



Quick Start Manual BR2018

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Technical features

Size / weight Antenna

320*255*136mm
3.15kg

Power

4200 mAh NiMH battery pack sub c

App Software

Rescue-Radar Analyzer

Definition

Hand antenna/Rescue-Radar

Handheld antenna to be placed on the spot, where a measurement shall happen

Tablet

Android device on which the measurement application is running

APP

Measurement application that configures the hand antenna and displays the measurement signals on the tablet

Rescue-Radar WIFI

WIFI connection between Hand Antenna and Tablet

1 About the App

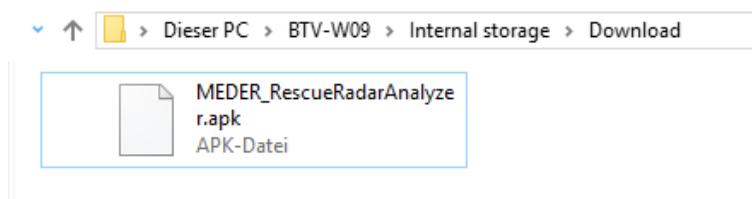
The app runs on Android devices with Android 7, 8 or 10 that provide WIFI.

1.1 Installing the App

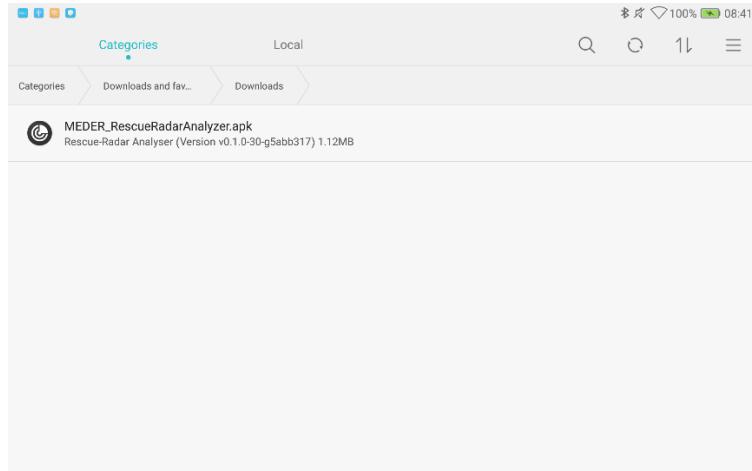
If you use the included tablet the Rescue-Radar Analyzer is already installed and you can skip this section

Please contact info@meder-commtech.com to receive the latest APP version.

To install the app on your target device copy the app to the internal storage of the device inside the “Download” folder.

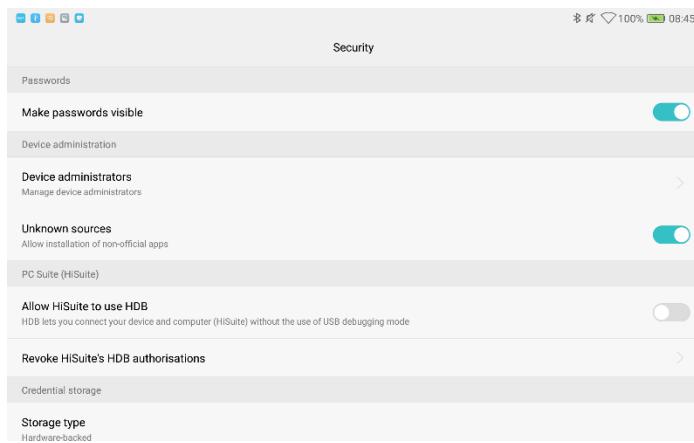
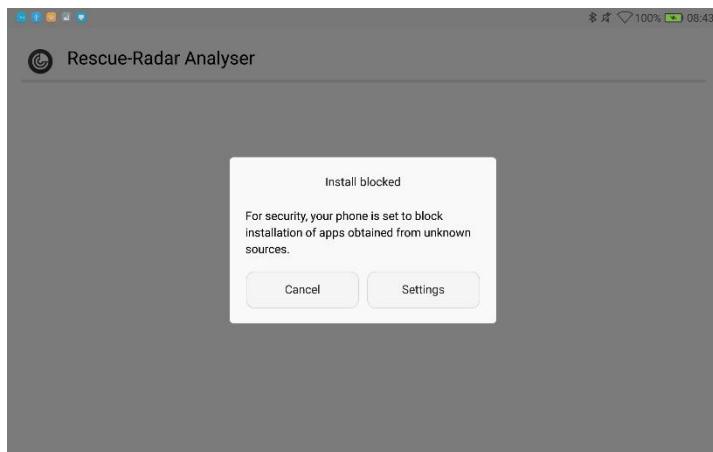


Open the File Manager of your device and open the download folder.



