Contents

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1. Introduction

The objective of the RoKiX Android app is to collect sensor data over Bluetooth low energy connection from one or multiple RoKiX evaluation Kit. Sensor data is stored in a csv file to the phone's internal memory which can be them moved to the PC.

2. Install

You can install RoKiX app on your mobile device using one of the three methods listed below.

Installation A

Download the application from Google play store:
https://play.google.com/store/apps/details?id=com.kionix.datalogger

Installation B

Enable untrusted sources and open GitHub link with phone using QR code reader here which points to GitHub. Download and open the latest APK.

Installation C

RoKiX android app can be found in https://github.com/RohmSemiconductor/Kionix-IoT-Evaluation-Kit/raw/master/Kionix-IoT-Logger/Android/kionix-logger-latest-release.apk . The ADB tool and the Google USB driver need to be installed before setting up the logger application.

Install ADB tool to PC

Install Google USB driver to PC

Connect the Android phone to the PC via USB. Download the apk file from GitHub to your PC.

To use the adb socket connection, you must enable **USB debugging** in the device system, under **Developer option**.

Set adb.exe to system path

After running the "adb devices" command the device should be found

```
adb.exe devices

List of devices attached
TA10408MVK      device
```

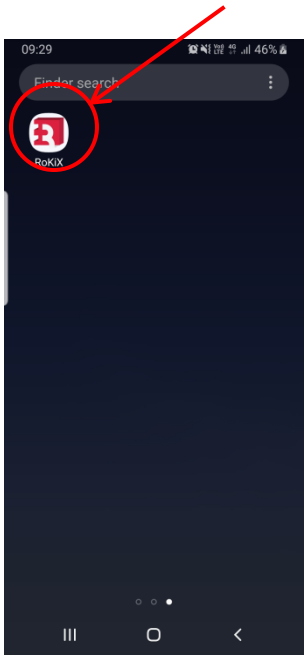
The RoKiX app can be installed using the following command

```
adb.exe install "RoKiX-4.0.0-release.apk"
```

3. Using the RoKiX Android app

3.1 Starting the RoKiX android application

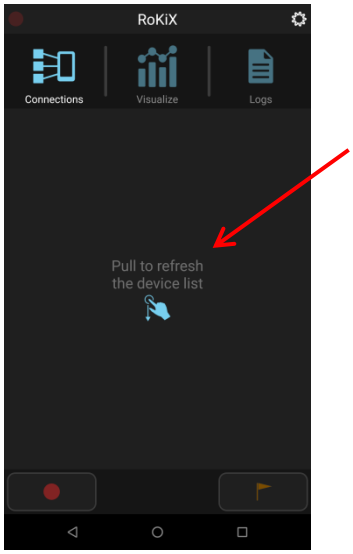
Launch RoKiX Android app by pressing the RoKiX icon. When the application is started for the first time, the configuration files are downloaded and extracted to the phone's internal storage (to the RoKiX folder).



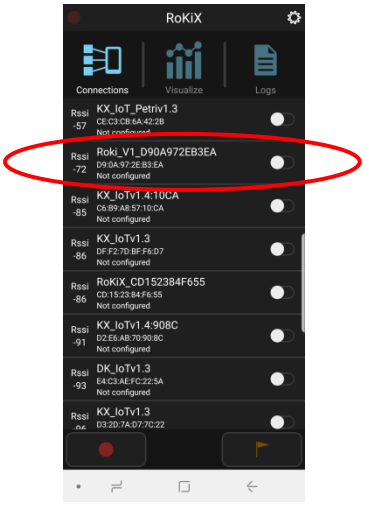
The license agreement, access rights and the battery optimization permission are requested from the user and must be accepted to guarantee the correct functionality of the application.

