Novoptel

Firmware Update using XILINX Impact

Revision history

Version	Date	Remarks	Author
0.9.0	02.08.2016	Draft version	B. Koch

Contents

Summary

This document describes the firmware update of Novoptel instruments using XILINX Platform Cable USB II and XILINX Impact.

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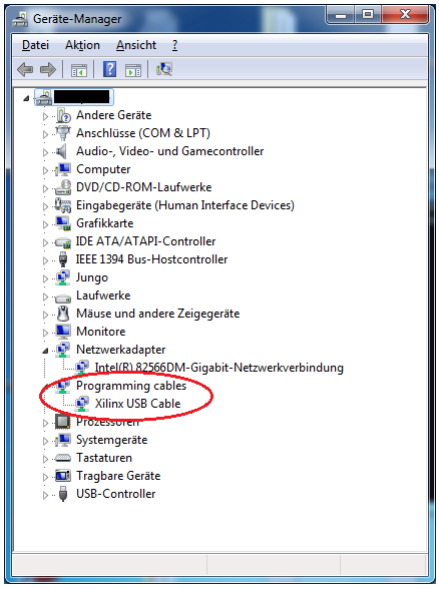
I. Connect the XILINX programmer to the PC

Fig. 1: XILINX Platform Cable USB II

Use a USB cable to connect the programmer box to the PC. Windows should automatically detect the hardware and install the driver.

II. Verify the XILINX cable driver

If the driver is installed correctly, the LED on the programmer box will glow in orange color. The programmer device should appear in the Windows device manager.



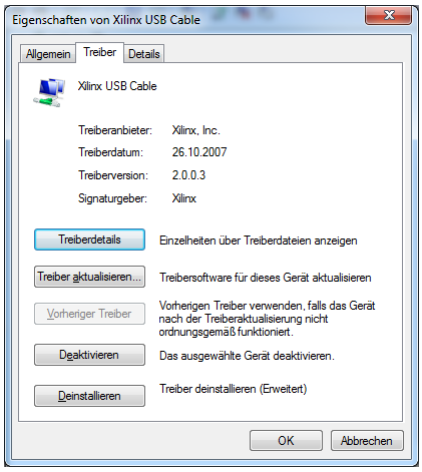


Fig. 2: Windows device manager

The driver version can be verified in the device properties.

III. Connect the XILINX programmer to the Novoptel device

Use the flat ribbon cable to connect the XILINX programmer to the JTAG socket at the rear side of the Novoptel device. Power the Novoptel device. If the connection is correct, the LED on the programmer box will glow in color green as soon as the Novoptel device is powered.

IV. Open XILINX Impact

If the programmer box is connected to a powered Novoptel device, XILINX Impact should be able to automatically detect the programmer.

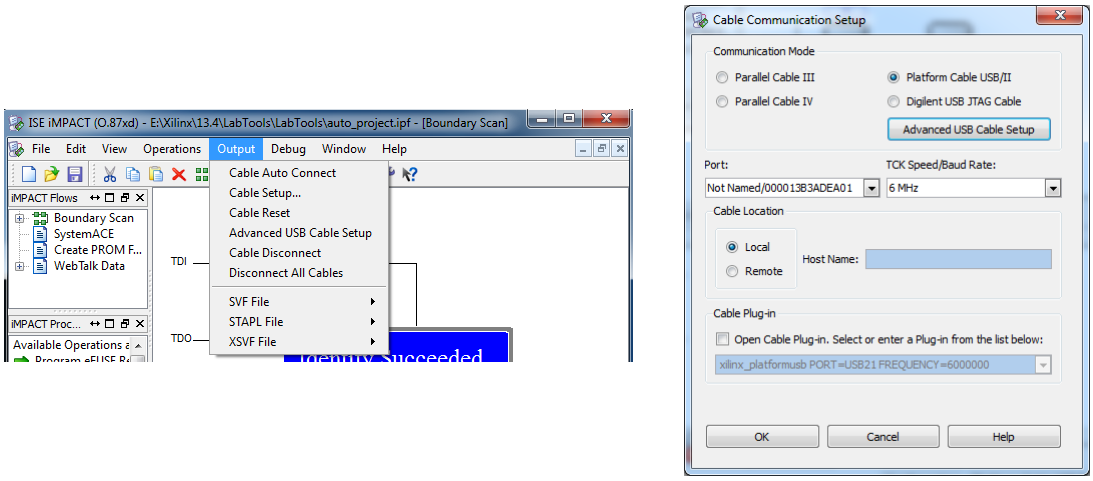


Fig. 3: Cable setup in XILINX Impact

Create a new project in XILINX Impact. If the programmer is not detected by XILINX Impact, check the configuration setup by opening the “Cable Setup…” in the menu bar. If the programmer is detected, Impact should automatically initialize the JTAG chain. If not, select “File”->”Initialize Chain” in the menu bar.

