

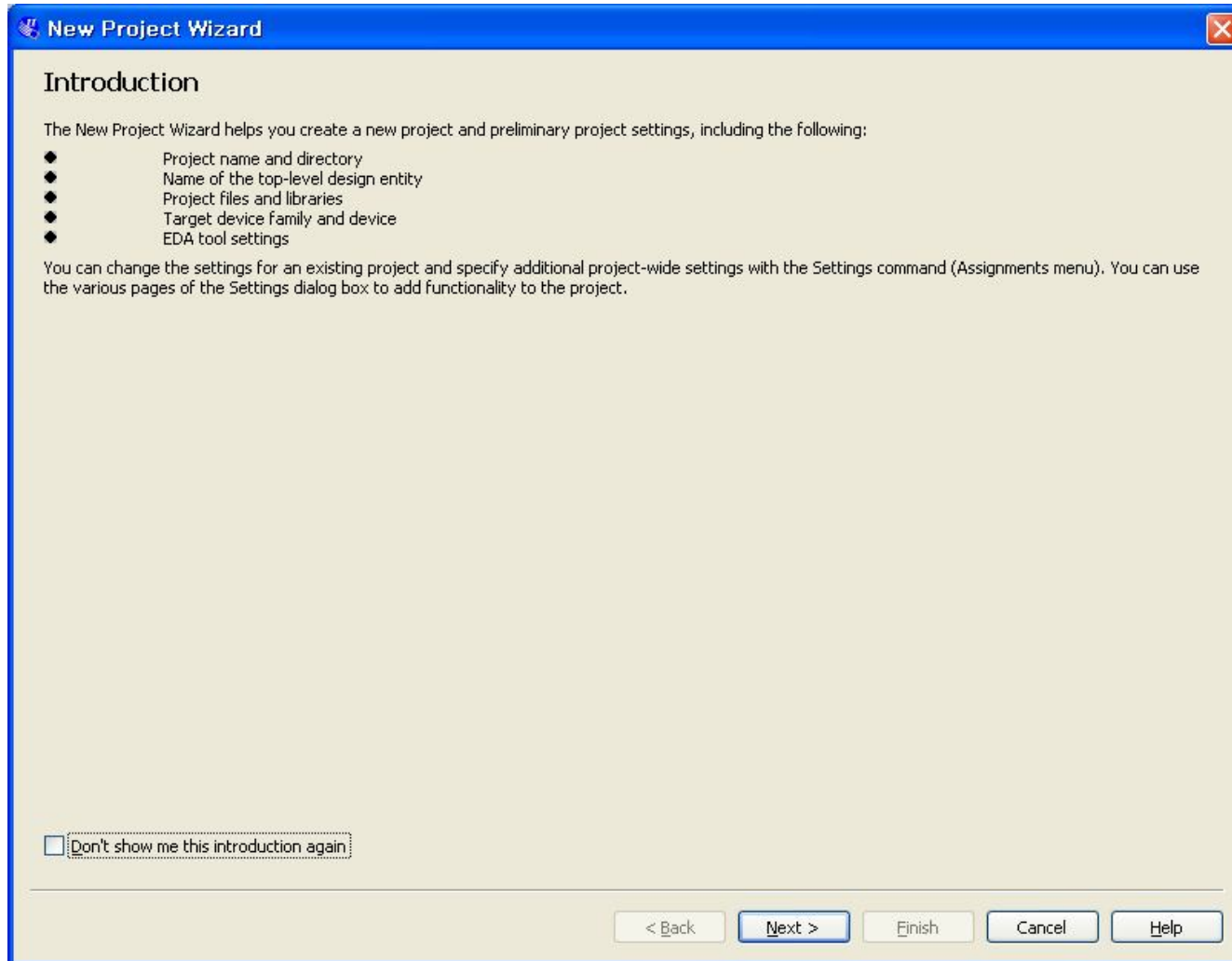
Quartus II Webedition V11.0 (Build 208) 컴파일러 사용법 및 다운로드

Altera Cyclone EP1C6Q240C8N 을 이용한
FPGA개발키트(FB-CY6-DEV) 사용

(주)뉴티씨(NEWTC) 류대우
davidryu@newtc.co.kr

FPGA개발을 위한 프로젝트 생성하기

STEP 1-1.



FPGA개발을 위한 프로젝트 생성하기 STEP 1-2.

New Project Wizard

Directory, Name, Top-Level Entity [page 1 of 5]

What is the working directory for this project?

C:/fpga_exam/example_lab/Lab01/testled ...

What is the name of this project?

test_led ...

What is the name of the top-level design entity for this project? This name is case sensitive and must exactly match the entity name in the design file.

test_led ...

Use Existing Project Settings...

< Back Next > Finish Cancel Help

FPGA개발을 위한 프로젝트 생성하기

STEP 2.

New Project Wizard

Add Files [page 2 of 5]

Select the design files you want to include in the project. Click Add All to add all design files in the project directory to the project.
 Note: you can always add design files to the project later.

File name: ...

File Name	Type	Library	Design Entry/Synthesis Tool	HDL Version

Specify the path names of any non-default libraries.

FPGA개발을 위한 프로젝트 생성하기 STEP 3.

New Project Wizard

Family & Device Settings [page 3 of 5]

Select the family and device you want to target for compilation.

Device Family

Family: Cyclone

Devices: All

Target device

☐ Auto device selected by the Fitter

☒ Specific device selected in 'Available devices' list

☐ Other: n/a

Show in 'Available devices' list

Package: PQFP

Pin count: 240

Speed grade: 8

☒ Show advanced devices

☐ HardCopy compatible only

Available devices:

Name	Core Voltage	LEs	Memory Bits	PLL
EP1C6Q240C8	1.5V	5980	92160	2
EP1C12Q240C8	1.5V	12060	239616	2

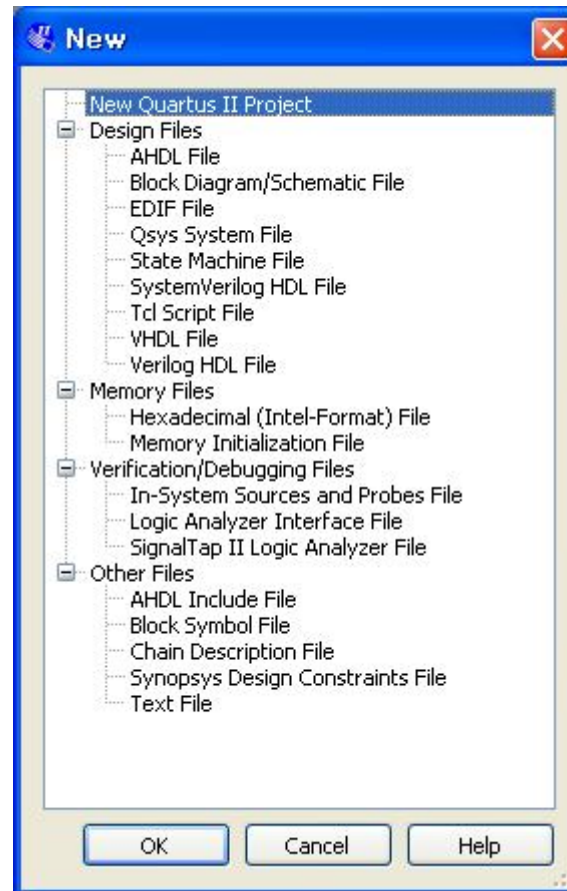
Companion device

HardCopy:

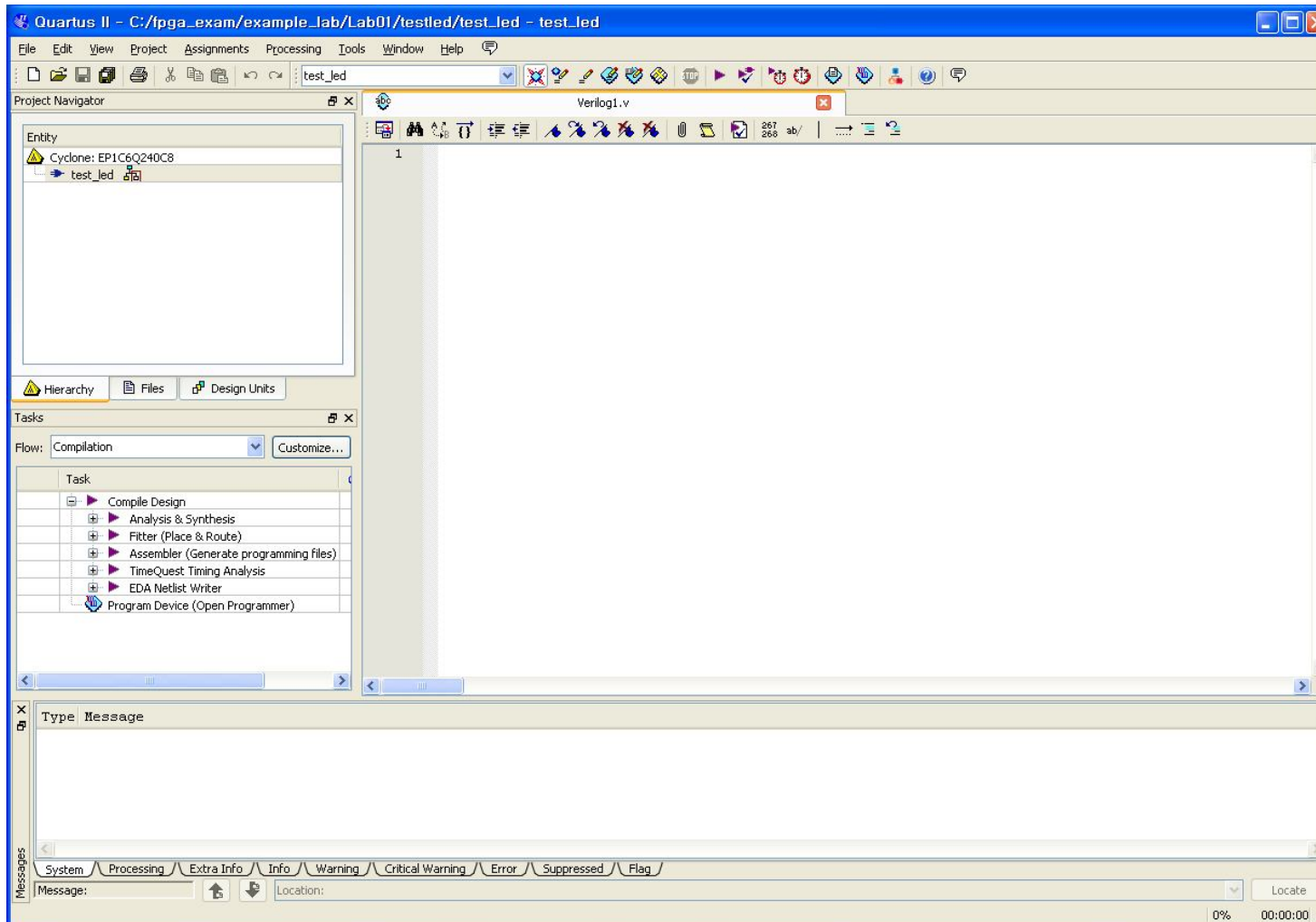
☐ Limit DSP & RAM to HardCopy device resources

< Back Next > Finish Cancel Help

FPGA개발을 위한 프로젝트 생성하기 STEP 4.



FPGA개발을 위한 프로젝트 생성하기 STEP 5.



FPGA개발을 위한 프로젝트 생성하기

STEP 6-1. Write source and save it!

```
module test_led (clk, reset, module_led);
```

```
input          clk, reset;  
output         module_led;
```

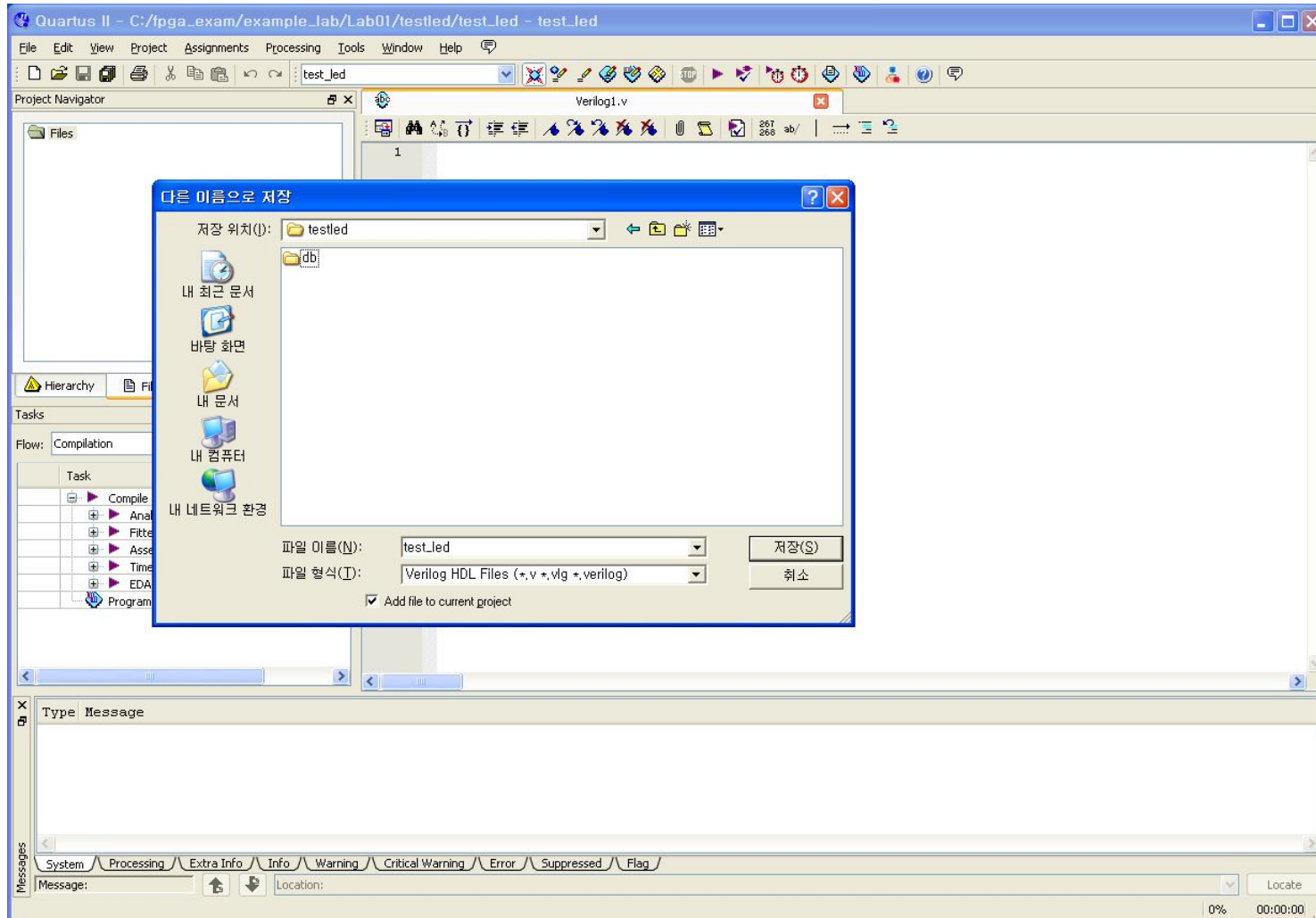
```
wire          module_led;  
reg [31:0] counter;
```

```
always @(posedge clk)  
    if(!reset)  
        counter <= 0;  
    else  
        counter <= counter + 1;
```

