



Release Notes and Installation Guide

Altus NR2 Firmware Package v1.2.1



1 Installation Guidelines

In order to upgrade the firmware to version 1.2.1, the following files must be installed on the receiver:

	SUF file	Located in	Contains
1.	Altus NR2-firmware-1.2.1-OS_failsafe.suf	firmware/failsafe/	See Section 6
2.	Altus NR2-firmware-1.2.1-full.suf	firmware/	See section 6

Note that Altus NR2-firmware-1.2.1-full.suf will be rejected if the failsafe image has not yet been upgraded.

2 New Features and Improvements

2.1 New features in version 1.2.1

Version 1.2.1 brings the following new features:

1. Switching between Internal Logging and UMSD (USB Mass Storage Device), on USB cable connection/disconnection, can be put off or on now.
2. The behaviour of the power button can be controlled by the user (power ON/OFF - start/stop logging - WIFI ON/OFF).
3. User management is available on the Altus NR2.

2.2 Improvements in version 1.2.1

Version 1.2.1 brings the following improvements and bug-fixes:

None

2.3 New features in version 1.2.0

Version 1.2.0 brought the following features:

1. The receiver can now output either Belgian Lambert 2008 or Lambert 72 horizontal map coordinates in the BD72 datum. Both options are combined with Belgian TAW heights. Lambert 72 and Lambert 2008/TAW are consistent with NGI specification (Horizontal coordinates fully compliant with NGI). In combination with Lambert 72, the TAW heights are however consistent with NGI specification up to a few millimetres depending on the location.
2. Data call (Circuit Switch Data) functionality has been added allowing connectivity to a Reference Network with a dial-up number or to another Altus NR2.
3. Dynamic DNS functionality has been added. Support for dyndns.org and no-ip.com services is included allowing remote access to the web interface and base/rover connectivity.
4. Firewall settings are now possible in the Altus NR2. This feature allows safely exposing the web interface or a base/rover setup. The feature is important also when using Dynamic DNS services.
5. Roaming status as well as enabling and disabling was added to the web interface, SBF format and to the command line interface (for integrators).
6. Cellular roaming is now configurable and allowed by default. Please make sure you disable the modem should you intentionally want to avoid roaming charges.
7. PinPoint-GIS Web now accepts attachements for data collection.
8. PinPoint-GIS supports collecting using local coordinates with either local datum or projected coordinates (only the supported projections).
9. RTCM3 message 1230 is now supported by the receiver.
10. A Data stream widget has been added to the Overview of the web interface for easy monitoring of the streams output and input.
11. The number of configurable NTRIP clients has been increased to 3.
12. NMEA GMP message has been added in the Altus NR2 (output, logging, command line).
13. The product has been renamed from "APS-NR2" to "Altus NR2".
14. A command for setting Marker parameters has been added helping on tagging collection from SurvCE or FieldGenius.

2.4 Improvements in version 1.2.0

Version 1.2.0 brought the following improvements and bug-fixes:

1. A new version of the GNSS engine is included with some generic improvements in RTK performance.
2. Improved NTRIP connectivity when switching from an NTRIP version 1.0 caster (without chunk mode) to an NTRIP version 2.0 (with chunked mode).
3. Now it is possible to remove the Bluetooth pairing code. Previously it would disable the Bluetooth connectivity.
4. Improvement on NTRIP functionality for re-connection (problem seen with specific casters where different timeout is needed).
5. Special characters are now supported as SSID to connect to in the Wi-Fi Client mode (e.g. "\$" or "&"). This allows Wi-Fi client to work with iOS devices default names.
6. Receiver now can connect to access point with space in the middle of its SSID. The receiver cannot connect to an access point whose name ends with a space.

7. Quality indicators have been added to the Overview page of the web interface.
8. Storage of data points and polygon using PinPoint-WEB interface is also reported in SBF Comment message.
9. SBF Comment message is now properly output when using commands for tagging collection (using SurvCE or FieldGenius software).
10. The Altus NR2 Marker name has been changed to SEPT as the integration documentation describes it (see setMarkerParameters command); previously it used to be APS_.
11. The logging screen has been reworked offering flexibility for logging multiple streams.

