OM-8025-023

Operating Manual for Loader software

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OPERATING GUIDE

FOR VERSION 1.00.04.2201

OF THE

LOADER SOFTWARE

ISSUE A

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Loader

Loader is a software application for upgrading the firmware of the Navigation Controller Unit (NCU) and the Generic Digital Transceiver (GDT) instruments. In addition to loading firmware there is a self test tool at step 24 for checking the performance of the USBL elements. This document provides the operator with a step-by-step guide for such upgrades and is **ONLY** compatible with the following software and firmware generations:

Firmware/Software	Version
Loader Software	> 1.00.04.2201
Navigation Control Unit	> 2.00.36.00
GDT Transceiver RovNav & USBL	> 8.05

NCU Firmware Upgrade

NCU firmware is written to a ***.S19 file**. It is recommended that the latest ***.S19 file** is obtained from Sonardyne International Ltd., and saved to the "C" Drive of the PC running the **Loader** application.

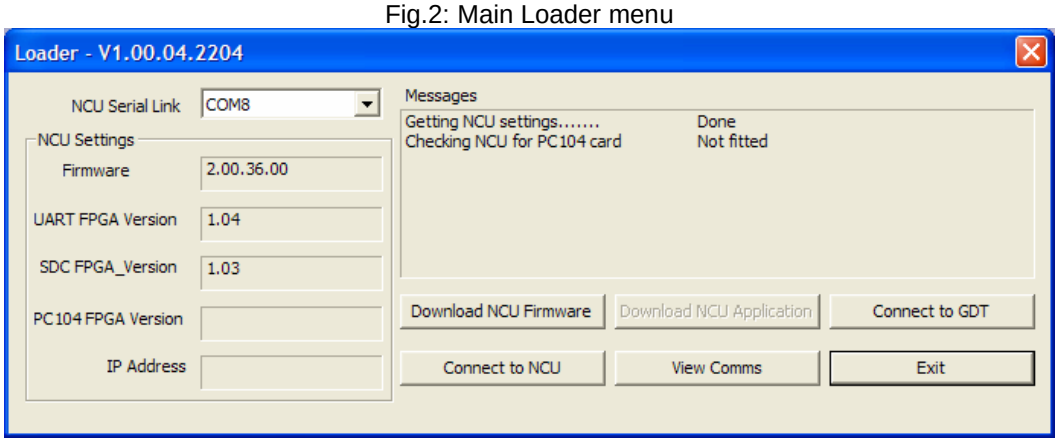
1. Connect the NCU's serial link port to a Com port (Com 1 recommended) on the PC using a null modem cable. Ensure that no other application is using the PC com port e.g. close the Fusion application if running.

2. Locate and open **Loader** (Fig.1) on the desktop which is a short-cut from *C:\Program Files\Sonardyne\Loader\Loader.exe*

Fig.1: Loader desktop icon

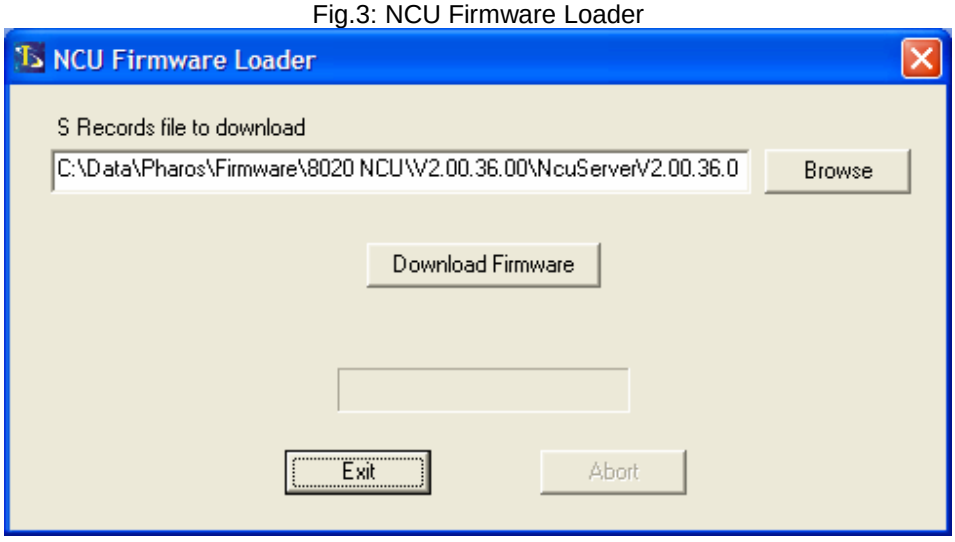
3. Choose *Com #* from the *NCU Serial Link* drop-down menu. This will automatically initiate comms with the NCU. In the event of comms failure, select ***Connect to NCU***. The *NCU Settings* display will update as shown below in Fig.2.

