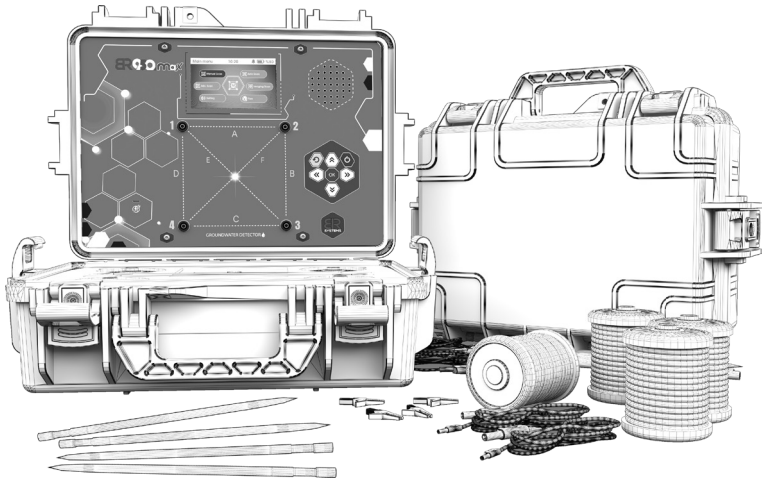
ER950 MAX

User MANUAL

GROUNDWATER DETECTOR

ER SYSTEMS



BR 950 MAX

User Manual

Safety Information

The internal components of this detector are highly sensitive and precise. Please follow the instructions below carefully to ensure your safety and maintain the proper functioning of the detector.

▶ Before Operation

- Read this manual thoroughly several times to fully understand all instructions, as improper use may cause damage or malfunction of the device.
- Strictly adhere to all warnings and guidelines provided in this manual before starting any search operation.
- If you encounter any difficulty during setup or assembly, it is recommended to contact the technical support team for assistance.

▶ During Use

- Do not use the detector in environments with high humidity or strong static electricity.
- Avoid exposing the detector to temperatures exceeding 50 °C or to direct sunlight for prolonged periods.
- Always ensure that the electrical outlet used for charging matches the voltage indicated on the original charger.
- Do not use non-original chargers or accessories to prevent battery damage or circuit failure.
- Make sure to power off the detector completely before storing or transporting it to avoid unintentional power consumption.

▶ After Use

- Return all components to the carrying case to protect them from shocks or scratches.
- Store the detector in a dry, dust-free location at a moderate temperature away from humidity.

Safety Information

In the Following Cases, Do Not Operate the Detector and Contact Technical Support Immediately:

- If any liquids have entered the detector.
- If the detector has been exposed to excessive moisture or water.
- If the detector has fallen or shows visible signs of physical damage.
- If the detector fails to operate according to the instructions in this manual.

Notes

- Keep a copy of this manual for future reference, as it serves as the primary operational guide.
- Adhering to all instructions and safety precautions in this manual is the key step to achieving the best performance from your detector and ensuring accurate results throughout all stages of operation and exploration.

Introduction

Thank you for choosing BR detectors — a globally recognized brand and a leading name in the field of precious metal and groundwater detection technologies. BR systems have earned their distinguished reputation through exceptional accuracy and reliance on the latest scientific and technical innovations.

The BR 950 MAX detector has been specifically designed to meet the needs of researchers, geologists, and drilling companies, providing practical and reliable solutions for groundwater exploration and identification of water sources.

The BR 950 MAX you now possess represents the latest generation of BR's advanced developments. It combines exceptional accuracy in results with complete ease of operation, making it a powerful and efficient partner in all field exploration missions, thanks to its integration of multiple advanced detection systems.

Its key capabilities allow users to:

- **Precisely locate underground water sources.**
- **Measure water depth with high accuracy up to 1000 meters.**
- **Analyze salinity levels to determine water quality.**
- **Display and analyze results visually through 2D and 3D imaging systems.**

The detector features a modern multilingual interface and a robust, field-ready design built to withstand harsh operating conditions.
It is also equipped with a high-capacity battery that ensures extended continuous operation hours, guaranteeing reliability and performance during all stages of exploration.

