

# ZCU208 Software Install and Board Setup

October 2020



# Revision History

Date	Version	Description
10/30/18	1.0	Initial version for production silicon.

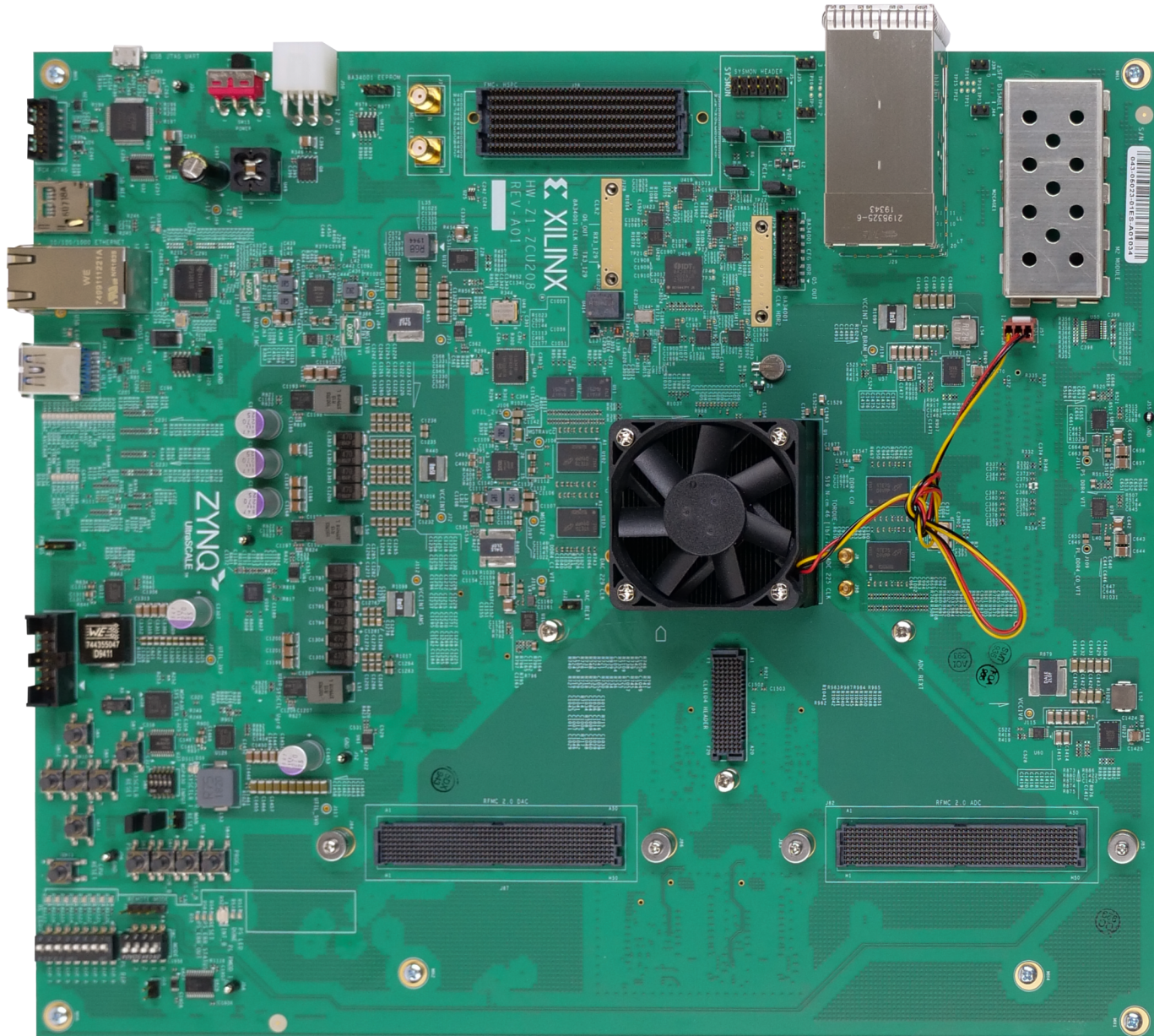
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# ZCU208 Software Install and Board Setup

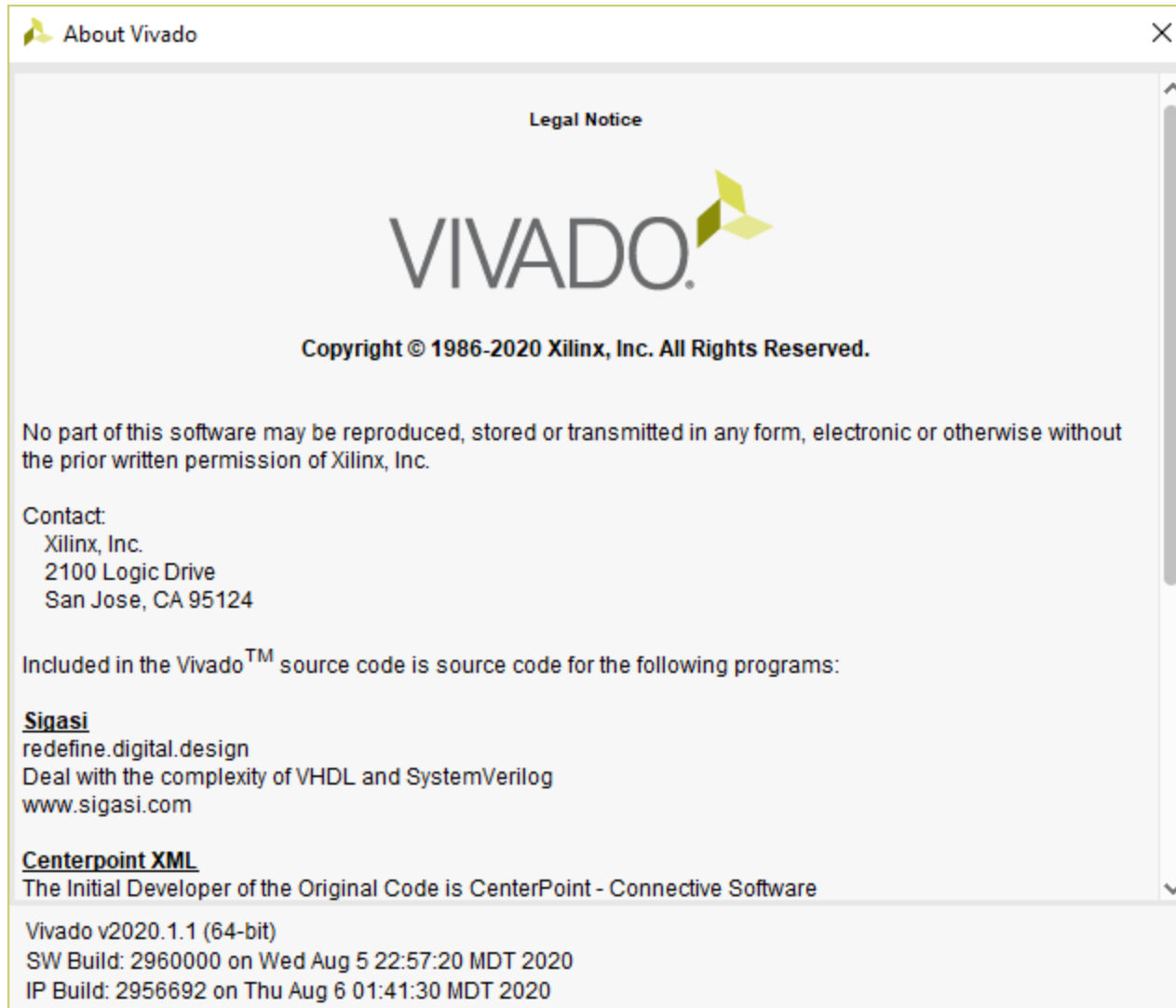
- > **Xilinx ZCU208 Board**
- > **Software Requirements**
- > **ZCU208 Hardware Setup**
- > **UART Driver Install**
- > **Terminal Setup**
- > **Clock Setup**
- > **Ethernet Setup**
- > **Optional Hardware Setup**
- > **References**

