



MALÅ Easy Locator Lite

User guide

September, 2026



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Our Thanks

Thank you for choosing Guideline Geo and MALÅ! The very core of our philosophy is to provide our users with excellent products, support, and services. Our team is committed to providing you with the most efficient and easy-to-use solutions to meet your efficiency and productivity needs.

Whether this is your first MALÅ product or an addition to the MALÅ collection, we believe that a small investment of your time to familiarize yourself with the product by reading this manual will be rewarded with a significant increase in productivity and satisfaction.

Please let us know about your use and experience of our products and the contents and usefulness of this manual. We are excited to be part of your journey!



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Guideline Geo AB

www.guidelinegeo.com



Preface

This manual is written for the end user, explaining how to set up and configure the product and providing detailed instructions on its use.

1.1 Additional resources

Training: www.guidelinegeo.com/training-gpr-resistivity-seismics-tem/

Downloads: www.guidelinegeo.com/support-service-advice-training/resource-center/

Applications: www.guidelinegeo.com/application-areas/

1.2 Feedback

Feedback regarding the contents of this manual or the product may be sent using any of the contact details found at www.guidelinegeo.com



Safety and compliance user notices

This GPR device is certified according to FCC, subpart 15, IC RSS-220 and ETSI EN 302 066-1&2.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Please note! This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: —Reorient or relocate the receiving antenna. —Increase the separation between the equipment and receiver. —Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. —Consult the dealer or an experienced radio/TV technician for help.

According to the regulations stated in ETSI EN 302 066-1 (European Telecommunication Standards Institute):

The control unit should not be left ON when leaving the system unattended. It should always be turned OFF when not in use.

The antennas should point towards the ground, walls etc. during measurement and not towards the air.

The antennas should be kept in close proximity to the media under investigation.



Canadian and US regulations state that whenever GPR antennas are in use the following notes apply:

This Ground Penetrating Radar device shall be operated only when in contact with or within 1 meter of the ground.

Only law enforcement agencies, scientific research institutes, commercial mining companies, construction companies and emergency rescue or firefighting organizations shall use this Ground Penetrating Radar Device.

This device complies with Industry Canada license-exempt RSS standards. Operation is subject to the following two conditions: (1) This device may not cause interference and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

In French: Cet instrument de Géoradar se devra d'être opéré seulement en contact à même le sol ou en deça d'un mètre du sol.

Cet instrument de Géoradar se devra d'être utilisé seulement par les agences chargées de l'application de la loi, les instituts de recherches scientifiques, les compagnies minières à buts lucratifs, les compagnies de construction et les organisations responsables pour le sauvetage et la lutte contre les incendies.

Cet instrument répond aux exigences de la licence avec Industrie Canada- exempt des standards RSS. L'opération est sujette aux deux conditions suivantes: (1) Cet instrument ne peut pas causer une interférence et (2) cet instrument se doit d'accepter quelque interférence que ce soit, incluant une interférence qui pourrait causer une opération non-souhaitable de l'instrument.

Radiation Exposure Statement

To comply with ISED RF exposure compliance requirements, a separation distance of at least 20cm should be maintained between the EUT and all persons during normal operation.

In French: Pour se conformer aux exigences de conformité d'exposition ISDE RF, une distance de séparation d'au moins 20 cm doit être maintenue entre l'EST et toutes les personnes pendant le fonctionnement normal.



1 About Easy Locator Lite

MALÅ Easy Locator Lite is a state-of-the-art Swedish quality product built on the latest research and innovation. It includes the unique MALÅ feature, MALÅ AI for easy detection of hyperbolas.

MALÅ Easy Locator Lite is made for direct interpretation and mark out in the field. No data is saved, but you can easily mark out features on the ground, as well as save screenshots.

The user interface is easy and intuitive, so you will be up and running in a few minutes.

The MALÅ EL Lite system consists of the MALÅ EL Lite antenna box and the MALÅ RTC Mini, as well as the Lite Controller app for data display. The Lite Controller app is preferably run on a Samsung or Getac tablet. The system is ready for instant use when unpacked.





