

# Install Tutorial: Quartus 20.1 and ModelSim or Quartus 23.1 and Questa for VEEK-MT2 development board

Version V1.1 from Oct 9, 2023

## Introductory notes:

Altera / Intel: Altera has been acquired by Intel. Two names, Altera and Intel, are used interchangeably in websites. In this document, we utilize Intel.

USB Port: When connecting VEEK-MT2 board, we recommend using a USB port exclusively for the board VEEK-MT2 and do not share it with other devices/hubs; otherwise, you could encounter USB-related problems.

Versions: The Quartus version 20.1.1.720 is the last one that contains a free ModelSim simulation environment. ModelSim has switched to Siemens Questa in its newer versions, with only a one-year free license that complicates laboratory installations. But in Windows 11 Thus, Quartus 20.1 can have difficulties. If you encounter them, you must install Quartus 23.1.

Quartus 20.1 a 23.1 has the same skin, but they differ mostly in its simulation environment. Free ModelSim in 20.1 was replaced by more restricted Questa in 23.1, which require only different EDA tool settings. The installation is the same.

## Download and run setup.bat

### 1<sup>st</sup> way: From official site:

Download: [Intel® Quartus® Prime Lite Edition Design Software Version 20.1.1 for Windows](#)

[ intel.com -> Products -> Intel® Quartus® Development Software & Tools>

Intel® Quartus® Prime Design Software -> Downloads

-> Download for Windows (free, no license required) - select Version 20.1.1

Download Quartus-lite-20.1.1.720-windows.tar ]

Run Command Prompt in the download directory (In Windows Explorer's, go to the folder.

Click on the Windows Explorer's location bar. Type **cmd**. Hit Enter).

In Command Prompt, create subdirectory tmp in the download directory by entering:

```
mkdir tmp
```

In Command Prompt, write (or copy-paste) the command for unpacking downloaded tar:

```
tar -zxvf ./Quartus-lite-20.1.1.720-windows.tar -C ./tmp
```

After extracting, enter the following commands:

```
cd tmp
```

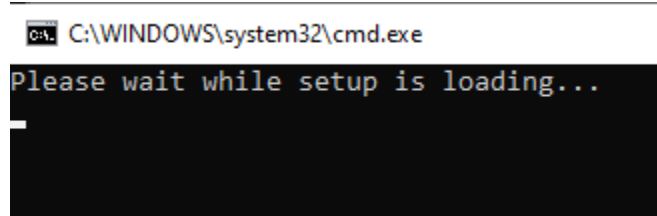
```
setup.bat
```

## 2<sup>nd</sup> way: From our local site

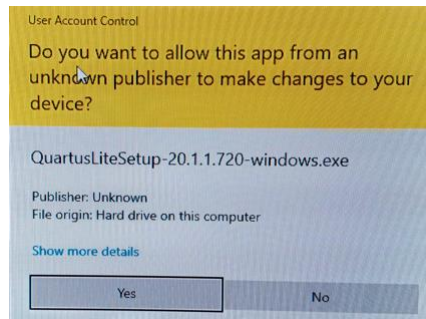
After logging to DCENET with your Felld password, download the zipped version of the tar distribution: Try first: [Quartus-lite-20.1.1.720-windows.zip](#) (6.3 GB) . Unzip it into some directory and run **setup.bat** If your Win11 encounter problems, install [Quartus-lite-23 1 1 CycloneIV.zip](#) (3.9 GB – it was reduced to contain only Cyclone IV)

## Installation

Run setup.bat and wait approximately 30 seconds.