# Xilinx ZCU208 Board



# Software Requirements

## > Xilinx Vivado Design Suite 2020.1.1, HL System Edition with SDK



Note: Presentation applies to the ZCU208

# ZCU208 Hardware Setup

## > ZCU208 Kit Hardware contents

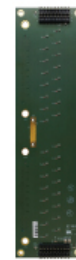
01



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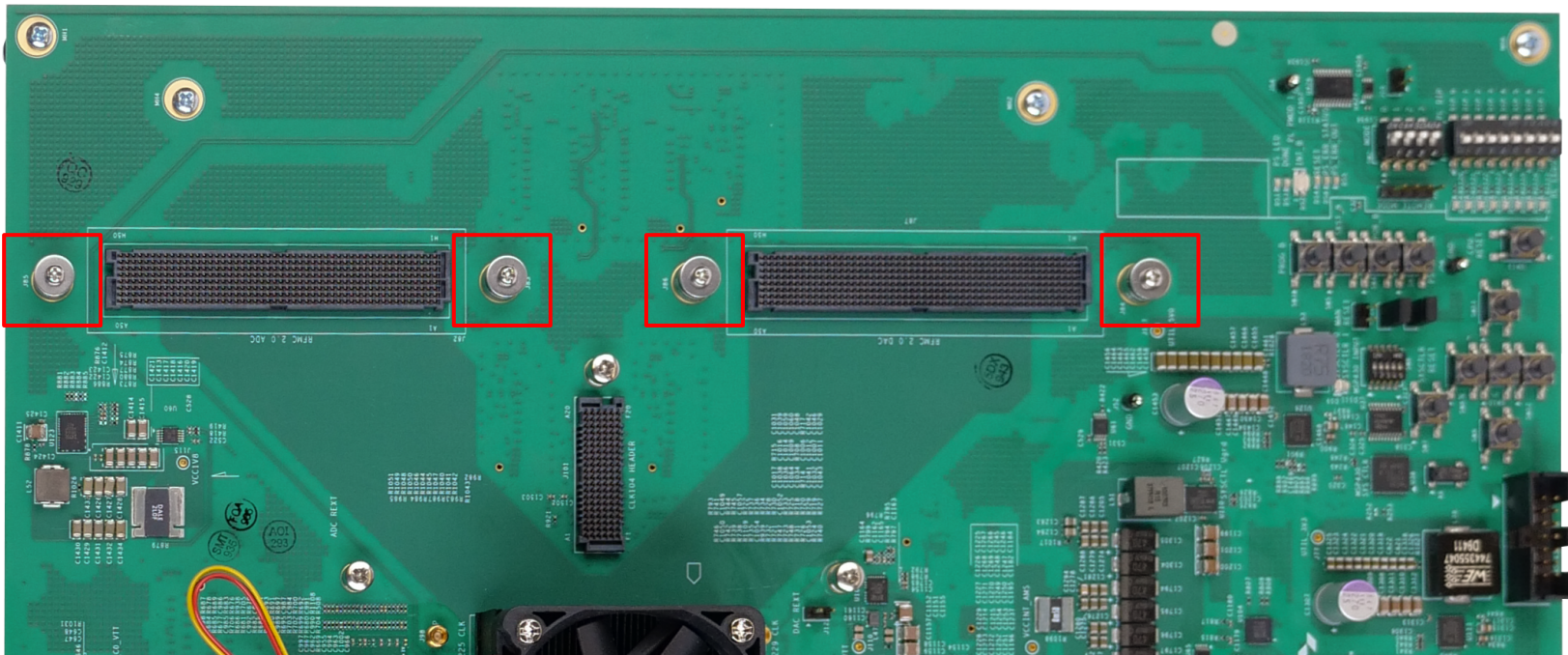
13



- 01 ZCU208 Evaluation Board
- 02 XM655 Breakout Add-On Card
- 03 XM650 Band Loopback Add-On Card
- 04 CLK104 RF Clock Add-On Card
- 05 6 Filters
  - 2 Low Pass: DC-2500MHz
  - 2 Mid-Band Pass: 3000-4300MHz
  - 2 High-Band Pass: 4900-6200MHz
- 06 2 Carlisle SMA 8 Cable Assemblies
- 07 2 SMA Cables
- 08 Ethernet Cable
- 09 2 Micro USB Cables
- 10 MicroSD Card
- 11 Power Cords and Adapters
- 12 Vivado® Design Suite: System Edition Voucher
- 13 Hand Tools

# ZCU208 Hardware Setup

- > Use a [JIS #1](#) screwdriver to remove and install screws on Balun board and Clock module
- >> Recommended: [Vessel 220 screwdriver](#)
- >> Press down reasonably hard to avoid [cam-out](#) when tightening or loosening the screws
- >> Clock module attaches to the vertical connector below the two Balun connectors with three screws



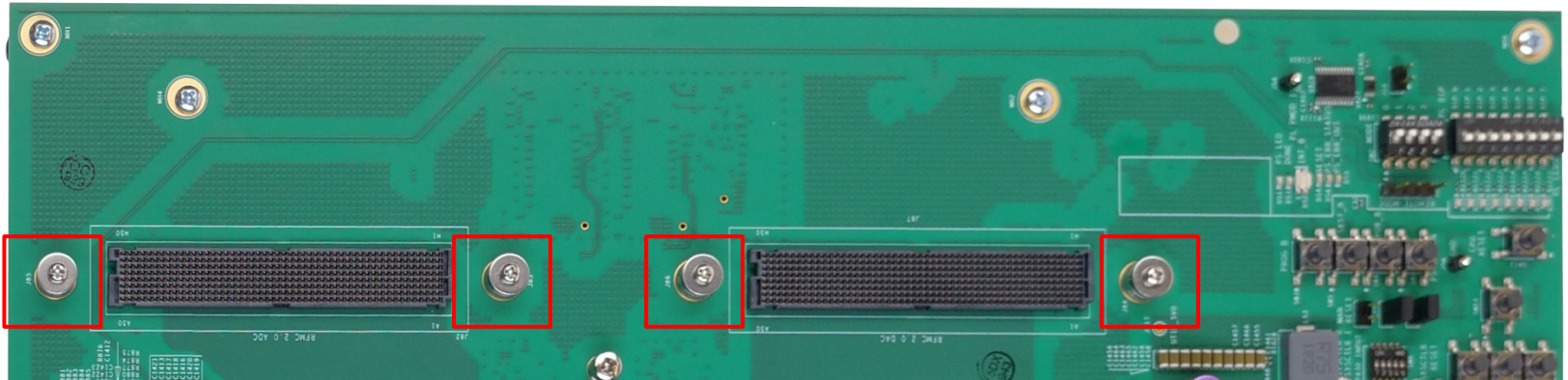
# ZCU208 Hardware Setup

## > Attach the XM650 Balun board

- >> Remove the screws and washers
- >> Verify the jackscrew nuts under the screws are tight, using the 4 mm hex wrench
- >> Attach the Balun board and initially snug the screws with the screwdriver
- >> Tightening each screw by one half turn from one side to the other until all four screws are equally tight

## > Remove the XM650 Balun board

- >> Remove the screws and washers
- >> Using a 4 mm hex wrench, jack the Balun board loose, carefully loosening each jackscrew nut a half turn at a time, until the Balun board is released from the RF connectors
- >> Samtec Video on board removal (JSO): <https://vimeo.com/158484280>

