Edison setup on Windows

Flashing and using Edison under Windows

> (i) Test done on Win 7 platform

> (i) Test done on Win 8 platform

Flashing setup

Sum-up Actions Sequence

- install phone flash tools
- install dfu utils
- start flashing IFWI
- setup driver with zadig
- restart
- run flashall to update all the device

Download the pre-built image

In order to perform any setup it is necessary to first download the latest pre-built image and extract it to a folder.

Installing Phone Flash tools

First you need to install Phone flash tools from Intel to be able to flash a blank board. See **Phone Flash Tool v4.4.4**

> ⚠ During setup don't forget to check the add to Path checkbox.

Installing Dfu utils

To update the flash you will need dfu-util for win 32, you can use this link http://dfu-util.gnumonks.org/releases/dfu-util-0.7-binaries.7z

You need to add manually dfu-util directory to Path, you can do that by :

- right-clicking Properties on Computer icon
- choosing Advanced System Setting in left pane
- clicking Environment Variables
- editing Path in System Variables list

If you installed dfu-util in C:\Program Files (x86), you should add C:\Program Files (x86)\dfu-util-0.7-binaries\win32-mingw32 don't forget to append a semi-colon ";" before.

You will also need Zadig program to make dfu-util work on Windows, you can use this link http://zadig.akeo.ie/downloads/zadig_2.1.0.exe

The first time the board is plugged into the PC, USB download gadget is not recognized by Windows, so you need to flash IFWI in the board,
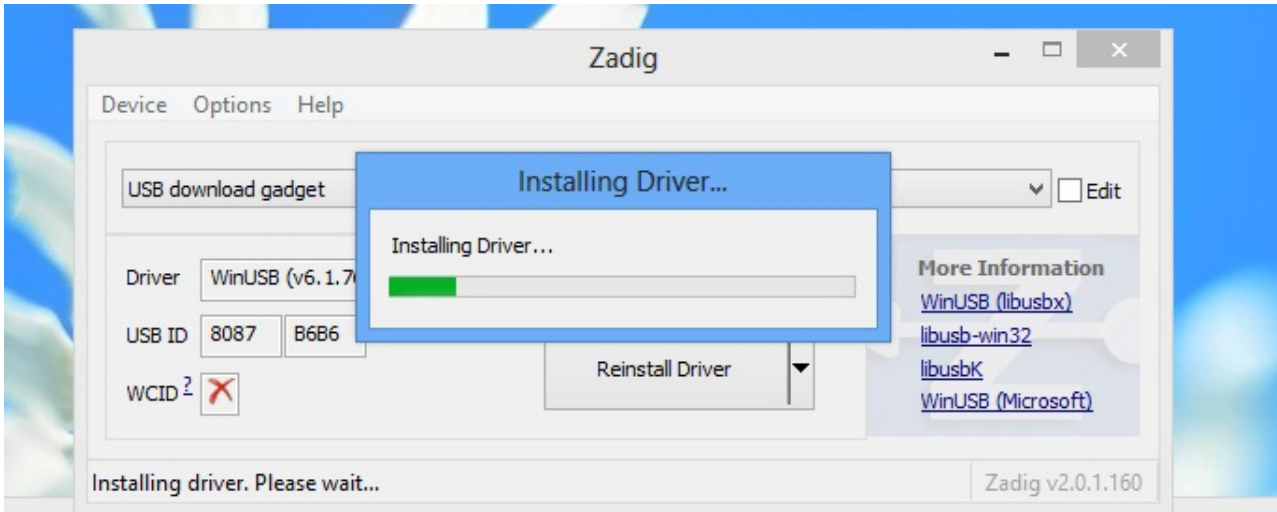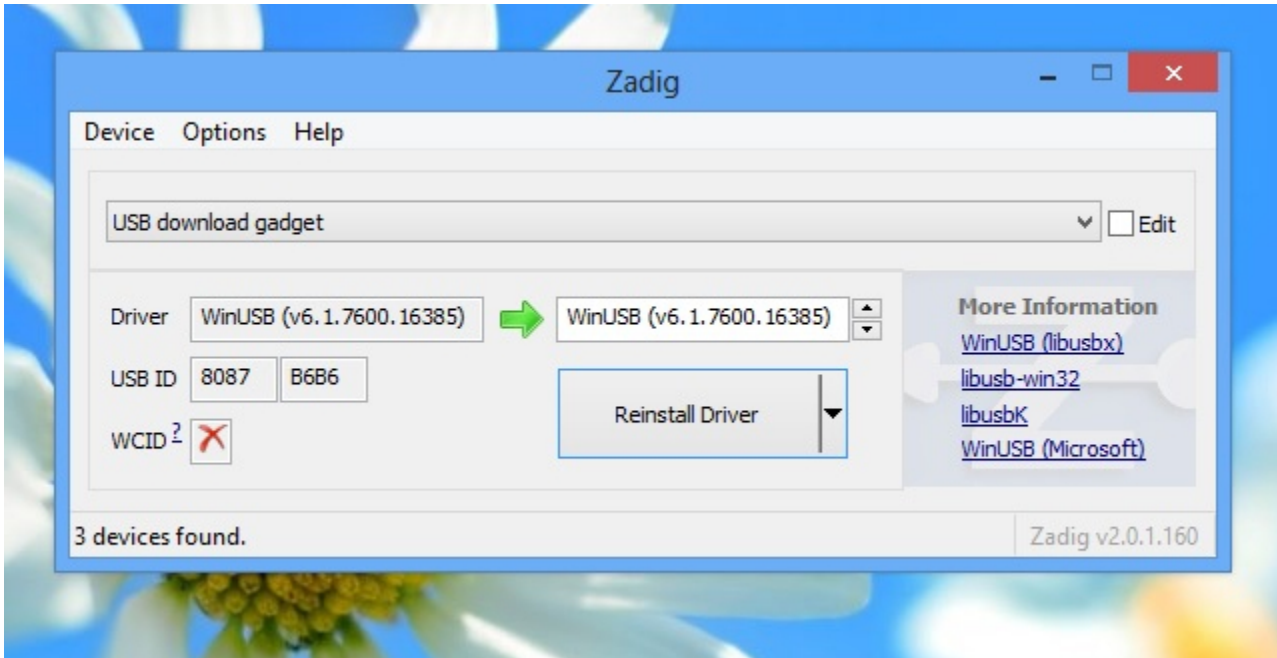
IFWI flashing

When you have a blank board, the first thing to do is to flash low level boot part called IFWI using the phone flash tools, this step enable dfu firmware.
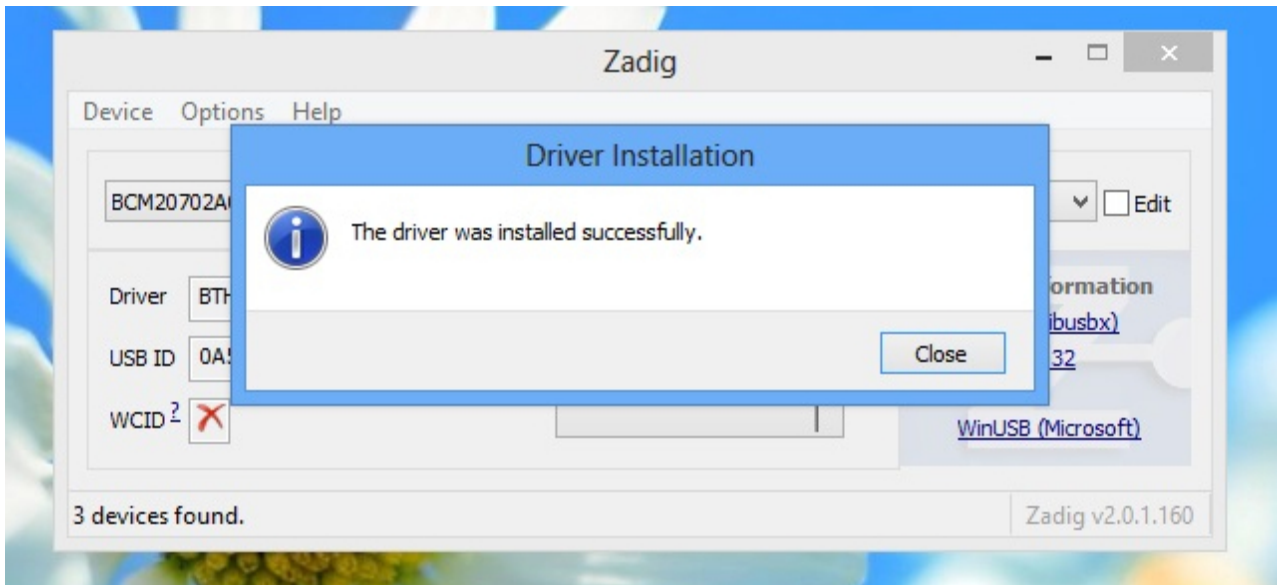
To do this, run the script flashall.bat which should have been in the same archive as the prebuilt image by issuing -i option, note that in early version script this option can be enabled by default.

