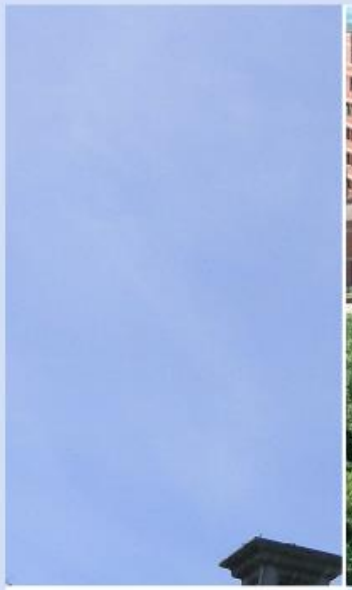



數位系統導論實驗

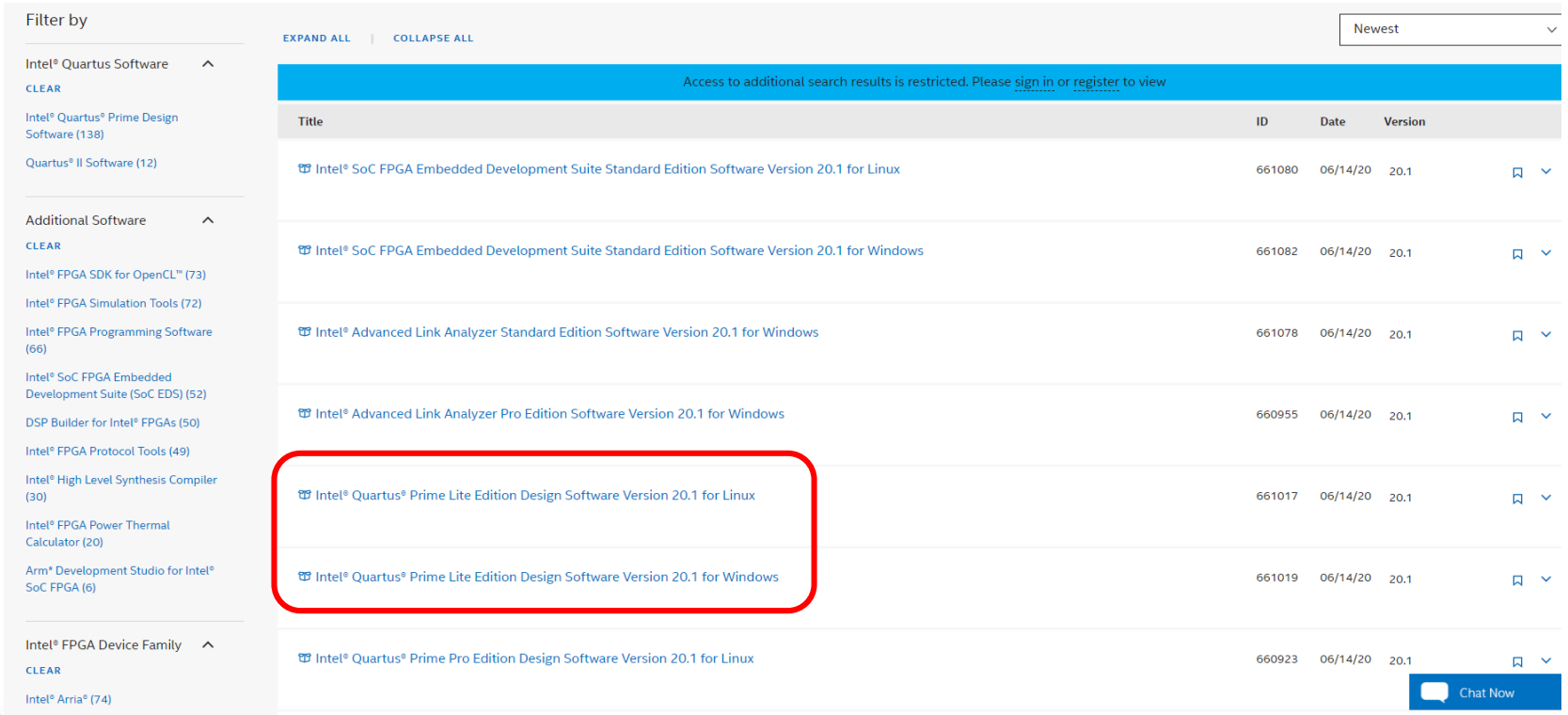
Quartus軟體操作

梁郁珮

軟體安裝

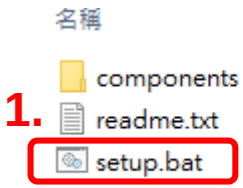
Google搜尋FPGA Software Download Center並進去此網頁

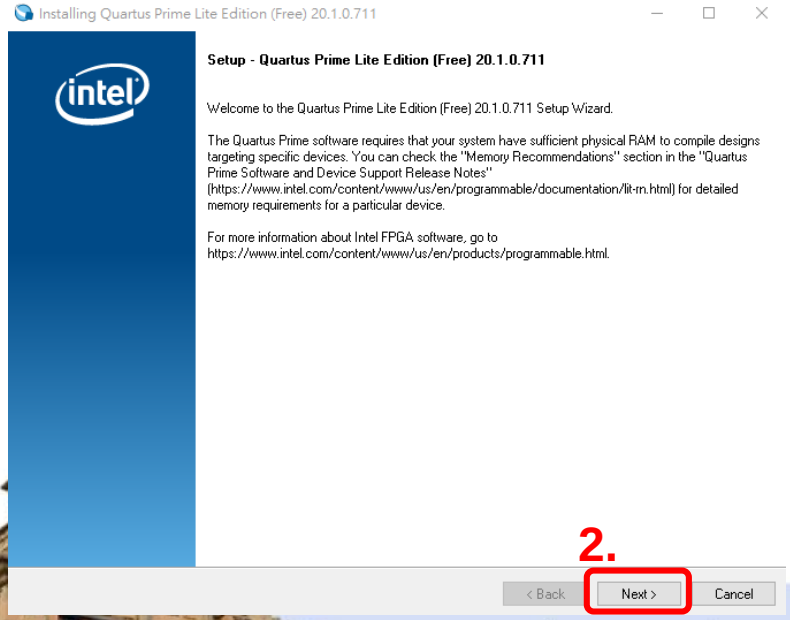
下載Intel® Quartus® Prime Lite Edition Design Software **Version 20.1**

