GPRover

UTILITY MAPPING PLATFORM

The science of mapping utilities accrately just became within reach of anyone with the knowledge to locate utilities.

It all comes together in a configuration that:
•Is easy to learn and implement.
•Provides stunning high accuracy +/- 5cm. (2in.)
•Enables the operator to provide a deliverable that crew in the field can immediately use.
•Does not require a cellular modem, base station, or control points.
•Works anywhere in the world without requiring different network subscriptions.
•Designed for map creation and exporting into multiple formats useable by CAD, GIS, Google Earth, & Point Files.
•Exportable files include SHP, DXF, KMZ, CSV, & RTF.

With greater depth and resolution than any other locating technology, the GPRover can be used for finding anything from direct burial cables to utilities up to 30'/9.1m+* deep and everything in between.

*In ideal conditions, actual penetration depths will vary based on soil conditions.

USRADAR INC.
SUBSURFACE IMAGING SYSTEMS
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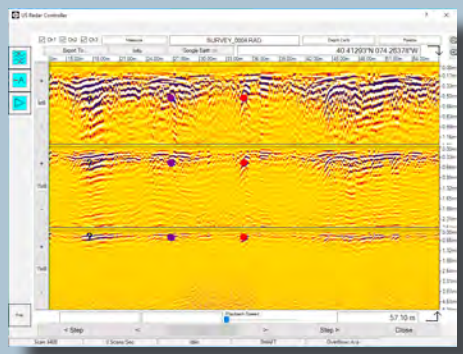
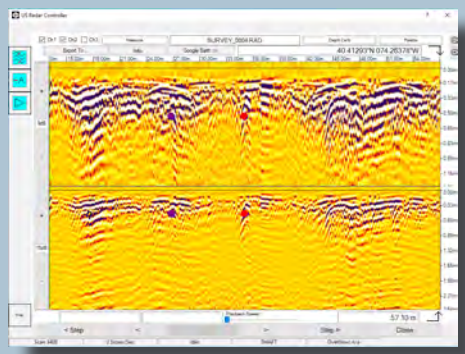
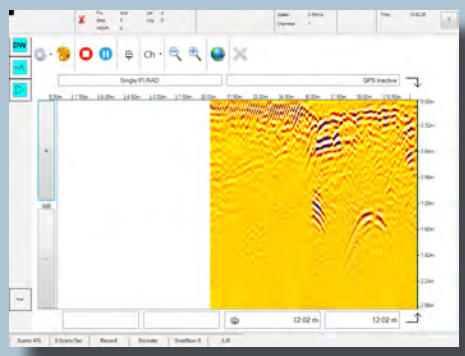
GPROVER
ANTENNA AND FEATURES







The challenge has always been that you sacrifice resolution when trying to accomplish depth. With this system you can combine resolution at shallower depths to help you identify targets at greater depths. By splitting the screen 3 ways initially, the slightest disturbance under the surface really stands out in the high frequency antenna. Then the operator can focus on the target in the appropriate frequency channel. You can run all 3 at once with the screen split 3 ways horizontally, or any 2 with the screen split in half or any one full screen. Even if you are observing only one channel at a time, data on all 3 is being acquired so it is possible to go back and check the other channels.

Durable, Glare-resistant tablet interface- All Quantums feature a daylight readable, weatherproof Getac tablet interface. Its high performance CPU enables real-time data processing as well as built-in 3D capability. Additionally, the system supports WiFi for quickly and easily sending data via e-mail, and has USB, ethernet and HDMI ports for easy export and display of data.

Easy Storage- The Quantum cart system has a folding tablet mount and cart handle to ensure it can be easily transported.

Hot-Swappable battery packs- Each system includes two hot-swappable battery packs, allowing the user to continuously use the system without waiting to recharge. Each battery has a life of about 8 hours and a total lifespan of several years.

Stepped Pulse Triple Frequency Antenna- Three antennas means three scans in one. The antenna's sloped design means it easily glides over obstacles. And all our systems easily integrate with GPS systems.

Airless, Solid Tires- Our tires cannot go flat and require no maintenance.

