Navigator Installation

Driver Installation – Windows XP & Vista

When a USB device is plugged into a Windows computer for the first time, the operating system sees that new devices are present on the USB and goes through a process of determining what the new devices are, and installing the drivers for them. Some Navigator devices are generic Windows devices with generic Windows drivers used. On the Navigator, both the 4 channel HUB and the USB Audio Codec sound device are generic and get installed automatically.

The rest of the board USB devices are set up as standard serial ports, with certain functions assigned to these ports:

Navigator CAT	Navigator PTT, CW, Squelch
Navigator WinKey	Navigator FSK
Navigator RS232	Navigator Configuration

These six functions will have a total of twelve configuration procedures that are created by Windows. Six are port related, and six are device related. The three USB / Serial converter devices used on Navigator support two COM ports per device so have individual setups per device.

Usually, the first port found is the Navigator CAT port. You will see four panels with option selection required to configure this port. These four panels are shown in the example below. Place the CD-ROM supplied with Navigator into the CD-ROM drive of your computer. This CD contains the drivers for Navigator.
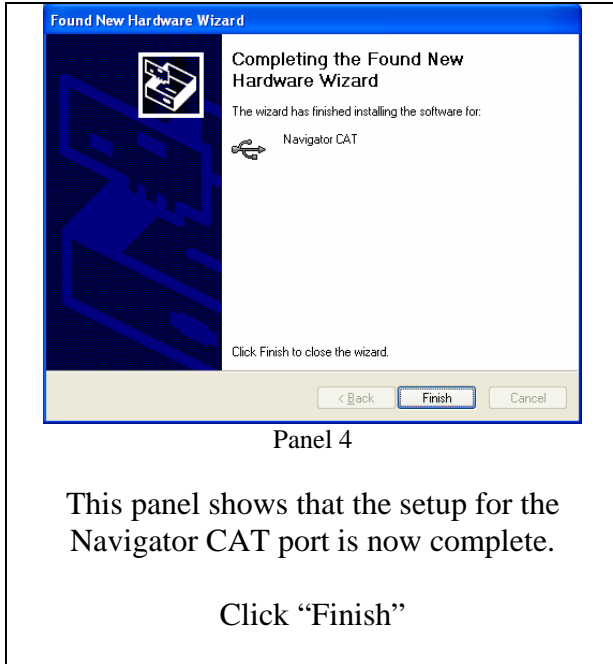
Copy the directory NavDrivers from the CD-ROM to your C:\ drive. It is necessary to have the drivers moved to the hard drive, because some of the files will be marked "Read Only" if executed from the CD-ROM.

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After you have copied the NavDrivers directory from the CD-ROM to the C:\ hard drive, you can plug in your Navigator to the USB bus. Your computer will recognize that there is a new device, and will present the following screens to install the drivers. This will take about 5 minutes.

At the beginning of the Found New Hardware Wizard, this is the first screen you will see. Check "No, not this time" and then click Next	On this screen, click "Install from a list or specific location (Advanced)" Click Next
Uncheck "Search removable …" Check "Include this location …" Next, browse to find c:\NavDrivers\WinxP2000. Click Next> Note: If you are installing on a 64 bit machine, select C:\NavDrivers\WinXPx64 instead.	You will see this screen. Our drivers are the certified FTDI drivers, but since we changed the Product ID, you get this screen. Click "Continue Anyway"

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Panel 4

This panel shows that the setup for the
Navigator CAT port is now complete.

Click "Finish"

This completes the first of 12 configuration sets for the Navigator. In each set, click the
option button(s) as shown in the above five panels.

        Panel 1: Click "No, not this time"
        Panel 2: Click "Install from a list or specific location (Advanced)"
        Panel 3: This panel will show that searching is progressing – a few seconds
        Panel 4: Click "Continue Anyway"
        Panel 5: Click "Finish"

The 12 configuration sets are (order may vary)
Individual Ports
        Navigator CAT
        Navigator PTT CW Squelch
        Navigator WinKey
        Navigator FSK
        Navigator RS232
        Navigator Configuration

