



A PUFsecurity Alliance

Urbana FPGA Board Power on Testing ■

2025 Spring

Agenda ■

1. Download & installation of Vivado
2. Power on Urbana board
3. Program Urbana board
4. Function check

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Download Vivado


- Download Vivado 2017.4
 - <https://www.xilinx.com/support/download/index.html/content/xilinx/en/downloadNav/vivado-design-tools/archive.html>
 - The later versions are also acceptable, but make sure that you have enough disk space for them
- Create account is required before download

Vivado Design Suite - HLx Editions - 2017.4 Full Product Installation

Important

We strongly recommend to use the web installers as it reduces download time and saves significant disk space.

Please see [Installer Information](#) for details.

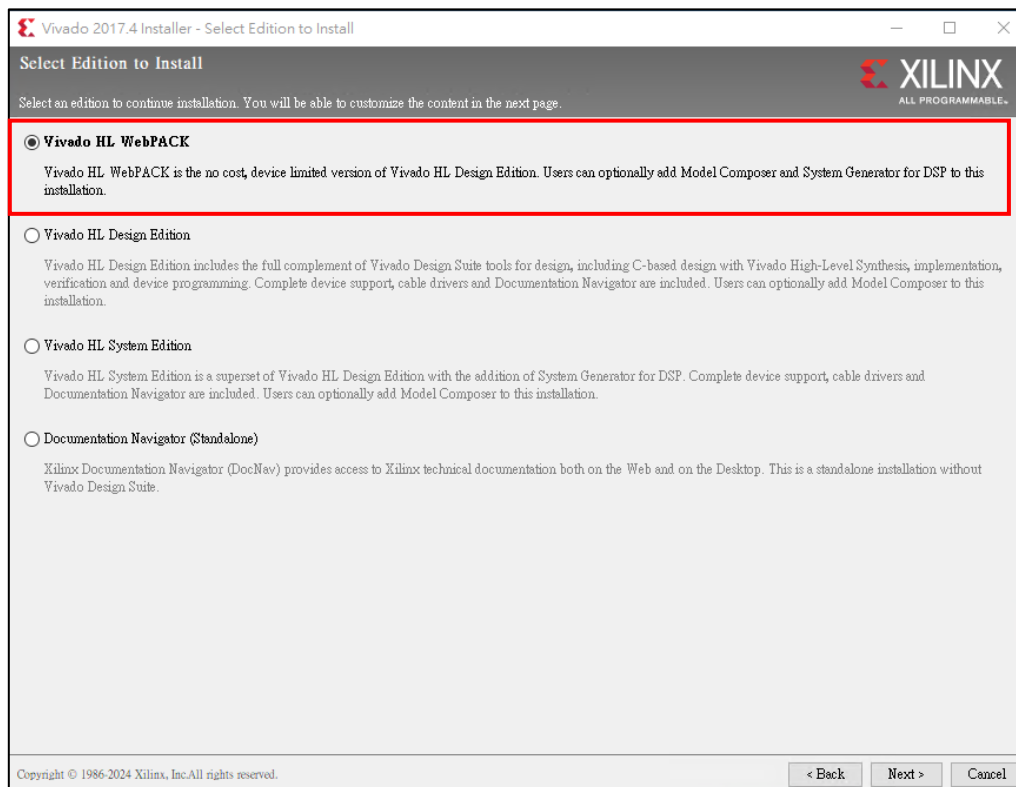
 **Vivado HLx 2017.4: All OS installer Single-File Download (TAR/GZIP - 16.17 GB)**

MD5 SUM Value : 5a1bb63f893f0039e34c9f412dd063a9

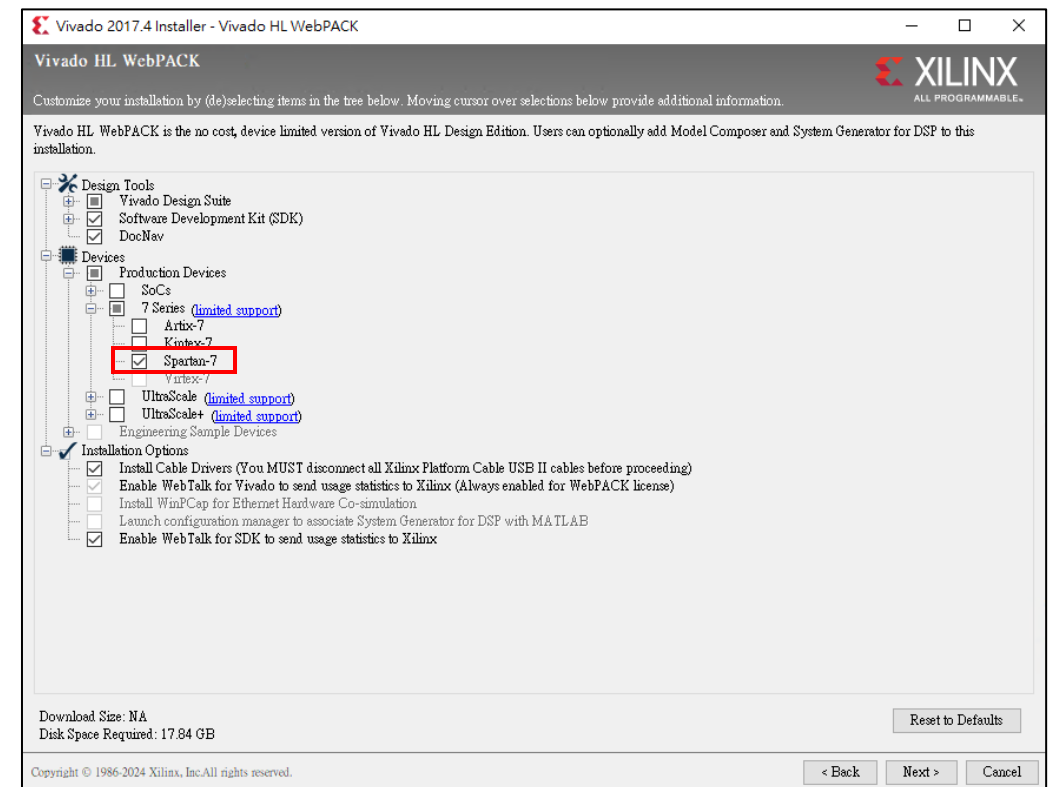
Download Includes	Vivado Design Suite HLx Editions (All Editions)
Download Type	Full Product Installation
Last Updated	Dec 20, 2017
Answers	2017.x - Vivado Known Issues
Documentation	2017.4 - Release Notes
Enablement	License Solution Center