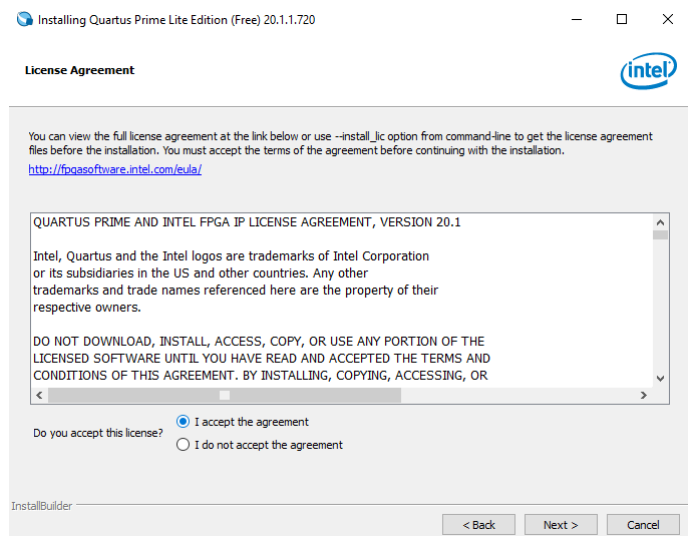
Confirm Windows dialog.



Skip the first screen.




Accept Agreement



Select the installation directory, or leave its default path.

**Installation directory**

Specify the directory where Quartus Prime Lite Edition (Free) 20.1.1.720 will be installed

Installation directory  

In the Select Components, you need only parts in the figure below. Eventually, you can also check off Quartus Prime Help to save HD space.

**Select Components**

Select the components you want to install

- Quartus Prime Lite Edition (Free)
  - Quartus Prime (includes Nios II EDS) (886.4MB)
  - Quartus Prime Help (509.6MB)
  - Devices
    - Arria II (536.5MB)
    - Cyclone IV (516.3MB)
    - Cyclone 10 LP (293.5MB)
    - Cyclone V (1434.3MB)
    - MAX II/V (13.1MB)
    - MAX 10 FPGA (367.9MB)
- ModelSim - Intel FPGA Starter Edition (Free) (4318.8MB)
- ModelSim - Intel FPGA Edition (4318.8MB)

Installs Cyclone IV device support. (516.3MB)

InstallBuilder

< Back

Next >

Cancel

In Quartus 23.1, the installation from DCENET was reduced to Cyclone IV to be smaller, so it contains only:

**Select Components**

Select the components you want to install

- Quartus Prime Lite Edition (Free)
  - Quartus Prime (includes Nios II EDS) (8757MB)
  - Quartus Prime Help (504.7MB)
  - Devices
    - Cyclone IV (516.3MB)
- Ashling RiscFree IDE for Intel FPGAs (2095.4MB)
- Questa - Intel FPGA Starter Edition (A zero cost license requi...)
- Questa - Intel FPGA Edition (3392.9MB)

You can add additional device support to an existing Quartus Prime software installation without having to reinstall the entire software package. Use the Install Devices command on the Tools menu in the Quartus Prime software to get started.

Select a component for more information

VMware InstallBuilder

< Back

Next >

Cancel

You can add RiscFree, if you wish, but it is too advance for our beginner course. We will not deal with it.

Then, confirm the installation directory summary or return by [<Back] button to make corrections.

**Ready to Install**



**Summary:**

Installation directory: C:\intelFPGA\_lite\20.1  
Required disk space: 14211 MB  
Available disk space: 204376 MB

**Quartus 23.1** needs 13.05 GB disc space without RiscFree, 15.1 GB with Risc-Free.

The installation steps start and will run depending on your hard drive speed. The fast computer with an SSD drive takes about 15 minutes.

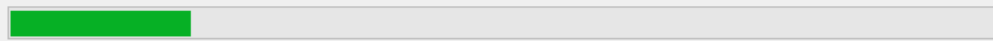
**Installing**



Wait while Setup installs Quartus Prime Lite Edition (Free) 20.1.1.720

Installing

Unpacking files



You need the "Launch USB Blaster II driver installation" selection on the final screen. The others are optional.