Navigator Devices (each done twice to account for the two sub channels per USB device)
        Navigator CAT & PTT CW Squelch
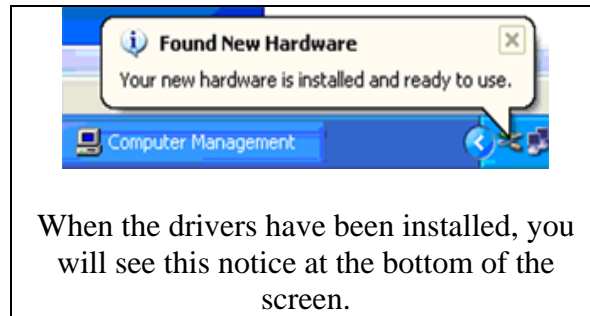   Navigator CAT & PTT CW Squelch
        Navigator WinKey & FSK
        Navigator WinKey & FSK
        Navigator RS232 & Configuration
        Navigator RS232 & Configuration

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When the drivers have been installed, you will see this notice at the bottom of the screen.
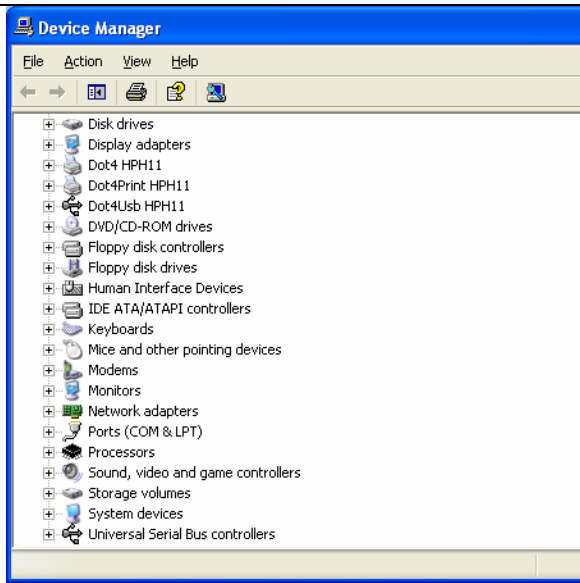
This completes the installation of the drivers for Navigator.
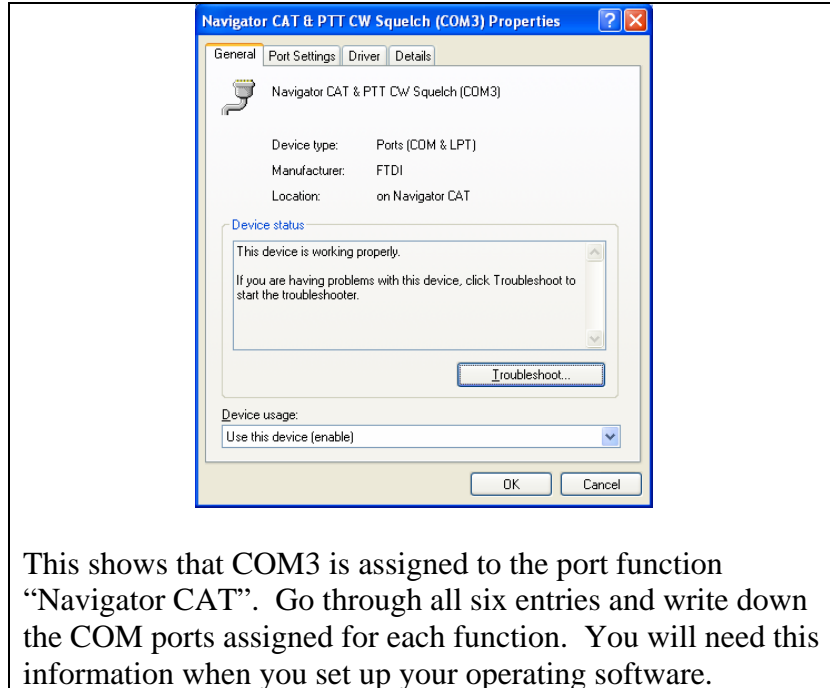
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Checking COM Port Assignments

When all devices have been configured, you can check the COM ports assigned by Windows for these devices using the Device Manager.

To open Device Manager, click **Start**, and then click **Control Panel**. Click **Performance and Maintenance**, and then click **System**. On the **Hardware** tab, click **Device Manager**.   You should see a panel similar to the one below.

