See also Quartus 19.1 Installation Instructions and the Quartus Tutorial.

Tips:
- Create a folder where you will store all of your Quartus projects.
- Do **NOT** use spaces and special characters in Quartus file/project names. Also, avoid common digital-related names like AND2, block, reg, or any HDL (VHDL or Verilog) keywords (all know to cause Quartus failure). Using these names may cause either compilation or simulation errors.
- Accept defaults when saving files.
- Use **labels** instead of crossing wires.
- Do **NOT** use spaces and special characters in Quartus file/project names. Also, avoid common digital-related names like AND2, block, reg, or any HDL (VHDL or Verilog) keywords (all know to cause Quartus failure). Using these names may cause either compilation or simulation errors.
- When you add pin and chip numbers in a Quartus bdf file, use text tool (the "A" in the toolbar of the bdf window) rather than naming the wires.
- Avoid floating inputs, i.e., do not leave inputs (e.g., enables) unspecified.
- It is a known and reoccurring problem when the **default file locations** were not used during the Quartus installation. If you did not use the default file locations, uninstall Quartus and ModelSim and then reinstall using the default file locations.
- I recommend that you do **NOT** run Quartus across any cloud (e.g., OneDrive) or network drive. This has caused problems in the past.
- If you change the device, you must recompile before programming the PLD.
- If you change pin numbers, you must recompile before programming the PLD.

FAQ:
Q: Quartus crashes when I try to make a new project.
A: Run Quartus as an administrator! Right mouse-click on Quartus, select "More", then select "Run as administrator".

Q: When I take off power from my PLD, the program is lost. How do I prevent this?
A: Make sure you are using the pof and not the sof.

Q: When I try to program the PLD, it fails.
A: Verify that you have the correct device selected. It should be a **10M02SCU169C8G**.

Q: I am typing in Quartus but my text keeps getting cut in half. Is there any way I can fix this?
A: There is instruction on the website called Quartus Display Issues (for high resolution monitors). Follow those instructions.

Q: ModelSim is not working. Any ideas?
A: On your computer, go to C:\intelFPGA_lite\19.1\modelsim_ase\win32aloem or some similar folder location). See if the file modelsim.exe is there. If not, then you did not install it with Quartus. Try to install it now; go back to the Quartus Installation Instructions to download ModelSim, then run ModelSim installation file.

Q: When running the simulator, I'm getting an error that says:
```
Unable to checkout a license. Vsim is closing
** Fatal: Invalid license environment. Application closing.
…
```
What should I do?
A: Is your project set for ModelSim-Altera for Simulation (which is free)? That does not require a license. It looks like it is searching for a ModelSim license (which costs a lot!). Go to `Assignments | Settings | EDA Tool Settings` and see the Simulation "Tool Name" to verify (or change) this setting. Also, set the "Format(s)" to `VHDL`.

Q: Input and/or output pins do not appear in the Node Finder list when simulating.
A: Re-compile your project and try again. Any time you make a change in Quartus, you should re-compile before simulating.

Q: I hear a whistling noise when I plug in my PLD board.
A: It's the switching regulator. You generally hear this if the chip is overloaded. You likely have a short circuit somewhere. Remove any wiring to the PLD board and see if the noise goes away. If it does, then you probably have a short circuit somewhere in your wiring. Measure the voltage at the 3.3 pin. It should be around 3.3 V.

Q: I am unable to check the verify box when programming. Any idea what is wrong?
A: Delete the SOF file and instead use the POF in the output folder.

