

## 1 Introduction

This document describes the procedure to update the terrain/obstacle and airport databases in an ST3400 TAWS.

## 2 Database Description

The ST3400 TAWS database consists of two files, an airport file, and a terrain/obstacle file, both of which are updated through the USB port on the front of the ST3400.

The airport database file contains airport and runway information for public airports with a runway length of 2,500 feet or greater. Coverage of the airport database is worldwide. A complete list of airports and runways in the current database is available on the Nighthawk Flight Systems, Inc. (NighthawkFS) website.

The terrain/obstacle database contains merged terrain and man-made obstacle data in 15 arc-second “cells”. Obstacles are not shown discretely but are included in the terrain cell height. Coverage of the terrain/obstacle database is divided into different geographical regions.

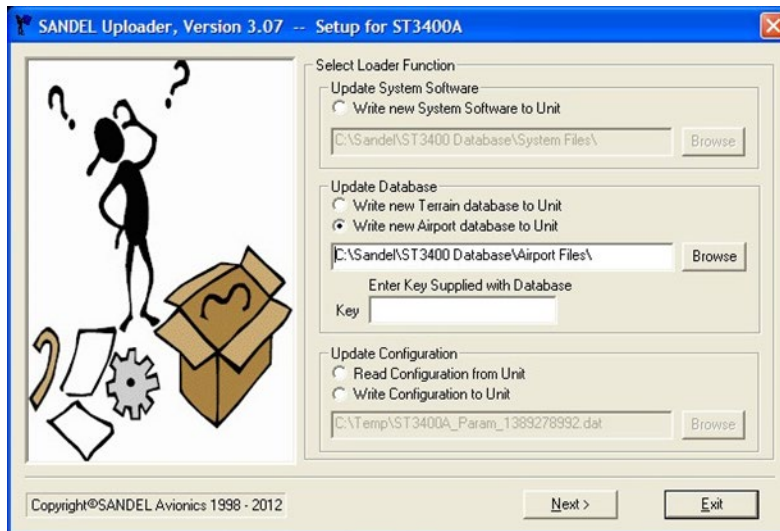
## 3 Hardware Requirements

- PC with Windows 7, Vista, or XP with available USB port
- USB to mini-USB interface cable, NighthawkFS part number 88114 or equivalent

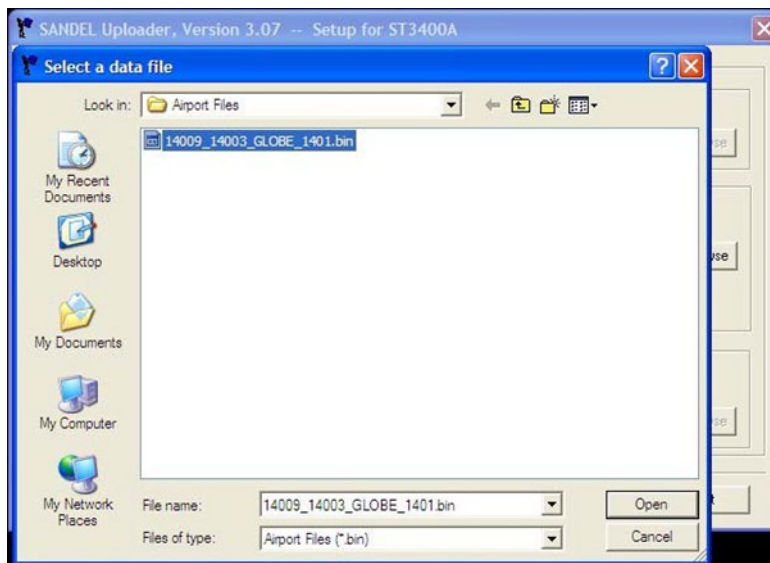
## 4 Upload Instructions

1. Before proceeding, the new database must be purchased from NighthawkFS. Distribution is by download from [www.nighthawkfs.com](http://www.nighthawkfs.com). A database key code will be supplied for each new database purchased. Different key codes are used for the airport file and terrain/obstacle files. It is important that the correct serial number of the ST3400 is given during ordering as the database key codes are serial number specific.
2. With power removed from the ST3400, connect the ST3400 to the PC via the USB cable.
3. Power up the ST3400 in maintenance mode. This is done by holding down the BRG1 and BRG2 keys on the ST3400 while applying power. Continue to hold down the two keys until the display is visible.
4. If a message ‘Found New Hardware’ appears, follow the instructions for loading the USB driver in Appendix A of these instructions.
5. Open Windows Explorer and locate the **Sandel\_Uploader\_3\_07.exe** file. The default location will be in the ‘NighthawkFS\Sandel-ST3400\_DB-Updates’ folder on the ‘C’ drive of the PC. Double click on the Sandel\_Uploader\_3\_07.exe file to start.

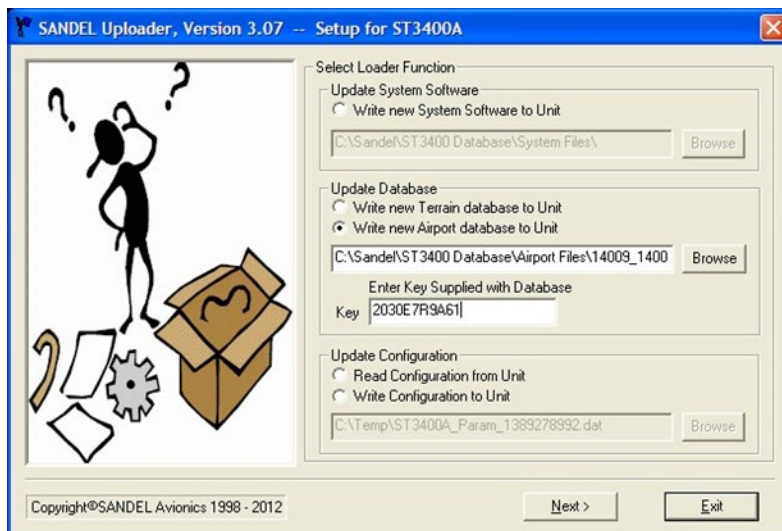
6. The Sandel Uploader Setup screen will appear. (Example below.) Select the option for **‘Write new Airport database to Unit’**.



