



Features

- **GPS L1/L2/L5, BeiDou B1/B2/B3, GLONASS L1/L2, Galileo E1/E5a/E5b, SBAS, QZSS, IRNSS¹**
- **BeiDou Global Signal B1C, B2a²**
- **Fully EMI Shielded Module**
- **Signal Acquisition Acceleration Module³**
- **Compact Design for Mobile Applications**
- **Support PPP and L-Band⁴**
- **DP-Filter Smooth Function⁵**
- **Serial, USB, CAN and Ethernet Interfacing**

FULL-CONSTELLATION GNSS AND SUPERIOR PERFORMANCE

The K705 is a full-constellation triple-frequency GNSS OEM board featuring superior performance and compact design. With the QUANTUM™ technology and second generation SinoGNSS ASIC chip inside, the K705 is optional to track signals from BeiDou Global satellite system and Galileo satellite system, which improves the reliability of positioning worldwide. It will be never outdated for any high-precision positioning demanding.

EASY OF INTEGRATION

Ensuring the K705 is easy to integrate for diverse applications, the K705 GNSS OEM board provides an excellent level of accuracy, strong compatibility and compact design. The K705 has been designed to use a shielded module with 50mm×40mm×9mm form factor, this design guarantees the high quality GNSS signals are protected from the source of EMI on the host platform. It only features 1.3 W power consumption that ensures longer operation time and less heat. The K705 is an ideal choice for integrating portable GNSS sensors.

DESIGNED FOR FLEXIBILITIES

Designed with multiple interfacing for flexible Serial Ports, USB Port, CAN Port, PPS and Event Markers, the K705 is a multi-purpose GNSS product used for high-precision GNSS applications, especially in mobile applications including UAV, robotic system and more.

Signal Tracking

- 574 Channels
 - GPS: L1 C/A, L2C, L2P, L5
 - BeiDou: B1, B2, B3
 - BeiDou Global Signal: B1C, B2a²
 - GLONASS: L1 C/A, L1P, L2 C/A, L2P
 - Galileo: E1, E5a, E5b
 - QZSS, IRNSS¹
 - SBAS: WAAS, EGNOS, MSAS, GAGAN
 - L-Band⁴

Performance Specifications

- Cold start: <60 s⁶
- Hot start: <15 s
- RTK Initialization time: <10 s
- Signal reacquisition: <1.5 s
- Initialization reliability: >99.9%
- Velocity accuracy: 0.03 m/s
- Acceleration: 4 g
- Overload: 15 g
- Time accuracy: 20 ns

Positioning Specifications

Mode	Accuracy
Post Processing	2.5 mm + 1 ppm Horizontal 5.0 mm + 1 ppm Vertical
Single Baseline RTK	8 mm + 1 ppm Horizontal 15 mm + 1 ppm Vertical
E-RTK (<100 km)	0.2m + 1 ppm Horizontal 0.4m + 1 ppm Vertical
DGPS	<0.4 m RMS
SBAS	1 m 3D RMS
Standalone	1.5 m 3D RMS
PPP	10cm Horizontal and 20cm Vertical

Communications

- 6 LVCMOS ports baud rates up to 921,600 bps
- 1 USB port
- 1 LAN Ethernet port, HTTP, TCP and Ntrip protocol
- 1 CAN Bus (Reserved)
- 1 Pulse Per Second (PPS) output
- 2 Event Markers input
- 3 LED indicators show the working status
- External Oscillator input

Data Format

- Correction data I/O: RTCM 2.X, 3.X, CMR (GPS only), CMR + (GPS only)
- Position data output:
 - ASCII: NMEA-0183 GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST; PTNL, PJK; PTNL, AVR; PTNL, GKG
 - 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, 20 Hz, 50Hz

Physical

- Size (L × W × H): 50 mm × 40 mm × 9 mm
- I/O interface: 2 × 22 pin male connector, pin pitch 1.27mm
- Weight: 22 g
- Antenna connector: 1 × MMCX female, 50 Ω

Environmental

- Working temperature: -40 °C to + 85 °C
- Storage temperature: -55 °C to + 95 °C
- Humidity: 95% no condensation

Electrical

- Input voltage: +3.3 V ~ +5.5 VDC
- Power consumption: 1.3 W (typical)

Software

- ComNav Compass Receiver Utility software
- Compass Solution software

Optional accessories

- AT-series GNSS antenna
- 5 m/10 m RF Cables
- OEM Board Evaluation Kit

1. QZSS and IRNSS are reserved for future upgrade.
2. BeiDou Global Signal is reserved for future upgrade.
3. Signal acquisition acceleration module optimizes TTFF, but increases power consumption meanwhile, this function is optional.
4. L-Band is optional.
5. DP-Filter smooth function largely improves the pass to pass accuracy. Please refer to white paper for more information.
6. Cold start < 40s with the signal acquisition acceleration module.

Specifications subject to change without notice.

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