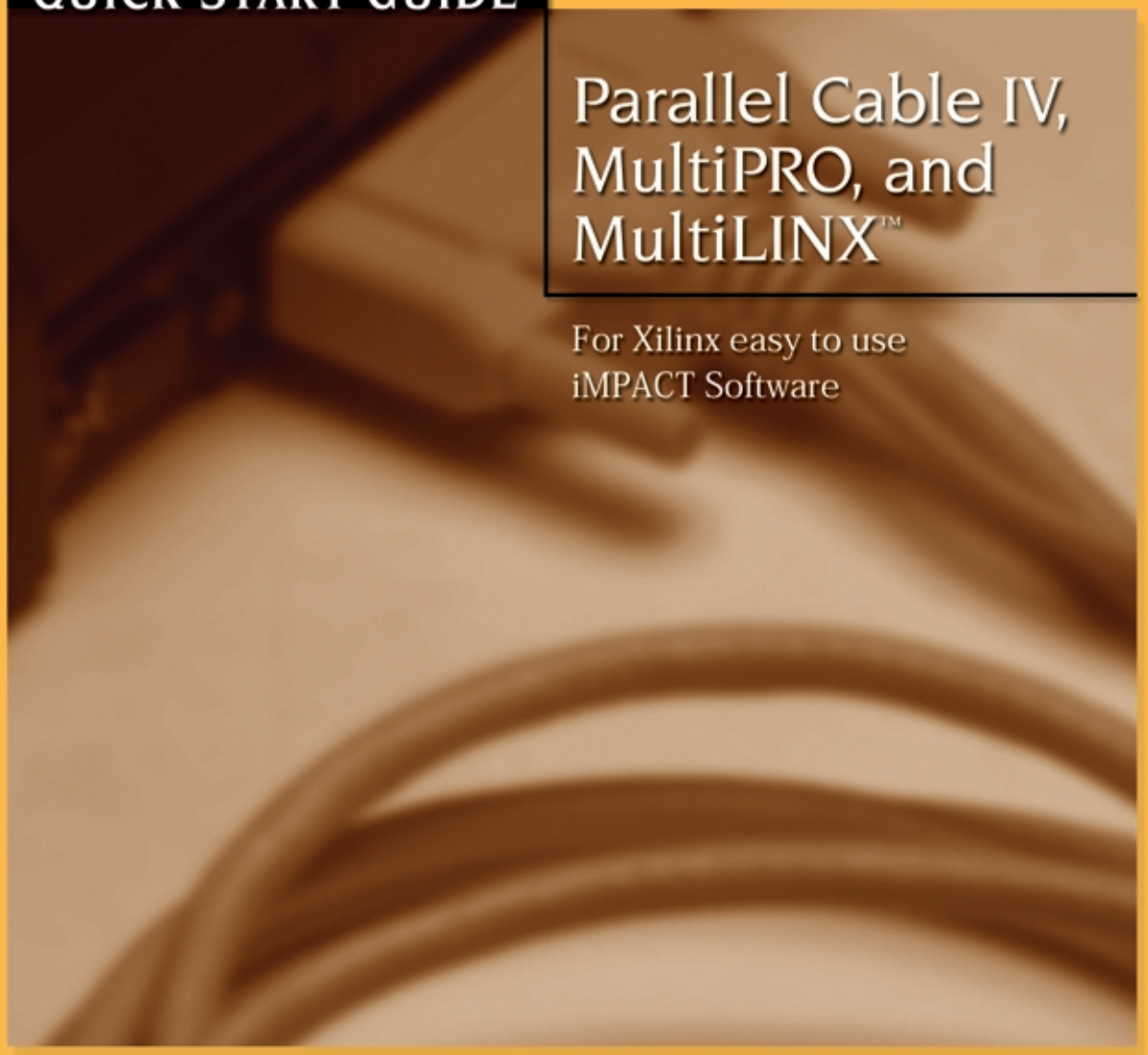
QUICK START GUIDE

Parallel Cable IV, MultiPRO, and MultiLINX™

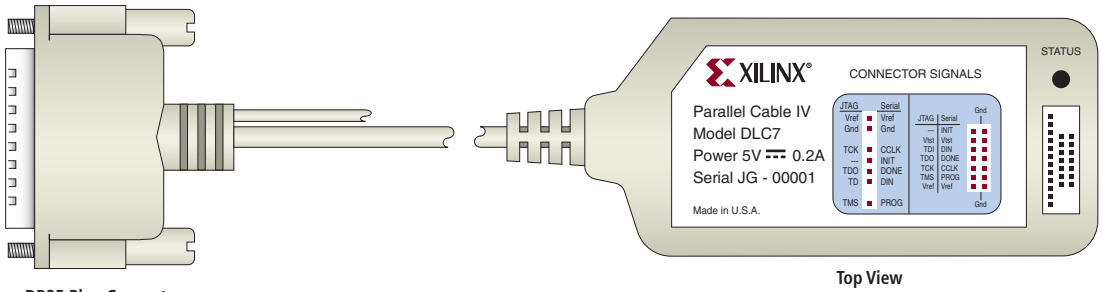
For Xilinx easy to use iMPACT Software



XILINX®

Parallel Cable IV (Model:DLC7)

Functions	Platforms	Voltages	Modes
Download and Readback	Win2000,WinXP	1.5, 1.8, 2.5, 3.3, 5 Volts	Slave Serial and JTAG



The Parallel Cable IV connects to any PC through the standard IEEE-1284 compliant parallel port, and draws power directly from the PC (through the mouse/keyboard port) or an external power supply. Shipping with the Parallel Cable IV is a robust ribbon cable, which allows you to use either the JTAG (IEEE 1149.1) or Slave Serial download mode at the fastest speeds. Parallel Cable IV automatically adjusts to operating voltages from 1.5 to 5 V. The Parallel Cable IV is also backward comptatible with the Parallel Cable III and offers a connector for the flying lead wires.

