UM960

FEATURES

- Small compact size 16.0 x 12.2 mm
- Multi-System, multi-frequency high-precision RTK module (SMD packaging)
- Supports GPS L1/L2/L5, Glonass L1/L2, Galileo E1/E5a/E5b, Beidou B1/B2I/B3I, QZSS L1/L2/L5
- All-constellation multi-frequency RTK engine and advanced RTK technology
- Independent tracking of each frequency and 60dB narrowband anti-jamming technology

PRODUCT BENEFITS

- 1408 channels
- Small footprint
- Centimeter-level RTK positioning
- Low power consumption of <500mW

EXAMPLE APPLICATIONS

- UAV, UVS, Robotics
- Survey and Mapping
- Machine Control
- Precision Agriculture

GPS / Glonass / Galileo / Beidou / QZSS High Precision RTK Positioning Module

UM960 is Unicore's new-generation proprietary high-precision positioning, based on the **Nebulas IV**™ SoC. The **UM960** simultaneously tracks multiple frequencies of all G6NSS systems, enabling the module to output high-precision RTK positioning. The built-in advanced anti-interference technology ensures the **UM980** delivers reliable and accurate positioning data even in complex electromagnetic environments. Featuring extraordinary positioning performance and stability, **UM960** is a perfect choice for high precision navigation and positioning applications.

MULTI-SYSTEM, MULTI-FREQUENCY SIGNAL PROCESSING

UM960 simultaneously tracks signals from GPS, Glonass, Galileo, Beidou and QZSS systems and supports tri-band signals from GPS, Galileo and Beidou and QZSS, delivering "instantaneous" RTK initialization achieving centimeter level positioning accuracy. In areas of partial signal blockage or over long baseline distance, the **UM960** obtains RTK positioning results quickly and reliably.

RTK KEEP

RTK KEEP technology eliminates the positioning errors affected by satellite orbits, clock difference's, ionospheric and tropospheric delays by means of models and parameter estimation after the loss of base station data. Centimeter-level positioning accuracy can be maintained for up to 10 minutes.

NEBULAS IV™ SoC

NebulasIV™ is Unicore's latest generation proprietary GNSS SoC. By leveraging 22nm process node architecture, high-performance multi-mode baseband processor and embedded microprocessor, NebulasIV™ delivers superb performance and maintains low power consumption. The integrated RTK matrix processing technology allows the chip to deliver an enhanced and robust all-system all-frequency centimeter-level RTK position.

UM960 TECHNICAL SPECIFICATIONS

PERFORMANCE

Channel	1408 channels, based on Nebulas-IV SoC
Frequency	GPS L1C/A, L2P, L5 Galileo E1, E5a, E5b Beidou B1I, B2I, B3I, - B1C, B2A* GLONASS L1, L2 QZSS L1, L2, L5
Autonomous accuracy (RMS):	Horizontal: 1.5m Vertical: 2.5m
DGNSS accuracy (RMS):	Horizontal: 0.4m Vertical: 0.8m
RTK accuracy (RMS):	Horizontal: 0.8cm + 1ppm Vertical: 1.5cm + 1ppm

Cold start:	<30 s
Warm start:	<10 s
Reacquisition time:	<1 s
Initialization time:	<5 s (typical)
Initialization reliability:	>99.9%
Correction Input Protocol:	RTCM V3.x
Data Output Protocol:	NMEA-0183, Unicore
Data update rate:	50 Hz*
Time accuracy (RMS):	20 ns

PHYSICAL

Dimensions	12.2 x 16.0 x 2.6 mm
I/O Connectors	24 pin LGA
Weight:	1.1 +/- 0.03g

ELECTRICAL

Voltage	3.3V ~ 3.6V DC
Ripple Voltage	100 mV p-p (max)
Power Consumption	TBD (typical)

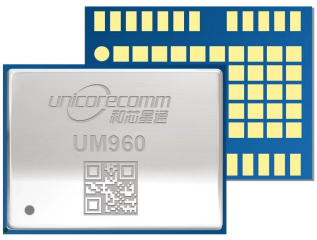
ENVIRONMENTAL

Operating Temperature:	-40° C to +85°C
Storage Temperature:	-55° C to +95° C
Humidity	95% non-condensing
Vibration	GJB150.16A-2009, MIL-STD-810F
Shock	GJB150.18A-2009, MIL-STD-810F

COMMUNICATION INTERFACE

3 x UART (LV-TTL), 1 x CAN*, 1 x I2C*

Note: Items market with * are only supported by specific firmware.



CONTACT INFORMATION

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Ordering Information

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