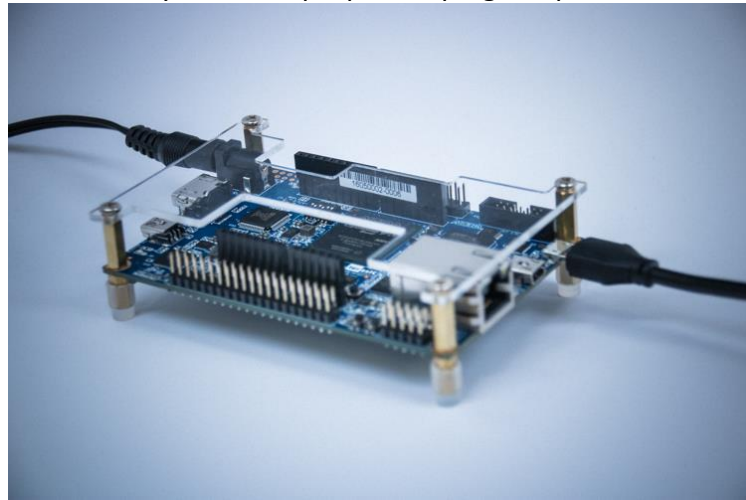
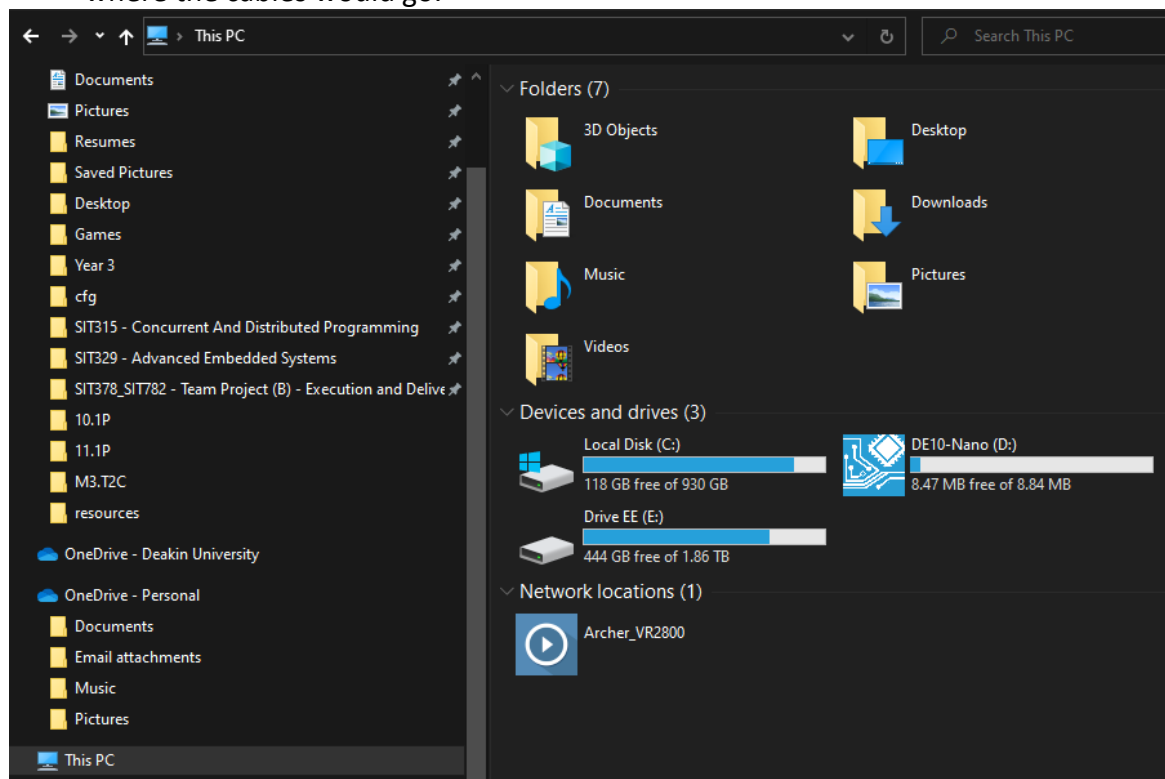


