EVALUATION KITS, ACCESSORIES, AND SERVICES

HPL EVK 5.0 Kit

UM960eb
UM960Eeb

Recommended Antennas

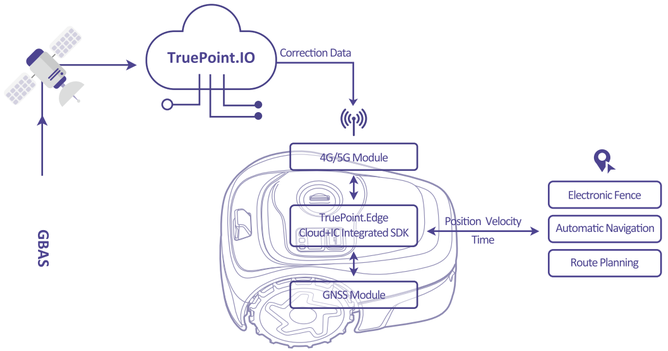
HX-CSX231A

HX-SE402A

BUILT-IN HIGH-PRECISION GNSS CORRECTION SERVICE

Provides centimeter-level positioning capabilities for outdoor robots that use RTK solution. Sparing the need for users to install base stations, the Chip-to-Cloud algorithm reduces data traffic consumption by 70% and paves the way for large-scale application of outdoor robots.

- High-precision positioning service built in the chip/module (activation required)
- Chip-to-Cloud integrated technology to improve the positioning performance
- Easy-to-use, multi-functional SDK available
- Seamlessly adapted to robots network and operational environments, delivering ease and efficiency.



Smart Positioning For Robotics

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2026
February

unicore
a BDStar company

Autonomous Machine

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.

NVIDIA PREFERRED PARTNER unicore

AUTONOMOUS MACHINE

The use of robots is spreading in day-to-day life. From remote delivery vehicles to remote inspection services to automated lawn mowing or line painting robots, the use of robotic machines is growing. Precise positioning and heading play an important role when it comes to the navigation abilities of robotic machines. Unicore's line of precision GNSS products are well suited for robotic applications.

For robotic use outdoors, GNSS provides a range of accuracies, depending upon the application, from sub-meter positioning down to decimeter and centimeter levels in real time. When combined with other sensors such as INS, vision and radar, robotic navigation can be realized in many complex environments.

ROBOTIC MOWER SOLUTIONS

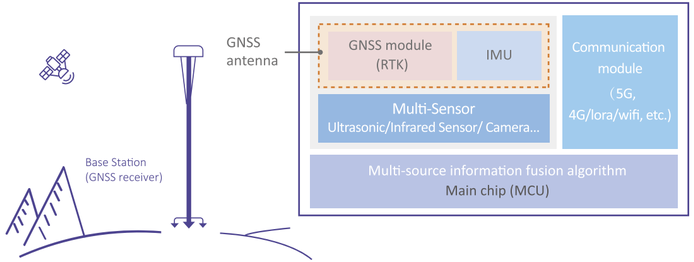
Robotic Mower (Rover)--Multiple Available Product Options

Unicore provides stand alone GNSS RTK module or GNSS module with onboard IMU.

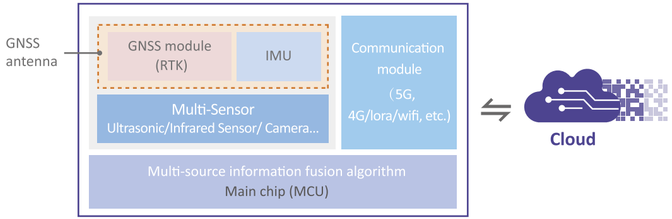
Base Station--Optional Correction Mode

RTK correction data can be received either through the local or self built CORS or by reliable correction service providers.

1- Single Base Station Mode

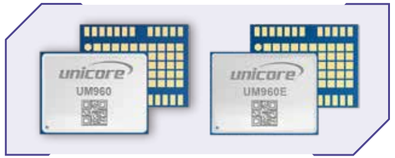


2 - CORS Mode



UM960 /UM960E MULTI-CONSTELLATION MULTI-FREQUENCY MODULE

- High precision, compact size and low power consumption
- Supports multi-constellation multi-frequency on-chip RTK positioning solution
- Excellent anti-jamming and anti-spoofing capabilities, supporting jamming detection and spoofing detection
- Advanced function of jamming detection
- Supports base station environment scoring, base station movement monitoring, RTCM data loss monitoring, and environmental awareness of the rover



Dimension	16.0x12.2x2.6mm
Package	24pin, LGA
Operating temp.	-40°C~+85°C
Storage temp.	-55°C~+95°C
Channel	1408 channels, based on NebulasIV
Signal	GPS L1C/A, L2C, L2P(Y), L5 BDS B1I, B2I, B3I, B1C, B2a, B2b GLONASS G1, G2 Galileo E1, E5a, E5b, E6 QZSS L1, L2, L5 SBAS L1C/A (UM960)
Cold start	<35 s
RTK initialization time	<5 s (Typical)
Initialization reliability	>99.9%

Single Point Positioning (RMS)	1.5 m 2.5 m	
DGPS (RMS)	Horizontal: 0.4 m Vertical: 0.8 m	
RTK (RMS)	Horizontal: 0.8 cm + 1 ppm Vertical: 1.5 cm + 1 ppm	
Velocity	0.03 m/s	
1PPS	20ns	
Observation	GNSS B1I/L1 C/A/G1/E1 Code B1I/L1 C/A/G1/E1 ADR B2I/L2P(Y)/L2C/G2/E5b Code B2I/L2P(Y)/L2C/G2/E5b ADR	 10cm 1mm 10cm 1mm
Update Rate	20Hz	
Interface	3×UART（LVTTL） 1×I²C*	
Protocols	NMEA 0183, Unicore, RTCM	
Power Consumption	UM960: 450 mW (typical) UM960E: 360 mW (typical)	