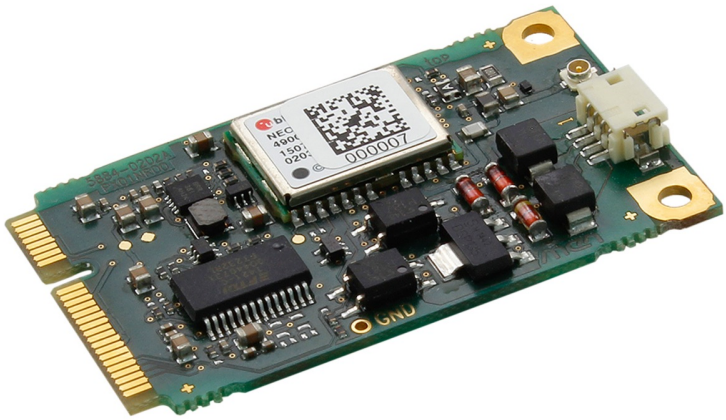
PX1N – GLONASS & GPS PCI Express Mini Card

- **Multi GNSS support**
- **Active Dead Reckoning (DR)**
- **Satellite Based Augmentation System (SBAS)**
- **-160 dBm tracking sensitivity**
- **Active/passive antenna connection via U.FL**
- **Compatible with NMEA 0183**
- **-40 to +85°C with qualified components**



Provides GLONASS and GPS functionality

The PX1N is a PCI Express Mini Card providing a GNSS receiver with GLONASS and GPS functionality and can be used in 19" systems, box PCs and display computers. It supports active or passive antennas, which can be connected to an U.FL connector. The received antenna signals are sent to the host via USB.

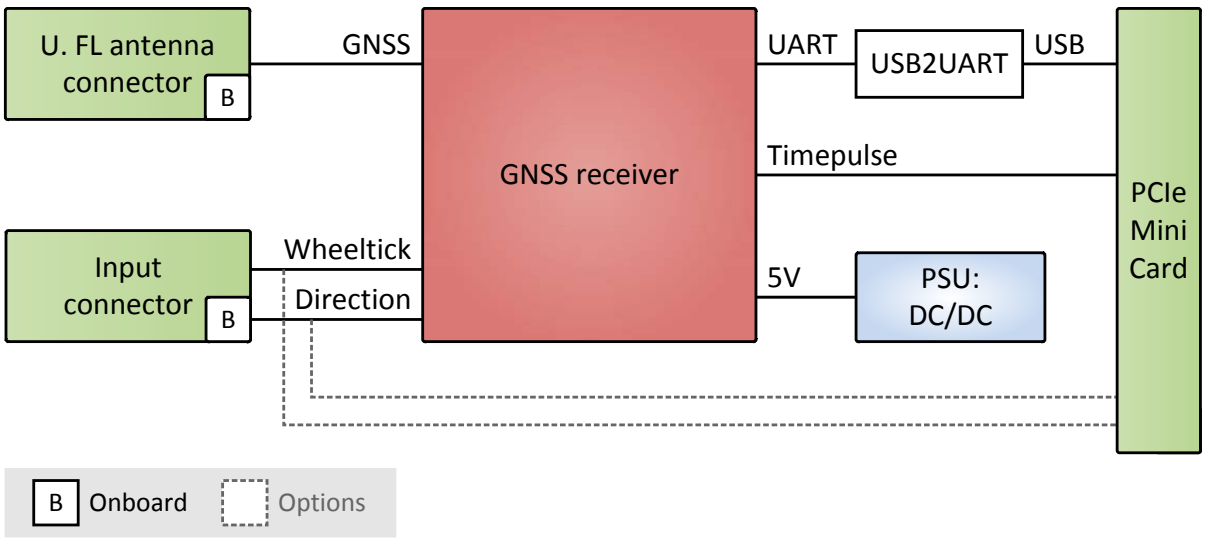
Supports global satellite navigation systems

The PX1N supports concurrent reception of GPS/QZSS, GLONASS, BeiDou and is Galileo-ready.

