



FieldGenius for Android

EMLID Reach RS/RS2 RTK Connection Guide

Connection Guide
20 November 2019

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Before You Begin

Before attempting to set up your receivers, it is recommended to have both MicroSurvey FieldGenius for Android (v1.2 or higher) and EMLID's ReachView app (free on the Google Play Store) installed on your Android device.



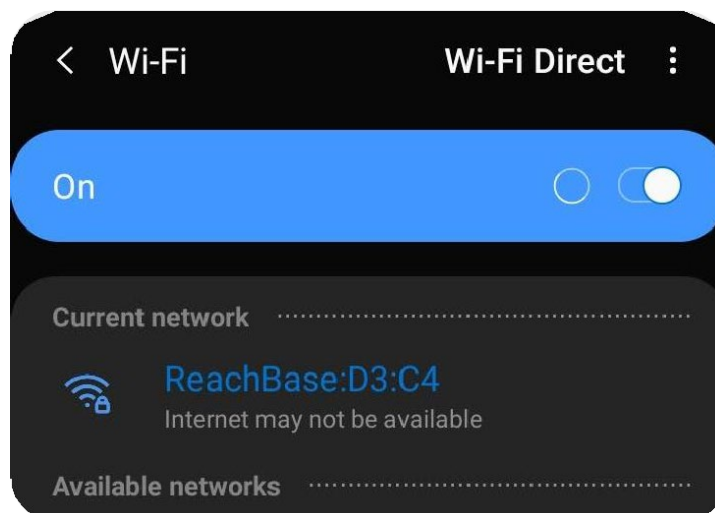
Base/Rover Connections

Set Up the Base Station

Connect to the Base

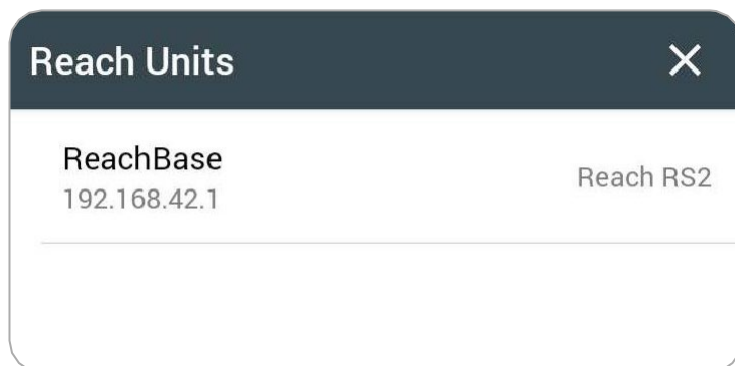
There are a couple methods of doing this, including connection to a common WiFi network, but if you have not set this up, you will need to connect via the RS2's internal WiFi "hotspot":

Turn on your RS2, and scan for WiFi signals on your Android device. The device will appear as DeviceName:XX:XX; the device name may be edited within the ReachView app. To connect, enter the password "emlidreach".



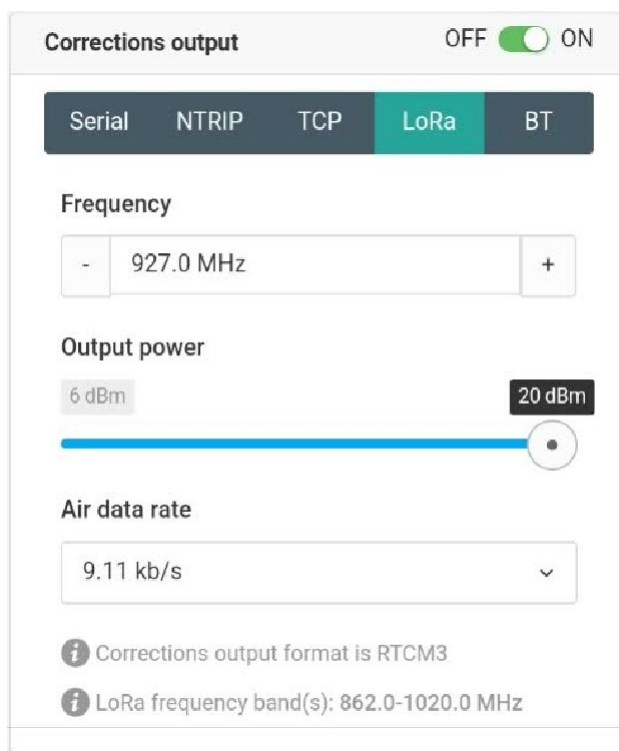
Launch ReachView

After connecting to the device's hotspot, launch the ReachView app. Select the base receiver to connect.