Cable Tips:

Power must be connected to the Parallel Cable IV either through the mouse/keyboard port or an external power supply of 5V ± 0.25V at 200mA before downloading to the target system.

Figure 2: Ribbon Cable

Figure 3: Parallel Cable IV connected to PC with power from mouse/keyboard port

Figure 4: Parallel Cable IV connected to PC with power from external power brick

MultiPRO Desktop Tool (Model: DLC8)

Functions	Platforms	Voltages	Modes
Desktop Programmer, Download and Readback	Win2000, WinXP	1.5, 1.8, 2.5, 3.3, 5 Volts	Slave Serial, JTAG, SelectMAP, and Programmer

The MultiPRO Desktop Tool functions as both a desktop programmer and a high-speed download cable. In the desktop programming mode, MultiPRO can program individual ISP PROMs or CoolRunner II CPLDs through the use of device adapters that are sold separately. As a download cable, MultiPRO can perform in-system programming of any Xilinx CPLD or ISP PROM and can configure any Xilinx FGPA. MultiPRO connects to the target hardware through one of the two included ribbon cables and automatically adjusts to operating voltages from 1.5 to 5 V. Designed for the desktop environment, MultiPRO connects to any PC through the standard IEEE-1284 compliant parallel port, and is powered from an external AC power brick that provides +5VDC to the POD. MultiPRO ships with two ribbon cables, one for Xilinx Slave Serial and JTAG (IEEE 1149.1) modes, and the other for Xilinx SelectMAP mode, and a +5VDC AC power brick. Both the Slave Serial/JTAG ribbon cable and power brick can be used with the Parallel Cable IV.

Figure 1: Parallel Cable IV pod with DB25 Plug Connector (artist rendering)

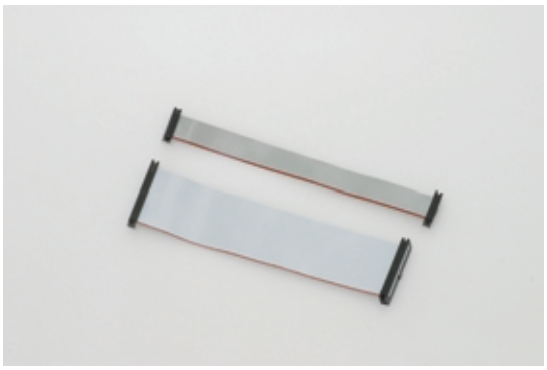


Figure 2: Ribbon Cables

Figure 3: MultiPRO Adapter

Figure 4: MultiPRO +5VDC AC Power Brick

MultiLINX (Model: DLC6)

Functions	Platforms	Voltages	Modes
Download and Readback	Win2000, WinXP, Solaris, Linux	2.5, 3.3 and 5 Volt	Slave Serial, JTAG, and SelectMAP

Connecting to the Host Computer

The MultiLINX download cable pod may be connected to either the RS232 serial cable or the USB cable. Only one cable should be used at a time. However, if both cables are connected the RS232 serial cable will override the USB connection.

The RS232 cable may be connected directly to the 9-pin port of a PC. The 25-pin adapter allows for connections to the 25-pin serial COM port of a PC or a UNIX workstation. The USB cable is keyed for a "Host" connection at one end (rectangular) and a "function" connection at the other end (square). The square end connects to the MultiLINX cable pod. Do not use with an external USB HUB.

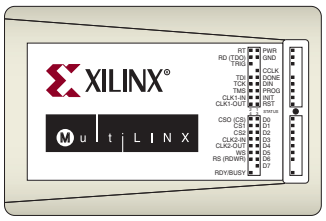
Connecting to a Target System

The MultiLINX cable has four sets of flying-lead connectors that are used to connect your target system. The lead ends fit standard 0.025in² header pins.

The PWR and GND leads may either be connected to the target system or a separate power supply. However, GND should always be common between the target system and the MultiLINX cable for proper I/O communication. The MultiLINX cable requires a 2.5-5V input on the PWR lead and requires approximately 500mA nominally at 3.3v.

Cable Tips:

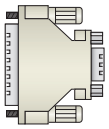
You must connect VCC and ground before you connect the control signals to the MultiLINX Cable.



