



Commissioning Guide for Verify DPx

Document No: AB-V-MA-00510

22/07/2009– Rev A

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Introduction

This document provides a structured set of step by step procedures that are consistent with normal work practice for Veripos Engineers.

No part of this Guide supersedes standard safe and quality work practice.

The installation of service of Verify DPx is a combination of Hardware and pre-installed DPx software.

Note: There are assumptions to consider in relation to this Commissioning Guide;

Assumptions:

- The installation engineer is familiar with the connection of services and connections for a Veripos LD-3 and LID-3. The guide assumes that the receiver is at a stage of commissioning which you would expect prior to requesting an Access code from the Veripos Helpdesk for Veripos service(s).
- Normal site – specific practice and all safety practice and guidance is followed for the physical siting and installation of the Veripos equipment.

For the purpose of this document the receiver will be named as LD3. However the unit that is supplied may be either of the following: LD3, LID3, LD3S or LID3S.

Background

This Guide will help you to set up the DPx service ready for use by the customer and the Veripos services to which they subscribe.

The installation of service of Verify DPx comprises a delivered -to –client combination of Hardware and the DPx software.

The majority of installations will comprise a **matched pair** of Touch screen PC and LD3 Receiver;

- A Veripos Panel PC unit with pre-loaded and configured software
- A LD-3 with the latest Firmware Version

Notes

1. When prompted, you will need to obtain an Access code from the Veripos Helpdesk.
2. The Commissioning Engineer will need the password to access the DPx Service Control Wizard software.
3. There is a DPx software licence code that may be required. It can be obtained from the Veripos Helpdesk and contact details for the Helpdesk are shown later in this document.

Commissioning Engineers Responsibility

The Commissioning Engineers procedures for GNSS will be part of the specific requirements agreed for the client and form no part of this guide.

Why use this Guide?

This step by step guide aims to help you Commission the DPx the correct and professional manner.

The key elements of service provision are summarised and this guide covers part(s) underlined;

Delivery

Installation

Commission

Test

Handover

As-built Documentation

Ongoing support

Scope

This document applies to the following units/teams:

- Veripos Installation & Commissioning Engineers

This document applies to the following types of work:

- Commissioning Verify DPx

It is recommended the commissioning engineer follow this guide until familiar with the system.

Training and Further Information

Training

Please contact in the first instance the Veripos Technical Training Manager

Alistair Webb

☎ 01224 526406

email: alistair.webb@subsea7.com

For Manuals and advice on how to use Veripos equipment and services refer to

The Veripos [VOSS](#) (Veripos online support system).

For guidance on specific information relating to the DPx please refer to the

DPx Operator Manual or **DPx Installation Manual** available at <http://help.veripos.com>

Document Owner and History:

The following person may be contacted in relation to the content this document:

Alistair Webb
Tel: 01224 526406
alistair.webb@subsea7.com

Version control

Date	Issue	Amendments
30 th November 2008	Draft 0.2	Initial draft.
3 rd November 2008	Draft 0.3	Draft for review by CSG and SDT peers
12 th November 2008	Draft 0.4	Update of Draft following review and installation trial
26 th November 2008	Draft 0.5	Final draft for approval.
18 th December 2008	Version 1.0	Production of v1.0 for internal use
27 th July 2009	Version 2.0	Manual Upgraded to support Verify DPx 1.1

This Guide is for use by Veripos personnel only.

Useful Contacts

Technical Training Manager

Alistair Webb
☎ 01224 526406

email: alistair.webb@subsea7.com

Veripos Helpdesk

☎ 01224 527104

email: Veripos.helpdesk@subsea7.com

Veripos documents, Guides and FAQ for customers <http://help.veripos.com>

Veripos external web site www.veripos.com

Step by Step Commissioning of DPx

Step 1 – Check List

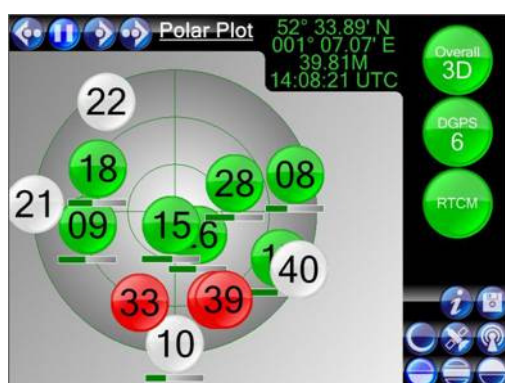
Step	Details
1	<p>You will need the following to commission the DPx installation -</p> <p>Information</p> <ul style="list-style-type: none"> An Access code for the Veripos service to be used The Login password for the Panel PC Inputs required for DP System (i.e. GGA, GLL, VTG etc.) <p>Hardware</p> <ul style="list-style-type: none"> A Veripos Panel PC unit with pre-loaded and configured software A LD-3 with the latest Firmware Version installed <p>In addition you will need:</p> <ul style="list-style-type: none"> A keyboard & mouse (used for commissioning) with adapter A USB Flash Drive (For inputting DPx License Code)



Veripos LD3



Veripos LD3 & Panel PC



DPx software Polar Plot Display

Step 2 – Connect the DPx Panel PC

Cables for power and between the DPx and the LD-3.

<div>Step 2</div>	<div>Details</div> <div>Cables and terminations</div> <div>Interconnect cabling between the DPx Panel PC and the LD-3 will look similar to that in Figure 1 below.</div> <div><p>Figure 1 DPx Interconnect cabling diagram Panel PC to LD-3</p><p>Notes – you will use these cables to connect between the DPx Panel PC, the LD-3 receiver and - for Commissioning ONLY - a PC keyboard and roller ball/mouse with a connection adapter when in use.</p><p>The Keyboard and mouse is detached and removed from site on completion of commissioning the DPx.</p></div>
<div>2.1</div>	<div>Attach Power supply to DPx Panel PC</div> <div>Attach the Panel PC to power supply in accordance with practice as advised by the authorised vessel representative.</div> <div>Keep the power to the Panel PC OFF until all connections are in place.</div>
<div>2.2</div>	<div>Attach cables between DPx and Satellite Receiver</div> <div>The interconnect cables run from the Panel PC to front and rear connectors on the LD3.</div> <div>First connect the Male and Female Amphenol type cables to the respective connectors on the LD3 receiver.</div>

	<p>Next attach in order (from the RIGHT when facing the Panel PC screen):</p> <ul style="list-style-type: none">• Com 1 – a 9 way Female D type socket – this is labelled GPS on the cabling• Keyboard / mouse c/w adapter & cabling• Com 4 – a 9 way Female D type socket – this is labelled LD-3 OEM)• Com 2 – a 9 way Female D type socket – this is labelled RTCM• Attach Power supply using the associated PSU (100-240V AC in, 12v DC out) <p>You are now ready to boot the Panel PC.</p>
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Step 3 – Verify DPx Panel PC

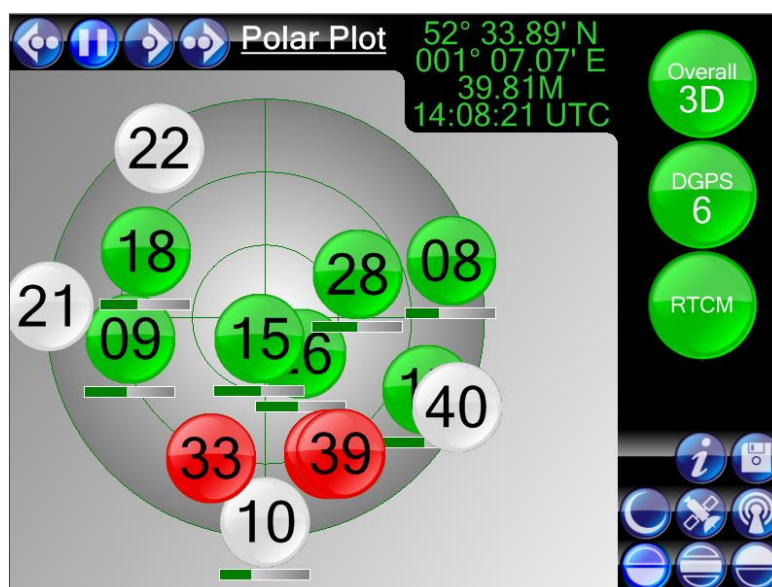


Figure 2 A typical Verify DPx Polar Plot display

This Step boots the Veripos Panel PC ready for commissioning and checks that the IO Bridge software is in place. The Bridge software allows the Panel PC to communicate with the LD-3 receiver.

