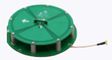
EVALUATION KITS, ACCESSORIES, AND SERVICES

HPL EVK 5.0 Kit

UM960 EB

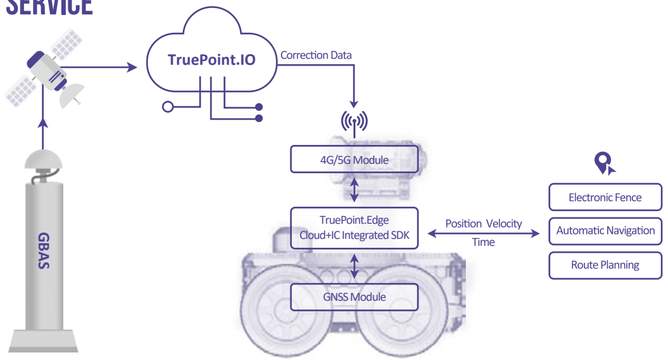
Recommended Antennas

HX-CSX231A



HX-CUX014A

BUILT-IN HIGH-PRECISION GNSS CORRECTION SERVICE



Smart Positioning For Robotics

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2023 October

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

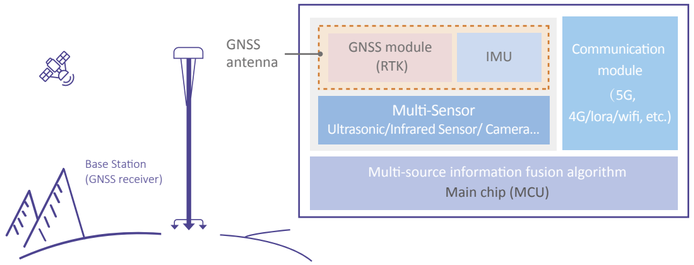
Robotic Mower (Rover)--Multiple Available Product Options

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

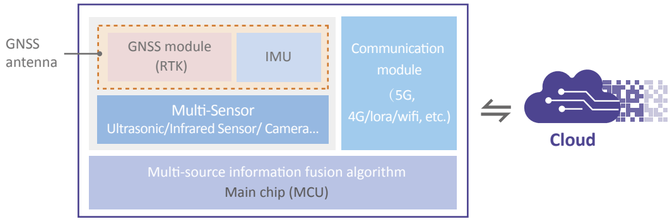
Base Station--Optional Correction Mode

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
MULTI-CONSTELLATION MULTI-FREQUENCY MODULE

- High precision, compact size and low power consumption
- Supports multi-constellation multi-frequency on-chip RTK positioning solution
- Independent tracking of different frequencies, and 60 dB narrowband anti-jamming
- Advanced function of jamming detection

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	BDS B1I/B2I/B3I/B1C/B2a GPS L1/L2/L5 GLONASS G1/G2 Galileo E1/E5a/E5b QZSS L1/L2/L5 SBAS
Cold start	<30 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 RTCM， Unicore	
Power Consumption	450 mW (typical)	