

INERTIAL PRODUCTS

NETWORK SET-UP GUIDE





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Text Usage

bold	Bold text is used for items you must select or click in the
	software. It is also used for the field names used into the dialog
	box.
Courier	Text in this font denotes text or characters that you should enter
	from the keyboard, the proper names of disk Drives, paths,
	directories, programs, functions, filenames and extensions.
italic	Italic text is the result of an action in the procedures.

lcons



The **Note** icon indicates that the following information is of particular interest and should be read with care.

Important

The **Important** mention indicates that the following information should be read to forbid or prevent a product dysfunction or a faulty operation of the equipment.



The **Caution** icon indicates that the following information should be read to forbid or prevent product damage.



The **Warning** icon indicates that possible personal injury or death could result from failure to follow the provided recommendation.

Abbreviations, Acronyms and terminology

Abbreviations, acronyms and terminology are described in the Inertial Products - Principle & Conventions document (Ref.: MU-INS&AHRS-AN-003).



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1 INTRODUCTION

This document is the Network Set-up Guide for iXBlue inertial products. It describes how to configure the link between a PC and an iXBlue inertial product::

- When the inertial product is directly connected to a PC/laptop
- When then inertial product belongs to an Ethernet network

iXBlue provides Inertial Navigation System (INS) and Attitude and Heading Reference System (AHRS) with an Ethernet port.

Using an Ethernet port, many configurations of integrating inertial products are made possible. This Ethernet link allows passing over the limitations imposed by the serial standards (namely RS232 and RS422), i.e. the transmission distance, bandwidth and low throughput, and allows a smooth connection to the inertial product web MMI.

In case Ethernet is not available on system side, the link between the PC and the inertial system can still be performed in serial using the repeater port, using PPP (Point to Point Protocol). Connection will be slower in this case, but still possible when required.



2 VERSION OF CONCERNED PRODUCTS

The current edition of this document is applicable to the following CINT firmware versions of these inertial products:

	•
Product	Firmware version
4th generation AHRS:	
OCTANS	higher than CINT3.86 version
OCTANS SUBSEA	
OCTANS NANO	
3rd generation INS:	
PHINS	
ROVINS	
ROVINS NANO	
 PHINS 6000 	
PHINS COMPACT C7	
PHINS COMPACT C3	higher than FrmWCINT_INS_v5.32 version
HYDRINS	
MARINS	
LANDINS	
QUADRANS	
AIRINS	
ATLANS	

Table 1 – List of products and firmware

For software configuration, refer to the following documents, depending of your product:

- For Web interface configuration:
 - □ Inertial Products-Web-based interface user guide (ref.: MU-INSIII-AN-021)
 - □ INS, Land & Air applications Web-based interface user guide (ref.: MU-INSIII-AN-022)
- For advanced control command configuration:
 - □ AHRS Advanced Configuration User Manual (Ref.: MU-AHRS-AN-002)
 - □ INS Advanced Configuration User Manual (*Ref.: MU-INSIII-AN-004*)



This manual applies to several products. Some sections apply only to a restricted number of products. In this document, these products are named "inertial products".

Contact iXBlue customer support to get the updated firmware version to be downloaded into your system. The contact information is detailed in the *Inertial Products - General Information* document (*Ref.: MU-INS&AHRS-AN-007*).



3 SPECIFICATIONS FOR COMMUNICATION BETWEEN THE PRODUCT & PC

The inertial product can be connected to a PC for configuration, installation and display purposes through the Web-based User Interface. The I/O signal is available:

- By default and preferably, through the Ethernet connector (see the User Manual of your product)
- Or, when the Ethernet connection is not possible, through the repeater link from a serial I/O connector (see the *User Manual* of your product)

Ethernet link

For the Ethernet link (see section 4.1 for more details), the following parameters are default defined:

- IP Address: 192.168.36.1xx, xx being the last two numbers of your inertial product serial number
- Connection through http web server (port 80)
- Repeater flow available in TCP (port 8110)

Serial link

The communication by serial link is slower and more difficult to configure than the Ethernet link (Refer to *section 4.1* to know how to configure it). By default, serial repeater link is configured as follows:

- Protocol used: PHINS Standard for INS product, OCTANS Standard for AHRS product (Refer to INS Interface Library (Ref.: MU-INSIII-AN-001) for a description of PHINS Standard data frame output and to AHRS Interface Library (Ref.:MU-AHRS-AN-003) for a description of OCTANS Standard data frame output)
- Baudrate : 57.6 kBauds for PHINS Standard, 19.2 kBauds for OCTANS Standard
- Flow Control: Odd, 2 stop bits
- Refresh rate : 5 Hz (200 ms)
- To communicate in TCP/IP with the PC, PPP mode must be activated. In this case, the PHINS Standard protocol is disabled and replaced by PPP protocol.



4 CONNECTING AN INERTIAL PRODUCT DIRECTLY TO A PC/LAPTOP

A PC/Laptop can be connected directly to an inertial product for configuration purposes as well as for data insertion and extraction (data in/out). This connection can be made either by Ethernet or by serial link (Point to Point Protocol).

4.1 Ethernet Link

4.1.1 EQUIPMENT REQUIRED

- 1 x PC or Laptop (with an unused Ethernet port)
- 1 x Cat 3/Cat 5 Cross Ethernet Cable (with new PC Generation, it is possible to use straight cable. The PC then manages the pin inversion)

4.1.2 APPROACH



This is the example of PHINS

By default, the inertial product is already assigned with an IP address. When connecting only one PC to the inertial product, it is only necessary to configure the PC to adapt to the inertial product default IP configuration.

4.1.3 SETTING UP THE PC

Assuming that the inertial product has a serial number of XXXX-12<u>34</u>, the last two digits of the serial number is the number <u>34</u>.

- For all products default configuration except LANDINS and ATLANS: By default, in factory, the inertial product IP address is set to 192.168.36.134, and the subnet mask is set to 255.255.0.0.
- For LANDINS:

By default, in factory, the LANDINS Datalogger IP address is 192.168.36.1<u>34</u>, and the subnet mask is 255.255.0.0, by default. The IP address 192.168.36.1<u>35</u> and 192.168.36.1<u>36</u> are also used by the INS and the embedded GNSS.

• For ATLANS:

By default, in factory, the ATLANS IP address is 192.168.36.134, and the subnet mask is 255.255.0.0, by default. The IP address 192.168.36.135 is used by the embedded GNSS.



Before configuring the PC, decide on the PC IP address. This address must be taken from the same subset as the address configured in the inertial product. In this example, we will use IP address 192.168.36.13<u>3</u> for the PC.