Once done, the script should be unable to continue board flashing due to the fact that USB Download gadget isn't installed yet.

So you need to install it by launching Zadig.exe.

The setup process is described under. First select USB Download Gadget and install driver WinUsb.

⚠ You need to restart your computer.

To Verifying dfu-utils installation, open a terminal and issue the command:
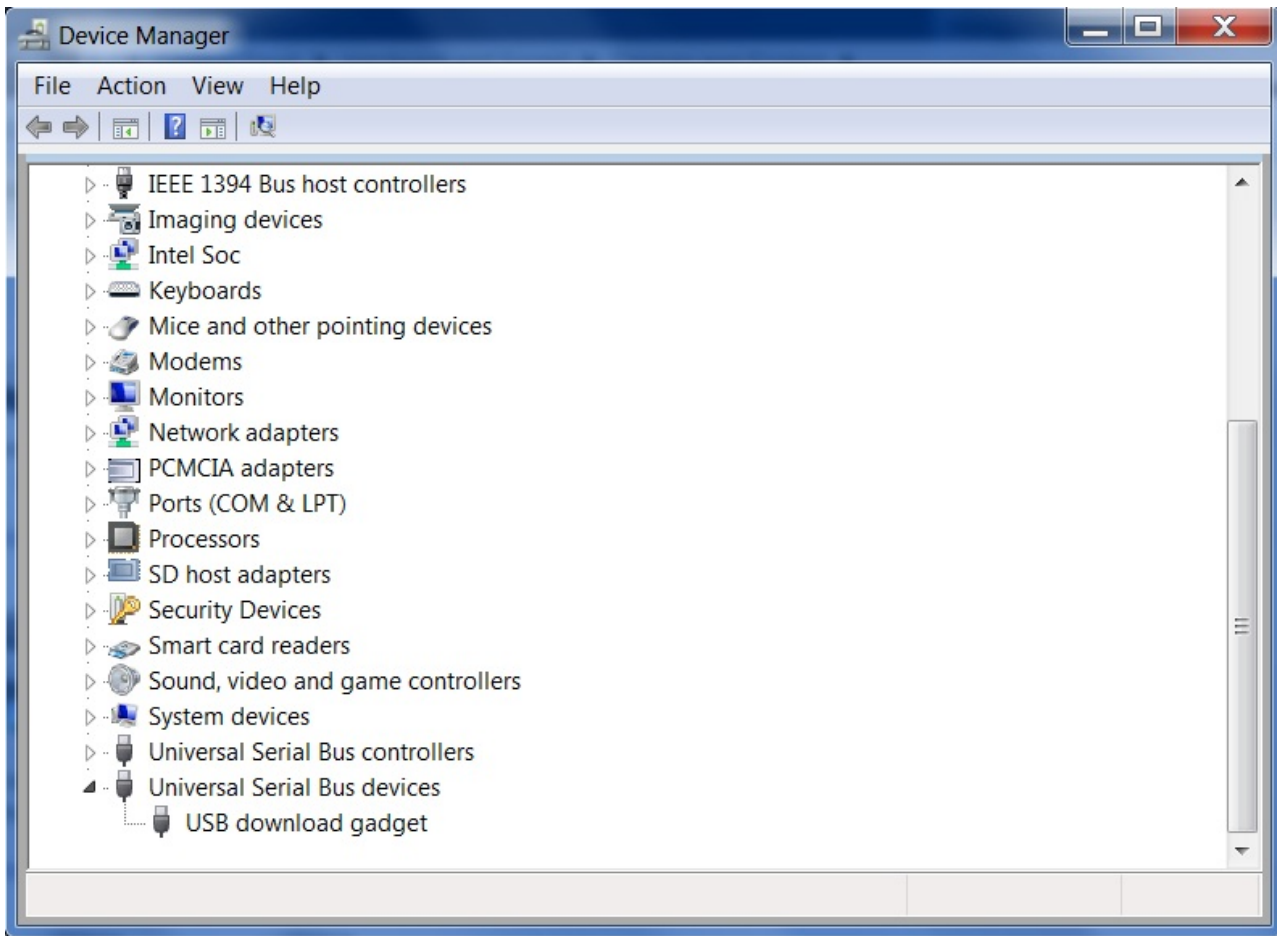
```
dfu-util -v -l -d 8087:b6b6
```

and you should see :

```
Copyright 2005-2008 Weston Schmidt, Harald Welte and OpenMoko Inc.
Copyright 2010-2012 Tormod Volden and Stefan Schmidt
This program is Free Software and has ABSOLUTELY NO WARRANTY

Filter on vendor = 0x8087 product = 0xb6b6
Found Runtime: [0a5c:21e1] devnum=0, cfg=1, intf=3, alt=0, name="UNDEFINED"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=0, name="u-boot0"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=1, name="u-boot1"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=2, name="u-boot-env0"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=3, name="u-boot-env1"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=4, name="boot"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=5, name="rootfs"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=6, name="log"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=7, name="update"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=8, name="home"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=9, name="vmlinuz"
Found DFU: [8087:b6b6] devnum=0, cfg=1, intf=0, alt=10, name="initrd"
```

you can also verify the availability of USB Download gadget in the Windows device manager

Device Manager

File   Action   View   Help

▷ 🖥 IEEE 1394 Bus host controllers
▷ 📷 Imaging devices
▷ 💻 Intel Soc
▷ ⌨ Keyboards
▷ 🖱 Mice and other pointing devices
▷ 📻 Modems
▷ 🖥 Monitors
▷ 💻 Network adapters
▷ 🖳 PCMCIA adapters
▷ 🖫 Ports (COM & LPT)
▷ 🖥 Processors
▷ 🖥 SD host adapters
▷ 🔑 Security Devices
▷ 💳 Smart card readers
▷ 🎮 Sound, video and game controllers
▷ 🖥 System devices
▷ 🖥 Universal Serial Bus controllers
▲ 🖥 Universal Serial Bus devices
    🖥 USB download gadget

Flashing the Edison Board

You should at least have an Edison image archive composed of all binary and configuration files needed to flash the board. You can get it from Artifactory.

You could also be in a Yocto environment which provide you also the scripts and configuration files.

In bothy cases shell scripts are provided for flashing. Theses last allows severals tasks to be performed.

For now there are two configurations supported one for MCG board and one for Edison, depending of your board you should use -m (for MCG board) or -e (for Edison) swtichs.

Kernel flashing

To do this, run the script flashall.bat -b, It should automatically flash all needed piece of software, ifwi, kernel, rootfs.

Connection setup

⊙   You may need to follow this procedure again and again each time if you change the USB port you plug the board.

Installing FTDI driver to use serial debug interface

If you have a debug extension board with 4 extra serial USB interfaces you can get the driver from ftdi website.
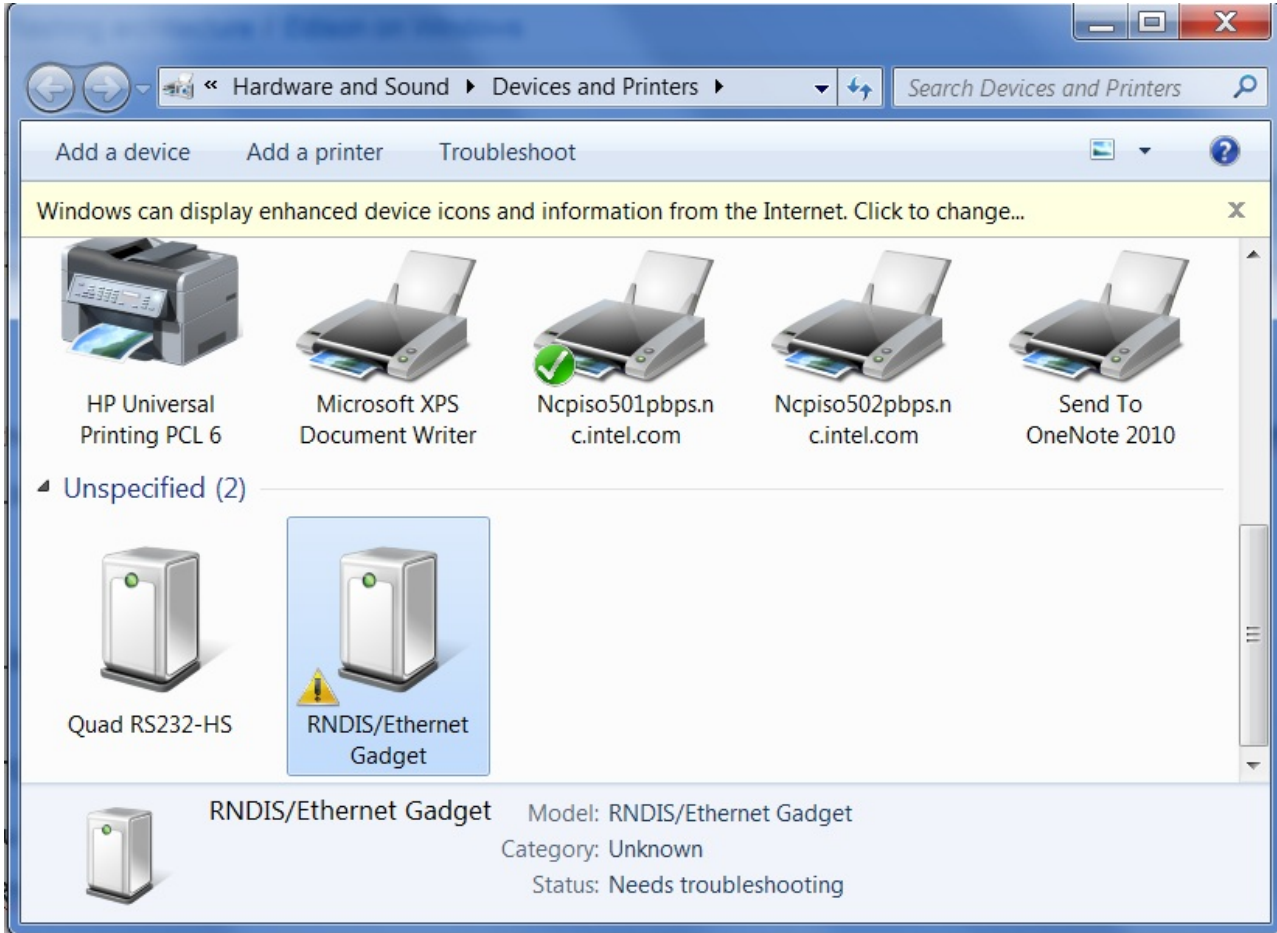
You can use this link http://www.ftdichip.com/Drivers/CDM/CDM%20v2.10.00%20WHQL%20Certified.exe executable