Fig.2: Main Loader menu



4. Click ***Download NCU Firmware*** to display the following window in Fig.3.

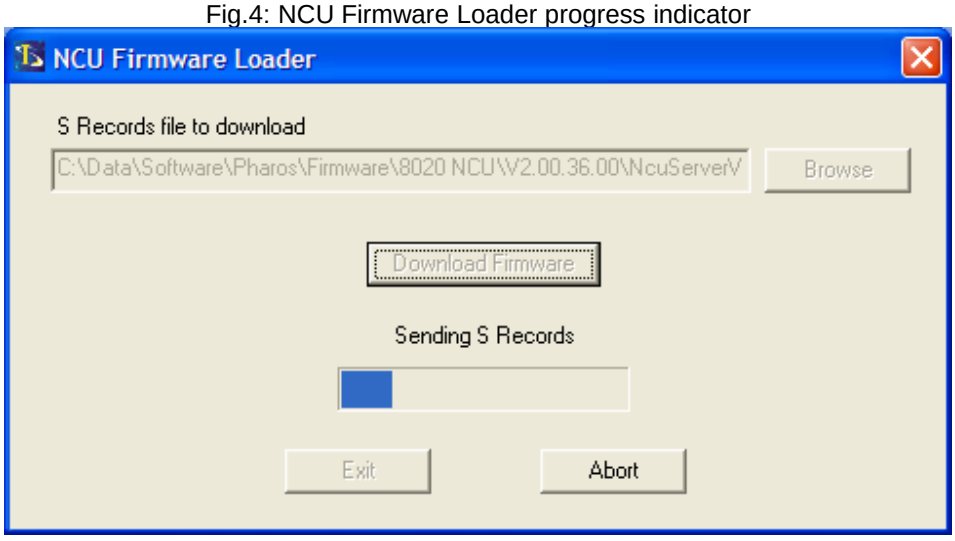
Fig.3: NCU Firmware Loader



5. As illustrated, enter the directory path for the new ***.S19 file** which will update the firmware. You can also click ***Browse*** to identify this directory path and select the ***.S19 file**.

6. Click ***Download Software*** to start the update process which will take approximately 3 minutes. The download status is shown via a progress bar 9 (Fig.4) and status messages. Error messages will also be displayed if problems are encountered and are designed to aid a potential troubleshooting process.

Fig.4: NCU Firmware Loader progress indicator



7. When the message *Download Complete* message is displayed, click ***Exit*** to return to the main *Loader* window.

GDT Firmware Upgrade

GDT firmware is written to a ***.gdt file**. It is recommended that the latest version ***.gdt file** is obtained from Sonardyne International Ltd., and saved to the "C" Drive of the PC running the **Loader** application.

N.B. Steps 1 to 3 are only necessary if the NCU is interfaced to the GDT Instrument.

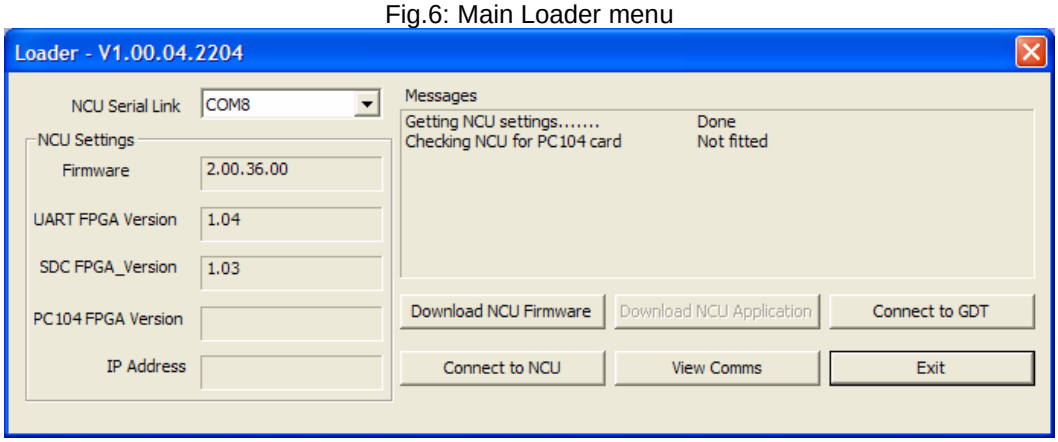
1. Connect the NCU's serial link port to a Com port (Com 1 recommended) on the PC using a null modem cable. Ensure that no other application is using the PC com port e.g. close the Fusion application if running.

2. Locate and open **Loader** (Fig.5) on the desktop which is a short-cut from *C:\Program Files\Sonardyne\Pharos\System\Loader.exe*

Fig.5: Loader desktop icon

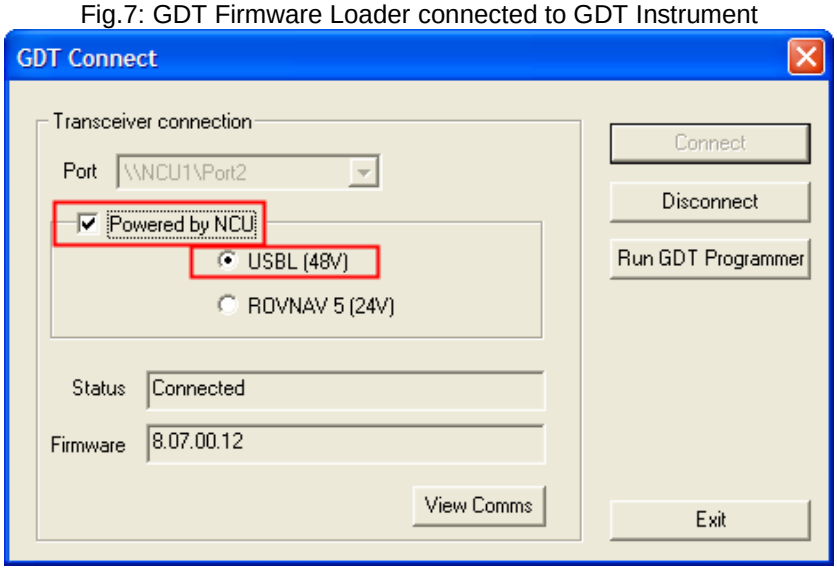
3. Choose *Com 1* from the *NCU Serial Link* drop-down menu. This will automatically initiate comms with the NCU. In the event of comms failure, select ***Connect to NCU***. The *NCU Settings* display will update as shown below in Fig.6.

