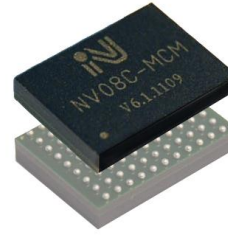




NVS TECHNOLOGIES AG

NV08C SERIES

- GPS, GLONASS, GALILEO, QZSS, COMPASS & SBAS L1
- Compact 9x12x2 mm BGA SMT package
- Precise navigation, positioning and time synchronization
- 32 GNSS tracking channels
- 200K correlators ensures fast TTFF and high signal sensitivity
- Raw Data output - Pseudorange, Carrier phase & Doppler (option)
- GLONASS group delay calibration (option)
- Assisted GNSS (A-GNSS) interface and Dead Reckoning (option)
- NMEA 0183 / IEC 61162-1, binary (BINR), RTCM SC-104 data protocols
- Receiver Autonomous Integrity Monitoring (RAIM)
- Low Power - 20 mW @ Time-to-Time Fix (TTTF) Mode
- Extended operating temperature range -30 (-40) to +85°C



NV08C-MCM

GPS/GLONASS/GALILEO/QZSS/COMPASS RECEIVER

The NV08C-MCM is a fully integrated multi-constellation satellite navigation receiver. Its key feature is its full compatibility with GPS, GLONASS, GALILEO, QZSS, COMPASS (GNSS), and EGNOS, WAAS and MSAS (SBAS).

The NV08C-MCM specifically designed for use in a wide range of high volume navigation and time synchronisation applications, demanding low cost, low power consumption, small form factor and uncompromised performance.

Applications:

- **In-car, personal navigation and hand portable devices**
- **Telematics, fleet management and marine navigation**
- **Surveillance, security and antitheft systems**
- **Mobile Satcom, remote monitoring and asset tracking**

The NV08C-MCM offers high sensitivity and high performance acquisition and tracking, combined with raw data output (option), Assisted GNSS (A-GNSS) and Differential GNSS (DGNSS) functions, Dead Reckoning option, low power consumption, and advanced power saving functionalities.

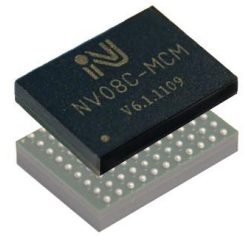
Tracking satellites from multiple GNSS constellations ensures much higher availability of navigation signals, when compared to single constellation alternatives, and provides increased performance, accuracy and reliability.

The NV08C-MCM features a variety of interfaces, flexible power supply options, and supports both active and passive antennas. This very compact and fully featured GNSS receiver can be integrated on a low cost 2 or 4 layer PCB with minimum additional passive components.

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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
 - L1 1602.00 MHz
- Accuracy (RMS)*
 - horizontal
 - autonomous mode **2.5 m**
 - SBAS mode **2 m**
 - differential mode **1 m**
 - height **3 m**
 - velocity **0.05 m/s**
 - time (1PPS) **±25 ns**
- Time to First Fix (TTFF)*
 - re-acquisition **<1 s**
 - hot start **<3 s**
 - cold & warm start **30 s**
- Sensitivity
 - tracking and re-acquisition **-160 dBm**
 - acquisition **-143 dBm**
- Supported vehicle dynamics
 - velocity **500 m/s**
 - acceleration **5g**
 - altitude **50,000 m**
- Coordinate systems **WGS-84, PZ-90, SK-42, SK-95**

* Typical values

RF Functionalities

- LNA **Built-In (SW controlled for power saving)**
- RF structure **2x RF Front End chains:**
 - GPS/GALILEO/QZSS/COMPASS/SBAS **L1**
 - GLONASS **L1**
- Antenna type **Active¹ or Passive**
- Internal clock **26 MHz TCXO**

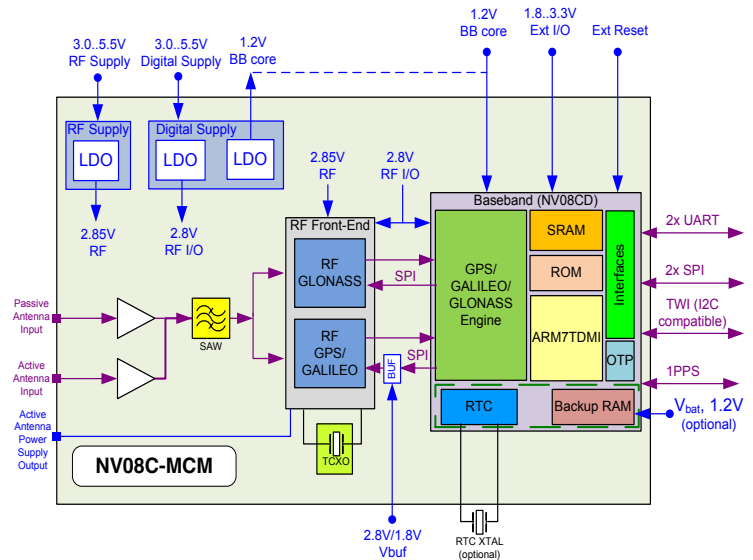
1 - Recommended active antenna: GPS/GLONASS L1, bandwidth: 35 MHz @ fc=1590 MHz, gain: including cable attenuation 20-30 dB, antenna noise figure: <2 dB, out-of-band signal attenuation: min. 35dB @ fc±70 MHz

Environmental Data

- Operating temperature **-30 (-40²) to +85°C**
 - Maximum operating humidity **98% @ 40°C**
 - RoHS compliant
- 2 - Performance can be degraded when operated below -30°C

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 v2.2
- Host data interfaces
 - 2x UART (1.8 to 3.3V CMOS-level)
 - 2x SPI
 - TWI (I²C compatible)
 - 1PPS output (CMOS levels)
- Data exchange rate **up to 230,400 bit/s**



Electrical Specifications

- Supply voltage configuration
 - Single supply voltage **3.0 to 5.5V**
 - Two supply voltages **1.2V/3.0 to 5.5V**
- Digital I/O voltage level **1.8 to 3.3 V (nominal)**
- Backup supply **1.2V, 4 μA**
- Power consumption (two supply voltages)
 - GPS only time-to-time fix mode @ 1s* **16 mW**
 - GNSS time-to-time fix mode @ 1s* **20 mW**
 - GPS only tracking & navigation mode* **<100 mW**
 - GNSS tracking & navigation mode* **<150 mW**

* - Average values