



Programming the RP-3200

Summary

This application note describes how to program the RP-3200 with a parallel port cable, a Xilinx Parallel Cable III or equivalent JTAG programming cable interface.

Introduction

The RP-3200 was designed to give the user the greatest flexibility of programming. The RP-3200 has circuitry based upon the Xilinx Parallel Cable III integrated directly on the board allowing the user to program the RP-3200 utilizing only a straight through 25 pin parallel port cable connected between a computer and the RP-3200. The RP-3200 also has a IEEE 1149.1 JTAG compliant input on the integrated on the board allowing to user to program the RP-3200 with an another programming interface such as the Xilinx Parallel Cable III. This application note describes how to configure iMPACT to program the RP-3200 (iMPACT is a part of the Xilinx ISE software suite).

This application note was written referencing Xilinx WebPack ISE 5.1. Other versions of the Xilinx ISE may have dialog windows that differ than what is shown in this document.

Programming the RP-3200

The following describes how to program the RP-3200 by using the iMPACT software tool.

Note: This procedure uses a JTAG file called rdwrcode.jed. This file is just used as an example. The same procedure will be used for any JTAG programming file.

1. Connect a straight through 25 pin parallel port cable between your PC and the RP-3200 (J8). If you are using a Xilinx Parallel Cable III or equivalent JTAG parallel port programming cable connect it to the parallel port connector on your PC and the JTAG connector (J7) on the RP-3200. Make sure that pin 1 of the JTAG programmable cable is connected to pin 1 of the RP-3200 J7 connector and that the correct signal pins are connected together. Only one JTAG communication cable, either a straight through 25 pin parallel port cable or Xilinx Parallel Cable III, should be connected to the RP-3200. If a straight through 25 pin parallel port cable is being utilized, Jacyl Technology recommends only using a high quality shielded cable less than 6' in length.

NOTE: The RP-3200 has the feature of manually switching the I/O voltage reference between 3.3VDC and 5VDC by the J6 connector. This connector also controls the reference voltage for the parallel port connector, J8, and the JTAG connector, J7, on the RP-3200. Always verify when using any type of JTAG communication cable, custom host computer configuration or parallel port communication to program the

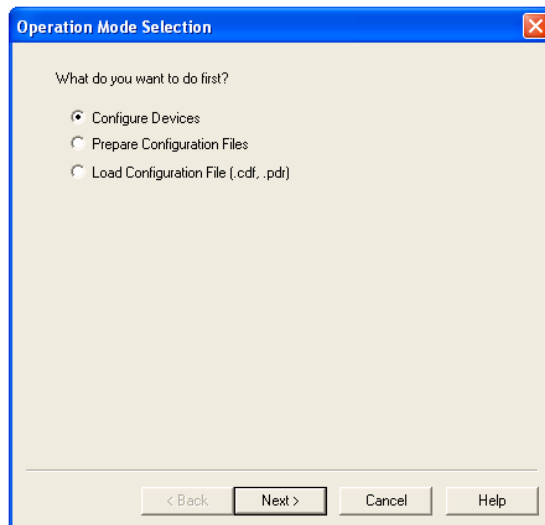


RP-3200 if the J6 connector should be configured for 3.3VDC or 5VDC operation. Whenever programming the RP-3200, the J6 reference voltage and the reference voltage of the JTAG programming device connected to the RP-3200 should be the same.

2. After you have successfully implemented your design in the Xilinx Project Navigator software, in the Project Navigator software double-click “**Configure Device [iMPACT]**” in the “**Process for Current Source**” window under “**Generate Programming File**”. This will generate a JEDEC file and bring up the Xilinx iMPACT software programming interface.

The following steps assume that you have a cable already connected between your computer and the RP-3200 and that power is applied to the RP-3200.

