

KCU116 Software Install and Board Setup

May 2019



XTP464

Revision History

Date	Version	Description
05/29/19	8.0	Updated for 2019.1.
12/10/18	7.0	Updated for 2018.3.
06/18/18	6.0	Updated for 2018.2.
04/09/18	5.0	Updated for 2018.1.
12/20/17	4.0	Updated for 2017.4.
10/26/17	3.0	Updated for 2017.3.1.
06/20/17	2.0	Updated for 2017.2.
04/19/17	1.0	Initial version.

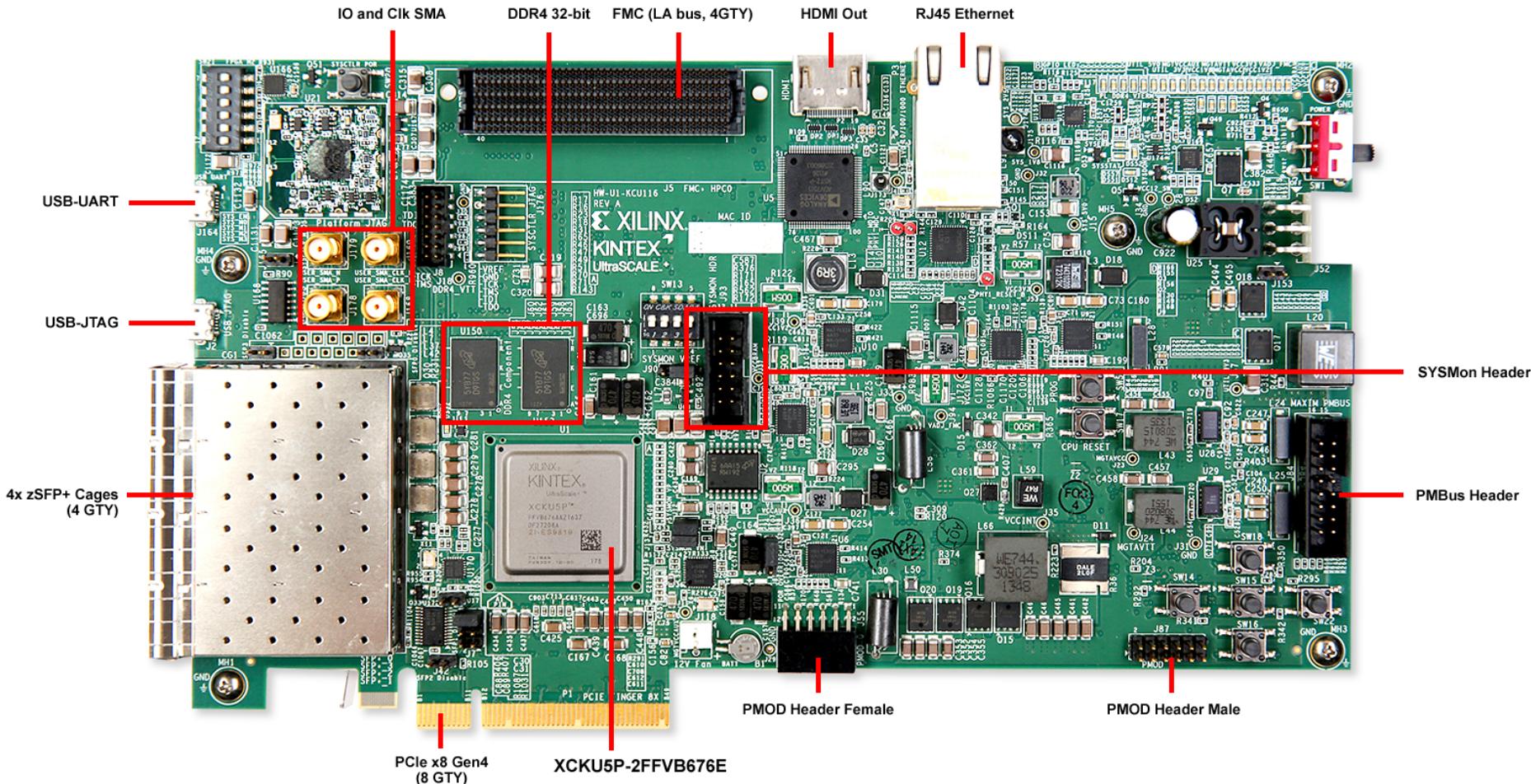
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KCU116 Software Install and Board Setup

