GroundTEM i5 & i10

TRANSIENT ELECTROMAGNETICS

GUIDELINEGEO
Your guide to the subsurface

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

PRE-SURVEY PROCEDURE

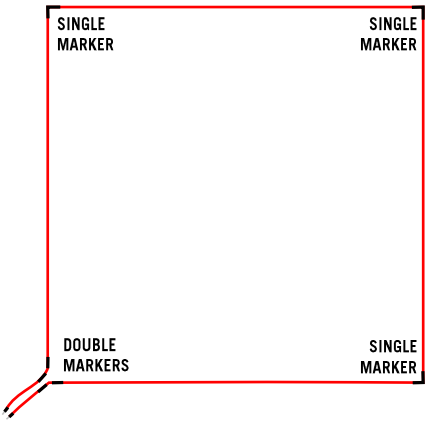
A. Prepare the batteries

- 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 PROCEDURE

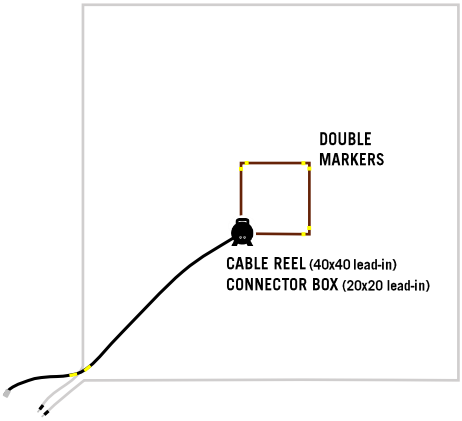
A. Lay out the transmitter loop

- 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 is found: this is the next corner of the loop;
- Now turn 90 degrees and walk again, to lay down the next side of the square: a compass, optical square or tapes can be used to help make the loop square - it does not need to be a perfect square to still perform acceptably;
- Use the other single black markers on the loop as a guide for the remaining corner positions;
- Another 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.



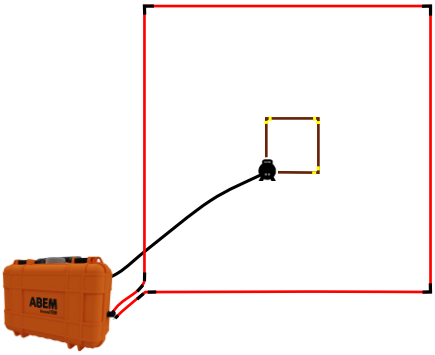
B. Lay out the receiver coil

- 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 drum (lead-in for use on 40x40m TX loops) / pre-amp box (20x20m TX).



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

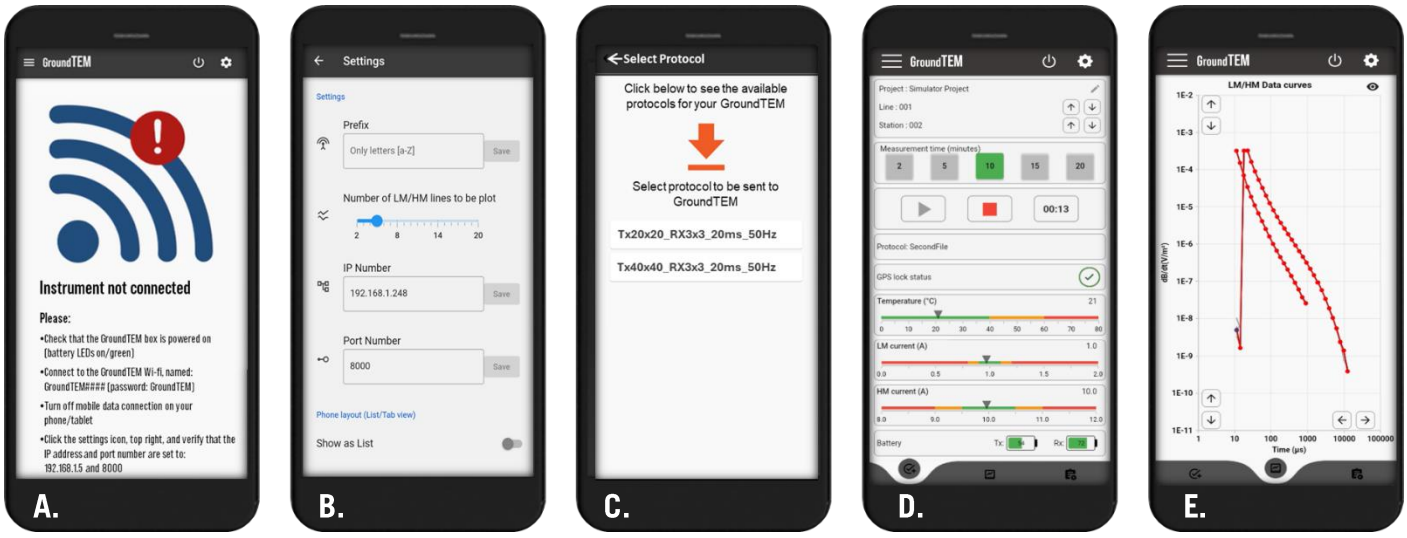
- Before making any connections, ensure connectors are clean and dry;
- The TX loop connects to the right hand side of the instrument;
- The RX coil plugs into the left hand side of the instrument.



D. Power-up the instrument

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

STARTING A MEASUREMENT



A. Connect to the GroundTEM instrument

- On your chosen device, look for the GroundTEM Wi-Fi network and connect;
- The SSID for the Wi-Fi network is "GroundTEM####" where the digits are taken from the serial number;
- The Wi-Fi password is *GroundTEM* (case sensitive);
- Start the GroundTEM App (Android and iOS compatible);
- Follow on-screen prompts if the device and instrument fail to connect.

B. Check configuration

- The settings page also allows the choice of "list" or tab view in the data collection screens;
- "List" has all views and functions on a single scrollable screen – if this is disabled, the app will display across three tabs as shown in right-most screenshots, above.

C. Choose a suitable measurement script

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

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

- The top box on the main data collection screen allows for data file management – it is possible to survey individual stations, along survey lines, within projects;
- The measurement duration should be selected: 5 or 10 minutes are normally sufficient but if data are coming in cleanly and consistently, it is possible to stop the measurement early without losing data.

E. Monitor the live results

- It is possible to check that the instrument temperature and output current on both the high and low moment cycles is correct, using the monitoring bars;
- Decay curves should also be inspected, to ensure that they are smooth and stable between repetitions.

FILE MANAGEMENT

The most effective way to download data is currently via a remote desktop connection.

A. Connect a mobile device or PC to the GroundTEM instrument

- Follow the same procedure as connecting to the instrument when initiating a measurement.

B. Start a remote desktop session

- Use any remote desktop software or app to access the Windows operating system running on the GroundTEM;
- Username for the connection is "admin", password should be left blank.

C. Copy data from the instrument folder on the C: drive

- Data files are stored in Universal Soung Format (.usf);
- USF files can be imported into any 1D inversion package e.g. Aarhus SPIA TEM or Interpex IX1D.