Future Technology Devices International Ltd.

Application Note AN_132

Re-Assigning COM Port Numbers Using the Windows Registry

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This application note illustrates how to re-assign automatically assigned FTDI COM port numbers using the Window OS registry.

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1 Introduction

This application note describes how to re-assign the COM port numbers allocated during installation on Windows operating systems by modifying registry entries. The application note provides a walkthrough of manually editing the registry, but the same technique could be employed by a program.

WARNING: Any edits made to a PC registry may be harmful to the operation of the PC. As such we recommend you create a backup of the registry before making any changes. FTDI cannot be held responsible for any damage done as a result of incorrect manual editing of the registry.

2 System COM Port Assignment

COM ports are assigned to FTDI devices during installation based on the next free port as indicated by the PC registry. In most systems this would imply starting at COM3 as COM 1 and COM2 are usually reserved for legacy COM ports. If COM3 is already in use, the next available COM port index will be claimed. In the case of multiple interface chips, such as the FT2232H or FT4232H, a co-installer is used to claim consecutive COM ports for the interfaces of the device. If three FTDI FT4232H devices are connected to a PC, then 12 COM ports will appear to the operating system. In the example below, the PC has assigned these COM ports with com port numbers from COM3 to COM14.

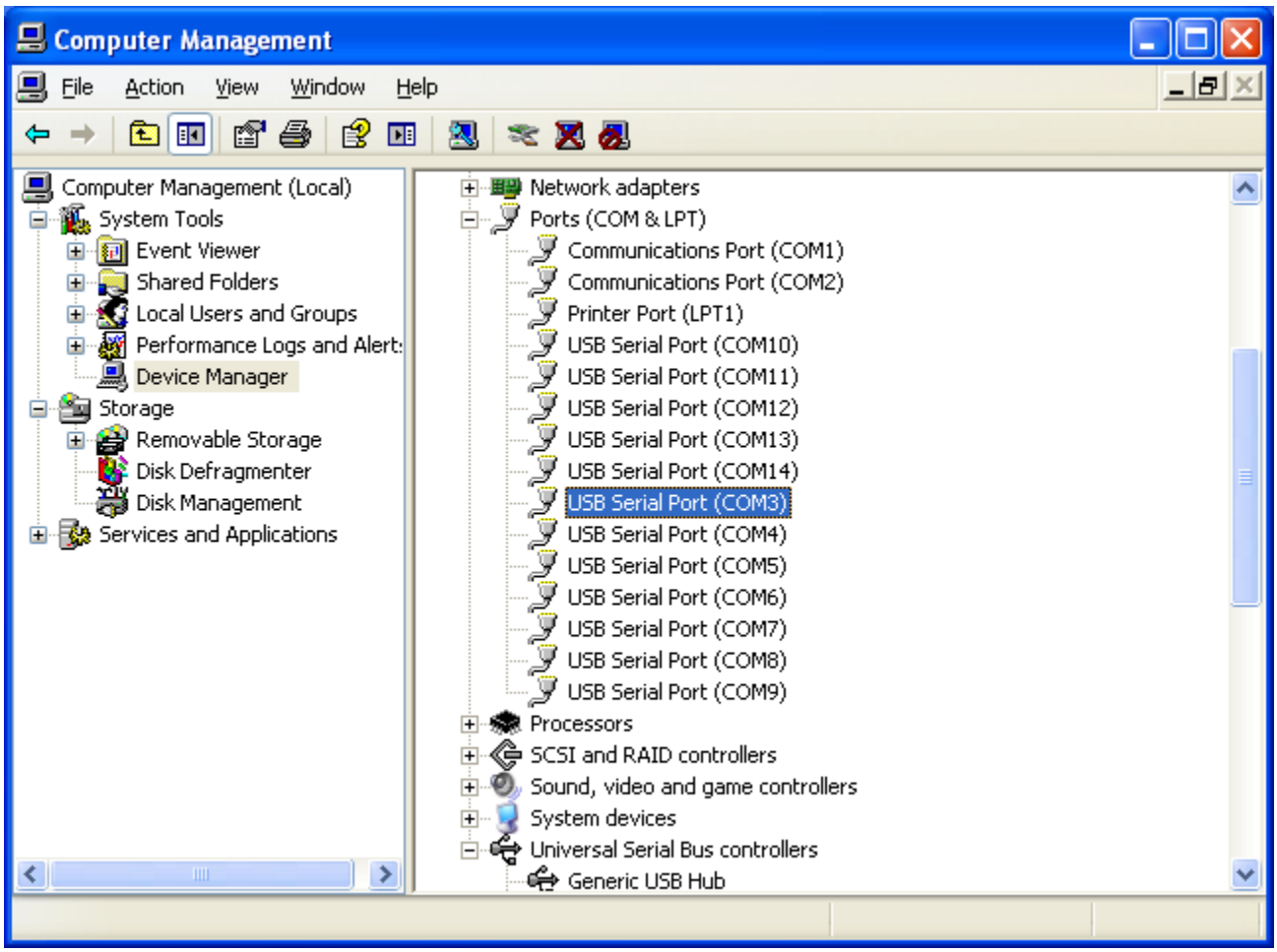

Figure 2-1 system COM port assignment

3 How to Re-Assign COM port numbers by registry modification

In the example above, the operating system automatically assigns the 12 COM ports from COM3 to COM14. If it is required to re-assign the COM port numbers without setting each port individually, then the FTDIUSB file in the registry can be used to do this. Follow the procedures below to re-assign COM Port numbers using the operating system registry.

3.1 Open the OS registry

To open the OS registry, select the "Start" button and press the "Run". In the pop-up box that appears, type "regedt32" and press enter to access the registry. This is shown in the figure below.

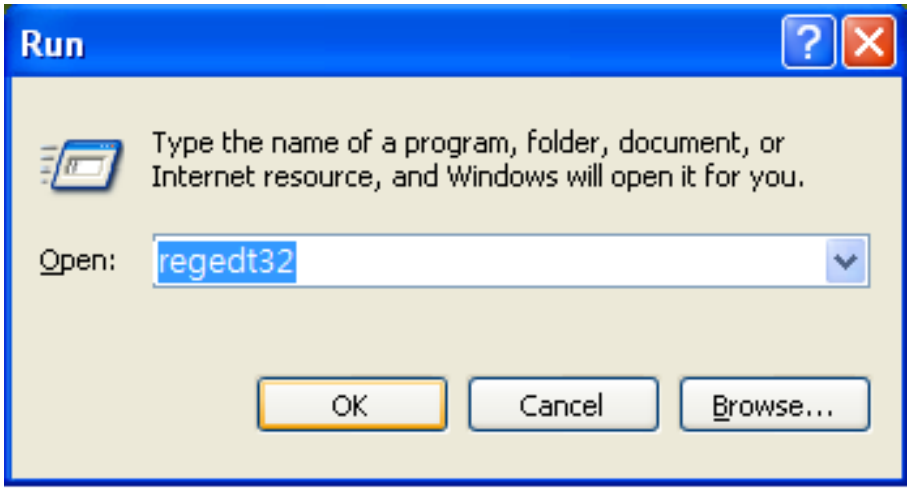

Figure 3-1 Accessing the registry

Within the registry, navigate to the following area to access all FTDI devices:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Enum\FTDIBUS.

Select FTDIBUS and then under the "file" pull-down menu select "export" – as shown in the figure below . This will export the FTDIBUS registry key, sub-keys and values to a file.