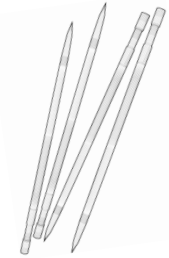
Technical Specifications

Specification	Description
Operating Principle	Signal analysis and data processing with conversion into readable and visualized results.
Display Type	5-inch color TFT screen, WVGA 480 × 800 resolution, 24-bit color depth.
Battery	Internal – Lithium-Ion – 7.4V – 7000 mAh (52W).
Power Consumption	Average consumption: 400 mA.
Battery Operating Time	Provides stable performance lasting more than 12 continuous hours on a full charge. Actual operation time may vary depending on screen brightness, audio level, and the number of search operations performed.
Power Adapter	Input: 100–240V AC; Output: PD 12V / 1.5A.
Languages	Supports 8 languages.
Detector Weight	7.4 kg.
Weight (with packaging)	7.9 kg.
Detector Dimensions	44.5 × 33 × 17.5 cm.
Outer Package Dimensions	45.5 × 35 × 20 cm.

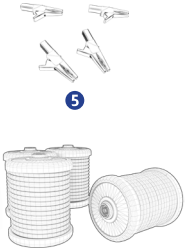
Detector Accessories

The BR 950 MAX detector consists of a set of essential components and field accessories designed to facilitate the search process and ensure maximum accuracy during operation. Please verify that all accessories are present before use.

❶



❷



❸

❹

❺

❻

❶ **Main control unit with display**

❷ **Four ground probes** (30 cm each)

❸ **Four wire reels** (23 meters each)

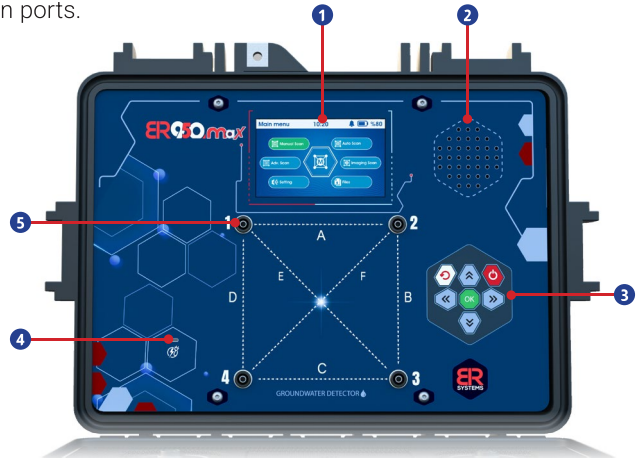
❹ **Four short connection cables**

❺ **Four metal clamps for probe fixation**

❻ **Fast Type-C (PD) charger**

Control Elements

The BR 950 MAX detector features an intuitive control layout that allows users to operate all functions with precision and ease. Below is a description of the primary control buttons and connection ports.



