



CorrSonic

UT Configuration Software Manual

3001-SWUT-9901-CAMS

Rev 0.6

Metal Samples

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TABLE OF CONTENTS

1	Operating Instructions: CorrSonic Configuration Software	1
1.1	Overview	1
1.2	Theory of Operation.....	1
1.3	Compatibility.....	1
1.4	Communication Drivers	2
1.5	Launching the Application	2
1.6	Home Screen, Basic Navigation	2
1.6.1	Basic Navigation.....	2
1.7	Settings	3
2	Connecting the MS800xUT Sensor	4
2.1	Connecting the Communication Cable	4
2.2	Battery Pack Connector	5
3	Read Function	6
3.1	Read Sensors.....	6
3.1.1	A-Scan View	8
4	Setting Up the MS800xUT Sensor	9
4.1	System Settings	9
4.1.1	System Settings Fields and Descriptions.....	10
4.2	UT Settings	11
4.2.1	UT Settings Fields and Descriptions.....	12
5	Troubleshooting.....	14
5.1	No COM PORT is shown on the Settings Window	14
5.2	USB Drivers	14
6	Software Licensing Agreement	15

1 OPERATING INSTRUCTIONS: **CorrSonic** CONFIGURATION SOFTWARE

The purpose of this chapter is to introduce the **CorrSonic** Configuration PC application. This chapter covers the following information:

- Overview
- Theory of Operation
- Compatibility
- Communication Drivers
- Launching the application
- Home Screen, Basic Navigation
- Settings

1.1 OVERVIEW

The **CorrSonic** Configuration application enables administrative users to set up and modify the settings of **MS800xUT** sensors. Default factory settings can be changed to optimize the measurement of the ultrasound echoes, set measurement timing periods and other functions and information within the devices.

1.2 THEORY OF OPERATION

The **CorrSonic** Configuration application is workflow based in that the main program functions are accomplished by navigating the user through a series of User Interface (UI) screens. The main workflows in the software include: reading data, configuration of communication settings and set up of Ultrasound measurement settings of the **MS800xUT** sensor.

Additionally, program settings and information are located as icons at the left side of the program window. These icons are available for navigation from any point in the program operation. Pressing the “Home” icon will always return the user to the main program window.

1.3 COMPATIBILITY

The application is compatible with and has been tested with the following operating systems:

- Microsoft Windows 10

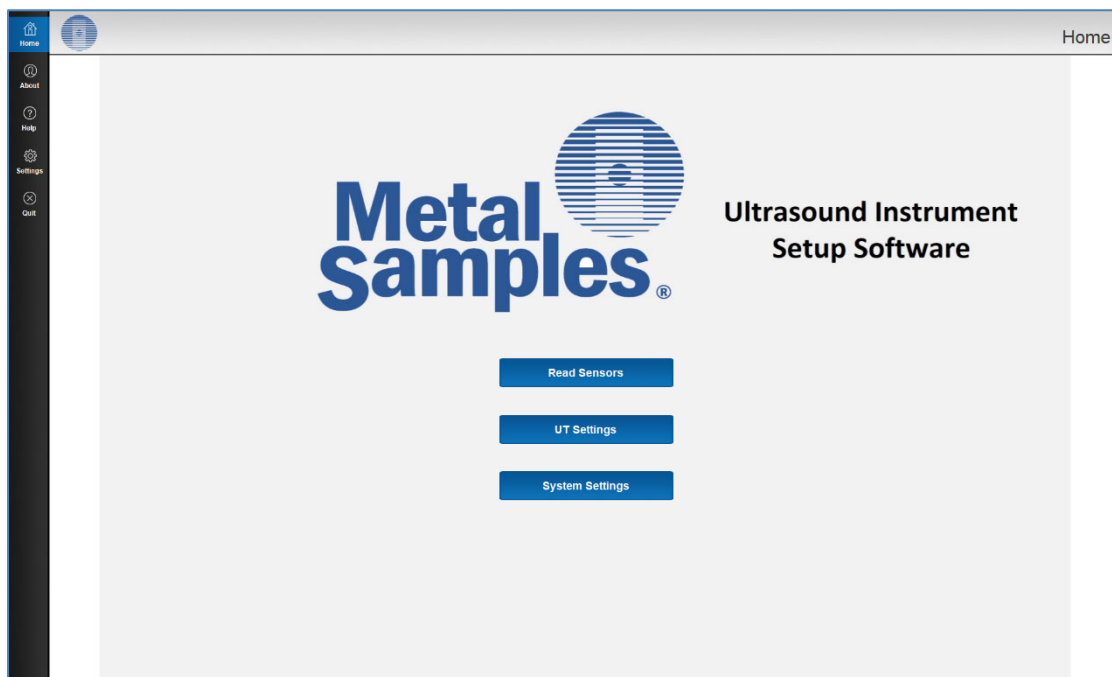
1.4 COMMUNICATION DRIVERS

CorrSonic Setup software communicates with the MS800xUT sensor via a custom USB serial cable. Connection to a MS800xUT device may require software drivers to be installed onto the laptop/tablet. The laptop/tablet user must have rights to the com ports of the device. Consult with your IT team to ensure your laptop/tablet is properly configured for USB-Com Port Communication to the **MS800xUT** sensor.