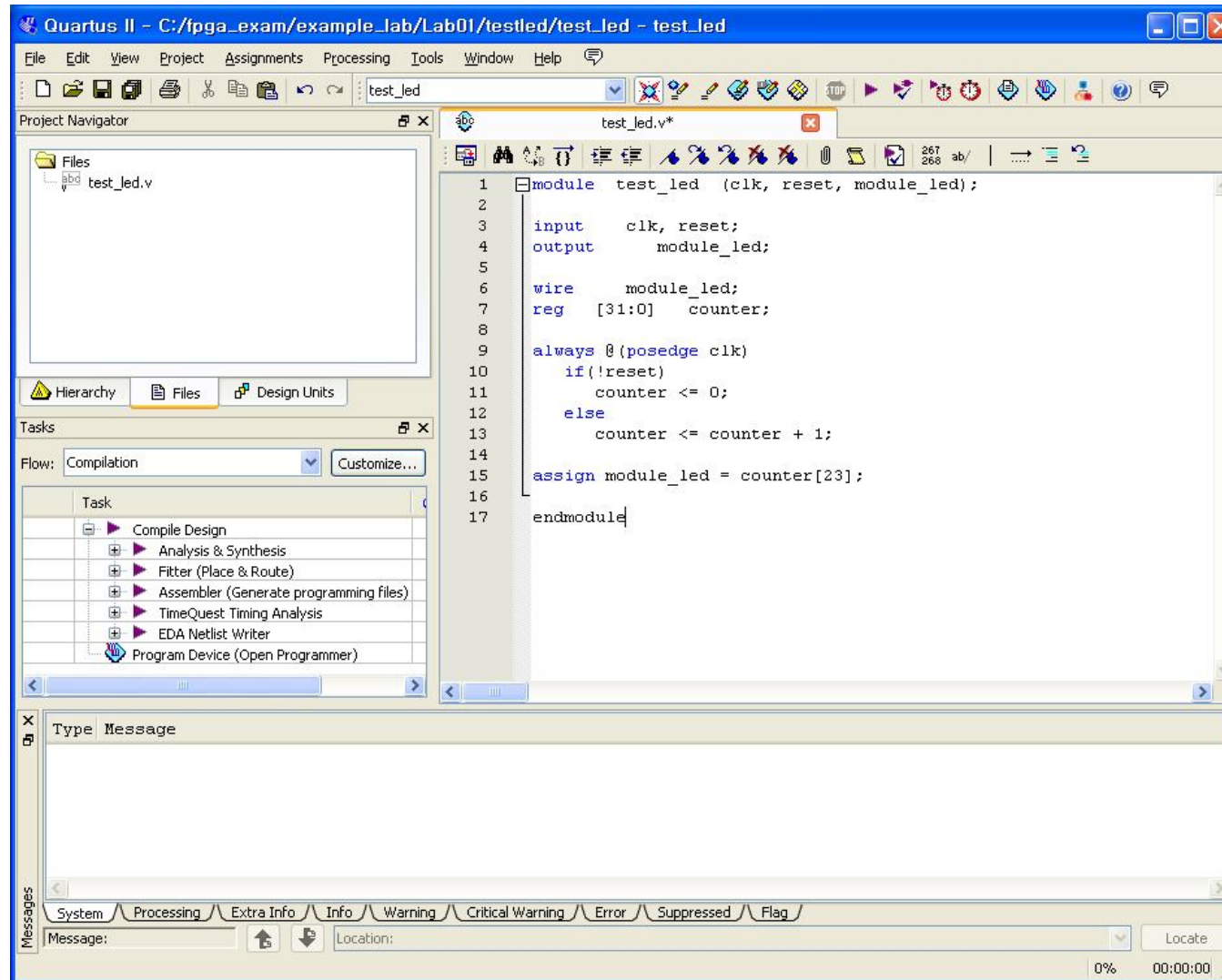
```
assign module_led = counter[23];
```

```
endmodule
```

FPGA개발을 위한 프로젝트 생성하기 STEP 6-2.

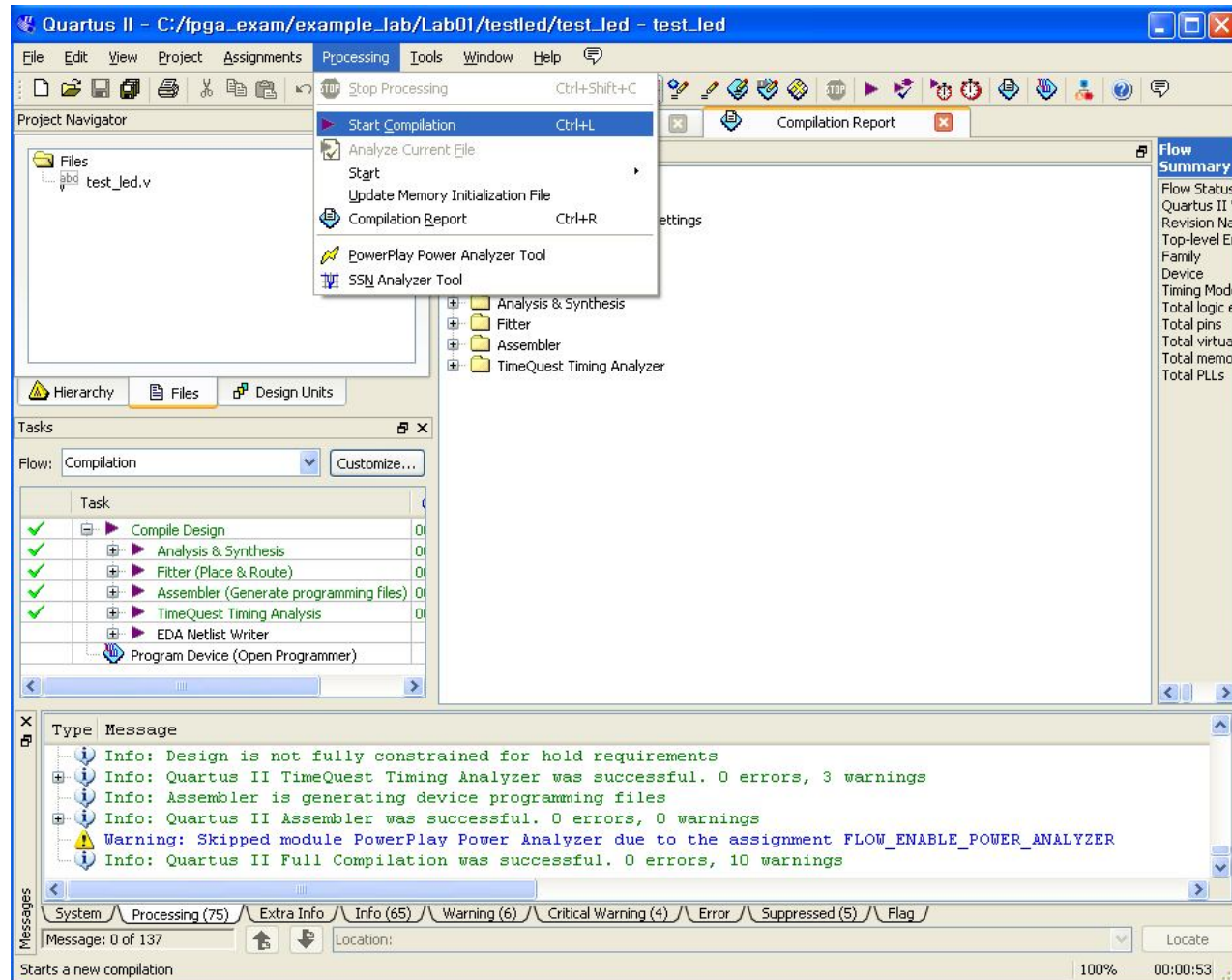


FPGA개발을 위한 프로젝트 생성하기 STEP 6-3.



