



# BX306 GNSS Kit

## 433/915MHz Radio Version

### Overview

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The BX306 is a cost-efficient GNSS RTK board for cm-level positioning and providing accurate raw measurement output, which can be integrated with autopilots and inertial navigation units.

The BX306 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.



### In the Box

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- 2x BX306 RTK receivers
- 2x GNSS antennas with cables
- 2x 433 [or 915] MHz radio modules with cables
- 2x LVTTTL serial ports
- 2x 20-pin external cables
- 2x Power cables

### Key Features

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

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Up to 20Hz RTK solution and raw data output

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Supports IMU 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 OEM615

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Log/command compatible with NovAtel protocol

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Supports event mark and PPS

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Serial ports with LVTTTL

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External antenna input through MCX connector

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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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### The 433/915MHz Radios

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The radio is available in 915 MHz (US) and 433 MHz (Europe). The two radio transmitters/receivers in a RTK system need to be able to pass RTCM data from the base station to the rover receiver. The bundle includes a basic low-power radio link that is designed for short baseline applications. It has a transmit power of up to 100mW, which can support communications over approximately one kilometer range.



# 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 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

Input Voltage:	3.3V DC
Power Consumption (typical):	2.8W
Active Antenna Input Impedance:	50Ω
Storage:	In-built 4GB memory
Size:	46x71x12mm
Weight:	23g
Antenna Connector:	MCX female x1
COM Baud Rate:	Up to 921600bps
Operating Temperature:	-40°C ~ +85°C

