

AsteRx1 Software v1.0 Release Notes

Copyright (c) 2007 Septentrio nv/sa, Belgium

These Release Notes describe version 1.0 of the Software Package used with Septentrio's AsteRx1 GNSS receiver. This Software Package delivered on the Companion Disk contains a version of the AsteRx1 firmware, the AsteRx1 manuals, and the RxTools: RxControl, USB Drivers, Data Link, and SBF Converter.

References

Release References

Software Package version:	1.0
Supported Receiver Platform:	AsteRx1
Release Date:	15 October 2007
AsteRx1 Firmware version:	1.0, composed of:
Bootloader version:	1.2
GNSS firmware version:	1.0
FPGA configuration version:	4883
Firmware Compatible with:	AsteRx1 Hardware GRB00061000AA04
RxTools:	1.0.0, composed of:
RxControl version:	4.0.0
USB Drivers version:	1.2.1
Data Link version:	2.1.6
SBF Converter version:	2.0.0
SBF Tools version:	1.0
AsteRx User Manuals version:	1.1, composed of:
Hardware Manual	1.6
AsteRx Firmware User Manual	1.1
AsteRx1-v1.0 Command And Log Reference Card	1.0
AsteRx Command Line Interface Reference Guide	1.0
SBF Reference Guide	1.0
SNMP' Technical Note	1.1

Contact

Septentrio nv/sa
Ubicenter
Philipssite 5
BE-3001 Leuven
Belgium

Tel: +32 16.300.800
Fax: +32 16.221.640
e-mail: <support@septentrio.com>
Web: <http://www.septentrio.com>

Deliverables

1. These Release Notes
2. The License Agreement for the AsteRx1 firmware, RxControl and other software
3. One AsteRx1 v1.0 Companion Disk, or an equivalent cd-AsteRx1-1.0/ directory, containing:

- 3.1. `RelNotes.pdf`, these Release Notes
- 3.2. `License.txt`, the license for the AsteRx1 firmware and RxTools
- 3.3. `Copyright.txt`, the copyright for the AsteRx1 firmware and RxTools
- 3.4. `gpl.txt`, the GNU Public License, version 2
- 3.5. Directory `manuals/` containing the receiver manuals:
 - 3.5.1. `AsteRx1 Hardware Manual.pdf`, the manual of the AsteRx1 hardware
 - 3.5.2. `AsteRx Firmware User Manual.pdf`, the manual of the AsteRx firmware
 - 3.5.3. `AsteRx1 Command and Log Reference Card.pdf`, a Reference Card showing all the commands, SBF and NMEA messages supported by the AsteRx1
 - 3.5.4. `AsteRx Command Line Interface Reference Guide.pdf`, the Reference Guide explaining the details of the AsteRx Command Line Interface
 - 3.5.5. `SBF Reference Guide.pdf`, the Reference Guide explaining the details of the Septentrio Binary Format
 - 3.5.6. `SNMP' Technical Note.pdf`, the technical note explaining the details of Septentrio's SNMP' binary interface
- 3.6. Directory `firmware/` containing upgrade files:
 - 3.6.1. `asterx1-bootld-1.2.srec`, the AsteRx1 Bootloader in S-Record format
 - 3.6.2. `asterx1-fpgacfg-4883.srec`, the AsteRx1 FPGA configuration in S-Record format
 - 3.6.3. `asterx1-fpgacfg-4883.suf`, the AsteRx1 FPGA configuration in SUF format
 - 3.6.4. `asterx1-gnssfw-1.0.srec`, the AsteRx1 GNSS firmware in S-Record format
 - 3.6.5. `asterx1-gnssfw-1.0.suf`, the AsteRx1 GNSS firmware in SUF format
- 3.7. Directory `sbftools/sbf2asc/` containing the sources of the `sbf2asc` example program, in particular:
 - 3.7.1. `ReadMe.txt`, a quick guide to recompile the `sbf2asc` sources
 - 3.7.2. `sbfdef.h`, the SBF definitions (a C header file)
- 3.8. Directory `sbftools/win32/` containing:
 - 3.8.1. `sbf2rin.exe`, a Win32 executable of the `sbf2rin` program
 - 3.8.2. `sbf2asc.exe`, a Win32 executable of the `sbf2asc` program
 - 3.8.3. `sbf2cmd.exe`, a Win32 executable of the `sbf2cmd` program
 - 3.8.4. `sbf2gpx.exe`, a Win32 executable of the `sbf2gpx` program
 - 3.8.5. `sbf2kml.exe`, a Win32 executable of the `sbf2kml` program
- 3.9. Directory `sbftools/linux-i386/` containing:
 - 3.9.1. `sbf2rin`, a Linux executable of the `sbf2rin` program
 - 3.9.2. `sbf2asc`, a Linux executable of the `sbf2asc` program
 - 3.9.3. `sbf2cmd`, a Linux executable of the `sbf2cmd` program
 - 3.9.4. `sbf2gpx`, a Linux executable of the `sbf2gpx` program
 - 3.9.5. `sbf2kml`, a Linux executable of the `sbf2kml` program
- 3.10. Directory `RxTools/` containing the RxTools (RxControl, USB Drivers, SBF Converter and Data Link), in particular:
 - 3.10.1. `RxTools_RelNote.pdf`, the RxControl, SBF Converter and Data Link Release Notes
 - 3.10.2. `RxTools/man/rxcontrol.pdf`, the manual of RxControl
 - 3.10.3. `RxTools/win32/RxTools_1_0_0_Installer.exe`, the Windows installer for the RxTools
 - 3.10.4. `RxTools/linux-i386/RxTools_1_0_0_Installer.bin`, the Linux installer for the RxTools

