

### LT-300 SW v1.03 Release Notes

Product Name: LT-300 Global Navigation Satellite System (GNSS)

Unit and Part Numbers: P/N: 51-100304

  

SW Part Number: 71-100231

SW Version: 1.03 LT-Service Tool: v1.06 (minimum req. SW)

Release Date: 14. January 2019

SW Update:  Optional  Recommended  Mandatory

File Name: LT-300\_v1.03.lti File size: 102.6 kB

Checksum (MD5): fbf9b285b56b621f7352f73be89f5fa6

Downloads: <https://www.thrane.eu/lt-300-gnss>

Contact: [support@thrane.eu](mailto:support@thrane.eu)

#### New Features

- SBAS

GNSS Satellite-based Augmentation System (SBAS) is a method of improving the GNSS position from GPS, GLONASS and BeiDou using additional information broadcast by SBAS satellites or earth stations identified by a PRN. When SBAS satellites are end of life or otherwise taken out of service, another SBAS satellite, identified by another PRN, usually takes over. Hence, over time, a GNSS receiver should use different SBAS satellites.

There are different SBAS systems around the world, including:

- EGNOS in Europe (PRN: 123, 136)
- WASS in North America (PRN: 131, 135, 138)
- MSAS in Japan (PRN: 129, 137)
- GAGAN in India (PRN: 127, 128, 132)

Best performance is achieved by using the SBAS system covering your current location.

- SBAS autoscan

This release introduces a method for automatic SBAS PRN scanning as an alternative to statically configuring the list of PRNs. In this mode, the user does not need to keep the SBAS configuration up to date, as satellites are decommissioned. The autoscan mode has inferior performance compared to a static configuration of the PRNs. Use the command 'gnss sbas provider' autoscan to enable SBAS autoscan. Autoscan is the default mode.

- Static SBAS satellite selection

The SBAS satellites can be statically configured by identifying the individual satellites (using the 'gnss sbas satellites' command) or selecting a specific SBAS system (using the 'gnss sbas provider' command).

- GNSS mode

The GNSS receiver can now be configured in one of two modes: Automotive or Sea. The Sea mode is default, results in the best performance, and is the recommended mode. The Automotive mode should only be used for vessel moving faster than 45 knots or vessels used in lakes located above (or below) sea level. Configure the GNSS mode using the command 'gnss mode'.

- NMEA 0183 baud rate

The NMEA 0183 baud rate is default configured by selecting the input level of the NMEA 0183 Rx signals (see 95-100229 LT-300 User & Installation Manual). Beginning with LT-300 SW v1.03, it is possible to configure the baud rate with the LT-Service Tool v1.06 (command "nmea0183 baudrate"). When the baud rate has been configured using the LT-Service Tool, the LT-300 will ignore the input levels of the NMEA 0183 Rx signals.

## Changes

- World Magnetic Model (WMM) update

The WMM model describes the magnetic field of the Earth and is used to calculate true heading. As the Earth's magnetic field changes over time, international bodies update the WMM model every few years - typically scheduled every 5 years. The next update was scheduled in 2020. However, due to unusual rapid changes to Earth's magnetic field, especially near the magnetic poles, an unscheduled updated WMM model was released in December 2018. This software release includes version 2 of the WMM2015 model (WMM2015v2) for best performance.

- Default SBAS configuration change

The default SBAS configuration is now 'autoscan'. Consider change to a specific satellite provider for best performance.

- Default GNSS mode change

The default GNSS mode has been changed from 'automotive' to 'sea'.

## Fixes

- SBAS

Previous SW releases used static SBAS satellite selection with the following list of PRNs: 120, 124, 126, 129, 133, 135, 137, 138. That list of PRNs is outdated and prevented Differential GNSS (DGNSS) fix in some locations. The problem is solved by scanning for PRNs by default.

## SW Update Procedure

Follow this procedure to upload a new application SW to the LT-300 GNSS:

- 1) Connect the LT-300 GNSS (NMEA 0183 interface) to a PC using one of these interfaces: USB to RS-422 adapter, serial RS-422 or RS-232. Details are available in the LT-300 User & Installation Manual.
- 2) When the LT-300 GNSS is connected and powered (9 - 40 VDC) - start the LT-Service Tool by double-click on the 'LT-Service\_v1.06.exe' file. The LT-Service Tool will automatically scan and detect any LT-300 GNSS connected to the PC. Type 'help' to get a full list of available commands.
- 3) Use the following command to upload the application SW: 'upload LT-300\_v1.03.Iti'.