RxTools v1.10.0 Release Notes

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This document is the Release Notes of Septentrio's RxTools which includes RxControl, Data Link, SBF Converter, SBF Analyzer, RxLogger, RxUpgrade, RxDownload, RxPlanner, RxAssistant, RxLauncher, SBF Tools, the Receiver Communication SDK for C++/Qt and the USB drivers.

References

Release References

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USB Driver version:	2.12
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Deliverables

- 1. RxTools_RelNote.pdf, the Release Notes (this document)
- 2. RxTools_Manual.pdf, the RxTools 1.10.0 Manual (an Adobe PDF document)
- 3. win32/RxTools_1_10_0_Installer.exe, the RxTools installer for Windows
- 4. linux-i386/RxTools_1_10_0_Installer.bin, the RxTools installer for Linux

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Septentrio does not authorize the use of its products as critical components in devices or systems intended for safety-of-life applications or in devices or systems, the failure of which may endanger life or cause injuries, without express written approval. All the software, firmware and documentation delivered with the Septentrio receiver is licensed, as explained in the License.txt, Copyright.txt, and gpl.txt files provided on the Receiver Software Package CD.

Some RxTools applications make use of Google Maps API. As such users agree to comply with Google's Terms of Use as presented through the Service or described in the Maps APIs Documentation. For further information please visit http://code.google.com/apis/maps/terms.html.

A note about compatibility

RxControl 4.x.x, RxLogger, RxUpgrade, RxAssistant and RxDownload support the following product families: AsteRx1, AsteRx2, AsteRx3, PolaRxS, PolaRx3, PolaRx4 and AsteRx-m. They are not compatible with the PolaRx2/2e product family.

SBF Converter 2.x.x and SBF Analyzer are capable of processing SBF log files made by any Septentrio receiver.

Data Link, RxPlanner and RxLauncher are not dependent on any specific receiver.

Installation

Before installing RxTools, please consult the section "RxTools installer known issues and limitations" below in this document.

To install RxTools on your PC, please execute RxTools_1_10_0_Installer.exe on Windows or RxTools_1_10_0_Installer.bin on Linux. These installers are provided on the CD containing the software package, or can alternatively be downloaded from www.septentrio.com: please navigate to the page for you receiver product, and then select the Support tab. Upon their startup, the RxTools applications check for the presence of a newer RxTools release. If present, the user can choose to download and install it.

The RxTools 1.10.0 package provides RxControl, SBF Analyzer, RxLogger, Rx– Upgrade, Data Link, SBF Converter, RxDownload, RxPlanner, RxAssistant and RxLauncher, as well as the SBF Tools. By default, the installer installs all components, including these applications and the Windows USB drivers. Users may choose a Custom installation and decide which applications to install. Follow the instructions in the installer for running a Custom setup.

Recommended System Requirements

The following operating systems are supported:

- Windows XP Service Pack 3, Windows Vista, Windows 7 and Windows 8
- Fedora Core 9, 10, 11, 12, 13, 14 and 15

Minimal system requirements (for 1 Hz update rate ¹) are:

- Pentium 800 MHz and above
- 512 MB RAM
- 1024×768 or higher resolution

RxTools 1.10.0

RxTools installer v1.10.0

RxTools installer differences to previous version

New features in RxTools installer:

1. USB Driver for the AsteRx-m GeoPod has been added into the RxTools installer.

RxTools installer known issues and limitations

- 1. Some Antivirus applications may identify SBFConverter as malware. Please make sure you adapt your Antivirus settings to add the Septentrio SBFConverter application into the safe list of applications.
- 2. The USB drivers are now signed. There installation is now less problematic, e.g. on 64-bit Windows machines.
- 3. On certain Windows systems, the completion of the installation process may take a few minutes, during which the installer is not responding. Please wait until this 'cleaning up installation' step finishes and the installer becomes responsive again.
- 4. The installer may instruct to close Acrobat Reader before proceeding, even if the user has no instances of Acrobat Reader open. If this occurs, please close all web browser instances before proceeding.
- 5. When installing RxTools on Windows XP, please make sure to launch the installer with administrative rights. Otherwise, the installer may fail with an 'Application Error' error message.

¹Higher data rates (e.g. 10 Hz) will require higher CPU and memory requirements.

