

Overview

The Composite CDC_MSC project is a simple demonstration program that uses the KSDK software. It is enumerated as a COM port and a ram disk. For the COM port, users can open such a COM port with some terminal tools, e.g. TeraTerm. It echoes back any character it receives. For the ram disk, users can format the disk and do any file operation in such disk. The purpose of this demo is to show how to build a composite USB device 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_composite_cdc_msc/<rtos>/<toolchain>.
- For lite version, the project files are in:
<SDK_Install>/boards/<board>/usb/usb_device_composite_cdc_msc_lite/<rtos>/<toolchain>.

Getting Started

Hardware Settings

- The Jumper settings:
JP12 connected .

Prepare the example

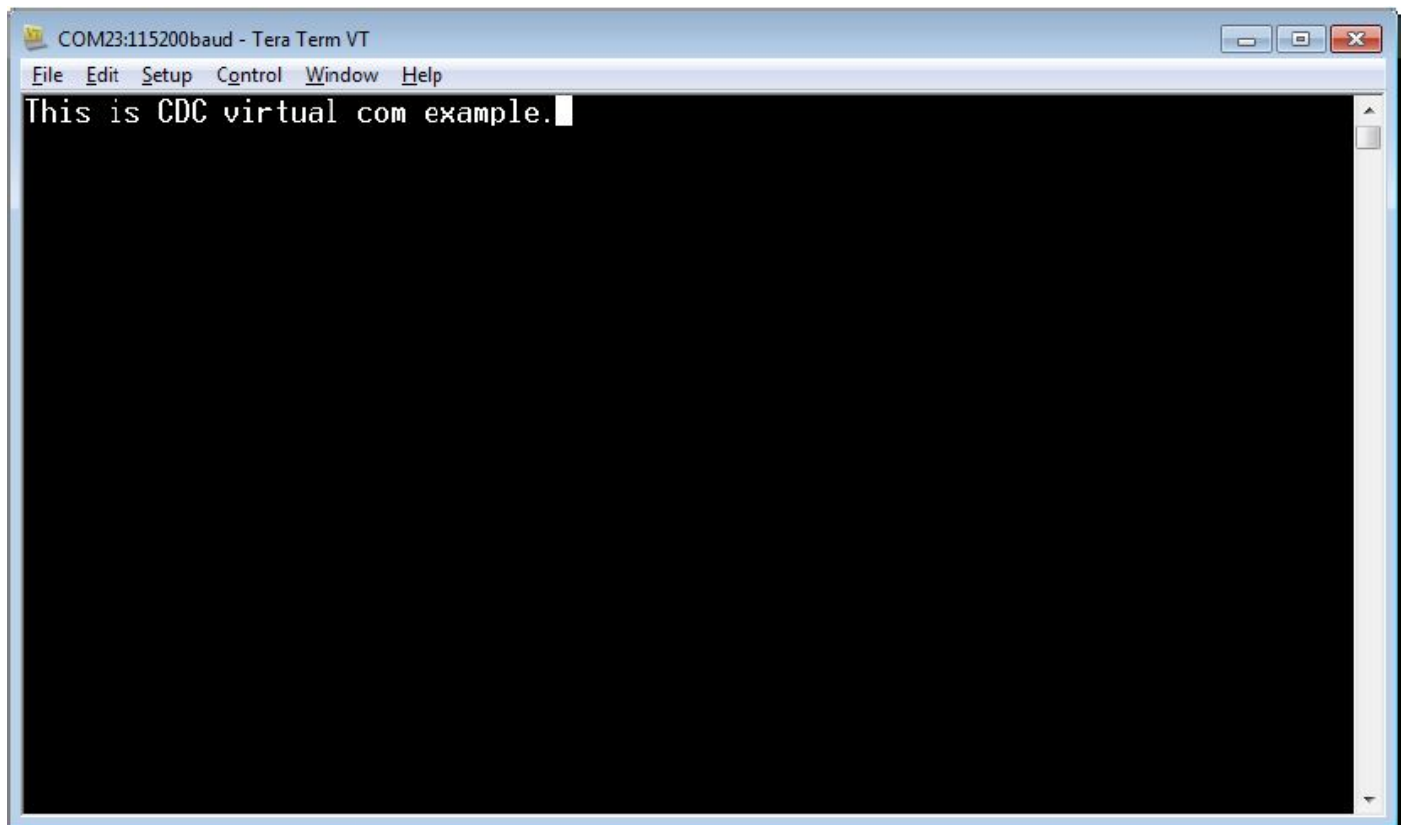
1. Download the program to the target board.
2. Either press the reset button on your board or launch the debugger in your IDE to begin running the demo.
3. Connect a USB cable between the PC host and the USB device port on the board.