Fig.6: Main Loader menu



4. Click ***Connect to GDT*** to display the *GDT Firmware Loader* window illustrated in Fig.7.

Fig.7: GDT Firmware Loader connected to GDT Instrument



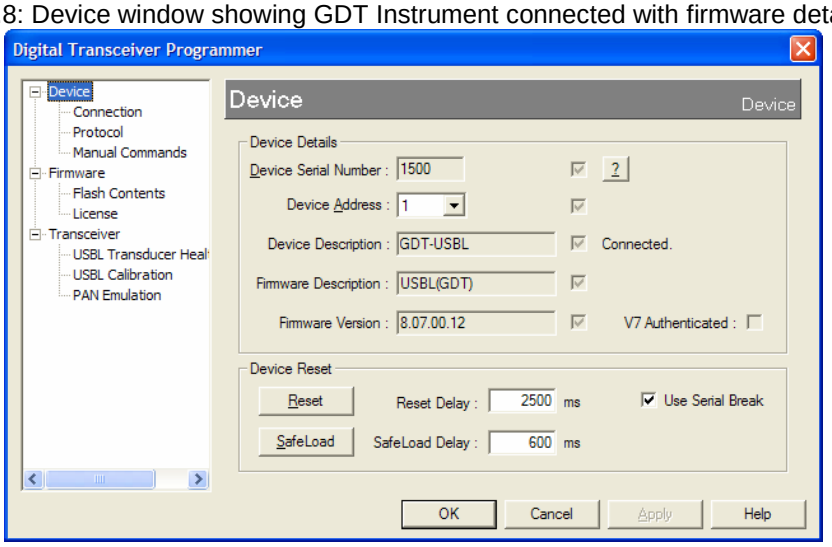
5. Select the relevant *Transceiver Port* from the drop-down menu. The port can be a NCU port or a PC port depending on the interface configuration. The user must identify the transceiver type and power source, and tick the relevant boxes as illustrated. Generally, transceivers on \\NCU1\Port2 and \\NCU1\Port3 will be powered by the NCU, while other connections will be externally powered.

6. Click ***Connect***. The *Transceiver Status* and *Transceiver Firmware Version* will update.

7. Click on the now active ***Download*** button.

8. The ***Device*** window is displayed (Fig.8), first showing the message *Connecting*, which once successful will change to *Connected* and display the current installed firmware details. Should the message continue to display *Connecting* or change to *Not Connected*, then click the ***Reset*** button.

Fig.8: Device window showing GDT Instrument connected with firmware details

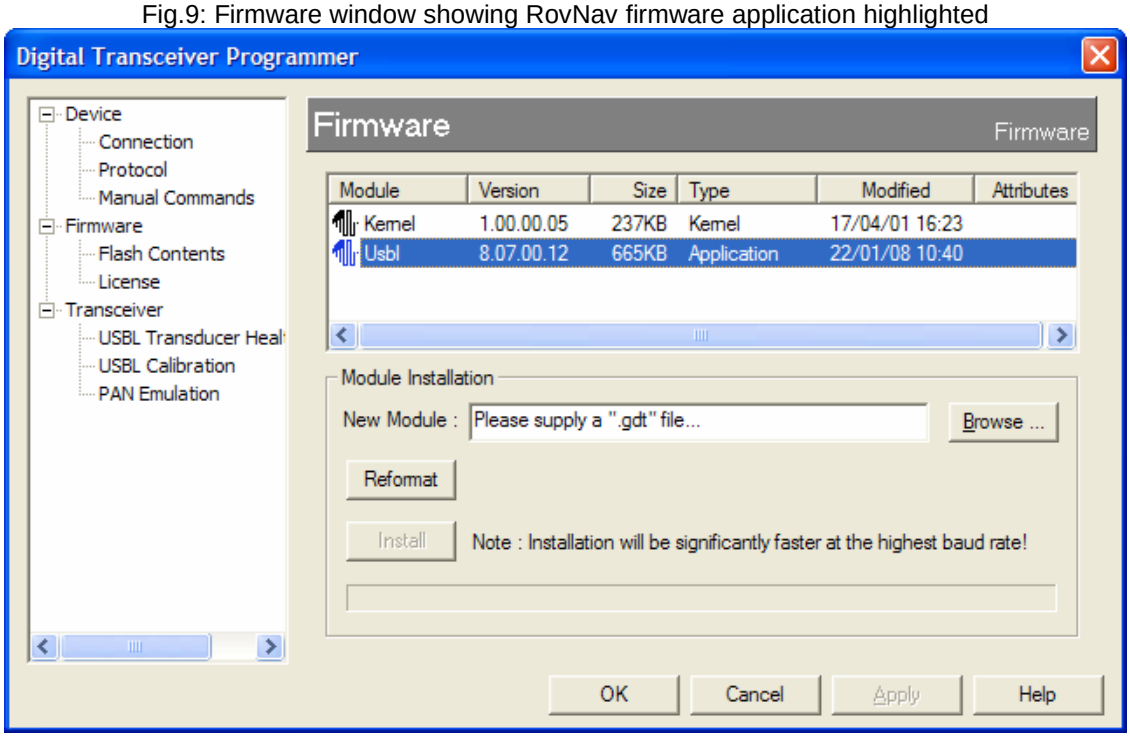


9. Click ***Firmware*** in the left-hand pane of the *Digital Transceiver Programmer.* The ***Firmware*** window will now be displayed as illustrated in Fig.9.