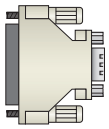
MultiLINX Cable Pod

MultiLINX automatically adjusts to operating voltages from 2.5 to 5 volts

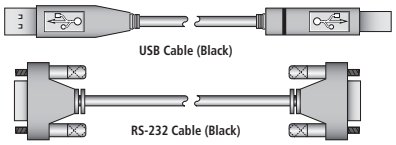
Accessories



DB25M to DB9M Adapter

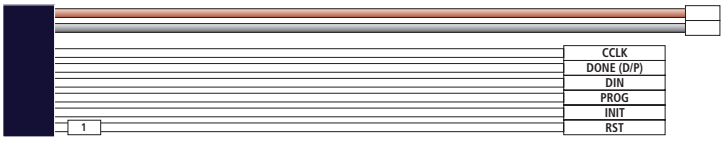


DB25F to DB9M Adapter

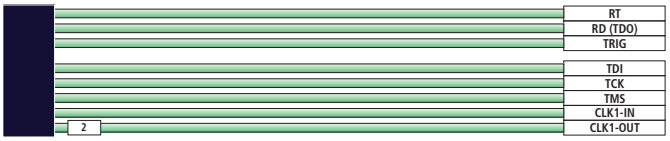


USB Cable (Black)

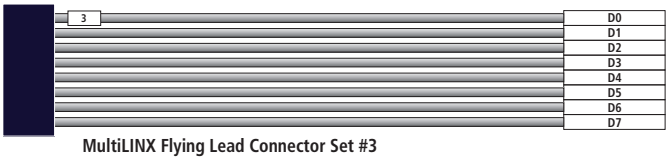
RS-232 Cable (Black)



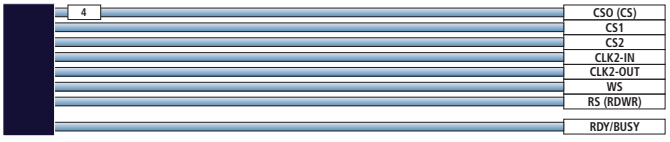
MultiLINX Flying Lead Connector Set #1



MultiLINX Flying Lead Connector Set #2



MultiLINX Flying Lead Connector Set #3

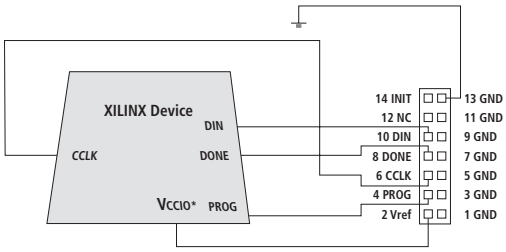


MultiLINX Flying Lead Connector Set #4

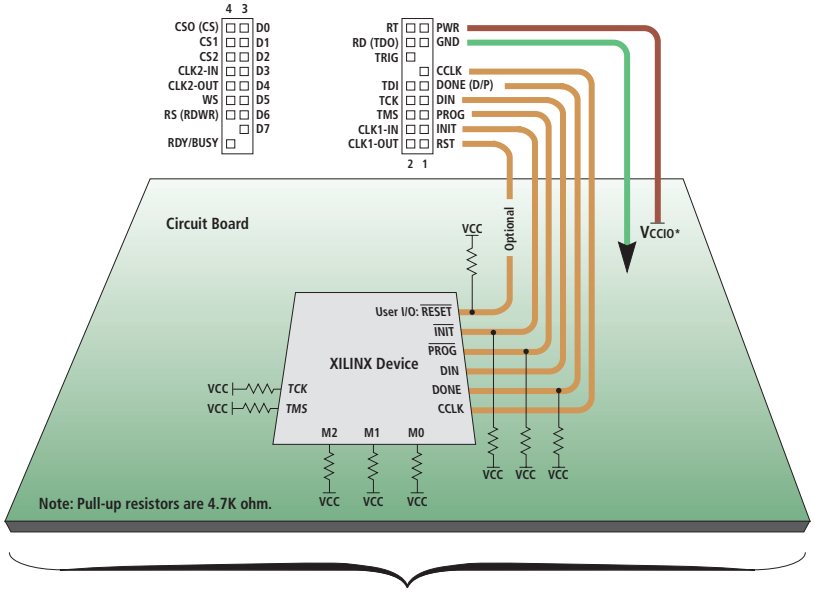
Slave Serial Mode

Supported Devices: Virtex-II™/Virtex-II Pro,™ Virtex/E, Spartan™-II/IIE, Spartan/XL, XC4000E/X/XL/XLA/XV.

Cable Options: Parallel Cable IV, MultiPRO Desktop Tool, MultiLINX Cable



Parallel Cable IV and MultiPRO Connections for the High Performance Ribbon Cable



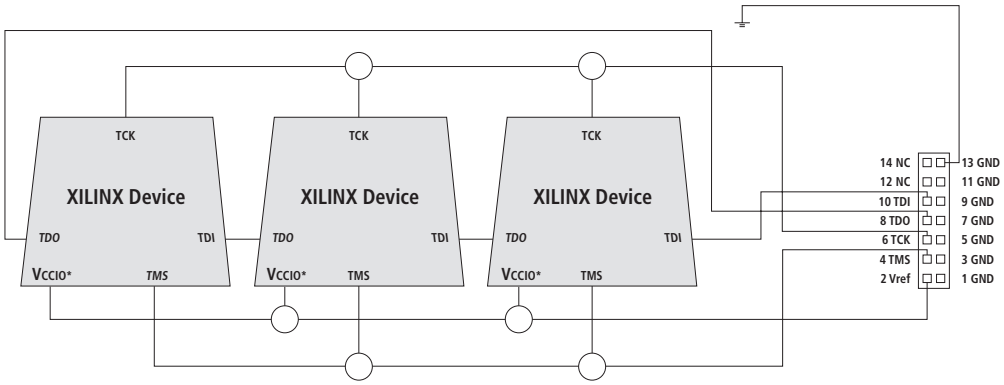
MultiLINX Cable Connections

*Refer to the specific Xilinx device data sheet for the appropriate I/O reference voltage.

