UB4B0M

GPS/BDS/GLONASS/Galileo
All-constellation All-frequency Compact High Precision Board

46 × 71 × 10 mm

Product Characteristics

» Based on Nebulas-II high-performance SoC, with 432 super channels
» Support BDS, GPS, GLONASS, Galileo and QZSS, including Beidou-3 signal
» Centimeter-level high-precision RTK positioning, better than 1mm carrier phase observation value
» Support single system standalone positioning and multi-system joint positioning
» Support multi-path mitigation technology
» Support 3 x UART and 1 x 1PPS
» Compatible with mainstream GNSS OEM boards

Applications

Surveying and Mapping

Brief Introduction

UB4B0M is a compact high precision board supporting RTK positioning. Using the self-developed proprietary multi-system multi-frequency high-performance SoC Nebulas-II, the board features low power consumption and offers millimeter-level carrier phase observation value as well as centimeter-level RTK positioning, supporting chip-level multi-path mitigation. The leading instantaneous RTK technology is especially suitable for high-precision navigation and positioning applications.

Electrical Specifications

Voltage	3V~5V DC
LNA	4.75~5.10V, 0~100 mA
Ripple Voltage	100mVp-p(max)
Power Consumption	1.8W(Typical)

Physical Specifications

Dimensions	46 × 71 × 10 mm
Weight	26 g
I/O Connectors	2x10pin
Antenna Input	1 × MCX

Functional Ports

	3x UART (LV-TTL)
	1x1PPS (LV-TTL)
	1×Event

Environmental Specifications

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

NOTE: The parts marked with * are optional configurations.

Performance Specifications

Channel	432 channels,based on Nebulas-II chip		
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	<25 s	Data Output	NMEA-0183,Unicore
Hot Start	<10s	Observation Update Rate	20 Hz
Reacquisition	<1 s	Location Update Rate	20 Hz
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		

Observation Accuracy	BDS	GPS	GLONASS	Galileo
B1/B1C/L1 C/A/G1/E1 Code	10cm	10cm	10cm	10cm
B1/L1 C/A/G1/E1Carrier Phase	1mm	1mm	1mm	1mm
B2/L2P(Y)/L2C/G2/E5b Code	10cm	10cm	10cm	10cm
B2/L2P(Y)/L2C/E5a Carrier Phase	1mm	1mm	1mm	1mm
B3/B2a/L5/E5a Code	10cm	10cm	10cm	10cm
B3/B2a/L5/E5a Carrier Phase	1mm	1mm	1mm	1mm