10. From the ***Firmware*** window, highlight the GDT Instrument icon under the *Module* heading. This will be USBL or RovNav depending on the transceiver type. The example shows a RovNav.

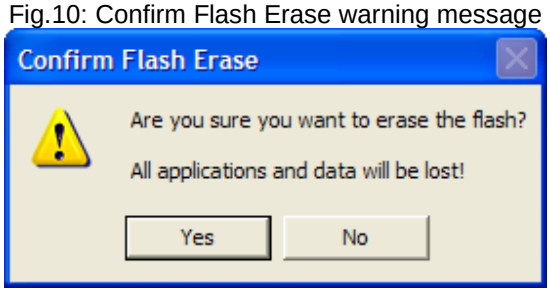
Warning: Do not under any circumstances highlight the Kernal file.

Fig.9: Firmware window showing RovNav firmware application highlighted



11. Click ***Reformat*** and choose ***Yes*** from the resulting *Confirm Flash Erase* warning message illustrated in Fig.10.

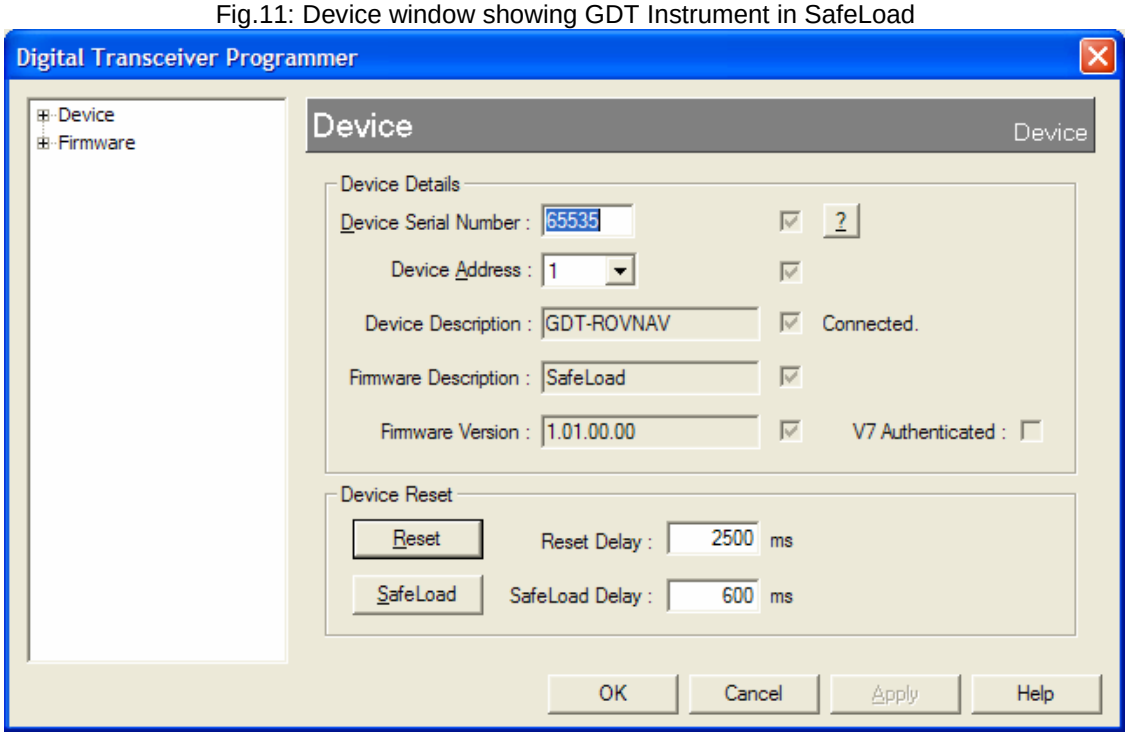
Fig.10: Confirm Flash Erase warning message



12. Click ***Device*** in the left-hand pane of the *Digital Transceiver Programmer.* The *Device* window will now be displayed as illustrated in Fig.11.

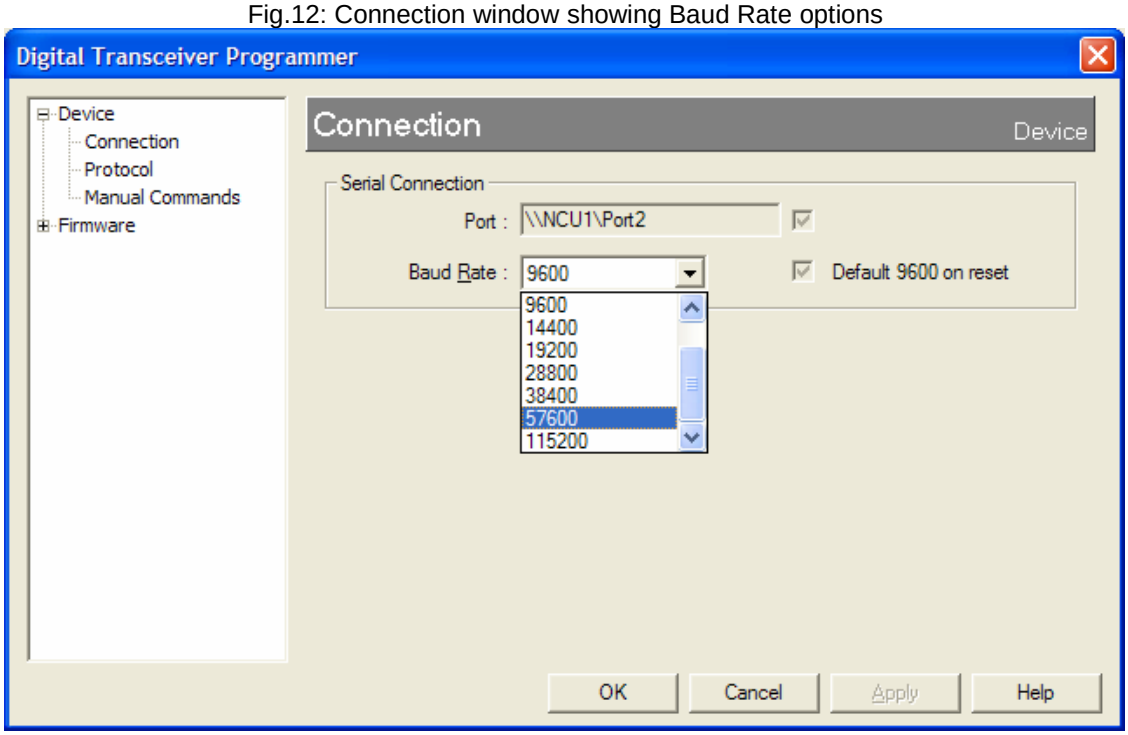
13. Click ***Reset*** and wait for the *Firmware Description* to read **SafeLoad**.

