

WIDEBAND TEST TERMINAL SOFTWARE USER MANUAL

ISSUE A

REVISION 4

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AMENDMENT RECORD

All amendments and additions will be issued with a new copy of this sheet,
recording the history of amendments.

Issue	Revision	Date	Comments	Section	Page
A	1	04/03/09	Initial Issue (WTT ver 1.0.0.76)	All	All
A	2	08/04/09	Extended to support Responder type 8167 (WTT ver 1.1.0.0) and WMT (8090) Quick Set function (WTT ver 1.2.0.0)	1.1, 2.2.4, 4	4, 11, 23
A	3	25/06/09	Added custom error handling and display messages (WTT ver 1.2.1.6)	2.2, 3.1, 4.1, 4.2	7 - 24
A	4	22/06/10	Added Battery Connect button, Acoustic Check, Release Test, Transceiver detection and sample Test Report (WTT ver 1.3.0.0)	2.2, 4	7 - 28
A	5	03/Jun/11	Update screen shot. Add Windows 7 details. Add note for sensor readings. (WTT ver 1.3.8.0)	2.1, 2.2.2, 2.2.5	5,9,17

1 Introduction

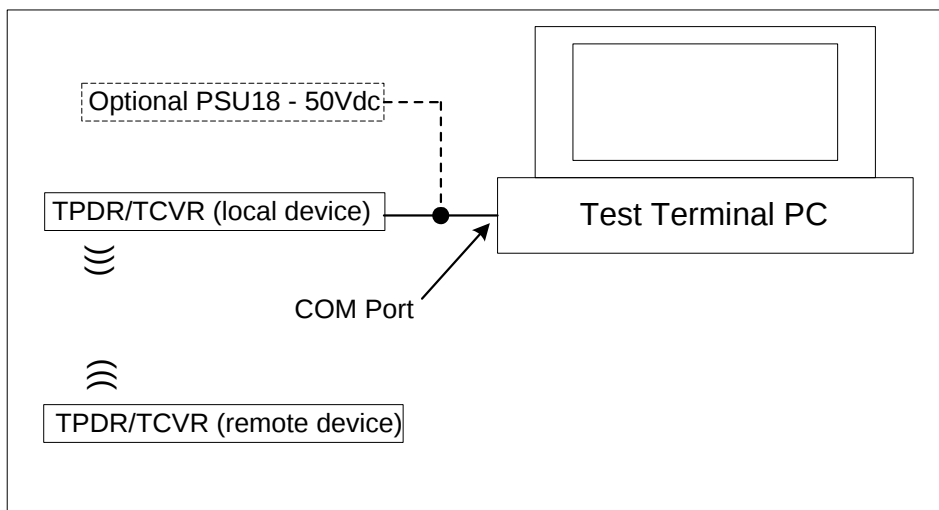
This document describes how to operate the **Wideband Test Terminal software** with Sonardyne Transceivers and Transponders. Using the software implies acceptance of Sonardyne's standard software license agreement. A copy is included in the appendix section of this document.

1.1 Abbreviations

The following abbreviations are used in this manual:

Abbreviation	Name
WTT	Wideband Test Terminal
WMT	Wideband Mini Transponder
PSU	Power Supply Unit
PC	Personal Computer
Device	Transponder or Transceiver
TPDR	Transponder
TCVR	Transceiver
UID	Unique Identity

1.2 System Overview



The test PC is used to run the Wideband Test Terminal software.

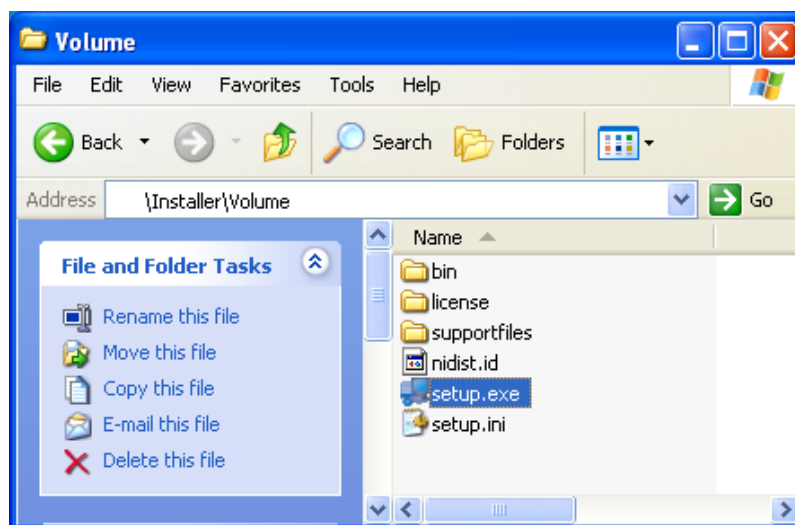
The power supply is required if the device under test does not have an internal battery.

2 Installation and Operation

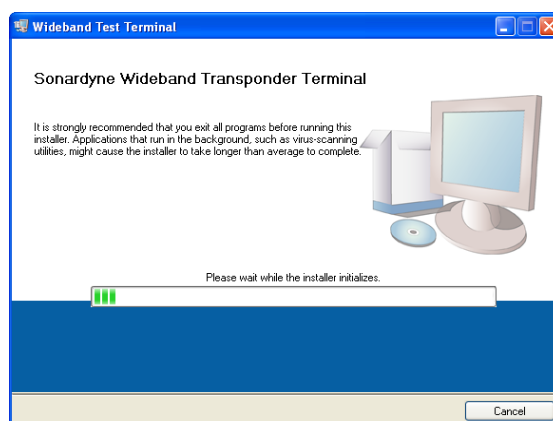
2.1 Software Installation

This software will run on Windows Vista/XP/2000/Windows 7 operating systems. The Wideband Test Terminal distribution disc contains a folder called "Installer". Insert the disc into the appropriate test PC disc drive.

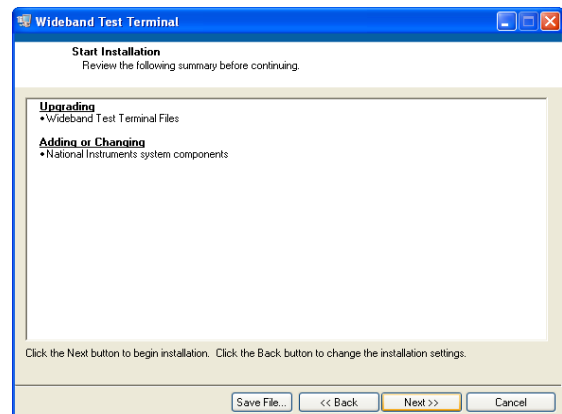
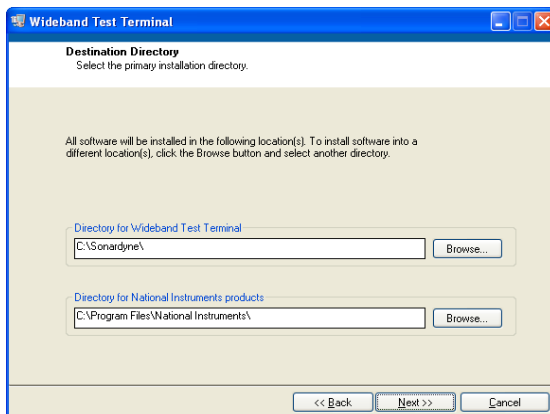
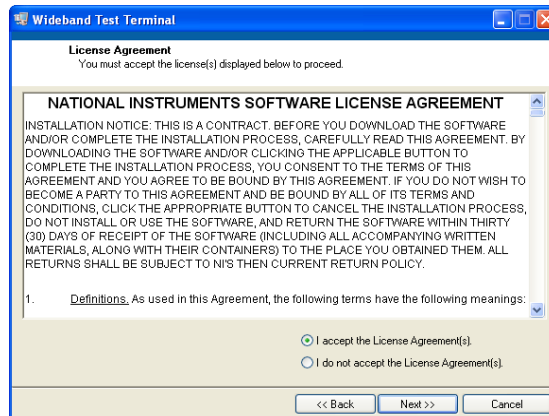
Run the "setup.exe" file located in the "\\Installer\\Volume\\" directory.