Install Vivado

- Follow the steps (1-14) of installation in this website:
 - https://blog.csdn.net/qq_41305281/article/details/120669572
- For step 10 and step 11, please follow the configuration below



Step 10



Step 11

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Before Powering on Urbana Board

- Connect the Power Select jumper to **Main USB port**

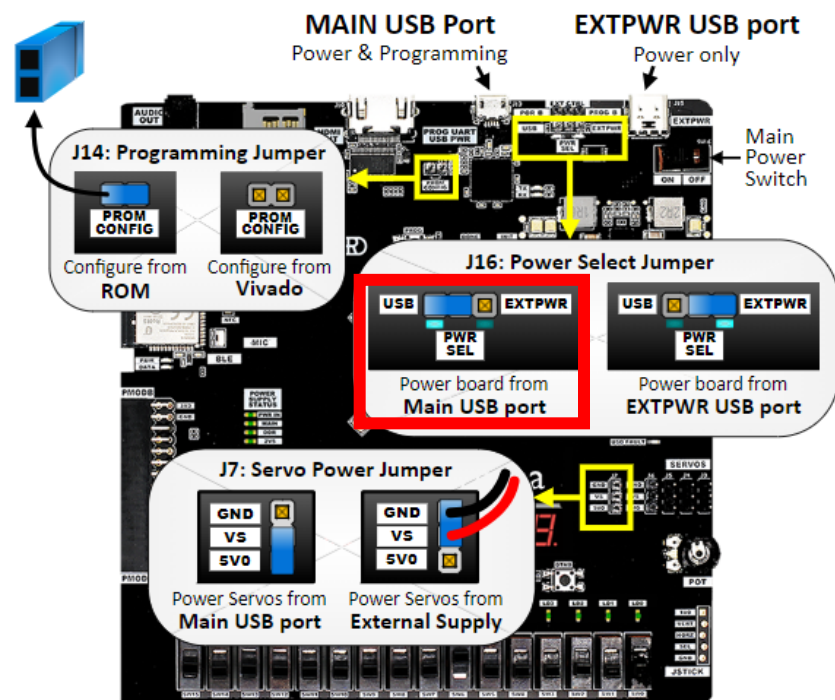
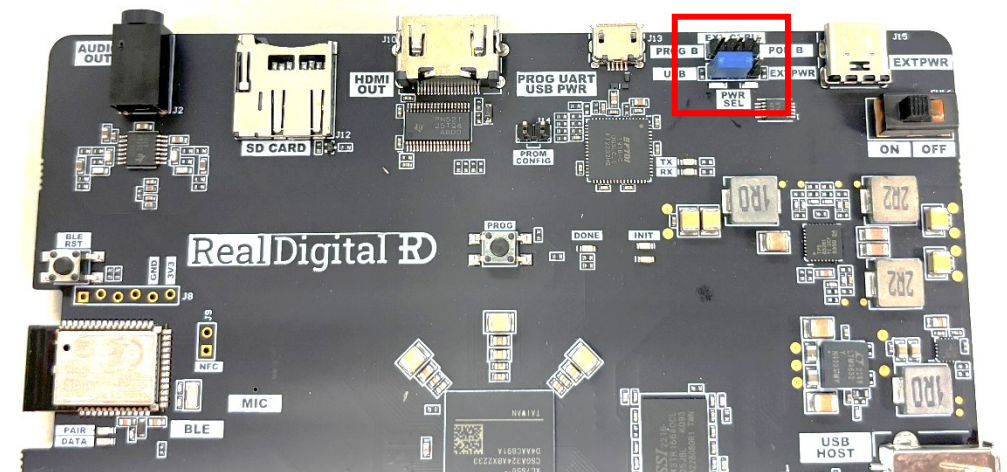
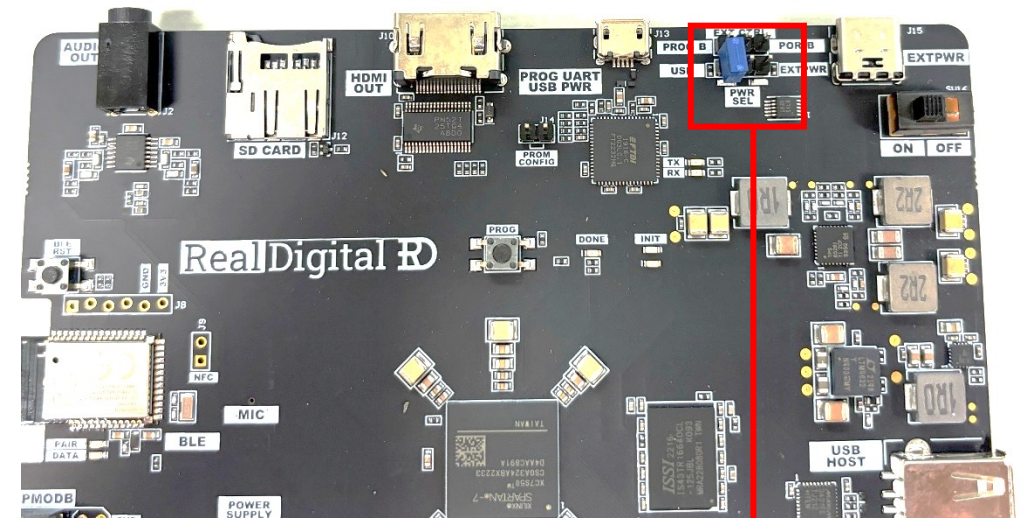
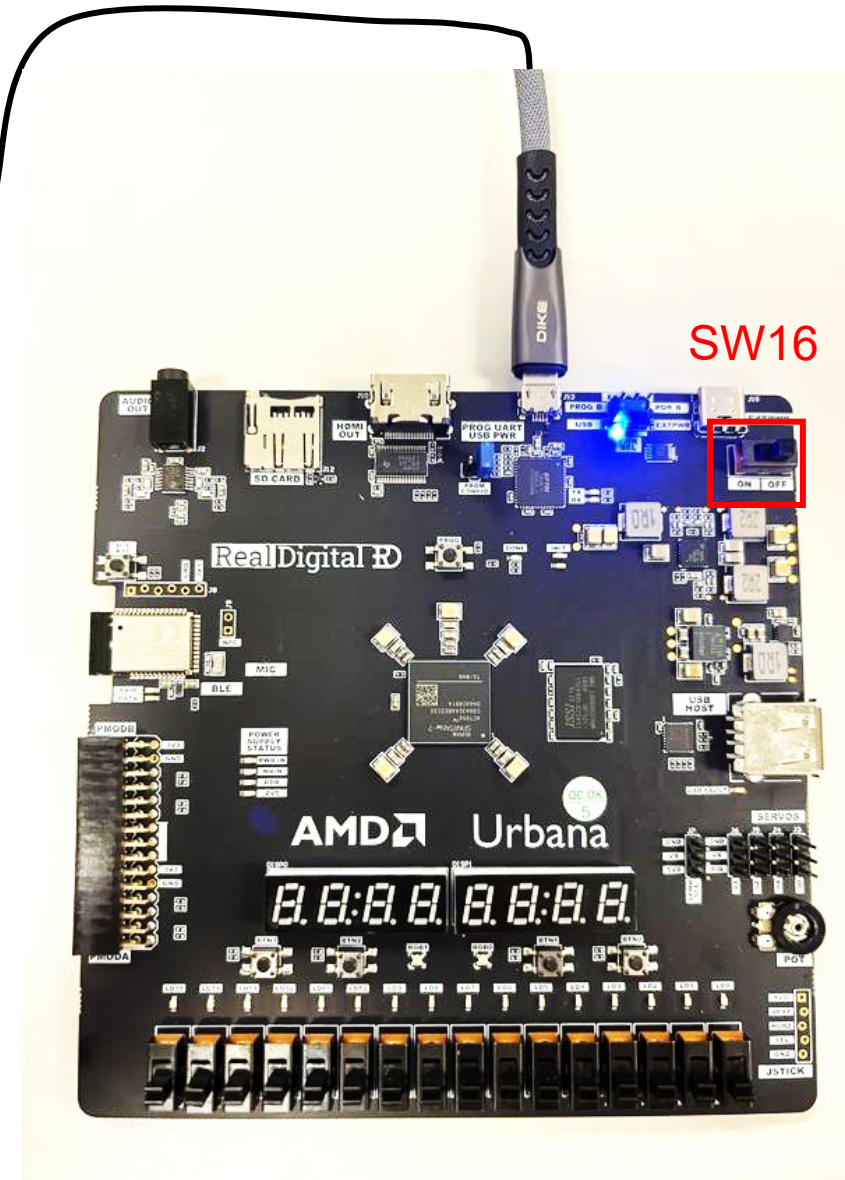


