

GR-3 PLUS
3D GROUND SCANNER

GR-3
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User Manual



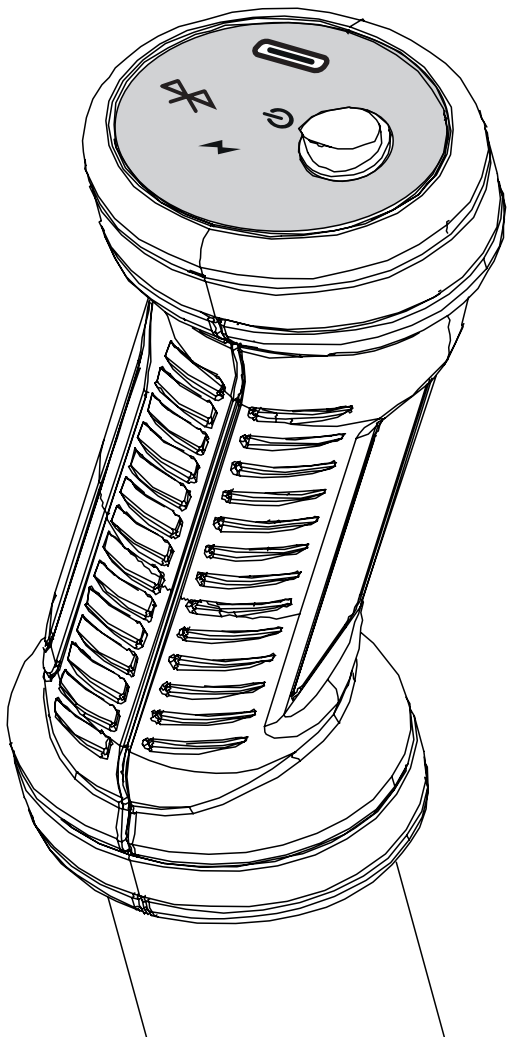


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Attention !!!

Read this warnings carefully before using this product

The information in this user manual is subject to change with-out notice. Reproduction, distribution and copying of this user manual without authorization by CONRAD Detectors is strictly prohibited.

General Information

CONRAD products, must be used carefully just like the electronic devices. The main unit must be used carefully; it must be protected from shocks and rigid objects, and excessive force must be avoided.

Injury

CONRAD products do not cause injury or health problems when used properly. CONRAD Products generally pose no dan-ger to the human body. As with electronic devices, they should be kept away from children. Be sure to take precautions against all types of risks.

Before starting the search, be sure that the main unit battery is full. An insufficient battery level may cause wrong measure-ment.



1

Connection LED

2

Power Button

3

Micro USB Port

4

Charging LED

5

Start Button

1. When you turn on your device, the LED lamp on the top flashes green briefly, then blue. The blue color indicates that there is no wireless connection (Bluetooth connection via tablet or mobile phone) in the main unit of the device.

If there is a wireless connection through your tablets or mobile devices, the green color flashes incessantly.

2. You can operate your device using the power button on the top of the device.

3. The main unit of the device is powered by a Li-ion battery and charged with a 5 volt 2 amp charging adapter. You can charge the device's battery using the micro USB input on the top panel. Only charge the device with the original charging adapter. If the charging adapter is lost or broken, please contact the technical service of CONRAD.

4. While the device is charging, the LED next to the USB port will light up.

5. The button on the front of the device; enables data transmission in manual search and continuation of data transmission after completion of each row in automatic search.

Installing 3D Analysis App

To start working with the device, you should first download the application CONRAD GR-3 on your device such as tablet or phone (Android/ IOS). To do so, search CONRAD GR -3 on Google Play Store or App Store.

then Install the CONRAD GR-3 application on your device.



