Overview

The Virtual COM project is a simple demonstration program that uses the KSDK software. It is enumerated as a COM port and users can open such a COM port with some terminal tools, e.g. TeraTerm. It echoes back any character it receives.The purpose of this demo is to show how to build a device of USB CDC class and to provide a simple project for further development.

System Requirement

Hardware requirements

- J-Link ARM
- P&E Micro Multi-link universal
- Mini/micro USB cable
- USB A to micro AB cable
- Hardware (tower/base board, ...) for specific device
- Personal Computer

Software requirements

- The project files are in: <SDK_Install>/boards/<board>/usb/usb_device_cdc_vcom/<rtos>/<toolchain>.
- For lite version, the project files are in:
  <SDK_Install>/boards/<board>/usb/usb_device_cdc_vcom_lite/<rtos>/<toolchain>.

Getting Started

Hardware Settings

- The Jumper settings:
  JP12 connected .

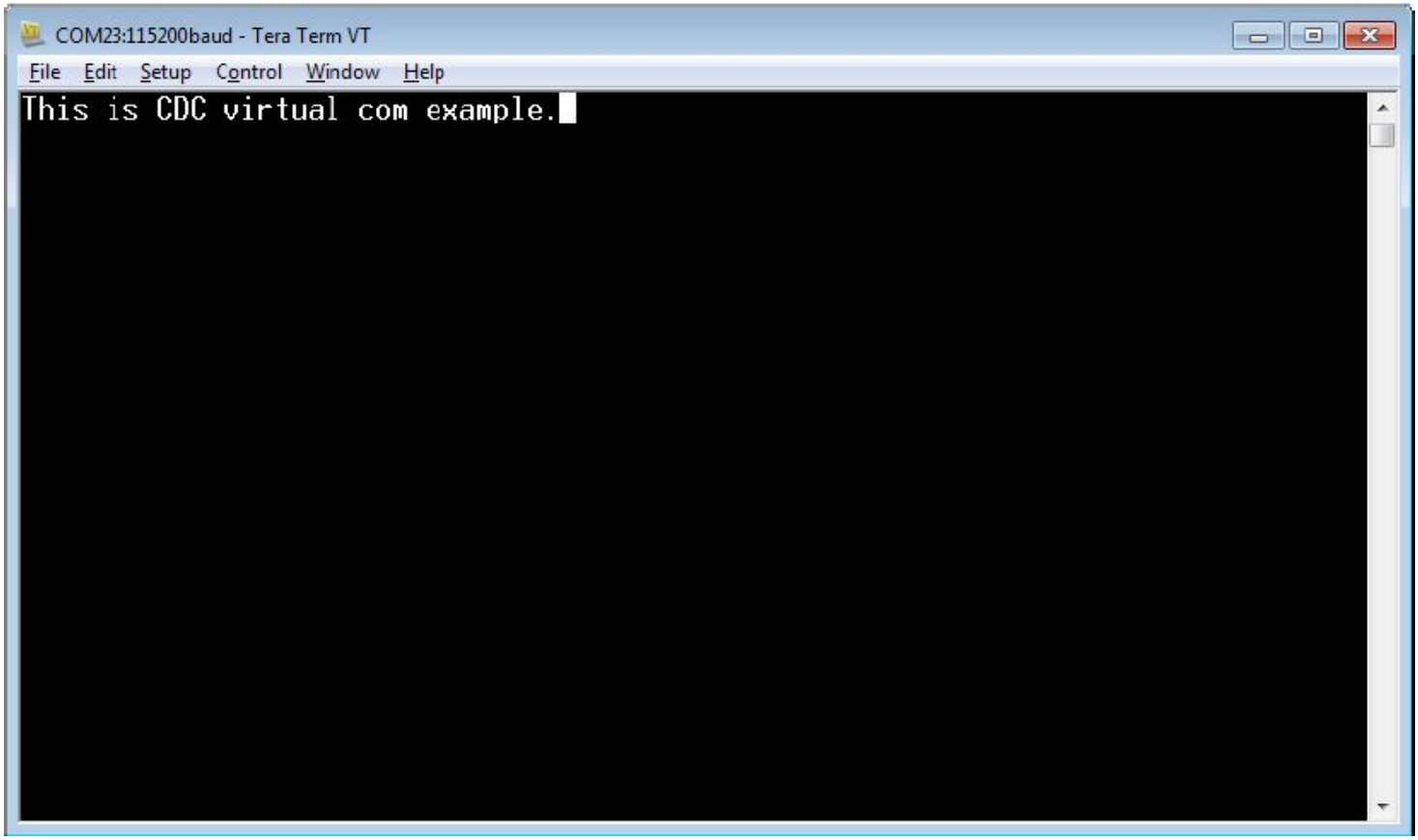
Prepare the example

1. Download the program to the target board.
2. Either press the reset button on your board or launch the debugger in your IDE to begin running the demo.
3. Connect a USB cable between the PC host and the USB device port on the board.

> Note
>
> For detailed instructions, see the appropriate board User's Guide.

Run the example in Windows