Figure 4. Urbana board jumper blocks and Power Delivery



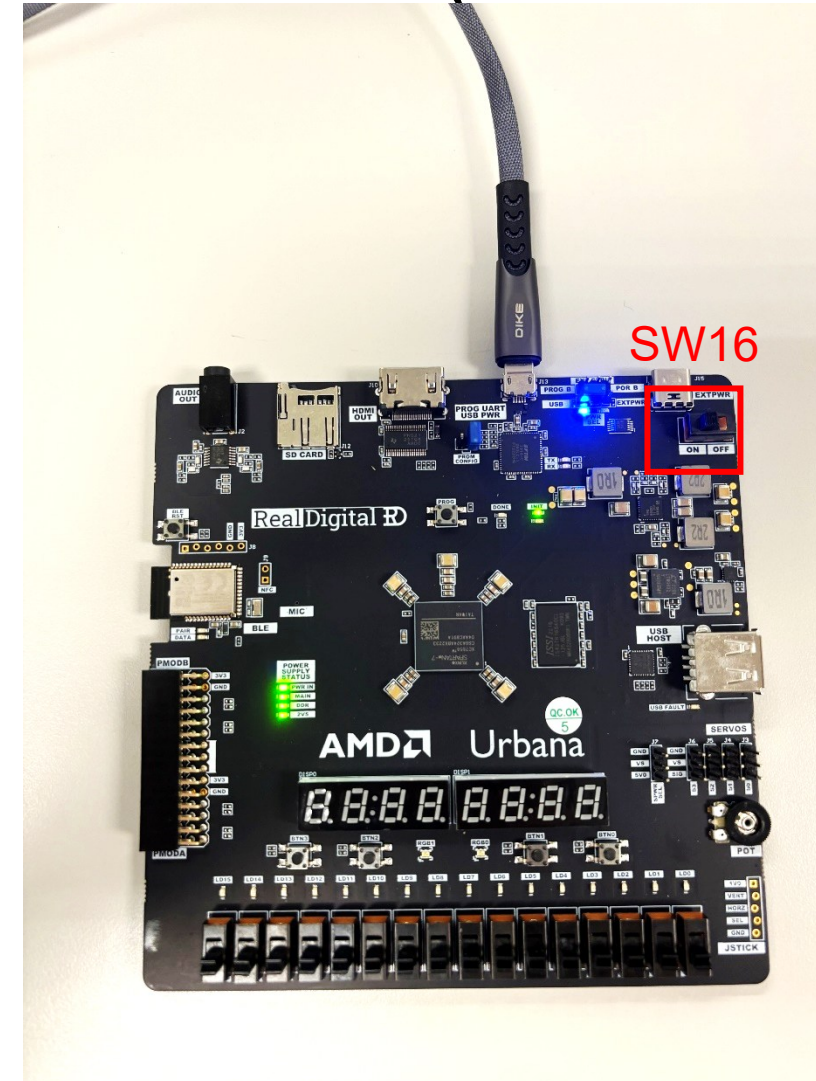
Power on Urbana Board (1/2) ■

- Connect Urbana board with your computer via Micro-USB cable
- As SW16 is “OFF”, you should see a blue LED lighting up



Power on Urbana Board (2/2) ■

- As SW16 is “ON”, you should see several green LEDs lighting up
- Now, Vivado can detect the Urbana board