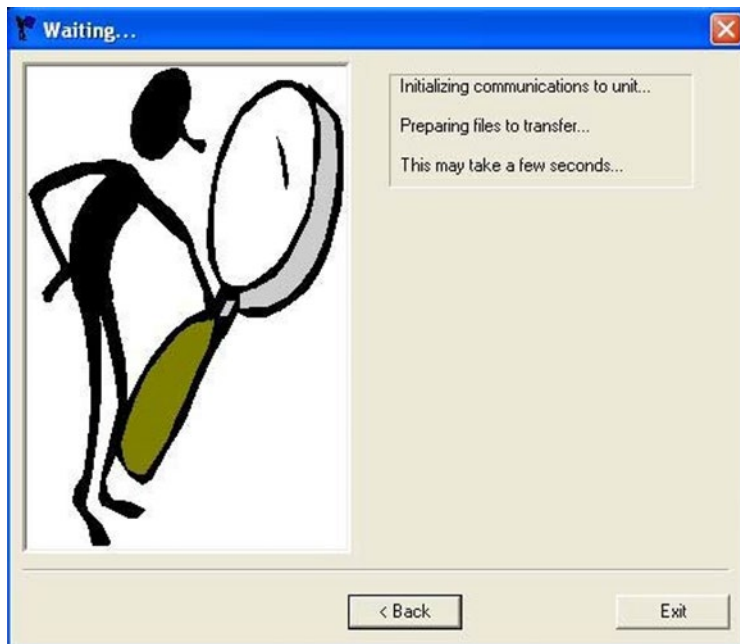
7. Click on ‘Browse’ and highlight the file specified for the current database. Click on ‘Open’. The default location for this file is in the ‘NighthawkFS\Sandel-ST3400\_DB-Updates\Airport Files’ folder.



8. Verify that the selected file is shown in the selection window. Enter the airport database key code corresponding to the serial number of the connected unit (case insensitive) in the window next to 'Key'. Click on 'Next'.



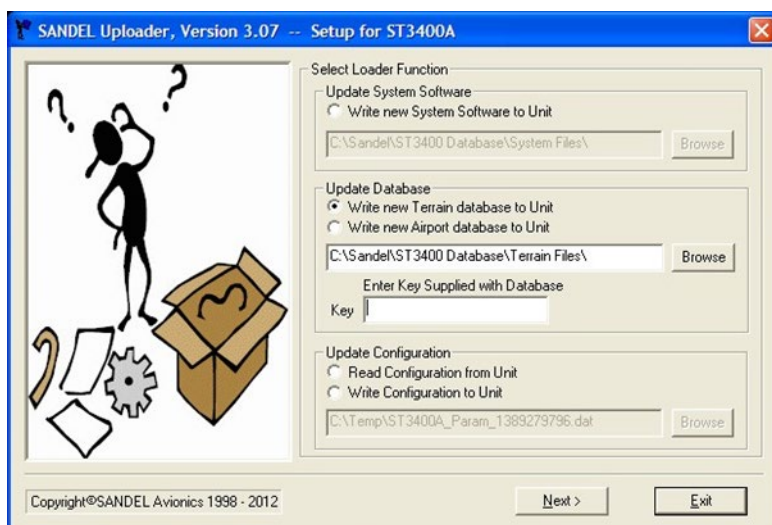
9. A message that the program is initializing communications with the unit will appear for several seconds.



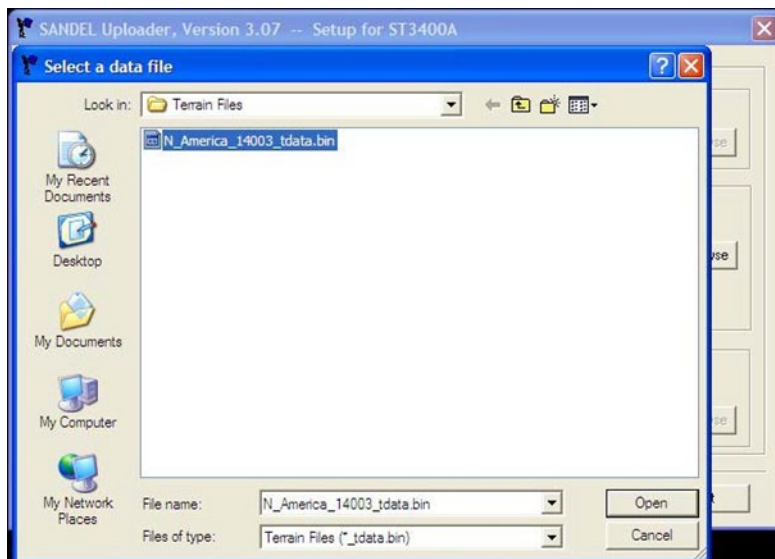
10. Once communication is established, the airport database file will be transferred to the ST3400. Do not remove power or disconnect the cable until 'Load airport data complete' is shown.



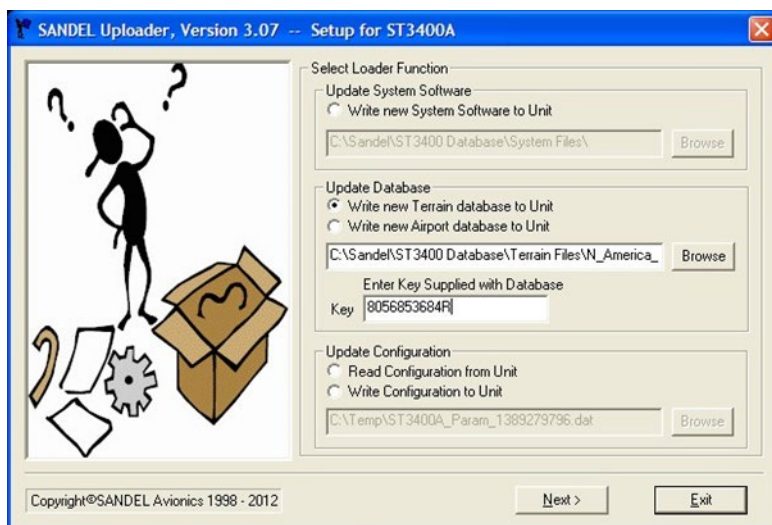
11. If only the airport database file is being updated at this time, skip to step 16. If the terrain/obstacle database file is also being updated then click on 'Back' to return to the Setup screen. Select the option for 'Write new Terrain database to Unit'.