1. A COM port is enumerated in Device Manager. If it prompts for CDC driver installation. Refer to the next section to see how to install CDC driver.
2. Open the COM port in a terminal tool, i.e. Tera Term.
3. Type some characters and you can see them echoed back from the COM port.



Run the virtual com example

Note:

- Since there is no dynamic detection between host and device, the COM port must be closed from the terminal tool prior to plug-out the CDC device. Or the CDC device won't get recognized next time you plug-in with the COM port still opened.
- If no HW FLOW CONTROL is needed, you can let the variable start_transactions always be TRUE.

Run the example in Linux/Android

Ubuntu X86 Linux PC

Steps:

1. Connect CDC device to PC
2. In terminal, run
   # ls /dev/tty*
   Then '/dev/ttyACM0' will be found
3. In terminal, run
   # minicom -s
   To configure ttyACM0 as the default console and other configurations
4. In terminal, run
   # minicom
   The ttyACM0 can be opened successfully and user can input characters by minicom

i.mx6DQ board with yactor rootfs

Steps:

1. enable ACM feature and rebuild kernel

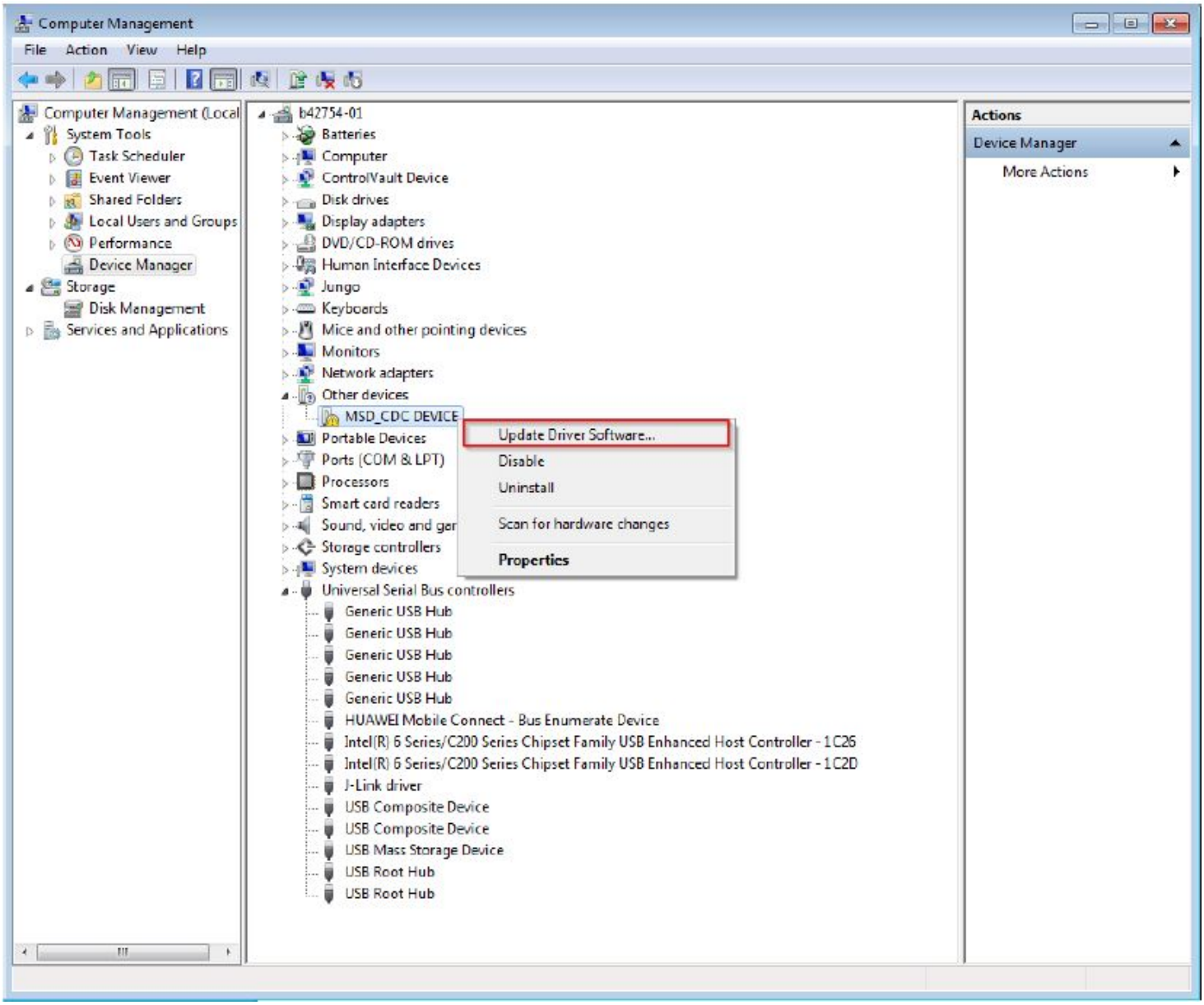
| Symbol: USB_ACM [=y] |
| Type : tristate |
| Prompt: USB Modem (CDC ACM) support |
| Location: |
| -> Device Drivers |
| -> USB support (USB_SUPPORT [=y]) |
| (1) -> Support for Host-side USB (USB [=y])