You can use putty if you need terminal for serial link http://the.earth.li/~sgtatham/putty/latest/x86/putty.exe .
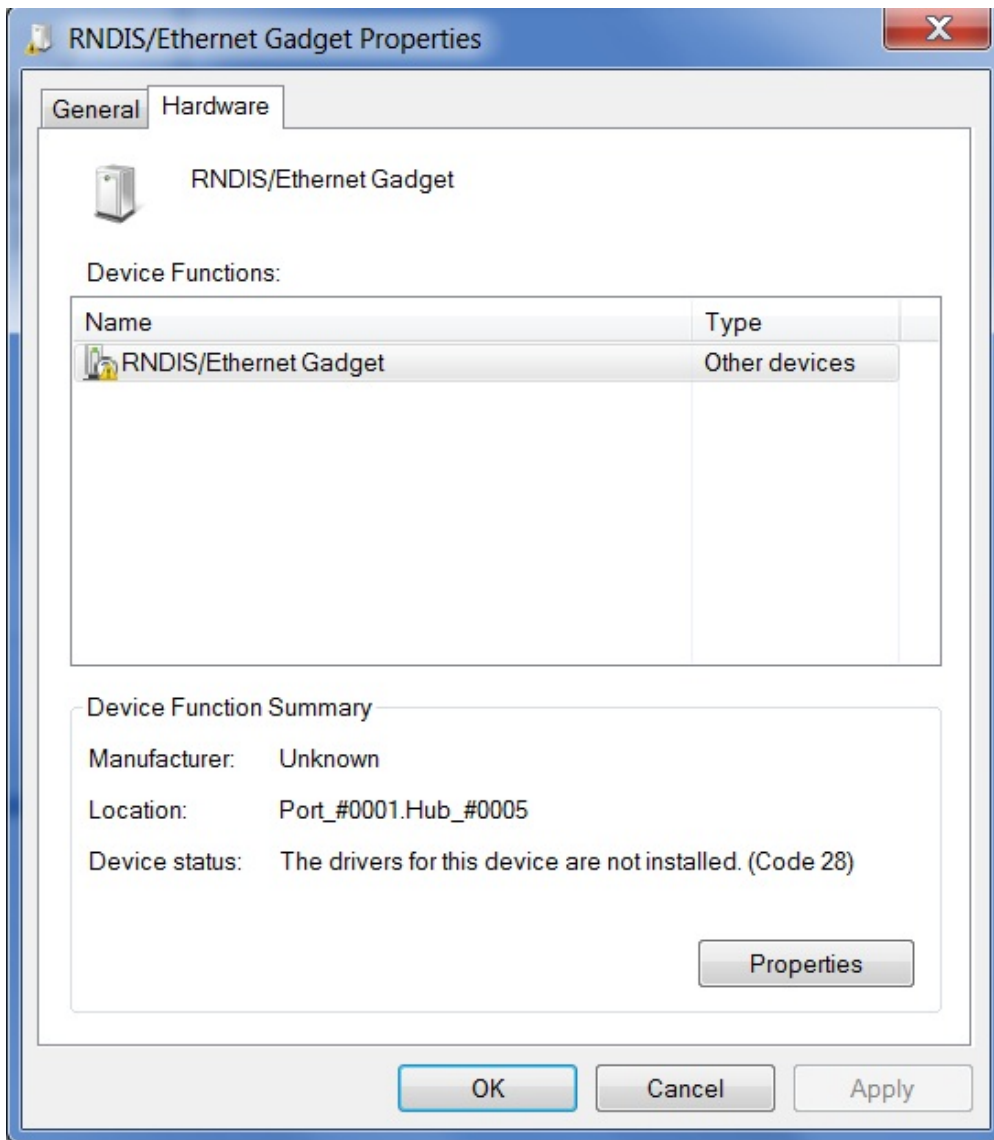
Accessing the board through ssh

Once the kernel is launched, you can access the root shell through an ssh connection made over USB.
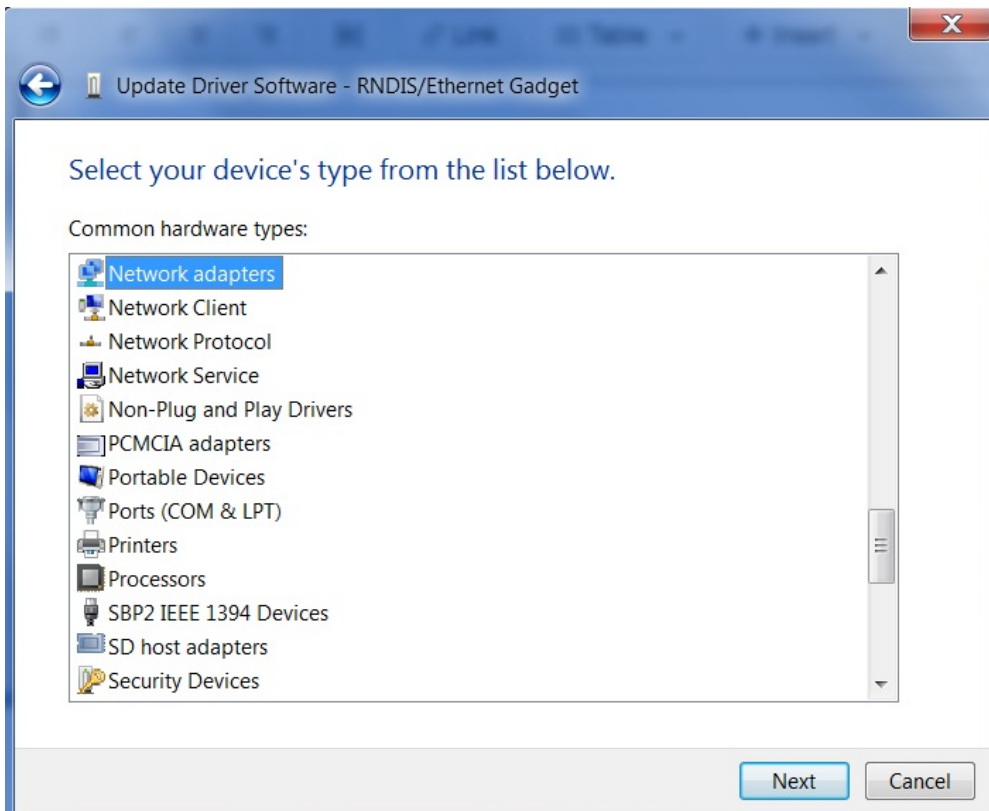
You need first to update driver RNDIS Gadget. Go to Devices and Printers as shown below
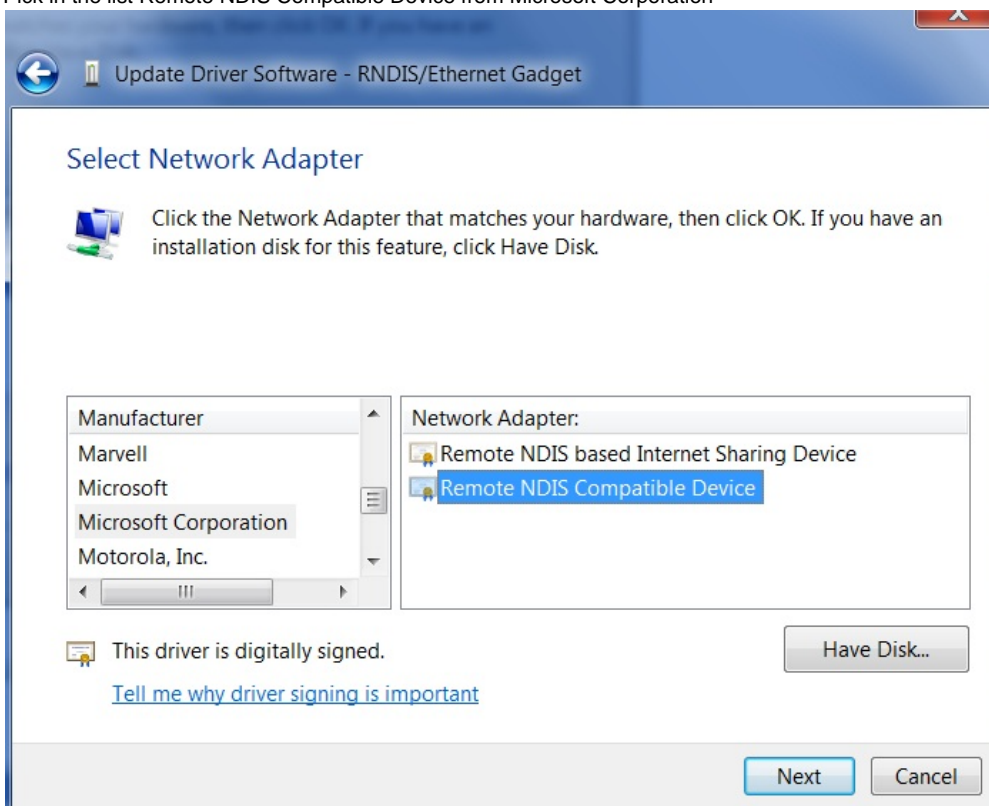