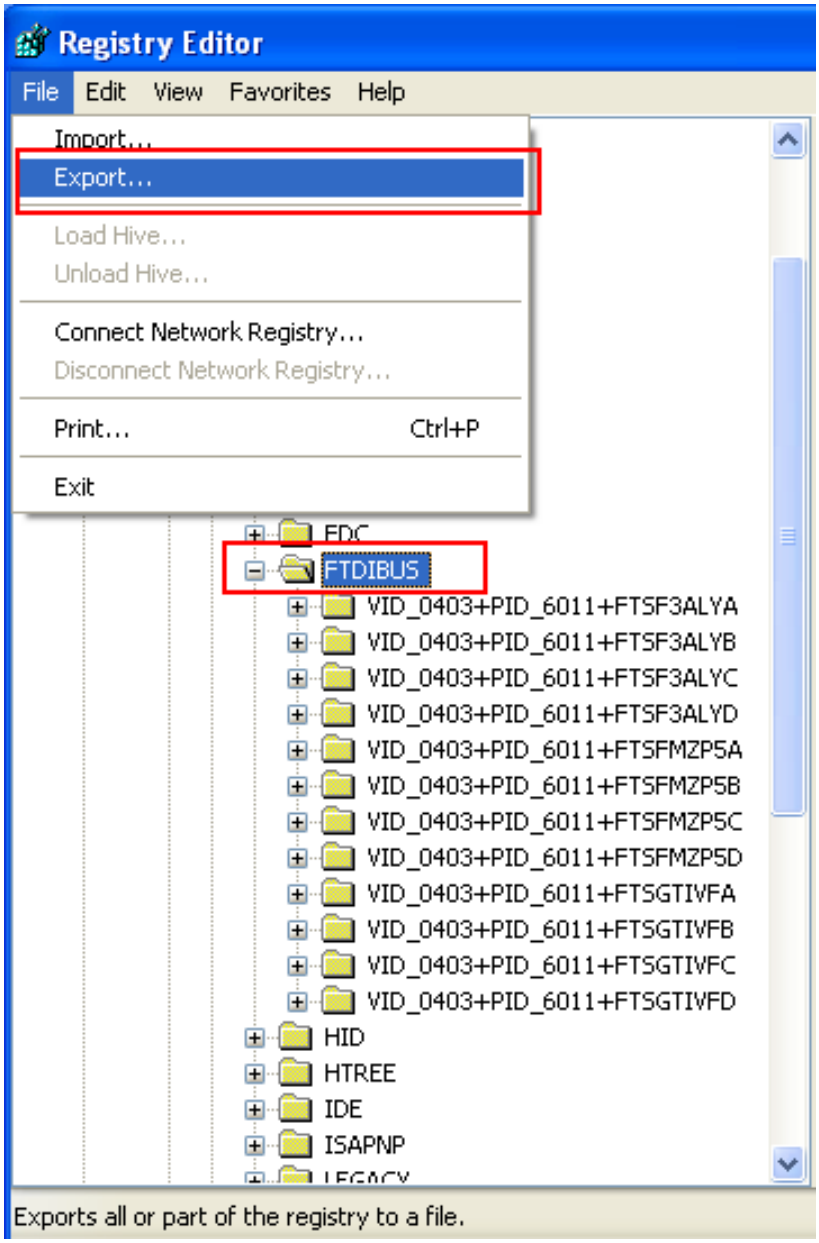

Figure 3-2 Export the FTDIBUS registry to a File

Right click on this saved file and select "Edit" to the open file, as shown in the figure below.

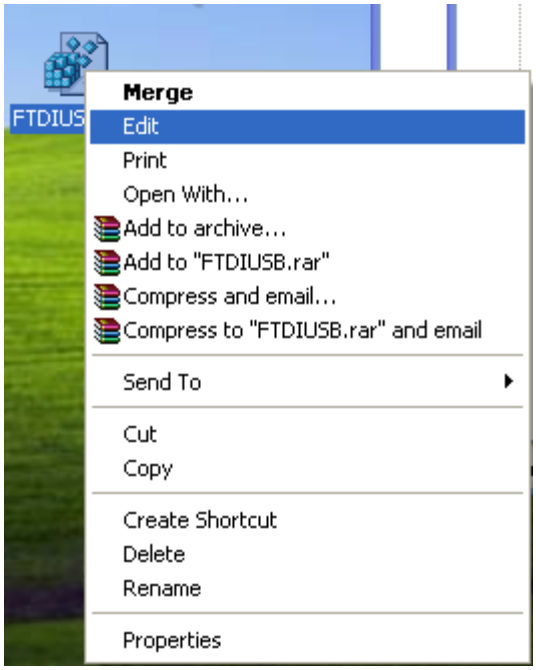

Figure 3-3 Edit the registry file

In the FTDIUSB.reg file, modify the "FriendlyName" and "PortName" in the file for each port which needs to re-assigned.