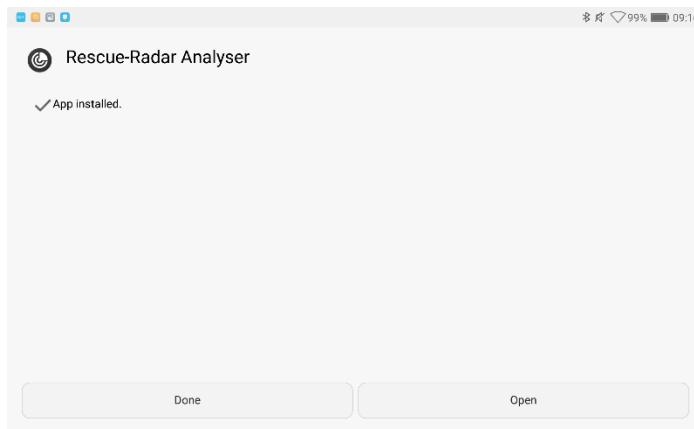
Click on the MEDER_RescueRadarAnalyzer.apk.

If not already activated you are prompted to enable the installation of apps from unknown sources. Follow the request and activate it.



Afterwards you can return to the File Manager and start the installation by clicking the MEDER_RescueRadarAnalyzer.apk again and confirm it with the “Install” button.

When finished you receive a success message.



2 Charging the Rescue-Radar

The Rescue-Radar can be charged with the included battery charger. It takes about 4:30 hours to fully charge it

The LED on the charger provides information about the charging state:

LED state	Meaning
Red	Charging
Green	Fully charged

3 Start the Rescue-Radar

Press the power switch to start the Rescue-Radar



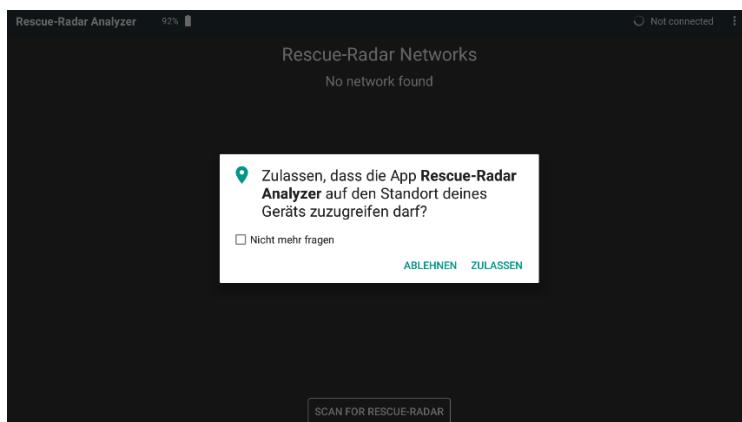
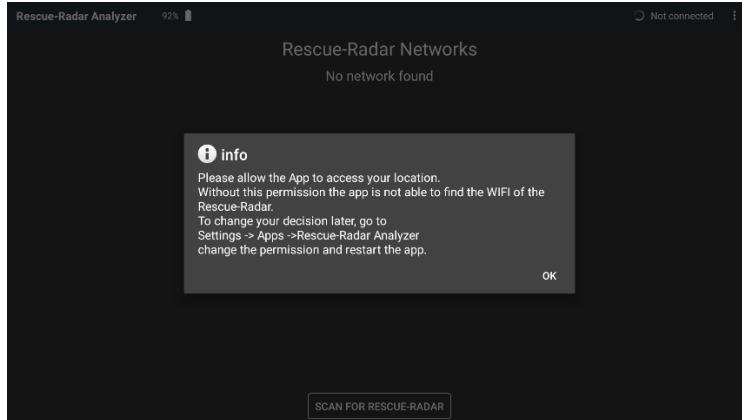
The LED on the Rescue-Radar provides information about the start-up process:

LED state	Meaning
Red	The power switch was pressed but the Rescue-Radar has not booted yet
Flash green	The Rescue-Radar has booted and the startup is running
Green	The Rescue-Radar is ready to use
Flash red (continuous)	The startup was not successful. Connect the tablet to get more information about the problem
Flash red (5 seconds)	The battery of the Rescue-Radar is empty and it will shut down

