

GeoScope™ Mk IV



HIGH-SPEED 3D GPR ACHIEVES BOTH HIGH-RESOLUTION & DEEP PENETRATION

GeoScope Mk IV ground penetrating radar (GPR) raises the standard for high-speed, high density three-dimensional, subsurface imaging. The Mk IV is the fourth generation GeoScope and further exploits the application of step-frequency technology to GPR. GeoScope Mk IV enables high-density, high-speed 3D data capture with the unique combination of deep subsurface penetration coupled to high-resolution. Optimal signal bandwidth and the best possible resolution at each investigation depth result in large swaths of the subsurface surveyed at higher speeds with no sacrifice in imaging detail.

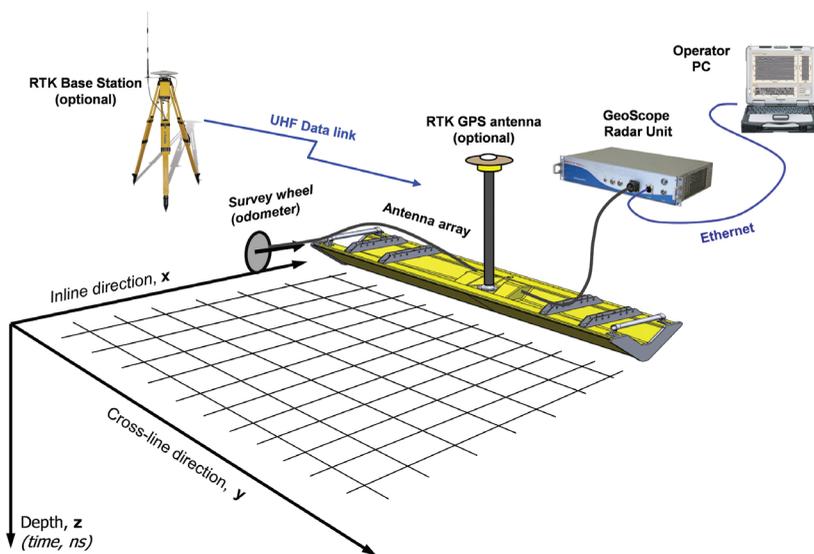


Figure1: System Overview

★ FEATURES & BENEFITS

- › **Achieving optimal resolution at all depths:**
Step-frequency technology enables users to achieve the best possible resolution at each investigation depth. Penetration and the highest resolution are simultaneously achieved with only ONE single antenna array. No need to employ different frequency antennas to adapt to different depths.
- › **Unprecedented area survey speed (work rate):** Very high scan rates and an efficient sampling method enables GeoScope Mk IV to provide full resolution 3D imagery with a 2.4 m antenna array at more than 80 km/h or 50 mph with a sampling grid of 7.5 by 7.5 cm. Work rates of above 20 ha/h (50 acre/h) are possible in appropriate locations.
- › **High-resolution, full 3D subsurface imagery:** 7.5 cm channel spacing in the antenna array combined with 3 GHz bandwidth ensures high-density sampling as required by utility mapping, military applications and archaeology prospecting.
- › **Wide range of antenna arrays with uniform response across the elements:**
The Mk IV is compatible with all DX and DXG Series antenna arrays ranging up to 3.3 m in width.

⚙️ SPECIFICATIONS

TECHNICAL SPECIFICATIONS	GEOSCOPE™ MK IV
Antennas	Compatible with all 3D-RADAR DX and DXG antenna array models
Number of Channels	User selectable up to the number of channels in the antenna array (Currently 41)
Scan Pattern	User definable. Includes linear scan, multi-offset and common mid-point.
Frequency Bandwidth	2.9 GHz (100-3000 MHz)
Resolution (Time)	0.34 ns.
Time Range	User selectable, up to 250 ns.
Scan Rate	User selectable, up to 13,000 A-scans per second
Operating Mode	Continuous (Time Interval), Survey Wheel (Distance Interval) or External Trigger
Positioning	Internal GPS in antenna array (Coarse) or external GPS with NMEA 0183 protocol
User Interface	Control and display GUI running on external computer. Full 3D real-time data display.
Interfaces	Gigabit Ethernet (Client computer), RS-232C (GPS) and Digital I/O (DMI, Trigger In and Out)
Power Supply	10.5-36 VDC, 100 Watts
Size	Without transport container: 483 x 337 x 89 mm (2U 19" rackmount) Within transport container: 630 x 500 x 310 mm
Weight	Without transport container: 8 kg Within transport container: 20.5 kg
Temperature Range	Operating: 0 to 50°C Storage: -40 to +85°C
Client Computer	Intel i5 or i7 with 8GBytes RAM Touch screen recommended Fast and large SSD recommended to store radar data

⚙️ ORDERING INFORMATION

PART NUMBER	DESCRIPTION
GS-MK4N	GeoScope™ Mk IV 3D Step Frequency GPR

APPLICATION AREAS

- › **Road & Bridge Inspection:**
Wide swath width and high-speed data capture minimizes lane closures.
- › **Railroad Inspection:**
Programmable to utilize unique scan patterns enabling a “look under” rails capability.
- › **Archaeology:**
Increased depths, multi-channel antenna array support and high-resolution reduce data collection time while providing the best possible imagery.
- › **Utility Mapping:**
Deeper depths and clear imagery increase the probability of locating buried infrastructure.
- › **Mine/IED Detection:**
The Mk IV technology is ideal for C-IED applications. High-resolution and increased depth penetration, combined with an open software interface, makes GeoScope Mk IV a key component in IED/UXO detection systems.

3D-RADAR RELATED PRODUCTS

- › DX Antenna Array Series
- › DXG Antenna Array Series
- › Examiner™ Software