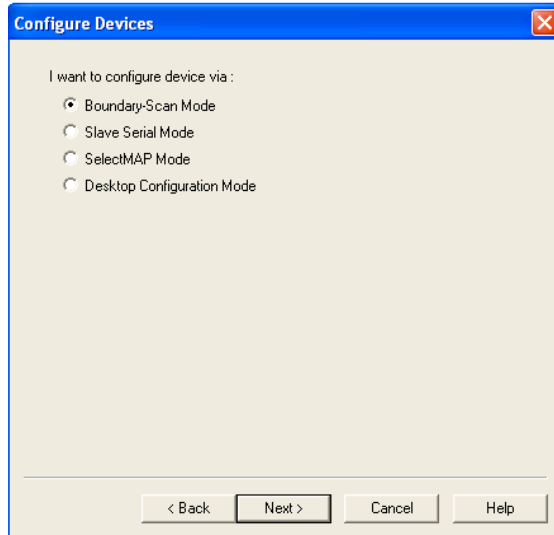
3. The first window that will appear in the iMPACT software is the “**Operations Mode Selection**” dialog window.



Select “**Configure Devices**” as shown above and click “**Next**”.

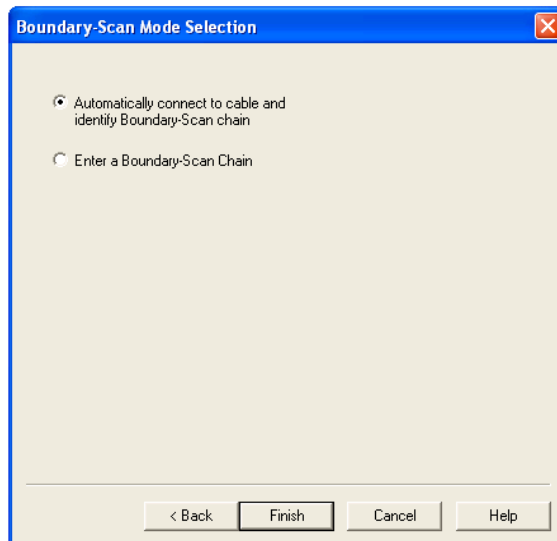


4. Next the “**Configure Mode**” dialog window will appear.



Select “**Boundary-Scan Mode**” as shown above and click “**Next**”.

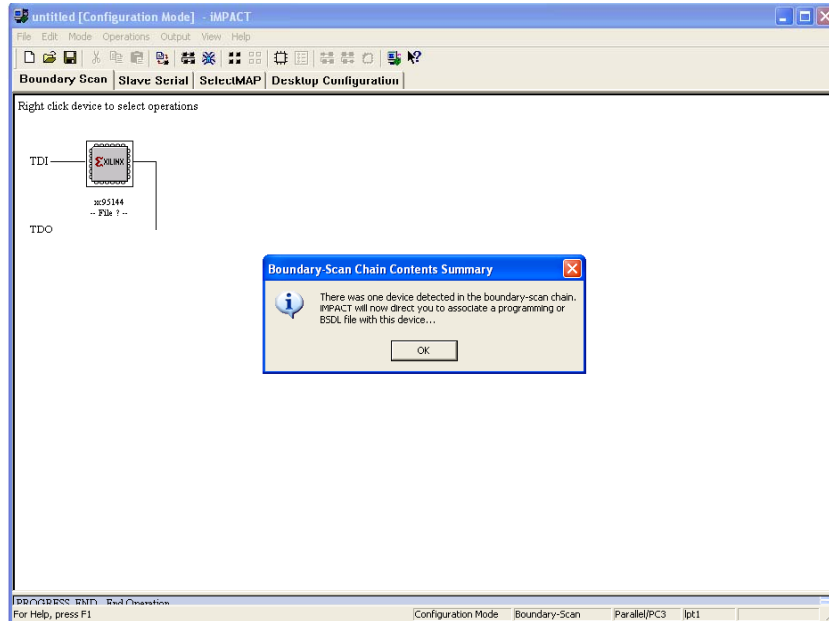
5. Next the “**Boundary-Scan Mode Selection**” dialog window will appear.



Select “**Automatically connect to cable and identify Boundary-Scan chain**” as shown above and click “**Finish**”.