Note

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

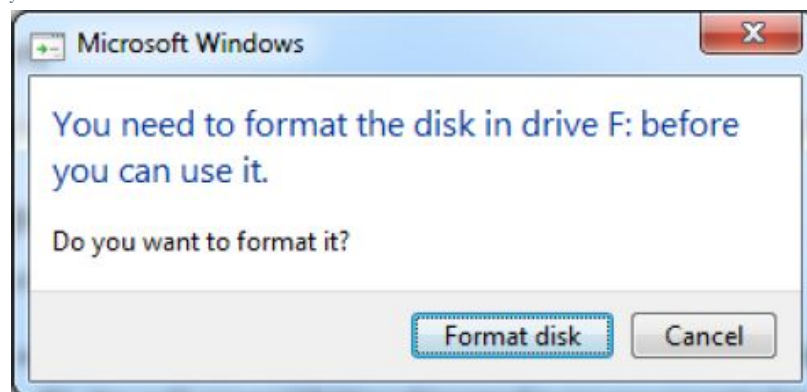
Run the example in Windows

1. A COM port and a USB Mass Storage Device 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 with the virtual com

4. The Windows will prompt you to format the u disk.



Prompt to format disk

When the format is completed, the computer will display the capacity of 10k removable disk.



A disk displayed in Windows

5. Then you can do any operation, just like as a u-disk.

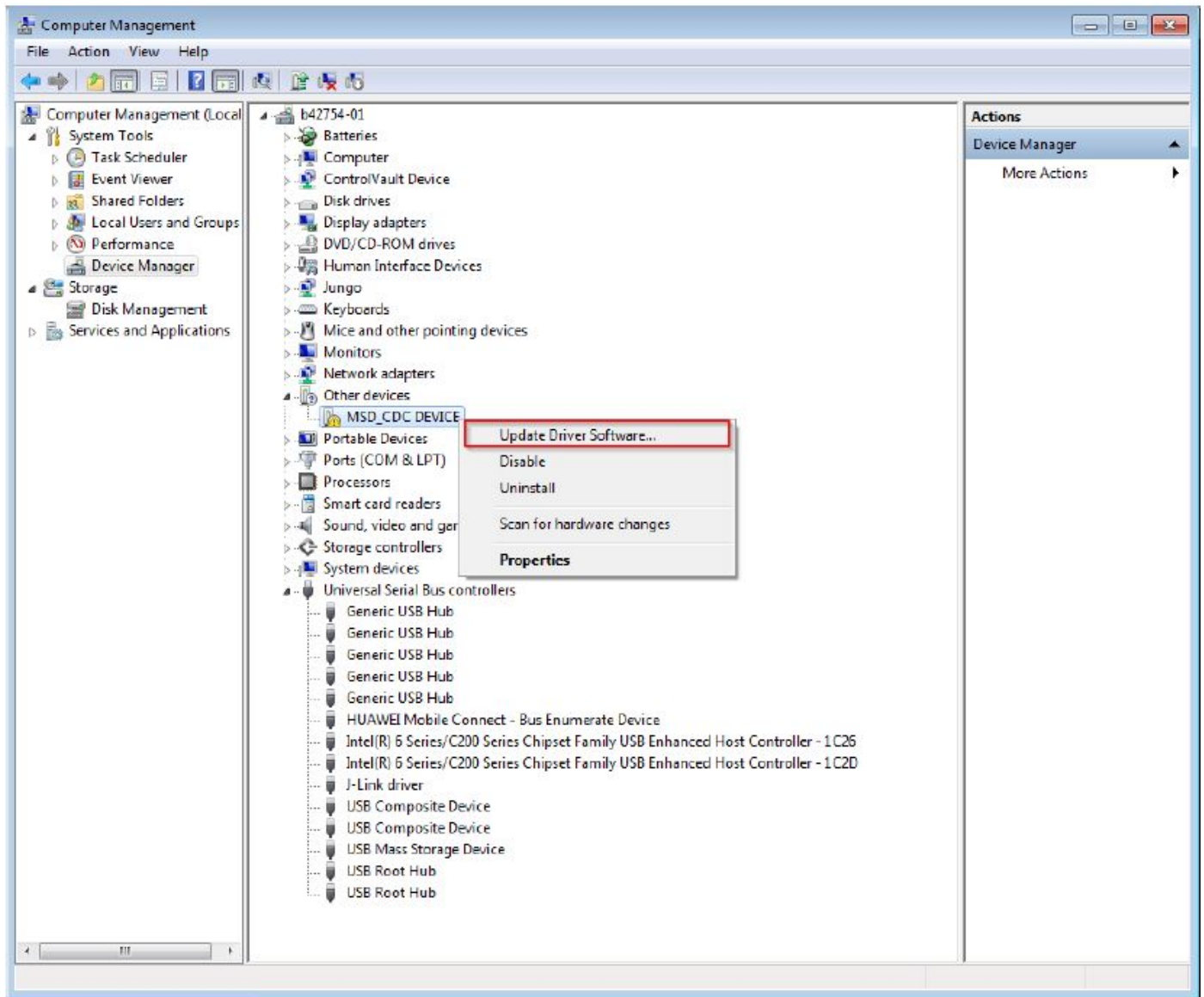
Note:

- 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`.
- The ram disk and SD disk function can't be enabled in the same time.
- Mac system default will create `.fsevents` , `.Trashes` folder and some other files if we format the disk on MAC. The total files size is about 8K. We need increase the RAM size at least to 32K if USB mass storage example running on MAC. Please change the MACRO `TOTAL_LOGICAL_ADDRESS_BLOCKS_NORMAL` in `disk.h` from 48 to 64.

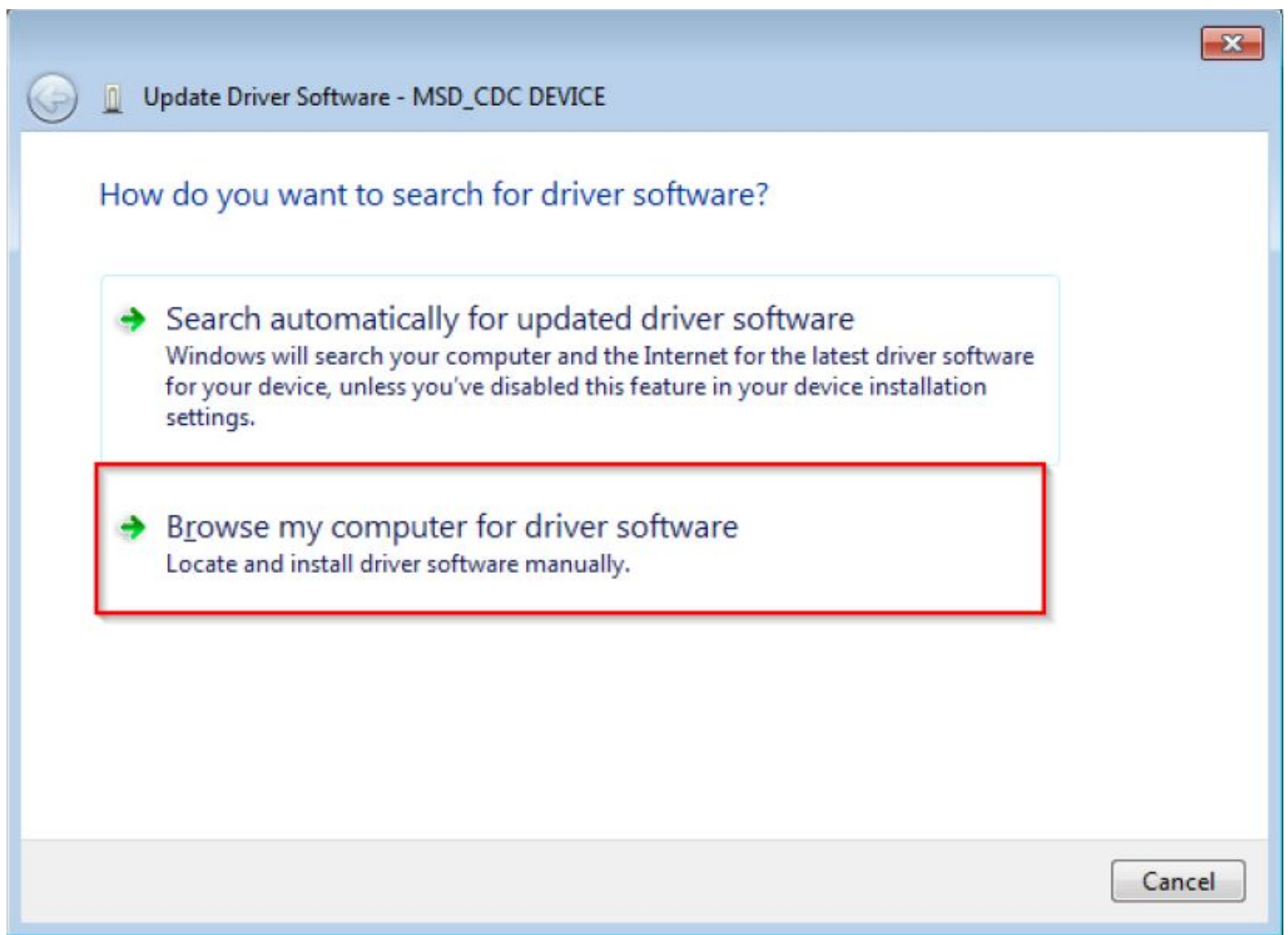
How to install CDC driver for virtual_com and msd_cdc composite example