3.2 Connecting the IoT device

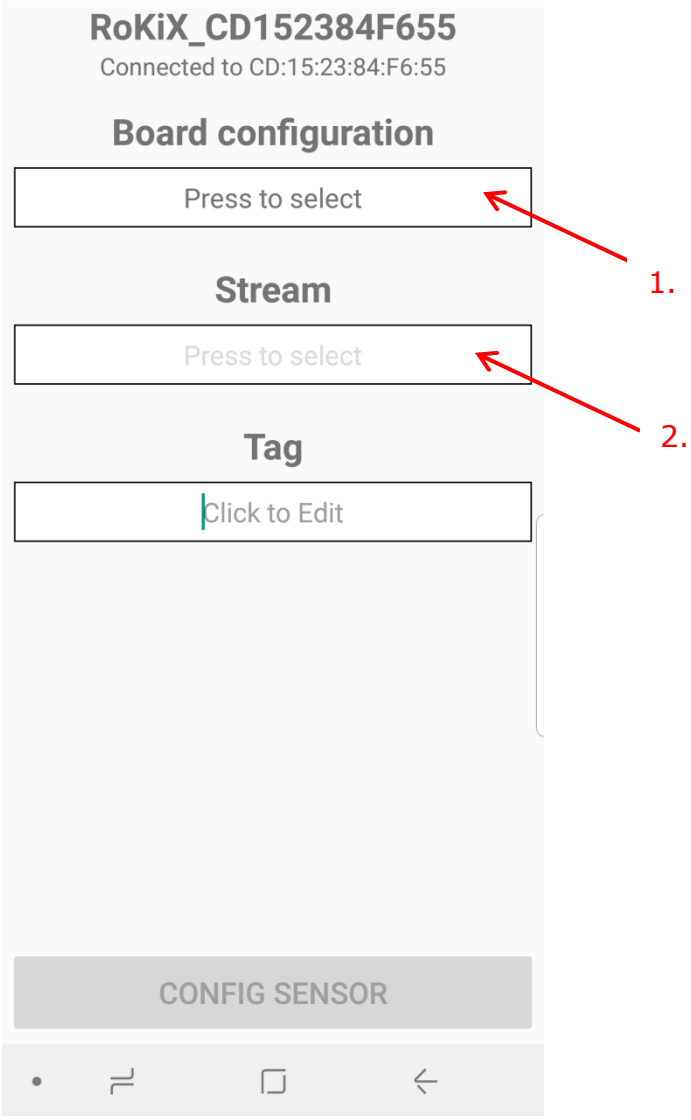
Make sure that the RoKiX IoT device(s) is powered on. Pull the touch screen to detect RoKiX IoT devices.



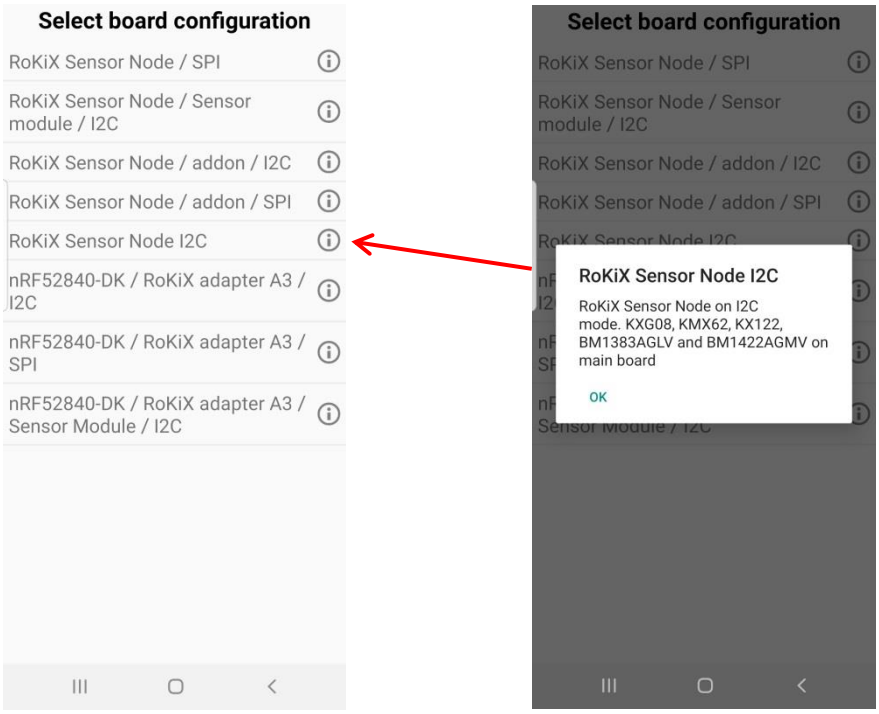
The RoKiX IoT device(s) should appear on the list. Select the device from the list to establish the BLE connection. The list is sorted with rssi, closest distance is listed first.



