GUTERMANN

User Manual

ZONESCAN INSTALL

Version: 2.5

Language: English

GUTERMANN

For any questions relating to this product, please write to:
support@gutermann-water.com

Contents

Table of Contents

Contents **1**

1 Safety Instructions **1**
- 1.1 Symbols 1
- 1.2 General Safety 1
- 1.3 Intended Use 1

2 Overview **2**
- 2.1 Introduction 2
- 2.2 Features 2

3 First Steps **2**
- 3.1 Charging 2
- 3.2 Android Device Requirements 3
- 3.3 Installation ZONESCAN INSTALL Software 3
- 3.4 Action Bar 3
- 3.5 App Setup Wizard 4

4 NB-IoT Wizard **6**
- 4.1 NB-IoT setup 6
  - 4.1.1 Configuring Gateway Settings 6
  - 4.1.2 Configure NB-IoT Logger 9
  - 4.1.3 NB-IoT Navigation Drawer options 11
  - 4.1.4 Import NB-IoT project 12
  - 4.1.5 Adding NB-IoT Logger 13
  - 4.1.6 Finalize the changes 15
- 4.2 Logger Deploy 16
- 4.3 NB-IoT Maintenance 17
- 4.4 NB-IoT Sleep mode 23
- 4.5 NB-IoT firmware update 24

5 Alpha Wizard **25**
- 5.1 Alpha Setup 25
  - 5.1.1 Configuring Mail Server Settings 25
  - 5.1.2 Alpha Navigation Drawer options 26
  - 5.1.3 Import Alpha project 27
  - 5.1.4 Wake up devices 28
  - 5.1.5 Adding Alpha 28
  - 5.1.6 Adding Measurement Point 30
  - 5.1.7 Connection Test 30
  - 5.1.8 Finalize the changes 31

6 Mixed Mode Project **33**
- 6.1 Support for Alpha and NB-IoT projects 33

6.2 Support for AMI and NB-IoT projects 34

7 Device Maintenance 35

7.1 Alpha Maintenance 35
7.2 Repeater Maintenance 40
7.3 Logger Maintenance 41
7.4 Project Maintenance 42

8 Firmware Update 42

9 Offline Maps 44

10 Further Hints 48

10.1 Delete project local data 48
10.2 Overview of connected devices 49
10.3 Navigation, Moving and Redeploying Devices, and Maintenance 48
10.4 Check Commlink Battery 50
10.5 Warning on more devices connected to GSM Alpha 51
10.6 KML 51
10.7 Change Language in the app 52
10.8 Add Asset Numbers 52

11 FAQ 55

11.1 How do I change from always to just once on Android? 55
11.2 How do I clear app cache on Android? 55

12 Support 55

13 Disposal 56

14 Imprint 56

1 Safety Instructions

It is essential to read the operating instructions carefully and completely before using the equipment and software for the first time. They contain important information on safety, installation, and use. Keep these instructions in a safe place.

1.1 Symbols

	Warning of dangerous situations that can cause injury and damage to the devices.
	Warning of non-ionizing electromagnetic radiation.
	Important notes and tips are provided. Follow these guidelines.
	Never put it in your household waste bin.

1.2 General Safety

The operating and maintenance personnel must read the instructions carefully before using the equipment. Knowing all the information contained therein - in particular the warning and safety instructions - is needed for the safe operation of the equipment, and to protect yourself and others against potential dangers. Ignoring the warning, safety, and operating instructions can cause injury, damage, or a considerable shortening of the equipment lifetime. Do not make any changes or alterations to our products.

When using the software or the equipment, make sure you adhere to any applicable regulations, in particular traffic regulations.
In case of any questions, ask your Gutermann representative.

1.3 Intended Use

ZONESCAN products, hardware, software, and accessories are exclusively intended for industrial use and exclusively intended for leak detection on water pipes of the public water supply. In particular, these products are not intended to be used on wastewater and gas pipes. Gutermann is not liable for any damage caused by misuse, improper operation, and as a result of non-compliance with safety instructions and warnings.

2 Overview

2.1 Introduction

ZONESCAN INSTALL is Gutermann's latest installation app for professional water leak detection systems. This Android mobile app handles device setup, maintenance, and firmware updates.

2.2 Features

ZONESCAN INSTALL has the following features:

- Set up of ZONESCAN devices
- Firmware update of the devices
- Project maintenance of these devices
- Online or downloadable hi-res offline vector maps (for the latter no mobile network and SIM card are required)
- Overview of all the connected devices are shown on the map
- Edit, delete, replace or merge devices based on the selected device type
- Upload device settings of the complete project to ZONESCAN NET

3 First Steps

3.1 Charging

To charge the Communication Link in Alpha projects, always use the included battery charger and cable. While charging, the red LED blinks. When the Link is fully charged, the LED switches off.

3.2 Android Device Requirements

The ZONESCAN INSTALL App works on devices with the following requirements:

Minimum: Tablet computer (or smartphone) with

- Android OS 10.0.0 or higher
- GPS

Recommended:

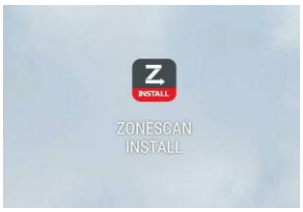
- Rear camera with > 3 M pixels and autofocus
- Screen size > 5"
- Quad-core processor
- 4GB of RAM
- 16 or 32GB internal storage

3.3 Installation ZONESCAN INSTALL Software

To install ZONESCAN INSTALL from play store proceed as follows:

- Go to the play store app on your device and search for "ZONESCAN INSTALL"
- Alternatively, click on the below link
- https://play.google.com/store/apps/details?id=eu.gutermann.zonescan.install

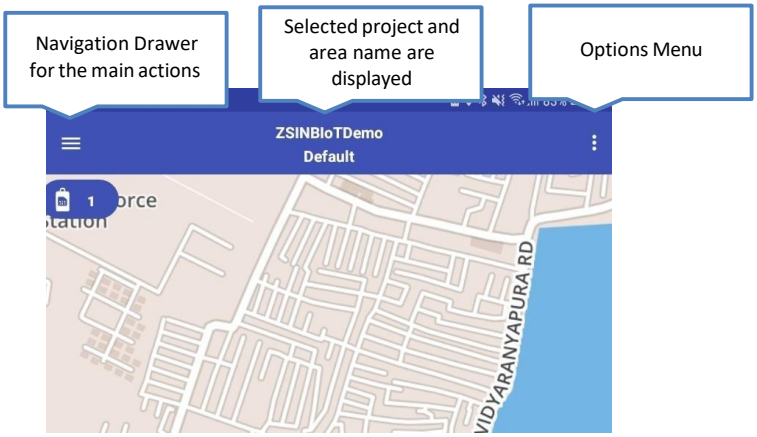
After the installation, you can start ZONESCAN INSTALL with the icon on the home screen:



3.4 Action Bar

The Action Bar, located at the top of each screen, controls app navigation and basic functions. How it looks depends on the screen you are on. On the main screen, the Action Bar contains the following items:

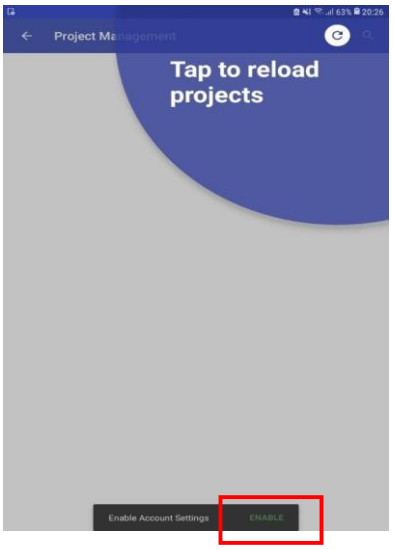
- Navigation drawer for the main actions in the app
- View to show selected project and area on the action bar
- Options menu for additional menu items.



3.5 App Setup Wizard

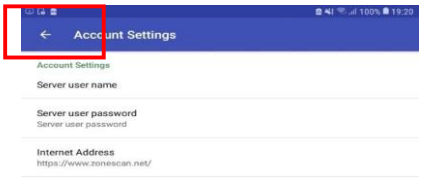
Install the app from the play store, launch the app, and grant the necessary permissions required for the app. Accept the license conditions to continue with the setup process. When ZONESCAN INSTALL is launched guided tutorials are provided all through the app to help you with the working of the app.

Once the license agreement is accepted, the 'Company Name' screen is shown where you need to enter your company name and select 'continue' to go to the 'Project Management' screen. Here you will find a message asking to enter the account details, select the 'Enable' button to complete the account settings process.

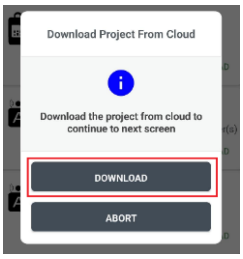


Note: The Account Settings step cannot be skipped. You must enter the details to proceed further.

Once the account details are correctly entered, press the back button in the 'Account Settings' screen as shown in the figure below. Then select the 'Reload' option to download the associated project metadata from the ZONESCAN NET.



To proceed further, click on the project name to download the project or select "Download" button.



4 ZONESCAN AI or NB-IoT Wizard

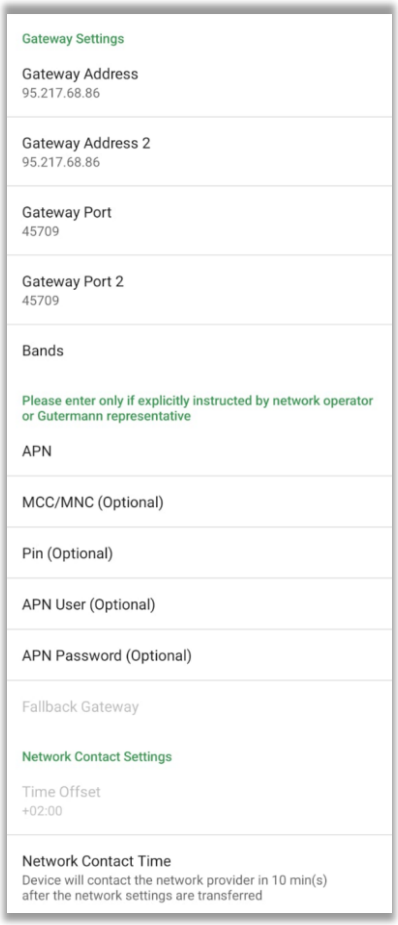
4.1 ZONESCAN AI or NB-IoT setup

This section explains the complete setup of loggers: from downloading an NB-IoT project from ZONESCAN NET to deploying the logger to uploading the changed configuration to the ZS-Net cloud.