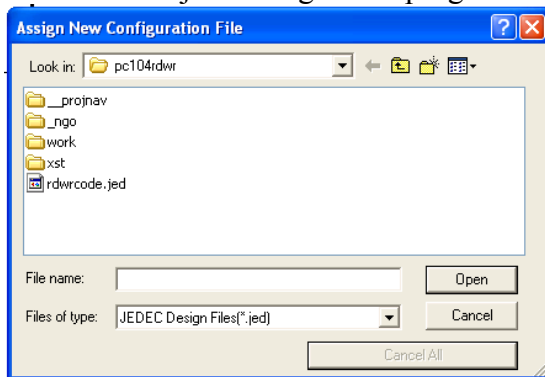
- Next a “**Boundary-Scan Chain Contents Summary**” window should appear. This window confirms that iMPACT detected the XC95144 on the RP-3200.



Click “**OK**” to continue.

NOTE: If iMPACT is unable to establish communications with the RP-3200 refer to the section titled Configuring iMPACT located in this document for possible solutions.

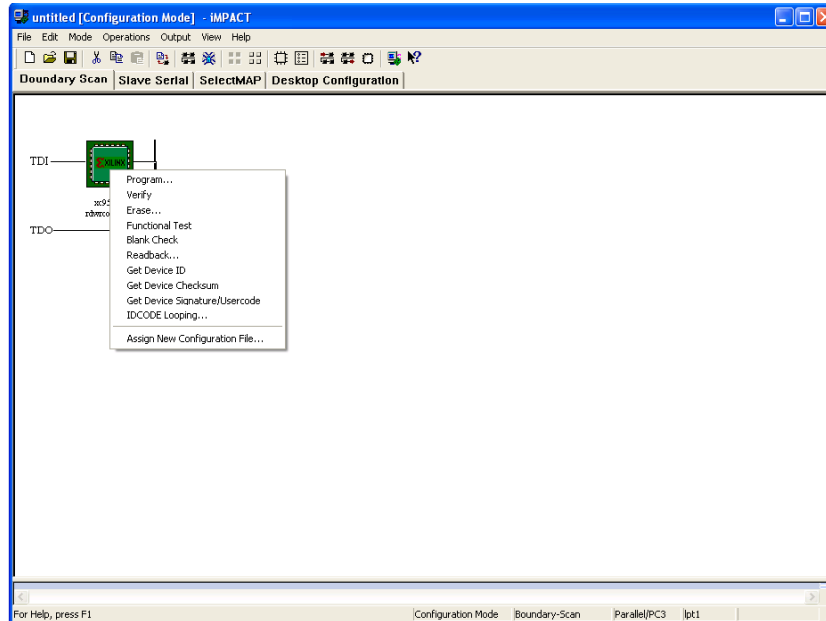
- Next the “**Assign New Configuration File**” dialog window will appear. This window queries the user for a JED, BSDL or BIT file to program into the RP-3200. For “**Files of type:**” select “**JEDEC Design Files(*.jed)**” which represents a JTAG file to program into the RP-3200. Select the appropriate directory and file that was created in Project Navigator to program into the RP-3200.



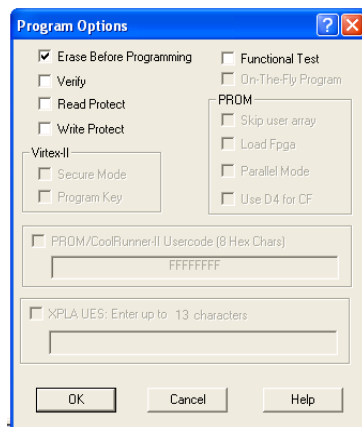
Once the correct file is selected click “**Open**”.



- Placing the mouse cursor on top of the graphic of the XC95144 right click one time and select “**Program...**” from the device menu.