2 Unpack. Inspect. Register

Great care should be taken when unpacking the equipment. Be sure to verify the contents in the packing list and inspect the equipment and accessories for any loose parts or other damage.

Please note! The packing list that is included with the shipment should be read carefully, and any discrepancy should be reported to our sales department at www.guidelinegeo.com.

Please note! All packing material should be kept if any damage occurs during shipping.

File any claim for shipping damage with the carrier immediately after discovering the damage and before the equipment is used. Any claims for missing equipment or parts should be filed with Guideline Geo within fourteen (14) business days from receiving the equipment.

2.1 Repacking and Shipping

The Guideline Geo packing kit is specially designed for shipping the MALÅ Easy Locator Lite. The packing kit should be used whenever shipping is necessary. If original packing materials are unavailable, pack the instrument in a large enough box to allow at least 80 mm of shock-absorbing material to be placed all around the instrument. This includes the top, bottom, and all sides.

Warning! Never use shredded fibres, paper or wood wool, as these materials tend to pack down and permit the instrument to move inside its packing box.

Please read our shipping instructions before returning instruments to Guideline Geo. These instructions can be found on our website at www.guidelinegeo.com.



2.2 Registering MALÅ Easy Locator Lite

By registering your equipment, you ensure you will receive valuable information, such as manual updates, software upgrades and other product information, which helps optimize the equipment's utilisation and realize the maximum return on your investment.

To register your equipment, visit www.guidelinegeo.com.

Please note! The serial number is found on the antenna box, right back corner.



3 Assembly and Start-up

3.1 Assembly

The Easy Locator Lite is delivered partly assembled, just carry out the following steps before measurements:

- Mount the RTC Mini handle on the cart.
- Attach the tablet for data acquisition on the RTC Mini handle.
- Make sure the MALÅ Lite Controller app is installed on the tablet (see *Chapter 6*). If you have purchased the system with a turnkey configuration, this is already preconfigured.
- The rear left wheel has an internal encoder for data triggering and precise distance measurements. Make sure the cable is connected between the antenna box and the RTC Mini. For more information see the *RTC Mini Quick Guide*.

Before measurements make sure the batteries are charged. See section *Power* below.

The batteries are inserted at delivery, otherwise, open the battery compartment and insert the batteries.

Press the ON/OFF button to start the Easy Locator Lite.

Please note! Press and hold the ON/OFF button when powering OFF.



The batteries are found behind the black lid. It is possible to hot-swap, one battery at a time, during measurements.

The ON/OFF button on the antenna box will blink to indicate start/boot. When the light turns steady, the Easy Locator Lite is ready to be connected to the MALÅ Lite Controller app.



Please note! If the light is blinking very fast, this indicates a problem with the unit. Please get in touch with the Guideline Geo support team for further assistance.



4 Connect Lite Controller app to EL Lite antenna

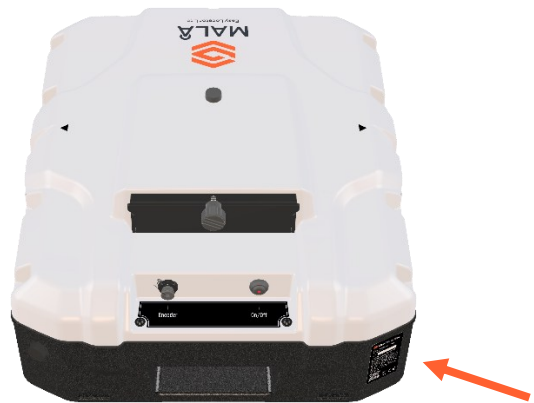
Make sure the MALÅ Lite Controller is installed on your tablet.



MALÅ Lite Controller can be downloaded from <https://guidelinegeo.com/products/software/mala-lite-controller> or by using the QR code.

Set up a mobile hotspot for communication between your mobile device and the Easy Locator Lite. The Easy Locator Lite serial number is found on the label on the back-right corner.

