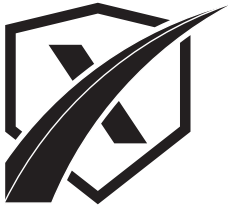
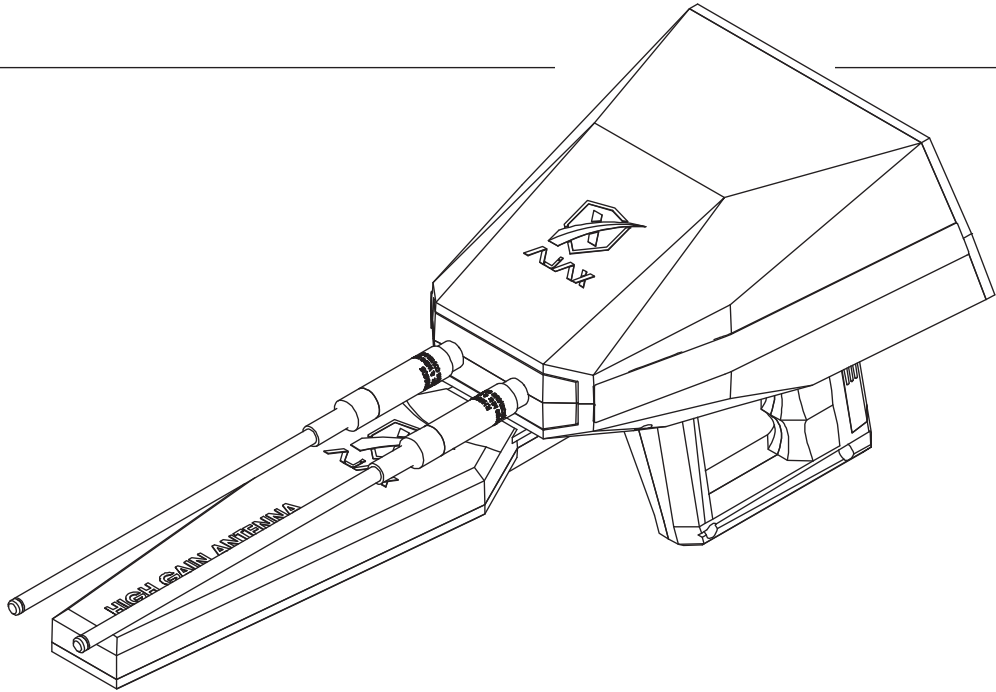




AJAX
DETECTION TECHNOLOGY

User Manual



AJAX

DETECTION TECHNOLOGY

ELECTRA

USER MANUAL

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Safety Information

The components included in this package are prone to damage from electrostatic discharge [ESD]. Please adhere to the following instructions to ensure successful device assembly.



Ensure that all components are securely connected. Loose connections may cause the device to not recognize a component or fail to start.

Hold the device firmly when assembling or operating.

It is recommended to discharge yourself of static electricity by touching another metal object before handling the device.

Store the device in an electrostatic free environment whenever the device is not in use.

Do not assemble or operate the device before reading the user manual. This might cause permanent damage to the components as well as injury to the user.



If you need help during installation step, please consult support via phone or Online help-desk.



Always turn off the device before storing the device.

Keep this user manual for future reference.



Keep this device away from humidity.

Make sure that your electrical outlet provides the same voltage as is indicated on the Charger before connecting to the electrical outlet.

All cautions and warning on the device and in the user

manual should be noted.

If any of the following situations arises, get the device checked by service personnel:

Liquid has penetrated into the device.

The device has been exposed to moisture.

The device does not work well or you can not get it work according to user manual.

The device has been dropped or damaged.

The device has obvious sign of breakage.

Do not leave the device in an environment above 60°C (140°F), it may damage the device.



Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **AJAX websites:**

The AJAX website provides updated information on AJAX hardware and software products. Refer to the AJAX contact information.

2. **Optional documentation:**

Your product package may include optional documentation, such as warranty fliers, that may have been added by your dealer. These documents are not part of the standard package.

Introduction

- ELECTRA works on scientific systems and advanced technologies with high level performance to detect diamond and gems underground for depths up to 100 meters by using the modern search systems provided, which gives the user comprehensive search interface and accurate tracking for the target's location and track.
- The device offers a list of parameters, in which the required target's type can be searched with search distance and depth selection prior to the search process.
- The ease of use and detection in Electra is one of its most important features in addition to the small size, high precision in performance.
- This device has two detection systems:
 1. Long-range detection system (Manual)
 2. Long-range detection system (Automatic)

Thank you for purchasing the AJAX ELECTRA detection device.

This quick Start section provides demonstration about how to assemble your device .

Some of the installations also provide video demonstrations. Please link to the URL to watch it with the web browser on your phone or tablet. You may have even link to the URL by scanning the QR code.

Specification Summary

AJAX Detection Technology has been working on an innovation in detection field to expand the horizons and opportunities for new experience leading to efficient work-flow.

Research Principle	Multi-detection systems and functions, with 2 optional systems
Operating Principle	Processing data and digital signals into visual and audio results
Processor Architecture	MIPS 32
Operation processor	M4K™ Core
Display Screen	TFT Color LCD, 800 x 480 WVGA, 16-bit color depth
Battery	Li-ion 7.4 volts, 3300 mAh
Power Rating	400 mA
Battery Endurance	Typical usage time 5 hours*
Power Adapter	240-100 VAC / 15 VDC
Storage	1 GB / Saves up to 500 scans per system.
Sound	High quality sounds, 32 KBIT/S, MP3
Notifications	Sound and tactile feedback
Languages	Multilingual User Interface with 8 supported languages.
Date and Time	Real Time Clock
Login Restriction	Configurable PIN.
Dimensions	49x21x15 cm
Overall Dimensions	54x50x20 cm
Package Total Weight	3.5 kg
Assembly Weight	1 kg
Operating temperature	From -10° C to 60° C (14° F - 140° F)
Storage temperature	From -10° C to 80° C (14° F - 176° F)
Humidity	Can be stored and operated at relative humidity level up to 90%.

* Typical battery endurance is subjected to battery life degradation and environmental factors.

Package Contents

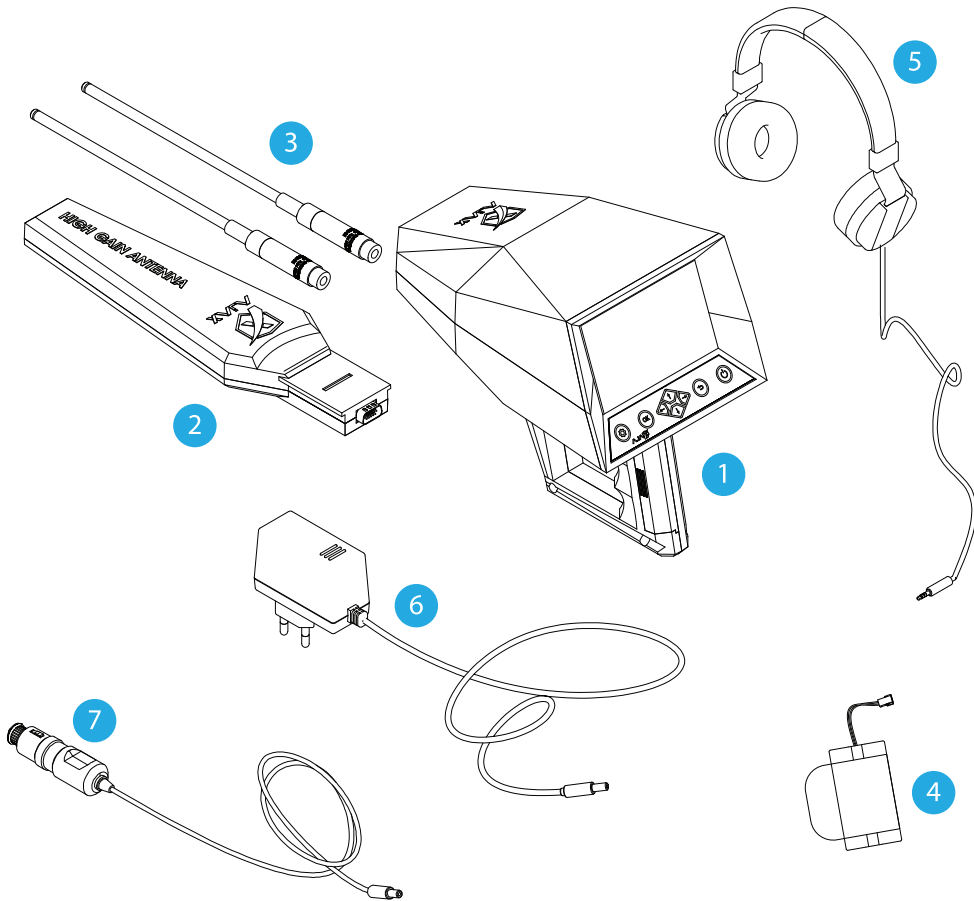


figure 1 -Package Contents

Package Contents

Check your device package for the following items:

1	Main Unit
2	High Gain Antenna
3	2x Roaming Antenna
4	Battery Pack
5	Headphones
6	Charge Adaptor
7	Car Charger Adaptor

- The items supplied with the device and any available accessories may vary depending on the region or service provider.
- The supplied items are designed only for this device and may not be compatible with other devices.
- Appearances and specifications are subject to change without prior notice.
- You can purchase additional accessories from your local AJAX retailer. Make sure they are compatible with the device before purchase.
- Use only AJAX-approved accessories. Using unapproved accessories may cause the performance problems and malfunctions that are not covered by the warranty.
- Availability of all accessories is subject to change depending entirely on manufacturing companies. For more information about available accessories, go to the AJAX website.

Overview

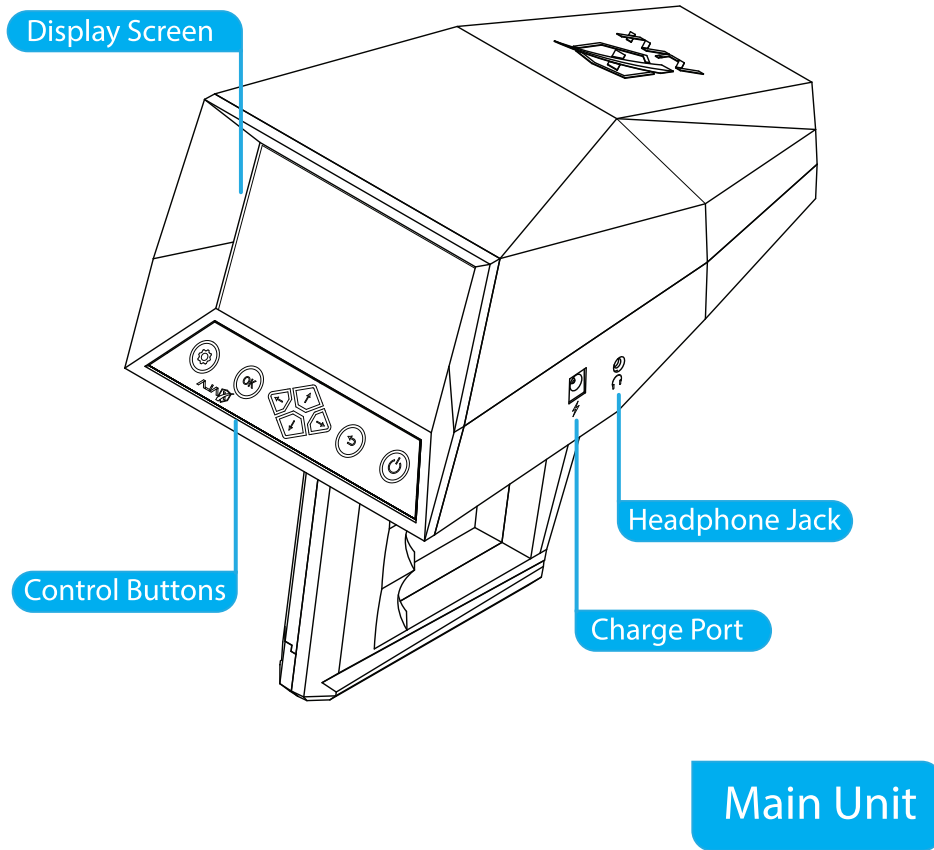


figure 2 -Device Overview

Hard Keys

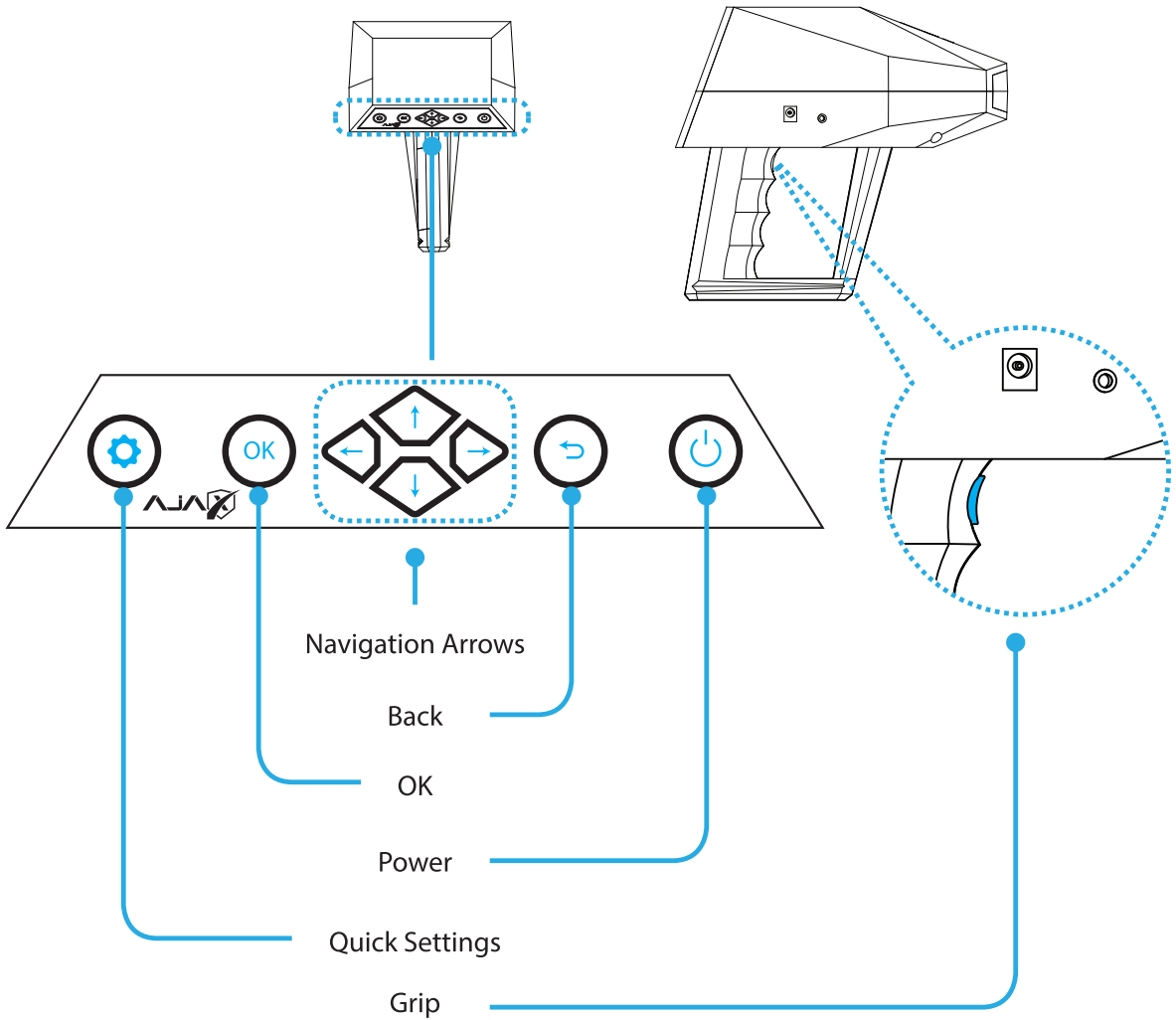


figure 3 -Hard Keys

Hard Keys

Key	Function
Power	<ul style="list-style-type: none">• Press and hold to turn the device On or Off.
OK	<ul style="list-style-type: none">• Confirm/Enter the selected option.
Back	<ul style="list-style-type: none">• Go to previous menu, cancel.
Navigation Arrows	<ul style="list-style-type: none">• Navigation through the device interface.
Quick Settings	<ul style="list-style-type: none">• Press to drop the quick settings menu.
Grip Key	<ul style="list-style-type: none">• Multi-purpose key for the ease of access while searching.

Turning the device on and off

Press and hold the Power key for a few seconds to turn on the device.

