Firmware Release Notes **Survey**

Date: March 4th, 2015

Product: SP60

Subject: SP60 V2.15 Firmware Release

Introduction

This document is the firmware release note of the SP60 V2.15.

This version is due to the replacement of the beam RTXEU by RTXAE and a problem when working in BEIDOU only mode.

Upgrade procedure

The customer can upgrade the receiver with the version V2.15 by following this procedure:

1- Copy the file sp60_upgrade_v2.15.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_v2.14.tar
7- Press the button Update and wait for the complete receiver upgrade

Firmware list and versions

General version number: V2.15 – 03/04/2015

OS: 3.0.101#324
PVT: LP63V15
DSP: LC63V15
SL: LS63V13
XDL: V01.14(2)

The software compatible with SP60 V2.15 are:

- FAST Survey: 4.3.0

- RINEX Converter: 4.6.0
- Survey Pro: 5.6.2, 5.6.4, 5.7
- Survey Office (64-bits): 3.50
- Spectra Precision Loader: 3.2.0
- Spectra Precision File Manager: 1.0.10

New features (compared to V2.13)

1. **RTX satellites**: the beam RTXEU was stopped on December 10,2015 and replaced by the new beam RTXAE. This release takes into account this change. In the GGA/POS messages, the ID for the satellite RTXAE is 107.

Improvements

Resolved Problems (compared to V2.13)

2. **BEIDOU only mode**: when the rover works in BEIDOU only mode, the $PASHR,DDS message is not generated so Survey Pro indicates that there is no differential data reception while the receiver computes RTK Fixed position. This problem is now resolved.

Known issues

3. **CenterPoint RTX RAM**: this service is available in some European countries and provides centimeter accuracy after 5 minutes. It requires to track the satellite RTXAE (107). The receiver tracks it by default but it may happen that the satellite RTXEA is tracked instead of RTXAE, in this case the convergence time is longer.
4. **Bluetooth**: the receiver can accept 2 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.
5. **USB**: when you plug a USB memory to 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.