Select an NB-IoT project and click on 'Download' from the list of downloaded projects to load an NB-IoT project. Then select the downloaded project to configure the gateway settings.

4.1.1 Configuring Gateway Settings

Configure the gateway settings to establish contact with the Gutermann gateway.
You need to fill in the following details on the Gateway Settings screen:



- Gateway Address: Default address is set to '95.217.68.86'.
- Gateway Address 2: This is the fallback gateway address in case the connection to the gateway address fails.
- Gateway Port: Default port number is set to '45709'. In the unlikely event that your network provider has blocked port 45709, you can use port 8472 as an alternative.
- Gateway Port 2: This is the fallback gateway port in case the connection to the gateway address fails.
- Bands: Select all the bands that your network provider supports.
- APN: APN of your network provider.
- MCC/MNC (Optional), Pin (Optional), APN Username (Optional), APN Password (Optional): Leave empty unless explicitly required by your network provider or Gutermann representative.
- Time offset: It is automatically set, and it is the same as the time offset set in ZONESCAN NET.
- Network contact time: This is the delay before the ZONESCAN AI or NB-IoT Logger tries to register itself at the gateway. The default time is set to 10 mins.

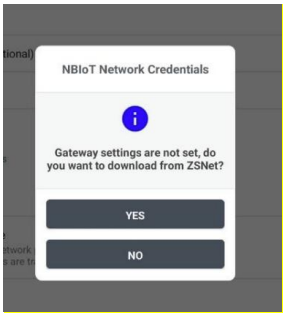
Note: Gateway Address, Port, APN, and Bands details are mandatory for establishing gateway connectivity.

For successful registration, the Logger will have to be known to ZONESCAN NET. So, you have to upload the project from ZONESCAN INSTALL to ZONESCAN NET before the Network contact time is up.

There are three different scenarios that you can encounter while configuring Gateway settings for ZONESCAN INSTALL

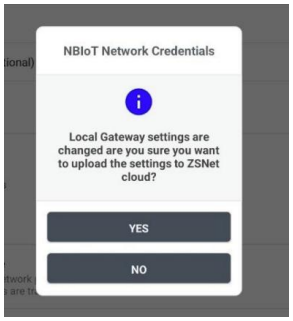
Scenario 1: Configuring Gateway settings for the first time in ZONESCAN INSTALL

For the first-time setup of gateway settings, a dialog will ask you to download the settings from ZONESCAN NET. Select "*Yes*" if you wish to use the gateway settings downloaded from ZONESCAN NET. Otherwise, Select "*No*".



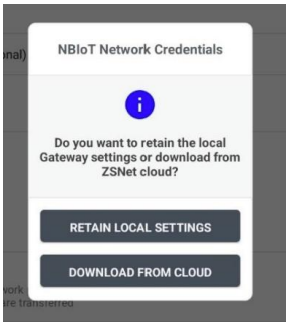
Scenario 2: When Gateway settings are updated in ZONESCAN INSTALL

If the local gateway settings are changed in ZONESCAN INSTALL, you will be prompted to upload the settings to the ZONESCAN NET cloud. Click on "*Yes*" to upload or "*No*" to retain the settings just locally to ZONESCAN INSTALL.



Scenario 3: When Gateway settings are updated in ZONESCAN NET

If the Gateway settings are changed in ZONESCAN NET, you will be prompted to retain the local Gateway settings or download them from the ZONESCAN NET cloud. Select "*Retain Local Settings*" to retain the local settings in ZONESCAN INSTALL or "*Download from Cloud*" to get the settings from ZONESCAN NET.

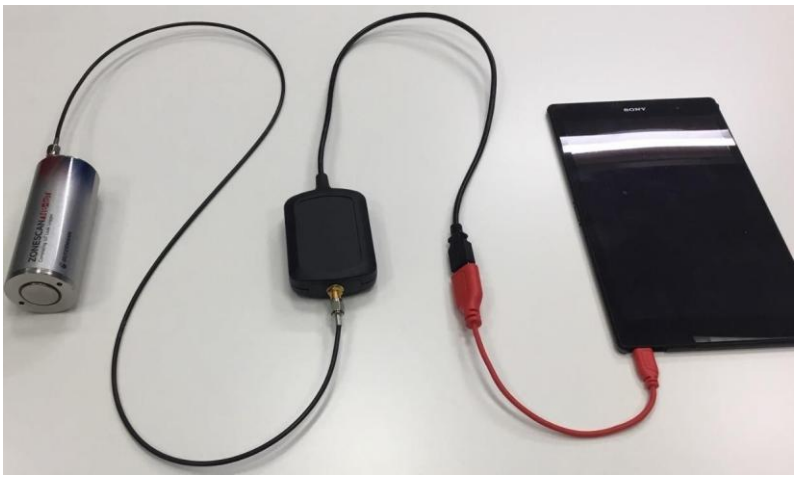


4.1.2 Configure ZONESCAN AI or NB-IoT Logger

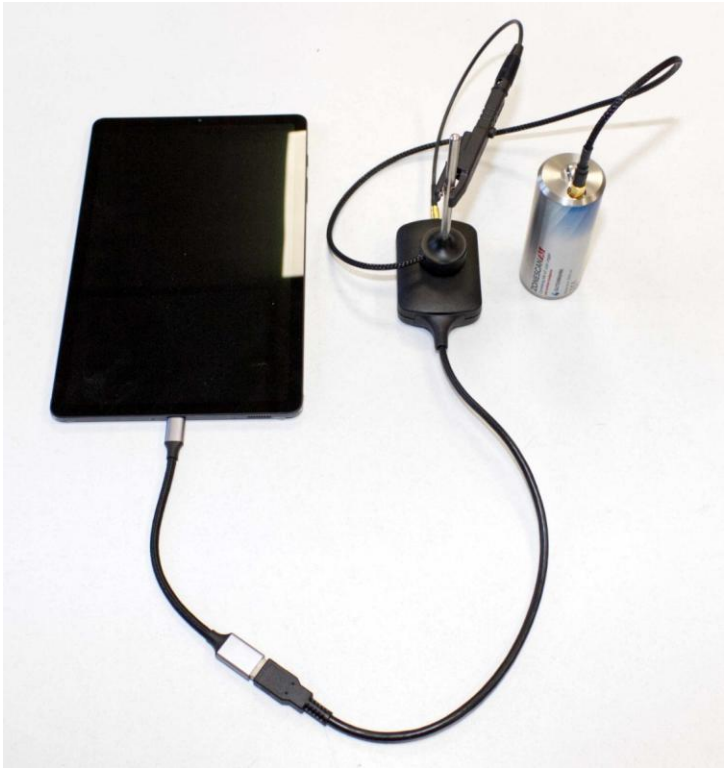
You need to configure the Logger before you deploy it. Refer to the photo below for the correct cable connections and follow these steps:

- Remove the external antenna from the ZONESCAN AI or NB-IoT Logger.
- Attach the JIG Cable to the ZONESCAN AI or NB-IoT Logger.
- Plug a Micro USB Cable into the JIG Cable box.
- Connect the OTG adapter cable with the USB-A connector of the Micro USB Cable (see picture below for clarification).
- Plug the OTG adapter cable directly into your Android device.

Old JIG Cable Setup



New JIG Setup

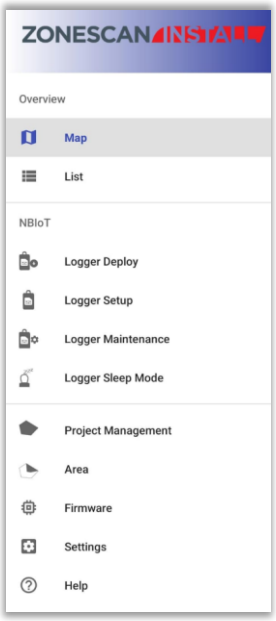


- Confirm the Android dialog asking you to allow ZONESCAN INSTALL to access the USB device to proceed.

- Confirm the dialog asking if you want to synchronize the network settings.

4.1.3 NB-IoT Navigation Drawer options

Once the project is downloaded, you will land on the main map screen of the project. Once the Navigation Drawer is selected, you will find the below-mentioned options.



The navigation drawer has three sections:
The top section contains all the viewing options.

1) Map: View the data on the map. Here you will find the deployed ZONESCAN AI or NB-IoT loggers and their count of them. On the long tap of the deployed logger on the map, you will find the following options Navigate to location, Move device, and Maintenance.
2) List: View all the loggers in the project and their respective ECL, Band, Signal Power, and Reachability. To update the list view swipe down to refresh.

The middle section contains logger setup and maintenance options

1) Logger Deploy: Deploy loggers and upload the data to ZONESCAN NET.
2) Logger Setup: Set up and add loggers
3) Logger Maintenance: Check the device state, config, and log of the logger. The in-detail explanation is in section 4.2.
4) Logger Sleep Mode: Logger is put to sleep mode to save the battery life of the logger.

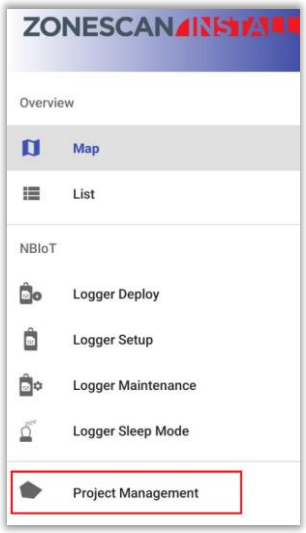
The bottom section contains options to import the project, change general and account settings, and a help section to share feedback with the user.