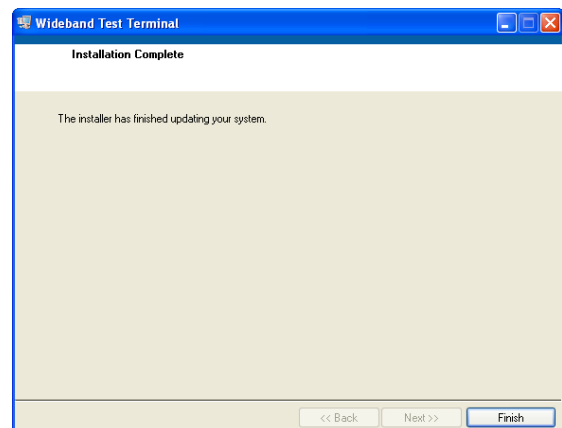
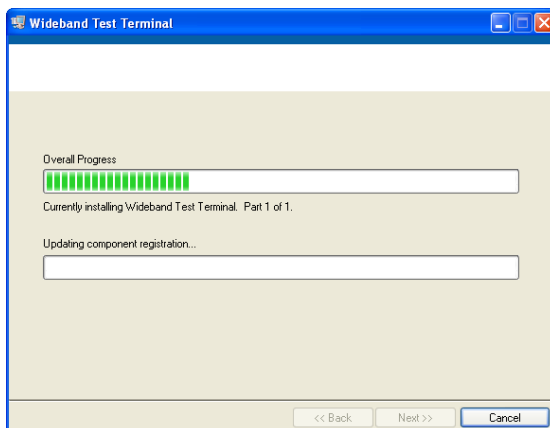
The installation will load the WTT software onto the PC and create a shortcut icon on the desktop.



After reading the license agreement select the "Accept License" and "Next" button options to proceed. Do not alter the default paths that appear.



Select "Finish" after the installation is complete and choose "Restart" if prompted to restart the test PC. Upgrades to existing WTT software do not require a restart.



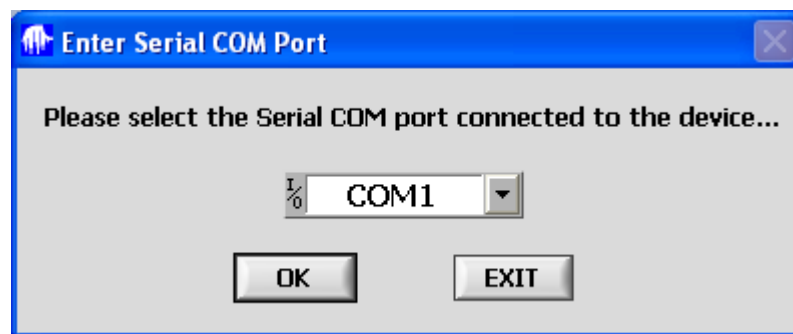
After restarting the PC find the "WTT" shortcut icon  on the desktop and double click it to run the "Wideband Test Terminal" software.

2.2 Software Operation

The software interface consists of control tabs, buttons and drop-down lists which are used to perform predefined actions such as setting a device address. The interface also has various indicators to display the current device information. These features are described in more detail throughout this document.

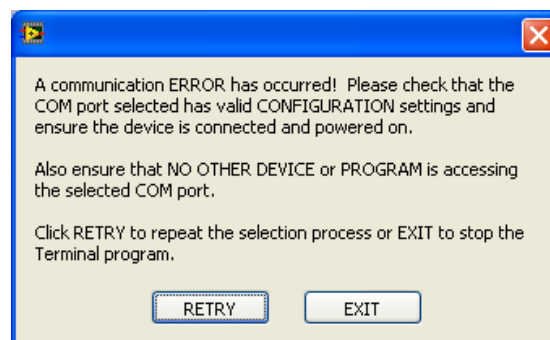
2.2.1 Start-Up

When the software starts running, a window requesting confirmation of the serial COM port to be used will be displayed.



The COM ports supported by the PC are available for selection from the drop-down menu. Select the COM port required and click the <OK> button to proceed with the Terminal program. Clicking the <EXIT> button will stop the program and shut down the WTT software window.

The port settings are automatically configured. If the software does not detect any communication with the device the following ERROR window may appear.



(See also Common Problems section)

Perform the necessary checks as displayed in the window and click the <RETRY> button to return to the COM port selection window. Clicking the <EXIT> button will stop the program and shut down the WTT software window.

When communication with the device is confirmed by the software, the **Progress** window will appear.



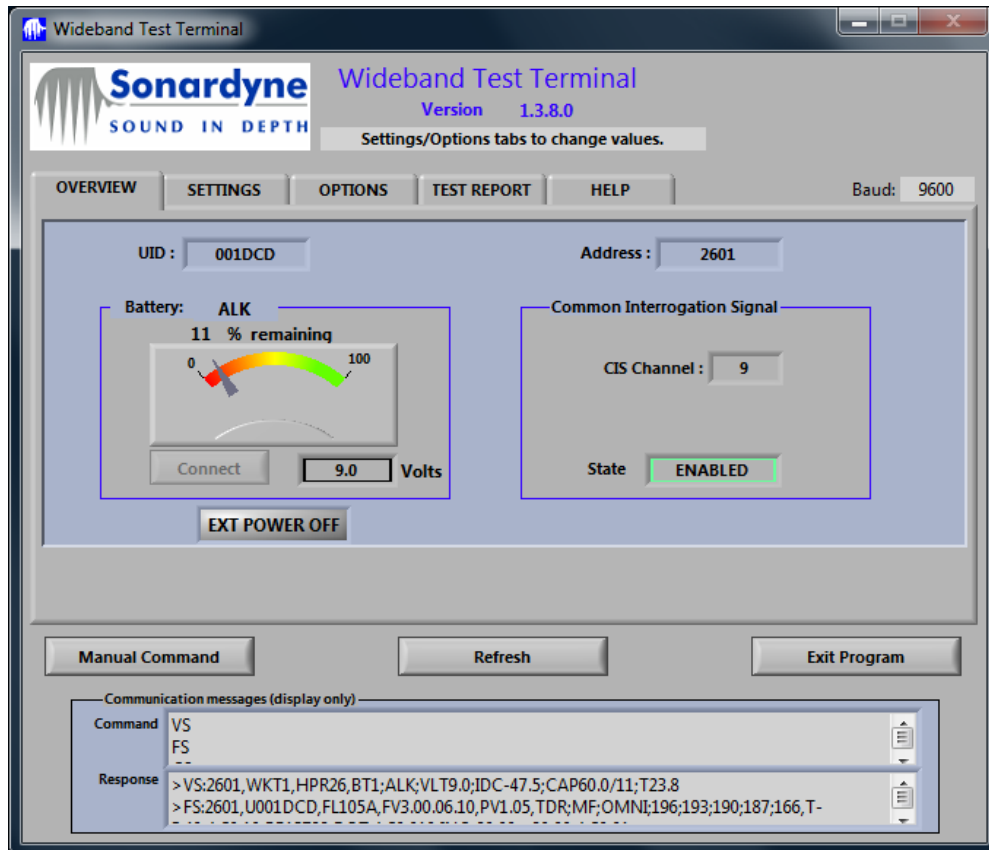
The status information will then be displayed on the WTT window which consists of five tabs.

2.2.2 OVERVIEW Tab

TIP: Placing the mouse over some of the display objects on the test terminal window shows some tips on what the function of the object is. In the example below, the mouse is placed over the **Battery-Volts** indicator to show its brief description that reads;

“Battery voltage (Green = Charging, Black = Draining)”.

NOTE: Any functions that are not supported by the connected device will either be missing or will appear greyed out on the WTT screen.