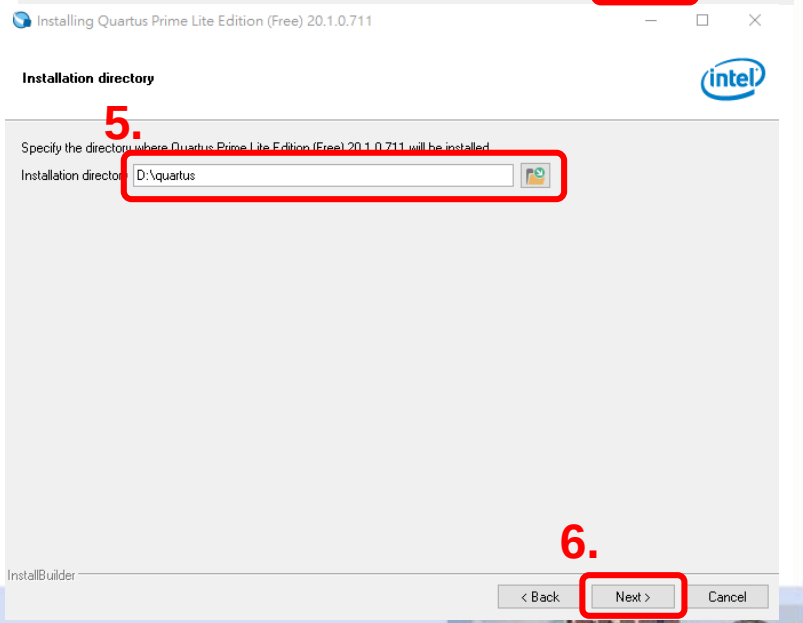


軟體安裝

解壓縮並下載主程式

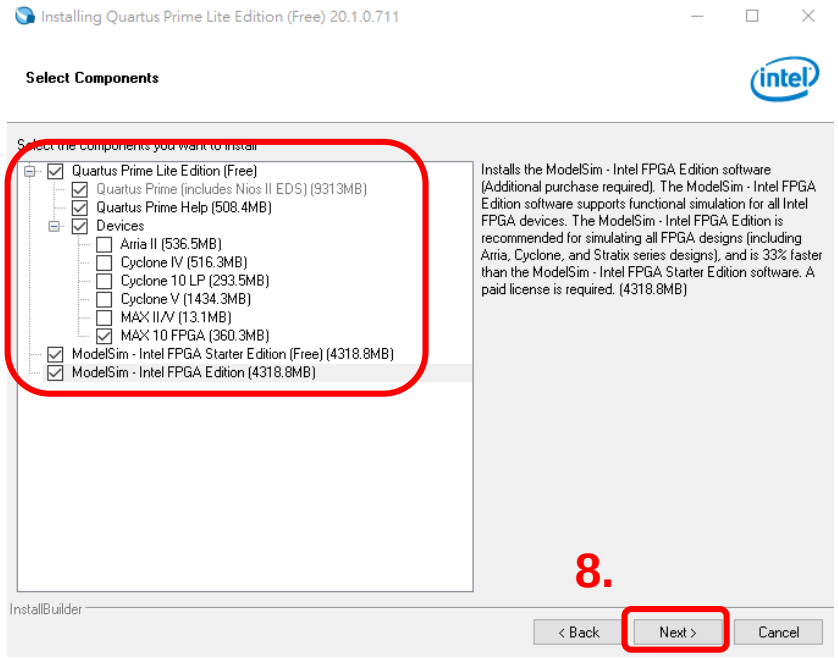


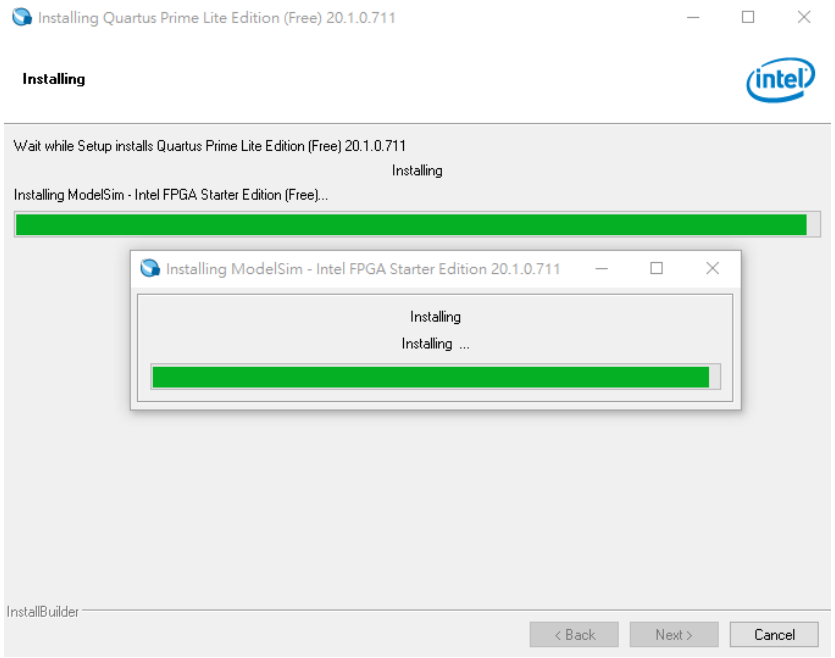




軟體安裝

請注意選取的安裝內容

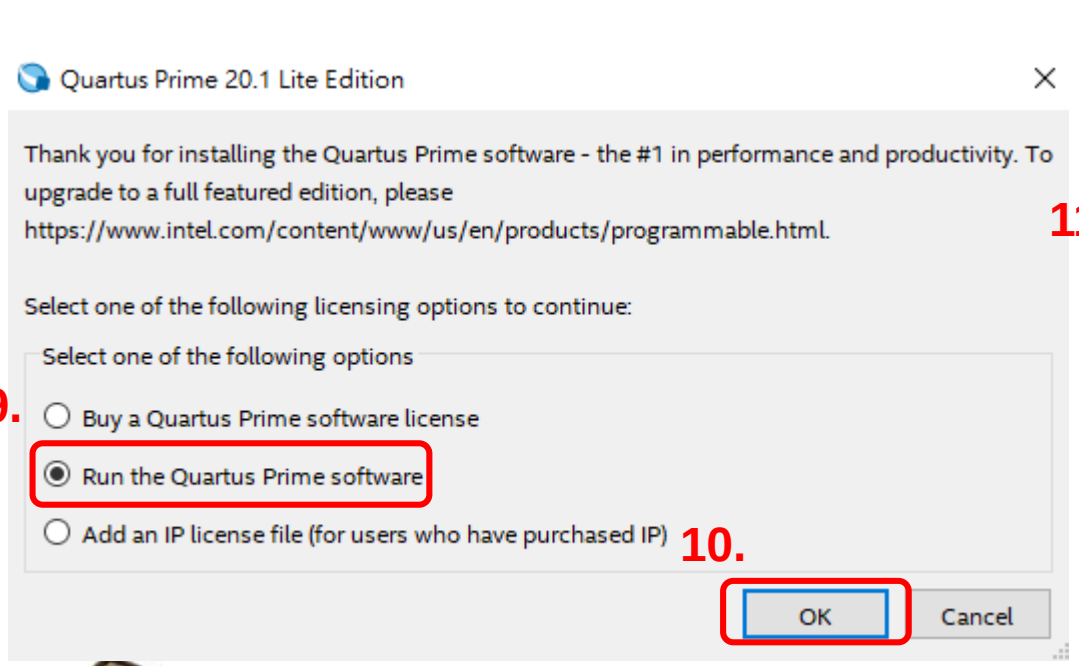


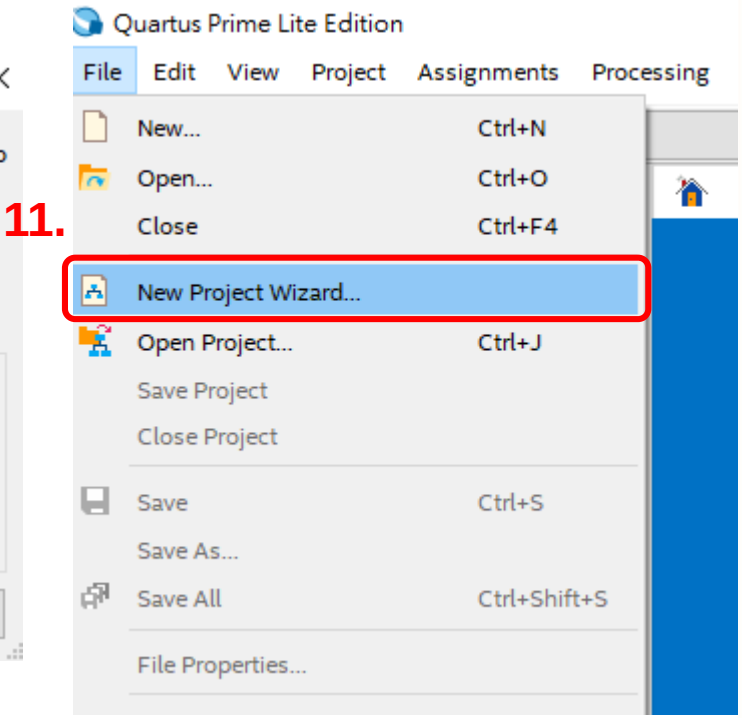


建立新專案

因Lite版本軟體為免費版，所以選擇第二個選項

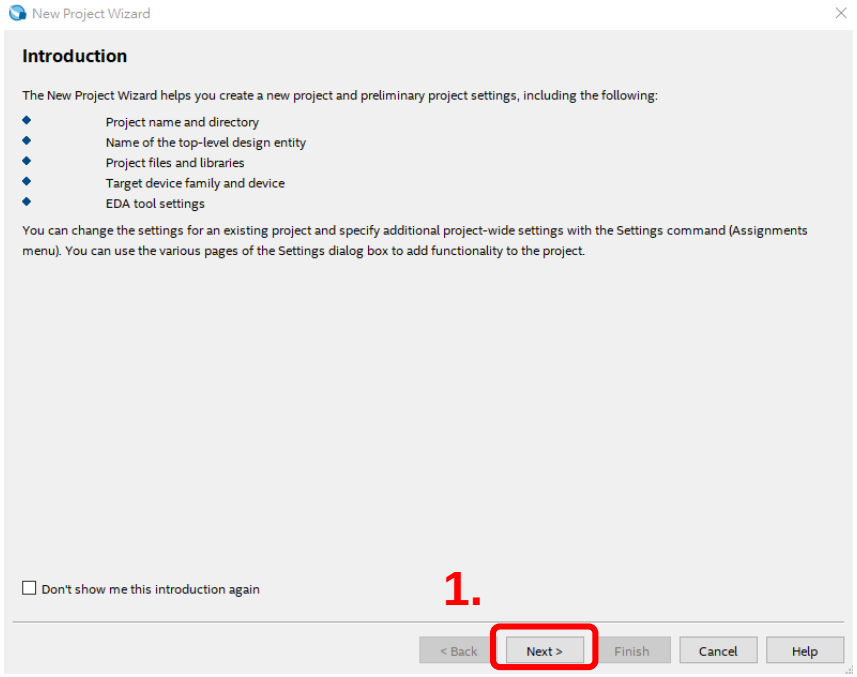
