



Release Notes and Installation Guide

PolaRxS Firmware Package v2.9.6



1 Installation Guidelines

Note: Until a version of the Upgrade Firmware higher than 1.0.3 has been installed, upgrade over Ethernet will only work using TCP port number 28784.

In order to upgrade the firmware to version 2.9.6, the following steps should be taken:

1. If upgrading from version 2.1.1 of the firmware, then due to improvements in the configuration management of the receiver, the current user settings will be lost during the upgrade procedure. If the current configuration needs to be maintained, it should be stored outside the receiver prior to an upgrade to 2.9.6. This can be done by saving the current configuration on a local disk in `.txt` format (e.g. with RxTools, go to `File/Show Receiver Configurations.../Save As...`).
2. It should be ensured that the bootloader is up-to-date. If the current version of the bootloader is 2.5, this step is not required (the actual version of the bootloader can be retrieved with *lif,identification*) and should preferably be omitted. It is necessary to ensure that the power is maintained during the procedure, as the receiver will have to be returned to Septentrio for reprogramming if the upgrade fails. The upgrade should be accomplished by utilizing the standard upgrade procedure that is described in the section *Upgrading the receiver* of the RxControl manual, in conjunction with the `ssrc3-1.0.4_upgrade_all.suf` file that is located in the `firmware/` directory. Note that a successful upgrade updates not only the bootloader (to version 2.5), but also the Upgrade Firmware (to version 1.0.4).
3. If the previous step has not been carried out and the version of the Upgrade Firmware is not already 1.0.4 then the Upgrade Firmware should be updated by means of the standard upgrade procedure that is described in the section *Upgrading the receiver* of the RxControl manual, in conjunction with the `ssrc3-1.0.4_upgrade.suf` file that is located in the `firmware/fwcomponents/` directory.
4. The GNSS Firmware, the FPGA configuration and the antenna information should be installed by means of the standard upgrade procedure that is described in the section *Upgrading the receiver* of the RxControl manual, in conjunction with the `ssrc3-fw-2.9.6.suf` file that is located in the `firmware/` directory.
5. If the configuration was stored on a local disk in `.txt` format, as described in point 1 above, then the `.txt` file should be loaded on the receiver (e.g. with RxTools, go to `File/Upload script...`). The file should then be copied to Boot via the command ***eccf, current, boot*** in order to make sure the receiver will always boot in the desired configuration.

It should be noted that the section *Upgrade the Receiver* of the Reference Guide also describes a manual upgrade procedure requiring neither RxControl nor RxUpgrade. This procedure can be used, for example, to install the GNSS Firmware separately (if ever it becomes necessary to do so), by utilising the `ssrc3-gnssfw-2.9.6.srec` file that is to be found in the `firmware/fwcomponents/` directory.

2 New Features and Improvements

2.1 New features in version 2.9.6

Version 2.9.6 brings the following new features:

1. The PolaRxS now supports the extended PRN range for the BeiDou (C33-C37), SBAS (S40-S58) and GLONASS (R25-R30) constellation.

2.2 Improvements in version 2.9.6

Version 2.9.6 brings the following improvements (bug-fixes):

1. The receiver has been made more robust against incorrect ephemeris transmitted by GNSS satellites.
2. DeleteOldest functionality has been made more robust.
3. Reporting of Galileo signal health status has been improved.
4. Size of the internal configuration files has been increased to allow storage of bigger configuration.
5. The implementation of GLONASS parity check was made more robust.
6. The satellite ID in RTCM message type 1020 (GLONASS Ephemeris Data) is now properly encoded.
7. The BeiDou week number is now correct in the BeiDou RINEX navigation files.
8. Message 1013 now supports all RTCM3 message types.
9. A memory corruption was fixed resolving CPU overload instances associated to tracking of high number of satellites.
10. In case of a system crash, the receiver will now restart with the boot configuration instead of with the current configuration (or the default configuration if the current configuration was never saved).
11. The PolaRxS now has improved support for the MultiMessage flag in RTCM3 streams.

2.3 New features in version 2.9.1

Version 2.9.1 brought the following features:

None

2.4 Improvements in version 2.9.1

Version 2.9.1 brought the following improvements (bug-fixes):

1. The robustness of Ethernet connectivity has been improved.
2. Improved functionality of the internal RINEX logging.
3. Improved reference station functionality in Galileo-only mode.

3 Known Issues and Limitations

1. To ensure a reliable logging without data gaps, it is recommended to use the receiver's USB connection when operating at 100-Hz. Depending on the Ethernet network topology, streaming 100-Hz data over a TCP/IP connection may be unreliable.
2. The PVTInfo flag in the ChannelStatus SBF block is always set to 0.
3. If FTP push is active, logging to internal memory can only be reactivated once it (FTP-push) has finished.
4. The scheduled sleep command is not fully supported in this release. In some situations, the receiver might not wake up at the predefined time. As such, it is not recommended to use this functionality.
5. The FTP interface should not be used to create directories on the internal disk or to upload files to the receiver as this might cause the data logging to malfunction.
6. FTP Push to and FTP Upgrade from an Anonymous FTP server are not recommended. Both features will only work when a password is provided in the password field even though it is not used.
7. To avoid high CPU loads and potential logging issues, it is advised to keep the size of the log files below 1GB and limit the maximum of files generated per day to 100 files.
8. Internal disk access over FTP is not supported with Safari versions 5.1.7 (Windows) or 7.0.2 (OS X)
9. After formatting the SD card, the FTP server is not available. The receiver should to be rebooted to recover the FTP server.
10. The web server on the receiver has been tested with Chrome (version 49), Firefox (version 45) and Internet Explorer (version 11). If you experience any problems with your browser, please use a different client application.
11. It is not possible to upgrade the receiver using Mobile safari on iOS devices.
12. When accessing the Web Interface via a Midori browser, opening the Ethernet or IP ports page crashes the browser.

4 Support

For further information or support, please consult the Septentrio support website (<http://www.septentrio.com/support>), or contact Septentrio Technical Support: support@septentrio.com.

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6 System Components and Versions

Firmware Package: 2.9.6 Applicable Product Group: PolARxS Receiver Platform: SSRC3 Release Date: 19 December 2016		version	ssrc3-1.0.4_upgrade_all.suf	ssrc3-1.0.4_upgrade.suf	ssrc3-fw-2.9.6.suf
Bootloader	2.5	Y			
Upgrade Firmware	1.0.4	Y	Y		
GNSS Firmware	2.9.6				Y
FPGA Configuration	00C21206				Y
Antenna Information	2.1.1				Y