

UM4B0

GPS/BDS/GLONASS/Galileo
All-constellation All-frequency
RTK Positioning Module



30 × 40 × 4 mm

Applications



Intelligent
Drive



Robot



High precision
GIS



UAV

Functional Ports

3 x UART
1 x PPS (LVTTL)
1 x Event

Physical Specifications

Size	30 × 40 × 4 mm
Weight	9.2 g
I/O Connectors	2 x 30 pin, SMD
Temperature	Working: -40 °C~+85 °C Storage: -55 °C~+95 °C
Humidity	95% No condensation
Vibration	GJB150.16-2009,MIL-STD-810
Shock	GJB150.18-2009,MIL-STD-810

Electrical Specifications

Voltage	3.3 VDC +5%/-3%
Ripple Voltage	100 mV p-p (max)
Power Consumption	1.8 W (typical)

NOTE: The parts marked with * are optional configurations.

Product Characteristics

- » Based on multi-system multi-frequency high-performance SoC - NebulasII, with 432 super channels
- » Support BDS, GPS, GLONASS, Galileo and QZSS, including Beidou-3 signal
- » 30x40 mm, small size all-system all-frequency RTK positioning SMD module
- » Instantaneous RTK initialization and support long baseline RTK solution
- » Adaptive recognition of differential data RTCM format, support antenna signal detection
- » 60dB narrowband anti-jamming, support multi-path suppression technology
- » Support UART, 1PPS, Event and other physical interfaces

Product Introduction

UM4B0 is an all-constellation all-frequency RTK positioning module based on the high-performance high-precision SoC - NebulasII, which is developed by Unicore Communications. It supports multiple satellite signals, including BDS B1I/B2I/B3I/B1C/B2a, GPS L1/L2/L5, GLONASS L1/L2, Galileo E1/E5a/E5b and QZSS L1/L2/L5. UM4B0 has adopted narrowband anti-jamming technology. It is mainly applied in the field of light-weight robots, GIS, intelligent driving, UAV, etc.

Performance Specifications

Channel	432 channels, NebulasII SoC			
Frequency	BDS B1I/B2I/B3I/B1C/B2a GPS L1/L2/L5 GLONASS L1/L2 Galileo E1/E5a/E5b QZSS L1/L2/L5			
Single point positioning(RMS)	Horizontal: 1.5m		Vertical: 2.5m	
DGPS(RMS)	Horizontal: 0.4 m		Vertical: 0.8 m	
RTK(RMS)	Horizontal: 0.8cm + 1ppm		Vertical: 1.5cm + 1ppm	
Cold Start/Hot Start	<25 s/< 10 s	Observation Update Rate	20 Hz	
Reacquisition	<1 s	Location Update Rate	20 Hz	
RTK Initialization Time	<5 s(typical)	Time Accuracy (RMS)	20 ns	
Initialization Reliability	>99.9%	Velocity Accuracy (RMS)	0.03 m/s	
Correction	RTCM V3.0 /3.2			
Data Output	NMEA-0183, Unicore			
Observation Accuracy(RMS)	BDS	GPS	GLONASS	Galileo
B1/L1 C/A/E1 Code	10cm	10cm	10cm	10cm
B1/L1/E1 Carrier Phase	1mm	1mm	1mm	1mm
B2/L2P(Y)/L2C/E5b Code	10cm	10cm	10cm	10cm
B2/L2P(Y)/L2C/E5b Carrier Phase	1mm	1mm	1mm	1mm
B3/L5/E5a Code	10cm	10cm	10cm	10cm
B3/L5/E5a Carrier Phase	1mm	1mm	1mm	1mm