- 6. After installing RxTools on a Windows 7 PC a popup might be shown with the warning: "This program might not have installed correctly". This warning can be ignored.
- 7. Installations of RxTools with a version prior to 1.3.0 have to be manually uninstalled before installing a newer version of RxTools.
- 8. The installer may ask for a user name and password with administrator rights. If you choose to launch RxLauncher at the end of the installation process, RxLauncher and all tools launched from there will be started using the same user name, using also the preferences of that user.

RxTools general v1.10.0

RxTools general differences to previous version

New features in RxTools general:

- 1. RxTools now comes with an extended User Manual, with chapters for each application in the RxTools suite, and for the command-line conversion tools that are included in the RxTools suite. Each application has a direct link to its chapter, which is available in the Help menu.
- 2. RxAssistant has been added to RxTools. This new application targets users of tablet PCs (but also works on other PCs), who want to easily configure their receiver for common tasks. It among others provides basic status monitoring, Ntrip support as well as the configuration of NMEA output.
- 3. An updated version with support for Windows 8 of the USB driver is included. This driver is now also digitally signed by Septentrio.
- 4. A new quality view was added with quality information of the receiver, the antennas, the GNSS signals, and more.

Issues resolved in RxTools general:

- 1. The Chinese navigation satellite system previously called 'Compass' has been renamed to 'BeiDou'. RxTools now consistently uses this new name, with one exception: the 'Tracking' receiver settings accessible via RxControl's 'Advanced User Settings' still mention 'Compass'. With future firmware upgrades this will also change eventually.
- 2. A bug is fixed in the legacy support for PolaRx2 data. The bug gave rise to bogus data in all places where information from the TrackingStatus PolaRx2 SBF block was shown.
- 3. An entry to specify the proxy settings of your network is added to the preference panel. If your network uses a proxy and the proxy settings are not correctly filled in some features might not work as expected.

RxTools general known issues and limitations

1. When using large display fonts, some parts of the user interface may not be displayed appropriately, discarding information or showing scroll bars. If this poses a problem, consider setting the font size back to normal (96 DPI).

- 2. When data is sent over the serial port at a high rate to an RxTools graphical application, CRC errors may occur. This is a limitation of the serial port of the PC equipment being used rather than of the RxTools graphical application itself.
- 3. Due to high amounts of data provided by the SBF messages, when logging at high data rates of above 5Hz it is strongly advised to log the minimum amount of blocks needed. Logging of all possible data blocks may result in data gaps. When logging at data rates above 1Hz please use the USB connection.
- 4. In order to run the SBF tools on a 64-bit Linux version it might be needed to install the 32-bit version of the C standard library. For Fedora installation this is the package "glibc.i686". The equivalent for Debian(/Ubuntu) installations is "ia32-libs" package.
- 5. When opening the "Help Topics" from an RxTools application, some web browsers fail to navigate to the relevant help page. The page can be reached by clicking the corresponding link in the table of contents.

RxControl v4.11.0

RxControl is a graphical user interface application which facilitates control and monitoring of Septentrio receivers in real time. Among different features it allows configuration of Septentrio receivers in a user friendly way, offers multiple views for monitoring data and offers a simple logger allowing you to record SBF (Septentrio Binary Format) files of the raw data you are receiving. To connect your receiver to RxControl, follow the instructions provided in the manual.

RxControl differences to previous version

New features in RxControl:

- 1. In time plots that support displaying the PVT Mode, Integration Mode and/or GNSS Attitude Mode, it is possible to filter data such that only epochs with specified mode values are shown. This is can be configured in the time plot legend and in the time plot options dialog, as well as in the report layout.
- 2. The Message Inspector shows both fields that are directly present in a message, as well as fields that are computed from other fields. It is now possible to distinguish between both, as the computed fields are shown in italics. Moreover, computed fields can now be hidden.
- 3. RxControl now displays the marker name of the connected receiver in the status bar.
- 4. The Message Inspector has an option to show only the primary fields. These are the fields that carry the most essential information for end users, as opposed to e.g. auxiliary fields.
- 5. A Quality Indicators time plot is added.

Issues resolved in RxControl:

- 1. With the new USB driver included in RxTools, it is now also possible in Window 8 to connect to a receiver over USB.
- 2. The baseline distances shown in the DiffCorr Info view include computed distances, which may not correspond to a base station that is currently in use. These prepended with an approximation sign.

