Appendix B - User's Manual

Please see attached document(s).

Document : NSA-U3 Quick Guide

- NSA-U3 GPS Receiver Driver Setup User Manual

version 1.5
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•NSA-U3 is a smart GPS receiver with USB interface.

•You have to install the **USB to Serial Port driver**
        before using for the first time.

Requirements

•USB 1.1 compliant port
•MS Windows98,ME,2000,XP

CD-ROM Contents

•[NSAUx Driver] Setup EXE File
•NSA-Ux Quick Guide PDF File

•When you first use the GPS, please make sure that you are outside with good view of the sky. It takes more 2 minutes to locate the satellites for the first time. However, it will locate much faster during the subsequent uses.

Specifications

•SiRFStarIIe GPS chipset
        L1 1575.42MHz, C/A CODE
        12ch Parallel Tracking
        Cold start < 45s(typical)
        Warm start < 38s(typical)
        Hot start < 8s(typical)
        SBAS(WAAS enabled)
•Protocol
        NMEA-0183 V2.2
        (GGA,GLL,GSA,GSV,RMC,VTG)
        9600,NONE,8,1,no flow control
•Accuracy
        < 10meter 2DRMS
•Interface
        USB 1.1 compliant
•Environment
        Temperature −20~+70℃
•Power/Consumption
        5V USB power
        110mA(hub not recommended)
•Size/Weight
        55.7×45.4×16.0㎜ (W x D x H)
        90g

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1. How to install driver setup utility

1.1 Insert NSAUx CD-ROM and run **setup.exe**.

1.2 Select an appropriate directory to install.

1.3 At the end of the installation, the USB to Serial Port Driver is automatically installed.
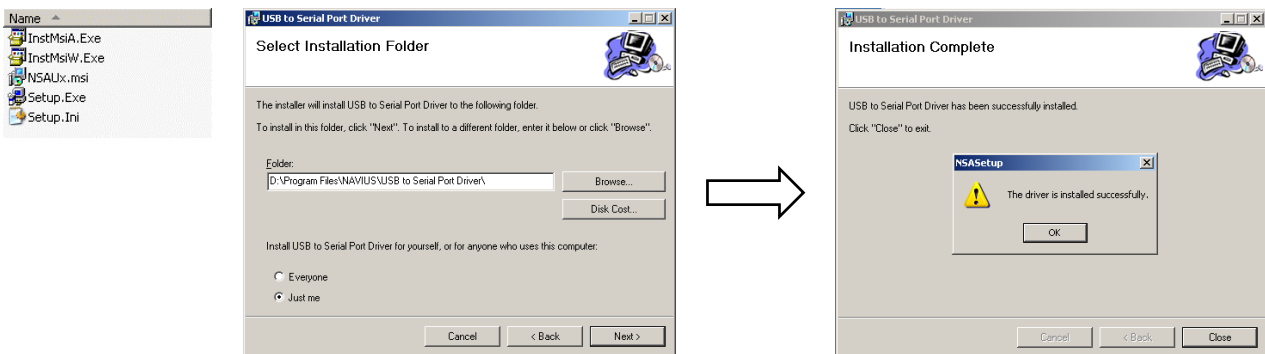

> If you want to run the USB to Serial Port Driver Setup utility manually to remove or reinstall the driver,
> Click **Start** button on the desktop and select **All Programs->USB to Serial Port Driver**> **Driver Setup**

