

Pandora SDHD Boards Programming Instructions.

FIRST TIME

- 1] Download all of the necessary files to your local hard drive.

http://pogle.pandora-int.com/pandora/download/SDHD_IO_CARD/

there are five files in total 2 for the input card and 3 for the output card. All have a *.mcs suffix.

NOTE :: Some versions of the Xilinx programmer software do not like spaces in the path or file name so it is not a good idea to just drag the files on to the desktop. In windows XP the desktop is in a directory called "Documents and settings" which has spaces so the Xilinx software may not be able to find the files from there. I normally use something like C:\PiXi .

- 2] If you have not already done so load the Xilinx webpack programming software. This is available free from Xilinx although you do have to register to download it. Webpack will run on Windows 2000 SP2 or Windows XP

<http://www.xilinx.com/ise/webpack6/>

Xilinx have moved this around several times so if this link doesn't work try going to the Xilinx home page <http://www.xilinx.com> and search for 'WEBPACK'.

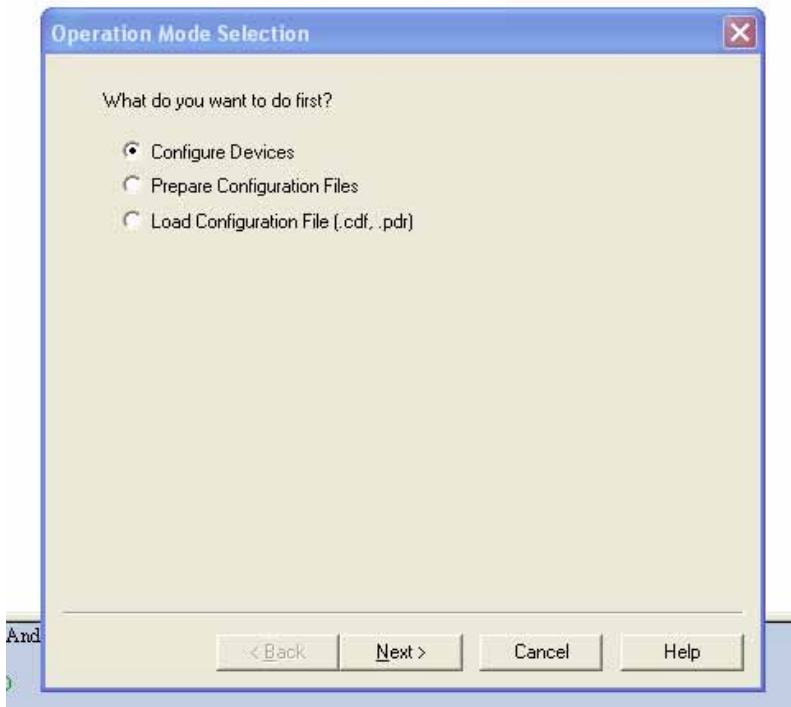
You do not need to download the full package just the programming tools.

SDHD INPUT CARD PROGRAMMING

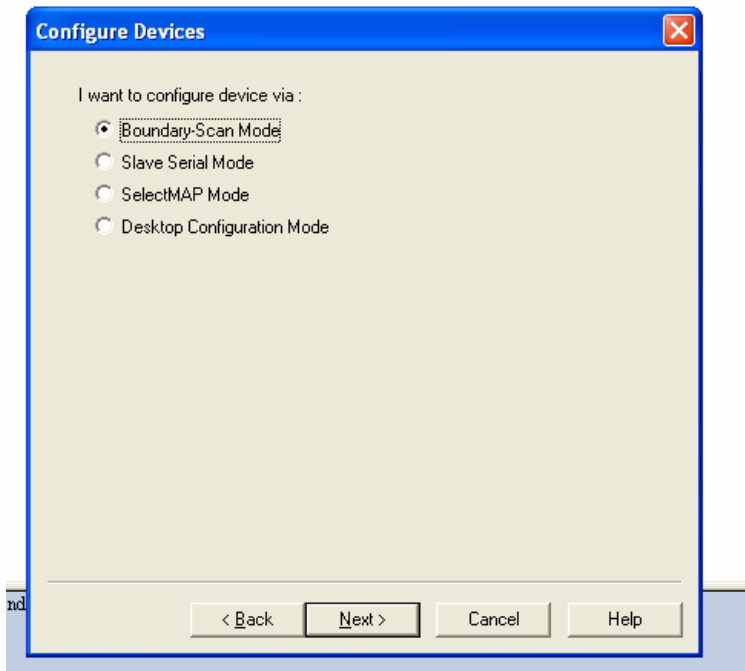
- 3] Attach the programming cable to the PC Parallel port and connect to the 10pin header on the top edge of the SDHD INPUT card. The programming cable takes it's power from the board being programmed so the Pixi must be switched on.