選擇【File】/【New Project Wizard】開啟一個新的專案

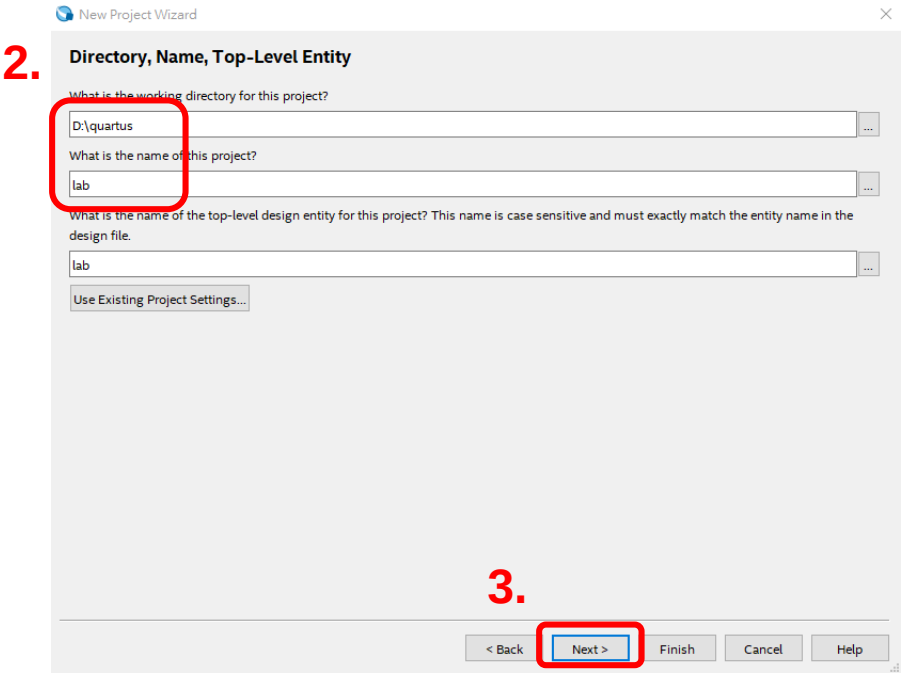




建立新專案

命名專案名稱，檔案儲存路徑（自行決定）

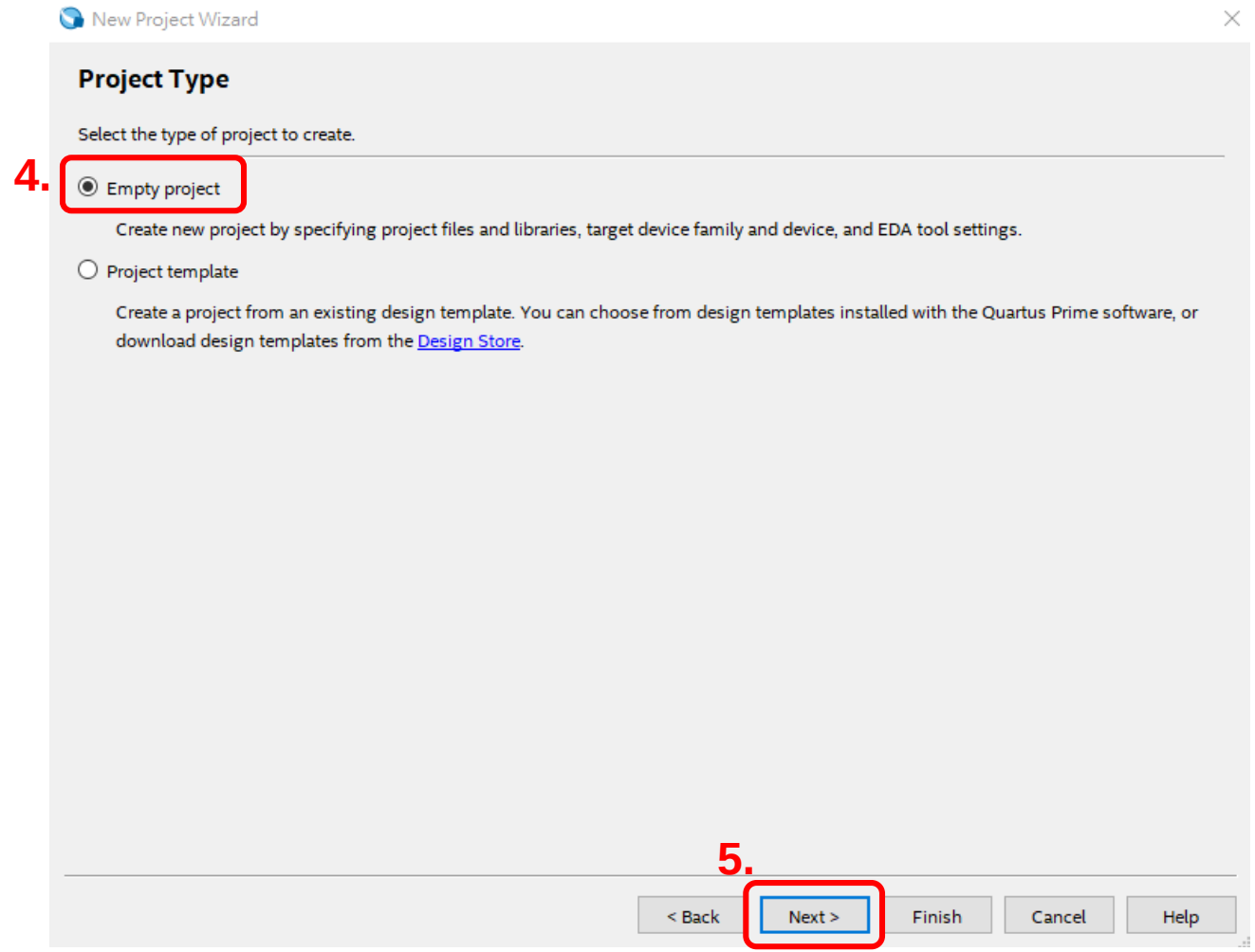




備註：也能直接點選Finish

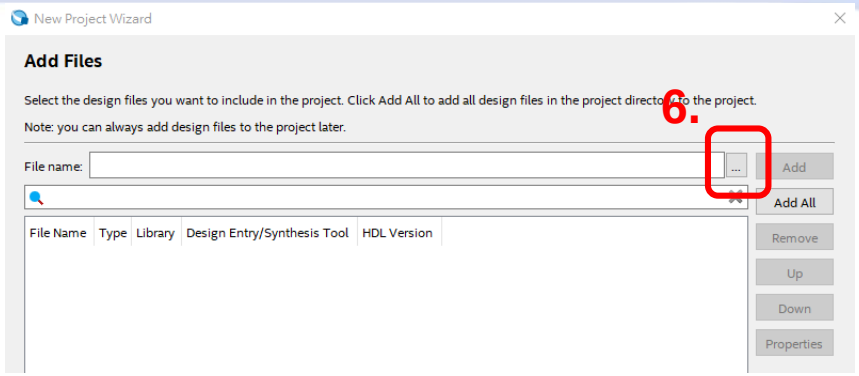
建立新專案

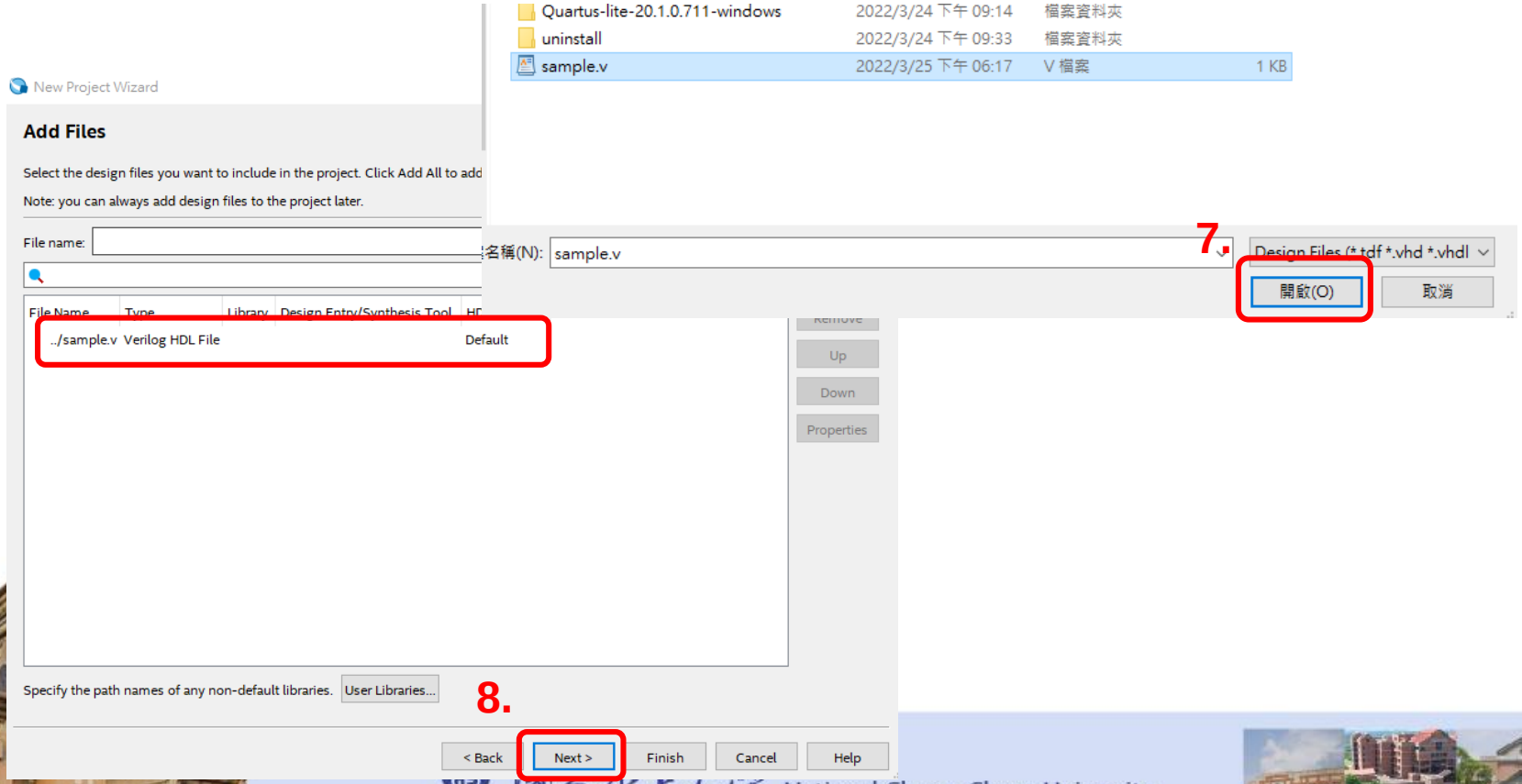
選擇空白專案



建立新專案

