# How to download an Example File

1. Open the Example Project File

After receiving the development board, you can try to use the supporting routines in the CD to familiarize yourself with the related operations. Download the routine to try it out to build up a basic intuitive feel.

Opening an existing FPGA project is very simple: copy the example project in the supporting CD to the hard disk, unzip it, and put it in the English directory without spaces.
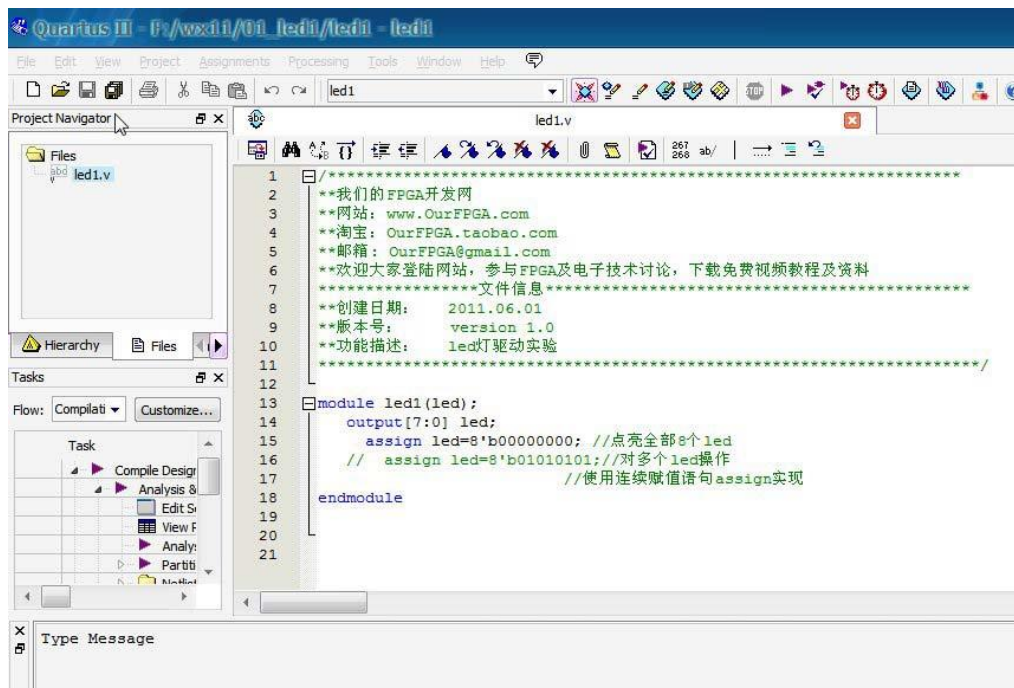
Open the Quartus II 11.0 software, select "Open Project" in the menu File
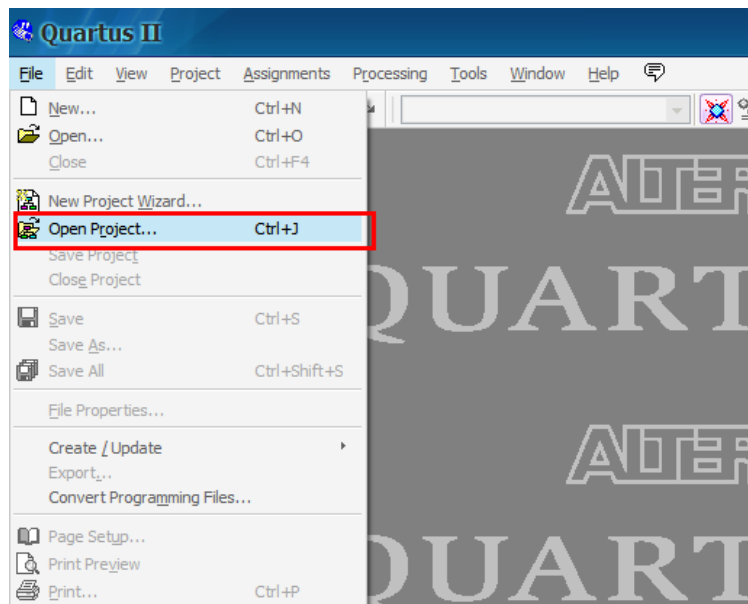
Find the example project package and open 01_led1
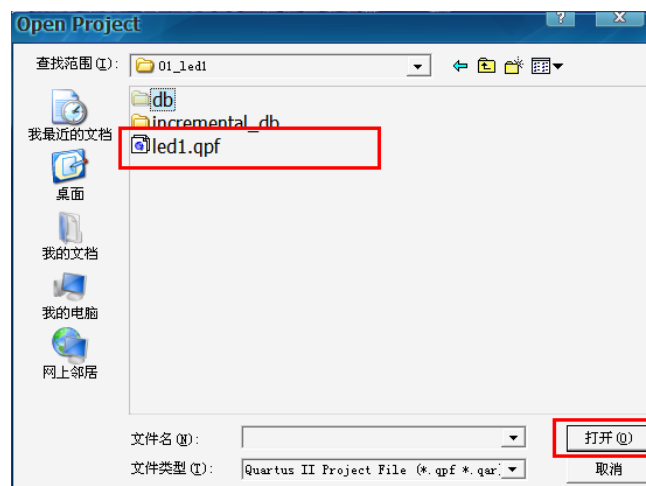
After opening the project file, as shown in the following figure:

2. Download SOF file with JTAG

The SOF file is downloaded by the JTAG port, and it is lost after power-off after downloading. It is mainly used in the process of program debugging. It is usually used for learning and this mode. Downloading is also very simple, click the programming selection on the toolbar, as shown in the red box in the following figure:
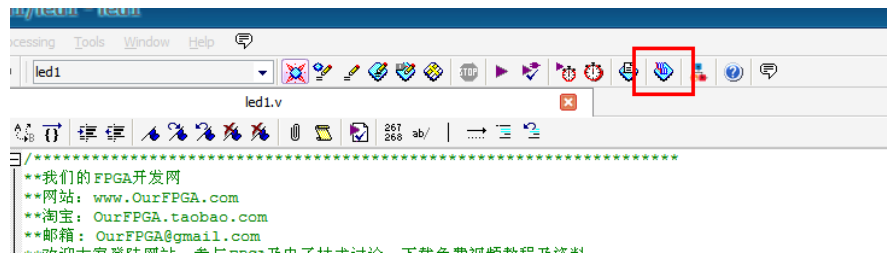
Click "Hardware Setup" as shown in the figure below, and then select the download hardware as: "USB blaster."
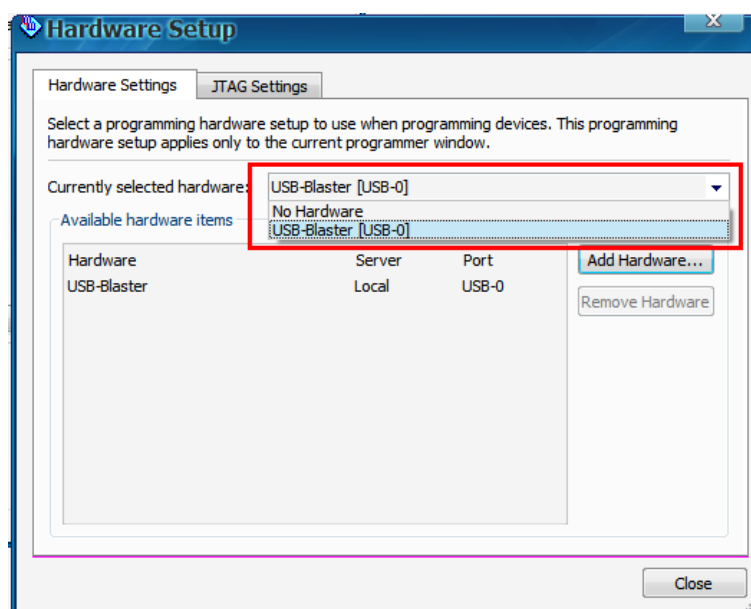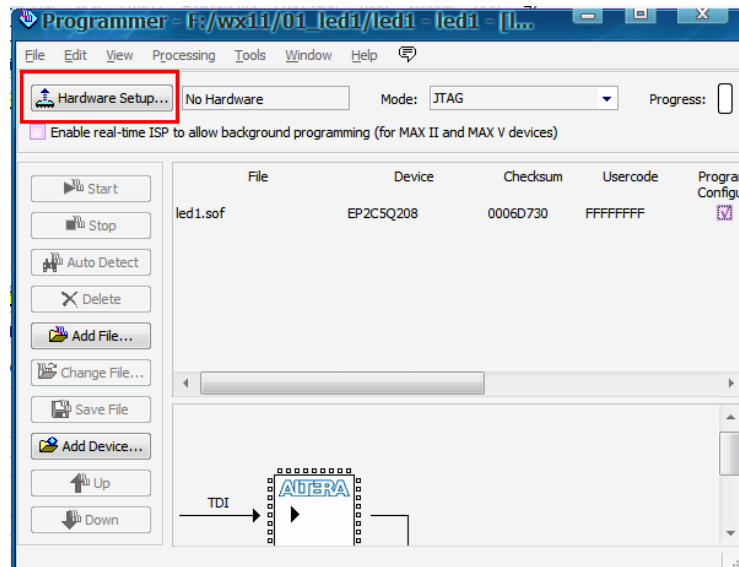
After closing, go back to the programming window, pay attention to the selection of each red box in the figure below
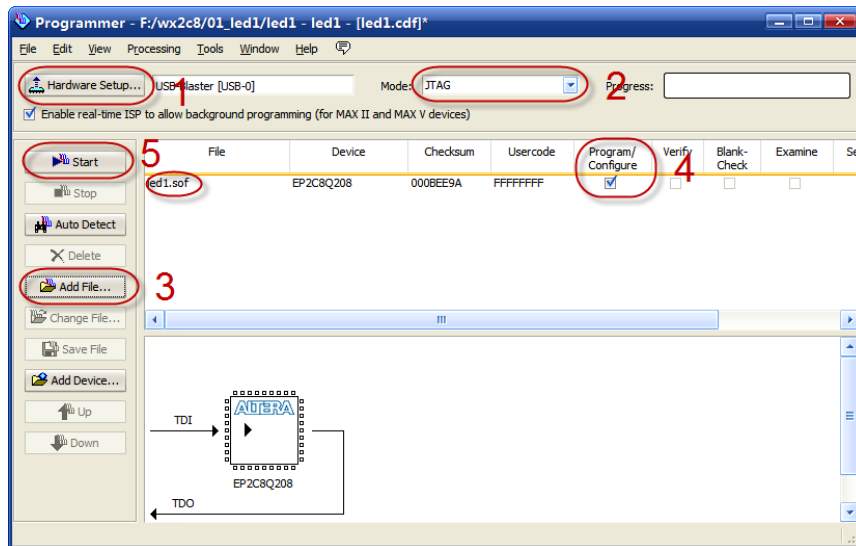
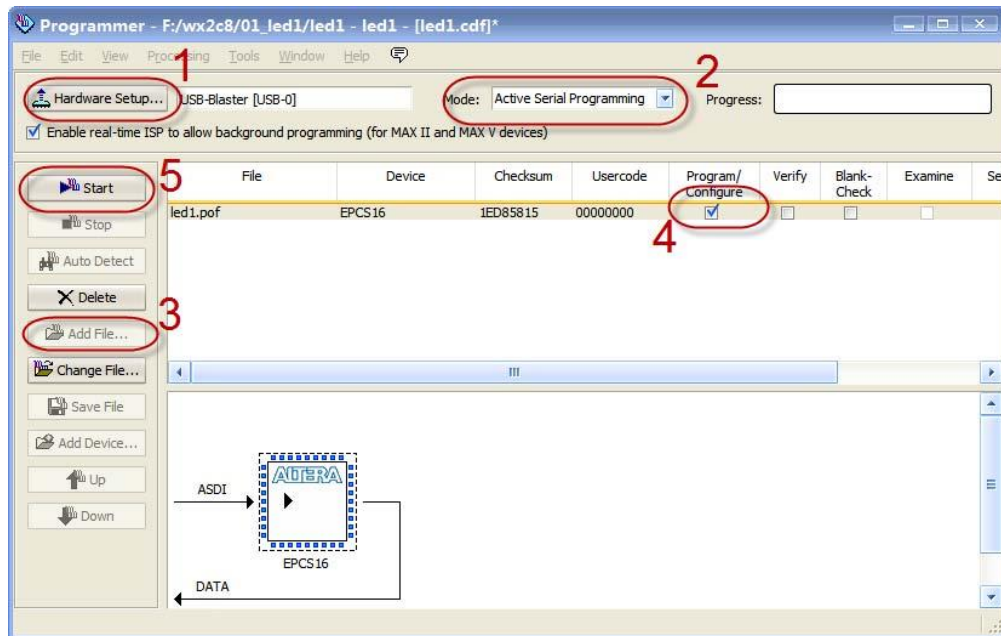The key points in the picture above are marked with red boxes and numbered 1, 2, 3, 4, and 5 as follows:

1. Select the downloader hardware device, which has been set before;
2. Select the download mode JTAG, and connect the USB blaster download cable to the JTAG port of the development board
3. Select the download file, click Add File, and add the .sof file
4. Program/Configure hit √
5. Click Start to download

Click "Start" to download. The configuration indicator on the development board will flash once, and then the program will start running, and 8 LEDs will light up simultaneously.

3. Download and configure the EPCS chip with AS

AS download is a firmware program. You can use this mode when the code is finalized and you want to permanently upload it in the circuit not to be lost after power failure. The FPGA development board has been strictly tested before leaving the factory. The final test step is generally to program the running water lamp example program. After receiving the power on the development board, you will see the running water lamp effect. You can program your own or erase it.

The specific download method is shown in the following figure:

The key points in the picture above are marked with red boxes and numbered 1, 2, 3, 4, and 5 as follows:

1. Select the downloader hardware device
1. Select the download mode AS, and connect the USB blaster download cable to the AS port of the development board
2. Select the download file, click ADD File, and add the .pof file
3. Program/Configure hit √.
4. Click Start to download

Note: After AS is downloaded, some downloaders need to turn off the power of the development board first, unplug the downloader from the AS port, and power on the development board again to run. Some downloaders also run after the download is complete.