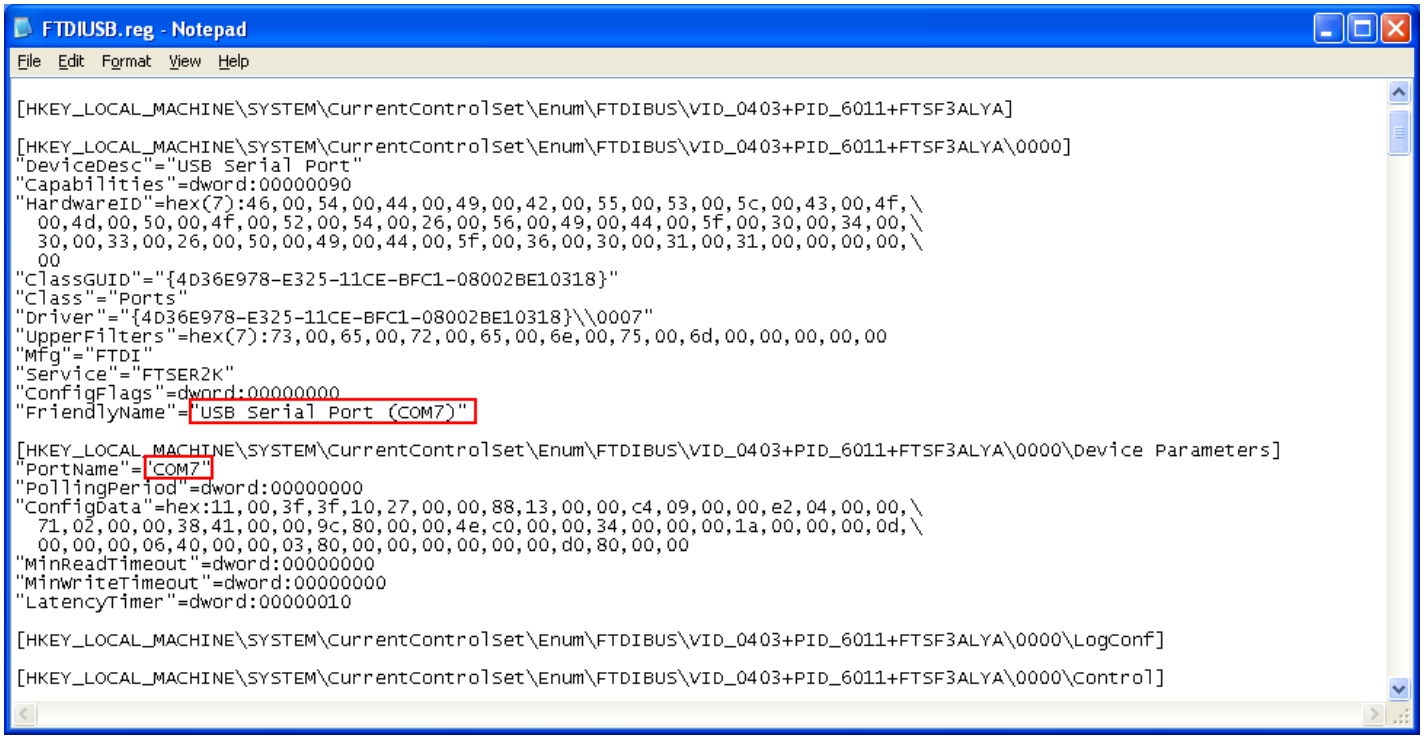

Figure 3-4 Modifying the FTDIUSB.reg registry file

For example to re-assign COM7 to COM17 modify the FTDIUSB.reg file as follows:

Replace FriendlyName from "USB Serial Port (COM7)" to "USB Serial Port (COM17)", and modify PortName from "COM7" to "COM17" at the same time. This will re-assign COM7 to COM17 after registry file has been uploaded (illustrated later).

The same method can be used to modify each port.

Note: care should be taken that the same COM port number is not repeated.

3.2 Re-assign the COM Name Arbiter in ComDB

If COM3 to COM14 are re-assigned to COM13 to COM24. then it is necessary to free up the unused com ports (COM3~COM12) and allocate the new addition ports COM15~COM24. To do this then it is necessary to modify the ComDB database by using the following procedure.

Open the registry and navigate to the following area of the registry
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\COM Name Arbiter

Then open the "ComDB" as shown in the figure below. The example shows that the original value of "ComDB" is as follows:

ComDB original value = FF 3F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

The ComDB value is a bit mask of COM ports already allocated. This value is equivalent to COM3~COM14.

The first byte "FF" equates to the com ports COM8~COM1 and indicates that these COM ports are occupied. The second byte "3F" equates to the com ports COM14~COM9 and this indicates that these COM ports are occupied. (**Note that COM1 and COM2 are the COM port of motherboard).**