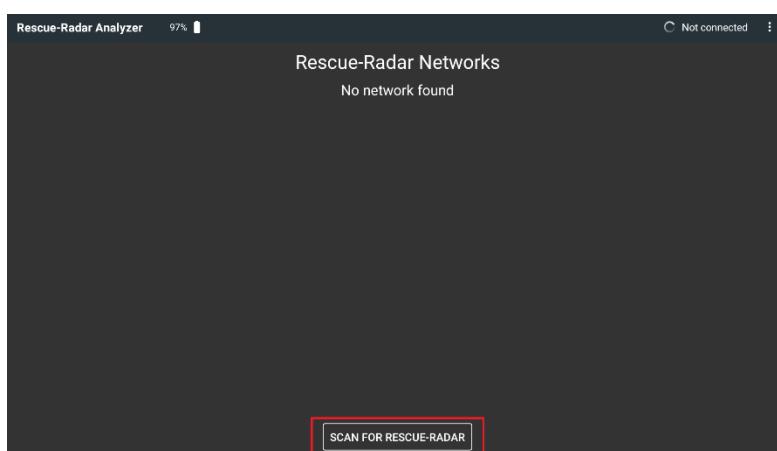
4 Connecting Tablet & Hand Antenna

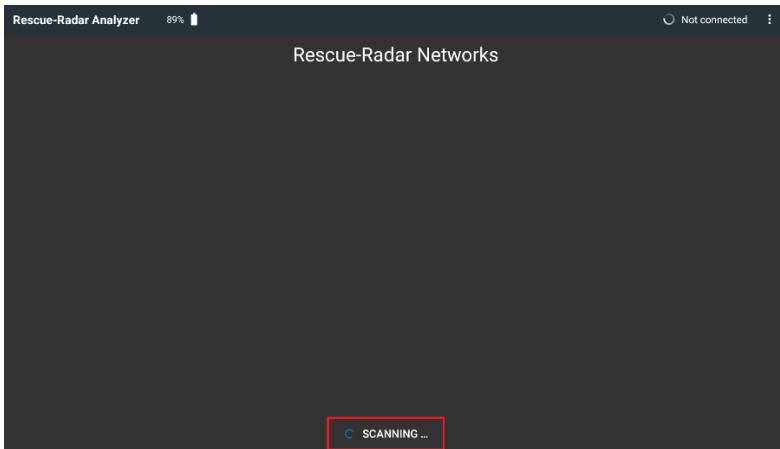
If your tablet was already connected to your Rescue-Radar before and the connection was not terminated by the user ([Chapter 8](#)) the Android operating system may start the connection by itself. In this case you can skip this section.

On the first start of the app the permission to access the location is requested. This permission is needed to be able to search for WiFi networks.



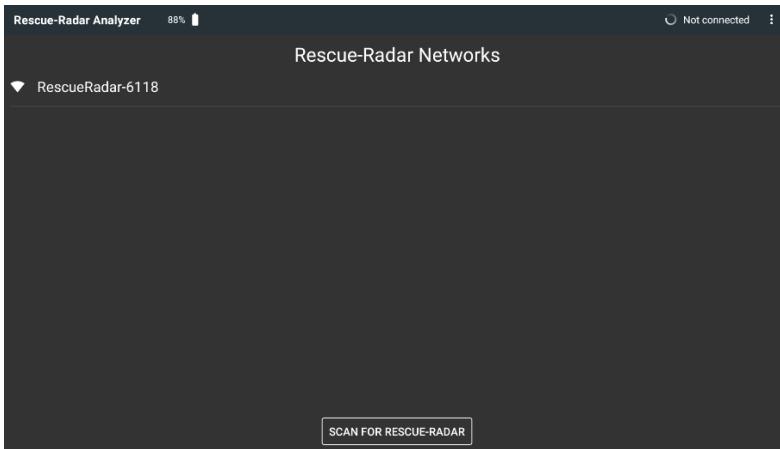
After starting the app the connection screen is displayed. By pressing the **SCAN FOR RESCUE-RADAR** button the app will search for the WiFi Network of the Rescue-Radar



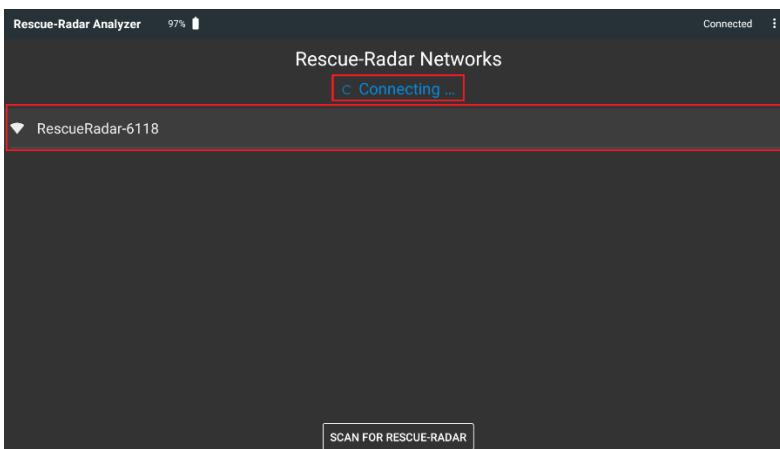


All found Rescue-Radar WiFi Networks are listed after the search was completed. To identify the right network compare the name of the found WiFi networks with the serial number printed on the hand antenna.

