Emlid GPS NTRIP Protocol

Margaret Kalacska

Abstract

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Protocol

Configuration of Cellular data connection

Step 1.

1. Turn on MiFi and wait for device to initialize. Connect Smartphone/tablet to the wifi network created by the MiFi.

NOTES

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Protocol requires the internal batteries of the MiFi, the Emlid RS and the smartphone/tablet to be charged. A cellular data plan for the MiFi and an NTRIP subscription are also required.

All changes to the configuration of the Emlid RS require the user to click on 'Apply' for the changes to take effect.

The configuration settings are only for the use of a single Emlid RS receiving input correction from NTRIP.

The Emlid RS needs to have been configured to connect to the MiFi's wifi network.
See https://docs.emlid.com/reachrs/quickstart/ for directions how to set up the wifi connection between the MiFi and the Emlid RS.

If the blue LED is solid instead of slowly flashing it means the Reach RS is broadcasting its own wifi network. Follow instructions in https://docs.emlid.com/reachrs/quickstart/ to connect the Reach RS to the MiFi wifi network.

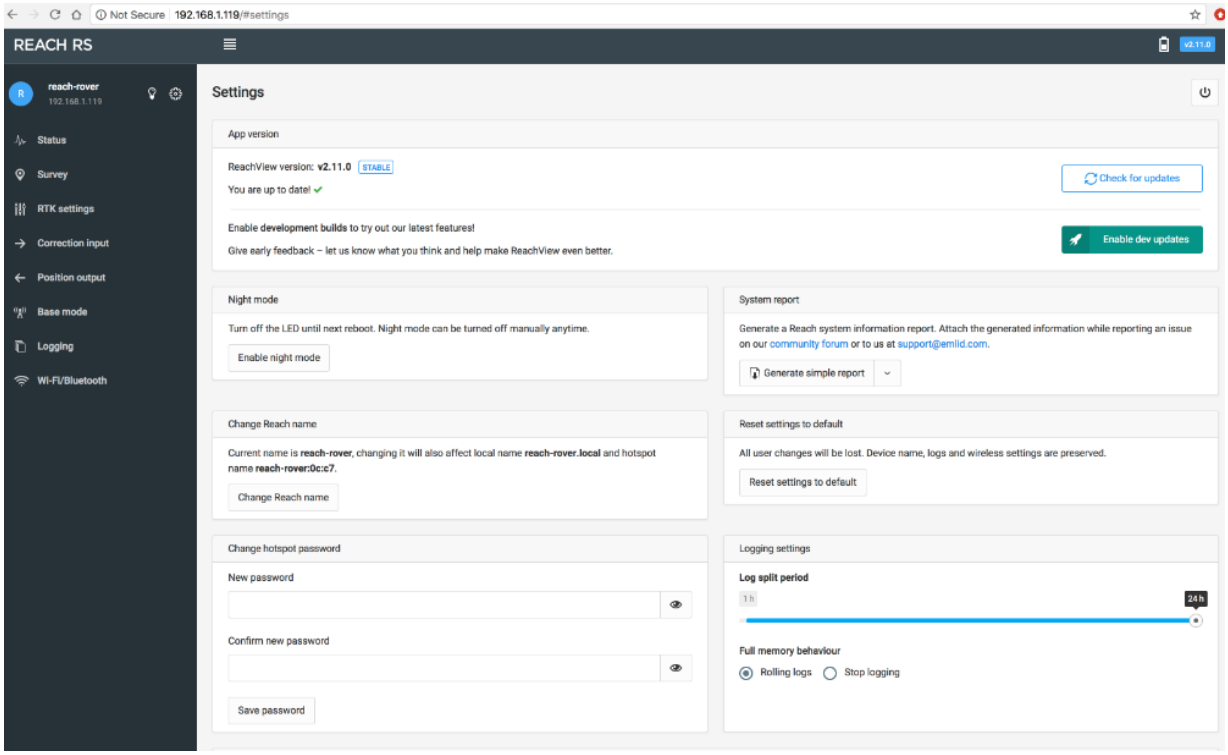
Configuration of the Emlid RS Rover

Step 2.

