



## DISABLING DETECTION OF MICROSOFT BALLPOINT MOUSE

**INTRODUCTION** - It has been observed that Windows™ has a "feature" whereby the data from a GPS receiver is occasionally interpreted as data from a legacy device known as a Microsoft Serial Ballpoint Mouse. If this device is "detected" when you plug your Evaluation Board into a computer the cursor will start jumping all over the screen, possibly opening windows, activating shortcuts, etc. This is fun to watch for a second or two, but not very useful. The problem is especially insidious as you will probably not have any problems with this on your lab computer, but the computer in your company's conference room will no doubt go nuts when you try to give a demonstration of your GPS prowess in front of your company brass and investors..... There are a couple of ways to fix this, which are detailed below.

### Windows 98 and XP

Since I have access to both XP and a couple of old Win98 machines I have verified that the two following "fixes" work with these operating systems. They probably work on just about all flavors of Windows but I cannot personally vouch for them. One fix is best described as a "work-around" that disables the Serial Ballpoint Mouse, while the second fix actually changes an entry in the Windows registry to prevent the Serial Ballpoint Mouse driver from ever starting.

### Method 1 - The Work-Around

The work-around fixes the problem by simply disabling the Serial Ballpoint Mouse driver. This is accomplished using the Windows Control Panel. Note that this method can only be used with if you can disable the GPS receiver data output. Steps are as follows:

1. Start Windows™.
2. When Windows™ boots you should see a notification from Windows that a Serial Ballpoint has been detected and Windows™ is installing the driver. Your cursor should start jumping around the screen.
3. Quickly disconnect the serial cable from the Com Port. If you have an Evaluation Board with a RESET switch, you should be able to simply press and hold down the switch to regain control of the cursor. This will maintain the connection but prevent any data from coming out of the receiver, making the cursor behave while you fix the problem. You must do this quickly before the data from the GPS receiver causes Windows to shut down services to your REAL mouse, touchpad, or keyboard. **IF** you are communicating through a USB port or a USB-to-Serial converter and you do not have a Reset capability the workaround method will not work. This is because as soon as you disconnect the USB link Windows will remove the Serial Mouse from system resources, and it's hard to disable something that Windows doesn't recognize.
4. Assuming that you can use the workaround method, at your desktop's bottom left-hand corner double left-click on **<Start>**, then **<Settings>**, then **<Control Panel>**.

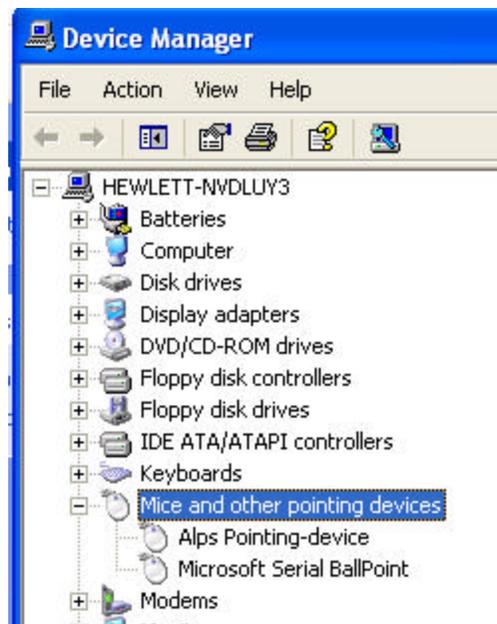
5. Next, open the System Properties dialog by double-clicking on **<System>** as shown below:



Next, double-click on **<Device Manager>**:



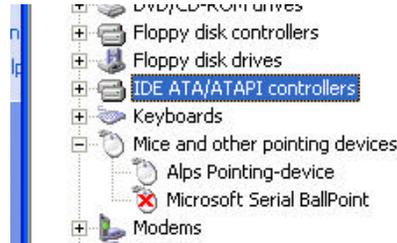
Next, click on **<Mice and other pointing devices>**:



As you can see, the Microsoft Serial Ballpoint has been incorrectly detected and installed. To disable the Ballpoint, right-click on **<Microsoft Serial Ballpoint>** and select **<Disable>** as shown below. **DO NOT** select **<Uninstall>**. If you uninstall the Ballpoint, Windows™ will simply re-install it the next time you start your computer....