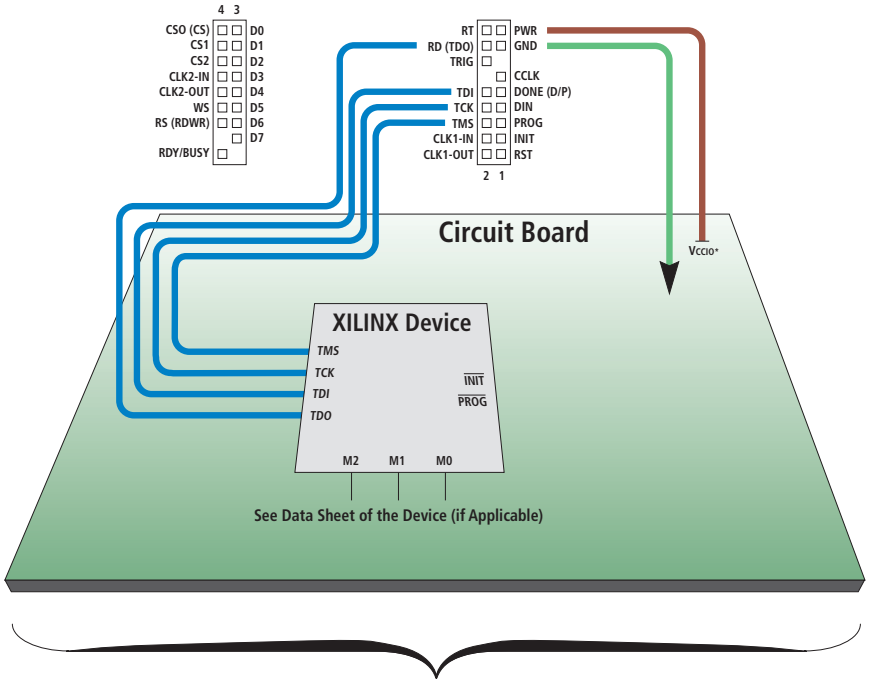
JTAG Mode

Supported Devices: Virtex-II™/Virtex-II Pro™ Virtex/E,Spartan™-II/II-E, Spartan/XL, XC4000E/X/XL/XLA/XV, ISP PROMs, CPLDs, and System ACE™ MPM.

Cable Options: Parallel Cable IV, MultiPRO Desktop Tool, MultiLINX Cable



Parallel Cable IV and MultiPRO Connections for the High Performance Ribbon Cable



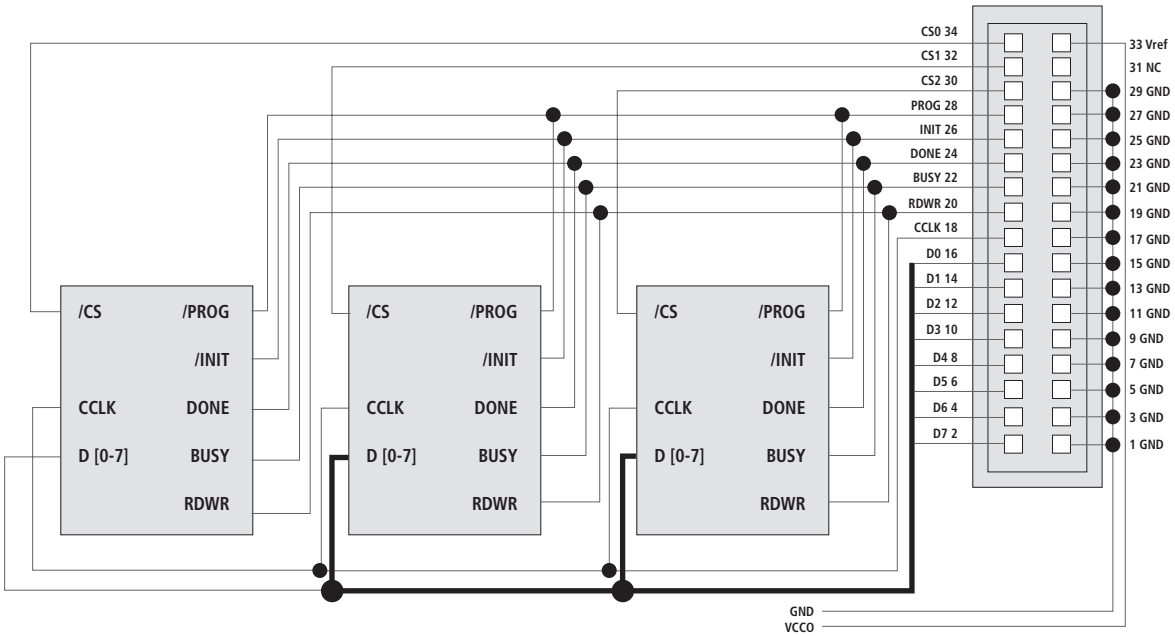
MultiLINX Cable Connections

*Refer to the specific Xilinx device data sheet for the appropriate I/O reference voltage.

