

Precis-BX316 GNSS RTK Board

GPS L1L2/GLONASS G1G2/Beidou B1B2 with Heading

Precis-BX316 is a GNSS RTK board for precise positioning and heading. It supports delivering multi-constellation RTK baselines between two connected antennae and to a remote base station. This board offers real-time, cost efficient cm-level positioning capability as well as flexible interfaces for a number of applications, such as navigation, precise agriculture, surveying and UAV.



Precis-BX316 can be integrated with other host devices or can serve as an independent positioning system. It uses standard serial port module for communication. A special connector makes it easy to integrate with host devices or autopilots. The Precis-BX316 board supports multi-GNSS RTK positioning, which improves continuity and reliability of RTK positioning.

Key Features

- Supports 3 constellations, 6 frequencies
 - GPS L1L2/BDS B1B2/GLONASS G1G2
 - GPS L1L2 heading mode
- Supports 192 GNSS channels
- Rapid RTK integer ambiguity resolution
- Achieves instant heading by dual antenna single board
- Up to 20 Hz position/velocity/time solutions
- High integration SoC solution
- Easy to integrate with Pixhawk and other autopilots
- Supports camera shutter synchronization
- Two serial ports with TTL level
- External antenna input through SMA connector
- Data output: NMEA-0183
- Correction: RTCM 2.x/3.x and CMR
- Supports logging raw observation data
- Compact design and low power consumption

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Performance Specifications

- Channel Number192
- Frequencies ... GPS L1L2/ BDS B1B2/GLONASS G1G2
- Standard Positioning Accuracy
 - Horizontal (RMS)1.5m
 - Vertical (RMS)3.0m
- RTK Positioning Accuracy
 - Horizontal (RMS).....10mm+1ppm
 - Vertical (RMS).....15mm+1ppm
- Observations Accuracy
 - C/A Code (zenith direction) 10cm
 - P Code (zenith direction) 10cm
 - Carrier Phase (zenith direction)1mm
- Heading Accuracy
 - 1m Baseline(RMS)..... 0.1°
- Time to First Fix (TTFF)
 - Cold start<50s
 - Warm start<30s
- Timing Accuracy (RMS) 20ns
- Initialization (typical)..... <10s
- Initialization reliability>99.9%
- Velocity Accuracy (RMS)0.2m/s
- Differential Data FormatRTCM 2.X/3.2/CMR
- Max. Update Rate 20Hz

Communication

- Serial port5pin TTL x2
- USB portUSB 2.0 + mini USB

Physical Characteristics

- Input Voltage.....5V~12V DC
- Power Consumption (Typical) 2.0W
- Active Antenna Input Impedance.....50Ω
- Size70x48x12mm
- Weight 33g
- Antenna Connector..... SMA Receptacle × 2
- COM baud rate Up to 230400bps
- PPS Port TTL
- Event Mark TTL

Optional Accessories

- AX3701 GNSS antenna
- 3m GNSS antenna cable with TNC/SMA connectors
- Tersus GNSS instrument case

