

UPRECISE GNSS EVALUATION SOFTWARE

UPrecise is a GNSS evaluation software independently developed by Unicore. It features a user-friendly interface and simple operations

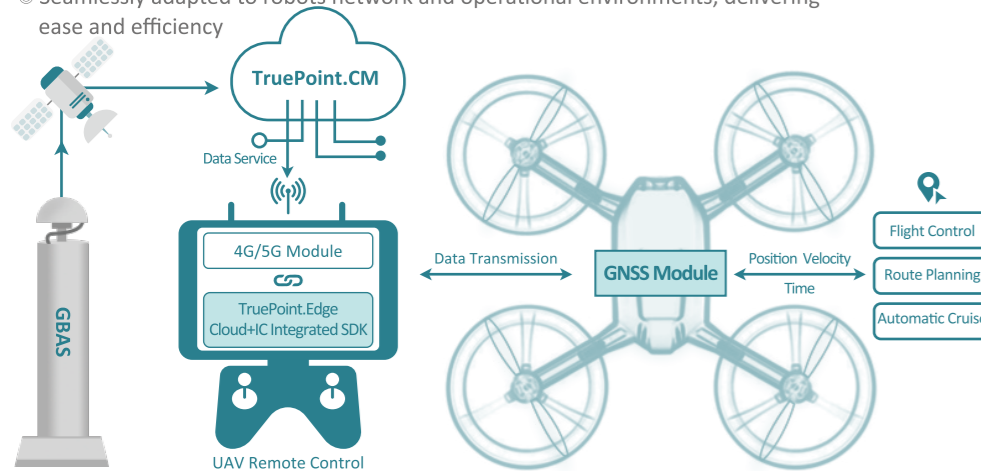
- Adaptable to Unicore products with graphical user interface
- Visualization of real-time positioning data to display satellite signals, positioning, heading, and attitude information
- Easy configuration of frequently used commands
- Real-time message parsing with descriptions to help users analyze positioning data



BUILT-IN HIGH-PRECISION GNSS CORRECTION SERVICE

Provides real-time, stable, and reliable centimeter-level positioning capabilities for UAV applications, supporting operations such as path planning, precise control, and automated inspection. Our global coverage advantage eliminates the need to install base stations.

- 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 Aerial Excellence

UNICORE COMMUNICATIONS, INC.

Web: www.unicorecomm.com

Email: info@unicorecomm.com

Beijing, China

Add: F3, No.7,
Fengxian East Road, Haidian, Beijing, 100094

Tel: +86-10-69939800

Fax: +86-10-69939888



Web Site



LinkedIn

Without prior written permission of Unicore Communications, Inc., any contents of this manual shall not be copied, disseminated, or stored in a retrievable system in any way. * We have made every effort to ensure the accuracy and completeness of the information contained in the manual up to the date of printing. If you find any errors or omissions, please contact us, for which we are very grateful. * Unicore reserves the right to change the product information in the manual at any time without prior notice. © Copyright 2009-2026 Unicore Communications, Inc. All rights reserved.



Unmanned Aerial Vehicle



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.

UAV

UAV have been widely used in aerial photography, electrical, agricultural mapping/inspection, aerial surveillance as well as for film and home entertainment purposes. GNSS is an integral sensor on the UAV flight control system, providing accurate position and orientation.

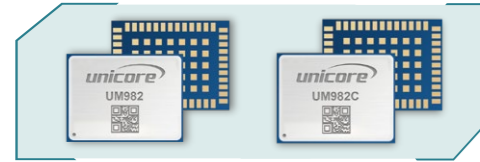
Unicore Communications provide a range of compact, cost-efficient products which provides high precision positioning or positioning combined with heading solutions on a single chip or module and are well suited for integration into UAV flight control systems and drone controllers.