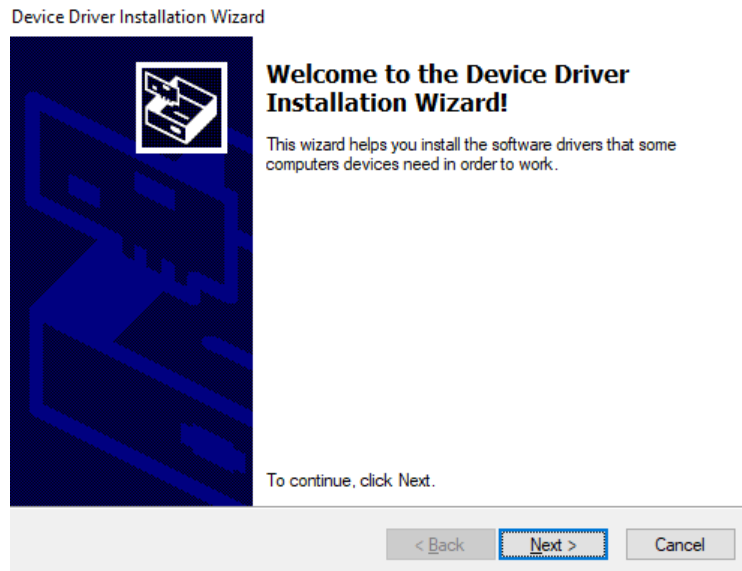
**Quartus Prime Lite Edition (Free) 20.1.1.720 Installation Complete**

Setup has finished installing Quartus Prime Lite Edition (Free) 20.1.1.720.

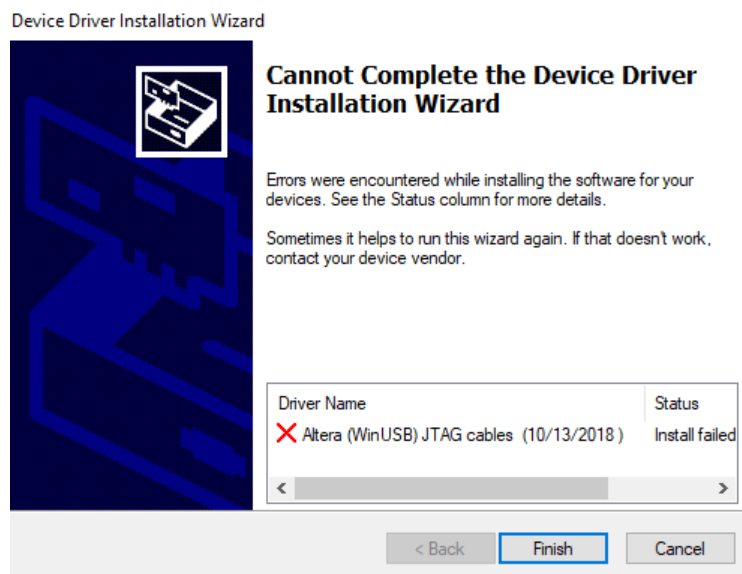
- Launch USB Blaster II driver installation
- Create shortcuts on Desktop
- Launch Quartus Prime Lite Edition
- Provide your feedback

< Back Finish Cancel

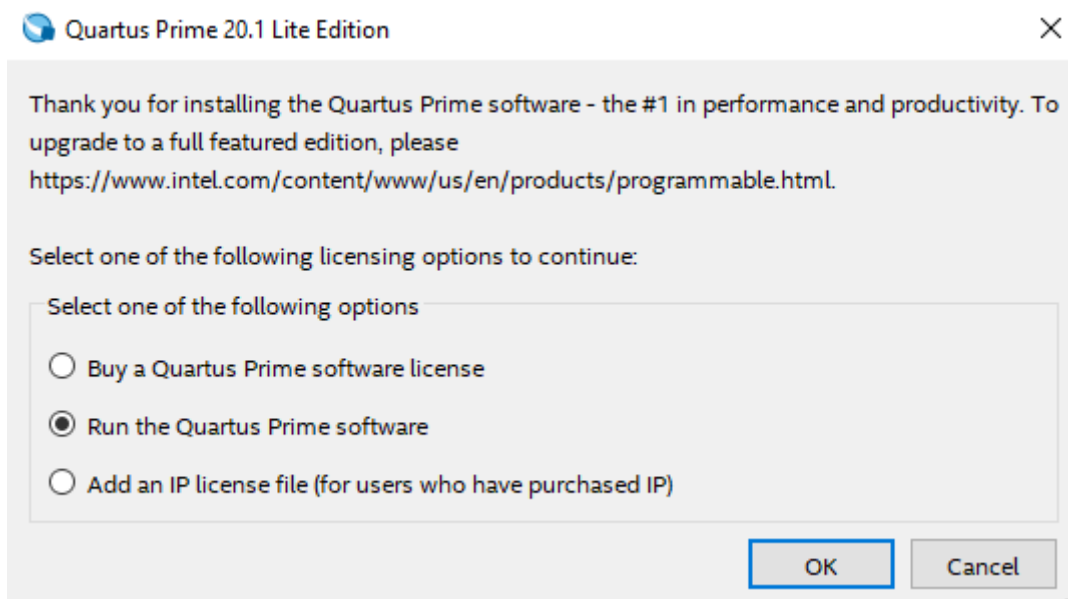
The driver installation is critical for communications with the board.



