



# Firmware Release 4.3.00

## Release Notes

December 06, 2023

Firmware version 4.3.0.0 has support for newly designed receivers and receiver's revisions, adds new features for improved performance of JAVAD receivers, as well as enhancements and bug fixes.

The details are included in the GNSS Receiver External Interface Specification (GREIS), revised September 29, 2023.

[http://download.javad.com/manuals/GREIS/GREIS\\_Reference\\_Guide.pdf](http://download.javad.com/manuals/GREIS/GREIS_Reference_Guide.pdf)

### Applicable Receivers

- All modern JAVAD GNSS receivers (based on TRIUMPH-3 ASIC)
  - Exceptions:
    - TRIUMPH-LS/LS+

### New Features

- TRIUMPH-3NR receiver support
- DELTA-3S receiver support
- SIGMA-3S receiver support
- TR-3S-HDA board support
- TR-2S-HDA board support
- TRIUMPH-1MP receiver support
- IMU support for TRE-DUO-IMU & TRIUMPH-3NR
- J-Star PPP support
- OpenVPN client support
- New correction data message & record to jps
- New receiver temperature message
- New parameters to tune RF.
- New raw data message for GNSS navigation data bits with reduced latency

## Updated Features

- TR-3S: support hardware rev. 3 & 4
- TR-2S: support hardware rev. 4 & 5
- TRE-3S: support hardware rev. 5
- TRE-DUO-IMU: support hardware rev. 2, GLONASS calibrator for 2<sup>nd</sup> antenna
- RTK:
  - Dynamic maximum number of SVs depending on ambiguities fix status.
  - Default MultiRTK to On for RTK in tough environments for TRIUMPH\_1MP, TRIUMPH\_3NR, TRIUMPH3, TRIUMPH2, TRIUMPH-1M.
  - Improve GLONASS bias computation.
  - Adjust default iono correlation time to extend RTK baseline.
  - Adjust default tracking & computation values to improve RTK on TRIUMPH-3, TRIUMPH-2, TRIUMPH-1M
- Files: support "ymmdd" format for file names ("/par/log/name/date" parameter).
- TCP client: implement UDP support for RCV mode.
- TCP/IP: implement network filter.
- TCP Ports: bypass security for connections from localhost for those with SSH access.
- PTP:
  - New implementation of IEEE 1588-2008 (v2) featuring Telecom profile support for TRIUMPH-3, OMEGA-3, TRE-3L, and TRE-3S. PTPv1 support removed.
  - v2: new parameter "/par/net/ptp/domain" to specify "domainNumber" clock property.
- File push:
  - Implemented --mts option for /par/log/push/rinex/opts parameter.
  - Raise number of destinations from 2 to 6.
  - Implemented support for Hatanaka RINEX compression.
  - Allow printing of compatibility parameter for destination-specific name
- Heading:
  - New parameter to set geometrical constraint tolerance for fixed baseline length.
  - Calibration for fixed internal baseline.
- FTP server:
  - Support FTP-specific password /par/net/ftp/passwd
  - Allow "/name" and "./name" for "name" or a file in the current directory only.
- Tropo model:
  - New message containing meteorological and tropospheric data.
  - New parameters "/par/pos/sp/tropom/meteo/source" and "/par/pos/pd/tropom/meteo/source", and "/par/pos/tropom/delay/cur".
- Attitude: new parameters to show pitch, roll, and heading.
- Antenna Database: Imported new database from NGS: <NGS-23/08/15=907>
- Revise power parameters "/par/pwr/".

## Bugs Fixed

- Galileo E6: fixed independent pilot-data tracking.
- RTCM3 and other coders of RTK corrections: fixed the check of slot validity.
- PTP:
  - Fix degradation of timestamping quality on non-T3 receivers.
  - Fix Delay Req interval from 4 to 0 that current PTP standard demands.
- RTK: fix possible degradation when /par/pos/mode/wd or /par/pos/mode/cd is turned on.
- T3 receivers: fix slow startup when GNSS board firmware malfunctions.
- Linux: GSM: Reviewed APN mechanism to fix possible registration problems.
- GSM: fixed GSM modem detection problem.
- TRE-QUA: add GLONASS biases with respect to external reference station.
- AFRM: fixed oldest file removal on TRIUMPH3, TRE-3L, TRE-3S and OMEGA3.
- OMEGA3:
  - fixed /par/rcv/ver/mdm/hw
  - decreased charging time ~50%.
- TRE-3L, TRE-3S: fixed possible hang at startup.
- TCP: fixed rare breakage of IP or MAC addresses on T3 receivers.
- RTCM3 output: fixed bug affecting number of SVs for RTCM3 messages.
- NTRIP Caster: raise timeout after accepting connection till request appears.
- TRIUMPH2, TRIUMPH-M: fixed WLAN RSSI value.
- T3: fixed occasional breakage of IP or MAC addresses.
- Fixed bug with PPS jumps with /par/pos/clk/sync/threshold.
- Fixed absence of non-zero data types in [ID] message in some receivers.