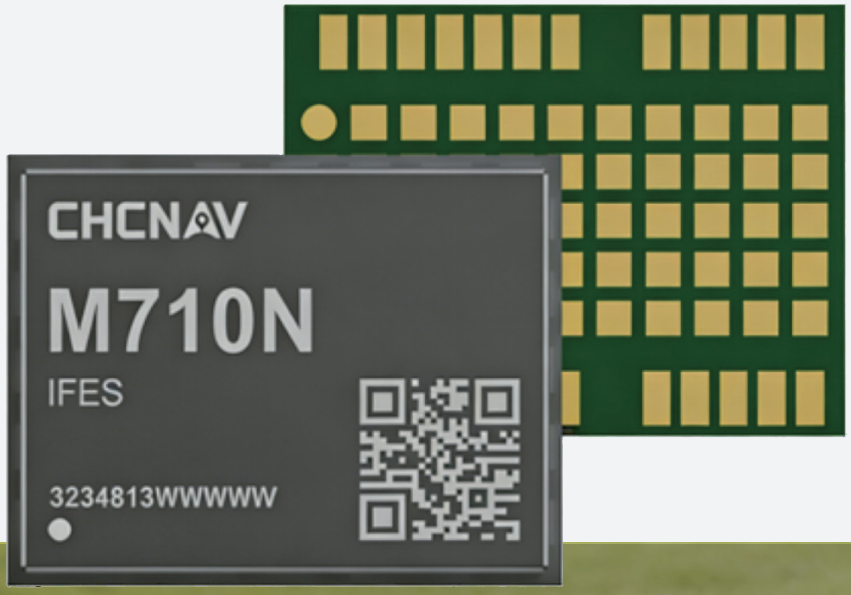
CHCNAV

Navigation

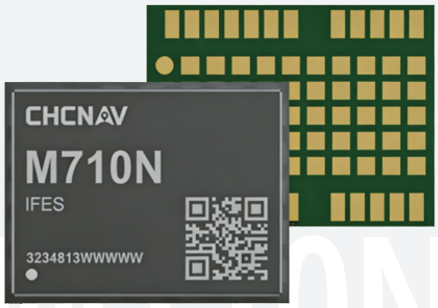
M710N

Ultra-Compact High-Precision GNSS Positioning Module



Highlights

The M710N is an ultra-compact high-precision GNSS positioning module measuring just 12 × 16 mm, designed for space-constrained OEM applications. Built on CHCNAV's integrated RF-baseband GNSS SoC, it tracks multi-frequency signals from BDS, GPS, GLONASS, Galileo, QZSS, NavIC and SBAS. Advanced RTK algorithms, multipath mitigation and JamAegis interference suppression help maintain reliable centimeter-level positioning across challenging operating environments. Its compact footprint makes it ideal for robotic lawnmowers, UAVs, precision agriculture equipment and other embedded positioning systems.



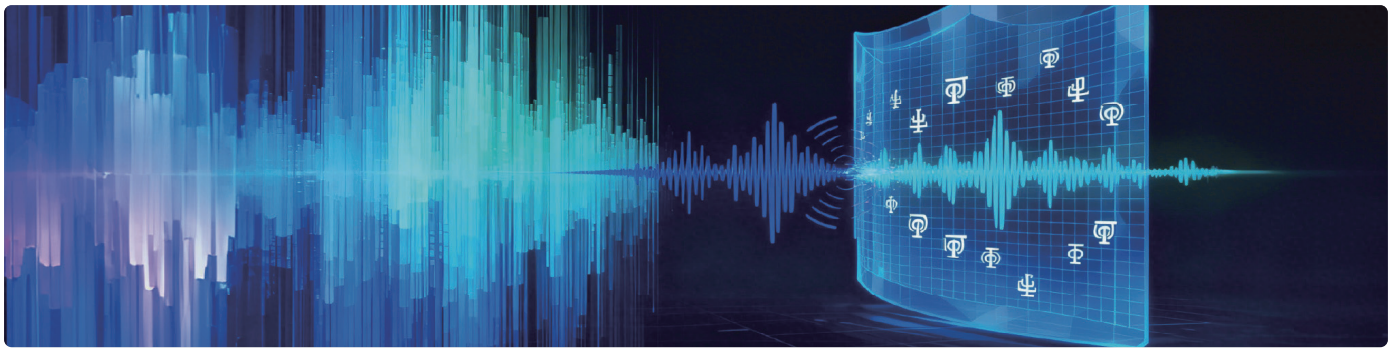
Key feature

- Multi-Band GNSS
- C^2 Fusion
- JamAegis
- 12 × 16 mm Size

Multi-Frequency, Multi-Constellation GNSS

Tracks multi-frequency signals from BDS, GPS, GLONASS, Galileo, QZSS, NavIC and SBAS. Broad constellation and frequency support increases satellite availability and helps maintain robust positioning performance across varied operating environments and application requirements.

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 advanced signal processing, it helps maintain stable high-precision positioning in challenging electromagnetic environments.

C² Fusion

C² Fusion combines CHCNAV correction services with receiver-side positioning algorithms to optimize high-accuracy GNSS performance. By coordinating service-side corrections and terminal processing, it helps improve positioning stability under signal obstruction, electromagnetic interference and active ionospheric conditions.

Adaptive RTK Algorithm

An adaptive RTK positioning algorithm continuously evaluates the operating environment and selects the most suitable positioning strategy. It helps maintain stable, high-accuracy positioning in urban canyons, wooded areas and other locations affected by signal obstruction, multipath or degraded GNSS conditions.

Use Cases

Robotic Lawnmowers

Precision Agriculture

UAVs

SPECIFICATIONS

Performance

Channels	1892 [1]
GNSS 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
SPP Accuracy (RMS)	Horizontal: 1.5 m Vertical: 2.5 m
RTK Accuracy (RMS)	Horizontal: 0.8 cm + 1 ppm Vertical: 1.5 cm + 1 ppm
PPP Accuracy (RMS)	Horizontal: 5 m Vertical: 10 m Convergence Time: < 15min
Time Accuracy (RMS)	5ns*
Velocity Accuracy (RMS)	0.03 m/s
Cold Start (RMS)	< 15 s
Initialization Time	< 3 s
Initialization Reliability	> 99.99%
RTK Frequency	1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz, 100 Hz*
Data Protocol	NMEA0183, RTCM3.X, CHCNAV Protocol

Physical

Package	24 pin LGA
Dimensions	60.0 × 100.0 × 7.4 mm
Weight	1.3±0.03g

Environmental

Operating Temperature	-40°C ~ +85°C
Storage Temperature	-55°C ~ +95°C
Humidity	95% non-condensing
Vibration	GJB150.16A-2009, MIL-STD-810F
Shock	GJB150.18A-2009, MIL-STD-810F

Electrical

Input Voltage	3.0 ~ 3.6 V DC
Power Consumption (Typical)	450 mW
Max VCC Ripple	50 mV

Communications

UART	3
USB	1
SPI*	1

***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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