Configure Corrections

Select the menu and choose "Base mode". Set "Corrections output" to ON, and make sure LoRa is selected. Configure your desired frequency, power, and data rate. The output format should automatically be RTCM3.



Acquire or enter base coordinates

Scrolling down in the “Base mode” tab, select the Coordinate input mode and accumulation time (if applicable). Select the circular icon in the top right corner of the Base coordinates box to recompute (if using “Average” mode). You may select the dropdown to enter LLh values (WGS84) or XYZ values (ECEF) if you are restarting the base on a known coordinate.

Base coordinates

Coordinates input mode

Average single

Coordinate accumulation time

0.1 min

30 min

Accumulating data...

84%

Coordinates will be averaged every time you restart the device.

Once the base has started, a pop-up will show in the top-right corner. Take note of the LLh (or XYZ) values if you intend to restart the base on this point in the future.

Base launched with new coordinates!

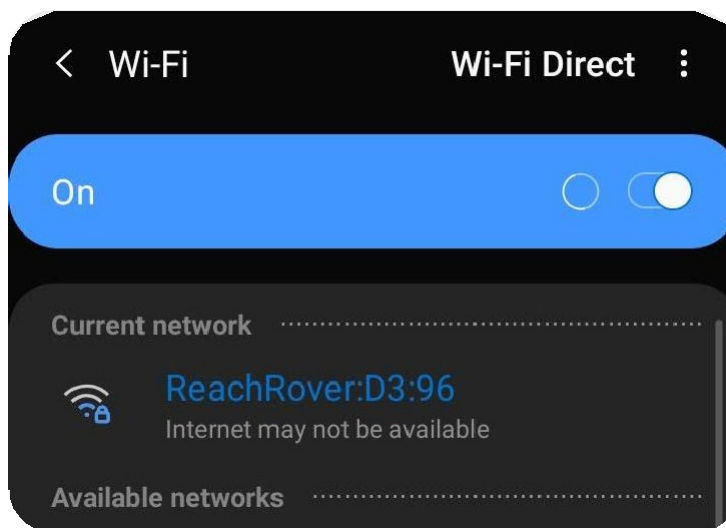
Disconnect the Base Receiver

You may now disconnect from the Base hotspot and close the ReachView app.

Set up the Rover

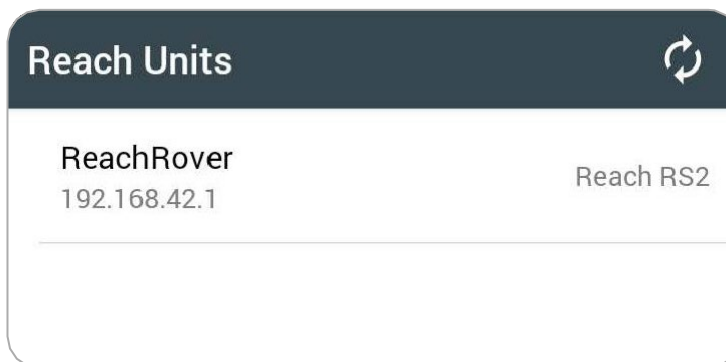
Connect to the Rover Receiver

Connect to the rover receiver in the same manner you used to connect to the base receiver, whether using a common WiFi connection or the internal hotspot.



Launch ReachView

After connecting to the device's hotspot, re-launch the ReachView app. Select the rover receiver to connect.