When you turn on your device for the first time or after performing a data reset, follow the on-screen instructions to set up your device.

To turn off the device, press and hold the Power key.

Follow all posted warnings and directions from authorized personnel in areas where the use of wireless devices is restricted, such as airplanes and hospitals.

Battery Assembly

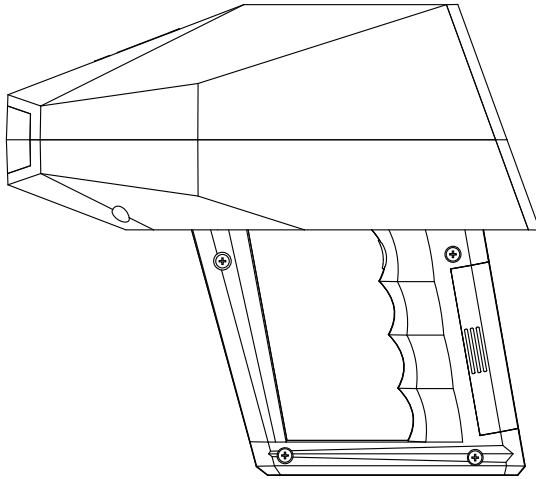
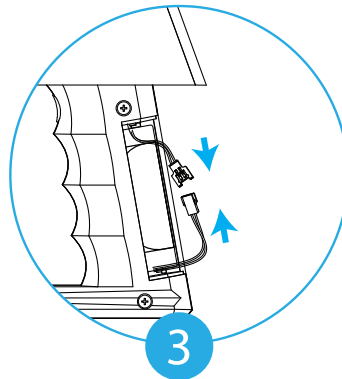
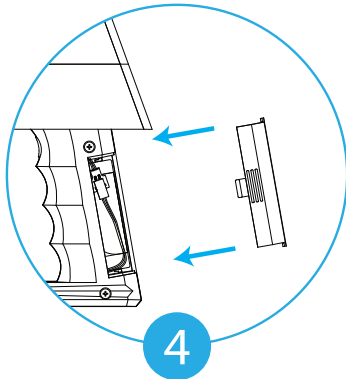
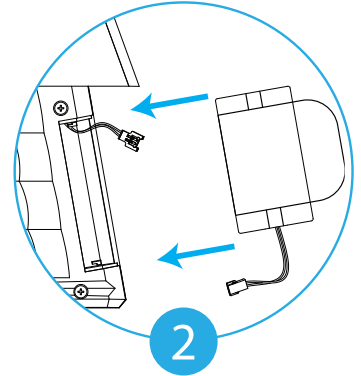
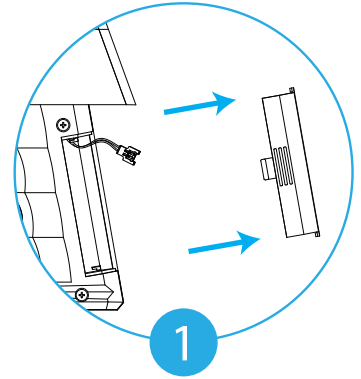


figure 4 -Battery Assembly



- 1- Press firmly at the ridges and push outwards to remove the battery cover.
- 2- Insert the battery pack inside the compartment.
- 3- Connect the wires and make sure they are securely attached.
- 4- Insert the connector inside the compartment and put the cover back on the grip.

Assembly

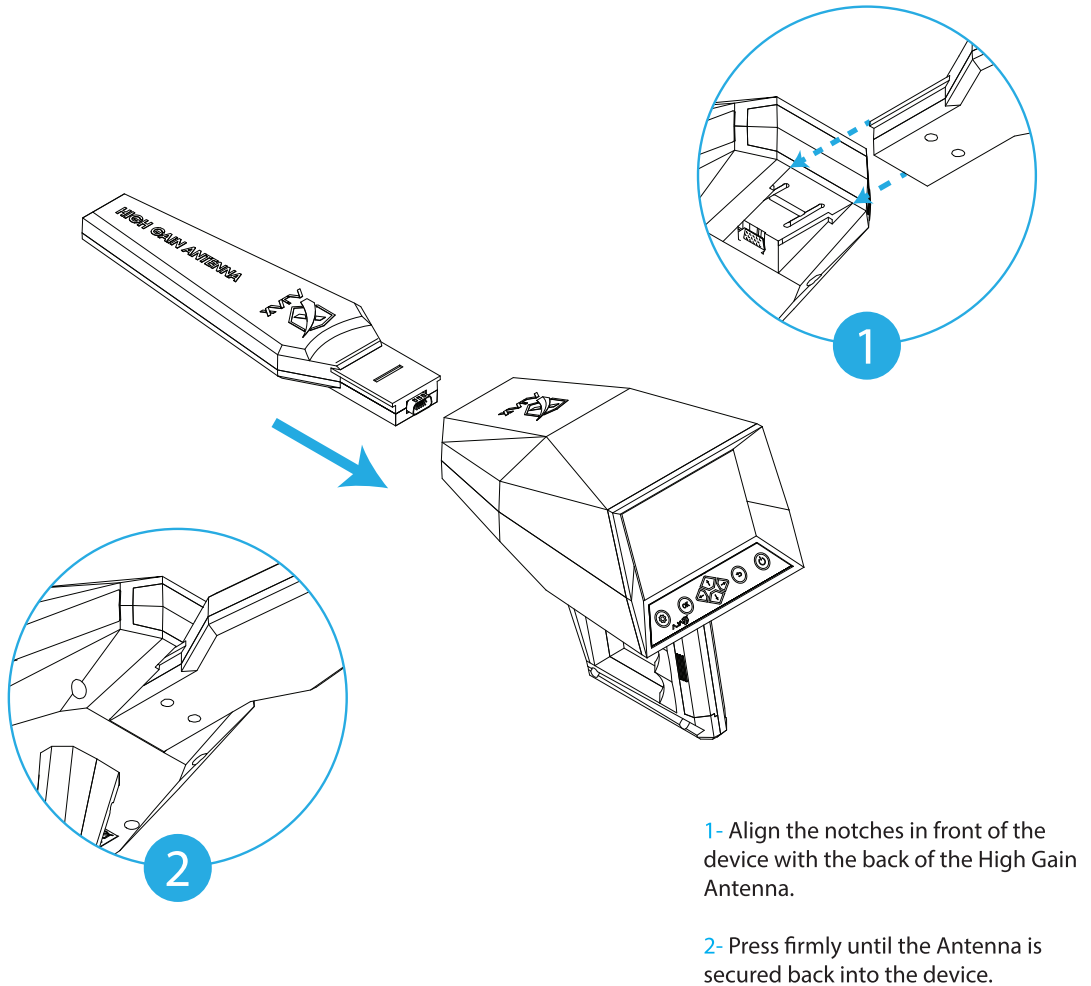
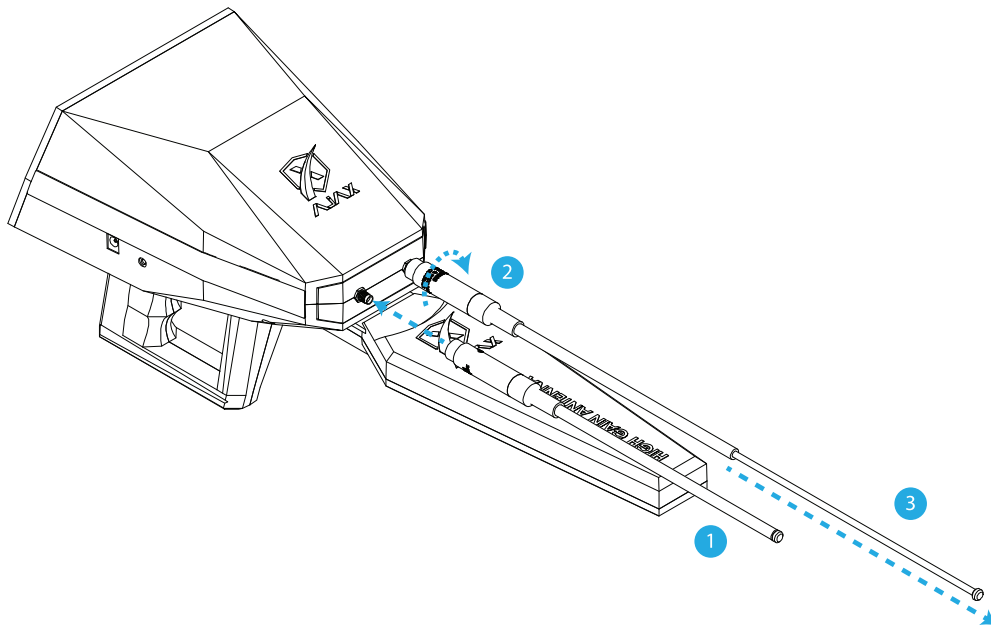


figure 5 -High Gain Antenna Assembly

Assembly



- 1- Insert the antennas into the connectors located in front of the main unit.
- 2- Screw the antennas into the connector securely.
- 3- Grab the tip of the antenna and extend it.

figure 6 -Roaming Antennas Assembly

Initial setup


When running the device for the first time or after performing a data reset, follow the on-screen instructions to set up the device.