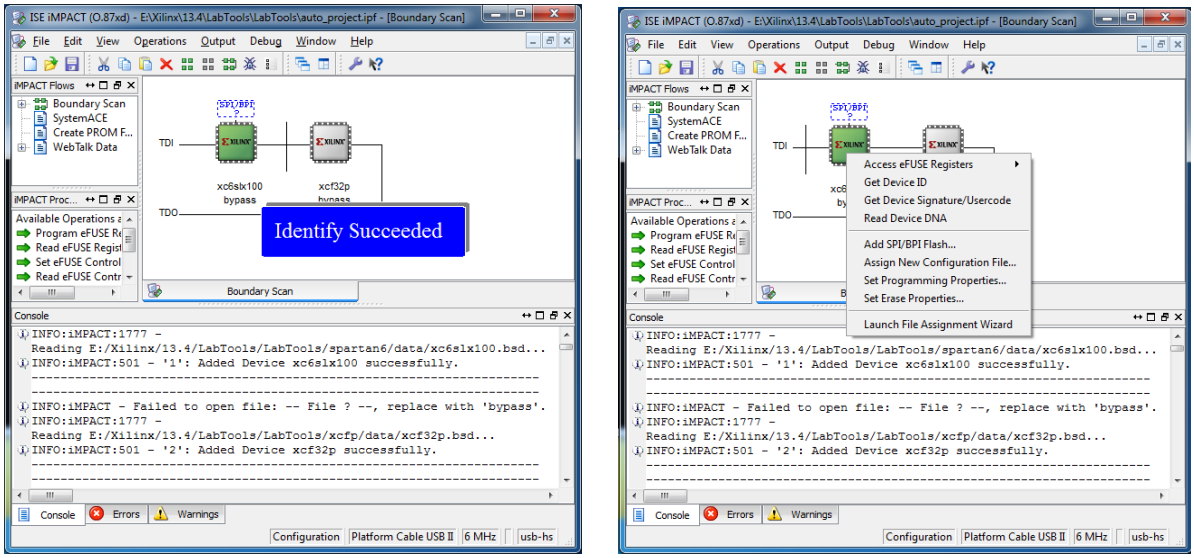


Fig. 4: Correct JTAG chain in XILINX Impact

If the JTAG chain is initialized correctly, two devices should be accessible. An FPGA (e.g. xc6sxl100) and a flash memory (e.g. xcf32p). The FPGA can be programmed using a .bit file to test new firmwares without overwriting the old one until you cycle the power. The flash memory can be programmed with a .mcs file to permanently upgrade the firmware. The .bit and .mcs files are provided by Novoptel upon request. Right-click on a device and select “Assign New Configuration File…” to assign a file.

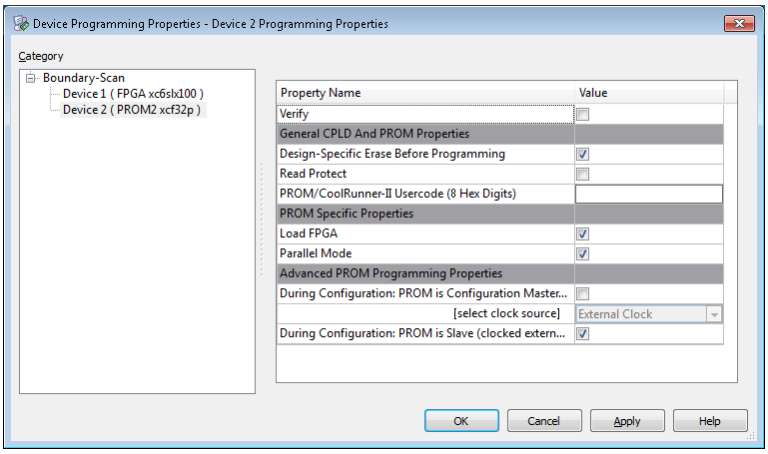


Fig. 5: Programming properties

Before programming the .mcs file, verify the programming properties. Right-click on the flash memory and select “Set Programming Properties…”. It is important that the menu item “Design-Specific Erase Before Programming” is activated, see Fig. 5. Finally the programming is started by right-clicking the device and selecting “Program”.