

StructureScan™ Mini LT

Quick Start Guide



Image Your World™

MN70-680 Rev C



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StructureScan™ Mini LT Quick Start Guide

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Before returning any equipment to GSSI, a Return Material Authorization (RMA) number must be obtained. Please call the GSSI Customer Service Manager who will assign an RMA number. Be sure to have the serial number of the unit available.

Regulatory Information

Please see our website, www.geophysical.com/regulatoryinformation.htm, for current information and FCC Registration Form, including:

FCC Notice for U.S. Customer

Canadian Requirements for RSS-220

Declaration of CE Conformance

Laser Cautions and Warnings

Please see Appendix D for important laser cautions and warnings.

StructureScan™ Mini LT

Front/Top View



- 1 Ergonomic handle and controls
- 2 Easy to use operator interface with color display screen
- 3 Survey wheel encoder
- 4 Guiding laser for locating

Back View

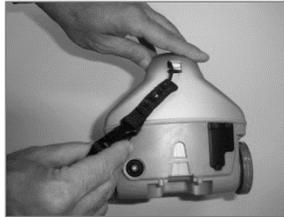


- 5** Power Button
- 6** Wrist Strap Attachment Point
- 7** Battery
- 8** SDR Card/Slot
- 9** USB-B Port

Section 1: Getting Started

1 Preparing the StructureScan Mini LT.

- Remove the protective plastic cover.
- Remove any blue protective tape from the wheels.
- Attach the wrist strap to the back of the Mini. The wrist strap should go around your wrist to prevent the Mini from being dropped.



- Attach the lanyard to the back of the Mini. The battery lanyard will attach to this lanyard to prevent the battery from falling out in rare cases.



- Insert the battery into the battery slot in back of the Mini. Lift the tab upward and “snap” the tab into place.

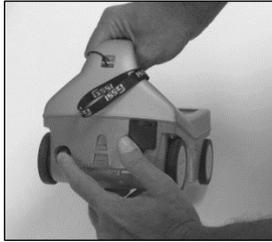


- Attach the battery lanyard to the lanyard on the Mini.



2 Powering up the StructureScan Mini LT.

- Press the power button. A green light will illuminate on the power button.



- After a few seconds, the system will boot up and the splash screen (Main menu) is displayed.
- The Green/Gray bar that is displayed on the lower left-hand corner is a battery life indicator. This will display how much battery time is remaining.
- The current time (as stored in the Mini) is displayed at the bottom of the screen.
- How much storage you have left (the distance you have left to scan) is displayed on the lower right-hand corner.



- 3** To power off the Mini, simply press and hold the power button for approximately 2 seconds. Then you may remove the battery by pressing down on the tab of the battery and pulling down.
- 4** Note the buttons on the handle of the Mini. They will be referred as Left Arrow ←, Right Arrow →, Up Arrow ↑, Down Arrow ↓, and Enter ↵ buttons relative to the screen.
- 5** Depending upon the orientation of the screen on the Mini (Left or Right depending upon which hand you use), the Left, Right, Up, and Down buttons are switched. However, you will still be pressing ←, →, ↑, and ↓ buttons, regardless of the orientation of the screen. The Enter button (↵) will always be the button located in the center.
 - At any time unless otherwise noted, you may press the Arrow button closest to the rear of the Mini (→) to return to the previous screen or menu. This will be known as the Back button.



Unless otherwise noted, this button, regardless of orientation, will return you to the previous screen or menu.

Section 2: Configuring the Structure Scan Mini LT

Before collecting any data, you may want to configure your Mini.

System Menu Options

- 1 From the Main menu, select System by pressing **↑**.
- 2 Use **↑** and **↓** buttons to highlight the appropriate options under the System menu.

Date/Time: Configuring Date and Time

- 1 Highlight Date/Time and press **↵**.
- 2 Highlight any of the options you wish to change and press **↵**.
The following options will appear at the bottom of the screen:
 - **Change Value:** Use **↑** and **↓** to change the value.
 - **Set Value:** Press **↵** to accept your change.
 - **Quit:** Use **→** to quit WITHOUT saving the changes.



DATE/TIME	AUG 24/09	
CONFIGURATION		
CALIBRATION		
CLEAR STORAGE		
SCAN DENSITY	HIGH	
BACKLIGHT	25%	
SAVE PROMPT	ON	
160 min	09:29:40	STORAGE: 15881 ft

YEAR	2009	
MONTH	AUGUST	
DAY	24	
HOUR	9	
MINUTE	30	
TIME ZONE	GMT - 5	
160 min	09:30:08	STORAGE: 15881 ft

- 3 Press **→** to return to the previous menu.

Configuration: Configuring Orientation, Language, Units, Laser, and Sound

- 1 Highlight Configuration and press **←**.
- 2 Press **↑ ↓** to select the appropriate options:
 - **Orientation:** Press **←** to toggle between Right or Left. This will flip the screen to allow for either right or left-handed operation.
 - **Language:** Press **←** to select your language preference.
 - **Units:** Press **←** to toggle between English or Metric.
 - **Laser:** Press **←** to toggle laser On or Off. If configured On, the laser will light up in the Collect menu only. Note: The laser will blink (whether configured On or Off) when battery life is low (10%). **Caution:** Do not stare into beam.
 - **Sound:** Press **←** to toggle between High, Medium, Low, or Off.
 - **Version(s):** Press **←** to display the version number of the software. Please visit GSSI's web site for updates to the firmware.
- 3 Press **→** to return to the previous menu.

ORIENTATION	RIGHT
LANGUAGE	ENGLISH
UNITS	ENGLISH
LASER	ON
SOUND	HIGH
VERSION(s)	1.0.1.9
95.00%	19:52:07
STORAGE	100%

Calibration: Auto Calibrations for Surface and Brightness

- 1 Highlight Calibration and press .
 - a) Hold the Mini upside down about 1 meter (3 ft) from any surface.
 - b) Press the button. The Auto-Calibration will take several seconds.
- 2 Press the to return to the previous menu.

Clear Storage: Deleting Saved Data

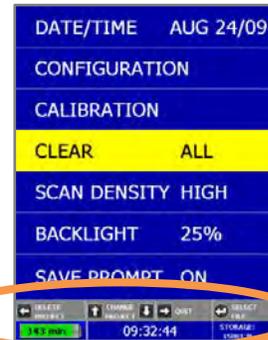
A project is a folder which holds individual files.

- 1 Highlight Clear Storage and press .
- 2 At the bottom of the screen, a new set of options is displayed.

Deleting All Projects or Deleting Specific Projects

All Projects: If you wish to delete ALL of your projects and all the files associated with each project:

- 1 Press when Clear All is displayed.
- 2 Press to confirm, to cancel the deletion.