Step	Details
3	<p>Boot the Veripos Panel PC</p> <p>NOTE: When a keyboard and mouse are connected to the PC during start up the PC may assign a mouse to a serial port due to incoming data on the Port. To overcome this, disconnect the Control port on the LD3 prior to starting the PC or start the PC before powering the LD3.</p> <p>Ensure illumination control on the bottom Right hand side is set to sufficient setting. If turned completely counter clockwise screen will remain blank.</p> <p>Press the on/off button on Right hand side the of the Panel PC.</p> <p>This normally takes 2-3 minutes. Messages onscreen appear – please wait. When completed a screen similar to Figure 2 will appear – you will see the display cycles through five screens;</p> <ul style="list-style-type: none"> • The DOP View • The Map • The Polar Plot • SNR Plot • Track Plot <p>A delay in booting is normal and expected.</p> <p>The Three circular “buttons” top RHS of screen flash Red, Amber or Green.</p> <p>DPx display is in full screen mode –key in [ALT+F4] to exit.</p> <p>Power on LD3 or connect Control connector upon completion of start-up.</p>

3.1 Set up Veripos IO Bridge

Overall

The Veripos IO Bridge software REMAINS running when the Panel PC is in use.

It ensures that COM ports are mapped to IP addresses on the Panel PC and used by Verify DPx software.

Confirm it is running and if necessary bring the Veripos IO Bridge to the display foreground – use **[ALT+TAB]** on the keyboard until selected and displayed (Figure 3).

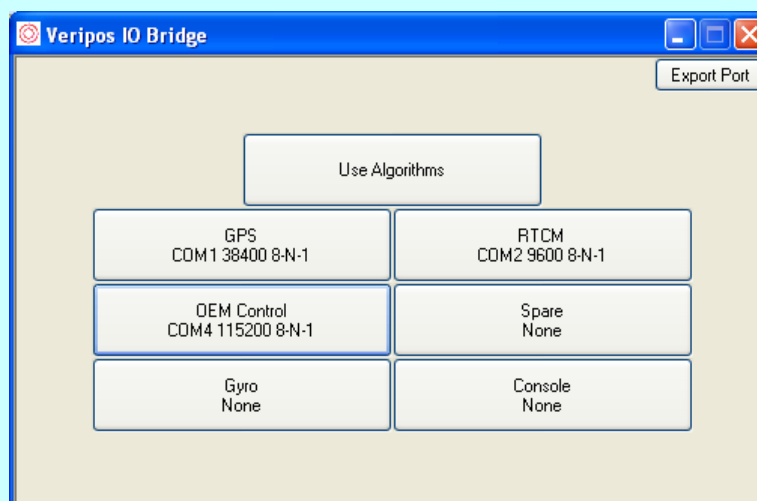


Figure 3 The Veripos IO Bridge Configuration screen on the Panel PC

Before proceeding, check to confirm all physical connections COM ports especially are in place.

Note: OEM Control baud rate should be set to 115200 for LD3S and 9600 for LD3.

The screen now displays the Veripos IO Bridge screen with a Windows **Start** button visible at the bottom LHS of the screen.

In the next step we will configure the LD-3 using the touch screen of the Panel PC, keyboard and mouse.

Step 4 – Starting the Commissioning Tool

This wizard guides you through baud rate changes to the PC and using the Bridge IO software to send commands that enable the LD-3 for the services required by the customer.

Step	Details
4	<p>Note - To complete this Step you need the engineering/commissioning Password.</p> <p>This password is confidential to Veripos.</p> <p>Click the Start button.</p> <p>Next click All programs and from the options select CommsTool. If the Commissioning Tool is not in the start menu it can be found in C:\Program Files\Veripos\Commissioning Tool – Double Click Veripos.CommissioningTool application.</p> <p>A window titled LoginForm appears.</p> <p>Enter the Veripos engineering / commissioning password and click the Login onscreen button.</p> <p>Successfully entering the password starts the Service control Wizard.</p> <p>Instruction –</p> <p><i>Please avoid touching the screen prompts, information buttons, etc. at this stage until you are familiar with the Service Control Wizard.</i></p>

Step 5 – Commissioning services using Commissioning Tool

Overview of process using the Commissioning Tool

The Commissioning Tool provides prompts to enter/amend the information needed to map the COM ports from the LD-3 to IP ports on the Panel PC.

Messages appear to assist and ensure the baud rate set is the same on the LD-3 as are on the Bridge IO software. This ensures end-to-end connectivity.

The commissioning tool DOES NOT look for acknowledgement from the receiver at any stage and may run until the end without the unit being set up correctly if there is a comms failure. Any problem will be evident in the unit not being set up correctly at the completion.

The outline sequence you will follow with help from the Wizard for each of the ports is;

Reset LD-3 to default of 9600bps.
 Reset the Bridge IO software to match at 9600bps.
 Change port B on the LD-3 to a higher baud rate of 38400bps.
 Match this by amending the Bridge IO settings to 38400bps.

On completion of this step the Bridge IO software remains running (the panel labelled Veripos IO Bridge) is not accessed by the client. It remains open and active so as to map between the *COM ports and TCP/IP*.

Step	Details
5	<p>Displayed on screen is the Service Control Wizard (Fig.4).</p> 

Figure 4 Service Control Wizard

5.1

The type of receiver to be configured must be set in the LD3 Type box, as in Fig 5



Fig 5 Commissioning Tool – Set Receiver Type

5.2

The Commissioning Tool ports must be set to Host: bridge GPS Port: 9001 and OEM Port: 9003, as in Fig 6.

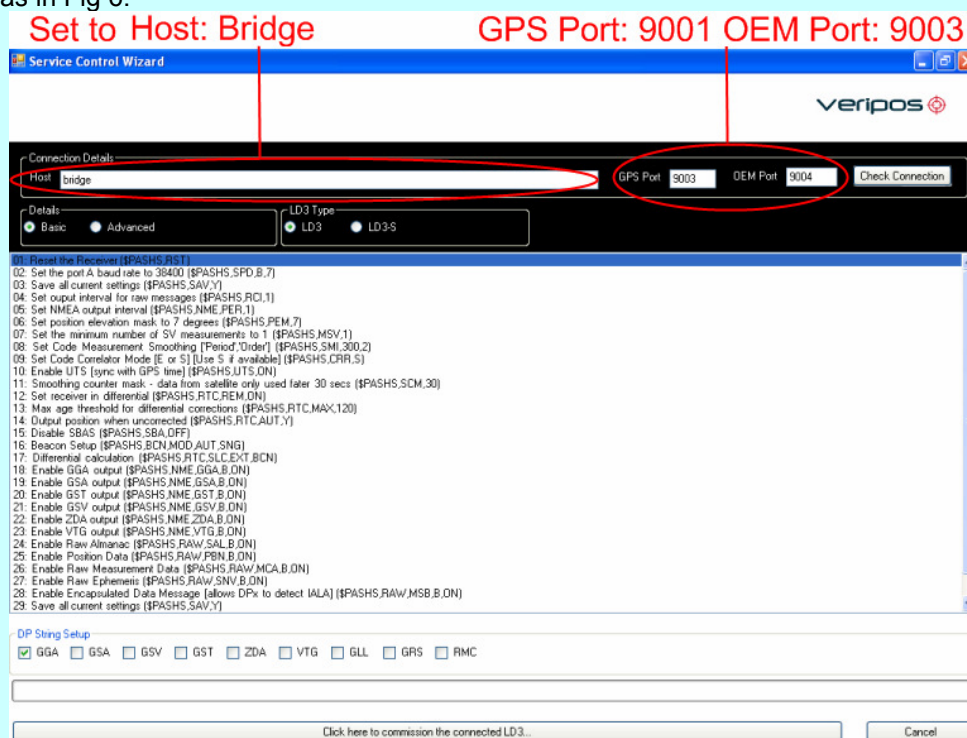


Fig 6 Commissioning Tool - Set Ports

Note: The Bridge interfaces to the LD3 and maps the ports to 9001 and 9003. If using a Moxa without the bridge, the Host is set the IP address of the Moxa and the Ports are set to match settings in the Moxa.

5.3

Set the Commissioning Tool to Basic or Advanced Mode as in Fig 7

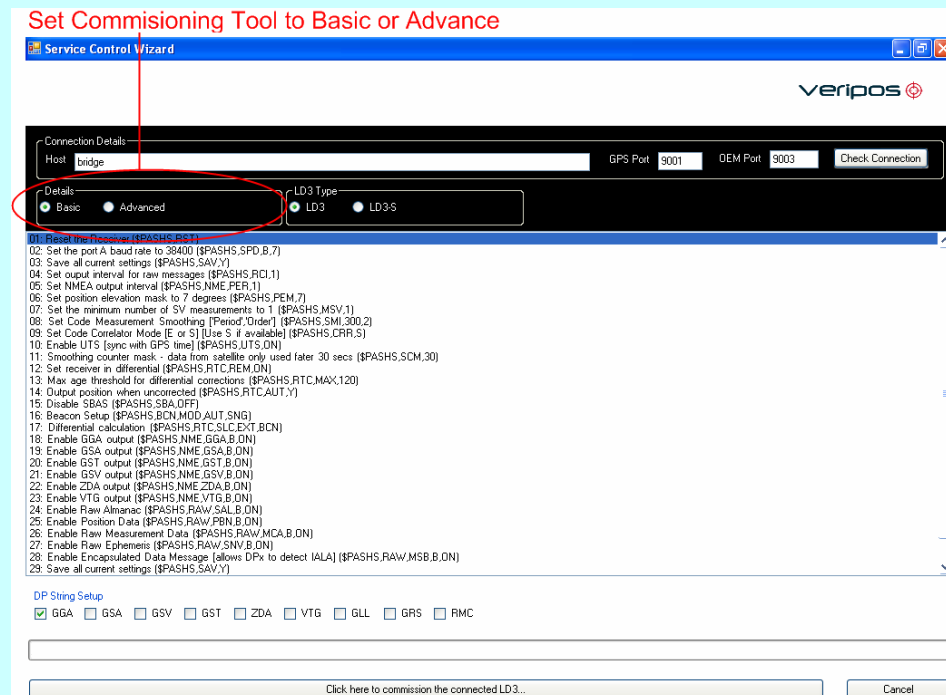


Fig 7 Commissioning Tool – Set Advanced Mode

This Manual runs Basic Mode (Advanced can be found in the Appendix).