(Software version number is shown under the title in xx.xx.xx.xx format)

This **OVERVIEW** tab is the default tab that is displayed after getting the device status. This displays values of the local device. Below the tab object are three command buttons whose function is later described in this document. These are the <Manual Command>, <Refresh> and <Exit Program> buttons.

At the bottom of the window are two display fields that show communication messages between the Terminal program and the device. These fields are for display purposes only.

- **Command** field shows the command messages sent to the device.
- **Response** field shows reply messages from the device.

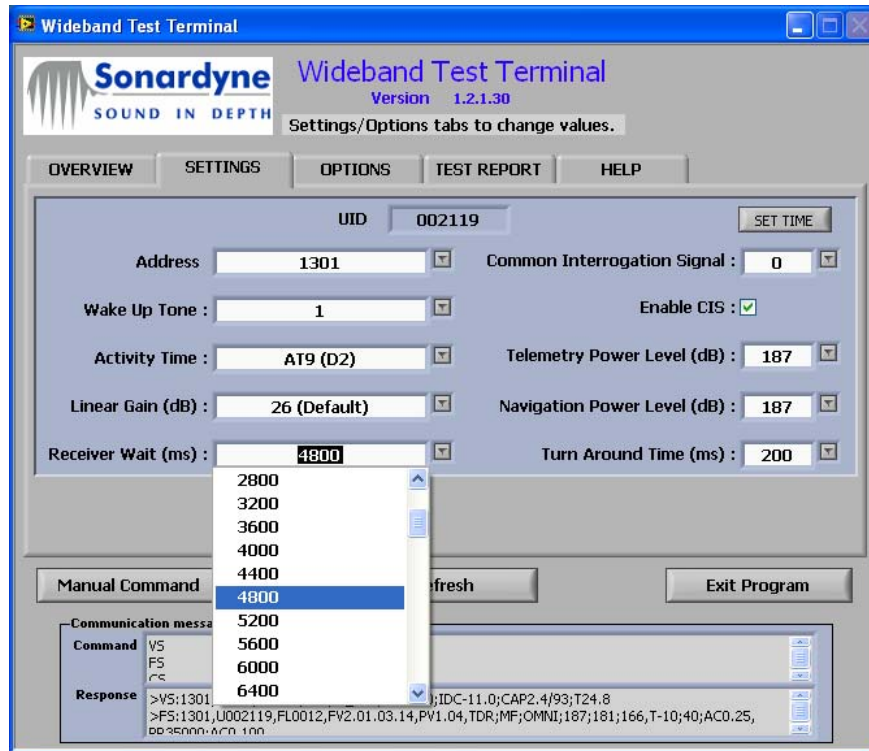
These fields may be scrolled through to see the complete message set if required.

The **Battery** field includes a button that **Connects** or **Disconnects** the device internal battery. This button is disabled if its function is not supported by the device. When disconnecting, the WTT software will display a confirmation warning message advising to only disconnect if the device is going into storage or for shipping.

The **EXT POWER** indicator shows the state of any connected external power.

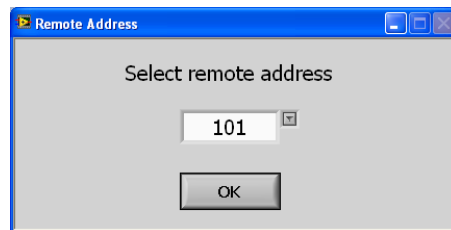
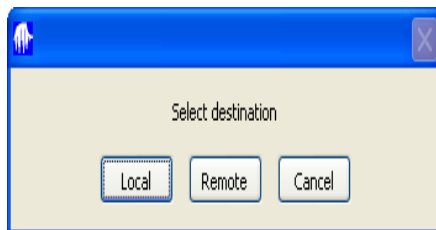
2.2.3 SETTINGS Tab

Select the *SETTINGS* tab to change and display local device parameters. Changes are made using the drop-down lists as shown below for the *Receiver Wait (ms)* control.



Once a parameter is selected from a drop-down list, a command relating to the selected parameter is immediately sent and **STORED** to device memory. The command and subsequent response will be displayed in the corresponding message fields.

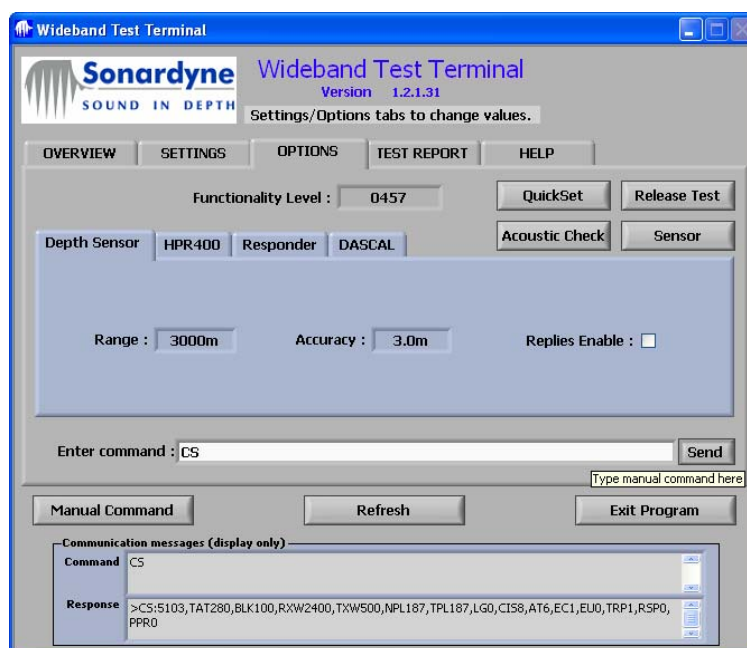
To set the device time, click the <SET TIME> button located near the top right hand corner of the tab. The *Select destination* window will appear.



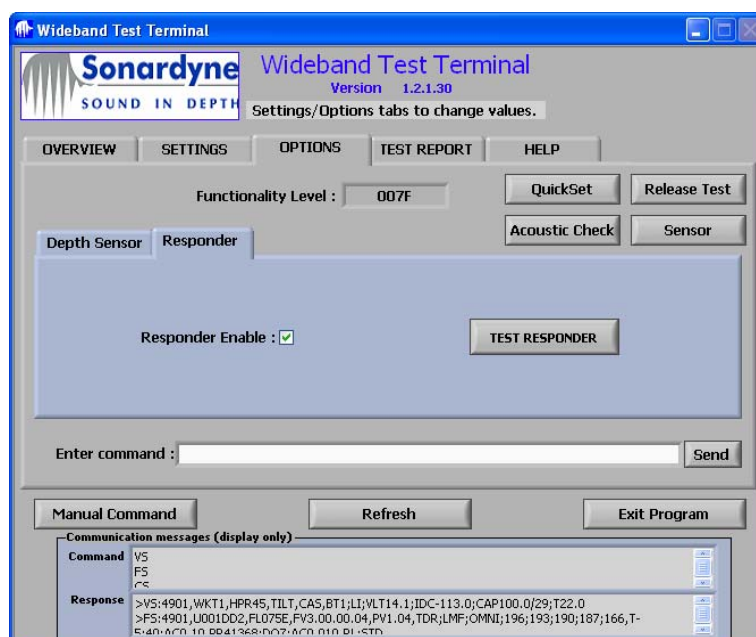
If the <Remote> button is selected the *Remote Address* window will appear. Enter the address and click the <OK> button or <Enter> key to proceed. The <Cancel> button aborts the set-time operation.

2.2.4 OPTIONS Tab

The OPTIONS tab contains controls and indicators of functions supported by the device. The tab below shows the *Depth Sensor*, *HPR400*, *Responder* and *DASCAL* as supported options. On the *Depth Sensor* tab, *Range* and *Accuracy* are for display only while *Replies Enable* is an ON/OFF control check box.