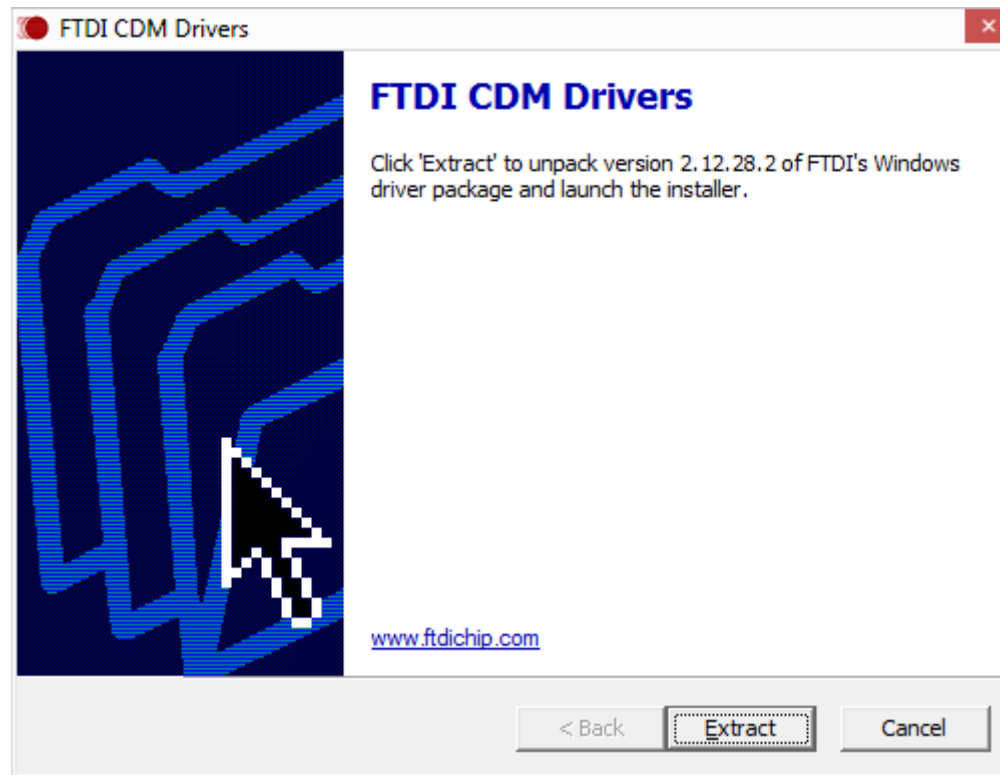




# UART Driver Install

- > Prior to connecting and powering on the ZCU208, install the FTDI CDM Drivers

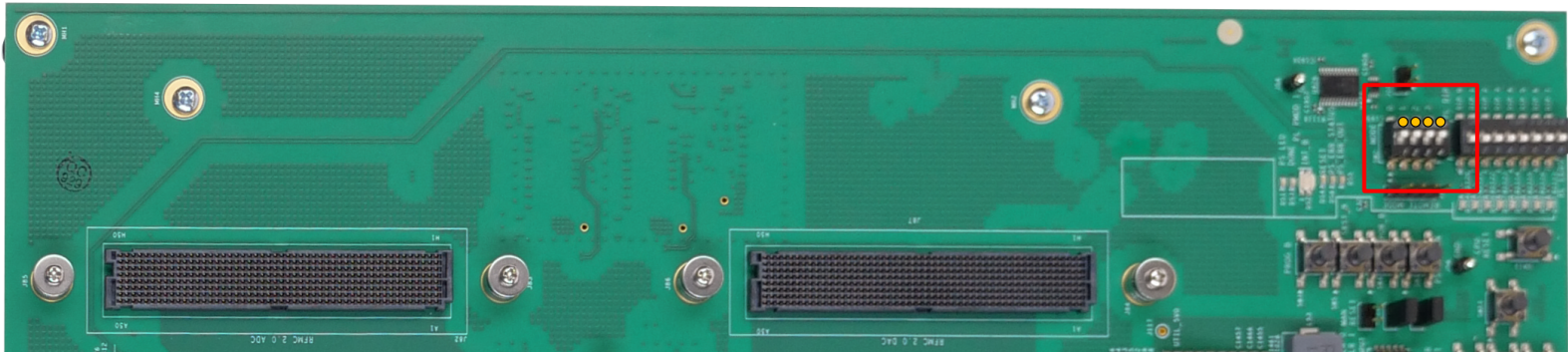
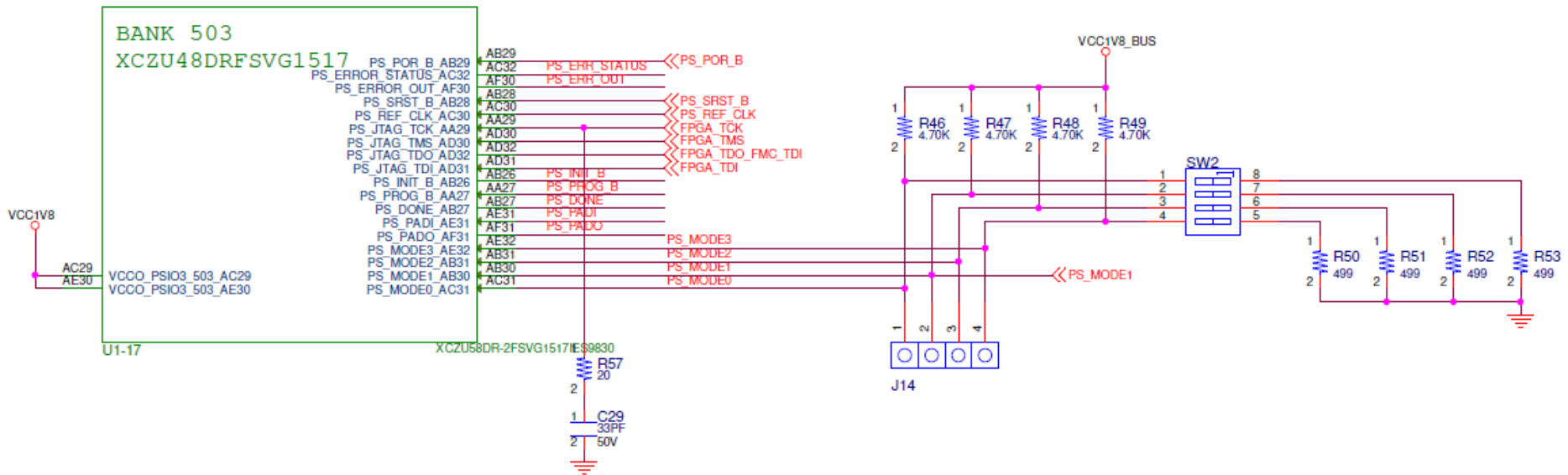
>> [http://www.ftdichip.com/Drivers/CDM/CDM21228\\_Setup.zip](http://www.ftdichip.com/Drivers/CDM/CDM21228_Setup.zip)