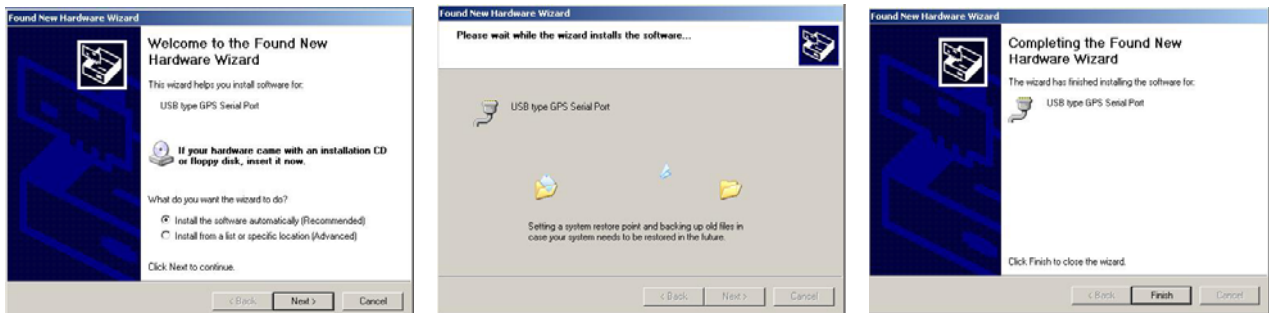USB to Serial Port Driver Setup Utility

2. How to uninstall driver

2.1 Remove NSA-Ux from USB port if connected.
2.2 Run the **USB to Serial Port Driver Setup Utility.**
2.3 Click **Remove** button.
2.4 Click **OK** button.
2.5 Reboot your computer (**must**)

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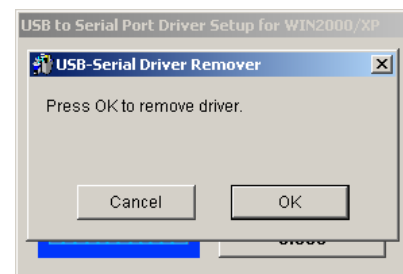
3. Connect NSA-Ux to PC

3.1 Insert the NSA-Ux GPS to the USB Port.

3.2 Click **Install the software automatically** (at Windows XP)
3.3 Click **Next** (at Windows XP)

The USB to Serial Port Driver is Installed Automatically

3.4 The Driver will assign a virtual COM port (named **NAVIUS USB to Serial Port**) to the NSA-Ux GPS.
 Make sure that <u>which COM port is assigned to the NSA-Ux</u> at the device manager.
To see the COM port**,**
**My Computer-**>**Properties**, Click on **Device manager** button at the **Hardware** tab.
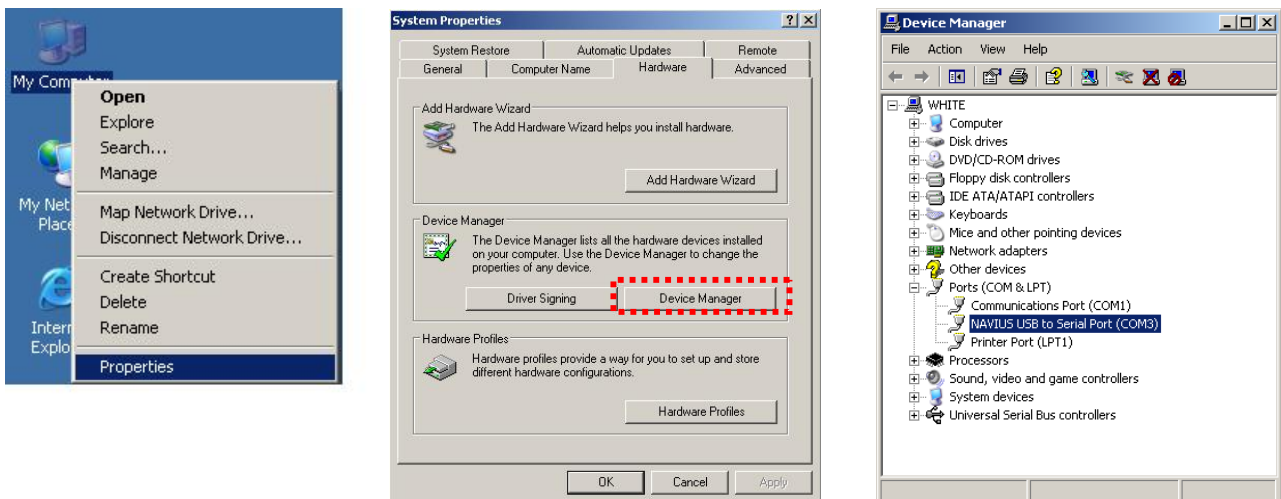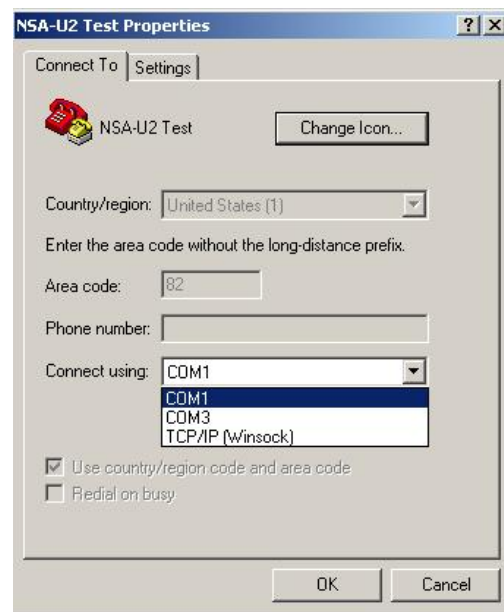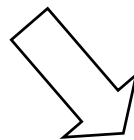

