



# **Sea Scan ARC Explorer Topside Detective Manual**

© 2013 Marine Sonic Technology, Ltd.

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This product was designed and developed by a team of engineers at Marine Sonic Technology, Ltd.

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## 1 Introduction

This software manual provides a description of how to use the Sea Scan ARC Explorer Topside Detective software. The Topside Detective software is a utility that makes it easy to troubleshoot and update your Sea Scan ARC Explorer Side Scan Sonar system.

This manual is separated into several sections: User Interface, Step By Step, and Software History.

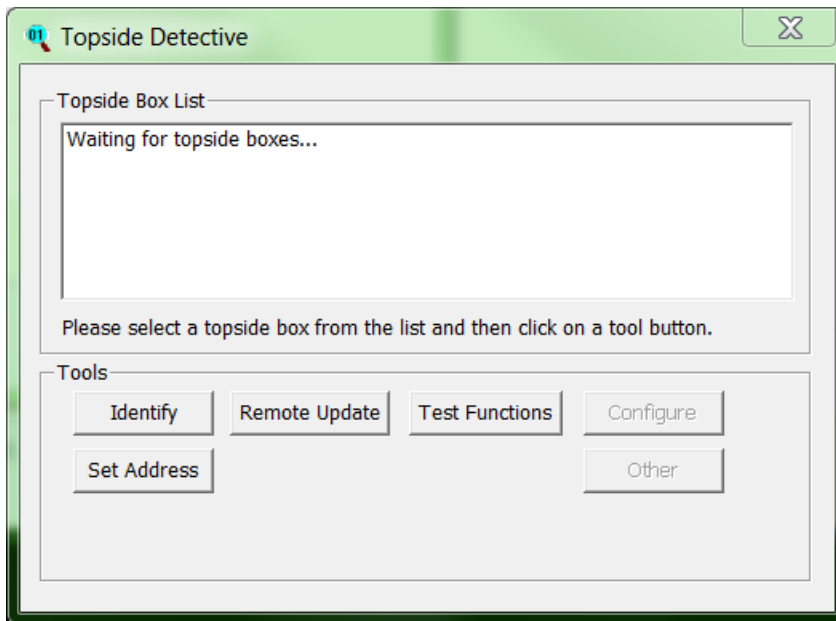
The [User Interface](#) section describes all of the buttons and windows in the Topside Detective software.

The [Step By Step](#) section walks you through using the software. Since the Topside Detective software separates all of its functions into separate windows, there is a Step By Step section for each of its windows.

The [Software History](#) sections lists all of the versions of software and the changes made. The versions are listed newest to oldest.

## 2 User Interface

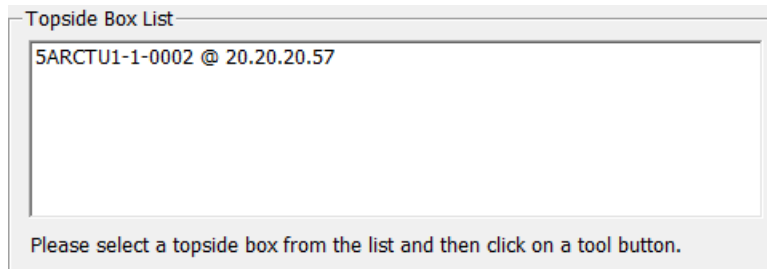
This section introduces the Topside Detective software's window layout. The main window is displayed below. If you are interested in one of the functions please refer to that section for details on its user interface layout.



Main Window

The Topside Detective software has 2 visible sections and 2 options available through the System Menu.

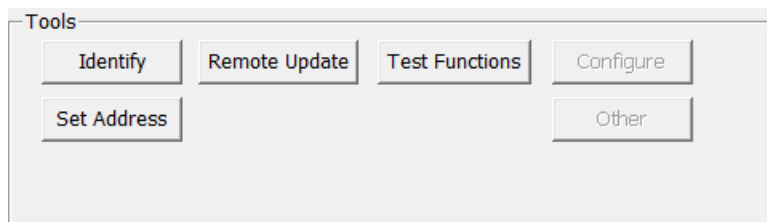
## 2.1 Topside Box List



Topside Box List Section

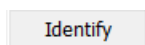
The Topside Box List lists the TCUs that have been found on the network. Although not common, more than 1 TCU can be connected on a network. Most of the functions in the Tools section require that a TCU be selected before clicking the function's button. To select a TCU, single click on the your TCU in the list. If you have more than one TCU connected and you need to sort them out please use TCU serial number or the [Identify](#) function to sort them out. If your TCU does not show up in the list, make sure the power and network indicators are on and that the computer is connected to the same network. You do not need to close the software to update the Topside Box List, it will update automatically as the TCU announces itself on the network.