1) Project Management: Import the latest configuration of the project.
2) Area: Change add a new area or change to another area within the project.
3) Firmware: Update to different logger firmware versions.
4) Settings: Change general settings, display settings, and account settings.
   a) General Settings: Here you will be able to change Link Serial Number, Company Name and enable or disable the Tutorials.
   b) Display Settings: Display settings can be set based on Reachability or RSSI value. Based on these values the color of the logger is set to green, yellow, or red.
   c) Account Settings: Update the server username and password
5) Help: It lets you send a problem report and the ZONESCAN INSTALL database to Gutermann support to analyze and fix issues with the app. You can also contact Gutermann support, see the newly released feature, and check the app's version number.

4.1.4 Import NB-IoT project

In ZONESCAN INSTALL, go to 'Project Management', search for your project, and download it.

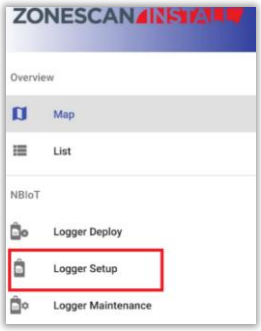
This step is most important because it makes sure that you work with the most recent configuration. If there were any changes (e.g., exchanged loggers) this step would update your local copy of the project so there are no more data inconsistencies.



After downloading, you can change settings, but everything should be pre-filled already. Select 'Next' and the project is downloaded.

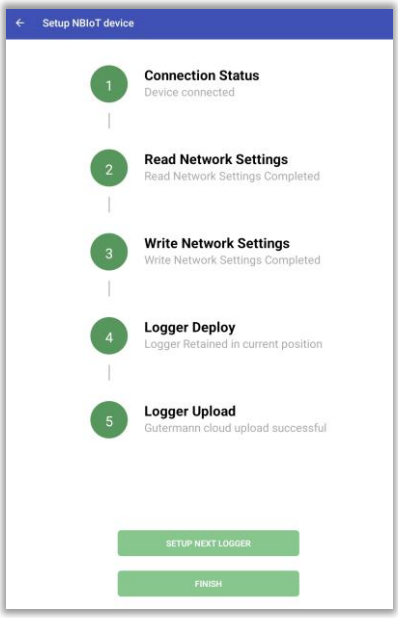
4.1.5 Adding ZONESCAN AI or NB-IoT Logger

Check section 4.1.2 for how to configure the ZONESCAN AI or NB-IoT Logger and then select 'Logger Setup' in the navigation drawer.



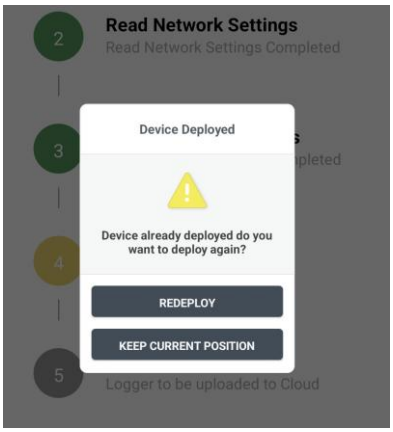
Make sure that the Logger serial number is in the range of '500 000 000' to '516 777 215'. If the logger serial number is not within this range, the logger firmware needs to be updated to v1105 or above. If not updated, you will not be able to deploy the logger.

Once 'Logger Setup' is selected, it goes to the 'Setup NB-IoT device' screen. Once the network settings are written, the basic device setup is finished. The steps will turn green, indicating that the steps have been completed successfully.



The logger will be temporarily deployed in the user's current position. Once the logger set up is complete, the data will be automatically uploaded to ZONESCAN Net**.** If you choose to setup a new logger, click on **"Setup Next Logger"** and the next logger is setup at 10 meters away from the previous logger.

NOTE: When the logger has already been deployed but the user only wants to change the network settings, a window like the one shown below will appear. You may choose to either "***Redeploy***" or "***Keep current Position***".

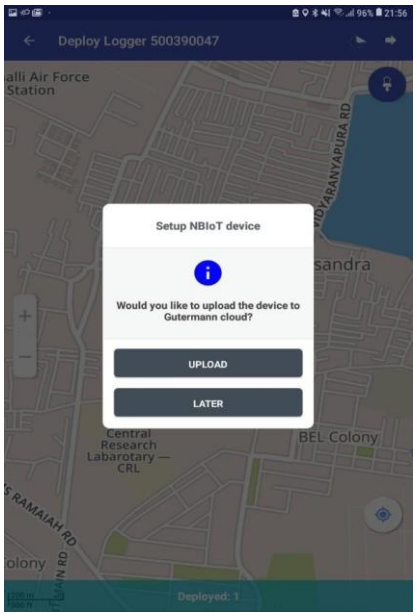


To deploy the logger in the actual position, use the "**Logger Deploy**" feature. Refer to section 4.2 for the same.

4.1.6 Finalize the changes

Once the logger is deployed you will see a tutorial: 'Tap on the next screen after deploying'. Select this button to upload to ZONESCAN NET.

In the dialog, which is now shown on the screen, select 'Upload' to upload the data to ZONESCAN NET. If 'Later' is selected, the data should be uploaded within the 'Network contact time' set in the Gateway settings to avoid data loss.

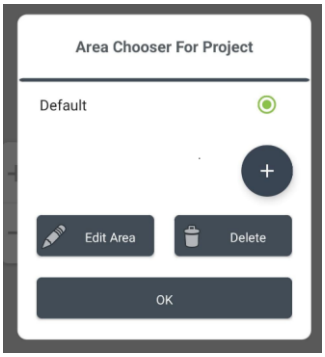


4.2 Logger Deploy

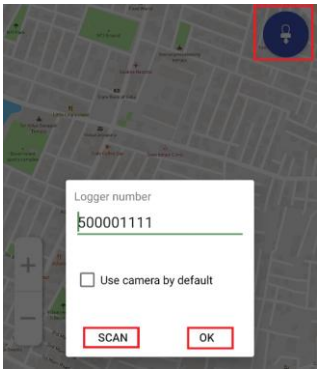
This option can be used to deploy multiple loggers in an area. To redeploy the logger, follow the steps mentioned below.

Step 1: Click on the “Logger Deploy” option from the main menu.

Step 2: Select the area to deploy the logger. You can deploy in a new area or deploy in the existing area.



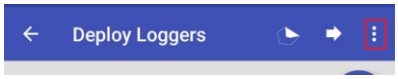
Step 3: Click on the deploy icon in the top right corner to deploy the log. You can scan the logger barcode by using the SCAN button and then select OK.



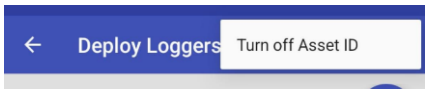
To always use the SCAN logger option, you can select the “Use camera by default” checkbox.

Once the logger has been successfully deployed, a dialog box will appear, prompting the user to assign an asset id to the logger. If you prefer not to include the asset id at this stage, you have the option to disable this feature. Please follow the steps below to disable this feature:

1. Click on the option menu as shown below



2. Select “Turn off Asset ID.”



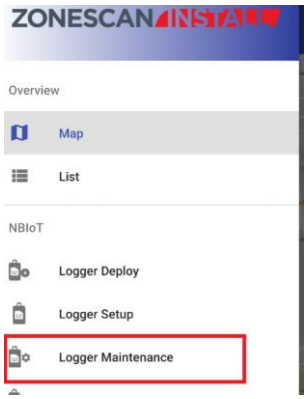
The same steps can be followed to turn it back on when needed.

4.3 Logger Maintenance

This section is divided into three sub-sections:

Read Device Config, State, and Log

To read each of the parameters select Logger maintenance in the navigation drawer item. Then, connect the JIG cable to the mobile device.



Under the logger Maintenance section, you will be able to read ‘Device Config’, ‘Device State’, and ‘Device Log’ and ‘Motion Sensor’.

Device Config
This option is provided to check if the gateway settings of the ZONESCAN AI or NB-IoT logger are correctly configured. To check the configuration status of the device, select ‘Device Config’ in the bottom navigation item. On selection, communication with the logger is started. “Network Contact Settings” and Gateway Settings” are read and displayed.

Device State
Select Device State in the bottom navigation item. Logger state informs the user of the current and next tasks of the logger and specifies if there are any errors. If you find any errors, you can read the device log and send the log to the support team. Instructions on how to send the device log are mentioned below.

Device Log

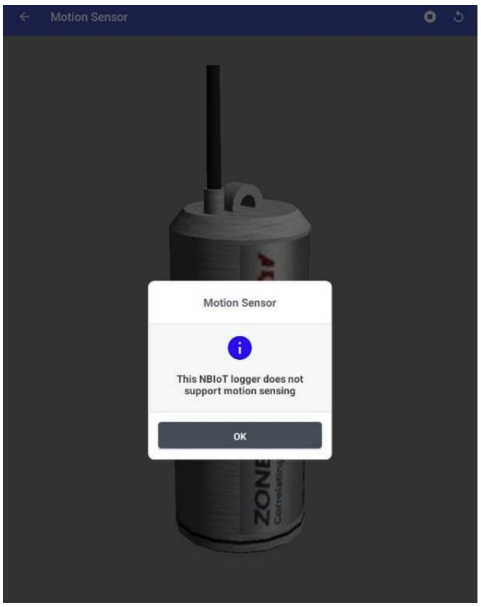
Select ‘Device Log’ in the bottom navigation item. Once selected communication with the logger is made and in case of any trouble with the ZONESCAN AI or NB-IoT device communication, you can send the log file to the support team by selecting the ‘share’ option.