5.4

Check the boxes of the strings that are required for the DP System, as in Fig 8

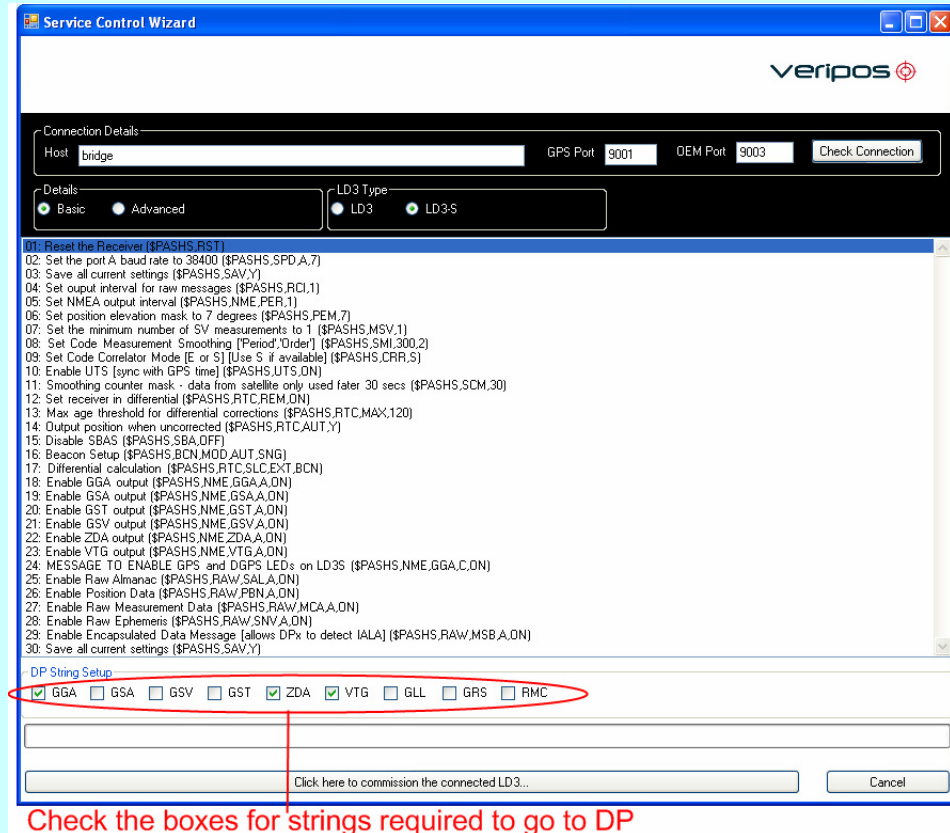


Fig 8 Commissioning Tool – DP String Setup

5.4 Click the Check Connection Box as in Fig as in Fig 9

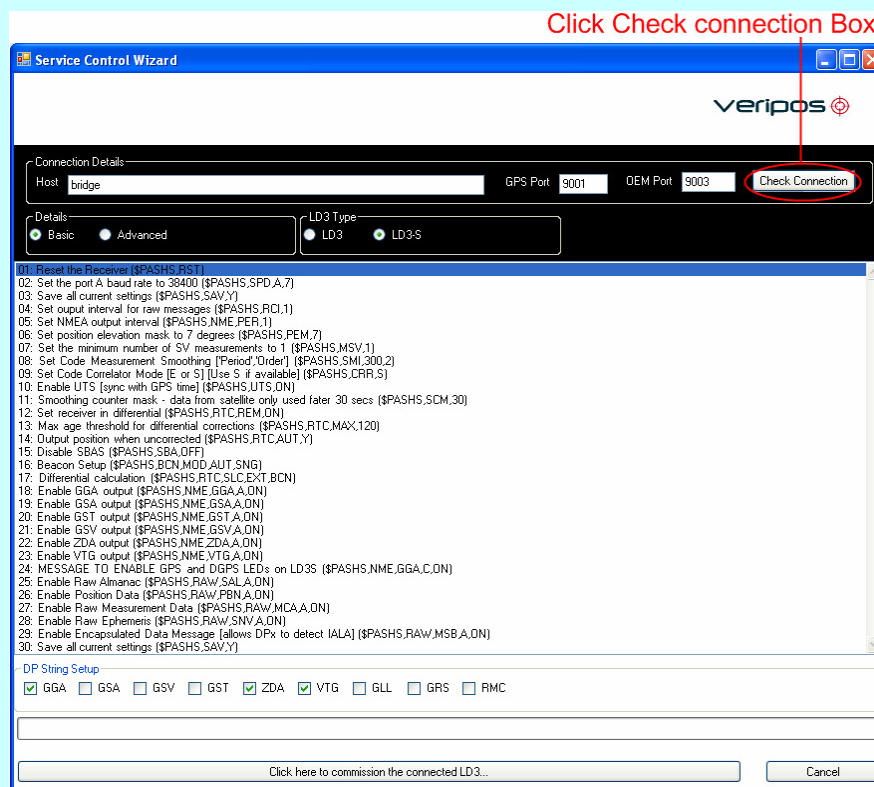


Fig 9 Commissioning Tool – Check Connection

A message confirming GPS and OEM Successful should appear – Click OK

5.5 Click the Commission the Connected LD3 button, as in Fig 10

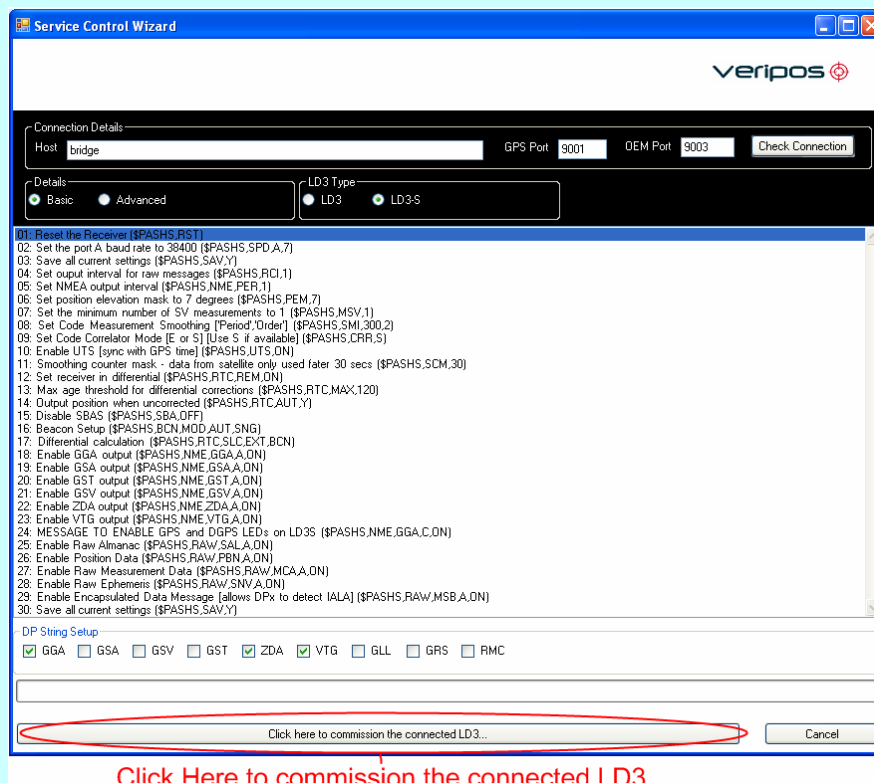


Fig 10 Commissioning Tool – Commission the connected LD3

The Commissioning Tool will now commence sending Commands to the Unit

- a) A notification window appears (Fig. 10) asking you to check/ confirm you have set baud rates on the Veripos IO bridge software – in this example, to 9600bps.

DO NOT click OK on this (Fig.10) notification window *until* you have carried out this action in the Bridge IO application.



Figure 10 Notification window

It is vital you make changes to / confirm settings on the Veripos IO Bridge before proceeding.