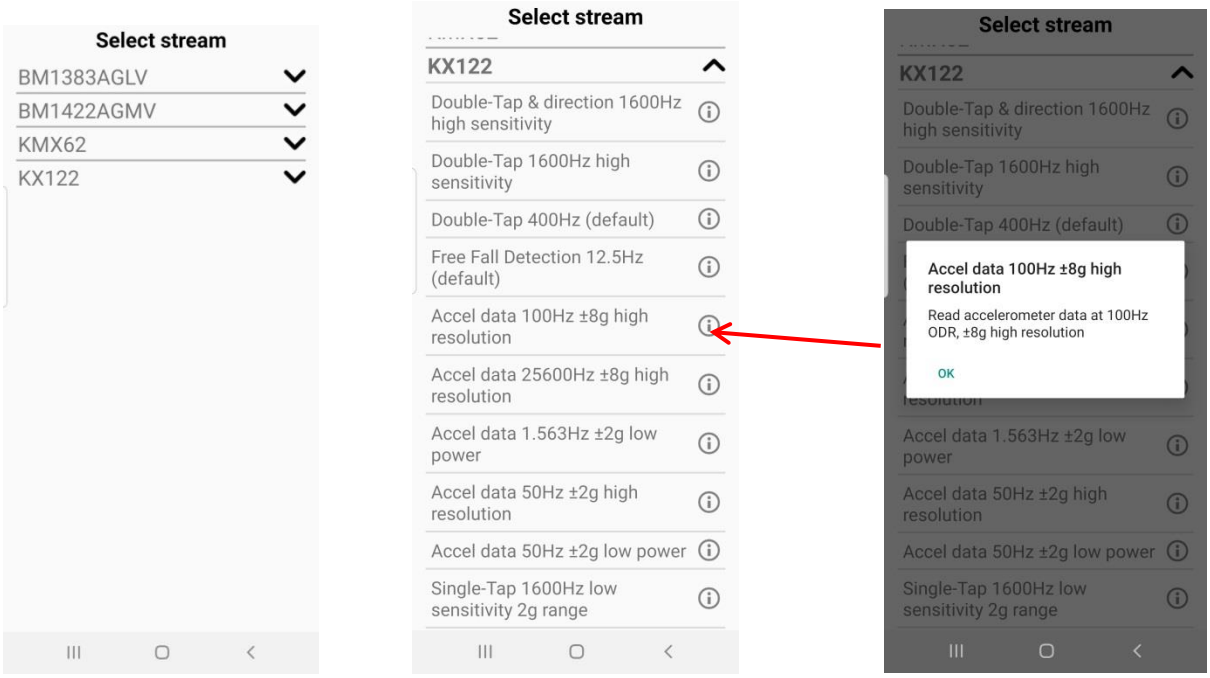
When the device is successfully connected, the configuration view appears as follows:



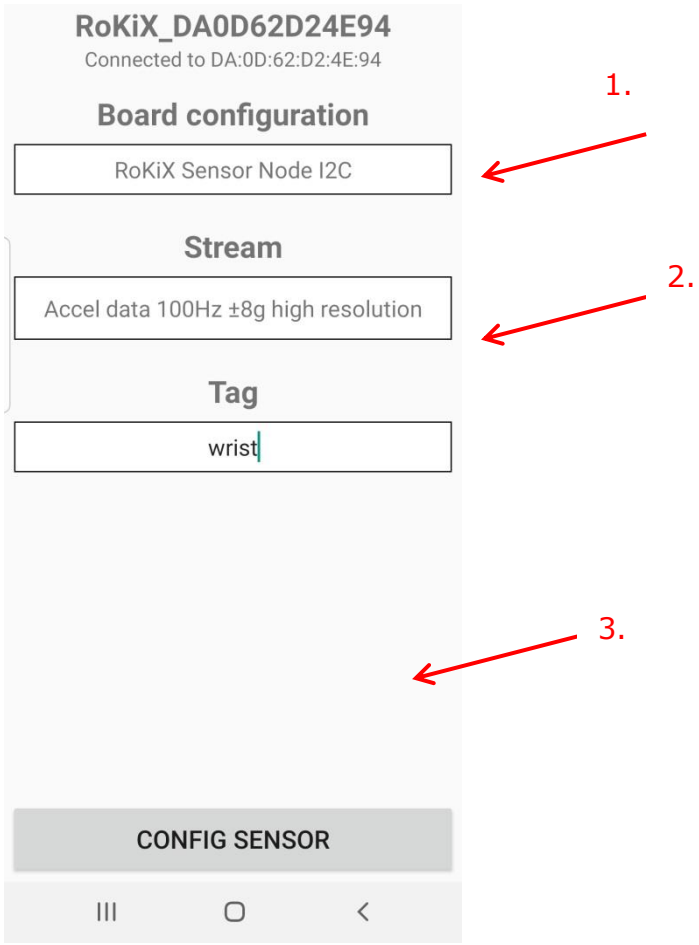
Select the proper board configuration files according to the IoT node hardware characteristics. By tapping the icon you can have more information about the sensor inside the board configuration