2. bring up i.mx board with rebuilt kernel
3. plugin CDC device to i.mx board
4. in i.mx board
   # ls /dev/tty*
   The /dev/ttyACM0 will be found
5. in i.mx board, we use pipe to read and write to ttyACM0 because minicom is not available for yactor rootfs.
   # cat /dev/ttyACM0 >> read1 &
   # echo "Hello World" > /dev/ttyACM0
   # fg
   Ctrl+c to interrupt the progress
   # vi read1
   Result: "Hello world" can be found in read1

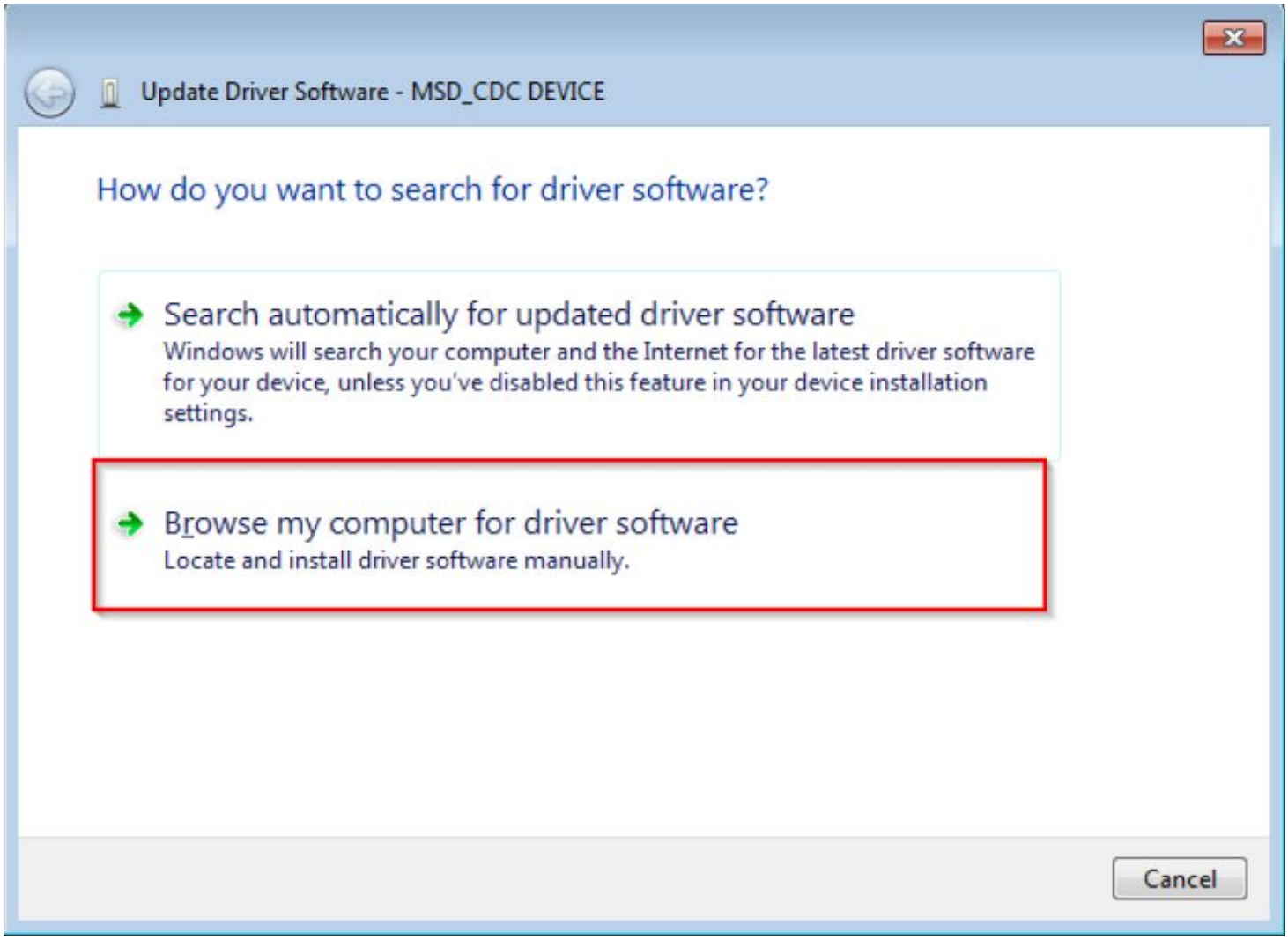
How to install CDC driver for virtual_com and msd_cdc composite example

Below are the steps to install CDC driver on Windows 7, while on Windows XP the similar way apply.

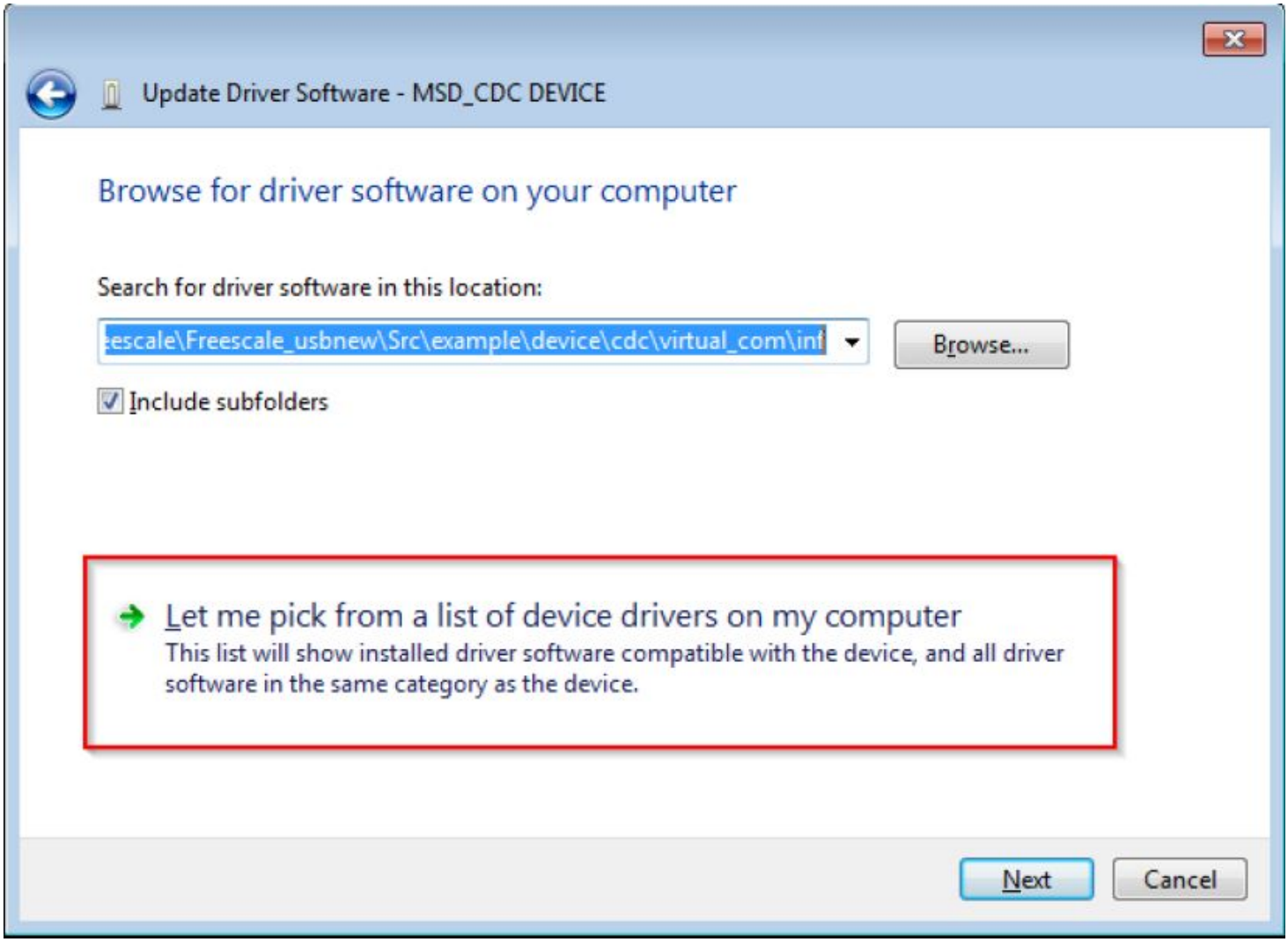
Step 1. Click "Update Driver Software..."



