

Lab 1b: Software Installation Instructions for a Personal Computer

Please note that this portion of the lab may not be required. Please follow the guidelines of the lab instructor on whether you need to install the software on your personal machine.

The main purpose of this lab is to install the software tools that we will be using for lab assignments on a personal machine.

1) Downloading the Necessary Files

To download the needed programs and files, please use the provided download link. **Please note that the file download is approximately 8 GB, so it may take a while to download.**

Download Link: [Intel Monitor Download Link](#)

2) Installing Quartus 18.1 and Intel Monitor 18.1

Please extract the downloaded zip file to the C:\ directory in Windows. The software is provided in a “pre-installed” bundle, so all you have to do is extract it to the C:\ directory. **If you do not have Windows, you will need to install a Windows Virtual Machine.** After extracting the file, the size of the extracted files should be approximately 18 GB. Once, finished with the extraction, the zip file can be removed from your system.

i) Moving the Program Shortcuts to the Desktop

Move the Intel FPGA Monitor and Quartus Lite shortcuts from C:\intelFPGA_lite to the desktop

ii) USB Driver Installation

(1) Connect the DE10 board via USB and turn it on

(2) Windows search: Device Manager

(a) In the Device Manager, if you see: JTAG cables -> Altera USB-Blaster II then the USB driver is already installed and you can stop here.

(b) Otherwise, select: Other Devices -> Unknown Device (or DE-SoC)

(i) Select: Update Driver, Browse my computer for driver software

(ii) Navigate to and select C:\intelFPGA_lite\18.1\quartus\drivers\usb-blaster-ii

Include subfolders option should be enabled

(iii) Select Next, Install, ...

(iv) If it fails, try using:

C:\intelFPGA_lite\18.1\quartus\drivers\UsbBlasterdrive-Resigned

(3) Turn board off.

(4) Turn board on. Programming the board should now work.

(5) In the Device Manager the board should show up under: JTAG cables -> Altera USB-Blaster II JTAG interface, and System Console interface

3) VirtualBox Notes

Whenever the board is first connected or turned off/on, access from the virtual machine to the USB interface must be enabled by checking the box under "Devices" -> "USB" -> "Altera DE-Soc". Recheck to ensure that it is enabled; you may have to do it more than once.

4) Optional: Installing in a direct location than C:

If you install somewhere other than C:\, e.g. on a second drive D:\, edit the shortcuts (right click, properties) and replace all 5 instances of C:\ with D:\

i) Quartus Shortcut:

Target: C:\intelFPGA_lite\18.1\quartus\bin64\quartus.exe

Start in: C:\

ii) Intel Monitor Shortcut:

Target: C:\intelFPGA_lite\18.1\quartus\bin64\jre64\bin\javaw.exe -

Dsun.java2d.noddraw=true -jar

C:\intelFPGA_lite\18.1\University_Program\Monitor_Program\bin\Altera_Monitor_Program.jar

Start in: C:\intelFPGA_lite\18.1\University_Program\Monitor_Program