## 2.2 Tools



Tools Section

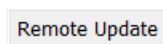
The Tools section contains all of the buttons that run the various Topside Detective functions. Clicking a function button will open the corresponding function window. Each function was designed to help accomplish a specific task. Each function is described briefly below. For details on the each function's window please refer to the functions corresponding User Interface section in this manual. If you are interested in an example of how to use each function please refer to the [Step By Step](#) section.



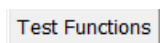
The Identify button shows the Identify function window. The Identify function reads the identity of the TCU as well blinks its LED indicators to facilitate identification of more than 1 TCU.



The Set Address button shows the Set Address function window. The Set Address function enables you to change the IP address of the TCU.



The Remote Update button shows the Remote Update window. The Remote Update function enables the Sonar's software to be updated.

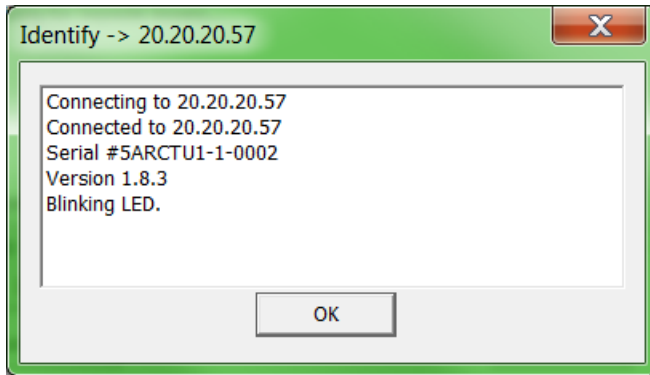


The Test Functions button shows the Test Functions window. The Test Functions function is useful for troubleshooting the system in the event that there is an issue connecting to the Sonar. It will test each step in the process and tell the user which

step the system is having trouble with making it easier to determine the appropriate steps to solving the issue.

### 2.2.1 Identify

Clicking on the Identify button will open the Identify window shown below.

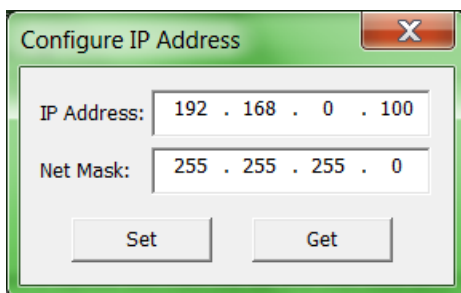


Identify Window

The Identify window shows useful information that can be relayed to Marine Sonic technical support as well as blinking the Command Indicator LED to show that the particular TCU that is being communicated with over the network with is the correct TCU. As soon as the Identify window is visible it begins the process of connecting to and identifying the TCU. This can be useful if there is more than 1 TCU connected to the network or if the TCU is remotely mounted. The Identify window will show the TCUs Serial Number and Software Version Number. Here you can see that the TCU is serial number 5ARCTU1-1-0002 and that it is currently running software version 1.8.3. Clicking the OK button closes the Identify window.

### 2.2.2 Set Address

Clicking on the Set Address button will open the Set Address window shown below.



Set Address Window

The Set Address window allows the IP Address (network address) of the TCU to be changed. It is important to note that the TCU must be visible on the network initially in order to change the address.

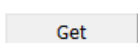
IP Address: 192 . 168 . 0 . 100

Clicking in the white space to the right of "IP Address:" will allow you to type in the IP Address.

Net Mask: 255 . 255 . 255 . 0

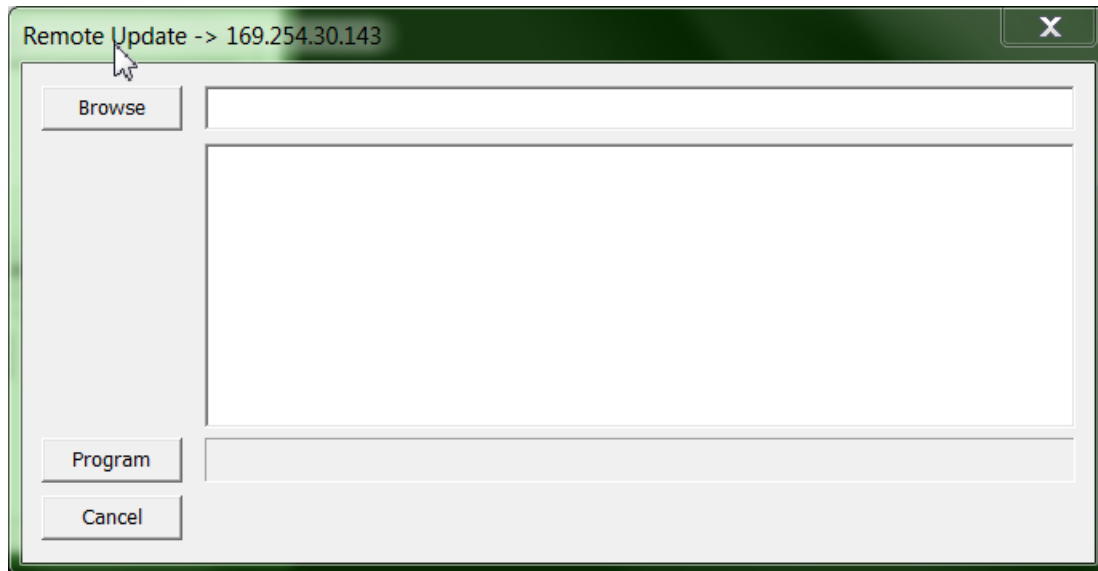
Clicking in the white space to the right of "Net Mask:" will allow you to type in the Network Mask.