- Right click on RNDIS/Ethernet Gadget
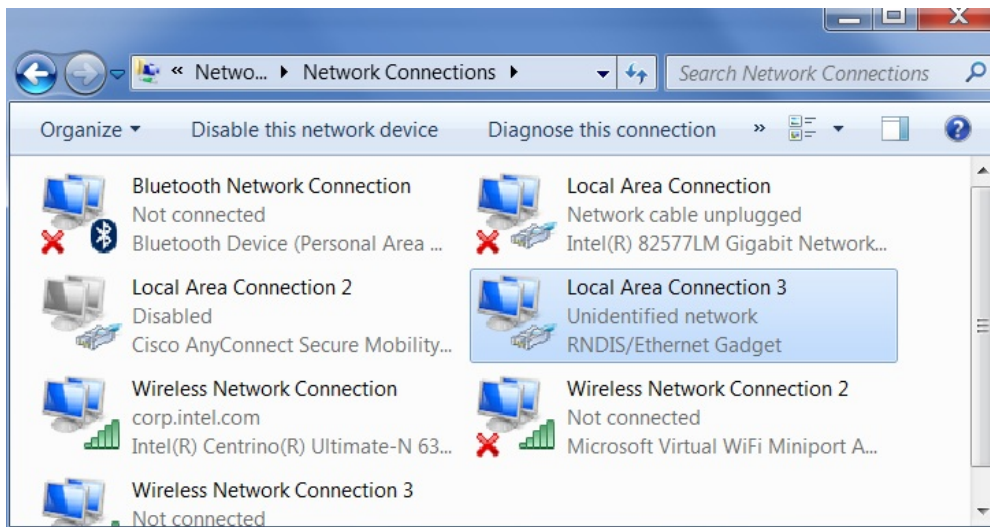- Select Property
- Select Hardware Pane

- Click Properties
- Click Change Settings
- Click Update Driver
- Click Browse my computer for driver software
- Click Let me pick from a list of device driver in my computer
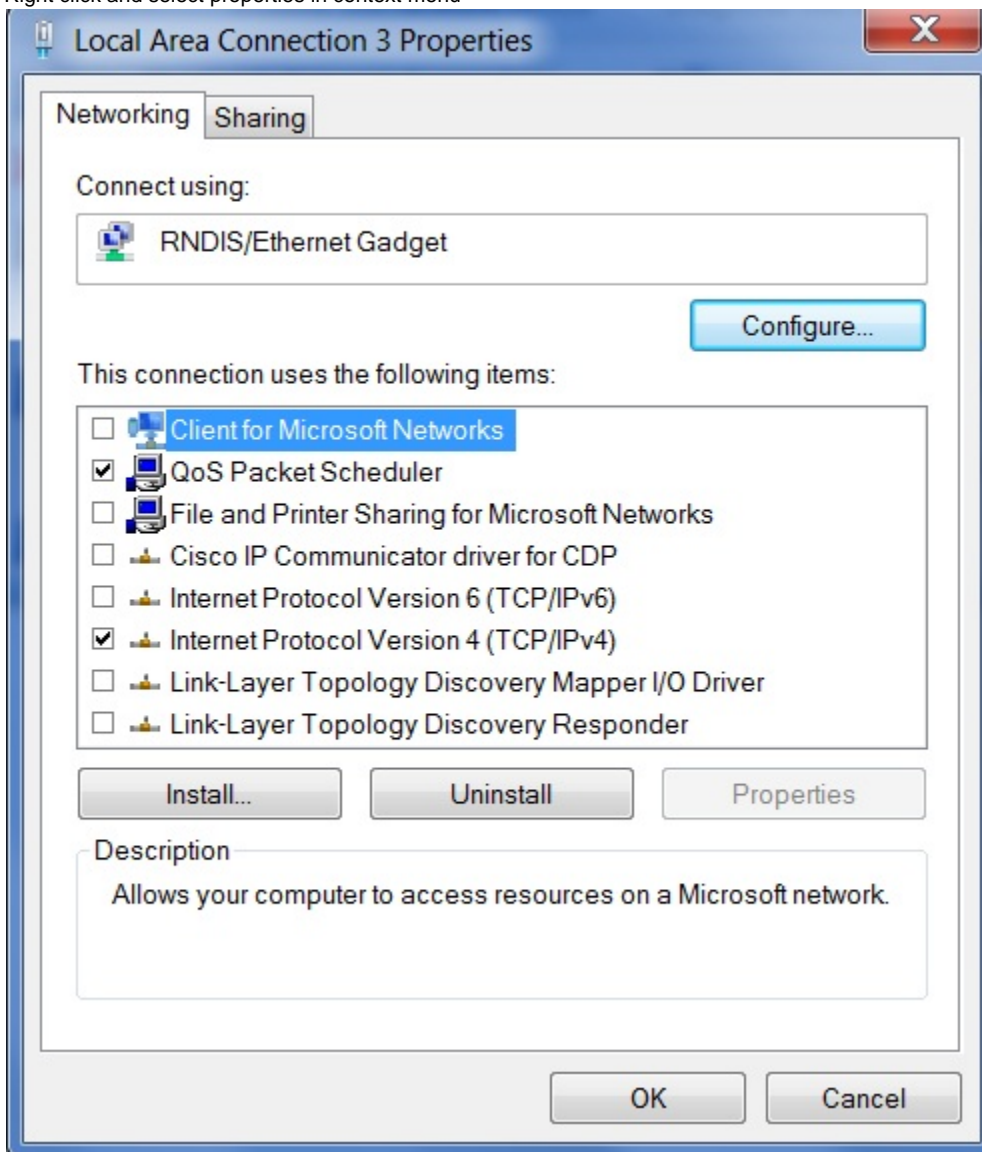- Scroll the list to Networks Adapters