For the hotspot, change the network name (SSID) to **MALAXxxxxxxx**, where **xxxxxxx** refers to the serial number and change the password for the mobile hotspot to **mala0123**.



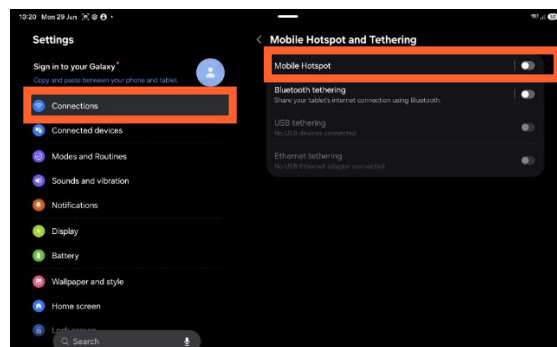
Label with information on serial number and QR code.

4.1 Settings for a Samsung Galaxy Tab Active5 Pro 5G

On your mobile device, enter:

- Settings  ->
- Connections ->
- Mobile Hotspot or Tethering.

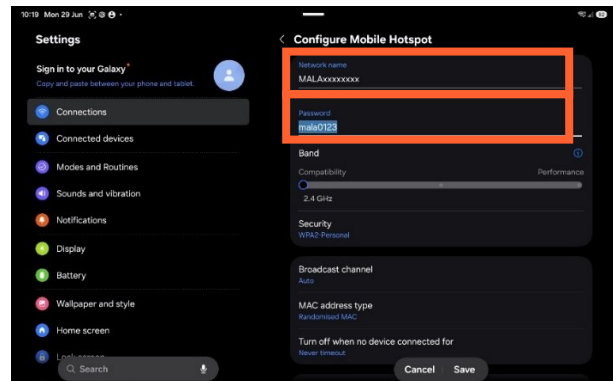
And then choose *Mobile Hotspot*.





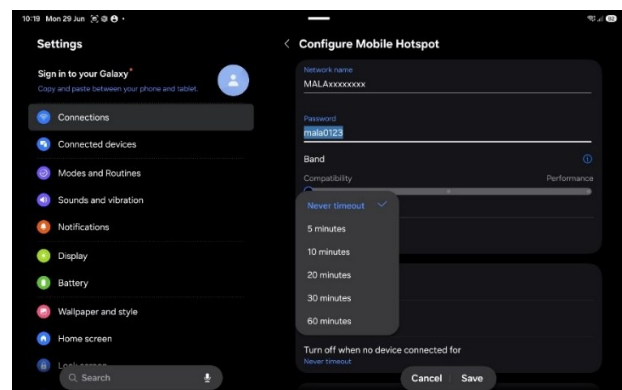
Change the network name (SSID) to **MALAxXXXXXXX**, where xxxxxxxx will be replaced with *all eight digits* from the antenna serial number.

Change the password for the mobile hotspot to **mala0123**.



Set the *Turn off when no device is connected* to *Never Time Out* to avoid corrupting the measurements due to mobile hotspot deactivation by the Android system.

Press Save.



4.2 Settings for Getac ZX10

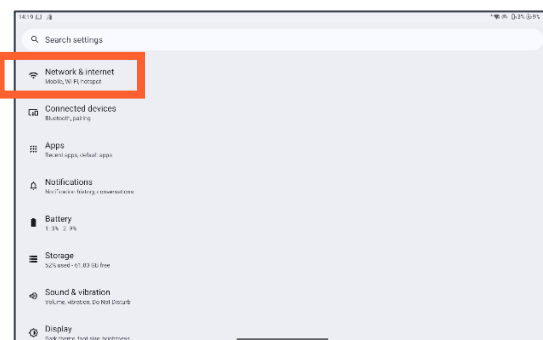
Please note! Remember to change the time-out settings, to never time out.