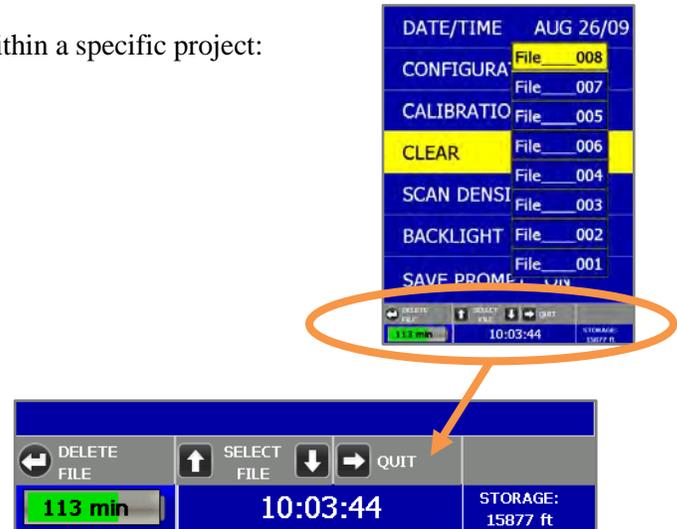


Specific Projects: If you wish to delete a specific project or specific files within a project:

- 1 Press \uparrow \downarrow to select the specific project.
- 2 Press \leftarrow to delete that entire project (and all the files associated with that project).
- 3 Press \uparrow to confirm, \downarrow to cancel.
- 4 At any time, you may press \rightarrow to quit.

Specific Files in a Specific Projects: Deleting specific files within a specific project:

- 1 Press \uparrow \downarrow to select a specific project.
- 2 Press \leftarrow to select that project.
- 3 Press \uparrow \downarrow to select a specific file.
- 4 Press the \leftarrow button to delete the selected file.
- 5 Press \uparrow to confirm, \downarrow to cancel.
- 6 At any time, you may press \rightarrow to quit.



Scan Density: Selecting the Scan Density

- 1 Highlight Scan Density.
- 2 Press **←** to toggle between High and Normal.
 - **High:** The Mini will scan at 8 scans/cm (approximately 240 scans/ft). Use this is when you are looking for very small objects.
 - **Normal:** The Mini will scan at 4 scans/cm (approximately 120 scans/ft). Use this is when you are looking for normal size objects.

Backlight: Setting the Brightness of the Mini Backlight

- 1 Highlight Backlight.
- 2 Press **←** to toggle between 25%, 50%, 75%, or 100%.

Save Prompt: Whenever Saving, Have the System Prompt You to Save or Save Automatically

- 1 Highlight Save Prompt.
- 2 Press **←** to toggle between On or Off.
 - **On:** The system will prompt you to save a file after you choose to save a file.
 - **Off:** The system will save the file automatically after you choose to save a file.

Section 3: Collecting Data

After your configuration is complete, you are now ready to collect data.

Important Note: To assure consistency in StructureScan Mini's naming of the files collected and saved, it is highly recommended that you insert the SD card prior to any data collection.

Collect Menu Options

- 1 From the Main menu, select Collect by pressing ←.
- 2 Use ↑ ↓ buttons to highlight the appropriate options under the Collect menu.

Before you begin to collect data (Start Collect), you may want to configure the Mini for a particular scan/project.

Project: Saving Files to a Specific Project

- 1 Highlight Project and press ↵
- 2 Highlight a Project number and press ↵. All files that you save during collection will be saved under this project. (Note: you may want to take field notes to document what files went under which project).

Depth: Selecting the Depth Where You are Scanning

- 1 Highlight Depth.
- 2 Press ↵ to toggle between 8, 12, 16 and 20 inches (20, 30, 40 and 50 cm).



Dielectric: Selecting the Approximate Dielectric of the Area You are Scanning

- 1 Highlight Dielectric and press **↵**. Change the Dielectric value by:
 - **←** to change the number after the decimal point.
 - **↑ ↓** to change the number before the decimal point.
 - **→** to quit WITHOUT saving the new value.
 - Press **↵** to set your new value.

Having the correct value will improve your depth accuracy. A higher value is necessary for young concrete or concrete that is under water.

- Less than 2 months/outside in wet environment, use 9+
- Younger than 12 months/outside, use 7-8
- Older than 12 months/indoor/dry, use 5-6

For more detailed information on concrete dielectric values, refer to the GSSI Handbook for RADAR Inspection of Concrete that can be found on www.geophysical.com.

START COLLECT	
PROJECT	Proj_1
DEPTH	8 in
DIELECTRIC	4.6
AUTO TARGET	OFF
DISPLAY	B
COLOR	
11 min	12:41:31
STORAGE: 3965 ft	

← CHANGE FRACTION	CHANGE VALUE ↑ ↓	→ QUIT	↵ SET VALUE
140 min	19:48:03		STORAGE: 15757 ft

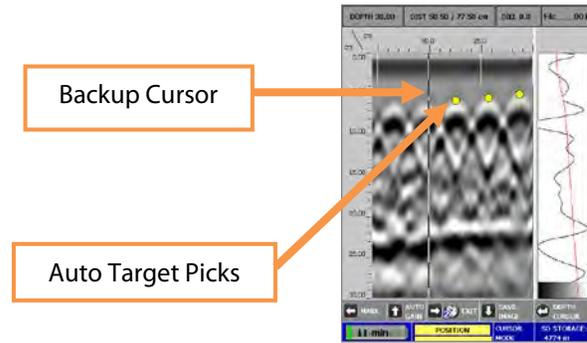
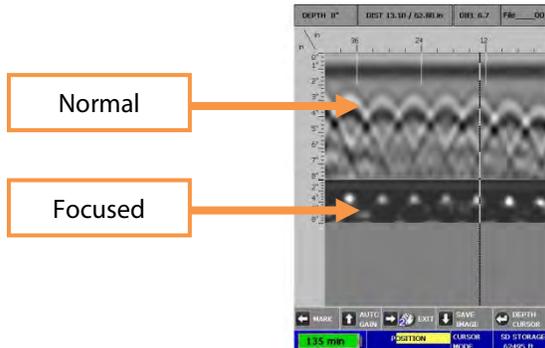
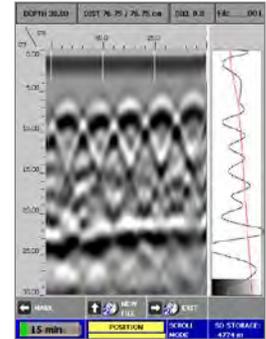
Auto Target: Allowing the Mini to Automatically Pick Your Targets

2 Highlight Auto Target.

3 Press **↵** to toggle between ON, OFF, and FOCUS.

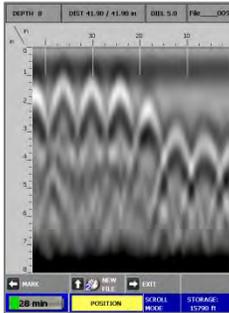
- **ON:** The Mini LT will place dots on what it interprets as targets as you collect data, and when pulling the Mini LT straight back.
- **OFF:** No dots and no interpretation will be done by the Mini LT.
- **FOCUS:** The Mini LT will split the data collection screen in half, showing normal collected data on the top half and migrated (focused) data on the lower half.