Fig.11: Device window showing GDT Instrument in SafeLoad



14. From the left-hand pane of the *Digital Transceiver Programmer* open the ***Device*** icon by clicking on the + sign. Now click on ***Connection*** to open the *Connection* window showing the Baud Rate options displayed in Fig.12.

Fig.12: Connection window showing Baud Rate options

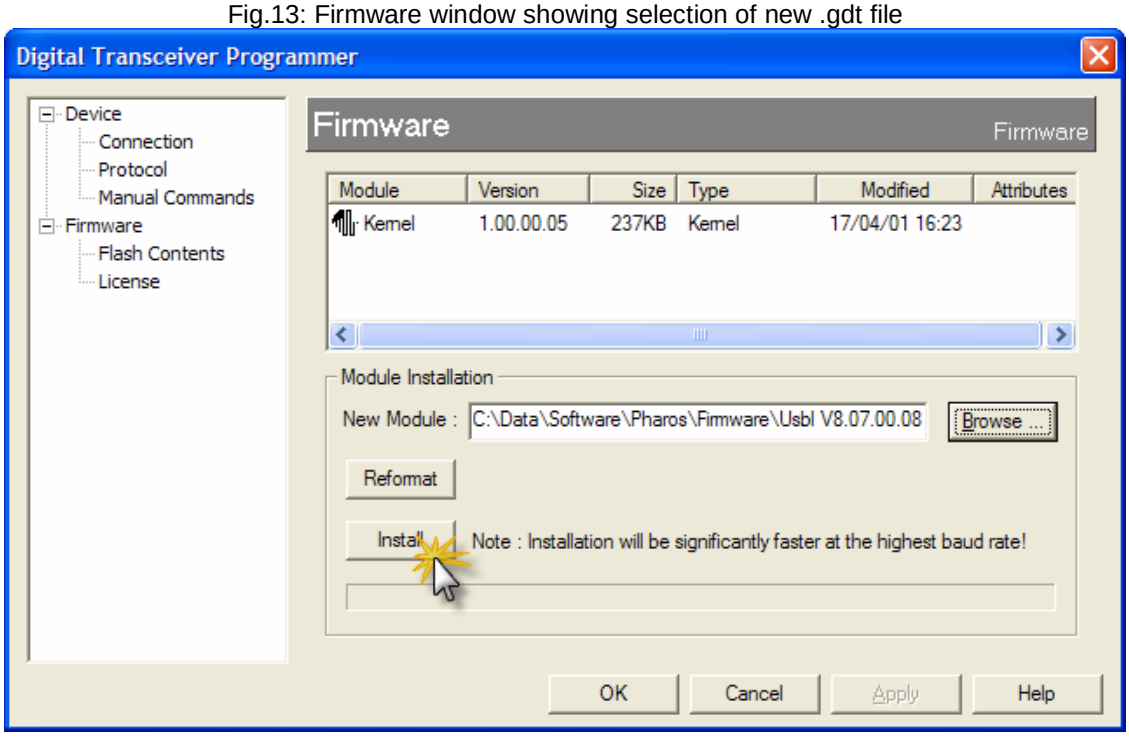


15. Baud Rate settings should be chosen using the following guidelines:

Hardware Configuration	Baud Rate	Approx. Install Time
RovNav5 powered via NCU	57600 recommended	13 minutes
RovNav5 externally powered	9600 maximum	30 minutes
GDT USBL powered via NCU	57600 recommended	13 minutes

16. From the left-hand pane of the *Digital Transceiver Programmer* click ***Firmware*** to open the *Firmware* window shown in Fig.13.