Set up Bluetooth

Click on the menu, then select the “Bluetooth” option. Ensure Bluetooth is set to “ON” and is always discoverable. Leave the PIN code as the default 123456.

Bluetooth

OFF ☒ ON

Settings

PIN code

123456

You can't make device discoverable without setting PIN code

Always discoverable

☒

Device name: ReachRover

Device MAC: 6C:21:A2:92:CD:51

Configure Corrections

Click on the menu, and select “Position output”. Ensure ERB is the selected format.

RS

v2.22.5

Position output

Output 1

OFF ☒ ON

Serial

TCP

BT

Make sure that your device is paired and connected in bluetooth settings

Format

ERB

Send error (111)

Output 2

OFF ☒ ON

Serial

TCP

BT

Role

Click on the menu, and select “Correction input”. Ensure LoRa is selected, and that the settings match those which were configured on the base receiver.

At this point there is a chance that your rover will beep, letting you know it has acquired a fixed position, depending on your loca

Base correction OFF ☒ ON

Serial

NTRIP

TCP

LoRa

BT

Frequency

- 927.0 MHz +

Output power


6 dBm20 dBm

Air data rate

9.11 kb/s

Format

RTCM3

 LoRa frequency band(s): 862.0-1020.0 MHz

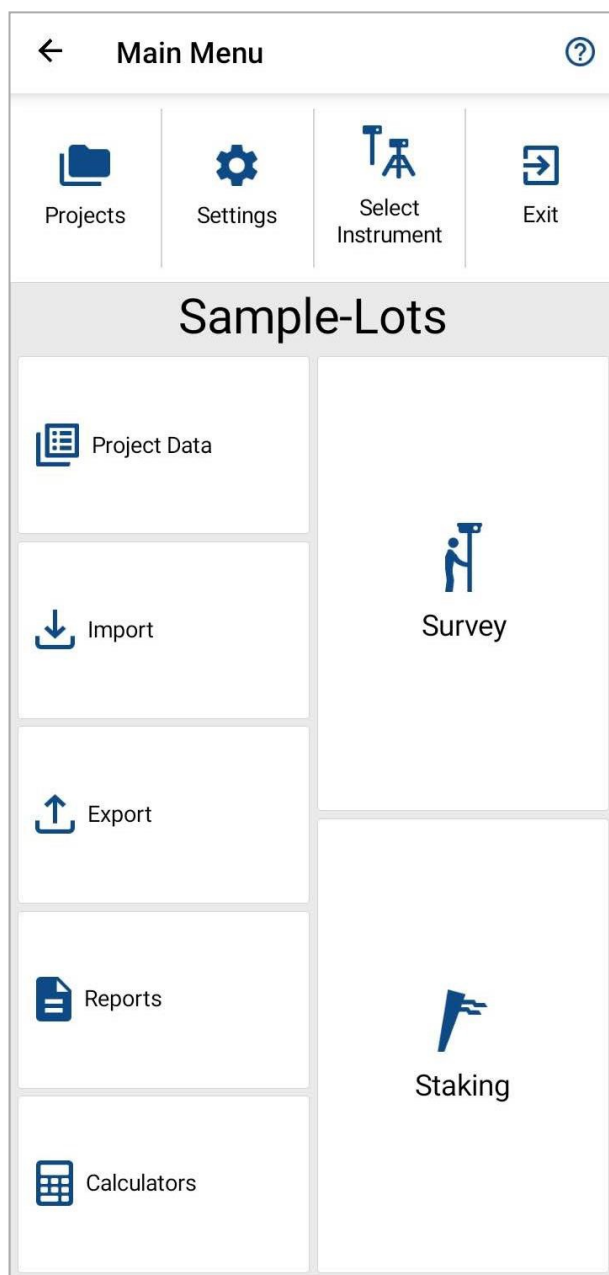
• Connected to localhost

Disconnect from the Rover Hotspot

Exit the ReachView app and disconnect from the rover's hotspot (it doesn't actually supply internet, so if you are expecting to receive notifications from other applications on your device, remaining connected to the hotspot will disconnect you from your preferred data network).