 Clicking the Set button will send the IP Address and Netmask to the TCU.

 Clicking the Get button will get the IP Address and Netmask from the TCU and display it in the IP Address and Netmask boxes.


### 2.2.3 Remote Update

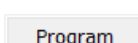
Clicking on the Remote Update button will open the Remote Update window shown below.

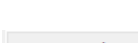


Remote Update Window

The Remote Update window is used to update the SONAR's software. This is may be necessary when updating the SONAR driver software.

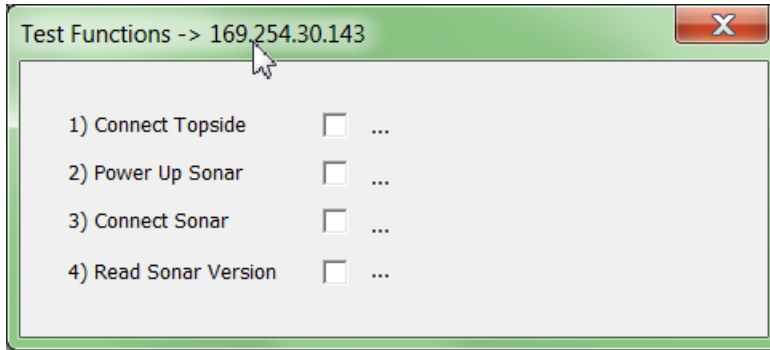
 The Browse button shows the Open programming file window. Use this button to choose a .RPD programming file. Once a file has been chosen, the full path will appear to right of the Browse button.

 The Program button initiates the programming session. The programming progress will shown to the right of the Program button.

 The Cancel button cancels programming once it has been initiated. If a programming session is canceled the SONAR may not function properly until it is reprogrammed successfully.

### 2.2.4 Test Functions

Clicking on the Test Functions button will open the Test Functions window shown below.



Test Functions Window

The Test Functions window is used for testing the various stages of communications with the SONAR. It can be used when diagnosing system problems. Checking the various check boxes will initiate the action to the left of the check box. The "..." to the right of the check box will display the results of the action. The check boxes should be checked in order (from top to bottom).

1) Connect Topside  ...

Checking the Connect Topside check box will initiate the connection to the TCU. The "..." to the right of the check box will indicate success or failure.

2) Power Up Sonar  ...

Checking the Power Up Sonar check box will turn on the power to the SONAR. The "..." to the right of the check box will indicate success or failure.

3) Connect Sonar  ...

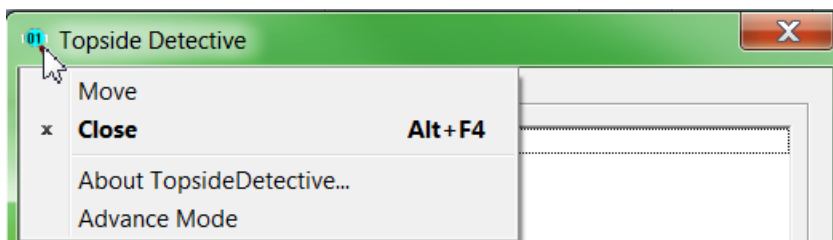
Checking the Connect Sonar check box will connect the TCU to the SONAR. The "..." to the right of the check box will indicate success or failure.

4) Read Sonar Version  ...

Checking the Read Sonar Version check box will test communications with the SONAR by reading the SONAR's software version. The "..." to the right of the check box will indicate success or failure. Upon success the software version will be displayed.

## 2.3 System Menu

The System Menu can be accessed by clicking on the through the Topside Detective icon to the upper left of the window in the Caption Bar.



System Menu

The System Menu contains has 2 items that are specific to Marine Sonic Technology software. The About item and the Advance Mode item. Clicking the About item will show the About window. The About Window is shown below. It is useful for determining the version of the software. It also provides a link to Marine Sonic's web site. Clicking the link will open your default web browser to Marine Sonic's web site. The software version is show as Topside Detective V2.0.0 built on March 27th 2013. It is



important to note that the build date is just as important as the version. This information is useful when contacting Marine Sonic for technical support. To close the About Window click the OK button.