1.5 LAUNCHING THE APPLICATION

- Click the logo on the start menu
- OR double click the CorrSonic.exe program file in C:\Program Files (X86)\ CorrSonic

1.6 HOME SCREEN, BASIC NAVIGATION



The home screen is shown above and can always be accessed by pressing the “Home” button at the upper left of the program window.

1.6.1 Basic Navigation

Navigation of the program involves program utilities that are addressed as icons on the left side of the screen and the main program functions that are shown as buttons on the middle of the home screen.

1.6.1.1 Program Utilities

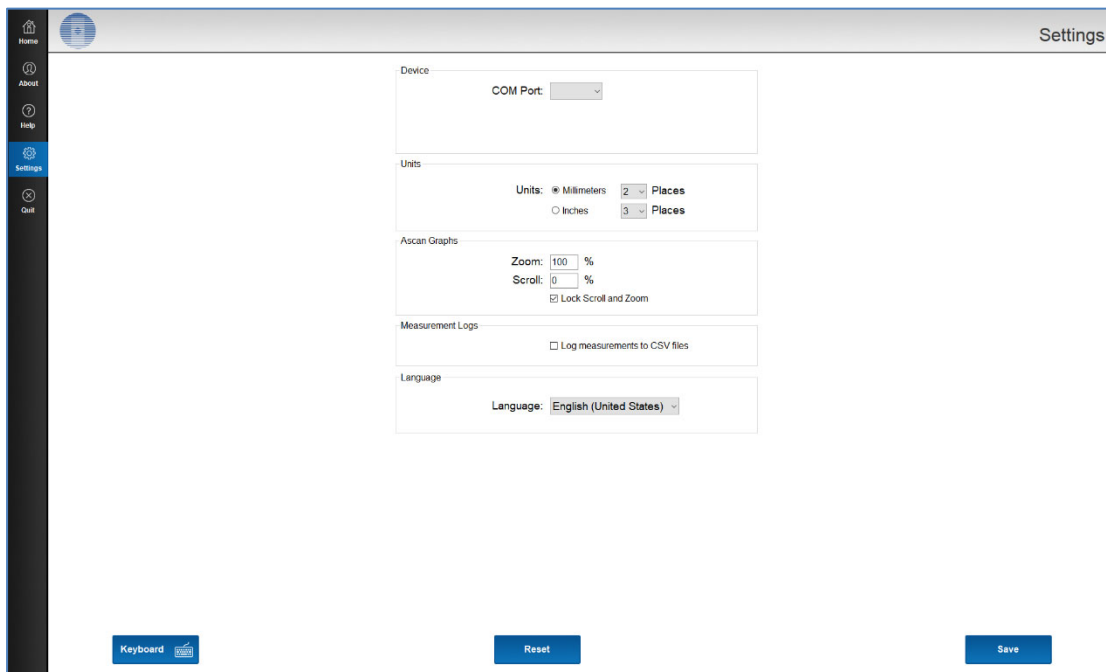
Utilities and informational functions are shown as icons on the left side of the main program window. The following functions are accessible:

- Home: Returns the user to the main program window
- About: Displays program copyright information and the software revision
- Help: Launches this manual
- Settings: Allows the user to adjust various program settings

1.7 SETTINGS

The settings functions are addressed on the settings page that is addressed by pressing the settings icon along the left side of the screen. Below is shown a screenshot of the settings screen. The functions are described as follows:

- Com Port: This setting identifies the com port of the RS-485 adapter. Select the com port that is associated with the adapter from the pull-down window. Baud rate control for MS800xUT instrumentation is to be set to 115200.
- Units: Allows the user to set the measurement units (mm or in) and precision
- A-Scan Graphs: Allows the user to set the Zoom and Scroll.
- Measurement Logs: Allows the user to log measurements to CSV files.
- Language: Allows the user to set the language in the program. Contact your Metal Samples Company representative if you require a language that is not currently available.
- Keyboard button: Invokes the touchpad keyboard.
- Reset button: Used to re-set the sensor configuration with a saved or factory supplied parameter file.
- Save button: Saves changes to the settings.