- b) Click on bridge icon at the bottom tool bar to display the IO Bridge interface (Fig 11).
- c) On the Bridge IO software interface, click on GPS button (Red oval Fig.11).

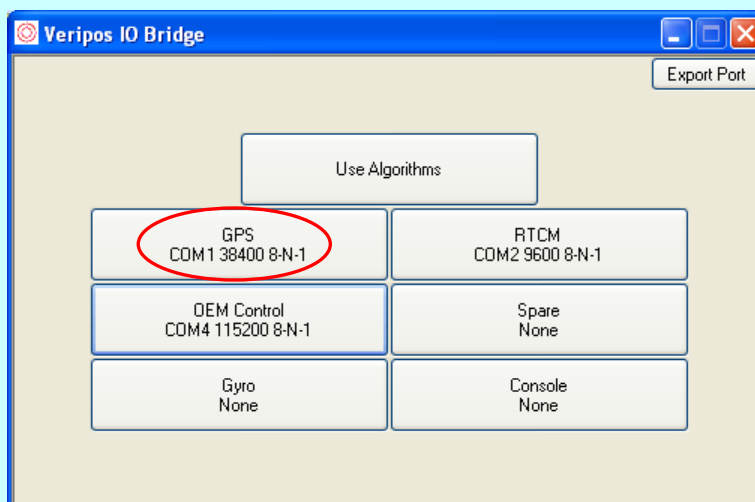


Figure 11 Bridge IO

The Edit GPS IO Parameters screen appears.

- d) Now select the drop down arrow against the Baud rate and select 9600 (Figure 12).

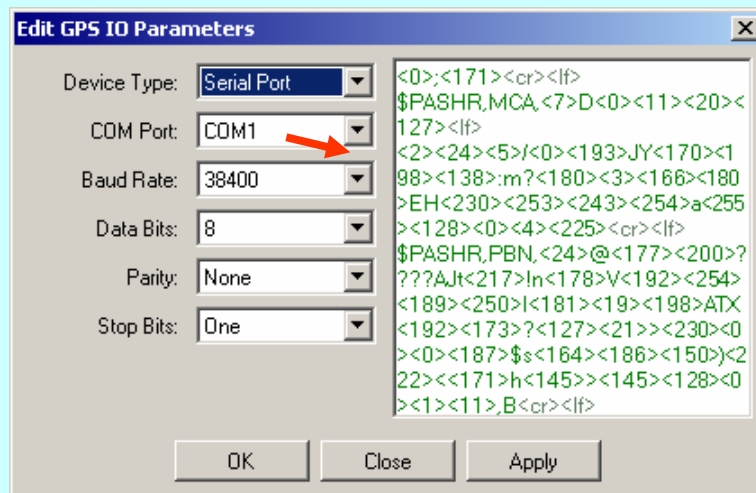


Figure 12 Notification window

Apply, then OK this window

- e) Return to the Service Commissioning Tool Wizard screen.
 f) Now click OK on the prompt that asked for the change of baud rate for GPS data.
 g) Next, an info box asks for the GPS port to be changed to 38400bps (Fig. 13)



Figure 13 The GPS 38400bps prompt

Again, do NOT click OK to this until you have used the Bridge IO software to make the changes using the Bridge IO software.

Follow the sequence c) – e) above, amending to the new baud rate settings as requested.

- h) Finally, return to the Service Commissioning Tool Wizard screen and OK the information box.

After the Commissioning Tool has completed sending the commands the following message will appear. Click OK.

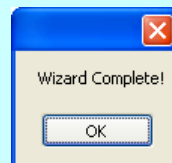


Fig 14 Commissioning Tool – Wizard Complete

Note: As the commissioning Tool does not look for the Acknowledge command this message does not mean that the setup has been successful. The unit should be tested in the DPx and DP Systems to ensure operability.

Step 6 – Confirm Verify DPx L-Band receiver setup

The Verify DPx software is required to be configured for the type of L-Band Receiver card it is interfaced to. The following types of card are in use:

- LD3 or LID3 – Thales
- LD3S or LID3S – Septentrio

The default setting for Verify DPx 1.1 is Septentrio.

Step	Details
6	<p>Check the Demodulator operation in Verify DPX by clicking on the Demodulator Button on the Verify DPx as in Fig 15.</p> <div data-bbox="572 658 1155 1021"></div> <p>Fig 15 Verify DPx Demodulator Button</p> <p>The following screen will appear – If the current beam is “Unknown” then the DPx may not be configured for the correct card.</p> <div data-bbox="411 1173 1318 1890"></div> <p>Fig 16 Verify DPX Beam Page</p> <p>Firstly check all the connections and baud rates are correct.</p>

If the problem continues, check the Verify DPx configuration file.

This file is located in C:\Program Files\Veripos\Verify DPX

The config file is named "Veripos.DPX.exe.config"

Open this file in Notepad

Check the Control Type Value as in Fig 17. This should be set to either "THALES" or SEPTENTRIO.

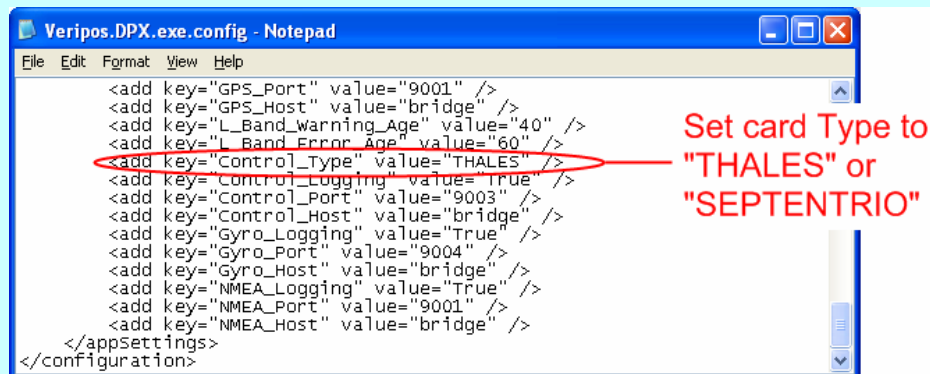


Fig 17 Verify DPX Config File – Control Type

Save the changes and close notepad

Reboot the DPx Software for changes to take effect.

Step 7 – Start the DPx software & Beam Selection

This step starts the DPX Software and guides you to entering the beam information during system set up.

Step	Details
7	<p>Start the DPx software & Beam Selection.</p> <p>Click the Windows Start button, select All Programs and click on DPx. (wait)</p> <p>The DPx program now starts.</p> <p>Click or touch onscreen to select the Demodulator icon (Fig 18 arrowed).</p> <div data-bbox="558 689 1257 1146"></div> <p>Figure 18 Main DPx Screen</p> <p>Touch the Beam button (Fig.13) and select a beam for your area of operation.</p> <div data-bbox="478 1272 1305 1870"></div> <p>Figure 19 Demodulator Screen</p> <p>The unit will alarm until the LD3 has switched and synched to the new beam</p>

Step 8 – Enable Unit and Select stations

During this step it will as usual be necessary to request an Access code from the Veripos Helpdesk, quoting the LD-3 User Code and the Enable Count.

The following describes how to:

- see the enable count information for DPx
- enter the Access code
- where to view the Verification code.

8

Enable Unit

From the main DPx screen select the Demodulator icon.

Now Select The Icon called **ACCESS**.

Request an Access code from the Veripos Helpdesk, supplying the Unit ID and the Enable count from the Screen (Figure 19). Remember to request a DP Standard Code.

Enter the 4 character Access code, press **Send**.

Ensure Unit Code is enabled in DP Standard Mode (Code should start with “q”)

Advise the updated Verification code back to the Veripos Helpdesk from this screen.

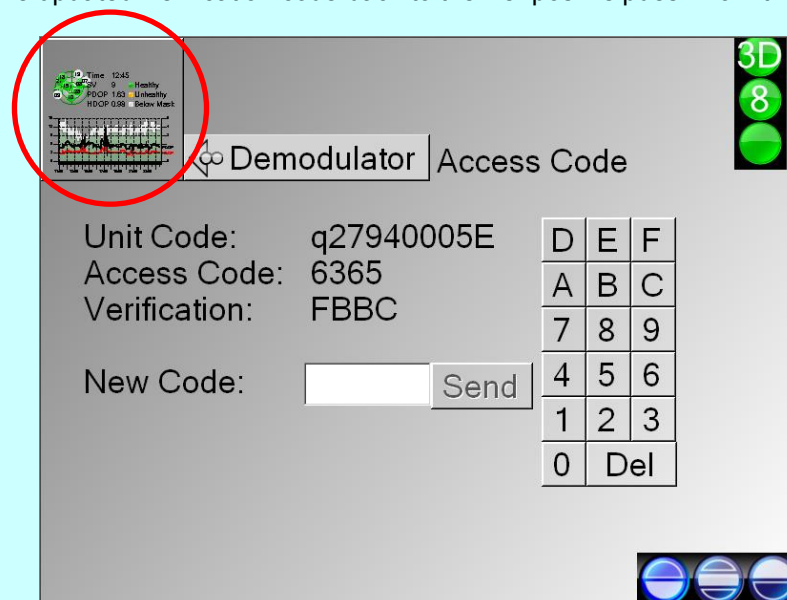


Figure 20 Main DPx Screen

Finally, on completion of entering the Access code, return to the main DPx display by touching the **Home screen** icon (circled top LHS of Fig 20).

