Gemini Profiler with Survey Software

EIVA NaviScan

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Outstanding Performance in Underwater Technology

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Help & Support

First please read this manual thoroughly (particularly the Troubleshooting section, if present). If a warranty is applicable, further details can be found in a Warranty Statement at the end of the manual.

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	Mail	*Tritech International Ltd* Peregrine Road Westhill Business Park Westhill, Aberdeenshire AB32 6JL, UK
	Telephone	++44(0)1224 744 111
	Fax	++44(0)1224 741 771
	Email	support@tritech.co.uk
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If the product has been used in a contaminated or hazardous environment you *must* de-contaminate the product and report any hazards *prior* to returning the unit for repair. *Under no circumstances should a product be returned that is contaminated with radioactive material.*

The name of the organisation which purchased the system is held on record at *Tritech International Ltd* and details of new software or hardware packages will be announced at regular intervals. This manual may not detail every aspect of operation and for the latest revision of the manual please refer to www.tritech.co.uk

Tritech International Ltd can only undertake to provide software support of systems loaded with the software in accordance with the instructions given in this manual. It is the customer's responsibility to ensure the compatibility of any other package they choose to use.

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Warning Symbols

Throughout this manual the following symbols may be used where applicable to denote any particular hazards or areas which should be given special attention:

Note

This symbol highlights anything which would be of particular interest to the reader or provides extra information outside of the current topic.

Important

When this is shown there is potential to cause harm to the device due to static discharge. The components should not be handled without appropriate protection to prevent such a discharge occurring.

Caution

This highlights areas where extra care is needed to ensure that certain delicate components are not damaged.

Warning

DANGER OF INJURY TO SELF OR OTHERS

Where this symbol is present there is a serious risk of injury or loss of life. Care should be taken to follow the instructions correctly and also conduct a separate Risk Assessment prior to commencing work.

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1. Introduction

In order to be used as a bathymetric survey system the Gemini Profiler will be used in conjunction with additional software. Details are presented here for the EIVA NaviScan software package.

The basic principle of operation is that the Gemini Software communicates with the sonar head and then sends out data in a compatible format to the survey software. Usually the survey software is installed on a separate computer and they are connected via a network link.

Note

For more details of the software and after sales support for NaviScan please contact your sales representative or visit the EIVA website at www.eiva.com.

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2. Hardware Setup for EIVA NaviScan

It will be necessary to run the Gemini Profiler off one computer and the EIVA NaviScan software on another computer. The two computers will be connected through an Ethernet LAN.

The survey system should be connected as follows:

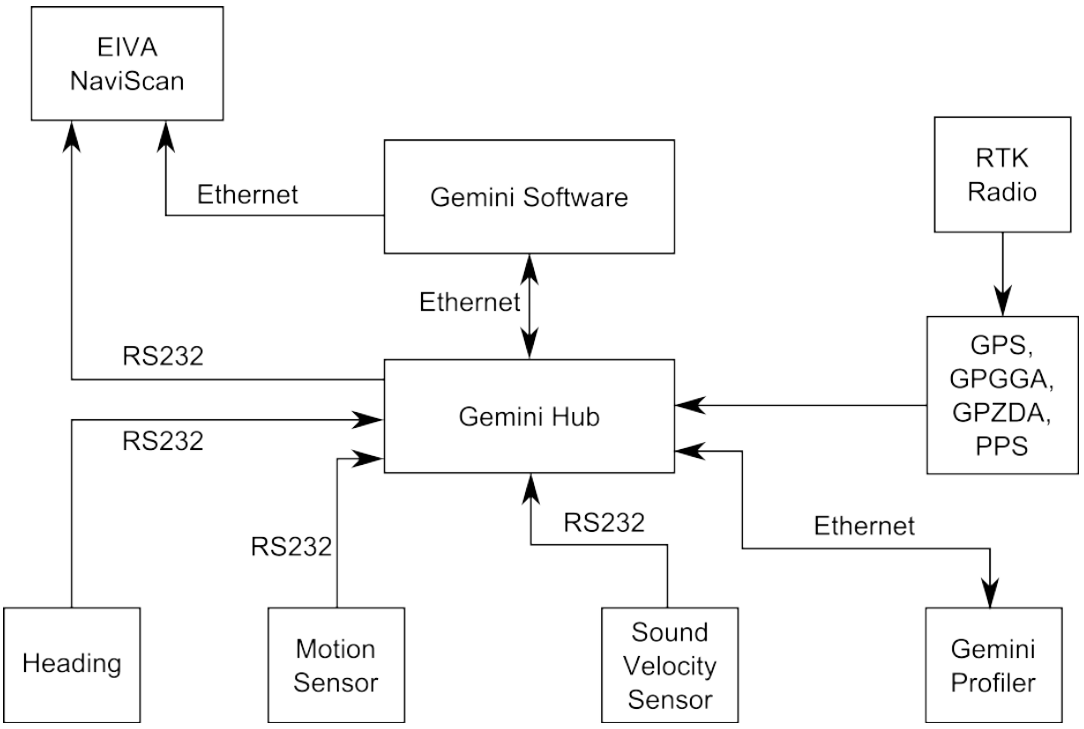

Figure 2.1. EIVA NaviScan Hardware Configuration

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3. Configure the Gemini Software

To set the Gemini software for use with a survey computer running EIVA NaviScan it will be necessary to configure the data output over an Ethernet port. The computer running the Gemini software will essentially be connected to two LANs, one for the Gemini Profiler head(s) and the other for the connection to the survey software.

Note

The computer running the Gemini software and the computer running the NaviScan software should be assigned IP addresses within the same subnetwork.

The network settings for the connection to NaviScan are located in the section titled `Set up network data output` in the `Digitisation` section of the `Advanced` tab (as shown in Figure 3.1, "Gemini Software Digitisation Settings"). The `Format` should be set to `Tritech` and the `Hostname` set to the IP address of the computer which is running NaviScan.

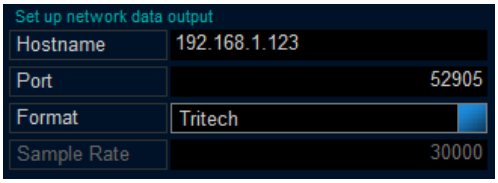

Figure 3.1. Gemini Software Digitisation Settings

Once the network has been properly set it will be necessary to configure the `Hub Setup` so that the data from auxiliary sensors is passed through correctly.

In the `Hub Setup` tab ensure that the time synchronisation is set to `GPS` and the network data output is `Framed`.

Figure 3.2. Gemini Software Hub Setup

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4. Configure EIVA NaviScan

In order to set up the Gemini Profiler it will be necessary to launch the `NaviScan Config` dialog. Each of the steps outlined below are performed with this dialog as a starting point.

4.1. The Gemini Profiler

From `NaviScan Config` click on `Equipment→Add sensor`.