The installation might also fail in some Windows versions, which is frequent incompatibility. We need only a cable connection to the development board, then we can correct it from the Windows Device Manager.

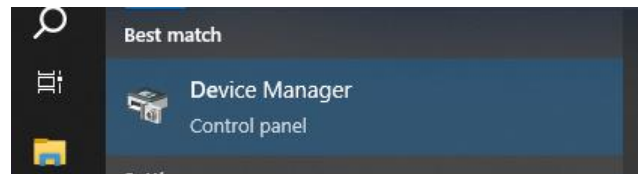
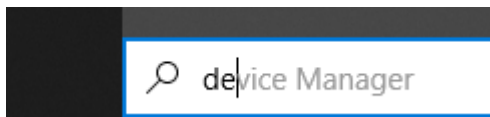


At the final dialog, select the middle option:

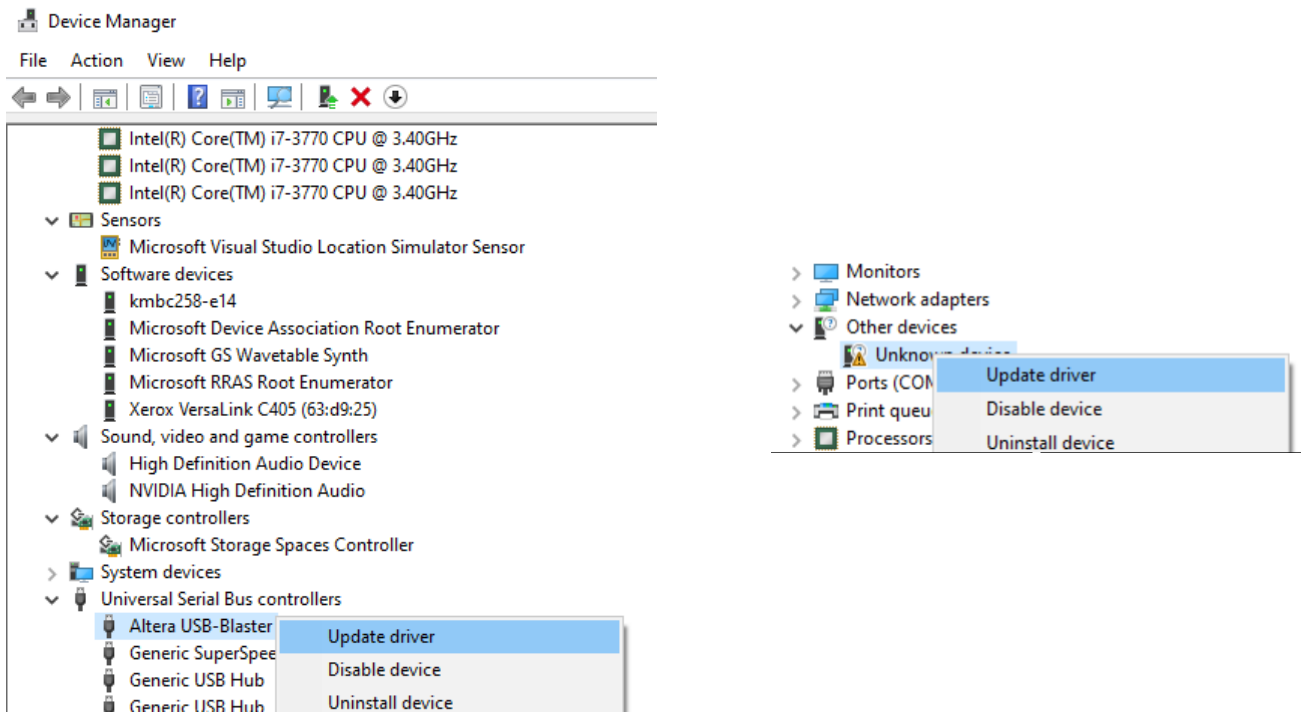


## Correcting Altera USB driver

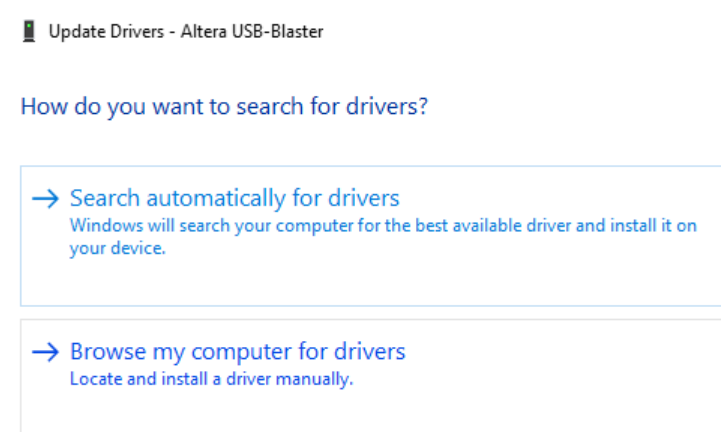
Connect your computer by USB cable to the VEEK-MT2 development board. Open Device Manager by typing its name in Application menu



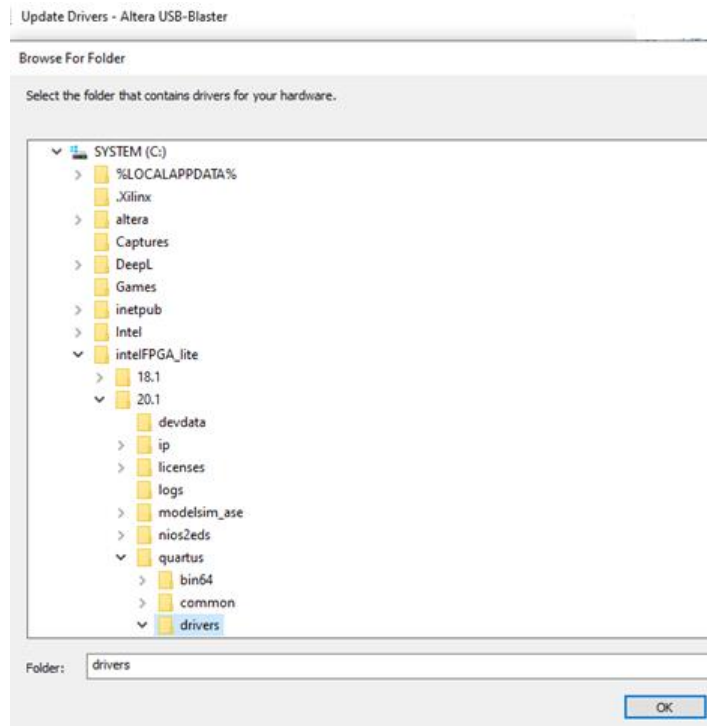
Locate Altera USB Blaster in the list of devices and select Update drive from the right mouse context menu. It need not be necessary in Universal Serial Bus Controllers, but, e.g., in Other Devices, and so on.



Select Browse my computer...



In your installation path, select folder quartus/drivers. If you have used the default path, it is located in **C:\intelFPGA\_lite\20.1\quartus\drivers** or in **C:\intelFPGA\_lite\23.1std\quartus\drivers** and press OK



Check Include subfolders option and click Next. Windows chose the driver and installed it.

Update Drivers - Altera USB-Blaster

[Browse for drivers on your computer](#)

Search for drivers in this location:

Include subfolders

→ [Let me pick from a list of available drivers on my computer](#)  
This list will show available drivers compatible with the device, and all drivers in the same category as the device.