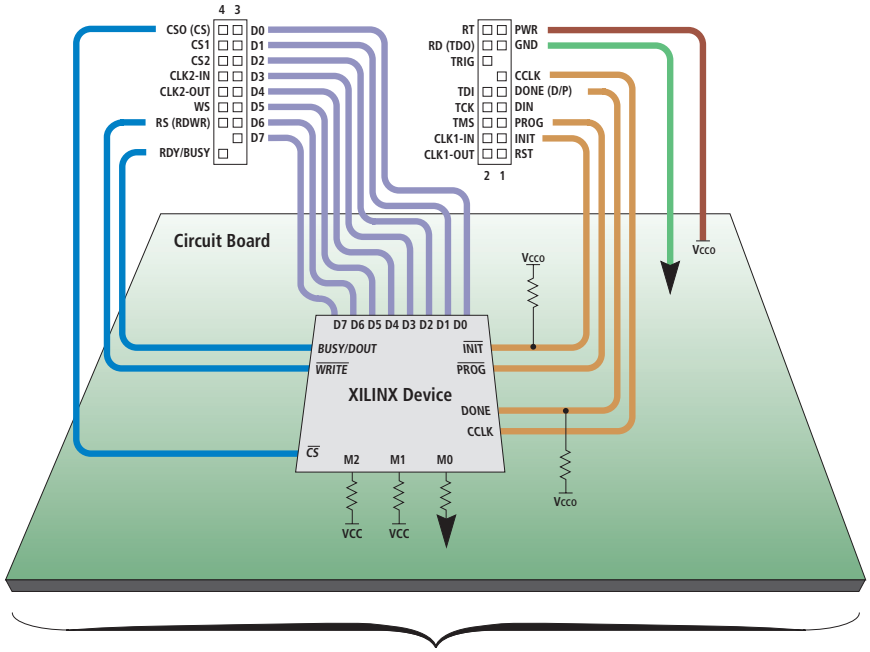
SelectMAP™/Slave-SelectMAP/Slave-Parallel Mode

Supported Devices: Virtex-II,™/Virtex-II Pro,™ Virtex/E, Spartan-II/IIE.

Cable Options: MultiLINX Cable and MultiPRO Desktop Tool



MultiPRO Ribbon Cable Connections



MultiLINX Cable Connections

*Refer to the specific Xilinx device data sheet for the appropriate I/O reference voltage.

iMPACT Quickstart Guide

In order to achieve the highest through put rate for Parallel Cable IV and MultiPRO, the ECP parallel port operation must be enabled in the system BIOS.

When switching between different configuration modes, the user must first select “Cable Disconnect” from the Output menu.

iMPACT Quickstart for Boundary-Scan Mode

Step 1: Selecting the Operation Mode

- Invoke iMPACT
- Select Operation Mode > Configure Devices
- Click “Next”

Step 2: Entering Boundary-Scan Mode

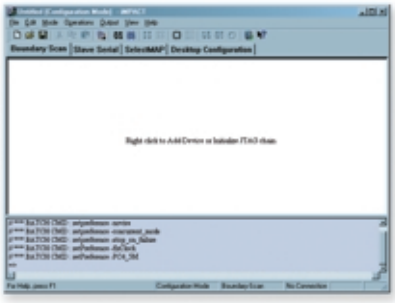
- Select Mode > Boundary-Scan Mode
- Click “Next”

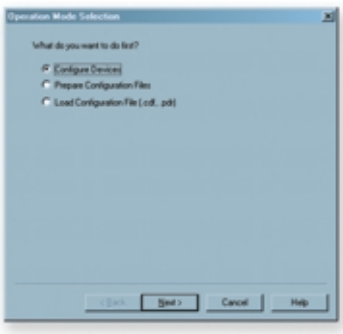
Step 3: Selecting Boundary-Scan Mode Option

User can either choose to have the software 1) Automatically connect to cable and identify Boundary-Scan chain or 2) Enter a Boundary-Scan Chain manually. If the user selects option 1, skip step 5 as cable and boundary-scan detection will be done automatically. Ensure that the cable is powered and connected correctly. Instructions for manually entering a boundary-scan chain are shown here.

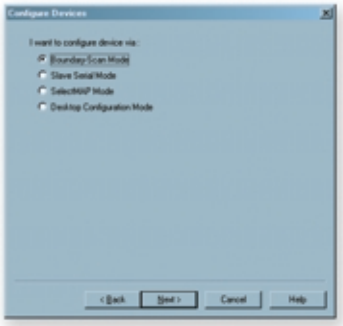
- Select Boundary-Scan Mode Option > Enter A Boundary-Scan Chain
- Click “Finish”

Step 1

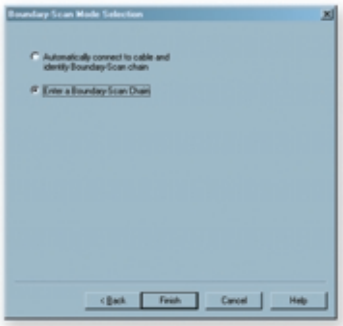




Step 2



Step 3



iMPACT Quickstart for Boundary-Scan Mode (cont)

Step 4: Boundary-Scan Chain

- Browse for the appropriate device file
- Click “Open” (Note: The .bit format is used for targeting FPGAs, the .jed format for targeting CPLDs, the .mcs/.exo format for targeting ISP PROM devices, and the .mcs format for targeting SystemACE MPM.