1 Display Screen
Shows menus, results, and analytical graphics during scanning operations.

2 Audio Output
An external speaker.

3 Control Panel
Contains navigation, confirmation, and back buttons.

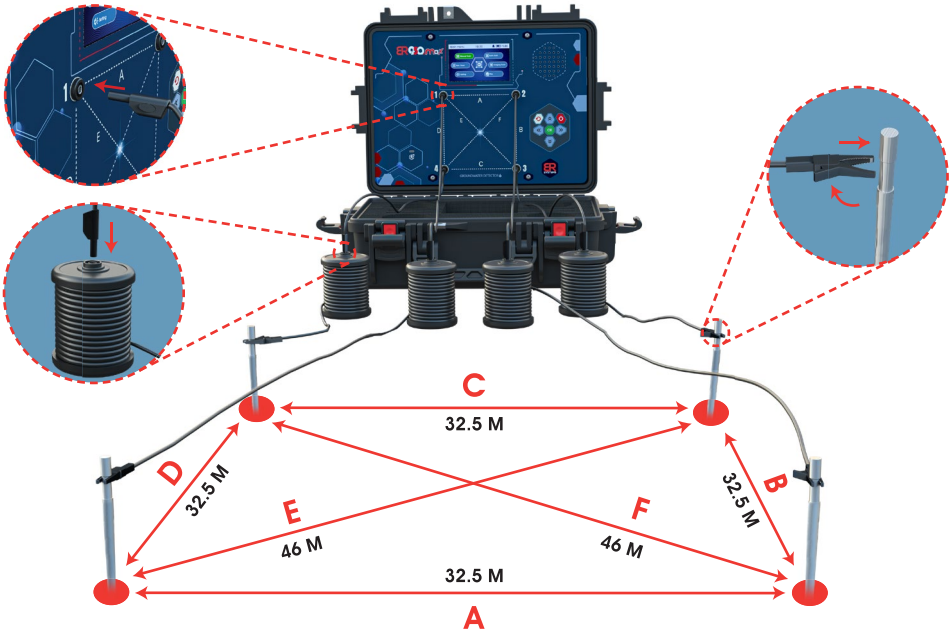
4 Charging Port
For connecting the original Type-C (PD) charger.

5 Probes Connector
Used to securely connect the ground probes cables to the detector.

Control Elements

Power Button	Turns the detector ON or OFF.
OK Button	Confirms and executes selected commands.
Back Button	Returns to the previous menu or cancels the current operation.
Arrow Buttons	Allow the user to move between menus, settings, and operational options during use.

Connection



Pre-Scan Guidelines

To ensure high accuracy during scanning and signal analysis, it is recommended to follow the guidelines below during operation:

❶ Battery Charging

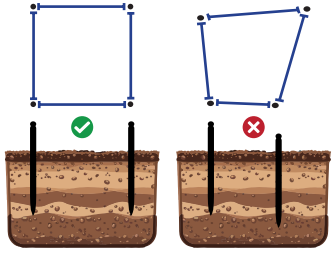
Make sure the battery is fully charged before beginning field operations to guarantee the longest possible runtime.

❷ Avoiding Interference Sources

Do not operate the detector near power lines, generators, or any strong electronic devices that may cause signal instability.

❸ Installing the Probes

Insert the ground probes vertically and evenly into the soil to maintain signal balance between the four points.



❹ Soil Moistening

If the soil is extremely dry, lightly moisten the area around the probes with a small amount of water before scanning.

This improves electrical conductivity and enhances measurement accuracy.

Pre-Scan Guidelines

❺ Connection Check

The detector automatically checks all probe connections before starting any new scan to ensure system readiness and result accuracy.
If an error symbol ⊗ appears, it means one of the probes is improperly connected or has a weak signal, and results for that probe will not be displayed.

❻ Avoid Touching the Cables

Do not move or touch the cables and probes during scanning to avoid data deviation or signal distortion.

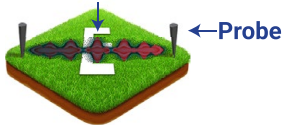
❼ Manual Scanning

When using the Manual Scan System, only two probes are required to be inserted into the ground to form a line for targeted analysis.

❽ Scanning with Other Systems

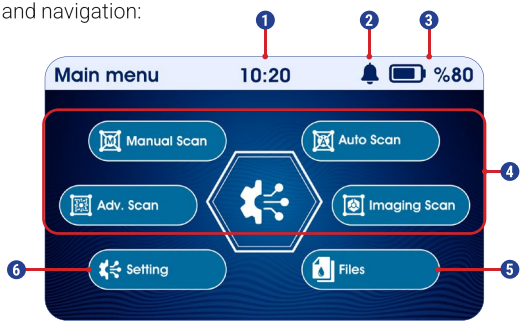
When using Automatic, Advanced, or Imaging Scan Systems, insert four probes to form a regular square. Connect the probes using the wire reels and secure them with the provided metal clamps.

