UB482

GPS/BDS/GLONASS/Galileo Dual-antenna, All-constellation Compact GNSS Positioning and Heading Board

Brief Introduction

Developed by Unicore and based on the Nebulas-II high-performance high-precision GNSS SoC, the UB482 is a multi-system, multi-frequency, high-precision heading board. It supports BDS B1/B2 + GPS L1/L2 + GLONASS L1/L2 + Galileo E1/E5b + QZSS L1/L2. UB482 adopts classic compact size and supports network and inertial navigation. It is widely used in drones, driving tests and intelligent driving.

"UGypsophila" RTK processing technology

Coupled with a high-performance data-sharing capability and simplified operating system within the Nebulas II, UB482 performs sufficient optimization on the multi-dimensional RTK matrix computation. The receiver will try to track all visible satellites of all systems to be used in the RTK and heading solutions, resulting in a shortened RTK initialization time of 5 seconds and improved accuracy and reliability.

Nebulas-II GNSS SoC

UB482 is based on Unicore' s Nebulas-II multi -system, multi-core, high precision SoC. The SoC supports 432 channels, includes a built-in high performance ADC, an anti-interference unit, two 600MHz ARM processors and two precision floating-point processing units, providing powerful GNSS signal processing capability.

On-board MEMS integrated navigation

The UB482 integrates 6-axis on-board MEMS chip and U-Fusion INS algorithm, resulting in optimized continuity and reliability of accurate heading and positioning output in tough environments, such as city canyons, tunnels and overpasses.

Application Field

- Precision surveying
- Ground-based augmentation systems(GBAS)
- Deformation monitoring
- Precison Agriculture
- Mechanical control

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Product Characteristics

- 46 X 71 mm compact board, with the interface compatible with the mainstream GNSS boards
- Multi-system multi-frequency high-precision heading
- Supports GPS L1/L2+BDS B1/B2 +GLONASS L1/ L2+Galileo E1/E5b+QZSS L1/L2
- Simultaneous output of heading and positioning and more than 20 Hz data output rate
- Less than 1 second RTK reacquisition speed, support hot start

Basic Features

- Based on a multi-system, multi-frequency and high-performance Nebulas-II GNSS SoC
- Supports dual antenna signal input and single board positioning and heading
- Advanced multi-path mitigation technology
- Rich set of interfaces such as ethernet, serial port, SPI, 1PPS

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Technical Specifications

Performance Specifications

Channel	432 channels, bases on Nebulas-II UC4C0 chip
Frequency	BDS B1/B2
	GPS L1/L2
	GLONASS L1/L2
	GALILEO E1/E5b
	QZSS L1/L2
	SBAS L1
Single Point Position (RMS)	Horizontal：1.5 m
	Vertical：2.5 m
DGPS(RMS)	Horizontal：0.4 m
	Vertical：0.8 m
RTK (RMS)	Horizontal：1 cm + 1ppm
	Vertical：1.5 cm + 1 ppm
Heading Accuracy	0.1 degree @1m baseline
Velocity Accuracy (RMS)	0.03 m/s
Time Accuracy (RMS)	20 ns
Reacquisition	< 1 s
Correction	RTCM 2.3/3.0/3.2
Data Output	NMEA-0183, Unicore
Heading and RTK Update Rate	20 Hz
Dead Reckoning Error	< 5% of distance travelled during GPS denied conditions
Network Protocol	NTRIP、TCP/IP

Physical Specifications

Dimensions	46 × 71 × 11.4 mm
Weight	21 g
I/O Connectors	2 x 14 pin
Antenna Input	2 x MMCX

Environmental Specifications

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

Electrical Specifications

Voltage	3 V~5 VDC
LNA	4.75 ~ 5.10 V, 0 ~ 100 mA
Ripple Voltage	100 mV p-p (max)
Power Consumption	2.4 W (Typical)

Functional Ports

- 3 x UART (LV-TTL)
- 1 x Event
- 1 x 1PPS (LV-TTL)
- 1 x LAN

CONTACT US

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