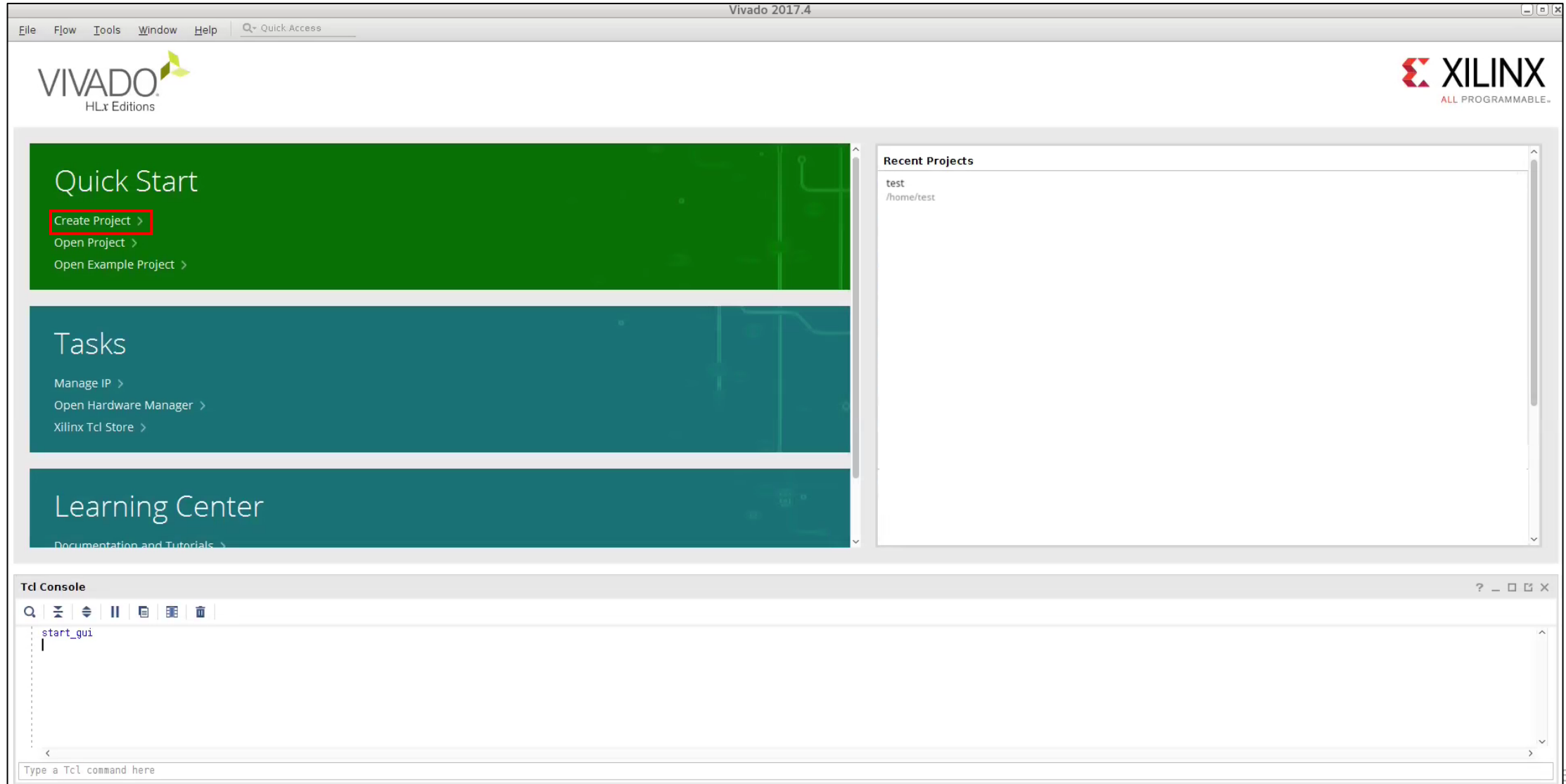


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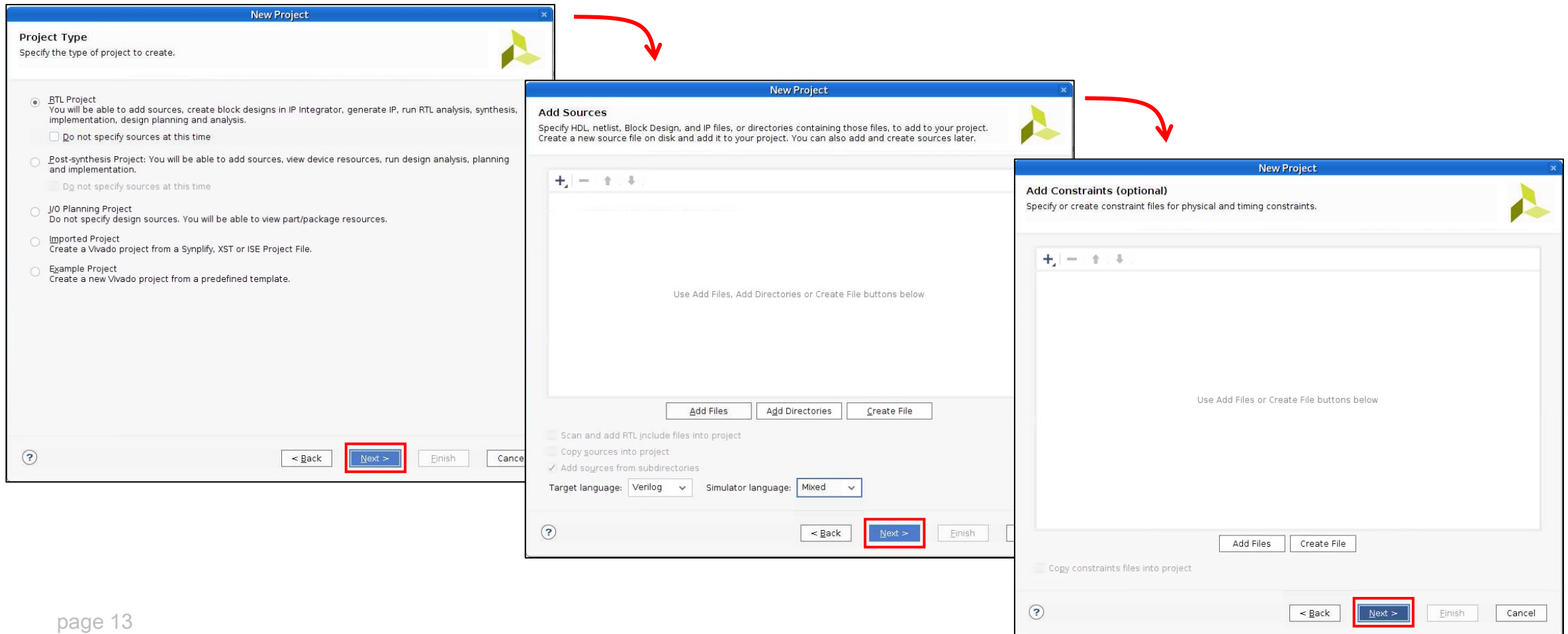