Line between the probes



Main User Interface

The main user interface of the BR 950 MAX detector serves as the central control hub, providing quick access to all operational functions and scanning systems. The interface consists of several key elements that simplify operation and navigation:



1 Time Display
Displayed at the top of the screen to help the user monitor the duration and timing of scanning operations.

2 General Sound
Displays the current sound status and can be adjusted through the detector's settings menu. When the sound level is reduced to the minimum, the icon switches to Mute mode.

3 Battery Status
The battery icon appears in the upper corner, indicating the current charge level and issuing a low-power alert when needed.

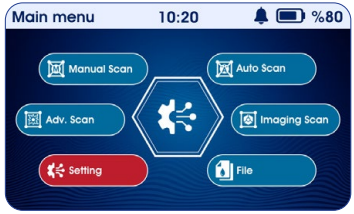
4 Scan Systems
Provides access to the four search modes Manual, Automatic, Advanced, and Imaging allowing the user to select the desired detection system.

5 Saved Files
A dedicated section for viewing results from previous scans, with the ability to open or delete files as needed.

6 Detector Settings
Opens the settings menu, allowing the user to configure the language, date and time, sound, display, and factory reset options.

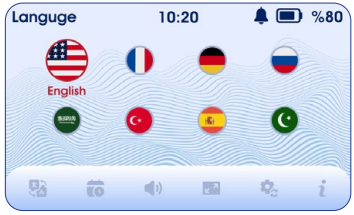
Settings

The Settings Menu in the BR 950 MAX detector allows users to configure all operational parameters according to their working environment and preferences. The menu includes the following options:



Language Selection:

The detector supports eight languages:
(English - French - German - Russian - Arabic - Turkish - Spanish - Urdu).
Select the desired language using the navigation arrows, press OK to confirm, and then press ⟲ to save the language settings.



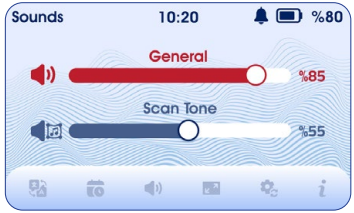
Date & Time Adjustment:

Set the date and time values using the arrow keys ⌃ ⌄ ⟨ ⟩ to increase or decrease numbers, then press ⟲ to save the new settings.

Settings

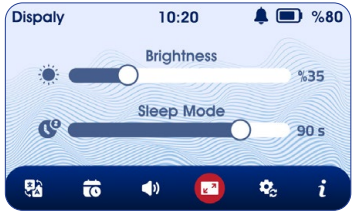
Sound Adjustment:

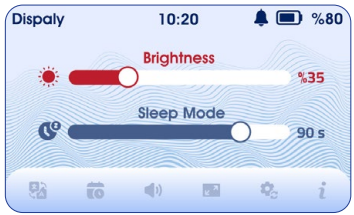
Control the general sound level and search tone using the left and right arrow keys then press to save changes.



Display Adjustment

Brightness Mode: Adjust the display brightness level using the arrow keys until the desired intensity is reached.
Sleep Mode: The detector allows you to set an automatic sleep delay to conserve power when idle. This feature can also be fully disabled if preferred.
After adjustment, press to save display settings.





Settings

Reset Settings

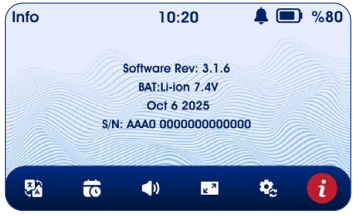
Factory Reset: Resetores the detector to its original factory configuration, erasing all saved scan results and custom settings.

Clear Memory: Completely deletes all stored data and clears the internal memory. A confirmation message will appear before the process is finalized.