- 3. A limitation has been removed that limited the data rate of the Doppler Rate and Pseudorange time plot to 1 Hz.
- 4. Now the baseline length in the DiffCorr Info view has been corrected in all dialogs.
- 5. A bug is fixed that caused the East and North Velocity time plots to be swapped.

RxControl known issues and limitations

- 1. When a file is processed that contains more than approximately 86000 epochs, the data may only be partially shown in the planimetric plot, keeping approximately the last 86000 epochs in the file.
- 2. When processing PolaRx2 SBF files, some deprecated blocks are translated to their newer versions before being processed, in order to include their contents in the analysis. Certain views, including the Message Statistics, will list them wrongly: e.g. a file having MeasEpoch version 1 blocks, will be reported to have MeasEpoch version 2 blocks.
- 3. In order to update its different views, RxControl places the SetSBFOutput (SSO) settings on its own connection dynamically, depending on the active screen(s). This allows an optimization of the communication messages and of the load of the CPU of the receiver. If too many RxControl views are opened, then the SSO settings may not be optimal. If too many views are open requesting a too extensive data set at high data rates (e.g. 10Hz), a high CPU load of the receiver of up to 80 percent or more may result. When using high data rates of over 5Hz it is essential to use a USB connection to ensure no loss of data. Users should carefully define which SBF blocks to use for their own applications when setting the receiver at high data rates. Consult the receiver's manual for more information about this limitation.
- 4. In certain configurations, RxControl may have difficulties to connect to a receiver after it has been reset. This can happen if the receiver's boot config has the "ASCII Display" output turned on for the port used by RxControl to communicate with the receiver.
- 5. The CGGTTS Conversion does not consider Health of Satellites when post-processing data. As such some CGGTTS may contain invalid data when having unhealthy satellites. The "SetHealthMask,Tracking,On" command available in some receivers might be used to avoid unhealthily measurements in the data.
- 6. In the planimetric plot, the distance between gridlines that are rendered when the Geodetic Grid is enabled does not correspond to the length of the scale bar. Please use the scale bar to interpret distances in the plot.
- 7. If a height plot already contains data, and then PVT is lost, during the time that there is not PVT, the height time plot is blank. If PVT is available again, the height data appears again (including the data from before the PVT loss).
- 8. When opening the heigh time plot or the ENU time plot, the historic data for the Integration Mode and GNSS Attitude Mode may not be filled in correctly. The new data that is appended after the plot is opened is correct.
- 9. The default number of digits used for the representation of certain fields in bin2asc or the message inspector may be insufficient. When more precision is needed, bin2asc allows to specify the required precision.
- 10. In the Residuals time plot, the w-test statistics values are plotted a factor 1000 too large.

Data Link v2.4.0

Data Link is a graphical communication terminal with multiple ports which allows users to establish and forward connections between a receiver and other devices connected in serial and/or TCP/IP ports. Data Link is handy to use when transmitting Differential corrections (RTCM, CMR, etc.) to different ports, when setting up a Dial-up modem connection or when using command line scripts to set up communication devices.

Data Link differences to previous version

New features in Data Link:

1. DataLink now supports Ntrip client. Any connection can now be set up to connect to an Ntrip caster and receive corrections from a given stream. These connections can be forwarded to any other connection. GGA information from any connection can be forwarded to the Ntrip connection to be sent to the caster.

Issues resolved in Data Link:

1. With the new USB driver included in RxTools, it is now also possible in Window 8 to connect to a receiver over USB.

Data Link known issues and limitations

- 1. Data Link may on rare occasions hang, taking 100% of the capacity of the PC's CPU. In this situation go to the Task Manager and end the Data Link process manually. Then restart Data Link.
- 2. During a congested connection Data Link may crash. The time it takes before the crash occurs depends on your PC's memory availability and the amount of congestion. To remedy the problem, restart Data Link and reduce the connection load.
- 3. When using the "Log File" feature note that the log file is kept open as long as the option is enabled or the program is running (regardless of the connection state).
- 4. After a network outage, a TCP/IP client (or host) connection in Data Link might show it is still connected, while the host (or client) has already closed the connection. When this happens, disconnect and reconnect the client (or host) connection.

SBF Converter v2.7.0

SBF Converter is an application that allows to convert SBF log files to various formats, including ASCII, RINEX, KML (Google Earth). It is an intuitive GUI shell around the underlying command-line conversion tools. SBF Converter also allows conversion of multiple files at once.