- > Xilinx KCU116 Board
- > Software Requirements
- > KCU116 Hardware Setup
- > UART Driver Install
- > Terminal Setup
- > Clock Setup
- > Ethernet Setup
- > Optional Hardware Setup
- > References

Xilinx KCU116 Board



Note: Presentation applies to the KCU116

XILINX

Software Requirements

- > Xilinx Vivado Design Suite 2019.1, HL System Edition with SDK



KCU116 Hardware Setup

> Kit Hardware contents

- >> KCU116 Board
- >> One SFP28 Loopback Module
- >> Ethernet cable
- >> Micro USB cables
- >> Power supply



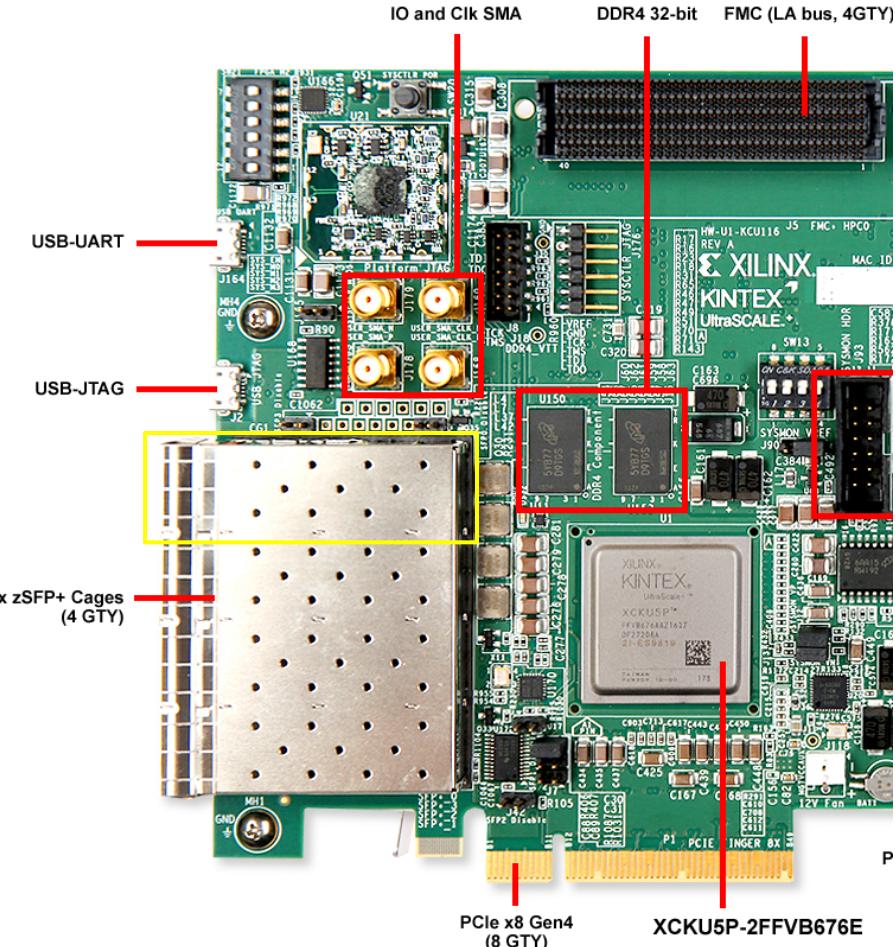
KCU116 Hardware Setup

> One Multilane zSFP 28 Gbps Loopback

> <https://multilaneinc.com>

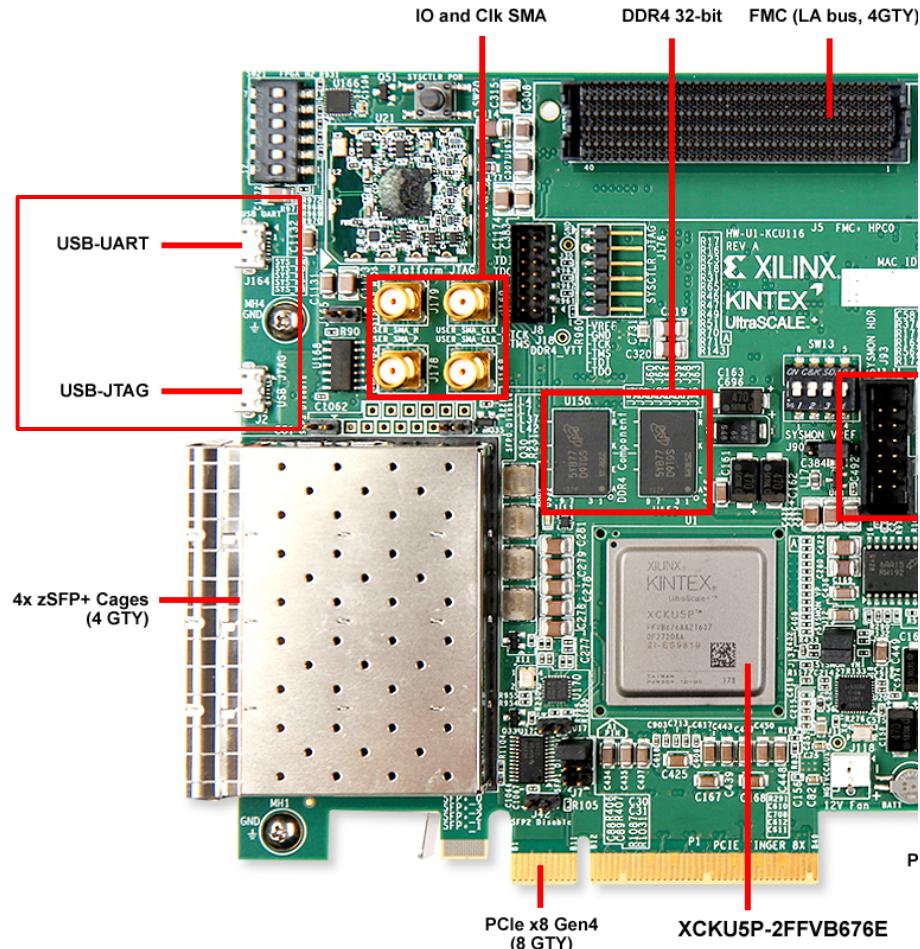
> Part number: ML4026-28

> Insert into the top slot of the SFP cage



KCU116 Hardware Setup

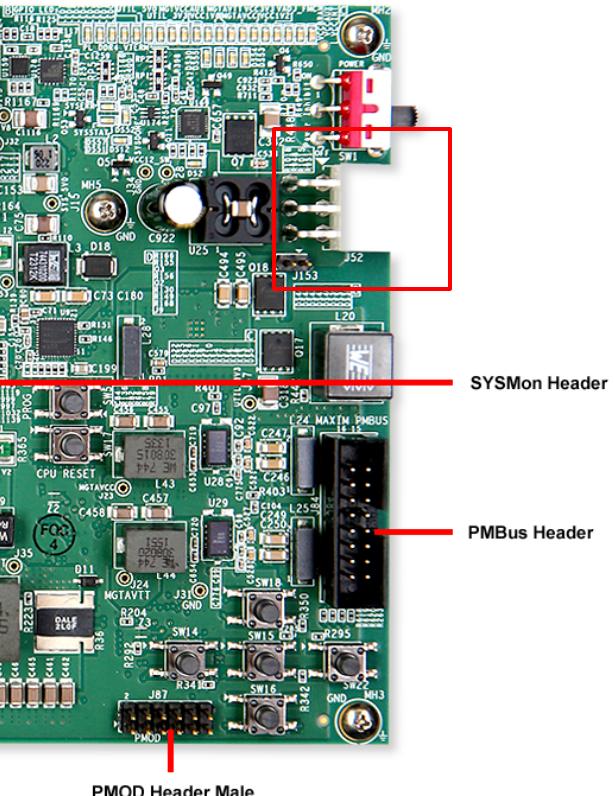
- > Connect a USB Type-A to Micro-B cable to the USB UART connector (J164) on the KCU116 board
- > Connect a USB Type-A to Micro-B cable to the USB JTAG (Digilent) (J2) connector on the KCU116 board
- > Connect these cables to your PC



