

Tersus BX40C

Full Constellation GNSS RTK Board



Overview

The Tersus BX40C is a compact GNSS RTK board with full constellation tracking for providing cm-level accuracy positioning. It can be integrated with autopilots and inertial navigation units.

The BX40C board supports multiple constellations and multiple frequencies to improve the continuity and reliability of the RTK solution even in harsh environments. In-built 4GB memory makes data collection easy. It features compatibility with other GNSS boards in the market via flexible interfaces, smart hardware design, and commonly used log/command formats.



Key Features

Powered by new Tersus ExtremeRTK™ GNSS Technology, BX40C supports multi-constellation and multi-frequency all-in-view satellite tracking

Supports multiple constellations & frequencies:

- GPS L1 C/A, L2C, L2P, L5
- GLONASS L1 C/A, L2 C/A
- BeiDou B1I, B2I, B2a, B3I
- Galileo E1, E5a, E5b
- QZSS L1 C/A, L2C, L5
- SBAS (EGNOS, WAAS, MSAS, GAGAN) L1 C/A

Supports 576 channels

Centimeter-level position accuracy

Flexible interfaces such as RS232, TTL, USB, CAN or Ethernet

Supports PPS output and event mark input

Supports up to 20Hz RTK solution updates and raw data output

In-built 8GB memory makes data collection easy

Pin-to-pin compatible with Trimble BD970

Log/command compatible with NovAtel protocol

Technical Specifications



Performance

Signal Tracking:	
GPS L1 C/A, L2C, L2P, L5; GLONASS L1 C/A, L2 C/A;	
BeiDou B1I, B2I, B2a, B3I; Galileo E1, E5a, E5b;	
QZSS L1 C/A, L2C, L5;	
SBAS (EGNOS, WAAS, MSAS, GAGAN) L1 C/A	
GNSS Channels:	576
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
Time To First Fix (TTFF):	
– Cold Start:	<50s
– Warm Start:	<30s
Reacquisition:	<2s
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+
Data Output:	NMEA-0183 and Tersus Binary Format
Max. Update Rate:	20Hz
Storage:	In-built 8GB memory

Communication

Serial ports:	RS-232 x1, TTL x2
COM baud rate:	Up to 921600bps
USB ports:	USB 2.0 device x1
CAN ports:	ISO/DIS 11898 x1*
PPS ports:	LVTTL x1
Event mark:	LVTTL x2
Ethernet:	10BaseT/100BaseT x1

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

Electrical and Physical

Input voltage:	3.3V DC
Power consumption (typical):	3.6W
Dimension:	100x60x16mm
Weight:	44g
IO connectors:	24pin header + 6pin header
Antenna Connector:	MMCX female x1

Environmental

Operating temperature:	-40°C ~ +75°C
Storage temperature:	-55°C ~ +85°C

