

A2 GEO

A2 MODEL

USER MANUAL



Caution!



Caution!

Read these warnings carefully before using this product. The information in this user manual is subject to change without notice. It is strictly forbidden to reproduce, distribute and copy this user manual without the permission of CONRAD Mühendislik.

General Information

GROUNDTECH products should be used with caution, just like electronic devices.

The main unit must be handled with care;

it must be protected from impacts and hard objects. Excessive force must be avoided.

Injury

GROUNDTECH products do not cause injury or health problems when used correctly.

GROUNDTECH Products do not pose

a danger to the human body in general. It should be kept away from children as in electronic devices. Take precautions against all kinds of risks.

Before starting the search, make sure that the main unit battery is full. Insufficient battery level may cause incorrect measurement.

Device buttons





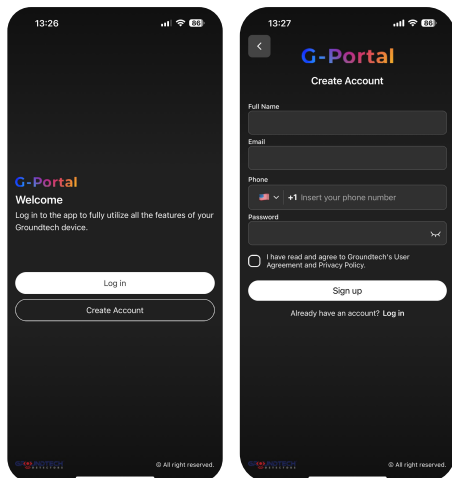
A2 and A2-GEO models report the received data directly to the user on the built-in screen located on the device. You can see the results directly on this screen. In addition, it allows you to analyze the data you have received in more detail through the Groundtech G-portal mobile application.

You can download and install **THE G-portal application** from the App Store for phones/tablets with **iOS** operating system and from the Google Play Store for phones/tablets with **Android** operating system.

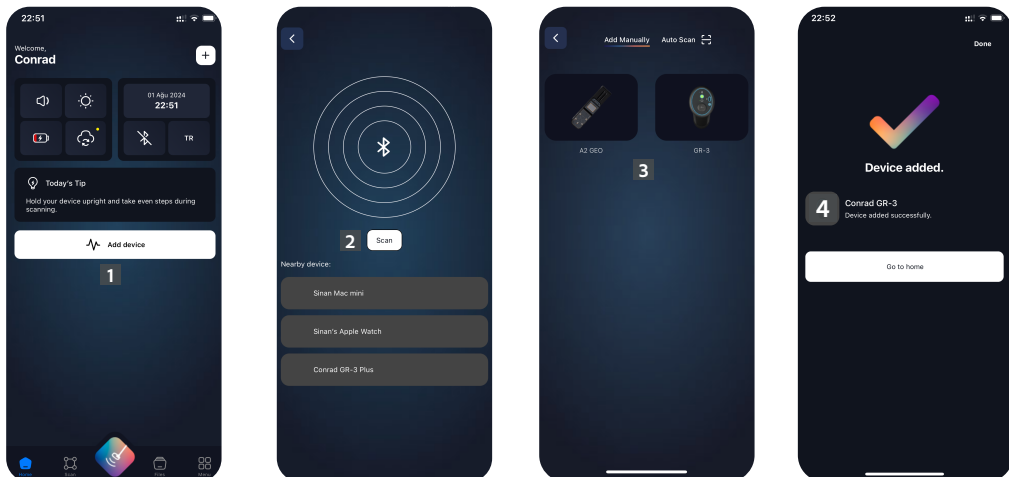
A2 model has **6 different** scan modes as 3D Ground Scanning, Magnetic Live Scanning, Magnetic Pinpointer, Fast Detector, Advanced Detector scanning, Detector pointer mode. The A2-GEO model has an additional Resistivity scan mode, offering **7 different** scan modes.

You can see below how to use the scan modes, both on the built-in screen on the device and through the G-portal (**Mobile app**) application, respectively.

After installing the app on your phone/tablet, you should create a personal account and then establish a **wireless connection** with your A2 device. For this, follow the steps below;



When you first open the app, you'll see a screen asking you to create an account or sign in if you already have one. If you have not created an account before, you need to create a new personal account. For this, you should select the **"Create an account"** option. Then, complete the account creation process by filling in the required information on the screen that appears. When the registration process is completed, the main screen will open.



On the home screen, you must first establish a wireless connection between the mobile device and the A2 product. In order to provide a wireless connection, you must accept the permissions set by the operating system. You can find these permissions in the **"Permissions"** section of the settings menu.

These permissions are to save files and use your location. **A2 product or G-Portal** product does not store your location data in any way. These are the permissions that **Android and iOS** operating systems require for **wireless data transfer**. This is all about the operating system.

After confirming the permissions, start the wireless scan again from the **"Add device"** section in the main menu. Select the A2 device in the menu, when you see the connection is established warning, a wireless connection will be provided.

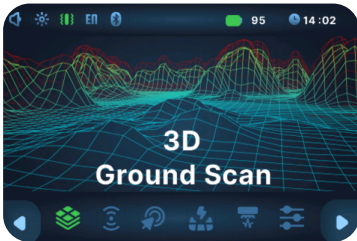
This procedure is only for performing the initial installation. From then on, direct automatic connection is provided.



3D GROUND SCANNING

3D Ground scanning allows you to create 3D graphics and ground analysis by scanning a specific area. You can start this scan mode from the built-in screen on the device and save the scanning. You can then transfer the data saved to the mobile application. As another option, you can start scanning directly in the mobile app and see the scanning results instantly in the mobile app.

Recording to memory through the device: To start scanning through the device and save the scan to memory, select the "3D Ground Scan" option in the Main menu. Then, on the following menu, select the scanning options according to the scanning area and your work. **Note:** Before starting the scan, attach the **MFS sensor** to the device. The scan will not start if the MFS sensor is not attached.



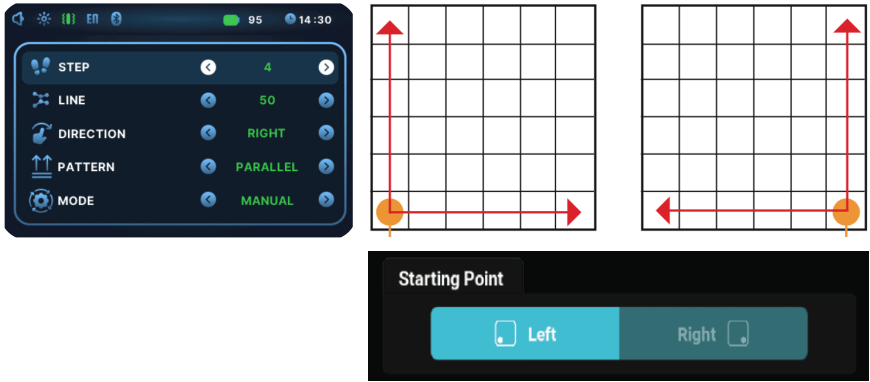
Step: Select how many measurement signals should be in each step. For example, **10 measurement signals**. The distance between each measurement signal should be between **20 cm and 30 cm** on average. The greater the distance, the more difficult it is to detect small objects.