INDUSTRIAL DRONES

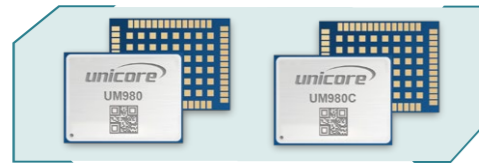
UM982/UM982C All-constellation Multi-frequency High-precision Positioning and Heading Module

- Dual-antenna heading and dual-RTK engine using master-slave antenna GNSS raw observations for independent positioning solution
- Excellent anti-jamming and anti-spoofing capabilities, supporting jamming detection and spoofing detection
- Supports E6 HAS, B2b-PPP, QZSS L6 (MADOCA) PPP and SouthPAN L5 PV Sservices
- UM982C: Supports L-Band and QZSS L6 (CLAS) PPP-RTK services
- Widely applied in agriculture, electricity, land surveying and public safety

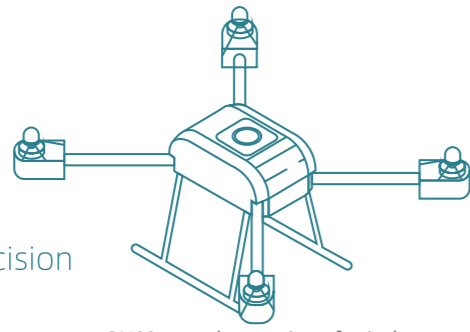
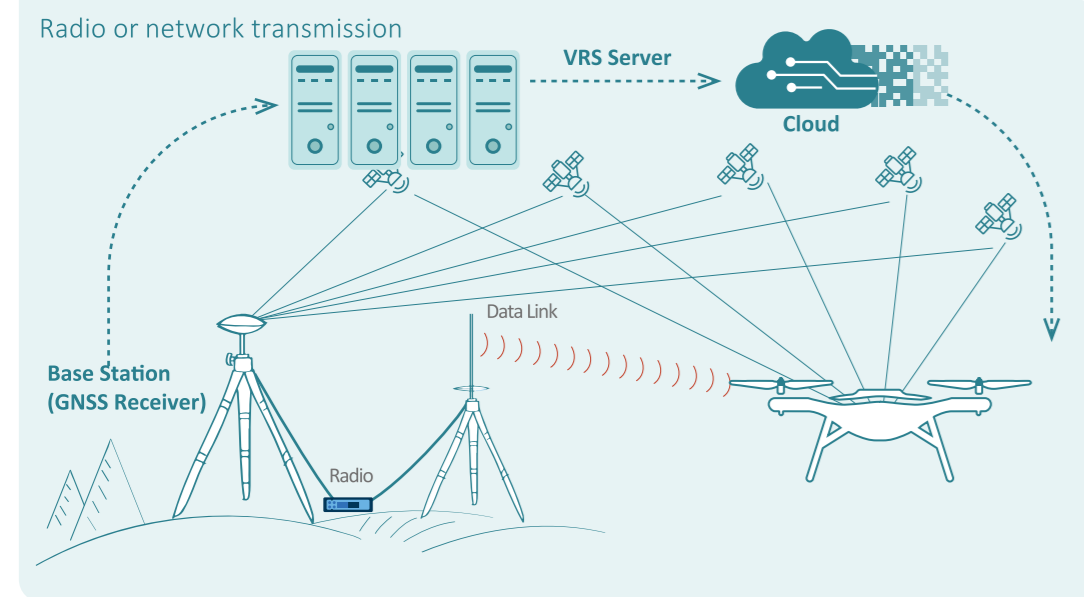


UM980/UM980C All-constellation Multi-frequency High-precision RTK Positioning Module

- UM980: Up to 50 Hz positioning data update rate
- Excellent anti-jamming and anti-spoofing capabilities, supporting jamming detection and spoofing detection
- Supports E6 HAS, B2b-PPP, QZSS L6 (MADOCA) PPP and SouthPAN L5 PV Sservices
- UM980C: Supports L-Band and QZSS L6 (CLAS) PPP-RTK services
- Widely applied in agriculture, electricity, land surveying and public safety