- 4] Run the Xilinx programming software [iMPACT]
When everything is installed correctly the following sequence should work .
If there are any problems see the notes at the end of this document.

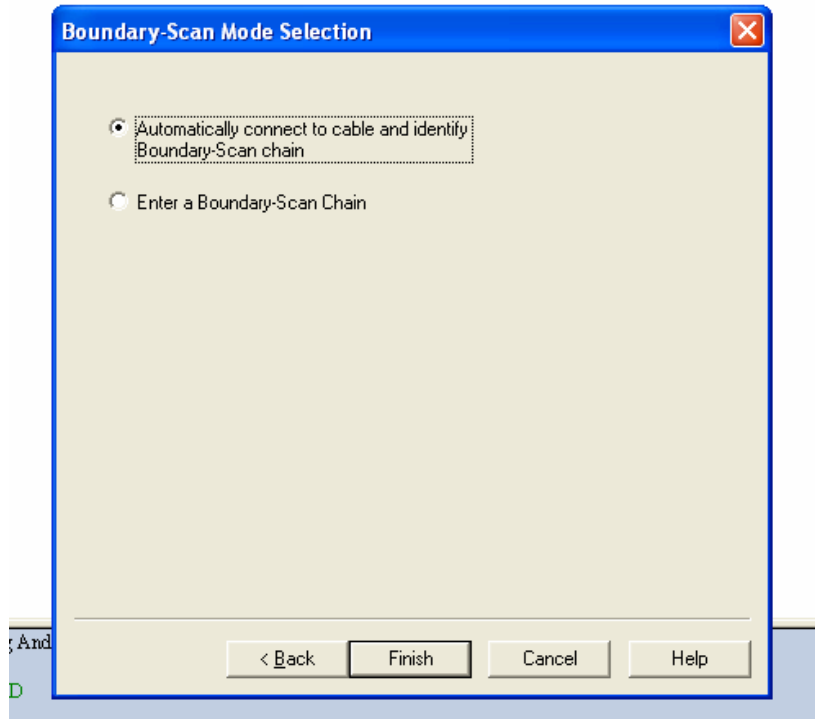
5] iMPACT should start a dialog asking what you would like to do. Take the default choice “configure devices”



6] Select 'Next' and the next menu displays. Select “Boundary-Scan Mode”.

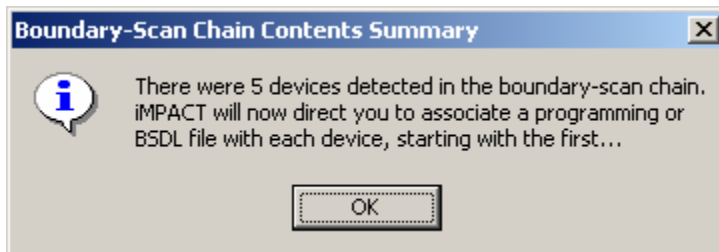


7] Select 'Next' and then in the next dialog choose 'Automatically connect to cable and identify Boundary-Scan Chain'.