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

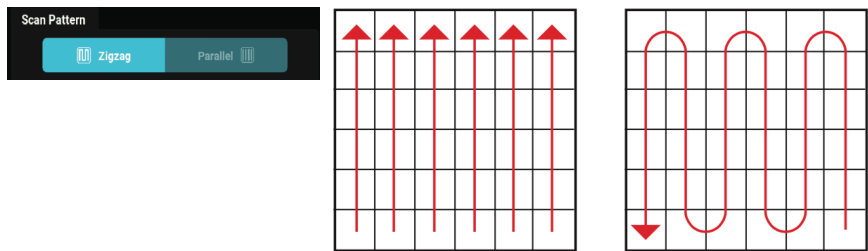


3D GROUND SCANNING

Starting point: You can set your scanning starting point from the bottom right or bottom left corner. To do this, you must select the left or right starting point. If you start the search in the lower left corner, you should proceed to the next scanning on the right. If you select from the bottom right corner, you should proceed to the next scanning on the left.



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



Scan Mode : This option gives the user the option to choose how they want the device to scan.

Manual: using this option means that the user must press the start button on the device for each scanning step.

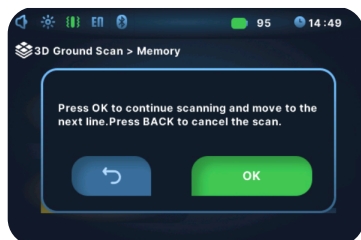
Auto: this option means that the device will automatically scan each point with a static delay



3D GROUND SCANNING



After completing all the settings, press the **OK** button, then the scan will start. If manual scanning is selected, you must press the **START** button on the device for each measurement signal. If Automatic scanning is selected, you do not need to press the **START** button, each measurement signal will advance automatically.



Each time a line completes, a menu will appear asking if the next scan will continue. If you want to continue the scan, press the **OK** button or the **START** button. Press the **BACK** button to exit without completing the scan and to exit without saving the data to memory.



It will automatically save when completed depending on the scan parameters and will switch to the menu with the saved files. You should use the **G-Portal application** to examine and analyze the recorded data. Unless deleted the files through the G-Portal application, the files will remain stored in the device memory.

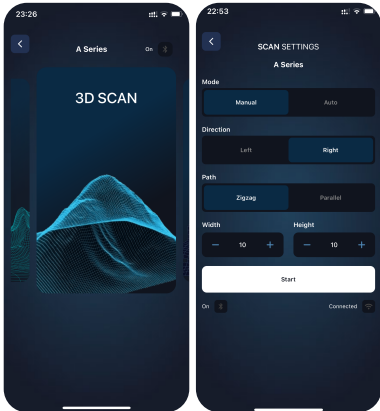


3D GROUND SCANNING

Instant 3D Ground scanning with mobile application:

In order to start 3D Ground scanning directly on the mobile app and analyze the data instantly, first of all, there must be a wireless connection between the mobile app and the A2 device.

To start 3D Ground Scanning, launch the 3D Ground Scanning mode from within the application. Select the appropriate options for the scanning area from the drop-down menu.

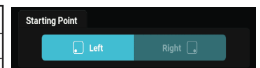
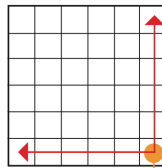
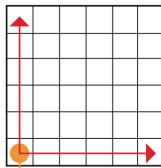


Scan Mode: This option gives the user the option to choose how they want the device to scan.

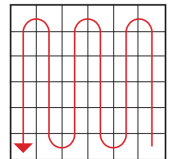
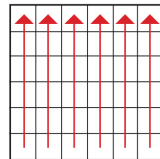
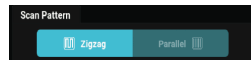
Manual: using this option means that the user must press the start button on the device for each scanning step.

Auto: using this option means that the device will automatically scan each point with a static delay

Starting point: You can set your scanning starting point from the bottom right or bottom left corner. To do this, you must select the left or right starting point. If you start the search in the lower left corner, you should proceed to the next scanning on the right. If you select from the bottom right corner, you should proceed to the next scanning on the left.



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

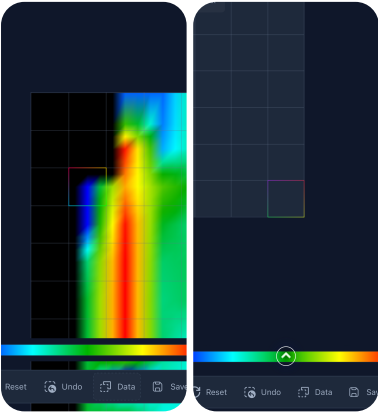


Width: Select how many measurement signals should be in each row. For example, 10 measurement signals. The distance between each measurement signal should be between 20 cm and 30 cm on average. The greater the distance, the more difficult it is to detect small objects.

Height: Enter the number of lines you want to scan based on the size of the area to be scanned. For example, 10 lines. The distance between each line should be 20 cm to 30 cm on average.



3D GROUND SCANNING

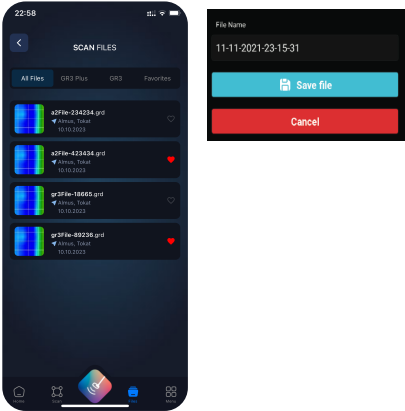


Once all settings have been made, press the **START** icon to initiate the scan. Then the scan will start.

The scan will continue according to the settings you made before the scan. If manual scanning is selected, you need to press the **START** button on the device or the data icon on the application screen for each measurement signal. If Automatic scanning is selected, you do not need to press the **START** button, each measurement signal will advance automatically. Each time a line completes, a menu will appear asking if the next scan will continue. If you want to continue scanning, press the **OK** button or the **START** button or the data icon on the application screen.

grounds and objects with relatively low magnetic influence will be displayed in yellow and orange. Once the scan is complete, you can examine these data in detail on the analysis screen. After completing all the lines and steps (**width and height**), a preview will be generated. On this screen, you can either save the collected data or exit without saving. If you select the **"Save"** option, you will need to enter a file name for this scan.

You can either enter a name for the scanned file or save it with the default file name. After saving the scanned file, you will be directed to the **"Files"** section. For instructions on how to analyze saved scans, refer to the Analysis section of the manual.



LIVE SCAN MODE



Live scanning is a 2D scanning mode that allows you to perform fast and pinpoint detection. With live scanning, scanning can be done without adhering to a certain order. Live scan mode can be scanned both on the built-in screen on the device and through the **G-Portal mobile application**. In order to use the Live Scan mode, the **MFS Sensor** must first be attached to the device.