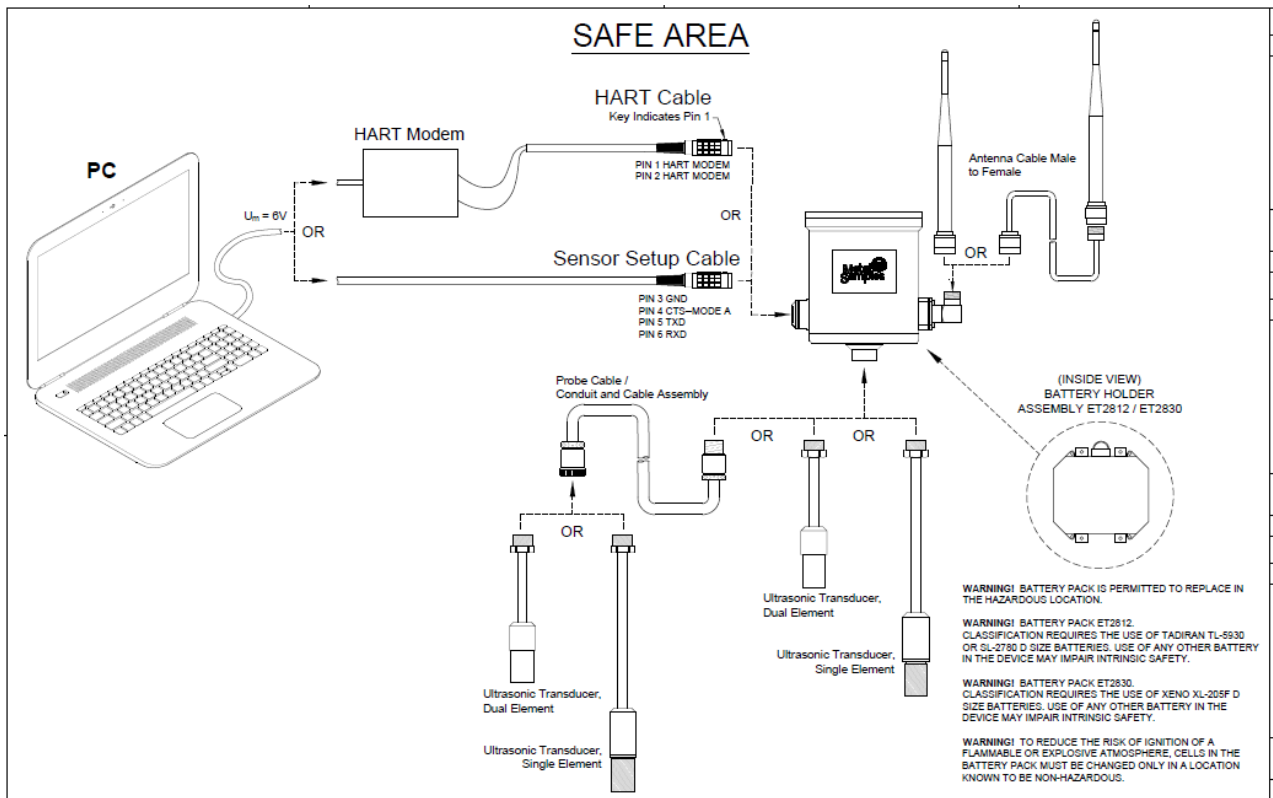
2 CONNECTING THE MS800xUT SENSOR

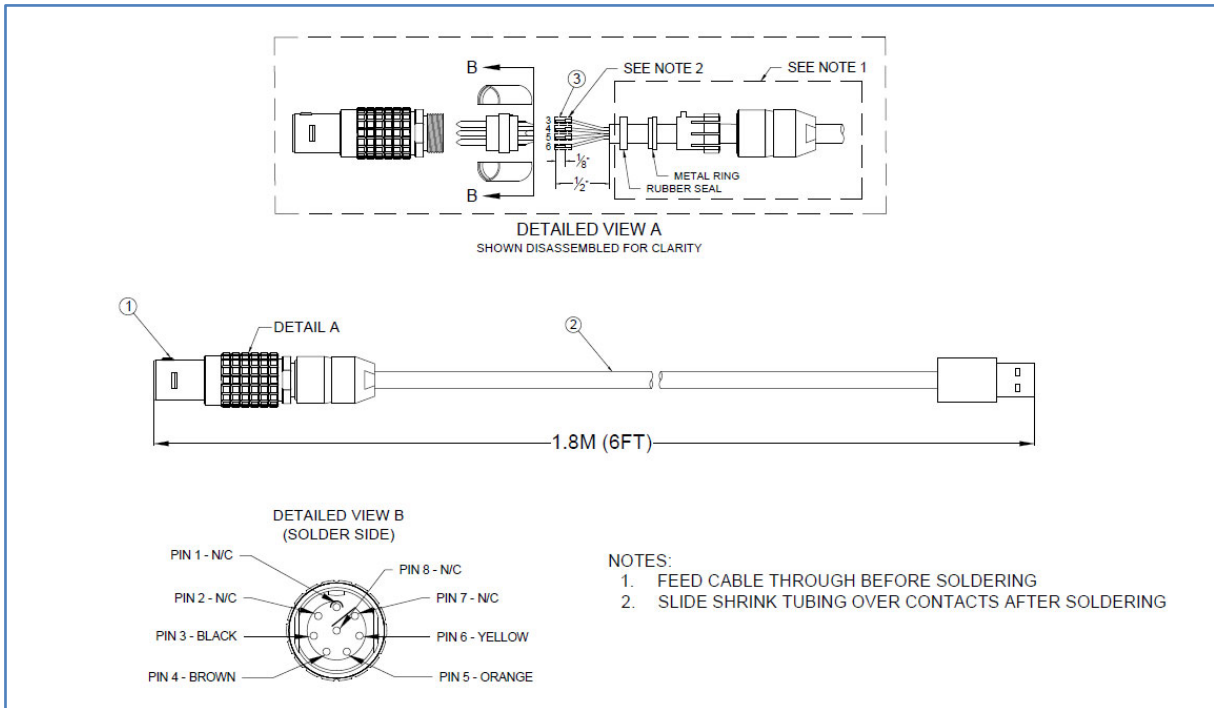
The purpose of this chapter is to guide the user through the process of connecting the MS800xUT sensor to the PC/Laptop/Tablet. This chapter covers the following information:

- Connecting the Communication Cable
- Service Port Connector

2.1 CONNECTING THE COMMUNICATION CABLE / SENSOR SETUP CABLE

To connect the MS800xUT sensor to the PC, a communication cable (Sensor Setup Cable) must be used. The cable is plugged into the USB port of the computer/tablet. The Lemo connector is connected to the MS800xUT sensor service port. The service port connector is located on the side of the transmitter as shown below.