8.1

Select Stations

Click on the Demodulator Button on the Verify DPx as in Fig 21.

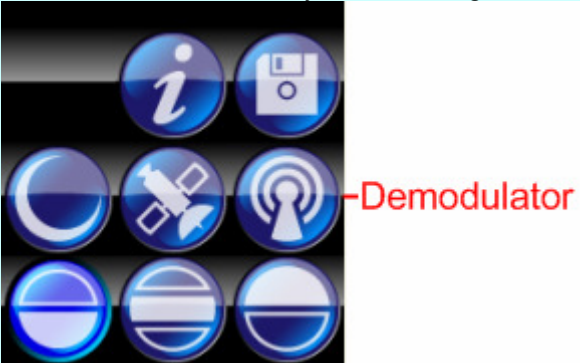


Fig 21 Verify DPx Demodulator Button

Touch the Station button (Fig.22)

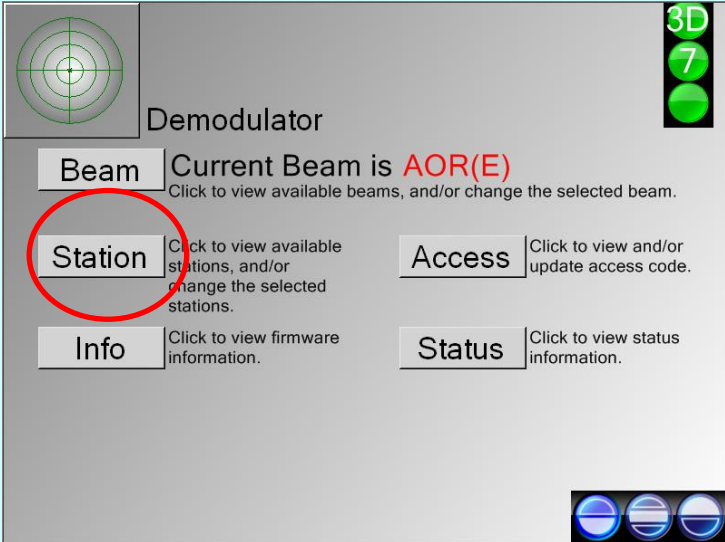


Figure 22 Demodulator Screen

Ensure all stations for current Beam are in the list and all stations are selected (Green boxes mean station is enabled), as in Fig 23

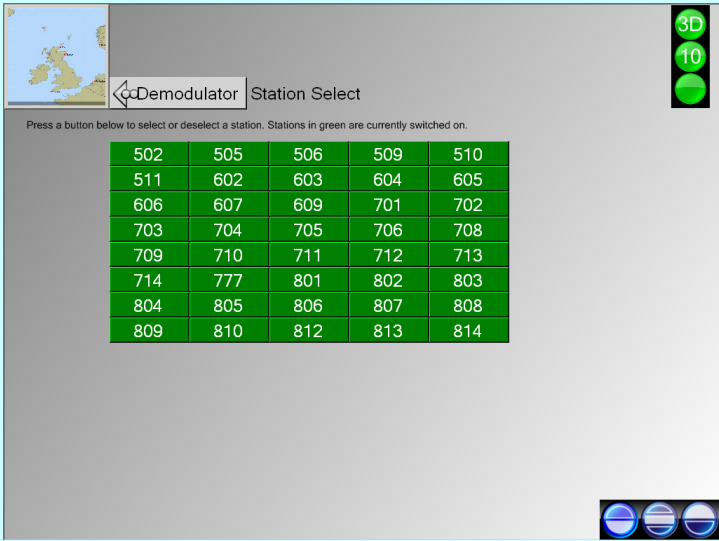
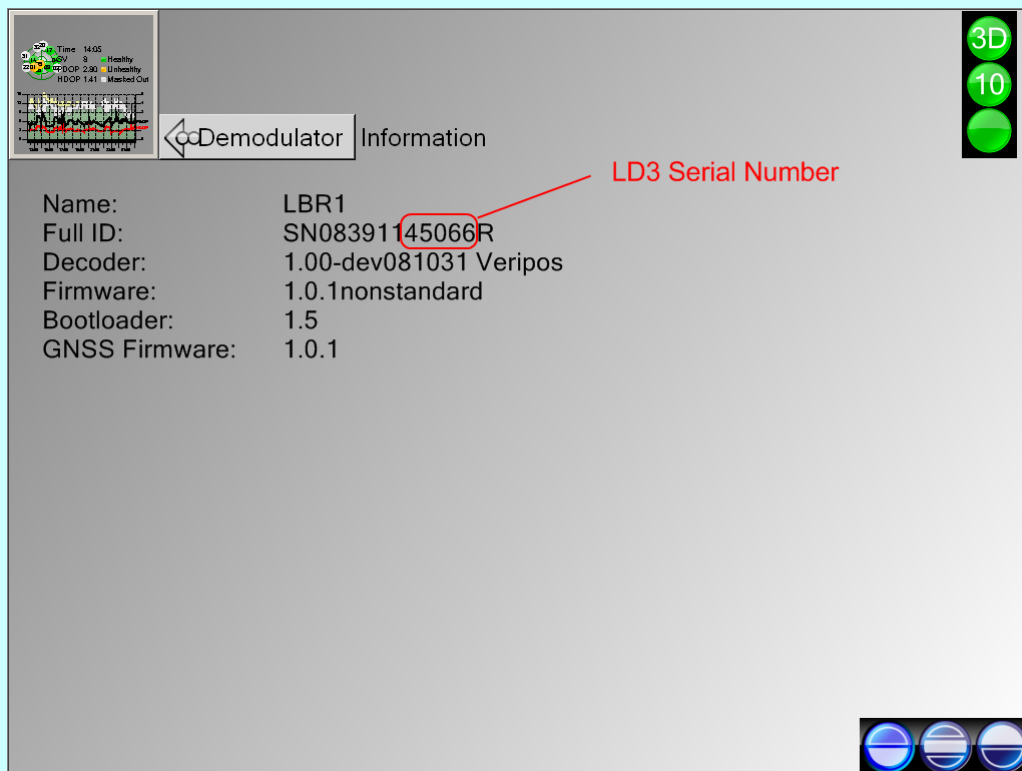


Figure 23 Station Screen

Step 9 – Enter the Verify DPx software Licence Code

This step helps you to navigate to the correct screens to enter the DPx Licence code, where applicable.*

* The Licence Code may already be entered on LD3 and DPx Panel PC units that have been factory paired. If this is the case you will have a valid Licence code and do not need to request/enter one.

Step	Details
9	<p>Licence Code</p> <p>A license code is a requirement of the DPx application.</p> <p>It MAY be input to the DPX before shipping.</p> <p>There are a number of ways to check the validity of the current licence code</p> <ol style="list-style-type: none"> 1) See shipping documentation for clarification 2) An alarm message stating Invalid Licence Code is displayed 3) The DPX is displaying Position on the main screen and all traffic lights are flashing red. <p>Should you need to enter it the procedure is described bellow.</p>
9.1	<p>Obtain Licence code from Veripos Helpdesk</p> <p>You will need the LD3 serial number which can be found on the front of the LD3 or in the Demodulator \ Info Screen as seen in fig 21</p>  <p>The screenshot shows the 'Demodulator Information' screen. On the left, there is a small status window with various indicators. The main area displays the following information:</p> <ul style="list-style-type: none"> Name: LBR1 Full ID: SN08391145066R (The '145066R' part is highlighted with a red box, and a red arrow points to it with the label 'LD3 Serial Number') Decoder: 1.00-dev081031 Veripos Firmware: 1.0.1nonstandard Bootloader: 1.5 GNSS Firmware: 1.0.1 <p>At the bottom right of the screen, there are three circular icons representing traffic lights.</p> <p>Figure 21 Demodulator – Info Screen</p> <p>Note: The easiest method to entering the licence is to receive a Txt file from Veripos helpdesk and copy it onto the DPX system via a USB Flash drive</p>

- 9.2** From the main screen of DPx touch the **i** (information) icon (Fig. 22 arrowed)



Figure 22 Main DPx Screen

Two methods are available for entering the licence code

- 1) Enter the licence code via the keyboard
- 2) Browse for the Text file that contains the Licence Code and click Open, as in Fig 24