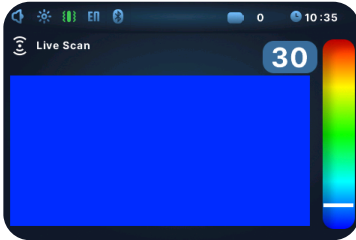
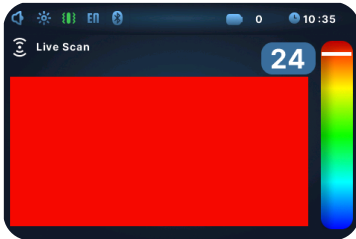
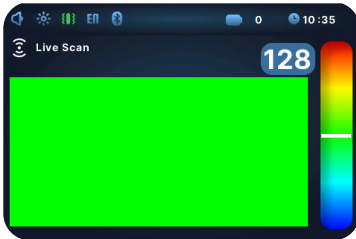
Live On-Device Scanning :

Using the live scanning system, instant observation of objects and underground changes can be made very easily.

You can see objects, metal objects and cavities buried underground by magnetic effect. This screen displays all metal objects and most objects with high magnetic influence in red or orange.

Cavities are shown in blue. In the absence of metal or cavities, the screen will be green.

ground and minerals with relatively low magnetic influence are displayed in yellow and orange.

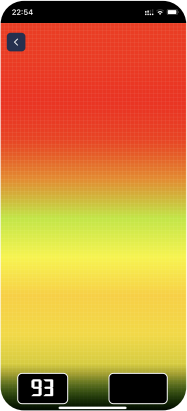
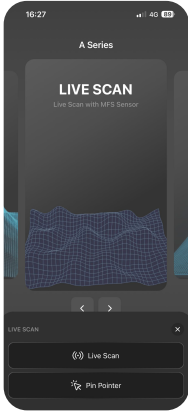


LIVE SCAN MODE



Instant Live Scan with the Mobile App;

In order to launch the live scan directly on the mobile app and analyze the data instantly, first of all, there must be a wireless connection between the mobile app and the A2 device.



To start the live scan, launch the Live Scan mode on the application. The live scan will start directly.

Scan Value

Numerical values of ground level and instantaneous measurements..

Calibration

You can reset the ground level by tapping the "Calibration" Button in the lower right corner.

Note: calibration must be performed at a point outside the area the user wants to scan

Using the live scanning system, instant observation of objects and underground changes can be made very easily. You can see objects, metal objects and cavities buried underground by magnetic effect. This screen displays all metal objects and most objects with high magnetic influence in red or orange. Cavities are shown in blue. In the absence of metal or cavities, the screen will be green. ground and minerals with relatively low magnetic influence are displayed in yellow and orange.

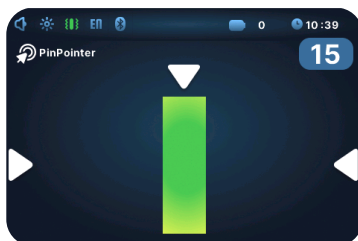
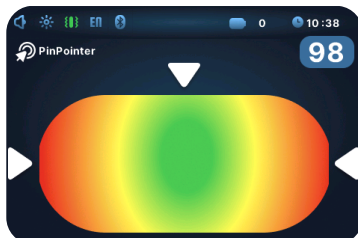
PINPOINTER SCANNING MODE



You can use the point detection option to determine the exact location of the metallic or magnetic object you have detected. The Pinpointer scanning mode can be used both on the device's built-in screen and through the **G-Portal mobile application**. In order to use the pinpointer mode, the **MFS Sensor** must first be installed in the device.

On-Device Pinpointer Scanning;

In the Pinpointer mode on the device, you can only detect metals with a magnetic effect. Objects with high magnetic effect are shown on the screen in red and orange. In the upper right corner, you can see the instantaneous value numerically.



PINPOINTER SCANNING MODE



Pinpointer Scanning with mobile application;

To start the Pinpointer mode directly on the mobile application and analyze data in real-time, a wireless connection between the A2 device and the mobile application must first be established.



To start the Pinpointer mode, open the Pinpointer on the application. The pinpointer will start directly.

Before scanning in pinpointer mode, you can reset the ground level by tapping the "Calibration" icon at the bottom center

Note: Calibration must be performed at a point outside the area the user wants to scan

You can increase or decrease your scanning sensitivity in the "**Sensitivity**" section on the left. Increasing the sensitivity will make the measurement signal strength more precise and sensitive.

The "**Threshold**" setting on the right allows you to adjust the ground level. This helps to filter out weak ground signals.

You can turn the signal volume on or off using the "**Volume**" button in the upper right corner.

In the middle, you can see the numerical bar and graph bar showing the intensity of the signal according to the type of object. When objects with a magnetic effect and metallic objects are detected, the bars on the left will increase and there will be a color transition from green to red. When structures such as hollows and caves are detected, the bars on the right will increase and there will be a **color** transition from green to blue.

RESISTIVITY (GEO-ELECTRIC)



NOTE : ONLY AVAILABLE ON A2-GEO MODEL.

Resistivity scanning allows you to find large structures such as large metals, cavities, tunnels, rooms, caves. Resistivity scanning has two different search modes, automatic and manual.

IMPORTANT NOTICE!

You must install conductive probes and cables before starting the resistivity scan. Never attach cables to the sockets after the scan has started. Resistivity scanning has high voltage output power. Do not touch the metal parts with bare hands during scanning. It may cause serious injuries.

On-device Resistivity screening;



To start the Resistivity scan on the device, you must first select the Resistivity menu from the main menu. Resistivity scanning has two different search modes, automatic and manual.

Calibration



Resistivity scans, wet ground can cause misleadings in your work. You should perform pre-scan ground calibration to minimize margins of error. For this, select Calibration Mode from the menu.

When you select the calibration mode, you will be presented with a high-voltage warning screen.

For calibration adjustment;

first place 2 conductive probes in the ground as in Manual search mode. Place the probes in a ground without any metal, space, water. Set the probe intervals in the range of 1 to 2 meters.



Attach the conductive cables supplied with the device to the probes and the other ends to any line in your device. For example, plug it into outlet sockets 1 and 2, which are line A. In the Resilience scan menu, enter the calibration option. Select the line on which you have installed the probes and select Calibration. The calibration should be completed. The received value should be fixed as ground level. You can scan through the calibration value obtained in automatic search or manual scan modes.



You need to re-calibrate each different scan or different areas. To erase the calibration and return the device to its factory range, select the **"Reset"** option in the calibration menu of the mobile application. This will restore the device's calibration values to the factory settings.

RESISTIVITY (GEO-ELECTRIC)



Automatic Scanning;

You can use the resistivity search mode for large metals and large-scale searches such as tunnels, caves, water, underground structures. You cannot detect small objects with the resistivity search mode.