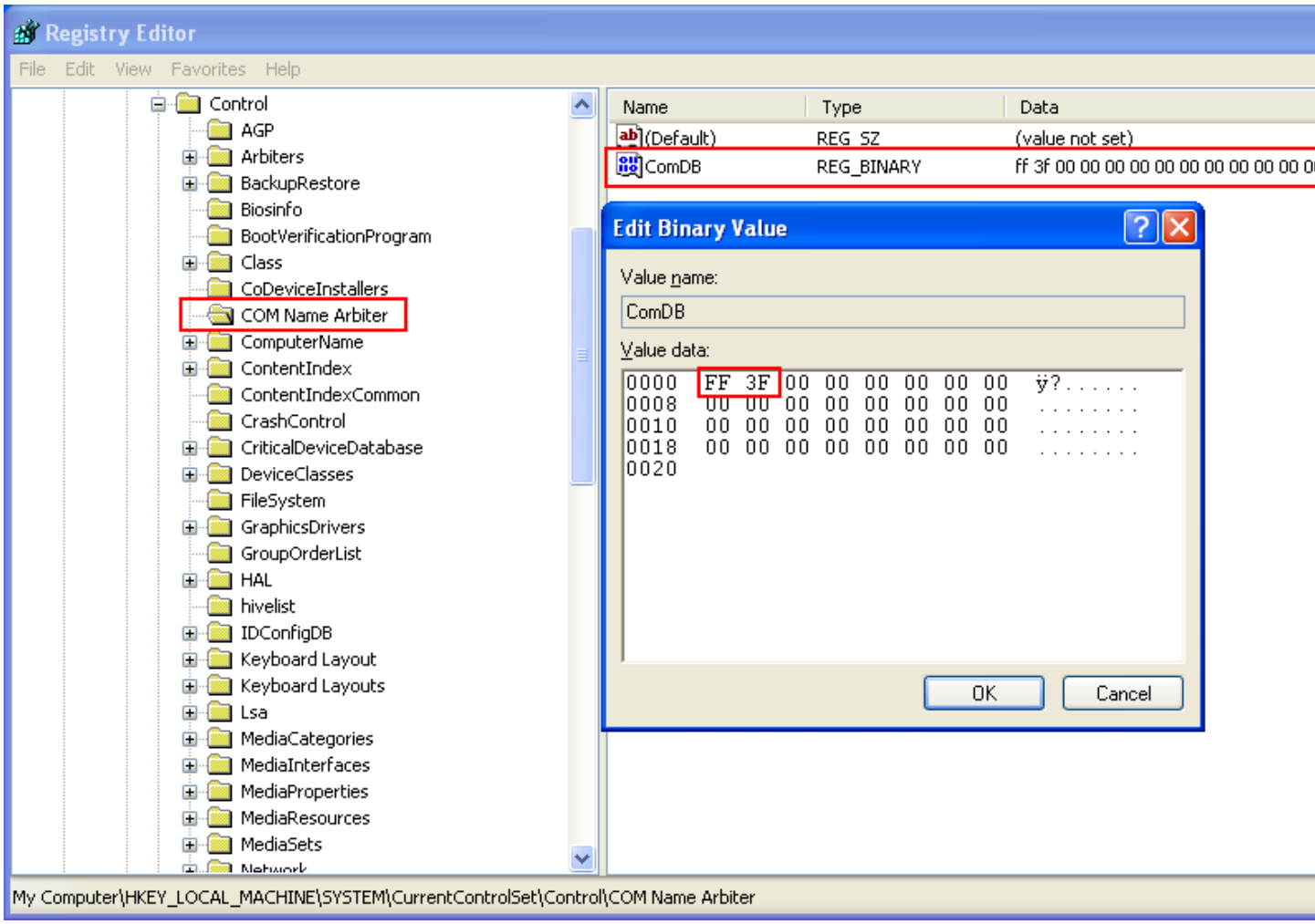

Figure 3-5 Editing the ComDB database.

To allocate the COM port numbers COM13~COM24, it is necessary to modify the ComDB value as follows:

ComDB new value = 03 F0 FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

This is shown in the following diagram:

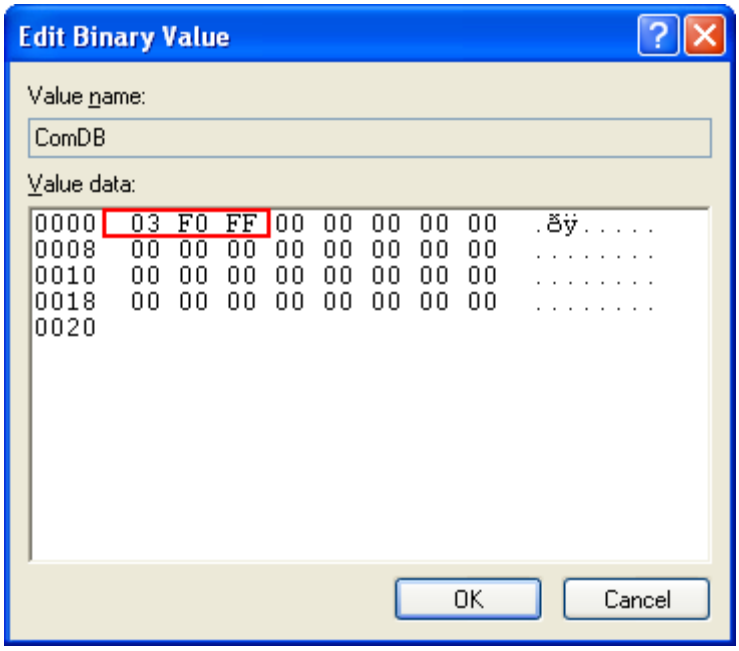

Figure 3-6 change the value 3

The first byte "03" is used for COM2 and COM1 of motherboard. COM8~COM3 are not used.

The second byte "F0" is equates to COM12~COM9 that are not used and COM16~COM13 that are occupied.

The third byte "FF" equates to COM24~COM17 which are occupied.

Note: The first byte controls COM8~1, the second byte controls COM16~9, the third byte controls COM24~COM17 and so on. A value=0 means that the port is not used. A value=1 means that the port is occupied.

3.3 Import the modifed FTDIUSB registry file

When the FTDIUSB registry file has been modified it is necessary to import the file back into the registry. To be able to do this a user must have full access control rights to modify it in the registry.