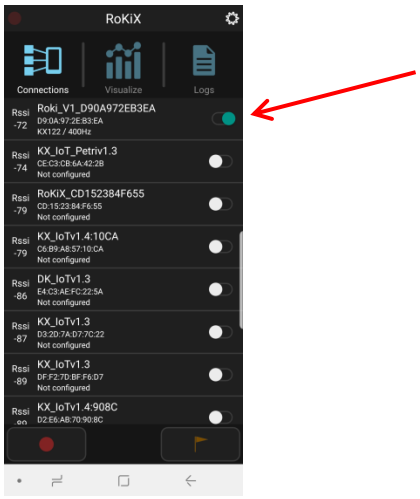
Select the sensor from the dropdown menu and then select stream file from the list. By tapping the info icon, you can see the detail of the selected stream.



After selecting the proper board and stream configuration files according to the IoT node hardware characteristics. The user can add an optional note which will be stored in the sensor node specific log file. Finally, press the "CONFIG SENSOR" button to perform the IoT board initialization.

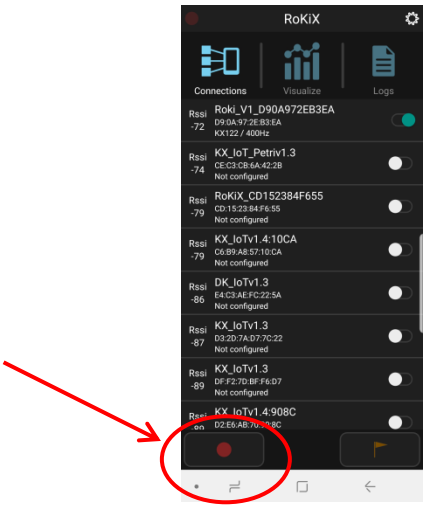


After a successful initialization, an indicator beside the IoT device name is changed from white to cyan color:

