

# BX316R GNSS PPK Board

*GPS L1/L2, GLONASS G1/G2, BDS B1/B2*

Datasheet  
V1.0-180116

BX316R is a GNSS Post Processing Kinematic (PPK) board for accurate positioning. It supports raw measurements output from two antennas. External SD card (up to 32G) makes it convenient for customer to collect data for post processing. Working with Tersus AX3702/AX3703 antenna, this receiver can output stable measurements even in harsh condition.

BX316R has versatile interfaces for a number of applications, such as precision navigation, precision agriculture, surveying and UAVs. A specific connector makes it easy to integrate with other devices.

## Key Features



- Supports measurements output
  - GPS L1/L2, GLONASS G1/G2, BDS B1/B2 from primary antenna
  - GPS L1/GLONASS G2 or GPS L1/BDS B2 from secondary antenna
- Supports external 32G SD card, makes data collection easy
- High integration SoC solution
- Supports PPS output and event mark input
- Serial ports with LVTTTL or RS-232
- External antennas input through SMA connectors
- Data output: NMEA-0183 and Tersus Binary format
- Correction: RTCM 2.x/3.x/CMR/CMR+
- Easy to integrate with Pixhawk and other autopilots



## Technical Specifications

### Performance Specifications

- Frequencies for Primary Antenna.....GPS L1/L2, GLONASS G1/G2, BDS B1/B2
- Frequencies for Secondary Antenna.... GPS L1/GLONASS G2 or GPS L1/BDS B2
- Standard Positioning Accuracy
  - Horizontal(RMS).....1.5m
  - Vertical(RMS).....3.0m
- Post-Processed Kinematic (PPK) Accuracy
  - Horizontal(RMS) ..... 10 mm+1ppm
  - Vertical(RMS)..... 15 mm+1ppm
- Observation Accuracy
  - C/A Code(zenith direction).....10cm
  - P Code(zenith direction).....10cm
  - Carrier Phase(zenith direction).....1mm
- Time to First Fix (TTFF)
  - Cold Start.....<50s
  - Warm Start.....<30s
- Timing Accuracy (RMS).....20ns
- Velocity accuracy (RMS) .....0.03m/s
- Initialization(typical).....<10s
- Initialization Reliability.....>99.9%
- Max Measurements Update Rate.....20Hz

### Communication

- Serial Ports.....LVTTL x2 or RS-232 x2
- USB Ports.....USB 2.0 device x1
- Ethernet..... 10M/100M Base-T x1 \*
- CAN Ports.....LVTTL or ISO/DIS 11898 x2 \*
- PPS Ports.....LVTTL x1
- Event Mark.....LVTTL x2 \*

### Physical Characteristics

- Input Voltage.....5~12V DC
- Power Consumption(typical).....3.5W
- Active Antenna Input Impedance.....50Ω
- Size.....108x54x12mm
- Weight.....44g
- Antenna Connector.....SMA female x2
- COM Baud Rate.....Up to 921600bps
- Operating Temperature.....-40°C ~ +85°C

### Optional Accessories

- AX3702/AX3703 GNSS antenna
- 3m GNSS antenna cable with TNC/SMA connectors
- Tersus GNSS instrument transport case

\* This port's function is related to FW version.

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