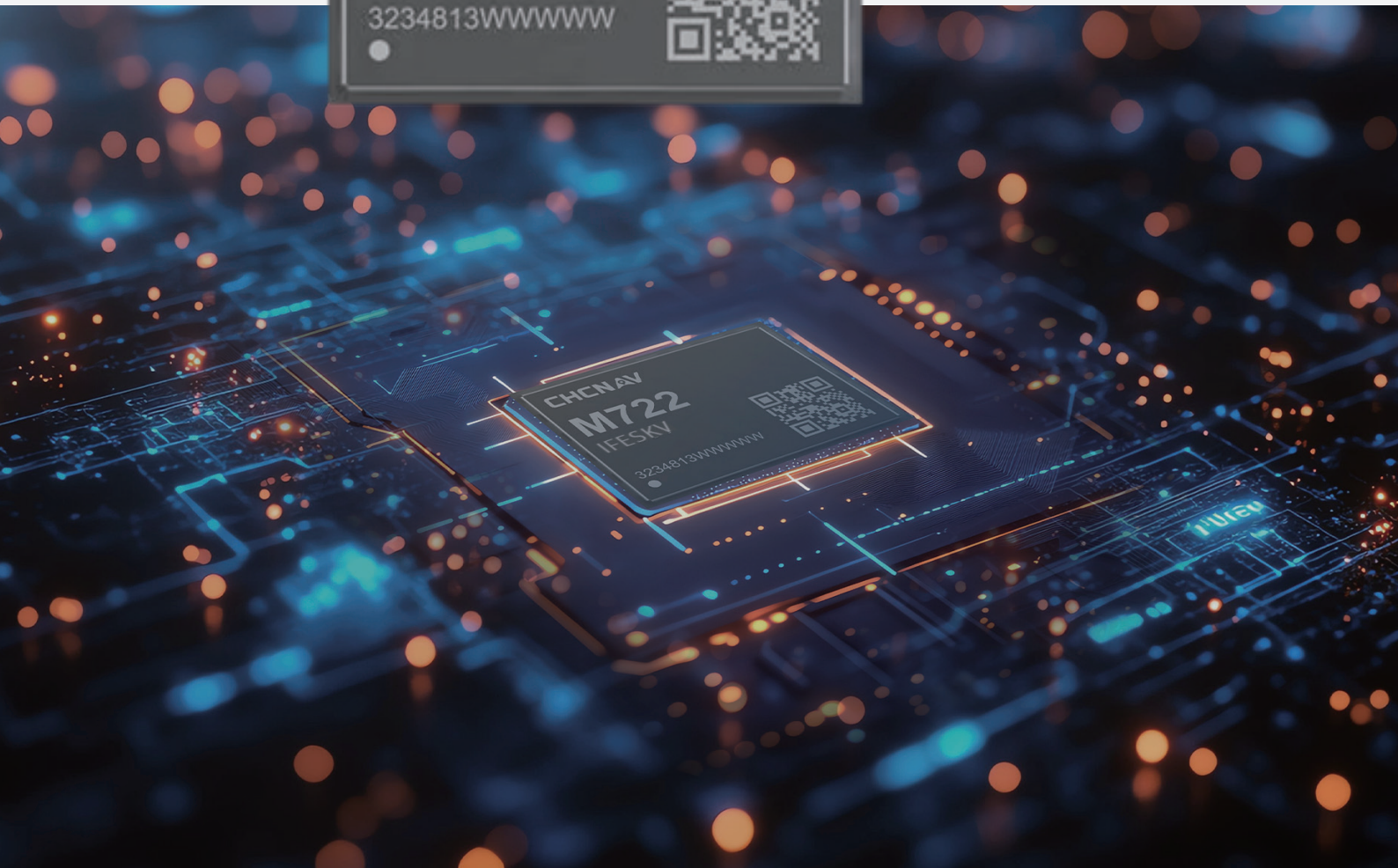


M722

High-Precision GNSS Positioning and Heading Module



► Highlights

The M722 is a high-performance dual-antenna GNSS positioning and heading module designed for robotics, precision agriculture, UAVs, and other autonomous applications. It supports multi-frequency signals from BDS, GPS, GLONASS, Galileo, QZSS, NavIC, and SBAS, together with L-Band reception for satellite-based correction services. Supporting both network RTK and satellite-based high-accuracy correction services, the M722 delivers fast centimeter-level positioning across connected and remote operating environments. Adaptive positioning algorithms automatically optimize signal and correction processing as conditions change, while multipath mitigation, real-time spectrum monitoring, and JamAegis interference suppression help maintain reliable positioning in challenging GNSS and RF environments.

Dual-antenna GNSS provides precise heading with accuracy of 0.1° at a 1 m antenna baseline, supporting accurate orientation for automated and autonomous systems.



► Key feature



Multi-Frequency,
Multi-Constellation GNSS



C² Fusion and
Precise Heading



JamAegis Interference
Monitoring and Mitigation



PointFusion
Multi-Source Corrections

► Multi-Frequency, Multi-Constellation GNSS

Tracks signals from BDS, GPS, GLONASS, Galileo, QZSS, NavIC, and SBAS across multiple frequency bands.

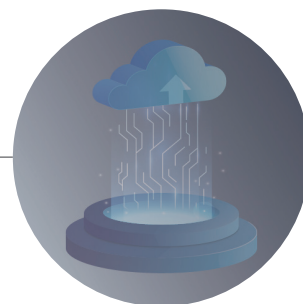
Broad signal availability improves positioning robustness and enables the module to adapt to diverse operating environments and application requirements.