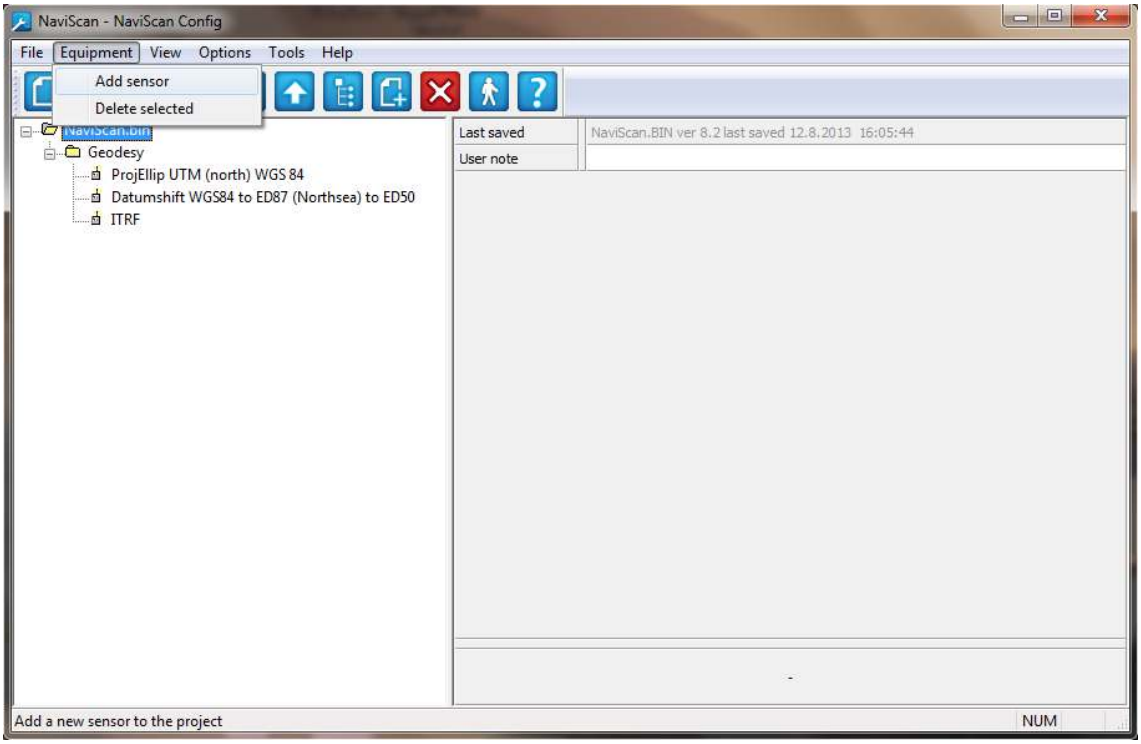

Figure 4.1. NaviScan Config

Next, select the `Echosounder` option.

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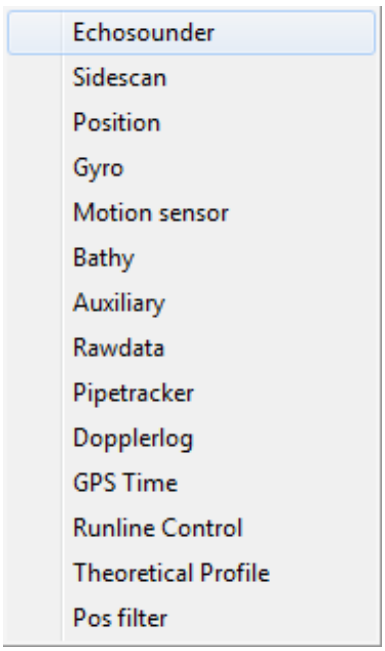

Figure 4.2. Select Echosounder

Choose `TritechMbe` for a single head system or `TritechMbeDual` for a dual head system and then click `OK` to proceed.