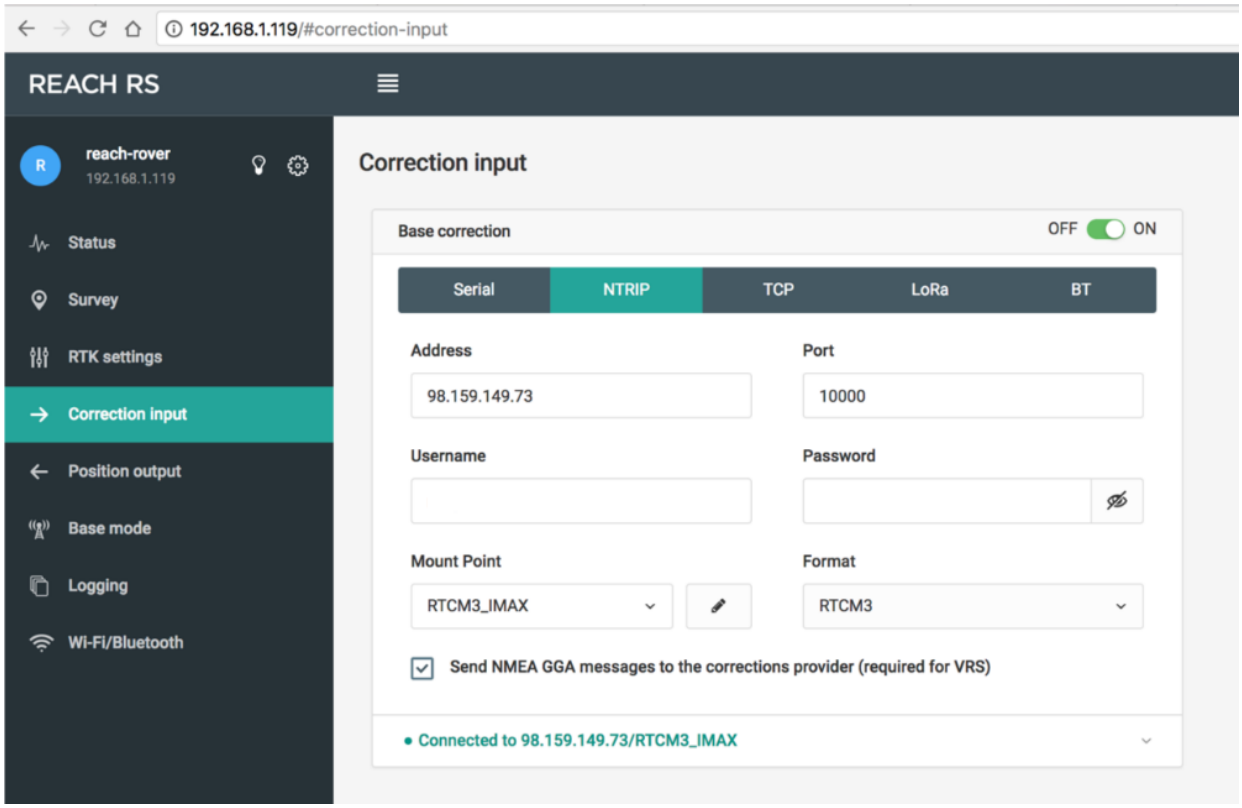
1. Turn on the Emlid RS rover. Wait for the LEDs to be solid orange, blinking blue and solid green.

2. On the smartphone/tablet enter the IP address of the rover. If the IP address is not known, scan the network with Fing (on smartphone/tablet) to find the address. Alternately launch the Emlid app and select the rover from the list of available devices.

3. On the Settings page check that the unit is up-to-date



4. On the Correction Input tab enter the NTRIP subscription information. Make sure radio button is set to 'on'.



The message at the bottom of the screen should say 'Connected' with the connection information.