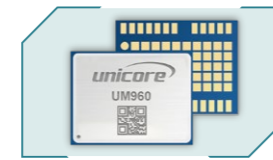
RTK Solution



DRONE LIGHT SHOW

UM960 All-constellation Multi-frequency High-precision RTK Positioning Module

- 12 x 16 mm Compact RTK module for reduced layout area
- Excellent anti-jamming and anti-spoofing capabilities, supporting jamming detection and spoofing detection
- Widely applied in drone light show and other formation shows

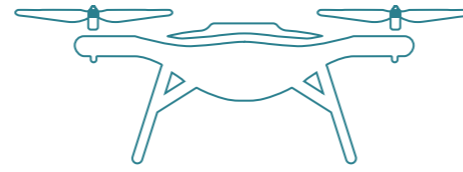


Single point positioning (RMS)	Horizontal: 1.5 m Vertical: 2.5 m
DGPS (RMS)	Horizontal: 0.4 m Vertical: 0.8 m
RTK (RMS)	Horizontal: 0.8 cm + 1 ppm Vertical: 1.5 cm + 1 ppm
PPP (RMS)	Horizontal: 5 cm Vertical: 10 cm
Cold start	< 30 s
RTK initialization time	< 5 s (Typical)

Initialization reliability	> 99.9%
PPS accuracy	20 ns
Velocity accuracy	0.03 m/s
Interface	3 x UART (LVTTTL) 1 x I ² C* 1 x SPI* 1 x CAN* (shared with UART3)
Operating temp.	-40°C ~ +85°C
Storage temp.	-55°C ~ +95°C

Product model	Dimension(mm)	Data update rate	Heading	CLAS	Power consumption	Frequency
UM982	16.0 x 21.0 x 2.6	20 Hz (RTK+Heading)	0.1° / 1 m baseline (dual antenna)	—	600 mW	BDS B1I, B2I, B3I, B1C*, B2b* GPS L1C/A, L2C, L2P(Y), L5 GLONASS G1, G2
UM982C				Support	500 mW	Galileo E1, E5a, E5b, E6* QZSS L1C/A, L1C/B, L2C, L5, L6 SBAS L1C/A L-Band (UM982C)
UM980	17.0 x 22.0 x 2.6	50 Hz	—	—	480 mW	BDS B1I, B2I, B3I, B1C, B2a, B2b GPS L1C/A, L2C, L2P(Y), L5 GLONASS G1, G2, G3
UM980C		20 Hz	—	Support	480 mW	Galileo E1, E5a, E5b, E6 QZSS L1C/A, L1C/B, L2C, L5, L6* NavIC L5 SBAS L1C/A L-Band (UM980C)
UM960	12.2 x 16.0 x 2.6	20 Hz	—	—	450 mW	BDS B1I, B2I, B3I, B1C, B2a GPS L1C/A, L2C, L2P(Y), L5 GLONASS G1, G2 Galileo E1, E5a, E5b QZSS L1C/A, L2C, L5

Note: Items marked with * are supported by specific firmware.



CONSUMER DRONES

UC6580 Dual-frequency Multi-constellation GNSS Positioning SoC

- 96 channels
- Concurrent operation of quad-constellation
- Supports L1+L5 dual frequencies, with excellent multi-path mitigation algorithm

Dimension	5.0 x 5.0 x 0.85 mm	
Constellations	BDS B1I/B1C*+B2a, GPS L1+L5, Galileo E1+E5a, GLONASS G1, QZSS L1+L5, NavIC L5*, SBAS L1	
Single Point Positioning (RMS)	Horizontal: 1.5 m	Vertical: 2.5 m
Velocity accuracy	0.02 m/s	
Time Accuracy (RMS)	5 ns, peak-to-peak value 30 ns (24 h)	
Data update rate	GNSS 1 Hz / 5 Hz / 10 Hz	
TTFF	Cold Start < 26 s	Hot Start < 1 s
Sensitivity	Tracking: -162 dBm	Cold Start: -148 dBm Hot Start: -156 dBm Reacquisition: -159 dBm
Interface	2 x UART, 1 x I ² C, 1 x SPI*	
Power Supply	1.7 ~ 3.6 V	
Power Consumption@3V	< 40 mA	
Operating temp.	-40°C ~ +85°C	
Data Format	NMEA-0183, Unicore, RTCM V3.X	

Note: Items marked with * are supported by specific firmware.