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

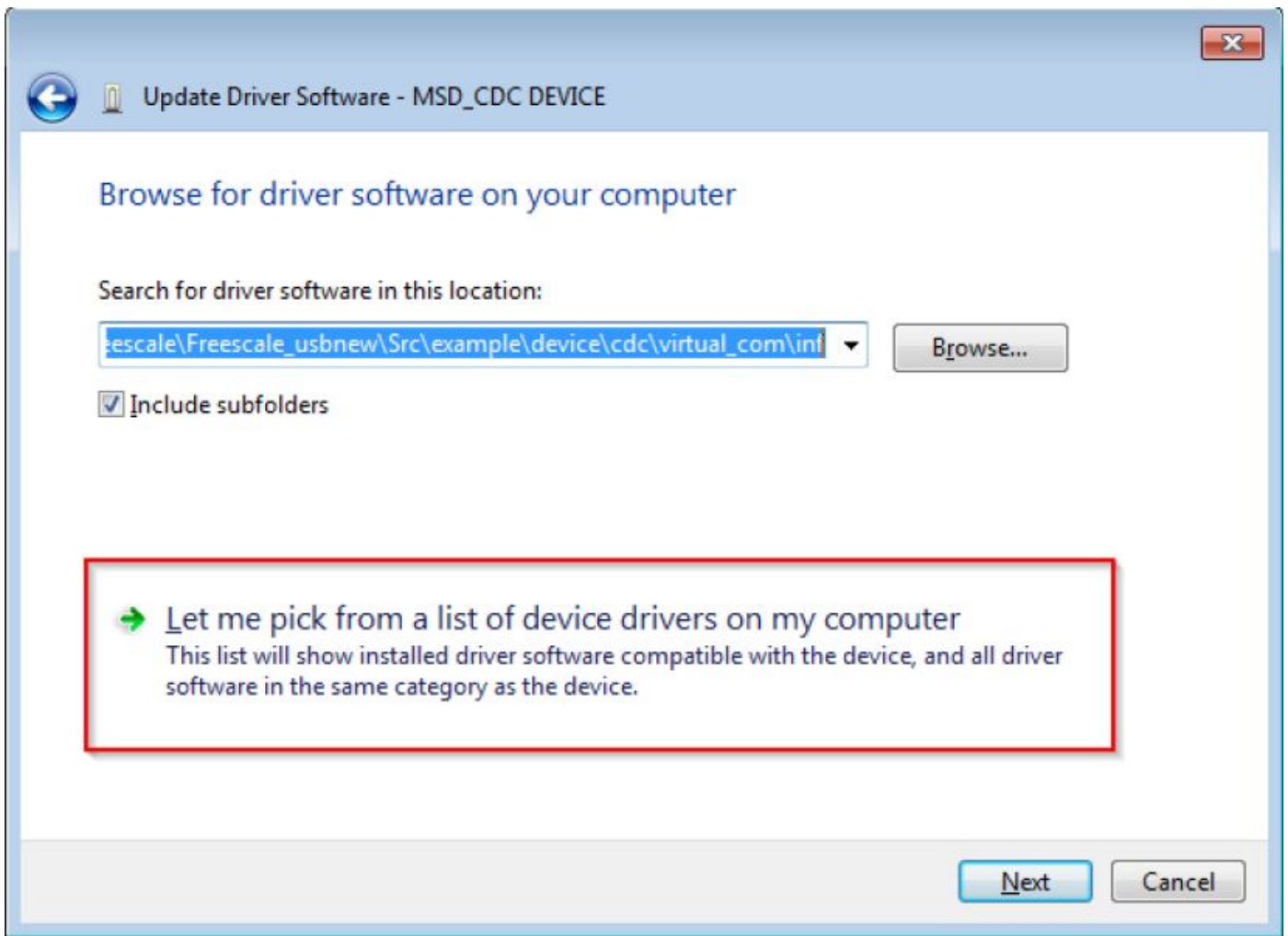
