

# USB Installation Guide

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## 1- USB Driver installation under Microsoft Windows XP/2000:

### Before You Begin

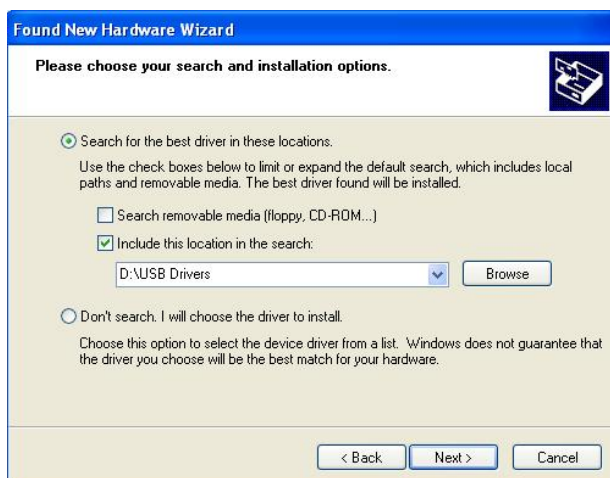
You will need to install the USB drivers for each controller you connect to your PC. For that reason, it's a good idea to store a copy of the drivers with the KEM-Log software. Before beginning, make a copy of the entire "USB Drivers" folder, which can be found in the JKEM folder on your C drive, and paste it in the "J-KEM Scientific" folder inside of the Programs Folder on your C drive.

**STEP 1:** Using the supplied USB cable, connect the J-KEM temperature controller or vacuum regulator to any available USB port in your computer.

**STEP 2:** The following screen will pop up. Select "**Install from a list or specific location (Advanced)**" and then click the "**NEXT**" button.



**STEP 3:** The following screen will pop up. Make sure only "**Search for the best driver in these locations**" and "**Include this location in the search**" are selected. Click on the "**Browse**" button.



**STEP 4:** The following screen will pop up. Open the KEM-Installation folder on the C drive. Select the folder “**USB Drivers**” and then click on the “**OK**” button. When presented with the option, click on the “**Next**” button as shown in STEP 3.



**STEP 5:** Click on “**Continue Anyway**” and wait until Windows installs the drivers. This is just a warning and won’t affect your PC.



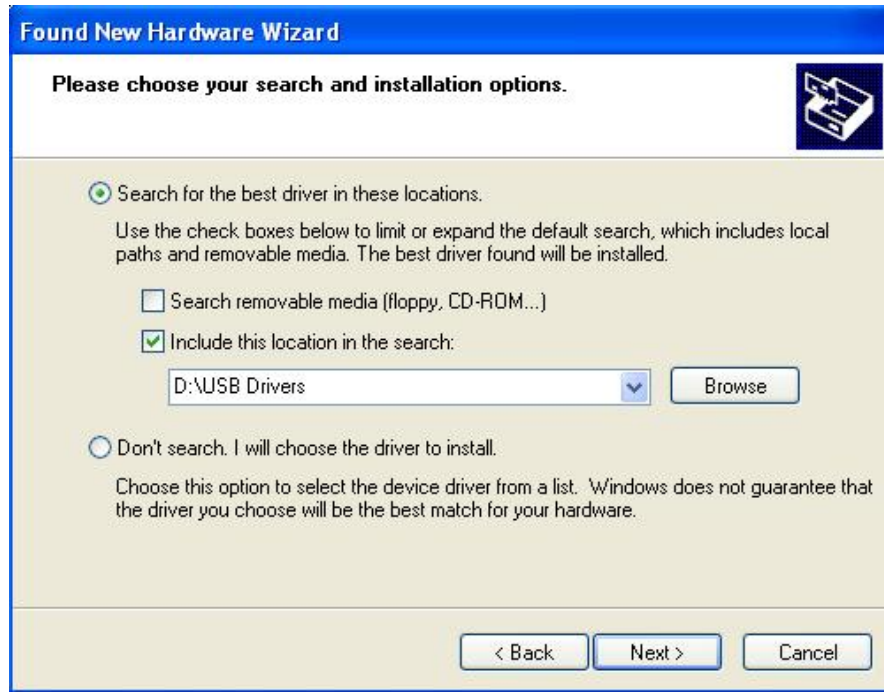
**STEP 6:** The following screen will pop up. Click on the “**Finish**” button



**STEP 7:** Now Windows will install the drivers for the serial port or VCP (virtual communication port). Select “**Install from a list or specific location (Advanced)**” and then click on the “**NEXT**” button.



**STEP 8:** The following screen will pop up. Make sure only “**Search for the best driver in these locations**” and “**Include this location in the search**” are selected. Click on the “**Browse**” button.



**STEP 9:** The following screen will pop up. Open the KEM-Installation folder on the C drive. Select the folder “**USB Drivers**” and then click on the “**OK**” button. When presented with the option, click on the “**Next**” button as shown in STEP 3.



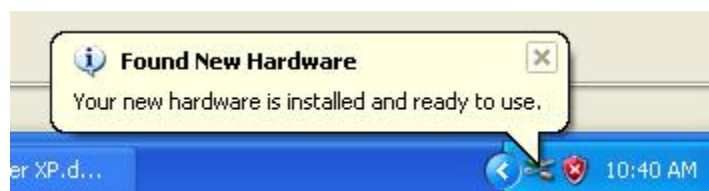
**STEP 10:** Click on “**Continue Anyway**” and wait until Windows installs the drivers. This is just a warning and won’t affect your PC.



**STEP 11:** The following screen will pop up. Click on the “**Finish**” button.



Congratulations! You successfully installed the J-KEM’s USB drivers.





## **2- USB Driver un-installation under Microsoft Windows XP/2000:**

**STEP 1:** Open the KEM-Net installation folder on the C drive and run the “FTClean.exe” application that it’s inside the “USB Drivers” folder.



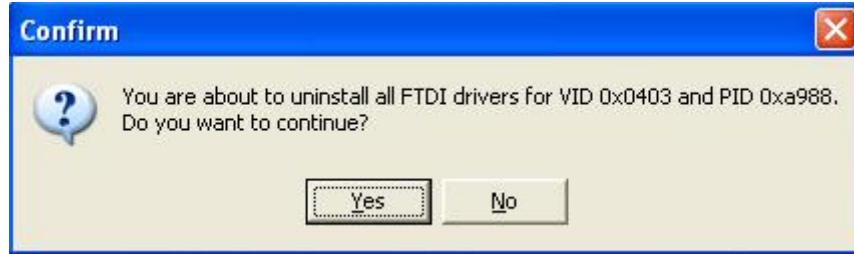
**STEP 2:** The following screen will pop up. Enter **a988** in the “PID(Hex)” field and click on the “Clean System” button.



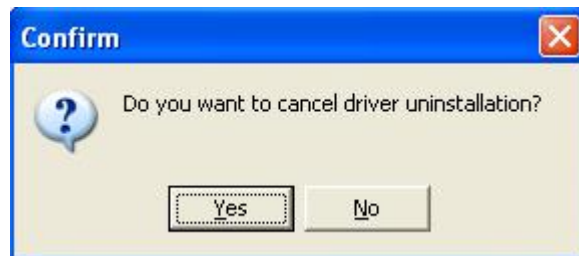
**STEP 3:** Disconnect all the J-KEM’s USB devices attached to the computer and click on the “OK” button.



**STEP 4:** Click on the “YES” button.



**STEP 5:** Click on the “NO” button.



**STEP 6:** Wait until the application removes the USB drivers from the computer. After that you'll see the following screen. Click on the “EXIT” button to close the application.



Congratulations! You successfully un-installed the J-KEM's USB drivers.