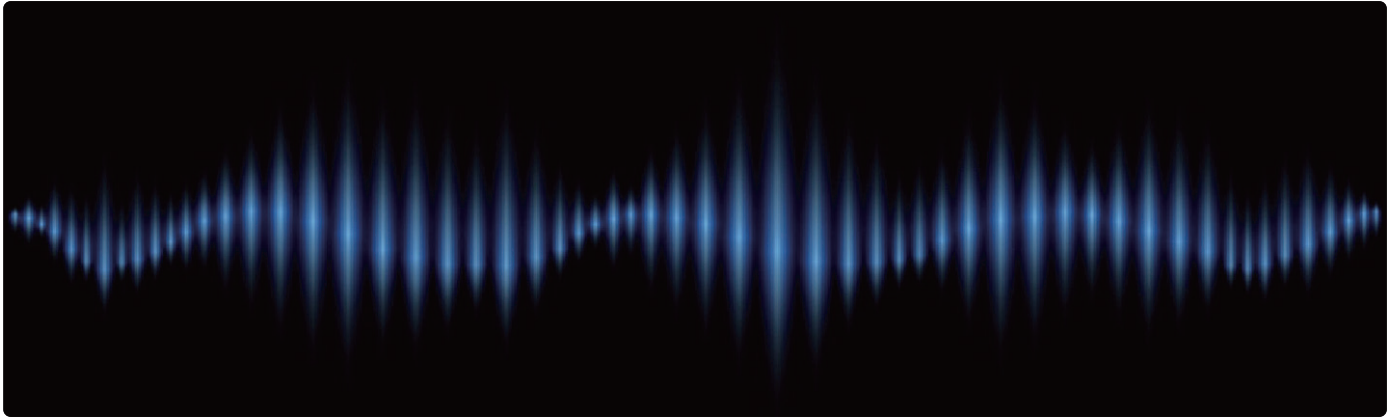
► C² Fusion and Precise Heading

C² Fusion combines CHCNAV correction services with receiver-side positioning algorithms to optimize high-accuracy GNSS performance under signal obstruction, interference, and active ionospheric conditions.

Dual-antenna GNSS delivers 0.1° heading accuracy at a 1 m antenna baseline, providing precise and stable orientation together with centimeter-level real-time positioning.



► JamAegis Interference Monitoring and Mitigation



- JamAegis detects, evaluates, and suppresses multiple types of GNSS interference, including single-tone, multi-tone, narrowband, and swept-frequency signals.
- Combined with real-time spectrum monitoring, it helps maintain stable high-precision positioning in challenging electromagnetic environments.

► PointFusion Multi-Source Corrections



- PointFusion supports multiple satellite-based high-accuracy correction services, including CHCNAV PointSky, BeiDou PPP-B2b, Galileo HAS, and QZSS CLAS.
- Multi-source correction support extends access to centimeter-level positioning across different regions and operating environments without requiring a local reference station.
- PointFusion helps maintain flexible and reliable high-accuracy positioning for applications operating beyond conventional network RTK coverage.

► Use Cases



Robotic Lawnmowers



Precision Agriculture



UAVs

SPECIFICATIONS

GNSS Signal

Main Antenna Signals	GPS: L1C/A, L1C, L2P(Y), L2C, L5 BDS: B1I, B2I, B3I, B1C, B2a, B2b Galileo: E1C, E5a, E5b, E5AltBoC, E6 GLONASS: G1,G2, L1OC*, L2OC*, L3OC QZSS: L1C/A(B), L1C, L2C, L5, L6D/E NavIC: L5 SBAS:L1, L5
Slave Antenna Signal	BDS: B1I, B2I, B3I, B1C, B2a, B2b GPS: L1C/A, L1C, L2C, L2P(Y), L5 GLONASS: G1, G2 Galileo: E1, E5a, E5b QZSS: L1C/A, L1C/B, L1C, L2C, L5

Performance

Raw Data Output	100 Hz*
Channels	1892 ⁽¹⁾
RTK Frequency	1Hz/2Hz/5Hz/10Hz/20Hz
RTK Accuracy (RMS)	Horizontal: 0.8 cm + 1 ppm Vertical: 1.5 cm + 1 ppm
PPP Accuracy (RMS)	Horizontal: 5 cm Vertical: 10 cm Convergence Time: < 15 min
SPP Accuracy (RMS)	Horizontal: 1.5 m Vertical: 2.5 m
Velocity Accuracy (RMS)	0.03 m/s
Tracking Sensitivity	-163 dBm
Acquisition Sensitivity	-146 dBm
Correction Protocol	RTCM 3.X
Output Protocol	NMEA0183, CHCNAV Protocol
Cold Start (RMS)	< 15 s
Warm Start (RMS)	< 10 s
Hot Start (RMS)	< 5 s
Reacquisition (RMS)	≤ 2 s
Time Accuracy (RMS)	5 ns
Initialization Reliability	99.9%

Environmental

Operating Temperature	-40°C ~ +85°C
Storage Temperature	-55°C ~ +95°C
Humidity	95% non-condensing
Vibration	GJB150.16A-2009, MIL-STD-810F

Physical

Package	48 pin LGA
Weight	1.88 ± 0.03 g
Dimensions	16.0 × 21.0 × 2.6 mm

Electrical

Input Voltage	3.0 ~ 3.6 V DC
Power Consumption (Typical)	600 mW
Max VCC Ripple	50 mV

Communications

Interface	3 x UART 1 x USB 1 x SPI* 1 x CAN*
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*Specifications are subject to change without notice.
Note: Items marked with * are supported by specific firmware versions or hardware models.
(1) 1380 GNSS channels + 512 anti-jamming channels

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