UB380

BDS/GPS/GLONASS Tri-System Octa-Frequency High Precision Board

Brief Introduction

UB380 is BDS/GPS/GLONASS Tri-system Octa-Frequency Board developed by Unicore based on its mature Beidou compatible multi-system GNSS SoC. UB380 provides an ideal solution for high precisioning, navigation, and GBAS applications.

■ BDS Support

384 channels, support BDS/GPS/GLONASS satellites, can track and process BDS B1, B2, B3[2], GPS L1, L2, L5. The support of GPS L2P, L2C, ensuring the high precision reference station equipment requirements of GBAS.

■ Latest Tri-System & Tri-frequency RTK Engine

With the latest tri-frequency RTK engine, UB380 can process tri-frequency of BDS, Tri-frequency of GPS and dual-frequency GLONASS observation data. It can significantly reduce initialization time, improve position accuracy, and enhance reliability in difficult environments such as city canyon and canopy, as well as make the long baseline RTK possible.

■ Mature GNSS SoC Technology

As the core processor of UB380, more than 100,000 pieces of unicore's high-performance multi-system multi-frequency SoC chip - (Nebulas™)[1] has been applied in the market, The SoC chip is characterized by small size, low power consumption and high reliability.

■ Easy Integration Design

UB380 board is compatible with industry standard GNSS OEM borads in size and interface electrical standards, convenient for the user to quickly develop and upgrade the software and hardware.

■ Multiple Communication Interface and Web Interface

UB380 supports various interfaces such as RS232, USB, and Ethernet interface, user can configure the board through Ethernet. With this, user can manage, upgrade, and reboot the board remotely.

Application Field

• Precision surveying

• Ground-based augmentation systems(GBAS)

• Deformation monitoring

• Precison Agriculture

• Mechanical control

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[1] Unicore Nebulas™ (UC260) is multi-system multi-frequency high performance SoC chip, which supports all existing GNSS, including BDS B1/B2/B3, GPS L1/L2/L5, GLONASS L1/L2 and Galileo E1/E5a/E5b.

Basic Features

• Based on multi-system, multi-frequency, high performance SoC - Nebulas™

• In support of the single system positioning

• Advanced technology of multi-path mitigation and low elevation angle tracking

• Support various interfaces such as Ethernet, 1PPS, and External oscillator input etc.

• Support HTTP、FTP、NTRIP

Product Characteristics

• Support BDS B1/B2/B3[2] + GPS L1/L2/L5 + GLONASS L1/L2

• Better than 1mm carrier phase precision

• Centimeter level high precision RTK positioning

• Better than 0.2° heading accuracy

• Compatible with Industry Standard GNSS boards

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UB380
BDS/GPS/GLONASS Tri-System Octa Frequency Board

Technical Specifications

Performance Specifications

Channel	384 channel SoC Nebulas		Initialization Time	<10s (Typical)	
Frequency	BDS B1 / B2 / B3[2]		Initialization Reliability	>99.9%	
	GPS L1 / L2 / L5		Time to First Fix(TTFF)	Cold Start : 50s	
	GLONASS L1 / L2		Frequency Correction	RTCM 2.x/3.x，CMR	
Single Point	Horizontal : 1.5m		Data Output	NMEA-0183, Unicore	
Position (RMS)	Vertical: 3.0m		Update Rates	20Hz	
RTK (RMS)	Horizontal : 10mm + 1ppm		Time Accuracy(RMS)	20ns	
	Vertical: 15mm + 1ppm		Velocity Accuracy(RMS)	0.03m/s	
Heading(RMS)	0.2°(1m baseline)		Network Protocol	NTRIP、HTTP、FTP	

Measurement(RMS)	BDS	GPS	GLONASS
B1/L1 C/A code	10cm	10cm	10cm
B1/L1 Carrier Phase	1mm	1mm	1mm
B2/L2P(Y) code	10cm	10cm	10cm
B2/L2 Carrier Phase	1mm	1mm	1mm
B3/L5 code	10cm	10cm	
B3/L5 Carrier Phase	1mm	1mm	

Physical Specifications

Dimensions	100 x 60 x 11.4 mm		I/O Connectors	2x12 pin
Operating	-40°C~+85°C			2x3 pin
Storage	-55°C~+95°C		Antenna Input	MMCX
Humidity	95% non-condensing		External Oscillator	MMCX
Vibration	GJB150.16-2009,MIL-STD-810			
Shock	GJB150.18-2009,MIL-STD-810			

Electrical Specifications

Voltage	3.3VDC +5%/–3%
LNA	4.75~5.10V, 0~100 mA
Ripple Voltage	100mV p-p（max）
Power Consumption	2.6W (Typical)

Functional Ports

1xLAN

1x UART (RS-232)

2x UART (LV-TTL)

1x1PPS (LV-TTL）

Note：Part marked with* is customizable.

[2] BDS signal support of this board is based on current publicly ICD information. As such, Unicorecomm cannot guarantee the board will be fully compatible with a future generation of Beidou satellites or signals.

CONTACT US

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