



BX306Z

GNSS Real-time Kinematic (RTK) Board

Overview

The BX306Z is a cost-efficient GNSS RTK board for providing cm-level positioning accuracy and raw measurement output, which can be integrated with autopilots and inertial navigation units.

The BX306Z board supports three constellations (GPS L1/L2, GLONASS G1/G2, and BeiDou B1/B2) to improve the continuity and reliability of the RTK solution even in harsh environments. In-built 4GB memory supports data collection. It features compatibility with other GNSS boards in the market via flexible interfaces, smart hardware design, and commonly used log/command formats.



Key Features

Supports GPS L1/L2, GLONASS G1/G2, and BeiDou B1/B2

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

Supports IMU raw data output

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

Pin-to-pin compatible with Trimble BD970

Log/command compatible with NovAtel protocol

Supports PPS output and event mark input

Serial ports with LVTTTL and RS232

Data output: NMEA-0183 and Tersus binary format

Supports logging of raw observation data

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



Technical Specifications

Performance

Frequencies:	
GPS L1/L2, GLONASS G1/G2, BeiDou B1/B2	
Standard Positioning Accuracy:	
– Horizontal (RMS):	1.5m
– Vertical (RMS):	3.0m
RTK Positioning Accuracy:	
– Horizontal (RMS):	10mm+1ppm
– Vertical (RMS):	15mm+1ppm
Observation Accuracy:	
– C/A Code (zenith direction):	10cm
– P Code (zenith direction):	10cm
– Carrier Phase (zenith direction):	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

Communication

Serial Ports:	LVTTL x1, RS232 x1
USB Ports:	USB device x1
CAN Ports:	ISO/DIS 11898 x2*
PPS Ports:	LVTTL x1
Event Mark:	LVTTL x2*
Ethernet:	10/100M BASE-T x1*

* This port's function is related to FW version

Physical

Input Voltage:	3.3V DC
Power Consumption (typical):	2.9W
Active Antenna Input Impedance:	50Ω
Storage:	In-built 4GB memory
Size:	100x60x12mm
Weight:	44g
Antenna Connector:	MCX female x1
COM Baud Rate:	Up to 921600bps
Operating Temperature:	-40°C ~ +85°C