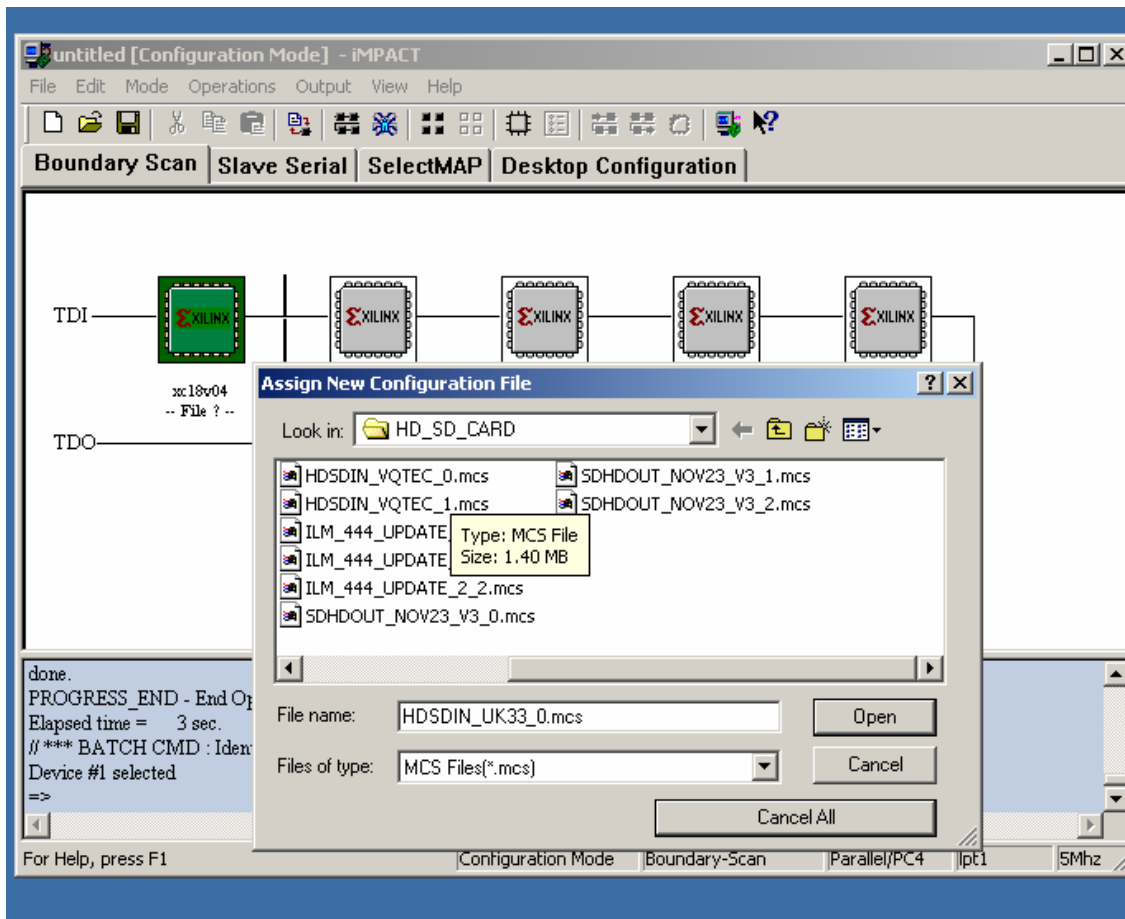


8] If all is well the software will now connect to the cable and scan the board for xilinx devices.

For the SDHD INPUT card you should see the following message.....