Step Action

- 1. Access to Network Connections Window (see Appendix A).
- 2. Right click on Local Area Connection icon and select Properties:









3. Double click on Internet Protocol (TCP/IP) label text.

The Internet Protocol (TCP/IP) Properties window displays:



4. Select the option Use the following IP address and enter 192.168.36.133 for the IP address field and 255.255.0.0 for the Subnet mask.

ou can get IP settings assigner is capability. Otherwise, you ne e appropriate IP settings.	d automatically if your network supports and to ask your network administrator fo
C Obtain an IP address auto	nalically
Uge the following IP addre	
JP address:	192 . 168 . 36 . 133
Sybret mask:	255.255.0 .0
Default gateway:	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
C Obtain DNG arriver addres	i automotically
· Use the following DNS ser	ver addesses
Evelened DNS server.	· · · · · ·
Alternate DNS server.	Contraction (Sec. 5)
	Advanced

- 5. Leave the **Default gateway** and **DNS server** addresses blank.
- 6. Click on **OK** button to validate the modifications.
- 7. End of procedure.



The IP address used here takes into account that the inertial product is using its default configuration with its serial number XXXX-1234. You may change the inertial product IP address and subnet mask. In either case, the subnet mask of both the PC and the inertial product should be the same.

If you need to retrieve the IP address of the inertial product, see section 5.6 of this document.



4.2 Serial Link

Important

This section does not apply to LANDINS because there is no communication possible between LANDINS and a PC or laptop via serial link.

4.2.1 EQUIPMENT REQUIRED

- 1 x PC or Laptop (with an unused Serial port)
- 1 x test Serial Cable (provided)
- 1 x Cat 3/Cat 5 Cross Ethernet Cable (for changing the inertial product IP address) (With new PC Generation, it is possible to use straight cable. The PC then manages the pin inversion)

4.2.2 APPROACH



IP address :192.168.36.202 This is the example of PHINS IP address :192.168.36.201

The connection between the inertial product and the PC is made through a serial link. The inertial product works as a PPP Server that provides the ability to transport TCP/IP traffic over the serial link.

4.2.3 INERTIAL PRODUCT CONFIGURATION

The inertial product is already assigned with an IP address. Before connecting the serial link, you need to activate the PPP mode using an Ethernet link and the Web-based User Interface (see section 7).

When PPP mode is activated, the inertial product will start a PPP server listening on repeater serial port at next reboot. In this configuration, the INS IP address over PPP will be automatically set to 192.168.36.201 and the PC will connect as a PPP client to the product using dialup connection. Thus, to connect to the product Web pages in PPP mode, open <u>http://192.168.36.201</u> on your browser after that the PC/product connection is established. **Note that in this mode, first page loading can take several minutes.**



4.2.4 SETTING UP THE PC

4.2.4.1 Creating a Direct Connection between your Inertial Product and your PC or Laptop

To create a serial direct connection between your laptop/PC and the inertial product, follow this procedure:

Step	Action
1.	Connect the inertial product to your PC/laptop using the provided test cable.
2.	Access to Network Connections Window (see Appendix A).
3.	On the left panel of the Network Connections window, click on Create a New connection . <i>The</i> New Connection wizard <i>opens</i> .
4.	Read the Welcome page then click Next . <i>The</i> Connection Type Selection <i>appears</i> .
5.	Select Set up an advanced connection then click Next . <i>The</i> Advanced Connection Options <i>page appears</i> .
6.	Choose Connect directly to another computer then click Next . <i>The</i> Host or Guest? <i>page appears.</i>
7.	Choose Guest then click Next . <i>The</i> Connection Name <i>page appears.</i>
8.	In the Computer name box, type a name for the connection. For example type in PHINS. On the Select a Device page, select a Communications Port , and then click Next .
9.	• If you want this connection to be made available to all users of this computer, on the Connection Availability page, click Anyone's use , and then click Next .
	• If you want to reserve the connection for yourself, select My use only , and then click Next . <i>The</i> Completing the New Connection Wizard <i>page, appears.</i>
10.	Click Finish.
11.	Once created, right click on the new connection name created and choose Properties <i>The</i> Properties <i>window of the new connection appears.</i>
12.	 Under General tab, click Configure button. The Modem Configuration window opens, set the Maximum speed (bps) to 57 600 and unselect 'Enable hardware flow control' option then click OK.
	 Under Options tab, unselect 'Prompt for name and password, certificate, etc.' option and click OK.

- Click **OK** in the Properties window.
- 13. End of procedure.



4.2.4.2 Activating the New Connection

Step	Action
1.	Access to Network Connections Window (see Appendix A).
2.	In the Network Connections window, activate the new connection by double clicking on its name.
3.	End of procedure.

4.2.4.3 Creating a serial Direct Connection under Windows 7

Installing a New Modem

Step Action

4. Open the Control Panel:

Control Panel 🕨 All Cor	ntrol Panel Items 🕨	Search Control Panel	
File Edit View Tools Help			
Adjust your computer's settings		View by: Small icons 🔻	
P Action Center	😨 Administrative Tools	🜉 Adobe Gamma	
Adobe Version Cue CS2	🕞 AutoPlay	🐌 Backup and Restore	
🖗 BitLocker Drive Encryption	💶 Color Management	Configuration de IDT Audio	
Courrier	Credential Manager	Pate and Time	
🧒 Default Programs	Dell Touchpad	📑 Desktop Gadgets	
🚔 Device Manager	n Devices and Printers	Company Display	
Ease of Access Center	🗾 Flash Player	Folder Options	
A Fonts	FreeFall Data Protection	🚽 Getting Started	
🖏 HomeGroup	🔏 Indexing Options	Intel(R) Graphics and Media	
🛜 Intel® PROSet/Wireless Tools	💮 Internet Options	🗿 Java	
Expoard Expoard	Location and Other Sensors		
Network and Sharing Center	🛄 Notification Area Icons	Paramètre de langue Windows Live	
Performance Information and Tools	Mersonalization	Phone and Modem	
Power Options	🛐 Programs and Features	P Recovery	
🔗 Region and Language	🐻 RemoteApp and Desktop Connections	I Sound	
Speech Recognition	🛞 Sync Center	🕎 System	
L Taskbar and Start Menu	Troubleshooting	& User Accounts	
Windows CardSpace	Windows Defender	Windows Firewall	



5. Click on **Phone and Modem** icon.

The Local Information window opens.

You don't need to fill in the form, click OK.

The Phone and Modem window opens.

Choose the Modems tab:

Dial	ing Rules Modems	Advanced		
	🐌 The following	g modems are installe	d:	
	Modem		Attached To	
		😗 Add	Remove Prop	erties
		OK		Annha



6. Click on Add... button.

The Add Hardware Wizard is activated, a window opens.

Install New Moo Do you want ¹	lem Vindows to detect your modem?
	 Windows will now try to detect your modem. Before continuing, you should: 1. If the modem is attached to your computer, make sure it is turned on. 2. Quit any programs that may be using the modem. Click Next when you are ready to continue. Don't detect my modem; I will select it from a list.
	Cancel

Select Don't detect my modem; I will select it from a list. option then click Next.