If using SmartNet as the NTRIP correction provider the following mountpoints are available for Quebec and Ontario.

Connection Information

NTRIP Information

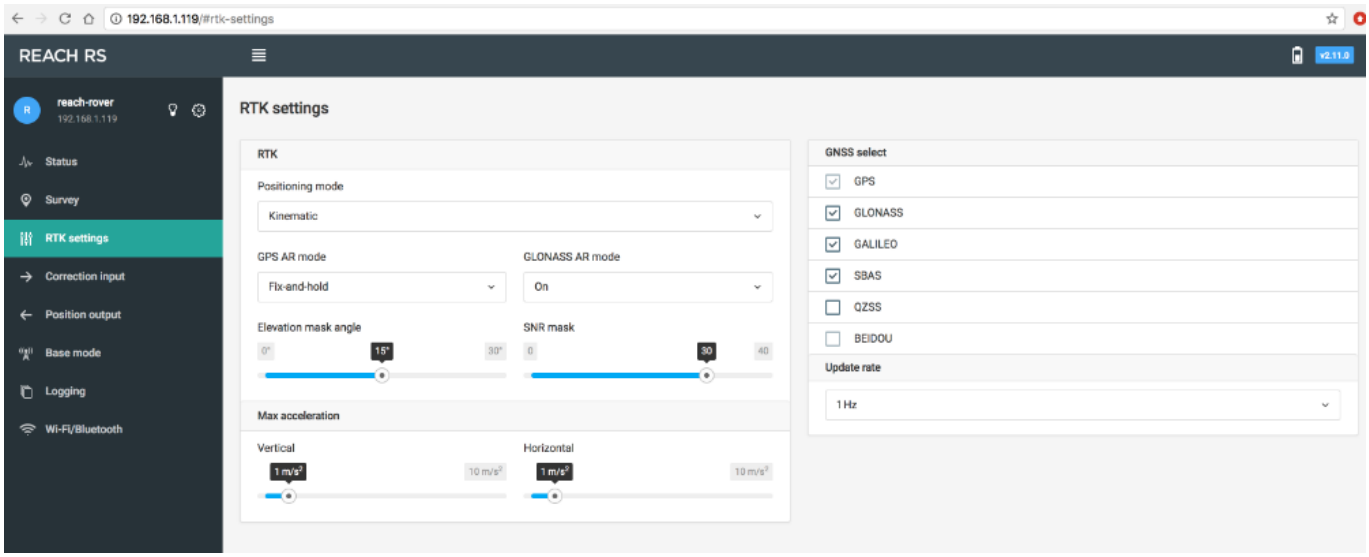
Server Address: 98.159.149.73

Recommended Mountpoint Information

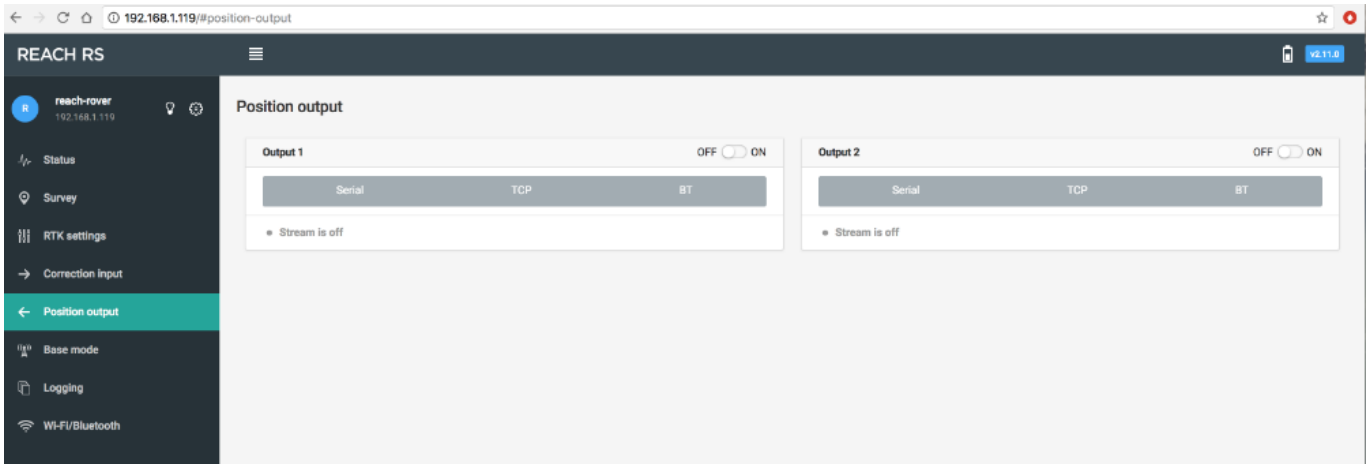
Help

Port	MountPoint	Correction Type	Reference Frame	Epoch
10000	RTCM3_IMAX	GPS+GLO (Network)	NAD83(CSRS)	2010.000