KCU116 Hardware Setup

> Connect the power supply to the KCU116 (J52)

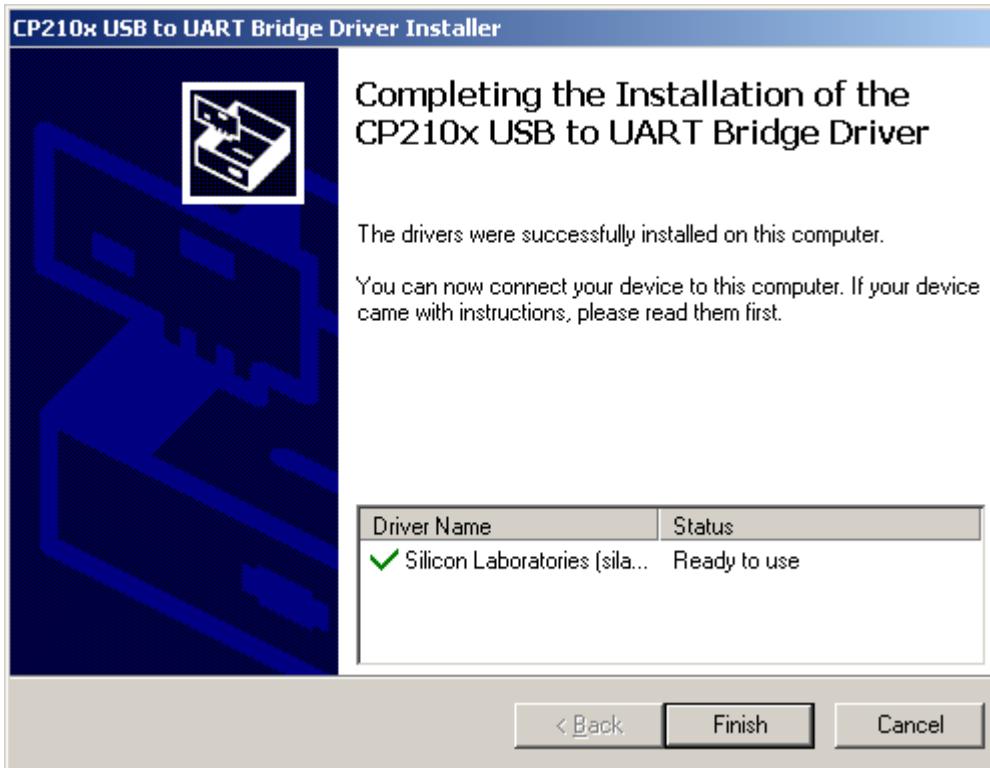
» Connect this power supply to a power outlet