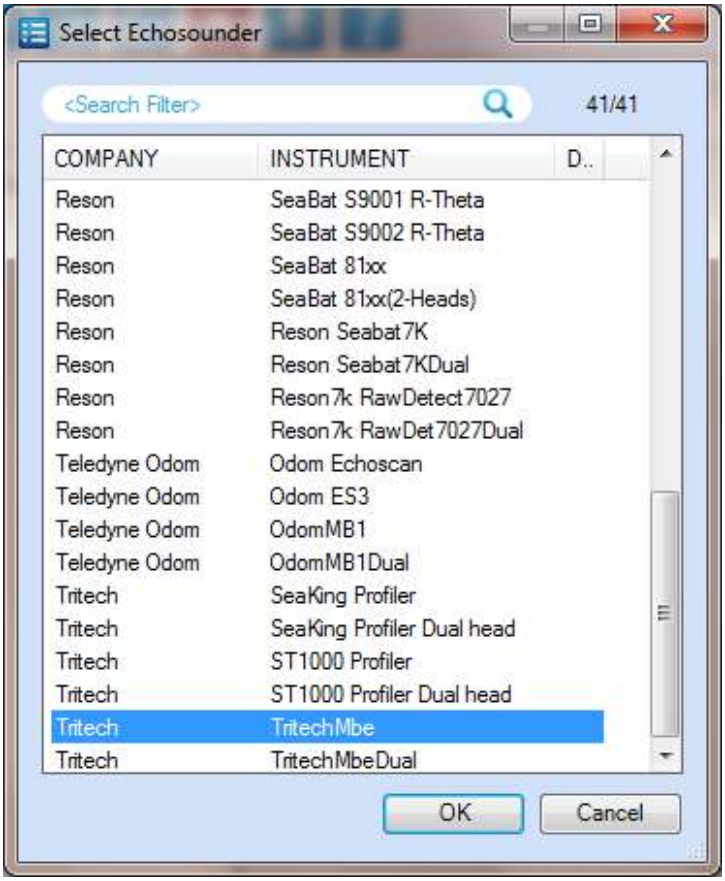

Figure 4.3. Choose Single or Dual Head

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The `Port settings` window will now appear. Set the `Port type` to **UDP/IP Port** and enter the IP Address and IP Port number of the Gemini computer that will be used for the connection (as configured in Chapter 3, *Configure the Gemini Software*).

Note

The example in Figure 4.4, "Echosounder Port Settings" shows a computer running the Gemini software that is configured to use an IP address of 192.168.2.100 on Port 52905 (the default communication port).

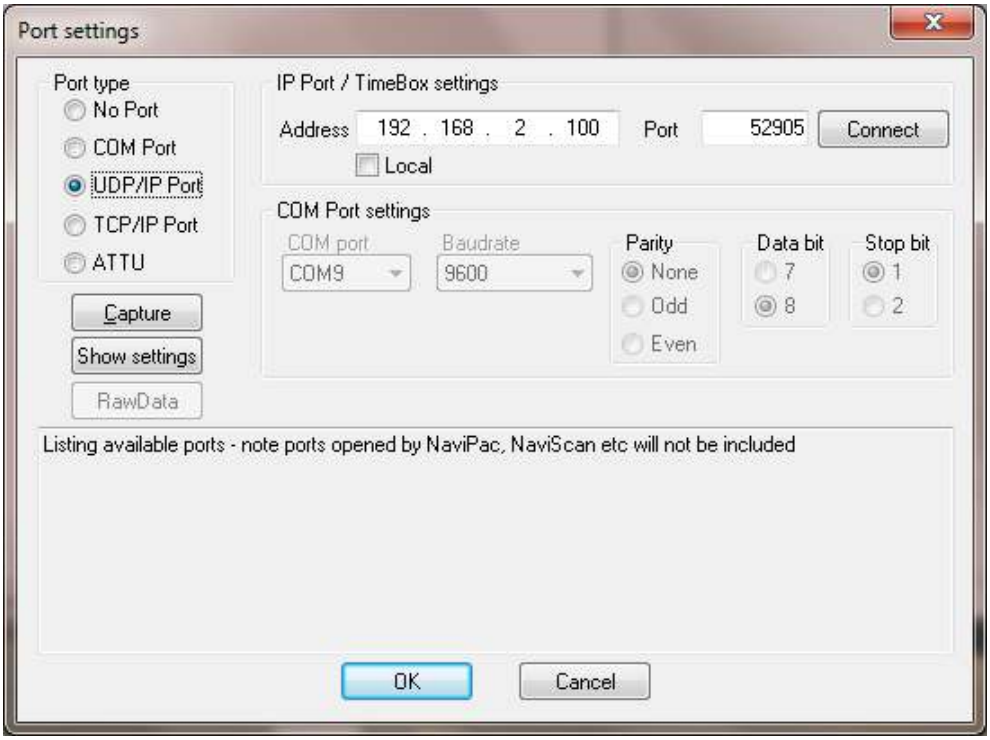

Figure 4.4. Echosounder Port Settings

Click on `Connect` and the new sensor will be added into the NaviScan Sensor listing