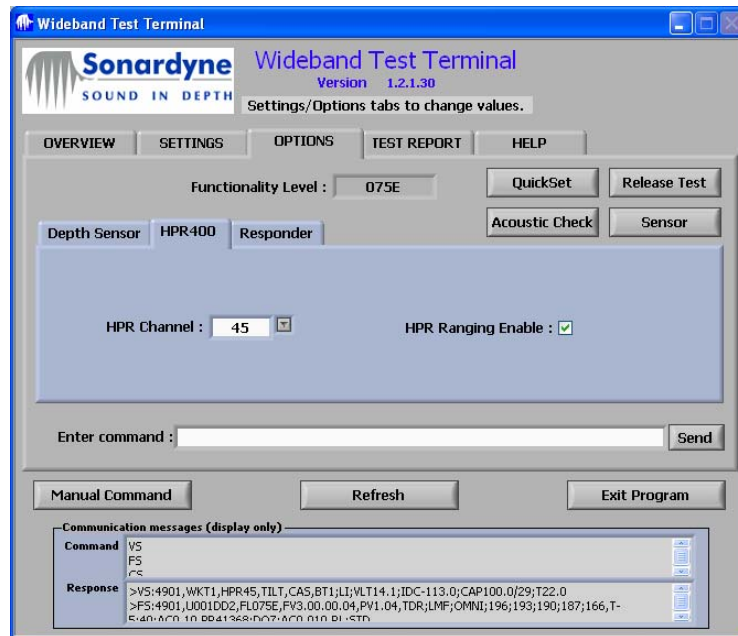


The window tab below shows that only *Depth Sensor* and *Responder* functions are the supported options of the device.

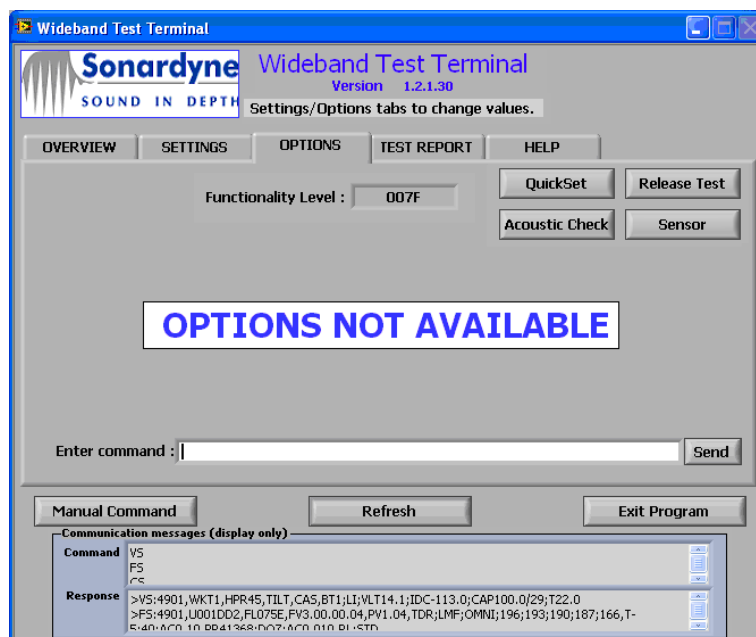


See appendix for a **Responder Test** example.

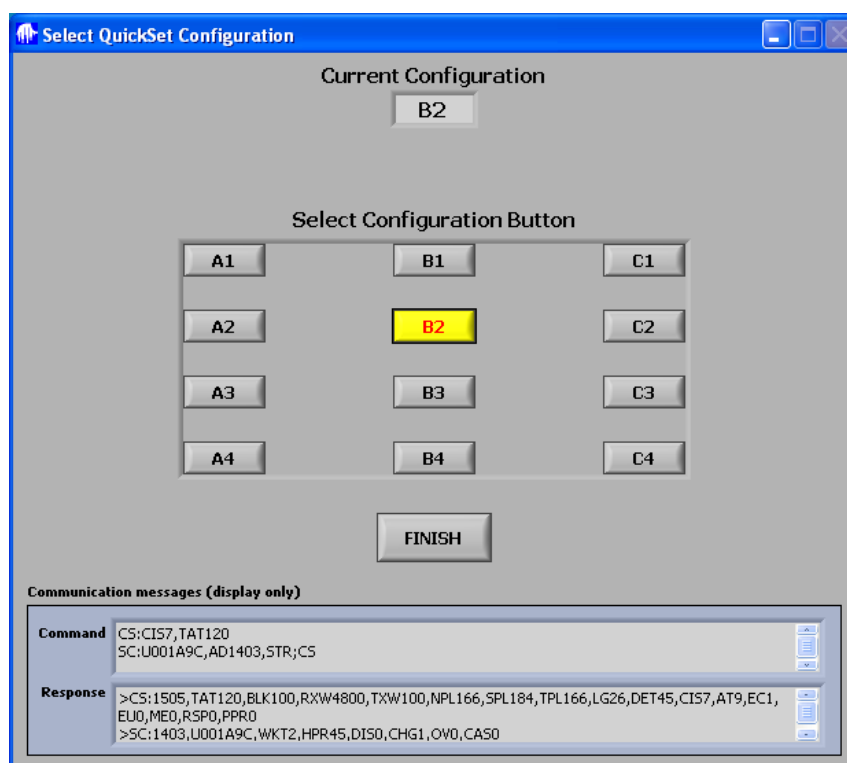
The window tab below shows controls for the HPR400 feature.



If the device does not support any of the functions on the options tab, the following window tab is displayed.



Click the <QuickSet> button on the OPTIONS tab to show the Select QuickSet Configuration window.



Each button represents a preset configuration of device parameters. See appendix for details of the available configurations.

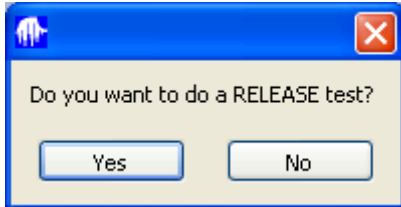
If the device already has a preset configuration, the corresponding button is highlighted as shown above (B2 in this example would be flashing yellow). Otherwise the word 'NONE' will be displayed in the Current Configuration field with no button highlighted. To set the device to a different configuration, select the required button. For each button selected the configuration is **STORED** to device memory.

Some devices do not support all available configurations so the number of buttons on display will vary. The configuration buttons that appear when the <QuickSet> button is selected represent the supported configurations.

NOTE: In order to configure another device, first exit the Configuration window by clicking the <FINISH> button to display the Wideband Test Terminal window. Connect another device to the PC COM port being used then click the <QuickSet> button and proceed as explained above.

Click on the <Release Test> button if it is enabled on the OPTIONS tab to perform a Release test. The example below shows prompt windows that appear depending on the selected buttons.

Example for Release mechanism test.

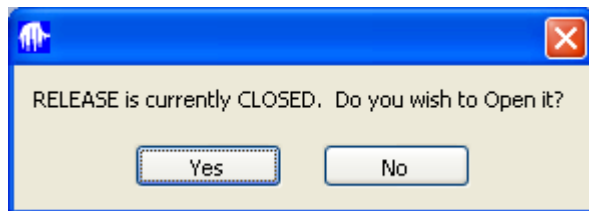


Window 1

Window 1 is the first prompt to appear.

Click YES for Window 2 prompt

Click NO for Window 3 prompt

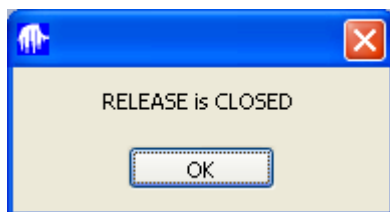


Window 2

Click YES to perform test.

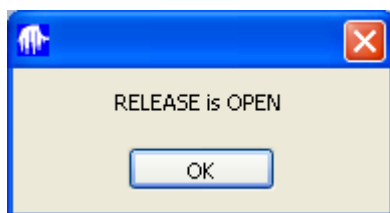
During the test the Response field should display "ACTIVE" in the reply message. Also a sequence of audible chirps are emitted from the device.

On completion Window 4 will appear.