## FPGA on windows (revised by Keefe Alpay)

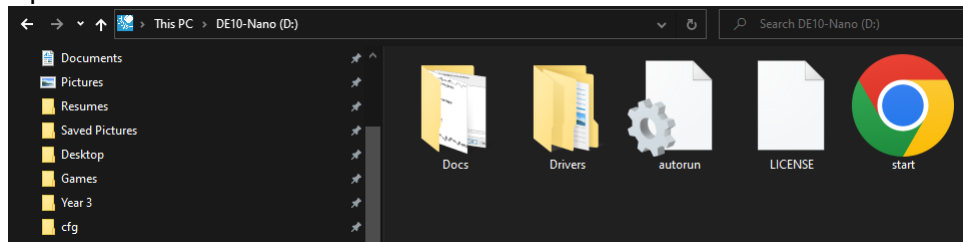
1. Plug in the micro b cable to the USB OTG Micro-AB on the FPGA. Plug the other end of the USB to the back of your PC/Laptop. Also plug the power cord into the board.



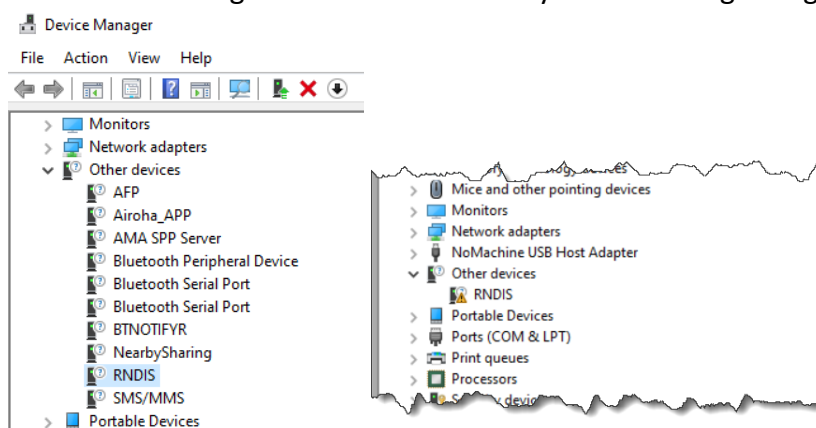
2. Open file explorer and navigate to the device "DE10-Nano". Windows may take a few seconds to recognise the FPGA connected to your PC/Laptop. If all steps are followed, Windows should recognise the De10-Nano drive, If not, **check if you are using the correct cable/port, DO NOT** use the Mini-B port or the USB Blaster 2 (USB Mini-B), these are common issues with this step. Verify with the image on step 1 where the cables would go.



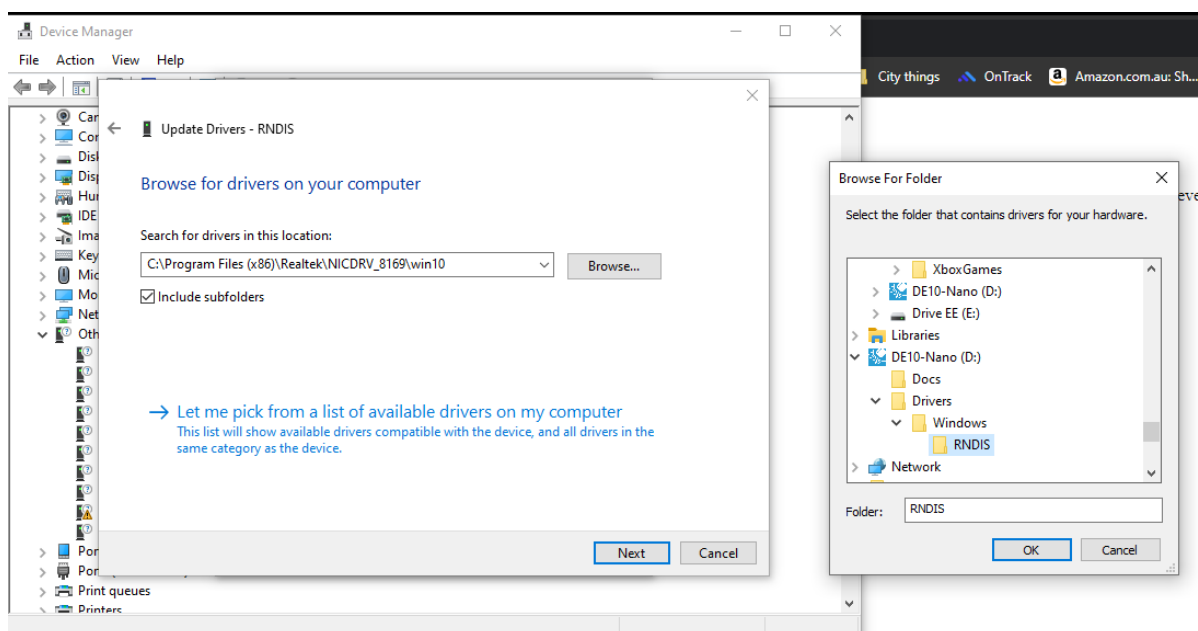
3. Open the DE10-Nano drive. All these should be visible.



