

Programming FPGA Flash on MKR Vidor 4000 – rev draft 1 – John W.

The following is a procedure to program the FLASH device that is on the MKR Vidor 4000 board that programs the Intel Cyclone LP 10 FPGA.

You will need a USB-Blaster connected via J11 on the MKR Vidor 4000 for this procedure to work.

This procedure uses the latest release of the Quartus Prime Lite tools (currently version 18.1); and the MKR 4000 Graphics Lite build/project.

The project should be built and the *.sof file should be available in the ../output_files directory. There are instructions on github for building the FPGA projects should that be something that needs to be done.

On the File menu → open the Convert Programming Files Directory:

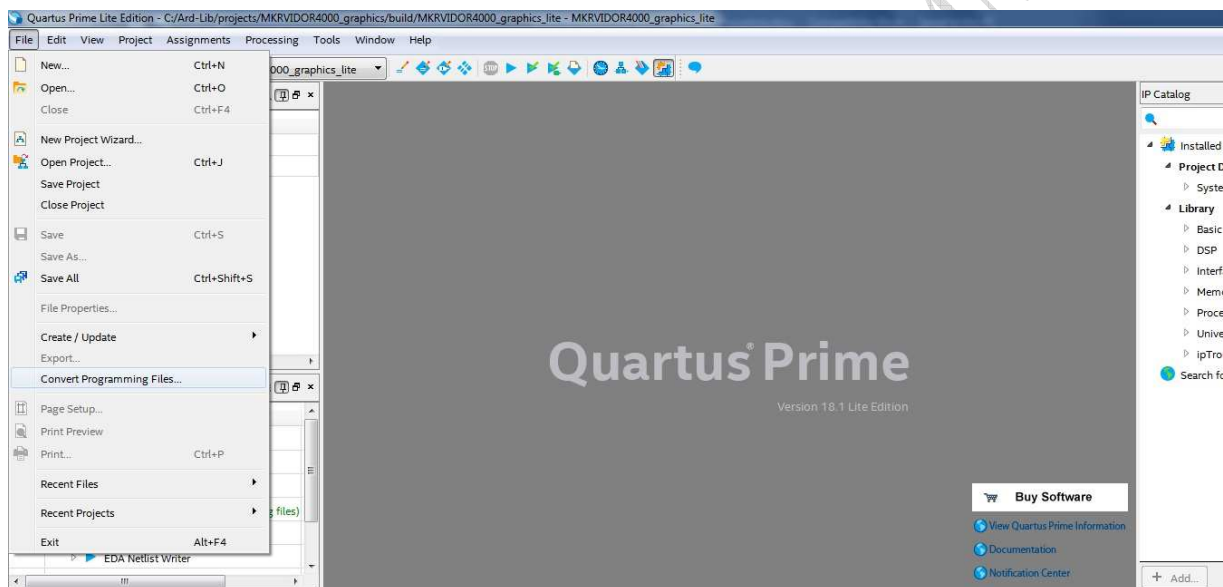


Fig. 1

Under Output Programming File, under Programming File Type, select JTAG Indirect Configuration File (*.jic).

For configuration device, select EPCQ16A – that's compatible with the FLASH device that's installed on the MKR4K (W25Q16DVSNIG).

In input files to convert – select the programming file (*.sof) that was generated from the Quartus build – in this case that's the MKRVIDOR4000_graphics_lite.sof file.

For FLASH Loader – add device Cyclone 10 LP - 10CL016Y.

The selections should look like the following figure:

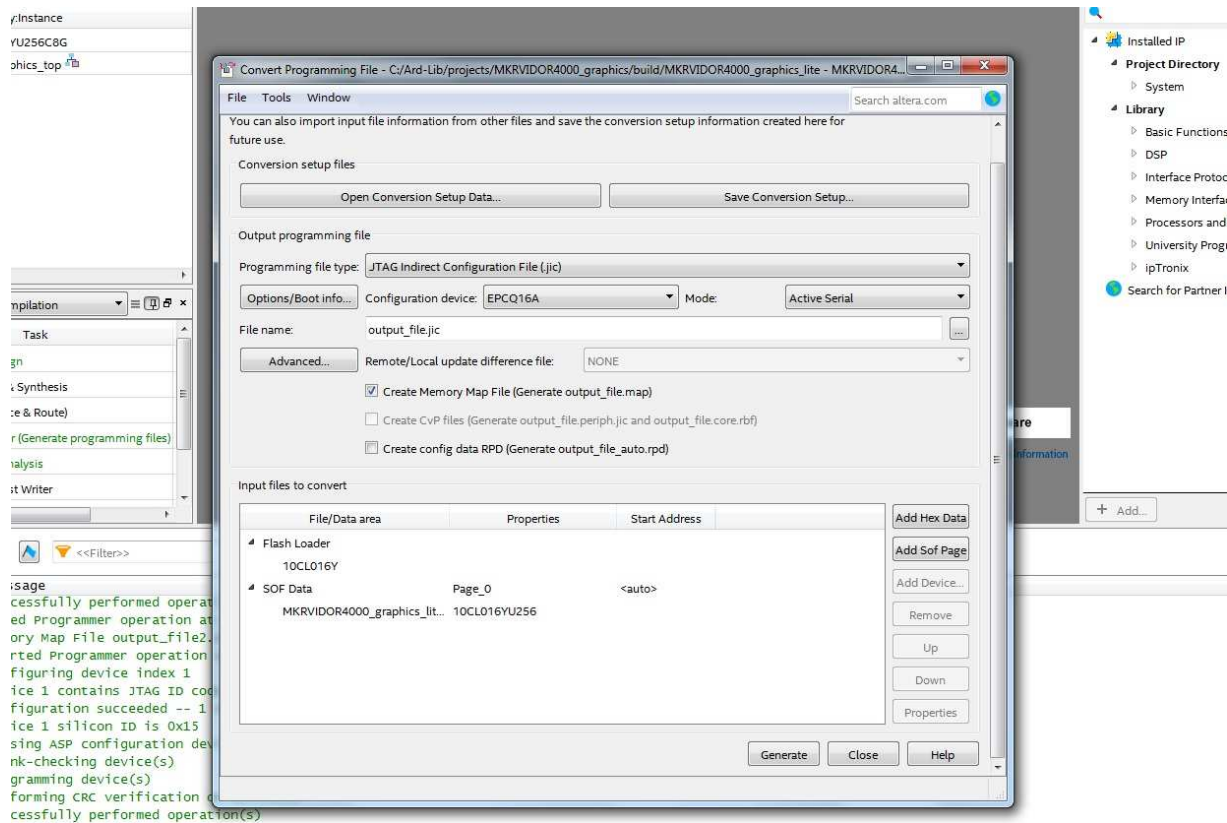


Fig. 2

Click Generate to make the *.jic file.

Open the Programming Window by going to Tools -> Programmer

Make sure the *.jic file that was generated was loaded.

Programming FPGA Flash on MKR Vidor 4000 – rev draft 1 – John W.

The screen should look like the following figure:

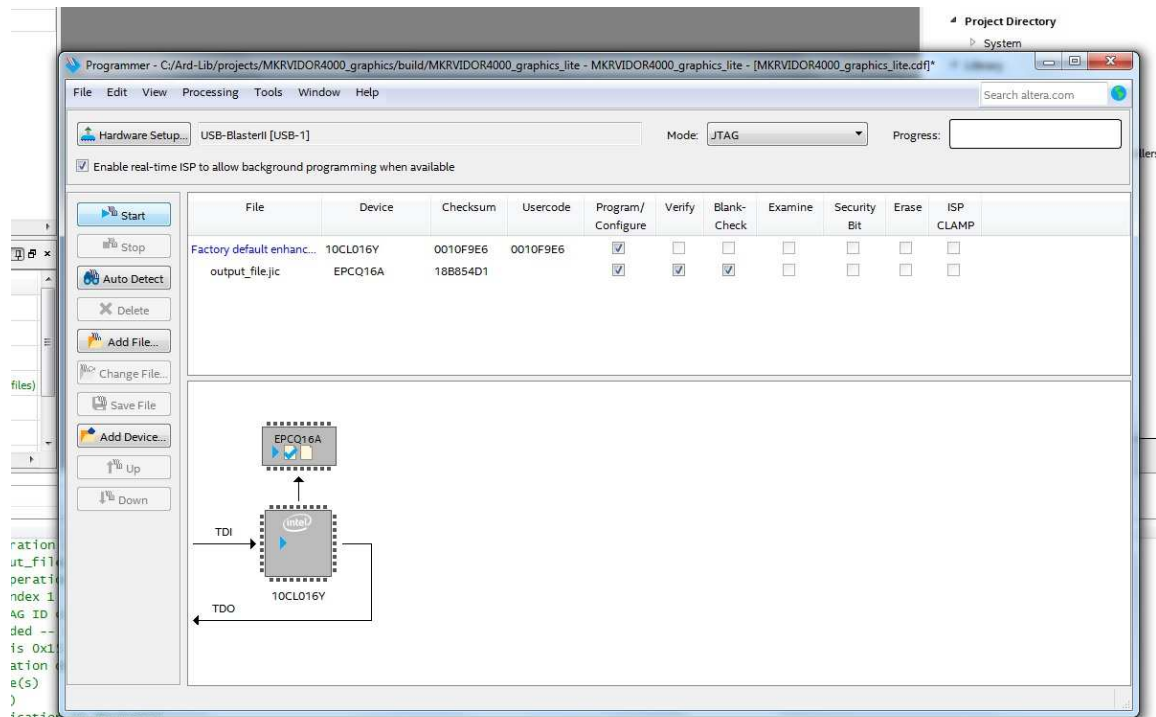


Fig. 3

Press start and the FLASH should be programmed.

Programming FPGA Flash on MKR Vidor 4000 – rev draft 1 – John W.

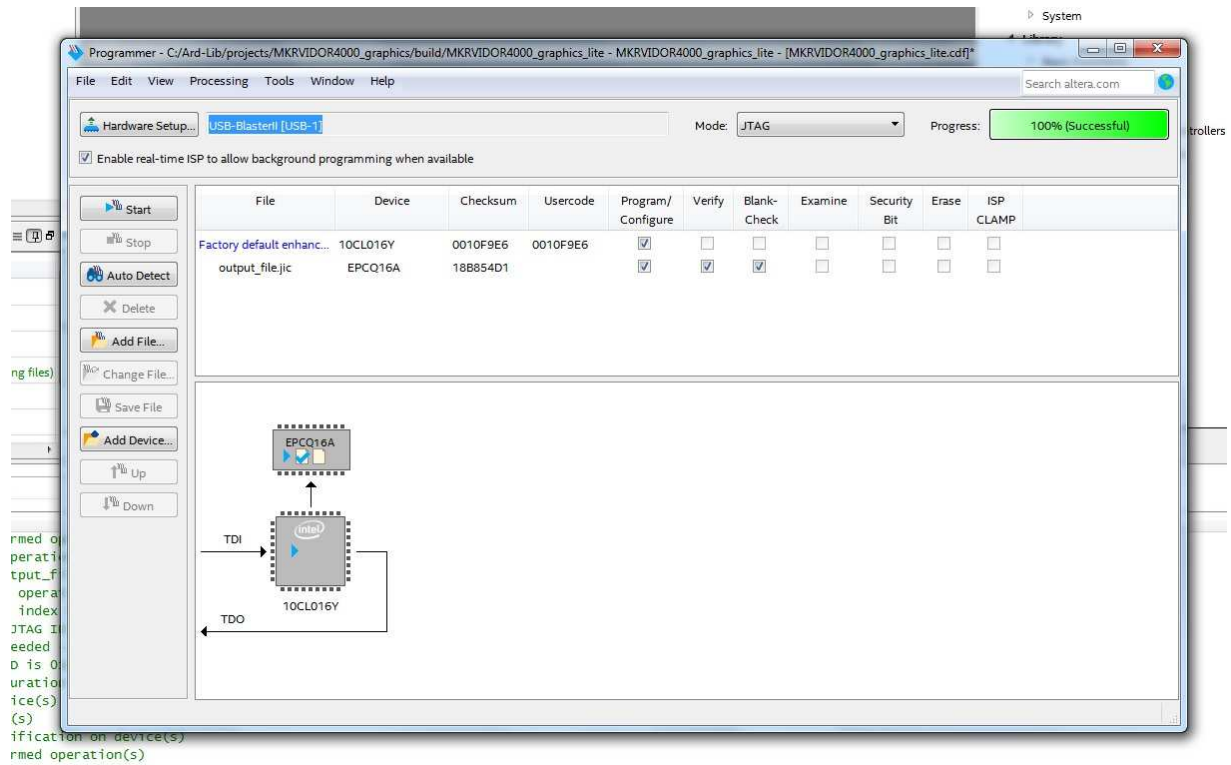


Fig. 4

Figure 4 shows an example of successfully programming the on-board FLASH.