### **3- Troubleshooting Microsoft Windows XP/2000**

#### ***3.1 Windows XP forces a reboot after installing a device***

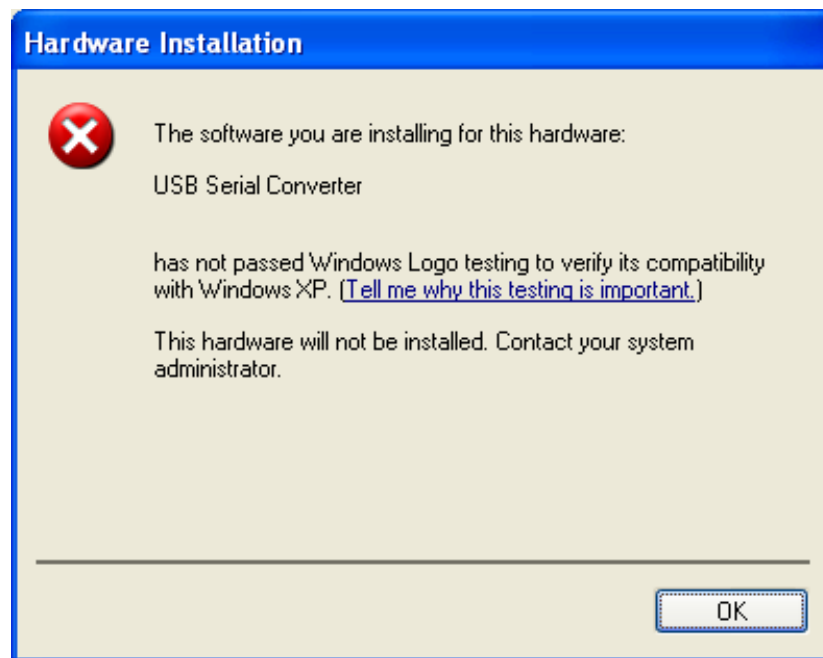
This problem can occur if an application is accessing a file while the New Hardware Wizard is trying to copy it. This usually occurs with the FTD2XX.DLL file. If installing a device, select not to restart the computer then unplug the device and wait 30 seconds. Plugging the device back in may allow the device to function properly without restarting.

#### ***3.2 Driver installation fails and Windows XP gives error code 10***

Windows error code 10 indicates a hardware error or failed driver installation. This error may appear if a device has insufficient power to operate correctly (e.g. plugged into a bus powered hub with other devices), or may indicate a more serious hardware problem. Also, it may be indicative of USB root hub drivers being incorrectly installed. If the error persists, please contact your computer support group.

#### ***3.3 Windows XP displays an error and then terminates installation***

If the following screen is displayed with this message, Windows XP has been configured to block the installation of any drivers that are not WHQL certified.



The driver signing options can be changed to either warn or ignore to allow the installation to complete.

To change the current driver signing setting, go to "**Control Panel\System**", click on the "**Hardware**" tab and then click "**Driver Signing**". The desired signing option may then be selected.

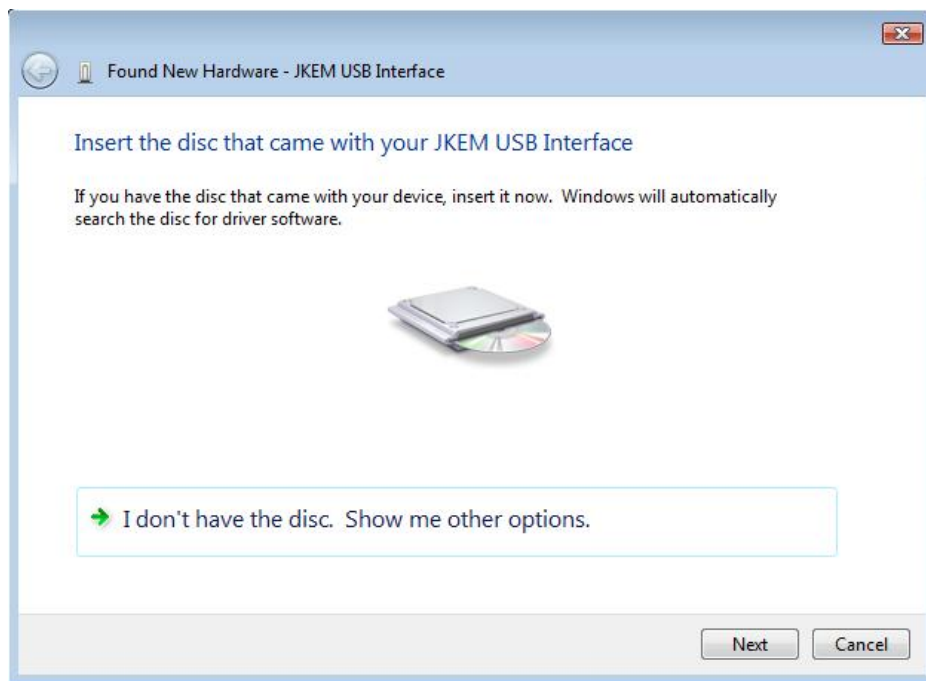
#### **4- USB Driver installation under Microsoft Windows VISTA:**

**STEP 1:** Using the supplied USB cable, connect the J-KEM temperature controller or vacuum regulator to any available USB port in your computer.

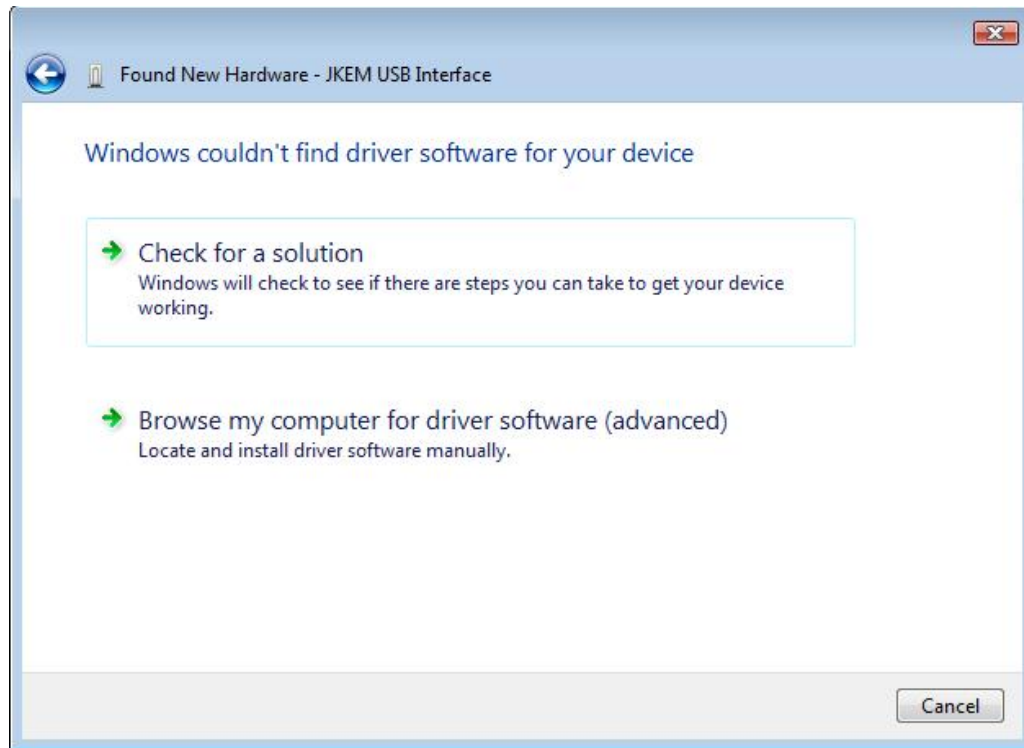
**STEP 2:** The following screen will pop up. Click on “**Locate and install driver software (recommended)**”



