



GPR SYSTEMS FOR CONCRETE & UTILITY APPLICATIONS

Image Your World



AN IMPACT IN EVERY CORNER OF THE GLOBE

1970

YEAR
FOUNDED

7

CONTINENTS
SERVED

86

NUMBER OF
EMPLOYEES

72k

HQ SPACE
SQ. FT.

COMPANY VISION

GSSI is an internationally respected corporation known for our technological advancements in the geophysical, archaeological, forensics, infrastructure, public works and transportation industries. We serve our clients with technical expertise, unsurpassed customer support and training facilities, and superior products.

OUR MARKETS

GSSI products are distributed through a series of application specialists and representatives worldwide to five primary markets-concrete inspection, utility mapping and locating, road and bridge deck evaluation, geophysics and archaeology. We also serve many specialty markets including autonomous vehicles, tree assessment, golf course management, environmental assessment and ice and snow investigation, to name a few.

ABOUT GSSI



TRAINING IS A BIG PART OF WHAT WE DO HERE AT GSSI

5

NUMBER OF
FULL TIME
TRAINERS

54

YEARS OF
EXPERIENCE
IN TEAM

120
+

NUMBER OF
CLASSES,
YEARLY

5k

DEDICATED
TRAINING SPACE
(SQ. FT.)



GSSI ACADEMY

OUR APPROACH

Serious professionals know that proper training on the equipment and in the application area is key to long-term success and the avoidance of costly claims. Our professional trainers provide exceptional instruction because you deserve the best.

OUR FACILITIES

With more than 465 sq. m (5,000 sq. ft.) of dedicated training space at our HQ, and a training location in Nevada, our trainers hold more than 120 classes a year. Our HQ facilities include two classrooms, a specialized concrete forms room, and a first-in-the-industry 70.6 sq. m (760sq. ft.) indoor utility pit. We bring real-world conditions into a safe learning environment.

Training
in Antarctica





STRUCTIONESCANNER™ MINI XT

COMPLETE GPR SYSTEM FOR CONCRETE INSPECTION

The StructureScan™ Mini XT is GSSI's newest generation of our very popular all-in-one GPR systems. The StructureScan Mini XT offers a 2.7 GHz antenna for superior target resolution and can reach depths of up to 60 cm (24 inches). This system is designed with the option for users to add accessories and tailor the unit to specific applications.

The Mini XT Advantage

The StructureScan Mini XT is ideal for locating the position and depth of metallic and non-metallic objects in concrete structures, including rebar, conduit, post-tension cables, voids and service utilities. In addition, the Mini XT can help identify structural elements including pan deck, concrete cover, and slab thickness.



MAX DEPTH

60 cm (24 inches)

ANTENNA FREQUENCY

2700 MHz

WEIGHT

1.8 kg (4 pounds)

STORAGE CAPACITY

14.5 GB

OPTIONAL SOFTWARE

RADAN 7 for
StructureScan Mini

ACCESSORIES

Palm XT Antenna,
LineTrac XT,
Accessory Pole



STRUCTURESCAN MINI XT FEATURES

High Frequency, High Resolution Concrete Antenna

The StructureScan Mini XT employs a new 2.7 GHz antenna that provides excellent near surface resolution while also maintaining the ability to resolve deeper targets.

Enhanced Data Visualization

Get first-in-class data visualization with a state-of-the-art 6.5 inch HD touchscreen user interface and several operation modes designed for beginner to advanced use.

OPERATION MODES:

- QuickScan** Collect 2D data with the push of one button
- ScanMax** Access advanced options
- Scan3D** For complex reinforcement environments

Accessories for Advanced Capabilities

Incorporated into the design are three accessory ports that allow the use of add-on accessories including the Palm XT, LineTrac XT and an extension pole.

TYPICAL USES

Find Rebar, Post Tension, Conduits, and Non-metallic Objects

Measure Slab Thickness and Void Location

Concrete Scanning and Imaging

Condition Assessment

Structure Inspection

FCC, RSS-220 and CE Certified

ACCESSORIES

2300 MHz – Palm XT Antenna

Palm XT is a small form factor GPR antenna that gives users unprecedented access in tightly spaced areas and enables easy overhead scanning. This 2300 MHz Palm XT antenna offers superior depth penetration and resolution with three data collection modes.



Standard Requires no special set up, and is ready for plug-and-play operation

Cross Polarization Highlights non-metallic objects such as PVC while de-emphasizing metallic objects like rebar and wire mesh

Side Car Transitions the survey wheel to the side of the antenna and allows it to fit into smaller spaces



LineTrac XT

LineTrac XT adds the ability to detect AC power and induced RF present in conduits. This accessory combines radar data with a magnetometer, which allows the LineTrac XT to detect low amplitude AC signals associated with difficult to locate conduits.

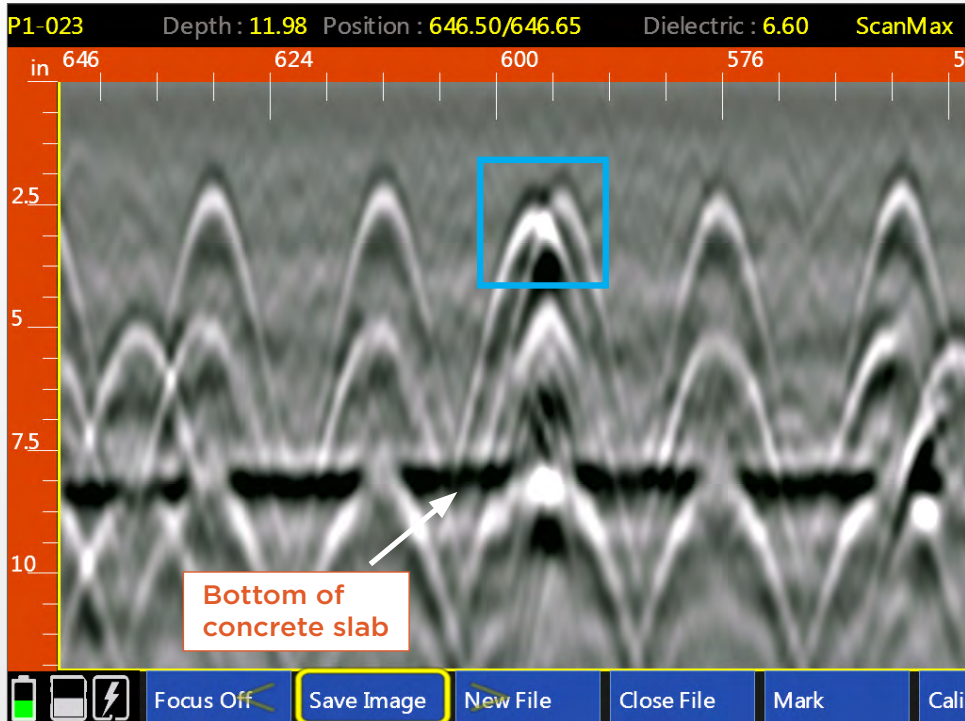
Features include:

- Seamless fusion with GPR data
- Aids in target discrimination
- Detection at 50/60 Hz
- Rugged, IP-65 rated enclosure