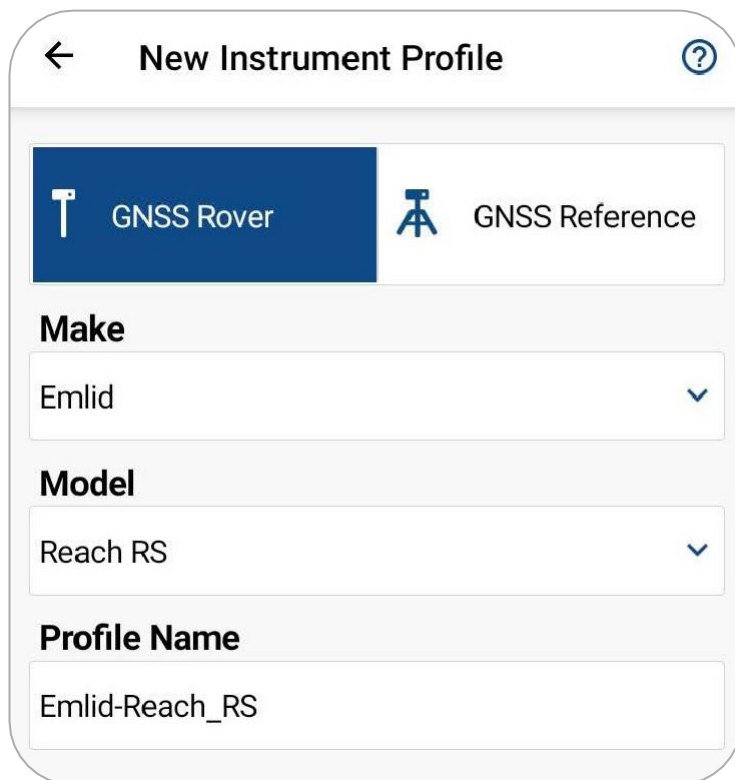
Launch MicroSurvey FieldGenius for Android

Open FieldGenius for Android. Your version must be v1.2 or higher, as an important fix for connections to the Reach RS2 has been included in this version. Create or select a project to enter the main menu.



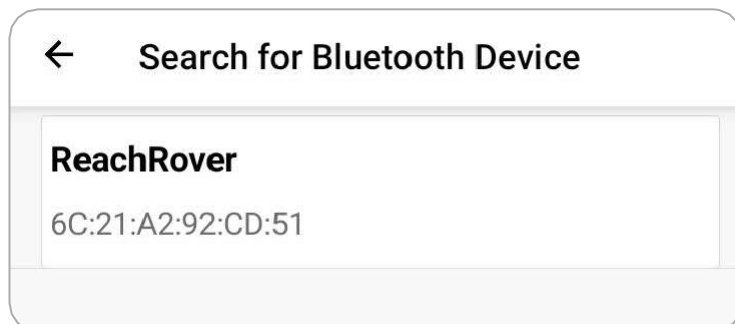
Create a new Instrument Profile

Choose “Select Instrument”, then “Add Profile” to create a new receiver profile for your RS2. Choose the Emlid Reach RS driver from the GNSS Rover setup page and accept or enter a name for the profile. Click “Create” at the bottom of the screen to continue.