(All files whose filename ends with `.pdf` are Adobe PDF documents, which can be read and printed with Adobe Reader and other programs. All files whose filename ends with `.txt` are plain text files.)

Legal Notice

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, which failure may endanger life or cause injuries, unless written approval is given.

All the software, firmware and documentation delivered with the AsteRx1 is licensed, as explained in the `License.txt`, `Copyright.txt` and `gpl.txt` files.

AsteRx1 Options

The AsteRx1 platform supports different options. Please contact Septentrio if you are interested in new options.

RxTools

The RxTools (RxControl, SBF Converter and Data Link) are utilities to be used together with AsteRx1. RxControl is a graphical program that enables a user to fully control and monitor his/her receiver through menus and windows. SBF Converter is a graphical program that converts the native binary data format of the receivers into other formats, notably RINEX. Datalink is a program which allows sending and receiving data on serial or TCP/IP ports.

See `RxTools_RelNote.pdf` for RxTools Release Notes.

AsteRx1 Firmware

Installing the AsteRx1 Firmware

To install or upgrade the AsteRx1 firmware, we recommend to follow the standard upgrade procedure, using the following upgrade files listed below:

1. `asterx1-fpgacfg-4883.suf`
2. `asterx1-gnssfw-1.0.suf`

The standard upgrade procedure is described in section *Upgrading the receiver* of the RxControl manual. A manual upgrade procedure that does not requires RxControl is described in section *Upgrade the Receiver Firmware* of the *AsteRx Firmware User Manual*. Upgrading the boot loader is normally not needed, we recommend to use the `asterx1-bootld-1.2.srec` file only if specifically instructed to do so.

This version does not need any Permission File.

Known Issues and Limitations of v1.0

1. Contrary to the statement in section 2.6 of the *AsteRx Firmware User Manual*, the default tropospheric model is not optimal for SBAS operation. *Workaround*: issue the `setTroposphereModel, MOPS, MOPS` command for SBAS operation.
2. Only GGA and GNS NMEA sentences are fully tested and are guaranteed to comply with the standard. Other sentences may contain empty fields or incorrect values.
3. Some fields in the *GEO Decoded Message Blocks* (see the *SBF Reference Guide* manual, section 3.6) are incorrect. To obtain the SBAS messages/corrections, use the `GeoRaw` or the `GeoCorrections` SBF blocks.

4. The RxState bit field in the ReceiverStatus SBF block is not set.
5. In this version, the values provided for DeltaClock in GeoCorrections SBF blocks are provided in meters instead of in seconds. To obtain the DeltaClock in seconds, divide the provided value by the speed of light (299792458.0 m/sec). Future versions will provide the values in seconds.
6. The values in the HPL and VPL fields of the DOP SBF blocks are multiplied with a factor 10. *Workaround:* divide the values by 10.
7. The PVTInfo flag in the ChannelStatus SBF block is always set to 0.
8. When geoid undulation is changed via command **setGeoidUndulation,manual**, this has no impact on the undulation and height above sea level reported in NMEA/GGA data records, although the values of undulation reported in the binary SBF data stream are correct.
9. Even if standalone mode is not requested in the RoverMode argument of the **setPVTMode** command, the receiver will output a standalone PVT solution as a fall-back, if the requested PVT solution is not (yet) available. The user can detect standalone PVTs by checking the Mode field of the PVTcartesian or PVTgeodetic SBF blocks.
10. The **setHealthMask,Tracking,on** command is not operational: unhealthy satellites are reported regardless of the setting of the health mask for tracking. *Workaround:* The health status of each satellite can be extracted from the ChannelStatus SBF block.
11. The SmoothingCorr field in the MeasExtra SBF block always contains the don't-use-value (-32768) regardless of the actual smoothing correction applied.
12. The *AsteRx Firmware User Manual*, version 1.1, on p.2, states:

Applicable to AsteRx1 firmware version 1.1 and compatible. Applicable to AsteRx2 firmware version 1.1 and compatible.

It should be:

Applicable to AsteRx1 firmware version 1.0 and compatible. Applicable to AsteRx2 firmware version 1.0 and compatible.