載入sample VHDL





建立新專案

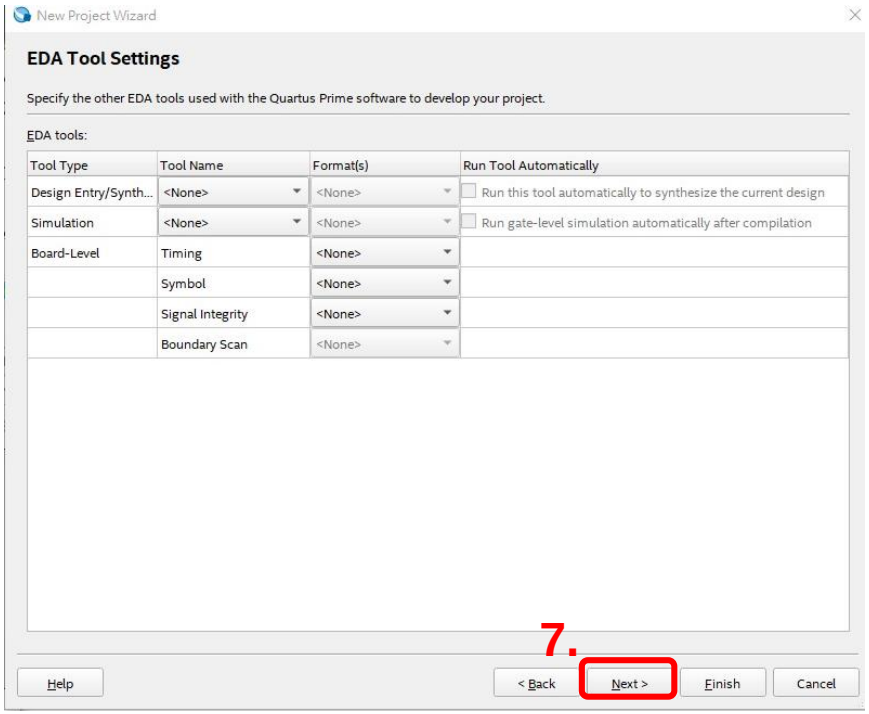
Family: MAX 10

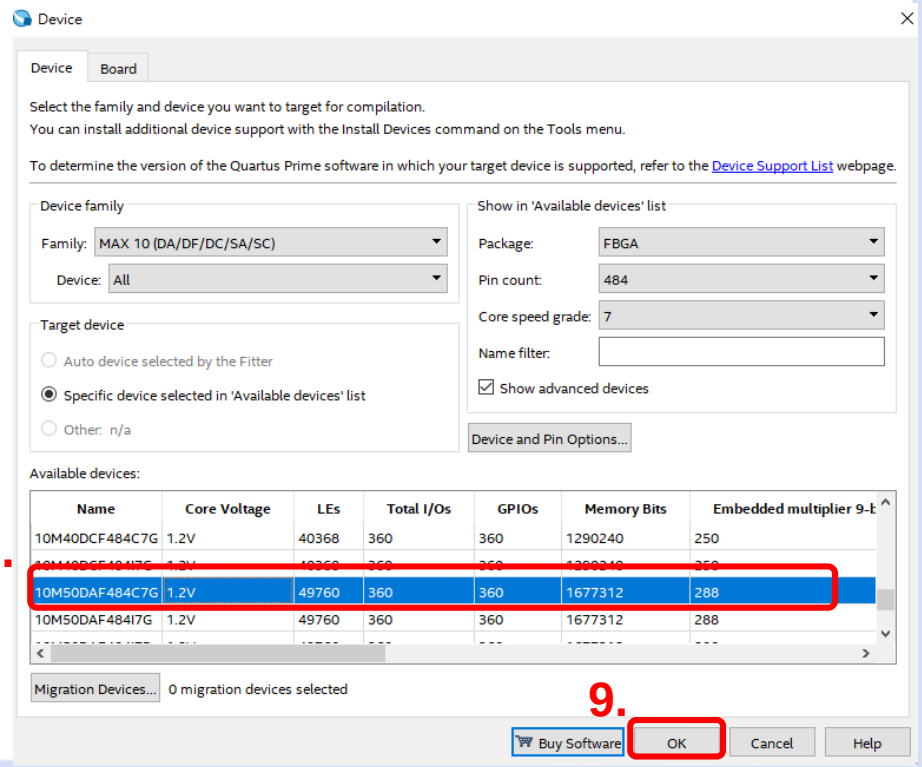
Package: FBGA

Pin count : 484

Core Speed grade: 7

選擇 10M50DAF484C7G





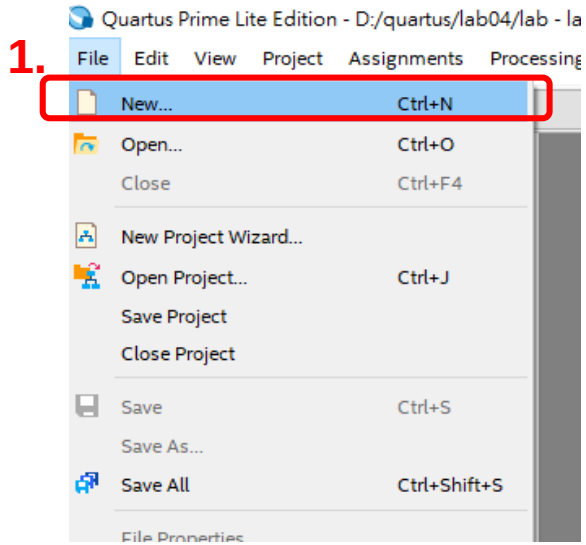
建立新設計

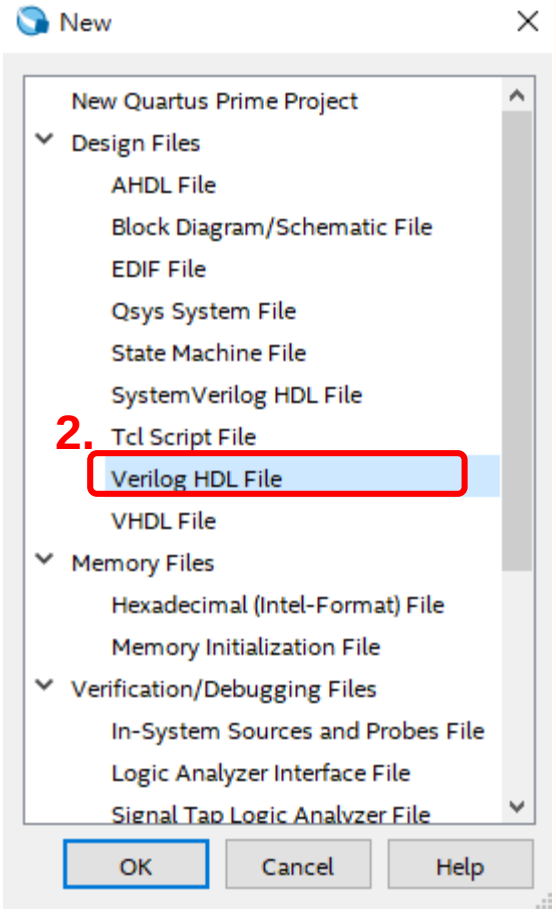
建立一個新設計(New Entity)