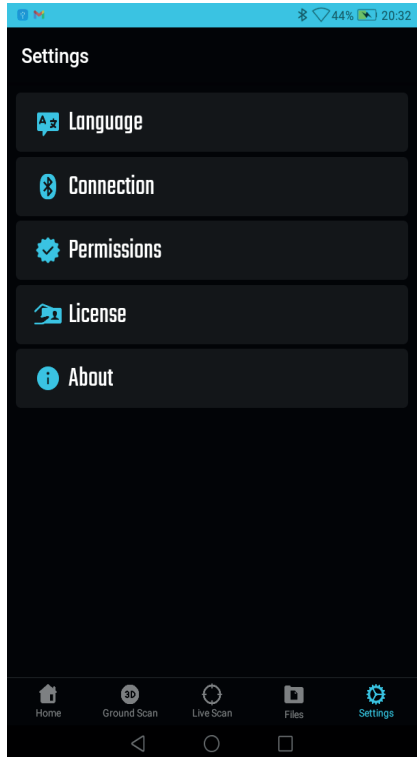
When installation complete, and in first use, the activation menu will appear. In this screen, fill up all requested information, such as the device serial number ,your name, and your email address then press on «Activate»

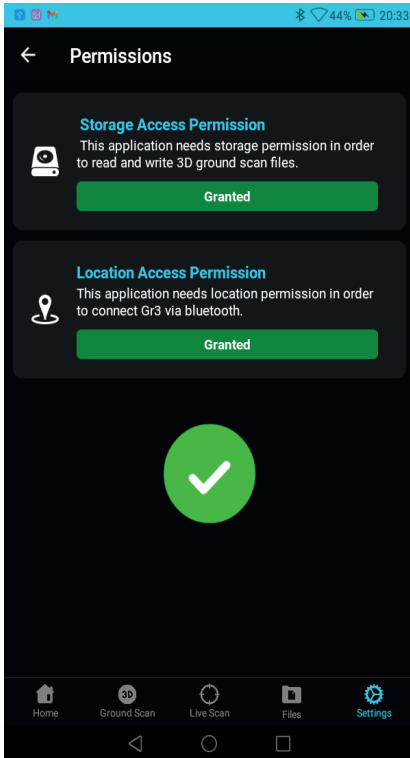
also you can scan device QR Code to get the device serial number using «Scan QR Coce» Button.

After activation, you will see the main page of the application. Before you can scan with the device, you should establish a wireless connection. For wireless connection.

A) To do tap the "Settings" menu in the application.

In the Settings menu, you must allow some features that you need the app to use on your mobile device.





B) In the Settings menu, go to the Permissions section. You will need to confirm both buttons. These permissions are necessary to save scan results and establish a wireless connection.

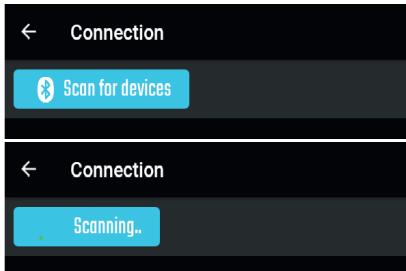
Note: This process only applies to the initial setup. Once done, you do not need to repeat it for next use.

Connect To Device

The second step is connecting the app to the GR-3 Device To do go to the “Settings” menu and Click on the “Connection” section.



Tap on the "Scan for devices" to start scan process for around bluetooth devices.



When scan completed you will see GR-3 device in the menu.



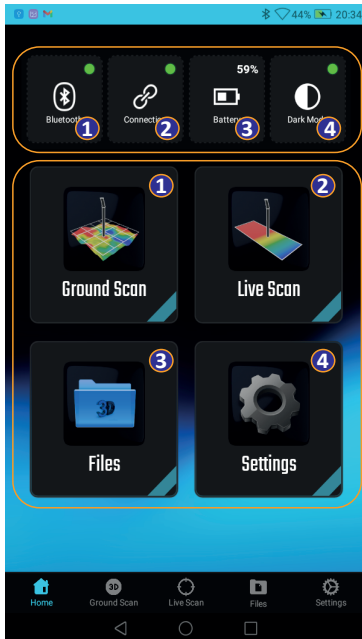
If you tap on the "Connect" section, the connection will be established.



App Interface and Systems

this screen separated as two parts.

- the top part which includes the app status
- the Main Menu part which includes system icons



Top Bar Icons

1. Turn on bluetooth device
2. Set connection with device
3. device battery status
4. set or unset dark mode

Main Menu

1. Ground Scan System
2. Live Scan System
3. Recorded Scan Files Folder
4. App Settings



Note: after establishing wireless connection with the GR-3 once, you can directly connect and start your scans with quick connection icon



Ground Scan

3D Ground Scan

The 3D Ground Scan allows you to create 3D graphics based on your scans of a specific area.

