



Locate and Map Underground Utilities with Ground Penetrating Radar

UtilityScan® DF

www.geophysical.com

UtilityScan® DF is GSSI's premium GPR unit for utility locating. It incorporates our innovative digital dual-frequency antenna (300 and 800 MHz) and an easy-to-use touchscreen interface to view shallow and deep targets simultaneously in a single scan. With an operation life of up to eight hours and a survey speed up to 6.25 mph (10 km/h), data collection is fast and efficient.



- 1** Touch-screen control unit
- 2** Interior, dual-frequency antenna
- 3** Adjustable, protective capsule
- 4** Ergonomic handle and flexible mount
- 5** Rugged, removable wheels
- 6** Internal, integrated survey wheel encoder

Designate Targets

- Real-time data collection
- Back-up cursor and cross-hair cursor allow the user to accurately locate targets
- Multiple techniques to calculate depth of targets

Integrated System

- Dual-frequency digital antenna offers superior resolution for shallow and deep targets
- Easy-to-use, user selectable text or icon-based interface
- Full GPS integration

Premium Mobility

- Rugged, four-wheel cart design able to withstand the toughest conditions
- Compact cart design is easy to transport and assemble
- Fast data collection, up to 6.25 mph (10 km/h)

Superior Data Quality

- System optimized for increased depth of penetration
- Advanced display modes, including 3D visualization and advanced signal floor tracking



"The UtilityScan DF provides a crystal clear, instantaneous double display of the location of utilities noticeable in the ground. Its use for utility mapping is an indispensable tool for our activity."

Thibaut Mabire, Ingetec



UtilityScan DF

Features

The UtilityScan DF is ideal for locating the position and depth of metallic and non-metallic objects, including service utilities such as gas, communications, sewer lines as well as underground storage tanks and PVC pipes in various soils. The UtilityScan DF is purpose-built and offers an easy-to-use touchscreen interface to view shallow and deep targets simultaneously in a single scan.

The new dual-frequency 300 MHz and 800 MHz antenna is GSSI's first digital antenna, allowing the operator to locate targets at depths of up to 5 m/ 16 ft. (in U.S./Canada). With an operation life of up to eight hours and survey speed up to 10 km/h (6.25 mph), data collection is fast and efficient.

Advanced software features offer the user several options to view the data; each channel individually, both channels separated via split screen, or our patent-pending Blend mode, or our newly designed 3D mode. The UtilityScan DF also provides advanced signal processing tools such as stacking, signal floor tracking and background removal.

System Includes

Dual-frequency antenna (300 and 800 MHz)
Customized Panasonic Toughpad® FZ-G1 control unit with extended life battery and AC power supply
Choice of survey cart with encoder wheel
2 m control cable
Transit case for control unit
Two batteries and two-bay battery charger: antenna
User Manual
2-year warranty