Entity有很多設計類型

1. Verilog
2. VHDL
3. AHDL
4. Block Diagram/Schematic File
5. Etc…

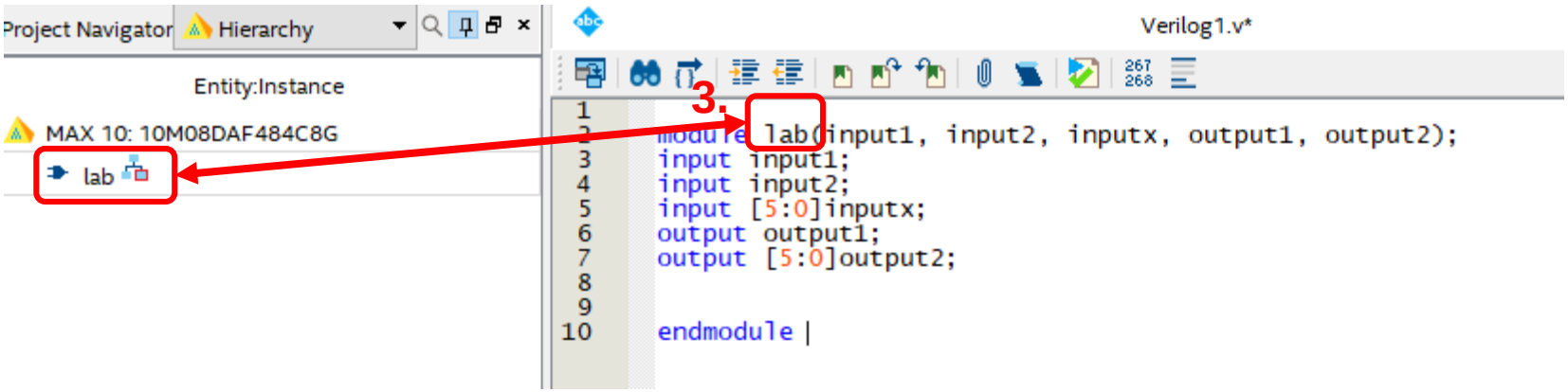
這裡先以 Verilog 作為熟悉Quartus的範例。





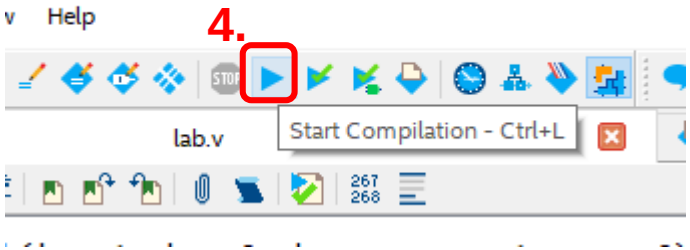
建立新設計

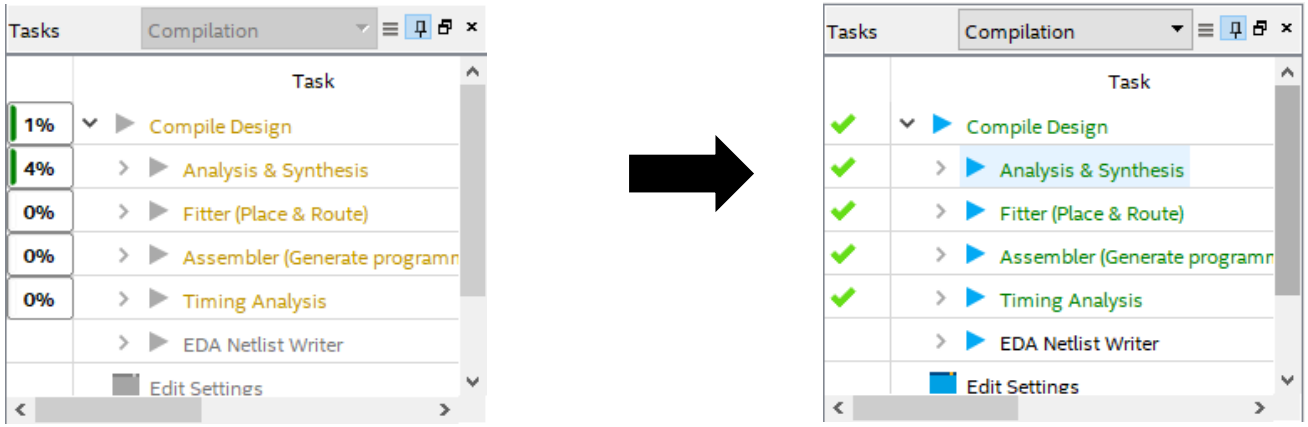
新設計的名稱需與top module名稱一致



建立新設計

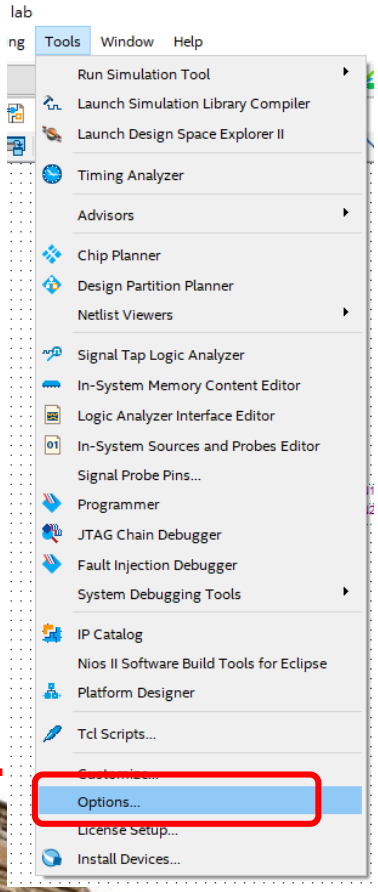
合成編譯電路

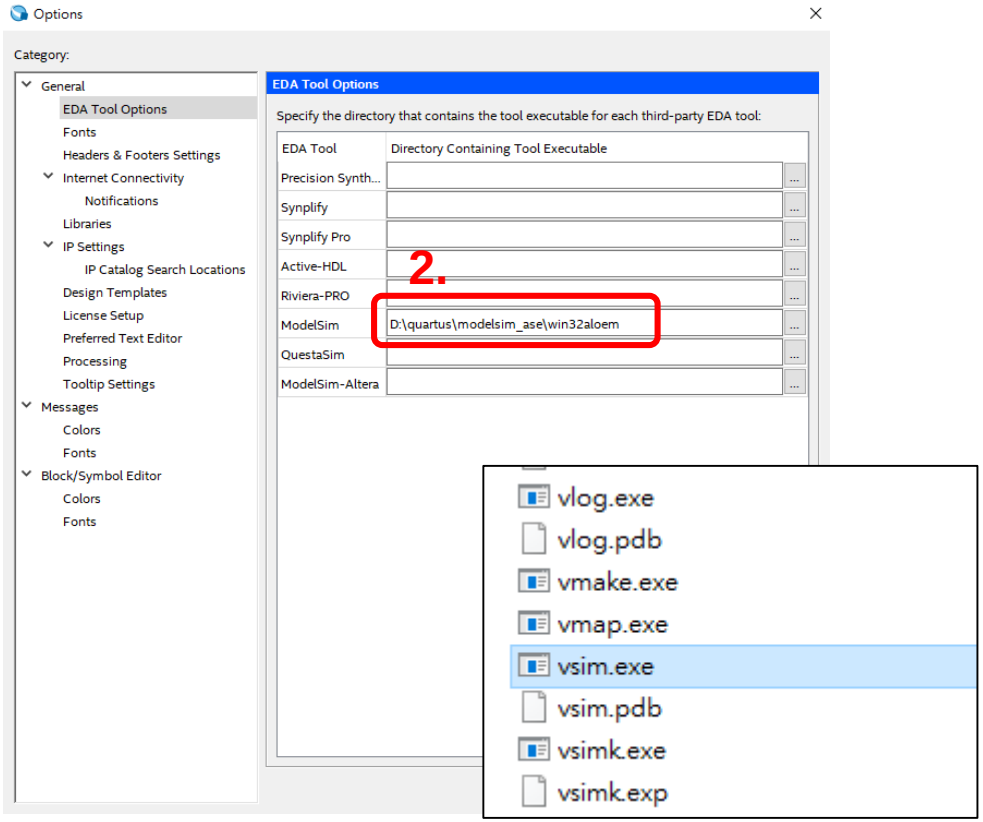




電路模擬設定

在Tools內選擇Options，並在EDA Tool Options設定ModelSim路徑

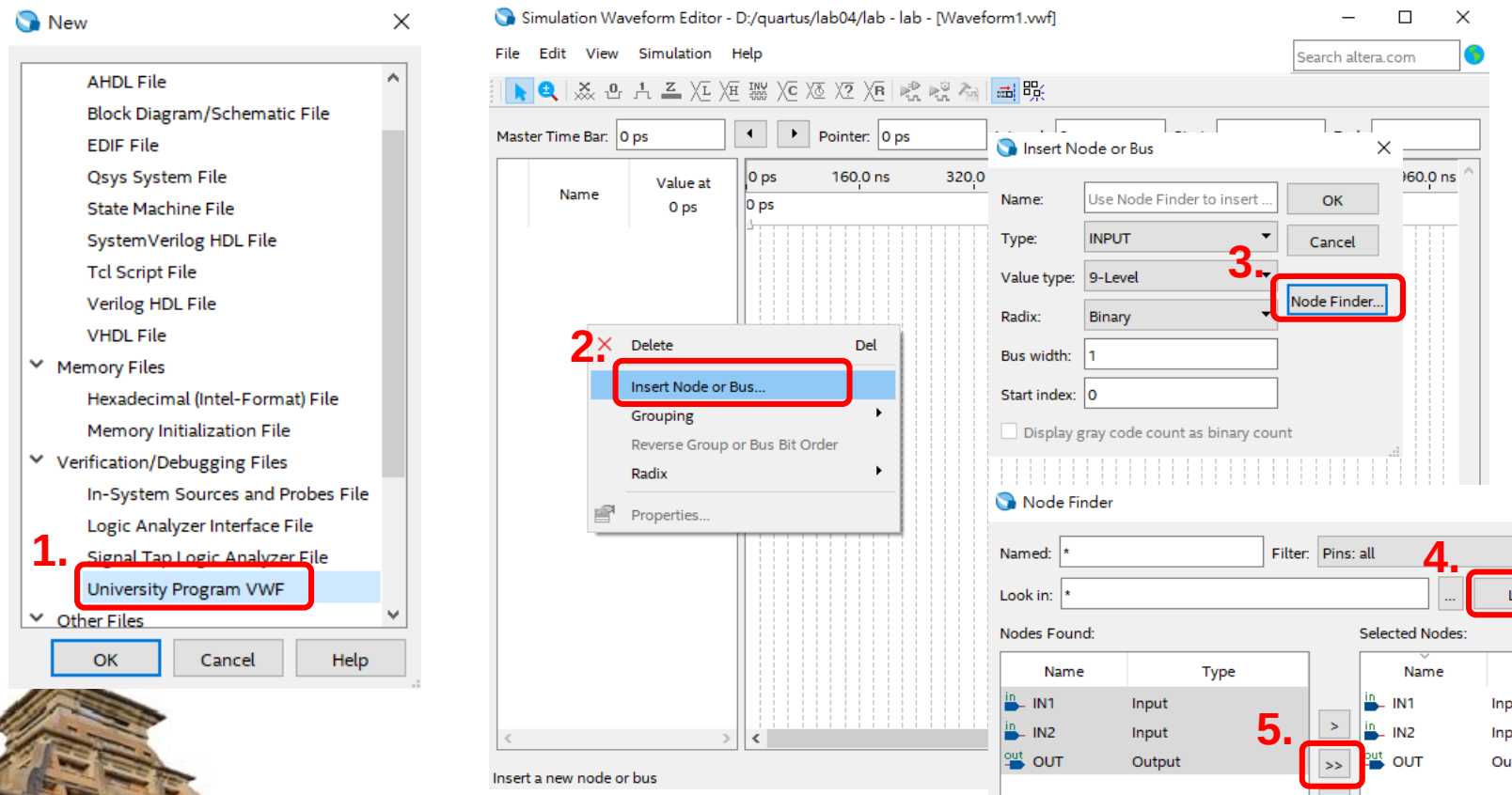




