# **TEBF0808 CPLD Firmware**

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## **CPLD** Access

- 1. Connect MiniUSB cable to J28 XMOD (XMOD2 label)
- 2. Set TEBF0808 DIP Switch S4-3 in ON position
- 3. Power ON the board (ATX Power or external 12V)
- Run "Lattice Diamond Programmer"
- 5. Select "Create new project from JTAG chain" and press "OK"
- 6. Select Port: FTUSB-1
  - After scan 2 MachXO2 devices should be detected in chain
- 7. Select "LCMXO2-1200HC" as "Device" for both columns.
- 8. In first column click to "File Name" and then to "...". Select "SCM\_\*.jed" file (Master CPLD File).
- 9. In second column click to "File Name" and then to "...". Select "SCS\_\*.jed" file (SlaveCPLD File).
- 10. Run "Design"->"Program" from main menu
- 11. Wait operations to complete

## Available CPLD Firmware

- TEBF0808 CPLD Firmware description with different Variants for PCB REV03/04 and newer
  - Default delivered Firmware (SCM\_07A\_default.jed/SCS\_07A\_default.jed)
  - Power Down Disabled (SCM\_07B\_powerdown\_disabled.jed/SCS\_07B\_powerdown\_disabled.jed) -can be used to power on with main power supply, if Jumper is add to J10-6 and J10-8 instead of Enclosure Button
  - MicroSD Boot Disabled (SCM\_07C\_msdboot\_disabled.jed/SCS\_07C\_msdboot\_disabled.jed) -for designs where microSD should not change the boot mode.
  - o It's recommended to update always both CPLDs together

#### **Download**

- TEBF0808/<PCB Revision>/Firmware/
  - Use files from the subfolders of your PCB revision

# General instructions

# **CPLD Firmware Update - General Requirements**

- Lattice Diamond or Lattice Diamond Programmer is available for free on http://www.latticesemi.com/
- Lattice compatible JTAG Programmer, for example:
  - Trenz TE0790 or Carrier with FTDI for JTAG
  - o Most JTAG programmer, which used FTDI Chip to translate USB to JTAG
    - Digilent FTDI based programmer are not compatible with Lattice.

- JTAG must be connected to CPLD JTAG
- JTAG Enable Pin of CPLD must be selectable and set to VDD
- Correct CPLD Firmware (JED-File) from Trenz Electronic Download

# **CPLD Firmware Update - General Procedure**

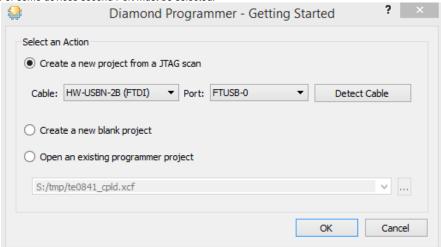
#### Important:

- Connect only one JTAG device to host PC.
- Close all other JTAG programs, like Xilinx tools (on WinOS check hw\_server.exe is terminated).

#### Procedure:

- 1. Enable CPLD JTAG access (See JTAG section on CPLD Firmware description)
- 2. Connect JTAG
- 3. Power on System
- 4. Open Lattice Diamond Programmer
- 5. Detect Cable and click "Ok"

For some devices second Port must be selected:



- Select Device (See CPLD Firmware overview description).
  In the most cases select the correct detected device one time (it's yellow at first on the menue)
- 7. Select correct Firmware from Download Area (JED File)
- 8. Program CPLD:
- 9. Disable CPLD JTAG access (See JTAG section on CPLD Firmware description)
- 10. Restart System

More Information are available on the CPLD Firmware description and on the readme.txt included into the download zip.