HIGH RESOLUTION ANTENNA

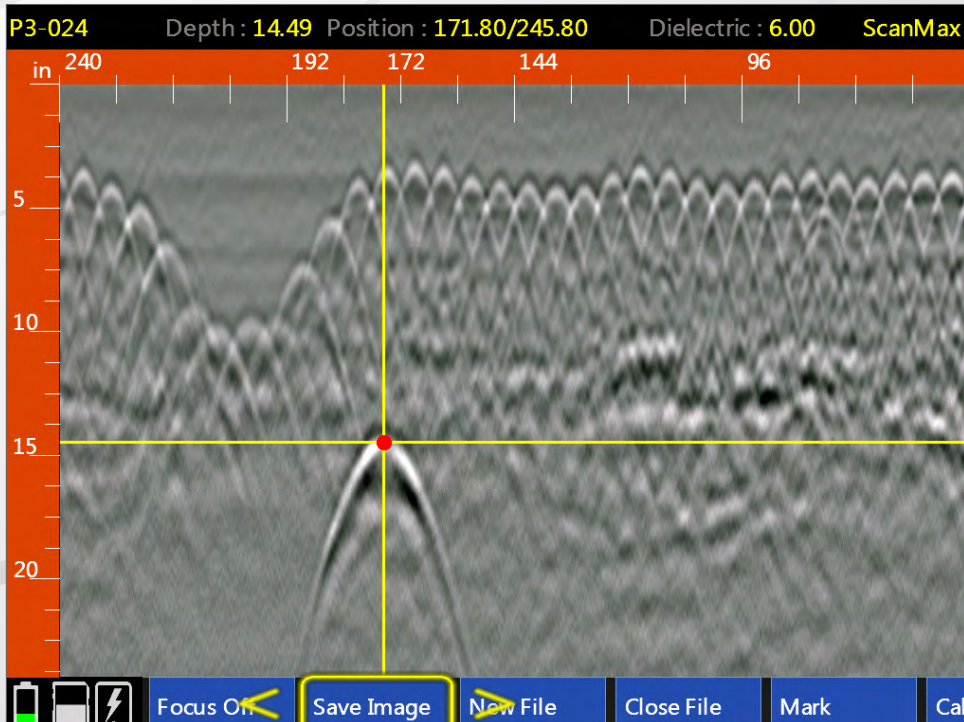
Data Example: Data shows multi layer rebar in an elevated slab. Bottom of slab is clearly visible at 20 cm (8 in) in depth. Note the closely spaced rebar highlighted in the **BLUE BOX**.



CONCRETE DATA

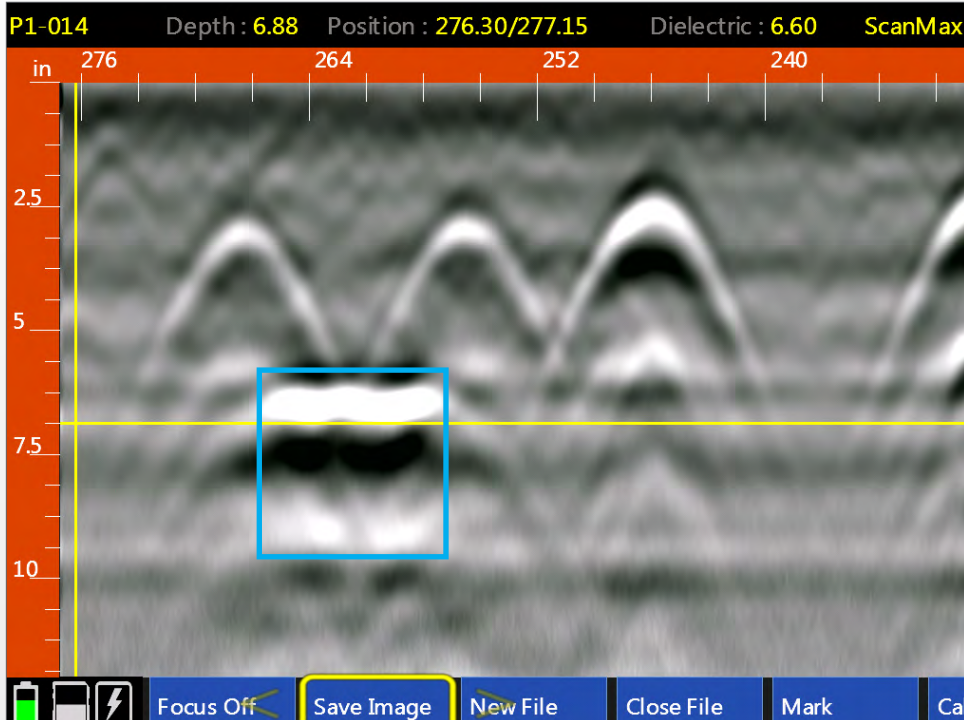
ENHANCED DEPTH PENETRATION

Data Example: Data shows a drainage pipe marked with a **RED DOT** underneath a concrete slab reinforced with wire mesh. The dip in the wire mesh represents a thickened slab-on-grade footing positioned for a load bearing wall. This data example also highlights the new extended depth range down to 60 cm (24 in).



IDENTIFY STRUCTURAL FEATURES

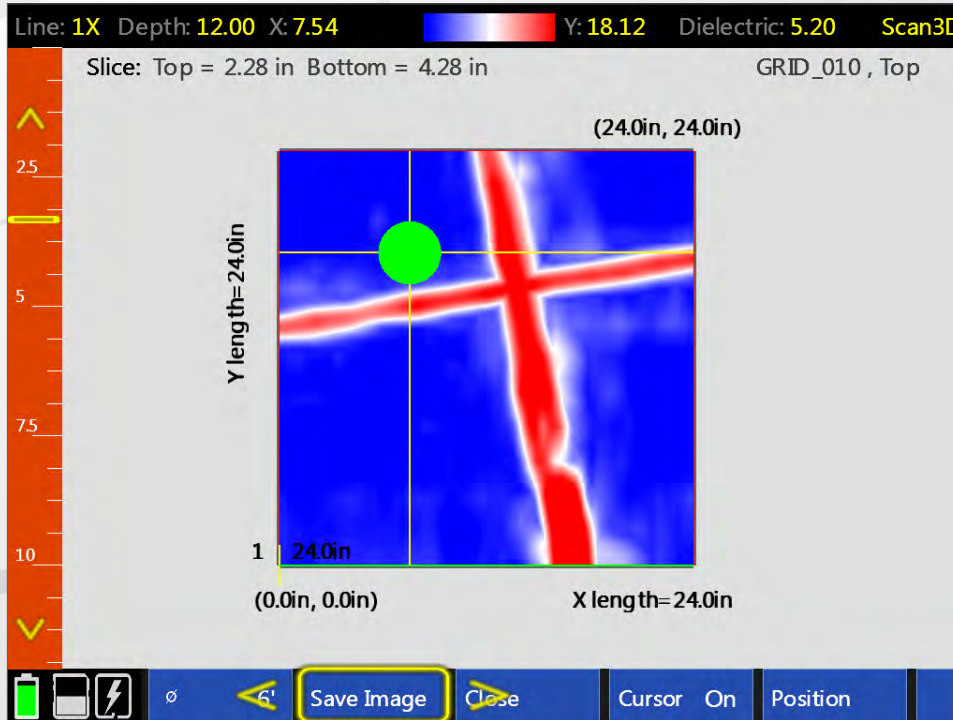
Data Example: Data shows rebar and a structural steel box beam highlighted in the **BLUE BOX**.



