February 4th, 2018

SP60 V3.35 Firmware Release

Introduction
This document is the firmware release notes of the SP60 V3.35.
This version is a minor release with new features, improvements and bug fixing.

Upgrade Procedure
The customer can upgrade the receiver with version V3.35 by following this procedure:
1- Copy the file sp60_upgrade_v3.35.tar to your PC.
2- Insert a fully charged battery inside the SP60
3- Switch on the SP60
4- Connect the SP60 to the PC with the USB cable
5- Run the software Spectra Precision Loader, select the COM port corresponding the USB cable and press the button Upgrade
6- Select the file sp60_upgrade_v3.35.tar
7- Press the button Update and wait for the complete receiver upgrade

Note that receiver has to be under warranty period to be upgraded.

Firmware list and versions
General version number: V3.35 – 2/4/2018

OS: 3.0.101#349
PVT: NP73V19
DSP: NC73V19
SL: NS73V21
XDL: V01.14(2)

The software compatible with SP60 V3.35 are:

- FAST Survey: 5.0.3
- Survey Pro: 6.2
- Trimble Access: 2017.00
- RINEX Converter: 4.7.1
- Survey Office (64-bits): 4.0
- USB Serial Emulation: 1.1
- Spectra Precision Loader: 7.1.0
- Spectra Precision File Manager: 1.4.0

New Features (since the version 3.33)

No new features

Improvements (since the version 3.33)

1. **QZSS**: QZSS functionality updated to match the latest QZSS SiS ICD. It is possible to track signals from up to 4 QZSS SV. L1-SAIF signal is not considered SBAS-like anymore, so not tracked as master. L1s signal is being tracked as slave instead, and its data stream is output in DAT,FRM

Resolved Problems (since the version 3.33)

1. **ZDA**: The message NMEA ZDA returned the year 2017 instead of 2018. This problem is resolved.
2. **DCOL**: The command 53h CHANCTRL was rejected if the receiver did not contain the option GLONASS, GALILEO or BEIDOU. This problem is now resolved.
3. **BEIDOU**: Unhealthy Beidou satellites may reboot the receiver. This problem is now resolved.

Known issues

1. **Bluetooth**: The receiver can accept two Bluetooth connections from data collectors. If your field software does not work properly, make sure that there is not another data collector connected to the receiver.
2. **USB**: When you plug a USB memory stick into the SP60, it may happen that the USB device is not detected. In this case, you need to unplug and plug it again. The receiver beeps when the USB device is properly detected.

Recommendations

1. **Beta version**: The official version contains 2 numbers (ex: 1.2). If the receiver contains a version with 3 digits (ex: 1.2.5), it means that it is a beta release and this beta release can used only 90 days after the release date. After 90 days, the receiver will not answer to any command, and the only thing to do is to upgrade the receiver with an official version.
2. **Firmware Upgrade**: It is not recommended to upgrade the firmware with SP Loader using the serial cable. The USB cable is recommended.
3. **Ionosphere activity**: Today we are at the peak of ionosphere activity which can affect/degrade receiver performance. User must realize that often 3rd party reference data provider is equally responsible for performance degradation because of generating much less correcting data compared to quiet ionosphere conditions. User is recommended also contacting Network data provider in case of RTK problems.
4. **ATL log**: We recommend end user in case of receiver performance problem to record atl.log and share it with Tech Support. W/o atl.log file, the ability to help end user will be much less.
5. **6 GNSS**: While SP60 can work with different subsets of GNSS (e.g. GLO only, BDS only, GLO+BDS), user must realize that exclusion of any available GNSS system may result in degraded positioning performance
6. **6 GNSS**: While SP60 can track, and use the observables from all 6 GNSS, for differential (RTK rover) operation it can be possible only if base provides respective reference data. Today with RTCM-3.1 protocols these reference data can be available only for L1/L2 GPS and GLONASS, so SP60 cannot take a benefit of other signals. Only the following 2 cases can allow effective RTK usage of all tracking signals:
    - Using own SP60 base generating either ATOM or RTCM-3.2 (MSM) differential data
    - Using 3rd party services supporting RTCM-3.2 (MSM) data generation
7. **NTRIP:** When working with Ntrip service, user is recommended to select VRS mount point over MAC and FKP. In general, with wide variety of different mount points, always try select points with multiple GNSS data.
8. **RINEX:** When converting receiver raw data to RINEX it is desirably to generate RINEX-3.2 (latest released version) data as legacy RINEX-2.11 does not support many of GNSS signals SP60 tracks.