

# USB Drivers for the Model 7124, 7270, and 7230 Lock-in Amplifiers

## Installation Instructions

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### Purpose

This document describes how to install the USB drivers that support the **SIGNAL RECOVERY** Model 7124, 7270, and 7230 Lock-in Amplifiers.

### Background

**SIGNAL RECOVERY** offers two types of digitally-signed USB drivers suitable for use with the Model 7124, 7270, and 7230 Lock-in Amplifiers. The first, SRUSB.SYS, is suitable for all versions of instrument bootcode and firmware; the second, which uses the National Instruments VISA software, requires that the instrument firmware be version 1.57 or later. If the VISA driver is also to be used to perform firmware updates then the instrument bootcode must be version 1.04 or later.

Both types of driver are available in different versions for use on computers running Windows XP 32-bit, Vista 32 or 64-bit, and Windows 7 32 or 64-bit.

In general, we recommend that you install the SRUSB.SYS drivers except if you want to operate these instruments from LabVIEW via USB, in which case you should install the VISA drivers. Note however that in order to use the VISA drivers you will also need to download and install the full VISA software package from the National Instruments website.

### Installation - General

Locate the file SRUSBDriversV3 . exe, which is a self-extracting extracting executable, and double-click it. On machines running Vista or Windows 7 right click and select Run as Administrator. The USB drivers will be unzipped to the folder **C:\Program Files\SIGNAL RECOVERY\USBDriversV3**

On 64-bit versions of Windows they will be placed in:  
**C:\Program Files (x86)\SIGNAL RECOVERY\USBDriversV3**

The driver installation procedure differs slightly depending on the operating system you are using, so please follow the instructions in the relevant sections below. They assume that no USB driver for these instruments has already been installed, or that any driver that has been used in the past has been properly uninstalled. Note also that you need to be using an account with administrator permissions in order to install driver software.

### Installation - Windows 7

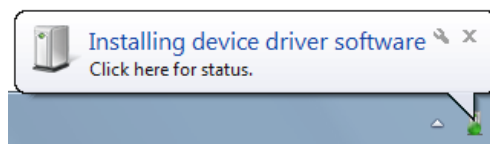
- a) If you intend to install the driver suitable for use with National Instruments VISA software then you must first download and install the NI VISA software from the NI website. The driver is designed for use with VISA version 4.4.1 or later. At the time of writing, VISA software can be downloaded via links from the page at <http://www.ni.com/visa/>
- b) Turn off the lock-in amplifier. Take a USB 2.0 type A to type B cable, shown below in figure 1, and plug the A plug end into a free USB port on the computer and the B plug end into the lock-in amplifier.

**SIGNAL RECOVERY**



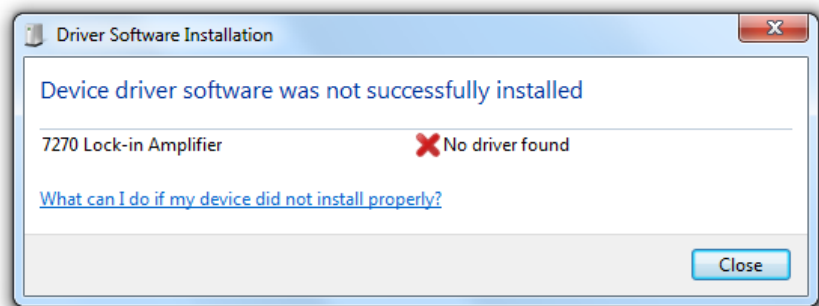
**Figure 1, USB 2.0 A to B Cable**

- c) Turn on the lock-in amplifier. The PC will attempt to install the driver software, as indicated by the message above the taskbar, shown in figure 2.



**Figure 2, Taskbar Message**

- d) The driver will not be found. Clicking the message will then show the information dialog, as in figure 3 below.



**Figure 3, Driver Software Installation Dialog**

- e) Close the dialog and then go to the Control Panel and Device Manager. The instrument you are trying to install will be shown with a yellow warning symbol, as in figure 4 below.

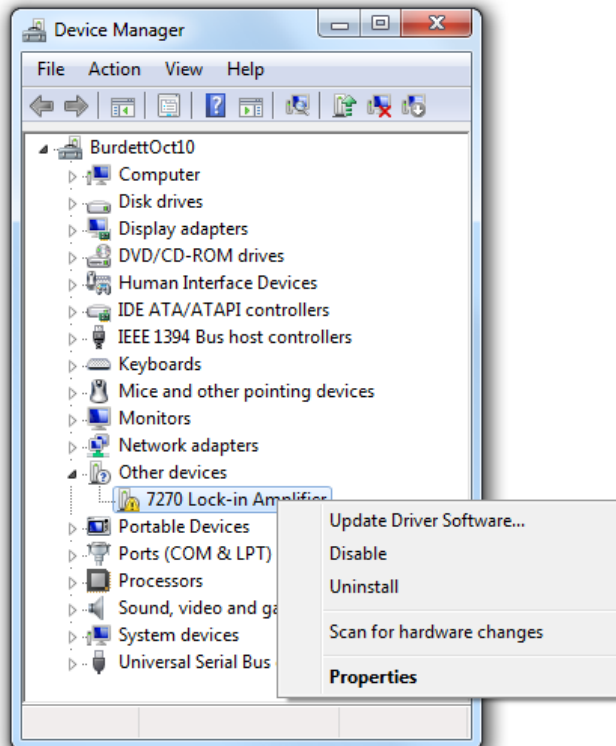


Figure 4, Device Manager Dialog

- f) Right click over the instrument name and select Update Driver software, to show the Update Driver Software dialog, as in figure 5.