**Lightweight Survey Cart
Model 625**

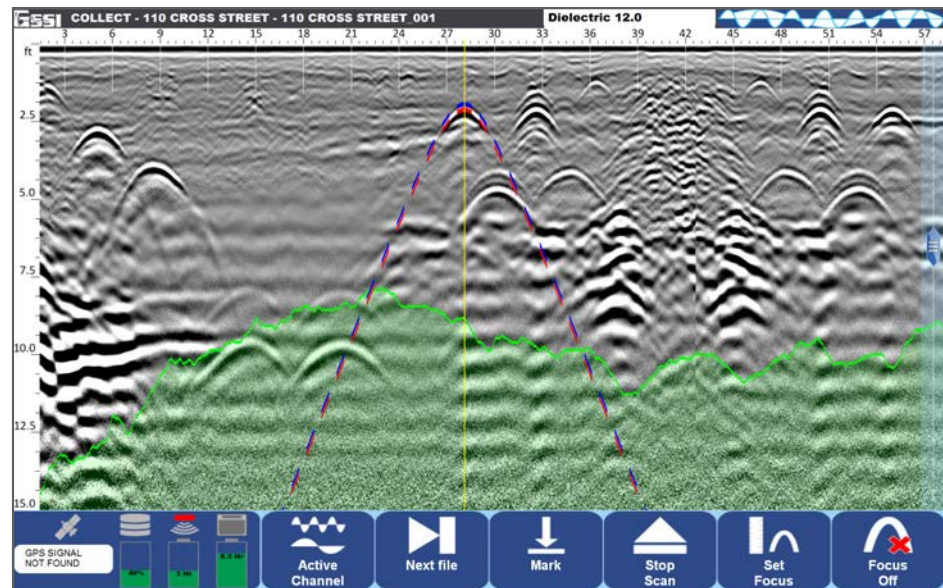
**Compact Survey Cart
Model 655**

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UtilityScan DF Data

Blend Mode

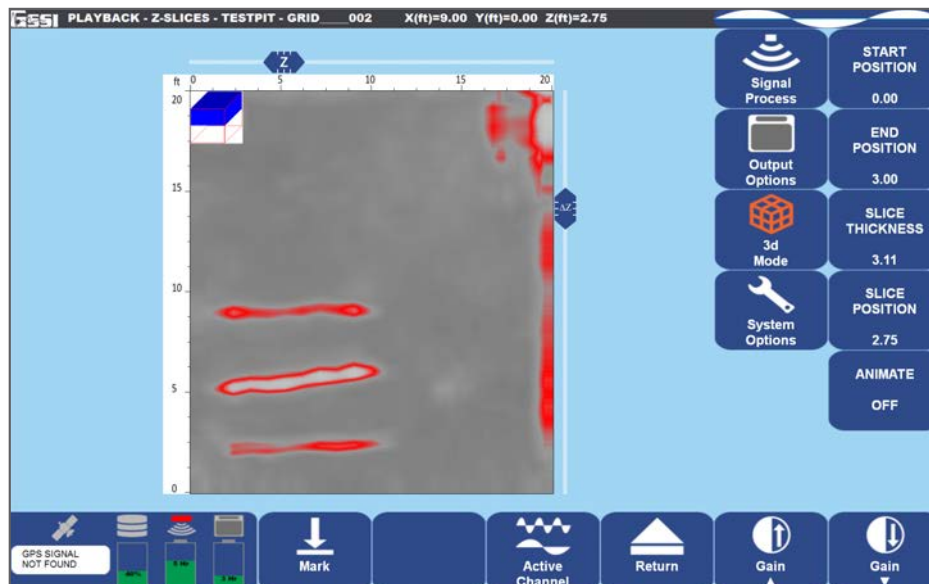
The UtilityScan DF features a patent-pending method to view the data, called Blend mode. Blend mode combines the high resolution near-surface data with lower depth detail in a single view.



Data illustrates several metallic and non-metallic targets at various depths in Blend mode. Green shaded area represents estimated signal floor. Red/blue dotted line identifies the soil velocity calculation tool.

3D Mode

The UtilityScan DF offers an ultramodern take on 3D visualization. Users can view data in planview, slice through the z and y planes or animate the data.



Data illustrates three metallic targets at depths of 1, 2 and 3 feet collected at GSSI's utility test pit using 3D mode.