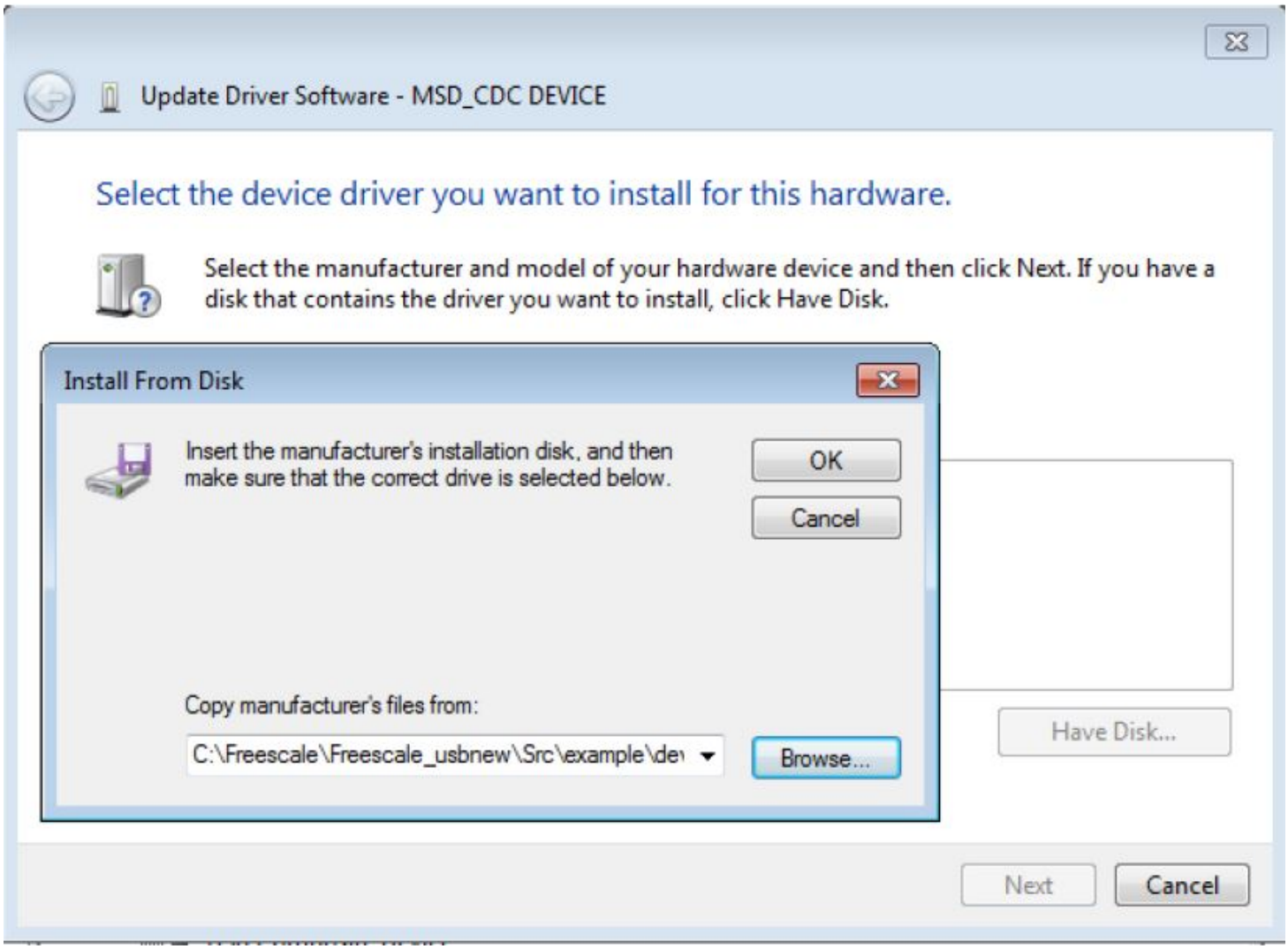
Step 2. Choose "Browse..."