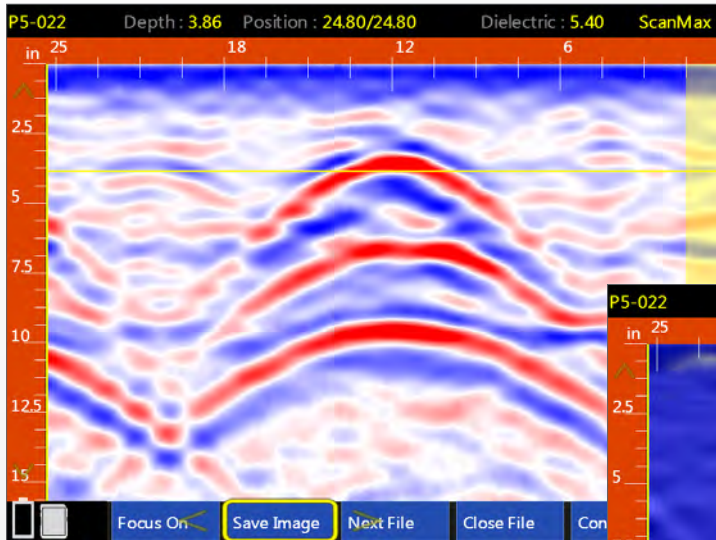
CONCRETE DATA

3D DATA WITH AUTO DRILL FEATURE

Data Example: This image is of a standard 3D data set showing rebar. The **GREEN DOT** represents location of auto drill feature. Green color indicates that the detection algorithm did not detect any obstructions within the green highlighted area.

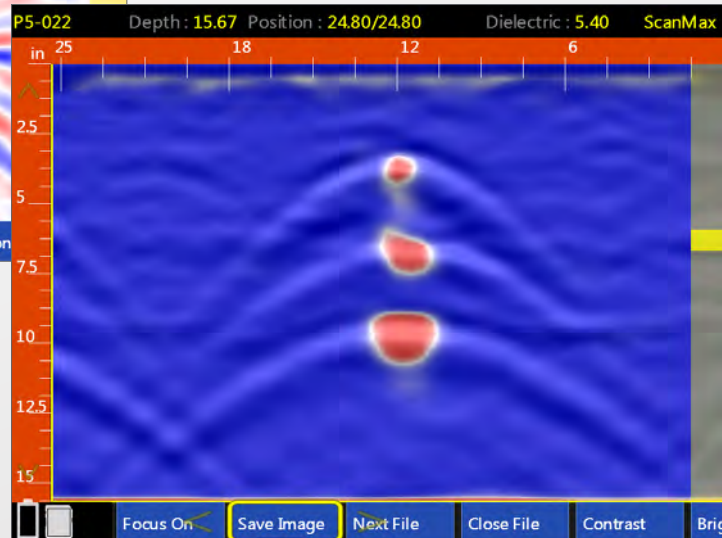


FOCUS MODE: ADVANCED TARGET IDENTIFICATION



Data Example (left): Linescan data image showing three targets at varying depths.

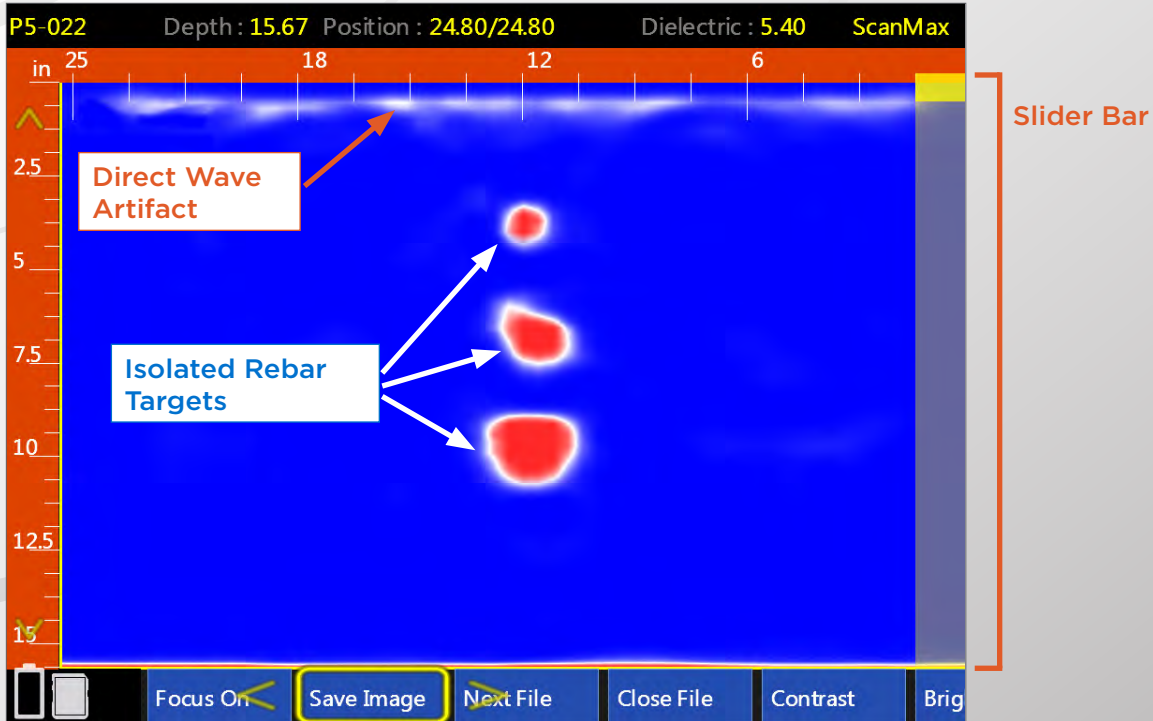
Note that all targets are vertically aligned, which the Mini XT system can easily resolve.



Data Example (right): Linescan data highlighting the Blend Mode functionality.

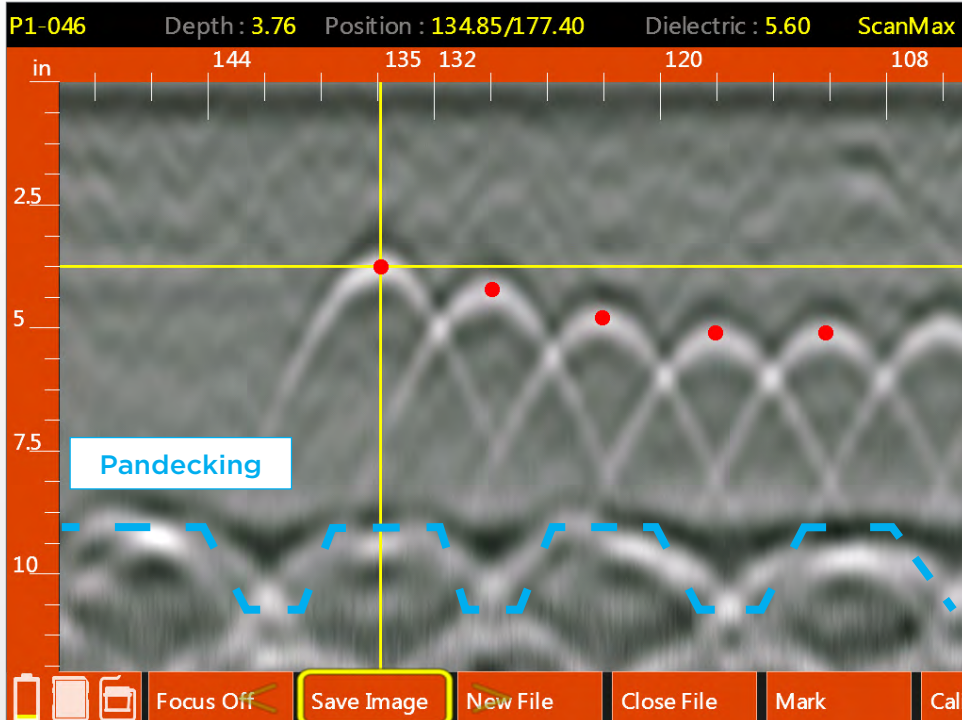
Data Example: Data set shows clear and concise position of vertically aligned rebar targets. Focus Mode allows for easier identification of target centers.