備註：選擇含有vsim.exe的資料夾，通常是aloem結尾

電路模擬

新增波形檔案，並指定顯示的輸入輸出



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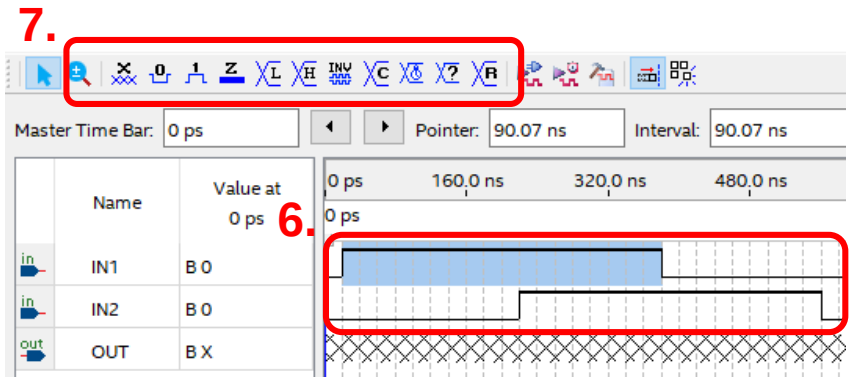
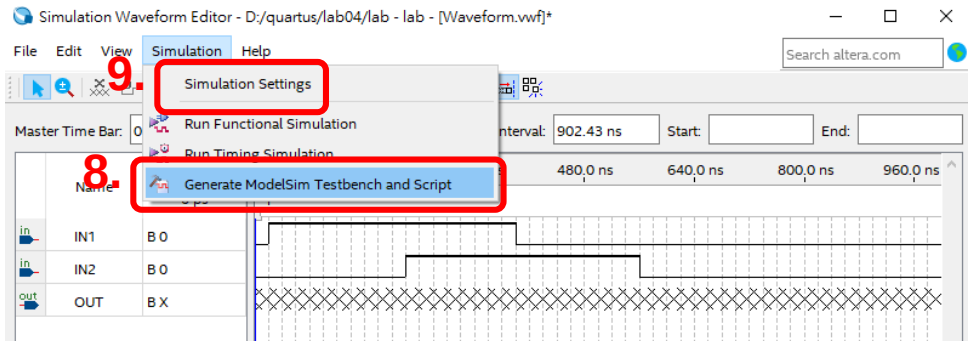
電路模擬

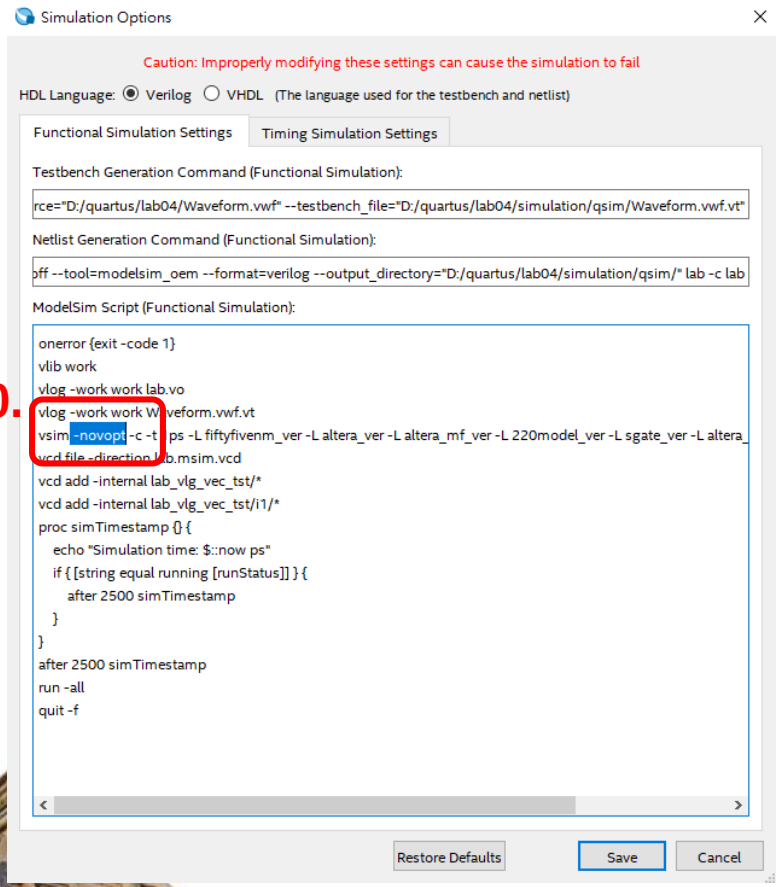
反白選取線段，並設定輸入值再產生測試檔



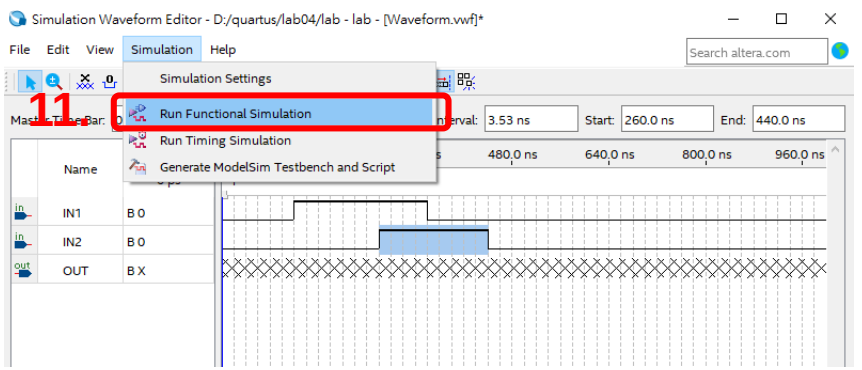


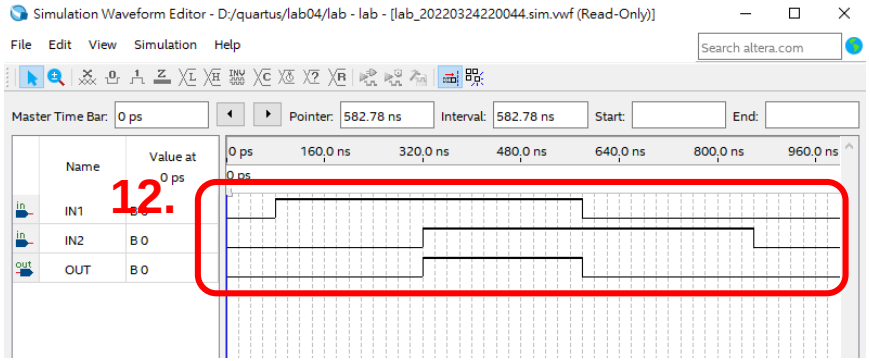
電路模擬

因版本問題，需將Setting中的-novopt刪除，即可開始模擬



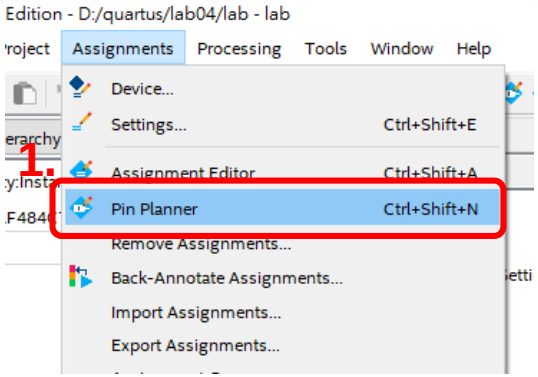
10.