Step 5: Boundary-Scan Multi-Device Chain Creation (Skip this step if automatic cable and boundary-scan chain detection was selected)

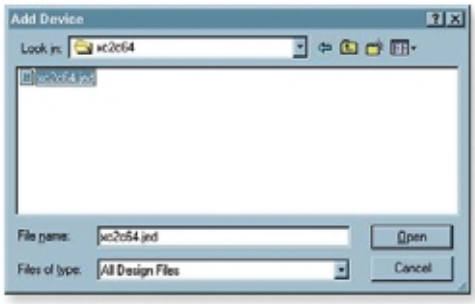
- Edit > Add Device > Xilinx Device
- Browse for appropriate device file
- Click "Open"
- Repeat Step 5 for each of the devices in the chain

Step 6: Boundary-Scan Chain Operations

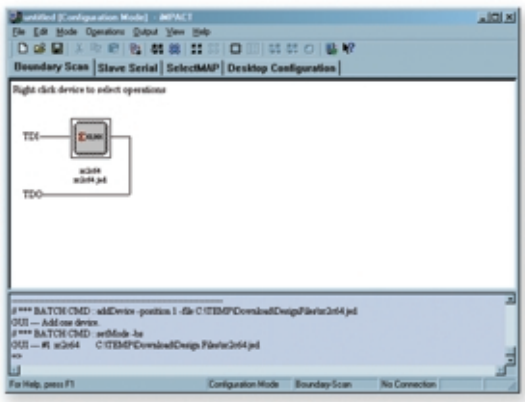
- Click on target device icon
- Operations > Program (or other desired operation)
- Cable detection will be done automatically

  Ensure that the cable is powered and connected correctly. (This only applies in Step 6 if the user has selected to manually enter a boundary-scan chain.)

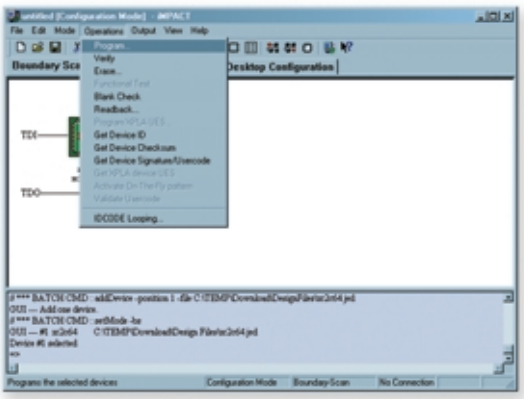
Step 4



Step 5



Step 6



iMPACT Quickstart for Slave Serial Mode

Step 1: Selecting the Operation Mode

- Invoke iMPACT
- Select Operation Mode > Configure Devices
- Click "Next"

Step 2: Entering Slave Serial Mode

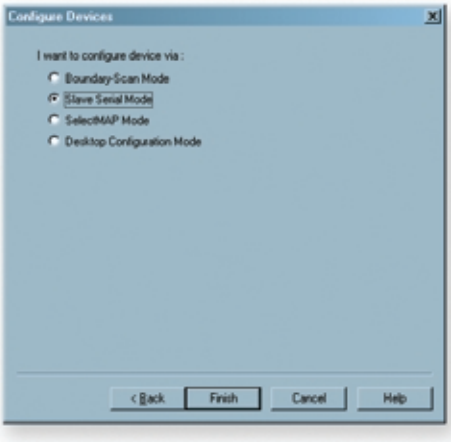
- Select Mode > Slave Serial Mode
- Click "Finish"
- Cable detection will be done automatically to ensure that the cable is powered and connected
  (Note: If the cable is not connected the user will be prompted to Step 5. If the user wishes to connect the cable at a later time they can follow Steps 4 and 5 after cancelling the prompt for the cable connection.)

Step 3: Creating a Slave Serial Chain

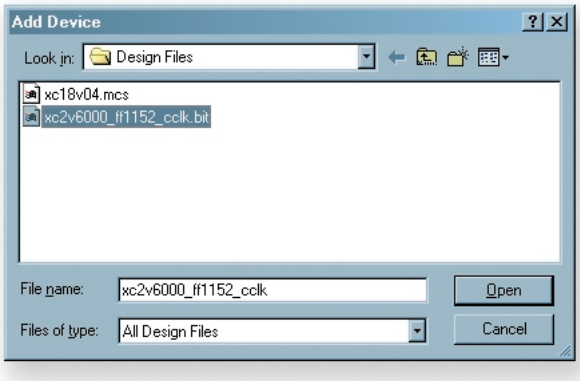
- Select target Slave Serial device(s) appropriate file
  (Note: The .bit format is used for targeting FPGAs, the .jed format for targeting CPLDs, and the .mcs/.exo format for targeting ISP PROM devices.

Step 1

Step 2



Step 3



iMPACT Quickstart for Slave Serial Mode (cont)

Step 4: Cable Setup

If automatic detection in Step 2 was successful, Step 4 and 5 are not required

- Output > Cable Setup

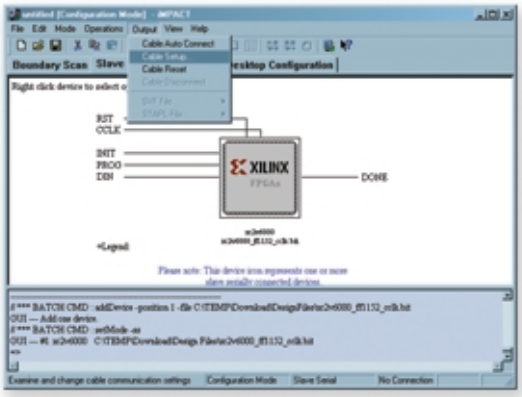
Step 5: Cable Selection

- Select the desired cable
- Click "OK"