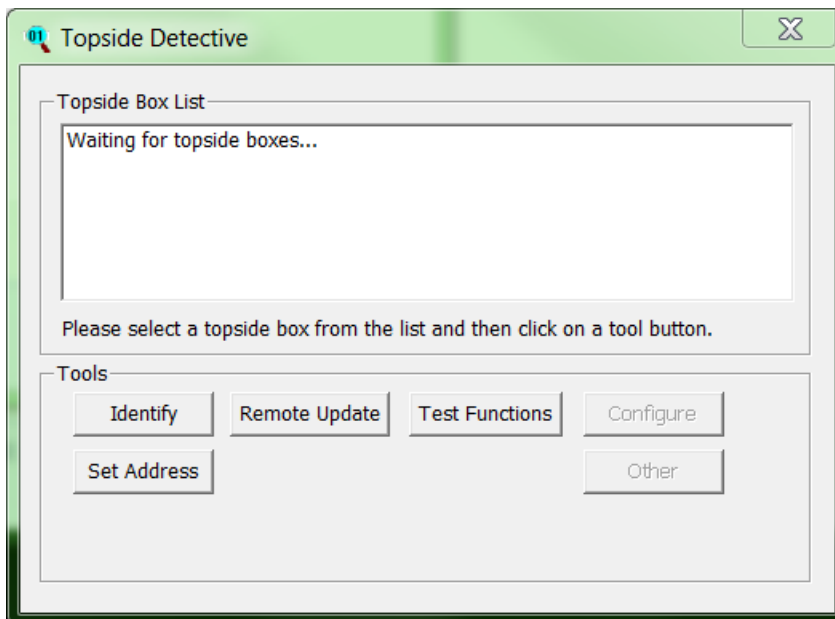
About Window

### 3 Step By Step

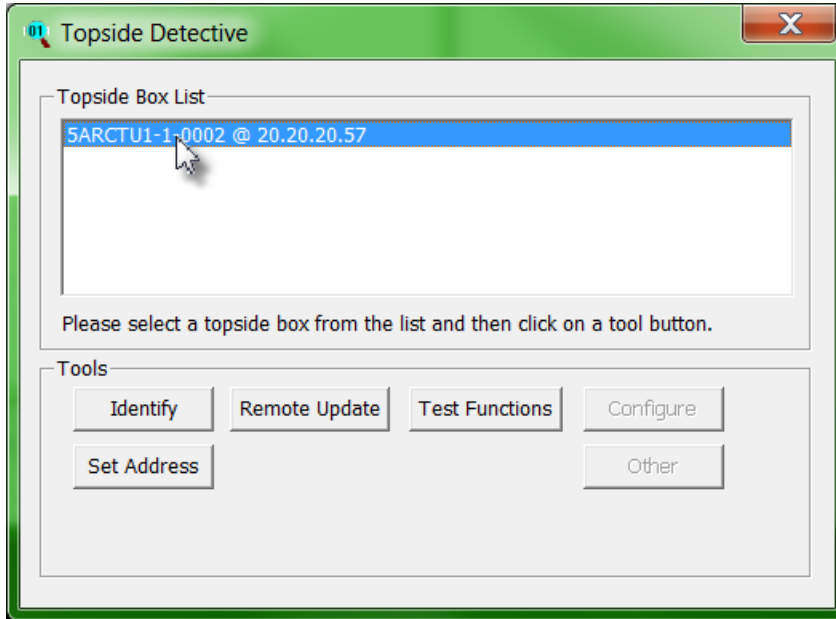
This section walks you through some typical uses of the Topside Detective software.

Most of the functions that Topside Detective performs require that a Sea Scan ARC TCU (Topside Control Unit) is connected to your computer, either indirectly to the network that your computer is on or directly to the computer through the wired network port. If it is not connected then many of the functions will not work.

The software will start up and appear as shown below:



Notice that the Topside Box List shows the message "Waiting for topside boxes...". This indicates that there are no TCUs that are detected on the network. If your TCU is powered up and the green network light is on then your TCU should show up within 5 seconds. Once your TCU is showing as illustrated below, you can now select your TCU by clicking on it.



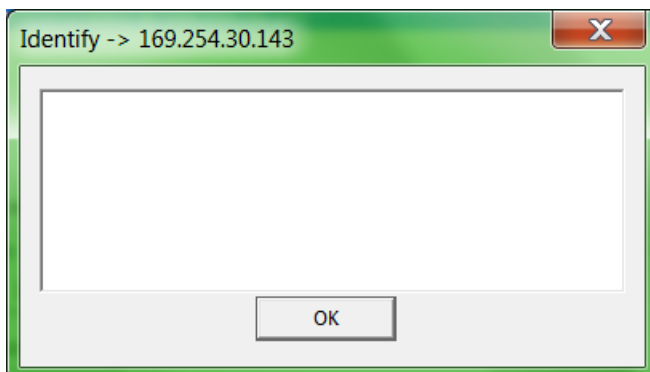
Notice that your TCU is displayed using its serial number and assigned IP address. This information is useful for troubleshooting.