It will NOT place dots on your targets, but will give an interpretation of where targets may be.

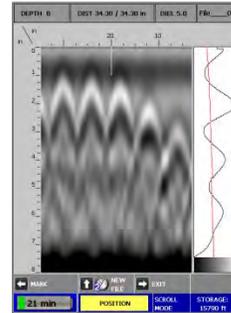


Display: While Collecting Data, Display Data Only or Data + O-Scope

- 1 Highlight Display.
- 2 Press \leftarrow to toggle between B (data only) and A+B (data + O-scope).



Data only display during collection



Data + O-Scope display during collection

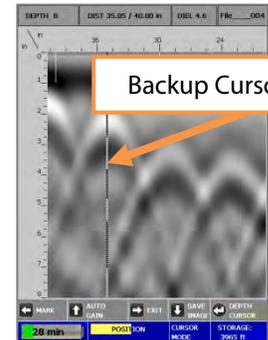
Color: Choosing the Colors You Want Displayed During Data Collection

- 1 Highlight Color.
- 2 Press \leftarrow to toggle between five different color schemes to be displayed during collection.

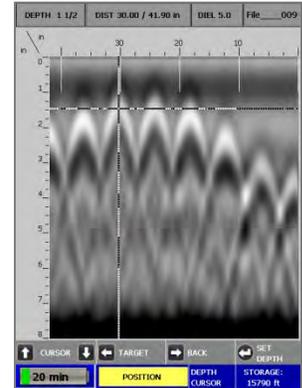
Collecting Data and Marking Your Targets

- 1 Highlight Start Collect and press \leftarrow . This screen is displayed.
- 2 Note the information at the top of the screen:
 - **Depth:** The depth you have chosen for this scan.
 - **Dist.:** The distance you have scanned.
 - **Diel.:** The dielectric you have chosen for this scan.
 - **"File ___XXX":** The filename of this scan if you choose to save this file.
- 3 Move your cart forward. Data only gets collected when you move the cart forward.
- 4 Once you start seeing hyperbolas on the screen, pull the system straight back along your survey line. You will see a vertical line (the backup cursor) scroll along your data. When that vertical line is right over the apex of the hyperbola, the center of the antenna is over that target.

Note: When you pull the Mini straight back, and if you configured Auto Target On, the Mini will interpret targets by placing yellow dots on the targets.



- 5** The center of the antenna is directly under the Mini. After marking the location of the target on the ground using the laser (if configured On) at each side of your cart as a guide (or the groove on each side of the cart as a guide if the laser is configured Off). Push the cart straight forward or move the cart to do another line scan. No data will be collected until you have passed the spot where you started to reverse.
- 6** If you wish, you may calibrate depth (optional). Match the target location in the data to its location in your survey area. Drill down to that target and measure the depth.
 - a)** Backup the Mini and press **←** Depth Cursor to display crosshairs and set them over the target in the data.
 - b)** Press **↑ ↓** to line up the horizontal line in the middle of first dominant color of that target.
 - c)** Press **←** to Set Depth.
 - d)** Press **↑ ↓** until the Depth in the upper left-hand corner matches the measured depth.
 - e)** Press **←** to Set Depth. The vertical scale will adjust and the dielectric will be updated. Please note that this is only an approximation of the true depth because the dielectric value or constant can change with depth and across the site.
 - f)** Press **→** to continue scanning.



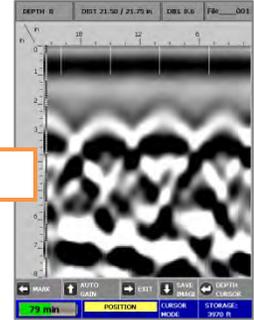
7 Auto Gain Feature

At times, while collecting data, the screen may be over or under gained. To correct this, backup the Mini and press **↑** Auto Gain. This will correct the gain without changing the dielectric. Continue forward to collect data with the new gain setting.

8 Save Image

To save an image of the data that was collected, backup the Mini and press **↓** Save Image. The file will save as a Bitmap file.

Over Gained



9 Other Options

- While collecting data (with no backup cursor on the screen), press and **HOLD ↑** (New File) to save your current file. If you have configured Save Prompt On, you will be prompted to confirm the save. Press **↑** to save, **↓** to not save the data. If you have configured Save Prompt Off, it will save automatically.
- Press **←** to place a user mark in your data.
- Press **→** to exit. If you have configured Save Prompt On, you will be prompted to confirm the save. Press **↑** to save, **↓** to not save the data. If you have configured Save Prompt Off, it will save automatically.

Helpful Hint: Make a sketch map of your survey area with immovable objects as reference points. Sketch in your survey files, note the start and stop points, direction of travel, and file name on the map. This will make it much easier to relocate your targets after the survey.

Helpful Hint: The top of a target is generally the middle of the first positive peak for metal targets (rebar, tensioned cable, wires in PVC, conduit). If you are working in a grayscale color table, the positives are white. If the utility is air or gas filled (empty PVC, voids) the top of the target is the middle of the first negative peak (black).

Please refer to Appendix C for examples of the different types of data.

Section 4: Data Playback and Review

The Playback menu provides tools to help you interpret your data. None of these functions are required to get interpretable data. They are simply meant to help you in the interpretation of the data. These functions do not permanently change your data or affect your saved data in any way. More intensive processing can be done in the RADAN processing program (sold separately).

Playback Menu Options

- 1 From the Main menu, select Playback by pressing →.
- 2 Use ↑ ↓ to highlight the appropriate options under the Playback menu.

Before you begin to playback data (Playback), you may want to configure the Mini to give you some helpful tools in the interpretation of the data.

Project: Selecting a Specific Project to Select a Specific File to Playback

- 1 Highlight Project.
- 2 Highlight and press ← to select the project where the file you want to play back is located.
- 3 Highlight and press ← to select the specific file you want to play back.



Auto Depth: Automatically Adjusting Depth Scale

- 1 Highlight Auto Depth.
- 2 Press  to toggle between Auto and Orig.
 - **Auto:** The Mini will estimate the depth of targets and automatically adjust the Depth Scale.
 - **Orig:** The Mini will use the original value set during collection.