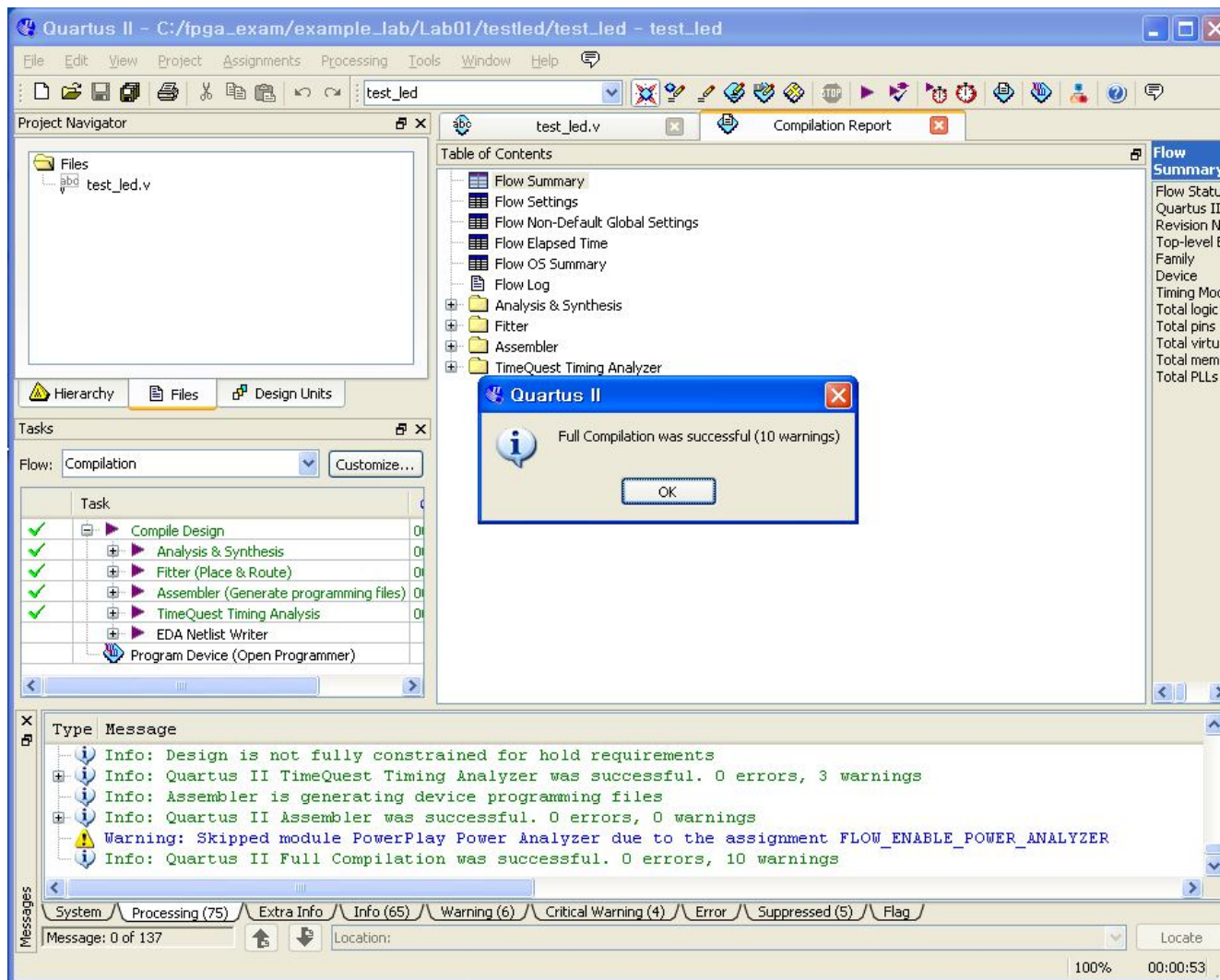
FPGA개발을 위한 프로젝트 생성하기

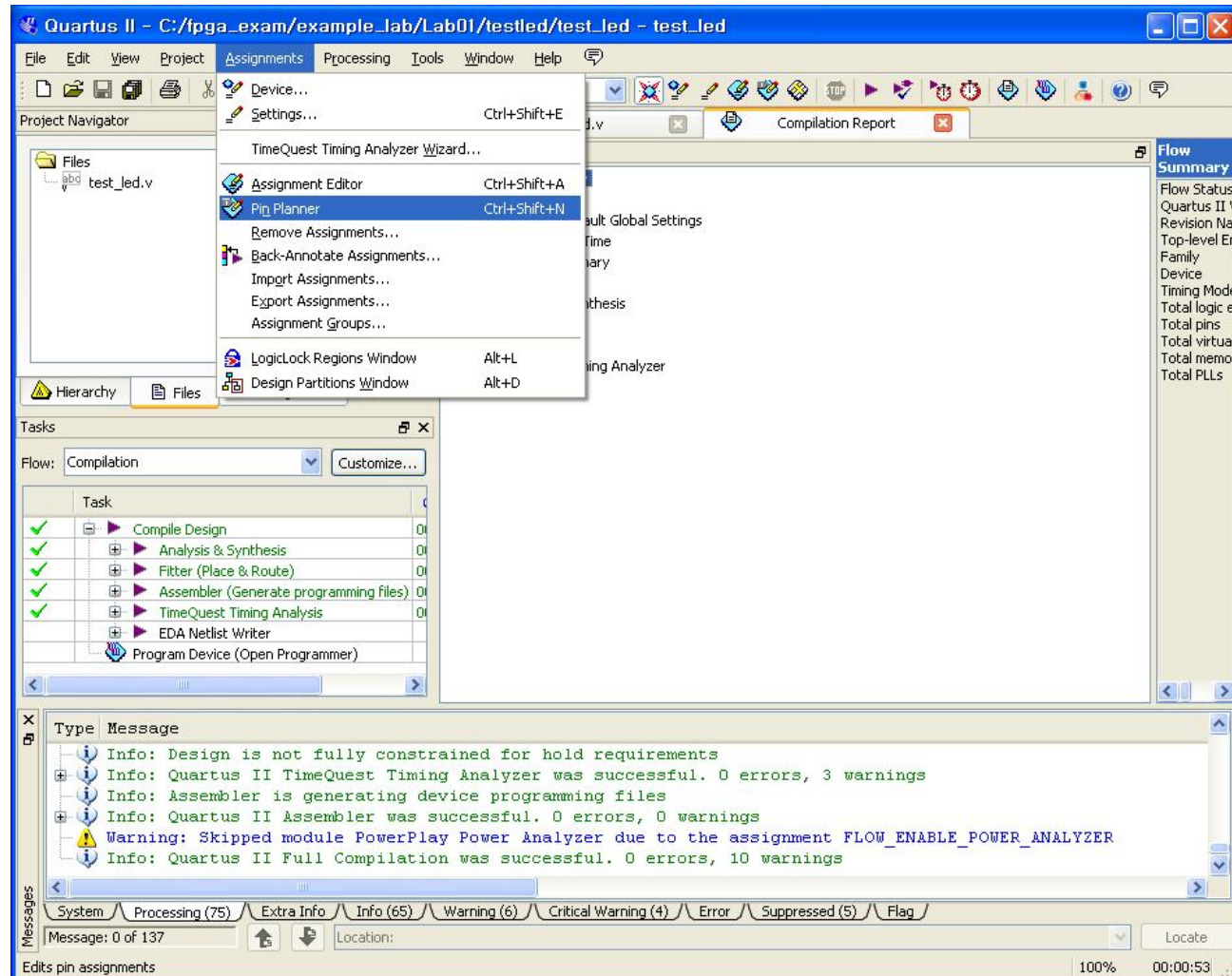
STEP 6-4.