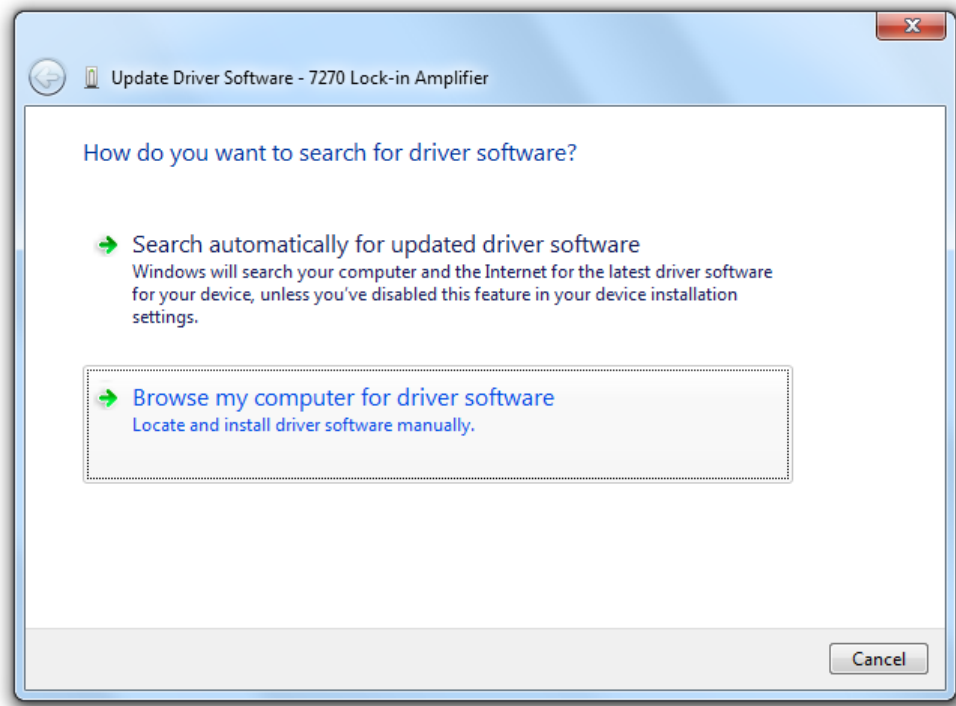


Figure 5, Update Driver Software Dialog

- g) Select Browse my computer for driver software and then, in the next dialog, shown in figure 6, browse to or enter one of the following locations:

For Windows 7 32 bit systems and the SRUSB.SYS driver:-

**C:\Program Files\SIGNAL  
RECOVERY\USBDriversV3\USBDriverW7Vista32**

For Windows 7 64 bit systems and the SRUSB.SYS driver:-

**C:\Program Files (x86)\SIGNAL  
RECOVERY\USBDriversV3\USBDriverW7Vista64**

For Windows 7 32 or 64 bit systems and the NI-VISA driver:-

**C:\Program Files\SIGNAL  
RECOVERY\USBDriversV3\USBDriverVISA W7Vista**

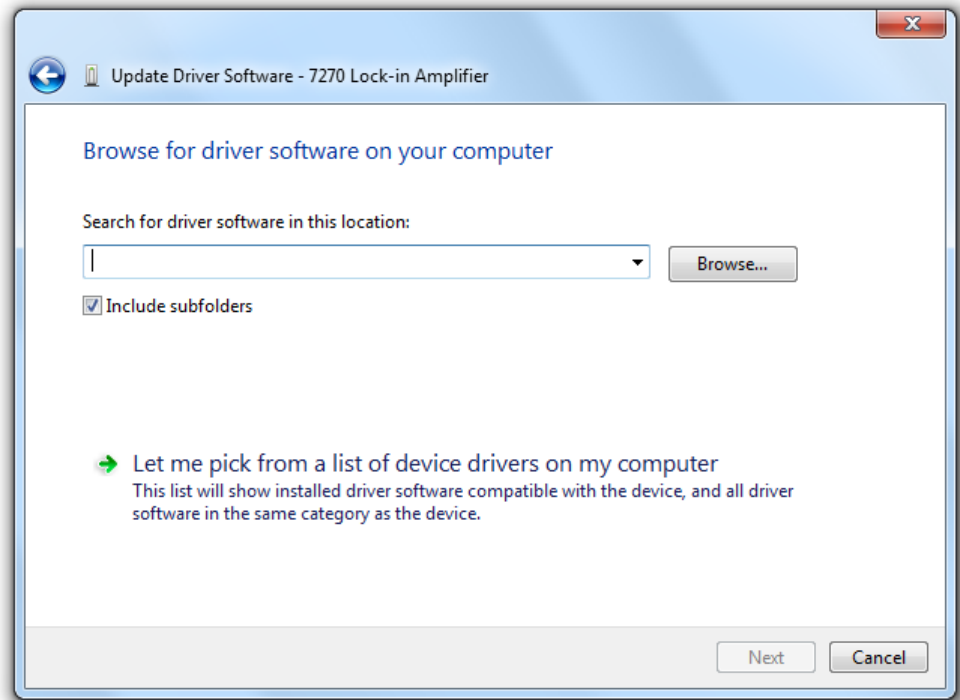


Figure 6, Browse for Driver Software Dialog

- h) The Windows Security dialog, shown in figure 7, will be displayed to indicate that the driver has been digitally signed by Ametek, Inc, the parent company of **SIGNAL RECOVERY**. Click Install to continue.

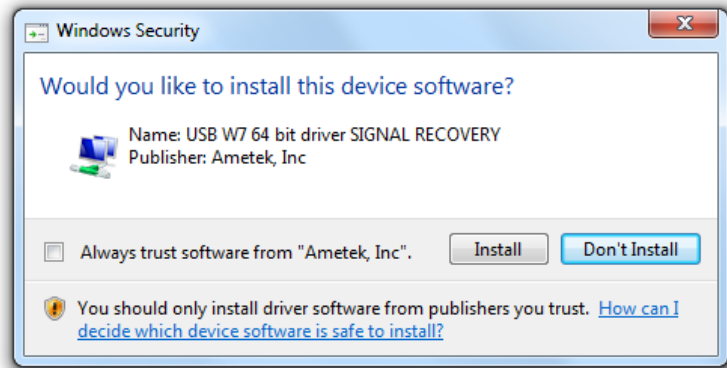


Figure 7, Windows Security Dialog

- i) To verify correct installation, go to the Control Panel and Device Manager. If you have installed the SRUSB driver then clicking the + sign next to the **SIGNAL RECOVERY** device category will display the installed model number, as shown for the case of the model 7124 in figure 8.

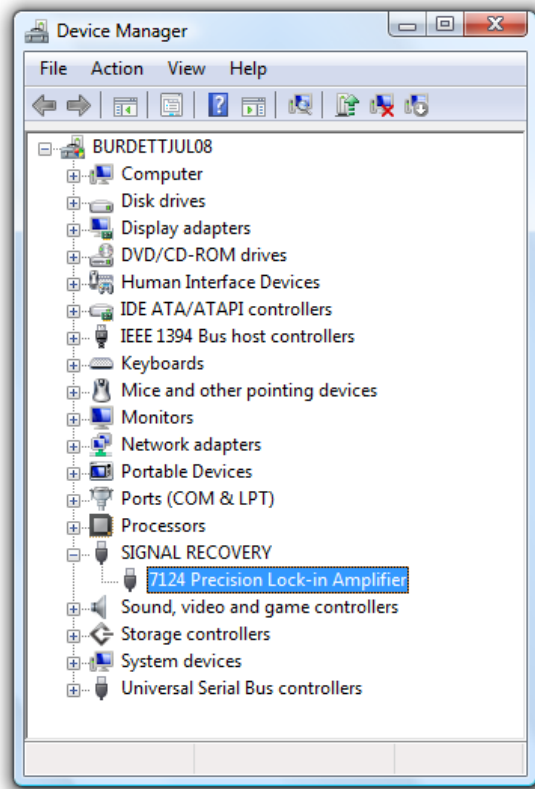


Figure 8, Device Manager - SRUSB Driver Correctly Installed

If you have installed the NI VISA driver then clicking the + sign next to the **NI VISA USB Devices** device category will display the installed model number, as shown for the case of the model 7124 in figure 9.

