



NVS Technologies AG

NV216C series

- Multi-frequency GPS, GLONASS, GALILEO, BeiDou, SBAS
- Up to 30 km Base line support
- RTK Positioning, Heading + Pitch/Roll
- Improved Multi-frequency RTK Engine
- Improved GNSS+INS Engine
- Base and Rover mode
- Data rate up to 500 Hz (INS mode)
- Centimeter-level positioning in RTK mode
- Individual GLONASS group delay calibration
- Automatic GLONASS inter-frequency calibration
- Enhanced RAIM for 3D and RTK modes
- Low power consumption
- Simple quick integration
- NMEA 0183, RTCM 3.1 communication protocols
- Industrial operating temperature range -40 to +85°C



NV216C-RTK-A

GNSS Receiver for RTK & Heading applications

The **NV216C-RTK-A** is fully integrated multi-frequency multi-constellation satellite navigation receiver with embedded RTK & Heading functionality.

The **NV216C-RTK-A**'s key feature is its full compatibility with GPS, GLONASS, GALILEO and BeiDou global navigation satellite systems (GNSS). **NV216C-RTK-A** device is specifically designed for use in high accuracy applications, demanding low cost, low power consumption, small form factor and uncompromised performance.

Applications:

- **Construction, Mining and Industrial**
- **Environmental & Structural Monitoring**
- **Machine control & automation**
- **Parallel driving systems**
- **Precision agriculture**
- **Unmanned aerial vehicle (UAV)**
- **Robotics and intelligent machines**
- **Land Surveying, 3D cartography, air photography**



Navigation Features

| | |
|--|--------------|
| • Number of channels | 216 |
| • Satellite access mode | All-in-view |
| • GPS | L1 & L2 |
| • GLONASS | L1 & L2 & L3 |
| • GALILEO | E1 & E5b |
| • BeiDou | B1 & B2 |
| • SBAS | L1 |
| • Accuracy (2D rms)* | |
| autonomous mode | 2.5 m |
| SBAS | <1 m |
| RTK mode | 1 cm + 1ppm |
| • Heading (rms)* | 0.1 deg @ 2m |
| • Velocity (rms)* | 0.05 m/s |
| • Sensitivity | |
| tracking and re-acquisition | -160 dBm |
| acquisition | -143 dBm |
| RTK mode | -137 dBm |
| • Coordinate systems | WGS-84 |
| • Time to First Fix | |
| Cold start | < 40 s |
| Warm start | < 35 s |
| RTK initialization time (after first 3D fix) | < 10 s |
| Initialization reliability | 99.9% |

Environmental data

| | |
|------------------------------|--------------|
| • Operating temperature | -40 to +85°C |
| • Maximum operating humidity | 98% @ 40°C |

Mechanical Features

| | |
|----------------------------|----------------|
| • Size (LxWxH) | 46 x 35 x 9 mm |
| • Weight (without package) | 14.2 g |

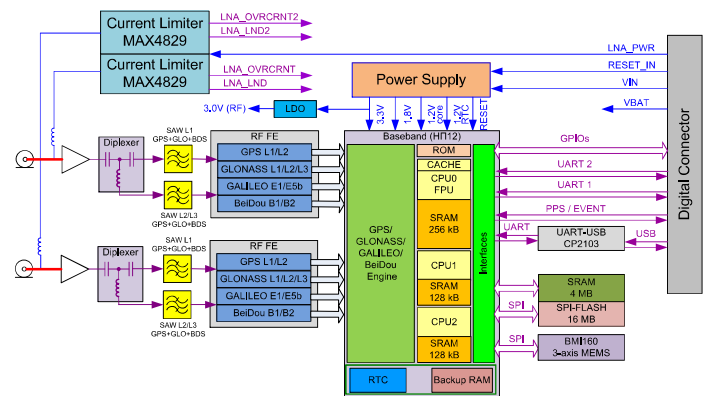
Main Features

- Rover & Heading and Reference Base Station modes
- Easy to integrate
- Small size
- Low power consumption

* Typical values

Data Interfaces

| | |
|---------------------------------|---|
| • PVT & Heading output rate | 1, 2, 5, 10, 20 Hz |
| • Max Data output rate with INS | 500 Hz |
| • Supported protocols | NMEA 0183 RTCM 3.x |
| • Host data interfaces | 2x UART (3.3V CMOS-level) 1x USB 3.3V (D+, D-) |
| • Connectors | |
| Data: | PLD-20 male |
| Antenna: | 2 x MCX female |
| • Data exchange rate | Up to 921'600 bits/s |



NV216C-RTK-A Receiver Block Diagram

Electrical specification

| | |
|-------------------------------|-------------|
| • Power supply voltage | 3.3V - 5.0V |
| • Power consumption | |
| GNSS RTK-navigation | 600 mW* |
| GNSS RTK-navigation & Heading | 1000 mW* |

Accessories

- TW7872 high grade antenna
- NV216C-EVK-RTK-A evaluation kit