FPGA개발을 위한 프로젝트 생성하기

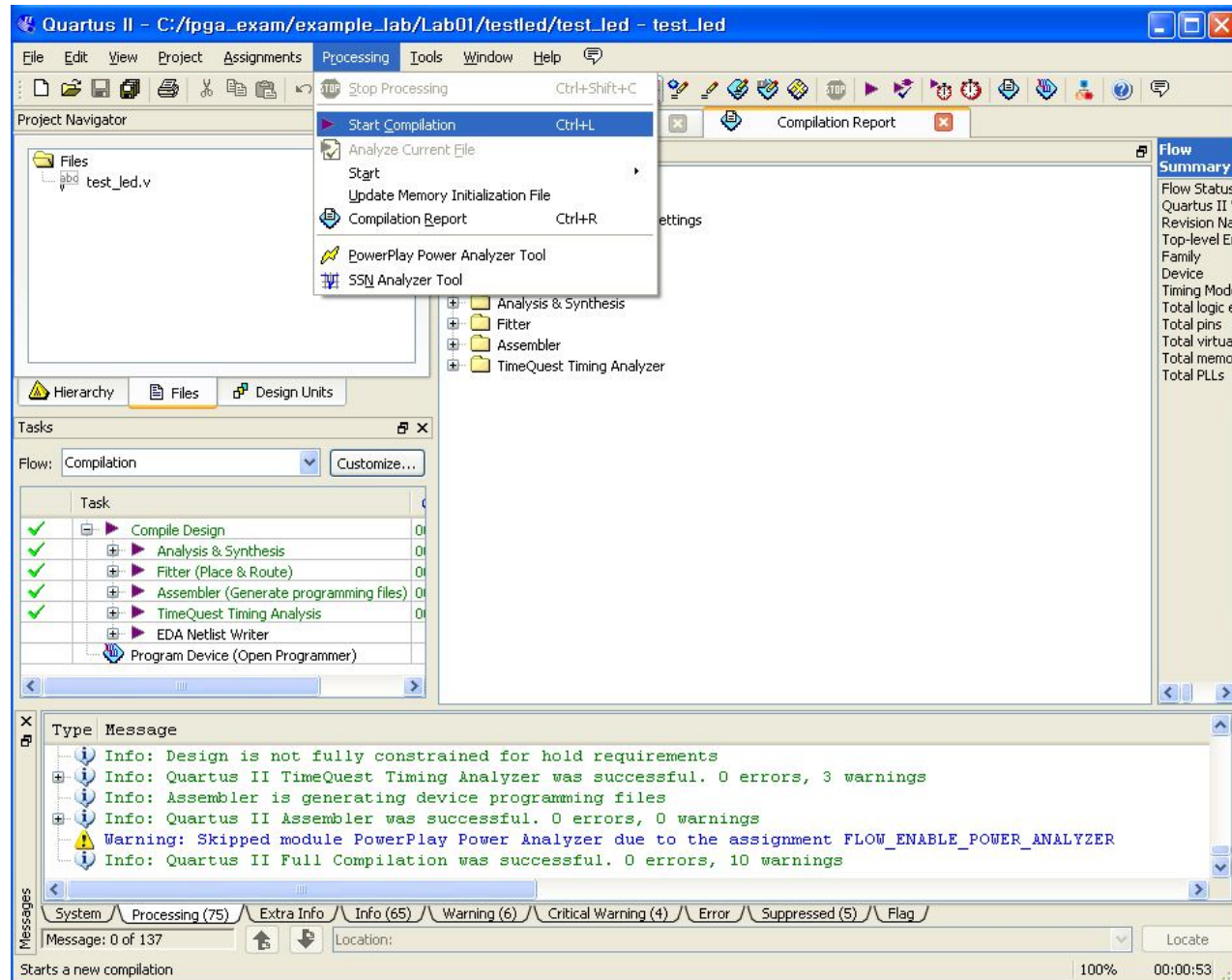
STEP 7. No error message after Compile





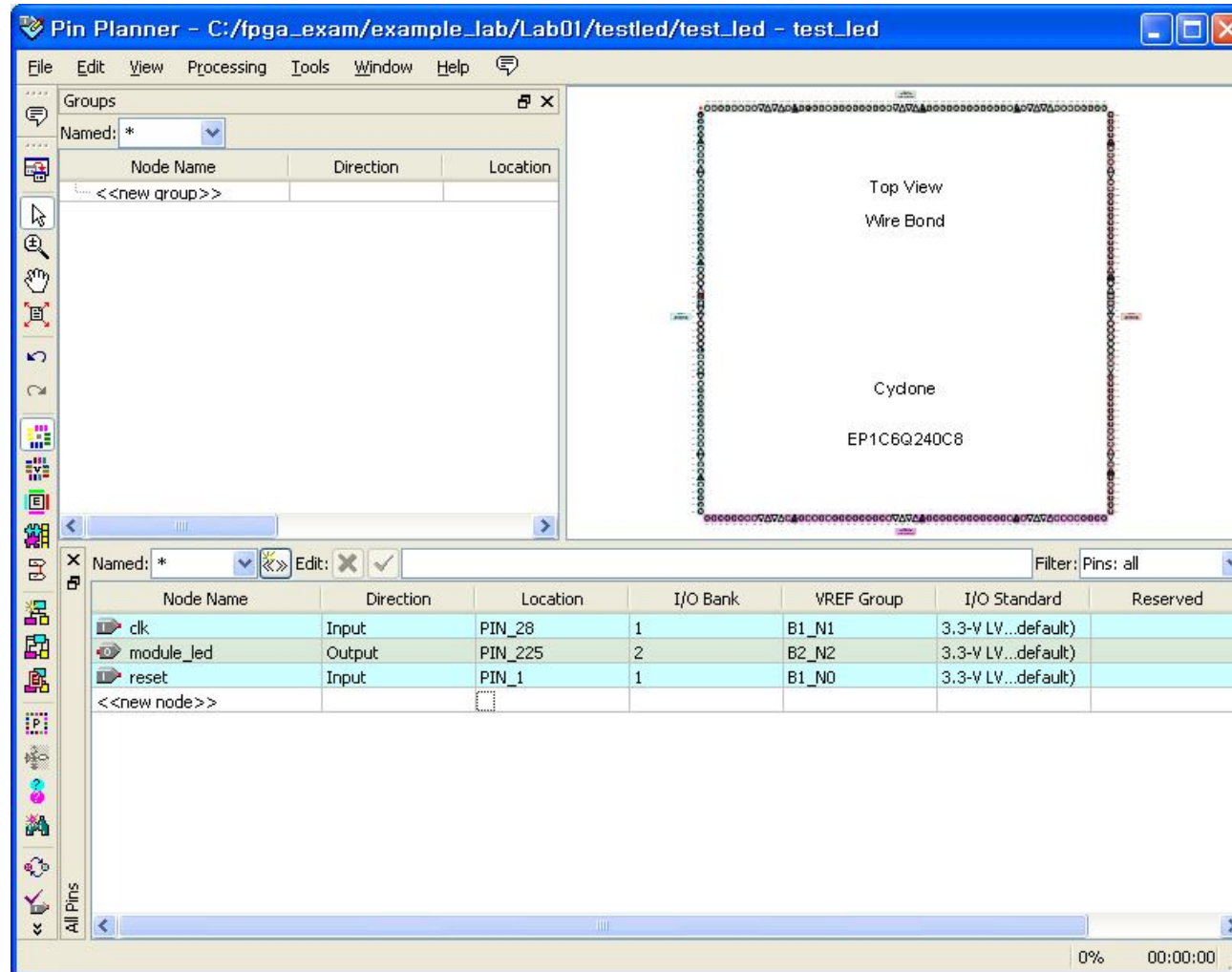
FPGA개발을 위한 프로젝트 생성하기

STEP 8-1. Pin assignments



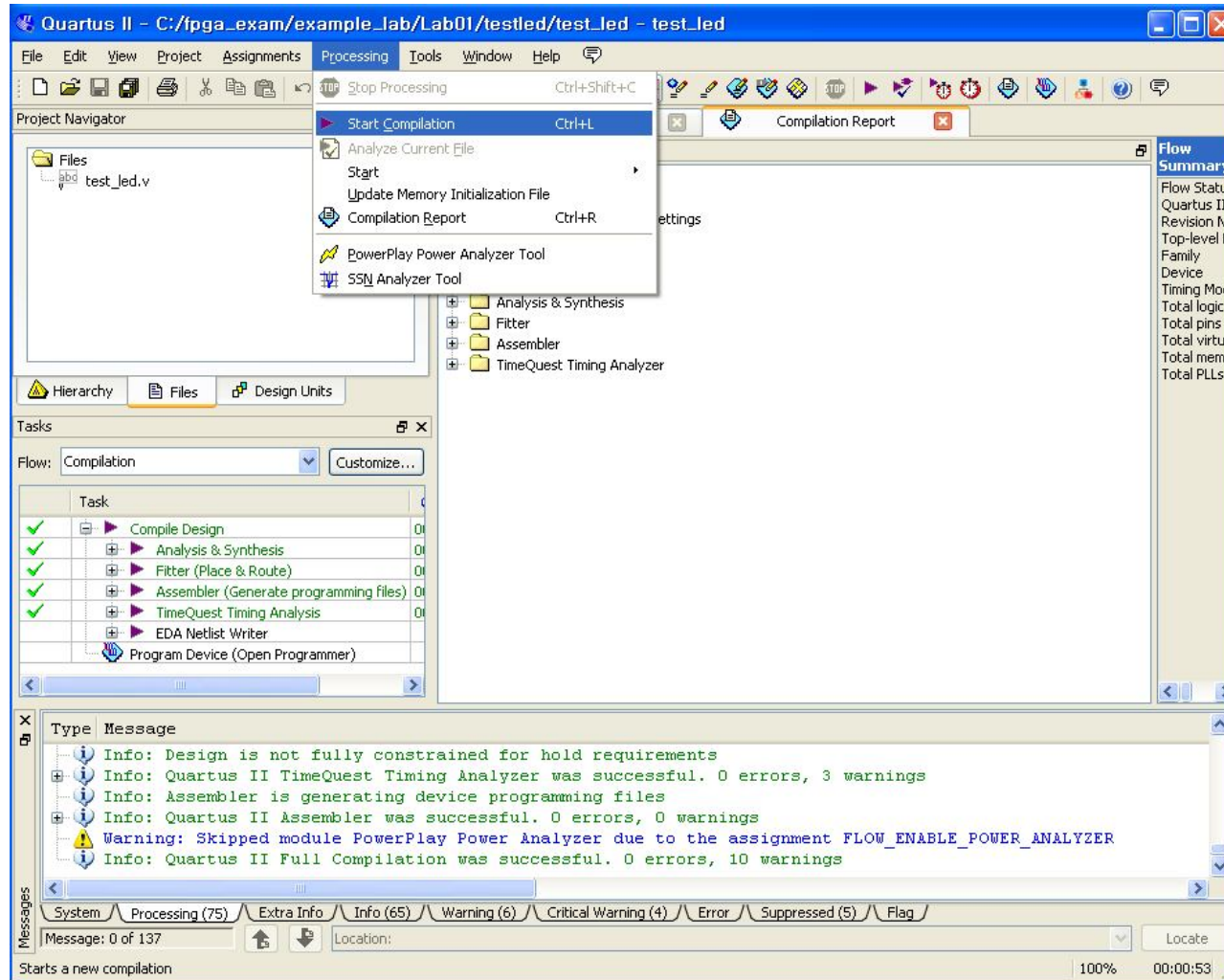