UART Driver Install

> Install Si Labs CP210x USB UART Drivers

» Refer to [UG1033](#) for details on installing the USB to UART Drivers



UART Driver Install

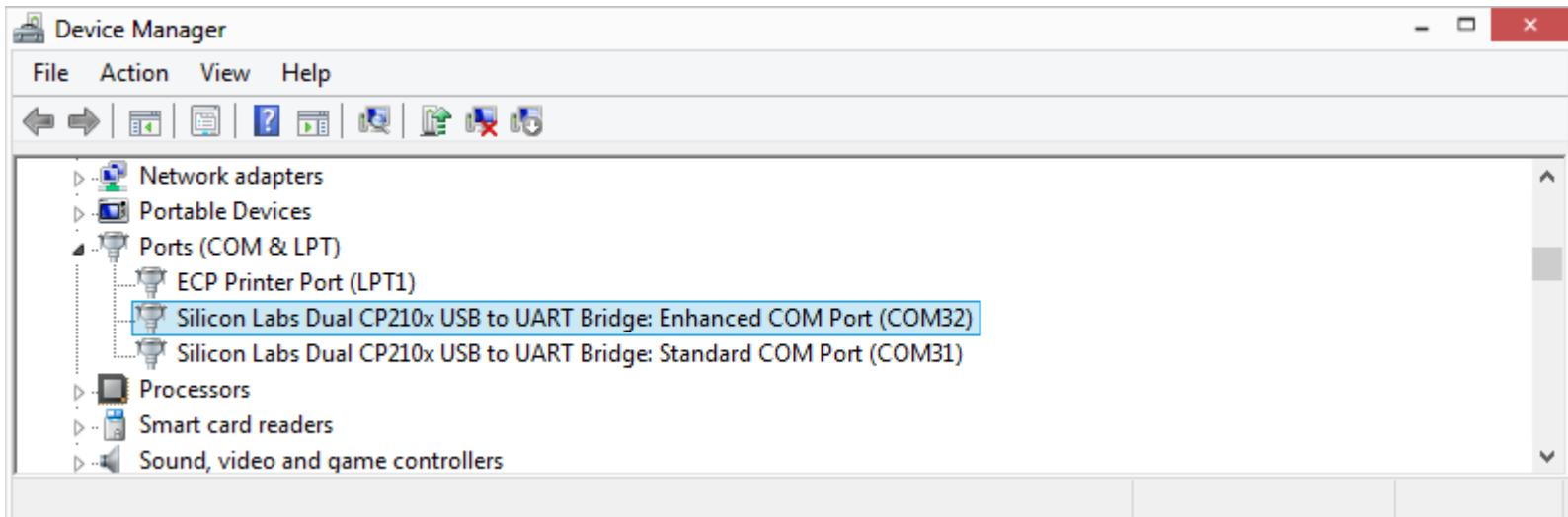
> Determine the COM Port numbers for your system