7. Under Models list, select Communication cable between two computers option:









8. Choose Selected ports.

The available list of ports displays:

You have selected the following modem:	
Communications cable between two computers	
On which ports do you want to install it?	
C All ports	
(• Selected ports	
COM3 COM4	
COM5	
COM6	
-	

Choose the port which is connected to the Inertial Product then click Next.

The message "Your modem has been set up successfully" displays. Click Finish.

9. This new modem appears now in the Phone and Modem window:

S Phone and Modem	X
Dialing Rules Modems Advanced	
The following modems are installed:	
Modem	Attached To
Communications cable between two comp	COM3
🛞 Add 🛞 R	Properties
ОК	Cancel Apply

- 10. Click **OK** in the *Phone and Modem* window.
- 11. End of procedure.



Configuring the Connection

Step Action

1. Open the Control Panel then click on **Network and Sharing Centre** icon.

🕽 🌍 🗢 🔆 🕨 Control Panel 🕨	All Control Panel Items Network and Sharing Center	✓ ✓ Search Control Panel
File Edit View Tools Help		
Control Panel Home Manage wireless networks Change adapter settings Change advanced sharing settings	View your basic network information and EU_LT_031 (This computer) View your active networks issea.local Domain network Change your networking settings	Set up connections Internet Connect or disconnect Access type: Internet Connections: Connexion au réseau local
Seado	 Set up a new connection or network Set up a wireless, broadband, dial-up, ad hoc Connect to a network Connect to a network Connect or reconnect to a wireless, wired, di Choose homegroup and sharing options Access files and printers located on other net 	, or VPN connection; or set up a router or access point. al-up, or VPN network connection. work computers, or change sharing settings.
Adobe Version Cue CS2 HomeGroup Intel® PROSet/Wireless Tools Internet Options Windows Firewall	Troubleshoot problems Diagnose and repair network problems, or gr	et troubleshooting information.

2. Click on **Set up a new connection or network** text label. *The window* Set up a Connection or Network *opens.*

Choose Set up a dial-up connection option then click Next.

The window Create a Dial-up Connection opens.



3. Except for the **Connection name** field, the values you enter here are not important. Here, for example, we have entered INS PPP for the **Connection name**:

Dial-up phone number:	0	Dialing Rules
User name:	0	
Password:	0	
	Show characters Remember this password	
Connection name:	INS PPP	
🌍 📝 Allow other people to	use this connection	

Then click Connect.

The connection fail, click on **Set-up connection anyway** and the following window displays:







- 4. To configure the settings of the serial port:
 - Change the properties of the rasphone.pbk file which is under C:\ProgramData\Microsoft\Network\Connections\Pbk to enable modifications inside.
 - Using Notepad for example, edit the rasphone.pbk file. And change the initial values of some parameters to obtain the following configuration:
 Type=4
 MEDIA=serial
 Port=COM3 (if the connection coming from the inertial Product enters from the COM3

```
of your computer)
Device= Communications cable between two computers
ConnectBPS=57600
```

• Save the rasphone.pbk file.



- 5. To establish the connection:
 - Either double click on the rasphone.pbk file.
 - Or in the Control Panel/Network and Sharing Centre, click on **Connect or disconnect** text label:

Control Panel +	All Control Panel Items Network and Sharing Center	Search Control Panel	
ile Edit View Tools Help			
Control Panel Home Manage wireless networks Change adapter settings Change advanced sharing settings	View your basic network information and se EU_LT_031 (This computer) View your active networks issee.Jocal Domain network Change your networking settings Set up a new connection or network Set up a wireless, broadband, dial-up, ad hoc, or	et up connections See full map Internet Connect or disconnect Access type: Internet Connections: Connexion au réseau local or VPN connection; or set up a router or access point.	
See also Adobe Version Cue CS2 HomeGroup Intel® PROSet/Wireless Tools Internet Options Windnaws Firewall	 Connect or reconnect to a wireless, wired, dial- Choose homegroup and sharing options Access files and printers located on other network Troubleshoot problems Diagnose and repair network problems, or get t 	up, or VPN network connection. ork computers, or change sharing settings. troubleshooting information.	

Then double click on INS PPP.

Currently connected to:	+1	1
ixsea.local Internet access		
Dial-up and VPN	^	
INS PPP	9j9	
Connexion réseau sans fil	^	4
iXBlue	Mer	
ixsea-public	201	
NUMERICABLE-13D5	all	
NUMERICABLE-AA6B	liter	
NUMERICABLE-C27E	lite	
NUMERICABLE-01B8	.ell	•

The connection establishes.

6. End of procedure.



5 INSERTING AN INERTIAL PRODUCT INTO AN ETHERNET NETWORK

The main advantage of inserting the inertial product into an Ethernet network is the ability to configure it and access to its data from any part of the network.

The advantage not only extends to wired networks, but also to wireless ones given that the correct equipment is used.

5.1 Equipment Required

- 1 x Ethernet Wireless Router with incorporated wired switch (Router should have LAN address configuration functionality)
- 1 x PC/Laptop with a free Ethernet port or a wireless adaptor
- 2 x Cat 3/Cat 5 Straight Ethernet Cable

Only 1 cable is required if the PC/Laptop has a wireless adaptor

5.2 Approach



By default, the inertial product is already assigned with an IP address. Depending on the nature of the network where it is inserted, the inertial product is required to be configured so that it adapts to the Ethernet network. If the Ethernet network has not been setup, the user may take reference from the next section to select IP addresses.



5.3 Choosing an IP Address (If Default Configuration is Not Used)

If you decide to change the default configuration of the inertial product, you will need to provide two (four for LANDINS) IP addresses for both the inertial product and the PC/Laptop. It is important to keep track of the addresses entered on both systems as their addresses are different.

You will need to setup a private network between the PC and the inertial product, thus you will need to select an address for the PC and the inertial product.

In private network addresses, it is usually recommended to use addresses of

- Either Class B (169.254.0.0 to 169.254.255.255) Subnet Mask: 255.255.0.0
- Or Class C (192.168.0.0 to 192.168.255.255) Subnet Mask: 255.255.255.0

Important

For Class C, the first (e.g. 192.168.0.0) and last (e.g. 192.168.255.255) addresses are reserved and therefore they cannot be used.

It is recommended to select two addresses from the same range set. Below are 2 examples:

- Example for LANDINS:
 - □ Either <u>169.254.0.1</u> to <u>169.254.0.3</u> for the LANDINS and <u>169.254.0.4</u> for the PC (Subnet 255.255.0.0)
 - Or <u>192.168.1.10</u> to <u>192.168.1.12</u> for the LANDINS and <u>192,168.1.13</u> for the PC (Subnet 255.255.255.0)
- Example for the other inertial products (i.e. except LANDINS)
 - □ Either <u>169.254.0.1</u> for the inertial product and <u>169.254.0.2</u> for the PC (Subnet 255.255.0.0)
 - □ Or <u>192.168.1.10</u> for the inertial product and <u>192,168.1.11</u> for the PC (Subnet 255.255.255.0)

Important

Refer to section 4.1.3 to configure IP address for PC and section 7 to configure the IP address of the inertial product.



