

评估套件、配件及服务

HPL EVK 5.0 Kit



UM980-EB
UM980C-EB
UM981S-EB



天线选型推荐

GPS520



GPS320



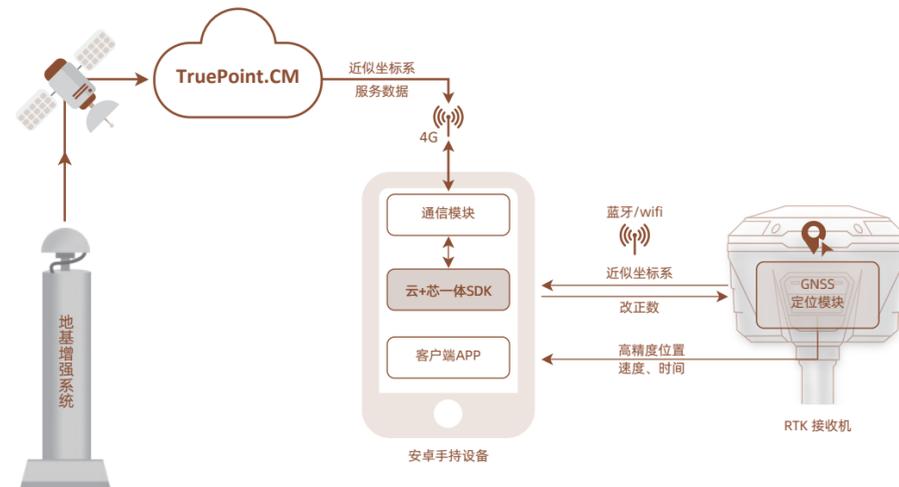
HX-CSX215A



内置高精度GNSS差分服务

提供一体化定位服务产品解决方案，满足厘米级定位精度、统一坐标框架、自助远程故障诊断等需求，结合全球服务覆盖能力，有效助力全球客户业务。

- ◎ 芯片 / 模块预置高精度定位服务（授权开通）
- ◎ 基于云芯一体深度融合技术，提升定位性能
- ◎ 简化客户使用模式，提供一体化多功能 SDK
- ◎ 定位责任主体明确，提升用户售后体验



Smart Positioning For Future Geoinformation

Surveying and Mapping 测量测绘



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2026
3月印刷

关于我们

和芯星通科技（北京）有限公司是一家专业从事高性能卫星定位与多源融合核心算法、高集成度芯片研发的高新技术企业。基于自主创新的核心芯片，和芯星通提供包括一站式 GNSS 基础产品在内的时空传感核心产品和服务，定位精度涵盖毫米级、厘米级、亚米级到米级，全方位满足精准农业、测量测绘、智能驾驶、无人机、机械控制、车载导航等市场领域对高性能、低成本、低功耗、高品质产品的需求。

和芯星通多模导航型基带芯片、多模多频高精度模块、高精度 OEM 板卡、射频基带一体化芯片、北斗三双频多系统高精度 SoC 均在北斗重大专项比测中蝉联冠军。公司产品多次荣获省部级奖项 " 卫星导航定位科技进步奖 " 最高奖；芯片技术获得 2015 年度国家科学技术进步二等奖，2021 年度北京市科技进步一等奖，相关应用成果获得 2018 年度国家科学技术进步一等奖。此外公司还获得 EE Times-China 最佳无线 IC 产品奖、" 中国芯 " 最具潜力产品奖等多个奖项。

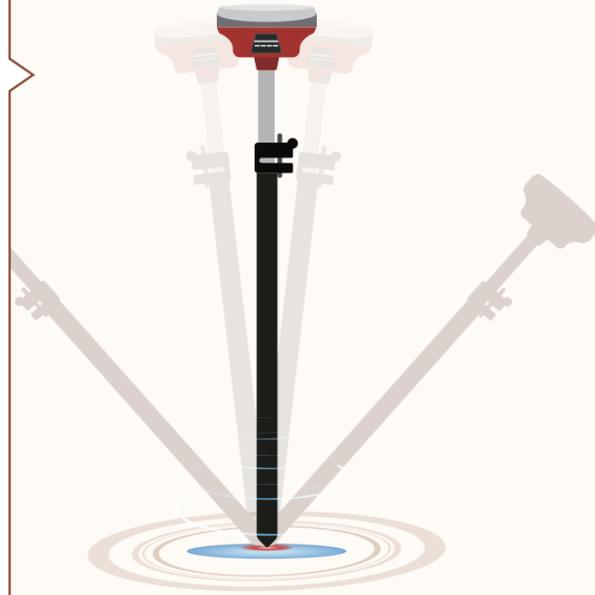
和芯星通是北京北斗星通导航技术股份有限公司（股票代码 002151）旗下企业，2009 年初成立于北京，是国家高新技术企业、北京市知识产权示范单位、北京市软件企业、中关村高新技术企业、国家级重点专精特新 " 小巨人 " 企业、制造业单项冠军企业。