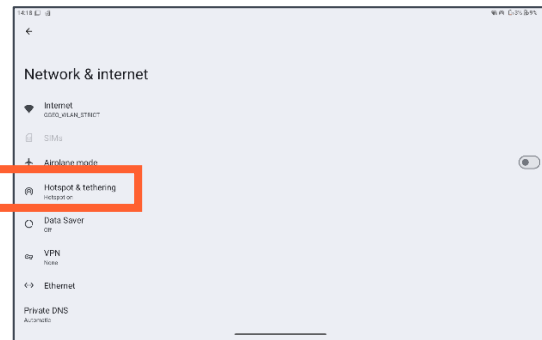
On your mobile device, enter:



- Settings ->
- Network & Internet ->
- Hotspot & Tethering.

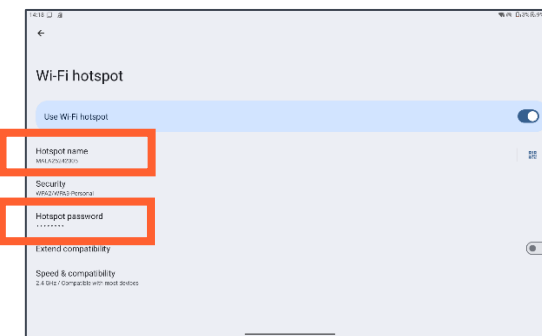
And then choose *Wi-Fi Hotspot*.





Choose *Wi-Fi Hotspot* and change the network name (SSID) to **MALAxXXXXXX**, where xxxxxxxx will be replaced with *all eight digits* from the antenna serial number.

Change the password for the mobile hotspot to **mala0123**.

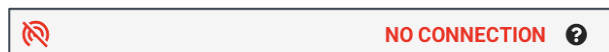


4.3 Wi-Fi connection

When the communication is working, the antenna name is displayed to the left in the status bar in the Lite Controller app, together with the battery status.



Successful connection



No connection

It is essential to have a stable Wi-Fi connection between the mobile device and the GPR antenna for effortless data collection. The Lite Controller has advanced



features to minimize impact of difficult Wi-Fi conditions. while you measure, such as automatic sync to recover data from interruptions.

Unstable Wi-Fi connections are typically caused by wireless interference. This can occur in or around apartment complexes or other dense areas where several Wi-Fi networks are active nearby.

For further information see the *Troubleshoot and Maintenance* section.

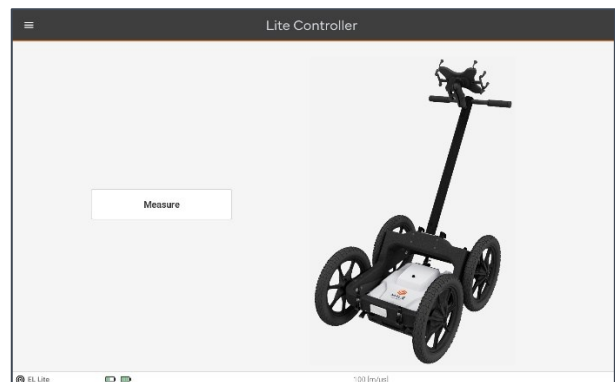


5 Measurements

GPR data collection and visualisation with the Easy Locator Lite system is carried out using the MALÅ Lite Controller app. This simple and straightforward application is designed to collect and view, Easy Locator Lite data on a tablet.

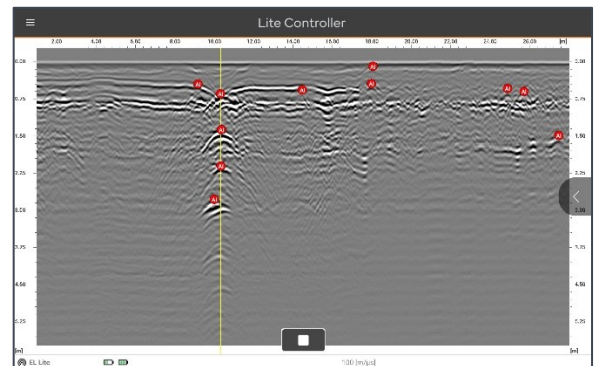
On the start page, you have the option to directly start a new measurement.