SBF Converter differences to previous version

New features in SBF Converter:

1. In the options for ASCII conversion it is now possible to enable scientific notation for floating point numbers as well as to override the precision to be used.

SBF Converter known issues and limitations

- 1. When a conversion is cancelled, temporary files may not be deleted.
- 2. For the RINEX conversion, when the "Add sequence number in IGS output file name" check box is checked and multiple files are being converted, neither SBF Converter nor sbf2rin will be comparing the time inside the input files and figuring out the right file sequence. Therefore please make sure that the input files in the Multiple File Selection dialog appear in the correct sequential order from top to bottom.
- 3. The conversion to STF does not properly handle output directories with spaces. Please make sure that if you manually select the output directory, the full path does not contain spaces.
- 4. The normal behavior of SBF Converter supports parallel execution of conversions. If however the conversion operation involves conversion to RINEX, and the option to add sequence number in IGS output file name is checked, all conversions, including non-RINEX conversions, are run sequentially.

SBF Analyzer v2.5.0

SBF Analyzer is a GUI application designed to analyze data from SBF log files. Similar to RxControl, SBF Analyzer allows visualization of multiple time plots as well as visualization of historic information in the SBF log file. It is a powerful tool when deep analysis of data recorded by Septentrio receivers is needed. As its output, SBF Analyzer can either open application windows allowing to interact with the plots much in the same way as in RxControl, but also offers the possibility to generate PDF documents following fully customizable templates.

SBF Analyzer differences to previous version

New features in SBF Analyzer:

- 1. In time plots that support displaying the PVT Mode, Integration Mode and/or GNSS Attitude Mode, it is possible to filter data such that only epochs with specified mode values are shown. This is can be configured in the time plot legend and in the time plot options dialog, as well as in the report layout.
- 2. If a file contains messages (SBF or differential corrections) that are not known to RxTools, these messages are now also identified and reported. This affects the Message Statistics view, the SBF Over Time plot, the Differential Corrections Age time plot and bin2asc conversion.
- 3. A Quality Indicators time plot is added.

Issues resolved in SBF Analyzer:

1. When using SBF Analyzer with command-line arguments to generated a report in a scripting context, the script will continue immediately. If you want the script to continue only after SBF Analyzer has completed, please prepend the command to start SBF Analyzer with "start /wait"

- 2. An issue is fixed that causes a crash when creating Satellite Azimuth/Elevation time plots for PolaRx2 SBF files.
- 3. The report layout file format (PPL) used by the report generator in SBF Analyzer (and RxPlanner) has changed. Although an attempt is made to support older layout files, it is advised to review the generated reports. When an issue exists, this can be resolved by deleting and re-adding the problematic plot in the layout editor.
- 4. A limitation has been removed that limited the data rate of the Doppler Rate and Pseudorange time plot to 1 Hz.
- 5. An issue has been fixed that under very specific conditions caused the SBF Analyzer memory usage to increase, finally leading to a crash.
- 6. A bug is fixed that caused the East and North Velocity time plots to be swapped.
- 7. The source of the 'external sensor information' as reported in the 'general file information' has been corrected to report the correct serial port.
- 8. A problem has been solved General File Information view: the update rate is determined in a better way. Moreover a PVT rate and a measurements rate is given.
- 9. An issue is fixed that, when processing a file without the EndOfPVT block, caused the east, north, up, height and velocities time plots to systematically show the values of the preceeding epoch.

SBF Analyzer known issues and limitations

- 1. When processing PolaRx2 SBF files, some deprecated blocks are translated to their newer versions before being processed, in order to include their contents in the analysis. Certain views, including the Message Statistics, will list them wrongly: e.g. a file having MeasEpoch version 1 blocks, will be reported to have MeasEpoch version 2 blocks.
- 2. A PDF file created by the reporter may show on screen some small inconsistencies in the colors that are used to represent data. On print the colors are consistent.
- 3. In certain circumstances, time plot legends may have too many entries to fit in the allocated area. The entries may be displayed overlapping and become unreadable.
- 4. When post-processing a file with SBF Analyzer the local time that is shown is not the local time of were the file is recorded, but the local time with the settings as specified in your PC's locale.
- 5. In the planimetric plot, the distance between gridlines that are rendered when the Geodetic Grid is enabled does not correspond to the length of the scale bar. Please use the scale bar to interpret distances in the plot.
- 6. If a planimetric plot is open at the time a new analysis is started, that planimetric plot will be closed.
- 7. The rate of the mode bars in the PRNs above Horizon, Satellite Azimuth, Satellite Elevation and Dilution of Precision time plots is limited to 1 Hz. This may cause a situation in which these plots do not show certain mode changes, while in other time plots these changes are correctly shown.
- 8. In the Residuals time plot, the w-test statistics values are plotted a factor 1000 too large.