Motion Sensor

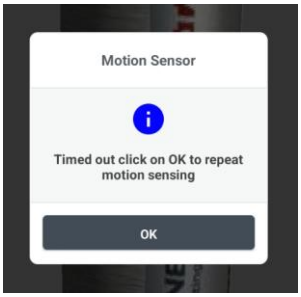
Select 'Motion Sensor' in the bottom navigation item. Once selected, communication with the logger is made and the 3D display of the motion sensor begins. If the ZONESCAN AI or NB-IoT logger is not connected, you will be prompted with a message to connect the logger.

You can also "Stop" and "Restart" the motion sensing by using the icons in the top right corner as shown in the image below.

If the 3D motion sensing is not available in the logger it displays the message “The NB-IoT logger does not support motion sensing”.

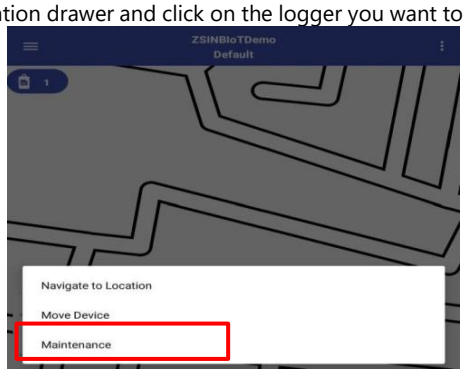


The motion sensor window will time out in 60 secs. You will be prompted with the timed-out message. The motion sensing can be performed again by selecting “OK” in the message window.

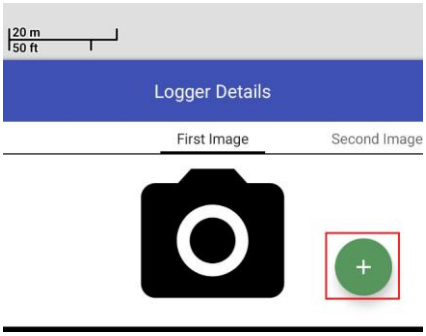


Upload the Device Image

On the map, long click on the deployed logger to go to the "Maintenance" screen. Alternatively, select 'List' in the navigation drawer and click on the logger you want to upload the device image.



In the maintenance view, select device details to upload a device image. A maximum of three device images can be uploaded.



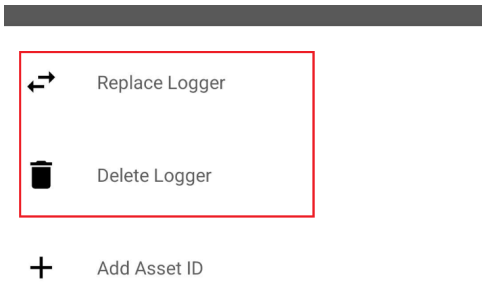
To upload the device image, please follow the steps below:

1. Click on the green plus icon.
2. Select the image from the phone gallery or camera.

These images will auto-upload when the final changes are uploaded to ZONESCAN Net via the "Upload" option under "Project," as shown in section 4.1.8

Delete, or Replace logger

Follow the steps as mentioned in 'Upload the Device Image' section to go the maintenance screen and then select 'Logger' in the maintenance view to delete or replace the logger.



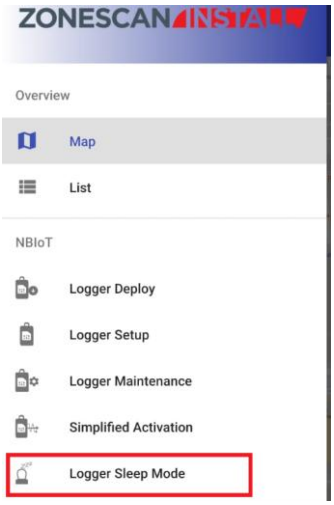
Note: After editing the logger the changes need to be uploaded to ZONESCAN NET. On the deletion of the logger, all the associated deployments and measurements of the device will be deleted in ZONESCAN INSTALL only but not on ZONESCAN NET.

4.4 Logger Sleep mode

If the loggers are not used for a long time, you can put them to sleep mode to save the battery life of the loggers.

- Go to Navigation drawer > Logger Sleep Mode.
- Connect ZONESCAN AI or NB-IoT logger to Android device.
- Loggers are then programmed to be in sleep mode.

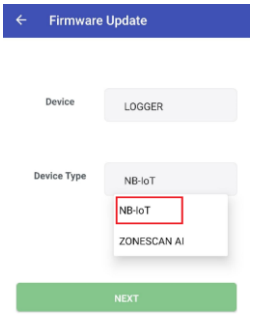
To wake up the loggers from sleep mode go through the setup process again.



4.5 Firmware update

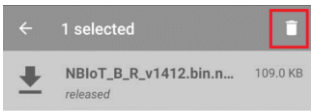
For firmware updates, make sure the JIG cable is connected. After that, follow the steps below:

- In the left-hand menu (navigation item), select 'Firmware'.
- Select "*Device*" as Logger and "*Device Type*" as "NB-IoT or ZONESCAN AI" depending on the logger



- A sorted list of available firmware will be displayed with the latest firmware version at the top
- Select the version number you want to update.
- If it is already downloaded to your device, you will be asked to confirm the selection. If not, a download is offered.
- Choose the required version and select 'Continue'.

- To delete the firmware, you can long tap on the firmware and select the delete icon on the top right corner. This action will delete the firmware from local storage. Multiple selections of firmware are supported.



Commented [DH1]: Please rephrase. If it's an AI logger, you should obviously select „ZONESCAN AI"

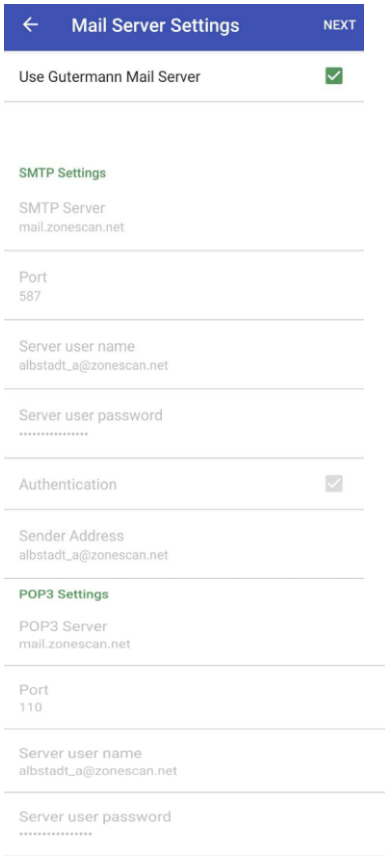
5 Alpha Wizard

5.1 Alpha Setup

This procedure will cover each step necessary to set up a new ALPHA project from scratch.
For each device, there is a guided workflow implemented in the ZONESCAN install. You can switch off the tutorial notes in the 'General' section of the settings found in the left-hand menu bar when you no longer need them.

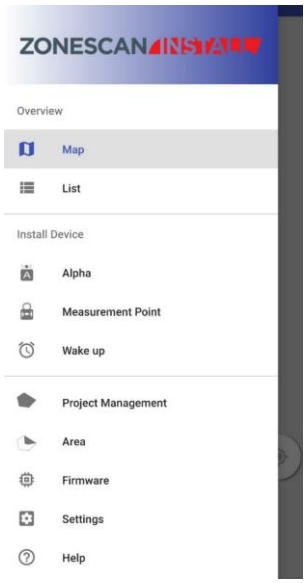
5.1.1 Configuring Mail Server Settings

From the project list choose the Alpha project you want to download and click 'Download'. After selecting the project, you'll be able to change mail server settings. Mail server settings are set to the Default Gutermann settings but changes can be made if needed. After, select 'Next'.



5.1.2 Alpha Navigation Drawer options

Once the project is downloaded, you will land on the main map screen of the Alpha project. Once the Navigation Drawer is selected, you will find the options below.



The navigation drawer has three sections:

The top section contains all the viewing options:

1) Map: to view the data on the map. Here you will find the deployed devices and the count of them. Select any of the overlay items on the map to view the devices on the screen.
2) List: all the devices are sorted by default in ascending order. Select 'Sort' to sort according to your preference. Also on refresh, you can check the status of the Alpha test mail.

The middle section contains device Alpha and measurement point setup which is explained in detail in sections 5.1.5 and 5.1.6

The bottom section contains options to import the project, change general and account settings, and a help section to share feedback with the user.

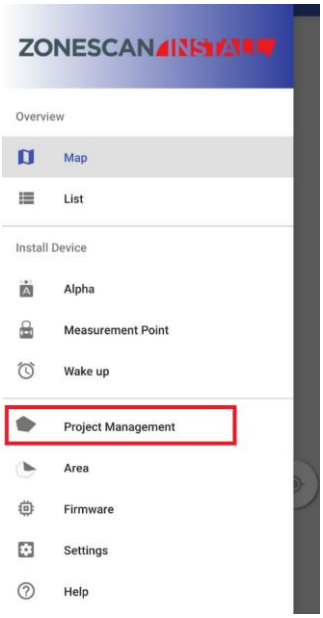
5) Project Management: To import the latest configuration of the project. Refer to section 5.1.3
6) Area: To change or add a new area or change to another area within the project.
7) Firmware: To update the firmware of different devices. For a more detailed explanation refer to section 7

8) Settings: To change general settings, display settings and account settings.
   a) General Settings: Change Link Serial Number, Company Name and enable or disable the Tutorials.
   b) Display Settings: Display settings can be set based on Reachability or RSSI value. Based on these values the color of the logger is set to green, yellow, or red.
   c) Account Settings: Update the server username and password.

5.1.3 Import Alpha project

In ZONESCAN INSTALL, go to Project Management, search for your project, and download it.

It is vital to eliminate data inconsistencies and make sure the most recent version of the project is downloaded into the app, before starting work each day. Any changes made on ZS.Net, or by another INSTALL user (i.e., exchanged loggers) will not be visible on your local copy of the project until this step is complete.



After downloading, you can change settings, but everything should be pre-filled already. Select 'Next' and the project is downloaded.