测量测绘

高精度 GNSS RTK 产品已成为测绘基本仪器的首选，其测量精度高、操作简便、体积小、便于携带、全天候操作，广泛应用于大地测量、资源勘查、监测、工程测量、土地测量、城市管理、形变监测等方面。

基于和芯星通 RTK 板卡/模块的测绘解决方案，充分发挥北斗与其他卫星导航系统联合定位精度优势和北斗三频优势，显著改善城市楼群、树荫等遮蔽地区，以及强多路径信号等恶劣观测环境下的定位可用性和精度，提供更可靠的定位结果，尤其适合高精度测量定位应用。

和芯星通的高精度板卡与现有进口主流板卡尺寸接口兼容，方便用户在原有基础上进行快速开发和无缝替换，降低测绘仪器集成商的研发周期，提高产品性价比。



UM980/UM980C/UM981S 系列 全系统全频高精度定位模块

- ◎ 基于最新一代 NebulasIV 射频基带及高精度算法一体化 GNSS SoC 芯片
- ◎ 全系统全频 RTK 引擎及满天星 RTK 技术
- ◎ 瞬时 RTK 初始化技术
- ◎ 优秀的抗干扰能力和防欺骗能力，支持干扰检测和欺骗检测
- ◎ 支持 Heading2 定向技术
- ◎ 支持 STANDALONE 单站高精度定位
- ◎ 支持 B2b-PPP、E6-HAS 和 QZSS L6E (MADOCA) PPP 服务
- ◎ UM980C：支持 QZSS L6D (CLAS) PPP-RTK 解算，支持 TruePoint | REACH Sat 基于 L-Band 的 PPP-AR 星基服务¹
- ◎ UM981S：板载 MEMS 组合导航，支持组合导航技术，具备倾斜测量功能



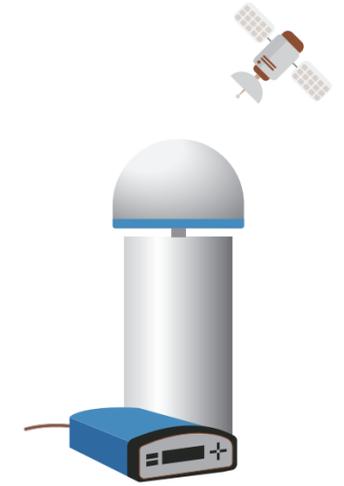
通道	1408通道, 基于NebulasIV
工作温度	-40°C ~ +85°C
存储温度	-55°C ~ +95°C
初始化时间	< 5 s (典型值)
初始化可靠性	> 99.9%
冷启动	< 12 s
速度精度	0.03 m
数据格式	NMEA 0183, Unicore, RTCM V3.X

注：1、UM980C 付费服务，2、开阔天空且无干扰环境

单点定位 (RMS)	平面: 1.5 m 高程: 2.5 m
DGPS (RMS)	平面: 0.4 m 高程: 0.8 m
RTK (RMS)	平面: 0.8 cm + 1 ppm 高程: 1.5 cm + 1 ppm
PPP (RMS)	平面: 5 cm 高程: 10 cm
PPP-AR (RMS) ² (UM980C)	平面: 3 cm @5min 高程: 6 cm @5min
CLAS (RMS) ² (UM980C)	平面: 5 cm @1min 高程: 10 cm @1min

UB9A0 全系统全频高精度板卡

- ◎ 基于 NebulasIV 全新多系统多频高性能 SoC，支持 1408 个超级通道，提供更为强大的卫星导航信号处理能力
- ◎ 支持 GPS/BDS/GLONASS/Galileo/QZSS/NavIC/SBAS 单系统独立定位和多系统联合定位
- ◎ 支持先进的多路径抑制技术和低仰角跟踪技术
- ◎ 毫米级的载波相位观测值
- ◎ 高可靠性、高稳定性、适合严酷的工作环境
- ◎ 支持 RS-232、Ethernet、1PPS、外部时钟等输入
- ◎ 支持天线信号检测及短路保护
- ◎ 硬件尺寸兼容市场主流 GNSS OEM 板