> Open the Device manager

Control Panel → System → Device Manager

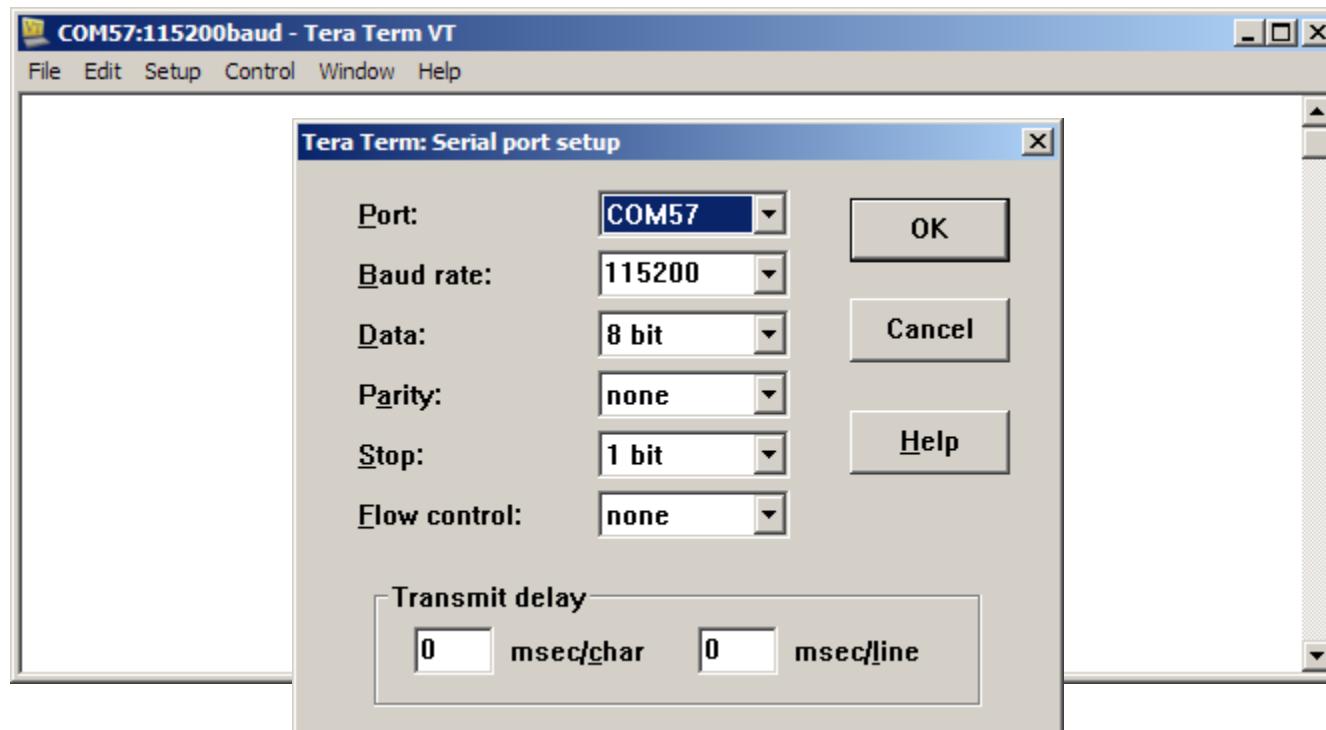
- » There will be two “Silicon Labs Dual CP210x” COM ports, Standard and Enhanced
- » The Standard COM Port is the FPGA UART COM Port
- » The Enhanced COM Port is the System Controller COM Port
- » The COM Port numbers and order may vary from system to system