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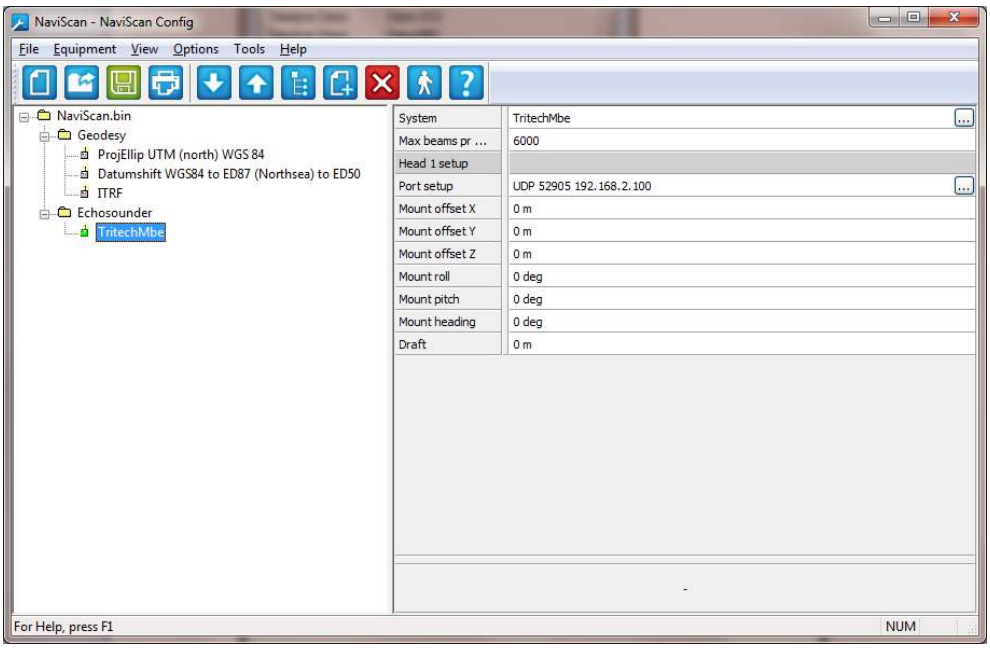

Figure 4.5. NaviScan Sensor Listing

4.2. 3rd Party Sensors

To add in any 3rd party sensors to be used with the system such as GPS Position, Motion Sensor or Gyro Compass launch the `NaviScan Config` dialog and select `Equipment→Add sensor`.

Position Sensor over UDP

To add in a sensor that is connected via the UDP interface first select `Equipment→Add sensor`:

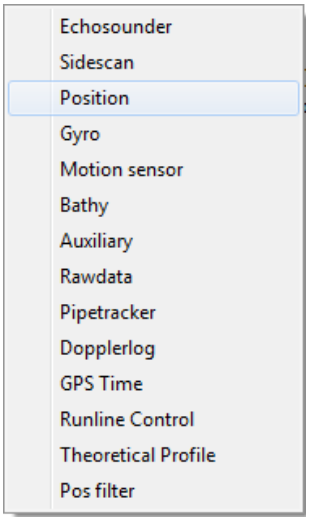

Figure 4.6. Choose Position Sensor

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In the `Port settings` dialog that is present select the **UDP/IP Port** option and make sure the IP Address and Port match the computer running the Gemini Software (in the example shown, the Gemini computer is on IP 192.168.2.50 using Port 52905).