RxLogger v1.6.2

RxLogger is a GUI application which provides advanced logging capability. Its main feature is support of logging on multiple streams, where an SBF frequency rate can be specified per stream. RxLogger also offers post-processing actions of SBF files such as conversion to RINEX format, conversion to CGGTTS format, FTP transfers, compression as well as custom actions ideal for reference receivers.

RxLogger differences to previous version

Issues resolved in RxLogger:

- 1. With the new USB driver included in RxTools, it is now also possible in Window 8 to connect to a receiver over USB.
- 2. A bug has been fixed that causes the -c command line switch not to work.
- 3. When using the -c option to specify the connection file the file argument should not longer be relative to the settings folder (<userdir>/.septentrio).
- 4. RxLogger now accepts absolute filenames when specifying the connection with the -c command line option.

RxLogger known issues and limitations

1. The CGGTTS Conversion does not consider Health of Satellites when post-processing data. As such some CGGTTS may contain invalid data when having unhealthy satellites. The "SetHealthMask,Tracking,On" command available in some receivers might be used to avoid unhealthily measurements in the data.

RxUpgrade v2.4.0

RxUpgrade is a small application which offers a handy and user friendly GUI wizard for updating Septentrio receivers. RxUpgrade can also be launched via command line allowing you to easily upgrade multiple receivers at a time.

RxUpgrade differences to previous version

New features in RxUpgrade:

1. The file name extension of Septentrio Upgrade Files (.suf) is now associated with the RxUpgrade application. To install a SUF, you can now double-click on it in the explorer.

Issues resolved in RxUpgrade:

1. With the new USB driver included in RxTools, it is now also possible in Window 8 to connect to a receiver over USB.

RxUpgrade known issues and limitations

- 1. When using a receiver port which is by default not in command mode the upgrade will succeed, but a timeout error will be reported when checking if the upgrade succeeded.
- 2. Rarely it happens that RxUpgrade becomes unresponsive. This does not necessarily mean that the upgrade has failed. RxControl can be used to check the firmware version of the receiver: Help -> Receiver Identification.
- 3. When starting RxUpgrade in batch mode it can happen that RxUpgrade becomes unresponsive just after starting. In that case RxUpgrade needs to be restarted again.
- 4. When upgrading the over an Ethernet connection, no other client should be connected to the receiver. Otherwise, there is a risk that the upgrade procedure is not successful.

RxDownload v1.2.3

RxDownload is an application which is designed to download and post-process the internal log files from multiple receivers.

RxDownload differences to previous version

Issues resolved in RxDownload:

1. With the new USB driver included in RxTools, it is now also possible in Window 8 to connect to a receiver over USB.

RxDownload known issues and limitations

1. When downloading large files, the CPU on the receiver can go up to 100%. This can cause data gaps in the receiver's logged data.

RxPlanner v1.2.4

RxPlanner is an intuitive stand-alone Satellite Mission planning software tool offering the determination of the visibility of GPS, GLONASS, GALILEO and Geostationary satellites in function of time and location, and of the resulting dilution of precision. The tool gives an estimate of the potential quality of a GNSS solution, and provides suggestions on appropriate times for surveying.

RxPlanner differences to previous version

Issues resolved in RxPlanner:

- 1. The report layout file format (PPL) used by the report generator in SBF Analyzer (and RxPlanner) has changed. Although an attempt is made to support older layout files, it is advised to review the generated reports. When an issue exists, this can be resolved by deleting and re-adding the problematic plot in the layout editor.
- 2. Solved a problem with displaying the google maps location when a proxy was needed.

