

TEF1002 CPLD Firmware

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Available CPLD Firmware

- [TEF1002 SC CPLD MAX10](#) - Firmware description
 - Default delivered Firmware

CPLD Access

1. Set JTAGEN dip switch S2-4 ON
2. Connect signals: TCK, TDO, TMS, TDI, Ref. I/O-voltage (3.3V), GND to your quartus compatibel programmer, e.g. use ARRow USB Programmer2 TEI0004.
3. Connect 12V to 6pin PCIe ATX connector J15 to power up board

General instructions

MAX 10 Firmware Update - General Requirements

- Quartus Prime software, available for free (lite version) on <https://www.intel.de/>
- [Arrow USB Programmer Driver](#)
- Quartus compatible JTAG programmer, for example:
 - TEI0004 - Arrow USB Programmer2 or carrier board with FTDI for JTAG
 - Other JTAG Programmer compatible with Quartus Programmer
- JTAG must be connected to FPGA JTAG
- Correct Firmware (*.pof file) from Download area

MAX 10 Firmware Update - General Procedure

Important:

- Connect only one JTAG device to host PC.
- Close all other JTAG programs.

Procedure:

1. **Enable FPGA JTAG access** (see JTAG section on Firmware description)
2. Connect JTAG
3. Power on system
4. Open Quartus Prime
5. Open Quartus Programmer from top menu: *Tools Programmer*
6. Select from Programmer top menu: *Edit Hardware Setup*
7. Select via the drop down menu: Arrow-USB-Blaster [USB0] (Installation of [Arrow USB Programmer](#) needed) and close the window
8. Click *Add File...*

9. Select correct Firmware from Download area and press *Open*
10. Click *Start* to program the device

Programmer - [Chain1.cdf]*

File Edit View Processing Tools Window Help

Search Intel FPGA

Hardware Setup... Arrow-USB-Blaster [USB0] Mode: JTAG Progress:

☐ Enable real-time ISP to allow background programming when available

File	Device	Checksum	Usercode	Program/ Configure	Verify	Blank- Check	Examine	Security Bit	Erase	ISP CLAMP	IPS File	EKP File
S:/firmware.pof	10M08SAU169	01DE4027	005BEA2C	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
CFM0				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
UFM				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Start Stop Auto Detect Delete Add File... Change File... Save File Add Device... Up Down

Diagram showing TDI (Test Data In) and TDO (Test Data Out) connections to the device 10M08SAU169.

More information are available on the Firmware description.