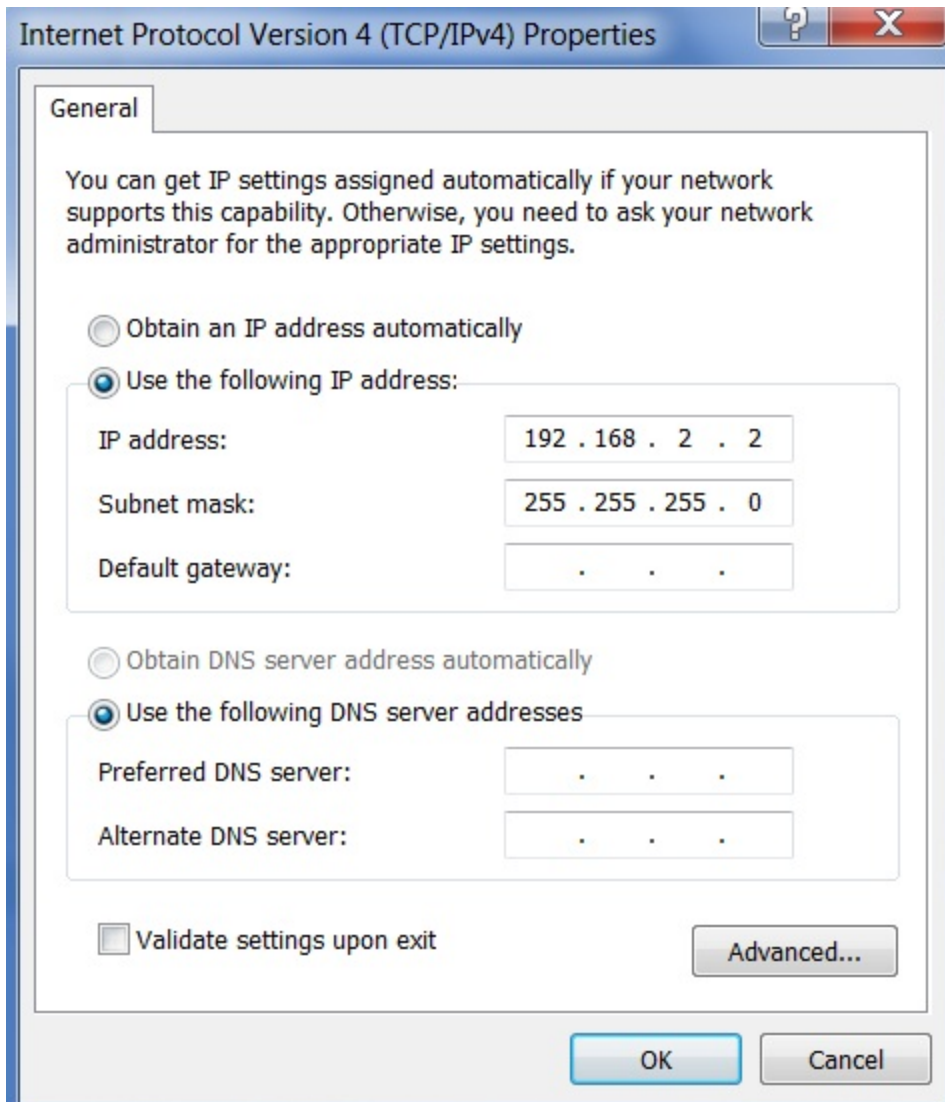- Pick in the list Remote NDIS Compatible Device from Microsoft Corporation

- Click Next and finish driver installation
- Driver now needs to be configured, to do that right click on Network Activity and choose Open Network and sharing center
- Click change adapter setting on left pane
- Select the Network connection corresponding to the RNDIS gadget as shown below

- Right click and select properties in context menu

- As shown above, keep only QOS Packet Scheduler and IPv4
- Select IPV4 and then click Properties
- Configure manually IP address to 192.168.2.2 and Subnet mask to 255.255.255.0 as shown below

Now you should be able to access the board through shh by using 192.168.2.15 as root user
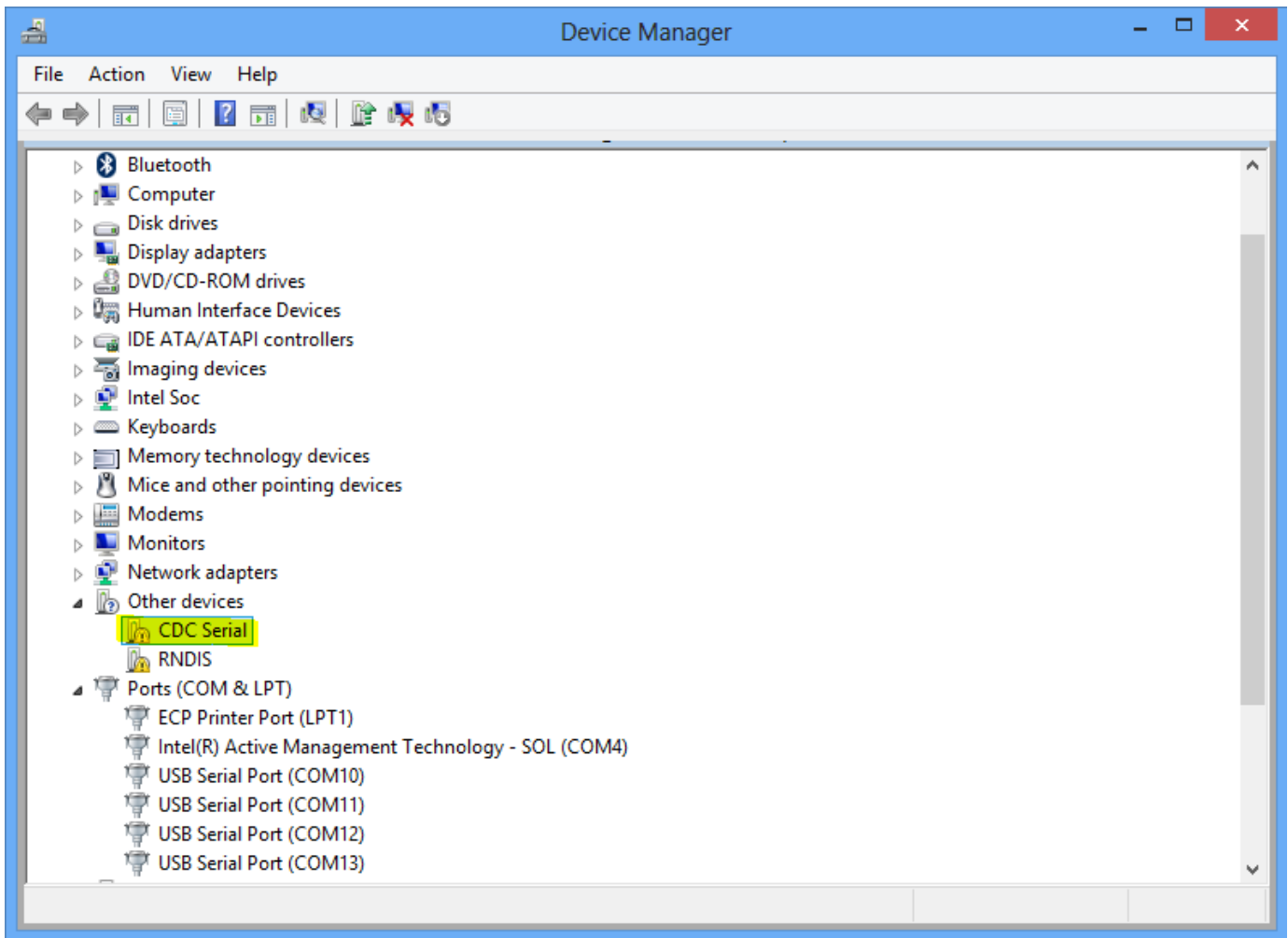
Installing the serial ACM driver

Once the kernel is launched, you can access a serial port over USB.

You need first to instal CDC Serial driver Gadget.

Download the needed driver:

- Windows 7 driver
- Windows 8 driver (you need to unzip the folder)
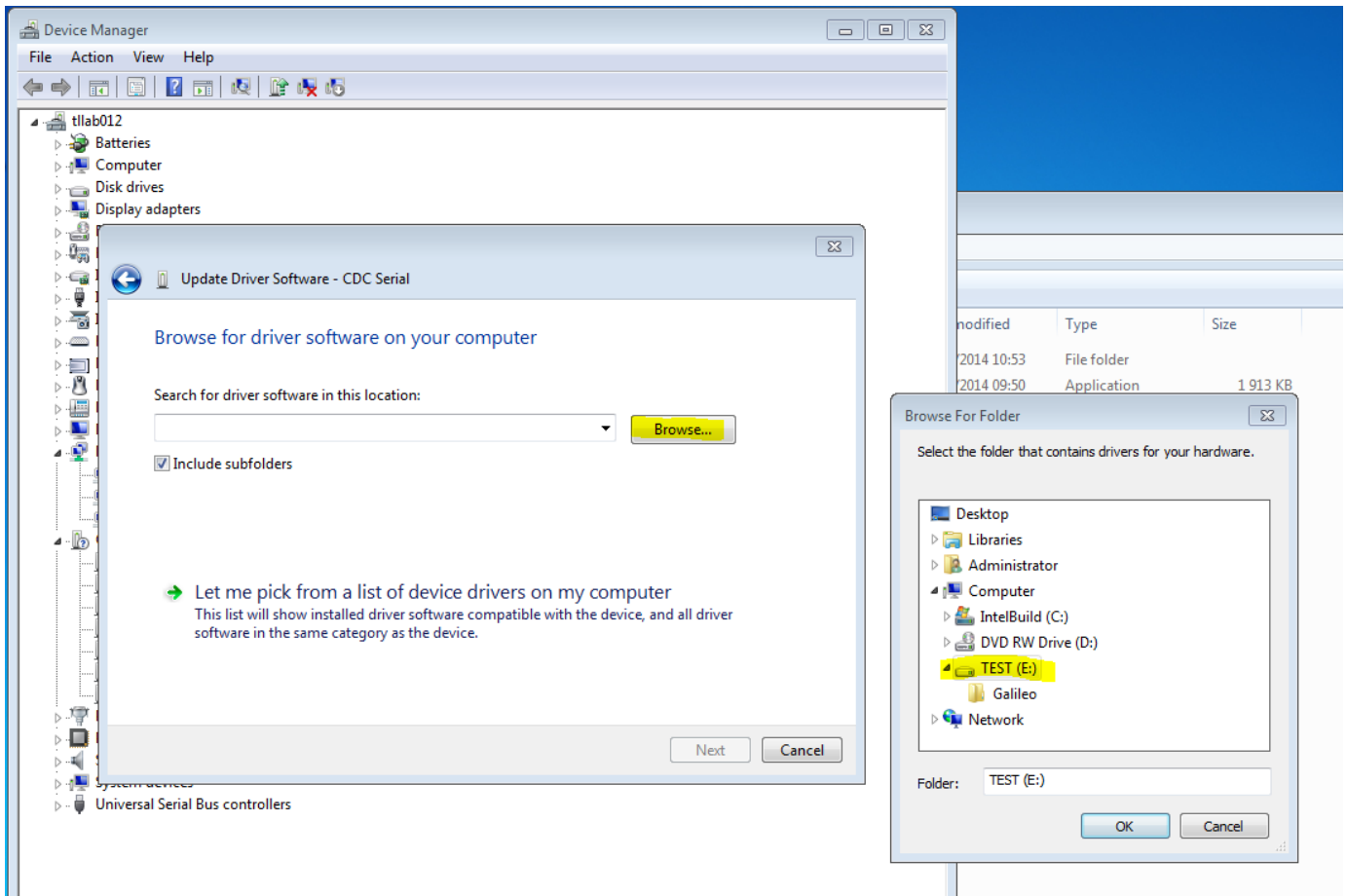
Go to Devices and manager as shown below:

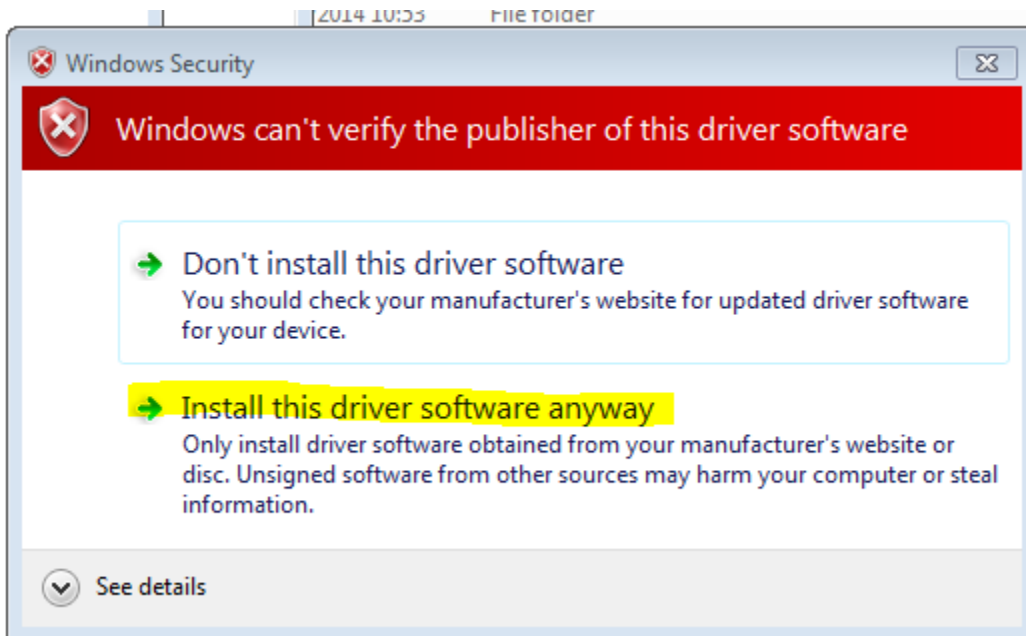- Right click on CDC Serial Gadget
- Select Update driver Software

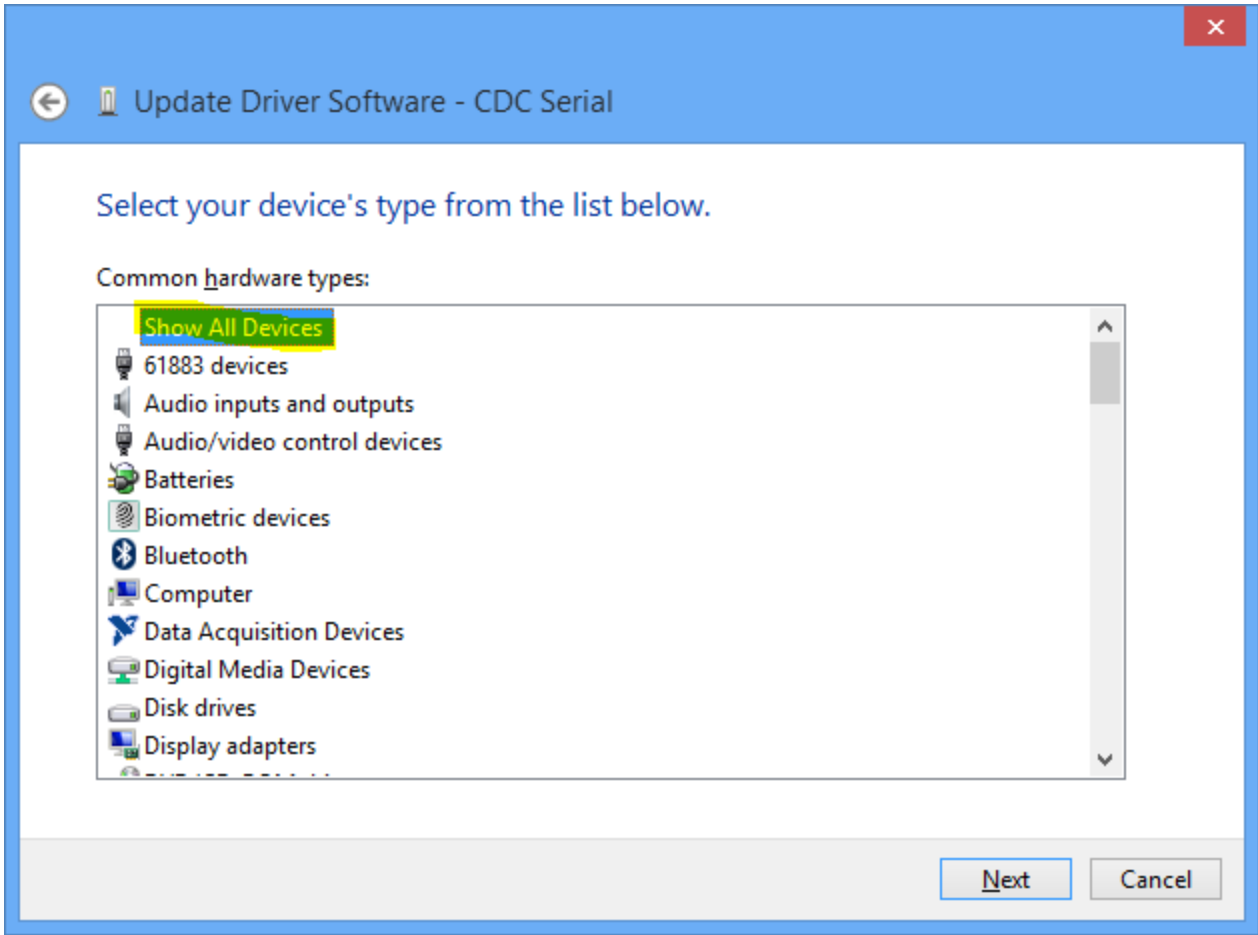⚠ From this point the procedure to install driver is different on Windows 8 and Windows 7.

