



BX316D

GNSS RTK Board with Heading

Overview

The BX316D is a dual frequency GNSS RTK board, which provides cm-level positioning and heading in real time, and accurate raw observation for static post processing and post processing kinematic (PPK). Its flexible interfaces can be used in a variety of applications, such as precision navigation, precision agriculture, surveying, and UAVs.

The BX316D is pin-to-pin compatible with NovAtel OEM617D. It is designed for take-up by original equipment manufacturers and system integrators. In-built 4GB memory supports data collection. Its log/command format is compatible with most of the OEM boards in market.

Key Features

Supports RTK positioning mode or RTK positioning + heading mode. The two modes are software configurable

Supports 384 channels

Up to 20Hz RTK solution updates and raw data output

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

Pin-to-pin compatible with NovAtel OEM617D

Log/command compatible with NovAtel protocol

Supports PPS output and event mark input

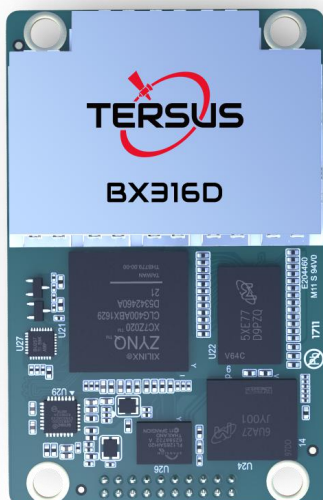
Serial ports with LVTTTL level

External antenna inputs through MMCX connectors for OEM board and SMA connectors for enclosure

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 L1 or GPS L1+BeiDou B1
GNSS Channels:	384
Single Point Positioning Accuracy (RMS):	
– Horizontal:	1.5m
– Vertical:	3.0m
RTK Positioning Accuracy (RMS):	
– Horizontal:	10mm+1ppm
– Vertical:	15mm+1ppm
PPK Positioning Accuracy (RMS):	
– Horizontal:	10mm+1ppm
– Vertical:	15mm+1ppm
Observation Accuracy (zenith direction):	
– C/A Code:	10cm
– P Code:	10cm
– Carrier Phase:	1mm
Heading Accuracy:	
– 1m Baseline (RMS):	0.15°
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:	3.3V DC (OEM board) 5~15V DC (Enclosure)
Power Consumption (typical):	2.8W (OEM board) 3W (Enclosure)
Active Antenna Input Impedance:	50Ω
Storage:	In-built 4GB memory

Communication

Serial Ports:	LVTTTL x2
USB Ports:	USB 2.0 device x1
CAN Ports:	ISO/DIS 11898 x1*
PPS Ports:	LVTTTL x1
Event Mark:	LVTTTL x1
Antenna Connector:	MMCX female x2 (OEM board) SMA female x2 (Enclosure)
COM Baud Rate:	Up to 460800bps

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

Physical

Size:	71x46x9.3mm (OEM board) 100.2x57.4x24mm (Enclosure)
Weight:	27g (OEM board) 150g (Enclosure)
Operating Temperature:	-40°C ~ +85°C