Auto Target: Allowing the Mini to Automatically Pick Your Targets

- 1 Highlight Auto Target.
- 2 Press  to toggle between ON, OFF, and FOCUS.
 - **On:** The Mini will place dots on what it interprets as targets.
 - **Off:** No dots and no interpretation will be done by the Mini.
 - **Focus:** The Mini will split the data collection screen in half, showing normal collected data on the top half and migrated (focused) data on the lower half.

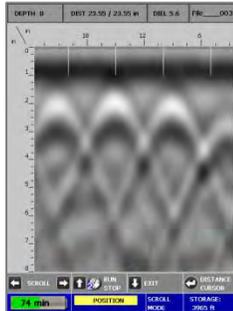
Note: Auto Target is for information purposes only and you should carefully examine your data to ensure that the Mini has correctly located objects.

Auto Gain: Allowing the Mini to Automatically Configure the Gain

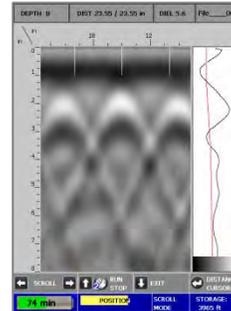
- 1 Highlight Auto Gain.
- 2 Press \leftarrow to toggle between On and Off.
 - **On:** The Mini will reconfigure the gain.
 - **Off:** The Mini will use the gain used during data collection.

Display: While Viewing Data, Display Data Only or Data + O-Scope

- 1 Highlight Display.
- 2 Press \leftarrow to toggle between B (data only) and A+B (data + o-scope).



Data Only display during collection



Data + O-Scope display during collection

Color: Choosing the Colors to Display During Data Collection

- 1 Highlight Color.
- 2 Press **←** to toggle between five different color schemes to be displayed during collection.

Playing Back the Selected File

- 1 Highlight Playback.
- 2 Press **←** to play back the selected file.

Note at the top of the screen the following information:

- Depth
- Distance
- Dielectric
- File name

Data with Auto Target OFF

Data with Auto Target ON

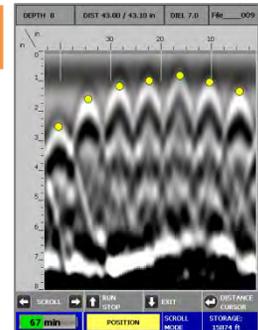
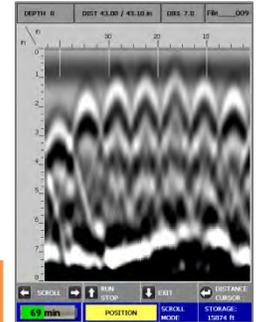
While in Playback, you will have an option to toggle between four different modes by simply pressing **←**. The mode you are in will be displayed at the bottom of the screen.

Scroll Mode: Allows you to scroll your data left and right

Distance Cursor Mode: Allows you to move a vertical line left and right on your data

Depth Cursor Mode: Allows you to move a horizontal line up and down on your data.

Set Depth Mode: Allows you to set a known depth to your targets.



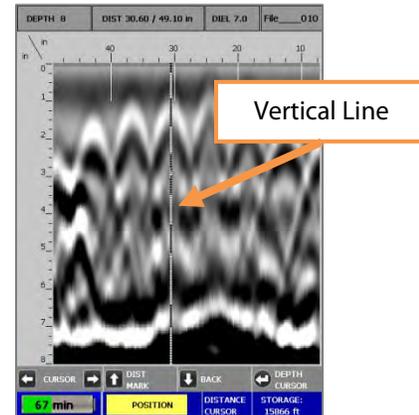
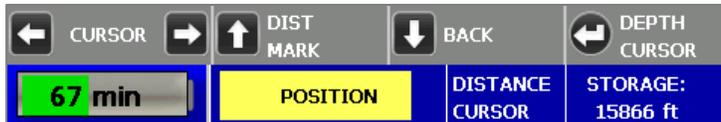
Scroll Mode

- ← → – Scroll through your data.
- ↑ – Run Stop, while your data is scrolling, press Up Arrow to stop and start the scrolling. Hold this button for 2 seconds will load the next file in the project.
- ↓ – Exit back to the Playback menu. If you added or deleted any targets, the system will prompt you to save your targets. Press ↑ for Yes, ↓ for No.
- ↶ – Switch to Distance Cursor Mode.



Distance Cursor Mode

- ← → – Move the vertical line left and right.
- ↑ – Place a user mark at the location of the vertical line.
- ↓ – Return to Scroll Mode.
- ↶ – Switch to Depth Cursor Mode.



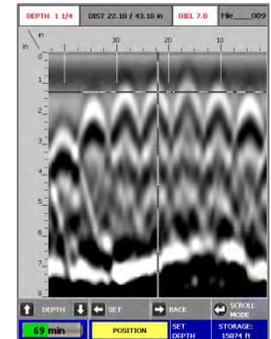
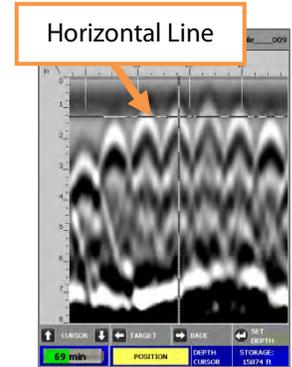
Depth Cursor Mode

- ↑ ↓ – Move the horizontal line up and down.
- ← – Toggles between placing and deleting a dot to mark a target where the cross hairs are.
- – Return to Distance Cursor Mode.
- ↶ – Switch to Set Depth Mode.



Set Depth Mode

- ↑ ↓ – Entering a known depth for the target in the crosshairs. The upper left-hand corner displays the depth.
- ← – Once the correct depth is displayed, set the depth. Note: If the depth of a target changes, this will automatically change the dielectric.
- – Return to Depth Cursor Mode.
- ↶ – Switch to Scroll Mode.



Section 5: Reset to Factory Settings

This will reset the Mini to the factory settings. This will NOT delete the data you have saved.

Simply press the Down Arrow from the Main menu.

↑ to Confirm.

↓ to Cancel.

Section 6: 3D - Collecting and Processing 3D Data

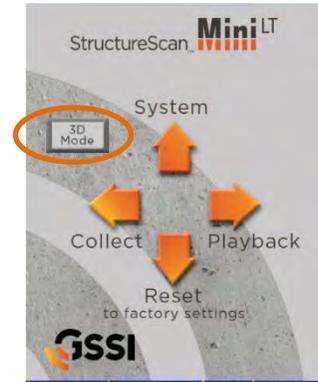
The StructureScan Mini LT comes with 3D collecting and processing.

Simply press  to toggle between 2D and 3D mode.

Configuring the StructureScan Mini LT for 3D Collection

- 1 From the Main menu, select System by pressing .
- 2 Use  and  buttons to highlight the appropriate options under the System menu.