FPGA개발을 위한 프로젝트 생성하기

STEP 8-2. Pin assignments



FPGA개발을 위한 프로젝트 생성하기

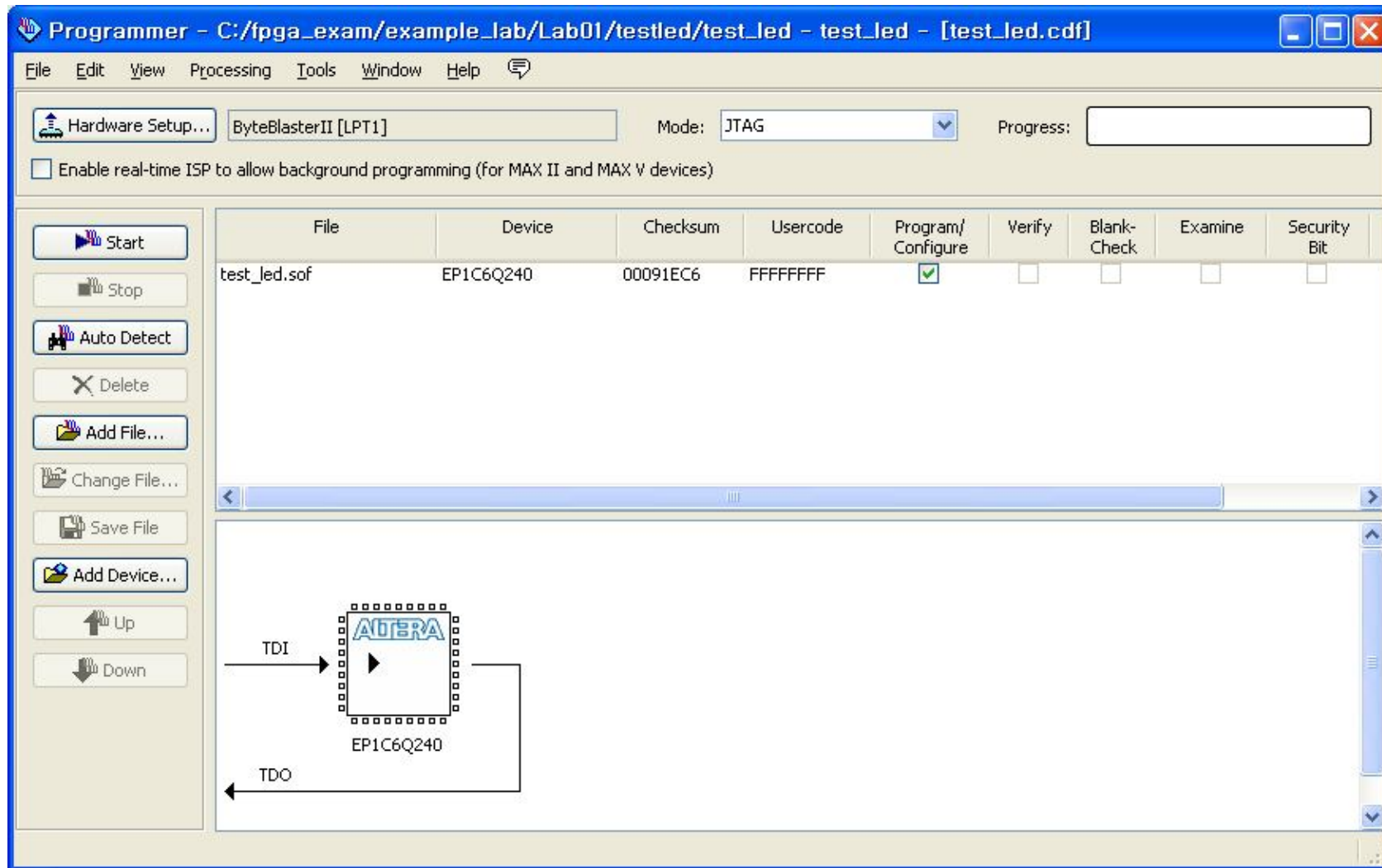
STEP 9-1. 재컴파일





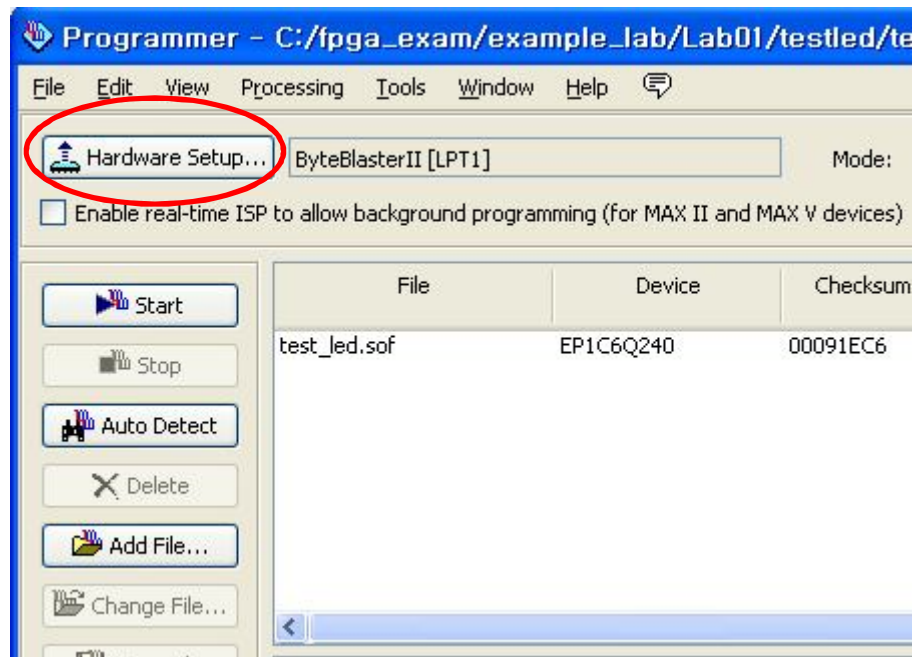


JTAG을 이용하여 다운로드하기 STEP 2.