Step 1. Click "Update Driver Software..."



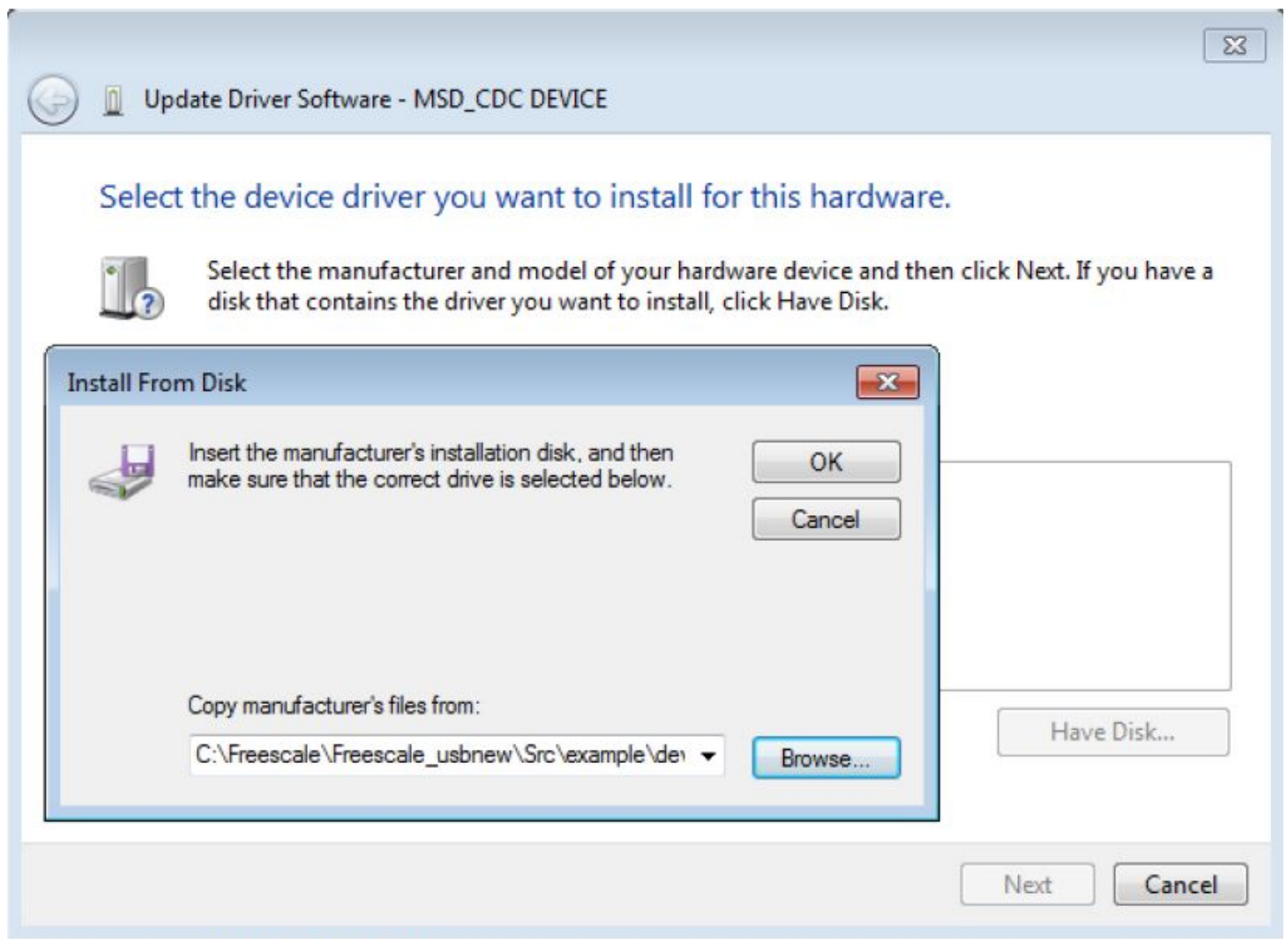
Step 2. Choose "Browse..."