Window 3

Window 3 will appear if the operator chooses not to carry out the test.



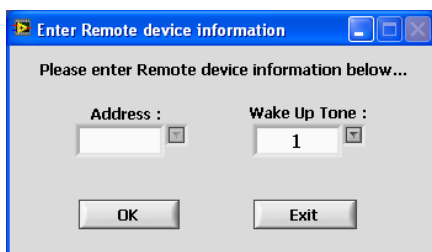
Window 4

Window 4 confirms the final state of the Release mechanism.

Click the <Acoustic Check> button on the OPTIONS tab to perform an acoustic interrogation test. In this test the Local device sends an interrogation signal to a Remote device and receives a reply. What is reported back determines whether the interrogation is successful or not.

The Remote device address should be known and entered.

Example for Acoustic test.

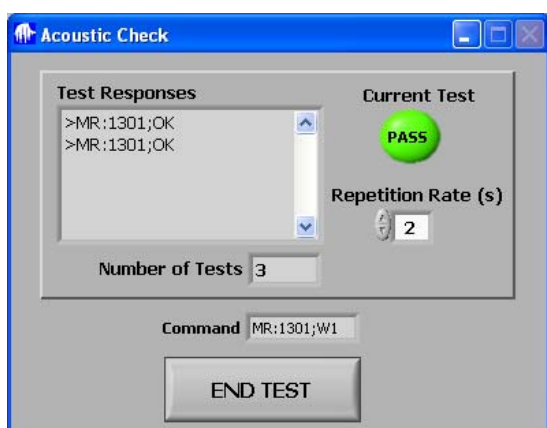


Window 1

Window 1 is the first prompt to appear.

Enter the address and wake up tone from the drop-down list boxes. This is the recommended selection method.

Click <OK> to display Window 2.



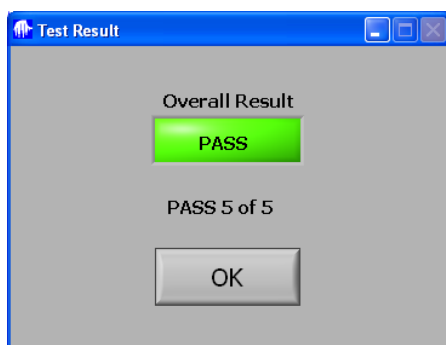
Window 2

The *Acoustic Check* window displays the test replies in the *Test Responses* window.

Each reply determines the state of the *Current Test* LED (PASS=green or FAIL=red).

The *Repetition Rate* control determines the rate at which the interrogation signals are sent. The default is 2secs.

Click <END TEST> to abort testing. Window 3 will then appear.

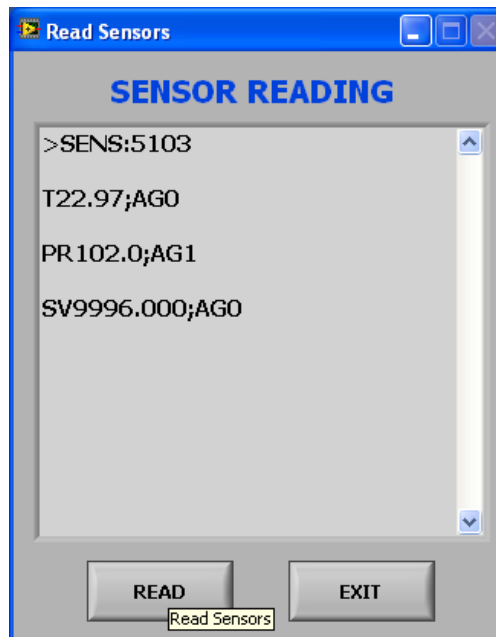


Window 3

The *Test Result* window displays a summary of number of PASSES for a give number of trials. Any single PASS is considered as an overall PASS.

These results are also logged when producing a Test Report (see TEST REPORT section).

Click the <Sensor> button on the OPTIONS tab to perform a check of on sensors connected to the device. The following window appears.



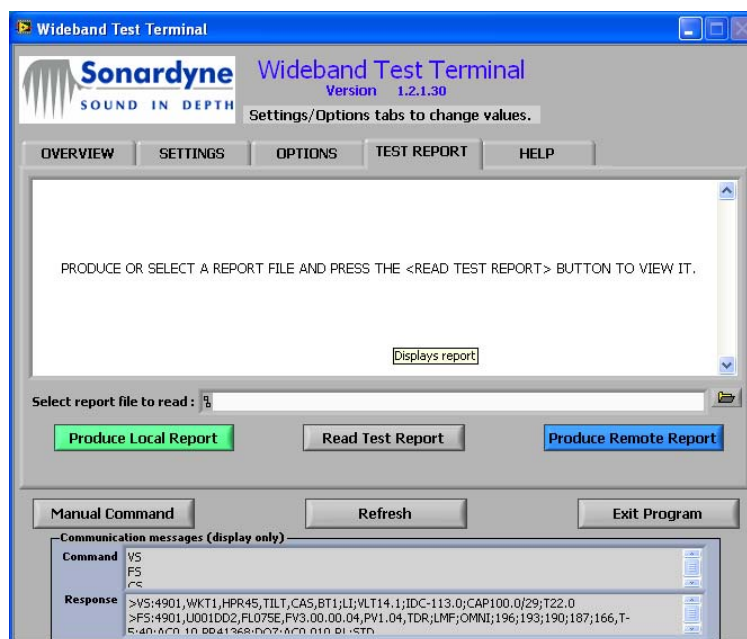
Click the <READ> button to get information about the connected sensors. Click the <EXIT> button to end the test.]

Note: If Sensor Readings indicates ER1 on power up, wait approx 30 seconds, to allow sensors to warm up. Then retry operation.

2.2.5 TEST REPORT Tab

Select this tab to produce a test report using the buttons provided. The window appears as shown below:

NOTE: Whenever a test report is produced the parameters are stored on the device memory.



Click the appropriate button as follows;

- **Produce Local Report** (green button) – produces a test report for the local device. This is the device that is physically connected to the PC running the Terminal program. Producing the report takes about 5secs with an additional 25secs if the device is equipped with sensors.
- **Produce Remote Report** (blue button) – produces a test report for a remote device. This is the device that communicates acoustically with the local device. Producing the report takes about 15secs (longer if the device is equipped with sensors). This button is **DISABLED** if the device connected is **NOT** a transceiver.

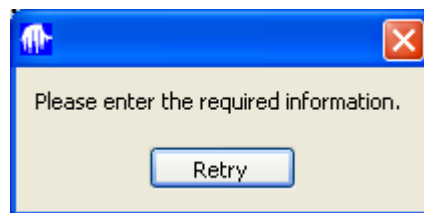
NOTE: These estimates may vary considerably depending on equipment status such as device range, power levels and Receiver Wait.

If the <Produce Remote Report> button is clicked the following window appears:

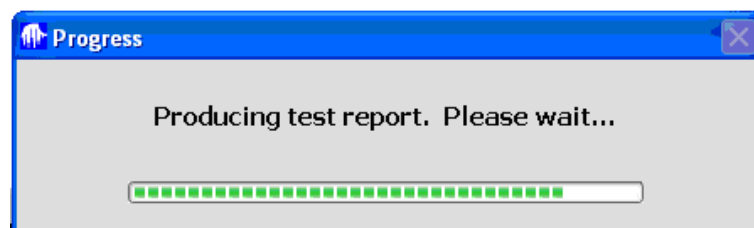
A Windows-style dialog box titled "Enter Remote device information". It contains the text "Please enter Remote device information below...". Below this, there are two labels: "Address :" and "Wake Up Tone :". Under "Address :" is a text box with a dropdown arrow, currently blank. Under "Wake Up Tone :" is a text box with a dropdown arrow, currently showing "1". At the bottom are two buttons: "OK" and "Exit".

When the <Produce Remote Report> button is first clicked some information fields will be blank. Enter the correct device information using the controls which contain valid device values.

