

# TE0790 CPLD Firmware

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## Available CPLD Firmware

- [TE0790 CPLD - XMOD Standard](#) - Firmware description for the most TE PCBs
  - [Default delivered Firmware](#)
- [TE0790 CPLD - XMOD Standard\\_RXTXSWAP](#) - Firmware description with UART RX/TX swapped
- [TE0790 CPLD - XMOD DIP40](#) -Firmware description used with TE0722

Go to the [.../REV0x/Firmware](#) folder to download files.

## TE0790 CPLD Access

Set DIP S2-1 to OFF. It's recommended to disconnect XMOD from Carrier and use power supply from USB (set DIP S2-4 to ON), see [TE0790 TRM DIP-switch Section](#).

## Download

- [TE0790/<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
  - 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

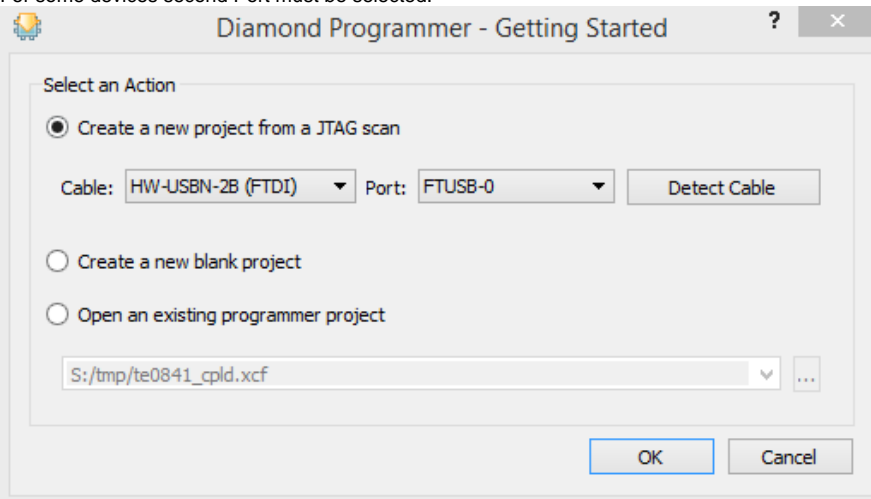
**Important:**


- 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:



6. 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 menu)
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.