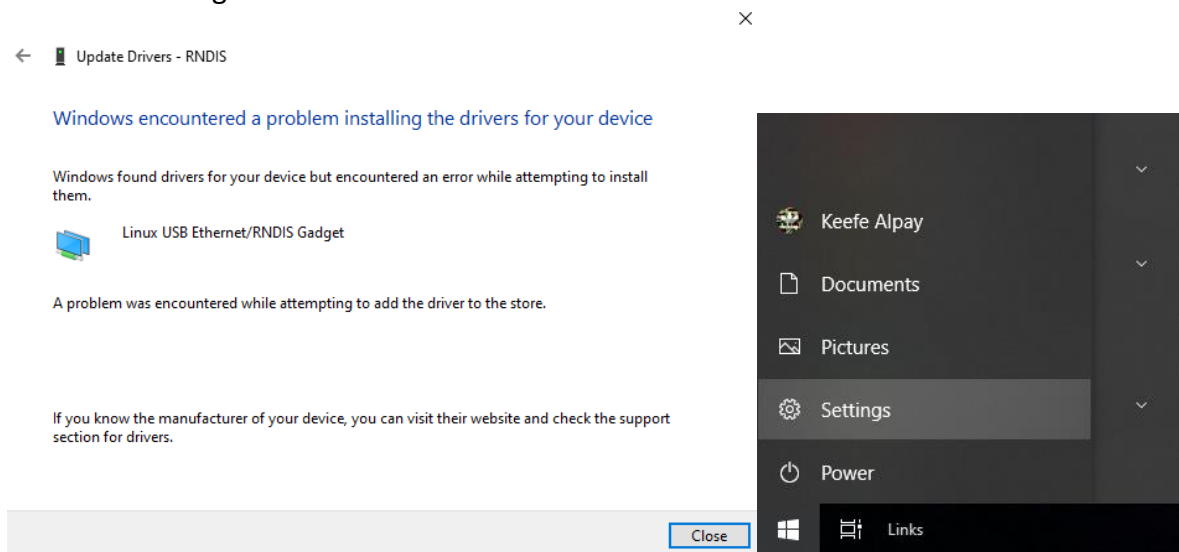
4. If you are on a Windows machine. You will need to install the RNDIS driver to enable Ethernet over USB. You can click the “start” HTML file for more information. To install the driver, open Device Manager on Windows. Under “Other devices”, find RNDIS. I have 2 figures here to show the yellow warning triangle and one without.