Once you have done this a red **X** should appear over the Ballpoint Icon like this:

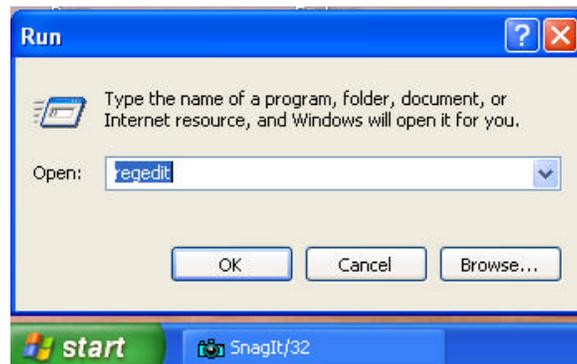


You're done. Close up all the windows you opened and restart your computer. The Ballpoint should not be detected.

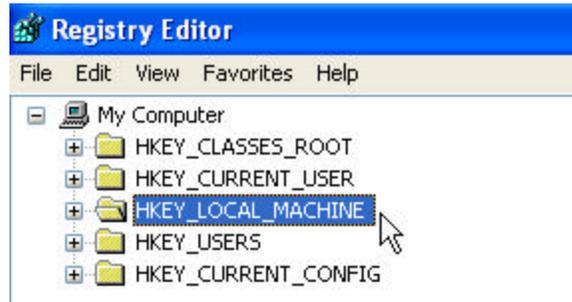
### Method 2 - Editing the Windows™ Registry

If editing your Registry brings out a cold sweat I understand completely. There is no shame. Doing this incorrectly can really cause your computer to do bad things. Naturally you can always return to a previously saved Registry, but that is like admitting defeat. Here we go:

1. Double left-click on **<Start>**, then **<Run>**. In the window that opens type **<regedit><Enter>** as shown below:

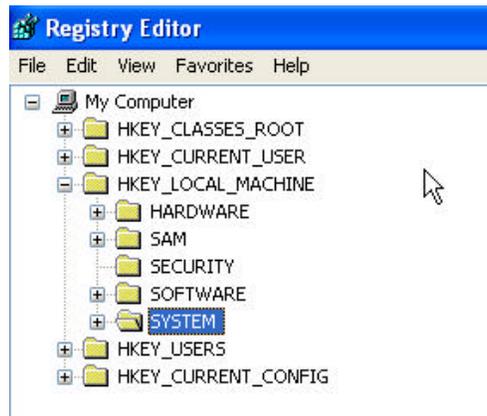


The Windows Registry editor will open and display the opening screen, a portion of which is shown here:

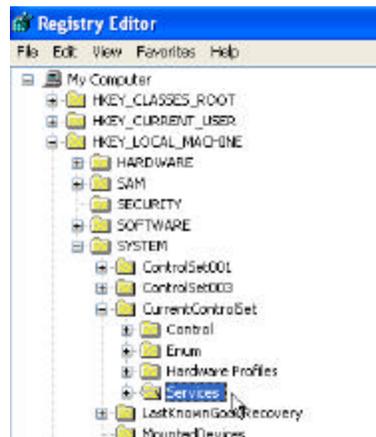


Naturally, the **ABSOLUTE FIRST** thing you need to do is select **<File>** and then **<Export>** to save a copy of your current registry.

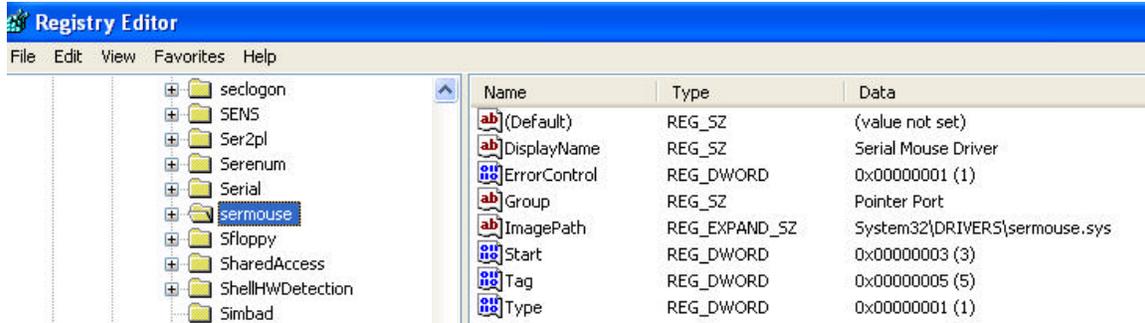
Next, double click on **<HKEY\_LOCAL\_MACHINE>** to expand this key. The next screen should look like:



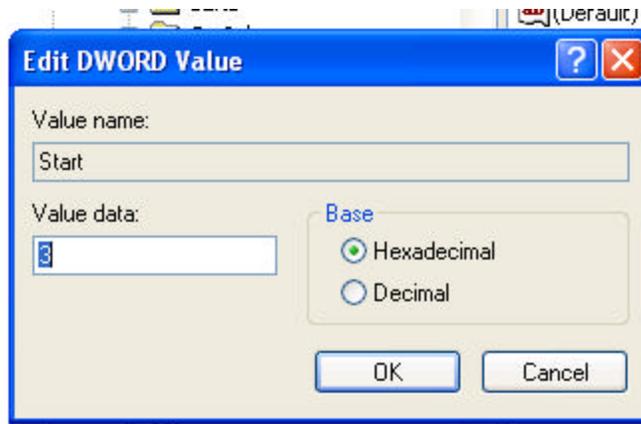
Next, click on **<SYSTEM>** to expand the SYSTEM folder. With SYSTEM expanded you should see:



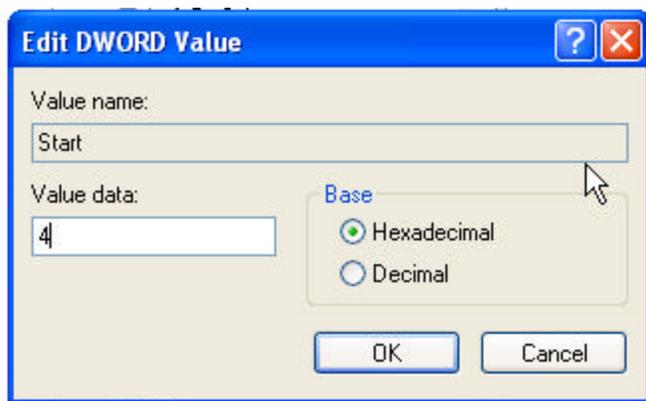
The next folder we want to expand is **<Services>**, so click on this folder. You should now see a LONG list of folders. If you scroll down the folders you will eventually see a folder called **<sermouse>**. Click on **<sermouse>** and you should see:



The entry we want to edit is shown above in the right pane and is called **"Start"**. Note that the REG\_DWORD value is currently 0x00000003. All we need to do to get rid of that annoying Ballpoint Mouse is to change this entry to 0x00000004. To do this, double-click on **"Start"**. The editor will bring up the following window showing that the current entry is indeed equal to 03<sub>h</sub>:

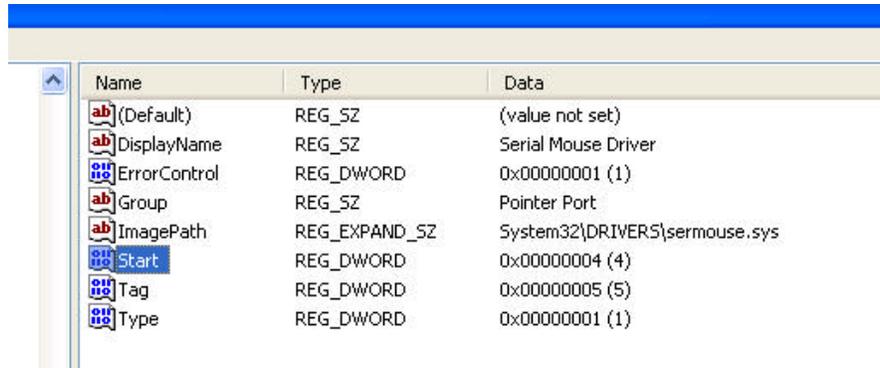


To change this, simply type **<4>**. The "Value data:" dialog should now have a "4" in it:



Click <OK> to close this window.

The right hand pane of the registry editor should now show a "4" as the "Start" "REG\_DWORD" value. It should look like this:



The screenshot shows the Windows Registry Editor window. The left pane shows the tree structure expanded to 'Start'. The right pane displays a table of registry values:

Name	Type	Data
(Default)	REG_SZ	(value not set)
DisplayName	REG_SZ	Serial Mouse Driver
ErrorControl	REG_DWORD	0x00000001 (1)
Group	REG_SZ	Pointer Port
ImagePath	REG_EXPAND_SZ	System32\DRIVERS\sermouse.sys
Start	REG_DWORD	0x00000004 (4)
Tag	REG_DWORD	0x00000005 (5)
Type	REG_DWORD	0x00000001 (1)

We're done. Quit the Registry Editor and re-boot. If you go back into the Control Panel and drill down to the Serial Ballpoint Mouse icon you should now see a <!> on top of it.

### Windows 2000

If you have a Windows 2000 machine the registry fix is a little different. *Microsoft* has posted instructions in their Knowledge Base. The instructions may be viewed at:

<http://support.microsoft.com/kb/283063/en-us>

Hope this has been useful. As always, if you have any further problems or questions please don't hesitate to let us know.

Randy Warner  
Senior Applications Engineer  
Synergy Systems, LLC  
[randy@synergy-gps.com](mailto:randy@synergy-gps.com)