Connect the other end to the PC. Confirm the comm-port settings as outlined in section 1.7.

2.2 BATTERY PACK CONNECTOR

Open the top of the MS800xUT sensor. Remove the four hex head screws from the lid using a small hex head driver. Pull the cap off the top of the sensor to expose the battery pack, the battery connector male and female with wires connected can be located on top.

The battery cable uses a polarized 3 pin linear connector. Connect both ends and ensure the connector is inserted properly.

3 READ FUNCTION

The purpose of this chapter is to guide the user through the process of obtaining a ultrasound thickness reading from the MS800xUT sensor to the PC/Laptop/Tablet using the **CorrSonic** application. This chapter covers the following information:

- Read Sensors
- A-Scan View
- Thickness View
- Summary View

The main purpose of the program is to read a data record from MS800xUT sensor, view the thickness and waveform and save the file to the laptop/tablet.

The MS800xUT sensor must be ready to power on with the service cable connected.

Open the **CorrSonic** software application and verify the proper comm port settings are made.

3.1 READ SENSORS

The Read sensors function is used to collect a UT thickness measurement from the MS800xUT sensor when connected to the service port. The sensor must be powered on and the interface cable plugged into the sensor.

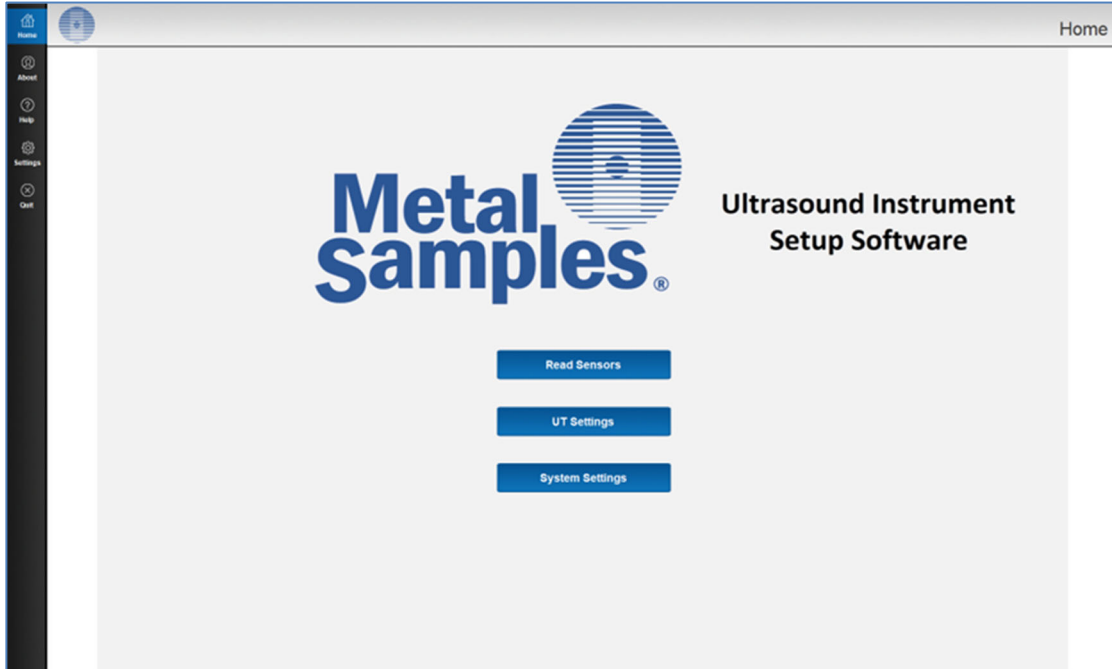
Step 1 : Launch the **CorrSonic** software. Open Settings and check that the proper com port is selected and the baud rate is set to 115200. Save settings to return to the main page.

Step 2 : Power on the MS800xUT sensor by connecting the battery plug to the transmitter power plug.

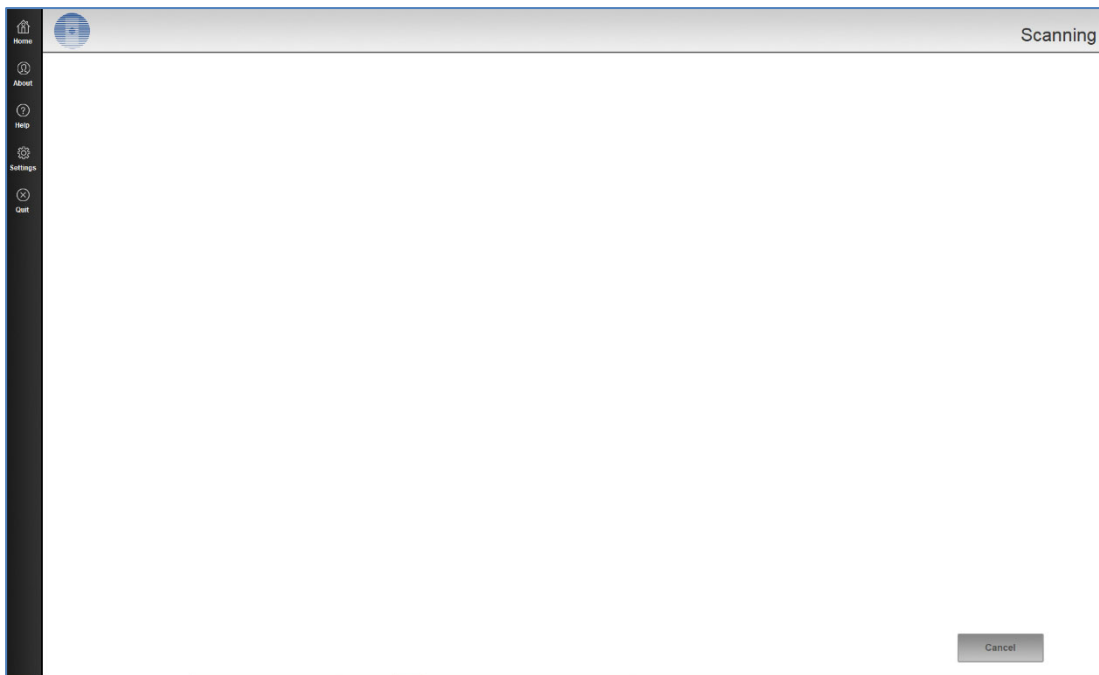
Step 3 : Within 30 seconds of powering on the MS800xUT sensor, click the Read Sensors button on the **CorrSonic** software main screen.