Or go to the main menus,



5.1 Workflow

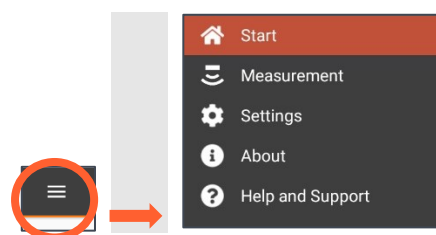
- Start the profile.
- Identify objects / hyperbolas.
- Use the MALÅ Back-track function (yellow line) to reverse the EL Lite to the correct position, directly over the hyperbola.
- Mark the object location on the ground, with e.g. spray paint or flag.
- Continue the search with a new profile.



5.2 Main menus and status bar

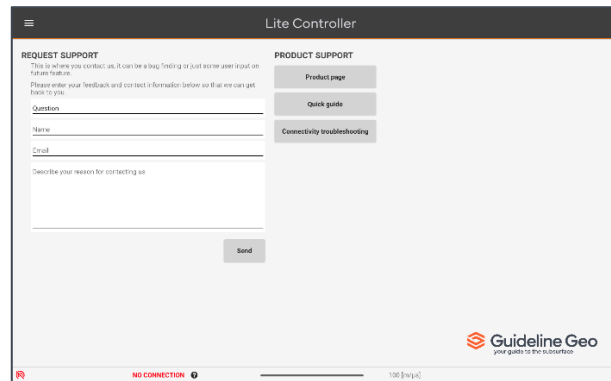
The main menu can be found in the upper left corner. Here, you can navigate between:

- Start page.
- Measurement page.
- Settings page (see *Measurement settings* below).



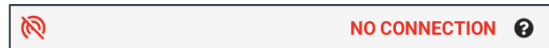


- About page, giving information on the connected antenna and the app itself.
- Help and Support page, where you can contact our support team. Here, you also find links to product support and user guides.



On the bottom status bar of the app, the following information is displayed:

When the hotspot is disabled, a red icon indicates no connection with the antenna and the text **NO CONNECTION** is shown.



If the hotspot is enabled but the antenna is turned off or not yet connected, only the red antenna icon (on the left) is seen.

When contact is established with the antenna (this can take approx. 90 sec), a black antenna icon is shown as well as battery status.



5.1.1 Measurement settings

Select *Settings* in the Main Menu . Here, the following can be adjusted:

- Sound for AI markers. If ON, a beeping sound will be heard when AI markers appear. See also section MALÅ AI.
- Enable or Disable resume of profiles
- Measurement Units: Metric or imperial.
- Radar wave velocity (in m/ μ s)
- Language (English, French, German, Spanish, Chinese, Italian, Japanese).
You need to restart the app when changing language.

Default or automatic values are used for:

- Depth (640 samples)

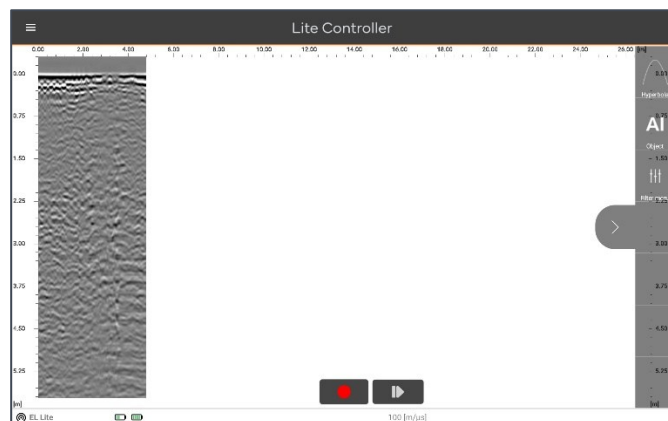


- Inline trace interval (2.5 cm / 0.98 inch)
- Stacking (auto stack)
- Time-zero (adjusted automatically)

Please note! The settings are automatically saved; the same settings will be used if the application is restarted.

5.3 Measurements

- Press  to start a new profile.
- Press  to resume a profile.
- Press  to stop a profile.