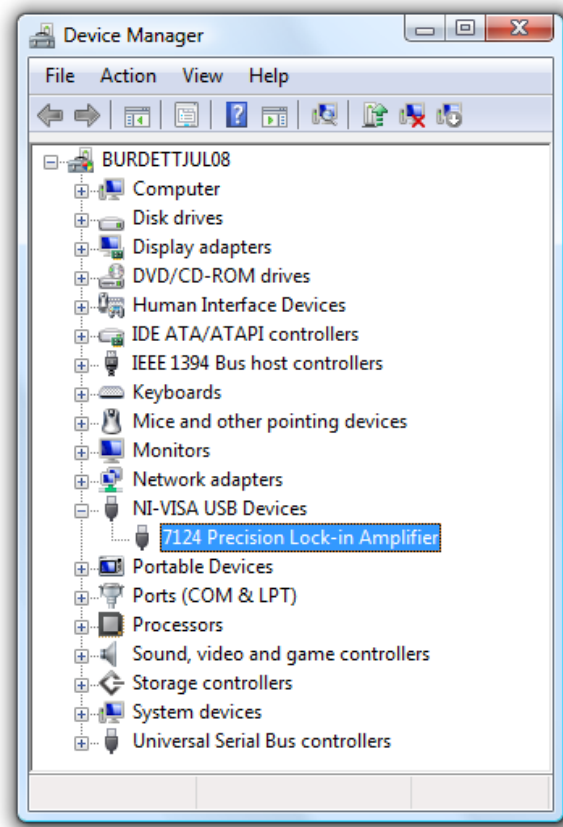


Figure 9, Device Manager - NI VISA Driver Correctly Installed

## Installation - Windows Vista

- a) As with the installation for Windows 7, if you intend to install the driver suitable for use with National Instruments VISA software then you must first download and install the NI VISA software from the NI website. The driver is designed for use with VISA version 4.4.1 or later. At the time of writing, VISA software can be downloaded via links from the page at <http://www.ni.com/visa/>
- b) Turn off the lock-in amplifier. Take a USB 2.0 type A to type B cable, shown above in figure 1, and plug the A plug end into a free USB port on the computer and the B plug end into the lock-in amplifier.
- c) Turn on the lock-in amplifier. The PC will display the "Found New Hardware" dialog, similar to that shown below in figure 10.

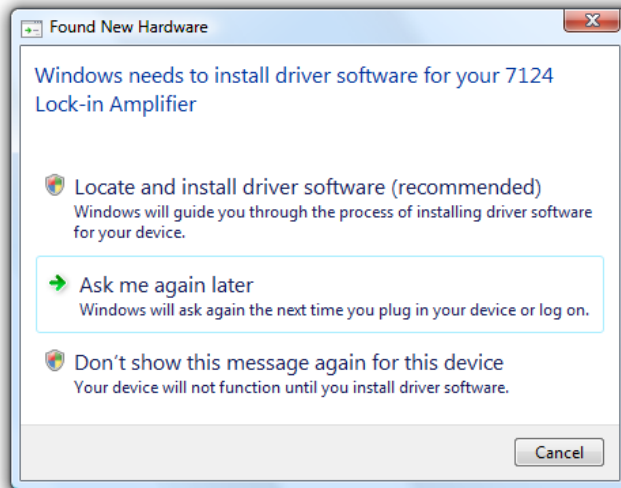


Figure 10, Found New Hardware Dialog

- d) Click the **Locate and install driver software** option. After searching Windows Update the dialog shown in figure 11 below will be displayed.

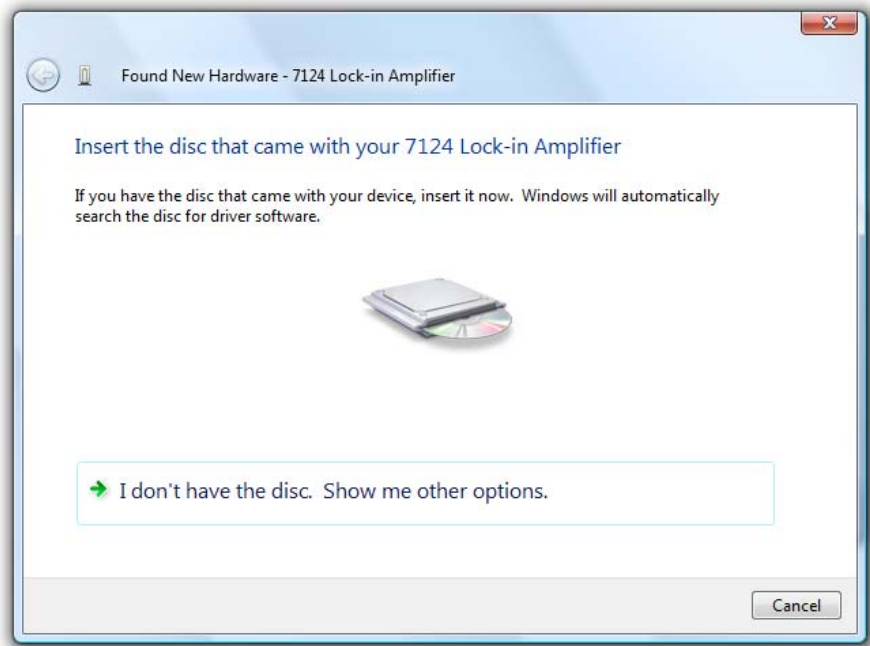
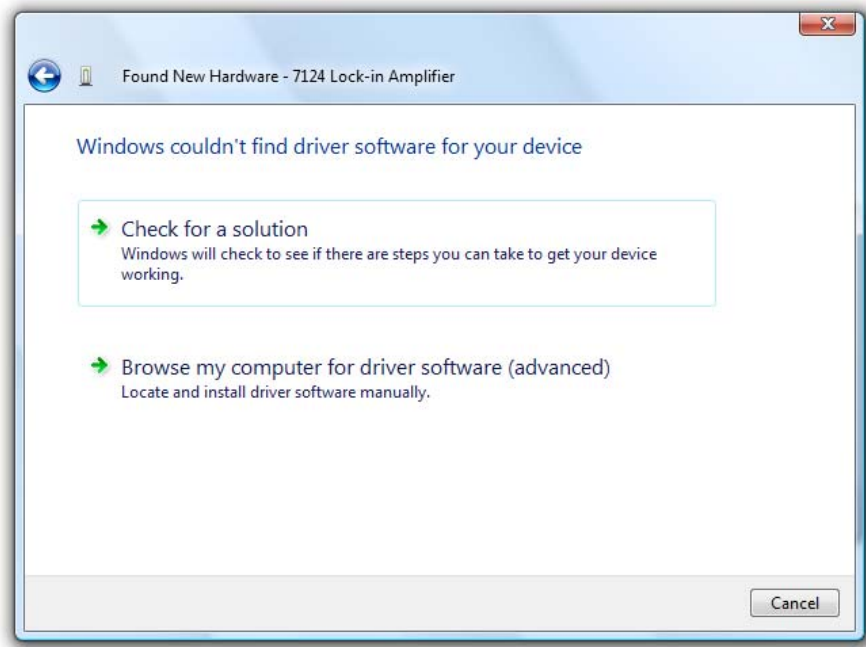


Figure 11, Insert Disk Dialog

- e) Click on the **I don't have the disk** option. The dialog shown in figure 12 will be displayed.