Note : the first 30 seconds after power up, the MS800xUT sensor will be scanning the service port for a computer connection. If no computer connection is made, the sensor will stop communications on the service port and boot up in radio mode.

The **CorrSonic** software will scan the Comm Port and establish a connection to the MS800xUT sensor.



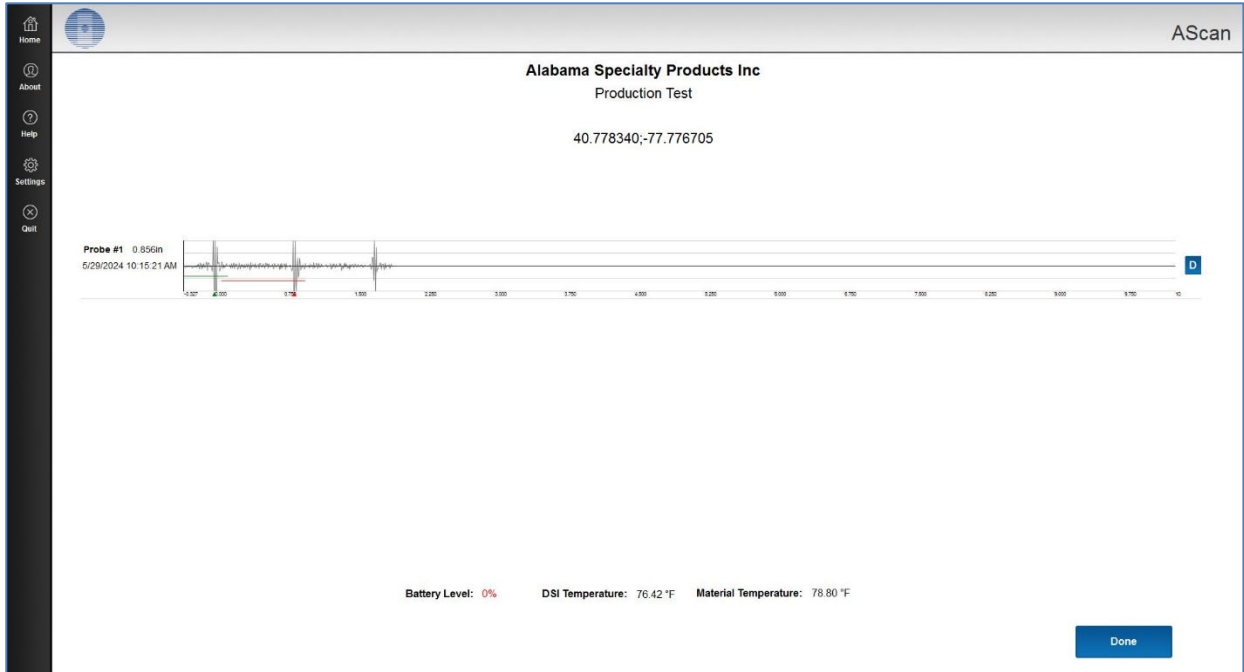
During the connection process, a message is displayed in the top menu bar with the message Scanning network... the process circle will rotate for a few seconds.



After the connection is made, the **CorrSonic** software will instruct the sensor to make a thickness measurement. The MS800xUT Sensor will make ultrasound measurements and the software will display the A-Scan window.

From the A-Scan window, you can view the thickness values and summary. Press “Done” to exit and return to the main menu.