Panel 1	Panel 2
Click on "Ports (COM & LPT)"	You will see the Devices listed (duplicated because there are two ports per device). With the COM ports assigned by Windows. Double click on one of them (example COM3) and you will see more detail on the next panel.

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This shows that COM3 is assigned to the port function "Navigator CAT". Go through all six entries and write down the COM ports assigned for each function. You will need this information when you set up your operating software.

The COM assignments established by the operating system during driver configuration may not be the ones needed by your software. This table shows the ones assigned, and the desired changes to the assignments to be compatible with most ham software programs. (See Chapter 1 for an analysis of popular sound card modes vs. COM assignments.)

Function	Initial COM Assignment	Desired COM Assignment
Navigator CAT Control	COM3	COM5
Navigator PTT, CW & Squelch	COM4	COM6
Navigator WinKey Control	COM5	COM7
Navigator FSK Control	COM6	COM8
Navigator General Purpose RS232	COM7	COM4
Navigator Configuration Channel	COM8	COM12

COM assignments are not always contiguous. There may be other devices already assigned to ports within the sequence. When this happens, Windows skips over the pre-assigned port and assigns the next available slot to the next port function.
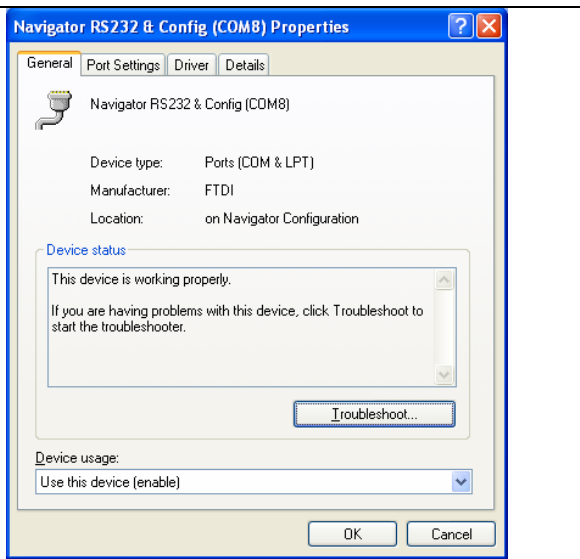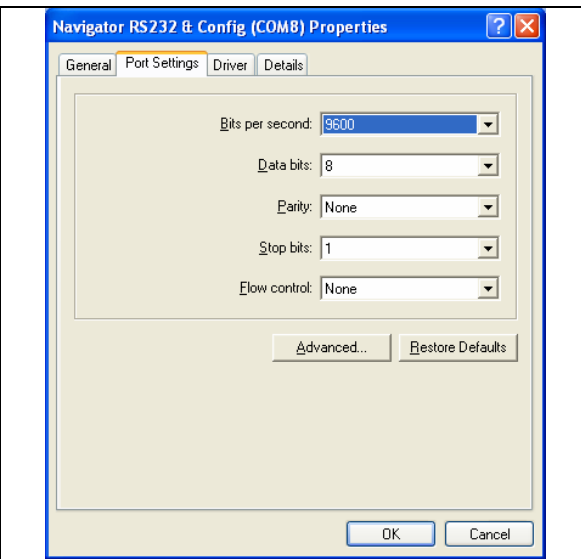
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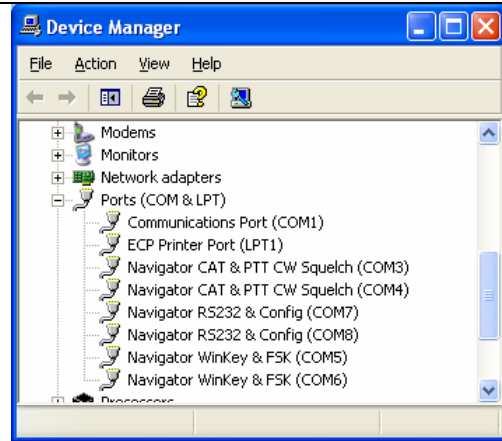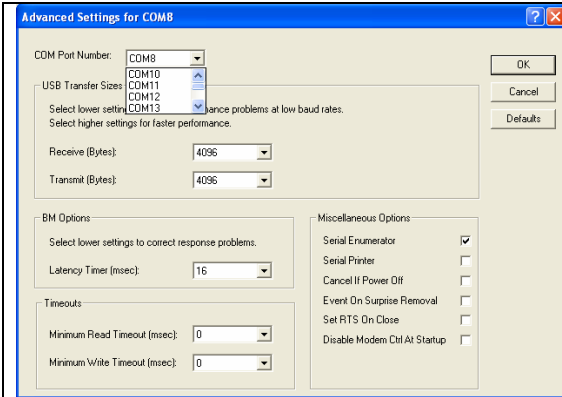
Changing COM Port Assignments