Info

Displays essential system information, including

- Software Version
- Battery Information
- Software Date
- Serial Number

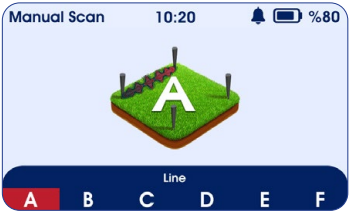


Scan Systems

The BR 950 MAX detector includes four main scanning systems, offering high flexibility and comprehensive coverage of different groundwater detection methods ensuring both precision and ease of use.

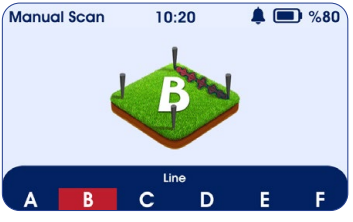
1 Manual Scan System

- This is the fastest and simplest search mode, requiring only two probes instead of four.
- The probes are inserted into the ground to form a scan line for independent analysis.
- The detector provides instant results including: (Water Type - Salinity Level - Depth) along the selected line.
- Ideal for preliminary surveys or for confirming the presence of water in a specific location due to its simplicity and speed.



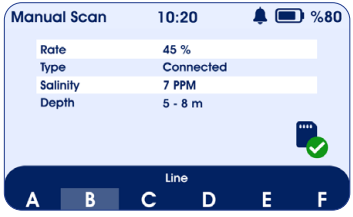
Operation Steps:

1. Select the scan line between points (A - B - C - D - E - F) using the arrow keys « »
2. Press OK to start the scan.
3. The result table will display: (Average - Type - Salinity - Depth).



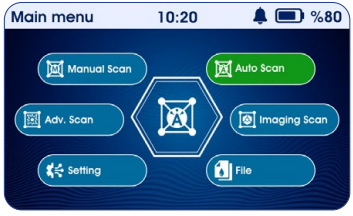
Note

To save the results, use the Up arrow to the save icon until it turns red then press OK A confirmation mark to confirm.



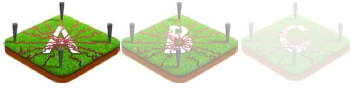
2 Automatic Scan System

- Performs a complete scan across all six lines formed by the four probes (sides + diagonals).
- Provides precise results for each line independently.
- Commonly used by field researchers for its quick operation and accuracy.



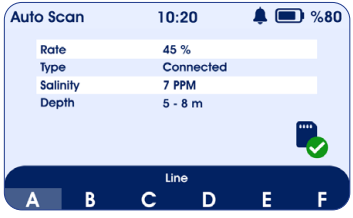
Operation Steps:

1. Press OK to start the automatic scan.
2. The detector checks all probe connections before scanning **(refer to Pre-Scan Guidelines, page 10)**.
3. If a disconnected probe is detected, a warning icon will appear with the option to ***"Recheck"*** or ***"Continue"***.
4. Use the arrow keys to select ***"Continue"***, and the detector will automatically begin the automatic scanning process.
5. Once the scan is complete, results are displayed in a table showing Average - Type - Salinity - Depth.



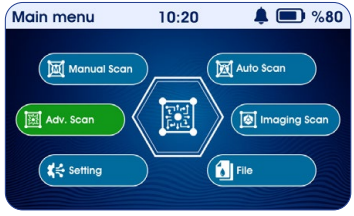
Note

To save the results, use the Up arrow to the save icon until it turns red then press OK A confirmation mark to confirm.



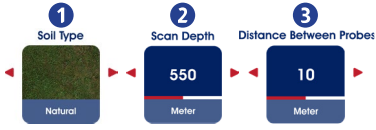
3 Advanced Scan System

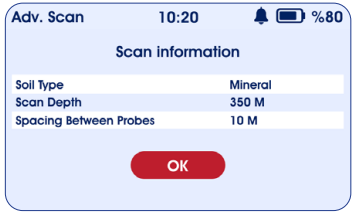
- Designed for experts and professional researchers.
- Allows full manual control over all scan parameters for maximum precision..
- Provides reliable results, especially in complex geological terrains.

