BX305 GNSS Kit

433/915MHz Radio Version

Overview

The BX305 is a compact GNSS RTK receiver which offers real-time, centimeter-level positioning capability as well as flexible interfaces for a number of applications, such as precision navigation, precision agriculture, surveying, and UAVs.

The BX305 can be integrated into other host devices or can serve as an independent positioning system that is dedicated to delivering high-precision, reliable position information.

Key Features

- Supports GPS L1/L2, GLONASS G1, and BeiDou B1/B3
- Provides centimeter-level positioning accuracy
- Up to 20Hz position/velocity/time solutions
- Serial ports with LVTTL
- Easy to integrate with Pixhawk and other autopilots
- External antenna input through SMA connector
- Data output: NMEA-0183
- Correction: RTCM 2.x/3.x and CMR
- Supports IMU raw data output
- Supports logging of raw observation data

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.

In the Box

- 2x BX305 RTK receivers
- 2x GNSS antennas
- 2x 3m GNSS antenna cables
- 2x 433 (or 915) MHz radio modems
- 2x 433 (or 915) MHz antennas
- 2x BX305 radio cable assemblies
- 2x UART TTL-USB converters

Technical Specifications

Performance

Channel Number:	192
Frequencies:	GPS L1/L2, GLONASS G1, BeiDou B1/B3
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
Max. Update Rate:	20Hz

Communication

Serial Ports:	LVTTL x3
PPS Ports:	LVTTL x1

Physical

Input Voltage:	5V DC
Power Consumption (typical):	1.56W
Active Antenna Input Impedance:	50Ω
Max. Antenna Bias Current Draw:	100mA
GNSS Input Sensitivity:	-85 dBm ~ -105 dBm
Size:	92x54x13mm
Weight:	104g
Antenna Connector:	SMA female x1
COM Baud Rate:	Up to 230400bps
Operating Temperature:	-40℃ ~ +85℃

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