The best thing about Quartus II is that it provides access to a large number of well-known FPGA vendors. It also includes a number of high-quality BSD and GNU licenses, in addition to a license for the low-cost Altera SDK. This post will detail how you can use Quartus II 13 in order to create custom or pre-designed boards containing Altera or other FPGA devices. The scope of this post will be confined to the similarities in native code development. We will not go into details on how to use Altera's Quartus II interface in order to design your FPGA devices. As stated in the introduction, Quartus II 13 provides many supported FPGA vendors. We will focus on two of them: Altera and Xilinx.

For the above example, assuming no errors have been found, we can move on to generate the design files using Quartus II 13. The command below generates a file called test_design_board_v10040000_002400003. scr. This design file can be opened in Quartus II 13 and the same results can be achieved.

We can now move on to create a custom board with Altera XC3S200 FPGA device. In this example, we will use I2C- slave device ID 2 and drive/clock mode 3 for output port 1. The command below generates a file called test_design_board_v10040000_002500002.scr. This design file can be opened in Quartus II 13 and the same results can be achieved in a similar way to the previous example in the post.

In order to test create a custom board, we need to download a . elf file. To avoid errors in our design file, we can use this method. The command below generates a file called test_design_board_v10040000_002600001.scr. This design file can be opened in Quartus II 13 and the same results can be achieved in a similar way to the previous example in the post.

Now that we have created both boards, we need to burn it on to an FPGA board with either Altera or Xilinx device using an USB-UART board with FT232RL chip connected to our PC using 8C SERIES serial adapter with FTDI driver installed on our PC. Quartus II 13 can be used for this purpose. For example: We can use the Quartus tools to burn our boards and see if the boards actually work or not. If we do not get any errors while burning, we can confirm that we have created a good design.

The iMPACT tool is used for programming and debugging Altera FPGA devices such as the DE0-Nano board, DE2-115 board and GenBoard. This is very useful in cases where we cannot connect an UART cable to an external device such as a breadboard or breadboard with Arduino and so on.

268eeb4e9f3238