

## EVALUATION KITS, ACCESSORIES, AND SERVICES

EVK 5.0 Kit



UM680A EB  
UM681A EB  
UM670A EB  
UM671A EB



### Recommended Antennas

HX-AULT002



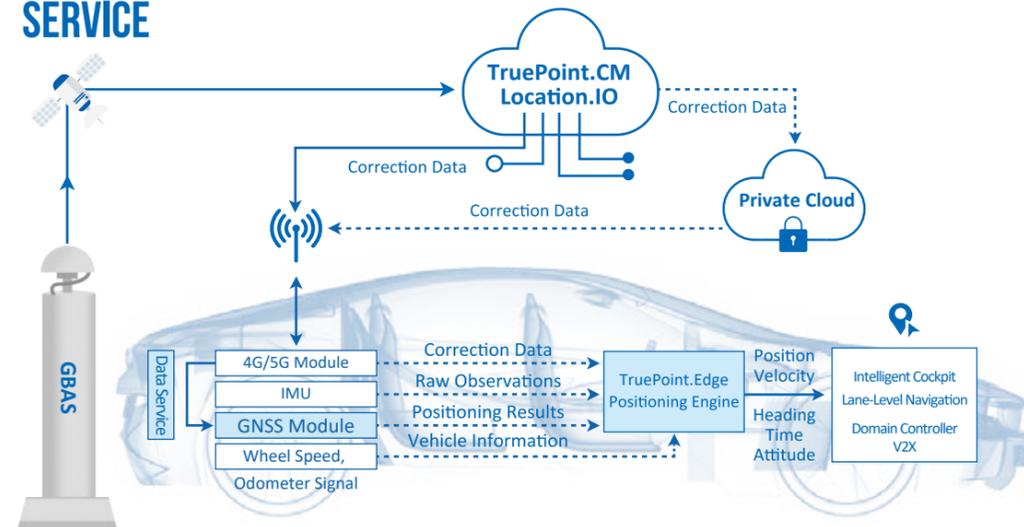
HX-AUST002



HX-AULT008



## BUILT-IN HIGH-PRECISION GNSS CORRECTION SERVICE



## Smart Positioning For Connected Vehicles

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**unicore**  
a **BDStar** company

# Intelligent Driving



## 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.

## INTELLIGENT DRIVING

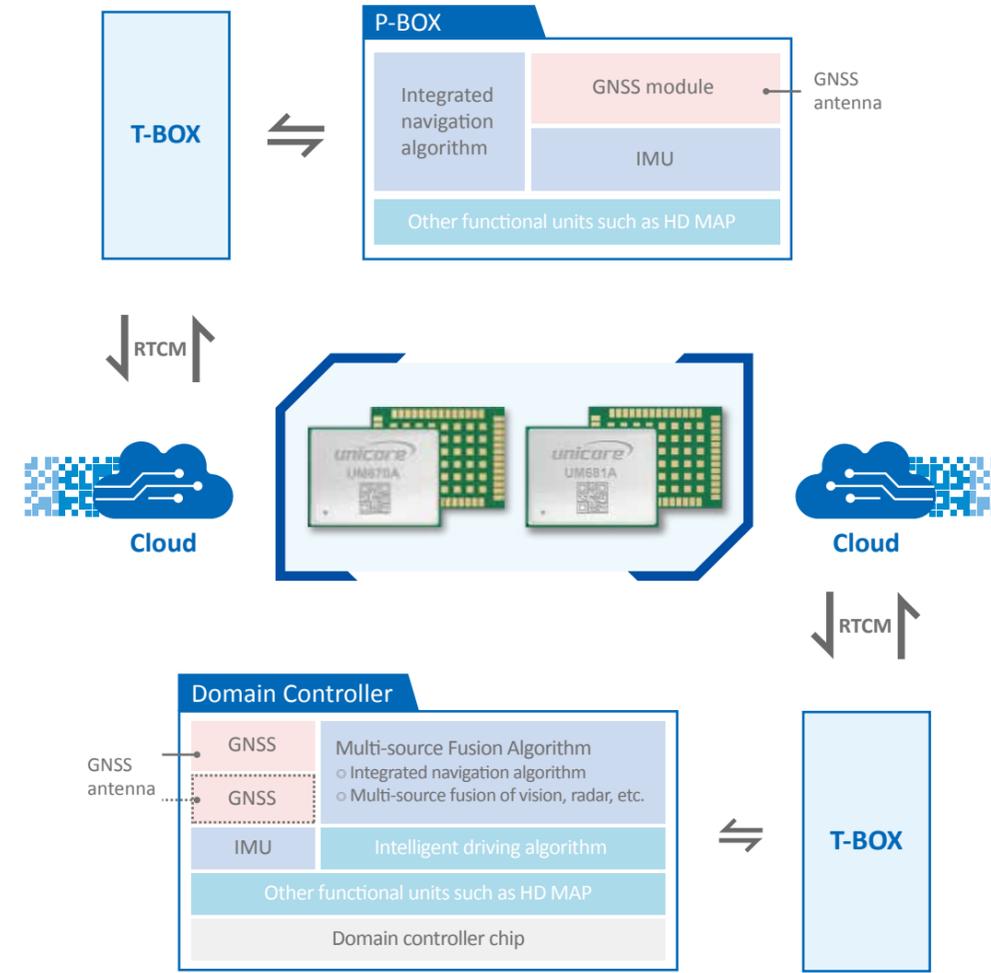
High-precision positioning is a vital part of intelligent driving. High-precision RTK positioning provides centimeter-level position and speed information, and when used with a dual-antenna heading receiver determines the direction of the vehicle. It can be integrated with inertial device to provide high frequency position, velocity, altitude and time information, ensuring continuous operation even when the GNSS signal is blocked.