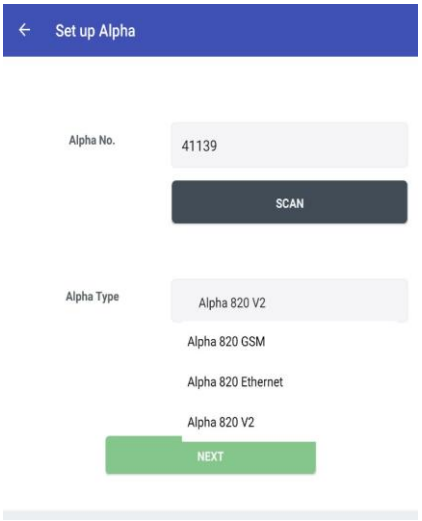
5.1.4 Wake up devices

All new devices are in sleep mode before deployment and thus hard to reach via radio. At the beginning of the day, or before installing new devices, select the 'Wake-Up' option from the left-hand menu. This step speeds up connection tests, and saves valuable time throughout the workday.

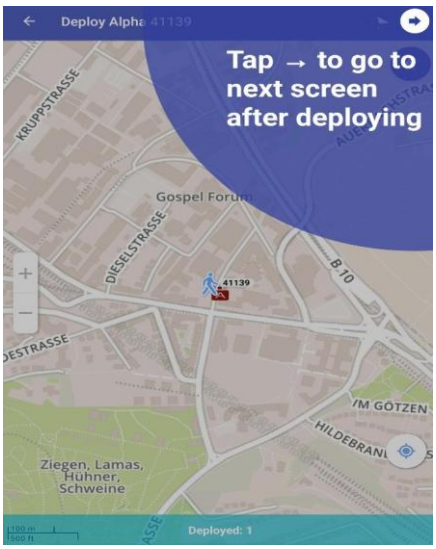
5.1.5 Adding Alpha

With new projects, it is strongly recommended to set up the ALPHA(s) first so that when adding Repeaters, you can already work with the real radio connection and choose the position of Repeaters accordingly.

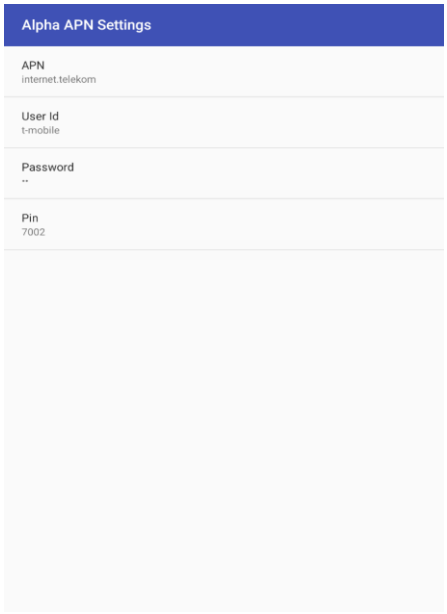
Open the left-hand menu bar, in the section 'Install Device' tap on 'Alpha'. Enter the serial number and select the correct ALPHA type (this influences some options later).



The next step is to deploy the ALPHA on the map. This can be done via GPS position or manually moving the position on the map.



After, you will be asked if you already have a SIM card. If you have, you can insert it now and set up an internet connection. If not, you can skip this part.

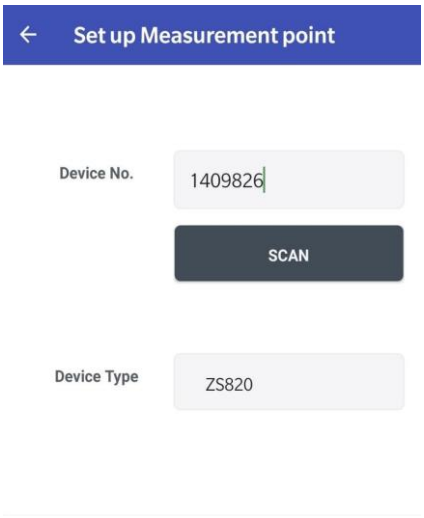


It is recommended to insert the SIM card and to set up and test the internet connection while in the office or hotel before your actual appointed day of installation. This will save valuable time on the installation day.

When configuring GSM Alpha, there is an additional option "**Band**". This option lets you select bands or frequencies for the Alpha to use. It should be "Standard" for Europe. For the US, Asia, and the rest of the regions, users should contact their mobile provider or Gutermann representative for the correct values.

5.1.6 Adding Measurement Point

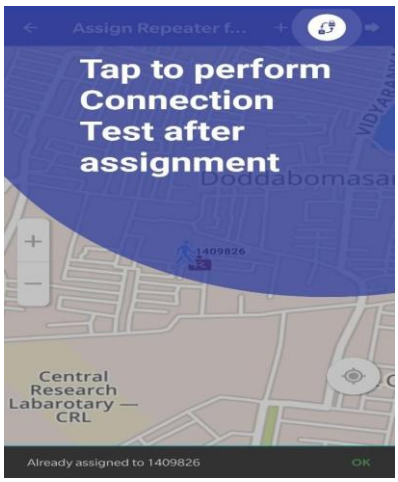
A measurement point usually consists of a Repeater and a Logger. The workflow supports both ways – installing the logger first, or installing the repeater first and will adapt automatically depending on which device is first scanned.



Also adding multiple Loggers to one Repeater is supported, though it should be carefully checked, as this option might result in weak radio communication links, which would lead to loss of data. When in doubt, add another Repeater.

5.1.7 Connection Test

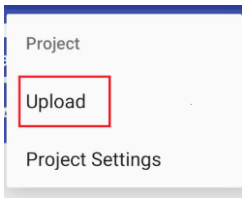
The most important part of the adding measurement point workflow is the connection test – make sure you get the best possible radio connection for your devices. This will influence reliability as well as battery life.



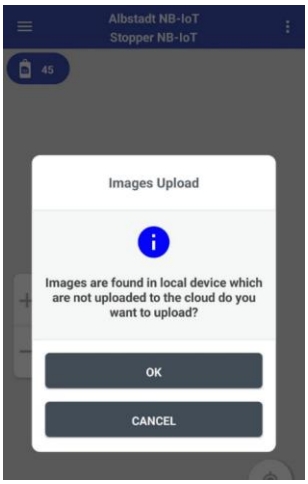
Connection tests will indicate the radio signal strength (RSSI value) between any two devices. This value is always negative, and will generally range from -50 to -120, with -50 to -70 being excellent, -70 to -90 being good, and any value above being a poor connection. An RSSI value between -90 and -99 will generally work, but -100 and above should be avoided if possible. RSSI values worse than -100 are unreliable and may not transmit data if minor weather conditions - such as fog – occur.

5.1.8 Finalize the changes

When you are done, you need to upload the changes you made to ZONESCAN NET for them to become effective. Go to the 'Map' in the top right corner, where you will find the options menu. Click on 'Project' and select 'Upload'.



In the event that the device image upload was not completed, a prompt will be displayed, as illustrated below, indicating that the image upload was unsuccessful. The user is then presented with the option of either proceeding with the upload or cancelling it.



When you log in to ZONESCAN net, you will see all the installed devices. You can calculate the radio window settings and then transfer the settings to the ALPHAs – once the Alpha/Alphas have received the settings, the following day everything will start working.

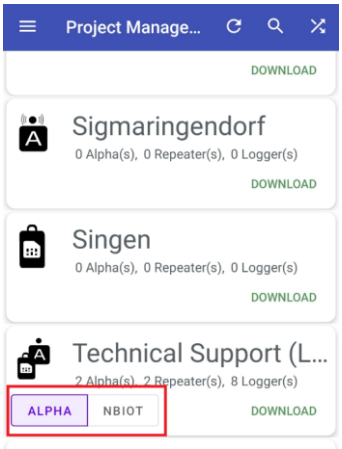
6 Mixed Mode Project

6.1 Support for Alpha and NB-IoT projects

This is a separate project type that allows you to have both ZONESCAN AI ,NB-IoT loggers and ZS820 loggers from an Alpha system in the same project. Scenarios where Mixed Mode projects are used are as follows:

a. A customer transitioning from an Alpha system to NB-IoT over time (replacing loggers as they have to go to service)

b. Situations where NB-IoT coverage is not available in some areas, so parts of the projects' area have to be covered by an Alpha system.

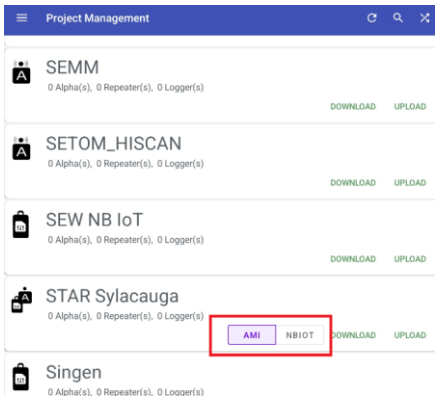


Users can choose to open the project in Alpha mode or NB-IoT mode depending on the type of logger the user wants to work with. For the Alpha project setup, refer to section 5 and for the NB-IoT project refer to section 4.

Note: This feature is not available for all projects. Only the projects that support both Alpha and NB-IoT are presented with this option.

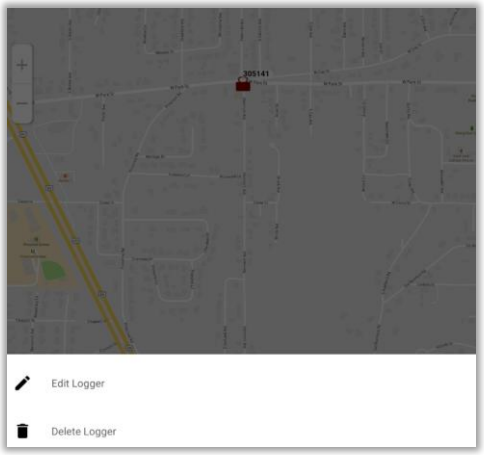
6.2 Support for AMI and NB-IoT projects

This is a separate project type that allows you to have both ZONESCAN AI/NB-IoT loggers and AMI in the same project.
Users can choose to open the project in AMI mode or NB-IoT mode, depending on the type of logger the user wants to work with.