Please note! If the red "start profile" dot is grey, there is no connection to the GPR antenna; check the antenna and the hotspot connection.

During a measurement, you can:

- Add black markers anywhere in the radargram by tapping the screen.
- Use hyperbola fitting to set velocity or change velocity directly.
- Use Set Depth tool to enter the known depth to a marker, and the app automatically adjusts the GPR velocity to match.
- Use MALÅ AI to aid in hyperbola identification.
- Apply filters such as background removal, AGC and gain.
- Change color palette



- Use the MALÅ Back-track function. When going backwards with the measurement wheel, the backtrack function is the same as on any other MALÅ device. A vertical yellow line indicates the current position of the antenna.

These options can be accessed by opening the slide-out menu. Slide out or click on the arrow to open and slide in or click to close.

Each dynamic menu in the slide-out menu opens as a floating panel, which can be placed anywhere in the MALÅ Controller App window.

Use  to move the panels around and close the panel with .

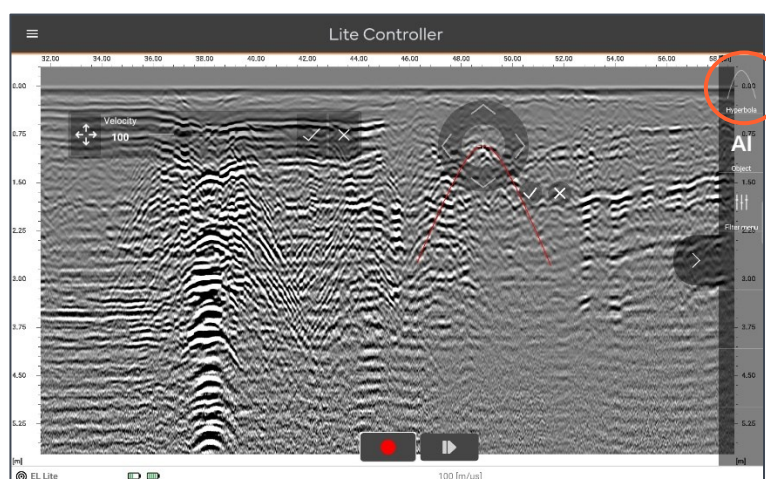
The functionality of the floating panels is described in detail below.



5.3.1 Hyperbola fitting

The global velocity can be set with the hyperbola fitting tool. Press *Hyperbola* and place the artificial hyperbola over the measured hyperbola. The position of the artificial hyperbola can be fine-tuned using the arrows.

Change the velocity (and the shape of the hyperbola) using the slider.



The selected velocity will be visible in the status bar (below the radargram) and can also be changed directly during the measurement. When pressing the velocity, a slider appears for easy velocity adjustment.

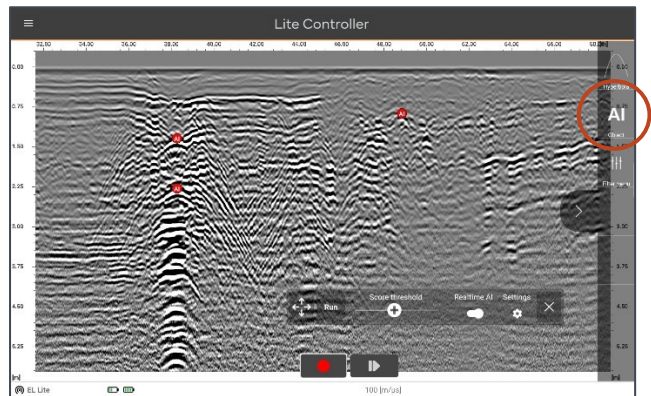


5.3.2 MALÅ AI

With MALÅ AI, you get real-time assistance in identifying and marking hyperbolas in your data.

Activate the AI Object detection floating panel option and adjust the sensitivity using the Score threshold slider.

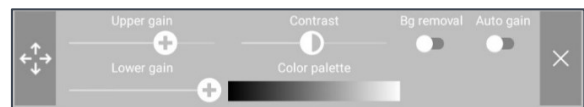
In the settings menu , the search depth can be adjusted.



