

April 17th, 2023

SP60 V5.23 Firmware Release

Introduction

This document is the firmware release notes for the [SP60 V5.23](#). This version is major release and requires valid warranty to be installed.

Upgrade Procedure

The customer can upgrade the receiver with version V5.23 by following this procedure:

1. Copy the file [sp60_upgrade_v5.23.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_v5.23.tar](#)
7. Press the button [Update](#) and wait for the complete receiver upgrade

Firmware list and versions

General version number: [V5.23 – 24/03/2022](#)

OS: [3.0.101#362](#)

PVT: [NP92V12](#)

DSP: [NC92V12](#)

SL: [NS92V11](#)

XDL: [V02.04\(3\)](#) or [V2.10\(3\)](#)

The SP60 [V5.23](#) is compatible with:

- Survey Pro: [6.5](#)
- Trimble Access: [2017.21](#)
- Survey Mobile: [2.3.0](#)
- Mobile Mapper Field: [5.0](#)
- TPSDK: [3.7.15](#)
- SPACE: [2.3.4](#)
- RINEX Converter: [5.0.11](#)

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- Survey Office: [5.30](#)
- Trimble Business Center: [5.30](#)
- USB Serial Emulation: [1.1](#)
- Spectra Precision Loader: [9.8.0](#)
- Trimble Loader: [9.8.0](#)
- Spectra Precision File Manager: [1.8.3](#)
- Trimble File Manager: [1.8.3](#)
- Spectra Geospatial Origin [2022.11](#)

Improvements (since version 4.33)

1. Merge with same FW as for SP85/SP90m
2. Beidou: the signal B2b is now tracked (Rinex name 7D)
3. CMRx: now it is possible to generate/decode Beidou phase III signals using CMRx

New features (since version 4.33)

No new feature

Resolved problems (since version 4.33)

1. QZSS: there are no more limitations with L2 QZSS at the base and at the rover

Known Issues

1. **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.
2. **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 be

- used only during 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:** Days and areas with increased ionosphere activity can demonstrate worse than usual RTK/RTX performance.
 4. **Base Matters:** Users must realize that often 3rd party reference data providers are equally responsible for performance degradation because of generating much less correcting data compared to quiet ionosphere conditions. Users are recommended also contacting Network data providers in case of RTK problems.
 5. **ATL log:** We recommend end users in case of receiver performance problems to record atl.log and share it with Tech Support. W/o atl.log file, the ability to help the end user will be much less.
 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
 7. **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 advantage of other signals. Only the following 3 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
 - Using SP60 base and any Trimble base generating CMRx corrections
 8. **NTRIP:** When working with Ntrip service, users are recommended to select VRS mount point over MAC and FKP. In general with a wide variety of different mount points, always try select points with multiple GNSS data.
 9. **RINEX:** when converting receiver raw data to RINEX it is desirable to generate RINEX-3.02 (or later) data as legacy RINEX-2.11 does not support many of GNSS signals SP60 tracks.