5.4 IP Address Options

Important

This paragraph does not apply to LANDINS.

Inserting the inertial product into the network mainly depends on the configuration of the local private network. The system integrator can have:

- Either set DHCP=ON, so that the inertial product will acquire IP address information from the local DHCP Server/Router. No setting of IP address will be required.
- Or set DHCP=OFF, and the user will need to specify an address for the inertial product, which is taken from the same subset of the local private network.

5.5 Inertial Product DHCP Option

Important

This paragraph does not apply to LANDINS.

LANDINS cannot be set into DHCP mode due to the three IP addresses needed.

Most routers sold today do come along with DHCP functionality. This allows the router to automatically assign unused IP addresses to all devices connected to the network.

- If the network where the inertial product is inserted is DHCP enabled, you may use this option for the setup
- If the network is not DHCP enabled, you will need to specify an address for the inertial product, which is taken from the same subset of the local private network.

Refer to section 7 to configure DHCP functionality.



5.6 Retrieving the IP Address of the Inertial Product

Important

This paragraph does not apply to LANDINS.

If you do not know the inertial product IP address or if you want to know which IP address was attributed by the DHCP server, connect the repeater cable to your PC and start a serial terminal (HyperTerminal, BBTALK, etc.) configured at 19200 baud, no parity, 1 stop bit, 8 data bits. Reboot the inertial product once connected. You will get the inertial product boot sequence message that contains its attributed IP address (line beginning with "IFCONF"):

```
Image QNX iXSea v2.10 generee le 28/04/2010 par FAP
Welcome to eOCTANS
DRV : 0 00198C000199
WAIT_EN : 0
IFCONF 1 : 0 192.168.36.199
IF_UP 1 : 0
IDEQNX3 : 0
FIN ---
```

5.7 Testing the Connection

You can check the connection by using the Product IP address and some windows commands.

See Appendix B.



6 SETTING UP THE DATA CONNECTION OF THE INERTIAL PRODUCT

The inertial product features several data outputs/inputs. All these inputs and outputs can be accessed via one single Ethernet cable.

To differentiate between the individual inputs and outputs within the Ethernet connection, the data is transmitted using different port numbers. Each port number used will be represented by one socket port.

There are four transport modes available, namely:

TCP Server	Protocol used: TCP
	Address specified: N.A.
	This requires a client to establish the connection to the inertial product. The address for the client to access to the inertial product is the same address used in the repeater port.
TCP Client	Protocol used: TCP
	Address specified: address of server that receives the data.
	The inertial product will establish the connection to the server.
UDP	Protocol used: UDP.
	Address specified: address of terminal that receives the data.
	The specific terminal will need to listen for the data from the inertial product.
	Other terminals in the network will not be able to receive this data through normal means.
UDP Broadcast	Protocol used: UDP.
	Address specified: broadcast address is limited to subnet mask. For example, if the subnet mask is 255.255.0.0 and system IP is 192.168.36.3, the broadcast address will be 192.168.255.255. All connected terminals will be able to receive the same data simultaneously
	by opening the same port to listen for the data.
UDP Multicast	Protocol used: UDP.
	Address specified: multicast subscription group that receives the data.
	Equipment that need to receive the output flow will have to subscribe to the same UDP multicast address and port. Multicast transmission method allows sending the same information to several different targets without broadcasting
	Lit to the entire network, thus equing network handwidth





For the Ethernet version of the Repeater port, Web-based User Interface uses TCP Client as default transport mode to access the inertial product. This setting cannot be changed. This means there can be only one terminal connected to the inertial product repeater port.

6.1 Port Numbers

In computer applications, port numbers are used to identify how data come from the process that produces the data, to the end process which receives the data. The inertial product uses port numbers to separate data from each port so that data that come from the IP address can be differentiated.

You can select any number above 1024 as port numbers. Port number for repeater port is fixed at 8110. By default, the 8111 to 8120 are used for outputs and inputs of the inertial product, except for LANDINS: in this last case the ports 8110 and 8113 are reserved for internal use.

To prevent conflicts with other systems or applications, it is important that no identical numbers are used and that reserved ports (e.g., 8121) are not used.

6.2 Configuring a Port with the TCP Transport Modes

The following parameters and their values will be needed to configure the port:

- Transport: TCP Server or TCP Client
- Port: any 4-digit number you want that is above 1024 (e.g. 8111)

The port number selected must be the same as the one used on the server or client.

The choice between Server and Client depends on the configuration of the whole system. Whether the inertial product establishes the connection or the server is the one that establishes the connection.



6.3 Configuring a Port with the UDP Transports Modes

Unlike TCP which requires TCP clients to establish a connection/handshake with the server before data is streamed, UDP packets will be streamed onto the network once the inertial product is powered ON. This means that the data transmission is unsecured and the server does not guarantee the data packets are received in order/sequence at the client side. There will be instances where packets are dropped. Such instances mainly depend on the integrity of the network. Fortunately, UDP still ensures that the data received is same as it is transmitted.

However, UDP has its advantages. UDP is faster, throughput is better than TCP due to smaller packet headers used. Selecting **UDP Broadcast** option under Transport field, the inertial product will stream data onto the network. This means everyone connected to that network will be able to receive the data, in other words for the same output port number, more than one computer will be able to receive the same data.

Configuring for a UDP connection is similar to configure a TCP connection. The only difference will be to select **UDP** or **UDP Broadcast** under **Transport** option.



7 CONFIGURING WITH THE WEB-BASED USER INTERFACE

7.1 LANDINS Products

7.1.1 STANDARD CONFIGURATION

Window access Use **NETWORK** option under **INSTALLATION** menu to access the Network parameters (see Figure 1 and Figure 2).



Figure 1 - NETWORK page (internal GNSS case)



	navigation data maintenance EN
CONTROL INSTALI	LATION SETUP DATA LOGGING
ETHERNET BOOT SETTINGS	
IP Address	192.168.36.117
INS IP Address	192.168.36.118
Net Mask	255.255.0.0
Cancel	ОК

Figure 2 - NETWORK page (external GNSS case)

The parameters are the following:

- **IP address**: this is the IP address of the Web-based User Interface and of the data logger (to download recorded files)
- **INS IP address**: this is the IP address used for the protocols output by Ethernet stream (real time mode)
- GPS IP address (present only for the internal GNSS case): this is the IP address of the internal GNSS. This IP address is used for monitoring and configuration of the embedded GNSS receiver.
- Net Mask: this is the common network mask address

The PC IP address must be taken from the same subset as the IP address configured in LANDINS and the subnet mask of both the PC and LANDINS should be the same.