UtilityScan® DF Specifications

Controller	
System	Panasonic Toughpad® FZ-G1
Data Storage Internal Memory	128 GB SSD
Display	Enhanced 10.1" WUXGA 1920x1200 with LED backlighting
Processor	Intel® Core i5 4310-U vPro
Ports	USB 3.0, Ethernet and Serial
Batteries	Li-Ion battery pack (10.8 V typical 9300 mAh)
Operating Temperature	-28°C to 60°C (-20°F to 140°F)
Environmental	IP-65
Drop Spec	MIL-STD-810G
GSSI System Software	
Data Format	RADAN® (.dzt)
Scan Intervals	50 or 100 scans/meter (15 or 30 scans/foot)
Output Data Resolution	32-bit
Operating Mode	Survey wheel
Depth Ranges	Five selectable ranges
System Speed	up to 600 kHz, 200 kHz per channel in U.S./Canada
Data Collection Speed	up to 6.25 mph (10 km/h)
Gain	Manual or automatic, 1-8 gain points (-42 to + 126 dB)
Real-time Filters	Stacking, Background Removal
Advanced Real-time Filter	Signal floor tracking
Display Mode	Linescan Mode: high frequency data only or low frequency data only displayed Split Mode: high and low frequency data displayed in split screen view Blend Mode: high and low frequency data combined in single view 3D Mode: 3D visualization
Data Format	RADAN™ (.dzt)
Diagnostic	GPS and quality indicator status, battery, hard disk capacity
Digital Dual Frequency Smart Antenna	
Number of Hardware Channels	2 (two)
Frequencies	300 and 800 MHz
Typical Range	12 ft (4 m)
Minimum/Maximum Range	20 in - 16 ft (.5 m - 5 m)
Connectors	Digital control, power, survey wheel, marker, serial RS232, accessory connector
GPS	Data stored internally
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Weight	12 lbs (5 kg)
Dimensions	13.2 x 12.2 x 5.9 in (33.5 x 31 x 15 cm)
Environmental	IP-65

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Cart Options

Model 655

- 4-wheel compact survey cart
- Internal, integrated survey wheel encoder
- Removable, 12-inch wheels
- Compact, weather resistant design
- Antenna centerline to front of cart: 15 in (38.2 cm)
- Dimensions: 24.3 x 39.4 x 40.3 in (61.7 x 100 x 102.4 cm)
- **Total System Weight:** 66 lbs (29 kg)

Model 625

- 2-wheel lightweight survey cart
- Integrated survey wheel encoder
- Removable, 24-inch wheels
- Lightweight and foldable design
- Antenna centerline to front of cart: 11 in (28 cm)
- Dimensions: 53.6 x 51.8 x 24.9 in (136.1 x 131.6 x 63.2 cm)
- **Total System Weight:** 51 lbs (23.1 kg)

See Our Website For
More Information



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Geophysical Survey Systems, Inc.

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New UtilityScan Accessory to Enhance Utility Locating

LineTrac™

www.geophysical.com

GSSI is pleased to announce LineTrac™, an accessory to our UtilityScan systems employing either the DF or HS antennas. LineTrac adds the ability to detect AC power and induced RF energy present in buried utilities.

Locating specific pipes and cables in large underground networks can be very complex. Ground conditions resulting from varying soil conditions can make the job more difficult and time consuming when relying on any one detection method. GSSI recognizes that ground penetrating radar (GPR) is not the only tool for the job and has developed an accessory that combines GPR data with a radio detection sensor.

The most important requirements for utility locators are ease-of-use, accuracy and reliability. The combination of UtilityScan and LineTrac addresses these needs with features that deliver accurate, dependable and repeatable performance.

LineTrac employs a three-axis 50/60 Hz magnetometer that is used to locate powered and non-powered utilities. LineTrac detects extremely low amplitude AC signals associated with difficult to locate utilities.

Features

LineTrac includes a number of features to easily identify target utilities, including:

- Easy integration with GSSI UtilityScan systems with digital antennas
- Seamless data fusion with GPR data
- Aids in target discrimination
- Designed to work with existing radio detection transmitters
- User selectable Frequency Mode or Power Mode options
- 20 Hz to 50 KHz active frequency bandwidth
- Rugged, IP-65 rated enclosure

