# What's New in OEM7 FW 7.200  (January 31, 2017)

*This is a general release for all OEM7 platforms: OEM719, OEM729 and OEM7700*

## New Features

* Interference Toolkit with manual mitigation - Allows the user to visually represent the RF spectrum levels to detect and manually mitigate RF interference. The receiver is able to auto detect in-band interference and will report it in the RXSTATUS log.
* TerraStar-L service - TerraStar-L is a new 40 cm Precise Point Positioning (PPP) correction service. TerraStar-L is a subscription based correction service that is delivered globally via satellites.
* RTK Assist – Provides RTK level accuracy for up to 20 minutes of interrupted RTK corrections with a valid RTK Assist subscription.
* Track the L3 GLONASS L3 CDMA signal - No navigation data is currently decoded. This is currently considered an experimental signal and is intended for research purposes.
* Improved GPS L1 acquisition time – Beta feature. Command configurable to change the acquisition method to improve GPS L1 acquisition time.
* Tracking multiple L-Band beams – All models are capable of tracking up to 3 L-Band signals simultaneously. This changes the behavior of the ASSIGNLBANDBEAM AUTO command.
* Dynamic PPP Seeding – Provides the PPP engine with an initial position even when the receiver is in motion through the PPPDYNAMICSEED command.

### New Features for INS

* Addition of PROFILES for SPAN - LAND profile (otherwise known as Dead Reckoning), as well as basic support for other profiles
* Support for fast INS initialization from NVM (through the INSSEED command)
* Support for the NG LITEF µIMU IMU
* Support for the Epson G320 IMU

## Software Improvements

* Improvements to the C/No measurements for all signal types (except L2 P(Y))
* Improvements to Steadyline
* Automatic fall back to internal TCXO when external clock is disconnected, and automatic re-connect when the same external clock is re-connected
* Improvements to the CAN interface:
  + Full support for NovAtel commands and logs using standard J1939/ISO-11783 Transport Protocols, including firmware upgrade using SoftLoad
  + Support for receiving and transmitting corrections, including Align, over CAN
  + Operation at baud rates up to 1Mbps
  + NMEA2000 standard logs at configurable rates

### INS improvements

* Robustness improvements to kinematic alignment routine
* Roll/Pitch now output before full initial alignment
* Performance improvements to Relative INS
* Enhanced extended solution status in 'X' logs
* Major setup command changes

### Additional Firmware Updates

* GPGGA log – Correct (from 7.100) the precision of the fields to conform to the NMEA standard
* Fix the default INTERFACE mode for COM3 on the OEM729 to NOVATEL
* Fixed issue with the LOG <message> ONMARK trigger, where the first output log was output immediately, rather than on the next MARKOUT
* Fix issue with tracking an unhealthy GLONASS satellite when TRACKSV GLONASS ANYHEALTH command issued

## Changes to Commands/Logs

Refer to documentation portal <http://docs.novatel.com/OEM7> for a comprehensive list of the changes to the commands and logs. Some commands and logs have been replaced with an updated version.

### Commands

New commands:

* Interference Toolkit commands: ITBANDPASSCONFIG, ITFRONTENDMODE, ITINTERFERENCEDETECT, ITPROGFILTCONFIG, ITSPECTRALANALYSIS
* INS related commands: INSCALIBRATE, INSSEED, SETINSPROFILE, SETINSROTATION, SETINSTRANSLATION
* CAN related commands: CANCONFIG, CCOMCONFIG, J1939CONFIG
* Secure RTK related commands: GENERATESRTKCORRECTIONS, SRTKSETKEY, SRTKSUBSCRIPTION
* NMEA related commands: NMEAFORMAT, PGNCONFIG
* PPP related commands: PPPBASICCONVERGEDCRITERIA, PPPDYNAMICSEED, PPPRESET
* USB configuration commands: SAVEUSBCONFIG, USBCONFIG
* RTK related commands: REFERENCESTATIONTIMEOUT, RTKPORTMODE, RTKRESET
* NVMUSERDATA

Deleted commands:

* RTCM related commands: SETRTCM16, SETRTCM36, SETRTCMRXVERSION, SETRTCMTXVERSION
* L-Band related commands: ASSIGNLBAND, ASSIGNLBAND2, OMNIUSEGLONASS
* RTK related commands: RTKCOMMAND, RTKELEVMASK
* INS related commands: LEVERARMCALIBRATE, RVBCALIBRATE, SETGIMBALORIENTATION, SETIMUORIENTATION, SETIMUTOANTOFFSET, SETIMUTOANTOFFSET2, SETIMUTOGIMBALOFFSET, SETINSOFFSET, VEHICLEBODYROTATION, GIMBALSPANROTATION, EXTHDGOFFSET, SETMARK1OFFSET, SETMARK2OFFSET, SETMARK3OFFSET, SETMARK4OFFSET, INSPHASEUPDATE, INSZUPTCONTROL, INSWHEELUPDATE
* APPLYVEHICLEBODYROTATION
* DGPSEPHEMDELAY
* PDPVELOCITYOUT
* SETCANNAME

### Logs

New logs:

* Interference Toolkit logs: ITBANDPASSBANK, ITFILTTABLE, ITPROGFILTBANK, ITPSDFINAL
* INS related logs: INSCONFIG, INSUPDATESTATUS, INSSTDDEV
* CAN related logs: J1939STATUS
* Secure RTK logs: SRTKSUBSCRIPTIONS
* Navigation data logs: GALFNAVEPHEMERIS, GALINAVEPHEMERIS, LBANDRAWFRAME
* RANGECMP4
* MODELFEATURES
* RTKASSISTSTATUS

Deleted logs:

* CMR related logs: CMRDESC, CMRGLOOBS, CMROBS, CMRPLUS, CMRREF
* L-Band related logs: LBANDINFO, LBANDSTATS, OMNIHPPOS, OMNIHPSATS, OMNIVIS, RAWLBANDPACKET
* INS related logs: INSCOV, INSCOVS, BESTLEVERARM, BESTLEVERARM2, IMUTOANTOFFSETS, INSUPDATE
* RTCA related logs: RTCA1, RTCAEPHEM, RTCAOBS, RTCAOBS2, RTCAOBS3, RTCAREF, RTCAREFEXT
* RTCM related logs: RTCM1, RTCM3, RTCM9, RTCM15, RTCM16, RTCM16T, RTCM1819, RTCM2021, RTCM22, RTCM23, RTCM24, RTCM31, RTCM32, RTCM36, RTCM36T, RTCM59, RTCM59GLO, RTCMOMNI1
* GPGGARTK
* HEADING
* PSRTIME
* SATVIS

# What's New in OEM7 FW 7.102  (September 23, 2016)

*General Release (supports all OEM7 platforms)*

* Resolves an issue with the BaseAntennaType and ThisAntennaType commands
* Minor tracking enhancements

# What's New in OEM7 FW 7.1

*FW 7.1 represents the first release for the OEM7 GNSS boards.*

* Note: FW 7.1 will not run on OEM6/OEMV GPS boards.