3. When a PDF is created from within RxPlanner the plot settings are passed to the PDF creator.

RxPlanner known issues and limitations

- 1. When creating a PDF report. The layout and setup of the report is determined by the template file, which can be set through the RxPlanner Preferences dialog. In particular, changes to the configuration of the plots in RxPlanner are not reflected in the generated PDF.
- 2. The almanac files downloaded from the Septentrio servers do not contain Galileo Almanac data. The user can select an SBF file of their own, in order to perform Galileo planning. To do this, select "Update Almanac from file for this session..." in the "File" menu.
- 3. In certain situations, RxPlanner may attempt to download from the Celestrak website a YUMA or SEM almanac that has not yet been made available.
- 4. The 'Update Almanacs' button may become disabled (greyed out). Temporarily selecting another method for any constellation or toggling the 'Use same method for all constellations' checkbox, enables the button again.

RxAssistant v1.0.0

RxAssistant is an application offering simple configuration of a receiver for common tasks and/or connectivity to other GPS applications (GIS, Surveying, etc). It among others provides basic status monitoring, Ntrip as well as the configuration of NMEA output.

RxAssistant among others has following features:

- 1. Connection dialog identifies the receivers that are connected to the computer.
- 2. If requested, RxAssistant reconnects to the last port when it is started again.
- 3. RxAssistant can be configured to be automatically started when the user logs on.
- 4. Automatic configuration of receiver for working with Ntrip.
- 5. If requested, Ntrip automatically starts when connecting to a receiver.
- 6. If requested, Ntrip tries to reconnect when its connection is lost.
- 7. Send scripts to the receiver, optionally automatically upon connecting.
- 8. Multiple presets allow easy switching between different settings.

RxLauncher v1.1.0

RxLauncher is a small launcher application that allows the user to start any application in the RxTools suite in an easy way.

SBF Tools

sbf2asc v2.4.0

Converter of SBF data to ASCII format. The source code of this application is available as sub-component of the RxTools Installer as an example of how to decode SBF.

The application supports SBF versions for PolaRx2 and also for the new generation of Septentrio receivers (SBF 1.0 and 2.0)

sbf2asc known issues and limitations

1. Only SBF files smaller than 2 GB are supported.

sbf2cmd v2.3.11

Converter of SBF data to Commands. The tool allows users to visualize the different settings of a receiver over time. The commands are shown in an ASCII file created from the tool.

The application supports only the SBF format for the new generation of Septentrio receivers (SBF 2.0). For full output the tool also uses the MIB file of the receiver used while the SBF data file was recorded.

sbf2gpx v3.0.15

Converter of SBF data to GPX format. The GPX format is a common standard for GPS receivers used for storing position information in an XML-like file. This format can be loaded into Google Earth or can be converted using GPS Visualizer (www.gpsvisualizer.com).

The application supports both the SBF format for PolaRx2 receivers and the SBF format for the new generation of Septentrio receivers (SBF 1.0 and 2.0).

sbf2gpx known issues and limitations

1. Only SBF files smaller than 2 GB are supported.

sbf2kml v2.7.2

Converter of SBF data to KML format. The KML format is the common standard used by Google Earth. This format can be directly loaded into Google Earth. KML allows for several visualization features based on coloring and 3D objects shown directly in Google Earth.

The application supports both the SBF format for PolaRx2 receivers and the SBF format for the new generation of Septentrio receivers (SBF 1.0 and 2.0).

sbf2kml known issues and limitations

- 1. If a file does not contain tracking data at the beginning of the file (e.g. no tracking SV's even if Channel status is output) then the Survey track functionality of KML will not work properly.
- 2. Only SBF files smaller than 2 GB are supported.

sbf2rin v9.3.3

Converter of SBF data to RINEX format. RINEX is the Receiver INdependent EXchange format. A set of standard definition and formats for ASCII data files to promote the free exchange of GNSS data and facilitate the use of data from any GNSS receiver with any software package. The tool allows for converting from SBF files into RINEX 2.1 and 3.0 formats.

The application supports both the SBF format for PolaRx2 receivers and the SBF format for the new generation of Septentrio receivers (SBF 1.0 and 2.0).

sbf2rin differences to previous version

New features in sbf2rin:

1. If the GPS-Galileo time offset (GALGstGps) SBF block is available, sbf2rin inserts a GPGA time system correction header record in the Rinex 3.02 Galileo navigation file.

sbf2rin known issues and limitations

1. Only SBF files smaller than 2 GB are supported.

sbf2stf v1.3.4

Converter of SBF data to Septentrio Text Format. The tool has been created to allow users to convert their data to a more formal ASCII format. The tool supports most of the SBF blocks and fields (more blocks than sbf2asc), it is column based, and the user can choose different options for the output display.