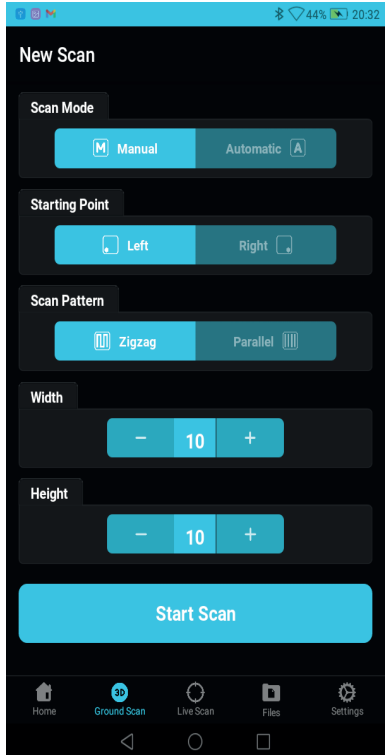
To create a 3D ground scan, enter the "Ground Scan" menu on the main page of the application.

Scan Mode

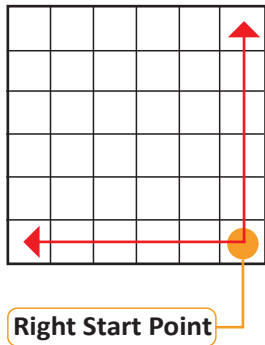
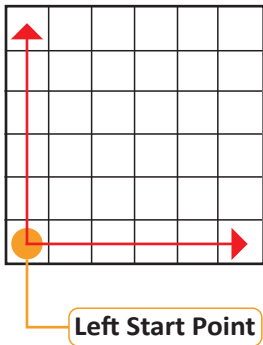
this option gives an option to user to select how s/he want the device do the scan process.

Manula:using this option means that user has to press on start buttun on the device for each scan step.

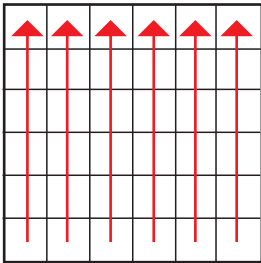
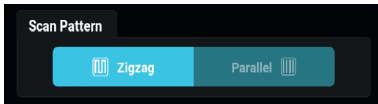
Automatic:using this option means that the device will make each point scan automaticly with a static delay.



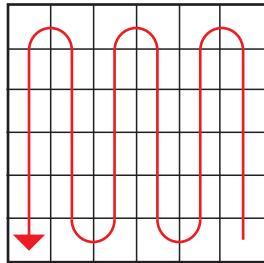
Starting Point: You can set your scan start point from the lower right or lower left corner. To do this, you must select the left or right start point. If you start searching from the lower left corner, you should proceed to the next scan job on your right. If you select from the bottom right corner, you should proceed to the next scan job on your left.



Scan Pattern: You can do your scans in zigzag or parallel pattern. You should start the scan at your start point and end it at your ending point, as shown in the figure below. When the number of signal pulses entered for each row is complete, you must proceed to the next series of scans. The direction of the Measurement device should not be rotated when you move to the next row.



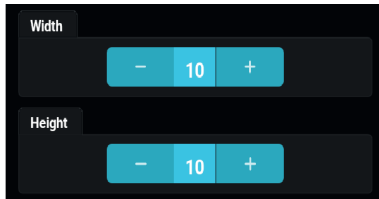
Parallel Pattern



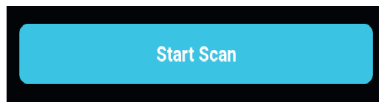
Zigzag Pattern

Width: Enter the number of rows you want to scan according to the size of the area to be scanned. For example, 10 rows. The distance between each row should be 20 cm to 30 cm on average.

Height: Select how many measurement signals must be present for each row. For example, 10 measurement signals. The distance between each measurement signal should be 20 cm to 30 cm on average. The more you increase the distance, the more difficult it becomes to detect small objects.



After settings done, you can initiate the scan by tapping “Start the Scan” button.