Edit or Delete Logger in AMI projects

Users have the option to edit or delete the logger in the maintenance view.



7 Device Maintenance

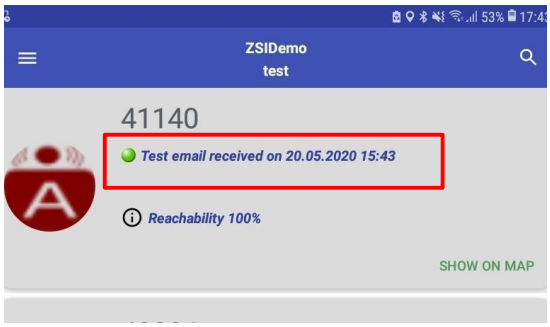
This section is further divided into three sub-sections.

7.1 Alpha Maintenance

For Alpha, maintenance go to 'List' and select the Alpha required. Alternatively, long press on the Alpha on the map. Once selected you will find three options. They are: Alpha Details, Alpha Radio, and Alpha.

Alpha Details
Under Alpha details you have the following options:

1) Alpha Details: Under this section, you can upload the device image. Select 'Alpha Details' and click on the '+' button to add the required image. You can check if the Alpha's settings are configured correctly i.e., SMTP settings and server username and password. Under POP3 Settings you can check for the port number and under Alpha Settings if the APN and other details of the network provider are read correctly.
2) Alpha Settings: Here you can change the APN settings and other details needed for the network registration. Alpha time settings are set to configure the time at which the alpha will additionally read the settings email.
3) Send Test Email Request: To request Alpha to send a test email. To successfully send an email. Under 'Alpha settings' APN and other details needed should be correctly entered. Check with the network provider for these details. To verify that the email was sent successfully, select the 'Check Test Email' option or go to 'List' and swipe down to refresh. If the email is received a message is shown 'Test email received on.'.



4) Check Test Mail: Once a request is made to send a test email you can check if the mail is received by selecting this option. If contact is made to the mail server and if the test email is received, the message is shown as below:

Alpha Radio

Under Alpha Radio you have the following options

1) Alpha State: To test communication with an Alpha, choose "Alpha State". Make sure the commlink is switched on and paired with the Android device. Then, enter the Alpha number and select the 'Connect' button to initiate the communication.

   When the Alpha is contacted, its settings will be displayed and the Alpha time in the status bar is updated every second.

2) Read Alpha Parameters: Alpha parameters consist of SMTP settings, POP3 settings, Alpha settings, and Alpha communication settings. SMTP settings or POP3 settings are required to establish a connection to the email server. Alpha settings or APN settings are for sim card registration with the network provider. Communication settings are to know when to read the info of the devices connected to the Alpha.

3) Alpha Installation Mode: This option is not available for ethernet Alpha. This puts the Alpha into Installation Mode for the selected duration. In Installation Mode, the Alpha will listen to all antennas internal or external for any requests received. So now if the connection test is invoked with a repeater or logger the Alpha will respond no matter which antenna is receiving the

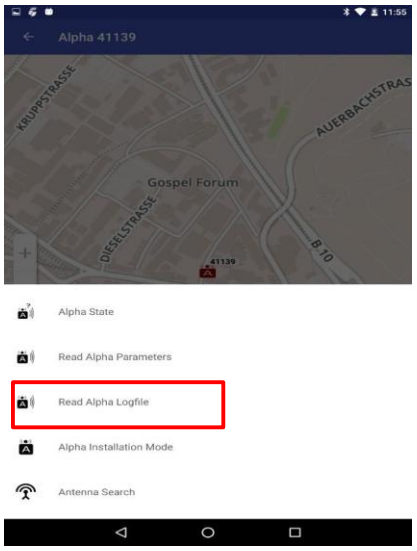
incoming connection test request. The antenna used will be reported in the connection test result.

Note: Installation Mode will increase the Alpha's power consumption. It is automatically switched off after the selected duration.

4) Antenna Search: This option is available only for V2 Alpha. When put into antenna search mode, the Alpha will attempt to reach all known devices (repeaters and loggers) via the internal as well as any connected external antennas. For each device, it will select and remember the antenna that provided the best signal.

   Note: The antenna search, once initiated, will take some time to complete, depending on the number of devices assigned to the Alpha. During this time, the Alpha may be unresponsive to connection attempts from the commlink.

5) Read Alpha Log: This option is available only for V2 Alpha. In case of any trouble with Alpha communication, you can send the Alpha log file to the support team by selecting 'Read Alpha Logfile'.



6) Alpha GPS: This option is available only for V2 Alpha. This feature is needed to find a good placement for the Alpha, so it has a good GPS connection. From the GPS the Alpha gets the precise time that is needed for precise leak detection (do pinpoint correlations).

On the selection of Alpha GPS, the GPS service starts here:

PPS Time: Indicates received time if the GPS fix is working.

PPS Count: Indicates that the satellite is giving precise time pulses. PPS count initially is set to 0. An increment of PPS count every second indicates that you are getting time pulses from the satellite receiver.

A row in the Alpha GPS is highlighted in green if this satellite is used for the fix (Works only if the Alpha firmware version is 2.21 or greater) . When three or more rows are highlighted it indicates that we have good GPS positioning. In this position, the PPS count shall start incrementing after some time, since the PPS count starts incrementing only when there is a 3D fix (5 satellites).

Latitude and Longitude: Provides the position of the Alpha.

PRN: Pseudorandom Noise code assignment.

SNR: Signal-to-noise ratio of the signal received from the satellite.

Elev and AZ: Elevation and Azimuth value suggests the angle at which the satellite is positioned.

Edit /Replace/Delete/Merge Alpha

The 'Merge Alpha' option is only applicable to V2 Alpha. Once the merge option is selected, you are provided with a list of Alphas to merge to the v2 Alpha. On selection of the 'Merge' button, all the devices connected to the previous Alpha are transferred to the new V2 Alpha.

On ‘Delete Alpha’, all the associated deployments and measurements of the device will be deleted. ‘Edit Alpha’ can be selected if you have to change the type of Alpha or redeploy the Alpha in a different position or area. Choose ‘Replace Alpha’ if you have to replace an old Alpha with a new Alpha.

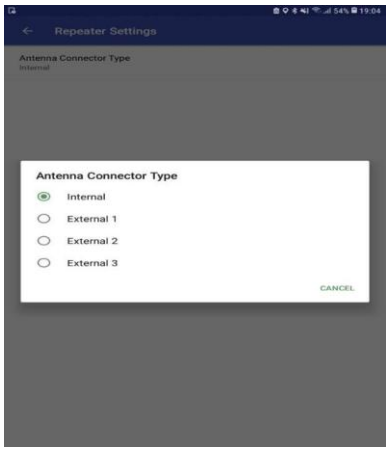
On the selection of any of these functions, changes need to be uploaded to ZONESCAN NET.

7.2 Repeater Maintenance

For Repeater, maintenance go to ‘List’ and select the required repeater or long-press on the repeater on the map. Once selected, you will find three options: Repeater Details, Repeater Radio, and Repeater.

Repeater Details
Under ‘Repeater Details’ you have the following options:

1) Repeater Details: Under this section, you can upload the device image. Select ‘Repeater Details’ and click on the ‘+’ button to add the required image.
2) Repeater Settings: If you have performed a connection test, either during deployment or with the Alpha’s Antenna Search function explained above, the Alpha has already selected the antenna that provides the best connection between Alpha and the repeater. With this option, you could manually override this selection by choosing a different antenna. Use this with care, as you may lose connection with the repeater when picking the wrong antenna. Since the repeater cannot send the antenna change to the Alpha directly, upload the project to the Gutermann Cloud afterward. Then in ZONESCAN NET, go to Administration > Radio Windows and send the current configuration again, so that the Alpha can pick up the change. There is no need to recalculate the Radio Windows.



Repeater Radio

Under 'Repeater Radio' you have the following options

1) Repeater State: Make sure the commlink is switched on and paired with the Android device. Then, enter the repeater number and select the 'Connect' button to initiate the communication.

   When the repeater is contacted, its settings will be displayed and the repeater time in the status bar is updated every second.

2) Connection Test: To do a connection test with the devices connected to the repeater. For more details refer to section 5.1.6

Edit /Replace/Delete Repeater

Similar to the edit, replace, and delete function of the Alpha. When any changes are made the new information must be uploaded to ZONESCAN NET.

7.3 Logger Maintenance

For Logger maintenance, go to 'List' and select the required logger or long-press on the logger on the map. Once selected you will find three options: they are Logger Details, Logger Radio and Logger.

Logger Details

Under 'Logger Details' you have the following options:

1) Logger Details: Under this section, you can upload the device image. Select 'Logger Details' and click on the '+' button to add the required image.
2) Logger Settings: By default, the antenna connector type is set to 'Internal'

Logger Radio

Under 'Logger Radio', you have the option to check the state of the logger

Contact Logger/Logger State: Make sure the commlink is switched on and paired with the Android device. Then, enter the logger number and select the "tick" mark to initiate the communication.

When the logger is contacted, its settings will be displayed and the logger time in the status bar is updated every second. Contacting the logger may take a long time. To avoid the delay, wake up the logger once before contacting.

Edit /Replace/Delete Logger

Similar to the edit, replace, and delete function of the Alpha. When any changes are made, the new information must be uploaded to ZONESCAN NET

7.4 Project Maintenance

When something is not working right, some loggers are not giving data or worse. ZONESCAN INSTALL helps you in the field to identify and repair the problem.