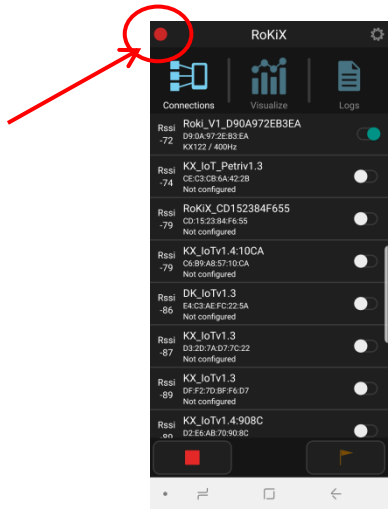


3.3 Logging data

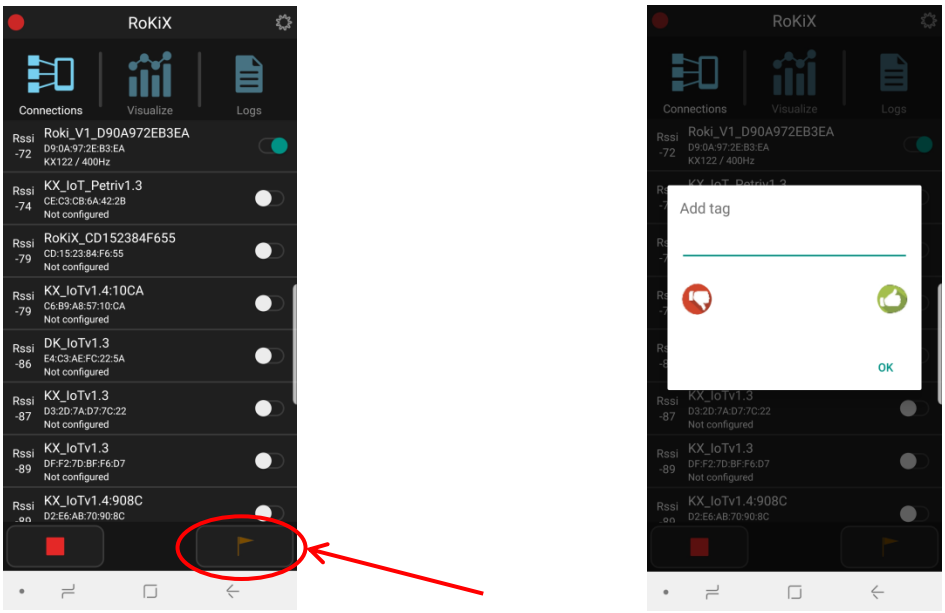
When the board is successfully initialized, the "record" icon will be enabled and the logging can be started by pressing the icon.



By pressing the "record" icon, data logging can be either started or stopped. When the icon is pressed for starting, the stream activation messages are sent to the RoKiX IoT device and the logging has started. The status icon at the top left corner of the screen is blinking for the active data logging. Pressing again the record icon, you can stop logging.



During the data logging, informative tags can be attached with data by pressing the icon at the lower right corner of the screen. This information will be stored in the sensor node specific tag file (tags.txt). In addition the tag goes in the middle of the log file on that time when tag is done.

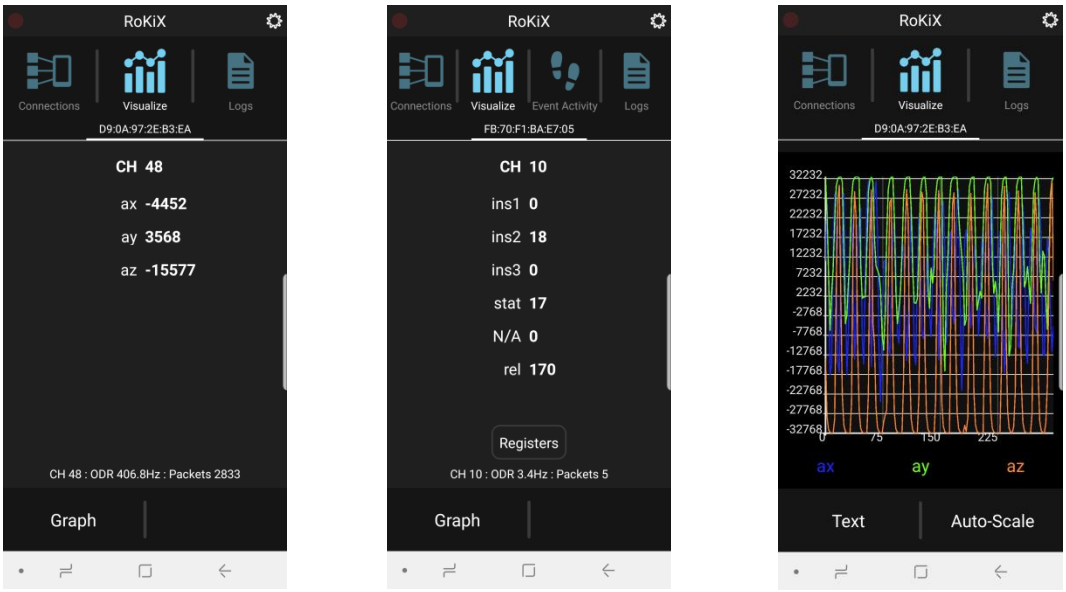


A tag can be either a predefined one or written as a free text. The predefined one can be written by pressing one of the thumbs.

The log file is stored into "\Download\RoKiXLogs" folder in the Phone's internal storage.