7.1.2 DEFAULT CONFIGURATION

This section gives the default values programmed used to configure a LANDINS product. These values are given in the *Ethernet Factory Setting list*. This is a document provided with your product.

The LANDINS default configuration is listed below:

- IP address: 192.168.36.1xx (xx being the last two numbers of the LANDINS serial number)
- **INS IP address**: 192.168.36.1(xx+1) (xx being the last two numbers of the LANDINS serial number).
- GNSS IP address (present only for the internal GNSS case): 192.168.36.1(xx+2) (xx being the last two numbers of the LANDINS serial number).
- Net Mask: 255.255.0.0



7.2 ATLANS Products

7.2.1 PRE-REQUISITE

Window access

Use **NETWORK** option under **INSTALLATION** menu to access the **NETWORK SETTINGS** parameters (see Figure 3).

	navigation data events viewer maintenance op	tions
CONTROL	INSTALLATION SETUP DATA LOGGING	
NETWORK SET		
Vetwork ·····		
DI	HCP Client	
IP	Address 192 • 168 • 36 • 100	
Ne	et Mask 255 • 255 • 0 • 0	
G	iateway 192 • 168 • 36 • 100	
▼ Internal GN	ISS receiver	
IP	Address 192 • 168 • 36 • 101	
 System Alia 	as	
Na	ame ATLANS	
Na	ame Server 192 • 168 • 36 • 100	
PPP Server	٢	
Er	nabled	
IN	IS IP Address 192 • 168 • 100 • 201	
PC	C IP Address 192 • 168 • 100 • 202	
Cancel	ОК	

Figure 3 – ATLANS- NETWORK page



The Internal GNSS receiver field is not displayed if there is no internal GNSS receiver.



The parameters are the following:

- **IP address**: this is the IP address of the Web-based User Interface and of the data logger (to download recorded files)
- Net Mask: this is the common network mask address
- Internal GNSS receiver IP address (present only for the internal GNSS case): this is the IP address of the internal GNSS. This IP address is used for monitoring and configuration of the internal GNSS receiver.
- **INS IP address**: this is the IP address used for the protocols output by Ethernet stream (real time mode)

The PC IP address must be taken from the same subset as the IP address configured in ATLANS and the subnet mask of both the PC and ATLANS should be the same.

7.2.2 DEFAULT CONFIGURATION

This section gives the default values programmed used to configure an ATLANS product. These values are given in the *Ethernet Factory Setting list*. This is a document provided with your product.

The ATLANS default configuration is listed below:

- **INS IP address**: 192.168.36.1(xx) (xx being the last two numbers of the ATLANS serial number).
- GNSS IP address (present only for the internal GNSS case): 192.168.36.1(xx+1) (xx being the last two numbers of the ATLANS serial number).
- Net Mask: 255.255.0.0



7.2.3 CONNECTING INTERNAL GNSS VIA ATLANS WITH ETHERNET

The GNSS inside the ATLANS is directly visible on the same network as the ATLANS INS.

Step Action

- Read the Internal GNSS receiver address configured in the NETWORK SETTINGS page (Figure 3).
- 2. Enter this address in your browser.

The following window is displayed.

	Receiver	Position	Attitude		
	Serial Number: 3013380	Lat: N48°53'57.7599" 0.561m	Heading: N/A N/A	SBAS Mo	Attitude
—	IP Address: 192.168.133.210	Lon: E2°3'50.0756" 0.301m	Pitch: N/A N/A	1 Co	rrections
septentrio	Uptime: 0d 00:22:44	Hgt: 154.445m 0.970m	Roll: N/A	🖗 Lo	gging
Overview	GNSS TERRAST	AR Communication	Corrections NMEA/SI	3F Out Logging	Admin
Qualit	y Indicators				
	<i>∽</i> *	5			
			7		
	Overall I 10/10	Main signals Main R الني 10/10 <u>الني</u>	Fpower C 10/10	0/10	
GNSS		a cr	(Recition: 0. Track: 10)		
		or GL	ONASS (Position: 9, Track: 10))	
		SE SE	AS (Position: 0, Track: 5)	, 	
	SBAS	💑 Q2	ZSS (Position: 0, Track: 0)	J	
TERR	ASTAR				
	(() ()	<u> </u>	ERRASTAR'		
	Beam: AORE		No TERRAS	TAR Access	
_ Attitu	de				
, Acticu	Mode: 🔀 No Attitude		No Heading	permission	

You are now connected to the ATLANS internal GNSS receiver web configuration page.

3. End of procedure.



7.2.4 CHECKING COMMUNICATION BETWEEN GNSS AND ATLANS

Once the GNSS is configured, check that ATLANS communicates well with the GNSS. For that:

Step A	Action
--------	--------

- 1. Plug in ATLANS (Ethernet, GNSS antenna and power supply cables).
- 2. Launch the Web-based user interface of ATLANS.
- 3. Click on **INSTALLATION** menu then select **INPUTS** option.
- 4. Check that GNSS, UTC and DMI are effectively configured on the internal port: presence of blue dots in the **Internal** column.

		navigation data ev	vents viewer mainten	ance optio
CONTROL	INSTALLATIO	N SETUP	DATA LOGGING	
INPUT AND EX	CTERNAL SENSORS S		rs	
	Input A	Input B	Internal	
Protocol	NONE	NONE	NONE	
GNSS			•	
UTC			•	
UTC DMI			:	



5. Check, after few minutes, that GNSS data is well received by ATLANS.

In the Input/output area (DETAILED STATUS left) of the CONTROL page must appear:

- Internal GNSS
- Pulse PPS activity

In the **Ext. Sensors** area (**DETAILED STATUS** right) of the **CONTROL** page must at least appear:

- GNSS Reception (for GNSS)
- UTC1 synchro

Heading 90.651° Roll 9.049° Pitch -6.724°		Latitude 48°52'42.4146" N Longitude 2°5'19.2777" E Altitude 97.58 m
Speed 0.000 kt	- ATLANS	System ready
Input / Output	System	Ext. Sensors
Internal GNSS Input A	Navigation mode Alignment Fine alignment GNSS altitude Fast alignment	GNSS valid Altitude valid ZUPT Mode enabled ZUPT Mode valid GNSS reception Altitude reception
XTERNAL SENSORS		

6. End of procedure.



7.2.5 RECEPTION OF DIFFERENTIAL CORRECTIONS ON ATLANS INTERNAL GNSS

The internal GNSS of ATLANS can receive differential corrections (CMR, RTCM) by two different ways:

- Using the GNSS serial port of the serial connector (corresponding to GNSS COM1).
- By Ethernet, through ATLANS.