Before starting the Automatic Mode Resistivity scanning, place the 4 conductive probes provided with the device in a square arrangement on the ground.

Adjust the distance between the two probes according to the depth you wish to scan. Your scanning depth will be approximately half the distance between the two probes.

Connect the 4 conductive cables provided with the device to the output sockets on your device and attach the other ends to the conductive probes.

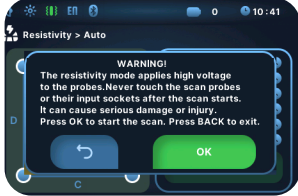
Ardından cihaz menüsünden **Otomatik Mod** seçeneğini seçiniz. Taramayı başlatmak için cihaz sizden onay tuşuna basmanızı isteyecektir. Onay tuşuna basınca Otomatik olarak 4 prob arasında arama başlayacaktır.

Herhangi bir sebeple taramayı durdurmak isterseniz Geri tuşuna basınız.

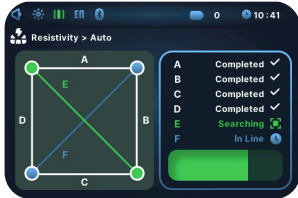
Tarama bittikten sonra almış olduğunuz ölçüme ait sonucu ekranın sağ tarafında rakamsal olarak görebilirsiniz.



Then select **Automatic Mode** from the device menu. To start the scan, the device will prompt you to press the **confirmation** button. Once you press the confirmation button, the scan will begin automatically between the 4 probes. If you wish to stop the scan for any reason, press the **Back** button.



After the scan is completed, you can view the results of your measurements numerically on the right side of the screen.



RESISTIVITY (GEO-ELECTRIC)

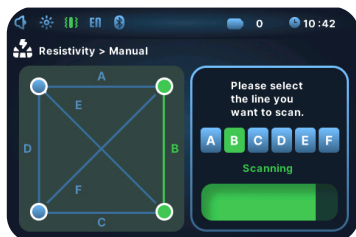
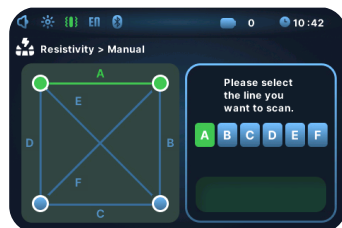


Manual Scanning;

Before starting the Manual Mode Resistivity scanning, place the 2 conductive probes provided with the device parallel to the ground.

Adjust the distance between the probes according to the desired scanning depth. Your scanning depth will be approximately half the distance between the two probes. Connect the 2 conductive cables supplied with the device to any two of the output sockets on your device and the other ends to the conductive probes. For example, connect them to the **1 and 2** output sockets of the A line.

Select the "**Manual Mode**" option from the device menu. Then, choose the line to which the conductive probes are connected. The scanning will begin. After the scan is completed, you will see the measurement result displayed numerically on the device screen.



RESISTIVITY (GEO-ELECTRIC)



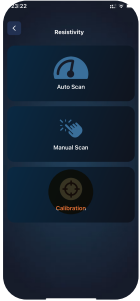
Resistivity Scanning with the Mobile Application;

To start the Resistivity mode directly on the mobile application and analyze data in real-time, a wireless connection between the A2 device and the mobile application must first be established.

To **start** the Resistivity mode, open the Resistivity on the application. Select the **calibration** menu to perform a pre-scan calibration.



To start the Resistivity scan on the device, you must first select the Resistivity menu from the main menu. Resistivity has 2 different scanning modes; **Automatic** and **Manual** scanning mode.



Calibration

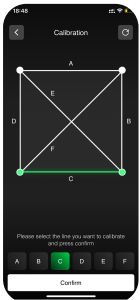
Resistance scans, wet ground can cause misleadings in your work. You should perform **pre-scan** ground calibration to minimize margins of error. For this, select **Calibration** Mode from the menu.

For calibration adjustment; first place 2 conductive probes in the ground as in Manual search mode. Place the probes in a ground without any metal, space, water.

Set the probe intervals in the range of **1 to 2** meters.



Connect the conductive cables provided with the device to the probes and attach the other ends to any of the output **sockets** on your device. Örneğin A hattı olan **1 ve 2** numaralı



In the Resilience scan menu, enter the calibration option. Select the line on which you have installed the probes and select **Calibration**. The calibration should be completed. The received value should be fixed as ground level. You can scan based on the calibration value obtained in either the automatic search or **manual scanning mode**. You need to re-calibrate each different scan or different areas.

device's calibration values to the factory settings..


To erase the calibration and return the device to its factory range, select the **"Reset"** option in the calibration menu of the **mobile application**. This will restore the device's calibration values to the **factory settings**.


RESISTIVITY (GEO-ELECTRIC)



Automatic Scanning;

You can use the resistivity search mode for large metals and large-scale searches such as tunnels, caves, water, underground structures. You cannot detect small objects with the resistivity search mode.


Before starting the **Automatic Mode Resistivity scanning**, place the **4 conductive probes** provided with the device in a square arrangement on the ground. 

Adjust the distance between the two probes according to the depth you wish to scan. Your scanning depth will be approximately half the distance between the two probes. 

Connect the 4 conductive cables provided with the device to the output sockets on your device and attach the other ends to the conductive probes..

Then, select the **Automatic Mode** option from the application menu.

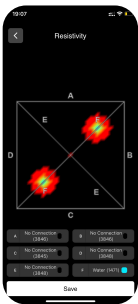


Once you press the confirmation button, the scan will begin automatically between the **4 probes**. 

If you wish to stop the scan for any reason, press the Back button.

Once the scan is complete, the result of your measurement will be displayed on the screen both **graphically** and numerically at the bottom. The colors in the graph represent the following:

- Green: Soil
- Blue: Cavity
- Light Blue: Water
- Yellow: Mineral
- Red: Metal.



RESISTIVITY (GEO-ELECTRIC)

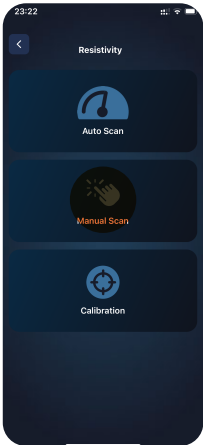
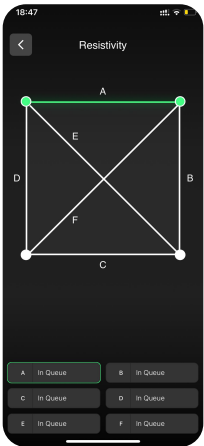


Manuel Scanning;

Before starting the Manual Mode Resistivity scanning, place the 2 conductive probes provided with the device parallel to the ground.

Adjust the distance between the probes according to the desired scanning depth. Your scanning depth will be approximately half the distance between the two probes. Connect the 2 conductive cables supplied with the device to any two of the output sockets on your device and the other ends to the conductive probes. For example, connect them to the **1 and 2** output sockets of the **A line**.

