



# BX306Z

## GNSS Real-time Kinematic (RTK) Board

### Overview

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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. It features compatibility with other GNSS boards in the market via flexible interfaces, smart hardware design, and commonly used log/command formats.

### Key Features

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

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

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Supports IMU raw data output

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Pin-to-pin compatible with Trimble BD970

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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 and RS232

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Data output: NMEA-0183 and Tersus binary format

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Supports logging of raw observation data

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

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# 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:	LVTTTL x1, RS232 x1
USB Ports:	USB device x1
CAN Ports:	ISO/DIS 11898 x2*
PPS Ports:	LVTTTL x1
Event Mark:	LVTTTL 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
Size:	100x60x12mm
Weight:	44g
Antenna Connector:	MCX female x1
COM Baud Rate:	Up to 921600bps
Operating Temperature:	-40°C ~ +85°C