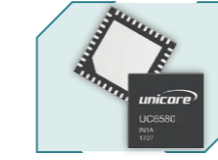
UC7510 Single-frequency Multi-constellation GNSS Positioning SoC

- 64 channels
- Supports GPS, BDS, GLONASS, Galileo and QZSS multi-constellation joint positioning



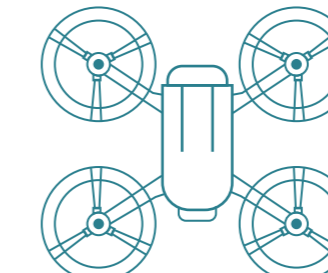
Dimension	4.0 x 4.0 x 0.75 mm	
Constellations	GPS L1, BDS B1, GLONASS G1, Galileo E1, QZSS L1	
Single Point Positioning (RMS)	Horizontal: 2 m	
Velocity accuracy	0.05 m/s	
Data update rate	Up to 10 Hz	
Sensitivity	Tracking: -165 dBm	Cold Start: -148 dBm Hot Start: -160 dBm Reacquisition: -160 dBm
TTFF ¹	Cold Start < 26 s	AGNSS ² < 3 s Hot Start < 1 s Reacquisition < 1 s
Operational Limits	Altitude: 18000 m Velocity: 515 m/s Dynamics: 4 g	
Power Supply	V _{IO} : 1.7 ~ 1.9 / 3.0 ~ 3.6 V V _{Core} / V _{RF} : 1.2 ~ 1.98 V V _{BACK} : 1.7 ~ 3.6 V	
Power Consumption	< 40 mA	
Operating temp.	-40°C ~ +85°C	
Interface	1 x UART (LVTTTL), 1 x I ² C*, 1 x SPI*	
Data Format	NMEA-0183, Unicore, RTCM V3.X	

Note: Items marked with * are supported by specific firmware.
1. Satellite signal strength -130 dBm. 2. Timely injection of assistance data.

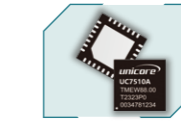


TTFF	Cold Start < 26 s	Hot Start < 1 s
Sensitivity	Tracking: -162 dBm	Cold Start: -148 dBm Hot Start: -156 dBm Reacquisition: -159 dBm
Interface	2 x UART, 1 x I ² C, 1 x SPI*	
Power Supply	1.7 ~ 3.6 V	
Power Consumption@3V	< 40 mA	
Operating temp.	-40°C ~ +85°C	
Data Format	NMEA-0183, Unicore, RTCM V3.X	

Note: Items marked with * are supported by specific firmware.

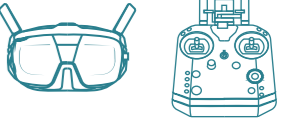


RECOMMENDED PRODUCTS FOR DRONE ACCESSORIES



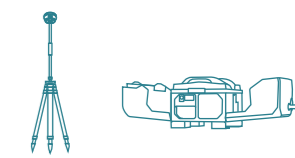
Drone Remote Controller and FPV Goggles

- UC7510 single-frequency multi-constellation GNSS positioning SoC, 4x4x0.75mm
- 64 channels
- Low power consumption, 12 mA @ 3.3 V
- Built-in anti-jamming technology, with excellent environmental adaptability



Drone Dock and Base Station

- UM980 All-constellation Multi-frequency High-precision RTK Positioning Module
- Provides reliable raw observation data
- Advanced multi-path mitigation technology
- Supports E6 HAS, B2b-PPP and QZSS L6 (MADOCA) PPP services



EVALUATION KITS, ACCESSORIES, AND SERVICES

HPL EVK 5.0 Kit 	UC6580 EVK 	UC7510 EVK
UM982eb/UM982Ceb 	UM980eb/UM980Ceb 	UM960eb

Recommended Antennas

HX-CUX615A 	HX-CUX005A 	HX-CUX005A
----------------	----------------	----------------