Data Collection Grids are free to download. Goto www.geophysical.com, select Products > StructureScan > StructureScan Mini LT. Scroll down the page until you see “Resources.” You can find the 1x1, 2x2, and 2x4 foot (30x30, 60x60, and 60x120 cm) grids available for download. You can also contact your GSSI sales representative if you would like a purchase a pack of printed grids.



Date/Time: Configuring Date and Time

- 1 Highlight Date/Time and press \leftarrow .
- 2 Highlight any of the options you wish to change and press \leftarrow . The following options will appear at the bottom of the screen:
 - **Change Value:** Use \uparrow and \downarrow to change the value.
 - **Set Value:** Press \leftarrow to accept your change.
 - **Quit:** Use \rightarrow to quit WITHOUT saving the changes.



- 3 Press \rightarrow to return to the previous menu.

Configuration: Configuring Orientation, Language, Units, Laser, and Sound

- 1 Highlight Configuration and press \leftarrow .
- 2 Press \uparrow \downarrow to select the appropriate options:
 - **Orientation:** Press \leftarrow to toggle between Right or Left. This will flip the screen to allow for either right or left-handed operation.
 - **Language:** Press \leftarrow to select your language preference.



- **Units:** Press \leftarrow to toggle between English or Metric.
 - **Laser:** Press \leftarrow to toggle laser On or Off. If configured On, the laser will light up in the Collect menu only.
Note: The laser will blink (whether configured On or Off) when battery life is low (10%).
Caution: Do not stare into beam.
 - **Sound:** Press \leftarrow to toggle between High, Medium, Low, or Off.
 - **Version(s):** Press \leftarrow to display the version number of the software.
Please visit GSSI's web site for updates to the firmware.
 - **Options:** Press \leftarrow to configure Scan Density and Migration Type.
 - **Scan Density** – Press \leftarrow to toggle between Normal and Low.
 - **Normal** – The Mini will scan at 8 scans/cm (approximately 240 scans/ft).
 - **Low** – The Mini will scan at 4 scans/cm (approximately 120 scans/ft).
 - Press \rightarrow to return to the previous menu.
- 3** Press \rightarrow to return to the previous menu.

Collecting 3D Data

After your configuration is complete, you are now ready to 3D collect data.

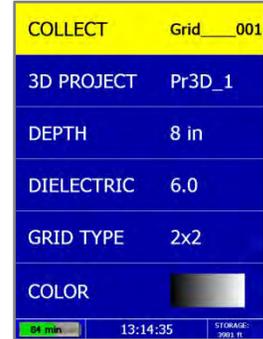
Important Note: To assure consistency of StructureScan Mini's naming of the files collected and saved, it is highly recommended that the SD card is inserted prior to any data collection.

Collect Menu Options

1 From the Main menu, select Collect by pressing ←.

2 Use ↑ ↓ buttons to highlight the appropriate options under the Collect menu.

Before you begin to collect data (Collect), you may want to configure the Mini for a particular project.



3D Project: Saving Files to a Specific Project

1 Highlight Project and press ←.

2 Highlight a Project number and press ←. All files that you save during collection will be saved under this project. (Note: you may want to take field notes to document what files went under which project).

Depth: Selecting the Depth Where You are Scanning

1 Highlight Depth.

2 Press ← to toggle between 8, 12, and 16 inches (20, 30, and 40 cm).

Dielectric: Selecting the Approximate Dielectric of the Area You are Scanning

1 Highlight Dielectric and press \leftarrow . Change the Dielectric value by:

- \leftarrow to change the number after the decimal point.
- $\uparrow \downarrow$ to change the number before the decimal point.
- \rightarrow to quit WITHOUT saving the new value.

Press \leftarrow to set your new value.

Having the correct value will improve your depth accuracy. A higher value is necessary for young concrete or concrete that is under water.

- Less than 2 months/outside in wet environment, use 9+
- Younger than 12 months/outside, use 7-8
- Older than 12 months/indoor/dry, use 5-6

For more detailed information on concrete dielectric values, refer to the GSSI Handbook for RADAR Inspection of Concrete that can be found on www.geophysical.com.



Grid Type: Toggle to Select Grid Size

- 1** Highlight Grid Type.
- 2** Press **←** to toggle between 1 x 1, 2 x 2, or 4 x 2.

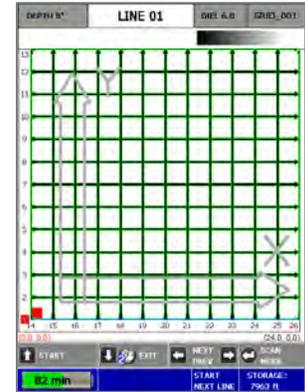
Color: Choosing the Colors You Want Displayed During Data Collection

- 1** Highlight Color.
- 2** Press **←** to toggle between five different color schemes to be displayed during collection.

Collect: Collect 3D Grid

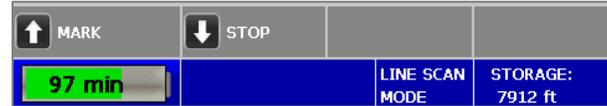
Highlight Collect and press  to begin collecting 3D data.

- 1 Begin by lining up the Mini with the appropriate pad. Using the lasers, line up the laser pointing forward with Line 1. Line up the side lasers with the start line of the pad. 
- 2 Once you have lined up the Mini, Press the Start Button  and then roll the Mini to the other end of the grid. The Mini will automatically stop collecting once it reaches the end of the grid. 
- 3 Return the Mini to the start of the grid and line up the lasers with the next line and repeat the process until all the lines needed are collected.
- 4 Note at the top of the screen. This displays which line number you should be collecting.
- 5 You may press Next/Prev buttons, the right and left arrows  , to scan a specific line. This can be used if you do not collect a line correctly and need to redo a line.
- 6 Press , Scan Mode, to toggle the view of the scan.



During collection, you may:

- Press the Mark Button  to place a mark in the data as a reference point.
- Press the Stop Button  and hold for two seconds to stop collecting that particular line because of an obstacle.



- 7** When you are done collecting all the lines, press and hold the Exit Button  for two seconds. The Mini will save, process and display the grid (See Playback section for processing saved data).

Playback: Processing and Drawing the 3D Grid

There are two ways to process and draw the 3D Grid.

- 1 After you finished collecting the data by pressing and holding the Exit Button \uparrow for two seconds. The Mini will save, process and display the grid.

OR

- 2 From the Main menu, select Playback \rightarrow .
 - a) Highlight 3D Project and press \leftarrow to select the appropriate project and select the appropriate Grid.
 - b) Highlight Playback and press \leftarrow to process and draw the grid.

Other Playback Menu Options

Auto Depth: Press \leftarrow to toggle between On and Off.

