



# BX316D

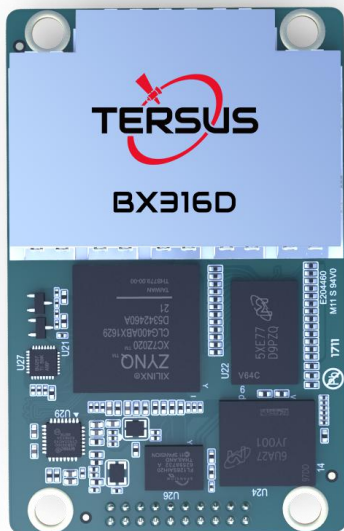
## GNSS RTK Board with Heading

### Overview

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The BX316D is a GNSS RTK board for providing accurate positioning and heading information. This board provides real-time, cost efficient and cm-level positioning as well as flexible interfaces for 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 popular interface and log/command format make it compatible with most of the OEM boards in market.



### Key Features

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

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Supports 384 channels

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Up to 20Hz RTK solution updates and raw data output

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

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Pin-to-pin compatible with NovAtel OEM617D

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Log/command compatible with NovAtel protocol

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Supports PPS output and event mark input

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Serial ports with LVTTTL level

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External antenna input through MMCX connectors

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Data output: NMEA-0183 and Tersus binary format

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

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Easy to integrate with Pixhawk and other autopilots

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# 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             |
| 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               |
| Power Consumption (typical):             | 2.8W                  |
| Active Antenna Input Impedance:          | 50Ω                   |
| Storage:                                 | In-built 4GB memory   |

## Communication

|               |                   |
|---------------|-------------------|
| Serial Ports: | LVTTL x2          |
| USB Ports:    | USB device x1     |
| CAN Ports:    | ISO/DIS 11898 x2* |
| PPS Ports:    | LVTTL x1          |
| Event Mark:   | LVTTL x2*         |

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

## Physical

|                        |                 |
|------------------------|-----------------|
| Size:                  | 46x71x12mm      |
| Weight:                | 23g             |
| Antenna Connector:     | MMCX female x2  |
| COM Baud Rate:         | Up to 921600bps |
| Operating Temperature: | -40°C ~ +85°C   |

## Optional Accessories

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