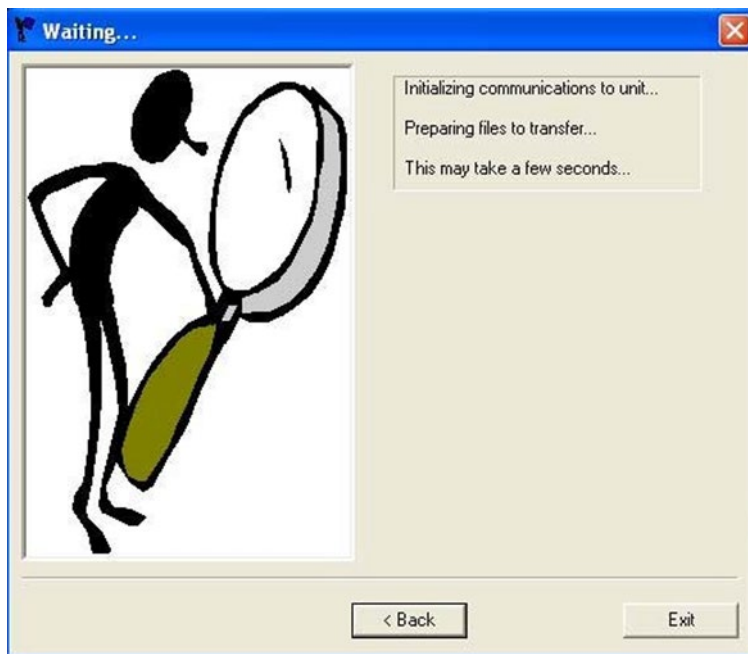
12. Click on 'Browse' and highlight the file specified for the current database. Click on 'Open'. The default location for this file is in the 'NighthawkFS\Sandel-ST3400\_DB-Updates\Terrain Files' folder.



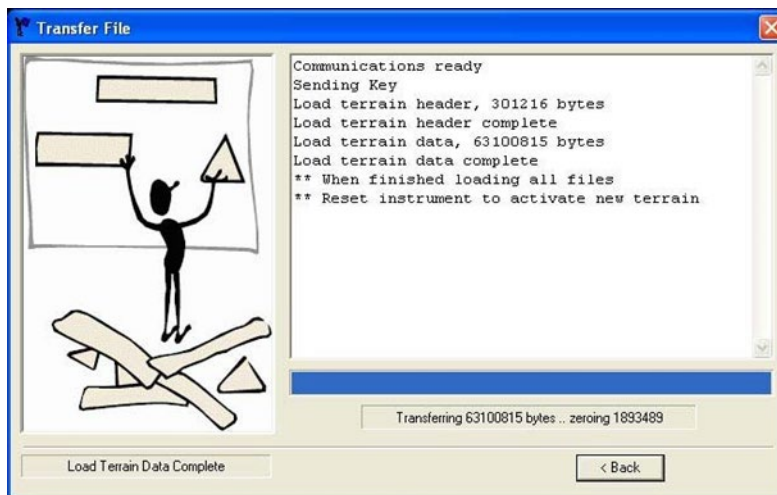
13. Verify that the selected file is shown in the selection window. Enter the terrain/obstacle database key code corresponding to the serial number of the connected unit (case insensitive) in the window next to 'Key'. Click on 'Next'.



14. A message that the program is initializing communications with the unit will appear for several seconds.



15. Once communication is established, the terrain/obstacle database file will be transferred to the ST3400. Do not remove power or disconnect the cable until 'Load terrain data complete' is shown.



16. Close the program by clicking on the red 'X' at the top right of the program window. The USB cable can now be removed and the ST3400 powered down.
17. Power up the ST3400 in maintenance mode. On Page 2, verify that Terrain Rev reflects the date and region of the current terrain/obstacle database. Verify that Airport Rev reflects the date of the current airport database. On Page 16, SFTWR CRC, press the RMI button on the ST3400 to



update the CRC codes. Verify that all fields show 'Pass'. If 'Fail' is shown in one of the fields repeat the database upload procedure.

## 5 Troubleshooting

**Error message 'Key is Invalid' appears on the PC when attempting to upload the airport or terrain/obstacle database file:** Verify that the key code was entered properly. Verify that the correct terrain/obstacle database region was chosen as shown in Step 12 as the key code is different for each region.

**Error message 'AIRPORT – TERRAIN CONFLICT' appears on the ST3400 display after updating the airport database:** This message will appear if the airport database file is not compatible with the terrain/obstacle file. The terrain/obstacle file must also be updated the unit to work properly.

Please contact NighthawkFS Product Support if there are any questions with this procedure:

Phone: 877-726-3357 or 760-727-4900 ext. 2

Email: [support@nighthawkfs.com](mailto:support@nighthawkfs.com)

## Appendix A

### NighthawkFS Sandel SN3500, SN4500 and ST3400 USB Driver Installation Instructions

#### Introduction

This document includes instructions for installing the USB driver for the NighthawkFS Sandel SN3500, SN4500 and ST3400 which utilize a USB interface. This enables the updating of software and databases through the USB port located on the front bezel of the units.

Note: This procedure does not apply to the SN3308 EHSD as that product requires a serial interface.

#### Hardware Requirements

- PC with Microsoft Windows 7, Vista or XP with available USB port.
- USB to mini-USB interface cable, NighthawkFS part number 88114 or equivalent

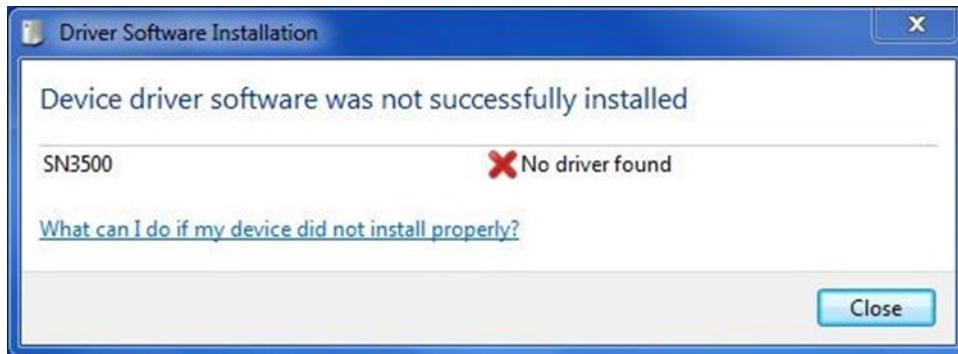
#### USB Driver Installation Instructions

It is necessary to install a USB driver the first time a ST3400 unit is connected to a PC via the USB interface. The procedures are slightly different for each version of Windows and are described separately on the following pages.