- **On:** The Mini will estimate the depth of targets and automatically adjust the Depth Scale.
- **Off:** The Mini will use the original value set during collection.

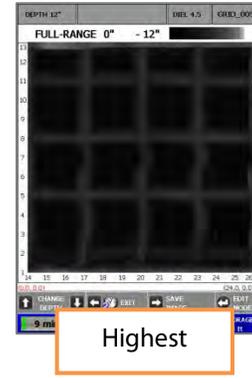
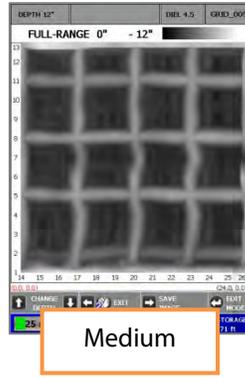
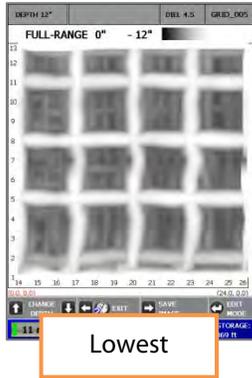
Auto Gain: Press \leftarrow to toggle between On and Off.

- **On:** The Mini will reconfigure the gain.
- **Off:** The Mini will use the gain used during data collection.



Contrast: Press \leftarrow to toggle between Lowest, Low, Medium, High, Highest.

- The lower the contrast, the more “positive” colors are displayed.
- The higher the contrast, the more “negative” colors are displayed.
- See the color scale below to see how much color is displayed as you toggle through these options. Low or Medium are good defaults.



Color: Press \leftarrow to toggle between colors for display of the data.

Once the Mini has processed the data, it will display the grid. You will be in Depth Slice Mode as noted at the bottom of the screen.

Modes

You may press \leftarrow to toggle between different modes for display and edit purposes. They are: Depth Slice Mode, Cursor Mode, Color Mode and Select Profile Mode.

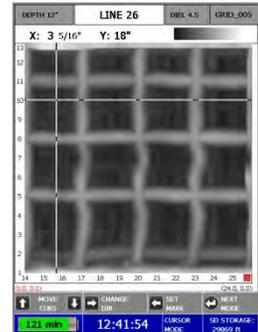
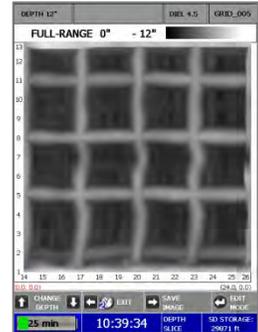
Depth Slice Mode

- 1 The initial display will be the Full Range of the grid. Pressing the \uparrow from the Full Range will decrease the range depth by $\frac{1}{2}$ inch increments. Pressing the \downarrow will slice down through the image in $\frac{1}{2}$ inch increments. Note the top of the screen, it will display the depth of the slice or the total depth of the slice.
- 2 Press the \leftarrow and hold for two seconds to Exit.
- 3 Press \rightarrow to save the image as a .bmp file.
- 4 Press \leftarrow to toggle to Cursor Mode.

Cursor Mode

This will display crosshairs on the data so that X and Y coordinates located at the top of the screen may be noted as the location of a target.

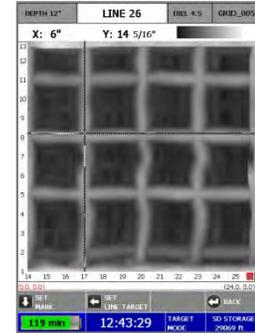
- 1 Press the \uparrow \downarrow buttons to move the crosshair in the Y Direction.
- 2 Press the \rightarrow to change the menu to the X Direction Mode so that you may move the crosshair in the X Directions by pressing \uparrow \downarrow .



- 3 Note the X and Y coordinates at the top of the screen as you move the cross hairs.
- 4 Press the **←** to set a mark at the location of the crosshairs.
 - Press **↓** to place a dot at the location of the crosshairs.
 - Press **←** to place a line following the vertical line of the crosshairs.
 - Press **↶** to return back to Edit Mode View.
- 5 Press **↶** to toggle to Color Mode.

Color Mode: Change Data Color and Contrast

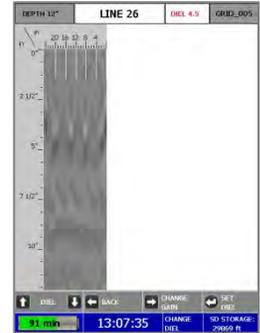
- 1 Press **←** to toggle between different colors.
- 2 Press **↑↓** to change the contrast of the screen.
- 3 Press **↶** to toggle to Select Profile Mode.

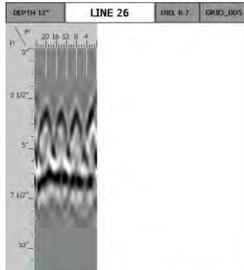


Select Profile Mode: Displays a Specific 2D Profile on the Screen

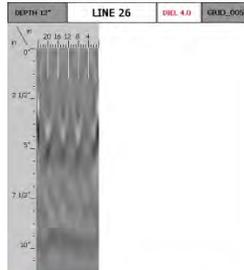
- 1 Press $\leftarrow \rightarrow$ to select which profile to display.
- 2 Press \downarrow to display the 2D profile.
 - Press $\leftarrow \rightarrow$ to display previous or next 2D Profile.
 - Press \uparrow to turn Focus on or off.
 - Press \downarrow to return to Select Profile Mode.
 - Press \leftarrow to change Dielectric.
 - Press $\uparrow \downarrow$ to change the Dielectric Value.
 - Press \leftarrow to return to the previous screen.
 - Press \rightarrow to change the Gain.
 - Press \leftarrow to set the new Dielectric.
- 3 Press \leftarrow to return to Depth Slice Mode.

Note: When changing and setting the dielectric, the system will redisplay the data. The goal is to have “dots” instead of hyperbolas.

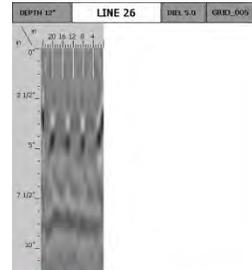




Dielectric Too High,
Hyperbola tails point down.
Adjust Dielectric Down



Dielectric Too Low,
Hyperbola tails point up.
Adjust Dielectric Up



Dielectric About Right,
Displays Dots and no or very
little tails

Appendix A: Inventory of Your System

- StructureScan Mini LT
- SD card (already inserted into the back of the Mini)
- Battery charger (2 slots)
- Battery charger adapter
- International plugs for the battery charger adapter (3)
- Quick Start Guide (this manual)
- USB cable
- Batteries (2)
- GSSI wrist strap
- Transit case

Note: If you wish to transfer any saved data to your PC, simply remove the SD card and transfer the data to your PC.