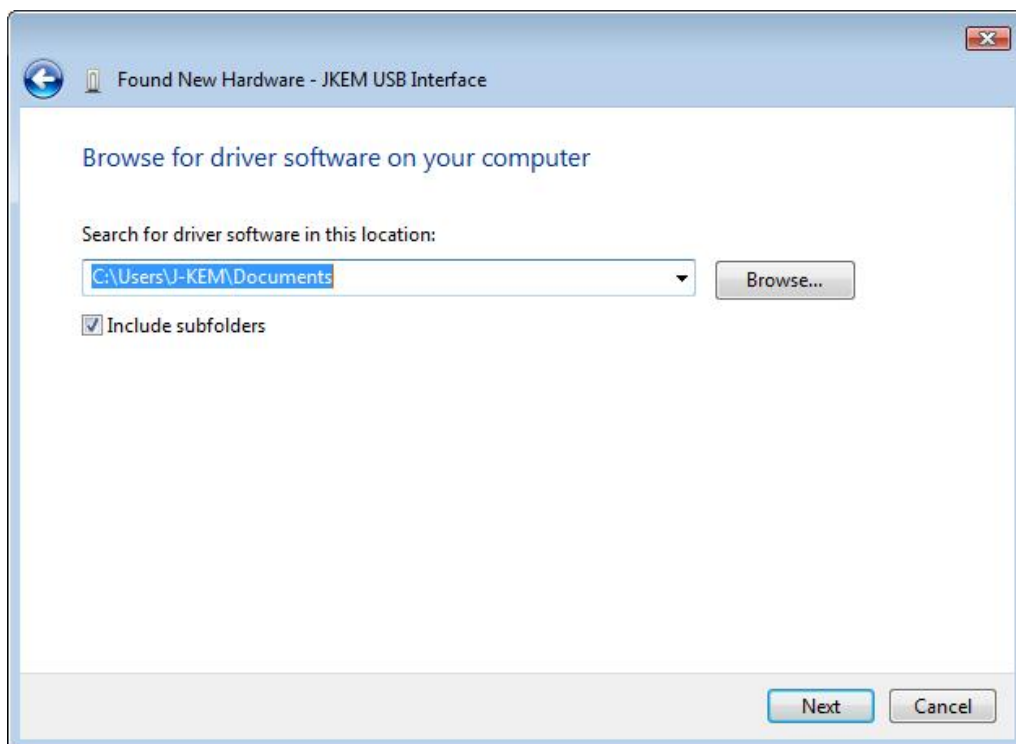
**STEP 3:** Click on “**I don't have the disk. Show me other options**”.



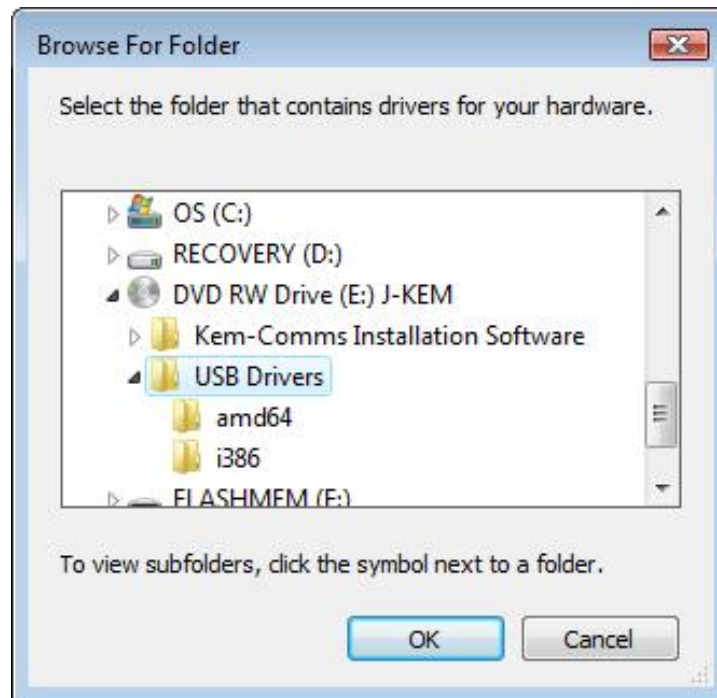
**STEP 4:** Click on **“Browse my computer for driver software (advanced)”**



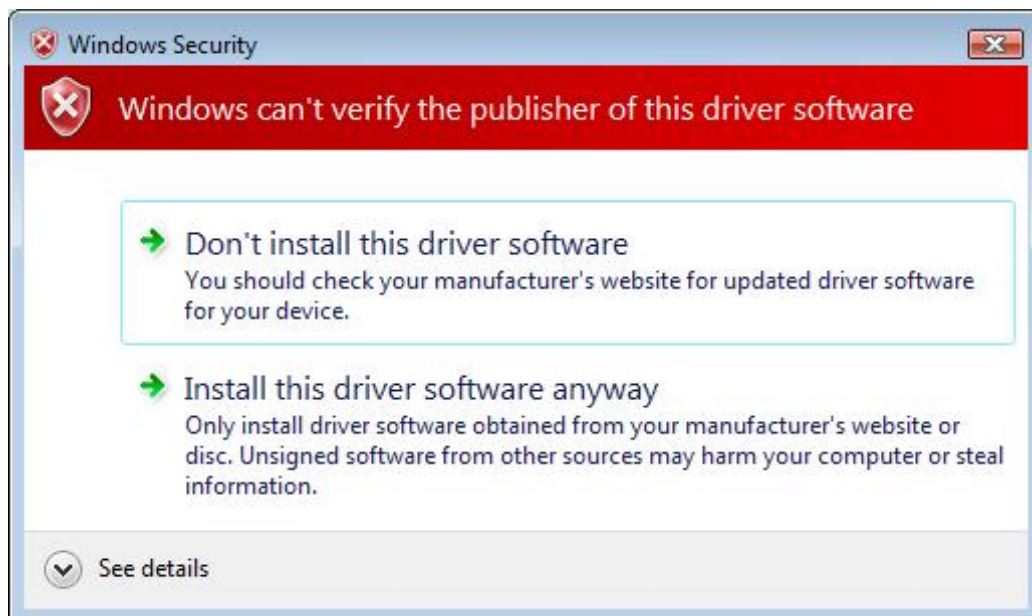
**STEP 5:** Click on **“Browse”** button



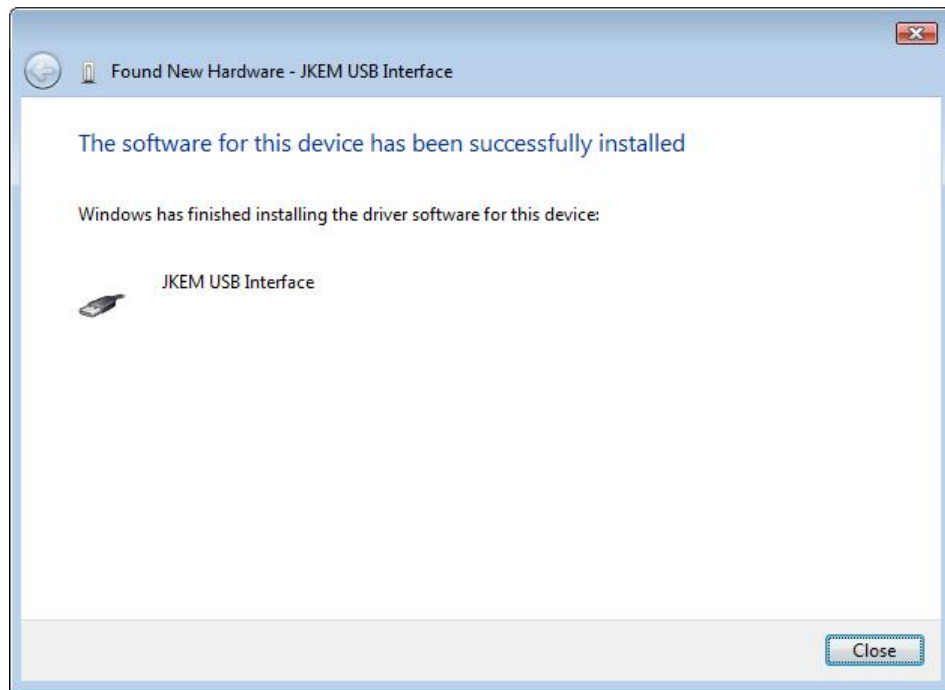
**STEP 6:** The following screen will pop up. Open the KEM-Installation folder on the C drive. Select the folder “**USB Drivers**” and then click on the “**OK**” button. When presented with the option, click on the “**Next**” button as shown in STEP 5.