- **Windows 7 procedure:**
  - Select "browse my computer for driver software"
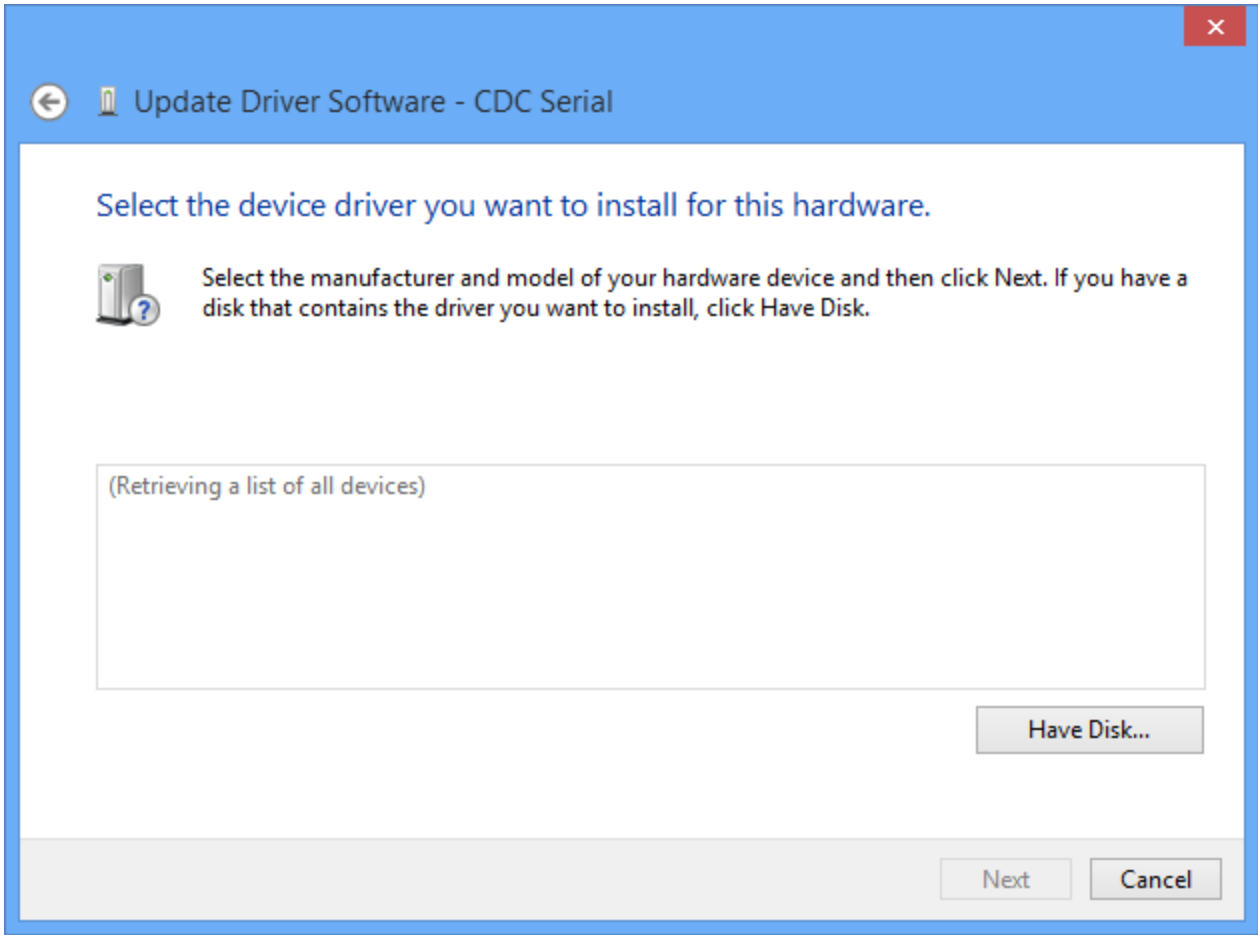 - Select "browse" in location driver as shown below:

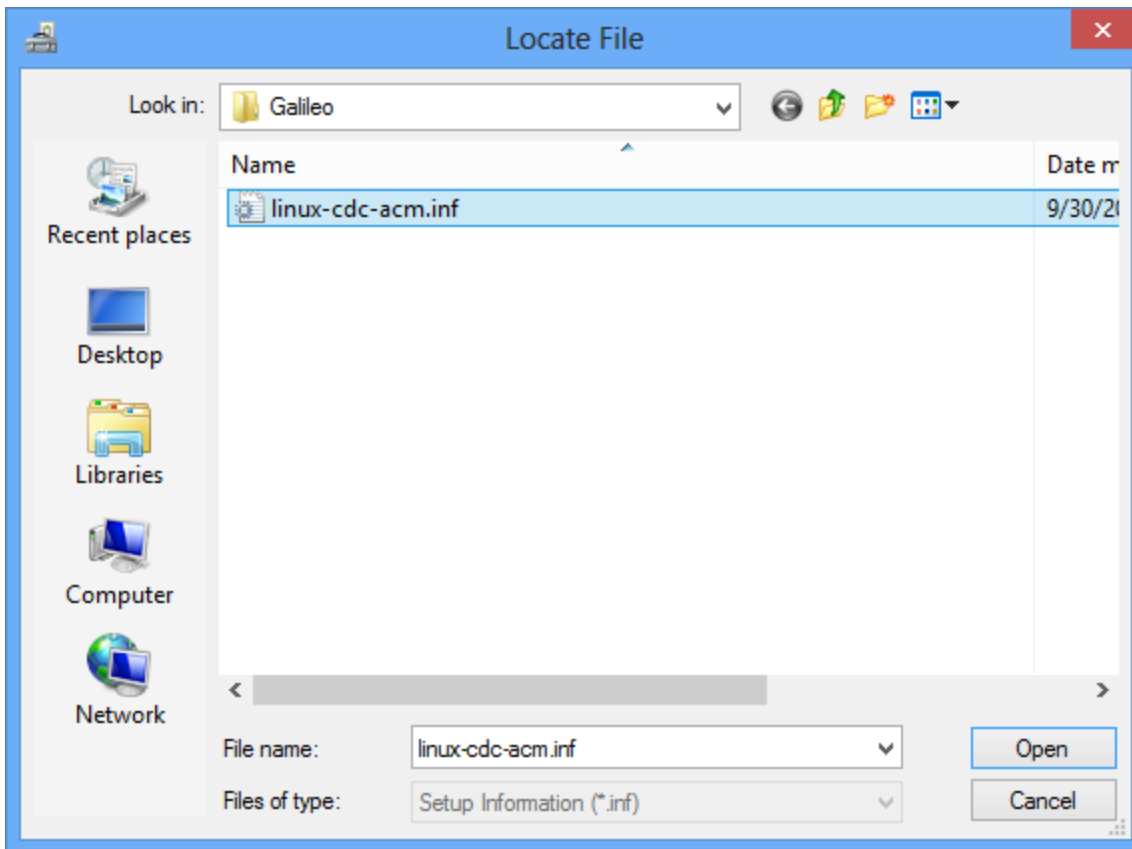- Select the folder where ".inc" file for Windows 7 is saved

