Tersus BX306 Firmware Version (FW1094) Release

Oct 9, 2021

Overview

Tersus GNSS Inc. ("Tersus") is glad to release the firmware to BX306 OEM board. Firmware version (FW0699) is available for download at www.tersus-gnss.com/pages/software and support documents are available at www.tersus-gnss.com/pages/documents.

Features

➢ The firmware tracks three constellations: GPS (L1/L2), GLONASS (L1/L2) and BeiDou (B1/B2).

➢ This firmware provides centimeter-level accurate positioning to meet the wide range of precision positioning applications.

➢ The 4 GB onboard data storage makes it possible to store raw measurements for post-processing application.

➢ The maximum update rate is 20Hz for RTK and 20Hz for raw measurements.

➢ With a number of configurations, the firmware matches the needs for post-processing workflows, and for the use as a base/rover station or rover.

➢

Change from Previous Versions

Issue	Type	FW	Date
Support decoding RTCM1021-1027	Enhancement	FW1094	2021/10/09
Fix an error in rtcm1020(GLONASS Satellite Ephemeris).	Bug Fix	FW0699	2020/04/20

Fix an error in rtcm1005 decoding. (Stationary Antenna Reference Point)	Bug Fix		
Modified GLONASS observable messages for RTCM3 and RTCM2.	Enhancement		
Fix errors in RTCM2 encoding and decoding.	Bug Fix		
Fix GLONASS encoding and decoding errors caused by leap second.	Bug Fix	FW0602	2020/01/13
Fix a bug in CMR encoding.	Bug Fix	FW0587	
Add two fields in log fix.	Enhancement	FW0526	
Change PPS pulse polar to align with spec	Bug Fix	FW0522	
Fix the error of "undulation user x.xxx"	Bug Fix	FW0498	
Add RTCM1013 log.	Enhancement	FW0462	
Add the feature of nPPS.	Enhancement		
Add 'baseantenna' log and modified Ionosphere model.	Enhancement	FW0441	
Fix cmr encoding and decoding bugs.	Bug Fix	FW0434	
Fix on changed log behavior.	Bug Fix	FW0394	
Fix the bug of RTCM2 decoding.	Bug Fix	FW0307	
Fix the bug of 'log undulation'	Bug Fix	FW0306	
Increase the number of decimal places for latitude and longitude std for log gpgst and log bestpos.	Bug Fix	FW0278	
Fix a convert GLONASS ephemeris time bug.	Bug Fix	FW0268	
Fix the bug of ephemeris log.	Bug Fix	FW0259	
Fix the bug of SATVIS log.	Bug Fix	FW0243	
Make the 'rtkcommand reset' work.	Bug Fix	FW0179	

Optimize the heading code.	Enhancement		
Baseband fix a Time Quality upgrade without firstly set time possible bug.	Bug Fix	FW0173	
Switch back AP RTK callback calling order	Bug Fix		
Make synchronous logs have priority over asynchronous	Bug Fix		
Add antenna type field in "thisantenna" log and this information can be converted to RINEX header.	Enhancement		
Change FSBL	Enhancement		
Optimize the heading code.	Enhancement		
Fixed the GLONASS string count=0 problem which would cause GLONASS have no observations when the UTC time equals 3 a.m.	Bug Fix	FW0138	
Expanded the size of RTK ephemeris array. This problem would cause the newly raised GPS satellites not to participate in RTK solution.	Bug Fix		
Fixed the problem of ionospheric model jumping	Bug Fix		
Added the function of smoothing RTK solution to get POSAVE coordinates.	Enhancement		
Fixed the bug of RTCM3 encoding and decoding of FW0114	Bug fix	FW0131	

If the input coordinates and actual coordinates differ by more than 30m in one direction,it will stop broadcasting RTCM messages although the RTCM logs are input.	Enhancement	FW0114	
The RTK engine is updated.	Enhancement		
Fixed the bug of solution type in heading log	Bug fix	FW0089	
Optimized cycle slip detecting method.	Enhancement		
Fixed the bug of log headingb	Bug fix	FW0087	
Optimized heading function.	Bug fix	FW0086	
Fixed the problem of invalid 'RTKSOURCE' command.	Bug fix		
Changed new BX316 (serial number start with 022) default storage medium to eMMC.	Enhancement		
When input have TAB(it maybe copy from pdf,html..etc.). Make Response enable.	Enhancement	FW0082	
The RTCM date will be broadcast only when the coordinates are fixed.	Bug fix		
Changed the RTCM1230 encoding and RTCM1033 decoding.	Bug fix		
AP added more checks for response.	Enhancement		
Make file downloads more robust.	Enhancement		
Fixed the bug of Galileo and BeiDou sig mask and GPS and GLONASS sig mask.	Bug fix		
Add DAC control clock drift range protection to +/- 0.6 ppm	Enhancement		

Consider clock drift error at recover clock drift stage.	Enhancement		
Expand clock drift recover range to 15Hz and expand clock drift tuning range to 40Hz.	Enhancement		
The RTK engine is updated to version 3.0 which is more stable re reliable.	Enhancement		
The maximum update rate is 20Hz for RTK.	Enhancement		
Add RTCMv3 messages, including GPS ephemeris (MT1019), GLONASS ephemeris (MT1020), BDS ephemeris (MT1042), GLONASS bias information (MT1230).	Enhancement		
Optimizing the upgrade program. Even if the OEM board is unable to boot, the upgrade program may be enforced.	Enhancement	FW0041	
The logic of firmware update has been optimized.	Enhancement		
The USB feature of firmware has been optimized.	Enhancement		
Fixed the bug when the updating is not successful.	Bug fix		
Changed the naming method of storage files. The time when the file was created is taken as the file name.	Enhancement		
Added a new feature of [base network]. (refer to < User Manual For BX Series GNSS Receiver >, 2.6.1)	Enhancement		