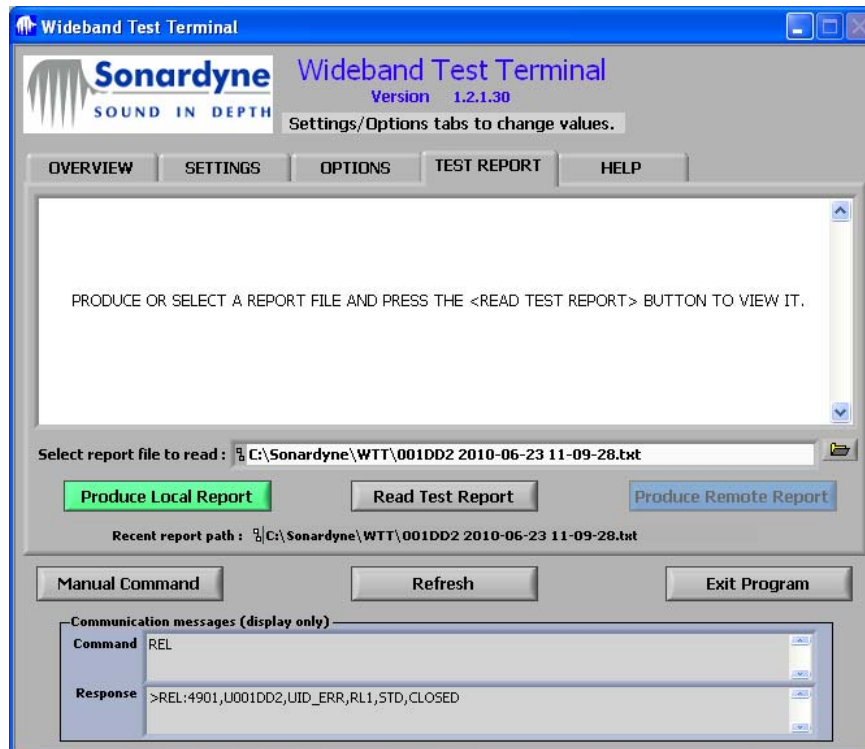
If the <OK> button is pressed, with the window appearing as shown above, the following window appears because the **Address** field is blank.



When a report is being produced the following window is displayed.



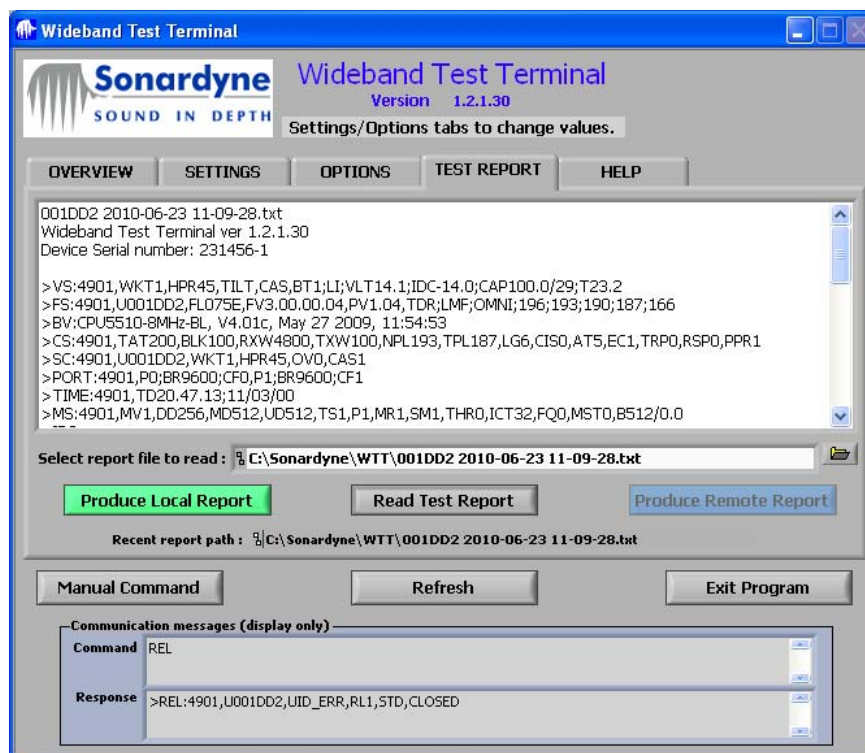
When producing a report a number of commands are sent to the device. Acoustic and Release tests (explained in *OPTIONS* tab section) are also performed if the function is supported by the device. The following shows the appearance of the window after the report is produced.



The report is automatically stored with a filename comprising the UID of the target device followed by the date and time as read from the PC internal clock. The path and filename of the report are displayed in the **Recent Report Path** indicator that is located at the bottom of the TEST REPORT tab.

NOTE: The window shown above has a **disabled** <Produce Remote Report> button indicating that the connected device is not a transceiver.

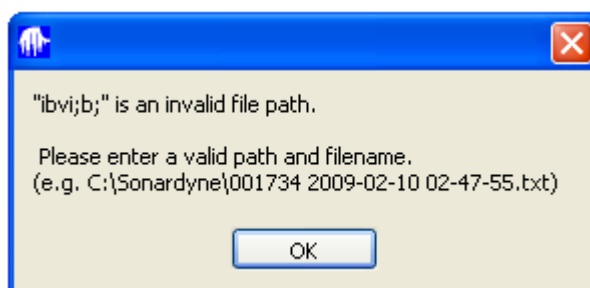
To view the contents of the report, click the <Read Test Report> button. This button reads the file whose path is displayed in the **Select report file to read** field. The **Recent Report Path** field shows the path of the most recently produced report.



The filename, terminal software version and device serial number information are included at the top of the report.

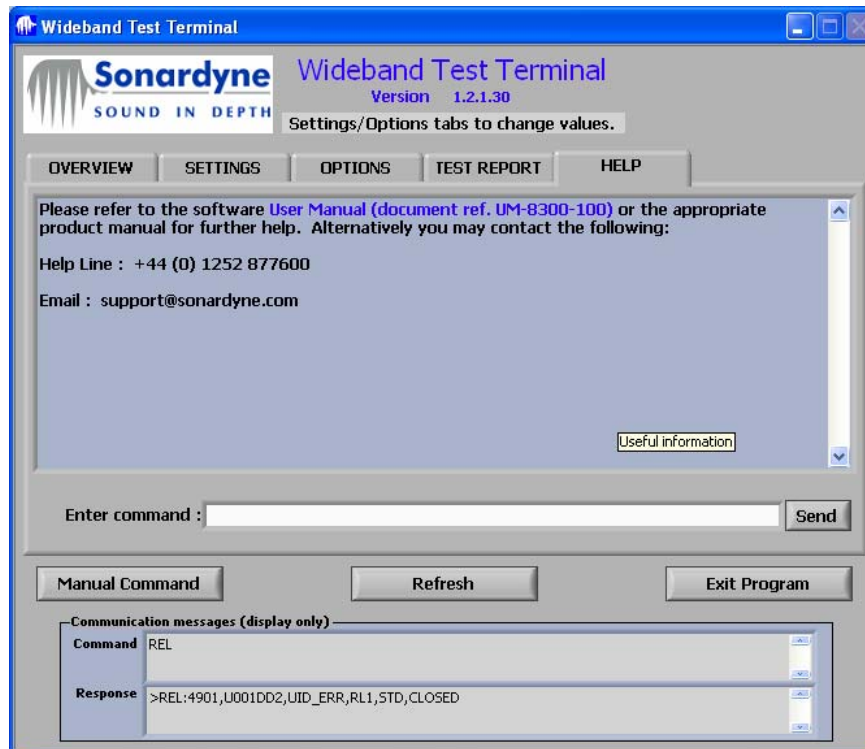
To read a previous test report, select the browse button  to the right of the display field labelled **Select report file to read**. From the browse file dialog window select the file required and click the <Read button>. The file contents will be displayed in the main window as shown above.