# ZCU208 Hardware Setup

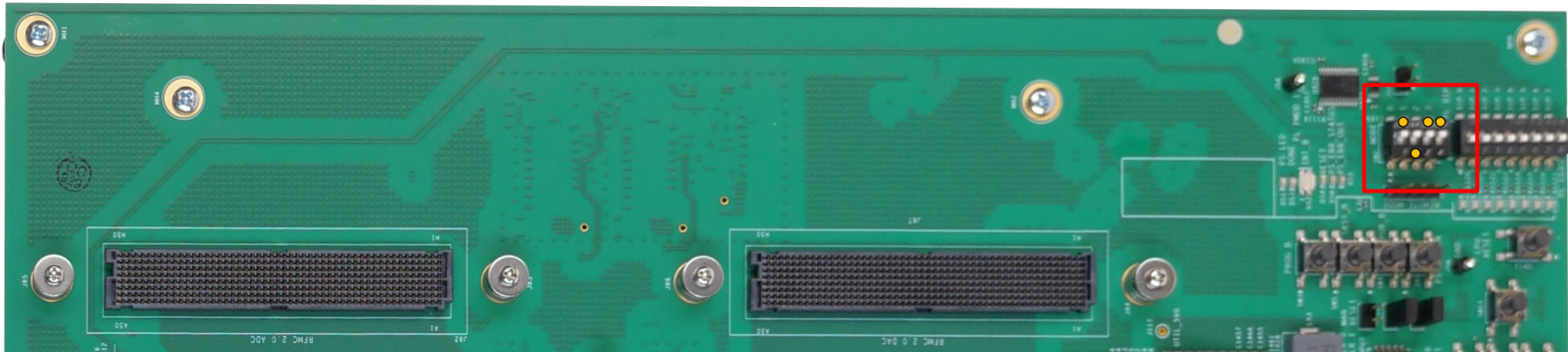
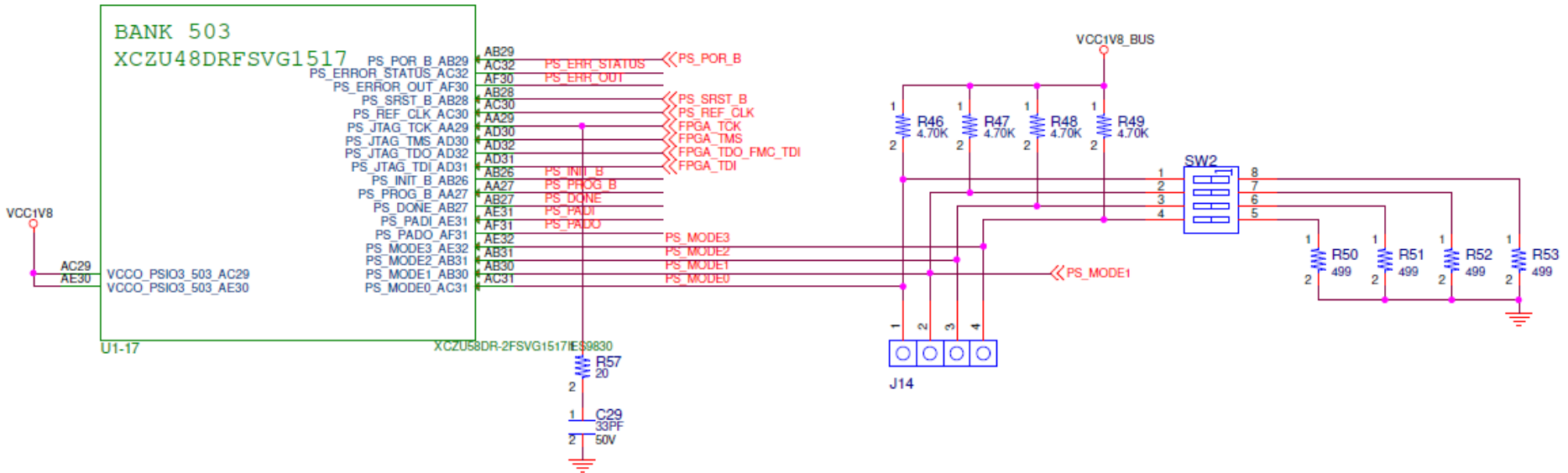
> Set S2 to 1111 (1 = GND, Position 1 → Position 4) (All Up)

>> Used for most tutorials; this sets the Boot Mode to 0x0000, JTAG as per [UG1085](#)



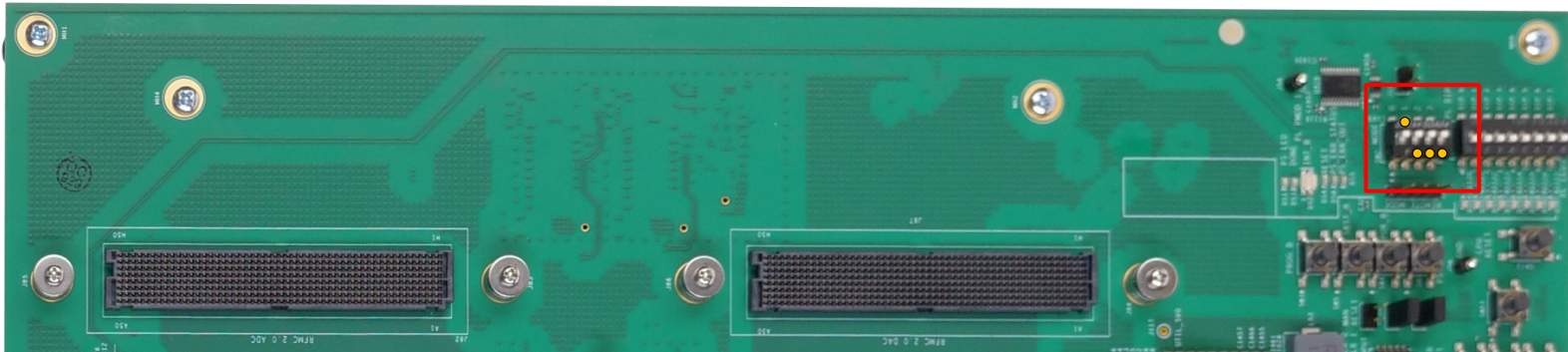
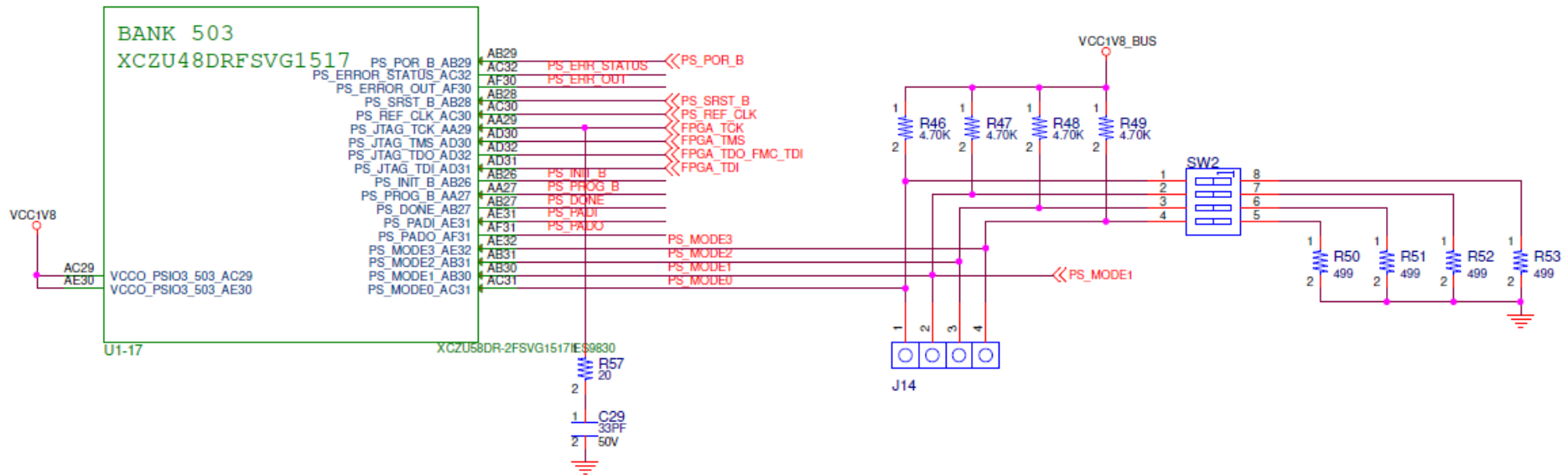
# ZCU208 Hardware Setup

