## Full - system Multi-function

The K803D has 965 channels and supports full–system, full–frequency signal tracking, includes high-precision GNSS measurement engine, navigation engine, high-precision inertial navigation and integrated navigation algorithms, supports high–performance RTK/PPP positioning.

## High performance IMU

K803D uses a large range, high stability inertial navigation device, through high-data updating rates and inertial navigation fusion algorithms, it can provide continuous, high-quality positioning data, even in tunnels, buildings, forests and other satellite signal limited environments, it supports Inclination measurement and some other using scenarios.

## Low latency

Module surface mount design, size: 30mm×30mm×3.2mm. It has a low latency, position information updating rate is up to 50Hz.

## Anti-interference

It is built-in narrowband and continuous wave suppression algorithm engine. It can effectively deal with satellite signal interference environments, providing stable continuous and reliable high–precision position information.

# K803D
## high precision positioning module

30mm×30mm×3.2mm

**Inclination measurement**

**Intelligent robot**

**Surveying and mapping**

**Foundation enhancement**

K803D GNSS is a full–system, full–frequency RTK positioning module , supports BDS–2, BDS–3, GPS, GLONASS, Galileo, QZSS, IRNSS and other satellite signal tracking systems, it has onboard IMU, supports integrated navigation, and is suitable for some fields, such as Inclination measurement, Intelligent robot, Surveying and mapping, Foundation enhancementand.

- **30mm×30mm size, Full-system Full-frequency high precision positioning**
- **Surface mount design**
- **BDS-3, BDS-2, GPS, GLONASS, Galileo, IRNSS*, QZSS*, SBAS* and some other full-signal tracking systems**
- **Low latency, position information updating rate: 50Hz**
- **Onboard inertial navigation, integrated navigation**
- **Power: 0.95W, extremely easy to integrate**
- **Narrow-band  Anti-interference**

**SinoGNSS** By ComNav Technology Ltd. / **QinNav**

QinNav Technology, LTD.
Service Hotline: 400-060-8030
Websites: www.qinnav.com
Location: Building 1, 618 Chengliu Middle Road, Jiading District, Shanghai

v1.0

# K803D
# high precision positioning module

## Signal Tracking

| BDS | BDS-2: B1I, B2I, B3I |
| | BDS-3: B1I, B3I, B1C, B2a, B2b* |
| GPS | L1C/A, L2P, L2C, L5, L1C |
| GLO | G1, G2, G3* |
| GAL | E1, E5b, E5a, E5 AltBoC*, E6c* |
| QZSS* | L1C/A, L2C, L5, L1C |
| SBAS* | L1C/A, L5 |
| IRNSS* | L5 |

## Time to First Fix

| Cold Start | < 20s(Adding Acceleration Capture Module) |
| Hot Start (with RTC) | < 10s(Typical) |

## Acquisition

| Reacquisition | < 1s |

## Accuracy of Observation

| Pseudorange Precision | ≤ 10cm |
| Carrier Phase Precision | ≤ 1mm |

## Accuracy

| Timing Accuracy | 20ns |
| SPP Accuracy | H ≤ 1.5m, V ≤ 3m (1σ, PDOP≤4) |
| Speed Accuracy | ≤0.02m/s (1σ, PDOP≤4) |
| RTK Initialization Time | < 5s (D<10km) |
| RTK Initialization Reliability | > 99.9 % |
| RTK Accuracy | H:±(8+10-6 ×D)mm |
| | V:±(15+10-6 ×D)mm D-Baseline length (Unit: mm) |
| PPP Convergence Time | <15min |
| PPP Accuracy | H ≤ 10cm, V ≤ 20cm |

## Inertial Measurement Unit*

Optional

### Gyroscope*

| Measurement Ranges | ±1000°/s |
| Zero-biased Repeat | – |
| Zero-biased Stability | 5°/h |
| Angular Random Walk | 0.12°/sqrt(h) |

### Accelerometer*

| Measurement Ranges | ±8g |
| Zero-biased Repeat | – |
| Zero-biased Stability | 50ug |
| Velocity Random Walk | 0.07m/s/sqrt(h) |

## Data Rates

| Measurement & Position | Max 20Hz (Optional) |
| RTK | Max 20Hz (Optional) |
| IMU* | Max 50Hz (Optional) |

## Electrical

| Voltage | + 3.3V~+3.45V DC |
| Power Consumption | 0.95W |

## Environmental

| Operating Temperature | –40℃~+85℃ |
| Storage Temperature | –55℃~+95℃ |

## Data Formats

| NMEA-0183 | GPGGA, GPGSV, GPGLL, GPGSA, GPGST, GPHDT, GPRMC, GPVTG, GPZDA etc. |
| ComNav Binary (CNB) | ComNav Self-Defined Binary |
| CMR(GPS) | CMROBS, CMRREF |
| RTCM2.X | RTCM1, RTCM3, RTCM31 |
| RTCM3.X | 1004~1008,1012,1019,1020, 1033,1042,1045/1046, 1230 |
| MSM3~MSM7 | 1073~1077,1083~1087,1123~1127,1093~1097 |

## Antenna Interface

| Impedance Matching | 50Ω |
| Antenna Supply Voltage | External: +3.3V~+5V @ (0-100) mA |
| Antenna Gain | 20~35dB |

## Hardware Interface

UARTx4, PPSx1, EVENTx2, SPIx1

## Physical

| Size | 30mm×30mm×3.2mm |
| Weight | 6.6g |
| Package | LGA 82Pin |

*Due to factors such as product iteration or technical updates, the product information provided in this document includes but is not limited to product names, parameters, and specifications that may change from time to time without prior notice. Please refer to the latest version of the specification file or consult with the staf