Once a TCU is selected then you may now click a function button to access that function. If you do not have a TCU selected then a message will be displayed instructing you to select a TCU instead of the function window showing.

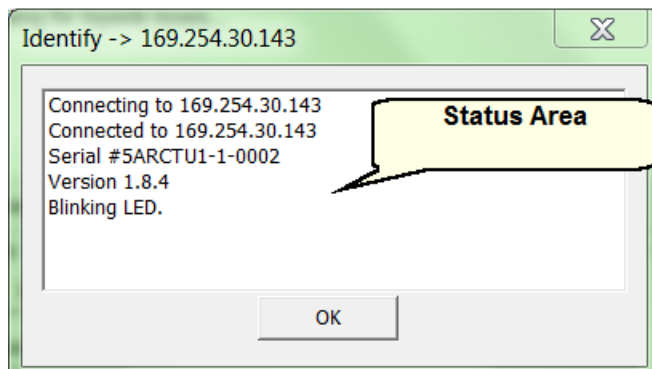
Note: The Set Address tool is the only tool that does NOT need to have a TCU selected to run.

### 3.1 Identify

Clicking on the Identify button opens the Identify window. You will need to first select the TCU before clicking on the Identify button. The Identify window is shown below:



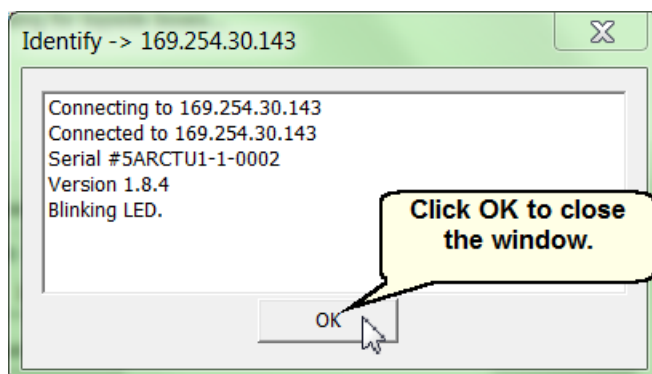
The Identify window's status area will initially be blank as shown above.



The process of connecting to the TCU will begin as soon as the window appears. The Identify window performs the following actions:

- Connects to the TCU
- Retrieves and displays the TCU's serial number.
- Retrieves and displays the TCU's software version.
- Blinks the SONAR activity LED.

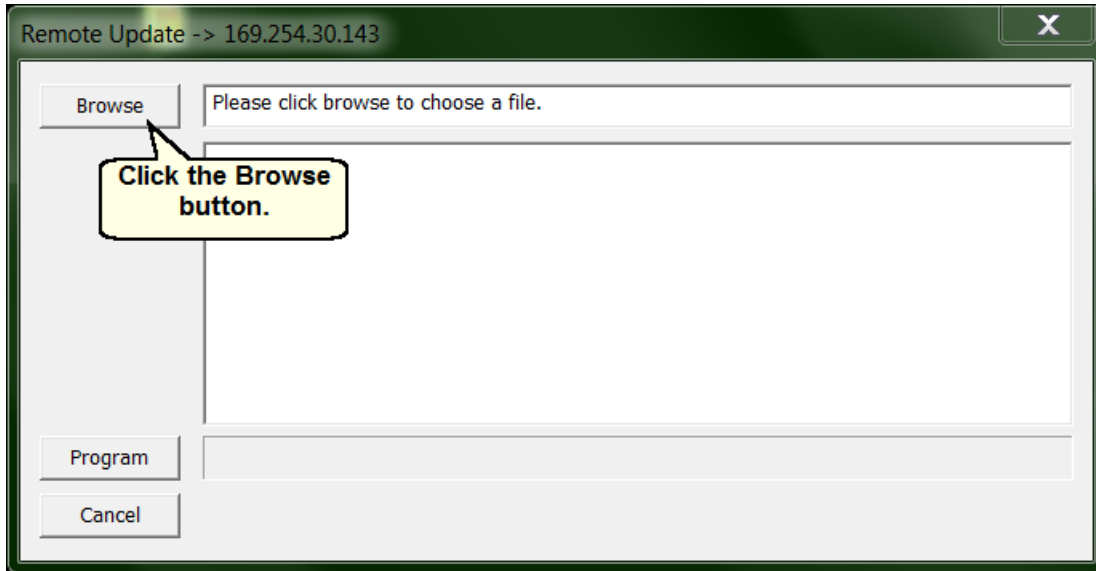
The results of the actions will be shown in the status area as shown above. The LED will continue to blink until the window is closed.