Active bar

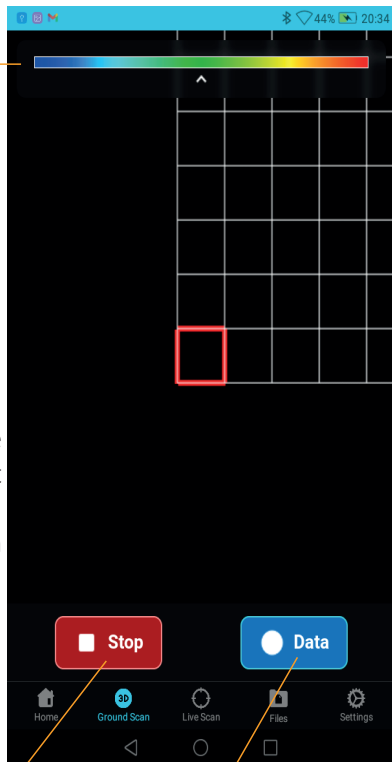
Start Scan

In the middle of the scan screen, you can see the immediate data that you get.

Active bar: indicates the immediate measurement severity.

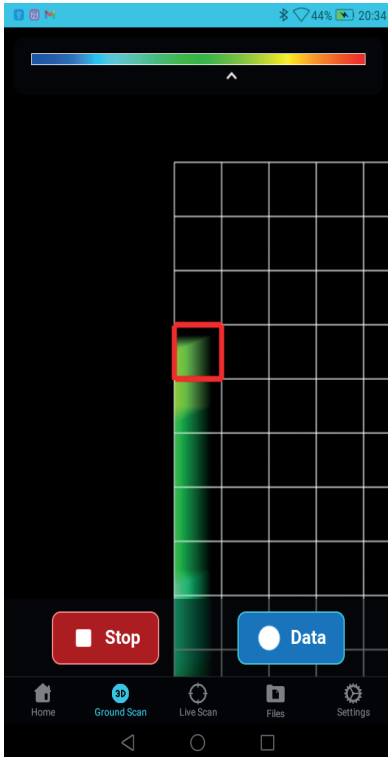
Stop: Use to stop scan process

Data: active in manual scans.



Stop Scan

Show Data



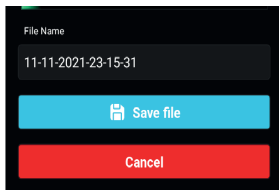
After you start getting data; You will see colors such as green, red, yellow, and blue according to the measurements you get. You can see all metallic objects and most objects with high magnetic effect as red, some as orange, cavities, earth fills, caves underground as blue, the earth without any changes and anomalies as green. You can see mineral soils and objects with a relatively low magnetic effect as yellow and orange colors. After the scan is complete, you can examine this data in detail on the analysis screen.

If you select automatic mode, after the signal step count for each row is completed, you will be requested to tap the Start button. You should perform this procedure for each scanning row. If you select manual mode, you should tap the Start button on the front handle for each signal step.

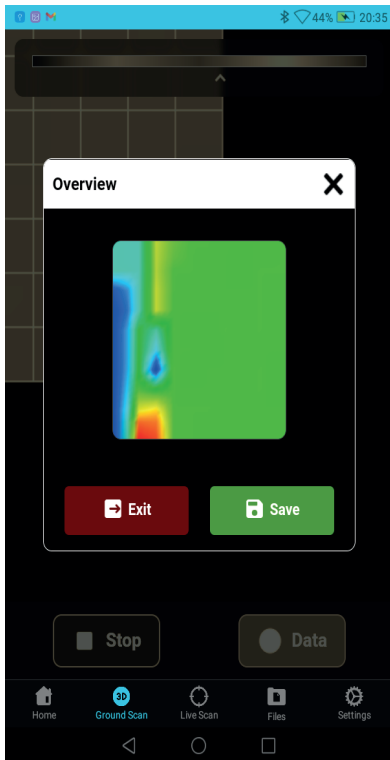
Ground Scan

After finishing all entered rows and steps (width & height). a preview will be created. In this screen, you can save the obtained data or exit without saving.

In case of choosing «Save», You should enter a file name for this scan file.



You can enter a name for the scan file or save it with the default file name.



After you save the scan file , you will be taken to the “Files” section. Refer to the Analysis section of the manual to analyse the saved scans.