- > Set S2 to 1011 (1 = GND, Position 1 → Position 4) (Up, Down, Up, Up)
  - >> For booting from QSPI



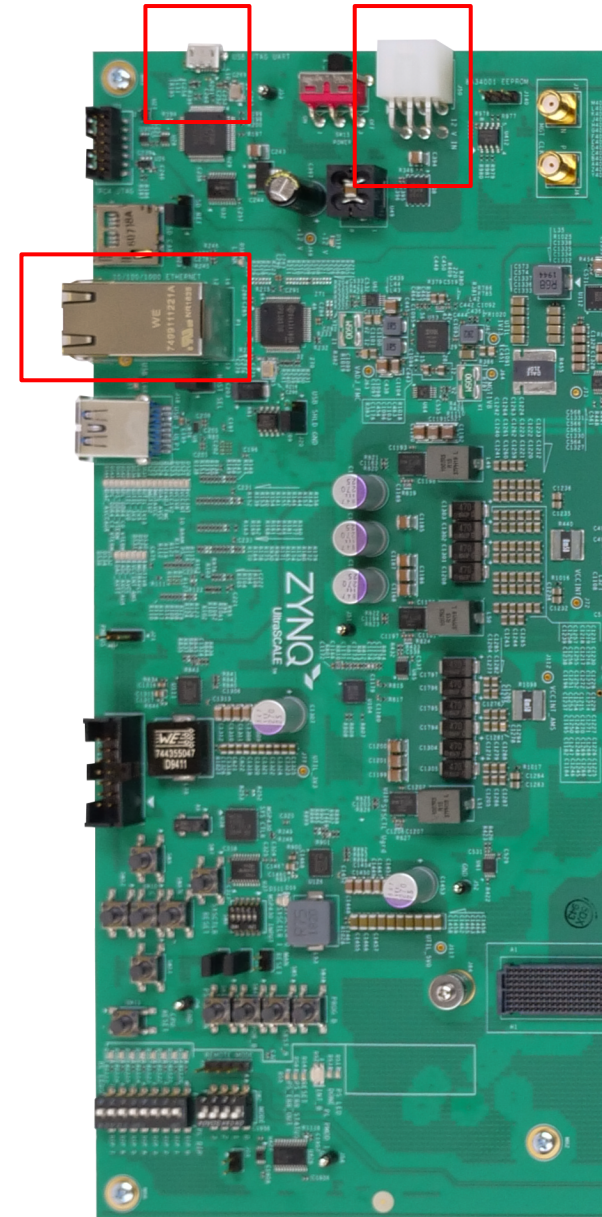
# ZCU208 Hardware Setup

- > Set S2 to 1000 (1 = GND, Position 1 → Position 4) (Up, Down, Down, Down)
  - >> For booting from SD



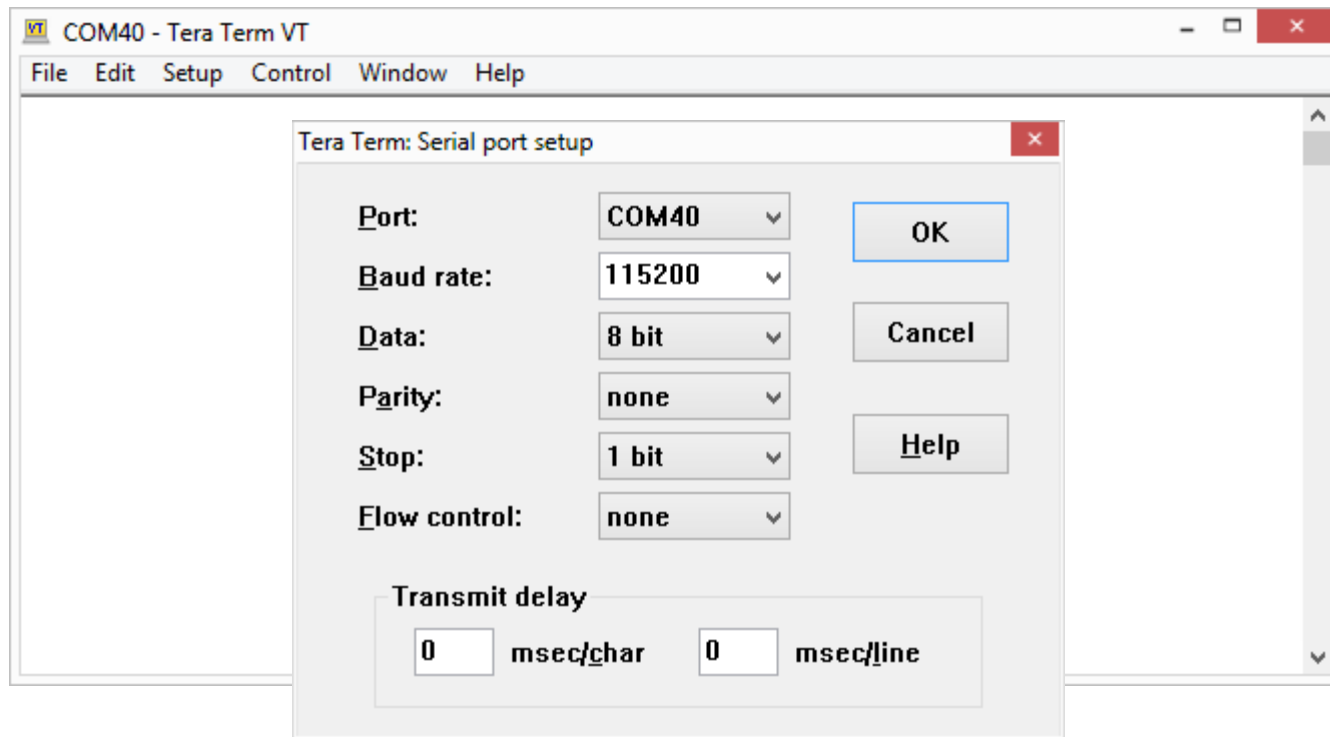
# ZCU208 Hardware Setup

- > Connect the included Ethernet cable to the ZCU208 and connect it to the Host computer
- > Connect a USB Type-A to Micro-B cable to the USB UART JTAG (FTDI) (J83) connector on the ZCU208 board
- > Connect this cable to your PC
- > Connect the power supply to the ZCU208 (J52)
  - >> Connect this cable a power outlet
- > Power on the ZCU208 board
  - >> The PC will enumerate the JTAG and COM Ports