The new slider bar (right side of the data image) is a touch screen control which allows users to easily transition between Linescan to Focus Mode data.



MINI XT ACCESSORY: PALM XT ANTENNA

Data Example: Data was collected using the 2300 MHz Palm XT antenna and shows wire mesh (**RED DOTS**) with 15 cm (6 in) spacing over pandecking (**BLUE LINE**).

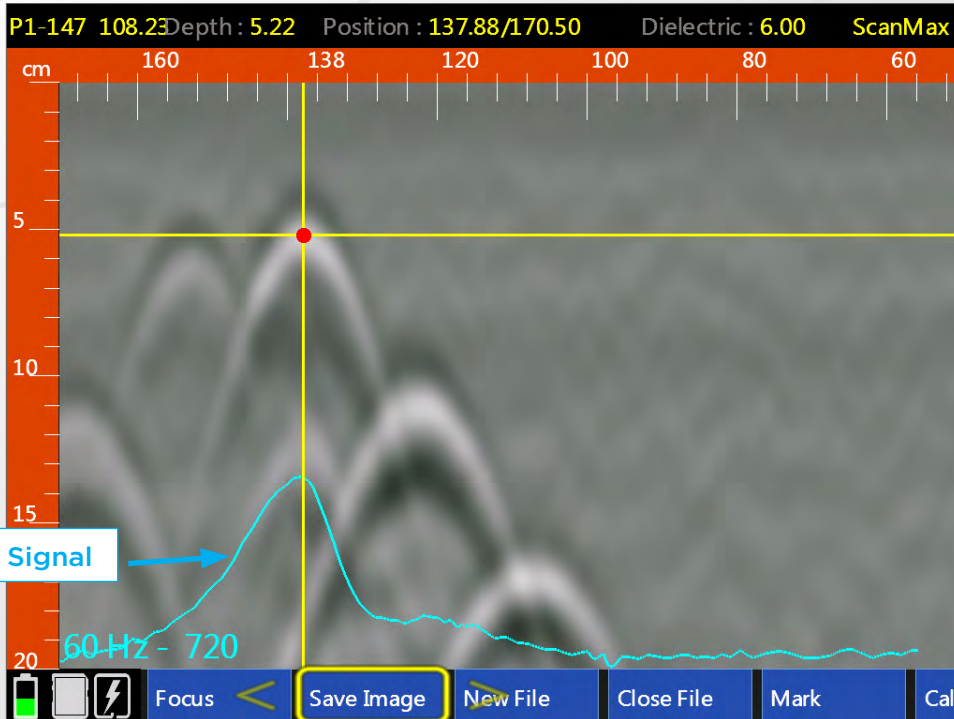


CONCRETE DATA

MINI XT ACCESSORY: LINETRAC

Data Example: Data was collected using the StructureScan Mini XT with the LineTrac accessory. Cross hair cursor highlights a shallow conduit carrying 3 amps of current at 60Hz.

BLUE LINE at the bottom of the data represents the measured response from the powered conduit.





STRUCTURESCAN™ MINI LT

ENTRY LEVEL GPR SYSTEM FOR CONCRETE INSPECTION

The StructureScan Mini LT is GSSI's entry level all-in-one GPR system for concrete inspection. This hand-held system, based on the popular StructureScan Mini, is designed for basic scanning needs on a budget. The Mini LT locates rebar, conduits, post-tension cables, voids and can be used to determine concrete slab thickness in real-time.

The Mini LT Advantage

The StructureScan Mini LT safely locates metallic and non-metallic targets in concrete structures to a depth of up to 50 cm (20 inches). This system can also be used to inspect bridges, monuments, walls, towers, tunnels, balconies and garages.



MAX DEPTH 50 cm (20 inches)	ANTENNA FREQUENCY 1600 MHz
WEIGHT 1.6 kg (3.6 pounds)	STORAGE CAPACITY 2 GB
OPTIONAL SOFTWARE RADAN 7 for StructureScan Mini	ACCESSORIES Extension Handle



STRUCTURESCAN MINI LT FEATURES

Integrated, Compact Design

The StructureScan Mini LT is rugged, compact and lightweight - weighing only 1.6 kg (3.6 pounds), making it easy to use on the floor or for overhead surveys.

Enhanced Data Visualization

The Mini LT includes two modes of operation; 2D Mode for real-time locating and 3D Mode for x-ray like images of the concrete. This system also incorporates two types of automatic target detection to aid users in interpreting data.



TYPICAL USES

Find Rebar, Post Tension, Conduits, and Non-metallic Objects

Measure Slab Thickness and Void Location

Concrete Scanning and Imaging

Condition Assessment

Structure Inspection

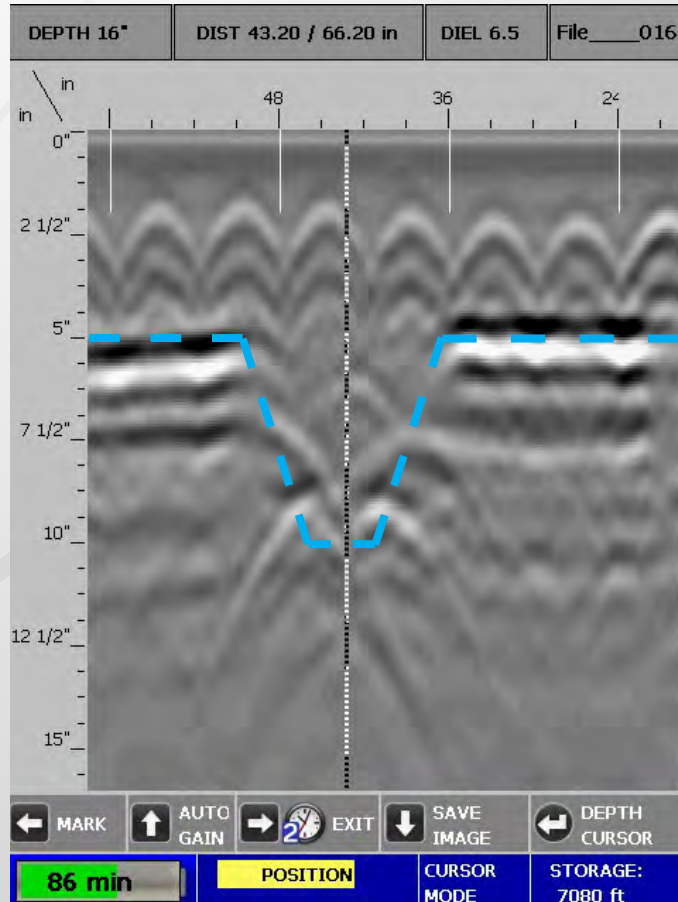
FCC, RSS-220 and CE Certified

First-in-Class Capabilities

Incorporated into the design is a laser positioning system. The lasers are located on the front and sides of the unit to help users accurately mark targets. The Mini LT also has an integrated positioning system to measure distance for efficient and accurate data collection.