产品型号	尺寸 (mm)	数据更新率	倾斜测量	时间精度	信号
UM980	17.0 x 22.0 x 2.6	50 Hz	—	20 ns	BDS B1I, B2I, B3I, B1C, B2a, B2b GPS L1C/A, L1C, L2C, L2P(Y), L5 GLONASS G1, G2, G3
UM980C	17.0 x 22.0 x 2.6			20 ns	Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C/B, L1C, L2C, L5, L6
UB9A0	100.0 x 60.0 x 9.2			5 ns	NavIC L5 SBAS L1C/A
UM981S	17.0 x 22.0 x 2.6	100 Hz IMU raw data, 50 Hz* RTK	10 mm + 0.7 mm/° tilt (30°内精度 < 2.5 cm)	20 ns	L-Band*

注：标注 * 部分为特定固件或硬件版本支持

EVALUATION KITS, ACCESSORIES, AND SERVICES

HPL EVK 5.0 Kit



UM980-EB
UM980C-EB
UM981S-EB



Recommended Antennas

HX-CSX600A



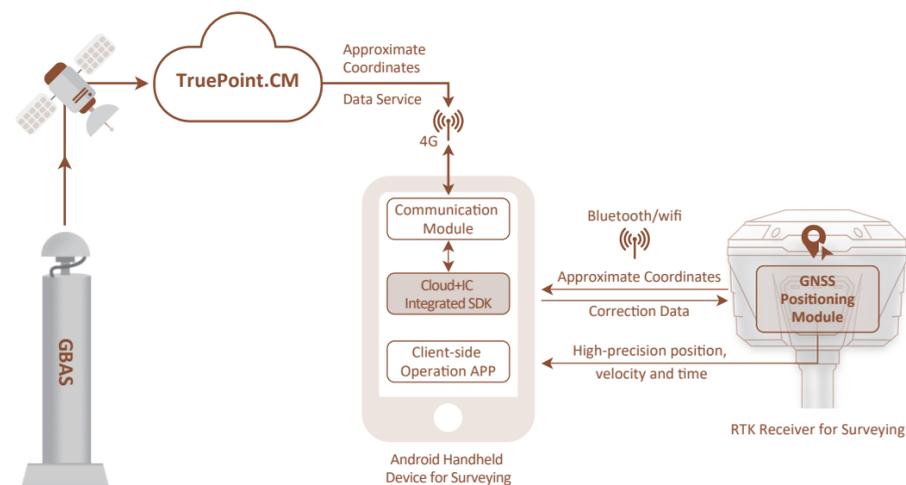
HX-CSX627A



BUILT-IN HIGH-PRECISION GNSS CORRECTION SERVICE

Provides integrated positioning service solutions to meet requirements such as centimeter-level positioning accuracy, unified coordinate frame, and self-service remote fault diagnosis.

- © High-precision positioning service built in the chip/module (activation required)
- © Chip-Cloud Integration technology to improve the positioning performance
- © Easy-to-use, multi-functional SDK available
- © Trustworthy, with good after-sales service to improve customer experience



Smart Positioning For Future Geoinformation

Surveying and Mapping



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ABOUT US

Unicore Communications, Inc. is a high-tech company dedicated to high performance satellite navigation and positioning, multi-sensor fusion algorithm development, and highly integrated GNSS IC design.

The accuracy of Unicore GNSS receivers ranges all the way from meter level, to sub-meter level and centimeter level, down to the millimeter level.

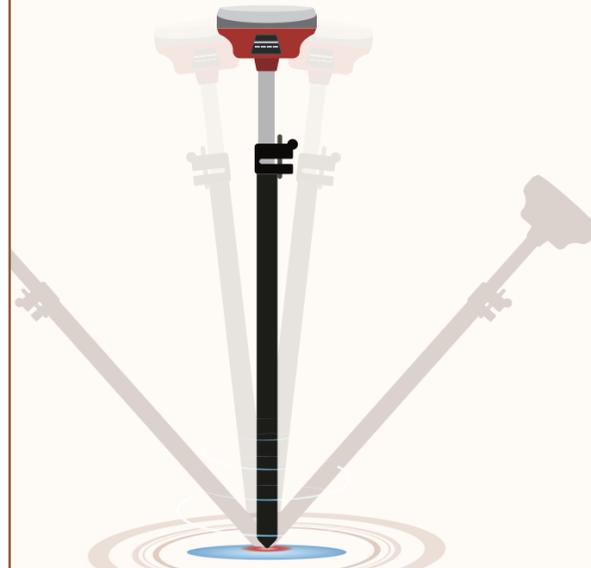
Using in-house designed proprietary technology, Unicore has successfully developed a series of multi-constellation, multi-frequency, high-performance GNSS receivers for applications ranging from industrial market, automotive market to consumer and IoT market.

SURVEYING

Robust and reliable positioning is a cornerstone of Unicore's product offering. Surveying and Mapping applications require a quick yet reliable and accurate solution. It's for these very reasons that Survey instrument manufacturers frequently turn to Unicore products.