- The initial setup procedure may vary depending on the device's software and your region.

1 Turn on the device.

Press and hold  to turn the device on

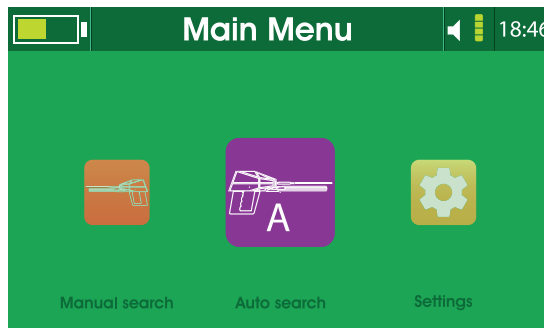
2 Select a language.

Select your preferred device language and select .

3 Set Time and Date.

Press   to move, and   to change values.

After setting the parameters the Main Menu will show on the display.

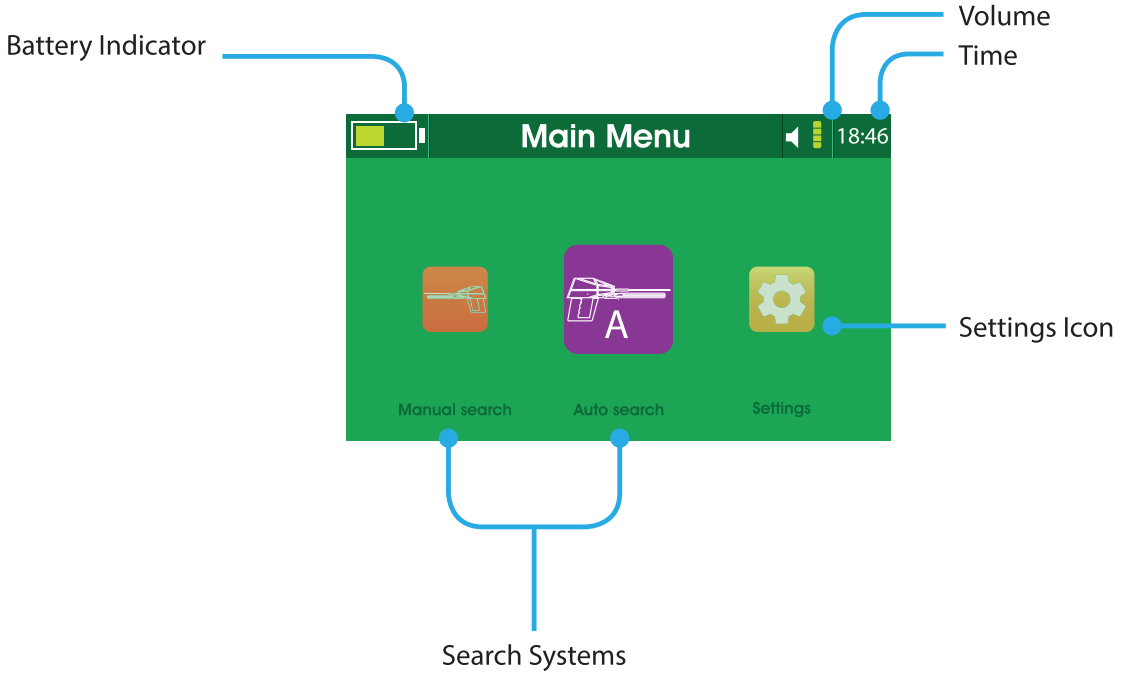


Note:

The time format is 24h (hh:mm) e.g. 19:42

The date format is day/month/year (DD/MM/yyyy) e.g. 30/03/2019.


Main Menu



Settings

Language

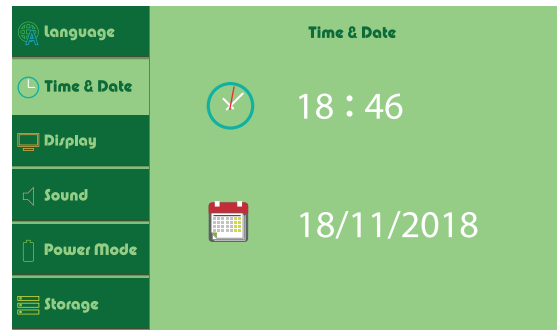
The device supports 8 different languages for the interface (English, French, German, Spanish, Italian, Russian, Turkish and Arabic)

Select language and press  to set the language to the device.



Time and Date

Press   to move, and   to change values.



Note:

The time format is 24h (hh:mm) e.g. 19:42

The date format is day/month/year (DD/MM/yyyy) e.g. 30/03/2019.

Settings

Display

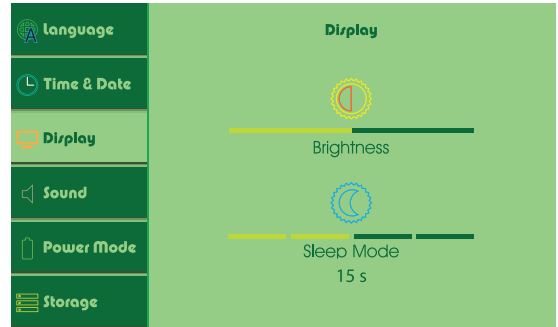
Brightness:

Move the brightness slider to adjust the brightness.
The value is adjustable from 0 to 100% brightness in a 1% increments.
Maximum brightness is 250 nits.

Sleep Mode:






Set the automatic dimming for the brightness to preserve power.

This setting can be set to 15, 30, 45 or 60 seconds, or it can be turned off completely.



Settings

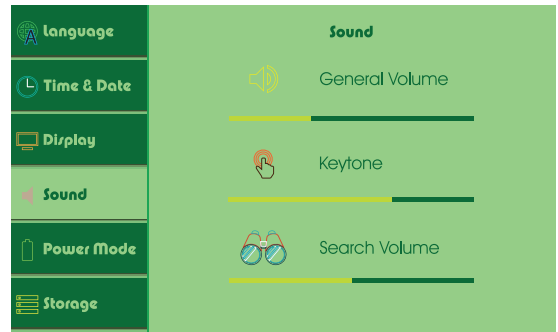
Sound

Press   to move the cursor, press   to change the values, and press  to change mode.

I- General Volume:

This setting controls the volume for the notifications, errors, and the starting audio.

To set volume press  , and press  to change mode.



1- General mode

The device responds with vibration in addition to sound.



2- Silent mode

The device does not respond with any type of feedback



3- Vibration mode

The device only responds with vibration feedback



4- Normal mode

The device only responds with sound feedback

II- Key-tone:

This setting controls the volume for the feedback of pressing the buttons.

To set volume press  .

III- Search Volume:

This setting controls the volume for the search results and readings.




To set volume press  .

Note:

The key-tone volume and search volume are not set by the general volume.

Settings

Power Mode

This menu shows the power state of the device and current power mode, to change the power mode move the cursor   and press  to confirm.

I- Power Saving mode:

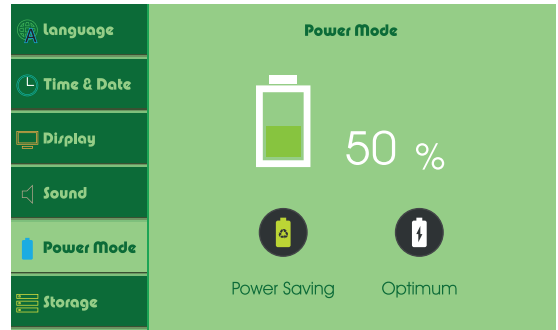


This mode saves power by disabling idle modules in order to preserve power for long search operations.

II- Optimum Mode:



This mode sets all of the device modules on for a steady performance and operation.