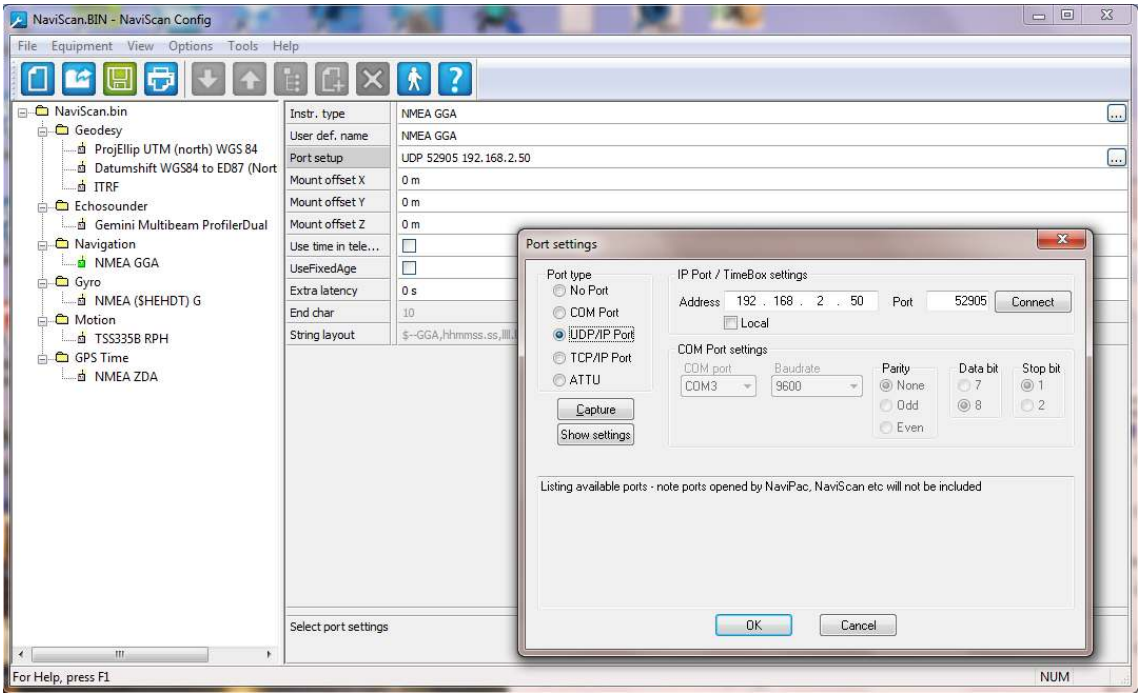

Figure 4.7. Select and Configure UDP Settings

Note

For UDP connections, make sure the `Network data output` is set to `Framed` in the Gemini Software as shown in Figure 3.2, “Gemini Software Hub Setup”.

Other Sensors

Repeat the steps outlined for the *Position Sensor over UDP* to connect all the other sensors required for the system (e.g., GPS, Motion Sensor and Gyro).

GPS Time Over Serial Connection

If desired, it is possible to connect serial sensors directly to the computer running NaviScan. An example is shown here using GPS Time data, but the steps can be followed for any relevant serial device.

Select `Equipment→Add sensor`:

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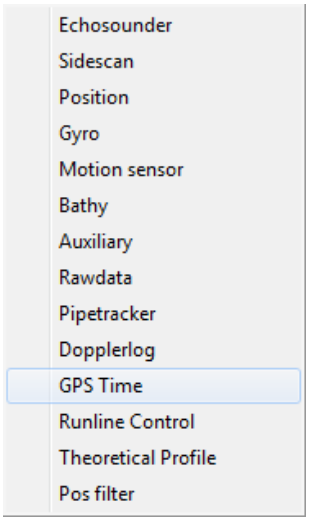