Select **Manual Mode** from the application menu. Then, choose the line to which the conductive probes are connected. The scanning will begin. You will see the measurement result taken after the scan numerically and graphically on the device **application** screen.



PULSE DETECTOR SCANNING MODE



You can detect all metals (such as gold, silver, and even iron or other non-precious metals) underground using the pulse detector system. In the pulse detector mode, metals do not need to be buried underground for long periods. Depending on the detector's working principle, it can differentiate between ferrous (iron-based) and non-ferrous (non-iron-based) metals, allowing you to detect all metals.

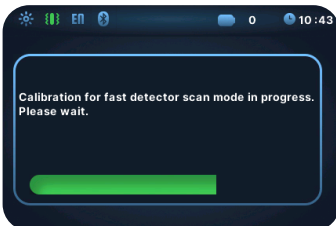
To use the pulse detector mode, you must first attach one of the detector scanning heads suitable for your scanning area (such as PiD 25, PiD 30, or PiD 35).

The pulse detector scanning system has **3 different scanning modes**. Unlike the scanning modes on the device, the mobile application also includes a 3D scanning mode.



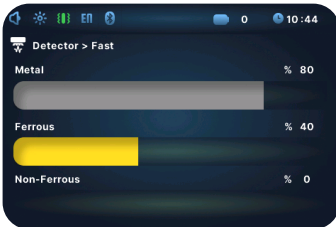
Pulse Detector Scanning System on the Device

For the Pulse Detector scanning system, you must first enter the Detector Mode from the main menu. In this screen, you will see 3 different scanning options. Choose the most suitable scanning option for your purpose and begin scanning.

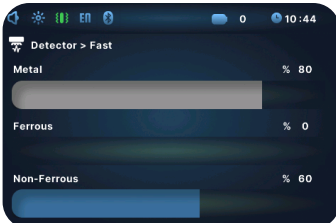


Quick scan;

When the quick scan mode is selected, the device will **calibrate automatically** first. During calibration, the detector scanning head should be positioned vertically towards the surface and should not be moved. Once calibration is complete, the device will transition directly to the scanning screen.



This mode allows for **quick scanning**. When a metal is detected, the metal bar at the top of the screen will increase. The bar level will rise based on the proximity and size of the detected metal. Additionally, the numerical value on the right will display the percentage level of metal detection.



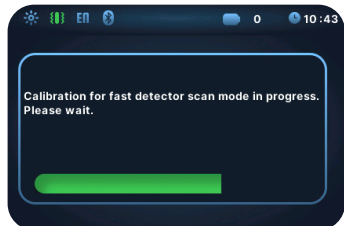
If the detected metal is ferrous (**contains iron**), the Ferrous bar will increase along with the Metal bar. The bar level and the percentage value on the right will rise according to the detection strength. If the detected metal is non-ferrous (**does not contain iron**), the Non-Ferrous bar will increase along with the Metal bar. Similarly, the bar level and the percentage value on the right will rise according to the detection level.

PULSE DETECTOR SCANNING MODE



Advanced Scan Mode:

When the Advanced Scan mode is selected, the device will first automatically calibrate. During calibration, the detector scanning head should be positioned vertically towards the surface and should not be moved. Once calibration is complete, the device will transition directly to the scanning screen.



In the **Advanced Scan mode**, the user can adjust settings for depth and sensitivity.

The detected metals are shown on the Metal bar at the bottom of the screen. Additionally, the percentage of the received signal strength is displayed in the lower right corner. If the detected metal is ferrous (**contains iron**), the word "**Ferrous**" will appear just above the bar at the top. If the detected metal is non-ferrous (**does not contain iron**), the word "**Non-Ferrous**" will appear instead. Additionally, along with the Metal bar, the bar at the top right of the screen will increase. Similarly, the bar level and the percentage value on the right will rise according to the detection level.



Advanced Detector Mode Settings:

To adjust settings in the Advanced Detector mode, use the direction buttons on the device. When you navigate to the option you want to adjust, use the **left-right buttons** to make changes.

PULSE DETECTOR SCANNING MODE

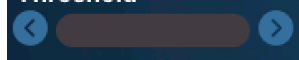


Gain



Gain; This option amplifies the signals detected by the detector, making it easier to identify targets. Lower gain settings reduce environmental interference, providing a cleaner scan, while higher settings amplify weak signals, allowing detection of deeper and smaller targets. However, very high gain settings can increase interference.

Threshold



Threshold; This setting determines the minimum signal strength that the detector can detect. Depending on the ground conditions and the size of the targets you wish to detect, an appropriate threshold level should be set.

Mode



Mode; This option defines how the detector operates and offers different modes based on the device's intended use and user preferences:

First Mode (Continuous Sound Mode): In this mode, the detector emits a continuous background sound. This sound changes in response to targets or small changes in the ground. This allows the user to detect ground variations and weak target signals more precisely.

Second Mode (Silent Mode): In this mode, the detector only produces a short beep (**tick sound**) when a target is detected. When no target is detected, the device remains silent. This mode provides a simpler experience.

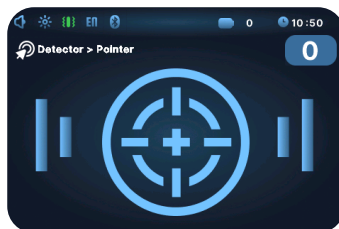
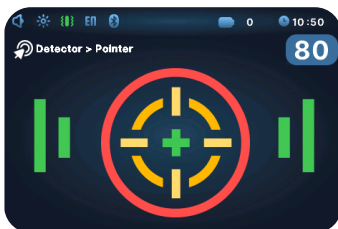
Led



Led; This option allows you to adjust the RGB LEDs on the device in increments. Depending on the detected metal's signal strength, the LEDs will change color from green to red. You can set the LED level in 4 stages.

Pointer Scan Mode:

The Pointer Scan mode is used to determine the exact location of the detected target. As you get closer to the target, the bars on the screen will fill up. The numerical value of the signal strength is also displayed in the top right corner of the screen.

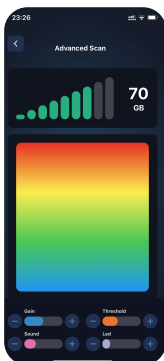


PULSE DETECTOR SCANNING MODE



Pulse Detector System with Mobile App:

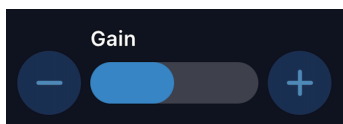
To start the detector mode directly via the mobile app and analyze data in real-time, a wireless connection between the mobile app and the A2 device is required.



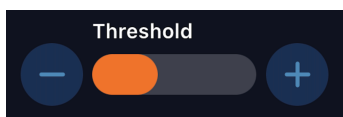
To activate the detector mode, open the detector mode in the app. Then, select the scanning mode you wish to use.