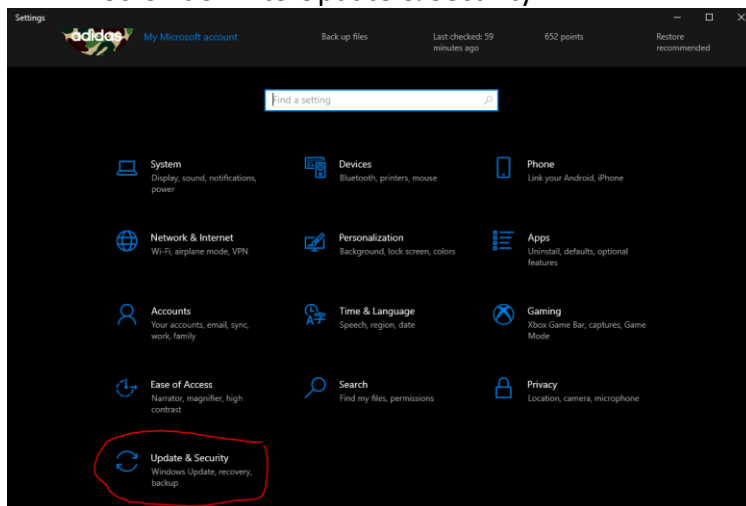
5. The RNDIS device should have a yellow warning triangle if the driver is outdated/not installed. To remove the warning triangle, open the RNDIS properties by clicking on it and updating the drivers. Click **Browse** navigate to the DE10-Nano drive go inside Drivers > Windows > RNDIS select this folder and click ok and Next. If there are **no errors skip to step 16. If there are errors proceed to step 6.**



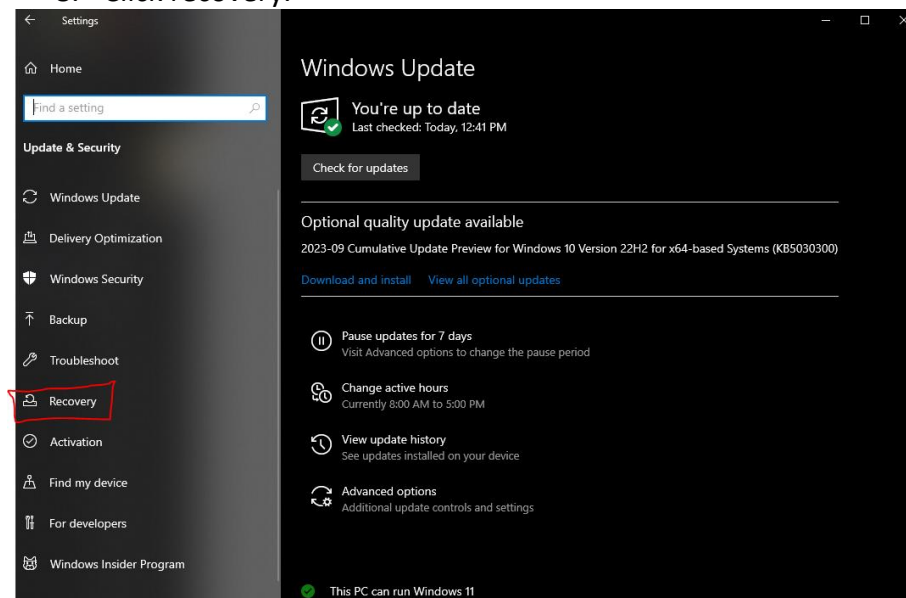
6. If you have encountered an Error After clicking Next, click on the start menu and go to settings.