Settings

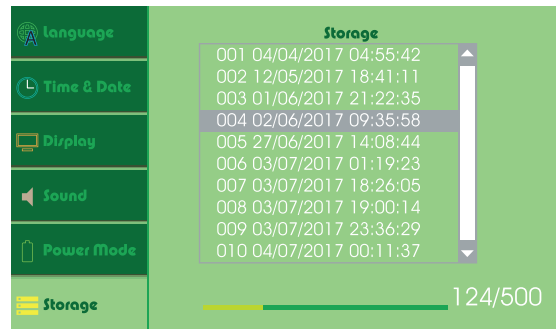
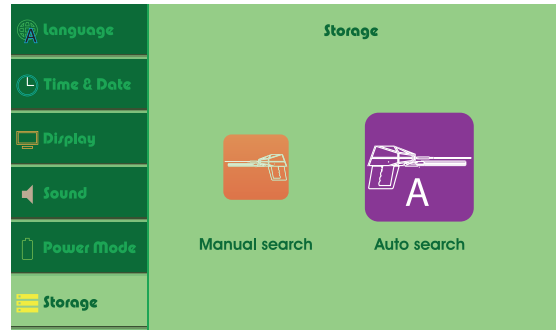
Storage

This menu shows the previously saved search results.

The user can view or delete the results.

Then the results list shows the saved searches

Navigate the list and press  to view or delete the highlighted result.



Settings

Info

This menu shows:

Device Version:

The current hardware revision.

Software Version

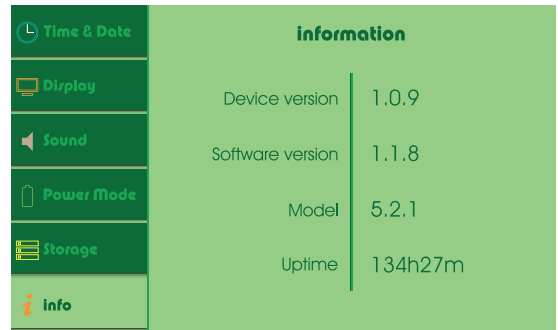
The current software revision and edition.

Model

The device model number and SKU identifier.

Uptime

The device working time.



Time & Date	information	
Display	Device version	1.0.9
Sound	Software version	1.1.8
Power Mode	Model	5.2.1
Storage	Uptime	134h27m
Info		

Settings

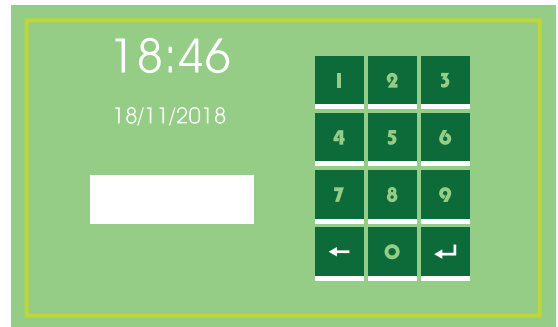
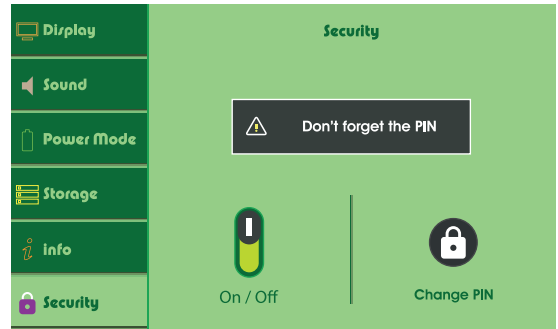
Security

This menu shows Secure Start state.

To change state press  then  to confirm.

Enter a new PIN then press .

Enter the PIN again for confirmation.



Settings

Reset

This menu shows the reinitializing options.

I- Clear Memory:

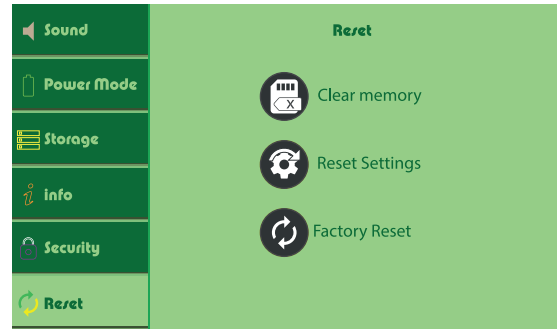
This option erase all saved results from memory.

II- Reset settings:


This option resets all the settings to default values.

III- Factory Reset:

This option resets all the settings to default values and erase all saved results.







Quick Settings



To access the quick settings menu, press  key on the far left of the keypad.

When pressed, the title in the status bar will be replaced with the settings icons.

Press   to navigate through the options.

 Display Brightness. It can be set by pressing  to decrease or  to increase the brightness intensity.

 Sleep mode. It can be set to 5 settings 15, 30, 45 or 60 seconds or be set off completely.

 Power mode. It can be set by pressing  to change the power mode into:










Optimum mode





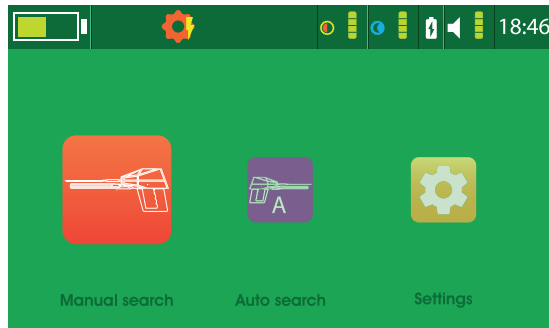
Power save mode



Sound. Press  to increase or  to decrease the current value, while pressing  will change the sound value for the device keys  or the search .


"18:46" Time. Set the current time by pressing  or .


Note: To exit the quick settings menu press  or . The quick settings menu is accessible in every menu with a visible status bar.



Search Systems

The device can be used with the following two systems:

1.  Manual Long-Range Locator system:
The term manual describes the user ability to adjust the search parameters manually to fit the needed requirements of the search, Where the target type can be set from the list in addition to the other parameters as the frontal search distance, and the depth.

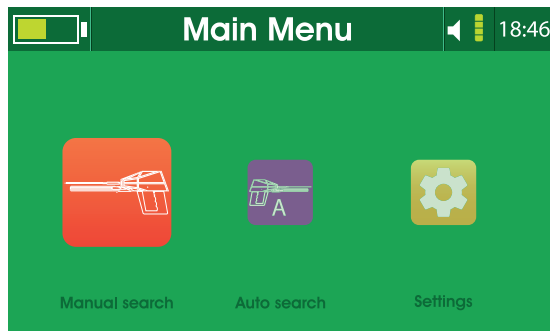
2.  Automatic Long-Range Locator system:

- The device has Automatic Detection System for the located targets and shows the target type on display automatically, and calculating the target distance from the device with high precision.
- The user can also determine the depth after acquiring the target location automatically.
- The device provides the user with a comprehensive report regarding the search process with the ability to save the report for review.

The High Gain Antenna and Roaming Antennas must be connected first to proceed to the search interface.

Assemble the High Gain Antenna as shown in “figure 5 -High Gain Antenna Assembly” on page 15.

Assemble the Roaming Antennas as shown in “figure 6 -Roaming Antennas Assembly” on page 16.



Manual Long-range Search

After selecting the system, the interface shows the search parameters, which are:


1. Target:

There are multiple targets to choose from ([Diamond](#), [Emerald](#), [Meteor](#), [Tourmaline](#), [Sapphire](#), [Garnet](#), [Zircon](#), [Meteorite](#), [Topaz](#) and [Amethyst](#)).

The target can be selected using  .



2. Search Distance:

Starts from 100 meters up to 2250 meters.

It can be set using  .

3. Depth:

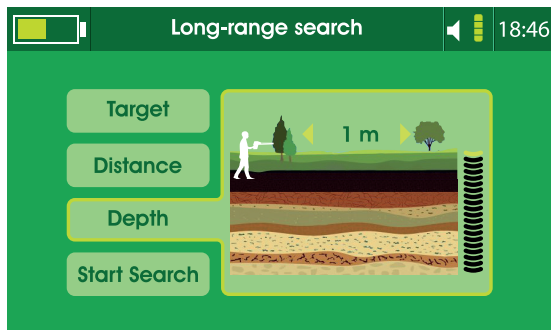
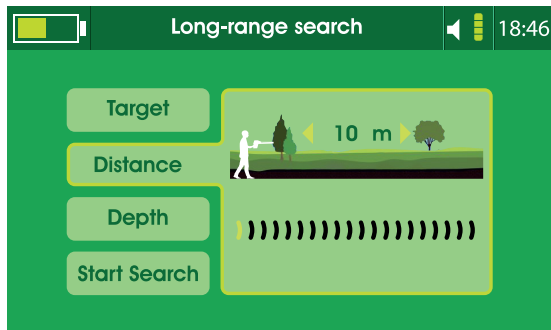
Starts from 1 meter up to 50 meters.