The AI markers can be turned into black markers, by a click.

5.3.3 Filters

You can manually adjust gain and contrast in the filters panel and apply background removal or auto gain.



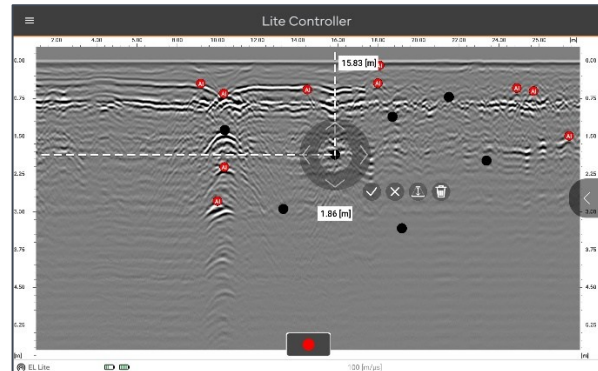
Use the sliders to increase or decrease the contrast or gain (Upper and Lower). The gain sliders are disabled if the Auto gain is turned ON.

Use the option Color palette if you want to change the color scale for the radargram:



5.3.4 Markers

Markers can be set anywhere in the radargram during measurements. These black markers are added by clicking on the tablet screen. It is an efficient way to point out features before taking a screenshot (with the built-in tablet functionality) of the collected data.



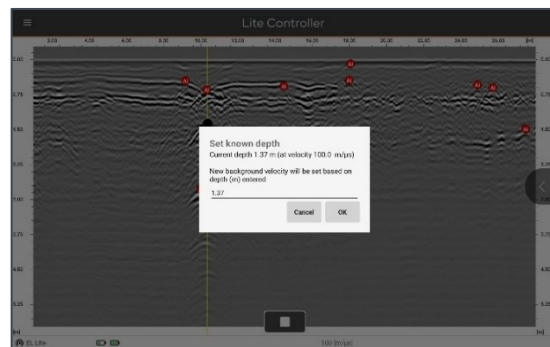
When clicking on the marker, the length and depth to the object is displayed. As well as options to move them or delete them.

You can also use the marker to adjust the velocity of the radar wave, see *Adjust velocity with known object* below.

5.3.5 Adjust velocity with known object

Click on a black marker and select  (Set Depth).

Enter the known depth and the radar wave velocity will be automatically adjusted.



5.3.6 Pan, zoom and stretch

During measurement, you can also pan, zoom and stretch the data.

- *Pan*: Press one finger and move to pan in the profile left/right/up/down
- *Zoom*: Pinch and use two fingertips to zoom in and out of the data. The data will be zoomed proportionally for x and y.
- *Stretch*: Use two fingertips to zoom vertically (down or up) or horizontally (left or right).

The set zoom will remain during your measurements.

To return to the standard settings (regular aspect ratio), double-click either the x- or y-axis.



6 System parts

6.1 Antenna box

The antenna box contains two antenna elements: a transmitter (Tx) and a receiver (Rx) antenna. The location of the measurement point is defined as the point between these two antenna elements. This is marked on the antenna itself (on three sides of the antenna box).

For easy lifting, larger handles (countersinks) are found on all sides of the antenna box.

On the antenna box you will also find the:

- ON/OFF button
- Battery compartment for two batteries
- Encoder wheel connection

6.2 Power

Two 10.8V 6.9Ah Li-Ion batteries power the Easy Locator Lite. The batteries are placed in the battery compartment behind the black lid. Ensure the lid is securely closed to prevent water and dust from entering.

The batteries can be hot-swapped one at a time. If needed, the Easy Locator Lite can also operate on a single battery.

The batteries are charged in an external RRC charger, where both batteries can be charged at the same time.

For more information see the *RRC Charger User guide*.



External dual battery charger



6.3 MALÅ RTC Mini

The RTC Mini is an off-road rough terrain cart that enables the use of the Easy Locator Lite in almost any type of terrain.

For more information see the *RTC Mini Quick Guide*.