This tool only supports SBF 2.0 used in the new Generation of Septentrio Receivers. The tool can be used for PolaRx2 SBF files only for some of the blocks which have remained unchanged.

Note that the sbf2stf tool has been superseded by the bin2asc tool and is no longer maintained. Please consider using bin2asc instead.

sbf2stf known issues and limitations

- 1. sbf2stf does not properly handle output directories with spaces. In order for sbf2stf to work properly, an output path without spaces must be used.
- 2. Only SBF files smaller than 2 GB are supported.

sbfblocks v1.5.2

This tool allows users to visualize which blocks are present in an SBF file. The output is put into an ASCII output file and it will show the statistics of how many blocks of each type exist. The tool also allows detecting CRC errors in the file as well as detecting the type of DiffCorr messages stored in the present DiffCorr blocks.

The application supports both the SBF format for PolaRx2 receivers and the SBF format for the new generation of Septentrio receivers (SBF 1.0 and 2.0).

sbfblocks known issues and limitations

1. Only SBF files smaller than 2 GB are supported.

sbf2ismr v5.1.0

Converter SBF to ISMR format (centilation format)

sbf2ismr known issues and limitations

1. Only SBF files smaller than 2 GB are supported.

posconv v1.0.10

This tool allows for converting positions into the following different coordinate formats used in GNSS receivers: Geodetic Coordinates in (Degrees), Geodetic Coordinates in (Radians) and Cartesian Coordinates.

timeconv v1.5.2

This tool allows for converting time into the following different time formats used in GNSS receivers: GNSS Date/Time, UTC Date/Time, GNSS seconds, TOW/WN.

bin2asc v1.1.0

The bin2asc tool converts SBF data to ASCII files. Each message is represented as a line of delimiter-separated line of human-readable field values. This tool replaces the sbf2stf tool since it supports much more blocks and conversion features.

bin2asc differences to previous version

New features in bin2asc:

1. It is now possible to specify for a specific message which fields are to be included/excluded, and in which order they have to be shown. Please consult the command line help for more information.

- 2. New options have been added to control the representation of floating point numbers. With '-scientific' a scientific notation can be enabled, with '-precision N' a precision of N digits can be imposed.
- 3. If a file contains messages (SBF or differential corrections) that are not known to RxTools, these messages are now also identified and reported. This affects the Message Statistics view, the SBF Over Time plot, the Differential Corrections Age time plot and bin2asc conversion.
- 4. Decoding errors are now reported either in a separate file ending with _errors.txt, or in the unique output file if requested. The statistics also include a report on errors if any.

Issues resolved in bin2asc:

- 1. For various fields, the number of digits was insufficient and has been increased.
- 2. The value of the MeanCorrAge field is now correctly scaled.
- 3. The representation of the DOP values from the DOP2 SBF message is now correctly scaled.
- 4. An issue is fixed causing the information for certain messages to be inappropriately split over multiple lines.

bin2asc known issues and limitations

- 1. The bin2asc tool may still change in the future with respect to its interface and output format. The message names to be used for message selection may change. The fields, their order, and the way they are formatted may change.
- 2. The default number of digits used for the representation of certain fields in bin2asc or the message inspector may be insufficient. When more precision is needed, bin2asc allows to specify the required precision.
- 3. The output of bin2asc for the MeasEpoch2 SBF block does not correctly put the information from the Type1 and Type2 sub-blocks at the same level.

Receiver Communication SDK for C++/Qt v1.0.1

The Septentrio Receiver Communication SDK for C++/Qt provides

a cross-platform software development kit for interacting with Septentrio GNSS receivers.

It facilitates building third-party applications by offering components to set up a connection to a receiver, and to communicate with it.

The SDK is written in C++ and Qt 4.x.

Receiver Communication SDK for C++/Qt differences to previous version

Issues resolved in Receiver Communication SDK for C++/Qt:

1. The instructions for compiling the Septentrio Receiver Communication SDK for C++ and Qt have been improved.

USB Driver v2.12

The USB Windows driver for Septentrio receivers.

USB Driver differences to previous version

Issues resolved in USB Driver:

1. With the new USB driver included in RxTools, it is now also possible in Window 8 to connect to a receiver over USB.

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