The Settings ([Chapter 7.4](#)) offer a possibility to only display a Rescue-Radar with a given ID

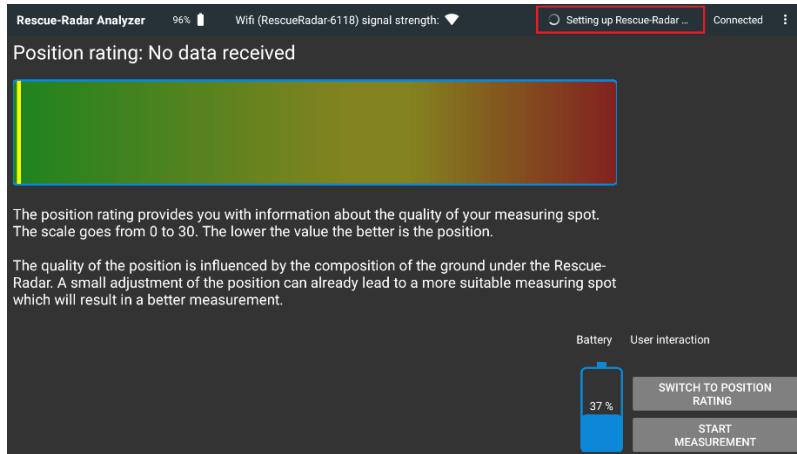


By pressing the name of the WiFi the connection is established. This can take up to 30 seconds.

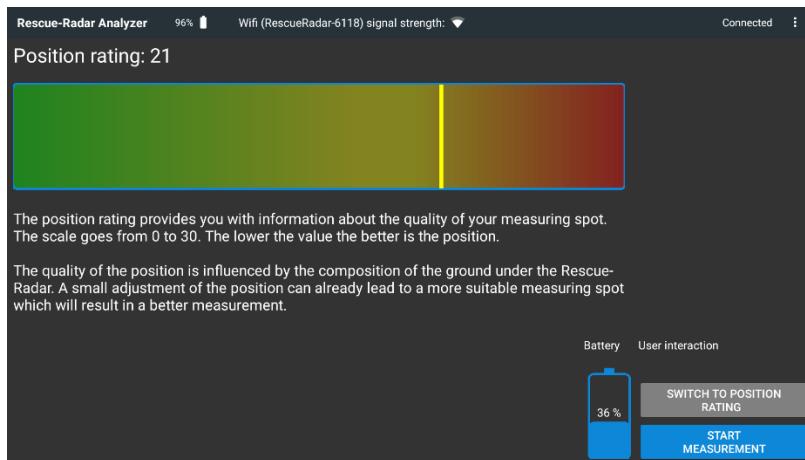


5 Run measurement

When the connection is established the **Position rating** screen is displayed and the initial setup is performed.



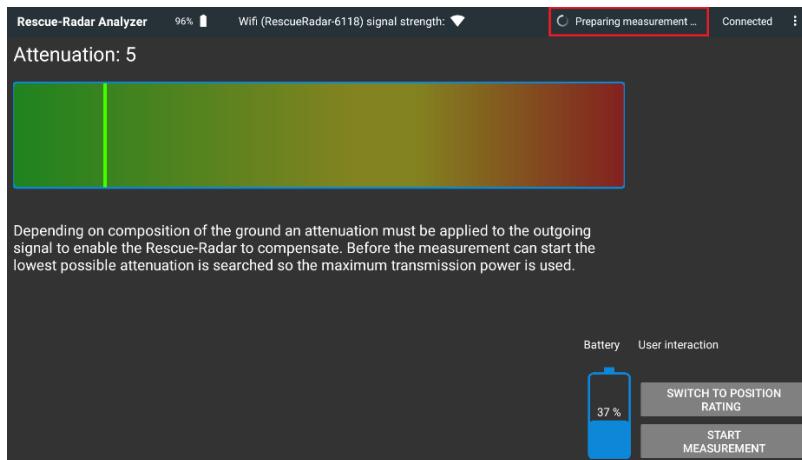
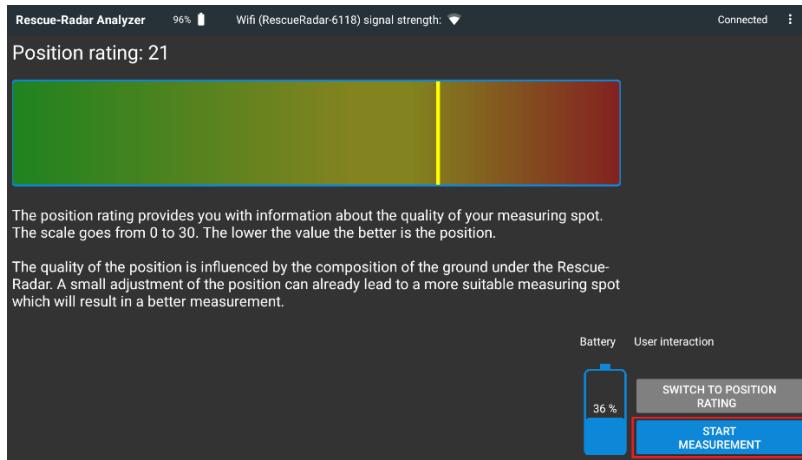
After the setup was performed the **Position rating** is calculated.



The position rating provides you with information about the quality of your measuring spot. The scale goes from 0 to 30. The lower the value the better is the position.

The quality of the position is influenced by the composition of the ground under the Rescue-Radar. A small adjustment of the position can already lead to a more suitable measuring spot which will result in a better measurement.

By pressing the **START MEASUREMENT** button the **Attenuation** screen is displayed and the measurement is prepared.