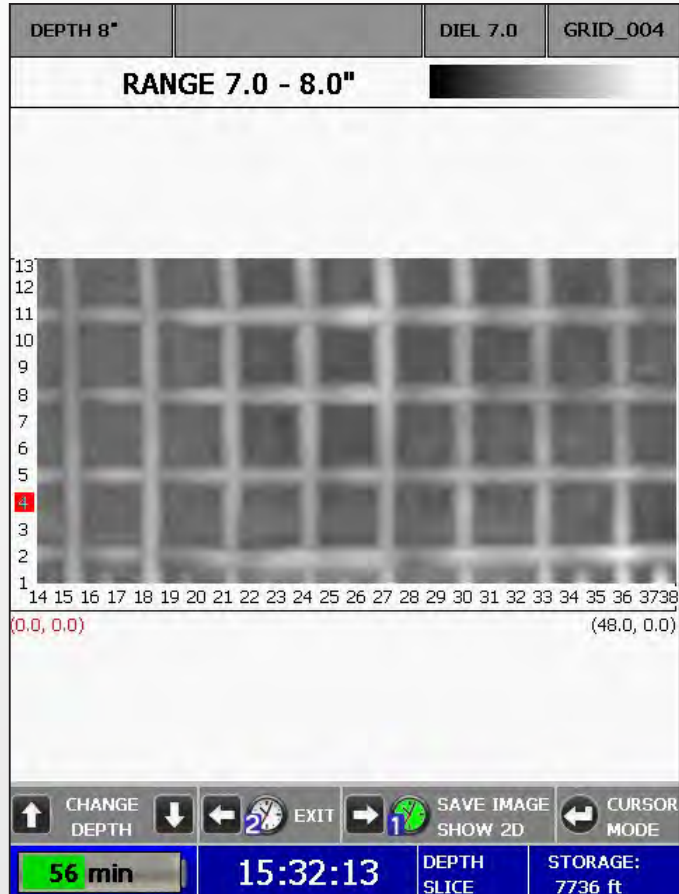
IDENTIFY STRUCTURAL FEATURES

Data Example: Data shows tendons and structural reinforcement over a beam in a precast parking deck structure.

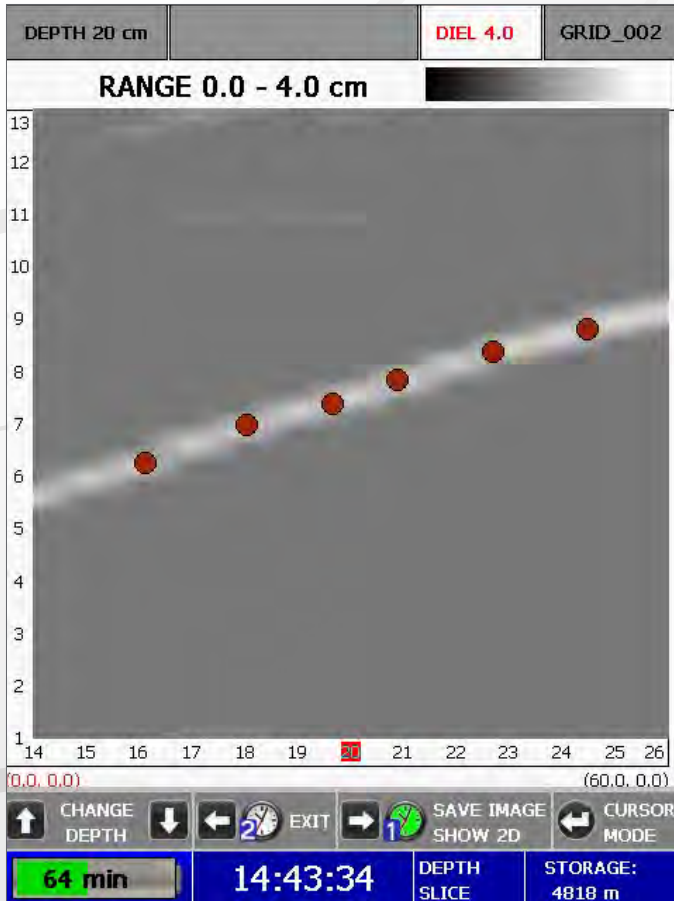


ADVANCED VISUALIZATION: 3D DATA

Data Example: Data image shows a large area (60 x 121 cm, 2 x 4 ft) in 3D Mode with wire mesh reinforcement.



CONCRETE DATA



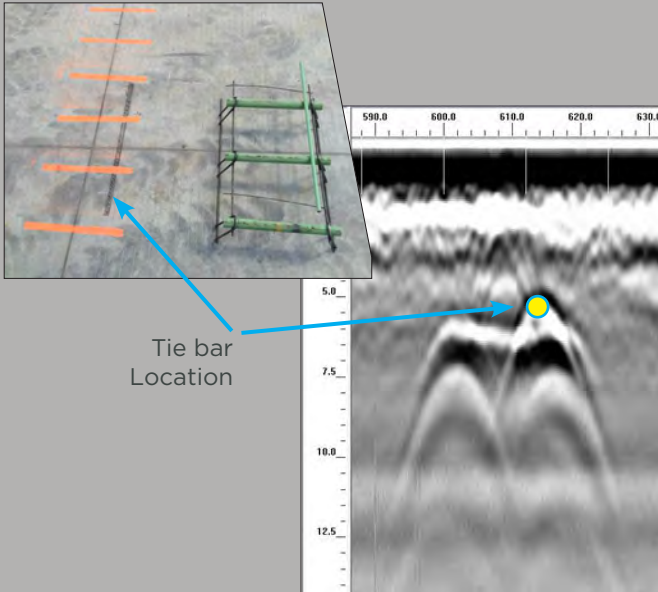
Data Example: Data shows a very shallow plastic conduit located at 4 cm (1.25 in) in depth.



CASE STUDY: DOWEL BAR & TIE BAR LOCATION

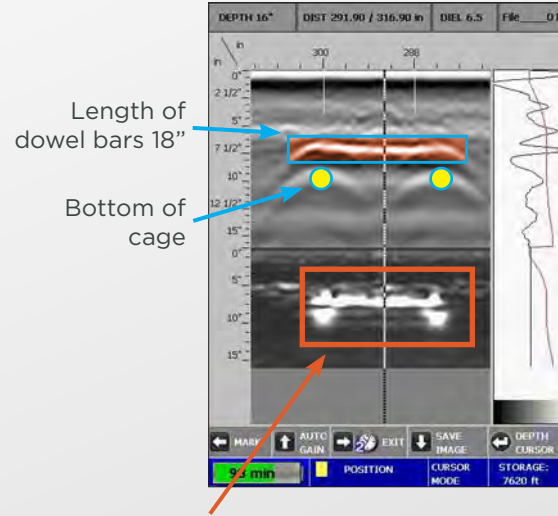
Determine Tie Bar Location for QA/QC:

By scanning perpendicular to a joint, determine the location of tie bars.



Determine Length & Location of Dowel Bar:

By scanning parallel and directly over one dowel bar, the user can determine the length of the dowel bar and location in relation to the joint.