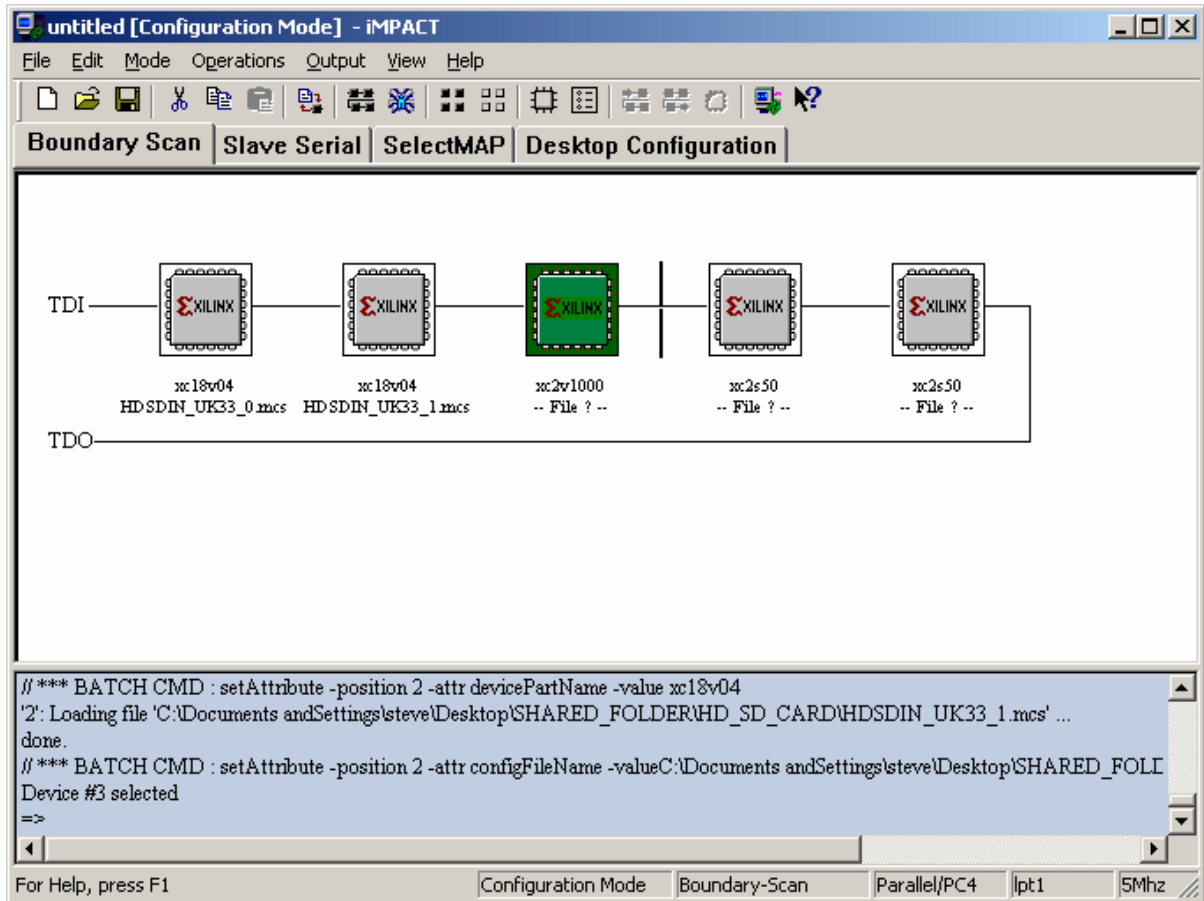
9] click on 'OK; and iMPACT software will now ask you to attach the programming files to the devices on the board.
A file browse window appears.....



10] For the first device select the HDSDIN_V5_0.mcs file and click 'Open'. The software will now load the first file and ask for the second device.

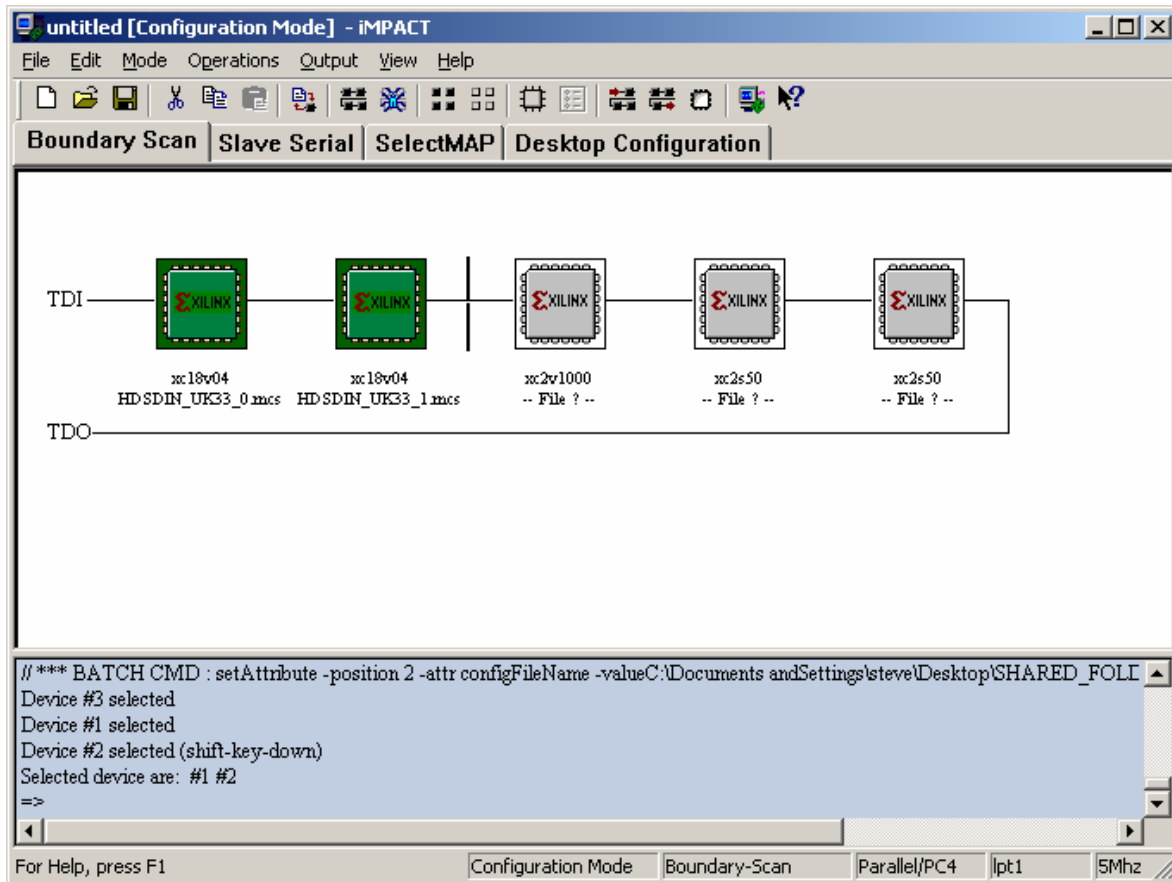
11] For the second device select the HDSDIN_V5_1.msc file and click 'Open'.