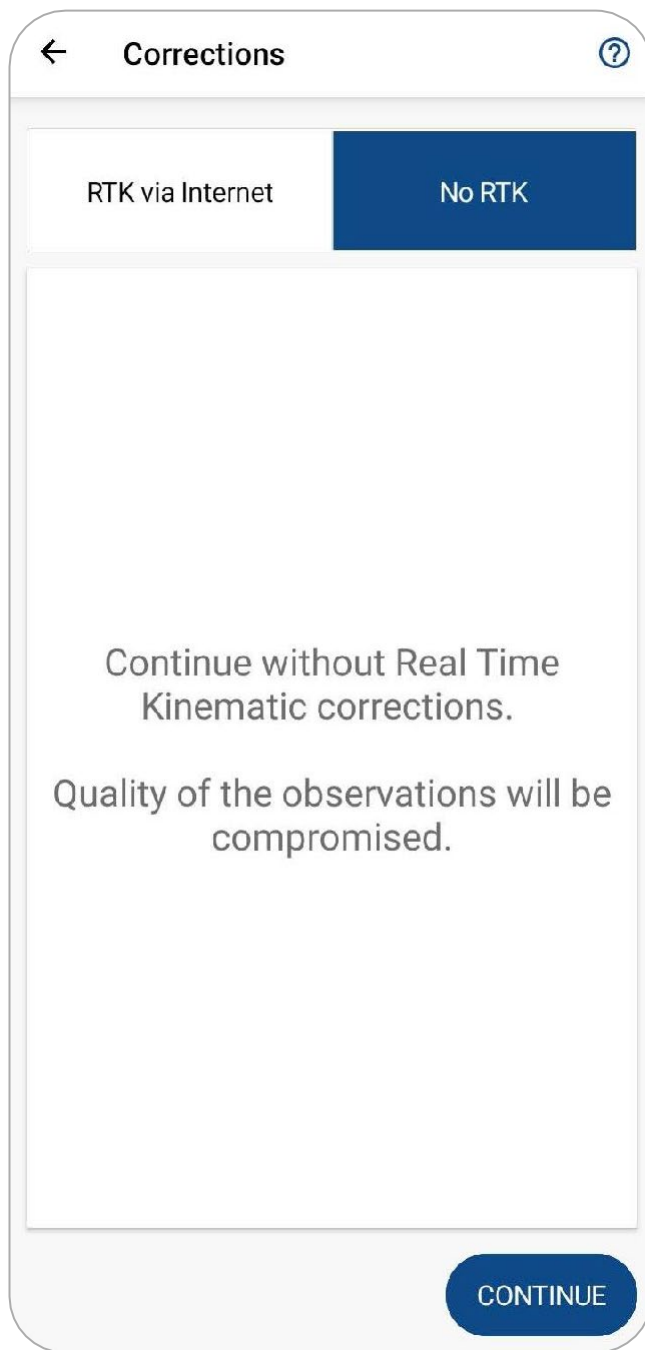
Set up Communication

On the next screen, select “Set up Communication” then “Search” to search for the Rover via Bluetooth. Ensure the Bluetooth on your device is turned ON. Once the Rover is detected, select it to apply.




Set up Corrections

Once you have connected to the rover, select "Set up Corrections". Select "No RTK"; you will still receive RTK corrections from the initial setup with the ReachView app, and FieldGenius is unable to configure the RS2 radio frequencies, so selecting "No RTK" simply does not attempt to configure any additional correction settings. Click "Continue".




Set up Antenna Height

Click “Set up Antenna Height” and input the measured distance to the bottom of the receiver. The distance from the bottom of the receiver to the ARP is 134mm. Click “Ok”.

Antenna Height 

Measured Height:

Model
 


Measure Point

OFFSETS

Horizontal - Measure point to ARP

Vertical - Measure point to ARP

Vertical - ARP to APC (L1)

OK

Set up Active Tolerance

Click “Set up Active Tolerance” to set point type tolerances and Auto-Store options for each. Click on the menu button for each item to change its settings. Click on “Reset Tolerances” to reset to default values. Click “Ok”. Click “Done” on the next screen to complete GNSS Rover Setup.

Tolerances
RESET TOLERANCES

RTK Fixed – Topo
⋮

✓

StdDev H: **0.050 m** StdDev V: **0.050 m**

Obs Count: **3**

RTK Fixed – Control
⋮

StdDev H: **0.030 m** StdDev V: **0.040 m**

Obs Count: **30**

Autonomous
⋮

StdDev H: **20.000 m** StdDev V: **20.000 m**

Obs Count: **1**

OK

Begin Surveying

You should now be directed to the main menu. Click "Survey" or "Staking" to enter the map screen and begin working. Your rover should beep to indicate that a fixed position has been achieved, and the measurement button will display "RTK Fixed".