When an invalid path e.g. "ibvi;b" is manually entered into the **Select report file to read** field, the following message will be displayed if the <Read Test Report> button is selected;



2.2.6 HELP Tab

Select this tab to read some useful information.

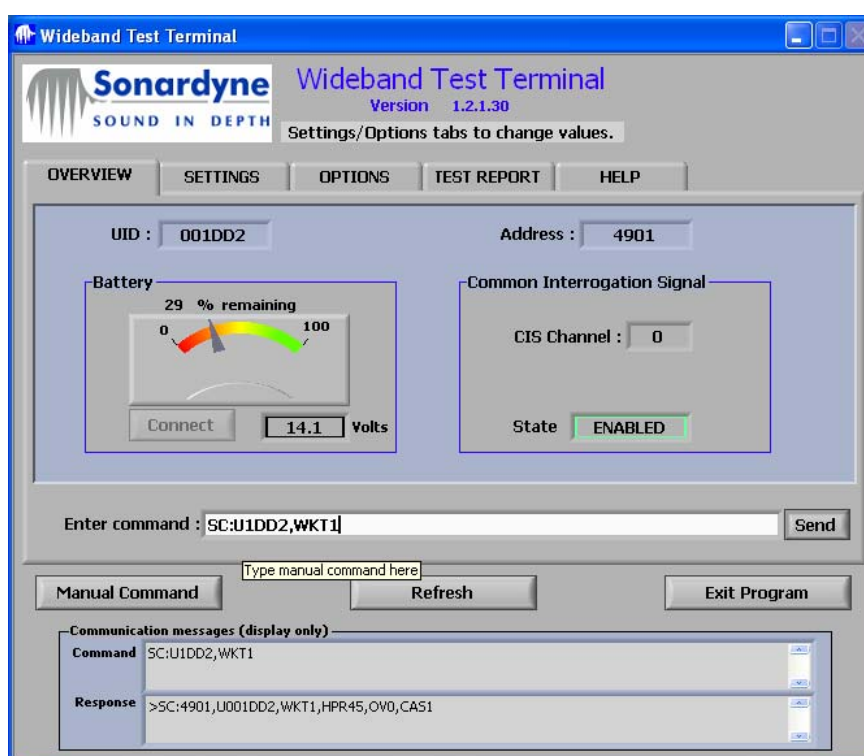


2.2.7 Control Buttons and Displays

The control buttons are the <Manual Command>, <Refresh> and <Exit Program> buttons. These are located below the tab display. They can be used irrespective of which tab is on display.

2.2.7.1 Manual Command

For those familiar with the command protocol, it is possible to enter commands manually. Click the <Manual Command> button to display the **Enter Command** field and type in a command. Click <Send> button or hit the <Enter> key to send a command.

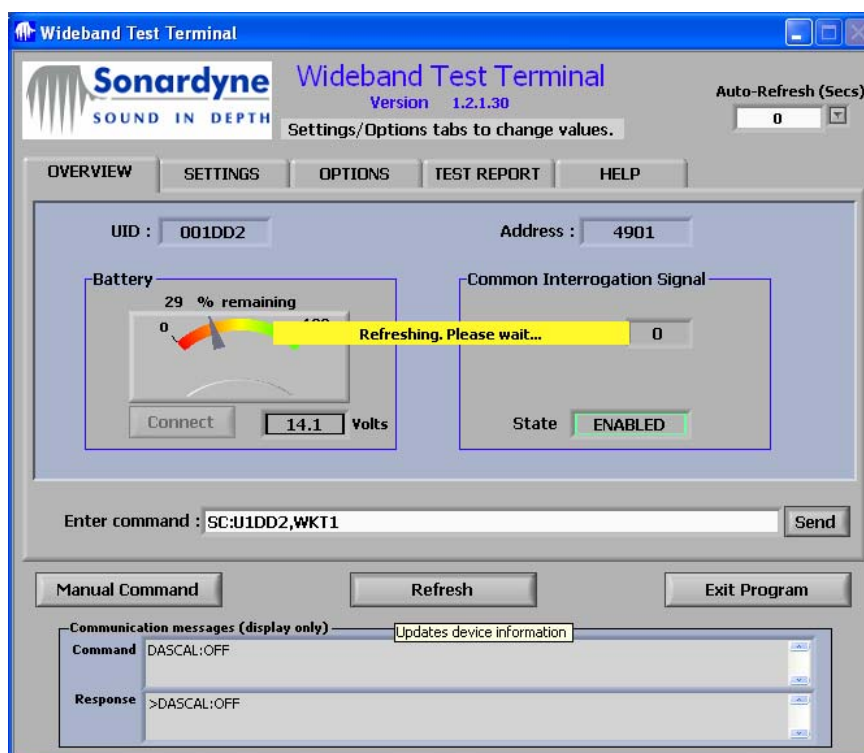


Any invalid commands return “?” that appears in the **Response** field at the bottom of the window.

NOTE: The window shown above has a **disabled** <Connect> button indicating that the connected device does not support the function.

2.2.7.2 Refresh

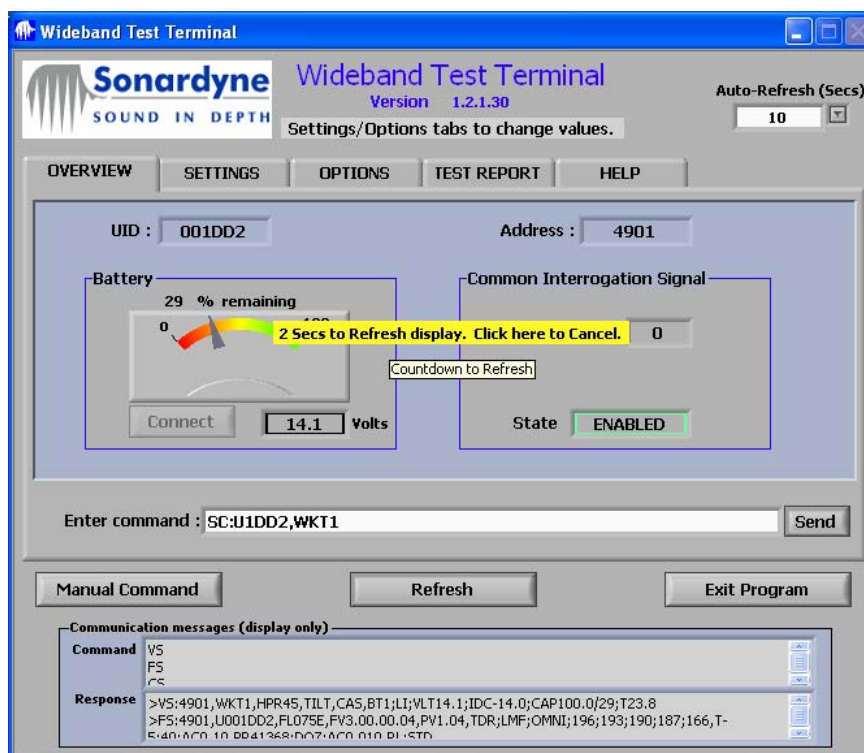
Click this button to update the indicators with the local device information. This **MUST** be used whenever a different device is connected while the program is running. Alternatively use the **Auto-Refresh (Secs)** drop-down control to set the periodic update-time in seconds. This control appears near the top right hand corner of the screen when the <Refresh> button is pressed for the first time.



During a refresh, a yellow indicator near the centre of the window advises the user to wait (approximately 3 – 5secs) while refresh is in progress. The Terminal program sends a pre-defined series of commands to the device. The local device status information in the OVERVIEW and SETTINGS tabs will be updated. When the yellow indicator disappears, the refresh process is complete.

NOTE: It is strongly advised to use the Refresh options when working with several devices on a single PC. This minimises the chance of erroneous information being displayed. When the WTT software is running, a new device becomes a “local device” when it is connected to the PC and then a Refresh action performed. Remote device information is NOT used to update the tab indicators.