Fig.13: Firmware window showing selection of new .gdt file

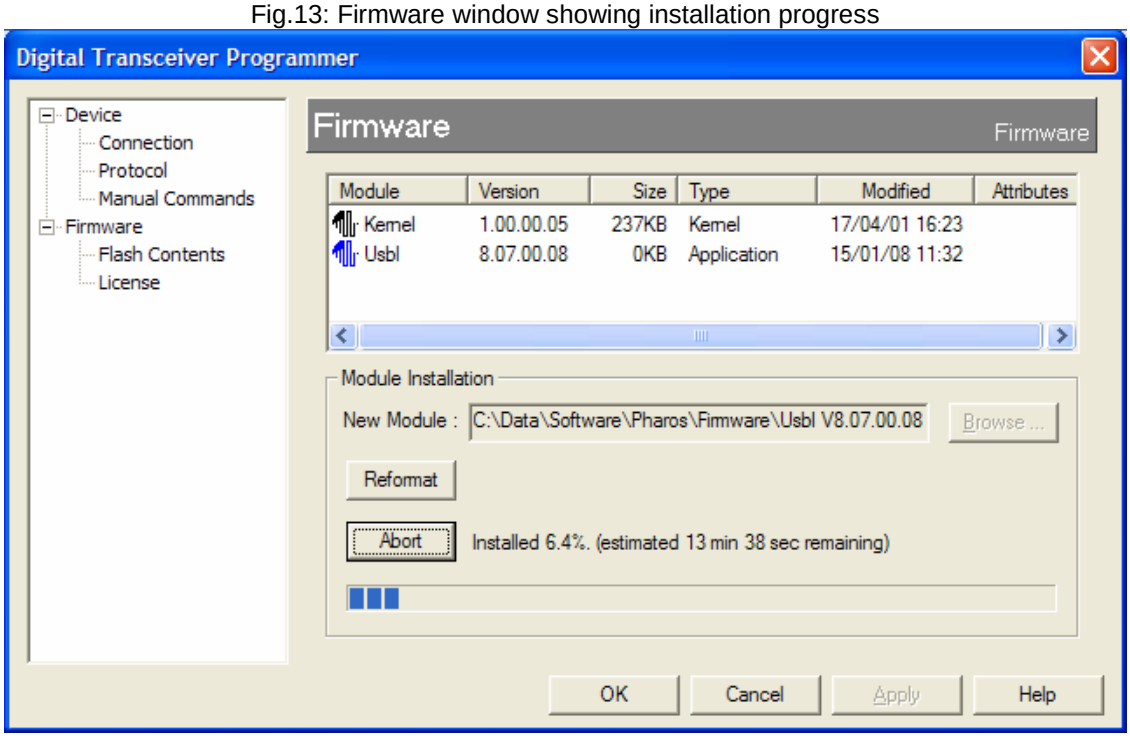


17. Click ***Browse***. Now locate and select the new ***.gdt file** which you stored on the “C” Drive or other suitable drive.

18. Click ***Install***. A progress bar (Fig.13.) will indicate the active status of the installation together with an estimate for the time to completion. The ***Abort*** button is now active should circumstances dictate its use.

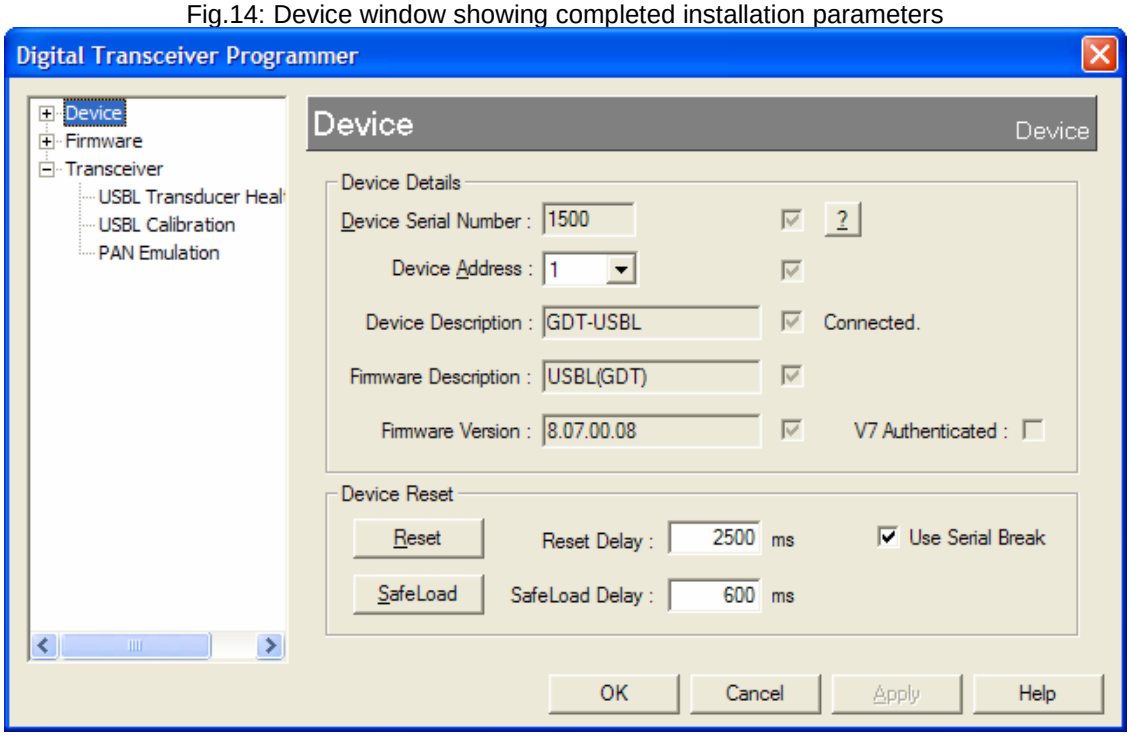
Warning: During the download it is recommended that the PC is not actively used with any other programs.