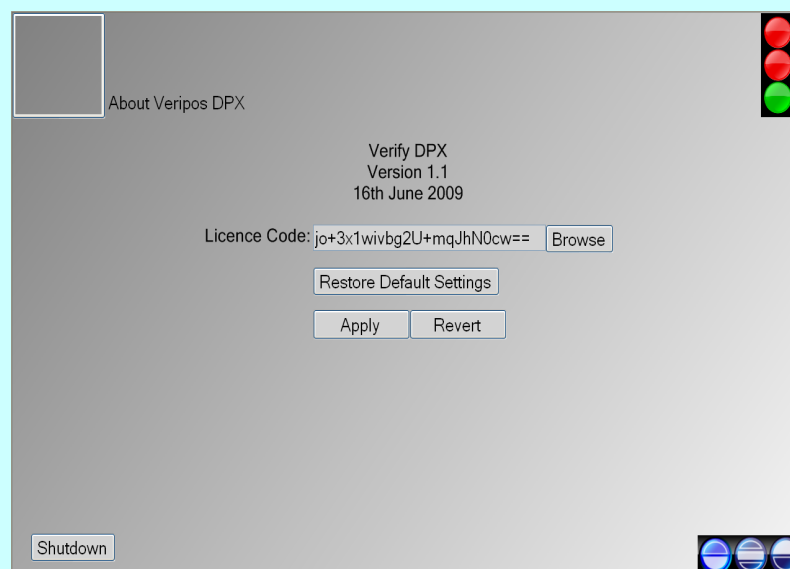


Figure 23 DPx licence Screen

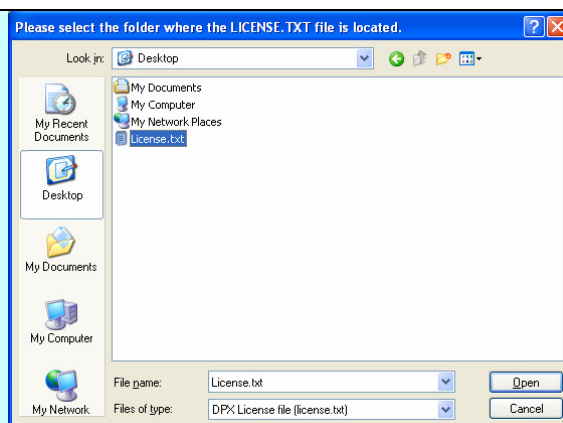


Figure 24 DPx licence Browse Window

click on or touch [Apply](#).

When entered correctly the DPx software application is activated.
That concludes the commissioning of the DPx.

Operational guidance is in the DPx Operating Manual at help.veripos.com

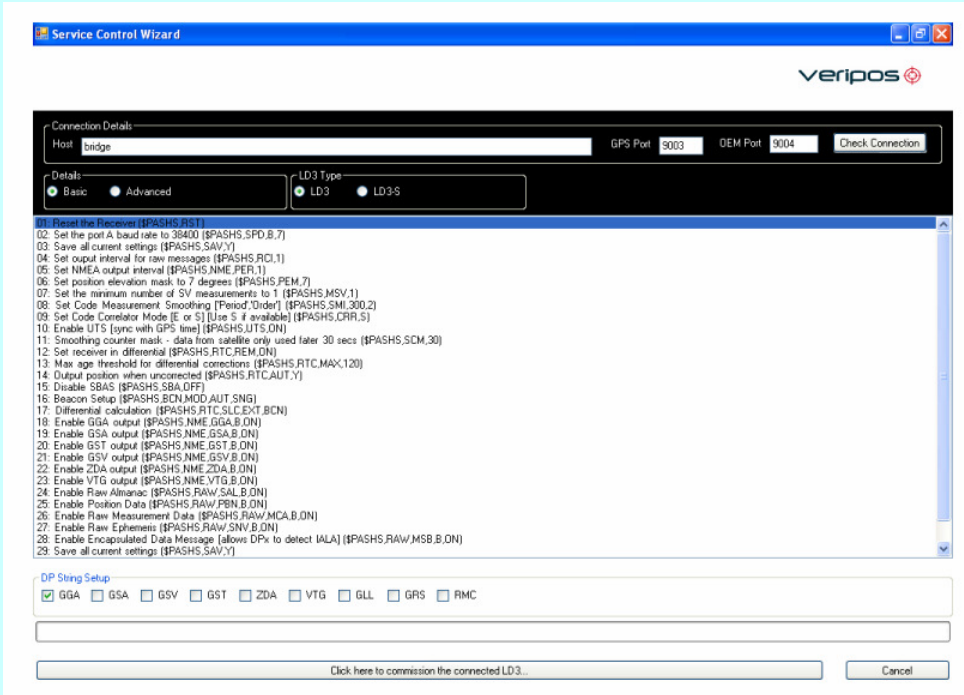
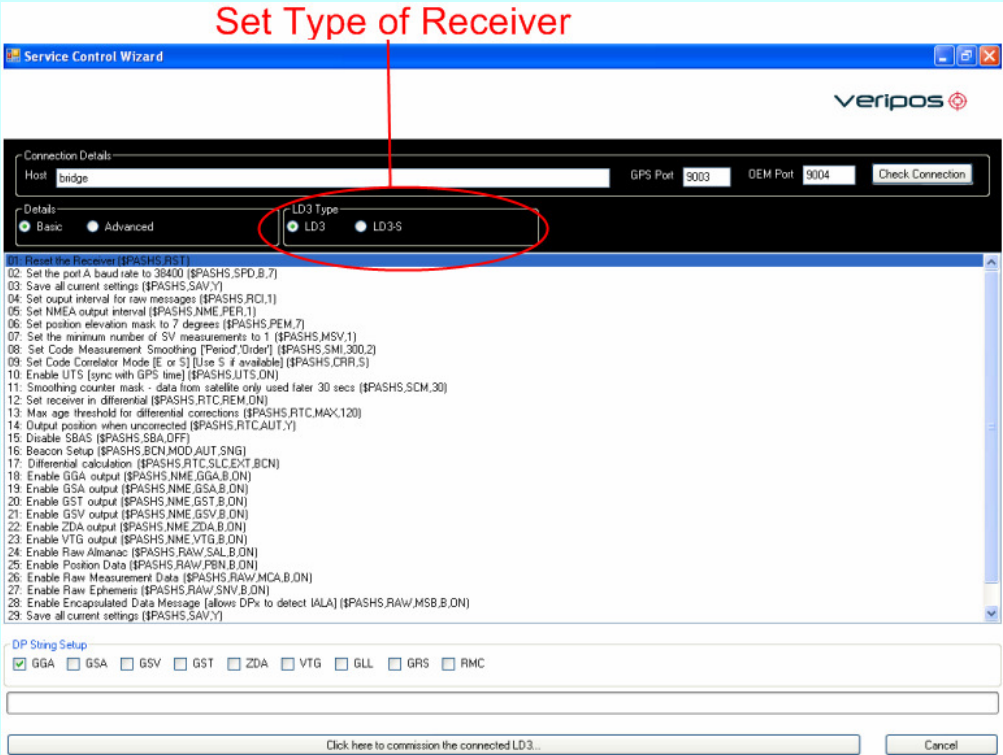
Important