Create Project (1/3)



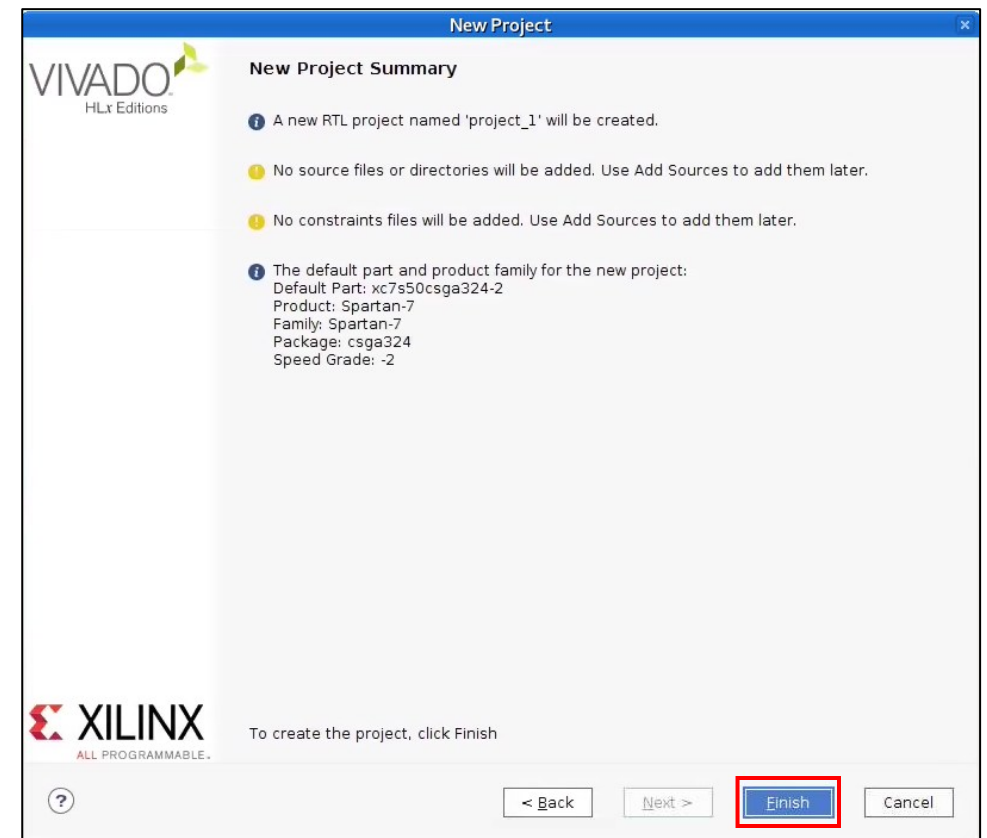
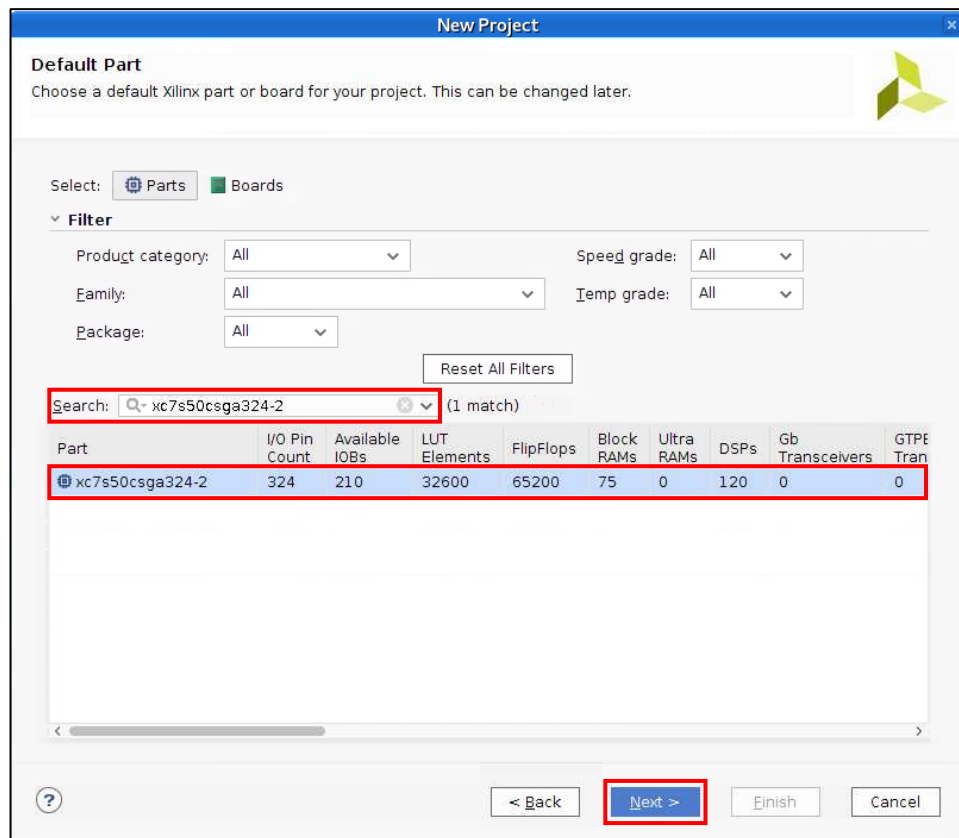
Create Project (2/3) ■