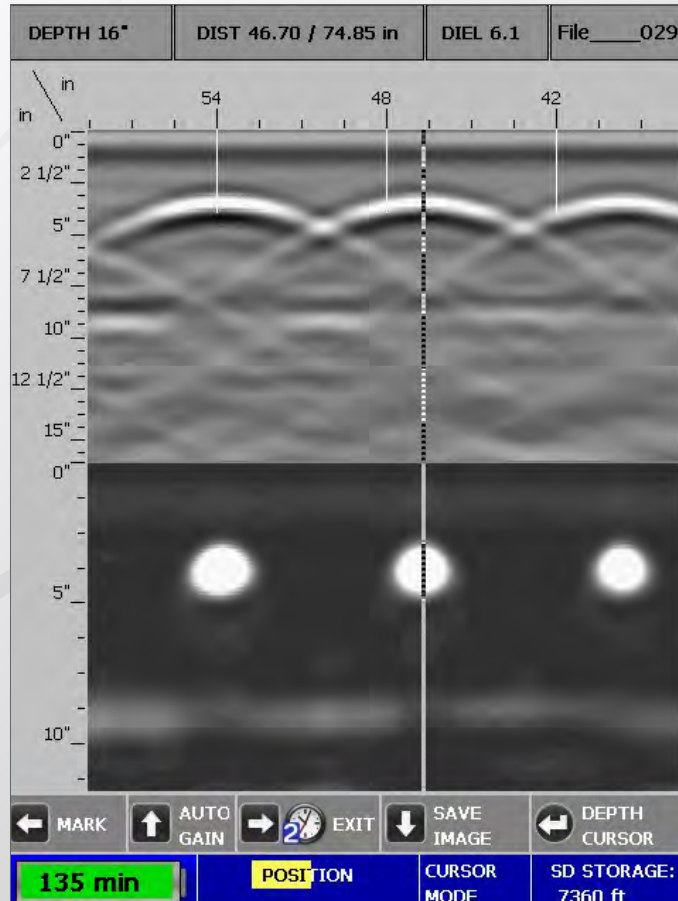


Bottom view is the Focus Mode view. Note the dowel bar and the cage.

FOCUS MODE: ADVANCED TARGET IDENTIFICATION

Data Example: Data shows rebar within a nine-inch suspended slab.

Focus Mode allows the user to accurately position target locations. Split screen Focus Mode allows the user to see both Linescan and Focus data simultaneously.





UTILITYSCAN®

COMPACT GPR SYSTEM FOR UTILITY LOCATING

The UtilityScan[®] provides a rich feature set that redefines the level of performance available in a low cost utility locating system. Its compact size makes it extremely portable and easy to maneuver in tight survey areas. The simple operation is ideally suited to meet the needs of service providers, engineering contractors and state and local municipalities.

The UtilityScan Advantage

Reliable mark outs, paper records, and as-builts on buried utilities are rare. UtilityScan can quickly identify the location and depth of service utilities such as gas, communications, and sewer lines – as well as other metallic and nonmetallic targets including underground storage tanks and PVC pipes.

MAX DEPTH

10 m (35 feet)

ANTENNA FREQUENCY

350 MHz

WEIGHT

15.4 kg (34 pounds)

STORAGE CAPACITY

64 GB

OPTIONAL SOFTWARE

RADAN 7 for UtilityScan, RADAN 7

ACCESSORIES

Transit case, Battery booster kit, Sunshade, Model 656 rugged cart



UTILITYSCAN FEATURES

Compact and Portable

The UtilityScan is incredibly compact. Weighing in at only 34 pounds, UtilityScan can collapse to fit in the back of a small vehicle or even in an airline overhead compartment. For survey conditions in rough terrain, the user can remove the handle and wheels and place the capsule into the (optional) rugged cart.

TYPICAL USES

Scan utilities – metallic and non-metallic

Locate water lines

Detect voids and underground storage tanks (USTs)

Identify soil and foundation characteristics

Locate shallow objects for archaeology

Premium Features, Entry Level Price

UtilityScan is based on GSSI's patented HyperStacking technology, which provides excellent near-surface resolution and increased depth penetration in most soil types. A new wireless antenna eliminates the need for cabling, resulting in a system that can withstand challenging field conditions.

Advanced Capabilities

UtilityScan can be provided with LineTrac power detection module. This module is designed to identify and trace the precise location of underground electric and RF induced utilities. Another feature of this system is the integrated GPS and built in GPS adapter for an additional GPS pole (customer provided).

FCC, RSS-220 and CE Certified

UTILITYSCAN®

UTILITYSCAN ADVANTAGES

LineTrac[®]

LineTrac is the first use of a power detection capability in a utility locating radar system. 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. These technologies are integrated into one seamless system to aid in target recognition and mapping for the first time in the industry.

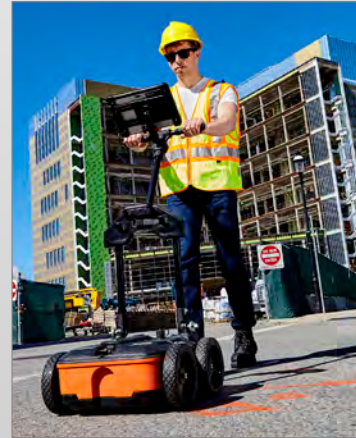
Dynamic Gain Control

Dynamic Gain Control recognizes a difference in subsurface conditions and automatically modifies the display gain. This eliminates the need for users to continually adjust the gain during surveys and provides a clearer, consistent data image.

HyperStacking[®]

HyperStacking results in superior near surface resolution, deeper depth penetration, and vastly improved RF noise immunity when compared to traditional GPR antennas.

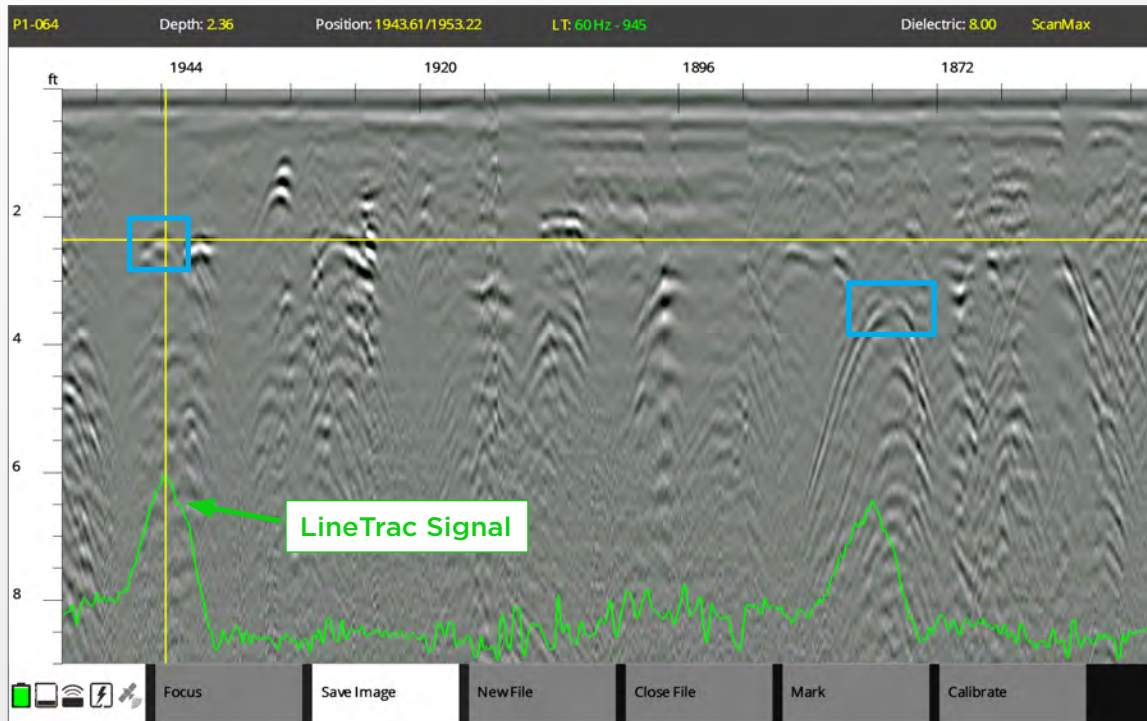
HyperStacking (HS) is a patented real-time sampling (RTS) technique that improves performance while maintaining measurement speed and minimizing radiated emissions. The technique uses multiple stacking (averaging) during data acquisition in order to reduce random noise and improve data quality.



