ABEM Exact
PT. EXACT GLOBAL TEKNOLOGI
INDONESIA *Authorized Agent*

GroundTEM i5, i10, i20

TRANSIENT ELECTROMAGNETICS

GUIDELINEGEO
Your guide to the subsurface

Quick Guide for 20m & 40m TX loops with 3x3m RX coil

PRE-SURVEY PROCEDURE



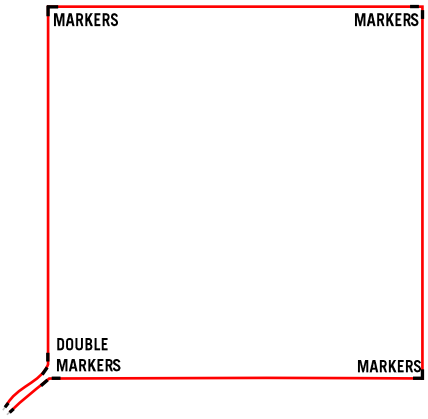
A. Prepare the batteries

- Charge batteries using the supplied GroundTEM battery charger;
- Guidance notes in the lid provide information on checking battery status;
- No external adapter is required for the battery charger, just a standard "clover leaf" power lead;
- When charged, install the batteries into the GroundTEM unit;
- No external batteries are required with the GroundTEM system.

LAYOUT & START-UP PROCEDURE

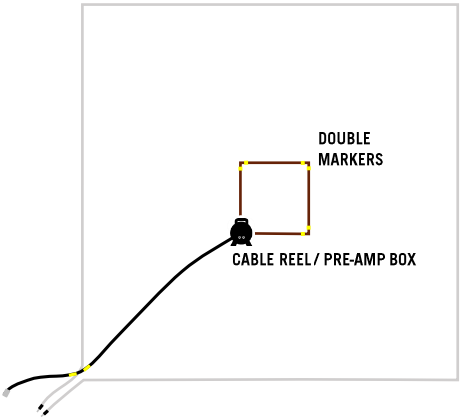
A. Lay out the transmitter loop

- The loop has a lead-in / lead-out added to each end, so start at the instrument and pull wire off the reel until the first double-marker is found: this will be the bottom-left corner of the loop;
- The TX loop can be laid out in a clockwise or anti-clockwise direction, so walk in a straight line until the first single marker (20m loop) or double marker (40m loop) is found: this is the next corner of the loop;
- Turn 90 degrees and walk again, laying the next side of the square: tapes, a compass, or optical square can be used to help make the loop square - it does not need to be a perfect square to perform acceptably;
- Use the other black markers on the loop as a guide for the remaining corner positions – these markers differ depending on loop size (see figure, right);
- A final double marker should coincide with returning to the bottom-left corner of the transmitter loop;
- The remaining wire on the drum is the lead-out back to the instrument.



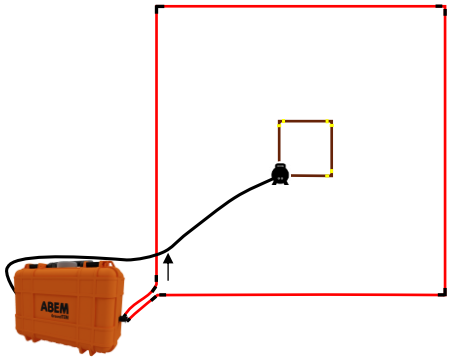
B. Lay out the receiver coil

- The receiver coil is relatively simple to locate centrally;
- On the lead-in cable, the first double marker should be held at the bottom-left corner of the TX loop;
- Now walk towards the top-right corner of the TX loop and the end of the lead-in cable will coincide with the bottom left corner of the receiver coil;
- Use the yellow markers on the receiver coil cable as guides for the corners and layout in a square roughly parallel with the TX loop;
- Before making any connections, ensure connectors are clean and dry;
- Plug the two ends of the RX coil cable into the two connectors on the cable reel / pre-amp box.