ACQUISITION SOFTWARE
FEATURES

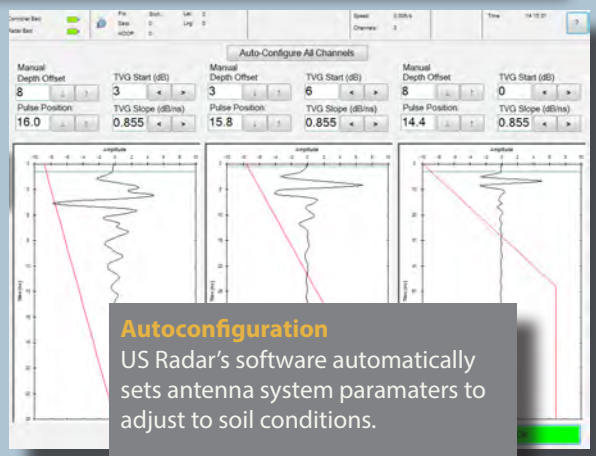
Our GPR Software is easy to use out of the box and perfect for on-the-go locators. Each time you create a file, our software automatically calibrates antenna and processing settings to the materials being scanned.

Superior Processing and Performance

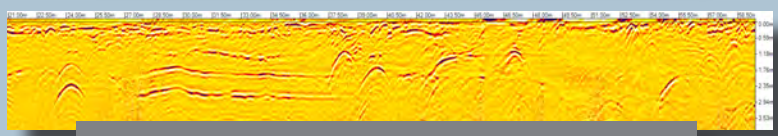
SmartGain - An industry exclusive, nothing else even comes close to the data clarity that SmartGain produces. Applying gain to a signal which has already been converted to digital inevitably amplifies noise along with the signal. Other GPR units then attempt to remove this noise by filtering it out, however, there is no substitute for a clean signal. The Quantum Imager applies gain to the raw analog signal as soon as it is received by the antenna, then gain is fine tuned digitally.

SmartStack - A unique algorithm takes advantage of spare processing power to improve image quality and increase depth of penetration, especially in lossy soils.

StreetSmart on board processing - eliminates the need for nearly all post-processing. Why wait to know in the office what you can find out in realtime? Why waste money on software you don't need?

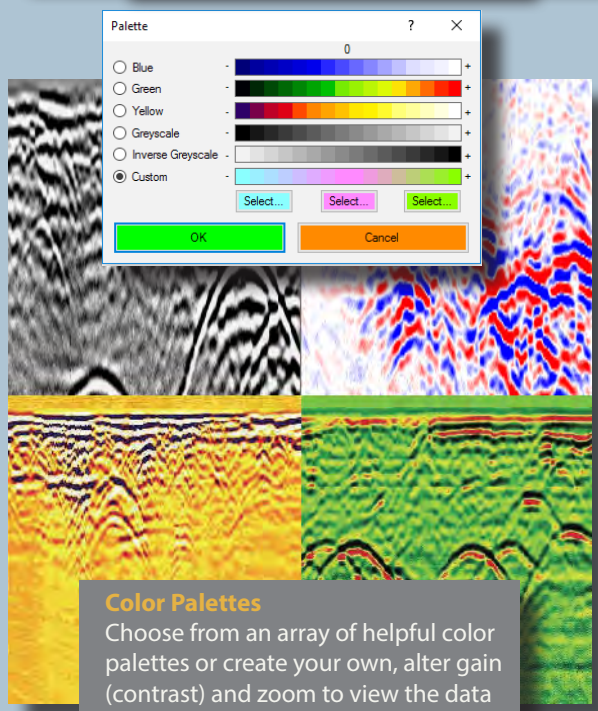


Autoconfiguration
US Radar's software automatically sets antenna system paramaters to adjust to soil conditions.

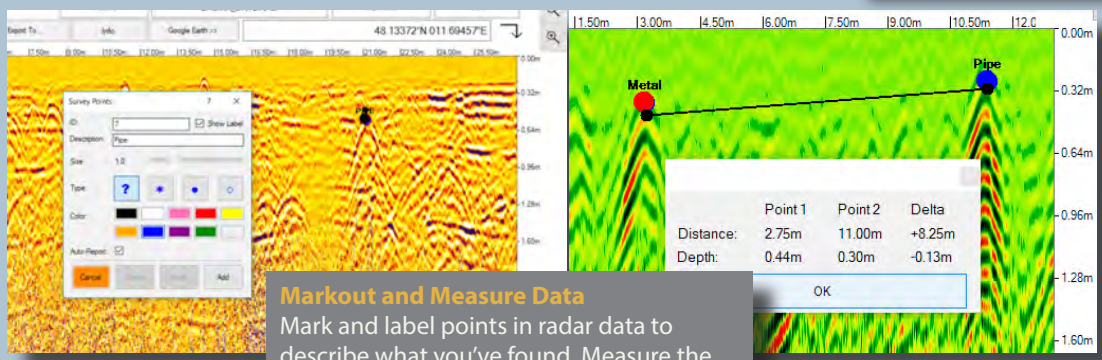


Automatic Report Generation
Export radar data and automatically generate reports in a number of different formats:

- Seg-Y (.sgy)
- Screenshot Image (.png)
- Slice Image (.png)
- Survey Point List (.csv)
- Seismic Unix (.su)
- Video (.avi)
- Google Earth (.kmz)
- Point Cloud (.asc)
- Auto-Report Points (.rtf)
- Printer-ready



Color Palettes
Choose from an array of helpful color palettes or create your own, alter gain (contrast) and zoom to view the data in different ways and gain important insights!



Markout and Measure Data
Mark and label points in radar data to describe what you've found. Measure the distance between two points to create even more context.

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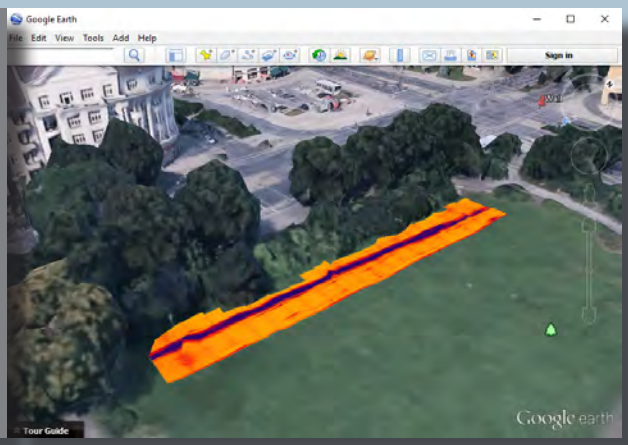
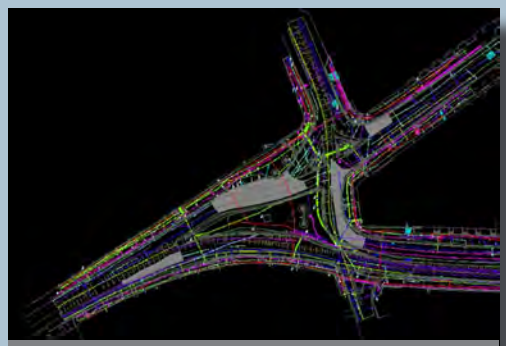
ACQUISITION SOFTWARE
FEATURES

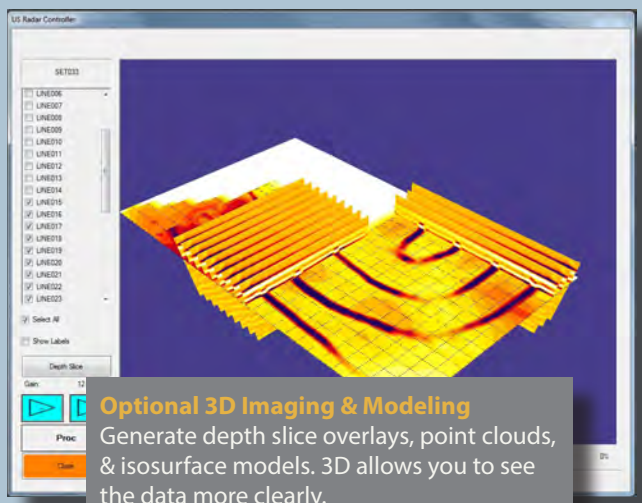
In addition to standard features unique to the proprietary scanning software, US Radar offers an array of powerful options to expand performance in mapping and locating: 3D scanning capability, integration with GPS and satellite imaging technology, and the ability to process data on third party software:

Google Earth/Satellite Imaging Integration
You can use location data for clues to locate specific utilities (e.g., a fire hydrant to locate water lines). Overlay radar data on satellite imaging to create reliable utility maps. Add descriptions to specific coordinates to annotate radar and map data.

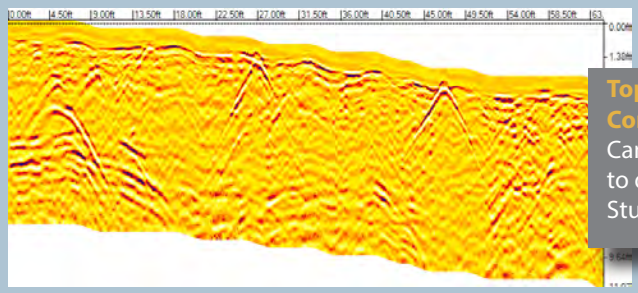




Mapping Software
Can be used to create as-built drawings in the field or in the office. Exports into many formats including .kmz, (Google Earth) .dxf (AutoCAD) and .shp (ArcGIS).