# Terminal Setup

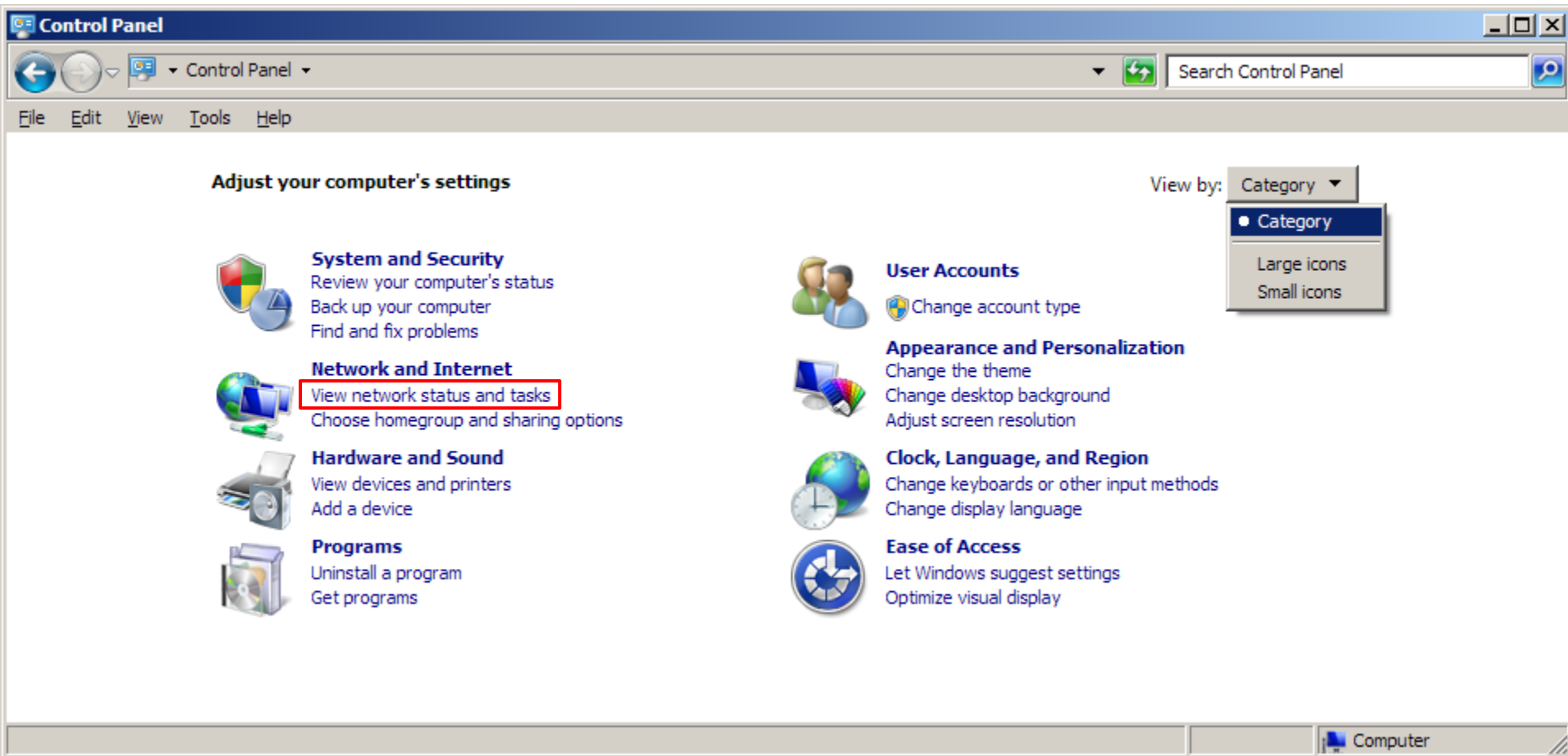
- > Refer to [UG1036](#) regarding Tera Term installation
- > Board Power must be on before starting Tera Term
- > Start the Terminal Program
  - >> Select the desired COM Port
  - >> Set the baud to 115200



**Note:** Close Tera Term while using BIT/System Controller GUI

# Ethernet Setup

- > **Open the Windows Control Panel**
  - >> Set to View by Category
- > **Click on “View network status and tasks”**



# Ethernet Setup

> Click on “Change adapter settings”

The screenshot shows the Windows Control Panel window titled "Control Panel\Network and Internet\Network and Sharing Center". The breadcrumb path is "Control Panel > Network and Internet > Network and Sharing Center". The main content area is titled "View your basic network information and set up connections". It features a navigation bar with "Change adapter settings" (highlighted with a red box), "Change advanced sharing settings", and "See full map". Below this, a diagram shows the network path: "XCOJAMESM22 (This computer)" connected to "Multiple networks", which is connected to "Internet".

**View your active networks**

Network Name	Access type	Connections
xlnx.xilinx.com Domain network	Internet	Local Area Connection
Network 4 Public network	No network access	Local Area Connection 2

**Change your networking settings**

- Set up a new connection or network
- Set up a wireless, broadband, dial-up, ad hoc, or VPN connection; or set up a router or access point.