Appendix B: Battery/Charger Information

Your system comes with a two-slotted battery charger and adapter. It also comes with three international interchangeable plugs.

- To charge your batteries, simply attach the adapter to the charger and plug in the adapter. Insert one or both batteries. The batteries will charge one at a time. The bars located at the top of the batteries will indicate how much charge is left in the battery.
- At times, you may wish to re-calibrate a battery. Simply insert a battery into the slot on the left and press the RECAL button
- **LED Lights:** As the batteries are charging, the LED lights for each slot will do different things.
 - No Lights – No Batteries
 - Green Flash – Fast Charging
 - Green Solid – Fully Charged
 - Yellow Flash – Recalibrating
 - Yellow/Green – Recalibrated
 - Yellow Solid – Standby
 - Red Flash – Error
- If the charger remains plugged in and there are NO batteries in the charger, the charger will eventually begin to “beep.” Since this can be annoying, it is recommended that you unplug the charger when not in use.

- **If you own another GSSI system:** Make sure that you are using the correct battery charger.



StructureScan Mini Series Charger

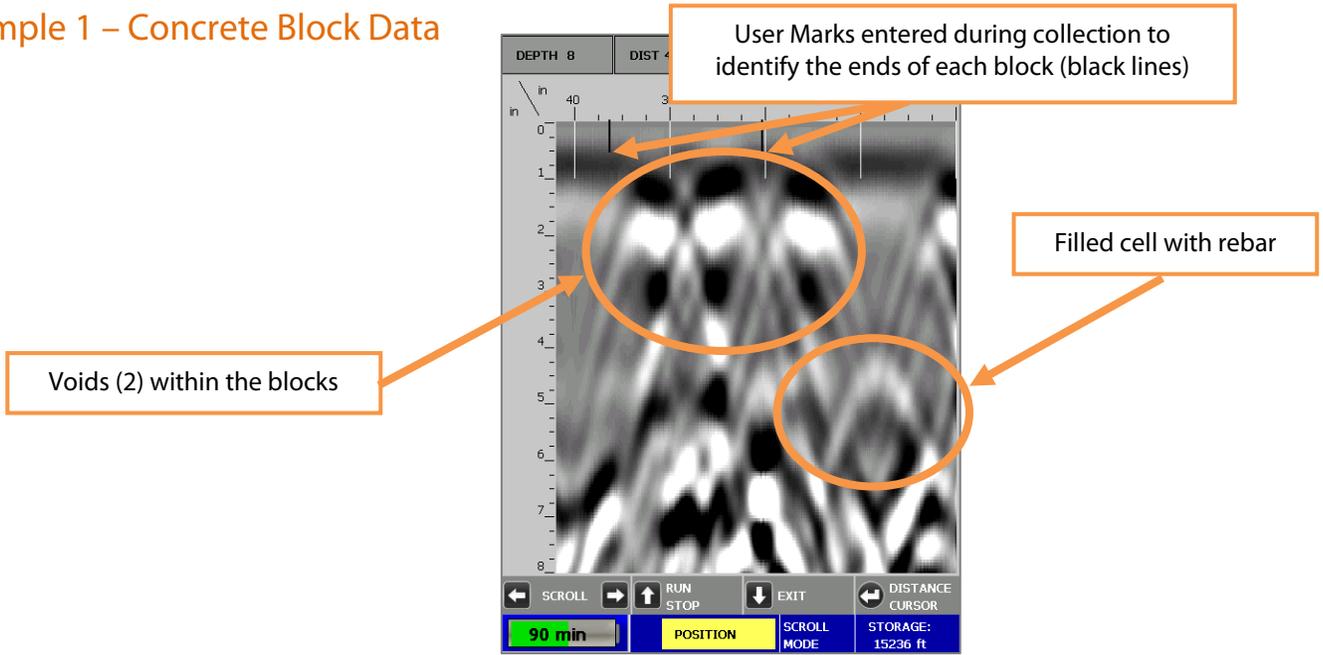


UtilityScan DF, Profiler, LifeLocator,
SIR 4000 Charger

Appendix C: Sample Data

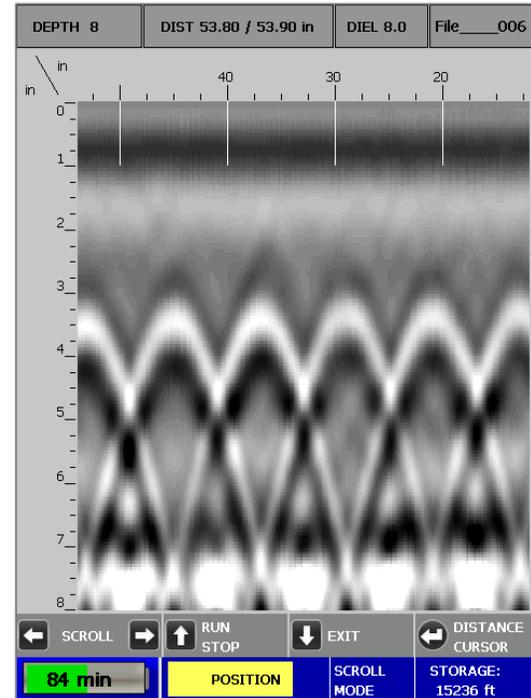
These examples are presented for informational use only. Conditions may be different at your site that may cause the images to look different from the data shown here.

Example 1 – Concrete Block Data



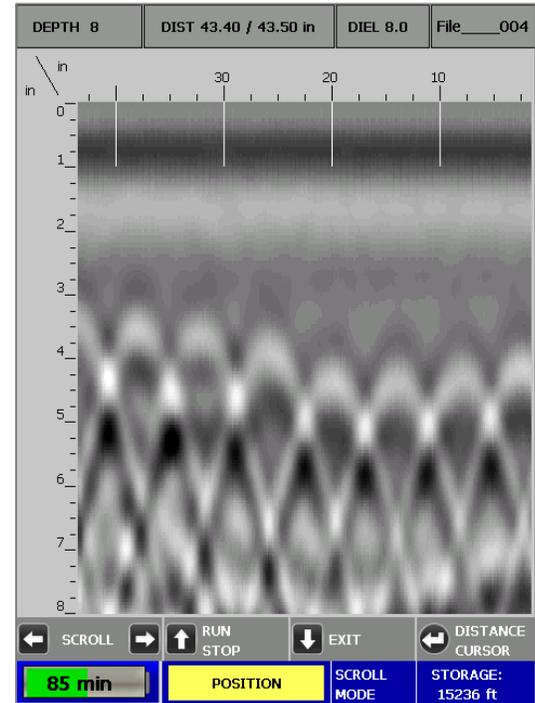
Example 2 – Rebar Data

This is an example of rebar. Note the distance between the peaks here (as well as at the location if you marked the area) is approximately 8 inches. Also note the approximate depth, the brightness of the hyperbolas, and they tend to be at a constant depth over the short term.