Compatible Systems

- UtilityScan Pro
- UtilityScan DF
- UtilityScan HS

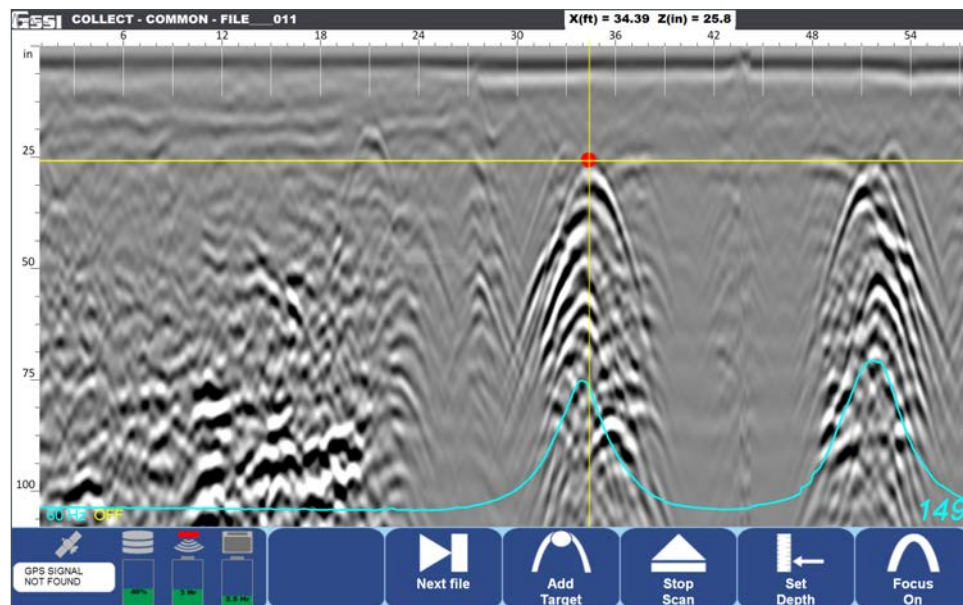
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Shown with 350 HS antenna



LineTrac Data



Power Mode

Data illustrates two power lines entering a large commercial building.

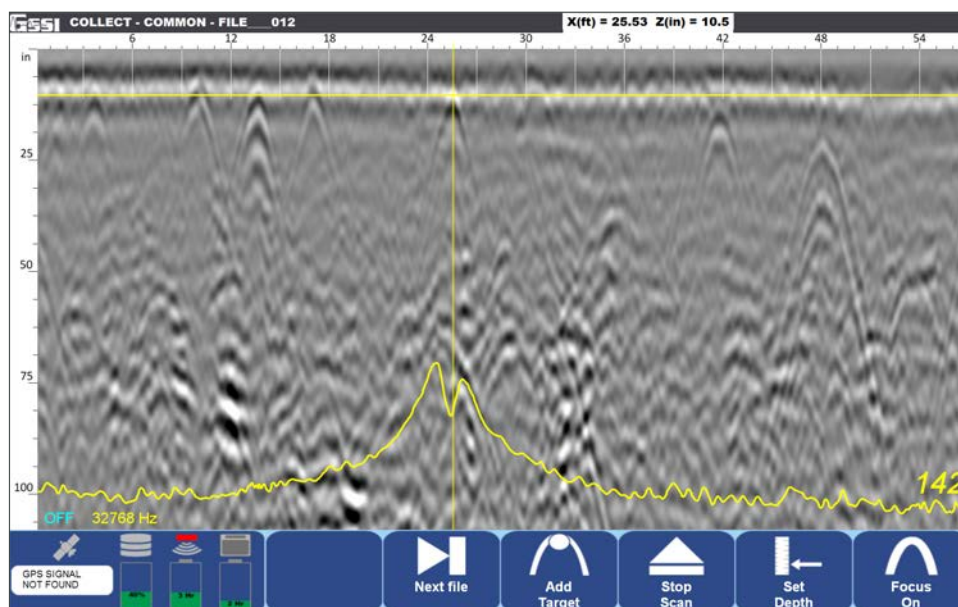
Data collected with:
UtilityScan HS

Frequency Mode

Data illustrates a small electrical conduit buried among multiple tree roots.

Crosshairs indicates position of conduit.

Data collected with:
UtilityScan HS



Antenna Compatibility

Models: 300/800 DF and 350 HS

Survey Cart Compatibility

Models: 625, 653, 654, 655

Specifications

Power Mode Frequencies	50/60 Hz
Frequency Mode Presets	1, 8, 16, 33 KHz
User-selectable Frequencies	20 Hz to 50 KHz
Ingress Protection	IP-65
Compliance	FCC, RSS, RoHS, CE
Operating Temperature	-20°C to 40°C (14°F to 122°F)
Warranty	2 years

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Geophysical Survey Systems, Inc.

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