7.2.5.1 Serial Port

Step Action

1. Connect to the internal GNSS receiver address via your browser.

The following window is displayed.

Ç septentrıo	Receiver Serial Number: 3013380 IP Address: 192.168.133.210 Uptime: 0d 00:22:44	Position Lat: N48°53'57.7599" 0.561m Lon: E2°3'50.0756" 0.301m Hgt: 154.445m 0.970m	Attitude Heading: N/A N/A Pitch: N/A N/A Roll: N/A	SBAS Mo II Overal Quality	Attitude RRASTAR rrections gging
Overview	GISS TERRAST/	AR Communication	Corrections NMEA/St	3F Out Logging	Admin
GNSS-	sBAS	all 10/10 all	Power of all 1 10/10 all 1 constitution: 9, Track: 10 constitution: 9, Track: 11 AS (Position: 0, Track: 5) TSS (Position: 0, Track: 0))	
Attitude	Beam: AORE	``T	'ERRASTAR' No terras	TAR Access	

2. Select Communication – Serial Port menu.

The following window is displayed.

Ç septent	s II II II II	Receiver erial Number: 301338 P Address: 192.168.1 ptime: 0d 00:26:54	33.210	Lat: N48 Lon: E2° Hgt: 154	Position °53'57.7617" 0.5 3'50.0707" 0.3 .392m 0.9	i6 1m i09m i8 1m	Heading: N Pitch: N Roll: N	/A /A /A /A	N/A N/A	⊕s <u>⊪∎</u> c	BAS Iverall Quality	≥ ⊗	No Attitude TERRASTAR Corrections Logging	
Overview Communicatio	GNS n > Serial Port	SS TER	RASTAR	Col	mmunication		Corrections		NMEA/SBI	Out	Loggi	ing		Admin
Í	-COM Port Se	ttings						_						
	Paud Pate	COM1 115200 baud -	COM2	w buc	115200 haud	-	115200 baud	-						
	Data Bits	8 hits V	R hits	auu ·	8 hits	• •	8 hits	• •						
	Parity	No -	No	-	No	Ŧ	No	-						
	Stop Bits	1 bit 👻	1 bit	•	1 bit	•	1 bit	•						
	Flow Control	none 🔻	none	-	none	•	none	-						
	Default	k	J)					

 Configure the serial port COM1 with the Baud Rate, Data Bits, Parity and Stop Bits compatible with the equipment sending the differential corrections then click on the Ok button.





4. Select Corrections - Corrections Input menu.

The following window is displayed.

	Receiver	Position	Attitude		
4	Serial Number: 3013380	Lat: N48°53'57.7657" 0.549m	Heading: N/A N/A	SBAS Mo At	titude
X	IP Address: 192.168.133.21	0 Lon: E2°3'50.0735" 0.301m	Pitch: N/A N/A	Corre	ctions
septentrio	Uptime: 0d 00:28:29	Hgt: 154.482m 0.953m	Roll: N/A	🕘 Loggir	ng
				1	
Overview	GNSS TERRAS	TAR Communication	Corrections NMEA/SB	F Out Logging	Admin
Corrections > Correction	s Input				
~In / Out					
		•			
		IP10 (I	N:RTCMv3 0.66kB/s)		
4					
			ut:SBE 5.22kB/s)		
		• •••••			
Input St	reams				
T	nnut				
COM1	auto 👻				
COM2	auto 🔻				
COM3	auto 🔻				
COM4	auto 🔻				
USB1	auto 🔻				
USB2	auto 🔻				
IP10	RTCMv3 🔻				
IP11	RTCMv3 🔻				
IP12	RTCMv3 🔻				
IP13	RTCMv3 -				
IP14	RTCMv3 🔻				

- In the COM1 pull-down menu, select the relevant differential correction standard (RTCMv3 is the default standard).
- 6. Click on OK.
- 7. End of procedure.



7.2.5.2 Ethernet Port

In this case, assuming you need to connect to a base station that sends differential corrections through a server TCP port, you need to configure input A in client TCP with base IP/port setup.

Step Action

1. Select **INPUT** option under **INSTALLATION**. Click on **Input A**.

		navigation data e	vents viewer maintena	ance options
CONTROL	INSTALLATI	ON SETUP	DATA LOGGING	
INPUT AND EXT	ERNAL SENSOR	S SETTINGS		
	Inputs	Event Marke	rs	
	Input A	Input B	Internal	
Protocol	NONE	NONE	N/A	
GNSS			٠	
UTC			•	
• INPUT A SET	TING S Protocol	NONE		
Physical Lin	k			
	Physical Link	Ethernet only		
▼ Ethernet			·	
	Transport Layer	TCP Client]	
	IP	185.105.3	. 250	
	Port	25004		

The following window is displayed.

- 2. In **Physical Link** area, select **Ethernet only.**
- 3. In Ethernet area, in Transport Layer, select TCP client.
- 4. Enter the Ethernet IP/Port data.
- 5. Connect to the internal GNSS address via your browser. *The following window is displayed.*



6	Serial Number: 3013380	Lat: N48°53'57,7627" 0.531m	Heading: N/A N/A	SBAS	🐹 No Attitude
S	ID Address 102 169 122 210	Len: E282'50.0764" 0.202m	Ditch: N/A N/A		
	IP Address: 192.166.155.210	Lon: E2-3 50.0764 0.302m	Pitch: N/A N/A]	 Corrections Logging
septentilo	Uptime: 0d 00:32:21	Hgt: 154.431m 0.958m	Roll: N/A		
Overview	GNSS TERRASTAL	R Communication	Corrections NMEA/SB	F Out Logg	jing Adı
Communication > Etherne	t				
- Ethorpot					
Luiemeu					
		V IP10 (I	n: RTCMv3)		
IP: 192.1	.68.133.210	IPS1 (0	ut: SBF)		
CTCP/IP S	ettings		- Ethernet Status		
	5				
Mode	OHCP Static		IP Address 192 168 13	3 156	
Mode IP addre	© DHCP Static 192.168.133.156		IP Address 192.168.13 NetMask 255.255.25	3.156	
Mode IP addre Netmask	 DHCP Static 192.168.133.156 255.255.255.0 		IP Address 192.168.13 NetMask 255.255.25 Gateway 192.168.33	3.156 55.0	
Mode IP addre Netmask Gateway	 DHCP Static 192.168.133.156 255.255.255.0 192.168.36.100 		IP Address 192.168.13 NetMask 255.255.25 Gateway 192.168.36 MAC Address 00:50:C2:26	3.156 55.0 5.100	
Mode IP addre Netmask Gateway Domain	 DHCP Static 192.168.133.156 255.255.255.0 192.168.36.100 192.168.133.209 		IP Address 192.168.13 NetMask 255.255.23 Gateway 192.168.36 MAC Address 00:50:C2:36	3.156 55.0 5.100 :3B:FA	
Mode IP addre Netmask Gateway Domain DNS1	 DHCP Static 192.168.133.156 255.255.255.0 192.168.36.100 192.168.133.209 0.0.0 		IP Address 192.168.13 NetMask 255.255.21 Gateway 192.168.33 MAC Address 00:50:C2:36	3.156 55.0 5.100 3B:FA	
Mode IP addre Netmask Gateway Domain DNS1 DNS2	DHCP Static 192.168.133.156 255.255.255.0 192.168.36.100 192.168.133.209 0.0.0.0 0.0.0		IP Address 192.168.13 NetMask 255.255.21 Gateway 192.168.33 MAC Address 00:50:C2:36	3.156 55.0 3.100 :3B:FA	
Mode IP addre Netmask Gateway Domain DNS1 DNS2	 DHCP Static 192.168.133.156 255.255.255.0 192.168.36.100 192.168.133.209 0.0.0 0.0.0 0.0.0 		IP Address 192.168.13 NetMask 255.255.21 Gateway 192.168.33 MAC Address 00:50:C2:36	3.156 55.0 5.100 5.3B:FA	
Mode IP addre Netmask Gateway Domain DNS1 DNS2	 DHCP Static 192.168.133.156 255.255.255.0 192.168.36.100 192.168.133.209 0.0.0 0.0.0 0.0.0 0.0.0 		IP Address 192.168.13 NetMask 255.255.22 Gateway 192.168.33 MAC Address 00:50:C2:36	3.156 55.0 3.100 3.3B:FA	