Unicore Precision products offer features such as high precision positioning and heading combined with low latency ensuring high reliability and safety of autonomous vehicles, suitable for low-speed operations in parks such as (logistics vehicles, cleaning vehicles, shuttle vehicles and so on), intelligent driving passenger cars, intelligent driving freight trucks and other large-scale applications in different application scenarios.



## UM670A /UM680A SERIES DUAL-FREQUENCY MULTI-CONSTELLATION MODULE

- Concurrent reception of quad-constellation (GPS/BDS/GLONASS/Galileo) L1+L5
- Centimeter-level positioning accuracy & raw data output
- GNSS chip qualified according to AEC-Q100 and production process conforms to IATF16949
- Anti-jamming design to ensure the module works stably in complex electromagnetic environment



Dimensions	22.0x17.0x2.6mm
Package	54 pin, LGA
Channel	96 channels, based on UFirebirdII
Signal	BDS B1/B1C*/B2a GPS L1 C/A/L5 GLONASS G1* Galileo E1/E5a NavIC L5* QZSS L1/L5 SBAS
TTF	Cold Start <26 s Hot Start <2 s Reacquisition<2 s
Voltage	2.7V~3.6V DC
Operating Temperature	-40°C~+85°C -40°C~+105°C

\*supported by specific firmware

Single Point Positioning (RMS)	1.5 m (horizontal, open sky) 2.5 m (vertical, open sky)
Velocity	0.1 m/s
1PPS	20ns
Sensitivity	GNSS Tracking -162 dBm Cold Start -147 dBm Hot Start -157 dBm Reacquisition -158 dBm
Update Rate	1 Hz / 5 Hz / 10 Hz
Interface	2×UART (LVTTTL) 1×I <sup>2</sup> C*/ 1×SPI* 1×1PPS (LVTTTL)
Protocols	NMEA 0183 RTCM, Unicore
Power Consumption	270 mw (typical)

Product model	Output	Accuracy	DR Position Error
UM680A	Raw data+ RTK	<b>RTK positioning:</b> 1cm + 1ppm (horizontal, opensky) 2cm + 1ppm (vertical, open sky)	—
UM681A	Raw data+ RTK +DR		1% of distance traveled without GNSS
UM670A	Raw data+ PVT	<b>Single point positioning:</b> 1.5 m (horizontal, open sky) 2.5 m (vertical, open sky)	—
UM671A	Raw data+ PVT+ DR		1% of distance traveled without GNSS