The antenna should be as close to the ground as possible, but in rough terrain it is more suitable to use the four straps to elevate it, to approx. 5 cm height.



The antenna can be removed from the RTC Mini, if needed. Remember to disconnect the encoder wheel cable from the external wheel port on the rear of the antenna before you lift the antenna box.



The connector for the external encoder is found to the left.



7 Troubleshoot and Maintenance

As with all electronic equipment, handling the Easy Locator Lite with care is essential. Avoid rough handling and impacts to the antenna box or tablet. During the transport of the equipment, the Easy Locator Lite should be adequately packed and firmly placed in a dedicated transport box. After completing a survey, check the equipment and ensure it is properly loaded before transport.

Below are troubleshooting tips for connectivity issues and recommended maintenance procedures to help extend the service life of your Easy Locator Lite.

Always check our website, www.guidelinegeo.com, for the latest news and updates, and if needed, please get in touch with Guideline Geo support (support@guidelinegeo.com) or your closest Guideline Geo sales representative.

7.1 Troubleshoot connectivity issues

If you cannot connect to the antenna, follow the workflow described below. Make sure everything is configured exactly as described.

Please note! This troubleshoot guide is also found on the Help and Support page in the Lite Controller.

1. If you can't connect to the antenna at all, make sure that mobile hotspot is configured exactly as described

- For the mobile hotspot set up, you will need the serial number (S/N) of the antenna to connect. You'll find the serial number printed on the antenna.
- Change the network name (SSID) to **MALAxxxxxxxx**, where xxxxxxxx refers to the serial number.
- Change the password for the mobile hotspot to **mala0123**.
- Enable the mobile hotspot to allow this specific antenna to connect to your mobile device.

2. Ideally set up your system in an area with minimal Wi-Fi interference to reduce potential problems.



3. Make sure that there is no other hotspot with the same network name (SSID) running on another mobile device. Do this by disabling the hotspot and searching for Wi-Fi networks. Make sure there is no other Wi-Fi network with the same SSID as you have set up.
4. Disable Wi-Fi on your mobile device and then turn off and turn on the hotspot. Verify SSID and password. Do not use VPN.
5. Make sure that the antenna batteries are charged. For Easy Locator Lite, the indicator on the batteries should have at least two bars. The LED may be on even though there is not enough battery power to initiate connection to Lite Controller.
6. If that doesn't work, restart the Lite Controller on your mobile device and wait for at least 30 seconds. To do this, open the Recent Apps view (accessed by pressing the button with three lines or a square), and swipe the app off screen to close it.
7. If it's still not possible to connect to the antenna, restart your mobile device and try again.
8. If you still cannot get connection, or if you for some reason would lose connection to the antenna, press the ON/OFF button on the antenna 5 times within 5 seconds. This will reinitialize the antenna and reset the connection. Please note that this may take up to 2 minutes.
9. If that doesn't work press and hold the ON/OFF button to turn the antenna off and restart your mobile device. Then power on the antenna and try again.
10. If the above doesn't work contact us at support@guidelinegeo.com or use the built-in Help and Support.



7.2 Maintenance

The following actions are advisable to carry out before measurements:

- Make sure that the batteries are charged.
- Make sure that the battery compartment is firmly closed.



The following actions are advisable after measurements:

- If needed gently wipe the EL Lite with a wet towel containing mild soap. You can use a water hose for rinsing. Ensure battery compartments are securely closed. Dry off any excess water with a towel and allow it to air-dry thoroughly before using it again.
- Check the sealing strip around the battery compartments. These should be changed if broken.
- Check the encoder O-ring on the RTC Mini. If it gets too loose, distance trig may fail.

Warning! Do NOT use a pressure washer to clean the MALÅ Easy Locator Lite.

Warning! Do not use any strong cleaning chemicals when cleaning the MALÅ Easy Locator Lite.

Batteries should be charged (40-60%), and when stored away for extended periods, they should be charged occasionally. It is not recommended to leave the batteries uncharged for longer than 1 month and not store batteries without charging them for more than a year.