12] On the SDHD INPUT card the remaining device do not need to be programmed so when the software asks for a file for device #3 select 'Cancel All'.
You should now see a screen like this

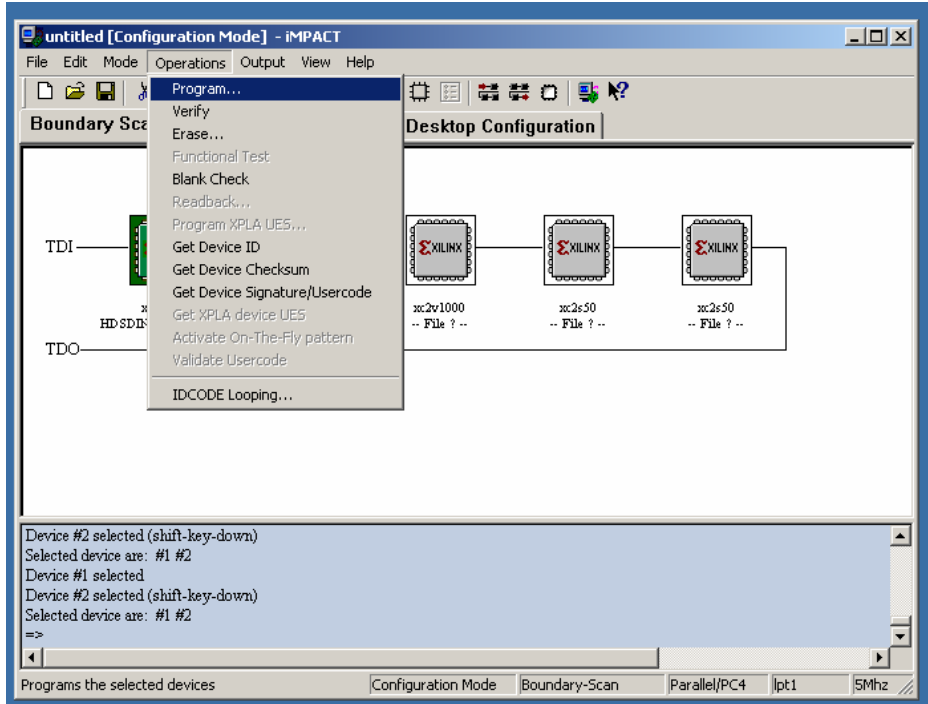


13] Note that the first two devices are the configuration proms type XC18V04 the remaining devices are the actual logic components which are visible for software development purposes. We need to 'burn' the mcs files into the first two proms for permanent storage.