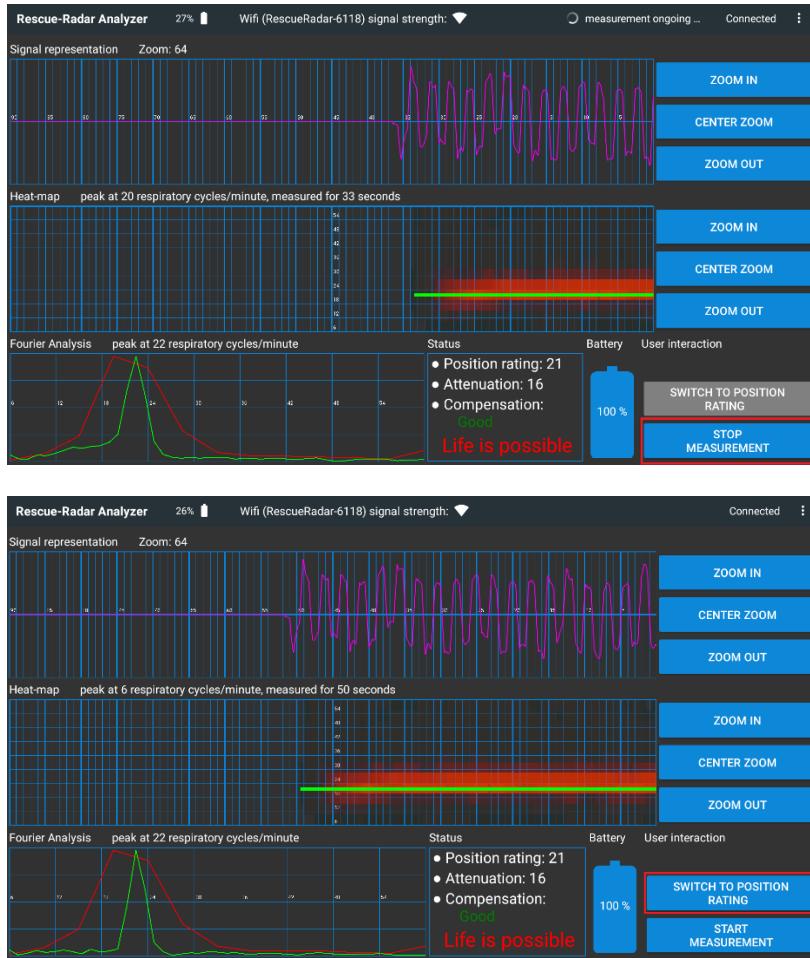


Depending on composition of the ground an attenuation must be applied to the outgoing signal to enable the Rescue-Radar to compensate. Before the measurement can start the lowest possible attenuation is searched so the maximum transmission power is used

After the lowest possible attenuation was found the measuring will start and the **analyzer screen** is displayed.



With the **STOP MEASUREMENT** button the measurement can be stopped. Afterwards the **position rating** can be displayed again.



5.1 Zoom and Scaling

On default the zoom of the Signal Representation and the Fourier Analysis is regulated automatically. If you want to change the zoom by hand this is possible with the **ZOOM IN** and **ZOOM OUT** buttons. To use the automatic zoom again use the **CENTER ZOOM** button.



The same applies for the color scaling of the Heat-map.





5.2 Understanding the measurement

There are 3 graphs displayed while measuring:

- The Signal representation shows the raw data received from the Rescue-Radar. If some regularity can be detected in this signal, this can be a first sign of life. The length of the graph is determined by the **Duration** value from the settings.
 - The Fourier Analysis shows which frequency is dominant in the raw data at the current moment. When searching for human life this value should be between 12 and 25 respiratory cycles per minute. The green Graph is more accurate but less responsive than the red one. Both should be used in order to find life
 - The Heat-map shows the same information as the Fourier Analysis but not only of the current moment but the change over a period of time. The length of the graph is determined by the **Duration** value from the settings ([Chapter 7.1](#)).
- The frequency with the largest share (inside the signal) at a given time is displayed in green colour. Yellow means that a large part of the signal is in the given frequency and red a small part.



6 Status Information

While sampling different status information are displayed:



The **position rating** and the **attenuation** are the values that were determined before the measurement.