Advanced Scanning Mode:

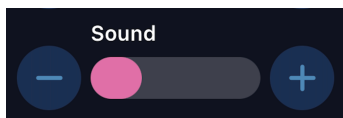
In the Advanced Detector Mode, the metal detection bar at the top will increase according to the signal strength of the detected metal, and a percentage value will be displayed next to it. If the detected metal is ferrous (**contains iron**), the word "**Ferrous**" will appear just above the bar at the top. If the detected metal is non-ferrous (**does not contain iron**), the word "**Non-Ferrous**" will appear instead. In the middle section of the screen, the graph will show a color transition from green to red according to the signal strength of the detected metal. As the signal intensity increases, the red color will intensify. To adjust the settings in the advanced detector mode, use the **+** and **-** icons in the settings section.




Gain; This option amplifies the signals detected by the detector, making it easier to identify targets. Lower gain settings reduce environmental interference, providing a cleaner scan, while higher settings amplify weak signals, allowing detection of deeper and smaller targets. However, very high gain settings can increase interference.




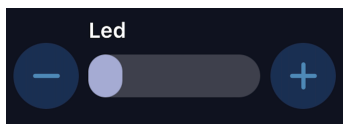
Threshold; This setting determines the minimum signal strength that the detector can detect. Depending on the ground conditions and the size of the targets you wish to detect, an appropriate threshold level should be set.



Mode; This option defines how the detector operates and offers different modes based on the device's intended use and user preferences:

First Mode (Continuous Sound Mode):  In this mode, the detector emits a continuous background sound. This sound changes in response to targets or small changes in the ground. This allows the user to detect ground variations and weak target signals more precisely.

Second Mode (Silent Mode):  In this mode, the detector only produces a short beep (tick sound) when a target is detected. When no target is detected, the device remains silent. This mode provides a simpler experience.



Led; This option allows you to adjust the RGB LEDs on the device in increments. Depending on the detected metal's signal strength, the LEDs will change color from green to red. You can set the LED level in 4 stages.

PULSE DETECTOR SCANNING MODE



Pointer Scan Mode:

The Pointer Scan mode is used to determine the exact location of the detected target. As you approach the target's location, the bars on the screen will fill up, and at the highest signal level, the graph will turn red. If the signal level is low, the graph on the screen will display green, and the bar will occupy a smaller area on the screen. Signal strength



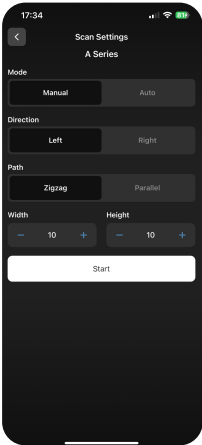
PULSE DETECTOR SCANNING MODE



3D Detector Scanning Mode:

This option allows the user to choose how the device will perform the scanning process.

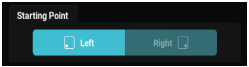
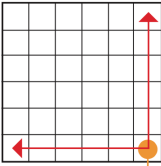
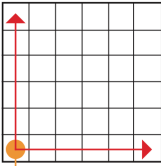
ScanningMode : Bu seçenek kullanıcıya cihazın tarama işlemini nasıl yapmasını istediğini seçme seçeneği sunar.



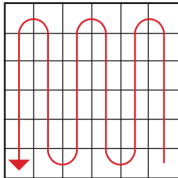
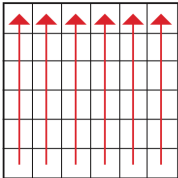
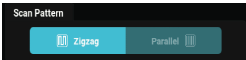
Manual:Using this option means the user needs to press the start button on the device for each scanning step.

Automatic:Using this option means the device will automatically scan each point with a static delay.

Starting point: You can set your scanning starting point from the bottom right or bottom left corner. To do this, you must select the left or right starting point. If you start the search in the lower left corner, you should proceed to the next scanning on the right. If you select from the bottom right corner, you should proceed to the next scanning on the left.

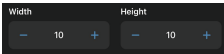


Scan Pattern:You can do your scans in zigzag or parallel pattern. You should start the scan at your starting point and end it at your ending point, as shown in the figure below. When the number of signal pulses entered for each line is complete, you should proceed to the next scanning series. The direction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

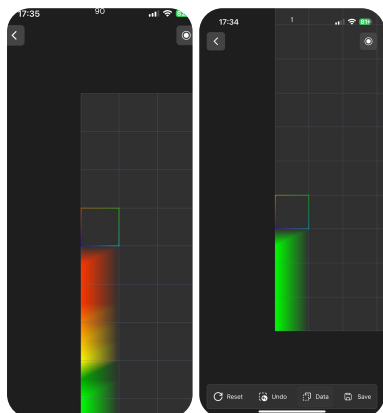


Width:Select how many measurement signals should be in each row. For example, 10 measurement signals. The distance between each measurement signal should be between 20 cm and 30 cm on average. The greater the distance, the more difficult it is to detect small objects.

Height: Enter the number of lines you want to scan based on the size of the area to be scanned. For example, 10 lines. The distance between each line should be 20 cm to 30 cm on average.



PULSE DETECTOR SCANNING MODE

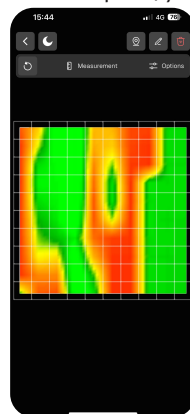
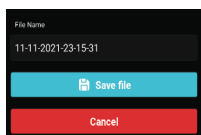


After all settings are made, press the **START** icon to start the scan. Then the scanning will begin.

The scan will continue according to the settings you made before. If manual scanning is selected, you will need to press the **START** button on the device or the data icon on the application screen for each measurement signal. If Automatic scanning is selected, you do not need to press the **START** button, each measurement signal will advance automatically. Each time a line completes, a menu will appear asking if the next scan will continue. If you wish to continue the scan, press the **OK** button, the **START** button, or the data icon on the app screen.

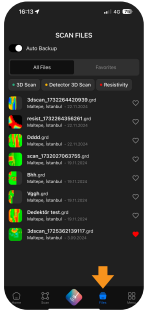
Once you start collecting data, you will see colors such as green, red, and yellow based on the measurements you obtain. All metal objects will appear red, some may appear orange, and areas with no changes or anomalies will be shown in green. Mineral-rich grounds and objects with relatively low magnetic influence will be displayed in yellow and orange. After completing the scan, you can analyze this data in detail on the analysis screen.

After completing all the lines and steps (**width and height**), a preview will be generated. On this screen, you can either save the collected data or exit without saving. If you select the "**Save**" option, you will need to enter a file name for this scan.



You can either enter a name for the scanned file or save it with the default file name. After saving the scanned file, you will be directed to the "**Files**" section. For instructions on how to analyze saved scans, refer to the Analysis section of the manual.

3D VISUALIZATION AND ANALYSIS



All completed ground scan graphics are saved in the "**Files**" section. Users can use this section to review or analyze these files. To open scanned files, go to the "**Files**" section in the main menu. In the Files menu, you can see the saved files for **3 different scan modes (MFS Sensor System, Resistivity System, and Pi Detector System)**. In this section, you can create a favorites list of your scans, view individual scan data, and organize your files. By enabling the "Auto Backup" option, your files will be stored in the cloud account you logged into within the app.