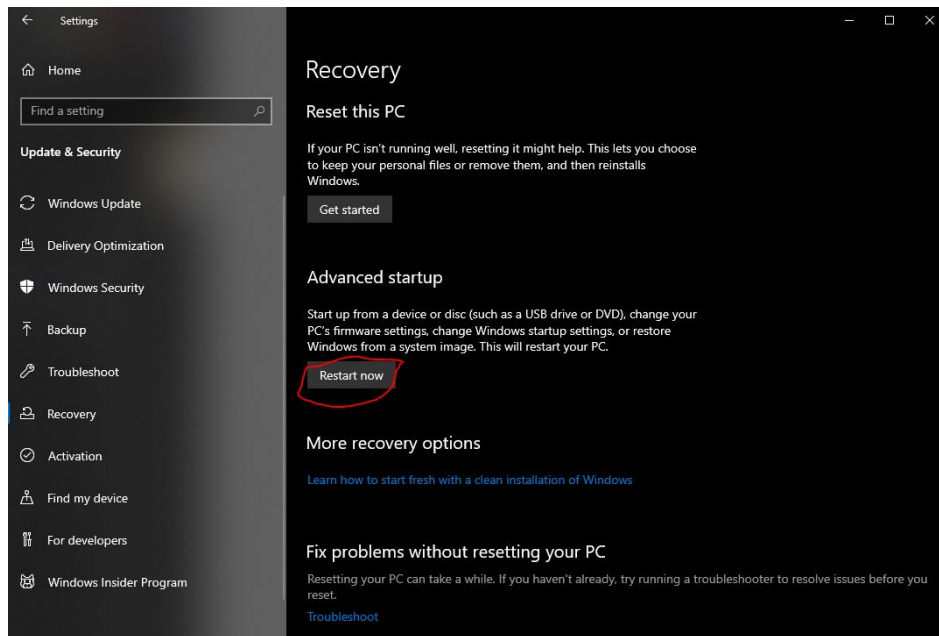
7. Scroll down to Update & Security



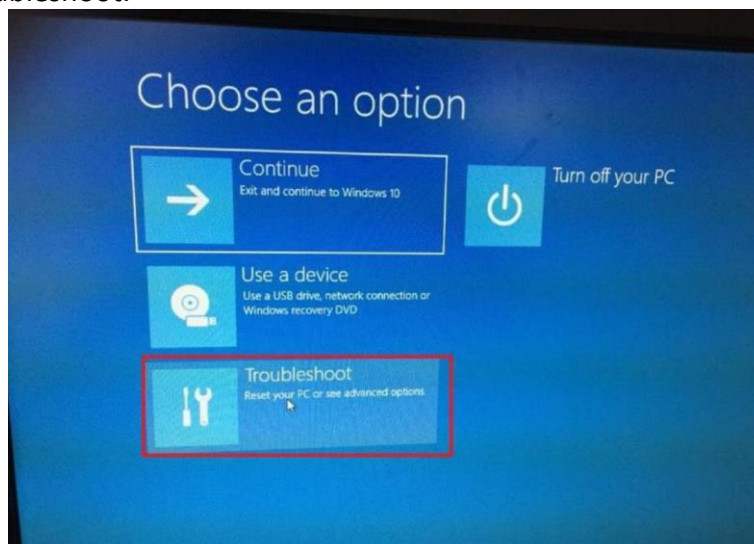
8. Click recovery.



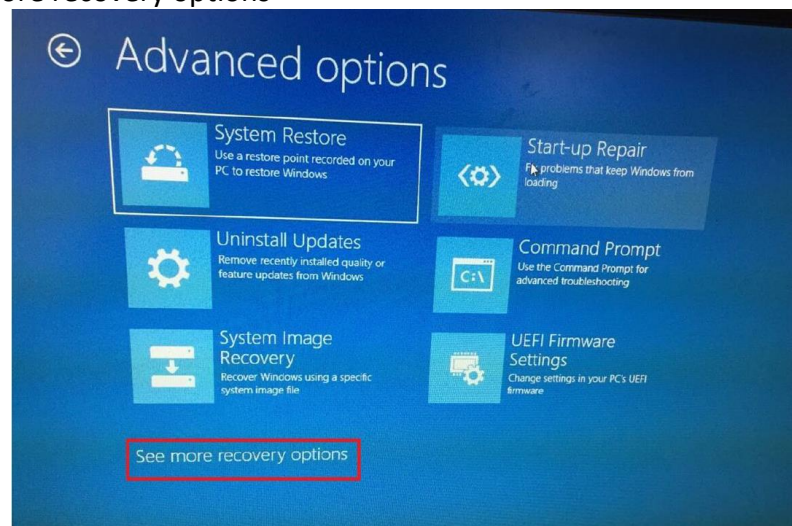
## 9. Click Restart now



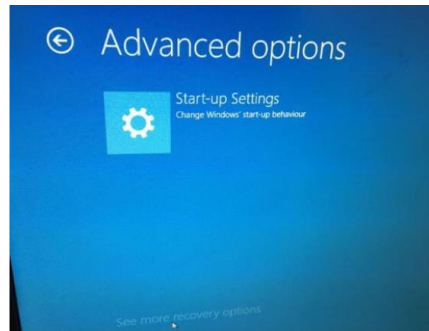
## 10. Click Troubleshoot.



