CHCNAV

Navigation

M720

High-Precision GNSS Positioning Module

Highlights

M720 is a high-precision GNSS positioning module powered by CHCNAV StellaX. It tracks multi-frequency signals from BDS, GPS, GLONASS, Galileo, QZSS, NavIC and SBAS, while supporting L-Band reception for satellite-based correction services. Adaptive positioning algorithms, multipath mitigation and JamAegis interference suppression help maintain reliable centimeter-level positioning in challenging GNSS and electromagnetic environments. Compact and versatile, M720 is designed for robotic lawnmowers, precision agriculture, UAVs and other autonomous applications.

Key feature

Multi-Frequency, Multi-Constellation GNSS

C^2 Fusion and Precise Heading

JamAegis Interference Monitoring and Mitigation

PointFusion Multi-Source Corrections

Multi-Frequency, Multi-Constellation GNSS

Tracks multi-frequency signals from BDS, GPS, GLONASS, Galileo, QZSS, NavIC and SBAS.

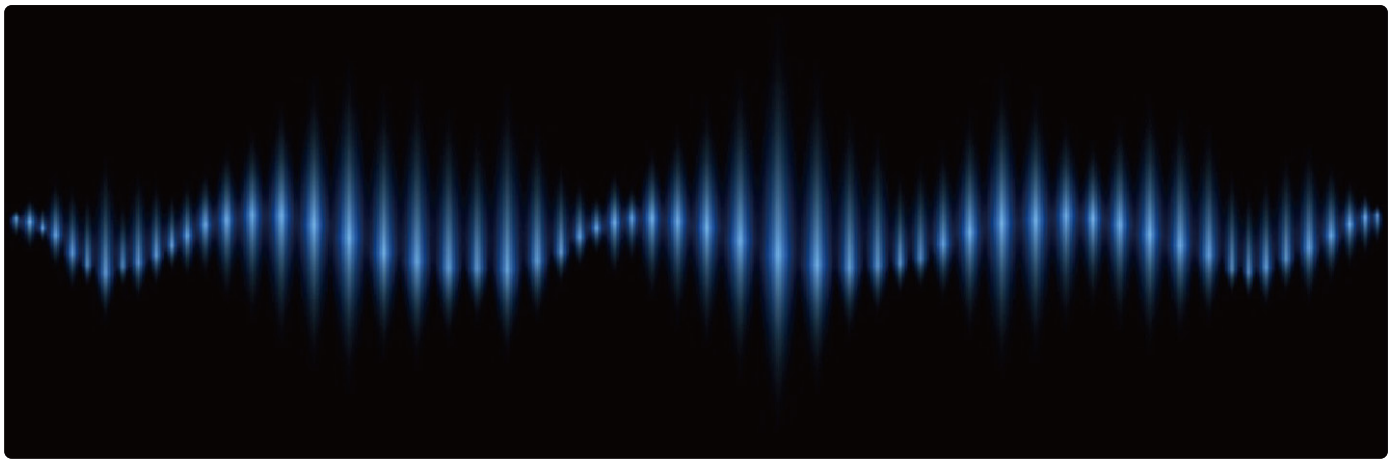
Broad constellation and frequency support increases satellite availability and helps maintain robust positioning performance across varied operating environments and application requirements.

C^2 Fusion

C^2 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.

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.

PointFusion Multi-Source Corrections

- PointFusion supports multiple high-accuracy correction sources, including CHCNAV PointSky, BeiDou PPP-B2b, Galileo HAS and QZSS CLAS.
- Multi-source correction support extends access to high-accuracy positioning beyond conventional network RTK coverage and provides greater flexibility across regions and operating environments.

Use Cases

Robotic Lawnmowers

Precision Agriculture

UAVs

SPECIFICATIONS

Performance

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
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

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

Physical

Package	54 pin LGA
Weight	1.88 ± 0.03 g
Dimensions	17.0 × 22.0 × 2.75 mm

Electrical

Input Voltage	3.0 ~ 3.6 V DC
Power Consumption (Typical)	500 mW
Max VCC Ripple	50 mV

Communications

Interface	3 x UART 1 x USB 1 x SPI* 1 x CAN*

***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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