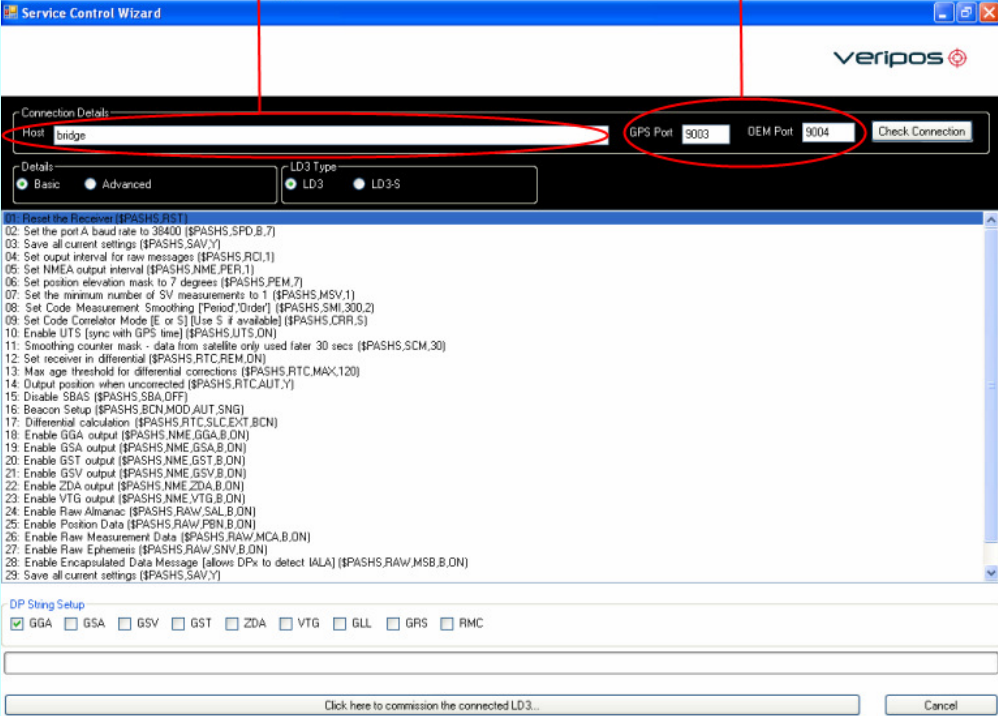
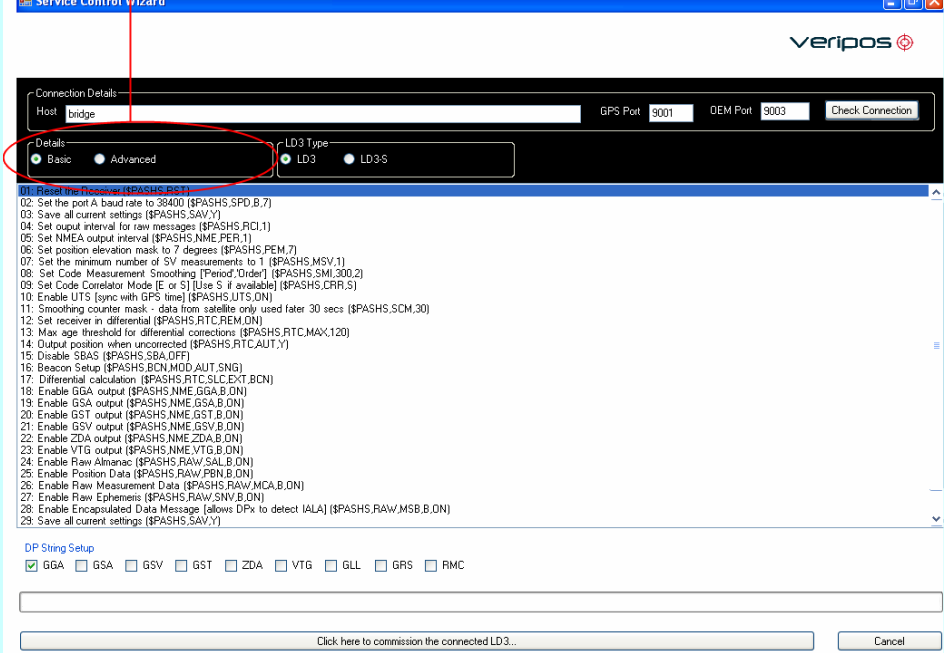
When you have completed commissioning the DPx installation, please remember to detach and **remove the Keyboard / roller ball/ mouse**. This is only ever used by Veripos engineers during commissioning.

Congratulations and thanks for using this quick guide.

Appendix A

Commissioning Tool Advanced Mode

<p>5</p>	<p>Displayed on screen is the Service Control Wizard (Fig.4).</p> <div data-bbox="427 380 1394 1072"></div> <p>Figure 4 Service Control Wizard</p>
<p>5.1</p>	<p>The type of receiver to be configured must be set in the LD3 Type box, as in Fig 5</p> <div data-bbox="408 1223 1415 1975"></div> <p>Fig 5 Commissioning Tool – Set Receiver Type</p>

<p>5.2</p>	<p>The Commissioning Tool ports must be set to GPS Port: 9001 and OEM Port: 9003, as in Fig 6</p> <div data-bbox="411 280 1412 1037"><p>Set to Host: Bridge</p><p>GPS Port: 9001 OEM Port: 9003</p><p>Fig 6 Commissioning Tool - Set Ports</p></div>
<p>5.3</p>	<p>Set the Commissioning Tool to Basic or Advanced Mode as in Fig 7</p> <div data-bbox="438 1249 1385 1944"><p>Set Commissioning Tool to Basic or Advance</p><p>Fig 7 Commissioning Tool – Set Advanced Mode</p></div>

5.4

The display shall change to the Advanced Mode screen as in Fig 8

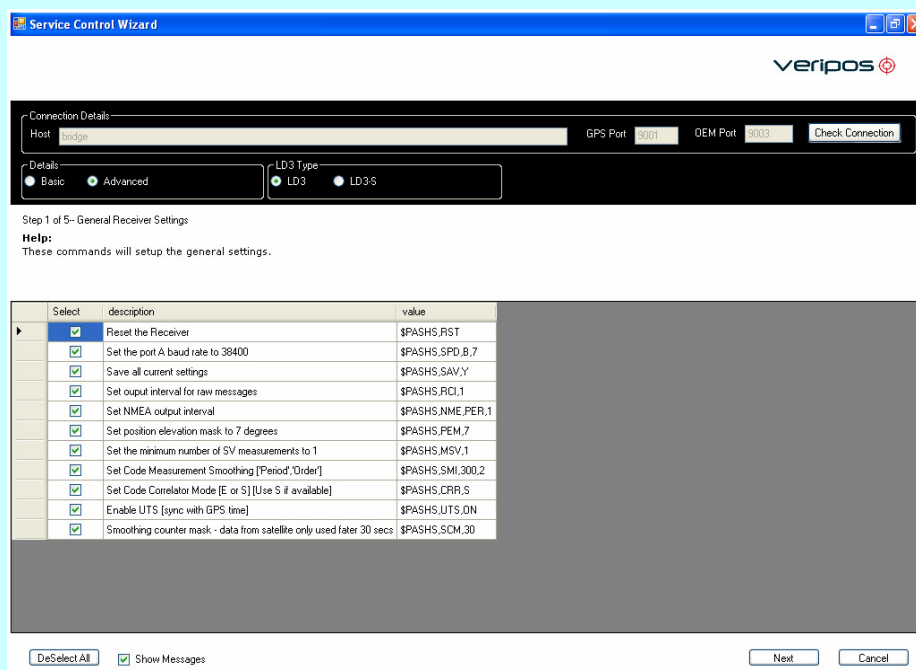


Fig 8 Commissioning Tool – Advanced Screen 1

Ensure the required commands are checked or unchecked

Click Next – a message will appear as in Fig 9

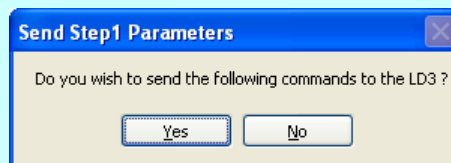


Fig 9 Commissioning Tool – Advanced Screen 1 Conformation

Click Yes

The Commissioning Tool will now commence sending Commands to the Unit

- a) A notification window appears (Fig. 10) asking you to check/ confirm you have set baud rates on the Veripos IO bridge software – in this example, to 9600bps.

DO NOT click OK on this (Fig.10) notification window *until* you have carried out this action in the Bridge IO application.



Figure 10 Notification window

It is vital you make changes to / confirm settings on the Veripos IO Bridge before proceeding.

b) Click on bridge icon at the bottom tool bar to display the IO Bridge interface (Fig 11).

c) On the Bridge IO software interface, click on GPS button (Red oval Fig.11).

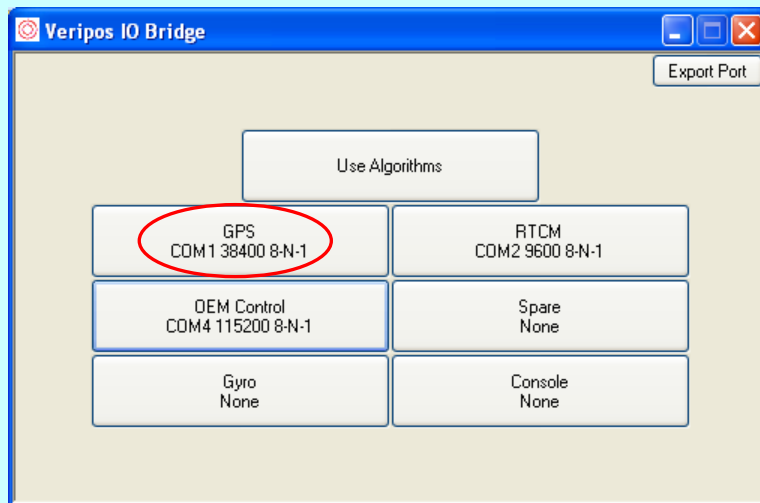


Figure 11 Bridge IO

The Edit GPS IO Parameters screen appears.

d) Now select the drop down arrow against the Baud rate and select 9600 (Figure 12).