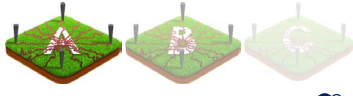


Operation Steps:

1. Use the arrow keys « » to select the soil type: (Natural - Mixed - Mineral - Sandy - Clayey - Rocky), then press OK to proceed to the next setting.
2. Set the desired scan depth (up to 1000 meters).
3. Set the distance between probes (from 5 to 16 meters).
4. A confirmation table will appear showing the selected settings before starting the scan
5. Review the parameters and press OK to start.
6. The detector checks all probe connections before scanning **(refer to Pre-Scan Guidelines, page 10)**.
7. The detector will automatically start the scanning process, and the results for each line will appear individually in a table showing the following parameters: Average - Type - Salinity - Depth. You can navigate between the results using the Right and Left « » arrow keys

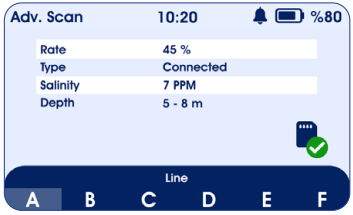






Note

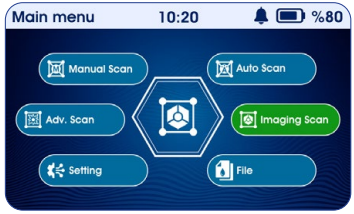
To save the results, use the Up arrow to the save icon until it turns red then press OK A confirmation mark to confirm.



Search Systems

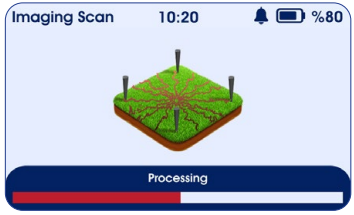
4 Imaging Scan System

- Provides an advanced **2D** / **3D** visual representation of underground structures.
- Ideal for obtaining a clear visual analysis of water locations and distribution.
- Enables full 3D interactive control — rotation, zoom, and cross-sectional views.



Operation Steps:

1. Press OK to begin the imaging scan.
2. The detector will first check that all probes are properly connected **(refer to Tips Before Starting the Scan, page 10)**.
3. The scan starts, displaying a 2D image on the screen..
4. To analyze a target, press OK on ***"Target Test".***

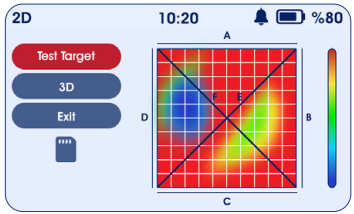


Viewing Results

▶ **First: 2D Mode**

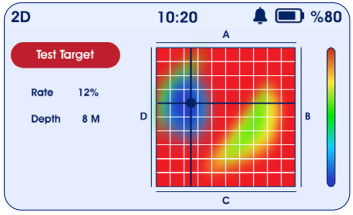
Displays a color-coded ground map:

- **Red** = Low or no water level.
- **Green** = Medium water level.
- **Blue** = High water level.



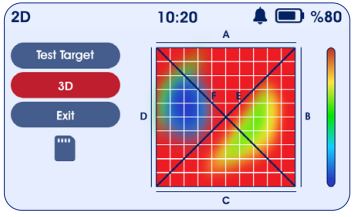
Target Test

1. Select ***"Target Test"*** by pressing OK
2. Use the arrow keys to move within the image and read the detailed values (Average – Depth).
3. To return to the previous menu, press the Back button



▶ Second: Three-Dimensional Mode (3D)

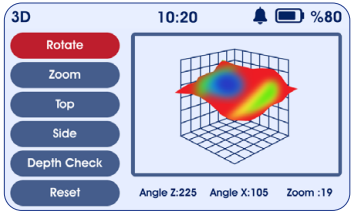
This mode allows a three-dimensional display of the target with interactive tools for full control of the view.