- Install the software anyway since this is not a signed driver.
- **Windows 8 procedure:**
    - Windows 8 only accepts signed drivers, so we use the Galileo driver to enable CDC serial
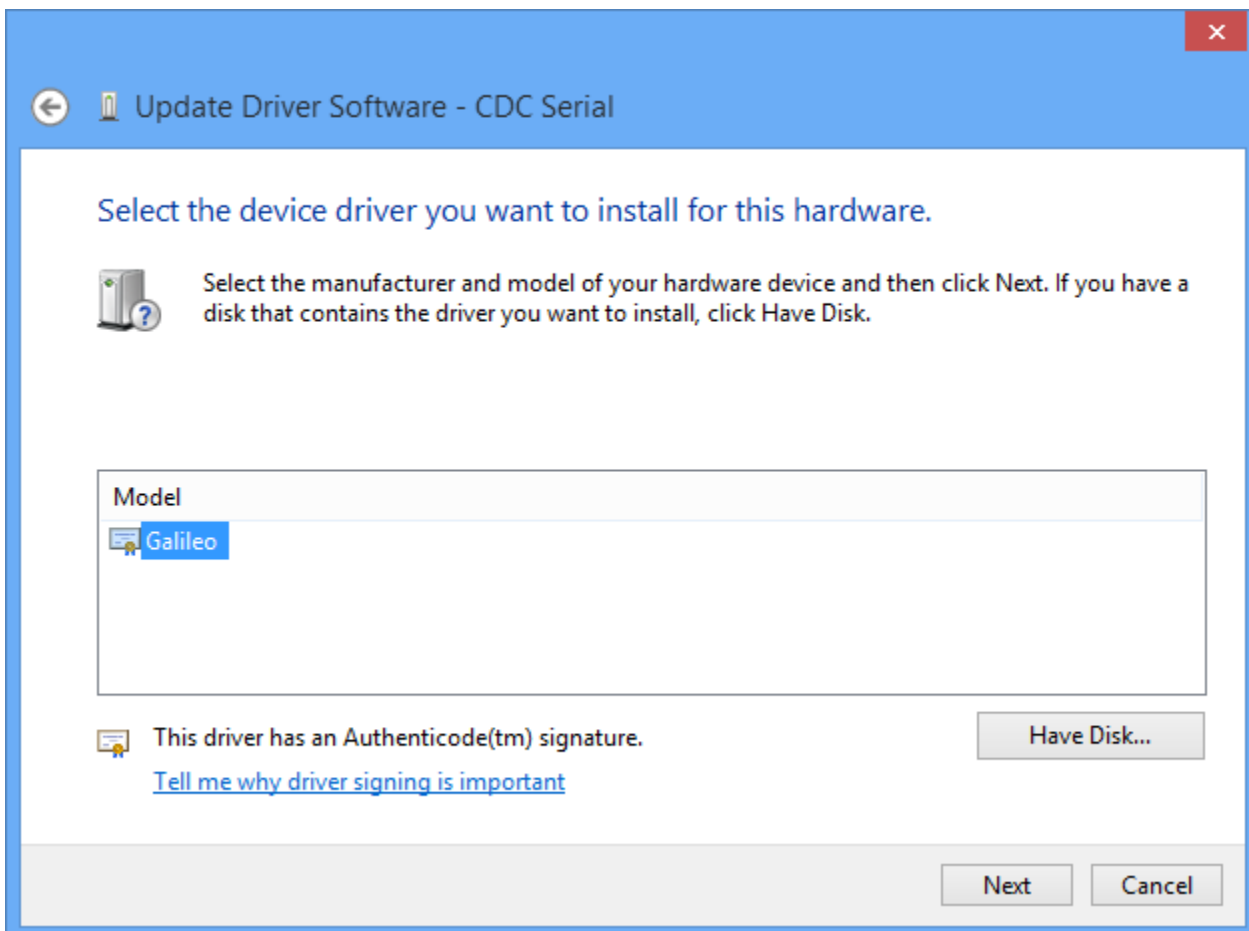   - Select "Let me pick on a list of device driver"
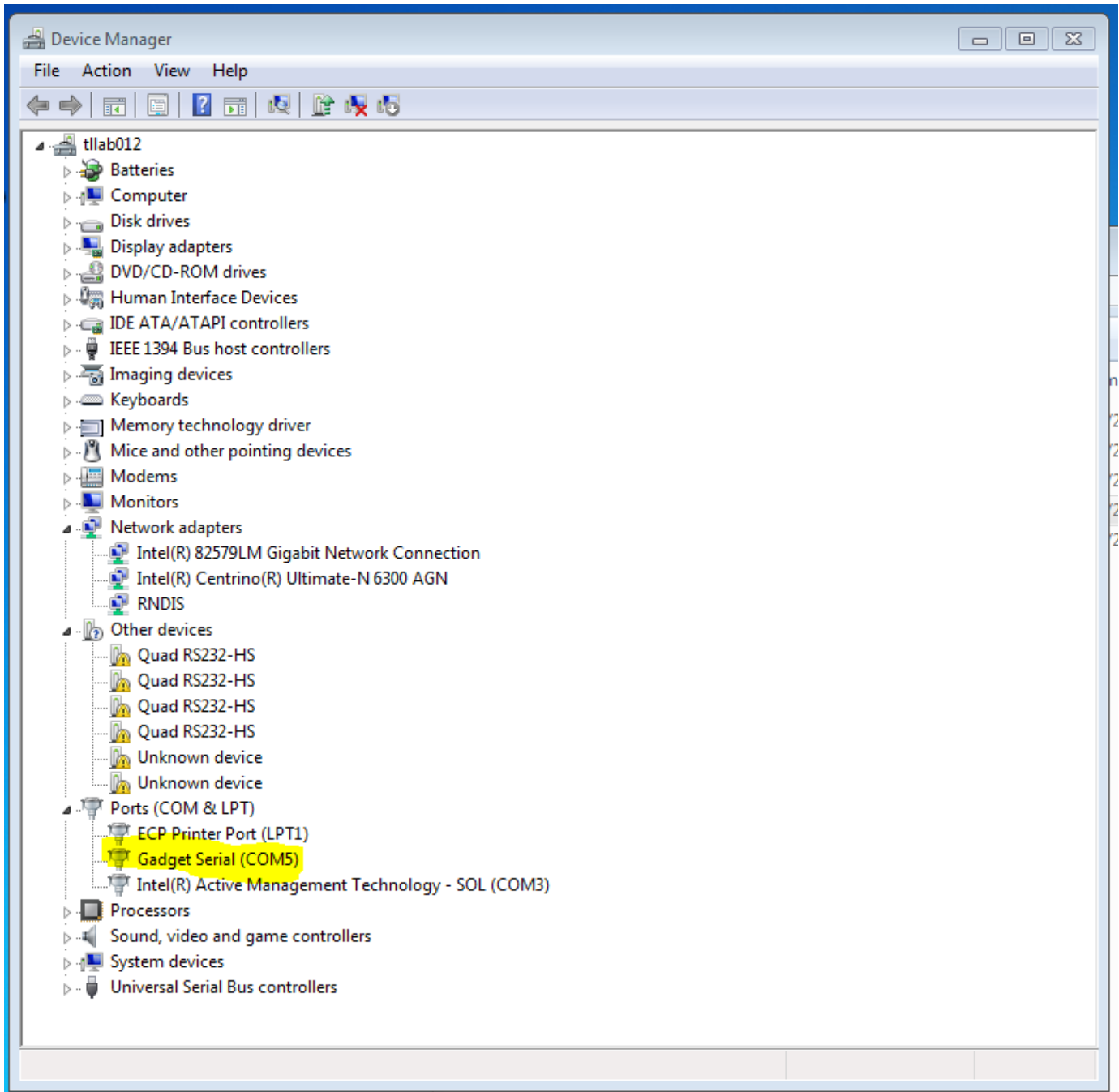
- Select "Show all devices"

- Select "Have Disk..."
- Select the ".inc" file for Windows 8

- Select "Open" then validate with "OK"

Update Driver Software - CDC Serial

Select the device driver you want to install for this hardware.

Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.

Model

Galileo

This driver has an Authenticode(tm) signature.
Tell me why driver signing is important
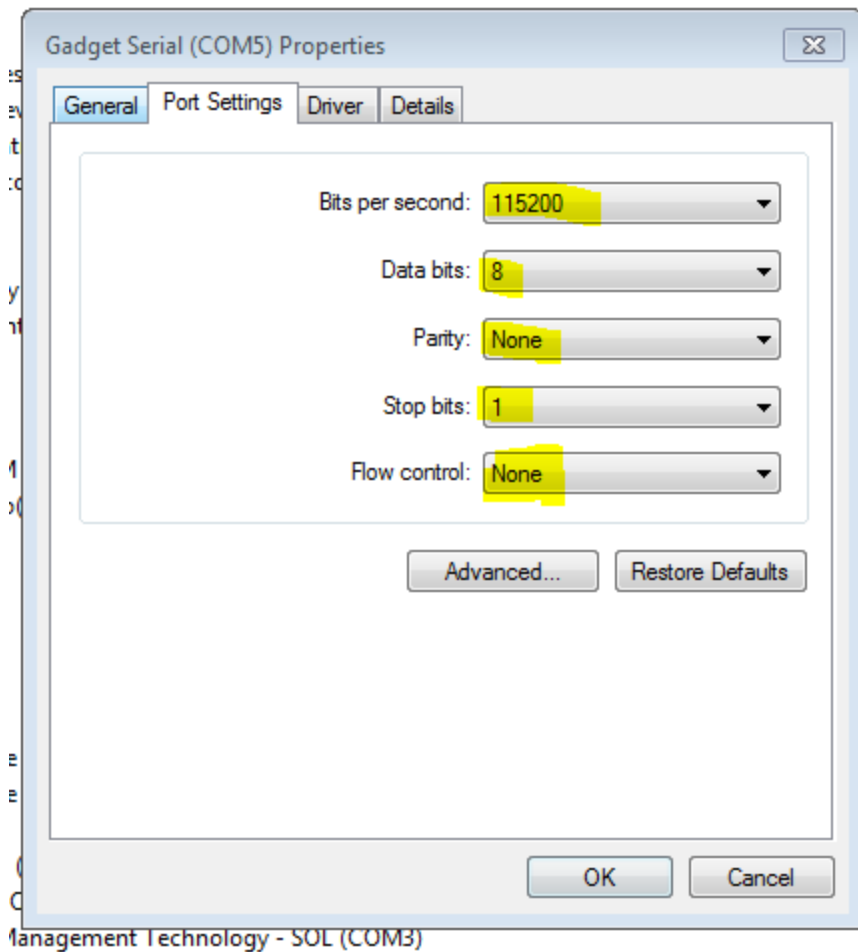
Have Disk...

Next   Cancel

- Select the Galileo driver the "Next"
- Select "Yes", "Install", click Ok, validate windows and stuff until you get your driver installed.
- **End of specific Windows procedure**
- At this point you will have the CDC gadget serial installed. Depending on your platform you will see a Gadget Serial (windows 7) or Galileo (windows 8).

Configure CDC ACM Serial driver

- In device manager, right click on the peripheral
- Select "properties"
- Select "Port Settings"
- Configure fields as shown below

Management Technology - SOL (COM3)

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AllJoyn™ SC (standard client) QuickStart instructions for Intel® Galileo Yocto Linux tiny image

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