**Figure 12, Unable to Find Driver Software Dialog**

- f) Click on the **Browse my computer for driver software** option. The dialog shown in figure 13 will be displayed.

Browse to or enter one of the following locations:

For Vista 32 bit systems and the SRUSB.SYS driver:-

**C:\Program Files\SIGNAL  
RECOVERY\USBDriversV3\USBDriverW7Vista32**

For Vista 64 bit systems and the SRUSB.SYS driver:-

**C:\Program Files (x86)\SIGNAL  
RECOVERY\USBDriversV3\USBDriverW7Vista64**

For Vista 32 or 64 bit systems and the NI-VISA driver:-

**C:\Program Files\SIGNAL  
RECOVERY\USBDriversV3\USBDriverVISAW7Vista**



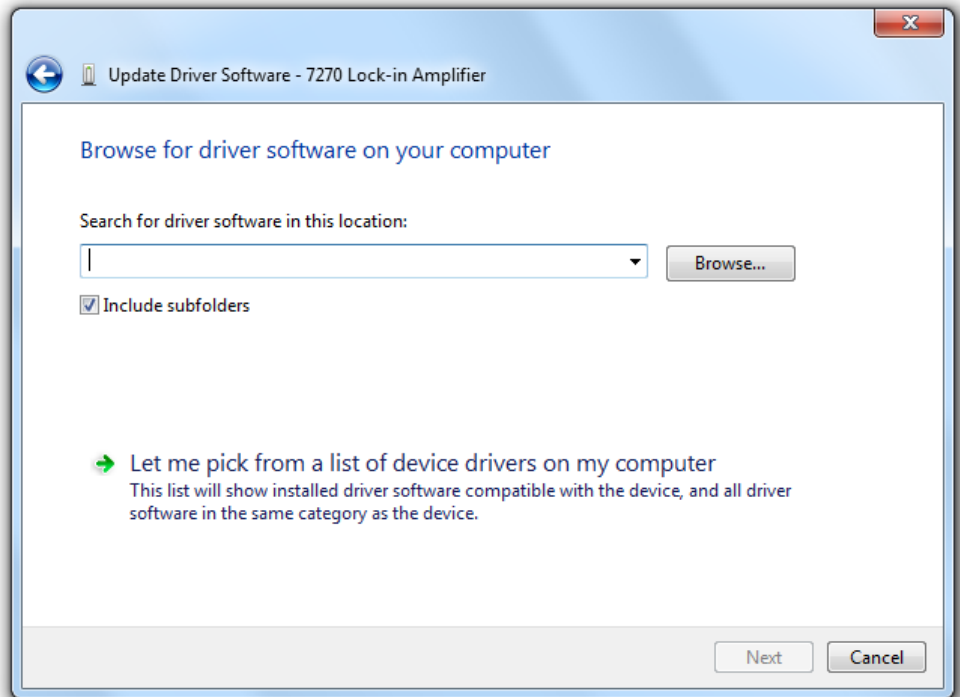


Figure 13, Browse for Driver Software Dialog

- h) The Windows Security dialog, shown in figure 14, will be displayed to indicate that the driver has been digitally signed by Ametek, Inc, the parent company of **SIGNAL RECOVERY**. Click Install to continue.

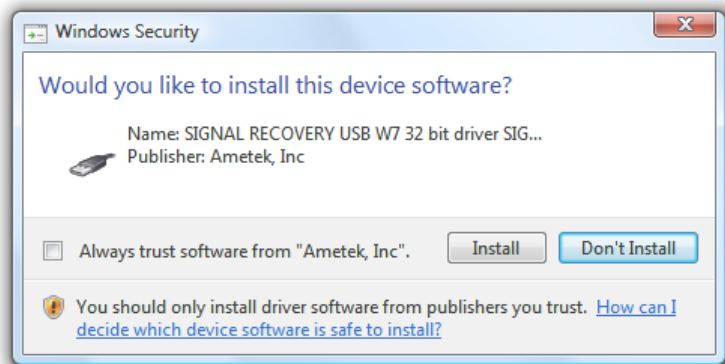


Figure 14, Windows Security Dialog

- g) Verify correct installation of the driver by going to the Control Panel and Device Manager, and checking that the installed instrument is shown correctly under the correct category, as in figures 8 or 9 above.

## Changing the Installed Driver - Windows 7 or Vista

If you wish to change the installed driver from SRUSB to NI VISA or vice versa, it is first necessary to uninstall the current driver using the following procedure.

