

spi configuration	
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iMPACT

Programming Devices Using Direct SPI

This topic assumes that you have already created a PROM file for Direct SPI programming. PROM files generated for Direct SPI cannot be used for PROM programming in any other configuration mode because of the file formatting. In Direct SPI mode, you can only configure one PROM at a time.

Direct SPI requires that the Xilinx® cable drives the SPI Flash device’s interface pins directly. To accommodate this, your board should be designed with a cable header on the SPI interface signals between the FPGA and the SPI Flash device. A different header is needed for each SPI Flash-FPGA pair on the board. Prior to configuration, you must attach the Xilinx® cable flying leads or ribbon cable header to this SPI Flash header on your board. The Xilinx cable flying leads or ribbon cable header can be tied to directly accesses the SPI Flash pins. The following chart lists supported SPI serial flash manufacturers SPI pin names and flying lead or ribbon cable connections.

Cable Connections to SPI Device Board Header

Cable Connections to SPI Interface	Connections					
Flying Leads Label	TMS/PROG	TD/DIN	TDO/DONE	TCK/CCLK	GND/GND	VREF/VREF
Atmel Flash SPI Interface	/CS_N	SI	SO	SCK	GND	VCC
Numonyx (STMicro) Flash SPI Interface	S_N	D	Q	C	GND	VCC
Winbond Flash SPI Interface	/CS	DI	DO	CLK	GND	VCC

To Program a Device Using Direct SPI

1. Ensure the FPGA’s pins are three-stated and remain so throughout the Direct SPI programming process.
- Note

One way to three-state the FPGA’s pins is by connecting the FPGA’s PROG_B pin to GND for the duration of any Direct SPI operations. The FPGA’s PROG_B pin must be released after programming in order to configure from the SPI serial flash.
2. Double-click **Direct SPI** in the iMPACT Flows panel.
3. Right-click in the Direct SPI window and select **Add SPI Device**.
4. In the Add Device dialog box, select a PROM file and click **Open**.
5. In the Select Device Part Name dialog box, select a **Part Name** and click **OK**.
6. In the [Device Programming Properties dialog box](#), set programming properties and click **OK**.
- Note

It is recommended that you set the **Verify** and **Erase Before Programming** properties.
7. After verifying the FPGA pins are three-stated, select the device, then right-click and select **Program**.

The device is programmed and a message appears telling you whether or not programming was successful.

See Also

- [Programming Multiple Devices](#)
- [Verifying a Device](#)
- [Erasing a Device](#)
- [Performing Blank Checks](#)
- [Performing Readback](#)
- [Getting the Device Checksum](#)
- [Setting Programming Properties](#)
- [Assigning a New Configuration File](#)