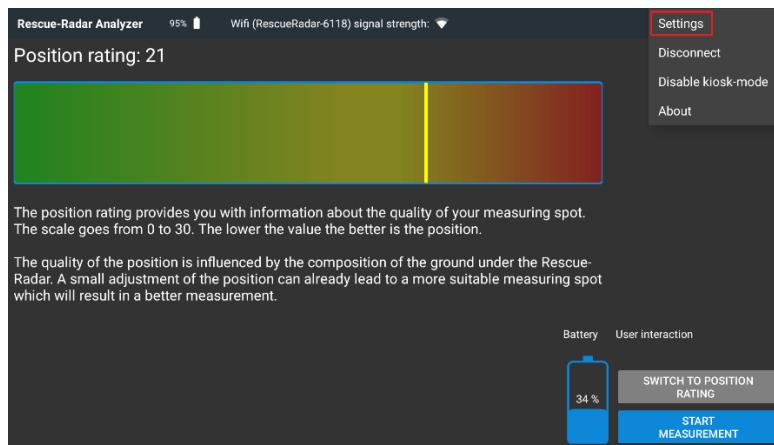
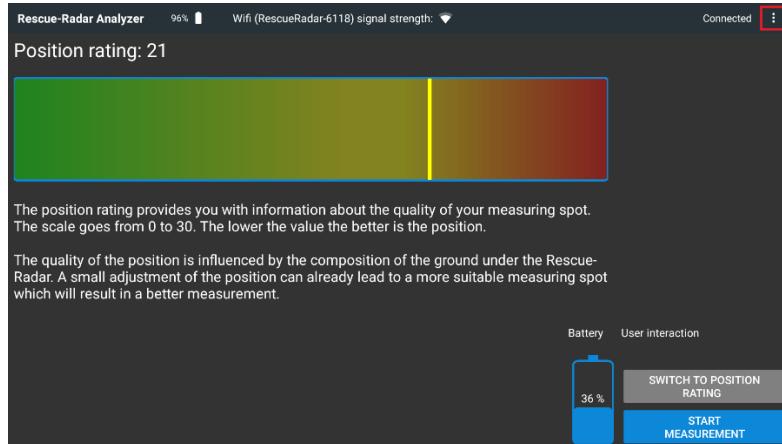
The **compensation** has 3 different state: *Good*, *Medium* and *Bad*. As long as the value is '*Good*' everything is alright. When the value is '*Medium*' the compensation is in a questionable state and it is not one hundred percent safe that the measurement is valid. If the value is '*Bad*' the measurement is invalid and the measurement should be stopped.

The **Battery** shows the remaining battery voltage.

The **Life is possible** message shows up and an alert sound is played if the heat-map registers a constant frequency for a certain duration (the duration can be defined in the settings chapter 7.23) - a constant frequency allows the conclusion that there could be life below the Rescue-Radar.

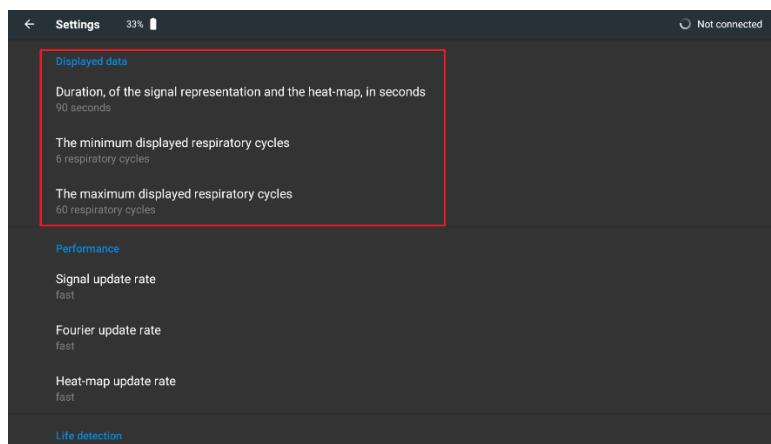
7 APP Settings

The app settings can be accessed via the menu in the top right corner



7.1 Displayed Data

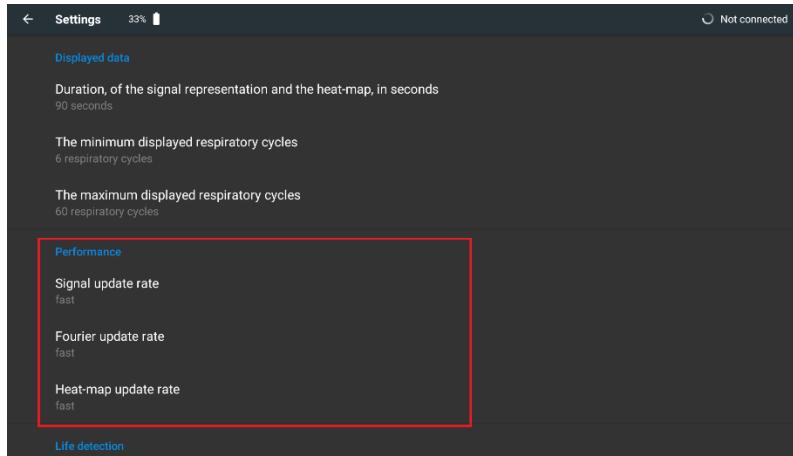
Displayed data allows you to change how the data is displayed on the analyser screen