Furthermore, Unicore offers specialized products tailored to this market segment, integrating Inertial Navigation Systems (INS) to empower manufacturers of intelligent GNSS antenna products. This integration allows for the precise measurement of antenna offsets in relation to antenna tilt, ensuring users achieve pinpoint accuracy.

Our products significantly enhance productivity by delivering Real-Time Kinematic (RTK) positions even in challenging environments. With the inclusion of multi-frequency and multi-constellation GNSS technology, our receivers excel in scenarios with limited satellite visibility, urban canyons, and under foliage.



UM980/UM980C/UM981S SERIES FULL-CONSTELLATION FULL-FREQUENCY MODULE

- Based on Unicore's proprietary GNSS SoC NebulasIV that integrates RF, baseband and high-precision algorithm
- Full-constellation full-frequency RTK engine and advanced RTK technology
- Instant RTK initialization technology
- Excellent anti-jamming and anti-spoofing capabilities, supporting jamming detection and spoofing detection
- Heading2 technology to provide heading information
- STANDALONE single-station high-precision positioning technology
- Supports B2b-PPP, E6-HAS and QZSS L6E (MADOCA) PPP
- UM980C: Supports QZSS L6D (CLAS) PPP-RTK solution and TruePoint | REACH Sat L-band-based PPP-AR service¹
- UM981S: On-board MEMS integrated positioning technology and tilt compensation capability



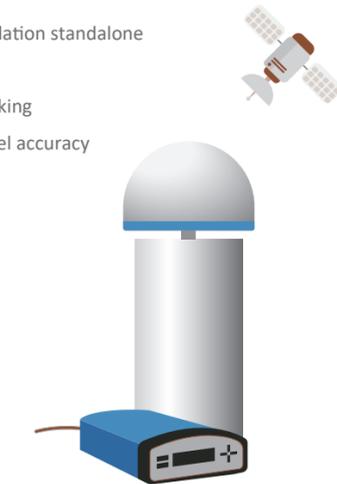
Channel	1408 channels, based on Nebulas IV
Operating temp.	-40°C ~ +85°C
Storage temp.	-55°C ~ +95°C
RTK initialization time	< 5 s (Typical)
Initialization reliability	> 99.9%
Cold Start	< 12 s
Velocity Accuracy (RMS)	0.03 m
Protocols	NMEA 0183, Unicore, RTCM V3.X

Note: 1. This is a paid service 2. Under open sky and without jamming

Single Point Positioning (RMS)	Horizontal: 1.5 m Vertical: 2.5 m
DGPS (RMS)	Horizontal: 0.4 m Vertical: 0.8 m
RTK (RMS)	Horizontal: 0.8 m + 1 ppm Vertical: 1.5 cm + 1 ppm
PPP (RMS)	Horizontal: 5 cm Vertical: 10 cm
PPP-AR (RMS) ² (UM980C)	Horizontal: 3 cm @5min Vertical: 6 cm @5min
CLAS (RMS) ² (UM980C)	Horizontal: 5 cm @1min Vertical: 10 cm @1min

UB9A0 FULL-CONSTELLATION FULL-FREQUENCY BOARD

- Based on NebulasIV - a new generation multi-constellation multi-frequency high-precision GNSS SoC, with 1408 channels and powerful signal processing capability
- Supports GPS/BDS/GLONASS/Galileo/QZSS/NavIC/SBAS single-constellation standalone positioning and multi-constellation joint positioning
- Supports advanced multi-path mitigation and low elevation angle tracking
- Supports the output of carrier-phase observations with millimeter-level accuracy
- High reliability, high stability, suitable for challenging environment
- Supports RS232, Ethernet, 1PPS and external clock input
- Supports antenna signal detection and short circuit protection
- Size compatible with mainstream GNSS OEM boards on the market



Product model	Dimension (mm)	Update Rate	Tilt Compensation	PPS Accuracy	Frequency
UM980	17.0x22.0x2.6	50Hz	—	20 ns	GPS L1C/A/L1C/L2C/L2P(Y)/L5 BDS B1I/B2I/B3I/B1C/B2a/B2b
UM980C	17.0x22.0x2.6			20 ns	GLONASS G1/G2/G3 Galileo E1/E5a/E5b/E6
UB9A0	100.0x60.0x9.2			5 ns	QZSS L1C/A/L1C/B/L1C/L2C/L5/L6 NavIC L5
UM981S	17.0x22.0x2.6	100Hz IMU raw data, 50Hz RTK	10mm+0.7mm/°tilt (accuracy < 2.5 cm within 30°)	20 ns	SBAS L1C/A L-Band*

Note: Items marked with * are supported by specific firmware