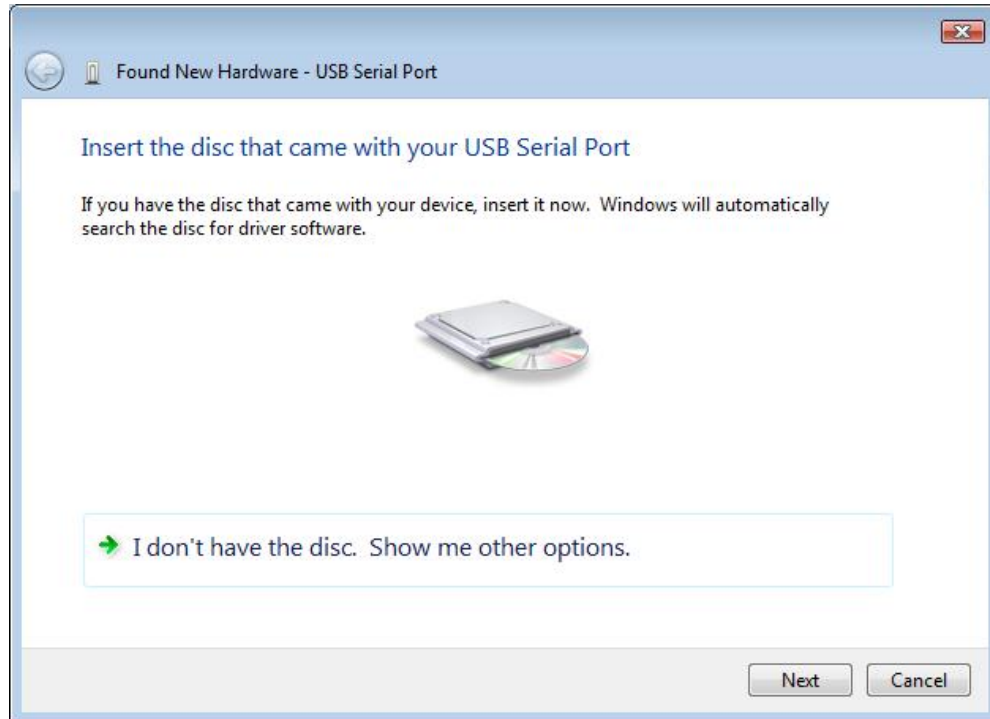
**STEP 7:** Click on “**Install this driver software anyway**” and wait until Windows installs the drivers. This is just a warning and won’t affect your PC.



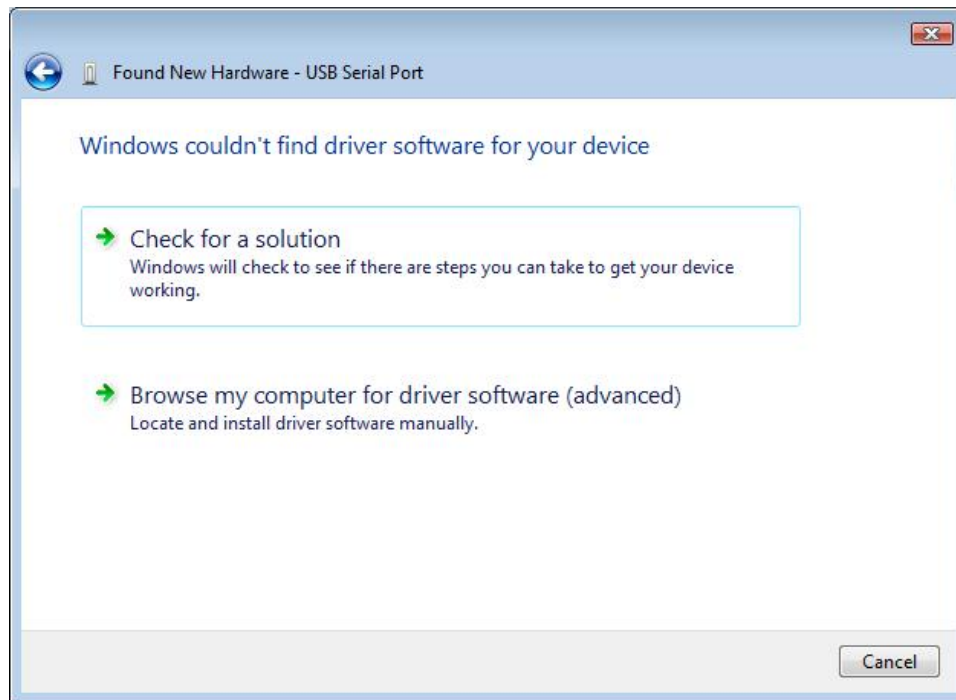
**STEP 8:** The following screen will pop up. Click on the “**Close**” button.



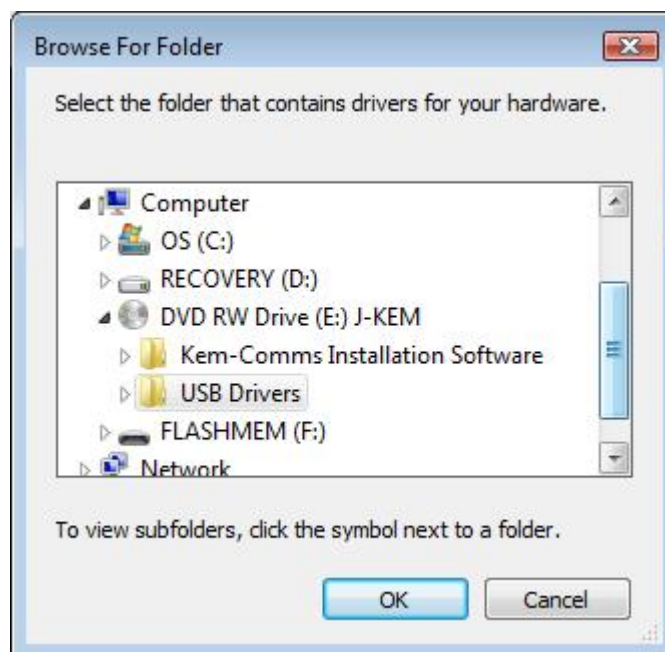
**STEP 9:** Now Windows will install the drivers for the serial port or VCP (virtual communication port). Click on **“I don’t have the disk. Show me other options”**.



**STEP 10:** Click on **“Browse my computer for driver software (advanced)”**

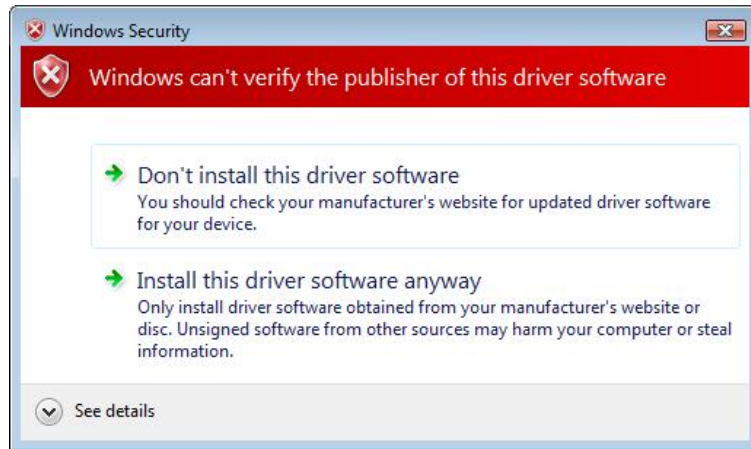


**STEP 11:** The following screen will pop up. Open the KEM-Installation folder on the C drive. Select the folder **“USB Drivers”** and then click on the **“OK”** button. When presented with the option, click on the **“Next”** button as shown in STEP 9.