- a) Go to the Control Panel - Device Manager, click the + next to the **NI VISA USB Devices** or **SIGNAL RECOVERY** device category, and then right-click on the lock-in model number. A pop-up menu will appear, as shown in figure 15 below.

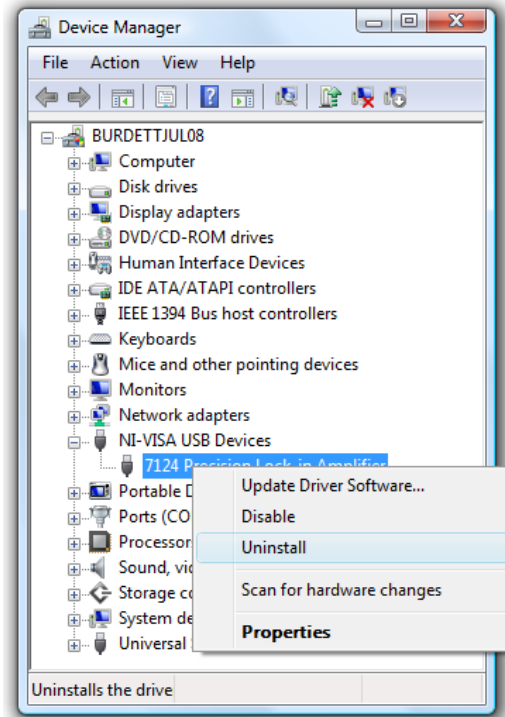


Figure 15, Preparing to Uninstall NI VISA Driver

- b) Click the **Uninstall** item. The dialog shown below in figure 16 will appear.

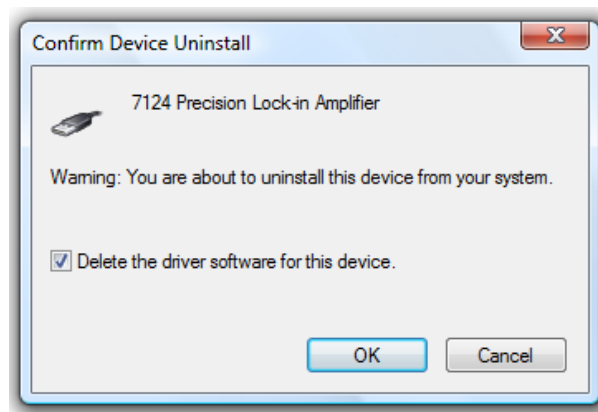


Figure 16, Confirm Device Removal Dialog

- c) Ensure that the **Delete the driver software for the device** box is checked and click **OK** to uninstall the driver.
- d) Unplug the lock-in amplifier. The driver removal process is now complete. If you

now wish to install the other driver, or re-install the driver just removed, then proceed as already detailed above in the sections **Installation - Windows 7** or **Installation - Windows Vista**

## Installation - Windows XP

This procedure assumes that no USB driver for these instruments has already been installed, or that any driver that has been used has been properly uninstalled. Note also that you need to be using an account with administrator permissions in order to install the driver.

- a) If you intend to install the driver suitable for use with National Instruments VISA software then you must first download and install the NI VISA software from the NI website. The driver is designed for use with VISA version 4.4.1. At the time of writing, VISA software can be downloaded via links from the page at <http://www.ni.com/visa/>
- b) Turn off the lock-in amplifier. Take a USB 2.0 type A to type B cable, shown above in figure 1, and plug the A plug end into a free USB port on the computer and the B plug end into the lock-in amplifier.
- c) Turn on the lock-in amplifier. The PC will display the "Found New Hardware Wizard" dialog, similar to that shown below in figure 17.



Figure 17, Found New Hardware Dialog

- d) Click on **No, not at this time** and then **Next**. The dialog shown in figure 18 will be displayed.

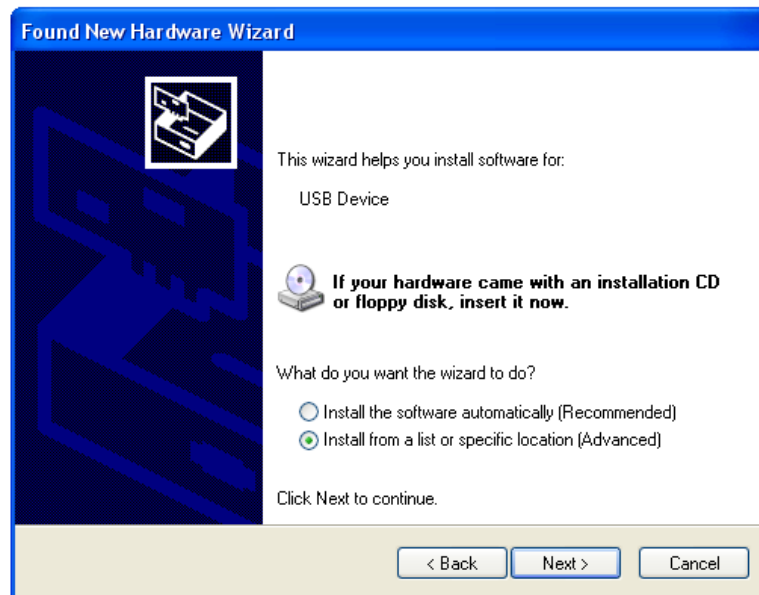


Figure 18, Select Driver Installation Source

- e) Click on the **Install from a list or specific location** and click **Next**. The dialog shown in figure 19 will be displayed.