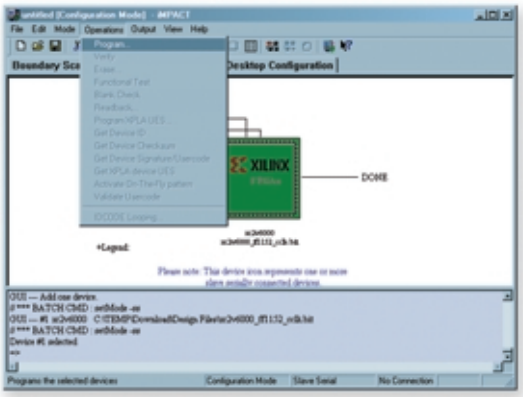
Step 6: Programming in Slave Serial Mode

- Operations > Program

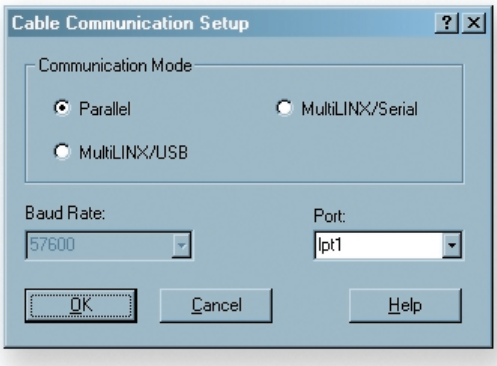
Step 4



Step 6



Step 5



iMPACT Quickstart for SelectMAP Mode

Step 1: Selecting the Operation Mode

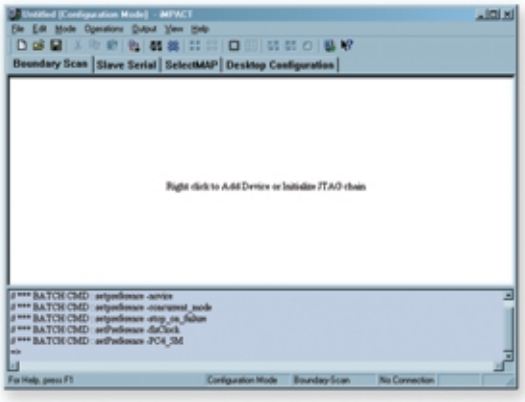
- Invoke iMPACT
- Select Operation Mode > Configure Devices
- Click "Next"

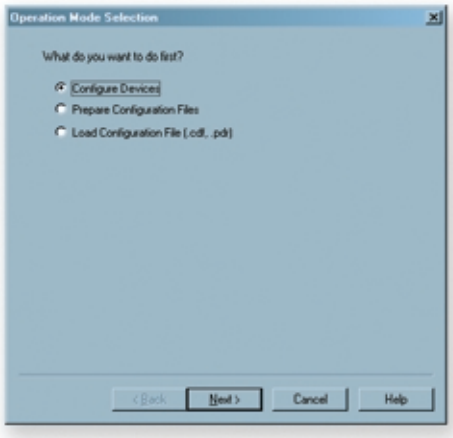
Step 2: Entering SelectMAP Mode

- Select Mode > SelectMAP Mode
- Click "Finish"
- Cable detection will be done automatically to ensure that the cable is powered and connected

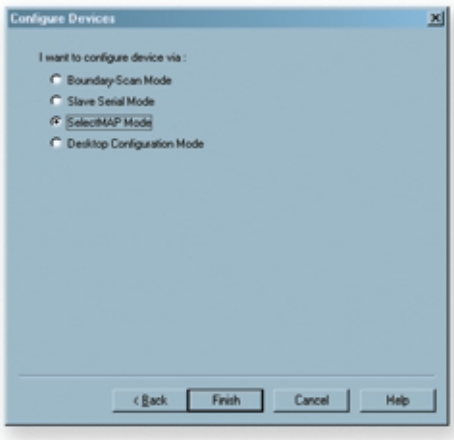
  (Note: If the cable is not connected the user will be prompted to Step 3. If the user wishes to connect the cable at a later time they can follow Steps 4 and 5 after cancelling the prompt for the cable connection as shown in Slave Serial Mode.)

Step 1





Step 2



iMPACT Quickstart for SelectMAP Mode (cont)

Step 3: SelectMAP Setup

- Select target device(s) appropriate file
- Click "Open"

  (Note: Up to three (3) FPGAs can be targeted in SelectMAP mode with iMPACT.

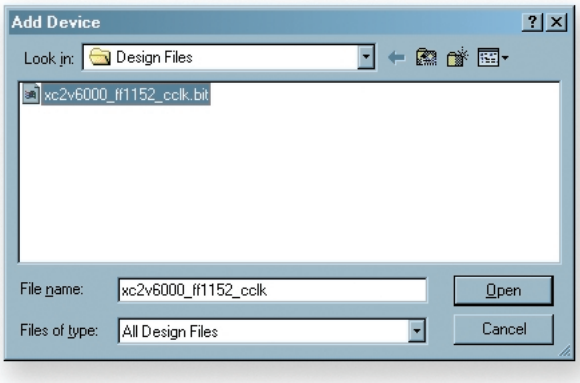
  Each FPGA device uses a .bit file for programming.)

Step 4: Program and Verify in SelectMAP Mode

- Operations > Program (or Verify)

  (Note: The user may optionally highlight the target device and right click to get the "Operations" menu options.)