LINETRAC: DETECT POWERED UTILITIES

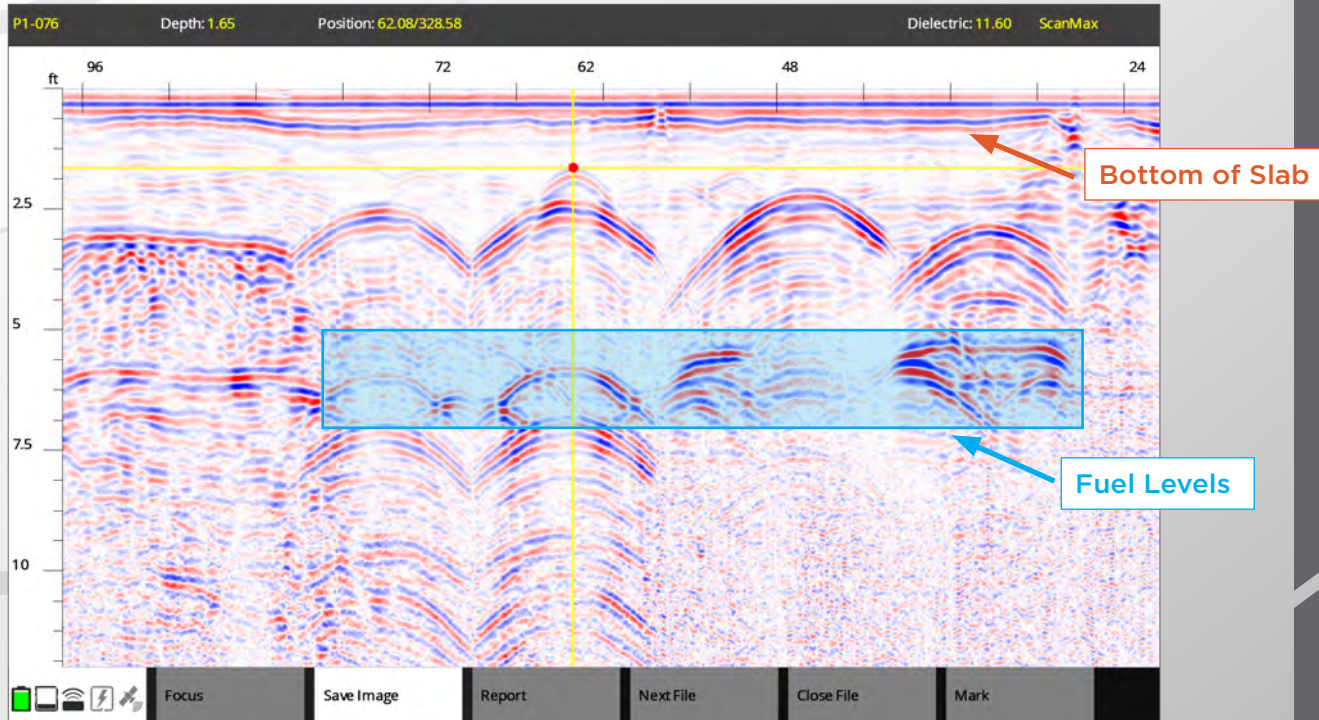
Data Example: Data was collected using UtilityScan enabled with LineTrac option. Data shows multiple underground power lines (**BLUE BOXES**) entering large commercial buildings. The other targets visible in the data are non-powered utilities.

GREEN LINE at the bottom of the data represents the measured response from the powered conduit.



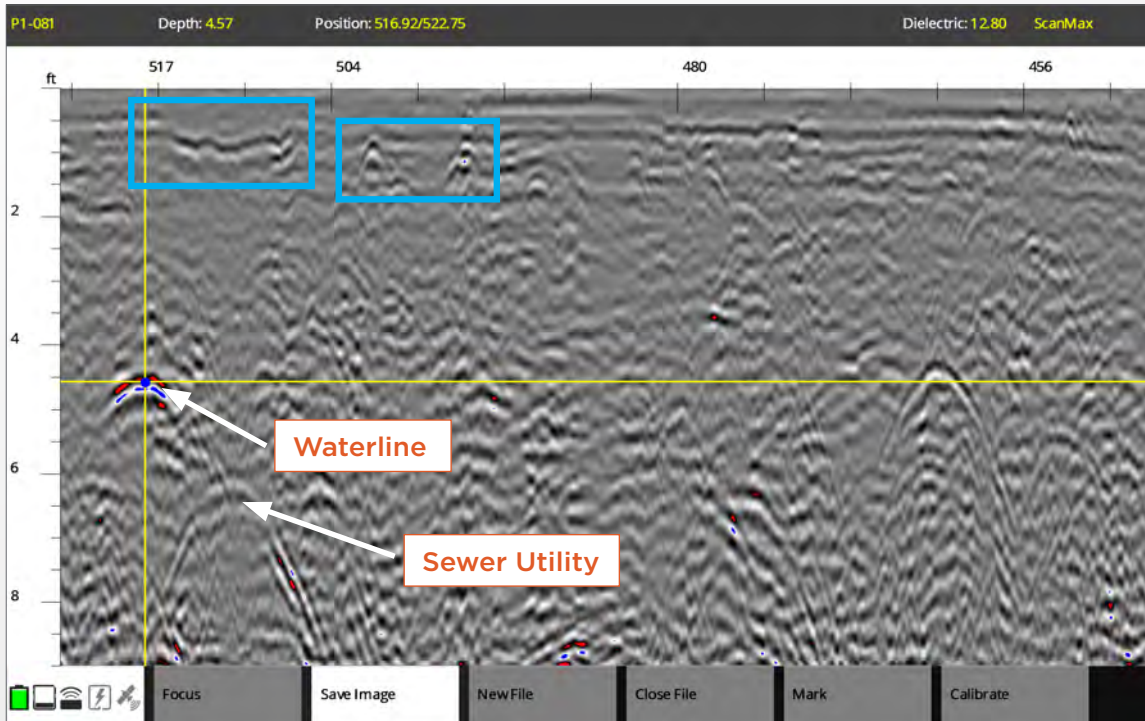
HYPERSTACKING TECHNOLOGY

Data Example: Data was collected over a series of large tanks at a gas station. Tanks are located over a large concrete slab. Note that fuel levels in the tanks (**BLUE BOX**) and near surface slab thickness can be seen in the data. The target indicated by the **RED DOT** is a fill pipe for one of the tanks