6. In the TCP/IP Port Settings area, note the Commands Port number.



7. Select **OUTPUTS** option under **INSTALLATION**. *The following window is displayed.*

	navigation data events viewer maintenance options
CONTROL INSTALLA	TION SETUP DATA LOGGING
OUTPUT SETTINGS	
Output Ports	s Output Pulses
Outp	ut A Output B
V Protocol	
Protocol	BROADCAST A
Lever Arm	Primary Lever arm
Rate	None
Synchro In	None
Physical Link	
Physical Link	Ethernet only
▼ Ethernet	
Transport Layer	TCP Client
IP	192. 168. 133. 156
Port	28784
Advanced Settings	
Cancel	ОК

- 8. Click on Output Ports.
- 9. In Protocol area, select BROADCAST A.
- 10. In **Physical Link** area, select **Ethernet only**.
- 11. In Ethernet area, select TCP Client.
- 12. In **Port** field, enter the port number noted in **step 6**.
- 13. Click **OK**.
- 14. End of procedure



7.3 All Other Products

7.3.1 STANDARD CONFIGURATION

Important

This paragraph does not apply to ATLANS and LANDINS.

Window access Select **NETWORK** option under **INSTALLATION** menu to access the Network parameters (Figure 4).

IX3LUE navigation data events viewer	maintenance options
CONTROL INSTALLATION SETUP DATA LOG	GING
PHINS	
NETWORK SETTINGS	
▼ Network	
DHCP Client	
IP Address 192.168.36.100	
Net Mask 255 . 255 . 0 . 0	
Gateway 192.168.36.1	
▼ System Alias	
Name PHINS Tribord	
Name Server 192 . 168 . 36 . 1	
▼ PPP Server	
Enabled	
Standard RS232 -	
INS IP Address 192. 168. 100. 201	
PC IP Address 192.168.100.202	
Cancel	DK

Figure 4 - NETWORK page

- Under Network area, the configurable parameters are the following:
 - **DHCP Client:** check box to activate DHCP client.
 - When the check box **DHCP Client** is selected: the product starts up in DHCP mode. If it has not found an address or a DHCP server after one minute, it starts up with the IP Address defined in the IP address field.



When the check box **DHCP** is unselected: the product starts up with the IP Address defined in the IP address field.

- □ IP Address: this is the IP address of the Web-based User Interface
- D Net Mask: this is the common network mask address
- Gateway: this is the address to use in order to send data outside the local area network.
- For example, if the local area network is 192.168.36.xx and you want to send data to the PC the IP address of which being 192.168.32.xx, you can indicate that the Gateway is 192.168.36.1. In this case the data, the destination of which is 192.168.32.5, will be sent through the gateway 192.168.36.1.
- Under System Alias area:
 - Name: you can define an alias (Name) for your product IP address to avoid using IP address to launch the Web-based User Interface for example or to distinguish easily the starboard (right) and port side (left) product if necessary. This Name appears in the events viewer page.
 - Name Server: to use an alias, you have to define the IP address of the Name server (DNS) of the network on which the inertial product is set. Then the product will send an IP packet to this DNS server in order to describe the (alias/ product IP address) mapping. Then, the PCs that want to connect to the product will send a query to the DNS server to get the product IP address. By default the Name Server is set to the product IP address.
- Under **PPP Server** area: for using the repeater with PPP server (=Point to Point Protocol)
 - Enabled to launch the Web-based User Interface via the serial link. When the check box Enabled is selected, the product will start a PPP server listening on repeater serial port at next reboot. When this option is disabled (default), the repeater port outputs OCTANS STANDARD or PHINS STANDARD protocol (following the type of product)
 - □ Standard: to choose between an RS232 or RS422 serial link (following the product)
 - □ INS IP Address: by default it is 192.168.100.201
 - **PC IP Address: by default it is** 192.168.100.202

The PC IP adress is used in case of the PC is connected to two different inertial units. In this case there must be a different IP on the PC for each PPP interface. For example:

- 192.168.200.1 on the PC PPP link 1 and 192.168.200.2 on the first INS
- 192.168.200.3 on the PC PPP link 2 and 192.168.200.4 on the second INS connected to the PC



To know how to set up the PPP connection to the product on your PC, refer to section 4.2.4.1.

If you want to keep the inertial product in its default configuration, you will only be required to change the IP address on the PC.

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Should the default configuration no longer exists, the user will need to retrieve the IP address set in the inertial product by accessing to the inertial product settings. Please refer to section 5.6 for more details on how this can be done.

The PC IP address must be taken from the same subset as the IP address configured in the product; the subnet mask of both PC and product should be the same.

Important

When you change the product IP address, carefully note down the new IP address, otherwise you may not be able to connect to the system through the Web-based User Interface.

To know how to retrieve the product IP address from serial port, refer to section 5.6.

Important

To launch the Web-based User Interface through a direct serial link:

- The PPP mode must have been activated
- A direct connection must have been created (see section 4.2.4.1)

In this configuration, the inertial product works as a PPP server, it must be activated before launching the Web-based User Interface: select **Start** menu > **Connect To** > **PRODUCT** (or the name chosen for the connection created between the workstation and your inertial product).

The Web-based User Interface is then launched from the Web browser hosted on the workstation. Its URL address is 192.168.36.201.



7.3.2 DEFAULT CONFIGURATION OF ALL OTHER PRODUCTS

This section gives the default values programmed used to configure an inertial product (INS or AHRS).