Step 3



Step 4

iMPACT Quickstart for Desktop Programming Mode

Step 1: Selecting the Operation Mode

- Invoke iMPACT
- Select Operation Mode > Configure Devices
- Click "Next"

Step 2: Entering Desktop Configuration Mode

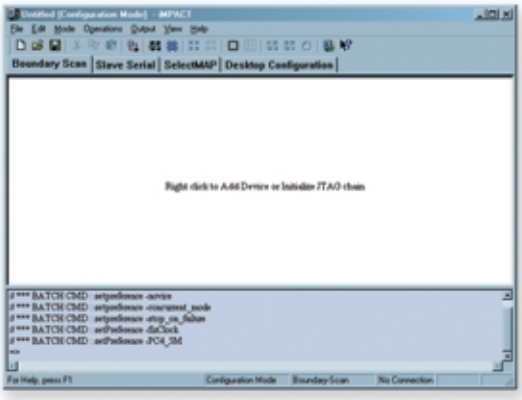
- Select Mode > Desktop Configuration Mode
- Click "Next"

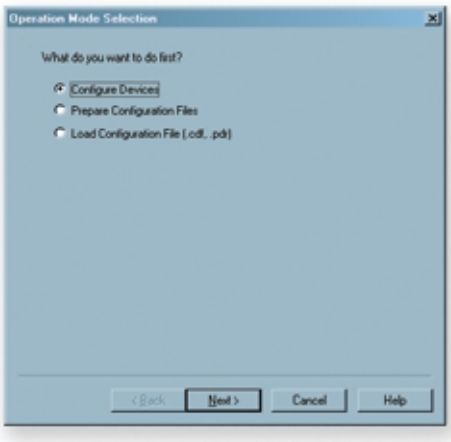
Step 3: Selecting Desktop Configuration Mode Option

User can either choose to have the software 1) "Automatically connect to cable and identify device" or 2) "Enter device information" manually. For automatic device detection, the cable must be connected and powered with the device.

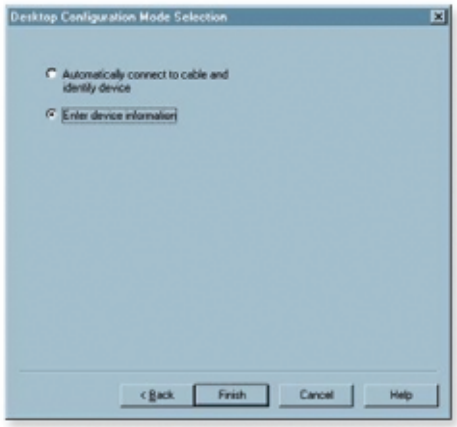
- Select Desktop Configuration Mode Option > "Enter device information"
- Click "Next"

Step 1

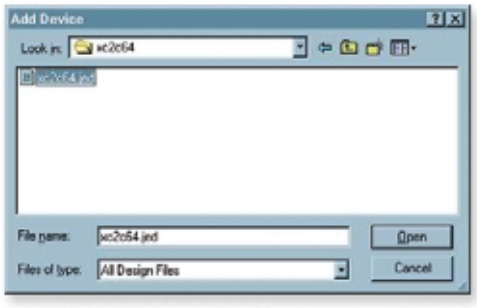




Step 2



Step 3



iMPACT Quickstart for Desktop Programming Mode (cont)

Step 4: Selecting the Device Design File

Both automatic detection and manual entry lead to this step. Automatic detection simply narrows the browser choices to applicable design file types for the detected device type.

- Browse for the appropriate device design file for the device to be configured
- Click "Open"

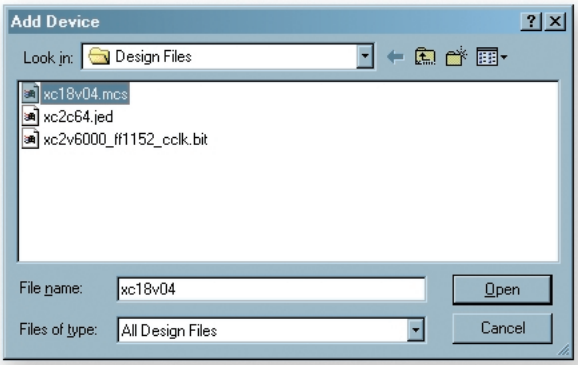
Step 5: Selecting the Program Options

- Invoke the Options->Program Option menu item
- Check all desired options in the Program Options dialog box
- Click "OK"

Step 6: Programming the Device

- Connect the cable if not already connected
- Insert the device
- Power the device
- Invoke the Operations->Program menu item

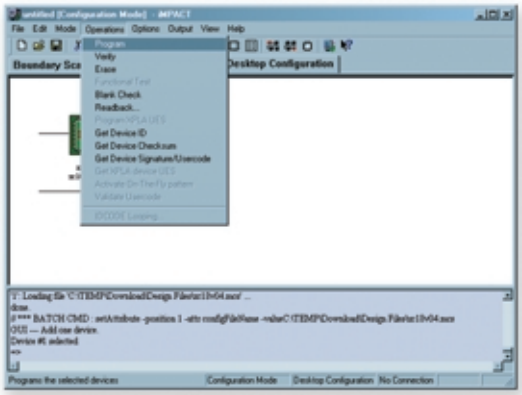
Step 4



Step 5b

Step 5a

Step 6



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