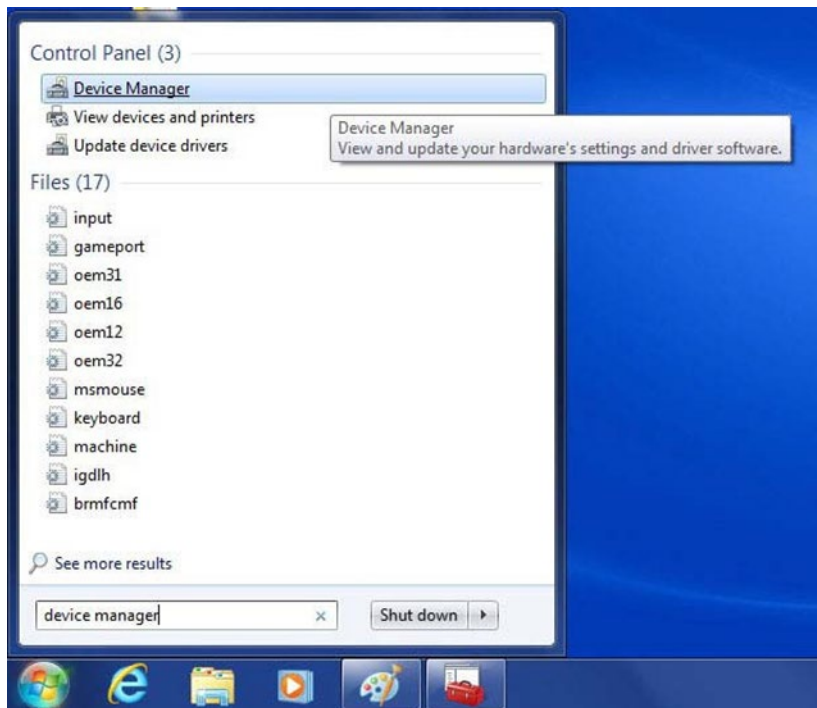
#### Windows 7 64-bit USB Driver Installation

1. With power removed from the ST3400 unit, connect the unit to the PC via the USB cable.
2. Power up the ST3400 unit in maintenance mode. This is done by holding down the appropriate keys while applying power. Continue to hold down the keys until the display is visible.

- The computer will attempt to automatically find and install a USB driver however it will respond an error message as shown below. (SN3500 example used for illustration.) Close the window and proceed to the next step.

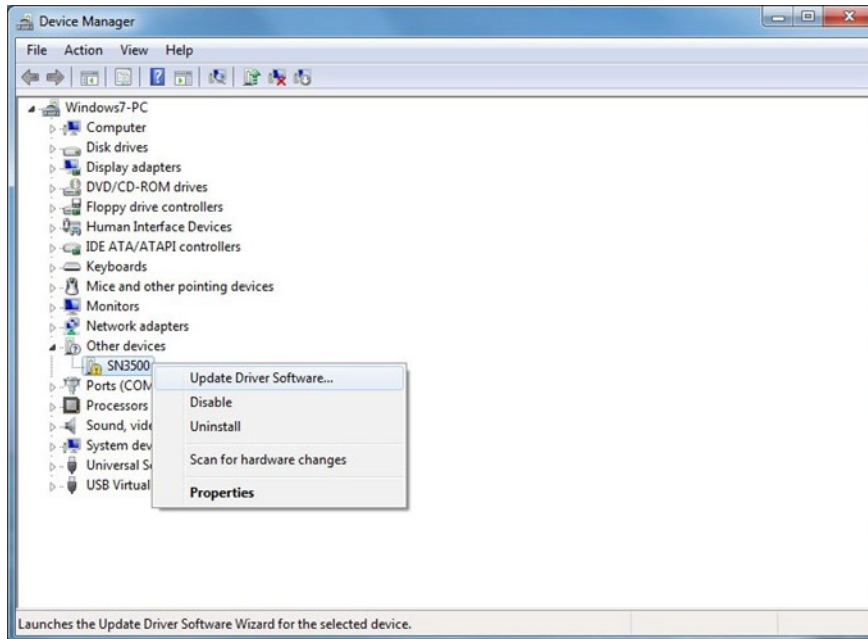


- Click on the start icon at the lower left of the desktop and type 'device manager' in the search box. Click on the 'Device Manager' program when it appears at the top of the start window as shown below.