Datum: 07.10.2021

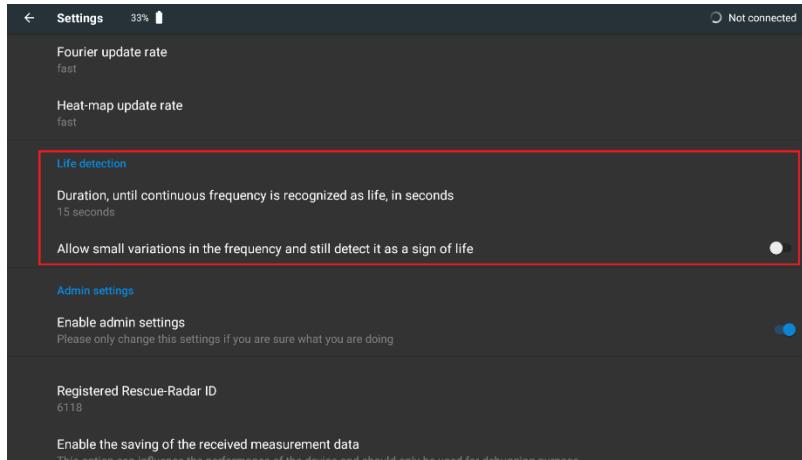
7.2 Performance

Performance allows you to change the update rate of the graphs to use the app less performant devices.



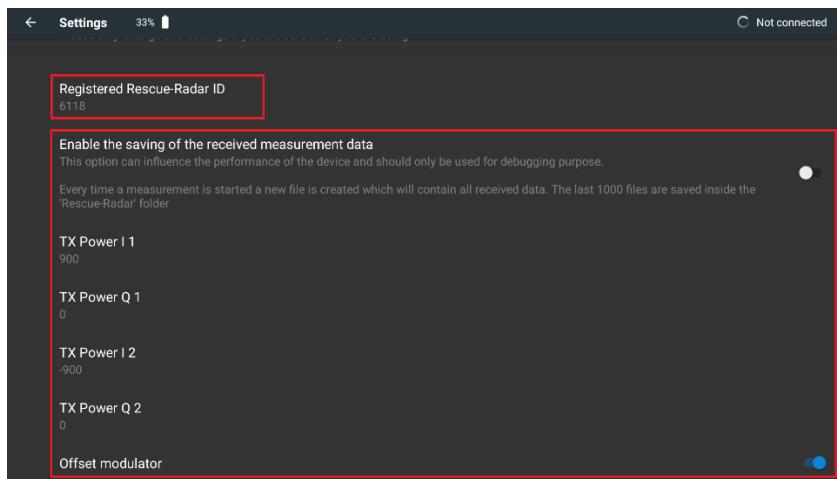
7.3 Life detection

Life detection allows you to change the parameters for the life detection ([Chapter 6](#))



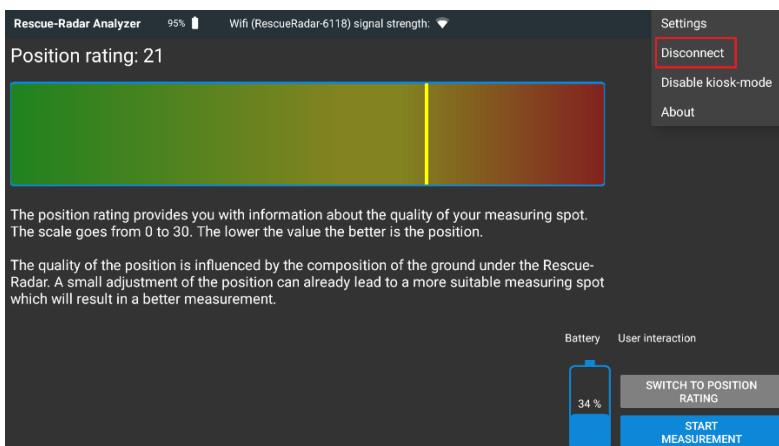
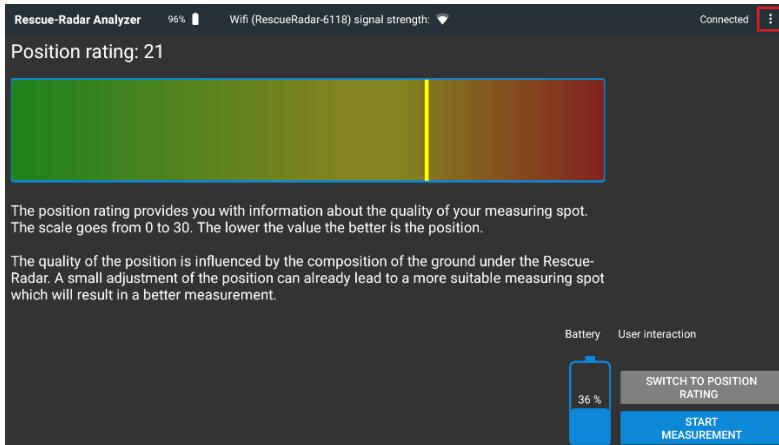
7.4 Admin settings

Except for the **registered Rescue-Radar ID**, which allows to display only a certain Rescue-Radar WiFi while searching in the connection screen, it is not recommended to change these settings since it will influence the measurement.