It can be increased or decreased using  .

4. Start Search:


Displays an overview of the search parameters.

Press  to proceed to the search interface.



Manual Long-range Search

An illustration shows the proper way to hold the device, which is upright and parallel to the ground while keeping the roaming antennas on the middle.

After holding the device properly press  or the Grip Key.

The search interface consists of the following objects:

1. Waveform window shows the signal frequency output operating and transmitting correctly.

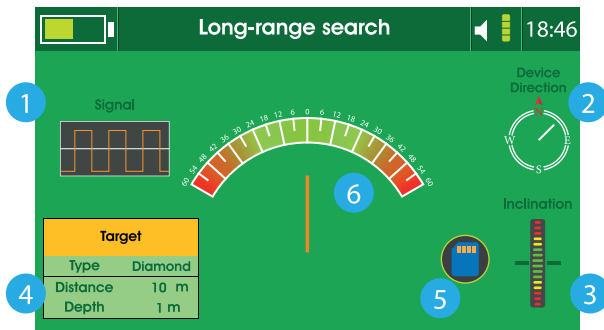
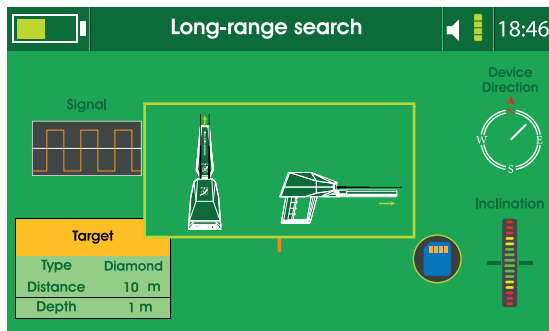
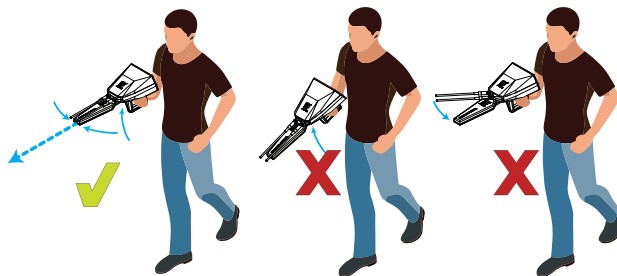
2. The compass shows the device current direction.

3. Inclination indicator shows the holding position of the device during the search process, so the user could keep it at the green range.

4. Target information box shows the selected search parameters.

5. Save icon is to store the current search information for review.

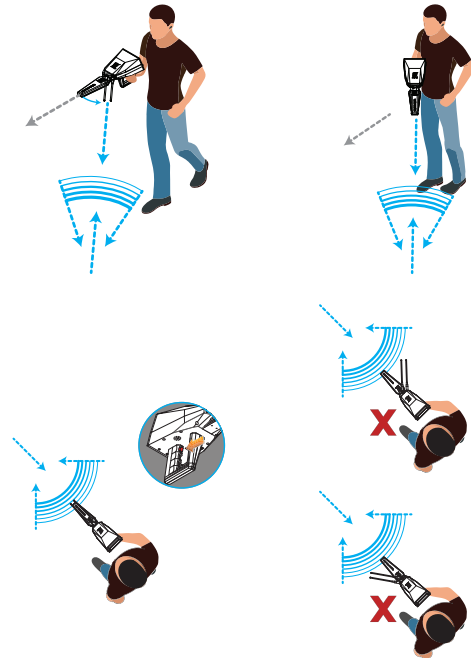
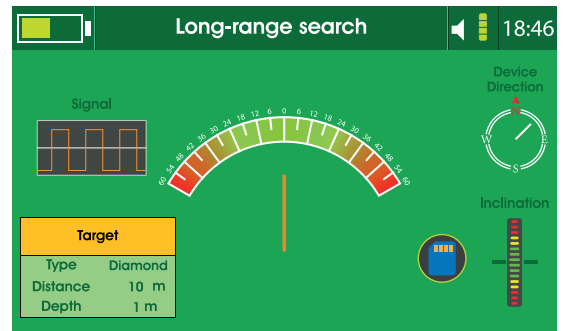
6. Roaming Antennas indicator shows the current position of the antennas relative to the device.



Manual Long-range Search

Working and locating targets using the system:

- The device needs to be balanced and held correctly.
- The tracking indicator will be shown in the middle of the interface.
- Hold the device until a signal is received indicated by the antennas moving from the balanced position towards another direction.
- The user turns with the antennas pointing towards the new path direction.
- Reset the tracking indicator by pressing the grip key, initializing the indicator back to the middle.
- If the antennas stay on the same path then the target path is correct.
- If the antennas turned towards another direction the user should repeat the previous steps again.
- After that, the user can walk to track the target path and locate it.



Manual Long-range Search

- Press the grip key once to display the target indicator which is a rhombus in top center of the interface.

- The device makes interactive sounds towards the target direction. Walk toward it.

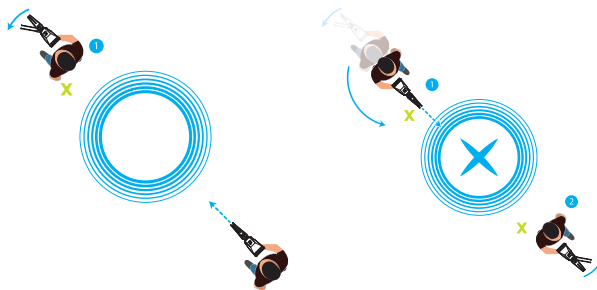
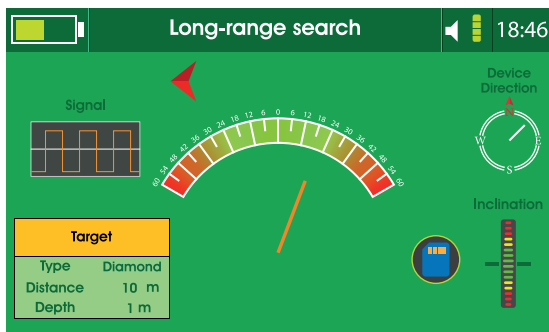
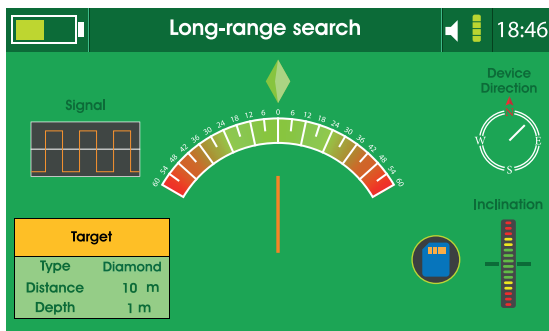
- If the antennas turn away slightly from the correct path left or right, the display show arrows, guiding the user to adjust the direction on a straight course.

- Once the target point is passed, the antennas will turn all the way left or right, then the user should stop and this is the first stop.

- Rotate with the antennas movement to track the new path.

- The antennas will stabilize on the same first path line but in the opposite direction. Keep walking down this direction until the antennas turn again. Here the user should stop again and this is the second stop.

- The target point is the midpoint between the first and second stop.