3.4 Visualization

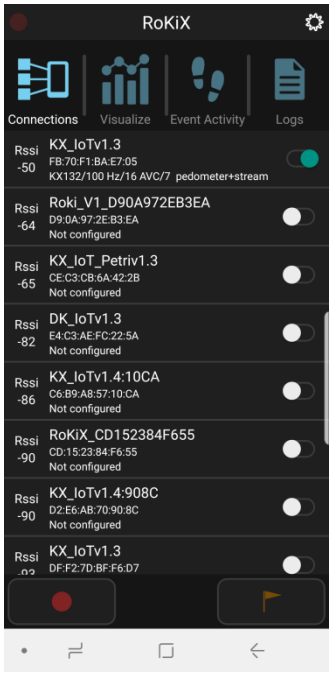
The option 'Visualize' allows viewing the recorded raw data by text or graphical means when there is a successful connection with a node. In the text view, the status bar at the bottom of the screen indicates the active channel(s), ODR and the total number of packets received via the BLE connection. The user can zoom, pan, disable/enable auto-scale and activate/deactivate different active channel(s). The user can connect multiple nodes at the same time and can see the recorded raw data or graphical view by swiping the screen to the left on the 'Visualize' tab

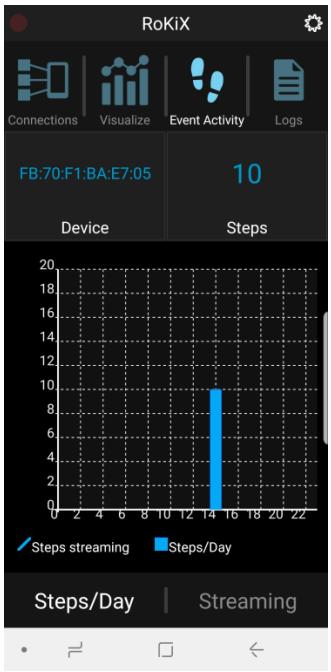


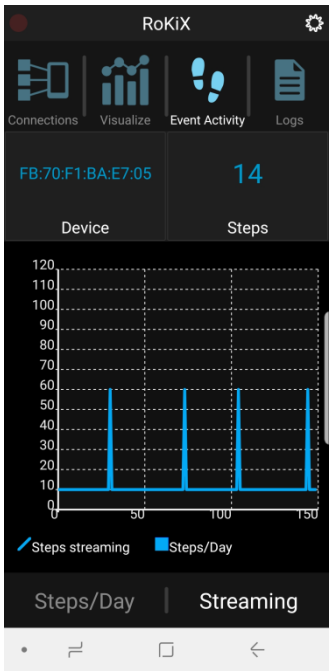
If the register item(s) is/are defined in the stream configuration file (register dump section), then a selection button for the register dump action ('Registers') can be seen with the text view.

3.5 Event Activity Tab

The option 'Event Activity' is only visible when there is a successful connection with a node that has a pedometer stream. It allows user to see The Device MAC address and the total step count on top of the screen. The user can also see the steps per days or the step streaming on the graph.