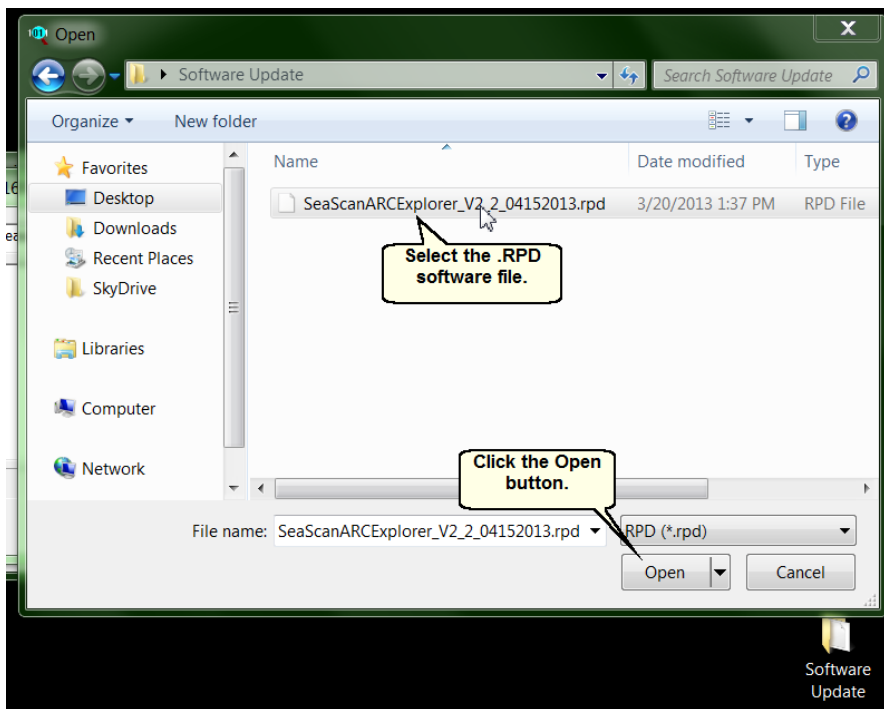
Click the OK button to close the window.

## 3.2 Remote Update

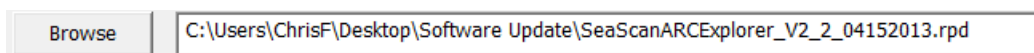
Clicking the Remote Update button opens the Remote Update Window. The Remote Update function allows the software on the SONAR to be updated.



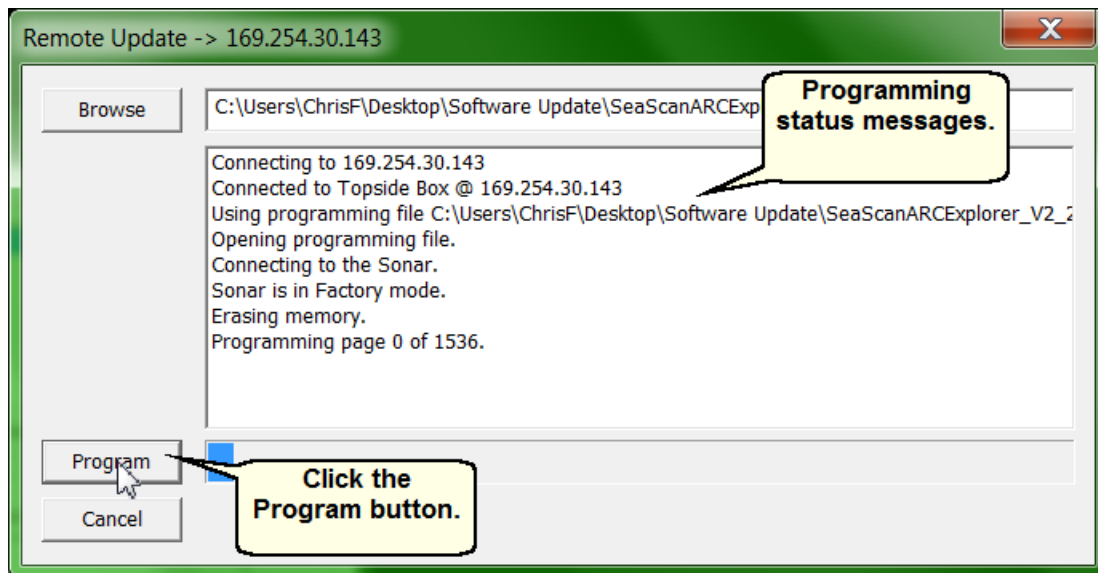
First click the Browse button to locate the .RPD software file. Navigate to the folder that contains the .RPD file.



Select the .RPD file and then click the Open button. The software file's full path will now show to the right of the Browse button.



Next make sure the Sonar is connected to the TCU and then click the Program button.



The status and any messages that pertain to the programming process will show up in the status message section that is located below the programming file name box.