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Auto Long-range Search

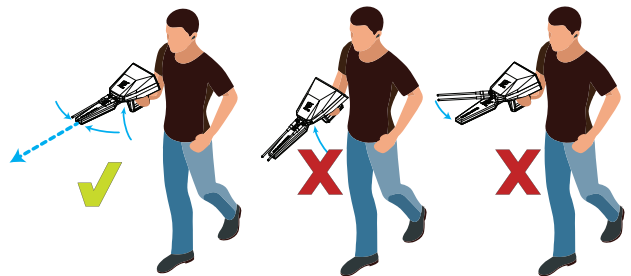
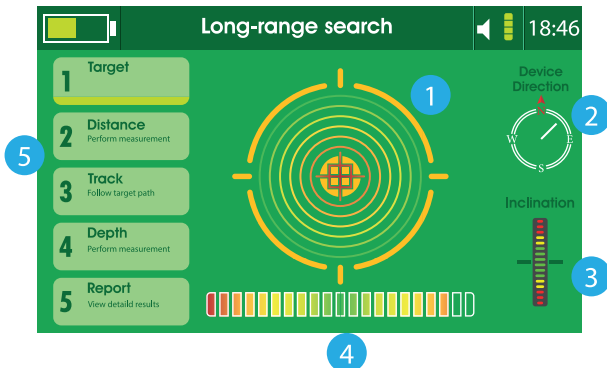
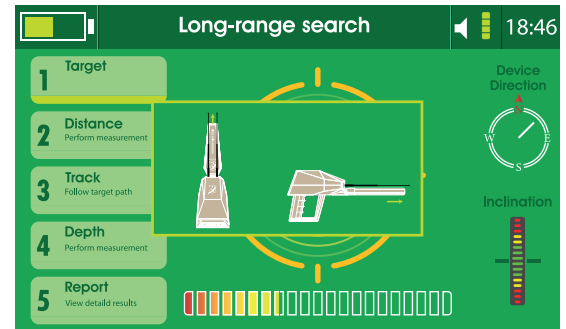
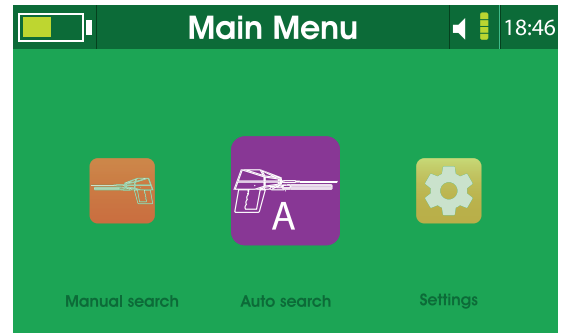
Select the Long-range Auto search from the Main Menu.

An illustration shows the proper way to hold the device, which is upright and parallel to the ground while keeping the roaming antennas on the middle.

After holding the device properly press  or the Grip Key.

The interface shows:

- 1• Search indicator in the middle of the interface.
- 2• Compass showing the current device direction.
- 3• Balance indicator shows the holding position of the device during the search process, so the user could keep it at the green range.
- 4• Interactive target detection indicator.
- 5• Search phases and current phase.





Auto Long-range Search

Face the targeted search area and wait for the device to receive a signal indicated by the antennas moving towards targets directions.

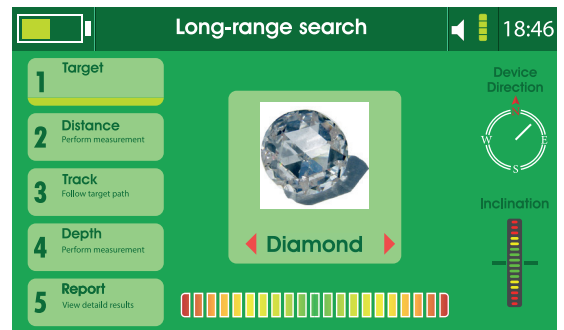
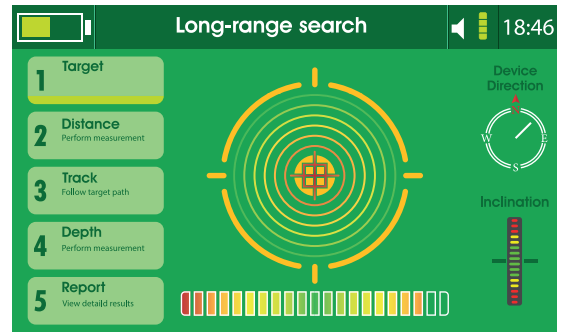
Then turn with the antennas, in the meanwhile, wait for the interactive meter to finish the evaluation and detection process.

The interface shows the found target or targets in the search area.

To list the detected targets, press  or  keys to see the target types.

Select one of the detected targets to locate its position and measure its distance.

When the target is selected from the list of detected targets the interface proceeds to the next phase in the system, which is the distance measuring.




Auto Long-range Search

Notice that the device making a sound notification when it is pointing toward the selected target direction.

This point and direction are the start point and direction for target measuring distance.
Target Distance Measuring:

When the device is aimed towards the target and it is making a notification sound, the direction must be sustained.

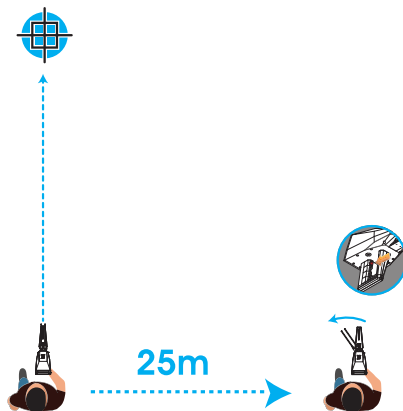
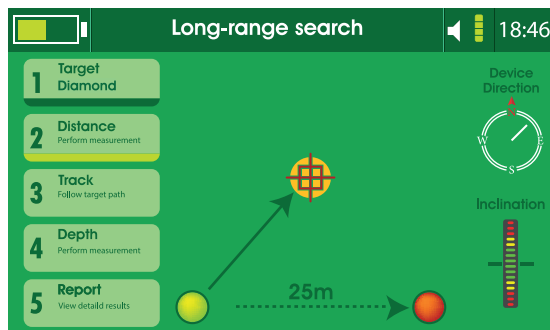
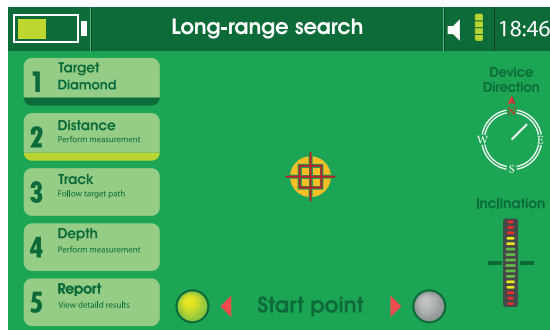
- Here, the start point should be selected. Either left or right of the current point.

- Press  and the arrow shows a prompt for moving 25 meters left or right depending on the selection.

- After walking the 25 meter distance, hold the device and wait for the antennas reading.


- The reading is indicated by the antennas turning towards the target direction and intersecting with the first path.

- If the reading towards the target is noticed, press the grip key to get the target distance.

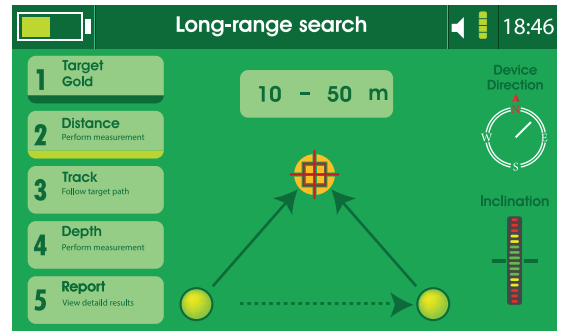


Auto Long-range Search

- The result will show on the top of the interface. If the result didn't show, then the arrow will blink indicating that the user should move another 25 meters.

- Then press  key to see the arrows forming a triangle with target distance from the search point.

- The interface proceeds to the next phase which is the target tracking.



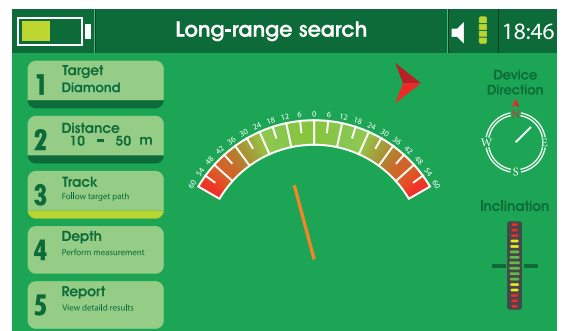
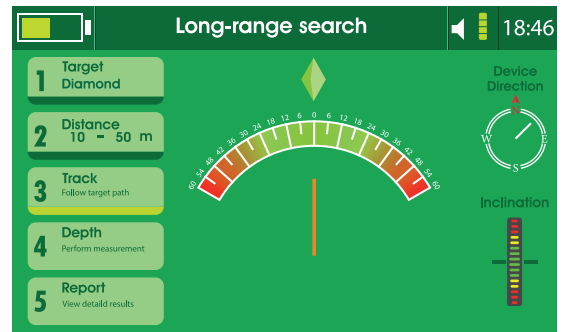
Auto Long-range Search

Target Tracking Process

- Sustain the balanced device position.
- The interface shows the signal tracking indicator in the middle.
- Initialize the target direction by pressing the grip key.