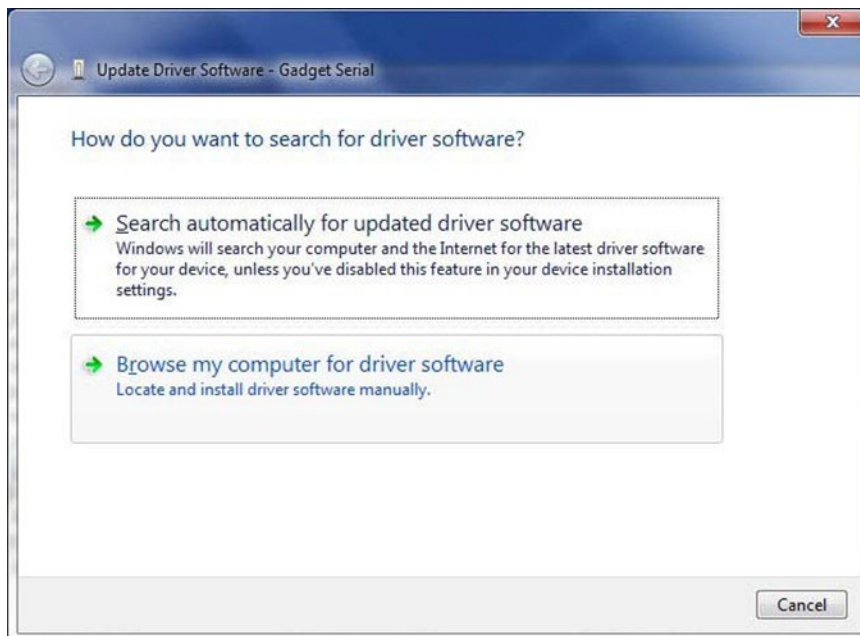




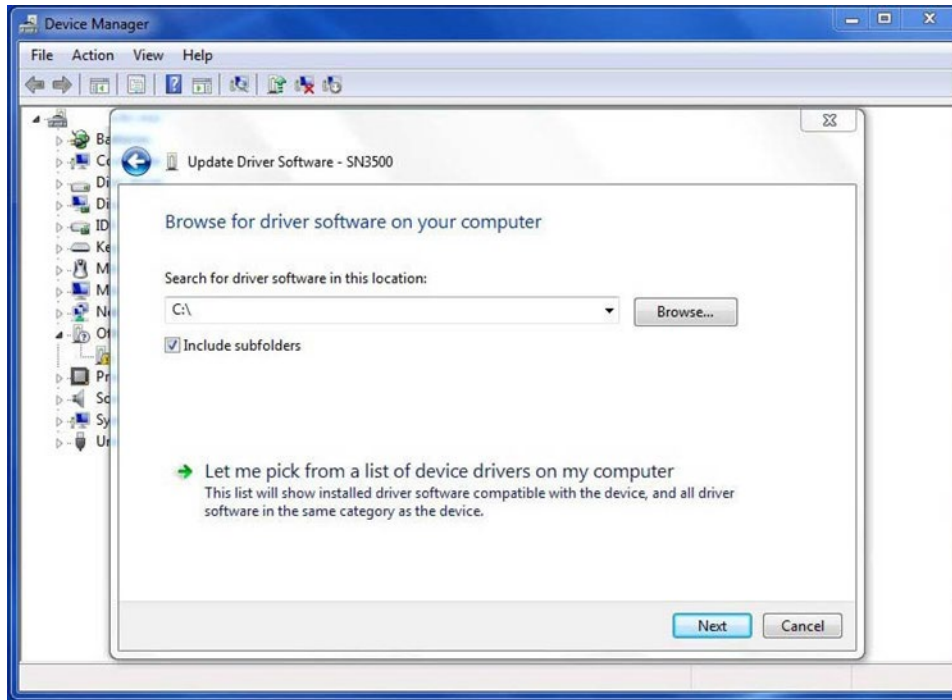
5. On the Device Manager window, double-click on 'Other devices' and then right-click on 'SN3500' (or SN4500/ST3400 as appropriate). Then click on 'Update Driver'.



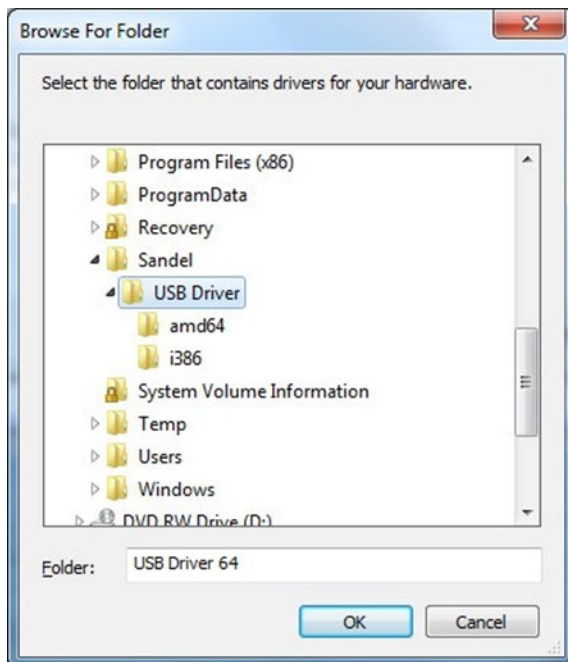
6. The Update Driver Software window will appear. Click on 'Browse my computer for driver hardware'.



7. The Browse for driver software on your computer will be shown. Click on 'Browse'.



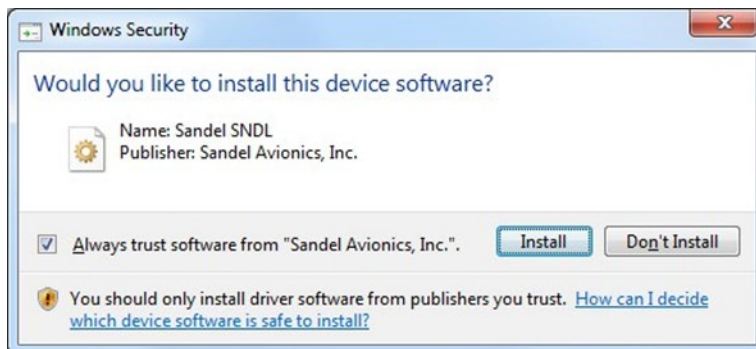
8. Select the ST3400 USB Driver folder. The default location is 'C:\NighthawkFS\Sandel-ST3400\_DB-Updates\USB Driver'. Click on 'OK'.



9. The USB Driver folder will be shown in the selection window. Click on 'Next'.



10. If a window appears asking 'Would you like to install this device software?' click on 'Install'.

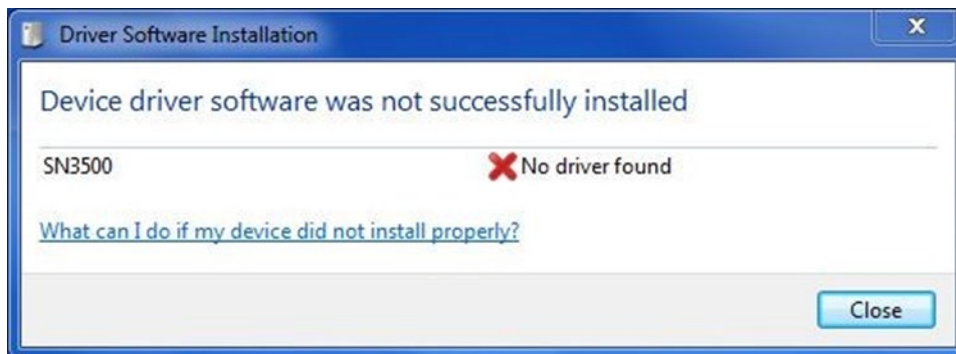


11. Windows will install the driver and display the message 'Windows has successfully updated your driver software' when complete. Click on 'Close' to complete the process.