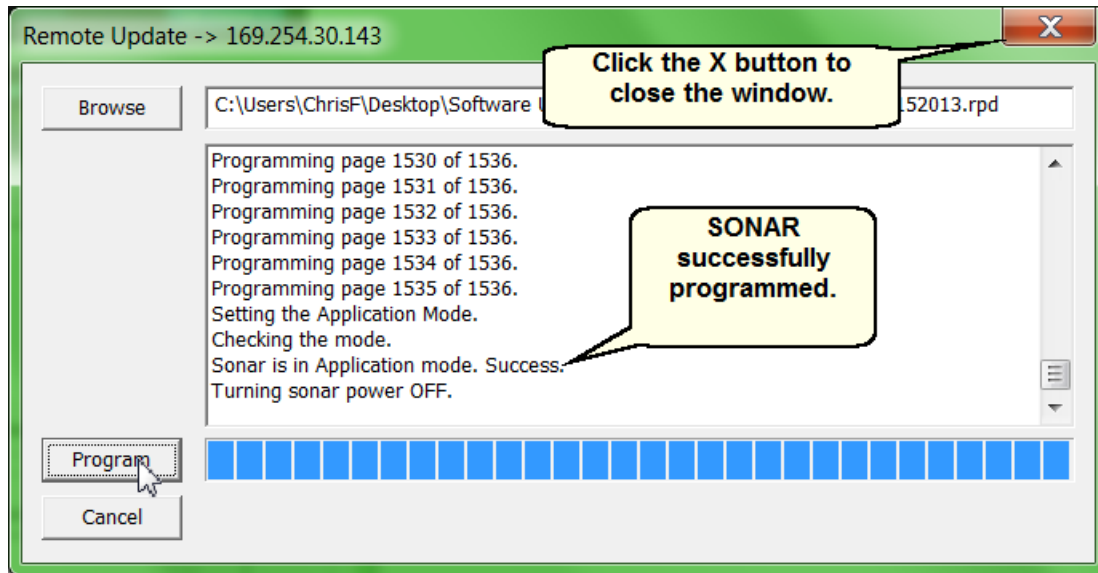
The programming process goes through the following steps:

1. Connect to TCU.
2. Opening the programming file.
3. Powering Up / Connecting to the SONAR.
4. Verifying the SONAR factory mode.
5. Erase memory.
6. Programming memory.
7. Verifying the SONAR software.
8. Power Down and Disconnecting the SONAR.

If there are any failures during these steps the programming process will be aborted and an appropriate troubleshooting message will be displayed in the status message section. During programming the programming progress bar will move to indicate programming activity and the current programming step will be displayed in the status message section.

At any time during the programming process you can press the Cancel button. Clicking the Cancel button will stop any programming that is in process. If you cancel the programming after the Erase or Programming steps have begun you will have to successfully complete the programming cycle before the SONAR will function properly.

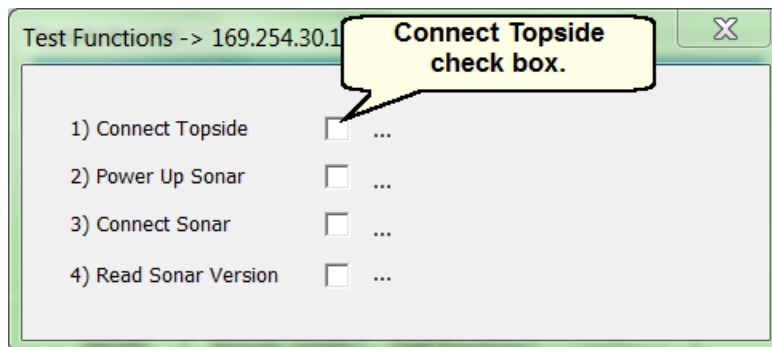
When the programming has been successfully completed the progress bar should be full and the status message section should display Success as shown below.



Click the X button in the upper right hand corner to close the Remote Update window.

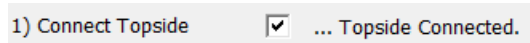
### 3.3 Test Functions

Clicking the Test Functions button opens the Test Functions window.



This window is mostly user driven in that it requires the user to check each check box in order from top to bottom. Feedback is then given to the right of check box in the area with the "...". If at any time there is a failure the subsequent check boxes will not activate their functions.

To initiate the process click on the Connect Topside check box first.



The status (to the right of the check box) should indicate success by displaying "Topside Connected". If the status indicates that the attempt to connect to the TCU failed then please check your network settings and network cable. Also check to see that the TCU is powered on.

Next click on the Power Up Sonar check box to send power over the towcable to the SONAR.



The status should indicate success by displaying "Sonar Power ON". If the status indicates the power on was not successful then please power off the TCU immediately and check the towcable for shorted wires and water intrusion. Disconnect the towcable and make sure the connectors are clean. Reconnect the towcable, uncheck the check box, and then try to power up the SONAR again.

Next click on the Connect SONAR check box to initiate the connection.

3) Connect Sonar  ... Sonar Connected.