■ Three “Next >”s



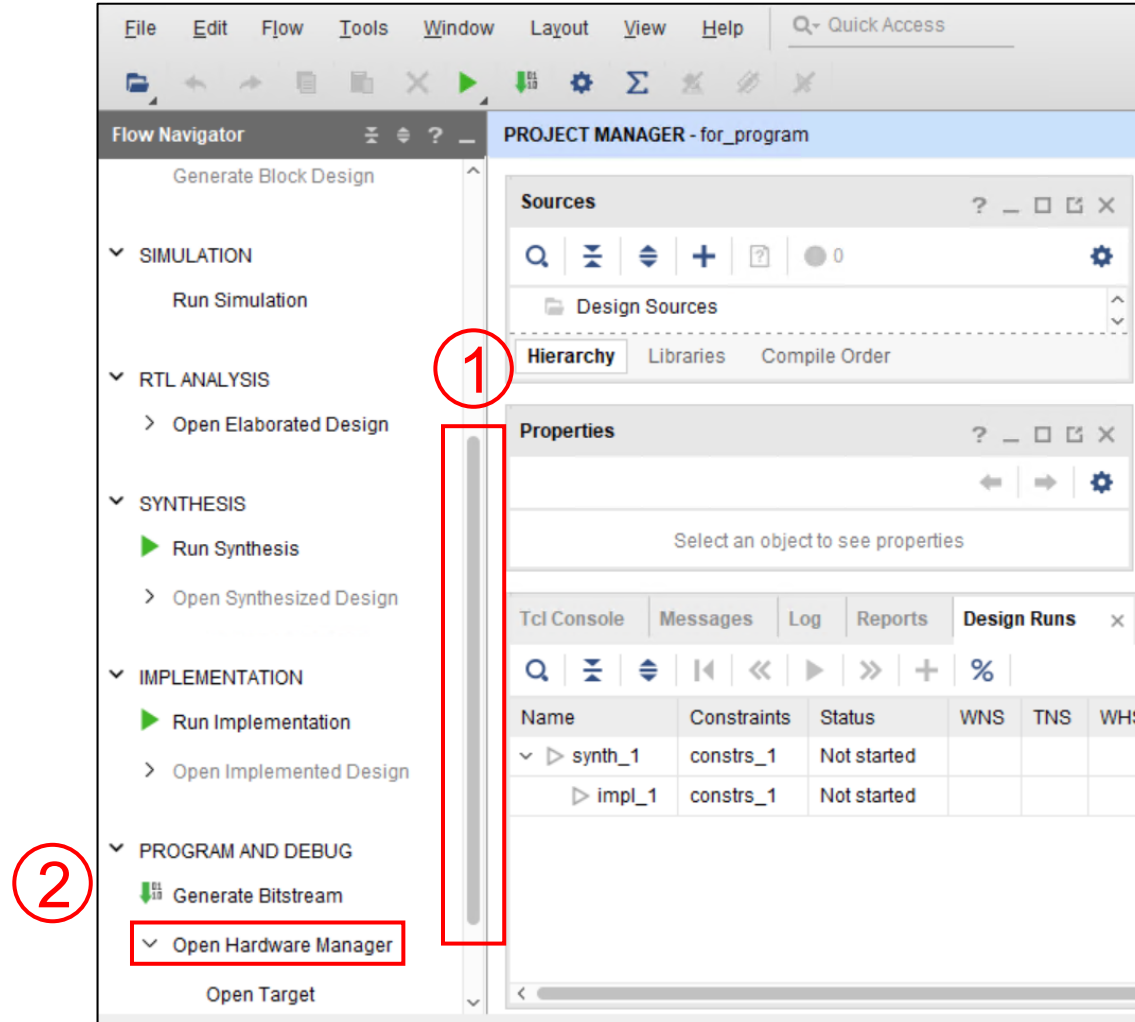
Create Project (3/3)

