K803 GNSS Module

Features

- GPS L1/L2/L5, BeiDou B1/B2/B3, GLONASS L1/L2, Galileo E1/E5a/E5b, QZSS, IRNSS, SBAS
- BeiDou Global Signal B1C, B2a, B2b¹
- Support L-Band and PPP⁴
- Support INS+GNSS navigation
- Surface-mounted design and small size to integrate
- High-performance floating-point arithmetic
- Industry-leading low power consumption
- Internal adaptive anti-interference algorithm

In built newly Quantum III SoC chip

The K803 incorporates ComNav’s new generation high-accuracy Quantum III SoC chip with the capability of tracking all the GNSS constellations and signals. It can provide users with highly reliable positioning information with support of high-performance floating point arithmetic.

Onboard IMU for reliable navigation

With up to 20Hz IMU data update rate and inertial navigation fusion algorithm, K803 can provide continuous and high-quality positioning data in the harsh environments such as tunnels, buildings and forests.

Adaptive Anti-interference Technology

The K803 has internal adaptive anti-interference algorithm which enables the module effectively suppress wideband, narrowband and continuous-wave interference. It can provide users with high-quality observing data even in the complex electromagnetic environment.

Easy Integration

30mm×30mm×3.2mm size module with surface-mounted design makes K803 modules ideal for users to integrate. The power consumption is lower to 1.0W.
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Signal Tracking

<table>
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<th>Channels</th>
<th>GPS</th>
<th>BeiDou</th>
<th>BeiDou Global Signal</th>
<th>GLONASS</th>
<th>GALILEO</th>
<th>QZSS</th>
<th>IRNSS</th>
<th>SBAS</th>
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Data Format

- Correction data I/O: RTCM2X,3X, CMR(GPS only), CMR+(GPS only)
- Position data output: ASCII: NMEA-0183 GGA, GSA, GSV, RMC, HDT, VHD, ZDA, VTG, GST, GLL, PTLN, PKJ, PTLN, AVR, PTLN, GKG
  - ComNav Binary
  - BINEX Data: 0x00, 0x01-01, 0x01-02, 0x01-05, 0x7d-00, 0x7e-00, 0x7f-05

Antenna Interface

- Impedance Match: Wiring 50Ω impedance matching
- LNA Power: External +3.3V ~ +5V ± 5%VDC @ 0-100mA
- LNA Gain: 20 ~ 40dB (suggested)

Performance Specifications

- Cold start <60 s³
- Hot start <15 s
- RTK Initialization time <10 s
- Signal reacquisition <1 s
- Initialization reliability >99.9%
- Velocity accuracy 4 g
- Overload 15 g
- Time accuracy 20 ns

Positioning Specifications

- Post Processing 2.5 mm + 1 ppm Horizontal
  5 mm + 1 ppm Vertical
- Single Baseline RTK 8 mm + 1 ppm Horizontal
  15 mm + 1 ppm Vertical
- DGPS <0.4 m RMS
- SBAS 1 m 3D RMS
- standalone 1.5m 3D RMS

Communications

- 4 LVTTL ports
- 1 SPI
- 2 Event Marker input
- 1 Pulse Per Second (PPS) output
- 3 indicator pins show the working status

- 1. B2b is reserved for future upgrade.
- 2. E6 and E5 AltBOC are reserved for future upgrade.
- 3. IRNSS is reserved for future upgrade.
- 4. L-Band is optional.
- 5. Cold start <40s with the signal acquisition acceleration module.
- 6. SPI is reserved, support customization.

Environmental

- Working temperature -40 °C to + 85 °C
- Storage temperature -55 °C to + 95 °C

Electrical

- Input voltage +3.3 V ± 5% DC
- Power consumption 1.0 W (Anti-interference off)

Software

- ComNav Compass Receiver Utility software
- Compass Solution software

Optional Accessories

- AT-series GNSS antenna
- 5m/10m RF Cables
- Evaluation Kit
- Card version

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