3.1.1 A-Scan View



4 SETTING UP THE MS800xUT SENSOR

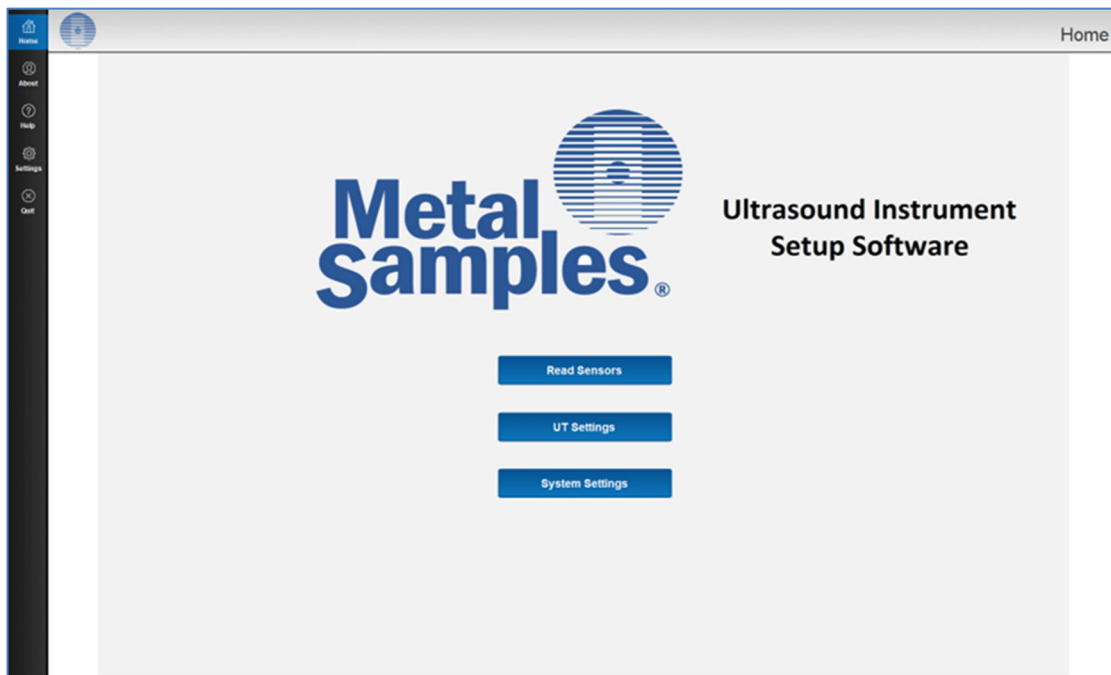
The purpose of this chapter is to guide the user through the process of setting up the MS800xUT sensor. Communications and Ultrasound settings. This chapter covers the following information:

- COM Settings
- UT Settings

The MS800xUT sensor comes from the factory with default communication and ultrasound set up information pre-loaded. It may be necessary to input network information and adjust ultrasound parameters to optimize ultrasound thickness measurement performance.

4.1 System Settings

The MS800xUT sensor uses communication settings to instruct the sensor when to make a thickness measurement and also the network ID and Join Key.



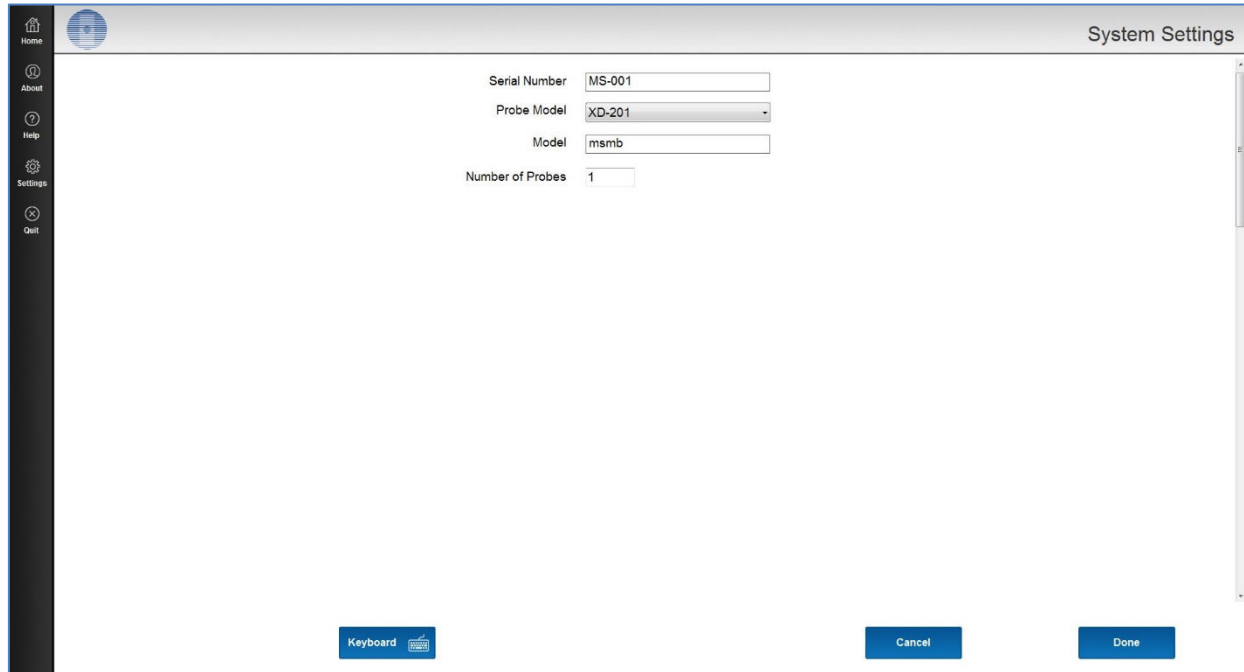
Step 1: Launch the **CorrSonic** software. Open Settings and check that the proper com port is selected and the baud rate is set to 115200. Save settings to return to the main page.

Step 2: Power on the MS800xUT sensor by moving the power switch from off to the on position.

Step 3: Within 30 seconds, click the System Settings button on the **CorrSonic** software main screen.

Note: the first 30 seconds after power up, the MS800xUT sensor will be scanning the service port for a computer connection. If no computer connection is made, the sensor will stop communications on the service port and boot up in radio mode.