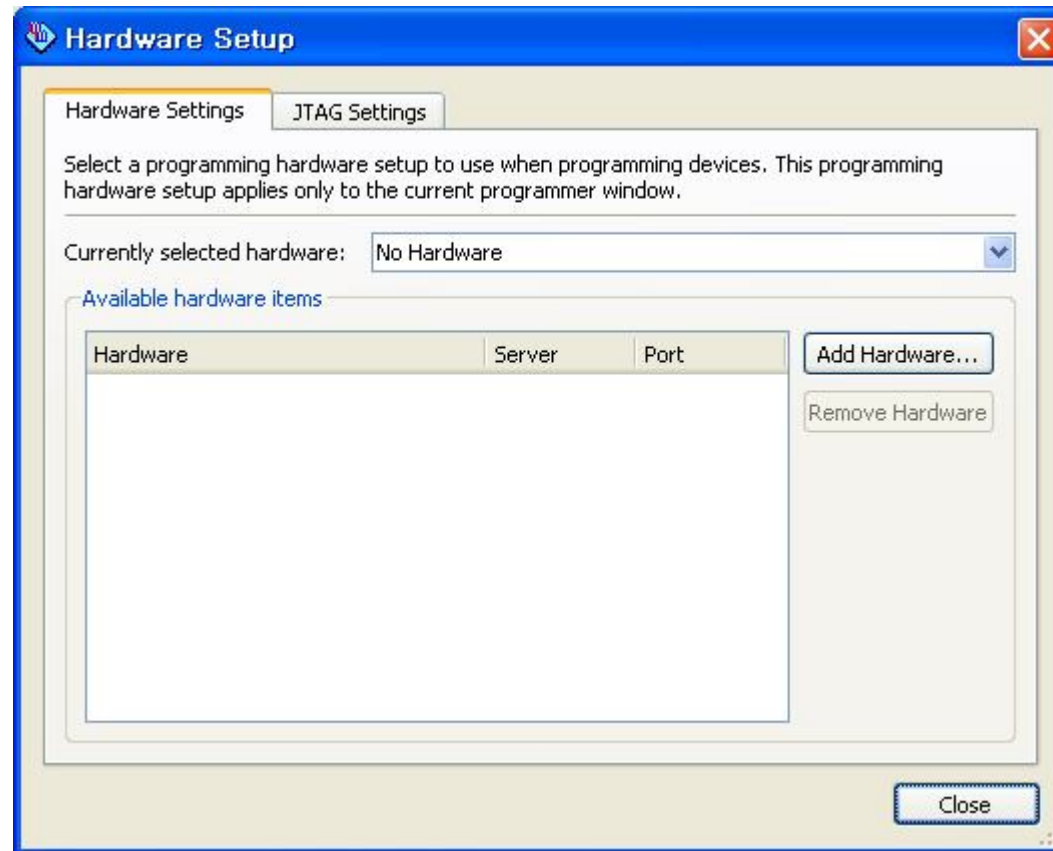
JTAG을 이용하여 다운로드하기

STEP 3-1. 하드웨어가 자동으로 잡혔을 경우

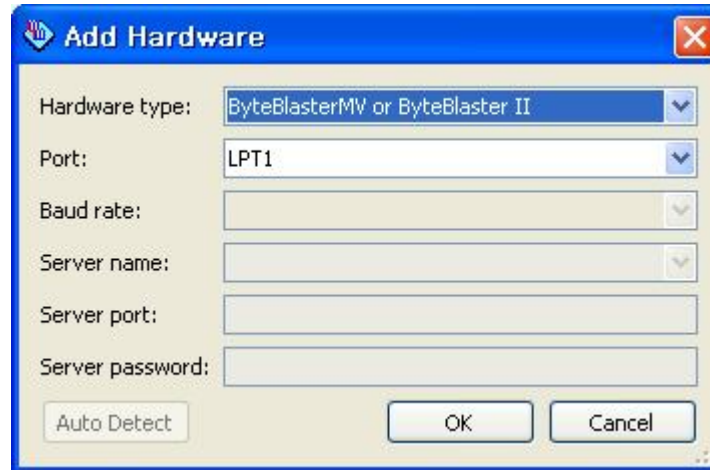


JTAG을 이용하여 다운로드하기

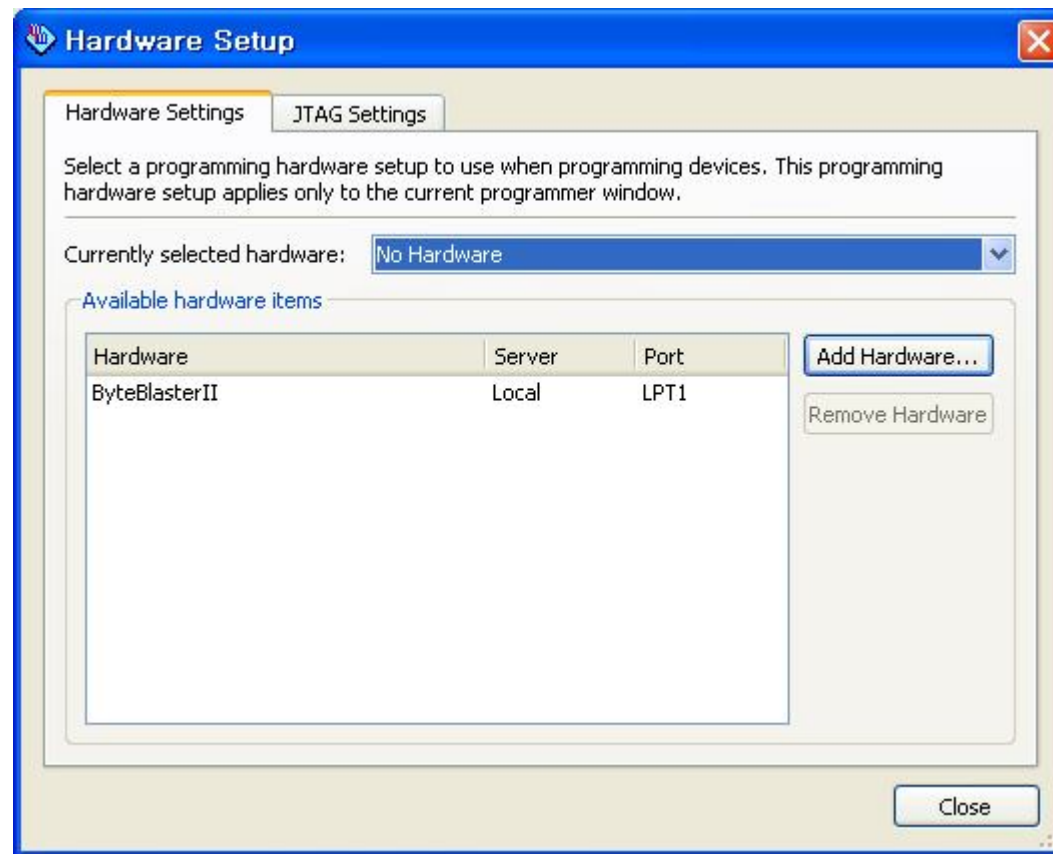
STEP 3. 하드웨어가 자동으로 잡히지 않을 경우



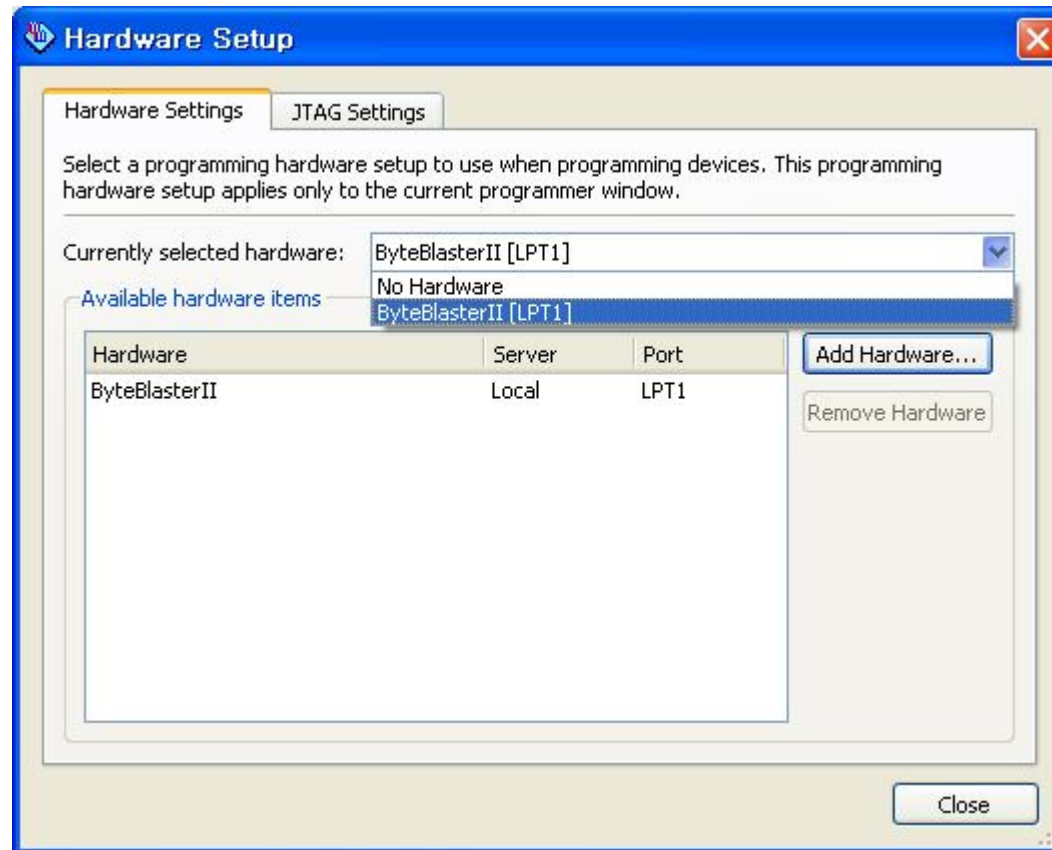
JTAG을 이용하여 다운로드하기 STEP 4.



JTAG을 이용하여 다운로드하기 STEP 5-1.



