



BX306 GNSS Kit

433/915MHz Radio Version

Overview

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 L1/L2, 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



In the Box

- 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

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

Supports 384 channels

Up to 20Hz RTK solution and raw data output

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

Pin-to-pin compatible with NovAtel OEM615

Log/command compatible with NovAtel protocol

Supports event mark and PPS

Serial ports with LVTTTL

External antenna input through MCX connector

Data output: NMEA-0183 and Tersus binary format

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

Easy to integrate with Pixhawk and other autopilots

The 433/915MHz Radios

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

Signal Tracking:	GPS L1/L2, GLONASS L1/L2, BeiDou B1/B2
GNSS Channels:	384
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
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
Input Voltage:	3.3V DC
Power Consumption (typical):	2.8W
Active Antenna Input Impedance:	50Ω
Storage:	In-built 4GB memory

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

Size:	46x71x12mm
Weight:	23g
Antenna Connector:	MCX female x1
COM Baud Rate:	Up to 921600bps
Operating Temperature:	-40°C ~ +85°C