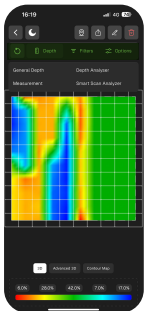
Using the icons to the right of the scan data, you can rename or **delete** the file. To analyze the scan data, tap on the file you want to open..



The 3D visualization and analysis screen offers different features for each mode. You can use different features for the 3 different scan modes (**MFS Sensor System, Resistivity System, and Pi Detector System**). Open the recorded file you wish to examine.










3D Viewer

In this screen, users can analyze data both graphically and numerically. At the top of the screen, you will find tool icons for performing graphic analysis as described below:



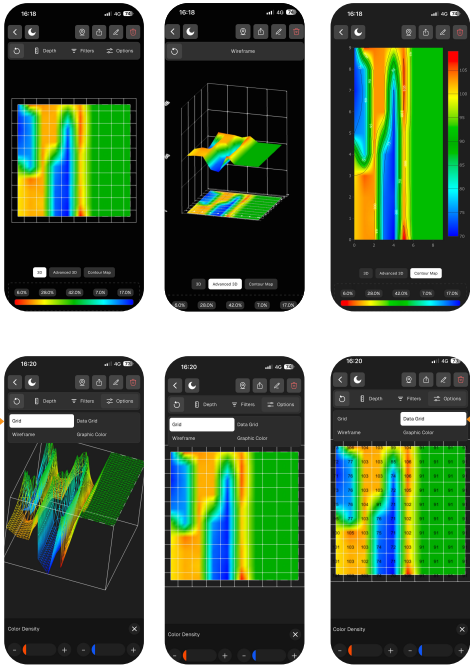
Within the app's upper bar, you can change the background color to black, white, or blue. You can also share the file with others, rename the file, and view the location where the scan was performed on the map.

Additionally, in the icons on the lower bar, you have the following options

-  **Reset:** Reset the scan screen to the top view.
-  **Depth:** Take depth measurements of the collected data and make distance measurements.
-  **Filter:** Users can toggle the red, blue, yellow, green, and light blue colors on and off in the graph.     
-  **Options:** Customize settings such as grid view, wireframe view, etc., on the graph.yapma.

“Advanced 3D”

The 3D view offers various display features. The “3D” menu, which provides standard 3D analysis, the “Advanced 3D” menu for graphical and different angle analyses, and the “Contour Map” menu, which displays the contour map of the graphs.



From the “Options” menu in the upper bar, you can switch the graph to a wireframe view, toggle the grid view on and off, and change the color settings for the graphical analysis.

3D VISUALIZATION AND ANALYSIS

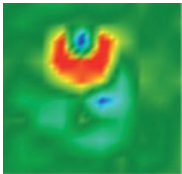
Graphical Analysis

By examining the collected data graphically and numerically, you can determine if there are any variations in the scan results.

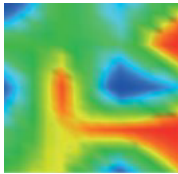
The meanings of the colors in the graph obtained from the scan results are as follows:

- **Red:** Metallic objects and objects with high magnetic effects.
- **Blue:** Underground cavities, caves, and soil fill.
- **Green:** Standard soil without any magnetic effect.
- **Orange and Yellow:** Mineral structures, mineral soils, and objects with relatively lower magnetic effects.

While analyzing the graph, you should pay attention to the colors and shapes in the graph:



Metal



mineral

Metallic objects have a distinct shape, whereas minerals are usually scattered and lack a clear shape. Metallic objects are typically red, while mineral structures are usually yellow and orange. The most important feature distinguishing metallic objects from minerals is the numerical difference found in the soil based on the collected data.

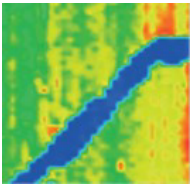
To view these numerical values, tap the "**Options**" icon in the 3D viewing function. Then tap the "Data Grid" option. There should be at least a 15-unit increase between the soil shown in green and the metallic objects shown in red in the graph. For example, if the soil grade is 210, the metallic object must have a value of at least **225-230** to be considered metallic. If there is only a small difference, this data is mineral. For new and less magnetic objects that have not been underground for long, a small increase can also occur. If there is a large difference between the soil and the magnetic objects, it is highly likely that it is a worthless metal. For example, if the soil level is **80 units** and the magnetic object is **200 units**. Metal objects that have been underground for a long time are easier to detect.

3D VISUALIZATION AND ANALYSIS

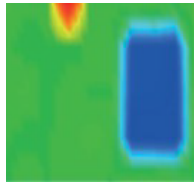
In cavity data:

Artificially created underground cavities such as tunnels, rooms, and tombs are shown in blue on the graph. If there is any collapse or soil filling in the underground cavity, the cavity data will appear in light blue, turquoise, and light green.

If you're looking for a structure with a different shape, the blue area in the graph should match this shape. For example, if you're looking for a tomb, it should have a rectangular shape and be the size of a tomb.



Tunnel

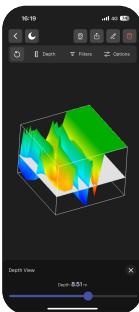
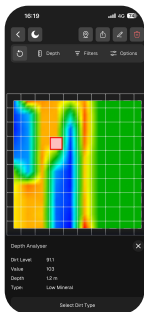


tomb

There should be at least a 15-unit difference between the ground shown in green and the cavity shown in blue on the graph.

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

If there is only a small difference of a few units, this data represents gaps created by stones or surface soil variations.



Depth Analysis:

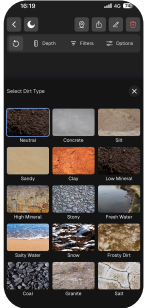
You can measure the estimated depth calculations of the data you have obtained using different modes.

With the **"Depth Analysis"** function, you can view the signal values corresponding to each square in the data, and by selecting the soil type, you can see the point-specific depth information. When you tap on the signal square you want to evaluate, you will see the values change in the window that opens at the bottom.

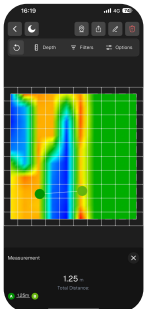
The first value you see is **"Soil,"** which indicates the ground level.

To view the total depth of the scanning area, tap on the **"General Depth"** option. In the window that opens, you can move the bar to lower or raise the depth line. These values provide you with the total general depth information. The depth information provided is based on a specific calculation. These values give you an approximate idea but are not definitive or binding.