- Enter “xc7s50csga324-2” in Search bar and select the part, then finish the New Project setting



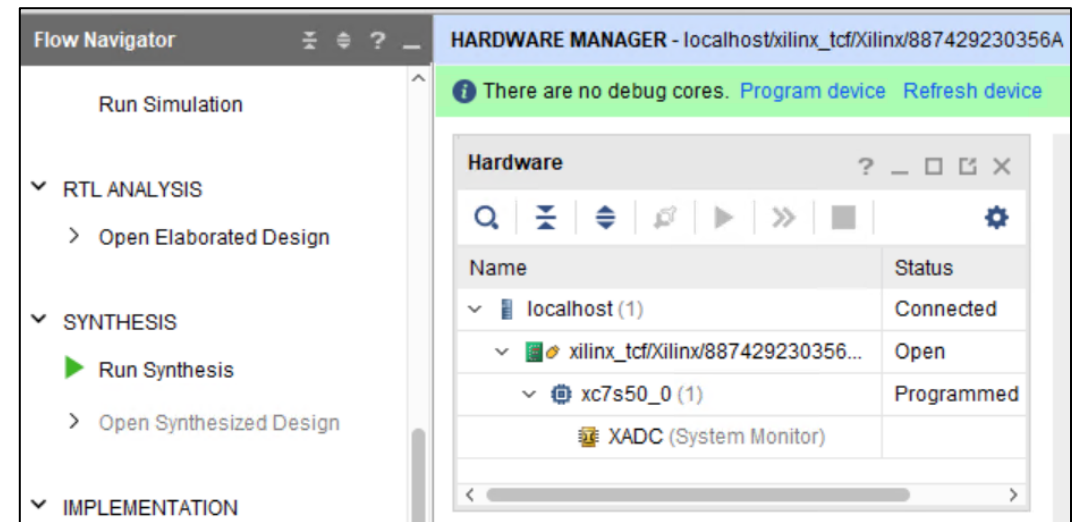
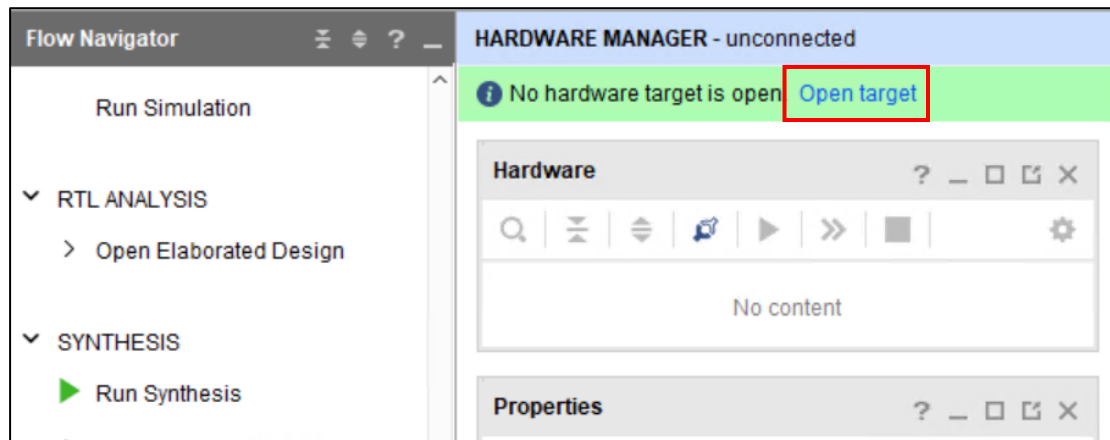
Open Hardware Manager for Programming

- Scroll down the Flow Navigator to find “Open Hardware Manager”, then click



Connect with Urbana Board

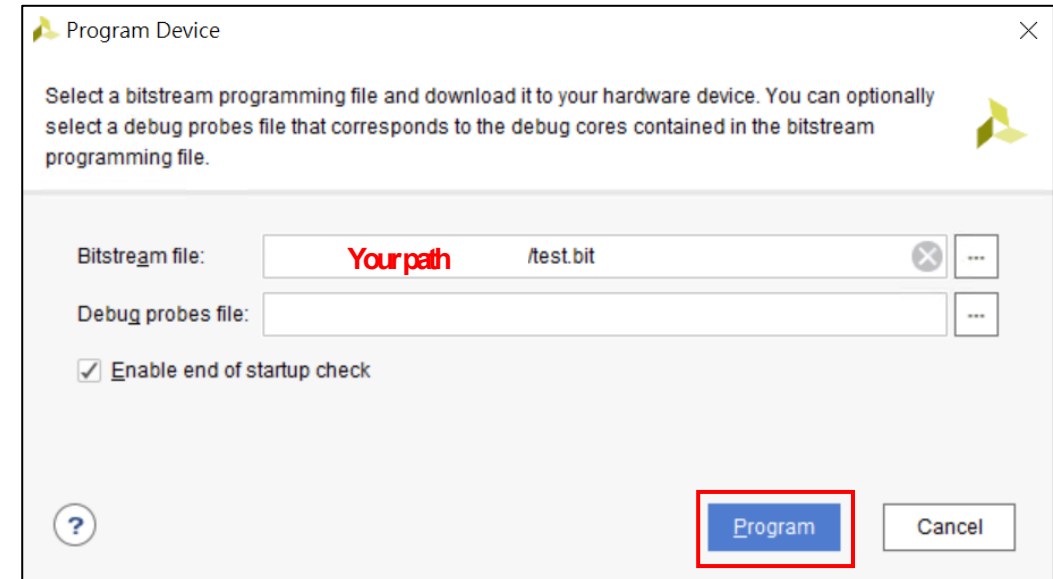
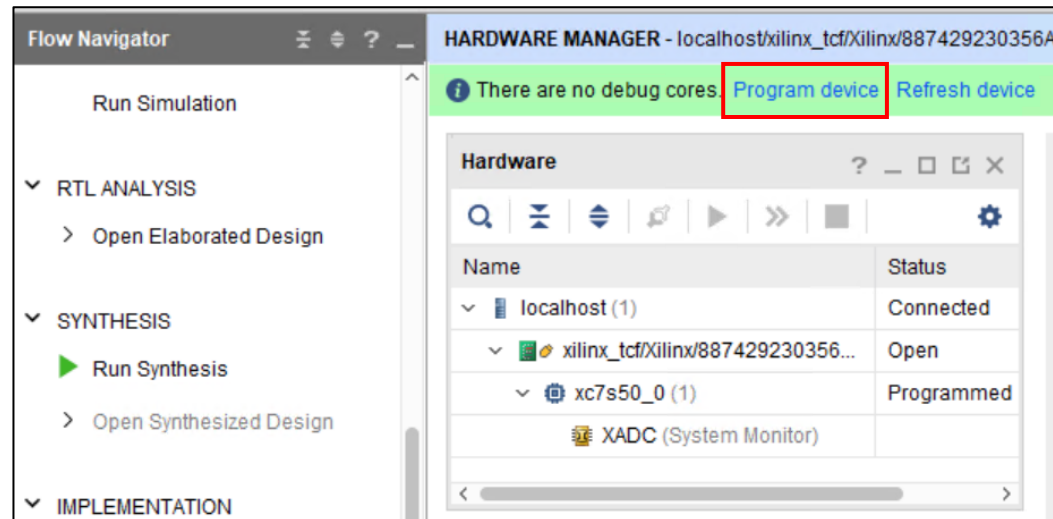
- In the jump-out HARDWARE MANAGER window, click Open target to connect with Urbana board
 - Before this step, make sure your board has connected to your computer via Micro-USB cable