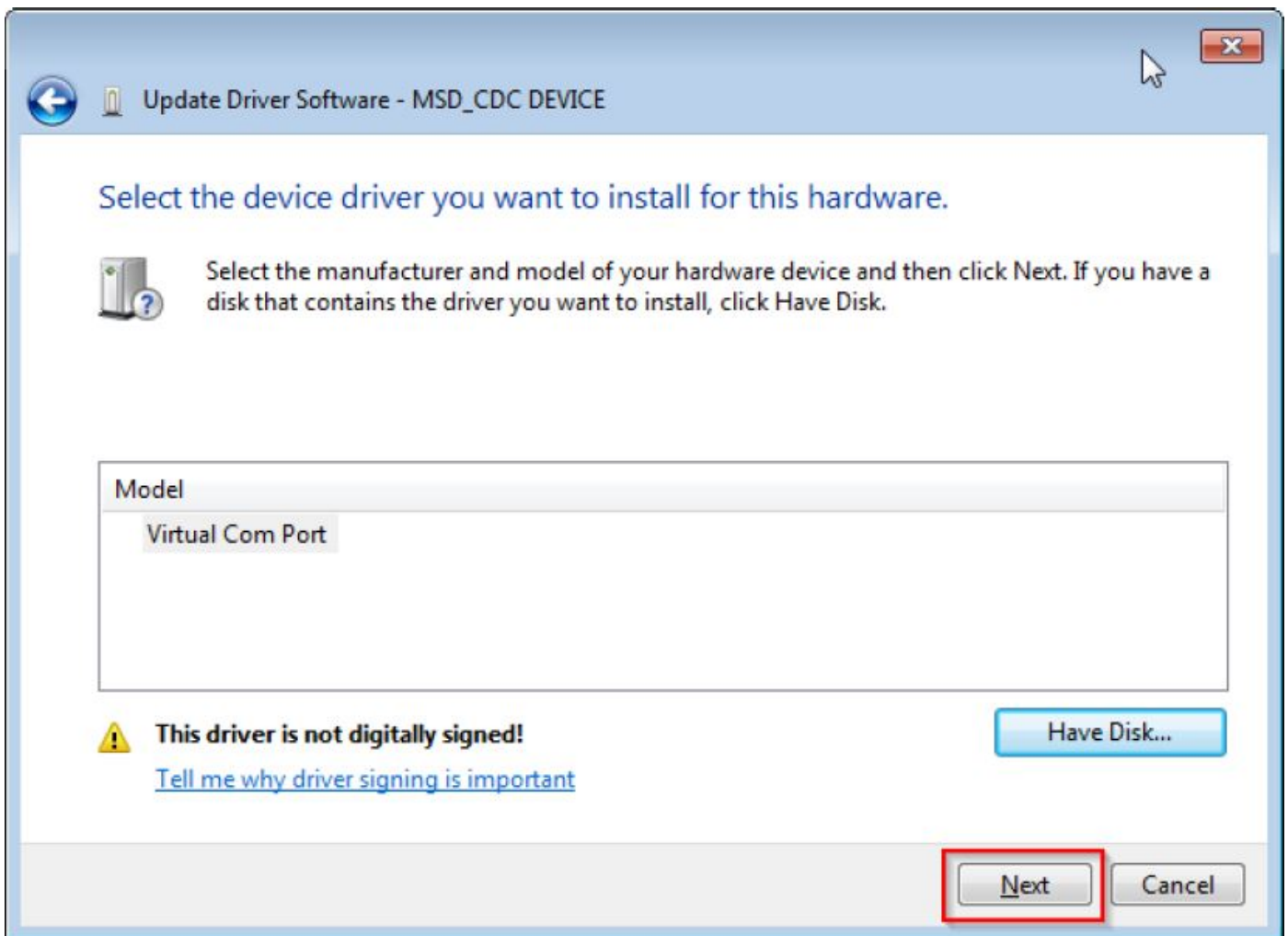
Step 3. Select "Let me pick..."