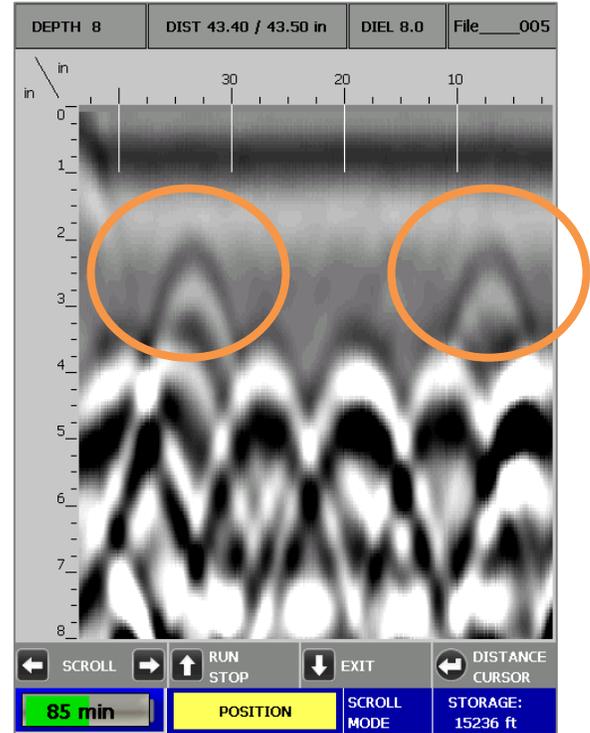
Example 3 – Mesh Data

This is an example of mesh. Note the distance between the peaks here (as well as at the location if you marked the area) is approximately 6 inches. Also note the approximate depth, the brightness of the hyperbolas, and mesh may be more uneven than rebar.



Example 4 – PVC

This is an example of two PVC pipes. Note they tend to be dimmer than rebar.



Appendix D: Laser Information

Laser Information: General

- Do not intentionally point the laser into your eye. Do not look directly into the laser light source.
- Do not place the laser in a position that may cause anyone to stare into the laser beam intentionally or unintentionally.
- Always power down the unit when not in use.
- Never view a laser through an optical device such as binoculars or a microscope.

Laser Information: Specific for the StructureScan Mini LT

- Do not remove or deface any product labels.
- This product contains lasers used as guides. Do not stare into any of the beams.
- You may configure the lasers on or off. From the Main menu:
 - a) Select **↑** Configure
 - b) Press **↑ ↓** and highlight Configuration and press **↵**
 - c) Press **↑ ↓** and highlight LASER
 - d) Press **↵** to toggle the laser On or Off.

**WARNING!**

Read and understand all instructions. Failure to follow all instructions may result in serious personal injury.

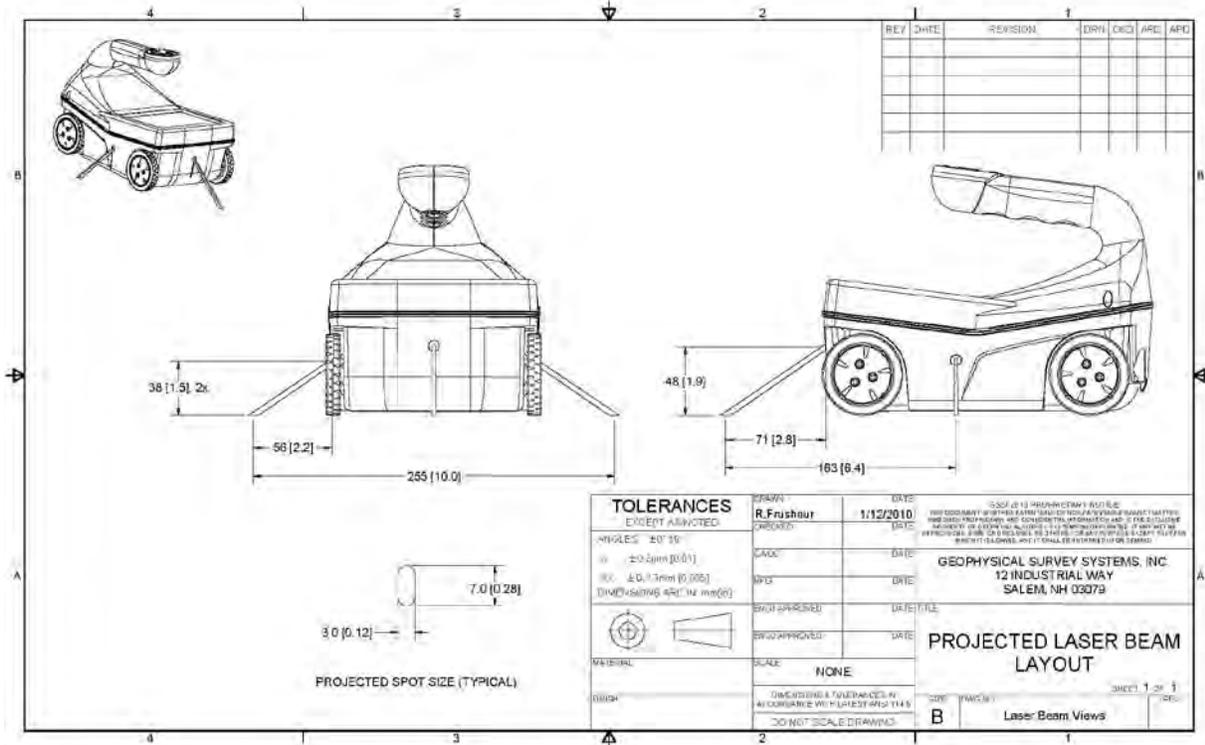
**CAUTION!**

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

LASER RADIATION**DO NOT STARE INTO THE BEAMS****CLASS 2 LASER PRODUCT**

- This product is designed to be opened by Field Service Professionals employed and/or trained by Geophysical Survey Systems, Inc only. Do not open this product. Tampering with this product voids all warranties.
- The laser has no serviceable parts.
- The laser will flash several times during system boot up.
- The laser will blink (whether Laser is configured On or Off) when the battery life is low (10%)
- **Remove the battery whenever transporting the product.**
- **Remove the battery whenever doing any self-maintenance to the product, such as cleaning the windows of the lasers.**
- If the lasers are configured On and the lasers are not working during collection of data, do not open the product. The product must be serviced by an authorized GSSI employee or representative only.
- If the lasers are configured On, they will work only while in the Collect menu option.
- The lasers will remain on (if Laser is configured On) even if the unit goes into sleep mode.

Laser Information: Projected Laser Beam Layout





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