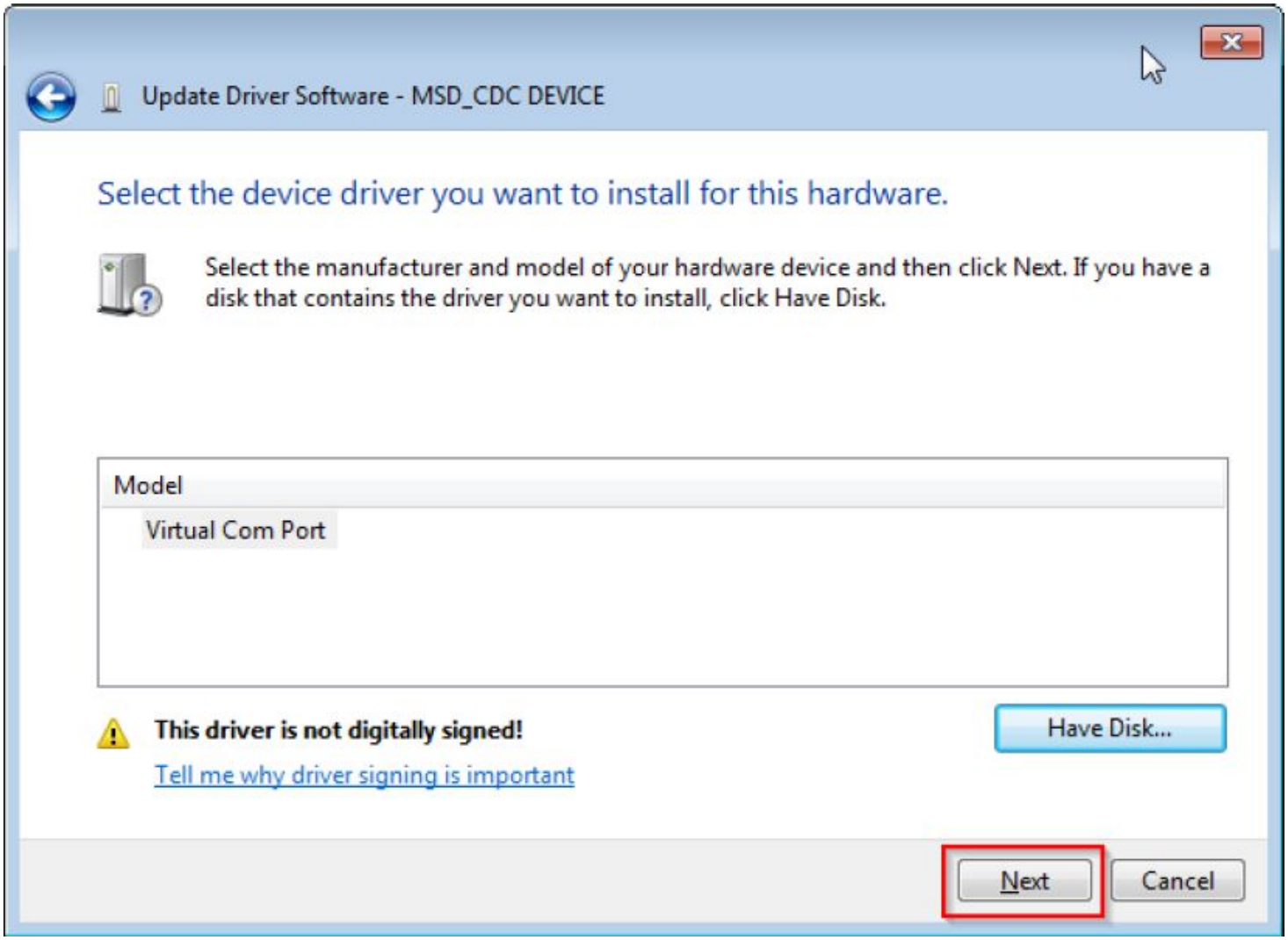
Step 3. Select "Let me pick..."