Live Scan

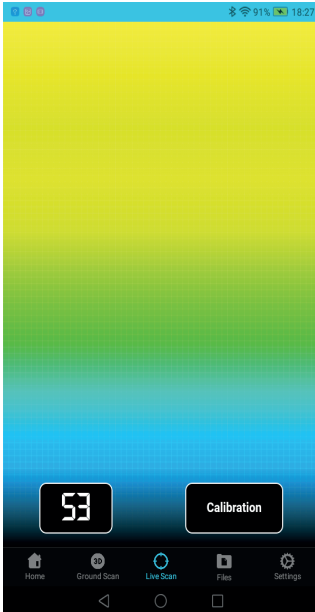
By selecting this item a screen will appear that gives two different systems.



Live Scan

1. Live Scan

Live scan is a 2D search mode with 3 different search options that allows you to make quick and pinpoint detection.



Instant observation of objects and underground changes can be done very easily using the live scan system.

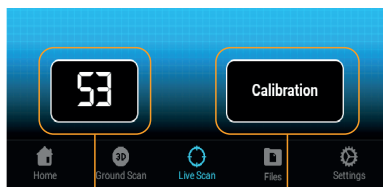
You can see objects buried underground with a magnetic effect, metal objects and cavities.

This screen displays all metal objects and most objects with a high magnetic effect in red or orange color.

Cavities are shown in blue color.

In the absence of metal or cavities, the color of the screen will be green.

Soil and minerals with relatively low magnetic effect are displayed in yellow and orange colors



Scan Value

Calibration

Scan Value

the dirt level and the numerical values of the immediate measurements.

Calibration

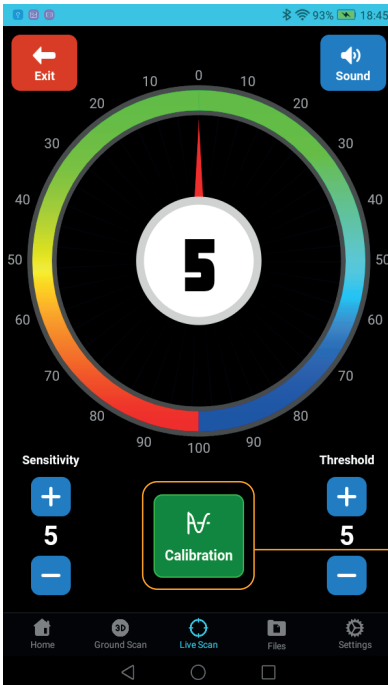
By tapping the "Calibration" Button in the lower right corner, you can reset the dirt level.

Note: calibration must be done in a point out of area that user want to scan



2. Pinpointer

You can use the pinpoint option to determine the exact position of the metallic or magnetic object you have detected.



Before scanning in the Pinpointer mode; by tapping the "Calibration" icon in the lower right corner, you can reset the dirt level tapping the "Calibration" icon in the lower right corner, you can reset the dirt level.

Note: calibration must be done in a point out of area that user want to scan

Calibration

You can see the severity of the signal and graphic bar according to the type of the object in the middle. When objects with magnetic effect and metallic objects are detected, the bar will increase to the left side. The bar will increase to the right side when structures such as cavities and caves are detected.



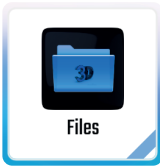
In the "Sensitivity" section on the left, you can increase or decrease your scan sensitivity. If you increase the scan sensitivity, the signal strength of the measurement will be more sensitive and responsive.



The "Threshold" setting on the right allows you to increase or decrease the dirt level. This allows you to block weak soil signals.

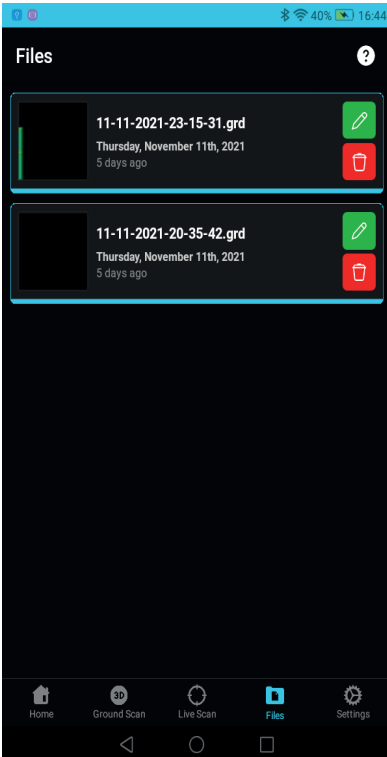


With the «Sound» button on the top right you can switch the signal tone on or off.