If you want to change the port assignments for Navigator, use the following procedure to do so.   First decide the sequence that you will use to re-assign the COM port numbers. Pick an empty slot to move the first one to, and then move the next to fill the just vacated slot. The COM assignment table above has been arranged to show this method.

Function	Initial COM Assignment	Desired COM Assignment	Change Sequence
Navigator Configuration Channel	COM8	COM12	1
Navigator FSK Control	COM6	COM8	2
Navigator PTT, CW & Squelch	COM4	COM6	3
Navigator General Purpose RS232	COM7	COM4	4
Navigator WinKey Control	COM5	COM7	5
Navigator CAT Control	COM3	COM5	6

Following this procedure ensures that you do not "double assign" a COM port in the process.   For each COM Function, double click on the COM number in the Device Manager. The first one will be COM8.

Double Click on "COM8" in Device manager. It will bring up this screen.

Click on "Port Settings"

Click on "Advanced"

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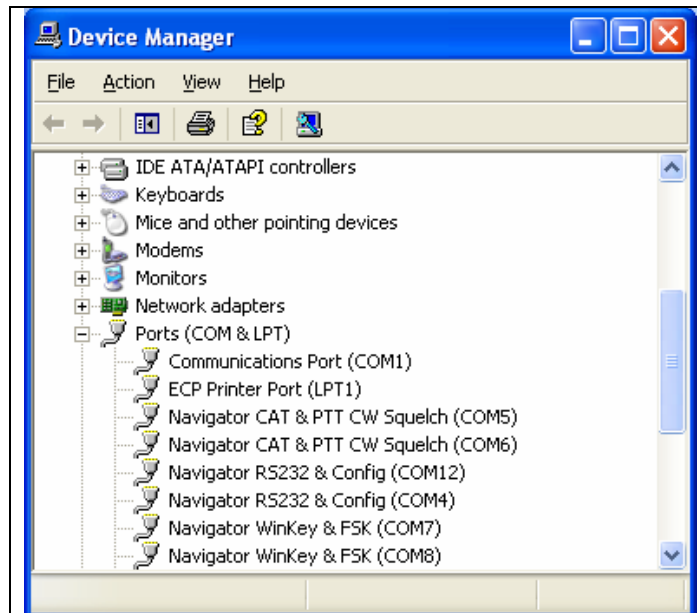Click on the "COM Port Number" and select COM12

Then Click OK – this returns you to the Properties Screen

Then Click OK on the Properties Screen to return to Device Manager

The Device Manager PORT display will come up again. Notice that the port that you just changed to 12, is still showing 8. The display needs to be refreshed by going to the "Action" menu and clicking on "Check for Hardware Changes"

The display will now show The port as COM12.

Repeat this process for each port that you want to change. In this example, you will change all 6 ports. When you are done, the new Device Manager display should look like

This completes the USB Driver Reassignment Procedure. – At this point, **REBOOT** the computer

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Certain information is saved in the Windows Registry regarding the devices found and the ports assigned. The Vendor ID Number (VID) and the Product ID number (PID) and the unique serial number of each device is saved, along with the COM port assigned to it.

If you unplug the USB cable from the device, all of the ports assigned are removed from the active list, but remain in the Registry. When you plug it in again, the Navigator and all of the devices will be given the port numbers of the original assignment. So your operating software which has been set up with these COM port assignments will be ready to go without re-configuring each time.

Another benefit of this system is that with unique serial numbers assigned, you can plug in multiple Navigators and they will maintain their private set of COM ports.