If the **Auto-Refresh** function is required, select the time period for every refresh action. The selectable values range from 0 to 1000 seconds in 10 second intervals. Selecting value of “0” (default) in the control disables the auto-refresh function so that any refresh required will have to be done manually by clicking the <Refresh> button. During the last 5 seconds of the selected refresh period an indicator appears as shown below:



In the above example the refresh period is set to 10 seconds and there are 2 seconds left for the refresh to begin. If so required, the refresh process may be cancelled before it begins by clicking the yellow countdown indicator. Whenever the value of *Auto-Refresh* (Secs) is changed, the timing process is restarted.

2.2.7.3 Exit Program

Click this button to end the Terminal program. This clears any resources at the COM port and shuts down the WTT window. To restart the WTT software use the desktop short as described (see Section 2.1 of this document).

3 Fault Finding

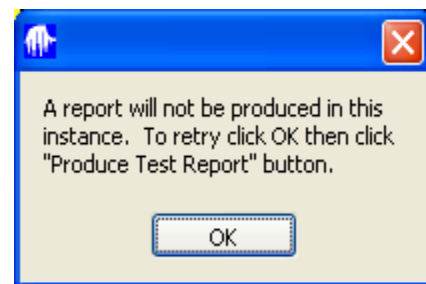
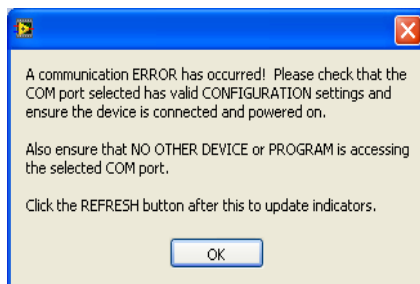
The WTT software is capable detecting and displaying Error or Warning messages. These suggest the likely causes of error while using the software.

3.1 Common Problems

The most common problem is communication. This may be because the local device;

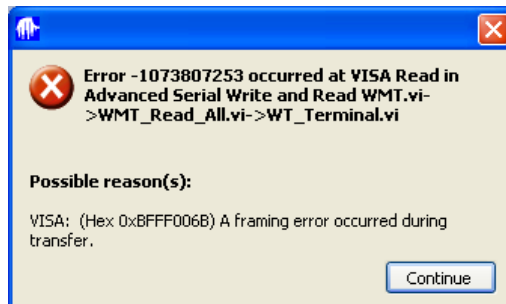
- is not physically connected to the PC COM port or another program already has control over the same COM port
- has incorrect port settings (these should be set to 9600 baud, 1 start, 1 stop, no parity which is done in the software on Start-Up – see Start-Up section)
- has no internal battery and is not connected to an external PSU
- does not have the correct firmware (also applies to remote device)
- is not suitably positioned while performing remote communications through air

The following is an example of the displayed error messages when trying to produce a test report with the device disconnected from the PC COM port.

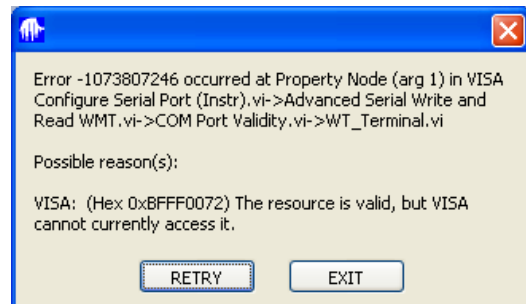


When a report can not be produced the **Select report file to read** and **Recent report path** fields will be cleared (see TEST REPORT section).

Some uncommon errors may occur. These are automatically reported by the WTT software with an **Error code** number. Two examples, a framing error and an access failure message, are displayed the following windows:



Transferred message format in error



COM port being use by another program.

Perform any advised equipment checks and retry. If this is unsuccessful you may contact Sonardyne (see section 3.2) with the information shown in the message window.

3.2 Miscellaneous

Some PC's have Security software that alerts the user about blocking the installed program. In the example below, click the <Unblock> button to continue using the WTT software.



For other Security software, please contact the PC administrator for assistance.

3.3 Technical Help

Click on the Sonardyne logo for copyright and contact help information. The following window appears:



The software version information is useful when contacting Sonardyne to resolve any issues.

3.4 Related Documentation

Seek advice by contacting Sonardyne International Ltd.

4 APPENDIX

4.1 RESPONDER TEST EXAMPLE

(see also OPTIONS Tab section)

NOTE: The RTS line on the PC serial COM port must be connected to the Responder trigger line for this test.

On the Depth Sensor options tab, **uncheck** the Replies Enable check box. Select the Responder options tab and click the <TEST RESPONDER> button. A single chirp sound should be heard.

On the Depth Sensor options tab, **check** the Replies Enable check box. Select the Responder options tab and click the <TEST RESPONDER> button. A double chirp sound should be heard.

4.2 WMT (8090) Quick Set List

(see also OPTIONS Tab section)

Configuration Button Label	Interrogation (CIS)	Turn Around Time (TAT)	IRS (Address)
A1	6	80	1501
B1	7	80	1401
C1	8	80	1301
A2	6	120	1503
B2	7	120	1403
C2	8	120	1303
A3	6	160	1505
B3	7	160	1405
C3	8	160	1305
A4	6	200	1507
B4	7	200	1407
C4	8	200	1307

CIS: Common Interrogation Signal

4.3 SAMPLE TEST REPORT

001DD2 2010-06-24 11-58-44.txt

Wideband Test Terminal ver 1.2.1.30

Device Serial number: 231456-1

```

>VS:4901,WKT1,HPR45,TILT,CAS,BT1;LI;VLT14.1;IDC-15.0;CAP100.0/29;T23.6
>FS:4901,U001DD2,FL075E,FV3.00.00.04,PV1.04,TDR;LMF;OMNI;196;193;190;187;166,T-
5;40;AC0.10,PR41368;DQZ;AC0.010,RL;STD
>BV:CPU5510-8MHz-BL, V4.01c, May 27 2009, 11:54:53
>CS:4901,TAT200,BLK100,RXW4800,TXW100,NPL193,TPL187,LG6,CIS0,AT5,EC1,TRP0,RSP0,P
PR1
>SC:4901,U001DD2,WKT1,HPR45,OV0,CAS1
>FVI:HOST;V2.01.03.14,U25;V01,U3;V1.02.00.00,PV1.04
>DCMD?
>PORT:4901,P0;BR9600;CF0,P1;BR9600;CF1
>TIME:4901,TD21.36.25;12/03/00
>MS:4901,MV1,DD256,MD512,UD512,TS1,P1,MR1,SM1,THR0,ICT32,FQ0,MST0,B512/0.0
>IDS:
BATT PCB,000000BCCFBE,8000-045-01,D2,12/09/2008,LI,STX10,CAP6528.0,CRC_OK
DSP MOD PCB,0000050A2384,8050-036-01,B1,25/02/2009,CRC_OK
DAS PCB,000005552312,8300-050-01,C1,07/04/2009,CRC_OK
LPT I/F PCB,000005553B0F,8300-038-01,A3,15/04/2009,CRC_OK
SMT TX PCB,000003A89EDF,8300-036-
08,B1,13/04/2010,LMF,OMNI,PL196,PL193,PL190,PL187,PL166,CRC_OK
>US:4901,SN231456-1,DR3000,STD,AL6082,TDR1
>CKHW:FAIL;PIC;LBK;GAIN
>SENS:4901,T24.23;ER1,PR112.0;ER1
>SENS:4901,T24.23;ER1,PR112.0;ER1
>SENS:4901,T24.23;ER1,PR112.0;ER1
>SENS:4901,T24.23;ER1,PR112.0;ER1
>SENS:4901,T24.23;ER1,PR112.0;ER1
>SENS:4901,T24.23;ER1,PR112.0;ER1
>MR:1301;OK
>MR:1301;OK
>MR:1301;OK
>MR:1301;OK
ACOUSTIC TEST - PASS 4 of 4
RELEASE TEST - PASS. CLOSED to OPEN
>SC:4901,U001DD2,WKT1,HPR45,TS14,OV0,CAS1,STR;CS;MS

```

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