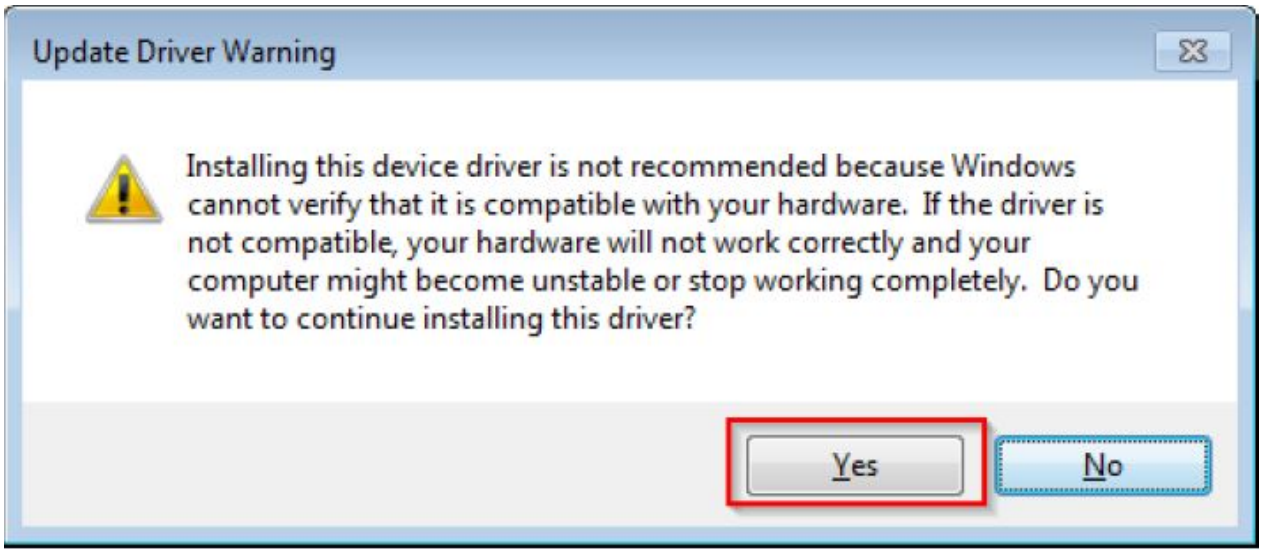
Step 4. Navigate to your CDC driver location. <install_dir>\middleware\usb\example\usb_device_cdc_vcom\inf or <install_dir>\middleware\usb\example\usb_device_cdc_vcom_lite\inf