3D Monitor

All completed ground scan graphs saved is saved in «Files» section. which user can review or analyse this files by using this section.



From the main menu, tap the "Files" section to open the scanned files.

You can change the file name or delete the file using the icons on the right of the scan data.



Open the scan data you want to analyze by tapping on it. This

in this screen user can analyze the data graphically and numerically.

On the top of this screen there is 6 tool icons that you can use to make the graph analysis as it's described below:

Analysis Tools



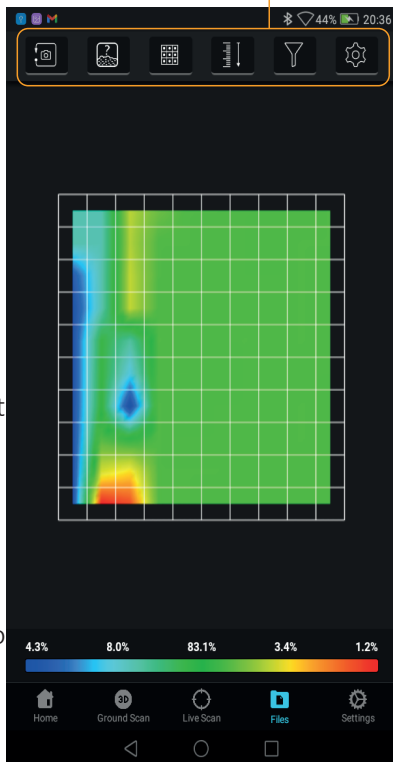
Reset: return the scan screen to the top view



Soil: To make depth measurement in the search, you should select the proper soil type for the area you scan.



Data: shows all data as numeric on the graph. To turn it off again, tap «Data» icon.





Depth: With the “Depth Analysis” function, you can see the signal values corresponding to each frame in the data you have obtained, you can see the point depth value by choosing the soil type.







Color Filter: user can turn on and off the red, blue, yellow, green and light blue colors on the graph



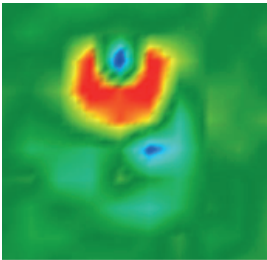
Settings: user can perform the analysis settings. In this section you can turn on and off the different color options and the frame on the scan.

Graph Analysis

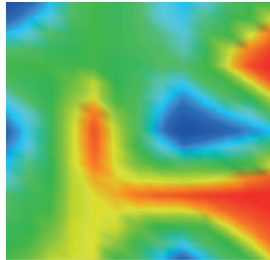
When you observe the data you have obtained graphically and numerically, you can figure out whether there is any variability in the scan result. The meanings of the colors in the graph obtained as a result of scanning are as follow:

-  **Red:** Metallic objects and objects with high magnetic effect.
-  **Blue:** Cavities, caves and earth fills underground.
-  **Green:** The standard earth without any magnetic effect.
-  **Orange and Yellow:** Mineral structures, mineral soils, and object with relatively lower magnetic effect.

While analyzing the graphic, you should consider the colors and shapes in the graph;



Metal



Mineral

- ★ The metallic objects have an obvious shape whereas the minerals are usually scattered and diffused.
- ★ The metallic objects are red, mineral structures are usually yellow and orange.
- ★ The most important feature of the metallic objects that distinguishes them from minerals is that there is a certain numeric difference from the soil according to the obtained data.

To see these numeric values, tap “Data” icon in the 3D monitor function.

There must be an increase of at least 15 units between the Soil shown in green and the metallic objects shown in red in the graph.

For example; If the dirt level is 210, it must have a value of at least 225-230 to be a metallic object.

If there are a few units of difference, this data is mineral. For new and less magnetic objects that have not been underground long, there may also be an increase of a few units.