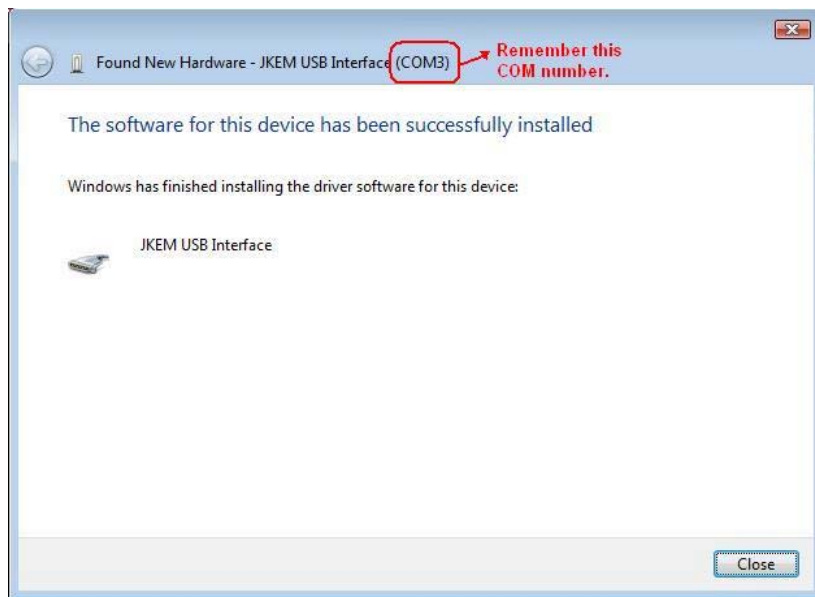


**STEP 12:** Click on **“Install this driver software anyway”** and wait until Windows installs the drivers. This is just a warning and won't affect your PC.





**STEP 13:** The following screen will pop up. If you have software that needs to communicate with your controller using a COM port (LabView or User written code, for example) remember the “COM” number that was assigned for future reference (see the screen below). Click on the “Close” button.



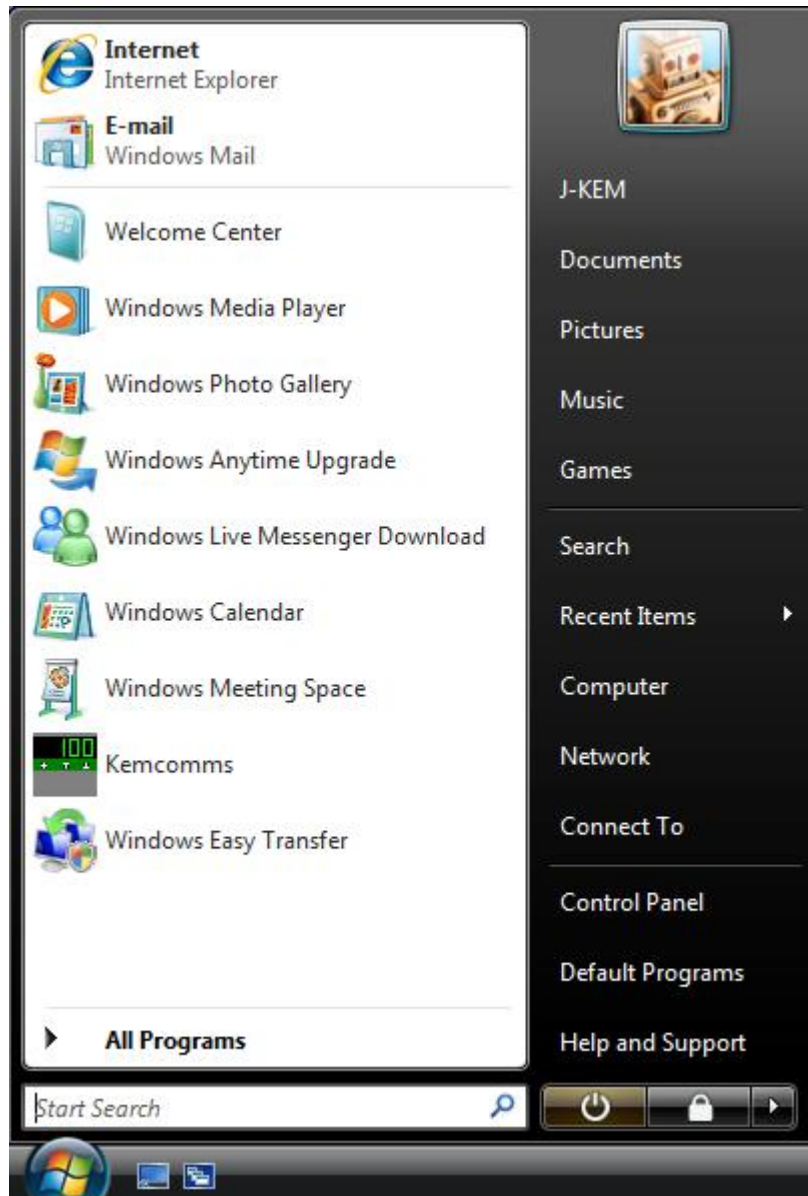
**STEP 14:** Congratulations! You successfully installed the J-KEM’s USB drivers.



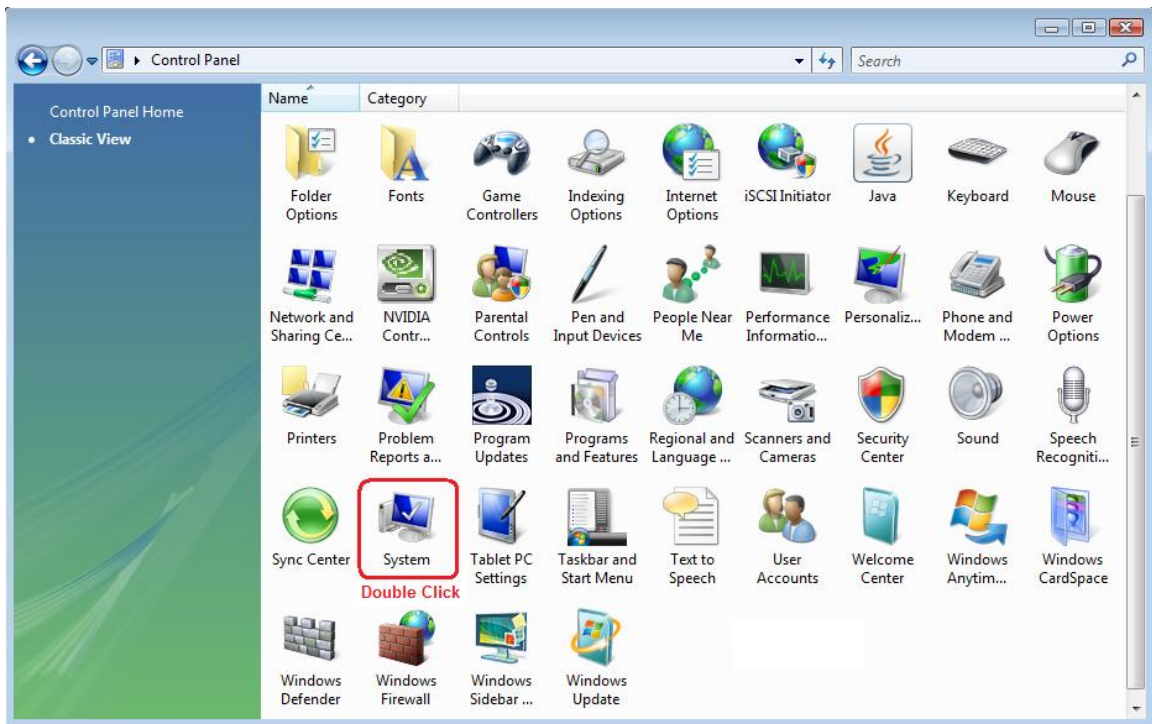
## 5- USB Driver un-installation under Microsoft Windows VISTA:

**STEP 1:** Plug the device in.

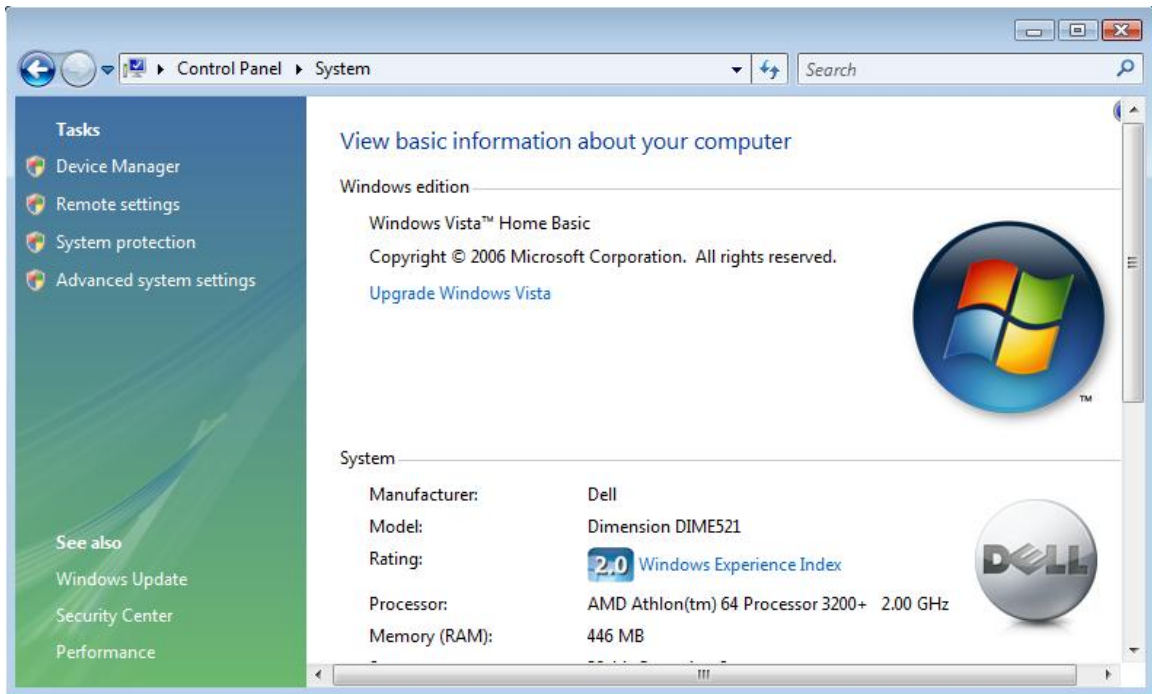
**STEP 2:** Press the “**START**” button and select “**Control Panel**”.



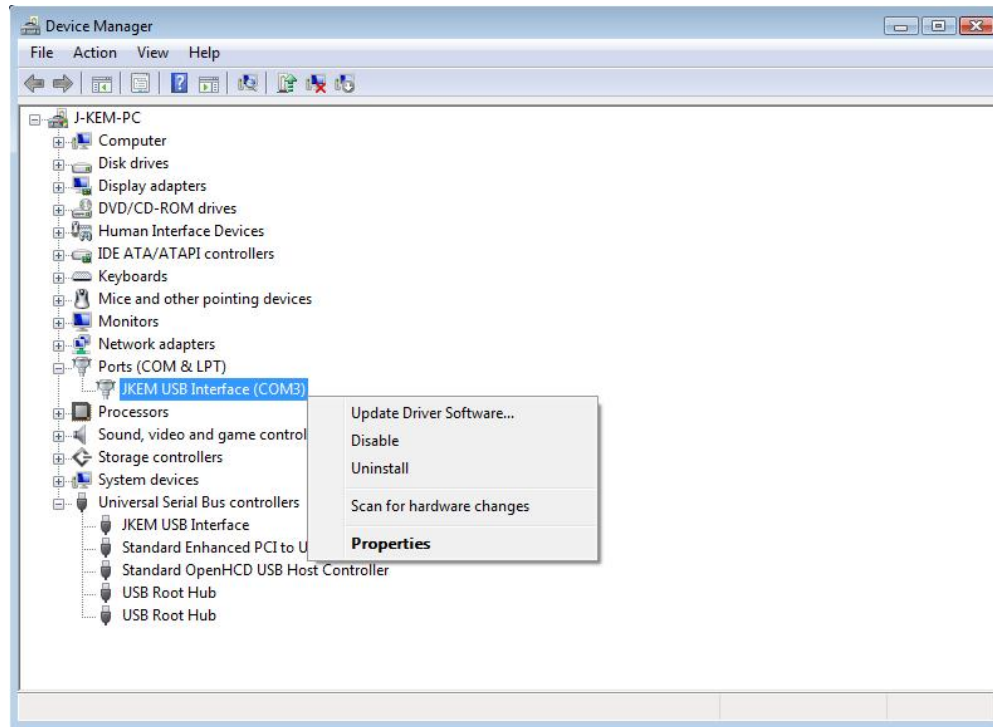
**STEP 3:** Select “**Classic View**” from the top left hand corner and then “**System**” from the list.



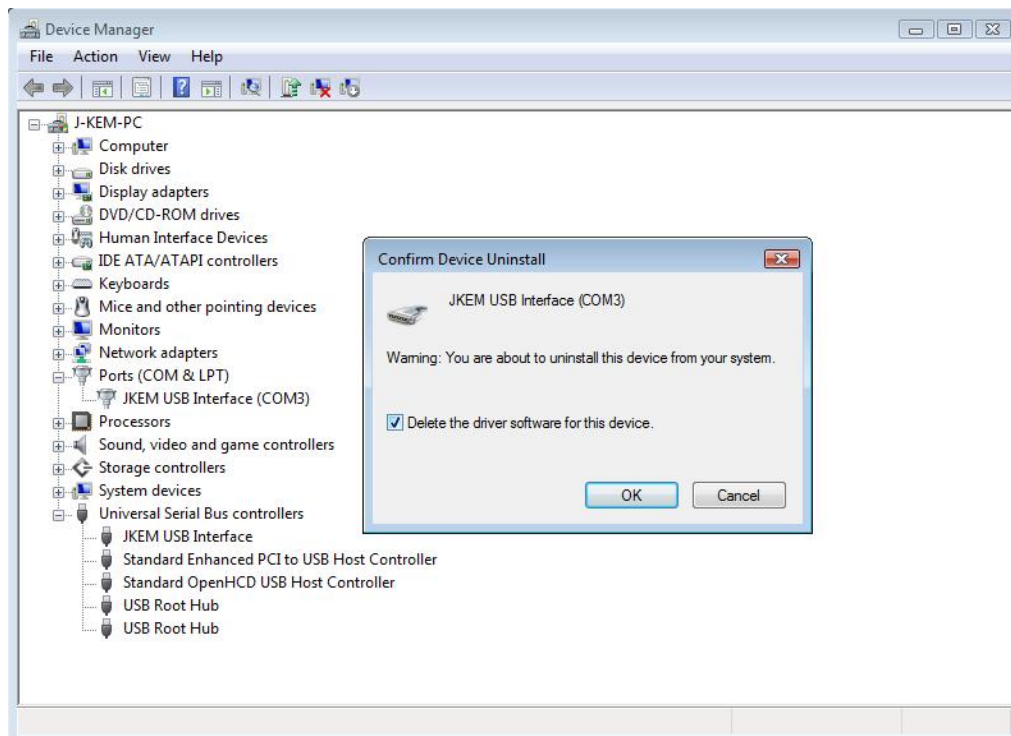
**STEP 4:** Select **Device Manager** from the top left hand corner.