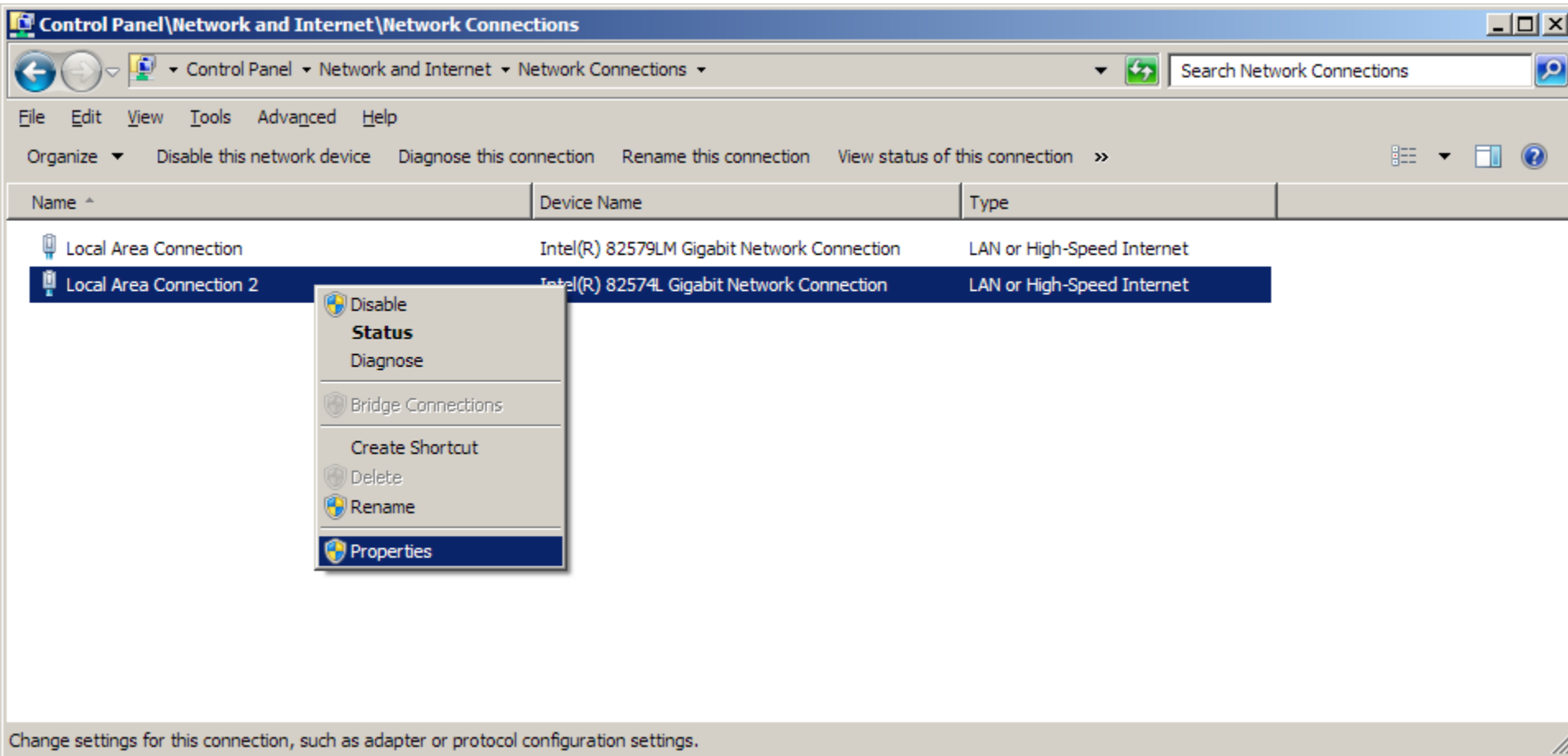
**See also**

- HomeGroup
- Internet Options
- Windows Firewall



# Ethernet Setup

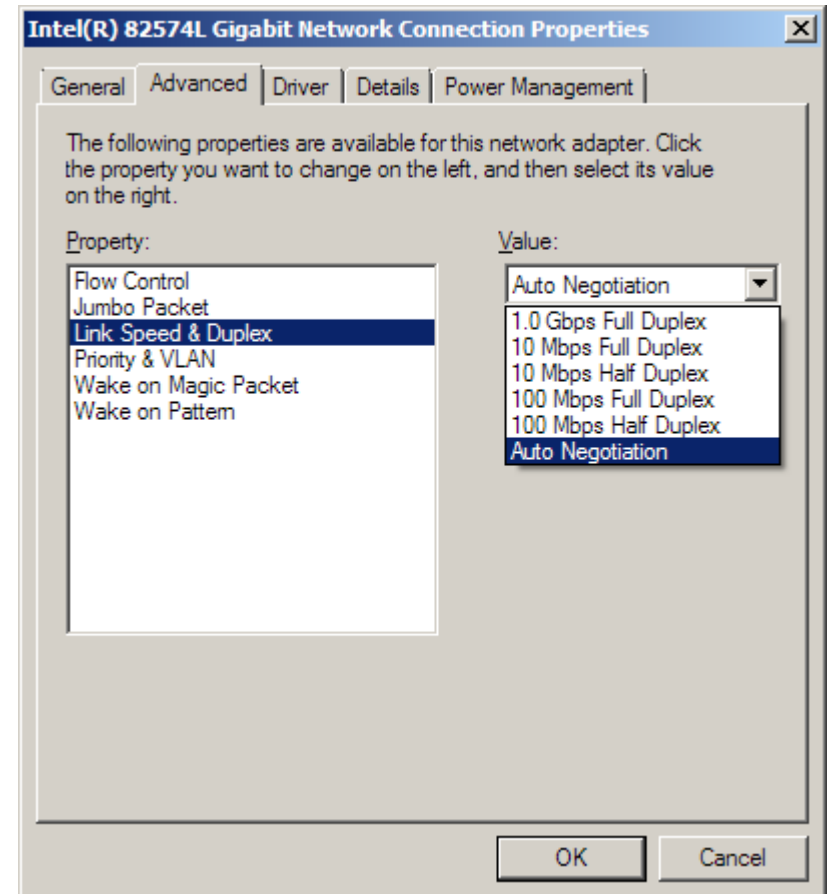
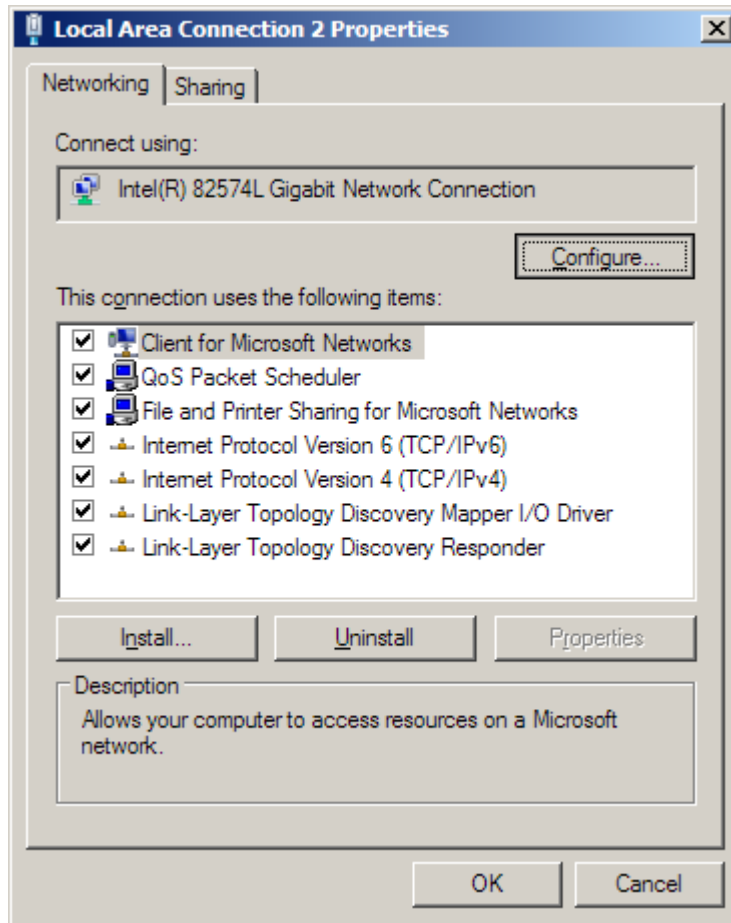
- > Right-click on the Gigabit Ethernet Adapter that you will be using for this test and select Properties



# Ethernet Setup

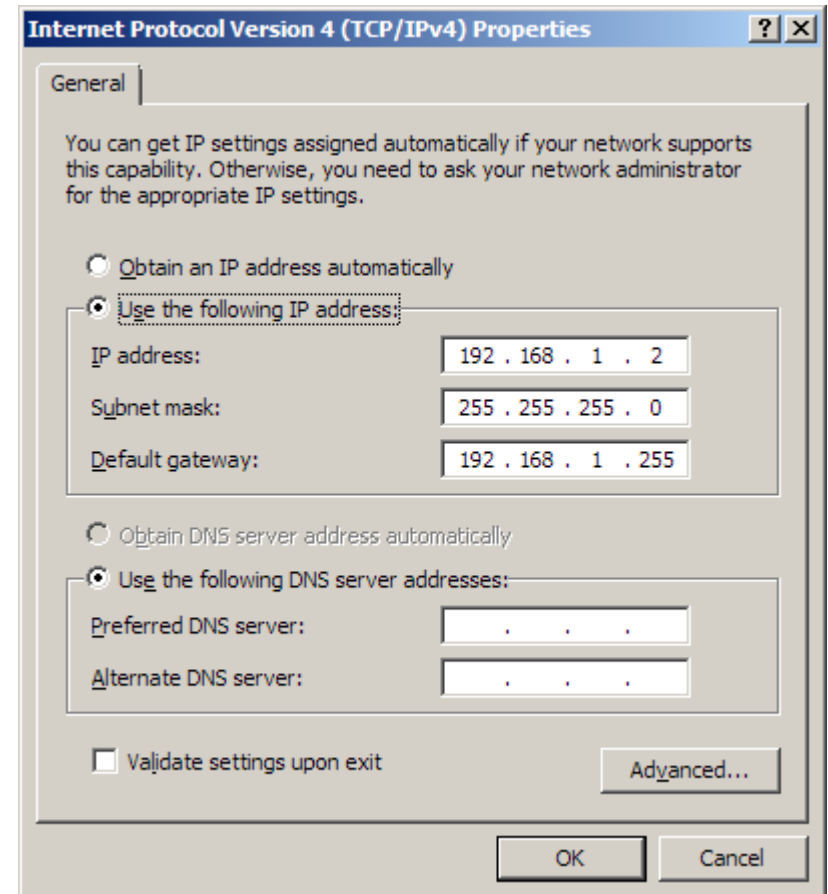
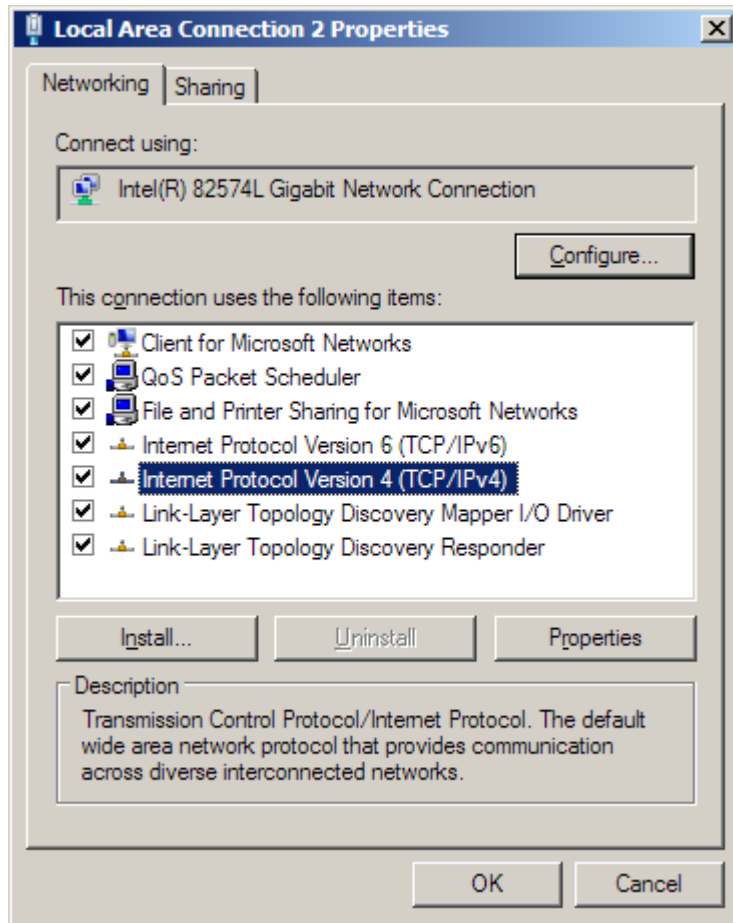
## > Click Configure

