

# 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 8GB 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 B1, B2, B3, support BDS-3
  - Galileo E1, E5a, E5b
  - QZSS L1 C/A, L2C, L5
- 

Supports 576 channels

---

Centimeter-level position accuracy

---

Flexible interfaces such as RS232, TTL, USB, CAN, 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	B1, B2, B3, support BDS-3;
Galileo	E1, E5a, E5b;
QZSS	L1 C/A, L2C, L5
GNSS Channels:	576
Single Point Positioning Accuracy (RMS):	
– Horizontal:	1.5m
– Vertical:	3.0m
DGPS Positioning Accuracy (RMS):	
– Horizontal:	0.25m
– Vertical:	0.5m
RTK Positioning Accuracy (RMS):	
– Horizontal:	8mm+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/100BaseTx1*(1)

\* This port's function is related to firmware version.  
(1) Hardware of ethernet is ready, reserved for future upgrade.

## Electrical and Physical

Input voltage:	3.45V DC
Power consumption (typical):	3.6W
Dimension:	100x60x10.1mm
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

Website | [www.tersus-gnss.com](http://www.tersus-gnss.com)  
Sales Inquiry | [sales@tersus-gnss.com](mailto:sales@tersus-gnss.com)  
Technical Support | [support@tersus-gnss.com](mailto:support@tersus-gnss.com)