View the Graph

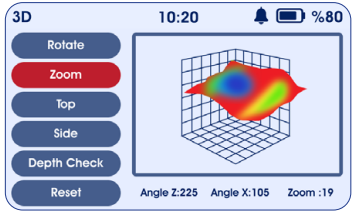
Rotate

1. Select 3D, then choose ***"Rotate"*** using the arrow keys, and press OK
2. Use the arrow keys to move the image in all directions and view the angles through the X and Z axes.
3. When finished, press OK to redraw the result.
4. then Back to return to the menu.



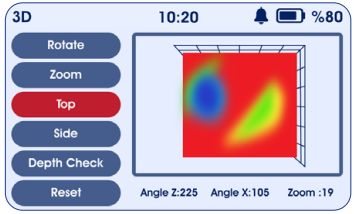
Zoom In and Out

1. Select ***"Zoom"*** and pres OK, then press OK
2. Use the arrow keys to zoom in and zoom out the image.
3. To adjust the viewing angle, use the arrow keys
4. When finished, press OK to redraw the result
5. then Back to return to the menu.



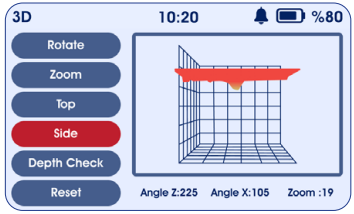
Top View

1. Select ***"Top"*** and press OK to display the image from above.
2. When finished, press OK to redraw the result.



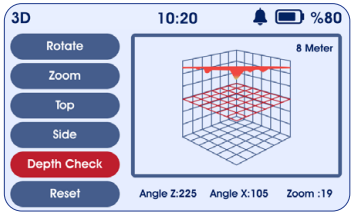
Side View

1. Select ***"Side"*** and press OK
2. The detector displays a side section of the 3D scan from one of the scan directions, and you can switch between them using the arrow keys
3. Then press Back to return to the menu.



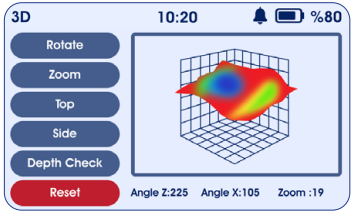
Depth Check

1. Select ***"Depth Test"*** and press OK
2. Use the arrow keys to move the central grid, which represents the depth indicator.
3. The detector displays the distance in meters to determine the water level accurately.
4. When finished, press OK to redraw the result.
5. Then Back to return to the menu.



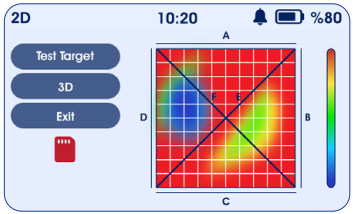
Reset

1. Select ***"Reset"*** and press OK
2. The detector resetores all settings (rotation, zoom, angles) to the default state.



Note

To save the results, use the arrow keys to highlight the Save icon (it will turn red), then press OK A confirmation mark Saved will appear, indicating that the data has been successfully stored.



To Exit the System

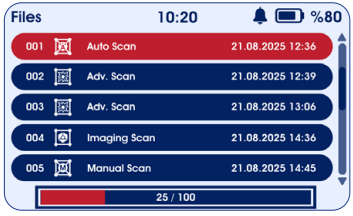
Press ***"Exit"*** to display a confirmation message.

Saved Files Management

The BR 950 MAX detector allows users to manage all previously stored scan data and results, with the ability to easily review or delete files directly from the main interface.

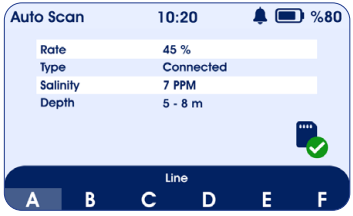
Viewing Saved Files

1. From the main menu, select ***"Files"***.
2. Use the arrow keys to navigate through the list of recorded files.
3. Press OK to open the selected file and view its results.
4. Results can be displayed in table or graph form, depending on the scan system used.