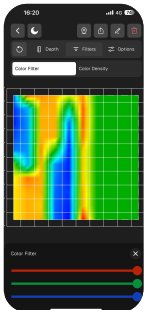
3D VISUALIZATION AND ANALYSIS



To gain insight into your scan and the soil composition, you can use the smart soil analysis function. When you tap on the “**Smart Scan Analysis**” option, your application will perform a calculation for a while, and then it will provide the results regarding your scan. The app will inform you about the type of soil scanned, such as normal soil, mineral-rich soil, or soil with cavities. If the scan is conducted over a narrow area, for example, if the number of scan rows or signals is low, the smart soil analysis function will provide warnings suggesting that you need to perform a healthier scan. For more reliable scans, you should conduct the scan over a larger area. For instance, having **10** signal counts and 10 scan lines.



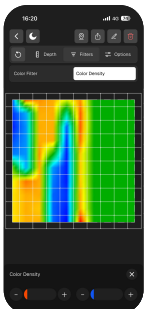
With the measurement function, you can measure the distance between any two points on the graph. When you tap on the starting point where you want to begin the measurement, a starting node is added to that point. Then, continue adding measurement nodes by tapping on the area where you want to measure. The distances between the two nodes you added will be displayed in the section below, and the total distance between all the nodes will be shown in the total distance box at the top of the window. This measurement can give you an idea about the sizes of objects, rooms, tunnels, or cavities in the scan results.



FILTERS

To further detail the data you have collected, you can use the filters. You can access the filters by tapping the filter icon on the 3D viewer screen.

Color Filter: You can reduce or remove the tones of red, green, and blue in the graph. You can enable or disable specific colors to focus on either metal or cavity data based on your search purpose.



Color Intensity: you can increase or decrease the intensity of the blue or red colors. This will make subtle differences in the values more prominent.

While performing 3D analysis with the detector system, you will observe a transition from green to red in the graph. The green areas represent the soil structure, while the orange and red areas represent metal data. The analyses mentioned above apply within the detector scanning system.



DEVICE SETTINGS



To adjust the settings on the device, go to the settings menu from the main menu. In this screen, you can view General settings, Date/Time, Language settings, and saved files..



In the General Settings menu, you can adjust the main device volume and the detector volume. You can enable or disable the LEDs, which change based on the scan data, when entering the scan menus. You can also turn the vibration function on or off.



In the System Settings menu, you can change the device's language option. You can also set the date and time.

In the Information section, you can see the device's serial number and version information.

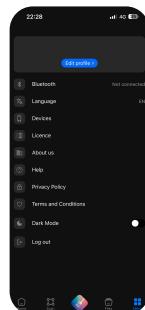


In the Files menu, you can view the 3D Ground scans you have saved on the device. You can save up to 4 different scans. Once you connect and complete the synchronization with the mobile application, the files will be automatically deleted.



MOBILE APPLICATION SETTINGS

In the mobile application settings, you can view details such as your login information, the language used in the app, license information, and device version and serial number details.



FREQUENTLY ASKED QUESTIONS



Can the device be used independently?

Yes. The product provides many functions on its built-in screen. You can perform analysis directly on the device screen in detector mode, live scan mode, and resistivity mode. For more detailed analysis and review, you can use the licensed Android and IOS software for the product. It can be used with devices running Android or IOS operating systems.

Is an internet or GPS connection required to use the device?

No internet connection is needed during scanning. However, an internet connection is required for software updates.

Can I install the software on another computer or Android tablet/phone?

Yes. You can download the Android software from Google Play Store and the IOS software from the App Store. You need to log in with your initial setup credentials on the app installed on other devices.

Is the device waterproof?

No. Avoid contact with water and use during rainy weather.

What is the battery life of the device?

The battery life is up to 6 hours with continuous use (this may vary with other models).

How long does it take to charge the device?

It takes 5-6 hours with the wall charger provided with the product and 6-7 hours with the car charger.

Charging with a power

bank may take longer, depending on the power bank's voltage and amperage.

Will the device be damaged if I don't charge the battery? Will the battery die?

If the device is not used for a long time, the Li-ion battery inside may discharge completely and become unusable. Therefore,

you should charge the device periodically when not in use.

Are accessories provided with the device covered by the warranty against malfunction and loss?

All accessories provided with the device are not covered by the warranty. The main unit of the device is covered by a 2-year international warranty.

What should I do if the device malfunctions and there is no service or authorized dealer in my area?

You need to send or bring the device to the manufacturer or the main service unit via cargo.

FREQUENTLY ASKED QUESTIONS



How does the measurement system work?

The product has multiple systems. The Magnetic Research System uses the MFS Sensor system. The detector system operates with the Pulse Induction system. The A2-Geo model uses the Geo-Electric method.

What is the maximum depth of the device?

The depth of the device varies depending on factors such as soil type, size, nature of the target, magnetic sensitivity, and time the object has been underground.

Can I find gold with the device?

With the Pulse Induction detector system, you can detect all metals, including valuable metals like gold, silver, and non-valuable metals like iron. The magnetic field measurement method detects metals, structures, bricks, caves, tunnels, water sites, graves, underground pipelines, alluvial wells, old wine cellars, and World War findings. Metals with magnetic properties that have been underground for a long time, such as iron and steel, can be easily detected. You can also find bullion coins, coins, or other treasures that have been underground for a long time and are within a metal that has magnetic properties. Gold coins, small gold objects, and other similar items buried directly in the ground can be detected using the detector mode.

Is the depth information in the app accurate?

The app provides estimated depth information based on a specific algorithm. This information is not definitive and is just an estimate.

Can I determine the size, shape, and weight of buried objects?

3D systems show the shape and dimensions of the buried object graphically, but the shapes and sizes may be misleading due to underground minerals or user errors during measurement. The weight cannot be determined.

Can the device help me find precious stones?

Diamonds, rubies, sapphires, or opals are often found combined with ores and minerals. These minerals may be represented as anomalies in the scan image.

Can I detect water with the device?

The device measures anomalies in the magnetic field. A water-filled cave, limited underground water reservoir, or underground water flow may appear as a cavity in the graphics. The A2-Geo model can detect water sources using the Geo-Electric system.

FREQUENTLY ASKED QUESTIONS



Can I scan in any direction while scanning?

Scans should always be done along the north-south axis. Otherwise, there may be errors in the data.

Why do I get different results when scanning in the same area at the same time?

Magnetic measurement methods are affected by factors such as the magnetic sensitivity of the area, sun and time variations, and starting the search from different points, which can lead to different results.

How can I be sure my device is working properly?

If the numerical values in the data are consistent and continue at a certain level, the device is working. However, if there is a standard color (such as red, blue, or green) in the graph and the numerical values remain between 0 and 5, the device may be malfunctioning.

How much area can I scan with the device?

You can scan up to a maximum of 50 lines and 50 signal pulses. To avoid errors in the scan, it's recommended to scan with at least 10 lines and 10 signal pulses, and ideally, 20 lines and 20 signal pulses for optimal measurements.

How high should I keep the device above the ground?

The distance between the ground and the sensor should be up to 15 cm and must remain constant during scanning.

How fast can I scan with the device?

You should scan at a normal walking speed.



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