>> Set the Link Speed & Duplex to Auto Negotiation then click OK



# Ethernet Setup

- > Reopen the properties after the last step
- > Double-click the Internet Protocol Version 4
- > Set your host to this IP Address:



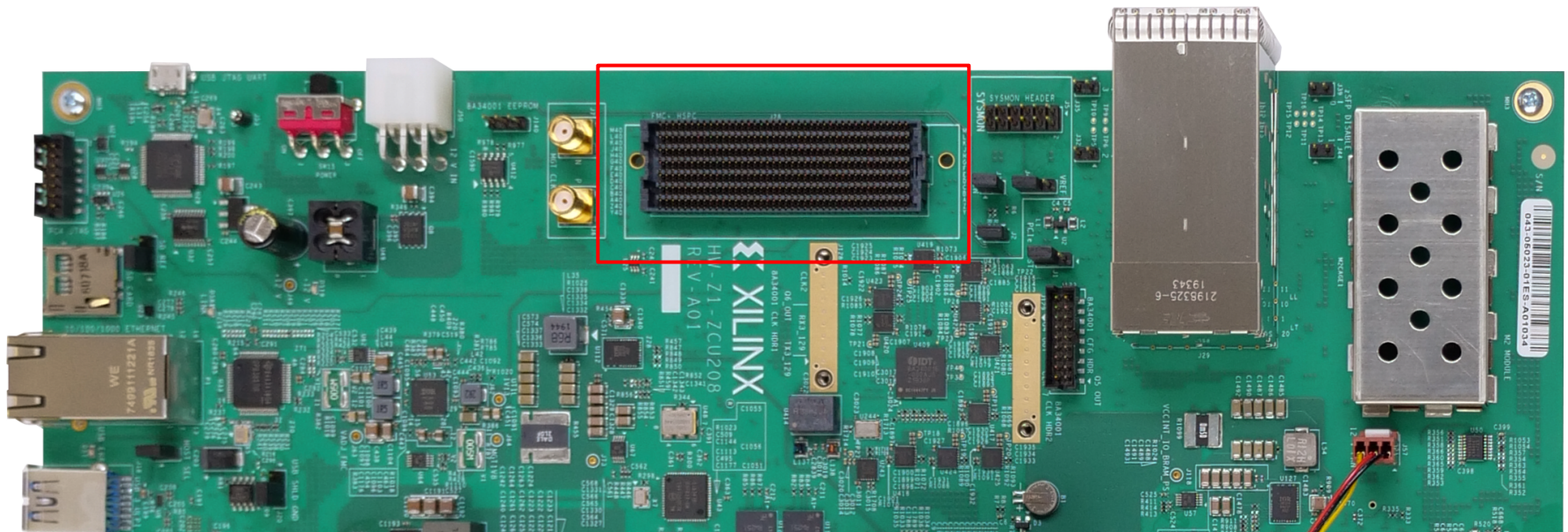
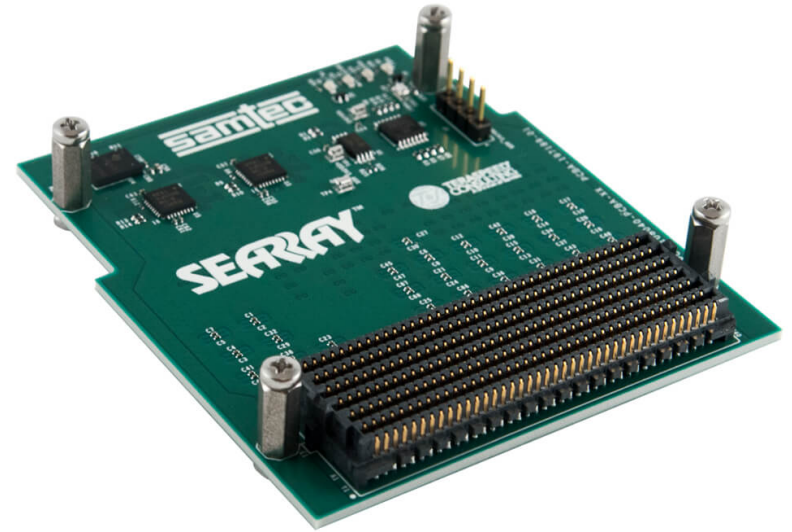
# Optional Hardware Setup

- > For testing SFP with IBERT, SFP28 Loopback Adapters are needed
  - >> [multilaneinc.com](http://multilaneinc.com)
  - >> SFP28 (zSFP+) Loopback Adapter
  - >> Part # [ML4026-28](#)
- > The ZCU208 uses 4 SFP28 adapters



# Optional Hardware Setup

- > Attach a Samtec HSPC FMC+ XM107 board to the FMC+ HSPC connector (J26)
- > Available through [Samtec](#)



# References



# References

## > Vivado Release Notes

- >> Vivado Design Suite User Guide - Release Notes – UG973
  - [https://www.xilinx.com/support/documentation/sw\\_manuals/xilinx2020\\_1/ug973-vivado-release-notes-install-license.pdf](https://www.xilinx.com/support/documentation/sw_manuals/xilinx2020_1/ug973-vivado-release-notes-install-license.pdf)
- >> Vivado Design Suite 2020.x - Vivado Known Issues
  - <https://www.xilinx.com/support/answers/75186.html>

## > Vivado Programming and Debugging

- >> Vivado Design Suite Programming and Debugging User Guide – UG908
  - [https://www.xilinx.com/support/documentation/sw\\_manuals/xilinx2020\\_1/ug908-vivado-programming-debugging.pdf](https://www.xilinx.com/support/documentation/sw_manuals/xilinx2020_1/ug908-vivado-programming-debugging.pdf)

# Documentation





# Documentation

## > Zynq UltraScale+

>> Zynq UltraScale+ RFSoc

– <https://www.xilinx.com/products/silicon-devices/soc/rfsoc.html>

## > ZCU208 Documentation

>> Xilinx Zynq UltraScale+ RFSoc ZCU208 Evaluation Kit

– <https://www.xilinx.com/products/boards-and-kits/zcu208.html>

>> ZCU208 Board User Guide – UG1410

– [https://www.xilinx.com/support/documentation/boards\\_and\\_kits/zcu208/ug1410-zcu208-eval-bd.pdf](https://www.xilinx.com/support/documentation/boards_and_kits/zcu208/ug1410-zcu208-eval-bd.pdf)

>> ZCU208 - Known Issues Master Answer Record

– <https://www.xilinx.com/support/answers/70958.html>