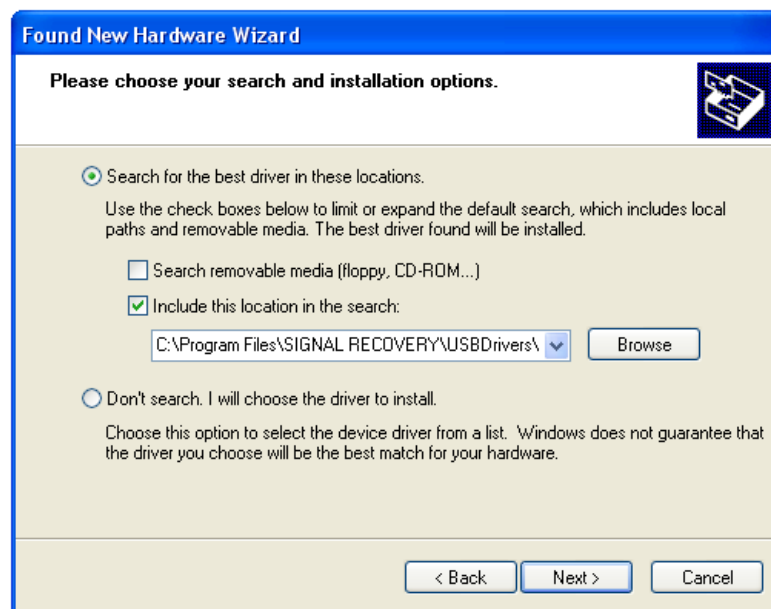


Figure 19, Choose Search and Installation Options Dialog

- f) Click on the **Search for the best driver in these locations** option.

If installing the SRUSB driver then enter:

**C:\Program Files\SIGNAL RECOVERY\USBDriversV3\USBDriverXP32** in the location box.

If installing the NI VISA driver then enter:

**C:\Program Files\SIGNAL RECOVERY\USBDriversV3\USBDriverVISAXP32** in the location box.

Click **Next** and the selected driver will then be installed. On completion, the dialog shown in figure 20 will be displayed. Click **Finish** to complete the process.

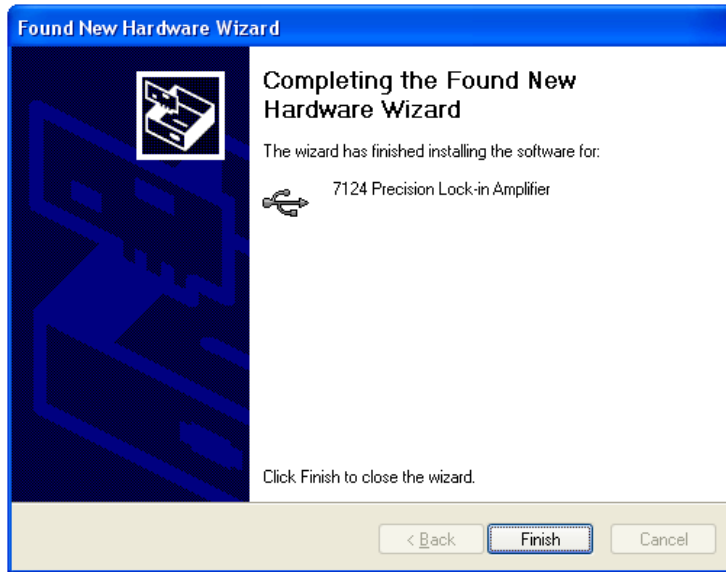


Figure 20, Driver Installation Complete

- g) To verify correct installation, go to the Start – Settings - Control Panel – System – Hardware – Device Manager dialog. If you have installed the SRUSB driver then clicking the + sign next to the **SIGNAL RECOVERY** device category will display the installed model number, as shown for the case of the model 7124 in figure 21.