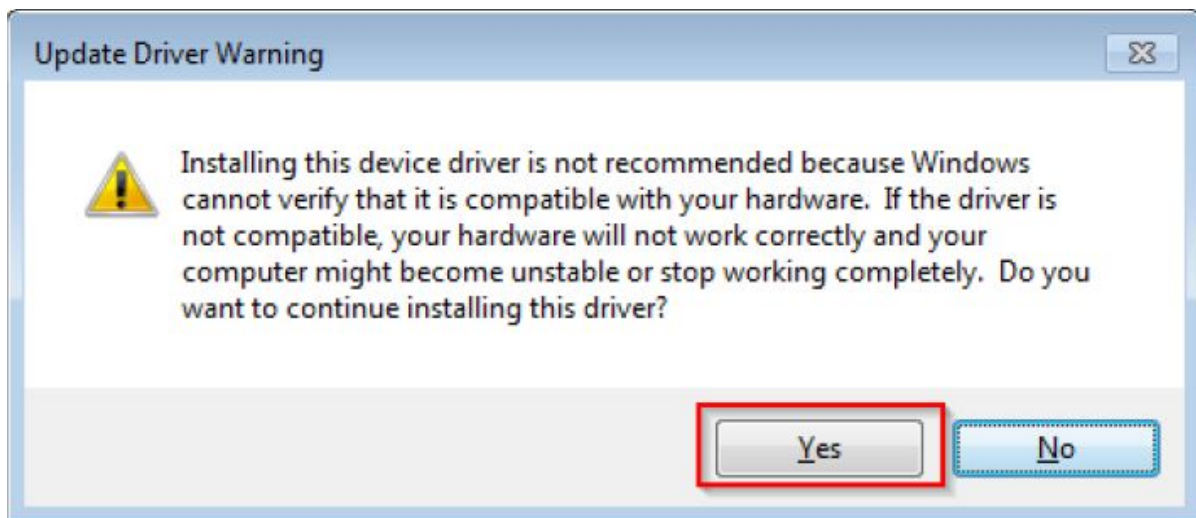
Step 4. Navigate to your CDC driver location. <install_dir>\middleware\usb\example\usb_device_composite_cdc_msc\inf or <install_dir>\middleware\usb\example\usb_device_composite_cdc_msc_lite\inf