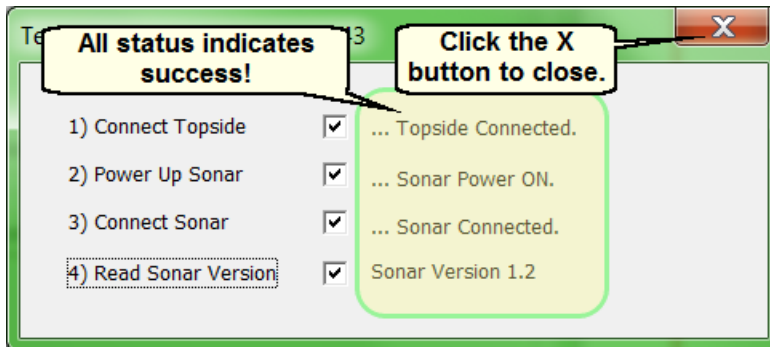
The status should indicate success by displaying "Sonar Connected". If the status indicates failure, power off the SONAR and check the towcable connection then try powering on the SONAR and connecting again.

Once the SONAR is connected, click the Read Sonar Version check box.

4) Read Sonar Version  Sonar Version 1.2

The status should display the SONAR's software version. In the above example the SONAR software version is V1.2.

Below is an example of all of the tests completed successfully.

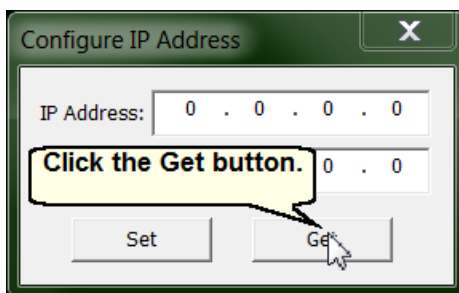


Click the X button to close the Test Functions window.

### 3.4 Set Address

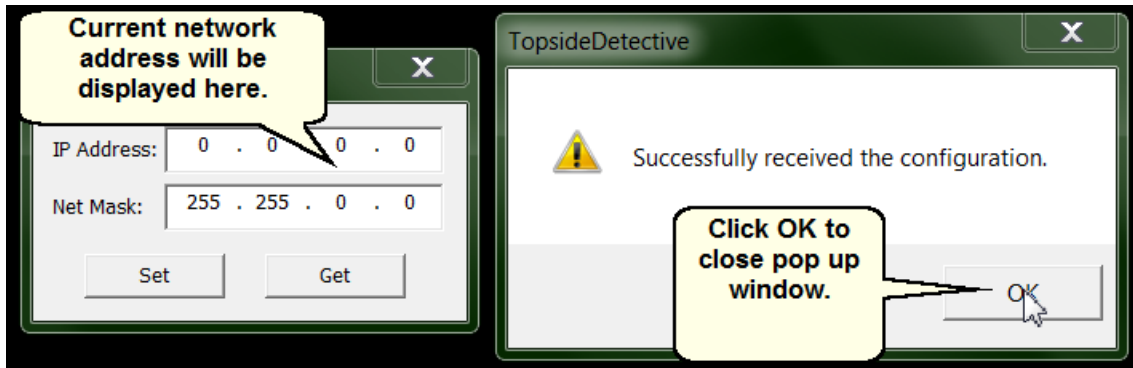
Clicking the Set Address button opens the Set Address window. This function is used to get and set the network address of the TCU.

The first step is to click the Get button to retrieve the current network address.

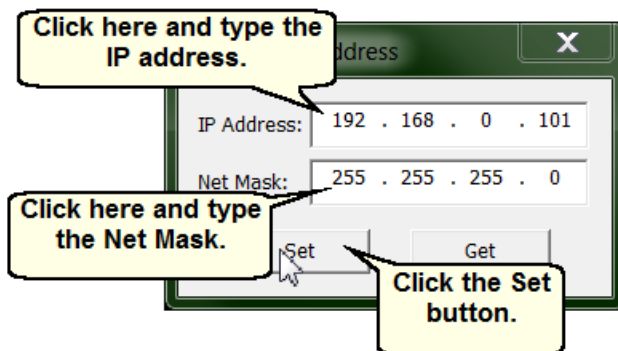


When the get address action has completed, a window will pop up and tell you if it was successful or if

the action failed. Click the OK button to make the pop up window disappear. The IP Address and Net Mask edit boxes will now contain the current network address settings.



The next step is to type in the new IP Address. Click in the IP Address edit box. Type in the new IP Address (192.168.0.101 is used in this example). Then click in the Net Mask edit box and type in the new Net Mask. (255.255.255.0 is used in this example). After the new network address settings have been entered, click on the Set button to send the new network address settings to the TCU.



After the new network address has been sent, the Set Address window retrieves the network settings again in order to verify the current settings. When the action has completed, a window will pop up and tell you if it was successful or if the action failed. Click the OK button to make the pop up window disappear. The IP Address and Net Mask edit boxes will now contain the current network address settings.



The TCU will now reboot with the new network address settings.



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Click the X button to close the window.

## 4 Software History

This sections contains the history of the Topside Detective software revisions:

### V2.0.0 - March 2013

- Initial Released Version