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GeoDrone
PRODUCT RANGE

Ground Penetrating Radar

THE STATE-OF-THE-ART, INTELLIGENT GPR SOLUTION FOR AIRBORNE SURVEYS

What is GPR?

Ground Penetrating Radar (GPR) is a non-destructive and rapid geophysical method that operates by transmitting electromagnetic waves from an antenna that reflects off layers and objects in the ground. These reflections are collected, saved and presented as images of the subsurface.

The GeoDrone

The GeoDrone is an airborne GPR solution for efficient field work, designed specifically for data collection in open remote, hazardous and inaccessible areas.

The GeoDrone uses the latest MALÅ HDR GPR technology, for fast and high quality GPR data collection. Data collection and real-time monitoring is carried out with the user-friendly and cloud connected MALÅ Controller App. The GeoDrone antennas are most suitable for automated drone surveying.

GeoDrone 80

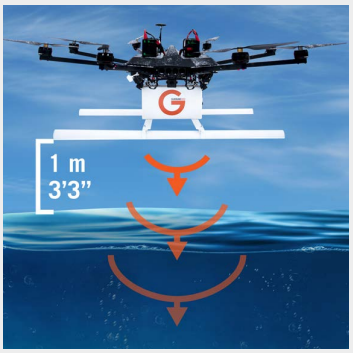
The GeoDrone 80 is an excellent solution for bathymetry investigations as well as deeper investigations of ice, snow and geological layers (peat, depth to bedrock etc). It is also suitable for the detection of larger objects, sinkholes or cavities (>1 m).

The Geodrone 80 has a centre frequency of 80 MHz and a light-weight omnidirectional antenna construction (3.23 kg).

The GeoDrone 80 features dual battery operation for extended survey campaigns, exceptional depth penetration, high quality built-in DGPS and cloud connection through the MALÅ Controller App for on-site interpretations and data storage.

The GPR Method

Ground Penetrating Radar (GPR) is an extremely versatile geophysical method, suitable for applications ranging from detecting rebars to conducting deep ice investigations. GPR surveys can be performed on the ground surface or in boreholes. Various antenna frequencies are available for different needs. Additionally, GPR systems can also be mounted on drones for airborne investigations.



The transmitter antenna radiates repetitive short-duration electro-magnetic signals into the sub-surface as the antenna moves over the surface.

Electromagnetic waves are reflected back to the receiver by interfaces between materials with differing electrical properties, e.g. ice and bedrock, or peat and sand.

The collected traces (also called scans) of the reflections form a 'radargram', the result of the GPR investigations, and is presented to the user, in real-time, as data is being collected.

GeoDrone 600

The GeoDrone 600 is an efficient tool for near surface target detection, shallow river surveys, lake bottom profiling as well as ice and snow investigations and shallow geological mapping.

The GeoDrone 600 has a centre frequency of 600 MHz and a light-weight directional antenna construction (2.7 kg).

The GeoDrone 600 features the brand new innovative MALÅ Motion Trig technology, PPS support for post synchronization with external RTK GNSS devices, power connectivity with external power sources and MALÅ AI compatibility for automatic hyperbola identification.

Bathymetry investigations

Bathymetry investigations are a common application for airborne GPR solutions like the GeoDrone. It enables measurements in freshwater lakes, dams, and rivers, allowing for the investigation of water volume even during periods of high flooding.

Ice and Snow investigations

Investigating ice and snow can often be challenging and dangerous due to crevasses, rugged terrain, and high altitudes. With a GeoDrone, these areas can be explored more efficiently and safely.

Geological mapping

The GeoDrone can be an efficient tool when carrying out investigations of geological layers, such as peat thickness estimations or depth to bedrock surveys, across extensive open areas. The drone allows for automated measurements and can also access otherwise inaccessible areas, such as very wet bogs and peatlands.

Want to learn more?

Check out our webinar covering GPR surveys over water, including GPR theory, survey design, instrument deployment, data processing for water-based surveys, and more.