10000	RTCM3_NEAR	GPS+GLO (Single Base)	NAD83(CSRS)	2010.000
10000	RTCM3_ViRS	GPS+GLO (Network)	NAD83(CSRS)	2010.000

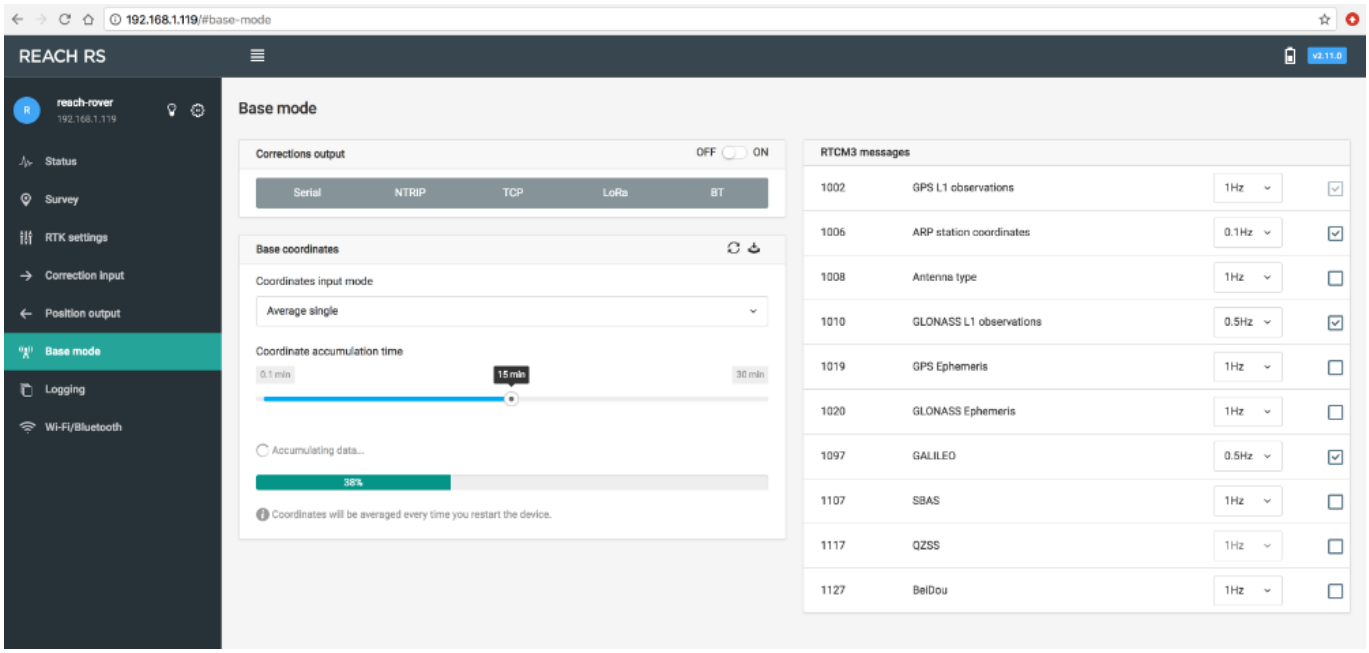
5. On the RTK tab set the GNSS settings to 'GPS, SBAS, GLONASS' at minimum but can also include 'GALILEO'. Set update rate to 1Hz. Set the GPS AR mode to "Fix and Hold" and GLONASS AR mode to On. Values for elevation and SNR less than 15 and 30 degreess respectively are not recommended.