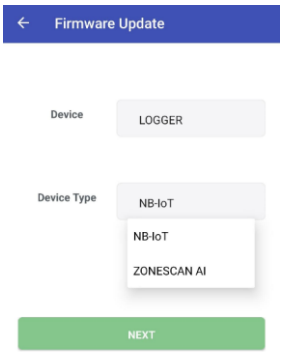
- Go to 'Project Management' and re-import the project. Only then you do have the latest configuration of the project on your mobile device.
- Either via the map or in the 'list' select the device which is not working correctly.
- You can use ZONESCAN INSTALL to navigate there.
- Once on the spot, try to get a radio connection with the device. If it answers, try to find better spots for the Logger and/or Repeater to get better radio connection.
- If you cannot reach it, check if it is physically still there.
- If it is, it is likely damaged or the battery is empty. Either replace the device or send it in for repairs.

If any device has been exchanged, the connection has been altered (e.g., connected to a different ALPHA) or a setting has been changed (e.g., a different antenna), you need to upload the project as per 5.1.8.

8 Firmware Update

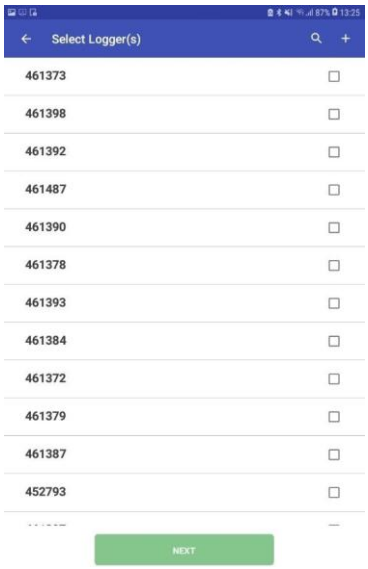
Firmware updates of a ZONESCAN AI or NB-IoT logger can be done from the app. Follow the steps mentioned below to update the firmware of the needed device

- In the left-hand menu select 'Firmware'
- Select what kind of device you want to update
- Select the device type between NB-IoT or ZONESCAN AI

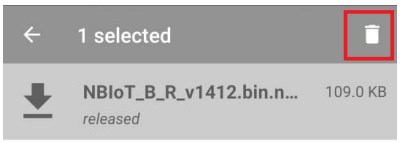


- A sorted list of available firmware will be displayed with the latest firmware version at the top
- Select the one you want to use

- If it is already downloaded to your device, you will be asked to confirm the selection
- If not, a download is offered
- After that, you get a list of devices to choose from.
- Multiple selections is possible (for example to update a ZONESCAN smart set)

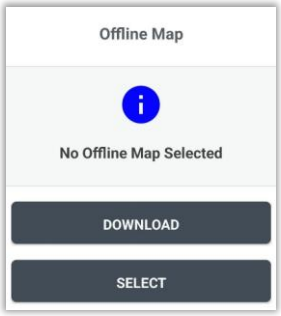


- To delete the firmware, you can long tap on the firmware and select the delete icon on the top right corner. This action will delete the firmware from local storage. Multiple selections of firmware are supported.



9 Offline Maps

In ZONESCAN INSTALL Online map has been discontinued. By default, it only supports Offline maps. If no map has been selected, the map dialog will prompt you to either download the map or select from the existing downloaded map.



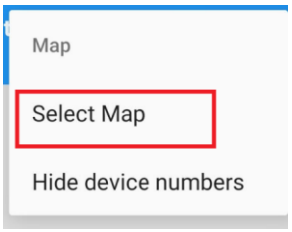
To download an offline map, you need a fast internet connection. Then choose “Options Menu > Map > Download Map”. After the download, select the new map with “Map > Select Map”.

In versions below Android 10 the downloaded maps would be stored in the folder “Download/Gutermann-offline-maps” on your Android devices.

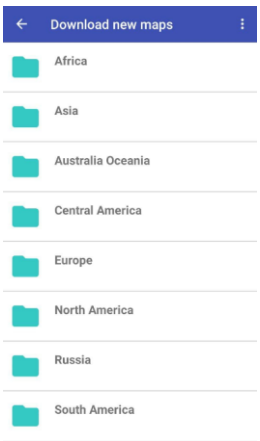
From Android versions 10 and above, the developers will not have direct access to the Downloads folder: therefore, only with user intervention files will be stored in downloads directory.

Detailed usage of how to download maps is provided in the SAF User Manual please refer to it for further details. For a quick reference follow the steps below to download the maps

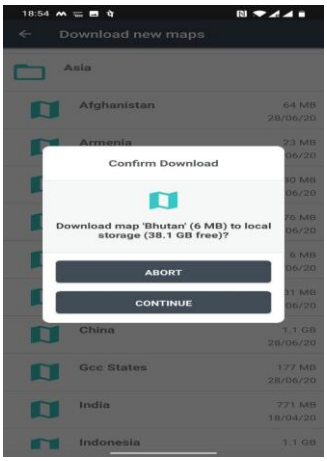
Step 1: From the left-hand menu, select “Map”. Then choose “Options Menu > Map > Select Map.



Step 2: Choose the respective region and country.



Step 3: Select the offline map you want to download and press "Continue" in the confirmation dialog.



Step 4: Once the downloading is finished you will get a screen to save the downloaded file. You can store the downloaded map in the already existing folders or you can create a new folder by clicking on the button highlighted in red as shown in the figure below.

For versions Android 10 and above we insist that you download the maps in a new folder. Delete all the existing maps to avoid confusion.

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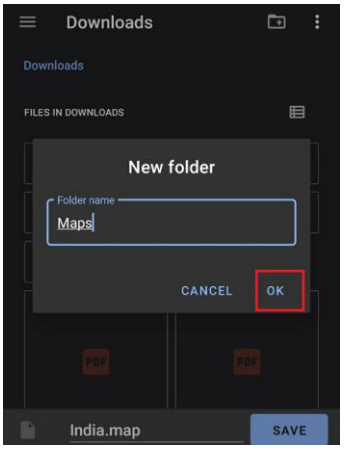
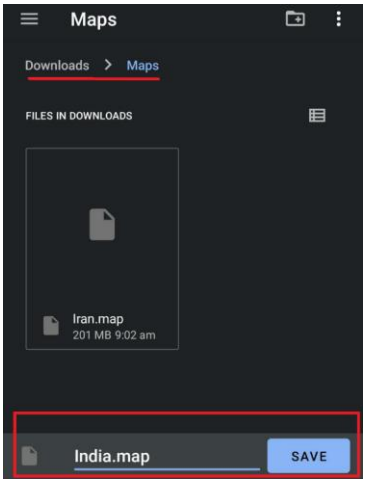
After making the selection to create a new folder, you will have an option to provide a name for the folder. Any name can be provided. Then select "Ok".

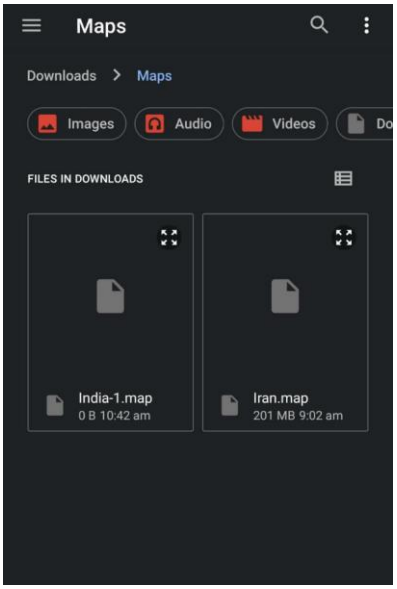


Step 5: After creating the new folder select the Save button to save the map file in the newly created folder. Once the file is saved the map is automatically selected by the app.



Step 6: To change the map, select the “Map” option. And then choose “Select Map”.

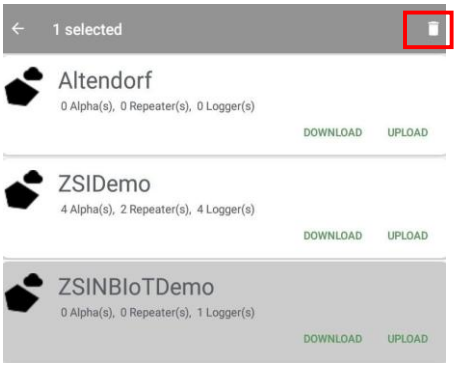
Step 7:,A system picker will open to choose the file from the folder. Navigate to the folder where the map is downloaded to choose the map. Select the map required. After selecting, the map is loaded on the app.



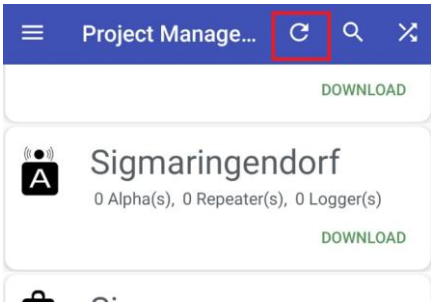
10 Further Hints

10.1 Delete project local data

If you want to delete all the local data of the project and re-import only that project, then go to 'Project management' and long tap on the project you want to delete.

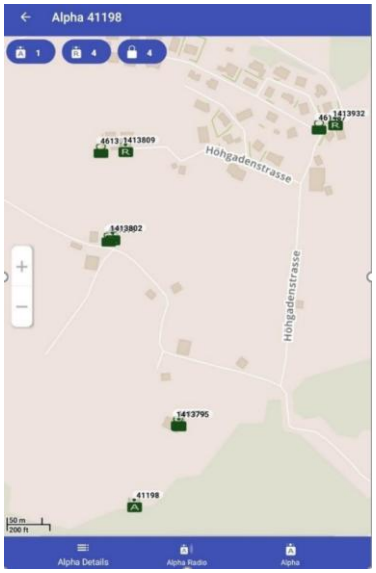


Now, you need to refresh the list of projects so that it shows you the project list again for you to download. You can so do by going to "Project Management" from the menu option and select the refresh icon like shown below.