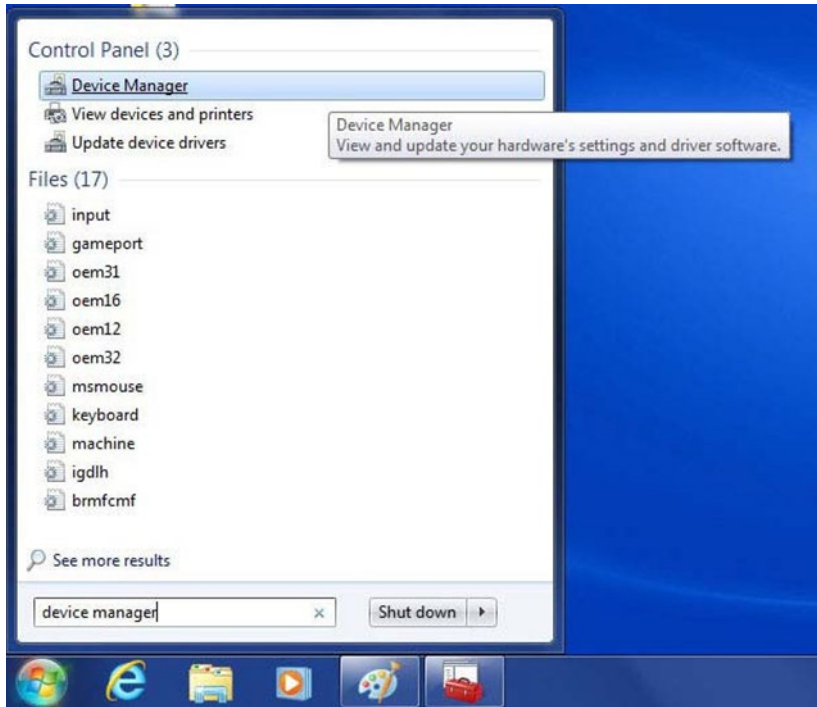


## Windows 7 32-bit USB Driver Installation

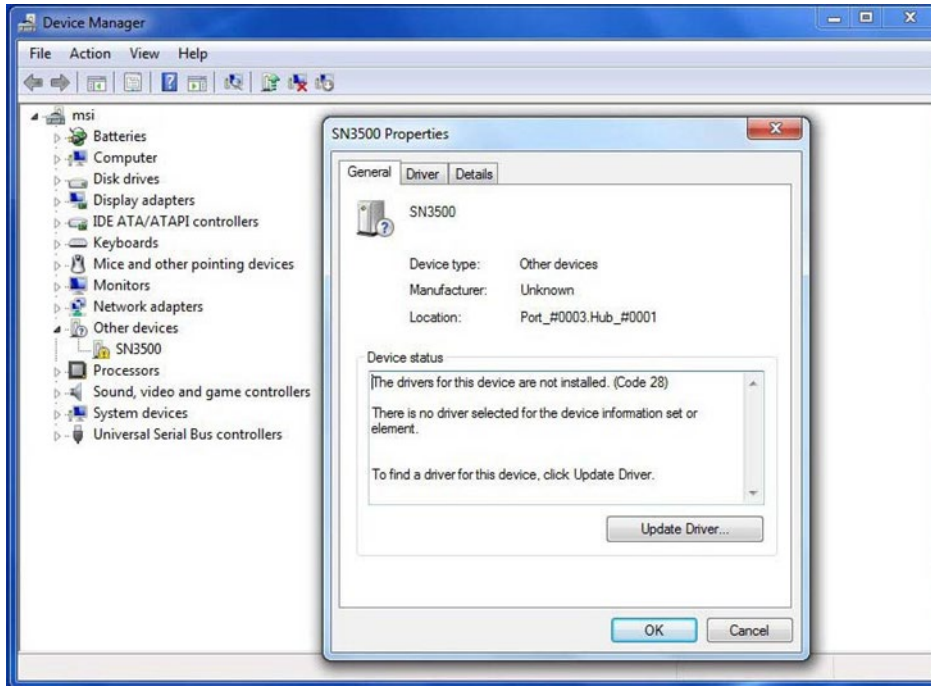
1. With power removed from the ST3400 unit, connect the unit to the PC via the USB cable.
2. Power up the ST3400 unit in maintenance mode. This is done by holding down the appropriate keys while applying power. Continue to hold down the keys until the display is visible.
3. The computer will attempt to automatically find and install a USB driver however it will respond an error message as shown below. (SN3500 example used for illustration.) Close the window and proceed to the next step.



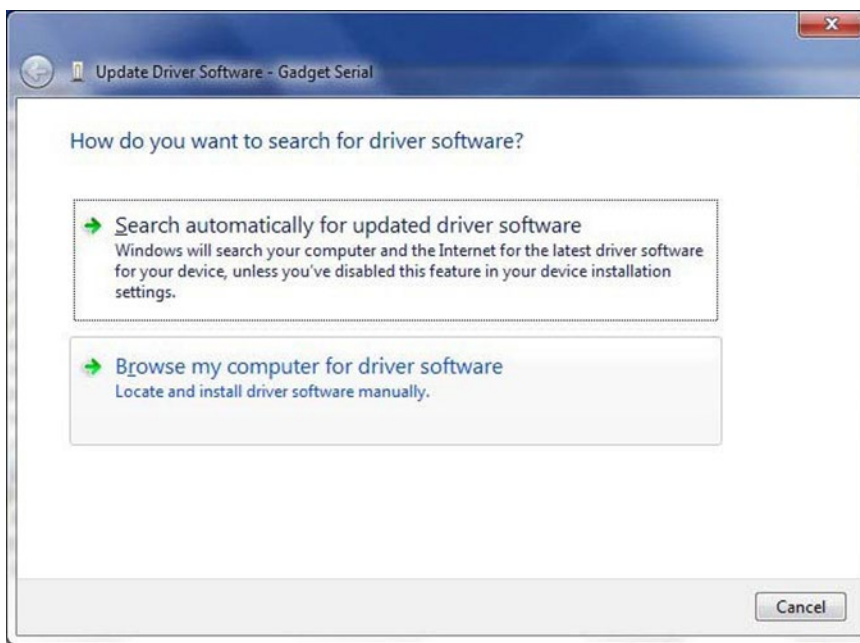
4. Click on the start icon at the lower left of the desktop and type 'device manager' in the search box. Click on the 'Device Manager' program when it appears at the top of the start window as shown below.



5. On the Device Manager window, double-click on 'Other devices' and then double-click on 'SN3500' (or 'SN4500' or 'ST3400' as appropriate) to bring up the properties window for that device. Then click on 'Update Driver'.