To modify the permissions, right click on the FTDIUSB folder in the registry and select the Permissions to enable the permission for modification – as shown in the figure below

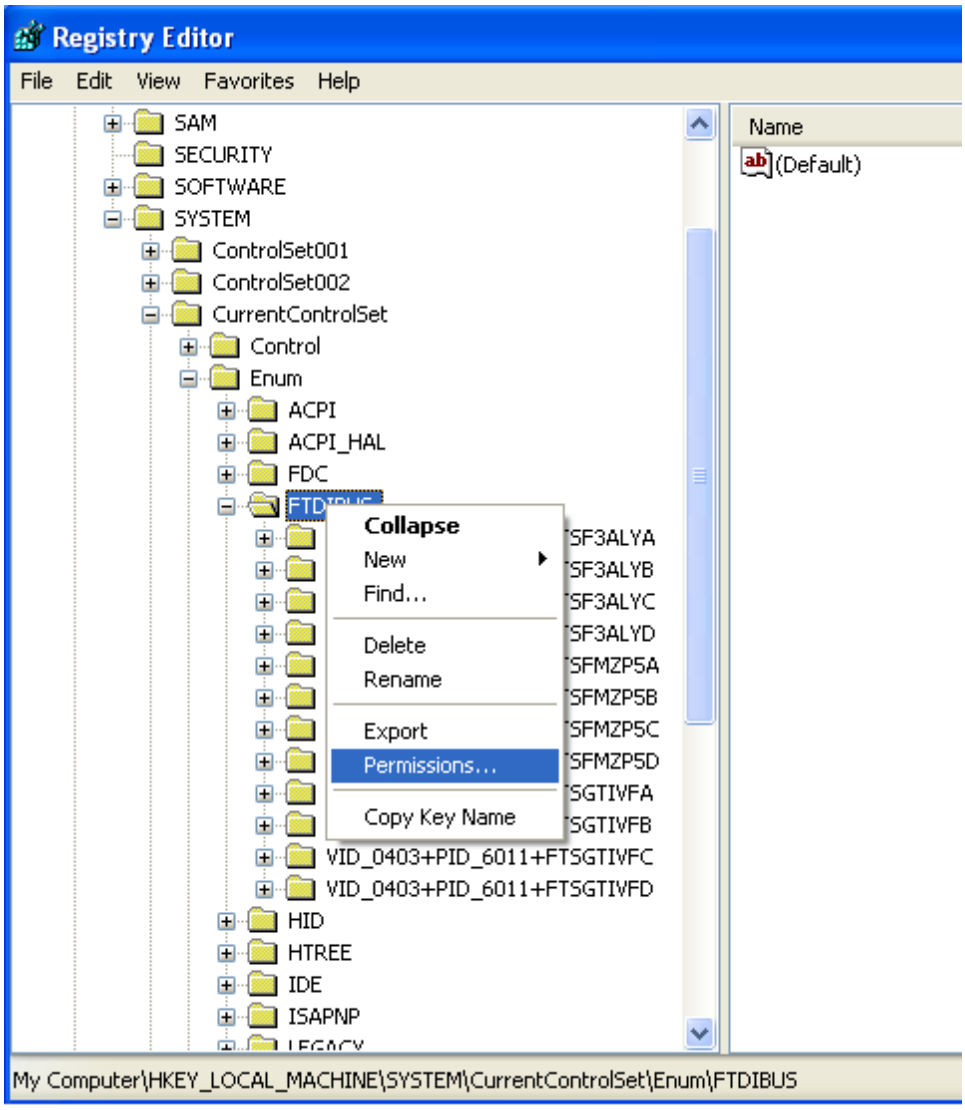

Figure 3-7 Modifying registry Permissions for FTDIUSB folder

The following window will appear. Select "full control" then press the OK.