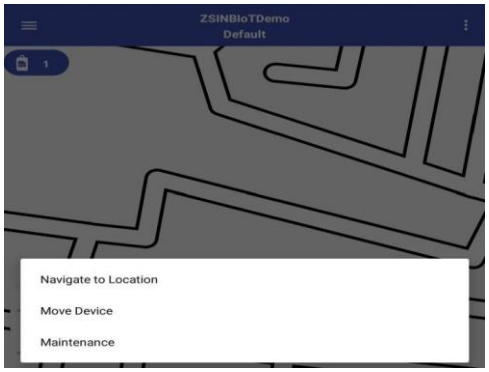
10.2 Overview of connected devices

Select 'List' in the navigation drawer and select the device for which you want to view the connected devices and click on the "Show ON Map" button in the list view. For example, in the below figure only devices connected to Alpha 41198 are shown on the map. Toggle between the overlay items to view only the selected devices on the screen.

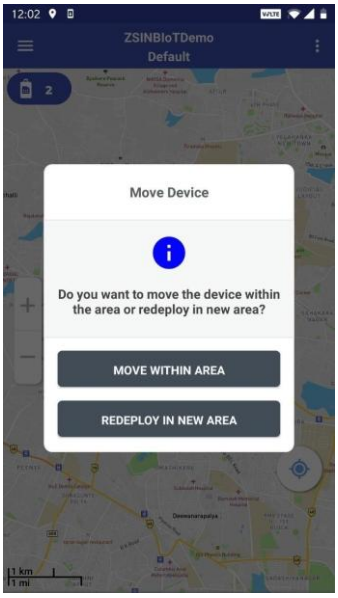


10.3 Navigation, Moving and Redeploying devices, and Maintenance

These functions are available in the context menu on long touch on a device.



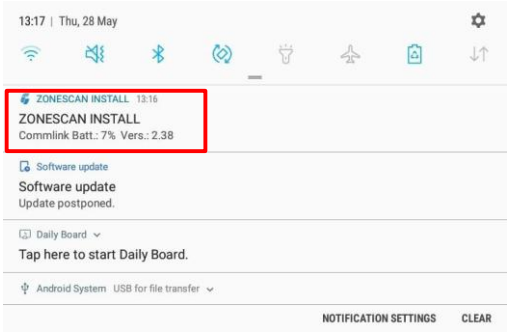
Move Device: gives an option to move the device within an area or redeploy in a new area.



If "Move Within Area" is selected, device is to be moved within an area in 10sec. If "Redeploy In New Area" is selected, you will be directed to choose an area. Next you will be taken to the deploy screen to deploy the device, and then press next to go to the main screen.

10.4 Check Commlink Battery

When the Commlink is connected, you will see a little "G" icon in the status bar in the top left of your Android device. Open that status message to see the commlink battery percentage and firmware version.



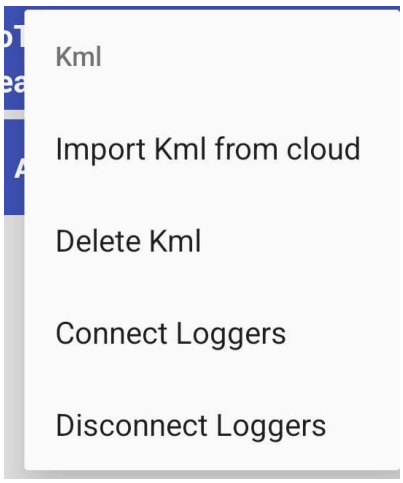
10.5 Warning on more devices connected to GSM Alpha

The maximum number of devices that can be connected to a GSM Alpha cannot be more than 64. If you try to assign more than 64, a warning is displayed as in "Assignment cannot be performed on this GSM Alpha. The number of connected devices to this Alpha exceeds 64".

10.6 KML

KMLs are overlays on the map. This feature helps us display the pipe network and logger location on the map so that the position of leak can be located.

Note: In ZONESCAN INSTALL, KML is only for display purpose. It is used for correlation calculation in ZONESCAN Smart and MULTISCAN.



The following options are available in KML.

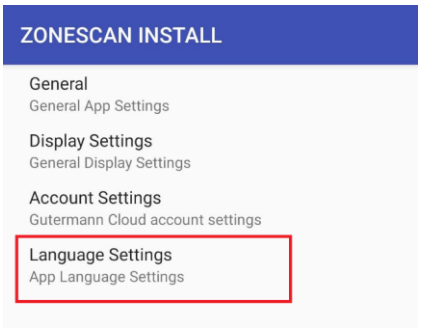
1. **Import KML from cloud** - This option lets you download the pipe data for the project from ZONESCAN Net
2. **Delete KML** – Use this option to delete the KML of the project from the map
3. **Connect loggers** – This option can be used to connect loggers to the imported pipe data
4. **Disconnect Loggers** – Select this option to disconnect loggers from the pipe data.

10.7 Change Language in the app

In ZONESCAN Install, you have the option to choose the language in which you wish to use the app.

Follow the steps below to change the language:

- Open the 'Navigation Menu' -> "Settings"
- Select Language Settings



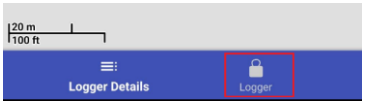
- Select the language of your choice and the language of the app will be changed immediately.

10.8 Add Asset ID

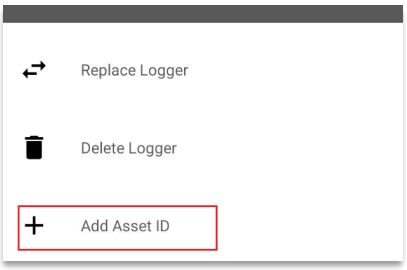
In the ZONESCAN Install, you have the option to add an asset id to the logger. The Asset ID is an identifier or serial number for the valve or hydrant on which the logger is placed.

Please follow the steps below to add an asset id

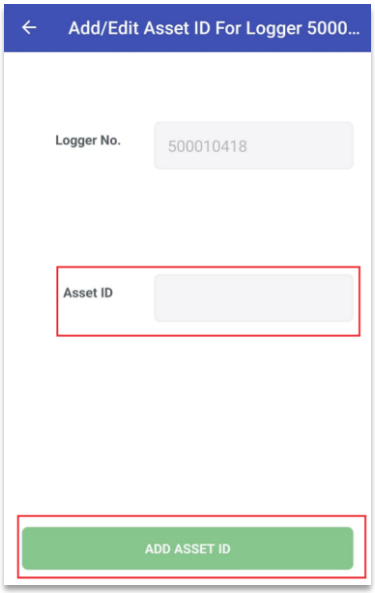
1. Navigate to the "Map" screen
2. Long-press on the logger to which you want to assign the asset id
3. Select "Maintenance"
4. Click on the "Logger" icon on the bottom navigation bar as shown below



5. Click on "Add Asset ID"



6. Now, mention the asset id. It supports both numbers and letters.

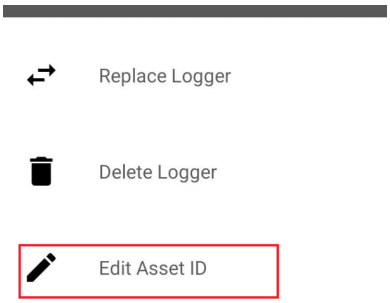


7. Finally, save the changes by selecting "Add Asset ID."

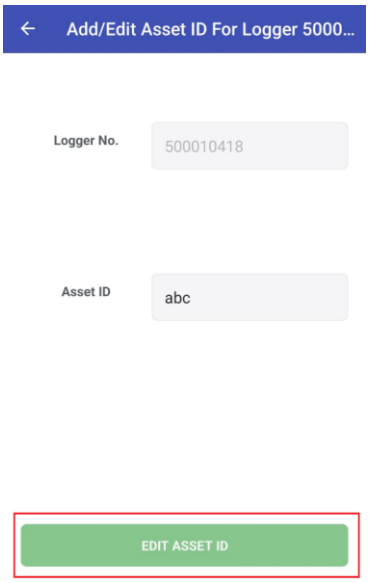
To **edit** the Asset ID, please follow the steps below to add an Asset ID.

1. Navigate to the "Map" screen
2. Long-press on the logger to which you want to assign the Asset ID
3. Select "Maintenance"
4. Click on the "Logger" icon on the bottom navigation bar

5. Click on "Edit Asset ID"



6. Update the Asset ID and save the changes by clicking on "Edit Asset ID"



11 FAQ

11.1 How do I change from always to just once on Android?

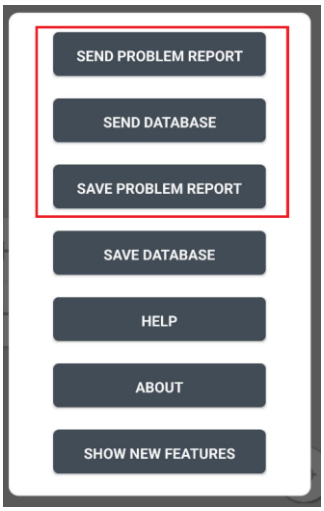
- Search for Settings in the App Drawer.
- Once there, select ‘Apps’ and choose the app you want to reset.
- Once selected, go to ‘Open by default’ from within the App info page.
- Tap ‘Clear Defaults’.

11.2 How do I clear app cache on Android?

- Open the Settings of your phone.
- Tap the ‘Storage’ heading to open its settings page.
- Tap the ‘Other Apps’ heading to see a list of your installed apps.
- Find the application for which you want to clear the cache and tap its listing.
- Tap the ‘Clear cache’ button.

12 Support

In case of any problems with the app, a problem report and database can be sent to the support team to resolve the issue. To send a problem report, click on ‘Navigation item Help’. Here you will find options to send the problem report and database. You can save the problem report and share it with Gutermann support via email or upload it to Drive using the “Save Problem Report” option.



13 Disposal

Never put electrical appliances in a household waste bin. Always collect them separately and perform environmentally friendly recycling. When disposing of electrical appliances always comply with national and regional waste disposal regulations. If the orderly disposal of our products is not possible, send the unit to Gutermann at the address below in the Imprint. Gutermann ensures its products are disposed of in an environmentally friendly way.

14 Imprint

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Subject to changes