3 Known Issues and Limitations

1. When entering NTRIP mount point names the user must exactly match the case or the receiver will not find the mount point.
2. If the message "USB device not recognized" is shown on the PC after an upgrade of the receiver firmware, it is recommended to restart the receiver. Afterwards the USB connection will be functional again.
3. Replies from the GNSS receiver board (AsteRx-m) to forward commands will be truncated if they are longer than 50kB.
4. When disabling Wi-Fi on the client device without disconnecting the Wi-Fi connection first (e.g. unplugging a USB Wi-Fi adapter), the web interface may display the client as still connected for several minutes.
5. Starting with firmware version 1.2.0 raw measurements output requires a special permission file. Raw measurement output permission has been included in all orders for Altus NR2 C and Altus NR2 Base models since September 2015. If you would like to get the raw measurement functionality activated, please contact orders@septentrio.com.
6. Loading of user map is slow when navigating away and back from the PinPoint-GIS Web Esri page. Please wait a few seconds once you are back in the PinPoint-GIS Web panel so that the User maps can be loaded.
7. When the user attempts to pair a second Bluetooth device while the receiver is streaming data to an already connected device, the data stream may be interrupted during the pairing attempt. The receiver will remain connected to the already connected device.
8. The editing of features (collected items) might not work properly when multiple features overlap in a very close position of the map.
9. The collection form for PinPoint-GIS Web might take a couple of seconds before it appears on the screen (this might vary depending on your internet connection). Please wait until the form is displayed after clicking on the Collect button.
10. The Base functionality of the NR2 requires a special permission file. If you would like to get the Base functionality activated and bought an Altus NR2 C before September 15th 2015, please contact orders@septentrio.com. Base functionality is since then included by default in all orders of Altus NR2 C models.
11. It is not possible to upgrade over COM1 with RxUpgrade. The upgrade will start but will fail during the process.
12. When the receiver is operating at high CPU load, it is not possible to enable or disable Bluetooth or Wifi.

13. It is not possible to upgrade the receiver using mobile Safari on iOS devices.
14. Upgrade over Cellular connection is not supported.
15. View selection of map services is not supported in PinPoint-GIS Web (they are always visible when loading a User map). However changing the basemap of a loaded user map containing a map service will cause the map service to disappear.
16. PinPoint-GIS Web might indicate that the user map is collectable while this is not the case.
17. Auto-populated GNSS fields in PinPoint-GIS Web will not show the whole accuracy for double values but when saved they will keep the full accuracy. Only when the values are edited, the accuracy might be dropped.
18. When a new battery is inserted, it may take a few seconds before the actual charge level is displayed.
19. The health status for GPS/GLONASS satellites is reported in the ChannelStatus SBF block separately for L1 and L2 signals. Only the health status value reported for L1-CA must be used as a valid health flag for a given satellite, while the health status flag provided for L2 can be ignored.
20. The web server on the receiver has been tested with Chrome (version 61), Firefox (version 55) and Internet Explorer (version 11). If you experience any problems with your browser, please use a different client application.
21. When the cell connection is slow, the receiver may fail to load the NTRIP mount point table.
22. Data cannot be streamed through the Bluetooth port at a rate higher than 5Hz.
23. The NTRIP server connection is sometimes not reliable when connected to a caster running "Professional Ntrip Broadcaster" (up to v2.0.22).
24. UDP functionality does not work over Cellular interface.
25. Firewall on computers can delay accepting connection by up to 4 minutes. Before using IPR functionality ensure that the desired IP port is enabled on your computer.
26. The command `exeNMEAOnce` always returns one single sentence. For multi-line messages like GSV the command `setNMEAOutput` should be used.
27. Some cellular networks require the configuration of an APN even for 2G connections.
28. Lambert 72 heights at this moment are not fully compliant with the National Geographic Institute of Belgium (NGI). The current implementation of TAW heights can result in differences of a few millimetres depending on the location.
29. The base station ID range in the GGA NMEA message (0-1023) has been increased to (0-4095) to support the RTCM base ID definition.
30. The generation rate of GBS and GRS nmea sentence is limited to 1Hz.

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.

Europe

Septentrio NV
Greenhill Campus
Interleuvenlaan 15i,
3001 Leuven,
Belgium

Phone: +32 16 300 800
Fax: +32 16 221 640
sales@septentrio.com

North and South America

Septentrio Inc.
23848 Hawthorne Blvd.
Suite 200,
Torrance, CA 90505
USA

Phone: +1 310 541 8139
sales@septentrio.com

Asia-Pacific

Septentrio
Unit 1901
Hua Fu Commercial Building
111 Queen's Road West
Sheung Wan
Hong Kong

Phone: +852 9095 5066
sales@septentrio.com

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6 System Components and Versions

Firmware Package: 1.2.1 Applicable Product: Altus NR2 Receiver Platform: SSR9 Release Date: 03 November 2017	version	Altus NR2-firmware-1.2.1-OS_failsafe.suf	Altus NR2-firmware-1.2.1-OS_bootloader.suf	Altus NR2-firmware-1.2.1-full.suf
Failsafe	2.2.2	Y		
Operating System bootloader	2.0.1		Y	
Operating System kernel	2.3.4			Y
Operating System root filesystem	2.2.2			Y
Control Firmware	1.2.1			Y
GNSS Firmware	3.6.4			Y
Antenna Information	2.2.3			Y