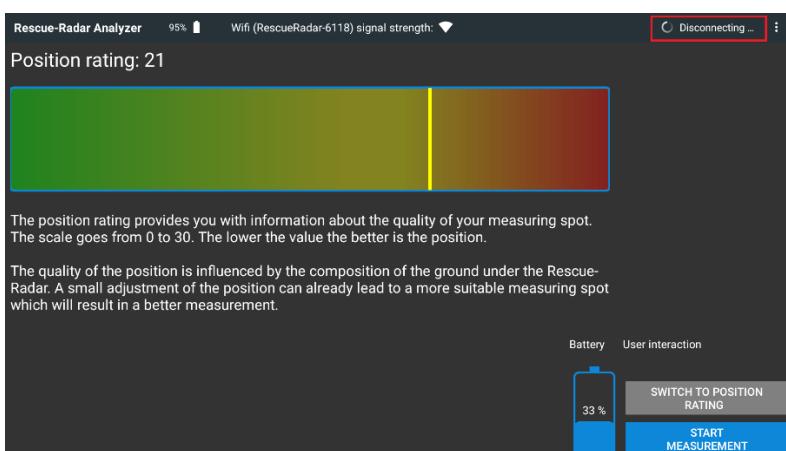


8. Disconnecting Tablet & Hand Antenna

The connection to the Rescue-Radar can be terminated by the user through the menu in the top right corner.



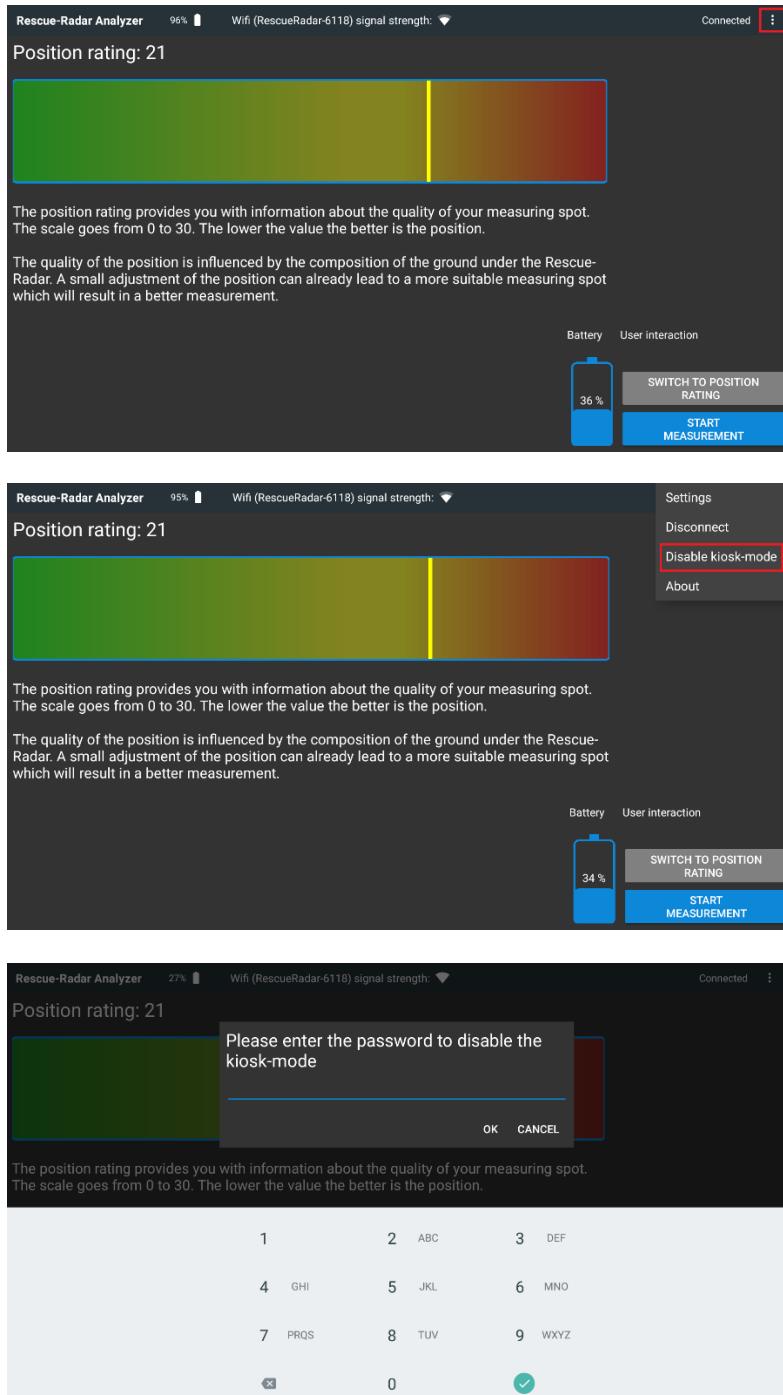
Disconnecting the tablet and the Rescue-Radar can take up to 10 seconds. After the connection was terminated by the user the next connection must be established by hand.



9. Kiosk-mode

If you use the included tablet the app is running in the kiosk-mode. This prevents the user from closing the app or using other apps on the tablet.

The kiosk-mode can be disabled through the menu in the top right corner.



The password is 1123581321

Datum: 07.10.2021