



BX306 GNSS Kit

High-end Radio (RS05R) 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 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.



In the Box

- 2x BX306 RTK receivers
- 2x GNSS antennas
- 2x 3m GNSS antenna cables
- 2x RS05R radio station modems
- 2x RS05R radio station antennas
- 2x RS05R radio station cable assemblies
- 2x TTL-RS232 converters
- 2x UART TTL-USB converters
- 2x 20-pin external cables
- 2x Power cables

Key Features

- Supports GPS L1/L2, GLONASS G1/G2, and BeiDou B1/B2
- Up to 20Hz RTK solution and raw data output
- Supports IMU raw data output
- 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 RS05R High-end Radio

The Tersus radio station RS05R is a rover radio solution for wireless applications. It provides reliable data communications for mission-critical applications where a combination of stability, superior performance and long communication range are required.

The RS05R is a lightweight, ruggedized UHF receiver designed for digital radio communications between 410 MHz and 470 MHz in either 12.5 kHz or 25 kHz channels, which can be widely used in GNSS/RTK surveying and precise positioning systems. The RS05R is equipped with a LED display and a keypad, which can be used for checking the operating status, changing the operating channel, and transmitter power level.



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

