Overview

The BX316R is a GNSS Post Processing Kinematic (PPK) board for accurate positioning. In-built 4GB memory makes it convenient for users to collect data for post processing. Coupled with Tersus AX3702/AX3703 GNSS antennas, this receiver can output stable measurements even in harsh environmental conditions.

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

Key Features

Supports measurements output
- GPS L1/L2, GLONASS L1/L2, BeiDou B1/B2 from primary antenna
- GPS L1/GLONASS L2 or GPS L1/BeiDou B2 from secondary antenna

Supports 384 channels

Supports in-built 4GB memory, which makes data collection easy

High integration System-on-Chip (SoC) solution

Supports PPS output and event mark input

Serial ports with LVTTL or RS232

External antenna inputs 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**

Signal Tracking for Primary Antenna:
- GPS L1/L2, GLONASS L1/L2, BeiDou B1/B2

Signal Tracking for Secondary Antenna:
- GPS L1+GLONASS L2 or GPS L1+BeiDou B2

GNSS Channels: 384

Single Point Positioning Accuracy (RMS):
- Horizontal: 1.5m
- Vertical: 3.0m

PPK Positioning Accuracy (RMS):
- Horizontal: 10mm+1ppm
- Vertical: 15mm+1ppm

Observation Accuracy (zenith direction):
- C/A Code: 10cm
- P Code: 10cm
- Carrier Phase: 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%

Correction: RTCM 2.x/3.x/CMR/CMR+

Max. Update Rate: 20Hz

Input Voltage: 5V~12V DC

Power Consumption (typical): 3.5W

Active Antenna Input Impedance: 50Ω

Storage: In-built 4GB memory

**Communication**

Serial Ports: LVTTL x2 or RS232 x2

USB Ports: USB 2.0 device x1

CAN Ports: LVTTL or ISO/DIS 11898 x1*

PPS Ports: LVTTL x1

Event Mark: LVTTL x1

* This port’s function is related to firmware version.

**Physical**

Size: 108x54x12mm

Weight: 50g

Antenna Connector: SMA female x2

COM Baud Rate: Up to 460800bps

Operating Temperature: -40°C ~ +85°C

**Optional Accessories**

AX3702/AX3703 GNSS Antenna

3m GNSS antenna cable with TNC/SMA connectors

Tersus carrying case