Connect successfully

Program bitstream into Urbana Board

- Click “Program device”, find the path of TA’s “test.bit” file for Bitstream file
- Then click “Program”

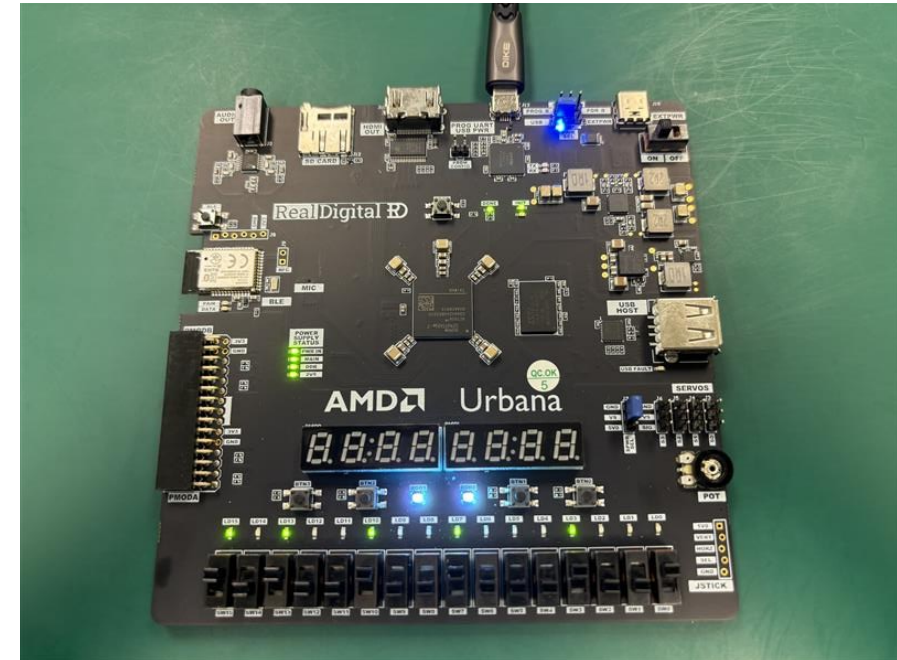
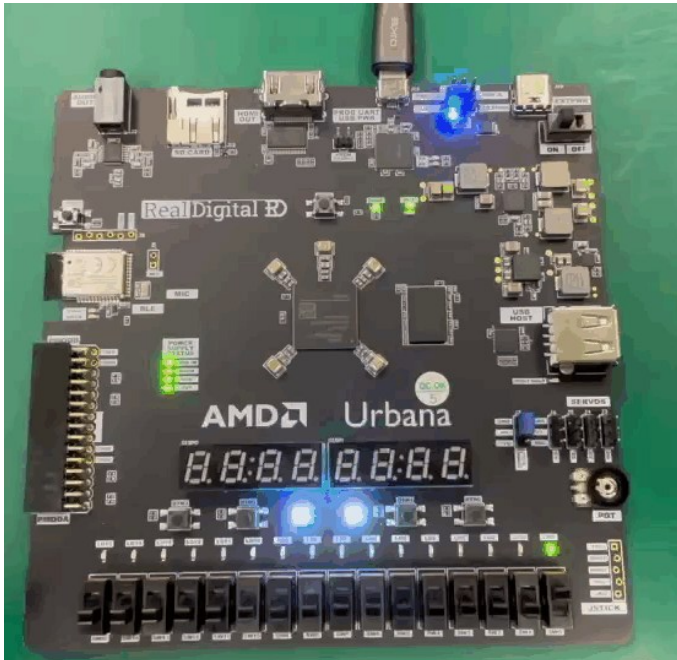


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Function Check

- If programming is successful, no error message will occur on Tcl Console
- Switch on SW0, then LED0 will start to blink
- SW1~15 can control LED1~15



Feedback to us ■

NTHU 晶片安全設計 回饋單



<https://forms.office.com/r/DYDu8vLaWN>

Thank you!



Visit our website: pufacademy.com

Contact us: PUFacademy@pufsecurity.com