Figure 4.8. Choose GPS Time

Choose the GPS device that matches the equipment being used, e.g.,

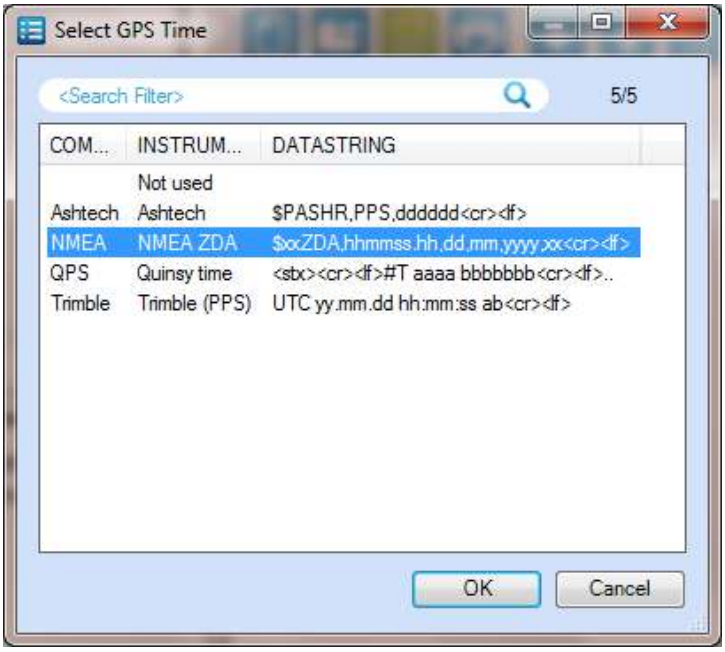

Figure 4.9. Choose GPS Device Type

Then in the `Port settings` page configure the COM port connection for the incoming GPS data strings and click `OK` when finished.

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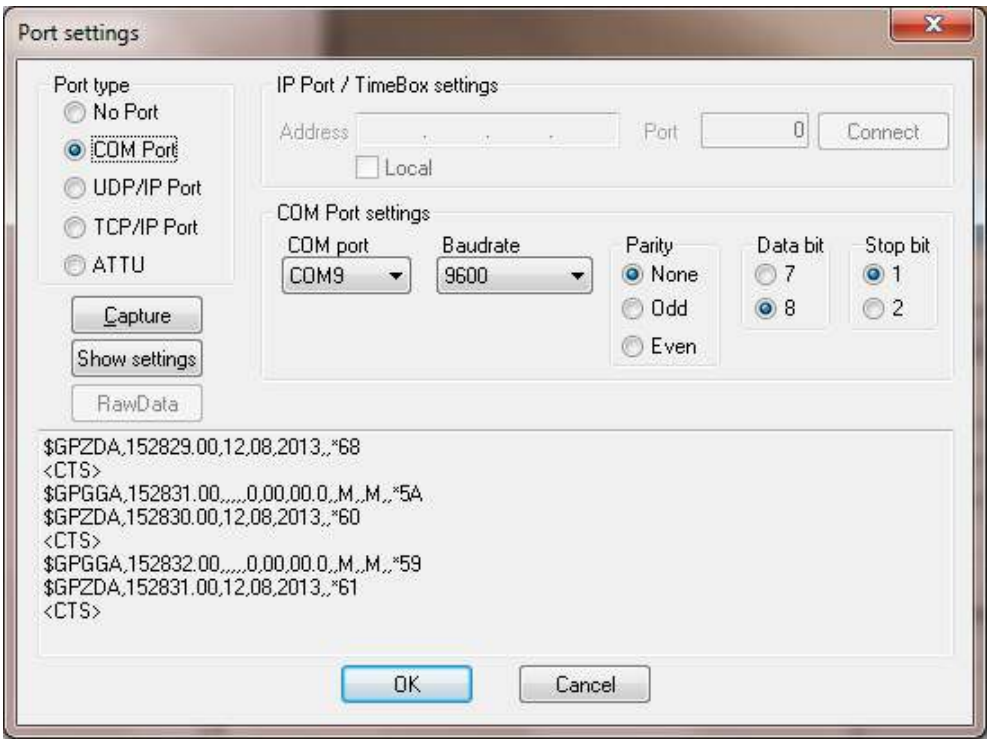

Figure 4.10. Select and Configure COM Port

The GPS Time sensor will now be included in the `NaviScan Config` sensor listing as shown in Figure 4.11, “Naviscan Sensor Listing (showing GPS Time)”. Make sure that `PPS usage` is set to `CTS`.