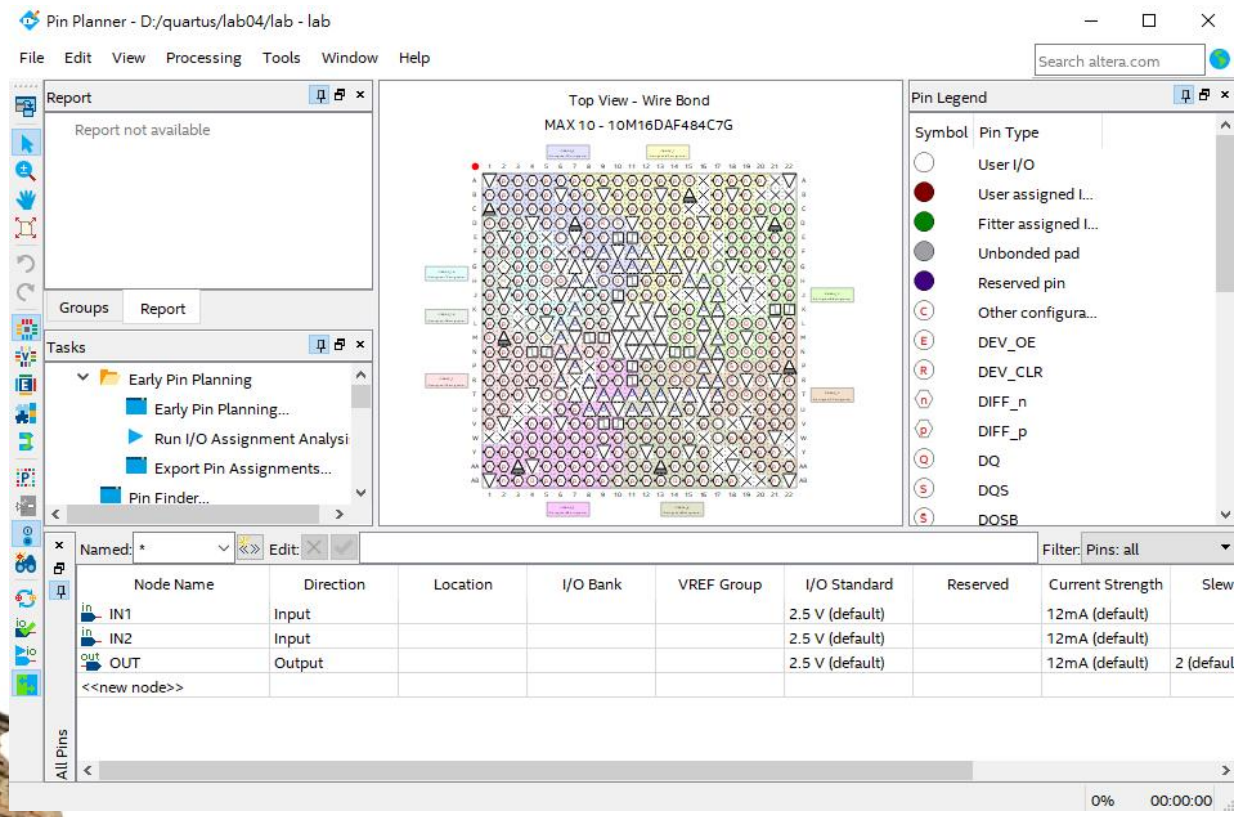




FPGA燒錄

對輸入/輸出指定腳位





FPGA燒錄

參考A1與A2的User Manual文件，選擇Switch為輸入與LED作為輸出，將對應的FPGA IO編號輸入，並重新編譯。

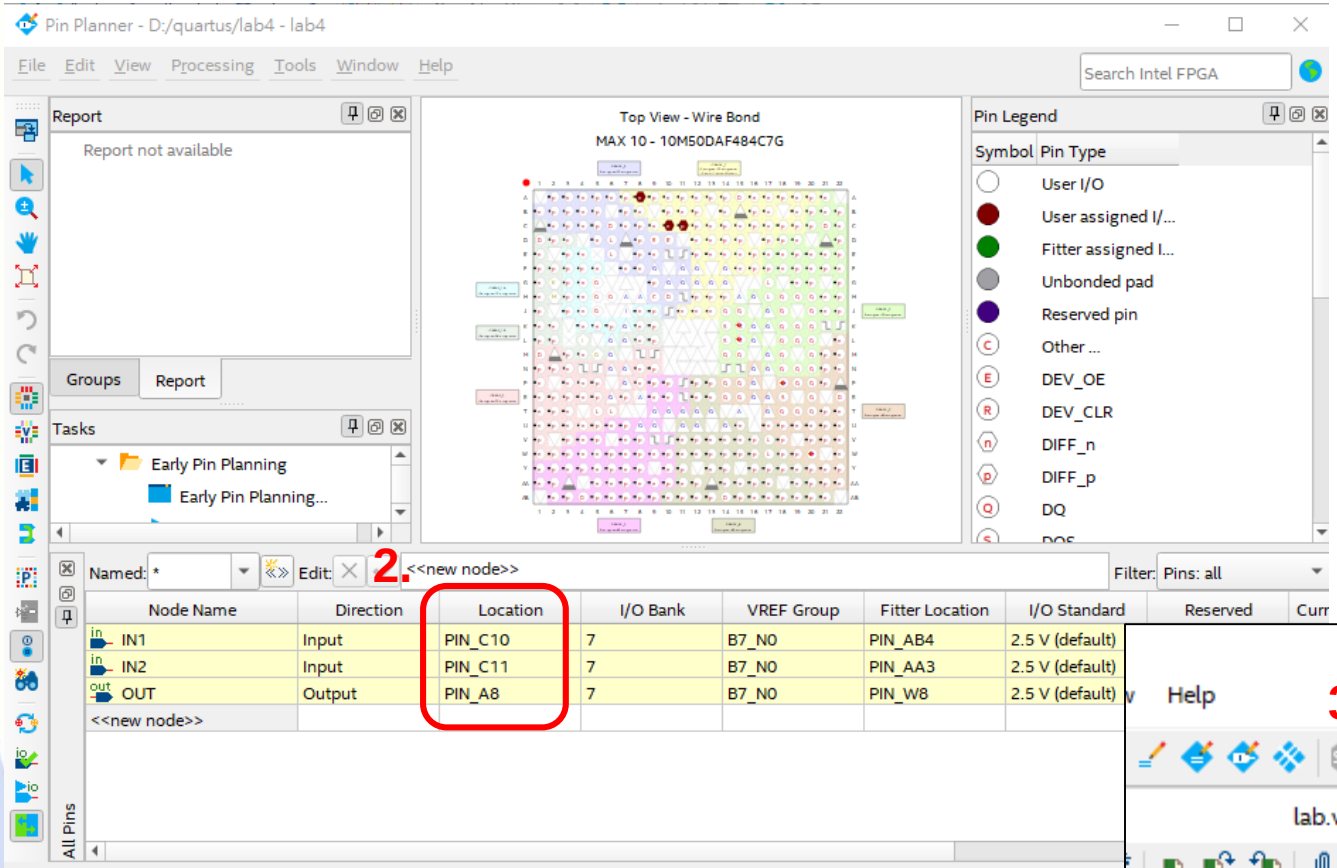
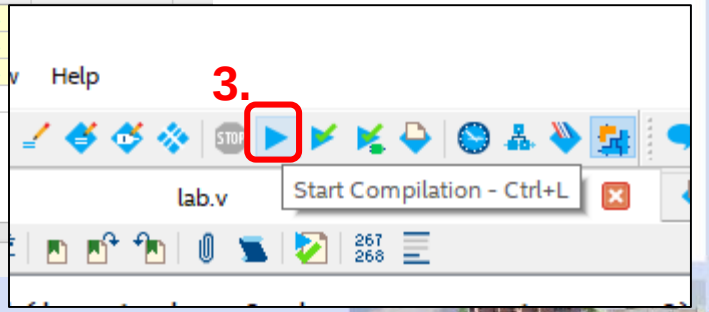