Note

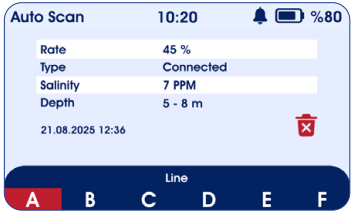
Files are automatically saved after each scan when the Save option is enabled in the selected system.



Saved Files Management

Deleting Files:

1. To delete a file, navigate to the Delete icon using the arrow keys until it turns red.
2. Press OK to confirm deletion.
3. A confirmation prompt will appear with two options
   - **Yes:** Permanently delete the file.
   - **No:** Cancel the operation.



Additional Notes:

- It is recommended to organize and manage files after each field scan to simplify data retrieval.
- All stored data can be erased at once using the Clear Memory option in the Settings Menu.
- File names are automatically generated by the system and include the scan date and time for easy identification.

Battery & Charging

The BR 950 MAX detector operates on a rechargeable Lithium-Ion battery, designed for long life and stable performance even under harsh operating conditions. The detector's internal power system ensures balanced energy distribution across all modules, allowing for continuous use over extended periods without interruption.

Charging:

- When the battery level becomes low, the detector will display an on-screen notification indicating the need for recharging.
- Always use the original Type-C (PD) charger supplied with the detector to prevent damage to the battery or power circuitry.
- When the charger is connected, a charging icon appears on the battery indicator to show that charging has begun.
- It is recommended to disconnect the charger once charging is complete to avoid overcharging.

Charging and Operating Duration:

- Charging and operating time vary depending on working conditions, display brightness, signal strength, and the selected scan system.
- Always fully charge the battery before starting any field operation to ensure optimal performance and stable signal processing.

Battery & Charging

Battery Care and Maintenance:

- Do not expose the detector to direct sunlight or high temperatures during charging or storage.
- If the detector is not used for a long time, recharge it periodically to maintain battery efficiency.
- Do not use unapproved power sources such as non-original fast chargers or power banks.
- Always ensure the charging port is clean and free from moisture or dust.

Battery Indicator:

- The battery icon is always visible on the main display, showing the current charge level.
- When the battery is nearly depleted, a visual and audible alert will notify the user to recharge.

Warranty Terms

- The BR 950 MAX detector is covered by a 3-year warranty against manufacturing defects that may occur under normal operating conditions.
- The warranty does not cover damage caused by misuse, improper handling, or the use of non-original accessories or chargers.
- It does not apply to damage resulting from drops, impacts, excessive humidity, or direct exposure to water.
- Any modification or repair carried out outside the company's authorized service centers will immediately void the warranty.
- The original purchase invoice or warranty card must be presented when requesting service.
- The company is not responsible for any data or scan results lost during maintenance procedures.

Warranty Activation:

To activate your warranty, register your detector on the official company website: brdetector.com/device-registration

Once registration is complete, your warranty will be automatically activated, making your detector eligible for full technical support and maintenance services.

Contents

Safety Information 02
Introduction 04
Technical Specifications 05
Detector Accessories 06
Control Elements 07
Connection 09
Pre-Scan Guidelines 10
Main User Interface 12

Settings 13
- Language 13
- Date & Time 13
- Sound 14
- Display 14
- Reset Settings 15
- Info 15

Scan Systems 16
1. Manual Scan System 16
2. Automatic Scan System 18
3. Advanced Scan System 20
4. Imaging Scan System (2D & 3D) 22

Saved Files Management 26
Battery & Charging 28
Warranty Terms 30

Notes

Notes

Contact Information

For inquiries regarding purchasing, technical support, or warranty services, please contact us through one of the following channels:

+1 480 409 41 19
info@brdetector.com
www.brdetector.com

BR SYSTEMS

ER SYSTEMS

info@brdetector.com