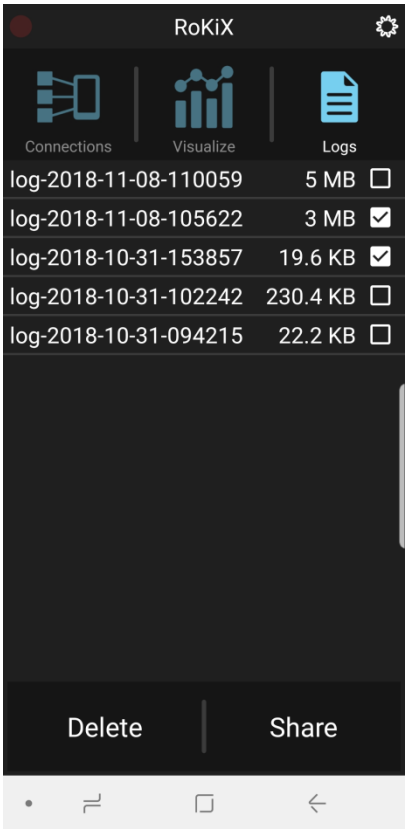






3.6 Log files

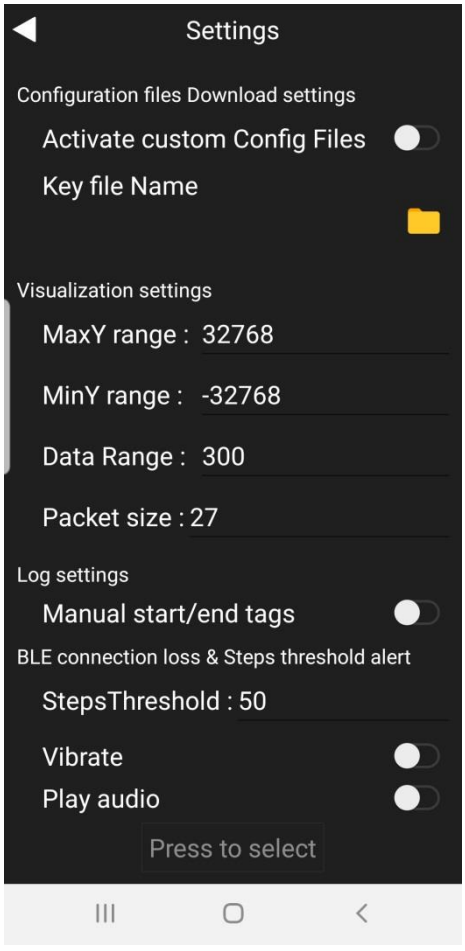
The option ‘Logs’ shows the stored log files. By selecting files, the user can also delete files or share them via different media options e.g. email. When the share action is used, a default file browser of some kind needs to be installed in the phone. One directory is one logging session that consists of different log files for each sensor node including log data, tags and other files (tags.txt) which solely contains tags.

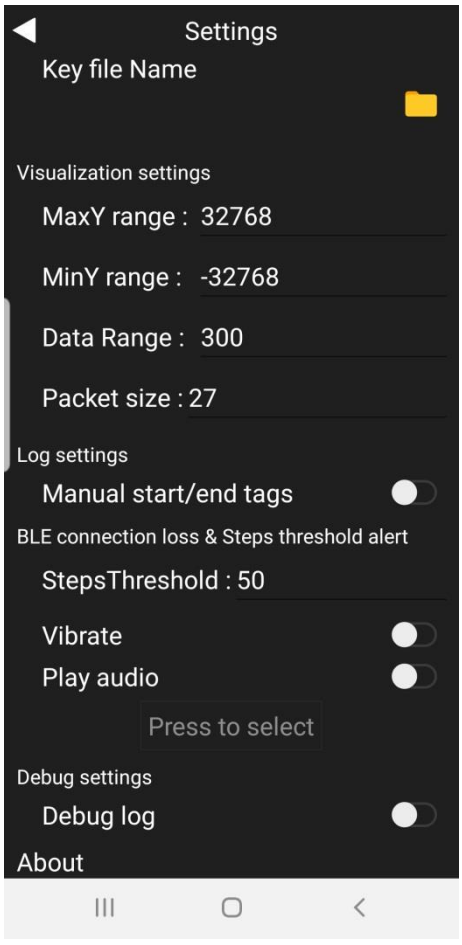


3.7 Settings

While not recording data, the user can open the Settings menu at the top right corner of the screen show where, which includes a number of options for

- Configuration files Download settings
- Visualization settings
- Log settings
- BLE connection loss alert
- Debug settings





Configuration files Download settings can be used to download customer specific configuration files using a key file. When using this setting you must first put the key file inside the download folder of your phone internal storage.

Visualization settings can be used to change the maximum/minimum range on the Y axis of the graph. In addition the user can change the number of sample shown on the X axis in the Data Range.

Log settings can be used to enable/disable to apply Manual start/end tags with the log files.

With the BLE connection loss & steps threshold alert settings, the user can set an alert notification for the Bluetooth connection losses and change the step threshold value to vibrate or play an audio tone.

Debug settings enable/disable to save debugging information into a log file. In addition the user can see debug log by tapping RoKiX title bar on top of the screen.

4. Download log files to the PC

The CSV log files are written to the phone's internal storage under the "download/RoKiXLogs" folder. The Logger configuration files can be found in the phone's internal storage under the "RoKiX" folder. Files can be manually edited and copied to the RoKiX folder.

1. Connect Android phone to the PC via USB cable.
2. Select MTP or USB mass storage mode from the phone for a file transfer.
3. Go to the PC file explorer and select your Android device. Browse \internal storage\Download\RoKiXLogs folder. Copy the log file(s) to the PC.

5. Known issues

These are some known issues that appeared in some android devices.

- If the log file cannot be seen in your device internal storage after data logging, you should reboot your device in order to see it.
- Logging sensor data with high ODR streams can cause the data transfer rate to drop since it depends on the device's Bluetooth version.