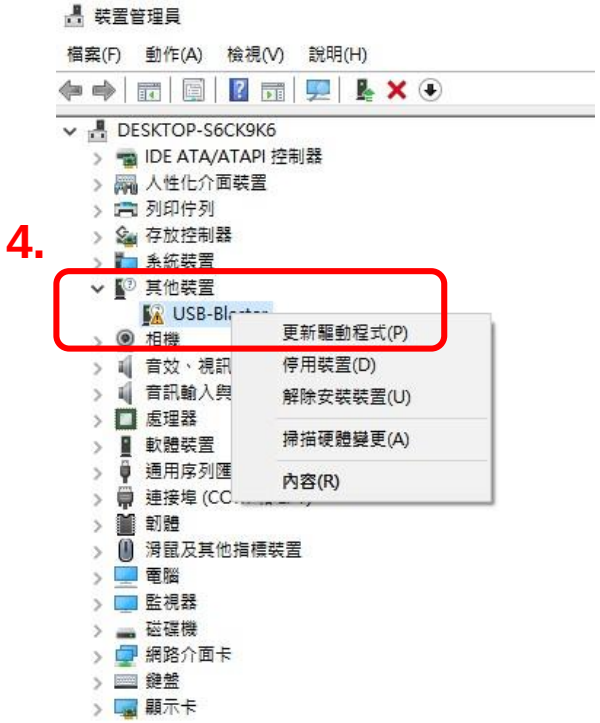
Table 3-4 Pin Assignment of

Signal Name	FPGA Pin No.
SW0	PIN_C10
SW1	PIN_C11
SW2	PIN_D12
SW3	PIN_C12
SW4	PIN_A12
SW5	PIN_B12
SW6	PIN_A13
SW7	PIN_A14
SW8	PIN_B14
SW9	PIN_F15



FPGA燒錄

呼叫裝置管理員後，在未辨識的USB-Blaster右鍵，選取更新驅動程式

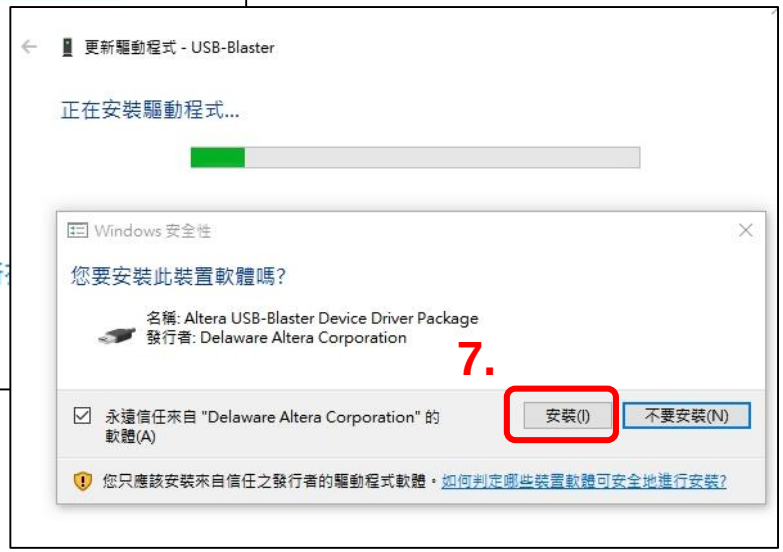


4.

5.

FPGA燒錄

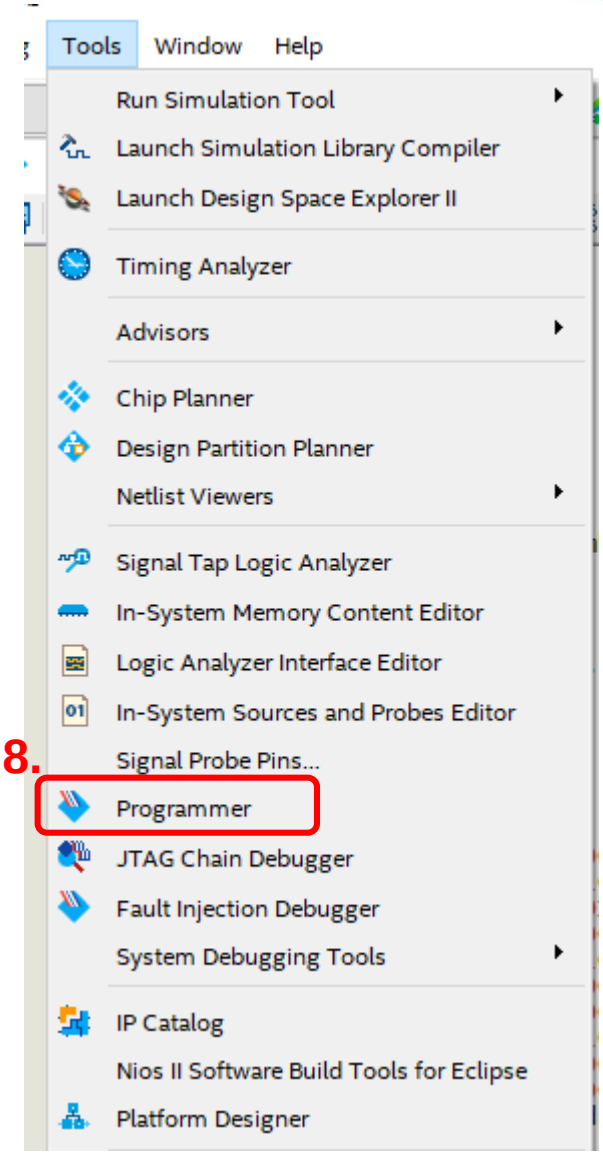
選擇從Ecourse2下載的USB-Blaster驅動程式解壓縮後的路徑，並完成安裝



FPGA燒錄

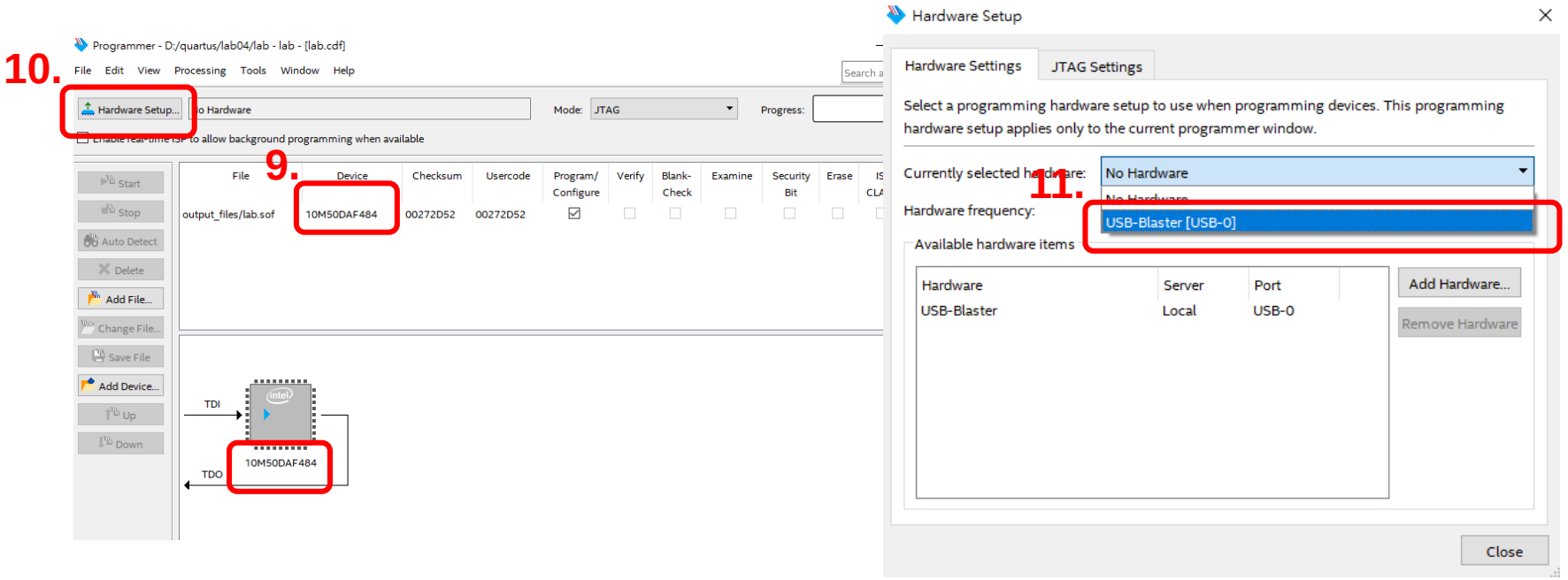
完成安裝後，開啟燒錄頁面

8.



FPGA燒錄

先確認選到正確的板子後，選取USB驅動程式



FPGA燒錄

選取完後即可直接燒錄

12.