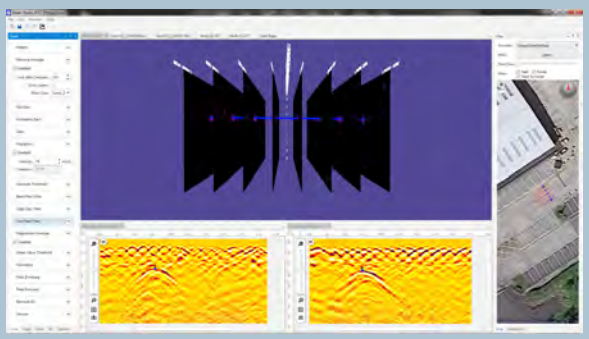


Optional 3D Imaging & Modeling
Generate depth slice overlays, point clouds, & isosurface models. 3D allows you to see the data more clearly.

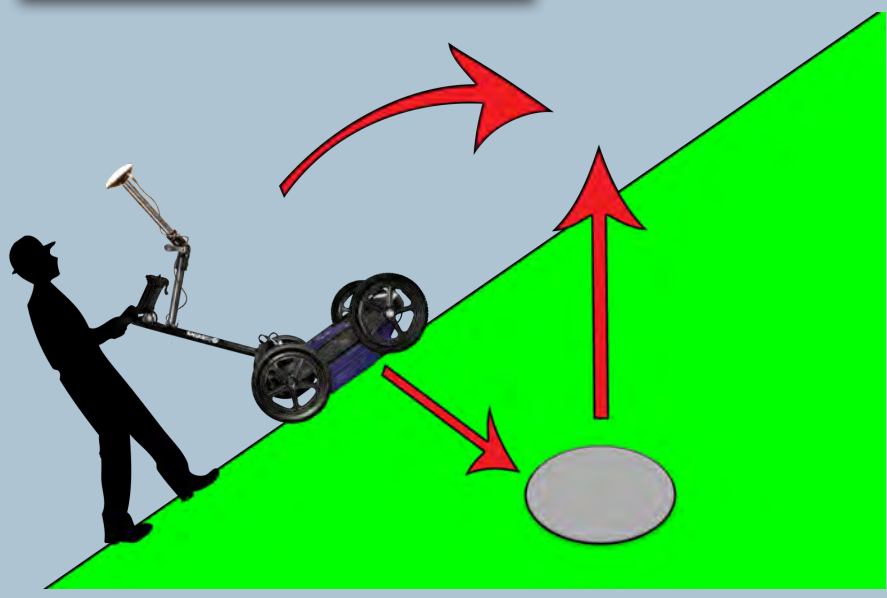


Topography Correction
Can be applied to data in Radar Studio Software.

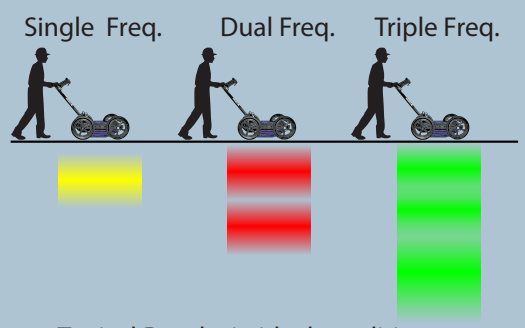
Tilt Correction
Patented tilt correction technology that corrects GPS positions for slope and cross-slope of the GPR and GPS antennas to increase overall accuracy on uneven terrain.



Field to Finish
Automatically connects user-identified utilities in 2d and 3D.