Q: I get an error message that includes "unexpected INTEGER NUMBER, …" What could be wrong?
A: Check if you have any labels or signal names starting with a number and replace them with labels or signal names starting with a letter.
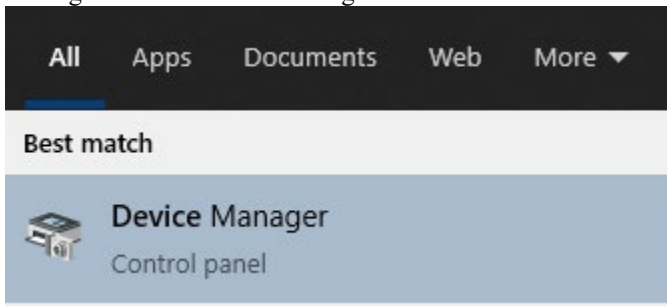
Q: I get an error that includes "Can't configure device" when trying to programming the PLD. What should I do?
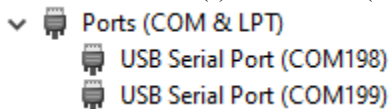A: Verify that you have selected the correct device and then recompile the design.

Q: The Quartus programmer is not working correctly. What should I do?
A: Follow the following steps:

1. A: Plug in the device
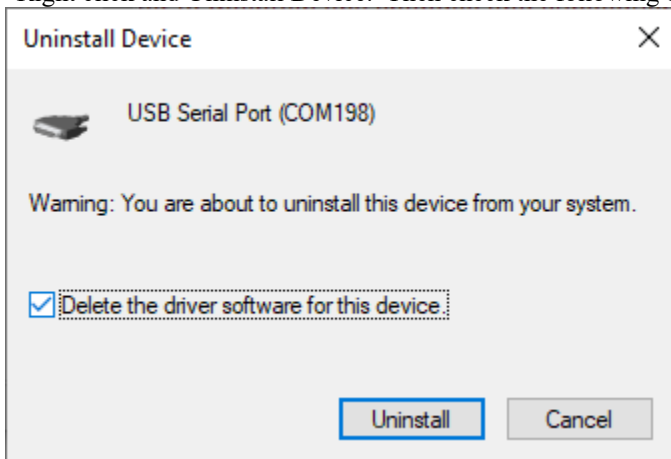2. Navigate to the "Device Manager"

3. Locate the device(s) under Ports (COM & LPT)

There should be two sequential ports. You can determine which ones by unplugging your device (USB cord coming into the computer) and plugging it back in, taking note of which ports disappear/reappear.

4. **Be careful to read full instruction before proceeding.**
Right click and Uninstall Device. Then check the following box before hitting Uninstall

Preform this step for both ports.
5. Unplug the device and restart your computer.
6. Once Windows has fully rebooted, re-attach the USB cord to your computer. Windows will now take a fresh look at the device and assign it a driver.

Q: The Quartus programmer does not detect the programmer (MBFTDI-Blaster).
A: Make sure you have the flat cable between the PLD PCB and the programmer PCB properly connect (as specified in the Quartus Tutorial. Then, after opening the Programmer (in the Tools pull down menu), select the "Hardware Setup" button. There occasionally is some contention between devices and programs. It is possible that there is a Windows 10

issue. For all kinds of devices, I have found that opening device manager and deleting the device in question then restarting the computer, then plugging it back in fixes many an issue. This causes Windows to update and to take a fresh look at the device. On my computer, I can find the programmer by going to Device Manager and selecting the Action menu and then "Devices and Printers". Under "Unspecified" is the Dual RS232-HS, which is the programmer.

Q: When attempting to program, I got an error that says, "Attempted to access JTAG server --internal error code 82 occurred". What does this mean?

A: This is an issue with a firewall or anti-virus program. A solution is discussed at here.

Q: When compiling, I got an error that says, "… unexpected INDENTIFIER …". What does this mean.

A: A using common digital-related names in bdf of VHDL files, like AND2, NOR3, block, reg, input, output, in, out, or any HDL (VHDL or Verilog) keywords (all know to cause Quartus failure). Using these names may cause either compilation or simulation errors.

Q: I get an error when I un-archive a project and then try to simulate it. What is going on?

A: After you un-archive the file, in simulation go to *Simulation | Simulation Settings* and select *Restore Defaults* at the bottom; then select *Save*. Then try to simulate again. If it still give an error, re-compile the design, then in simulation again *Restore Defaults* and then simulate.