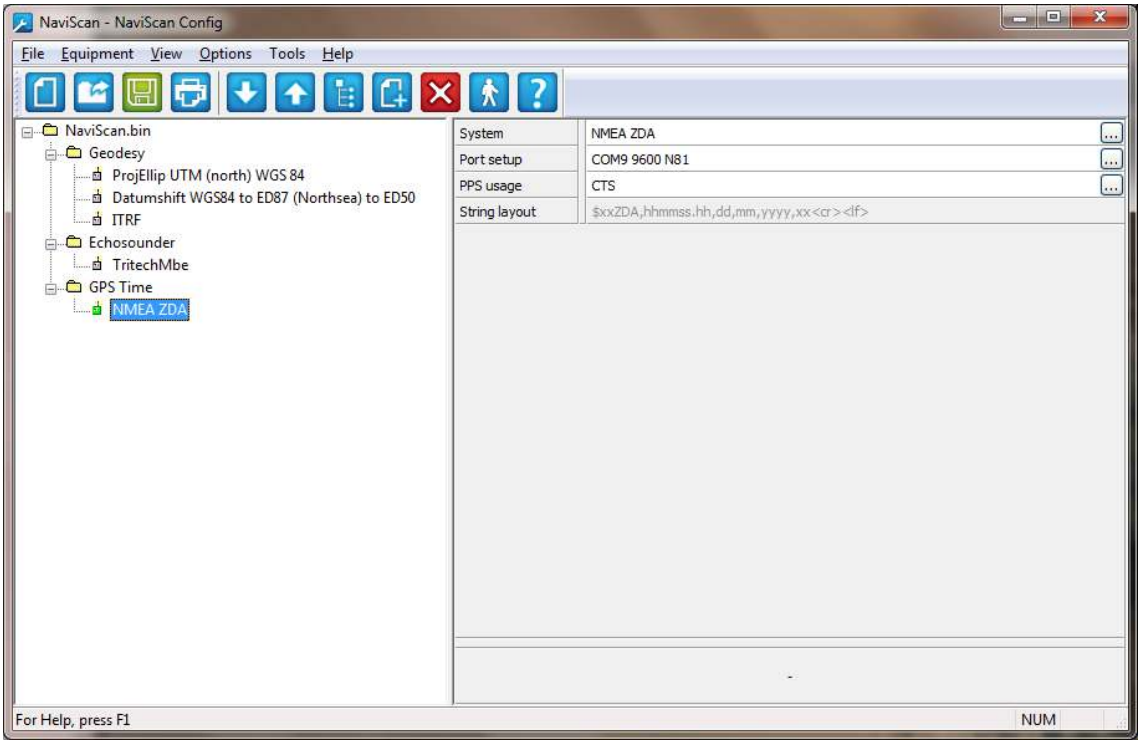

Figure 4.11. Naviscan Sensor Listing (showing GPS Time)

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Note

The Time message and PPS (using CTS) must be connected over a serial connection directly to the NaviScan computer (see Figure 2.1, “EIVA NaviScan Hardware Configuration”).

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Glossary

Ethernet	A family of computer networking technologies for local area networks (LANs).
Gemini	Unless specified this can refer to any of the multibeam sonars in the Gemini range by *Tritech International Ltd* such as the Gemini Imager (720id), Narrow Beam Imager or Gemini Profiler (620pd).
Gemini Hub	A rack mountable device capable of driving 2 Gemini sonars and multiple serial sensors and outputting the data to a PC network.
GPS	Global Positioning System.
LAN	Local Area Network
PPS	Pulse Per Second
RS232	Traditional name for a series of standards for serial binary data control signals.

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