JTAG을 이용하여 다운로드하기 STEP 5-2.





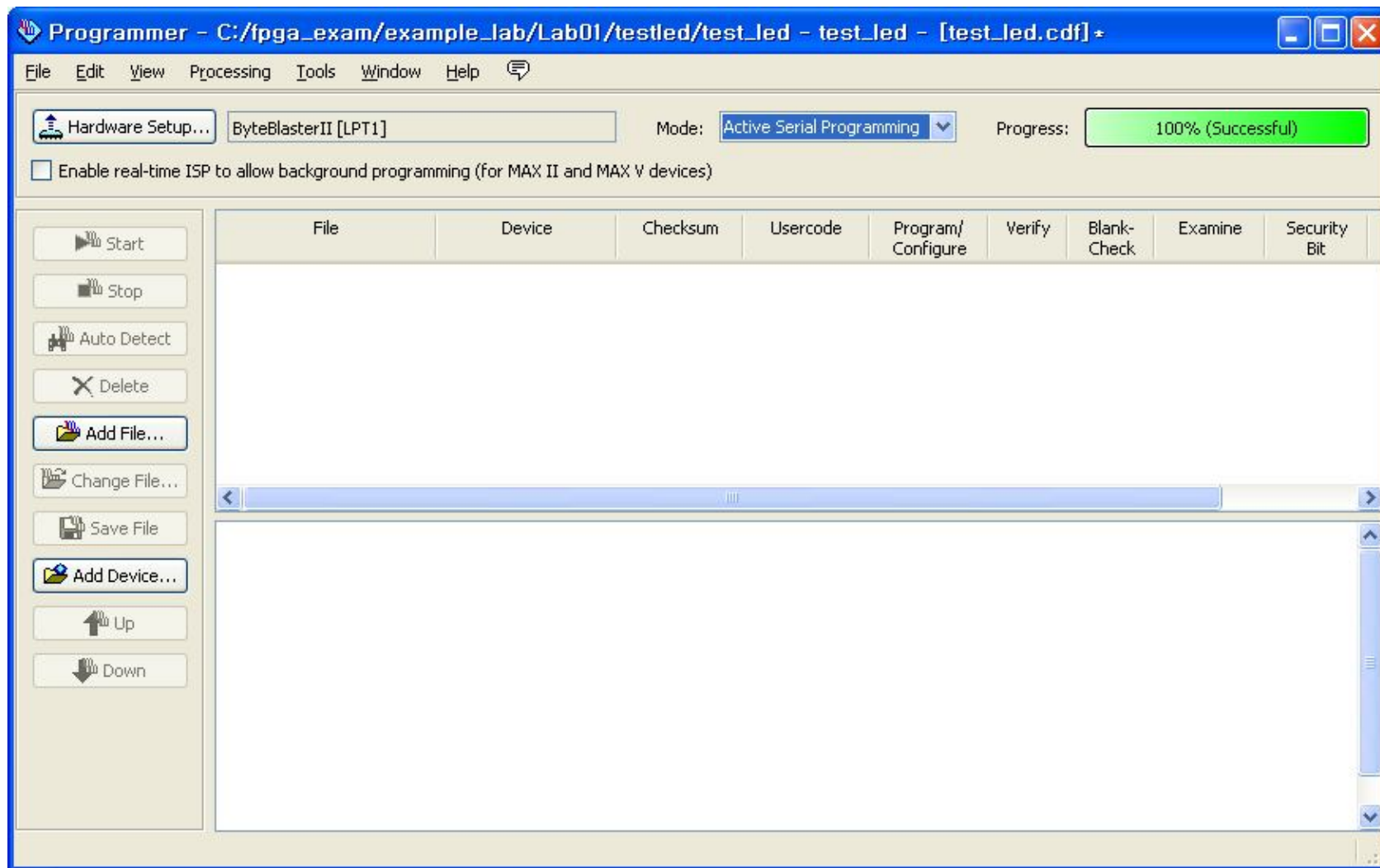


Downloading in Active Serial Mode

STEP 1.

- ByteBlaster II (FM-BB2)를 FPGA 보드의 Active Serial 포트에 연결하고 반대쪽은 PC의 프린터 포트에 연결합니다.
- 4.1 절의 Step 5까지 진행한 후 아래 스텝으로 넘어갑니다.

Downloading in Active Serial Mode STEP 2.



Downloading in Active Serial Mode STEP 3-1.