Uses dead reckoning functions for high accuracy positioning

The GNSS module provides a 3-axis accelerometer and gyroscope sensors for dead reckoning functions, which enable accurate positioning. Various Satellite-Based Augmentation Systems (SBAS) are also supported. The PX1N provides communication information compliant to the NMEA 0183 protocol.

Diagram



Technical Data

Connectivity	■ 72-channel GNSS (Global Navigation Satellite System) receiver ■ GPS signals/frequency: L1C/A, 1575.42 MHz ■ GLONASS signals/frequency: L1OF, 1602 MHz ■ BeiDou signals/frequency: B1, 1561.098 MHz ■ QZSS signals: L1C/A (Pacific region) ■ Galileo ready for signals E1B/C ■ Assisted GNSS support (A-GNSS) □ AssistNowTM Online □ AssistNowTM Offline □ AssistNowTM Autonomous ■ Automotive Dead Reckoning support (gyroscope) ■ Augmentation Systems □ Satellite Based Augmentation System (SBAS) □ Differential GPS support (D-GPS) □ RTCM 10402.3 ■ Integrated Real-Time Clock (RTC) ■ Accuracy: □ Horizontal: 2.5 m Autonomous, 2.0 m SBAS □ Velocity: 0.05 m/s □ Heading: 0.3 degrees ■ Time To First Fix (TTFF): □ Cold start: 27 s (GPS/GLONASS), 28 s (GPS/BeiDou), 30 s (GPS) □ Hot start: 1.5 s (GPS/GLONASS), 1.5 s (GPS/BeiDou), 1.5 s (GPS) □ Aided start: 4 s (GPS/GLONASS), 6 s (GPS/BeiDou), 3 s (GPS) ■ Sensitivity: □ Tracking and navigation: -160 dBm □ Re-acquisition: -159 dBm □ Cold start: -147 dBm □ Hot start: -156 dBm ■ Protocol: NMEA 0183 rev. 4.0
Onboard Interfaces	■ One U.FL antenna connector □ For the use of an external active or passive antenna □ Phantom power supply: 3.3V ■ PCI Express Mini Card connector □ USB 2.0 ■ Input connector □ Wheel tick and direction inputs for dead reckoning support □ Voltage input range of 24 VDC nominal □ Galvanically isolated
Electrical Specifications	■ Supply voltage/power consumption: □ +3.3 V, max. 191 mA □ Impedance: 50 Ohm
Mechanical Specifications	■ Dimensions: 30 mm x 58 mm x 5 mm (PCI Express Full-Mini Card) ■ Weight: 4 g
Environmental Specifications	■ Temperature range (operation): □ -40 to +85°C (qualified) □ Airflow: min. 1 m/s ■ Temperature range (storage): -40 to +85°C ■ Relative humidity (operation): max. 95% non-condensing (EN 50155 / EN 60068-2-30) ■ Relative humidity (storage): max. 95% non-condensing (EN 50155 / EN 60068-2-30) ■ Altitude: -300 m to +3000 m ■ Shock: 15 g, 11 ms ■ Bump: 10 g, 16 ms ■ Vibration (sinusoidal): 1 g, 10..150 Hz

Technical Data

MTBF	■ 1.800.000 h @ 40°C according to IEC/TR 62380 (RDF 2000)
Safety	■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
EMC Conformity	■ EN 50121-3-2 (immunity) ■ EN 55011 (radio disturbance) ■ EN 61000-4-2/EN 50121-3-2 (ESD) ■ EN 61000-4-3/EN 50121-3-2 (electromagnetic field immunity) ■ EN 61000-4-4/EN 50121-3-2 (burst) ■ EN 61000-4-6/EN 50121-3-2 (conducted disturbances)
Software Support	■ Windows 7 or later ■ Linux

Up-to-date information, documentation and ordering information: www.men.de/products/px1n/

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