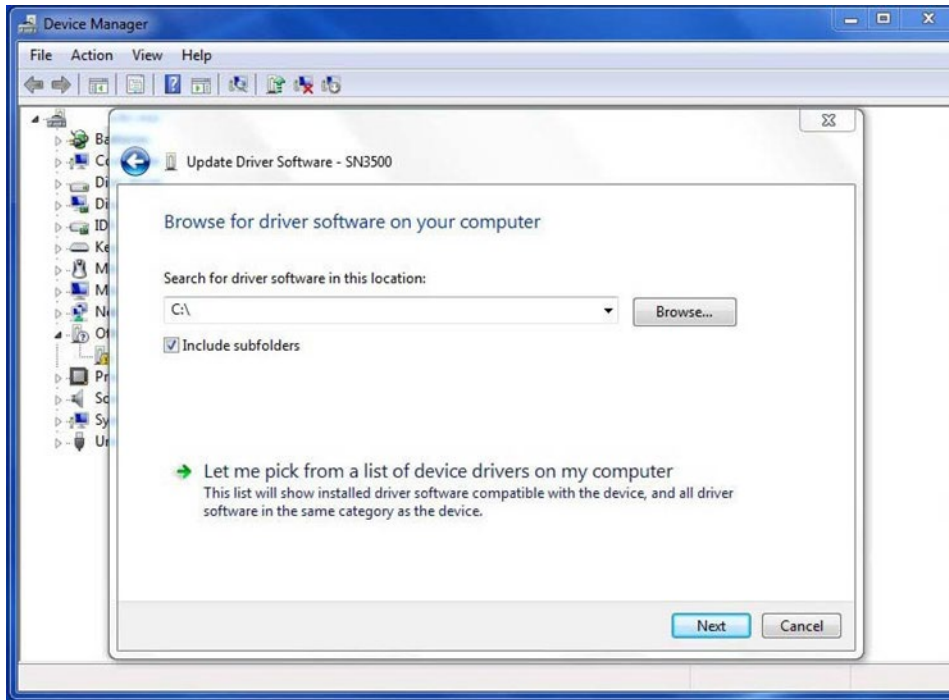


6. The Update Driver Software window will appear. Click on "Browse my computer for driver hardware".

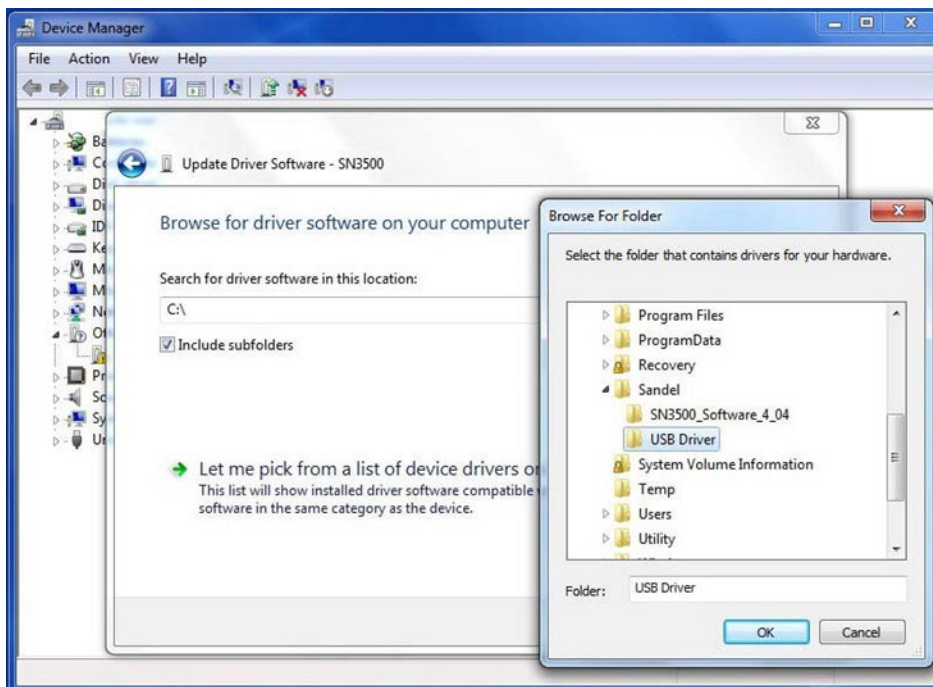




7. The Browse for driver software on your computer will be shown. Click on 'Browse'.

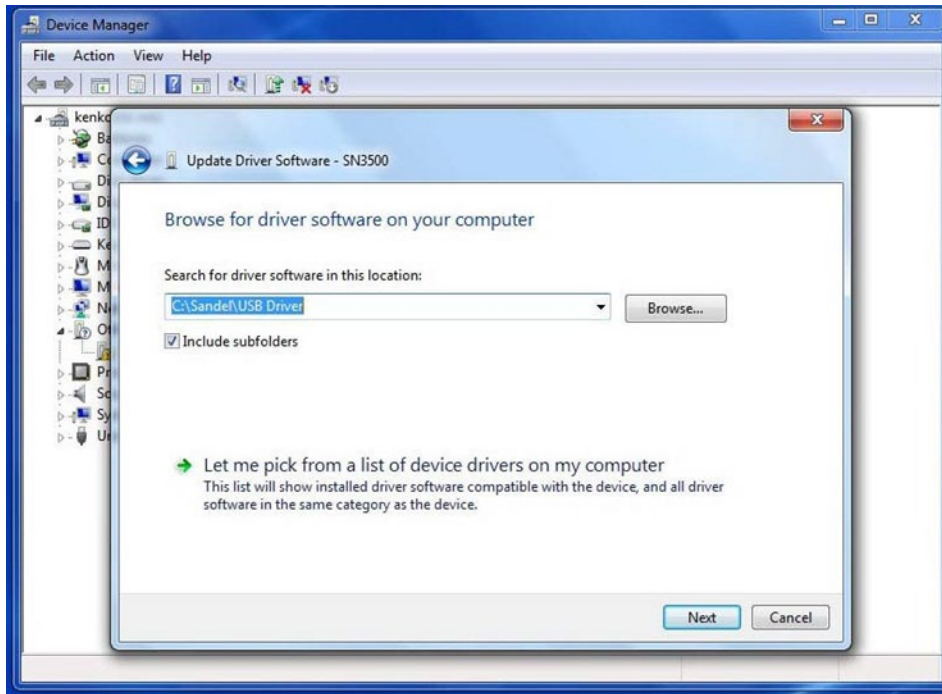


8. Select the ST3400 USB Driver folder. The default location is 'C:\NighthawkFS\Sandel-ST3400\_DB-Updates\USB Driver'. Click on 'OK'.





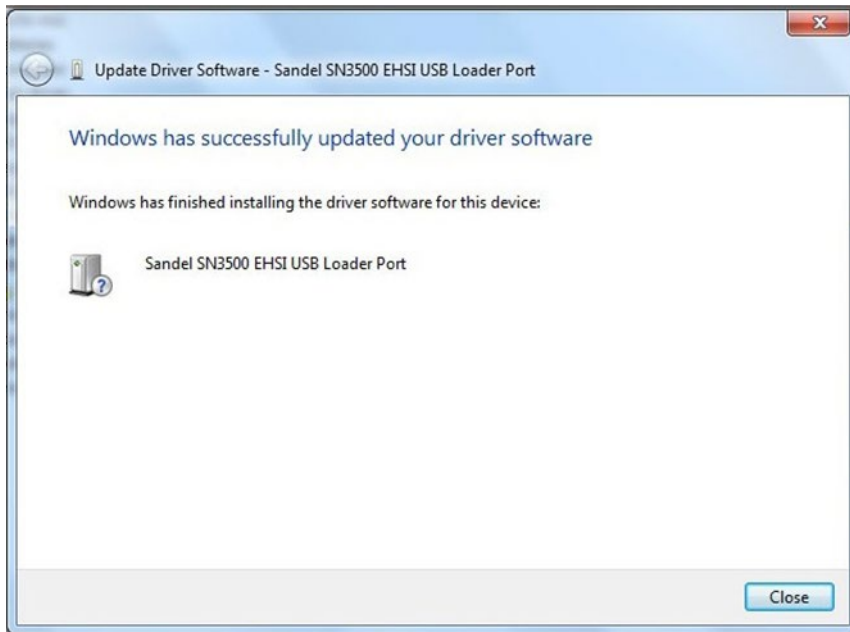
9. The USB Driver folder will be shown in the selection window. Click on 'Next'.