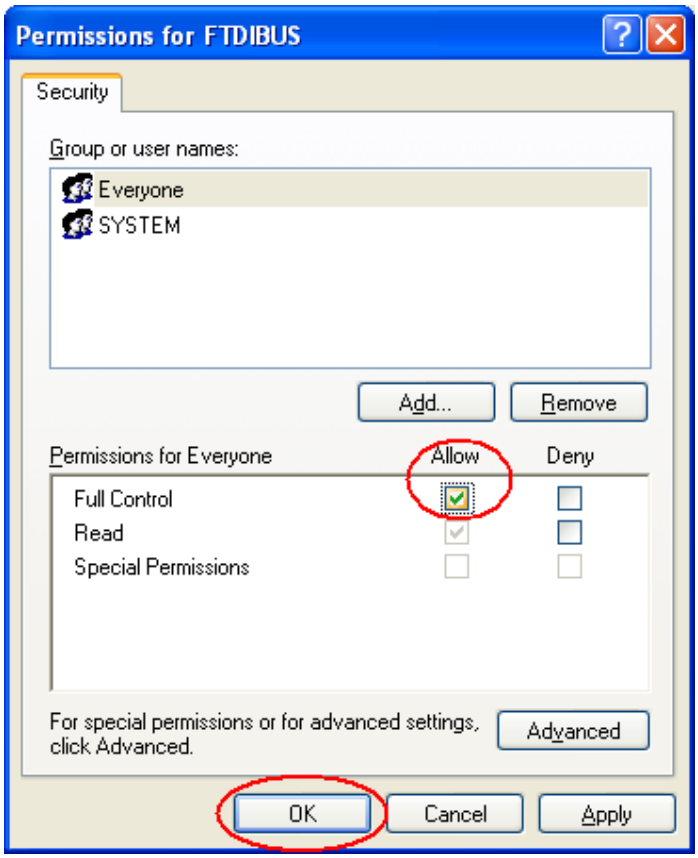

Figure 3-8 Allow Full Control Access rights to the FTDIUSB registry

Next import the modified FTDIUSB file. Select Import and choose the modified registry file to import the registry file. This is shown in the following figure:

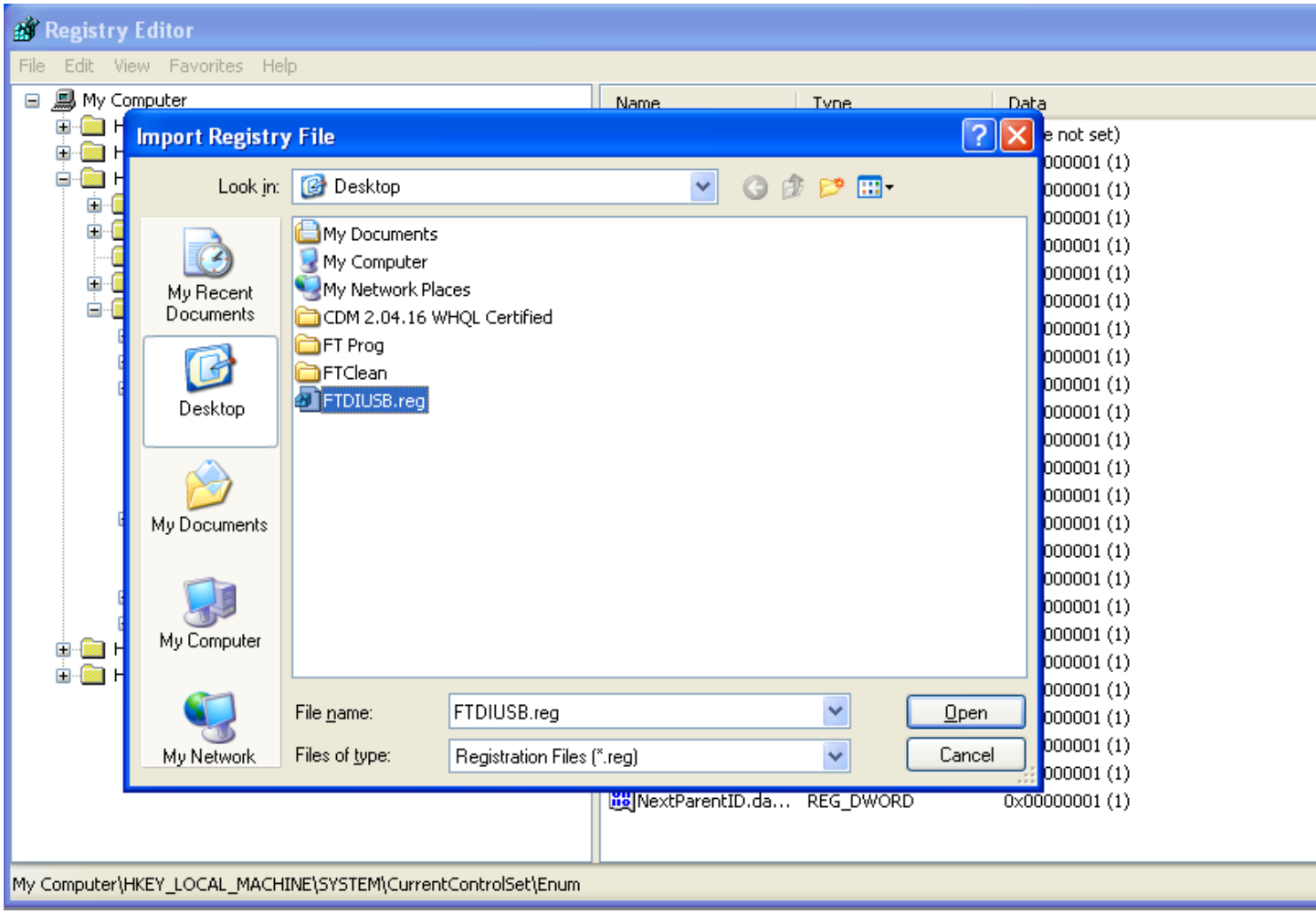

Figure 3-9 Importing the FTDIUSB file to the registry

To check that the procedure has worked, open the device manager and press "Scan for hardware changes". This should show the new COM port assignments as illustrated in the following figure:

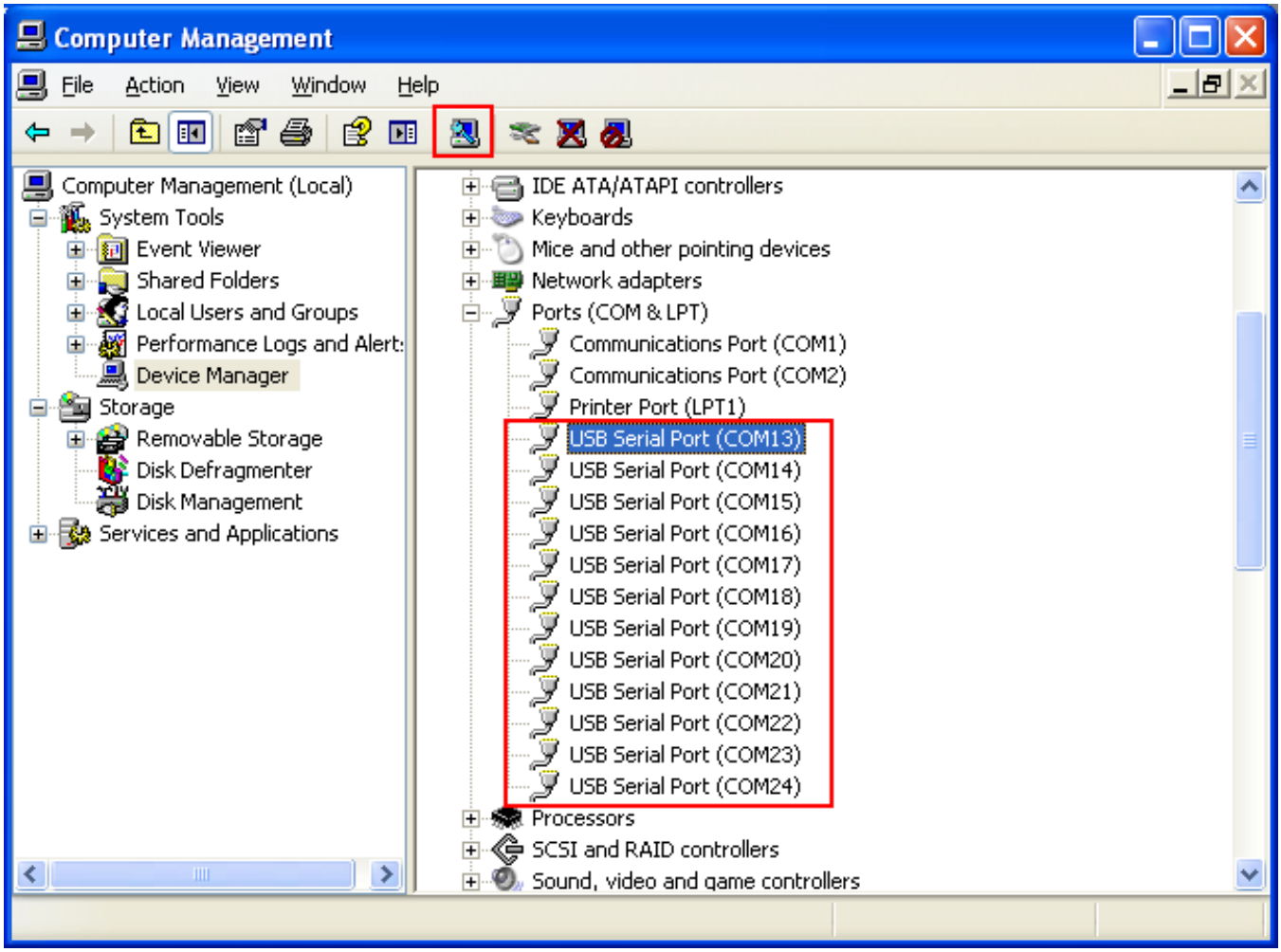

Figure 3-10 Device Manager showing re-assigned COM port numbers

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Distributor and Sales Representatives

Please visit the Sales Network page of the FTDI Web site for the contact details of our distributor(s) and sales representative(s) in your country.

Appendix A - Revision History

Revision History

Version 1.0	Initial release	06/11/2009