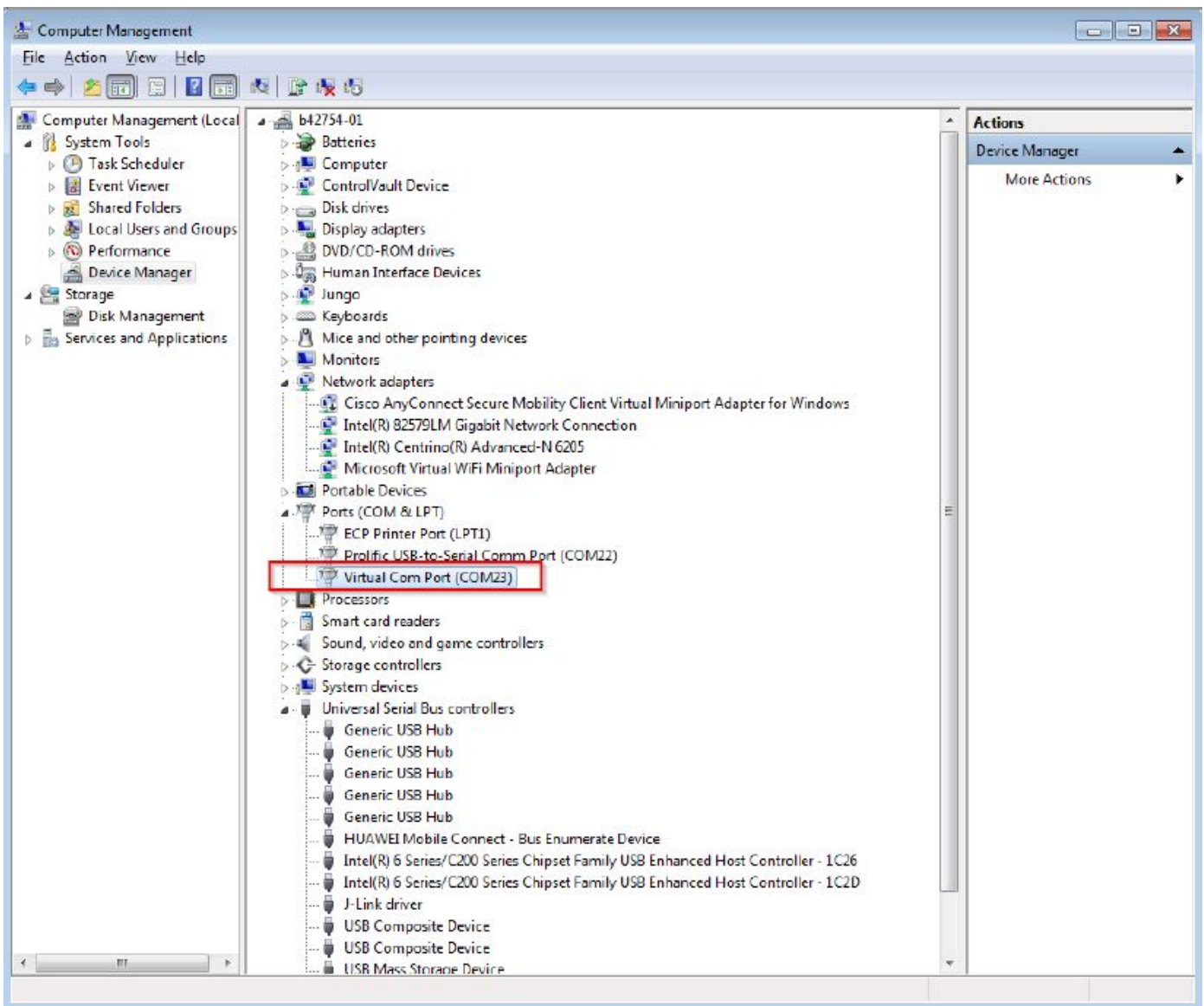
Step 5. Press "Next".



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



Step 7. Now the CDC driver should have 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](https://msdn.microsoft.com/en-us/library/windows/hardware/ff544865(v=vs.85).aspx)
 - <http://www.davidegrayson.com/signing/#howto>
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