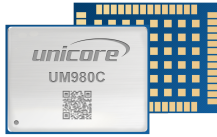


UM980C

GPS/BDS/GLONASS/Galileo/QZSS
All-Constellation Multi-Frequency
High-Precision RTK Positioning Module
(L-Band & CLAS Supported)



Features

- » Based on Unicore's proprietary GNSS SoC NebulasIV which integrates RF-baseband and high-precision algorithm
- » All-constellation, multi-frequency RTK engine and advanced RTK processing technology
- » Instant RTK initialization technology
- » 60 dB narrowband anti-jamming and jamming detection
- » Heading2 technology to provide orientation information
- » STANDALONE single-station high-precision positioning technology
- » Supports B2b-PPP, E6-HAS and QZSS L6E (MADOCA) PPP services
- » Supports QZSS L6D (CLAS) PPP-RTK solution
- » Supports TruePoint REACH Sat L-band-based PPP-AR service¹

Dimensions: 17.0 × 22.0 × 2.6 mm



UM980C is Unicore's new-generation proprietary all-constellation, multi-frequency high-precision RTK positioning module, developed based on the GNSS SoC NebulasIV which integrates RF-baseband and high-precision algorithm. The module supports multiple systems including GPS, BDS, GLONASS, Galileo, QZSS, NavIC, SBAS and L-Band, supports QZSS L6D (CLAS) PPP-RTK solution, and Supports TruePoint REACH Sat L-band-based PPP-AR service. The built-in multi-frequency anti-jamming technology enhances RTK solution on multiple modes and frequencies, which significantly improves RTK initialization speed, measurement accuracy and reliability in challenging environments such as urban canyons and tree shades. UM980C is ideal for surveying and mapping, and precision agriculture.

Applications

Performance Specifications

Channel	1408 channels, based on NebulasIV			
Frequency	GPS L1C/A, L1C/L2P, L5			
	BDS B1I, B2I, B3I, B1C, B2a, B2b			
	GLONASS G1, G2			
	Galileo E1, E5a, E5b, E6			
	QZSS L1C/A, L1C, L2C, L5, L6			
	NavIC L5			
	SBAS L1C/A			
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 @20min			
	Vertical: 10 cm @20min			
PPP-AR (RMS)	Horizontal: 3 cm @5min			
	Vertical: 6 cm @5min			
CLAS (RMS)	Horizontal: 5 cm @1min			
	Vertical: 10 cm @1min			
Observation Accuracy (RMS)	BDS	GPS	GLONASS	Galileo
B1I/B1C/L1C/A/G1/E1 Pseudorange	10cm	10cm	10cm	10cm
B1I/B1C/L1 C/A/G1/E1 Carrier Phase	1mm	1mm	1mm	1mm
B2I/B2a/B2b/L5/E5a/E5b Pseudorange	10cm	10cm	10cm	10cm
B2I/B2a/B2b/L5/E5a/E5b Carrier Phase	1mm	1mm	1mm	1mm
B3I/L2P(Y)/L2C/G2/E6/L6 Pseudorange	10cm	10cm	10cm	10cm
B3I/L2P(Y)/L2C/G2/E6/L6 Carrier Phase	1mm	1mm	1mm	1mm
Time Pulse Accuracy (RMS)	20 ns			
Velocity Accuracy (RMS)	0.03 m/s			

Performance Specifications

TTFF	Cold Start < 12 s
(Time to First Fix)	Hot Start < 4 s
Initialization Time	< 5 s (Typical)
Initialization Reliability	>99.9%
Data Update Rate	Up to 50 Hz RTK data output
Differential Data	RTCM V3.X
Data Format	NMEA 0183, Unicore

Physical Characteristics

Package	54 pin LGA
Dimensions	17.0 × 22.0 × 2.6 mm
Weight	1.88 g ± 0.03 g

Environmental Specifications

Operating Temperature	-40°C ~ +85°C
Storage Temperature	-55°C ~ +95°C
Humidity	95% No condensation
Vibration	GJB150.16A-2009, MIL-STD-810F
Shock	GJB150.18A-2009, MIL-STD-810F

Functional Ports

3 × UART (LVTTL)
1 × I ² C*
1 × SPI*
1 × CAN* (Shared with UART3)

*: I²C, SPI and CAN are supported on specific firmware or hardware.

1. This is a paid service
2. Under open sky and without jamming



Surveying
and mapping



Precision
agriculture