To verify the virtual COM port

If the **NAVIUS USB to Serial Port** doesn't appear, you must remove driver and reboot computer then re-install driver using NSA-Ux Driver Setup Utility

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4.Test NSA-Ux

4.1 At the desktop, Click **Start** button
and select **All Programs**->**USB to Serial Port Driver -**>**USB to Serial test**.
The following hyper terminal appears.
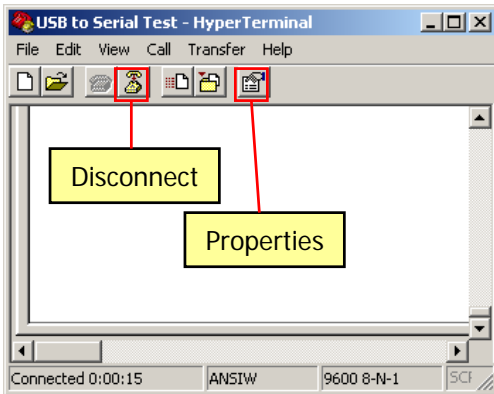
4.2 If the virtual COM port is not COM1,
click **Disconnect** button.
4.3 Click **Properties** button on the toolbar.
4.4 Choose the virtual COM Port which is
found at 3.4

4.5 Click **Call** button.
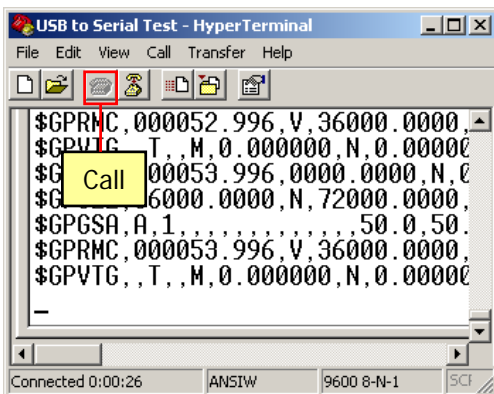
If the **USB to Serial Port Driver** installs
well,
you can receive the NMEA format data
from NSA-Ux GPS as the left
picture shows.

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5. Q&A

1) How do I change the virtual COM port number assigned by the USB to Seri al Port Driver?
→After the driver is installed, it will create a virtual COM port and the default setting assigned by the OS will be COM2 or COM3 if there are two physical COM ports on your computer. If you want to change the assigned virtual COM port for the NSA-Ux to the other COM port, please follow the steps below.

       -Double click <u>My Computer</u>, <u>Control Panel</u>, <u>System</u>
       -Click <u>Device Manger</u> tab
       -Click <u>Ports(COM&LPT)</u> and double click on the <u>NAVIUS USB to Serial Port (COM x)</u>
       -Click <u>Port Settings</u> tab and click <u>Advanced</u> button

You can change the virtual COM port to the other one at the COM port combo box.

2)Is it possible to connect NSA-Ux using external Hub device?
→ NSA-Ux is bus-powered USB device. Bus-powered devices rely totally on power fro m the USB cable. The power consumption of NSA-Ux is 160~185mA. So, if notebook c omputer run short of battery power, NSA-Ux will not work properly. In addition, <u>it is r ecommended that NSA-Ux is directly connected to USB port of notebook or PC withou t extra hub or else.</u>

3)After disconnecting NSA-Ux from USB port, I connect NSA-Ux to USB port again. Why I cannot see any incoming data in HyperTerminal?
→When NSA-Ux is removed, Virtual COM port will be disappeared. Hyperterminal can not reconnect COM port automatically. In Hyperteminal, Simply press disconnect butto n and connect button again.

4)When I connect NSA-Ux, there is some delay to see incoming data. Why is that?
→To avoid Bluescreen problem in Windows XP, NSA-Ux outputs data after 5 seconds.

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FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions : (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

INFORMATION TO THE USER

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

WARNING

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.