

Precis-BX305 GNSS RTK Board

GPS L1/L2, GLONASS G1, BDS B1/B3 with 192GNSS Channels

Datasheet
V2.0-170324

Precis-BX305 is a compact GNSS RTK board which offers real-time, cost efficient centimeter-level positioning capability as well as flexible interfaces for a number of applications, such as precision navigation, precision agriculture, surveying and UAVs. Precis-BX305 can be integrated with other host devices or can serve as an independent positioning system, which is dedicated to delivering high precision, reliable positions between the rover and the reference antennae. It uses standard serial port or UHF module for communication. A PicoBlade connector makes it easy to integrate with host devices or autopilots. Precis-BX305 board supports multi-GNSS RTK positioning, which improves continuity and reliability of RTK positioning.



Key Features:

- Supports three constellations, five frequencies
 - GPS L1/L2
 - GLONASS G1
 - Beidou B1/B3
- Supports 192 GNSS channels
- Centimeter level positioning accuracy
- Rapid RTK integer ambiguity resolution
- Up to 20Hz position/velocity/time solutions
- Serial ports with LVTTL
- Easy to integrate with Pixhawk and other autopilots
- External antenna input through SMA connector
- Data output: NMEA-0183
- Correction: RTCM 2.x/3.x and CMR
- Onboard 9-axis inertial/magnetic sensors
- High performance miniaturized microstrip GNSS antenna
- Supports logging of raw observation data
- Compact design and low power consumption



Technical Specifications

Performance Specifications

- Channel Number.....192
- Frequencies.....GPS L1/L2、
GLONASS G1、 Beidou B1/B3
- Standard Positioning Accuracy
 - Horizontal(RMS).....1.5m
 - Vertical(RMS).....3.0m
- RTK Positioning Accuracy
 - Horizontal(RMS).....10mm+1ppm
 - Vertical(RMS).....15mm+1ppm
- Observation Accuracy
 - C/A Code(zenith direction).....10cm
 - P Code(zenith direction).....10cm
 - Carrier Phase(zenith
direction).....1mm
- Time to First Fix(TTFF)
 - Code Start.....<50s
 - Warm Start.....<30s
- Timing Accuracy(RMS).....20ns
- Initialization Reliability.....>99.9%
- Velocity Accuracy(RMS).....0.03m/s
- Differential Data Format.....RTCM 2.x/3.x/CMR
- Max Update Rate.....20Hz

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Communication

- Serial Ports.....LVTTL x3
- PPS.....LVTTL x1

Physical Characteristics

- Power.....5V DC
- Power Consumption(typical).....2.6W
- Active Antenna Input Impedance.....50Ω
- Max. Antenna Bias Current Draw.....100mA
- GNSS input sensitivity.....-85 dBm ~ -122 dBm
- Size.....130x60x18mm
- Weight.....69g
- Antenna Connector.....SMA Receptacle x2
- COM Baud Rate.....Up to 230400bps

Optional Accessories

- PicoBlade cables
- AX3701 GNSS antenna
- Compact 500mW UHF transceiver
(433MHz/915MHz)
- Tersus USB connector and instrument case
- 3m GNSS antenna cable with TNC/SMA
connectors