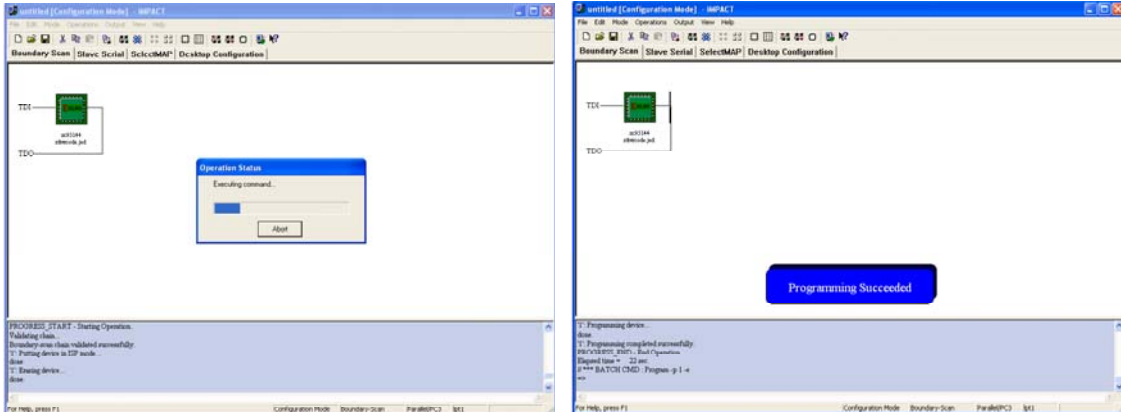
- Next the “**Program Options**” dialog window will appear.



Select “**Erase Before Programming**” and click “**OK**”.



10. Next the “Operations Status” window will appear indicating the progress of programming the RP-3200 followed by a “Programming Succeeded” status window.

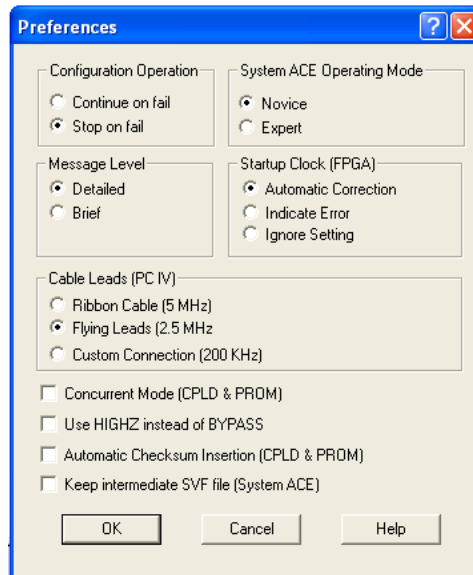




Configuring iMPACT

This section describes the communication settings for the Xilinx iMPACT software for communication to the RP-3200 regardless of the communication cable being utilized. Generally iMPACT will auto detect and auto connect with the RP-3200 but in some instances iMPACT will not auto detect the RP-3200 due to configuration setting in iMPACT. This section defines the configuration settings in iMPACT that will allow it to communicate with the RP-3200 if communication problems are encountered.

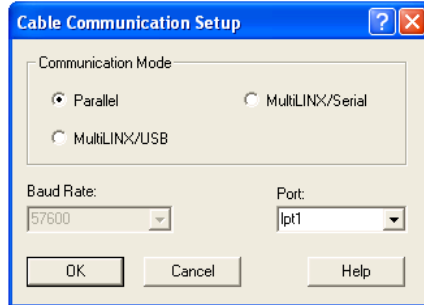
1. In the iMPACT software under the “**Edit**” menu select “**Preferences...**”. The “**Preferences**” dialog window will appear.



Select the same settings as shown above and click “**OK**”.



2. Under the “**Output**” menu select “**Cable Setup...**”. The “Cable Communication Setup” dialog window will appear.



For “**Communication Mode**” select “**Parallel**” and for “**Port**” select the parallel port connected to the RP-3200, usually “**lpt1**”.

3. The iMPACT program may have to be stopped and restarted before the above settings take affect.
4. Be sure that no other program on your computer is currently utilizing or has reserved the parallel port that is connected to the RP-3200.
5. Also, only one instance of iMPACT should be running on your computer. If you have iMPACT currently running on your computer and inadvertently start a second session of iMPACT the parallel port may temporarily stop communicating with the RP-3200.
6. Consult the help section of iMPACT and Project Navigator for additional information about working with iMPACT.



Document Revision History

| Revision | Date Issued | Description of Change |
|----------|-------------|-----------------------|
| 01 | 7/1/2003 | Initial release. |

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