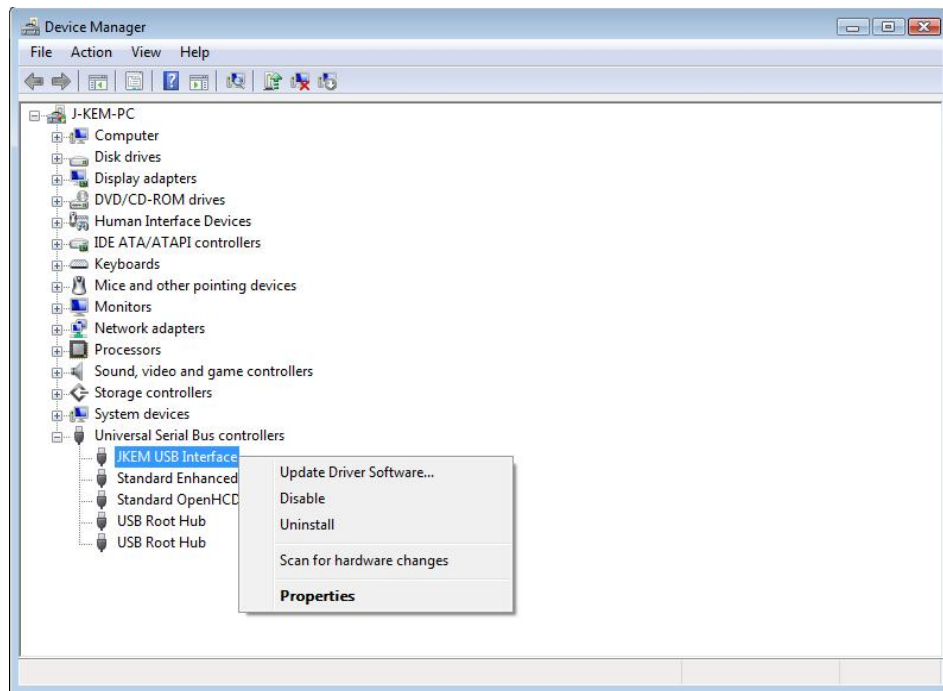
**STEP 5:** Locate “JKEM USB Interface” under the “Ports (COM & LPT)” section and right click on it to bring up the menu shown.



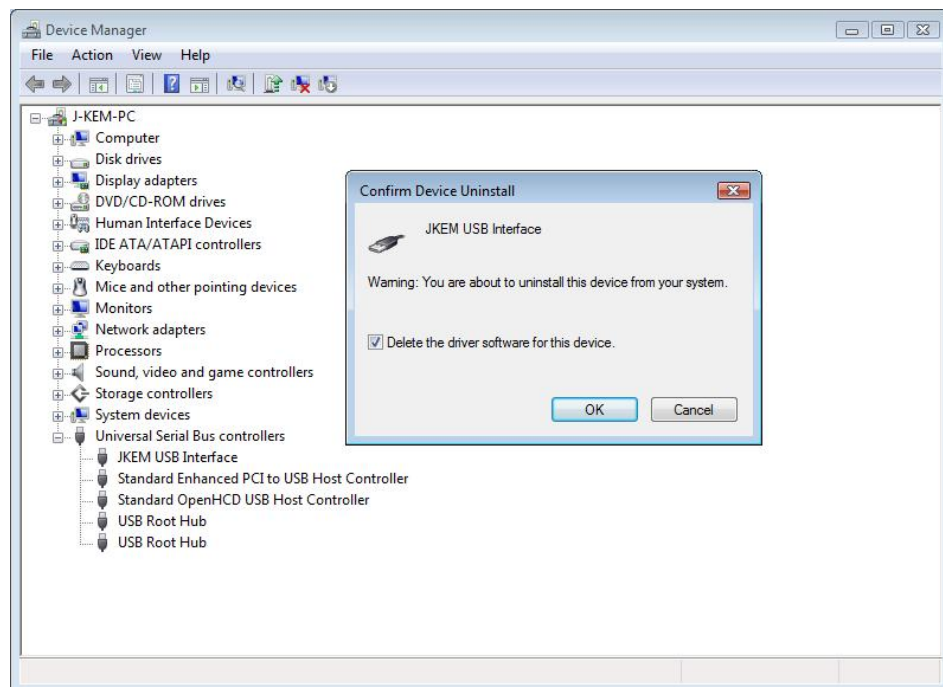
**STEP 6:** Select “uninstall” and be sure to tick the box for “Delete the driver software for this device” in the next window and press **OK**.



**STEP 7:** Locate “**JKEM USB Interface**” under the “**Universal Serial Bus Controllers**” section and right click on it to bring up the menu shown.



**STEP 8:** Select “**uninstall**” and be sure to tick the box for “**Delete the driver software for this device**” in the next window and press **OK**.



**Congratulations!** You successfully uninstalled the J-KEM’s USB drivers



## 6- Which Serial Port was assigned to my controller?

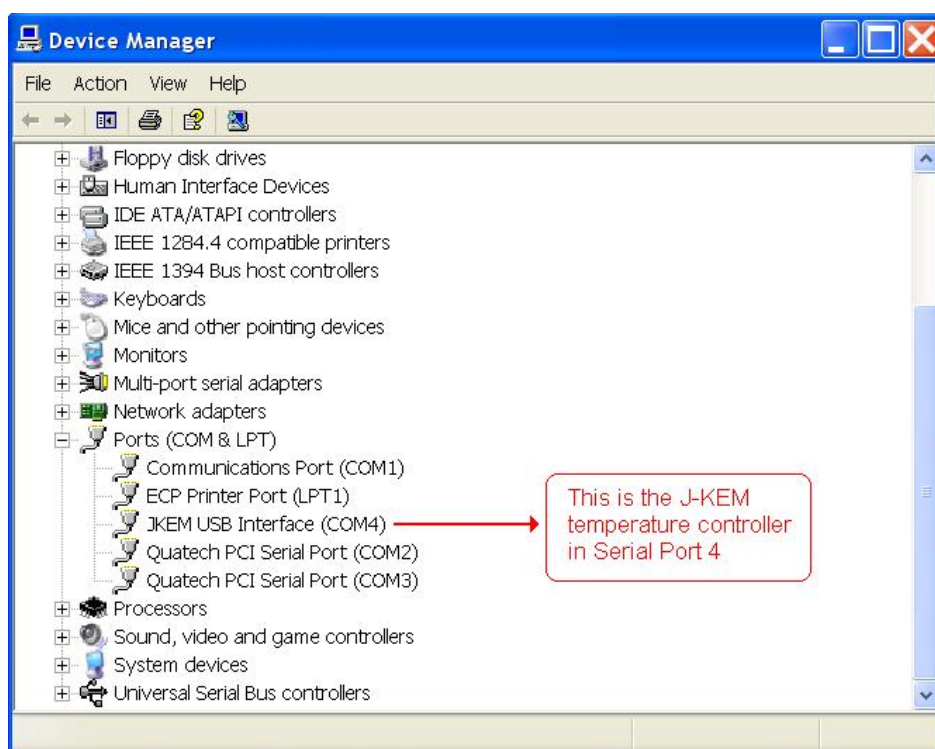
J-KEM products support two protocols for software to communicate with your J-KEM controller. It can use the PC's USB port as a USB port, or it can use the USB port as a *Virtual Comm Port*. KEM-Log uses the USB port as a USB port, which is the optimal method of communication, but some software packages can not address a USB port, but only the older style comm port. For these software packages, your controller was provided with a driver that allows the software to use the USB port and *think* that it's actually using a comm port. This is known as a *virtual comm port*, and to the software addressing it, it is indistinguishable from a (real) hardware comm port. After you install the drivers, you can see which serial port was assigned to the instrument.

### Under Microsoft Windows XP/2000:

Go to **Start/Settings/Control Panel/System/Hardware/Device Manager** and you'll see a screen like this.

### Under Microsoft Windows VISTA:

Go to **Start/Control Panel/System/Device Manager** and you'll see a screen like this.