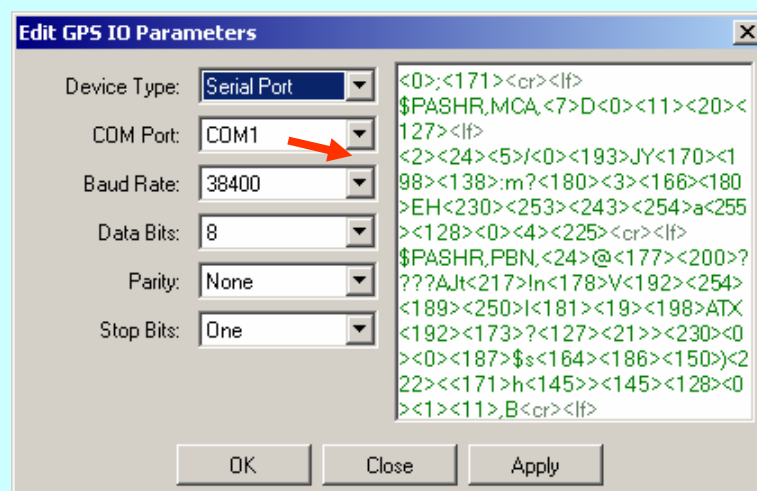


Figure 12 Notification window

Apply, then OK this window

- e) Return to the Service Commissioning Tool Wizard screen.
- f) Now click OK on the prompt that asked for the change of baud rate for GPS data.
- g) Next, an info box asks for the GPS port to be changed to 38400bps (Fig. 13)



Figure 13 The GPS 38400bps prompt

Again, do NOT click OK to this until you have used the Bridge IO software to make the changes using the Bridge IO software.

Follow the sequence c) – e) above, amending to the new baud rate settings as requested.

- h) Finally, return to the Service Commissioning Tool Wizard screen and OK the information box.

5.6 The commissioning tool now moves onto Advanced Screen 2 as in Fig 14

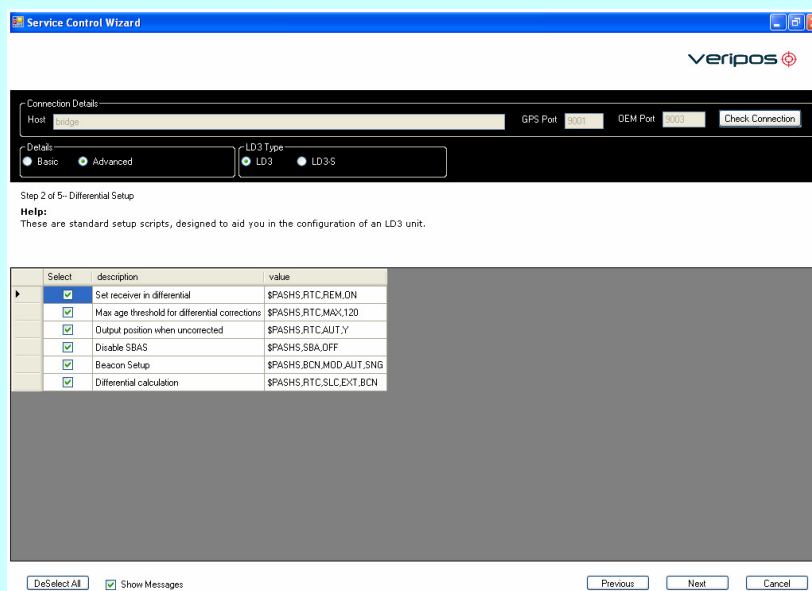


Fig 14 Commissioning Tool – Advanced Screen 2

Ensure the required commands are checked or unchecked

Click Next – Conformation window appears (Similar to Fig 9)

Click Yes

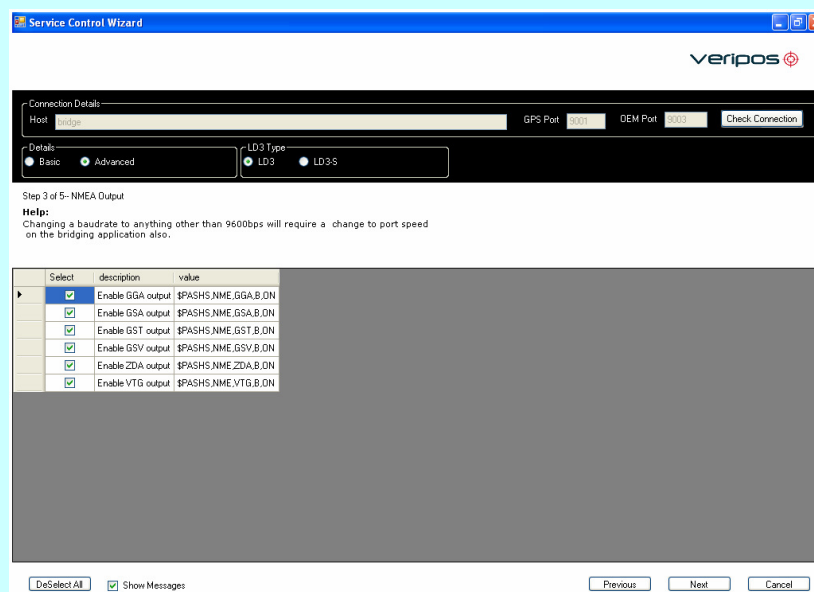
5.7 The commissioning tool now moves onto Advanced Screen 3 as in Fig 15

Fig 15 Commissioning Tool – Advanced Screen 3

Ensure the required commands are checked or unchecked
 Click Next – Conformation window appears (Similar to Fig 9)
 Click Yes

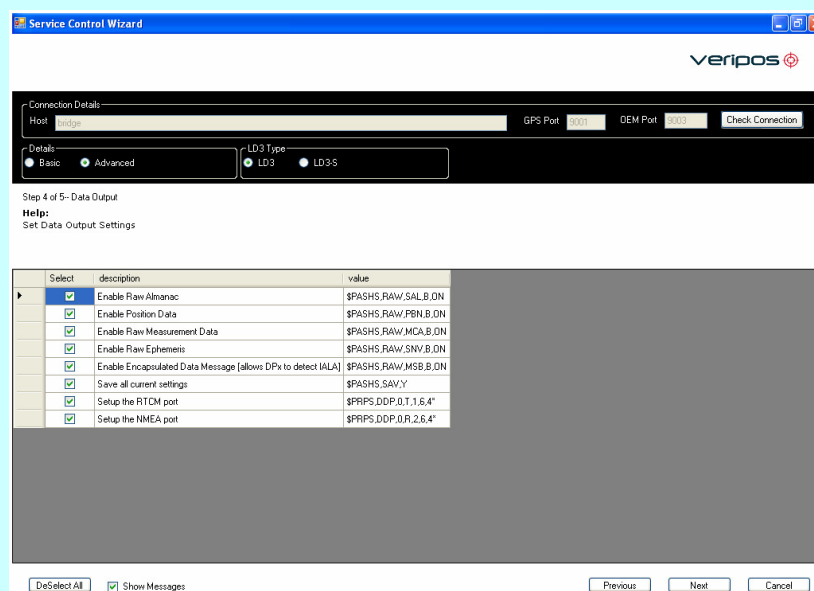
5.8 The commissioning tool now moves onto Advanced Screen 4 as in Fig 16

Fig 16 Commissioning Tool – Advanced Screen 4

Ensure the required commands are checked or unchecked
 Click Next – Conformation window appears (Similar to Fig 9)
 Click Yes

5.7 The commissioning tool now moves onto Advanced Screen 5 as in Fig 17

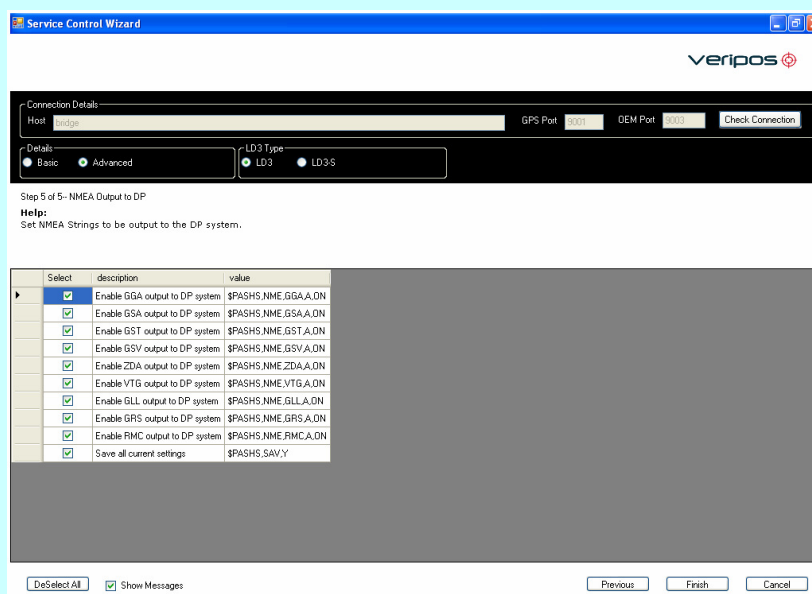


Fig 17 Commissioning Tool – Advanced Screen 5

Tick that are required by the DP and are output on NMEA port of the LD3 or LD3S

Click Finish – Conformation window appears (Similar to Fig 9)

Click Yes – After the commissioning tool has sent the commands the Completed window will appear as in Fig 18 - Click OK

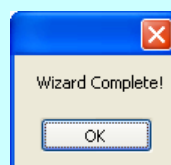


Fig 18 Commissioning Tool – Wizard Complete

Note: As the commissioning Tool does not look for the Acknowledge command this message does not mean that the setup has been successful. The unit should be tested in the DPx and DP Systems to ensure operability.