GPROVER
SUMMARY

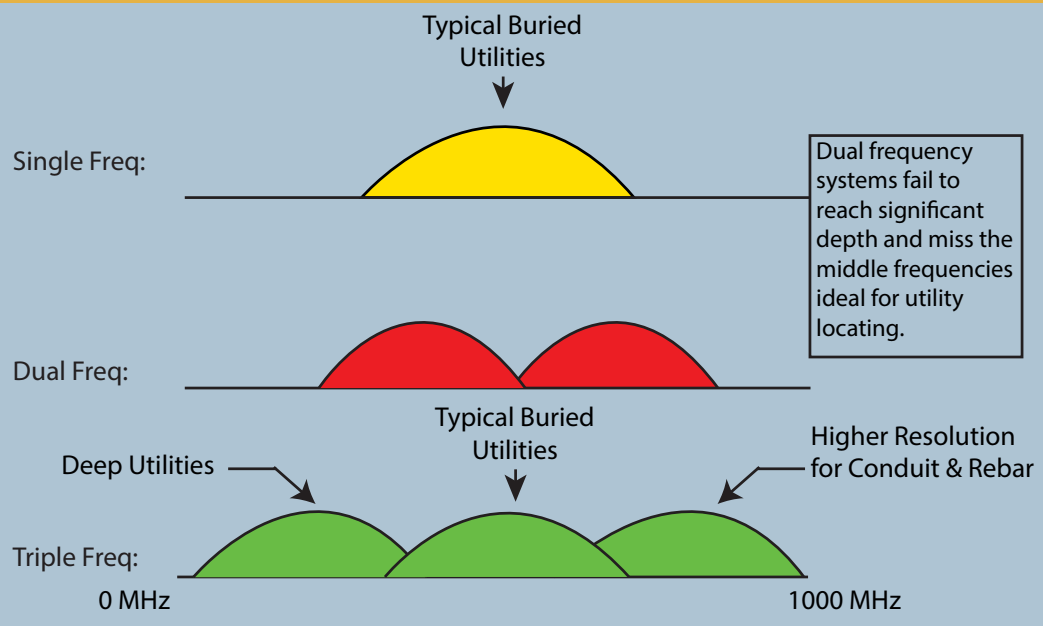


Typical Depths in ideal conditions:

10ft. (3m) 15ft. (4.5m) 30ft. (9m)

Typical Depths in clay soil:

5ft. (1.5m) 8ft. (2.4m) 15ft. (4.5m)



SPECIFICATIONS:

Radar Controller Computer:
Getac F110

HARDWARE AND SOFTWARE
Windows 7 or 10
Intel® Core™ i5vPro™ Processor

DURABILITY
MIL-STD-810G, 4-foot drop and all-weather IP65 dust and water resistant design

DISPLAY
11.6"/29.5 cm, HD daylight-readable touchscreen

I/O INTERFACE / COMMUNICATIONS

Ethernet Port

DC Power Port

1 USB 3.0 Port

HDMI Port

WiFi and Bluetooth

Expansion Options:

MicroSD or second USB 2.0 port

RJ45 Ethernet

Dedicated GPS

4G LTE

Control:
Windows-based full screen menu system using touchscreen interface. Optional use of full keyboard and mouse.

Software:
Microsoft Windows
US Radar Control Software Including:
- System Configuration
- A Scan Display (Oscilloscope Mode)
- B Scan Display (Cross Sectional View)
- Optional C Scan Display (3D) (optional)
- Optional Integrated Map Display Panel with real time annotation and CAD and GIS export
- Real Time Signal Processing
- Data Storage and Playback
- Optional GPS Integration

System Scan Modes:
- Trigger Modes: Free run, timed interval, shaft encoder, GPS, manual
- Resolution: 100 gigasamples

Nominal Sampling Rate: 650,000,000 samples per second
- Gain: 45dB hardware, 90 dB Software, 60 dB Software Flat Gain

Radar System Environmental Specifications:
Temperature: -11° to 50° C.
Seals: IP 67

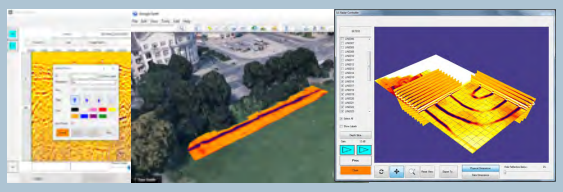
Radar Head Electronics Specifications:
Sampling Interval: 10 ps-6.4 ns
Time Range Adjustment Interval: 10 ps
Pulse Repetition Frequency: 0.1-4 MHz-adjustable
Sample per Trace: 2-8192, Adjustable
Effective Bandwidth (typ.): >4 GHz
Stacking: Automatic

Transmitter:
Stepped Ultra Wideband Triple Frequency

Support:
- Warranty: 2 Years Parts and Labor
- Complimentary telephone and email technical support

All hardware (except Getac products) made in USA by:

SOFTWARE:



US Radar offers a variety of software in on-board and desktop configurations including:
- GPS
- 3D
- GIS Mapping
- Report Generation
- and more!

The Quantum is also compatible with a wide variety of third party processing software packages.

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