## 11. Click See more recovery options



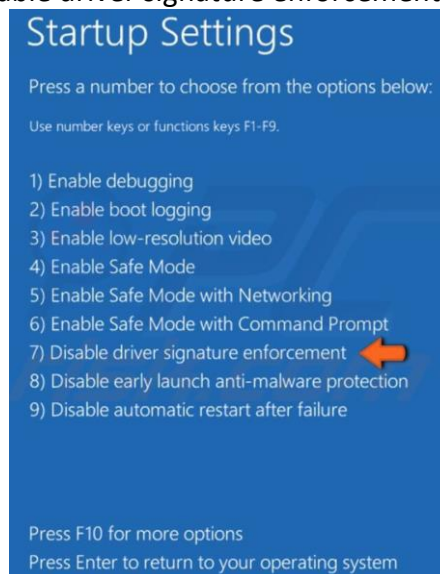
12. Click Start-up Settings



13. Click Restart



14. Press 7 OR F7 to “Disable driver signature enforcement”



15. The PC/Laptop will restart. **Go back to step 4** and install the driver.

16. Use Chrome or Mozilla Firefox and enter the IP address of the FPGA 192.168.7.1 into the URL

```
Administrator: Command Prompt - scp C:\Users\keefe\Documents\edge_detection\test_images\r35_car.jpg root@de10-nano: root@de10-nano:~/Desktop/
C:\WINDOWS\system32>scp C:\Users\keefe\Documents\edge_detection\test_images\r35_car.jpg root@de10-nano: root@de10-nano:~/Desktop/
root@de10-nano's password:
ford_gt.jpg                               100% 3030KB  12.8MB/s   00:00
root@de10-nano's password:

C:\WINDOWS\system32>scp C:\Users\keefe\Documents\edge_detection\test_images\supra.jpg root@de10-nano: root@de10-nano:~/Desktop/
root@de10-nano's password:
supra.jpg                                 100% 5541KB  13.1MB/s   00:00
root@de10-nano's password:

C:\WINDOWS\system32>scp C:\Users\keefe\Documents\edge_detection\test_images\purple_car.jpg root@de10-nano: root@de10-nano:~/Desktop/
root@de10-nano's password:
purple_car.jpg                           100% 3740KB  13.0MB/s   00:00
root@de10-nano's password:

C:\WINDOWS\system32>scp C:\Users\keefe\Documents\edge_detection\test_images\r35_car.jpg root@de10-nano: root@de10-nano:~/Desktop/
root@de10-nano's password:
r35_car.jpg                               100% 4717KB  13.2MB/s   00:00
root@de10-nano's password:
```

## DE10-Nano Kit

[Start](#)[Play](#)[Learn](#)[Develop](#)

Welcome to the DE10-Nano Development Kit from Terasic Inc.

This kit will help you learn about Intel® SoC FPGA devices which combine an embedded dual-core ARM® Cortex™ A9 MPCore™ processor system with user-customizable programmable logic in a single package. This new class of device opens exciting possibilities for the embedded developer. This web site will guide you through the steps of learning about the board from evaluation to full development. Here are some things you can do with this kit:

[Play](#) Interact with the board using a web-based interface.

[Learn](#) Learn the fundamentals of SoC FPGA development, access technical documentation and on-line training.

[Develop](#) Download and install development tools on your PC or workstation.  
Explore sample code, "hands-on" labs, and "how-to" articles.  
Learn where to get SD Card updates and the source code used in the design running on this board.

Start by getting familiar with the board:

<a href="#">Board Block Diagram and Schematic</a>
<a href="#">SoC System Design</a>
<a href="#">Board Layout</a>
<a href="#">Switches and Push Buttons</a>
<a href="#">LEDs</a>
<a href="#">I/O Headers</a>

17. Click on this [YouTube link](#) to view the result, this demonstrates how to blink LEDs.