



PIKSI MULTI FIRMWARE 2.1 RELEASE

October 11, 2018

Updates to Swift Navigation's Multi-Band, Multi-Constellation Centimeter-Accurate RTK GNSS Receiver

Overview

Swift Navigation is proud to release the latest firmware upgrade to Piksi® Multi and Duro®. Firmware Version 2.1 introduces improvements to our SBAS performance and provides bug fixes.

Firmware Version 2.1 applies to both the Piksi Multi GNSS Receiver and its ruggedized version, Duro. In the Getting Started Guide, refer to Section 7 entitled [Piksi Multi - Upgrading Firmware](#) for detailed instructions on how to upgrade your device. [Firmware release binaries](#) and product support documents are available at support.swiftnav.com.

Changes from Firmware Version 2.0

SBAS Smoothing—Firmware Version 2.1 provides a smoother position and velocity solution in SBAS mode by improving the modelling of the epoch-to-epoch position change of the rover in the [Starling™ Positioning Engine](#). The reduction in noise on the PVT output allows for a smoother solution that provides enhanced performance in general, and in particular when coupled with existing auto-steering systems.

Re-Enable 20 Hz Raw Measurement Support—With Firmware Version 2.0, 20 Hz raw measurement support was temporarily disabled. It is re-enabled in Version 2.1 to support PPK and non-differential use cases. Note, the maximum RTK solution frequency is still 10 Hz.

SBAS Availability Improvements—Firmware Version 2.1 has improved SBAS availability and will provide continuous SBAS navigation solutions in open sky environments after initial acquisition.

Firmware Upgrade Robustness—Firmware Version 2.1 provides a more robust upgrade process in the event of a power failure. It is still advised to maintain power throughout the upgrade process.

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Ethernet Interface Improvements—The Ethernet interface and the TCP/IP and UDP clients are more robust and resistant to communication issues when hot-plugging or when downstream devices are added and removed from the Ethernet network.

NED Baseline Reference Position—Piksi Multi will use the base station position as the origin of the local tangent plane for the baseline North East Down (NED) coordinate system. Formerly, the origin of the frame was the base station position but the rotation to define the local tangent plane was computed at the rover's position.

Known Issues—

- Upgrading to Firmware Version 2.1 requires that the Piksi Multi or Duro device be running Firmware Version 2.0. Users will be unable upgrade to the 2.1 release from devices running Firmware Version 1.5 and prior. Users will first need to upgrade to the Firmware Version 2.0 firmware release before being able to upgrade past 2.0.0. Downgrading from firmware 2.1 to 1.5 or prior can be done directly without downgrading to firmware 2.0 first.
- Continued from Firmware Version 2.0: RTK performance has improved at all solution frequencies from prior releases. Solution frequencies at 10 Hz may use fewer satellites than solutions provided at slower rates. To maximize the number of satellites used in an RTK solution, it is recommended to operate at 5 Hz or below.