K823 GNSS Module

K Series GNSS Module | Ver.2023.10.26

Size(L × W × H): 30 mm × 40 mm × 3.2 mm
Weight: 10g

K823
GNSS Module

Easy Integration

The K823 module is a 30mm×40mm×3.2mm module with surface-mounted design. It and is ideal for users to integrate. The power consumption is lower to 1.6W .

Features

- Dual-antenna Design for Robust Heading and Positioning
- GPS L1/L2, BeiDou B1/B2, GLONASS L1/L2, Galileo E1/E5b, QZSS, SBAS
- BeiDou Global Signal B1C, B2b
- Support L-Band and PPP
- 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 K823 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, K823 can provide continuous and high-quality positioning data in the harsh environments such as tunnels, buildings and forests.

Adaptive Anti-interference Technology

The K823 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.

SinoGNSS®
By ComNav Technology Ltd.

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Signal Tracking

Channels	1226
GPS	L1 C/A, L2C, L2P
BeiDou	B1, B2
BeiDou Global Signal	B1C, B2b[1]
GLONASS	L1 C/A, L1P, L2C/A, L2P
GALILEO	E1, E5b
QZSS	L1, L2[2]
SBAS	WAAS, EGNOS, MSAS, GAGAN,SDCM
L-Band[3]	

Performance Specifications

Cold start	<60 s[4]
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

Heading Specifications

Azimuth: (0.2/R)°[5]	
Roll or Pitch: (0.4/R)°	

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

3 LVTTL ports
1 SPI[6]
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. QZSS is reserved for future upgrade.
3. L-Band is optional.
4. Cold start < 40s with the signal acquisition acceleration module.
5. R(meter) is the length of two GNSS antennas.
6. SPI is reserved, support customization.
7. One size option for card version: 46*71 mm (pin to pin with K726).

Data Format

Correction data I/O	RTCM2.X, 3.X, CMR (GPS only), CMR+(GPS only)
Position data output	-ASCII: NMEA-0183 GGA, GSA, GSV, RMC, HDT, VHD, ZDA, VTG, GST, GLL; PTNL, PJK; PTNL, AVR; PTNL, GGK -ComNav Binary -BINEX Data: 0x00, 0x01-01, 0x01-02, 0x01-05, 0x7d-00, 0x7e-00, 0x7f-05 -Position data output rate: 1 Hz, 2 Hz, 5 Hz, 10 Hz,20Hz

Antenna Interface

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

Physical

Size (L × W × H)	30 mm × 40 mm × 3.2 mm
Hardware interface	LGA 60 pin
Weight	10 g

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	1.6 W (Anti-interference off)

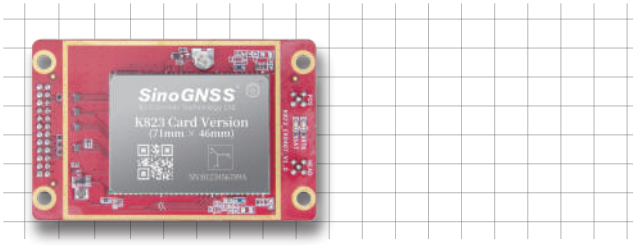
Software

ComNav Compass Receiver Utility software
Compass Solution software

Optional Accessories

AT-series GNSS antenna
5m/10m RF Cables
Evaluation Kit
Card version[7]

Option for card version



71*46mm (pin to pin with K726)

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