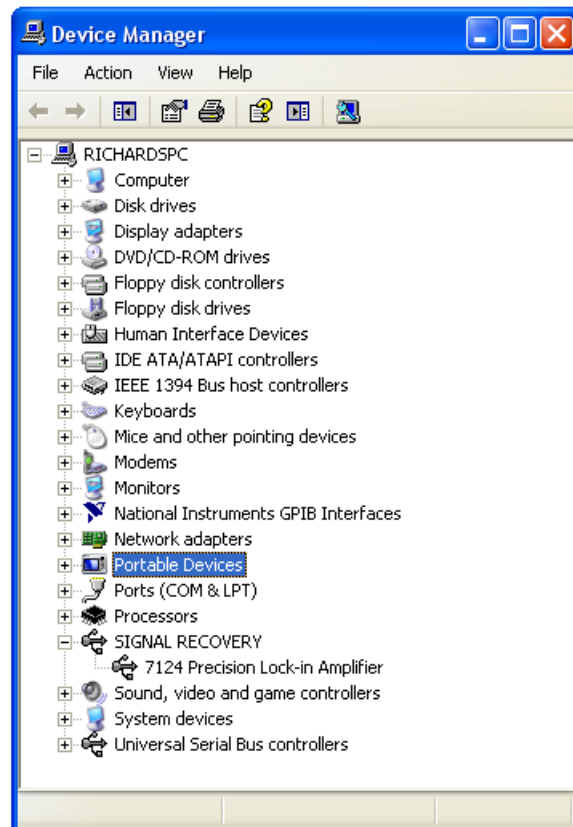


Figure 21, Device Manager - SRUSB Driver Correctly Installed

If you have installed the NI VISA driver then clicking the + sign next to the **NI VISA USB Devices** device category will display the installed model number, as shown for the case of the model 7124 in figure 22.



Figure 22, Device Manager - NI VISA Driver Correctly Installed

## Changing the Installed Driver - Windows XP

If you wish to change the installed driver from SRUSB to NI VISA or vice versa, it is first necessary to uninstall the current driver using the following procedure.

- a) Go to the Control Panel - Device Manager, click the + next to the **NI VISA USB Devices** or **SIGNAL RECOVERY** device category, and then right-click on the lock-in model number. A pop-up menu will appear, as shown in figure 23 below.

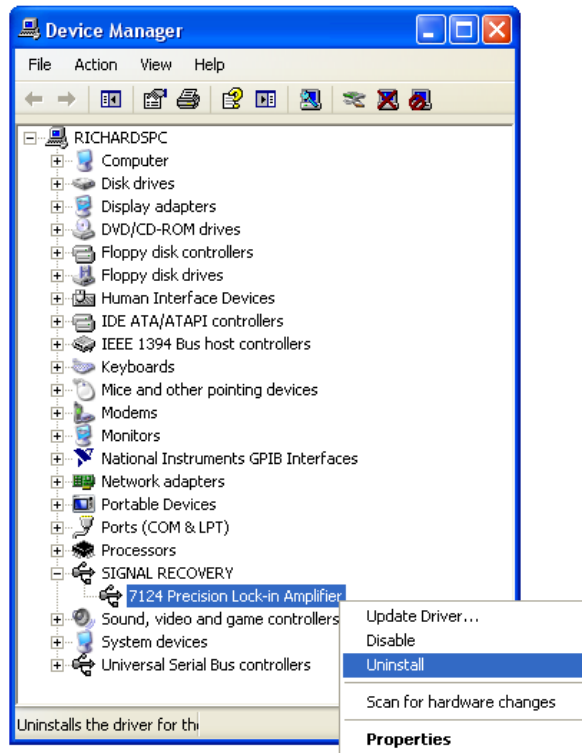


Figure 23, Preparing to Uninstall SRUSBXP Driver

- b) Click the **Uninstall** item. The menu shown below in figure 24 will appear.



Figure 24, Confirm Device Removal Dialog

- c) Click OK to uninstall the driver. However, unlike the installation on Windows 7 or Vista there is no facility to delete the underlying driver installation information **.inf** file that was copied to the PC when the driver was installed. Hence if the same instrument is detected again then the same driver file will be loaded. To prevent this happening, and allow installation of the alternative driver, it is necessary to remove the **.inf** file. To make this easy, we supply a simple program **SwitchUSBDriver.exe** that is placed in the **C:\Program Files\SIGNAL RECOVERY\USBDriversV3** folder.
- d) Use Windows explorer to find this file and double click it. The dialog shown in figure 25 will be displayed.

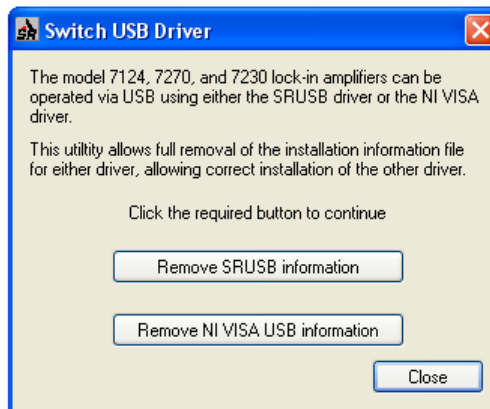


Figure 25, Switch USB Driver Dialog

- e) If you have just uninstalled the SRUSB driver then click the **Remove SRUSB information** button; if you have just uninstalled the NI VISA driver then click the **Remove NI VISA USB information** button. In either case a confirmation dialog, similar to that shown in figure 26, will be displayed

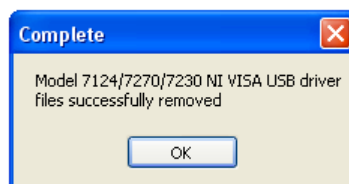


Figure 26, Driver Successfully Removed Dialog

- f) Unplug the lock-in amplifiers. The driver removal process is now complete. If you now wish to install the other driver, or re-install the driver just removed, then proceed as outlined in the section **Installation - Windows XP** above.

## Further Advice

If you require further help or assistance in driver installation or removal then please contact our service department via e-mail at [info@signalrecovery.com](mailto:info@signalrecovery.com)

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## SIGNAL RECOVERY

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