Once connected, the System Settings window will be displayed.



4.1.1 System Settings Fields and Descriptions

Serial Number: This is a display only field. It displays the serial number of the MS800xUT sensor.

Probe Model: Select the sensor ultrasound probe model from the pull-down list. This is typically pre-set at the factory and should not be changed.

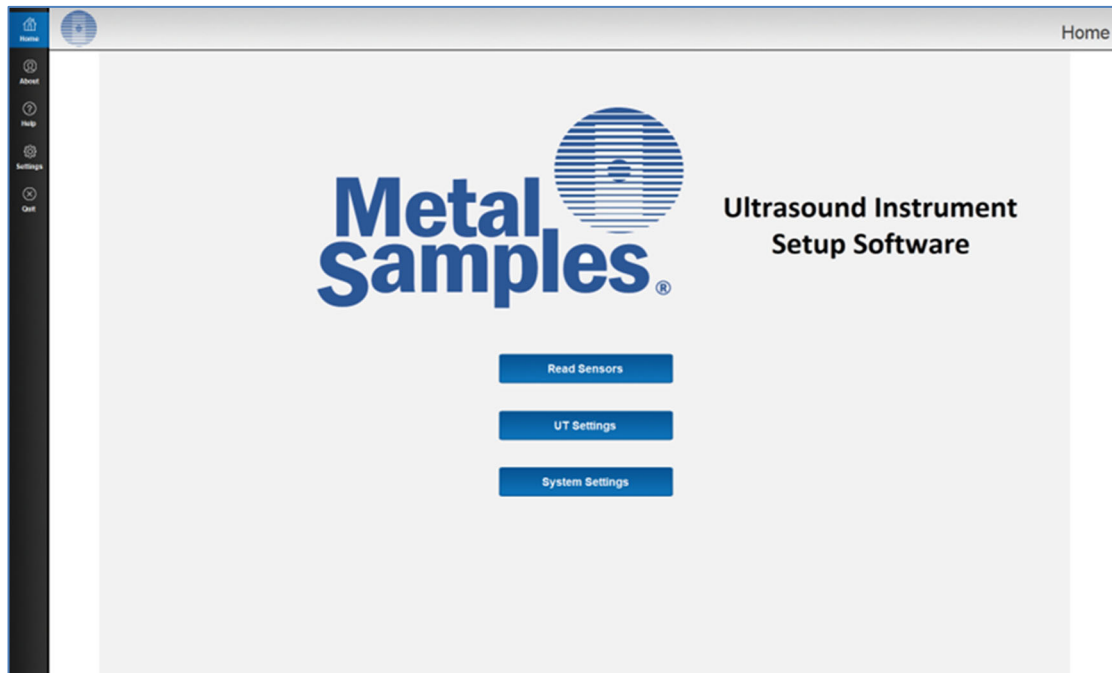
Model: This is a display only field. It displays the model type of the MS800xUT sensor.

Click the Done button when done updating the required fields.

4.2 UT SETTINGS

This mode of the CorrSonic software is used to set up the ultrasound measurement settings of the MS800xUT sensor.

The UT Settings window is used to set up the MS800xUT device after it has been installed and normalized to the test object.



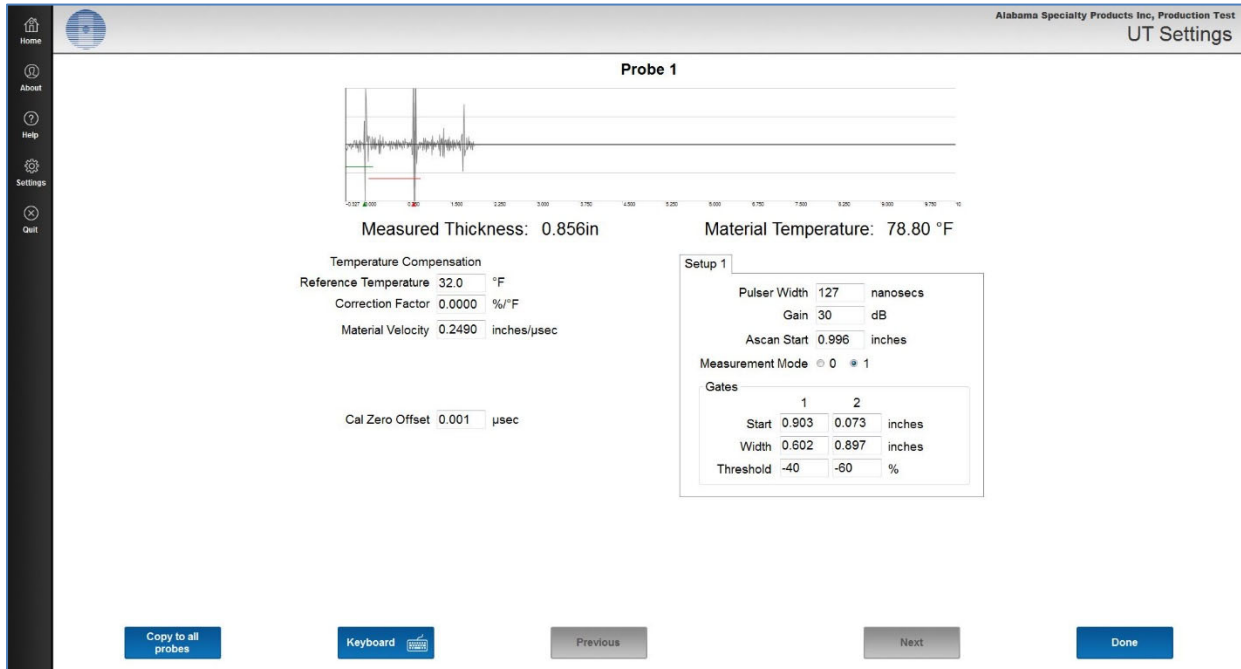
Step 1: Launch the **CorrSonic** software application and check that the proper com port is selected and the baud rate is set to 115200.