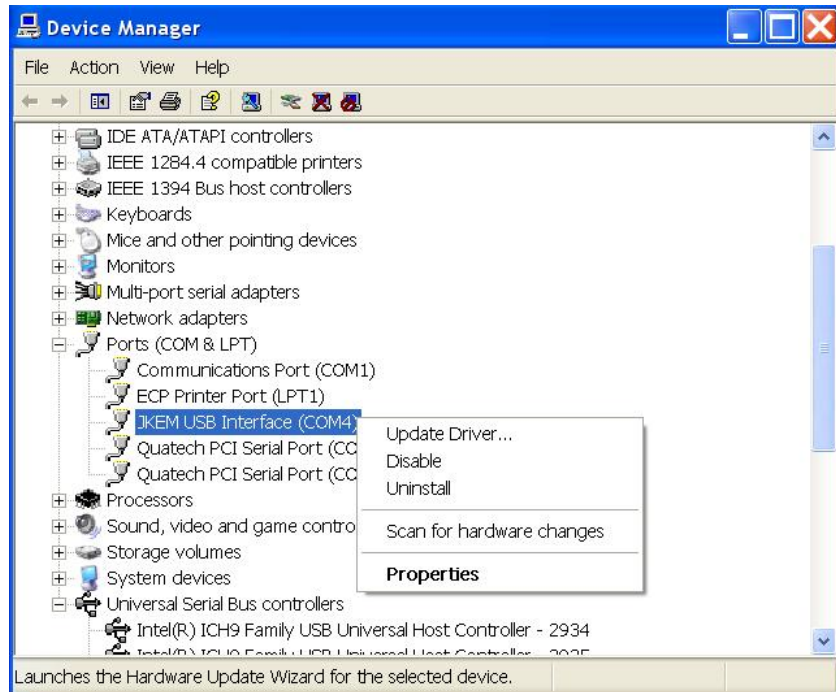


**Note:** If you have more than one instrument connected to the computer, you can un-plug and re-plug each instrument one at a time while keeping the “Device Manager” open. You’ll see which serial port was assigned to that particular instrument when Windows refreshes the screen. It takes some seconds for the operating system to refresh the “Device Manager” windows.

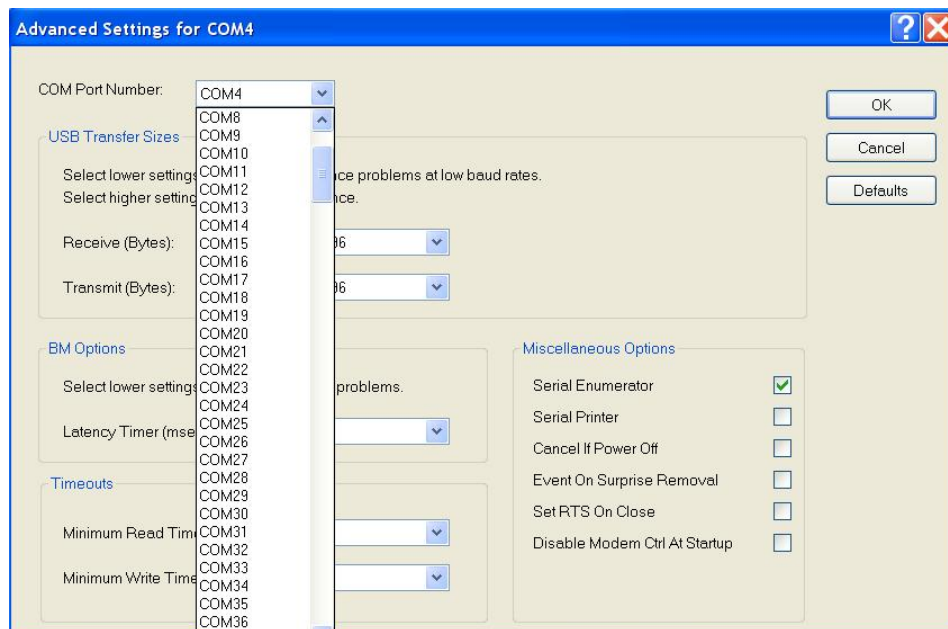


## 7- How do I change the assigned Serial Port?

If a different serial port number is needed, follow the instructions as described in “**Which Serial Port was assigned to my controller?**” and then do a right click on “**JKEM USB Interface**” and click on “**Properties**”.



Click on “**Port Settings**” and then click on “**Advanced**” and you’ll see:

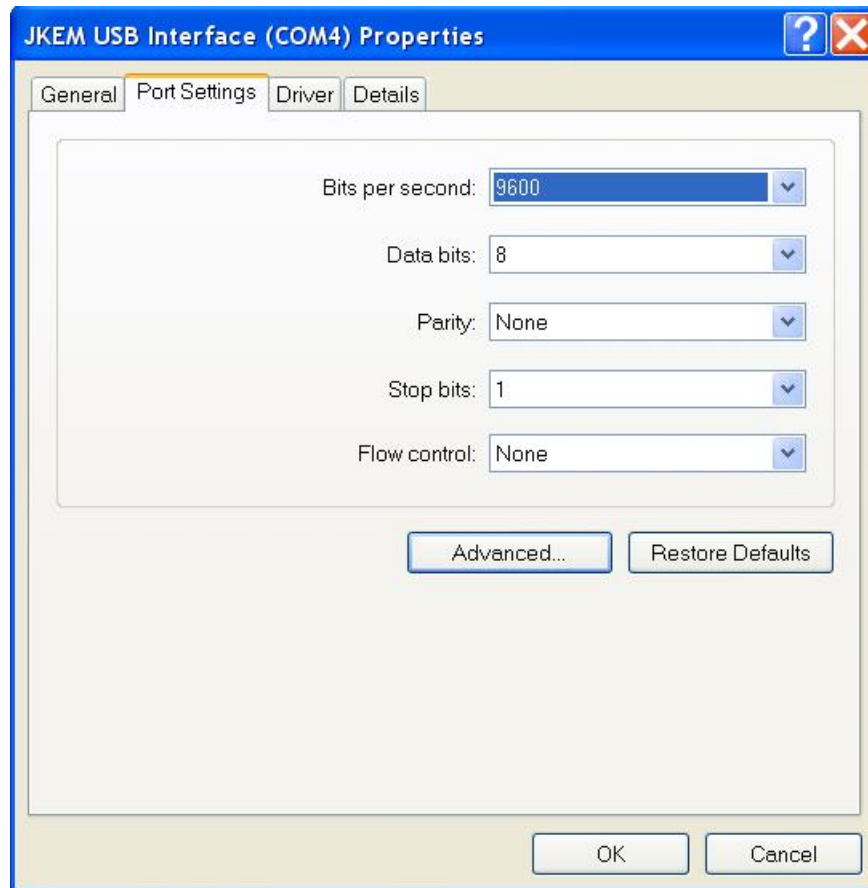


Click on “**COM Port Number**” and then you’ll be able change the serial port number.

## 8- Advance Users: ASCII protocol description.

You can use any ASCII terminal program (like HyperTerminal included in Microsoft Windows XP/2000) to communicate with the instrument.

The communication settings are:



**T(address)\r** → This command returns the **actual temperature** in the specified meter. “\r” means carriage return character and “address” is the meter address. For controllers with more than 1 digital meter, the first meter is address 1, the second meter is address 2, etc.

### Example:

You send:

**T(1)\r**

The reply from the instrument will be:

**67.2\r**

**P(address)\r** → This command returns the actual **set point** in the specified meter.  
“\r” means carriage return character and “address” is the meter address.  
For controllers with more than 1 digital meter, the first meter is address 1, the second meter is address 2, etc.

**Example:**

You send:

**P(1)\r**

The reply from the instrument will be:

**50.0\r**

**S(address,value)\r**

→ This command sets the **set point** in the specified meter.

“\r” means carriage return character and “address” is the meter address.

For controllers with more than 1 digital meter, the first meter is address 1, the second meter is address 2, etc.

“value” is the new set point value. “value” can be positive or negative and with or without a decimal point, for example:

**S(1,50)\r**

**S(1,50.0)\r**

**S(1,-1)\r**

**S(1,-1.5)\r**

**S(1,-0.3)\r**

The reply from the instrument will be for example:

**50.0\r** if you sent **S(1,50.0)\r** or **S(1,50)\r**

**?(0)\r**

→ This command returns the instrument serial number and model type.

“\r” means carriage return character.

The reply from the instrument will be for example:

**00001234:210-T-1-CT-021608\r**

**V(0)\r**

→ This command returns the instrument firmware version.

“\r” means carriage return character.

The reply from the instrument will be for example:

**BL1.0 – F6.0\r**

**NOTE 1:**

The commands are always upper case. Carriage return character “\r” (hex 0x0D) must be sent always at the end of the command. If the instrument receives a wrong command, it won’t reply anything.

**NOTE 2**

If you have problems to communicate or you are not getting any reply from the instrument, make sure LEVEL C in all the meters is:

Addr =1

Baud =9600

dAtA =18n1