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GeoDrone 80

GROUND PENETRATING RADAR

Airborne GPR Solution

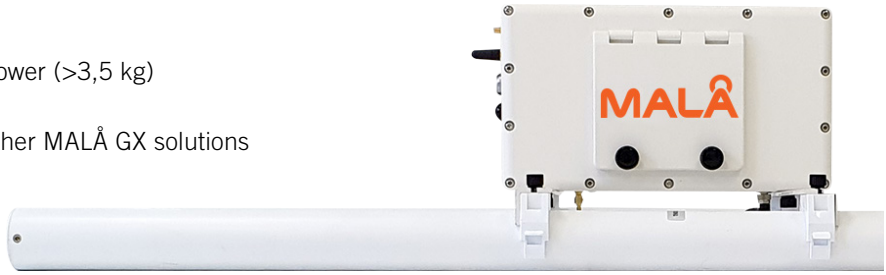
Technical Specification

The GeoDrone 80 is the cutting-edge solution for unmanned surveying in hard to reach and dangerous areas. It's based on the latest GPR HDR technology.

The GeoDrone 80 is an airborne GPR unit for efficient field work, designed specifically for data collection in remote, hazardous and in-accessible areas. The GeoDrone 80 makes it possible to effectively collect GPR data in a variety of difficult environments, such as snow-covered ground, rocky and uneven terrain, across rivers and in avalanche-prone areas.

GeoDrone 80 Features

- Using the unique MALÅ HDR GPR technology
- Support all standard drones with adequate lift power (>3,5 kg)
- Optimized for specific critical application areas
- Wireless real-time monitoring compatible with other MALÅ GX solutions
- Suitable for automated drone surveying



Technical Specification

Core Technology:	MALÅ HDR GPR
Dimension excl. drone:	W580 x L1040 x H240 mm (W23" x L41" x H9½")
Antenna separation:	530 mm (21")
Antenna weight incl. 2 batteries:	3.23 kg (7 lb 2 oz)
Antenna weight excl. 2 batteries:	2.31 kg (5 lb 1 oz)
Battery weight:	0.46 kg (1 lb)
Operating time:	Up to 1 hour
Antenna Frequencies:	80 MHz
Communication:	Complies with IEEE802.11 b/g/n
Built-in positioning:	DGPS (SBAS)

Responsibility & liability

The purchaser must investigate and adhere to the current laws, regulations and any required permissions related to the use of airborne GPR in the location of use. The manufacturer and Terraplus accept no responsibility nor liability in regards to the above.

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GeoDrone 600

GROUND PENETRATING RADAR

Airborne GPR Solution

Technical Specification

The GeoDrone 600 is the state-of-the-art, intelligent GPR solution for airborne surveys in hard to reach and dangerous areas. It's based on the latest GPR HDR technology.

The GeoDrone 600 is an airborne GPR unit designed for near surface GPR investigations in remote, hazardous and in-accessible areas. The GeoDrone 600 makes it possible to effectively collect GPR data in a variety of difficult environments, such as snow-covered ground, rocky and uneven terrain, across rivers and in avalanche-prone areas.

GeoDrone 600 Features

- The brand new and innovative MALÅ Motion Trig technology
- High resolution HDR technology
- PPS support for post synchronization with external RTK GNSS
- Power connectivity from external power sources
- MALÅ AI compatibility for automatic hyperbola identification

Technical Specification

Core Technology:	MALÅ HDR GPR
Antenna frequency:	600 MHz
Dimensions:	620 x 216 x 80 mm (24.4 x 8.5 x 3.15")
Weight:	2.7kg (5.95 lbs) in operation
Power:	Single 10.8 V smart battery, optional external power 9-32 VDC, 1.5 A max
Operating time:	1+ hours
Built-in positioning:	DGPS (SBAS) and PPS support for postsurvey synchronization with external RTK GNSS devices
Environmental:	IP 65

Operated via MALÅ Controller App (Android device)
Cloud processing using MALÅ Vision
Offline processing with MALÅ Vision Desktop

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