BX306 GNSS Kit

With 2W/460MHz Radio

Overview

BX306 Kit consists of BX306 Basic and 2W Radio Option. BX306 GNSS receiver is a cost-efficient GNSS RTK receiver for cm-level positioning and providing accurate raw measurement output, which can be integrated with autopilots and inertial navigation units.

2W Radio option provides reliable data communications between 457 MHz and 467 MHz for mission-critical applications where a combination of stability, superior performance and long distance are required. The BX306 Kit is ideal for surveying, AGVs, and agricultural applications.

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 LVTTL

External antenna input through SMA 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

Note: If users want to customize the product portfolio, please contact sales@tersus-gnss.com by email.

Technical Specifications
- BX306 enclosure

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 x1*
PPS Ports:	LVTTL x1
Event Mark:	LVTTL x1

* This port's function is related to firmware version.

Physical

Size:	95x57x24mm
Weight:	153g
Antenna Connector:	SMA female x1
COM Baud Rate:	Up to 460800bps
Operating Temperature:	-40°C ~ +85°C

Technical Specifications
- 2W Radio RS460

General

Frequency Range:	457MHz~467MHz
Band Width:	10 MHz
Channel Width:	25KHz
Operation Voltage:	5V~12V
Power Consumption (typical):	
− Transmitting 2W:	6.5W@DC5.5V
− Transmitting 1W:	4W@DC5.5V
− Receiving:	< 400mW@DC5.5V
Dimension:	107x62x26.6mm
Weight:	≈213g
Operation Temperature:	-30℃ ~ +60℃
Storage Temperature:	-40℃ ~ +85℃
Antenna Port:	TNC Female
Antenna Impedance:	50Ω
VSMR:	≤ 1.5

Transmitter

Frequency Stability (at 25℃):	≤±1.5ppm
Configurable Channels:	10
Adjacent Channel Selectivity:	≥ 60dB
RF Output Power:	
− High Power Level (2W):	33.5±0.5dBm@DC5.5V
− Low Power Level (1W):	30±0.5dBm@DC5.5V

Modem

Air Baud Rate:	9600bps @ 25KHz
Modulation Type:	GMSK
RF Sensitivity:	Better than 13dB @ -119dBm
Decode Sensitivity:	-116 dBm BER 10E-5 @ 9600bps
Protocol:	Transparent EOT, TT450S and Tersus

Interface (Pin) Definition

Type:	RS232
Pin 1:	Power Ground, GND
Pin 2:	Power Ground, GND
Pin 3:	Power, 5V~12V DC
Pin 4:	RXD
Pin 5:	TXD
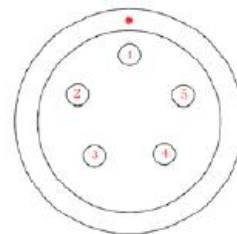
Overview of Interface (Pin)