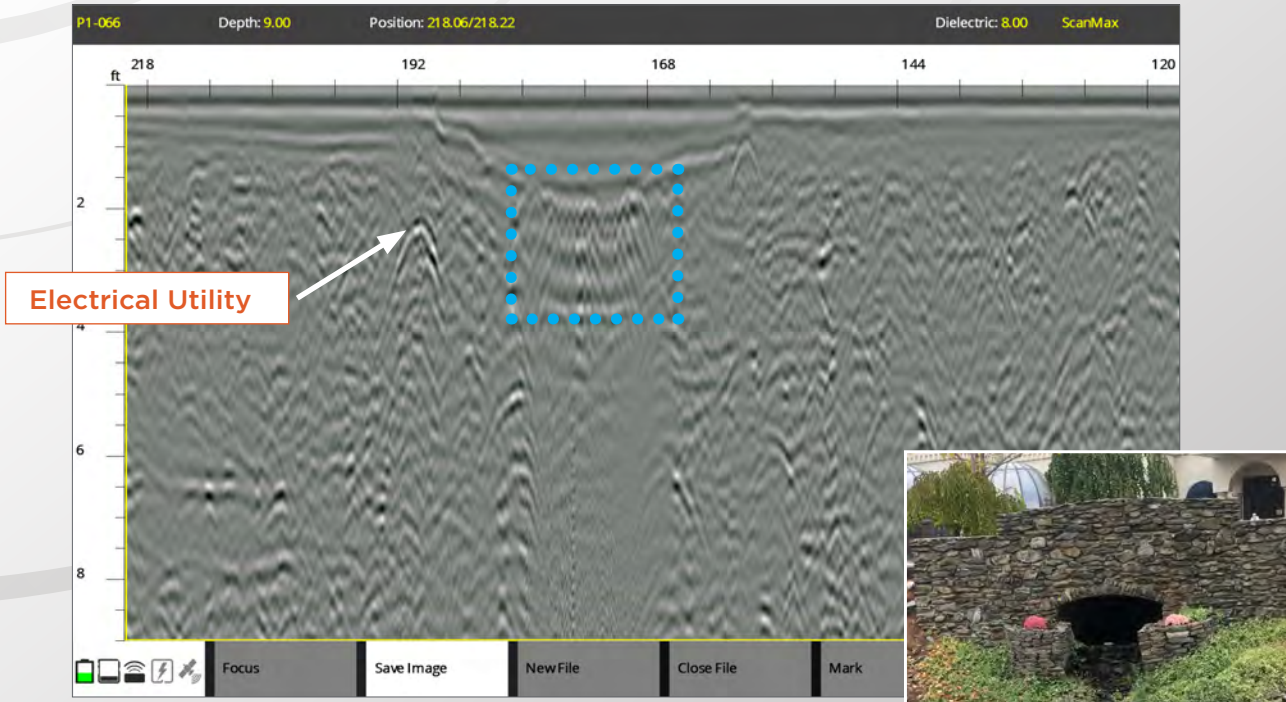
HIGH RESOLUTION DATA

Data Example: Cross hair cursor shows the position of a waterline entering a commercial building. The **BLUE BOXES** highlight well defined excavation trenches for the sewer utility.



CASE STUDY: ORNAMENTAL BRIDGE

Data Example: This data image shows a buried reinforce box culvert that is part of an ornamental bridge. The dip is caused by a topographic inversion created by fill that makes the “bridge” have a crown in the center. Note the electrical utility positioned left of the box culvert.



PREMIER GPR SYSTEM FOR CONCRETE INSPECTION

Accurate, Reliable and Safe Concrete Imaging

StructureScan Pro is a versatile concrete inspection system offering a wide variety of antenna options for concrete and other applications. Based on the SIR 4000 controller, the StructureScan Pro provides the GPR professional with solutions to any scanning situation.

Premium Mobility The rugged handcart-based system is lightweight and simple to transport. GPR is a safe technology with no site hazards or the need to close off work areas as with radiography (X-Ray).

Fully Customizable System The StructureScan Pro comes with two antenna options; 1600 MHz or 2600 MHz. Designed to fit your needs, the StructureScan Pro is adaptable to expand survey capabilities, such as bridge and utility applications, with antenna upgrades.



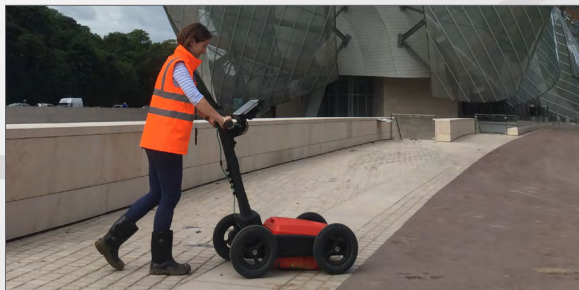
MAX DEPTH	46 cm (18 in)
ANTENNA FREQUENCY	1600 MHz, 2600 MHz
OPTIONAL SOFTWARE	RADAN 7
ACCESSORIES	Palm Antenna, SIR 4000 stand, SIR 4000 carry harness

INDUSTRY STANDARD IN GPR FOR UTILITY MAPPING AND LOCATING

With UtilityScan Pro, users can quickly identify and mark the position and depth of metallic and non-metallic objects; including utilities such as gas, communications and sewer lines as well as underground storage tanks and PVC pipes. Based on the SIR 4000 controller, the UtilityScan Pro provides the GPR professional with solutions to any underground locating situation.

Fully Customizable System Users can customize the UtilityScan Pro with multiple antenna offerings and cart options. The tailored options provide survey flexibility, from smooth prepared surfaces to rugged terrain with our rugged four-wheel cart, and suit a number of utility locating applications.

Data Visualization The UtilityScan Pro system features our state-of-the-art SIR 4000 controller and can incorporate an optional AC power accessory. The SIR 4000 controller incorporates advanced display modes and filtering capabilities for in-the-field processing and imaging. The LineTrac accessory for digital antennas adds the ability to detect AC power and induced RF energy present in buried utilities.



MAX DEPTH	0-12 m (0-40 ft)
ANTENNA FREQUENCY	400 MHz, 300/800 DF, 350 HS
OPTIONAL SOFTWARE	RADAN 7 for UtilityScan, RADAN 7
ACCESSORIES	LineTrac

UTILITYSCAN[®] PRO



DUAL-FREQUENCY DIGITAL SYSTEM

Locate and Map Underground Utilities

UtilityScan DF incorporates our innovative dual-frequency digital antenna (300 and 800 MHz) and an easy-to-use touchscreen interface to view shallow and deep targets simultaneously in a single scan.

Target Designation The UtilityScan DF features real-time data collection. This portable GPR unit has a backup cursor and cross-hair cursor that allows the user to confidently mark targets.

Premium Mobility The UtilityScan DF has two different cart options to enhance ease of use on all job sites. The four-wheel cart is built to withstand the toughest job sites, while the two-wheel cart is lightweight and easy to transport.

Enhanced Software Capabilities There are several modes to view collected data. Our patented Blend Mode combines high resolution near-surface data with lower depth details into one 'blended' data set.



MAX DEPTH	7 m (21 ft)
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ANTENNA FREQUENCY	300/800 Dual Frequency
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OPTIONAL SOFTWARE	RADAN 7 for UtilityScan, RADAN 7
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ACCESSORIES	LineTrac, Sunshade for Panasonic G1
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ANTENNA FREQUENCY, APPROXIMATE DEPTH PENETRATION AND APPROPRIATE APPLICATION

APPROPRIATE	PRIMARY ANTENNA	SECONDARY ANTENNA	APPROXIMATE APPLICATION
Structural Concrete, Roadways, Bridge Decks	2600 MHz	1600 MHz	0-0.3 m (0-1.0 ft)
Structural Concrete, Roadways, Bridge Decks	1600 MHz	1000 MHz	0-0.45 m (0-1.5 ft)
Structural Concrete, Roadways, Bridge Decks	1000 MHz	900 MHz	0-0.6 m (0-2.0 ft)
Concrete, Shallow Soils, Archaeology	900 MHz	400 MHz	0-1 m (0-3 ft)
Shallow Geology, Utilities, USTs, Archaeology	400 MHz	270 MHz	0-4 m (0-12 ft)
Geology, Environmental, Utility, Archaeology	270 MHz	200 MHz	0-5.5 m (0-18 ft)
Geology, Environmental, Utility, Archaeology	200 MHz	100 MHz	0-9 m (0-30 ft)
Geologic Profiling	100 MHz	MLF (16-80 MHz)	0-30 m (0-90 ft)
Geologic Profiling	MLF (16-80 MHz)	None	Greater than 30 m (90 ft)





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