Fig.13: Firmware window showing installation progress



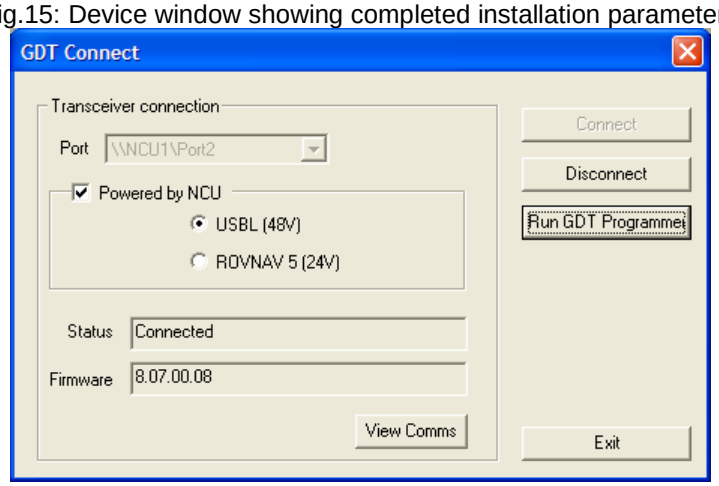
19. When the installation is complete, the program will automatically revert to the ***Device*** window where the new firmware will be displayed in the *Firmware Description* field as shown in Fig.14.

Fig.14: Device window showing completed installation parameters



20. Click **OK** to return to the *GDT Firmware Loader* window shown in Fig.15.
21. Click ***Disconnect*** from the *GDT Firmware Loader* window.

Fig.15: Device window showing completed installation parameters



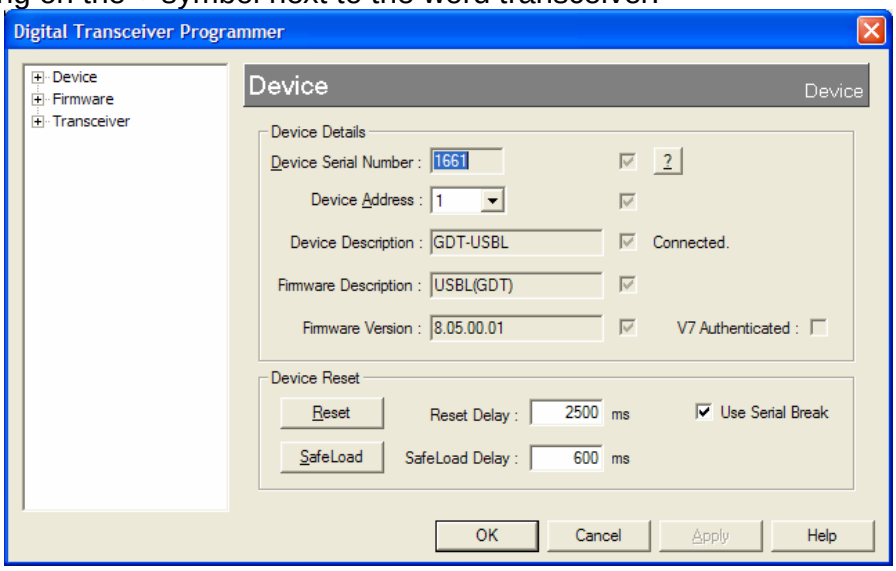
22. Click ***Exit*** to return to the main ***Loader*** menu.

23. Click ***Exit*** and the process is now complete.

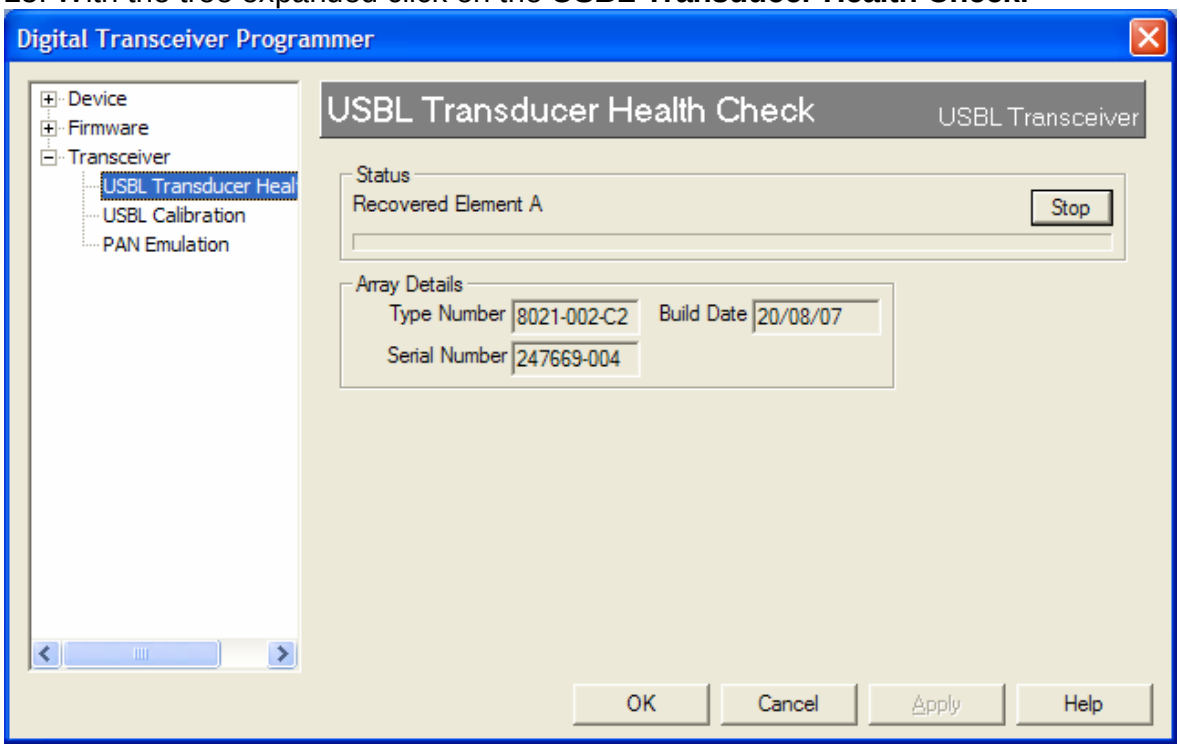
USBL Transducer health check

The Health Check will only work on transceiver with a device Serial number greater that 1560 as these were fitted with all the necessary components when shipped as new. It may be possible that older transceivers could have had both an array and pre-amp upgrade to allow this transducer array health check to be performed. At the end of the check a CSV file will be created that should be sent to Sonardyne for analysis.