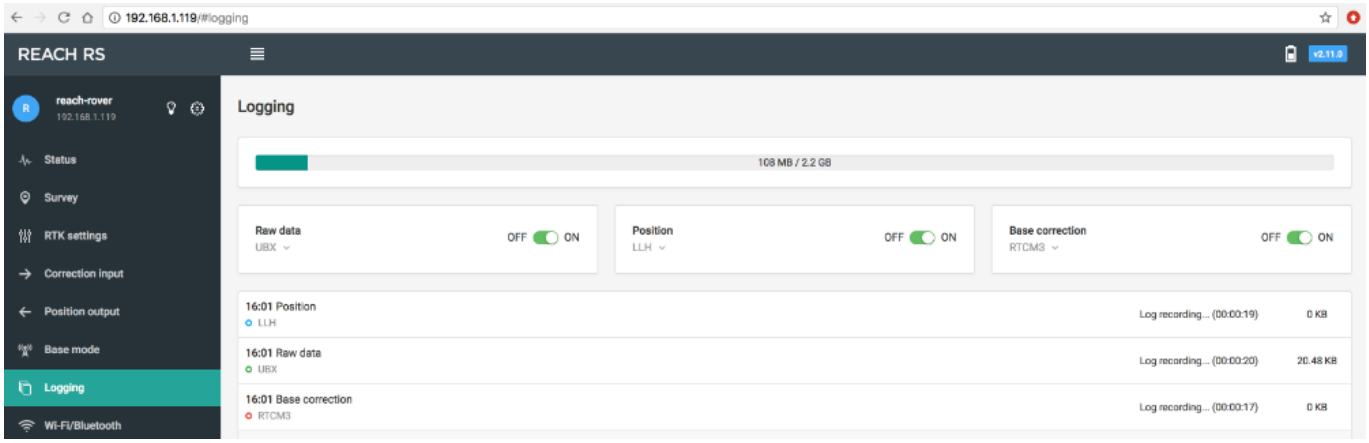
6. On the position output table set radio buttons to 'Off'



7. On the Base Mode table set the radio button to 'Off'



8. On the Logging tab turn on the radio buttons for the log files.



9. On the Status tab ensure that there are both coloured (i.e. green/orange) and grey bars. A minimum of 5 satellites must show green bars for the results to be satisfactory. Green bars illustrate satellites that meet the elevation and SNR thresholds set by the user.

LINK:

https://docs.emlid.com/reachrs/quickstart/

EQUIPMENT
Equipment brand:
Emlid
SKU:
-
Specifications:
Reach RS

EQUIPMENT
Equipment brand:
MiFi
SKU:
-
Specifications:
Mobile Hotspot

EQUIPMENT
Equipment brand:
Smartphone or tablet
SKU:
-
Specifications:
Smartphone or table capable of connecting to Wifi. Device also needs to either install the Emlid app or have a built in web browser where an IP address can be manually entered. Wifi network scanning App such as Fing is also recommended.

Collecting GPS points

Step 3.

1. Click on the Survey tab and follow instructions
at https://docs.emlid.com/reachrs/common/reachview/survey/ for collecting, saving and exporting points.

LINK:
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In the Antenna Height field 65mm must be added to the height of the base of the Emild RS. For example, if the base of the Emlid RS is set to a height of 1.00 m, enter 1.065 m.