These values are given in the *Ethernet Factory Setting list*. This is a document provided with your product.

Important

This configuration does not apply to ATLANS and LANDINS.

The inertial products default configuration is listed below. The configuration of these parameters can be done through the Web-based User Interface (see section 7):

- Enabled (PPP server): OFF.
- DHCP Client: OFF.
- IP address:
 - □ Default address is 192.168.36.1xx for communication through the Ethernet link (xx being the last two number of the INS serial number)
 - Default address is 192.168.36.201 for communication through the serial link
- Network mask address: 255.255.0.0
- Gateway: by default, it is the inertial product IP address.



Appendices

A ACCESSING TO THE NETWORK CONTROL PANEL OF YOUR COMPUTER

Step Action

- 1. Access to Network Connections Window
 - Either locate the icon "My Network Places" on the desktop screen of the PC, right click on the icon then select **Properties**



- Or if you cannot locate this icon, you can still proceed by selecting Start menu > Connect > Show all connections.
- Alternatively, if you are using Classic Start Menu, select Start menu > Settings > Control Panel, then double click on the icon Network Connections.
- For Windows Vista:
 - Open Network Connections by clicking the Start button, and then clicking Control Panel. In the search box, type adapter, and then, under Network and Sharing Centre, click View network connections.
- For Windows 7:
 - Open Network Connections by clicking the Start button, clicking Control Panel, clicking Network and Internet, clicking Network and Sharing Centre, and then clicking Manage network connections.
- 2. End of procedure.



B TESTING THE CONNECTION TO THE INERTIAL PRODUCT

B.1 Checking the Connection with a Ping Command

The ping command is a computer network utility used to test whether a particular host is reachable across an Internet Protocol network and to measure the round-trip time for packets sent from the local host to a destination system, including the local host own interfaces.

You need to know the IP address of your inertial product to perform the procedure:

- The default IP address is 192.168.36.1xx, xx being the two last digits of the serial number of your unit.
- See section 5.6 to retrieve a lost IP address

Ste Action

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- 1. Open the command window:
 - From Windows 7 or Vista: from Start menu, type in cmd in the search box then press [Enter].
 - From the other Operating system: from **Start** menu, choose **execute** then type in cmd and press [Enter].

The command window opens:





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2. In the command window, type in

PING yyy.yyy.yyy

replacing yyy.yyy.yyy.yyy by the IP address of your inertial system unit.

The successful command reply is looking like the following: here it is the example for the IP address 192.168.36.111

C:\Windows\system32\CMD.exe	
C:\Users\ngo>PING 192.168.36.111	*
Pinging 192.168.36.111 with 32 bytes of data: Reply from 192.168.36.111: bytes=32 time<1ms TTL=255 Reply from 192.168.36.111: bytes=32 time<1ms TTL=255 Reply from 192.168.36.111: bytes=32 time<1ms TTL=255 Reply from 192.168.36.111: bytes=32 time<1ms TTL=255	
Ping statistics for 192.168.36.111: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = Oms, Maximum = Oms, Average = Oms	
C:\Users\ngo>	
	-

The unsuccessful command reply is looking like the following: here it is the example for the

IP address 192.168.36.111



3. End of procedure.

If you could not reach your inertial system using the ping command, you have to check the setting of your computer (see section 4.1.3), the issue may be on your side due to wrong settings of your PC.



B.2 Reading the Data Flow with a Telnet Command

You can check your product data flow using a telnet command.

For Windows VISTA and 7 OS only For a Windows Vista and Windows 7 Operating Systems, you need to activate the telnet command before using it:

Step Action

1. Open your Control Panel (**Start** menu, **Control Panel** option) *The Control Panel opens:*





2. Click **Programs** then under **Programs and Features** menu, choose **Turn Windows** features on or off option:



3. In the Windows Features window that displays select **Telnet Client** by clicking in the associated tick box then click **OK**.

Control Panel Home System and Security	Programs and Featu Uninstall a program 😵 Run programs made for pr	ES Furn Windows features on or off View installed updates vious versions of Windows How to install a program	
Hardware and Sound Programs User Accounts Appearance and Personalization Clock, Language, and Region Ease of Access	 Default Programs Change default settings for Set your default programs Desktop Gadgets Add gadgets to the desktop Restore desktop gadgets in FreeFall Data Protect Java 	Image: Control of the second secon	

- 4. Close the Control Panel.
- 5. End of procedure.



Launching the telnet command:

You need to know the IP address of your inertial product to perform the procedure:

- The default IP address is 192.168.36.1xx, xx being the two last digits of the serial number of your unit.
- See section 5.6 to retrieve a lost the IP address

Step Action

- 1. Open the command window:
 - From Windows 7 or Vista: from **Start** menu, type in cmd in the search box then press [Enter].
 - From other Operating system: from **Start** menu, choose **execute** then type in cmd and press [Enter].

The command window opens:





2. In the command window, type in:

TELNET yyy.yyy.yyy 8110

Replacing yyy.yyy.yyy.yyy by the IP address of your inertial system unit.

The successful command reply is looking like the following: here it is the example of an INS with the IP address 192.168.36.111, the data flows under PHINS (or OCTANS for an AHRS product) standard format.

Telnet 192.168.36.111
\$PIXSE,UTMWGS,U,20,426649.851,5414515.332,0.000*11
\$FIX5E,HEHVE_,-0.000,-0.000,0.000*79 \$FIX5E TIME 002806 797101*62
\$PIXSE_STDHRP,1.998,0.073,0.106*7A
\$PIXSE,STDPOS,15847.39,14621.35,50.00*70
\$PIXSE, STDSPD, 18, 419, 13, 881, 10, 001 ×4B
2P1X5E,HLGS18,00000045,00804000×58
SPIXSF, HT SIS FFFD5551+46
\$PIXSE_SORSTS_000000000.00000000×61
\$HEHDT, 44.989, T*17
\$PIXSE,ATITUD,0.000,0.000*62
5P1X5E,F05111,48.87925161,295.39957068,0.000*51 cb1vec cbEED _A 004 _0 004 _0 000*64
7F1ASE, SFEED_, 70.001, 0.001, 70.000701 \$PIXSE ITMUS II 20 426649 850 5414515 332 0 000*10
\$PIXSE,HEAVE_,-0.000,-0.000,0.000*79
\$PIXSE,TIME,002806.927100×6D
\$PIXSE,STDHRP,1.998,0.073,0.106*7A
5P1X5E,51DP05,15847.39,14621.35,50.00*70
3F1/35F, 31/35F0, 10, 317, 13, 001, 10, 001 **10
\$PIXSE, STATUS, 0000000, 0000000×6F
\$PIXSE,HT_STS,FFFD5551*46
\$PIXSE, SORSTS, 0000000, 00000000×61

3. End of procedure.