Step 2: Power on the MS800xUT sensor by moving the power switch from off to the on position.

Step 3: Within 30 seconds, click the COM Settings button on the **CorrSonic** software main screen.

Note: The first 30 seconds after power up, the MS800xUT sensor will be scanning the service port for a computer connection. If no computer connection is made, the sensor will stop communications on the service port and boot up in radio mode.

Once connected, the UT Settings window will be displayed.



4.2.1 UT Settings Fields and Descriptions

A-Scan: The live A-Scan is displayed at the top of the window. Adjustments can be made to the A-Scan by clicking on the A-Scan and while holding down the left mouse key, drag down to expand the A-Scan image. Click and drag left or right to move the A-Scan to the left or right within the A-Scan viewing window area.

Within the A-Scan window, the gate(s) are displayed for measuring the thickness. The A-Scan echo crossing the threshold of the gate is where the measurement is made. When the system is making a measurement on an A-Scan within the gate, a carrot is displayed at the bottom of the A-Scan indicating the point on the A-Scan being used to make the thickness measurement.

Dual element sensor types will display a single gate. UHT single element sensors will display two gates. Gate start position and width can be controlled on the UT Settings page.

The scale of the A-Scan window can be changed by clicking and dragging the mouse pointer within the A-Scan window. Click and drag left or right to move left or right in the A-Scan. Click and Drag up and down to change the range of the A-Scan.

Measured Thickness: The measured thickness value is displayed under the A-Scan window.

Material Velocity: This is a factory setting set to the approximate value of carbon steel. If the **MS800xUT** is being mounted to a material other than carbon steel, the velocity value can be changed to the known acoustic velocity of the non-carbon steel material.

Cal Zero Offset: This value is factory set for each sensor. It is used to adjust the acoustic thickness offset for the delays within the dual element sensor.

Setup1 Tab

Pulse Width: This is the width of the pulse used to drive the sensor. This is set based on the frequency of the sensor. The factory setting is typically 85 or 124 nanoseconds. Do not change this unless instructed by Metal Samples.

Gain: This adjusts the amplitude of the A-Scan echoes within the A-Scan image (top of page). The maximum is 39.9dB. This is typically set at the factory and then adjusted after the sensor has been mounted to the test object and normalized.

Sensor Number*: Shows the sensor number being adjusted. For a MS800xUT this will always be set at 1.

Ascan Start: This is factory set default based on the sensor type. Only change when instructed by qualified factory trained personnel.

Measurement Mode: This is factory set default based on the sensor type. 0 for dual element, 1 for single element. Only change when instructed by qualified factory trained personnel.

Gates:

Start: Controls the position of the starting point for gate 1 or gate 2 as shown in the live A-Scan window at the top of the screen.

Width: Controls the position of the end point for gate 1 or gate 2 as shown in the live A-Scan window at the top of the screen.

Threshold: Controls the location, positive or negative in relation to the base line of the A-Scan for gate 1 or gate 2 as shown in the live A-Scan window at the top of the screen.

* Denotes local data stored on device only. Not transmitted to network.

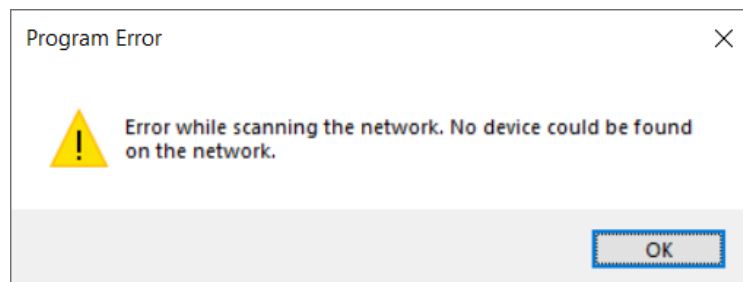
5 TROUBLESHOOTING

5.1 No COM PORT IS SHOWN ON THE SETTINGS WINDOW

This software uses COM PORT communication to connect and communicate with the **CorrSonic** instrument. The Commissioning Cable (P/N ET2808) is required for this function. COM PORT drivers for the commissioning cable are also required to be installed and registered on the local PC. Drivers are supplied as a separate installation executable with the **CorrSonic** software.

The PC user profile must have access to the COM & LPT ports of the machine. Consult with your IT department to ensure the user has these authorities on the local machine. Confirmation of the COM PORT access and driver installation can be confirmed in the Windows Device Manager.

Typical error message if the incorrect or no com port is set up in the Settings window.



5.2 USB DRIVERS

When using the USB Commissioning Cable, 03-010135, additional COM drivers for this cable must be installed on the local machine. The drivers required are from FTDI and can be downloaded from <https://ftdichip.com/drivers/vcp-drivers/>

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