If there is a large difference between the soil and objects with magnetic effect, there is a high probability that it is a worthless metal. For example, the dirt level is 80 units and the magnetic object is 200 units.

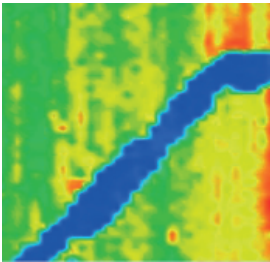
Metallic objects buried underground for a long time can be detected more easily.

In the Cavity data:

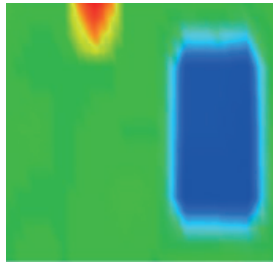
Underground cavities such as tunnels, chambers, and tombs that have been artificially created are shown in blue in the graphic.

In case there is any kind of subsidence or earth fill inside the underground cavity, the cavity data will be light blue, turquoise and light green.

If you are looking for a structure that has a distinctive shape, the blue area in the graph should be suitable for it. For example, if you are looking for a tomb, it should have a rectangular and tomb-size shape.



Tunnel



Tomb

There must be at least 15 drops between the soil shown in green and the cavity shown in blue in the graph.

For example if the dirt level is 150, the cavity data should have a value between 135-130.

If there is a difference of a few units, this data is the cavities formed by objects such as stones or surface soil differences.

Depth Analysis:

For the point depth value, you should first select the correct soil type for your scan area.

Tap on "Soil Selection" then select the correct soil type for the area you are scanning.

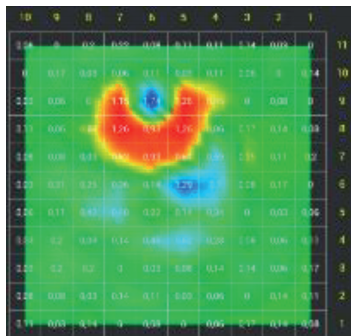
You should select the proper soil type for the area that you are working in. For example, if your work area is a completely rocky area, you can select "concrete" type, in a stony structure, you can select "stony" type. You can select the "lightly mineralized" type for non-mineralized soils such as fields and the "highly mineralized" type for soils with high mineral content. If you have no idea or guess about the soil type, you can obtain and compare the depth values with several options to make a better calculation.

Note: Usually obtaining the results of "lightly mineralized" and "Mil" options and averaging out gives you a better result.

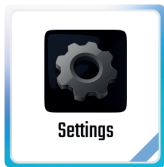
After selecting the soil type, the depth values for each point are displayed in the graph.

Depth Analysis

The numbers in the graph are in meters. You can see the depth value for each point within each signal frame. If there is no magnetic object or other anomaly underground during your measurements, you will see the depth value as 0 (zero) or very low numbers in the application. As you can see in the example graph, the metallic object says 1.26, which means that the depth of the metallic object is 1.26 meters in the lightly mineralized soil type. The values in the depth value are the result of a calculation. These values give you estimated information. These depth values are neither certain nor binding information.

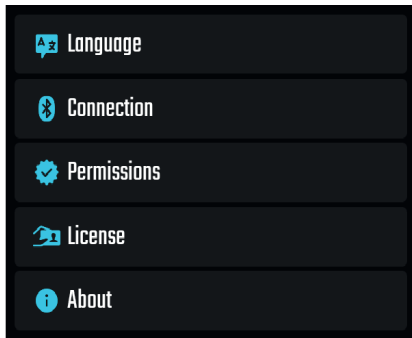


Depth Values Example



Settings

To change the application settings, you should use “Settings” menu.



- 1. Language:** select your favorite language
- 2. Connection:** use this item to edit wireless connections.
- 3. Permissions:** the permissions that the application must use on your device.
- 4. License:** user license information
- 5. About:** application information.

Customer Service (Repair)

Repairs caused by technical defects and made within two (2) years from the date of purchase are free of charge. Contact your dealer for product service or your questions. The unit will be inspected by a qualified technician and repaired if necessary. After two years all repairs are chargeable.

If you harm the products or open the main unit, it becomes out of warranty.



www.conraddetector.com