10. If a warning message appears, click on 'Install this driver software anyway'.



11. Windows will install the driver and display the message 'Windows has successfully updated your driver software' when complete. Click on 'Close' to complete the process.



## Windows Vista USB Driver Installation

1. With power removed from the ST3400 unit, connect the unit to the PC via the USB cable.
2. Power up the ST3400 unit in maintenance mode. This is done by holding down the appropriate keys on the unit while applying power. Continue to hold down the keys until the display is visible.
3. A message 'Windows needs to install driver software' will appear. (Example using the SN3500 is shown below.) Click on 'Locate and install driver software'.

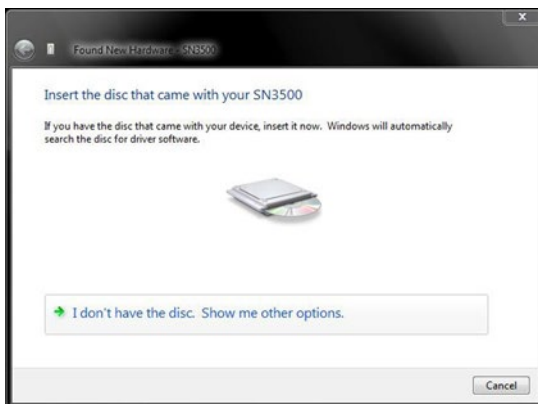


4. A message 'Windows needs your permission to continue' will appear. Click on 'Continue'.

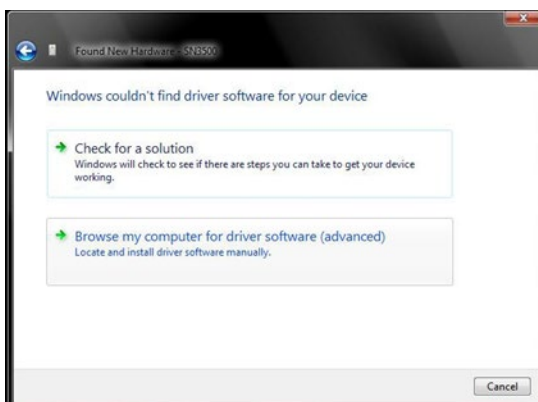
5. A message 'Installing device driver software' will appear at the lower right. No action is necessary.



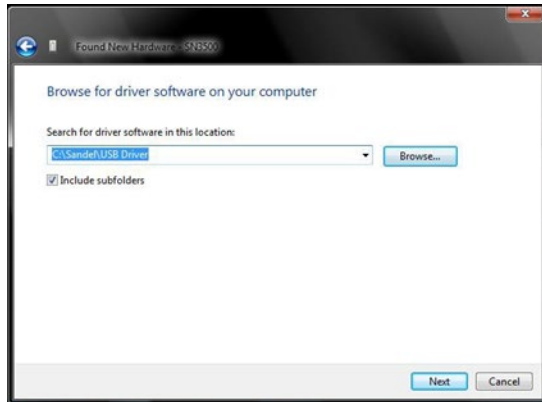
6. After several seconds, Windows will prompt to 'Insert the disc'. Click on 'I don't have the disc. Show me other options.'



7. A message 'Windows couldn't find driver software for your device' will appear. Click on 'Browse my computer for driver software'.



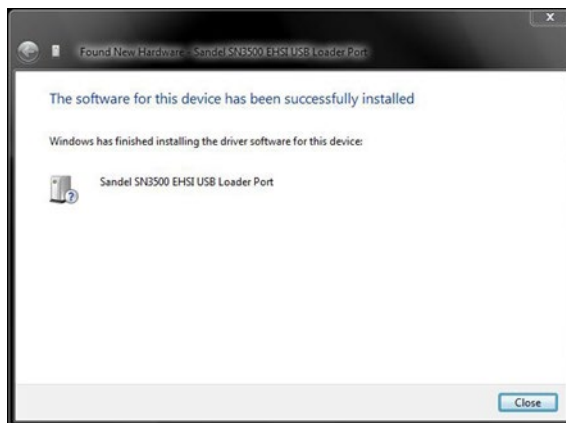
8. Windows will ask for the location of the driver. Click on 'Browse' to select the folder which contains the file 'ST3400.inf'. The default location is C:\NighthawkFS\Sandel-ST3400\_DB-Updates\USB Driver'. Click on 'Next'.



9. A warning message 'Windows can't verify the publisher of this driver software' will appear. Click on 'Install this driver software anyway'.



10. Windows will install the driver. This will take several seconds. After successful installation of the driver click on 'Close' to complete the process.





## Windows XP USB Driver Installation

1. With power removed from the ST3400 unit, connect the unit to the PC via the USB cable.
2. Power up the ST3400 unit in maintenance mode. This is done by holding down the appropriate keys on the unit while applying power. Continue to hold down the keys until the display is visible.
3. A message 'Found New Hardware' will appear. (Example using the SN3500 below.)



4. The Found New Hardware Wizard will start. Select the option 'No, not this time' and click on 'Next'.



5. Windows will ask if it should install the software automatically or install from a list or specific location. Select the option 'Install from a list or specific location (Advanced)' and click on 'Next'.



6. Windows will ask for the location of the driver. Select the option 'Search for the best driver in these locations' and check the box 'Include this location in search:'. Click on 'Browse' and select the folder that contains the file 'ST3400.inf'. The default location is 'C:\NighthawkFS\Sandel-ST3400\_DB-Updates\USB Driver'. Click on 'Next'. (Note: ST3400.inf is used for all NighthawkFS Sandel models.)



7. Windows will locate and install the necessary driver.



8. The driver has been installed. Click on 'Finish' when complete.



**END OF USB DRIVER INSTALLATION INSTRUCTIONS**