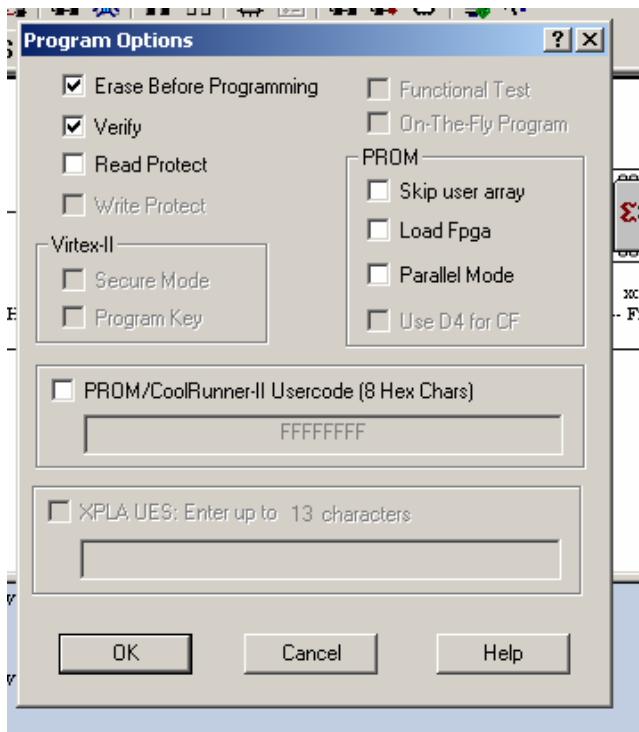
14] Click once on the first device. Hold down the CTRL key and click on the second device so that they are now both selected like this.



15] Select 'Operations' Menu. "Program" option.



16] Program Options menu is Displayed.



17] Make Certain that the following items are selected ...

“ERASE BEFORE PROGRAMMING”
“VERIFY”

Double check that the following items ARE NOT selected.

“PARALLEL MODE”
“LOAD FPGA”

18] Click on “OK” to start the programming sequence which will run for 1-2 minutes.

19] At the end of the sequence you should see the message
“PROGRAMMING SUCCESFUL” displayed.

20] The new firmware is loaded into the Xilinx proms but will not be running in the logic yet. To test the new firmware either switch the Pixi OFF and the ON again or push the small reset button located just below the 10pin programming header. This should cause the Xilinx logic to re-configure using the data now written into the proms.

SDHD OUTPUT CARD PROGRAMMING

The sequence for the SDHD output card is similar to the input card.

- 1] Attach the cable to the SDHD OUTPUT card.
- 2] If the Xilinx software is still running you can make it re-scan the new board by selecting “Initialize Chain” from the FILE menu. Or by restarting the application.
- 3] For the SDHD Output card the software should find only FOUR devices.
- 4] There are THREE files to program into the SDHD output card.
#1 SDHDOUT_NOV23_V3_0.mcs
#2 SDHDOUT_NOV23_V3_1.mcs
#3 SDHDOUT_NOV23_V3_2.mcs

Select “Cancel All” for the fourth device.

- 5] Click on the image of the first device and then hold down the CTRL key to select devices 2 and 3. You should have three icons illuminated.

6] Select OPERATIONS → PROGRAM.

7] Make sure that you have the same options selected as before...

“ERASE BEFORE PROGRAMMING”

“VERIFY”

And NOT these...

btg

“PARALLEL MODE”

“LOAD FPGA”

8] Click on OK to program.

SETTING UP THE XILINX SOFTWARE

There are help documents available on the Xilinx web site to help with this but the following notes might help...

1] Make sure that the iMPACT software is running in “CONFIGURATION MODE”
This is selected under the MODE menu.

2] If the Programming cable is not detected first make sure that the connection to Pixi is done correctly and the the POWER is switch on.
Select “OUTPUT” from the Menu and then “Cable Setup”.

Cable type should be set to Parallel III and the port to LPT1.

3] In some cases I have had to disable the EPP mode for the parallel port on the PC motherboard.

This has to be done by rebooting the machine and entering the BIOS setup [usually by holding down the DEL key as the machine starts up].

In some cases you need to setup the parallel port to use a standard interrupt at h378 rather than letting the operating system assign one automatically. This all seems to depend on the manufacturer of a particular mother board and the version of windows installed.