C. Connect the TX loop & RX coil to the GroundTEM

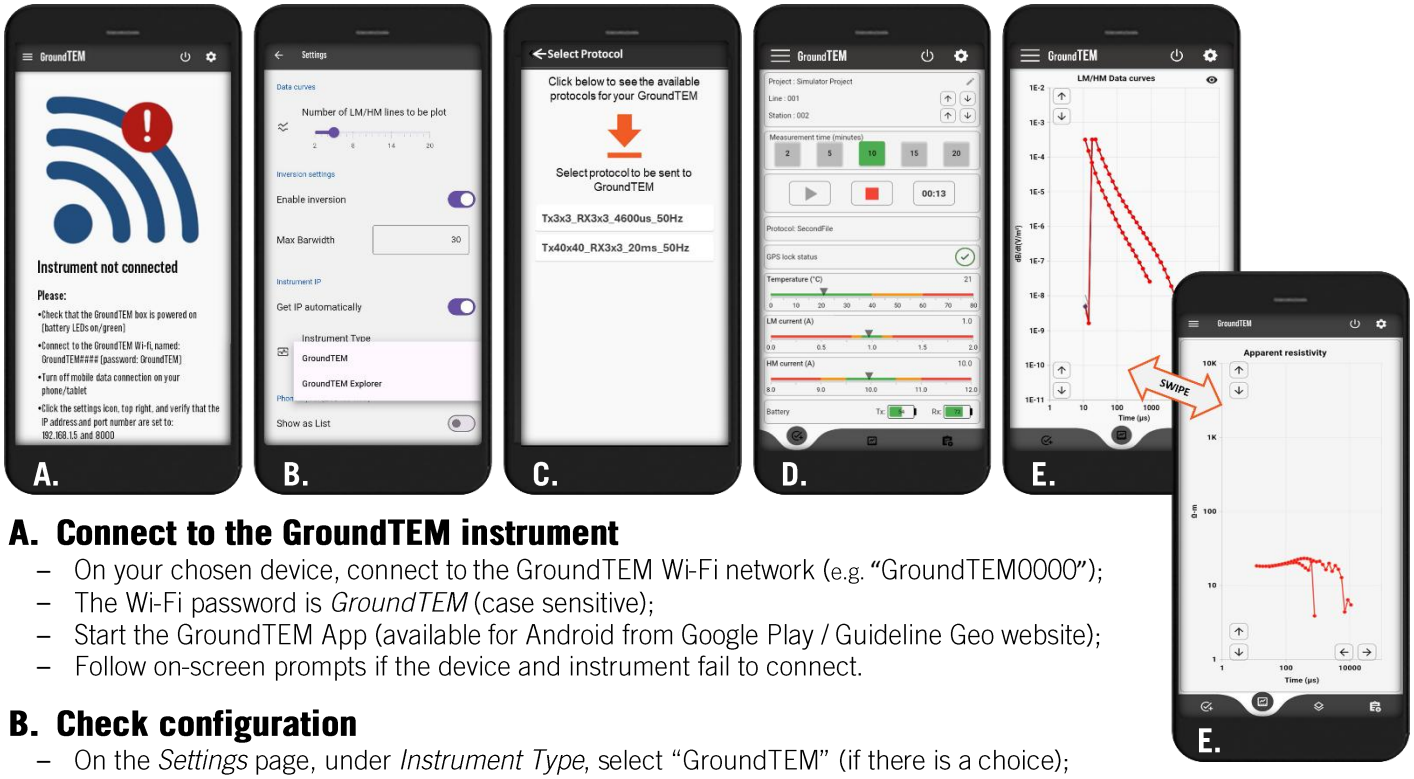
- Before making any connections, ensure connectors are clean and dry;
- The TX loop connects to the right-hand side of the instrument;
- Shift the RX coil lead-in away from the corner and then plug it into the left-hand side of the instrument.



D. Power-up the instrument

- Press the silver power button on the instrument;
- The three green lights will indicate that batteries for the Tx and Rx are functioning, and a GPS signal is being received (flashing light).

MAKING A MEASUREMENT



A. Connect to the GroundTEM instrument

- On your chosen device, connect to the GroundTEM Wi-Fi network (e.g. "GroundTEM0000");
- The Wi-Fi password is *GroundTEM* (case sensitive);
- Start the GroundTEM App (available for Android from Google Play / Guideline Geo website);
- Follow on-screen prompts if the device and instrument fail to connect.

B. Check configuration

- On the *Settings* page, under *Instrument Type*, select "GroundTEM" (if there is a choice);
- This example is from an instrument with an active *Real-time Inversion* subscription.

C. Choose a suitable measurement script

- Scripts are named according to transmitter / receiver loop size – select the correct one for the current configuration.

D. Enter a project name, line / station numbers, and measurement duration

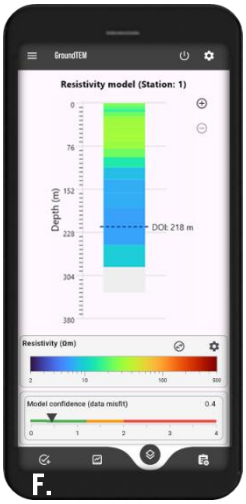
- The top box is for file management: it is possible to survey individual stations, along survey lines, within projects (note that separate projects must be used for different configurations / scripts);
- Select measurement duration then press Play button: 2 to 10 minutes are normally sufficient for good results but, if data are coming in cleanly / consistently, it is possible to stop longer measurements early, without losing data.

E. Monitor the live results

- Decay / apparent resistivity curves can be inspected (swipe left/right to switch between the two displays), to ensure that they are smooth and stable between repetitions;
- Instrument temperature and output current can be checked using the monitoring bars.

F. Review real-time inversion results

- An inversion, showing an auto-processed resistivity model can be seen during measurement*;
- If multiple stations have been collected in a line, swipe sideways to view a 2D profile of results.



FILE MANAGEMENT

A. Install ABEM GroundTEM Connect

- Download the GroundTEM Connect software from the Guideline Geo webpages (use QR code on first page);
- After installing, right click on the GroundTEM Connect icon and tick "Run as Administrator".

B. Downloading data

- Connect the PC to the GroundTEM Wi-Fi network (ID: GroundTEM#### Password: GroundTEM);
- Click on "Connect to Instrument" (if it fails, firstly check the Wi-Fi connection, then make sure that the GroundTEM Connect settings are correct ( ), try the "Default settings" button, if necessary);
- The left panel shows projects on the instrument, whilst the right panel shows the default download location;
- If the right panel is blank, refresh the view ( );
- Select the required projects in the left window and click on the "Copy" button, between the two windows;
- To change the download location, either add a new directory ( ) or work up through existing directories (back);
- If the USF file (an industry standard format, compatible with all 1D inversion software) is corrupt or missing, use the "STB -> USF" button to generate a new one from the selected project folder.