Follow the antennas direction. If the antennas stay on that path then the path to the target is correct, but if the antennas change direction; the user should repeat the previous steps.

- Walk to track the target path and locate it.
- The device makes interactive sounds towards the target direction.
- Walk toward it. If the antennas turn away from the correct path slightly to the left or right, the display shows arrows, guiding the user to adjust the direction on a straight course.



Auto Long-range Search

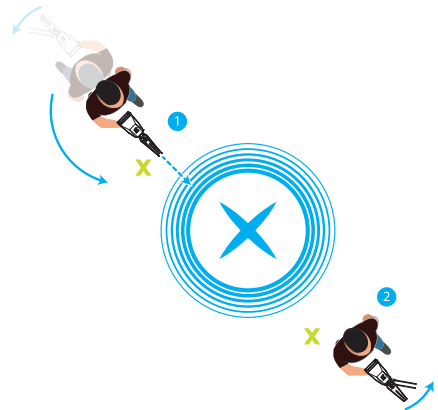
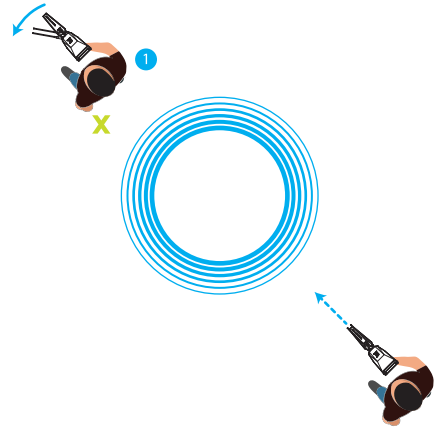
- Once the target point is passed the antennas turn all the way to the left or right. Then, the user should stop and this is the first stop.

- Rotate with the antennas movement to track the new path. The antennas will stabilize on the same first path line but in the opposite direction.

- Keep walking down this direction until the antennas turn again. Here, the user should stop again and this is the second stop.

- The target point is the midpoint between the first and second halt.

- Once the target tracking phase is finished, the device proceeds to the depth measuring phase.



Auto Long-range Search

Depth measuring process:

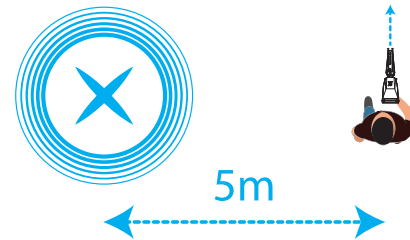
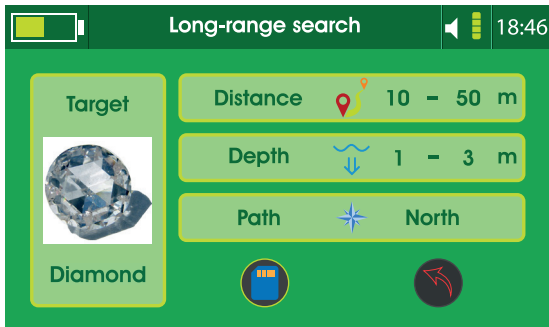
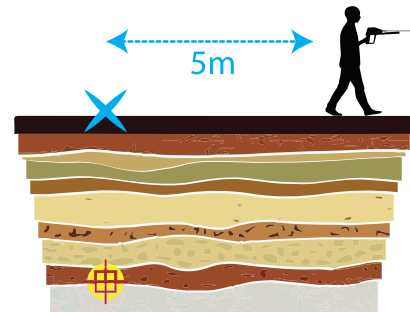
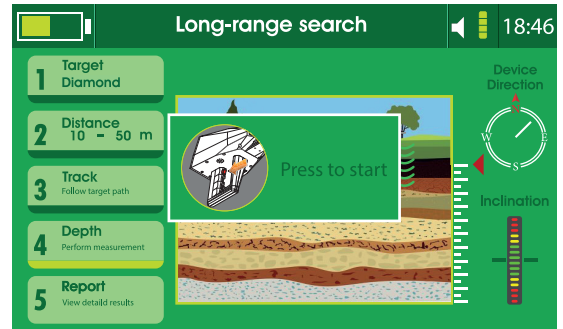
The user has to move 5 to 10 meters away from the target point, while the depth measuring interface is ready.

Press the grip key and wait for the antennas reading indicated by pointing towards the target location again.

When the reading is complete, the depth result shows on the interface then the system proceeds to the last stage which is the report.

Report:

Offers a summary of the search process including the target type, distance, the followed path and depth. The user can save this report in the device storage for later review or discard the report by exiting the interface and confirming the process.



Battery

Charging the battery

Charge the battery before using it for the first time or when it has been unused for extended period.

Use only AJAX-approved chargers, batteries, and cables.

Unapproved chargers or cables may cause the battery to explode or damage the device.

- Connecting the charger improperly may cause serious damage to the device.

Any damage caused by misuse is not covered by the warranty.

- Use only cable supplied with the device. The device may be damaged if you use different cable.

To save energy, unplug the charger when not in use.

The charger does not have a power switch, so you must unplug the charger from the electric socket when not in use to avoid wasting power.

The charger should remain close to the electric socket and easily accessible while charging.

1 Plug the DC cable into the device's Charge jack.

2 Plug the power adapter into an electric socket.

3 After fully charging, disconnect the charger from the device.

Then, unplug the charger from the electric socket.

Precautions for the operation environment

Your device may heat up due to the environment in the following conditions.

Use caution to avoid shortening the battery's lifespan, damaging the device, or causing a fire.

- Do not store the device in extreme cold or hot temperatures.

- Do not expose the device to direct sunlight for extended periods of time.

- Do not use or store the device for extended periods of time in very hot areas, such as inside a car in the summertime.

- Do not place the device in any areas that may overheat, such as on an electric heating mat.

- Do not store the device near or in heaters, microwaves, hot cooking equipment, or high pressure containers.

- Never use a damaged charger or battery.

Battery

Battery charging tips and precautions

- When the battery power is low, the battery icon appears empty.
- If the battery is completely discharged, the device cannot be turned on immediately when the charger is connected. Allow the depleted battery to charge for a few minutes before turning on the device.
- The device can be used while it is charging, but it may take longer to fully charge the battery.
- If the device receives an unstable power supply while charging, the device may not function. If this happens, unplug the charger from the device.
- While charging, the device and the charger may heat up. This is normal and should not affect the device's lifespan or performance. If the battery gets hotter than usual, the charger may stop charging.
- If the device is not charging properly, send the device and the charger to AJAX or an AJAX Authorized Service Centre for service.

Contact Information

AJAX DETECTION TECHNOLOGY LTD.

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Telephone +1 816 298 0485
+1 816 399 3744

E-mail info@ajaxdetection.com
Web site <http://www.ajaxdetection.com>

WEEE (Waste Electrical and Electronic Equipment) Statement

To protect the global environment and as an environmentalist, AJAX must remind you that... Under the European Union ("EU") Directive on Waste Electrical and Electronic Equipment, Directive 2002/96/EC, which takes effect on August 13, 2005, products of "electrical and electronic equipment" cannot be discarded as municipal waste anymore, and manufacturers of covered electronic equipment will be obligated to take back such product at the end of their useful life. AJAX will comply with the product take back requirements at the end of life of AJAX-branded products that are sold into the EU. You can return these products to local collection points.



Environmental Policy

The product has been designed to enable proper reuse of parts and recycling and should not be thrown away at its end of life.

Users should contact the local authorized point of collection for recycling and disposing of their end-of-life products.

Visit the AJAX website and locate a nearby distributor for further recycling information.

Users may also reach us at <envo@ajaxdetcor.com> for information regarding proper Disposal, Take-back, Recycling, and Disassembly of AJAX products.



WEEE (Waste Electrical and Electronic Equipment) Statement

European Union:



Batteries, battery packs, and accumulators should not be disposed of as unsorted household waste. Please use the public collection system to return, recycle, or treat them in compliance with the local regulations.

Taiwan:

廢電池請回收



For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

California, USA:



The button cell and Li-ion battery may contain perchlorate material and requires special handling when recycled or disposed of in California.

For further information please visit:

<http://www.dtsc.ca.gov/hazardouswaste/perchlorate/>



AJAX

DETECTION TECHNOLOGY

www.ajaxdetector.com