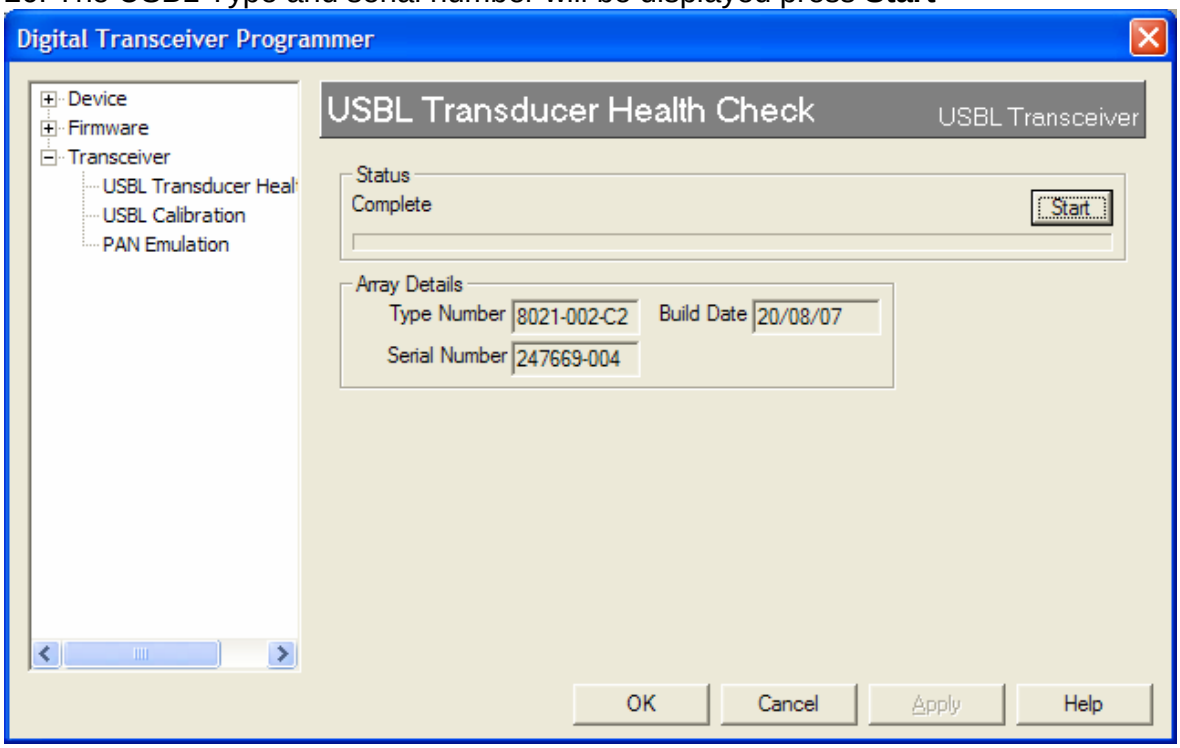
24. Open the device window demonstrated in step 8 and expand the USBL tree by clicking on the + symbol next to the word transceiver.



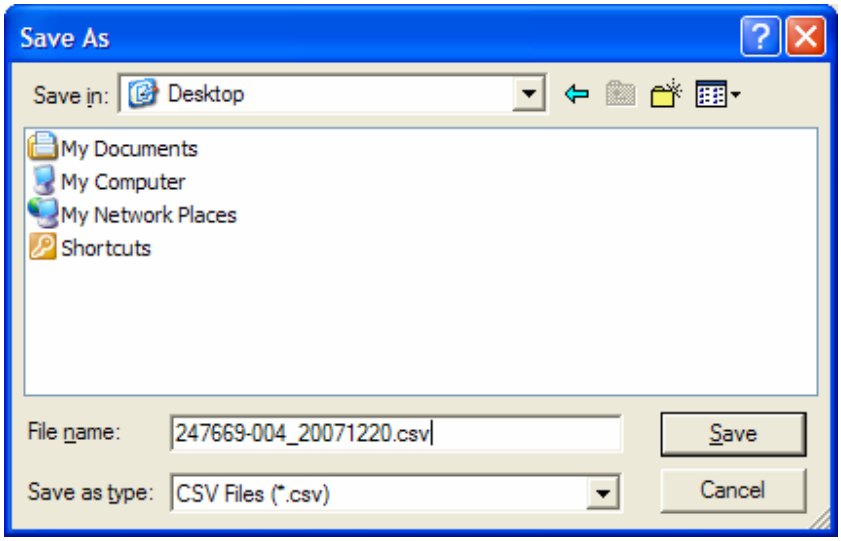
25. With the tree expanded click on the **USBL Transducer Health Check.**



26. The USBL Type and serial number will be displayed press **Start**



27. Once the calibration is completed the user will be prompted to save the collected information to a Comma Space Variable, **CSV** file. It is recommended that the file name is left as the default one given as this has the date and serial number embedded.



28. The CSV file should then be emailed to Customer services to analyze.

e.mail: **usbl.support@sonardyne.com**