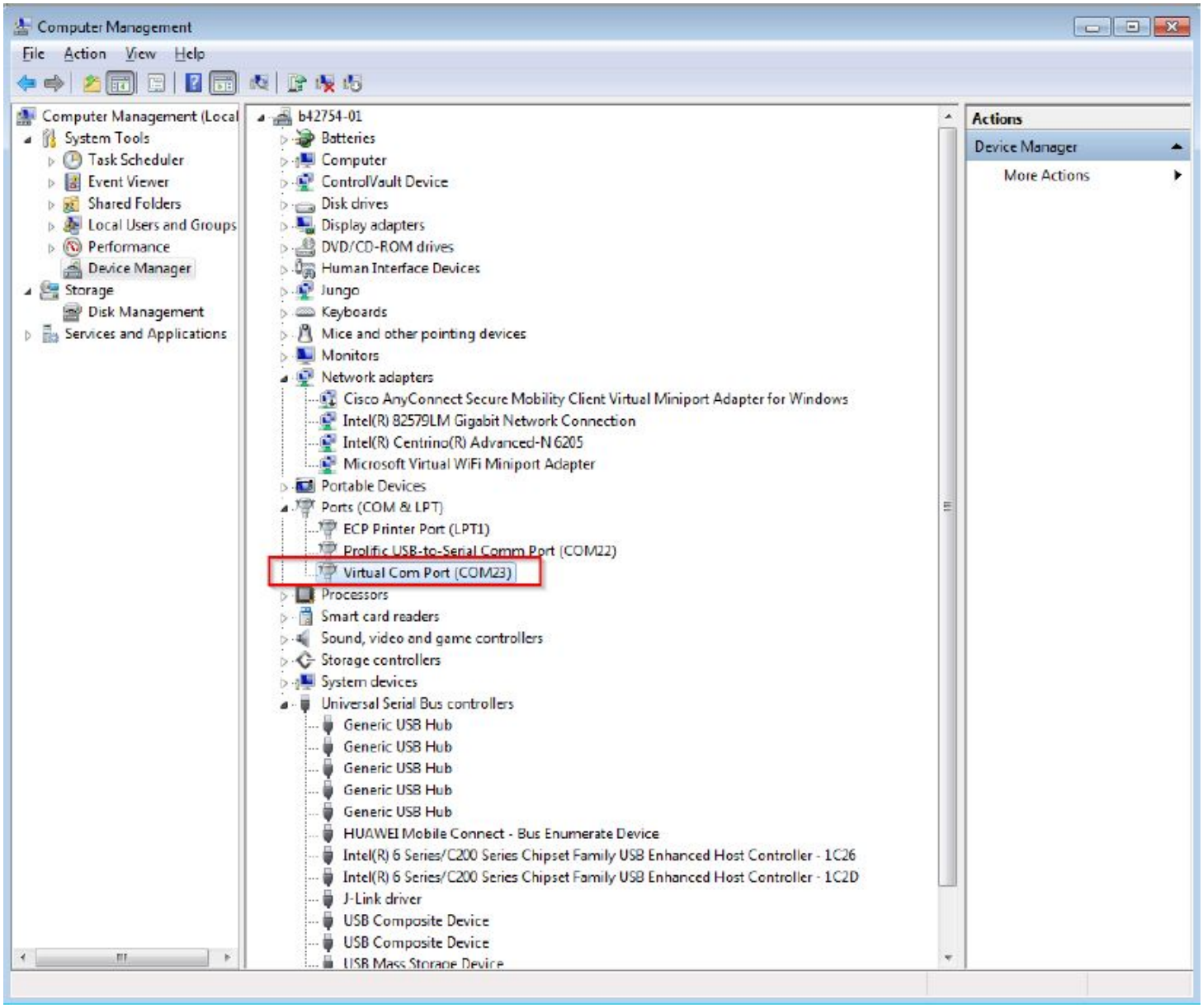
Step 5. Press "Next".



Step 6. Ignore the warning and press "Yes".



Step 7. Now the CDC driver should has been installed successfully.



- If you run into driver signature issue on Windows 8, please refer to the link as follow, https://learn.sparkfun.com/tutorials/disabling-driver-signature-on-windows-8/disabling-signed-driver-enforcement-on-windows-8
- If you want to do driver signing on Windows, please refer to the link as follow,
  - https://msdn.microsoft.com/en-us/library/windows/hardware/ff544865(v=vs.85).aspx
  - http://www.davidegrayson.com/signing/#howto