> These COM Port Numbers will be used in several of the tutorials



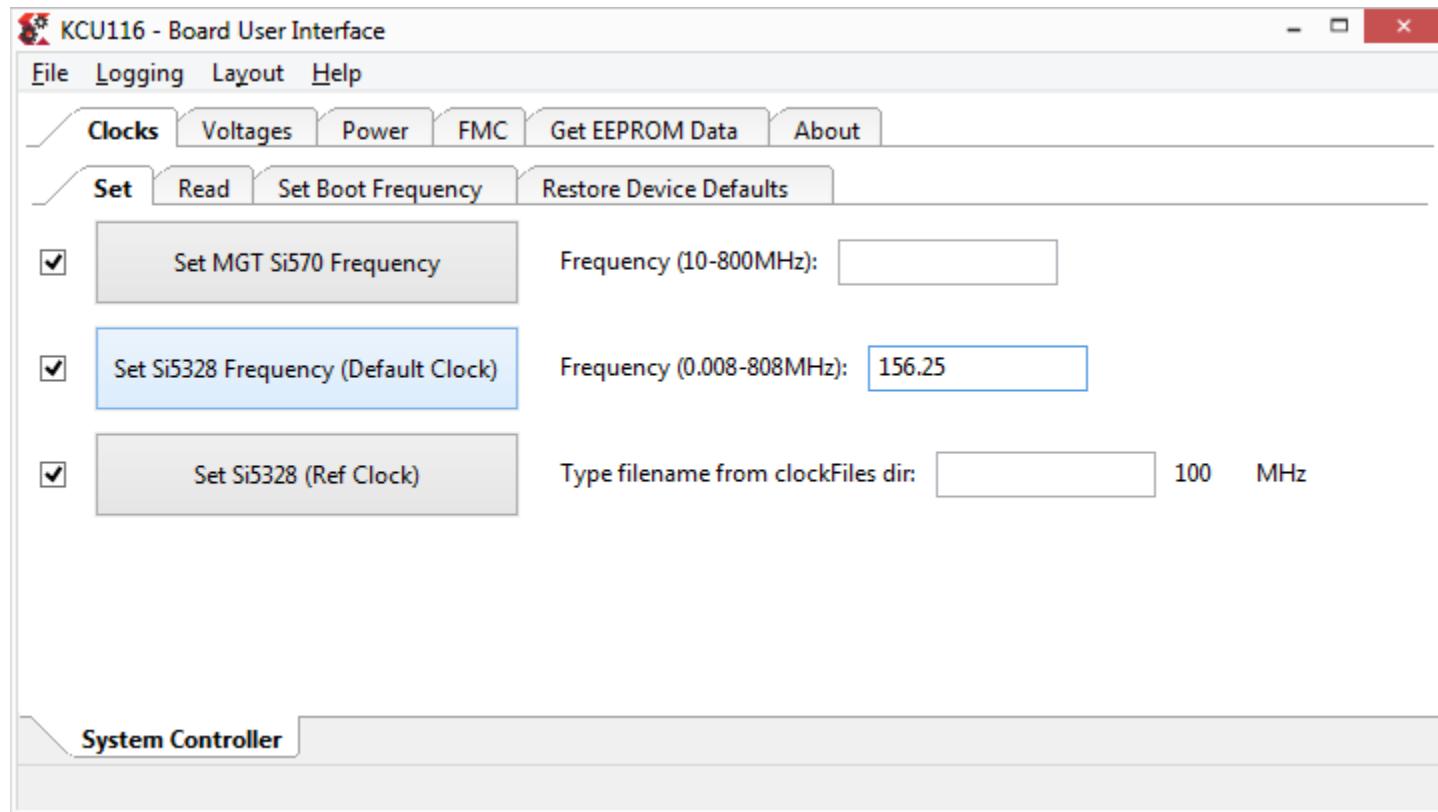
Terminal Setup

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



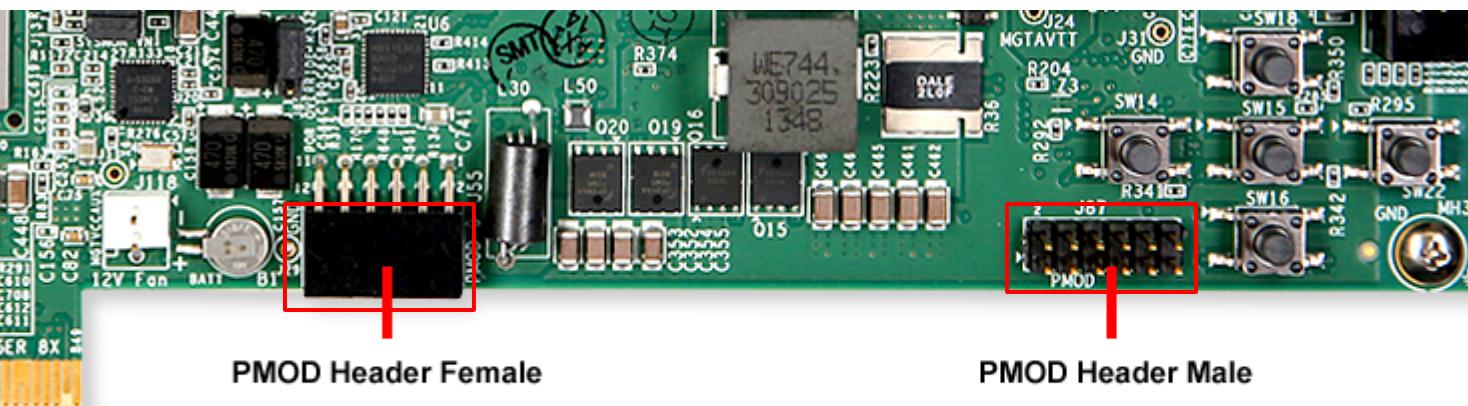
Setting the clocks

- > Using the SCUI, (See XTP465) select the Set tab underneath the Clocks tab
- > Enter 156.25 for the Si5328 and click the Set Si5328 Frequency button



Optional Hardware Setup

- > Jumper PMOD headers
- > Both J55 and J87:
 - » 1 to 2
 - » 3 to 4
 - » 5 to 6
 - » 7 to 8

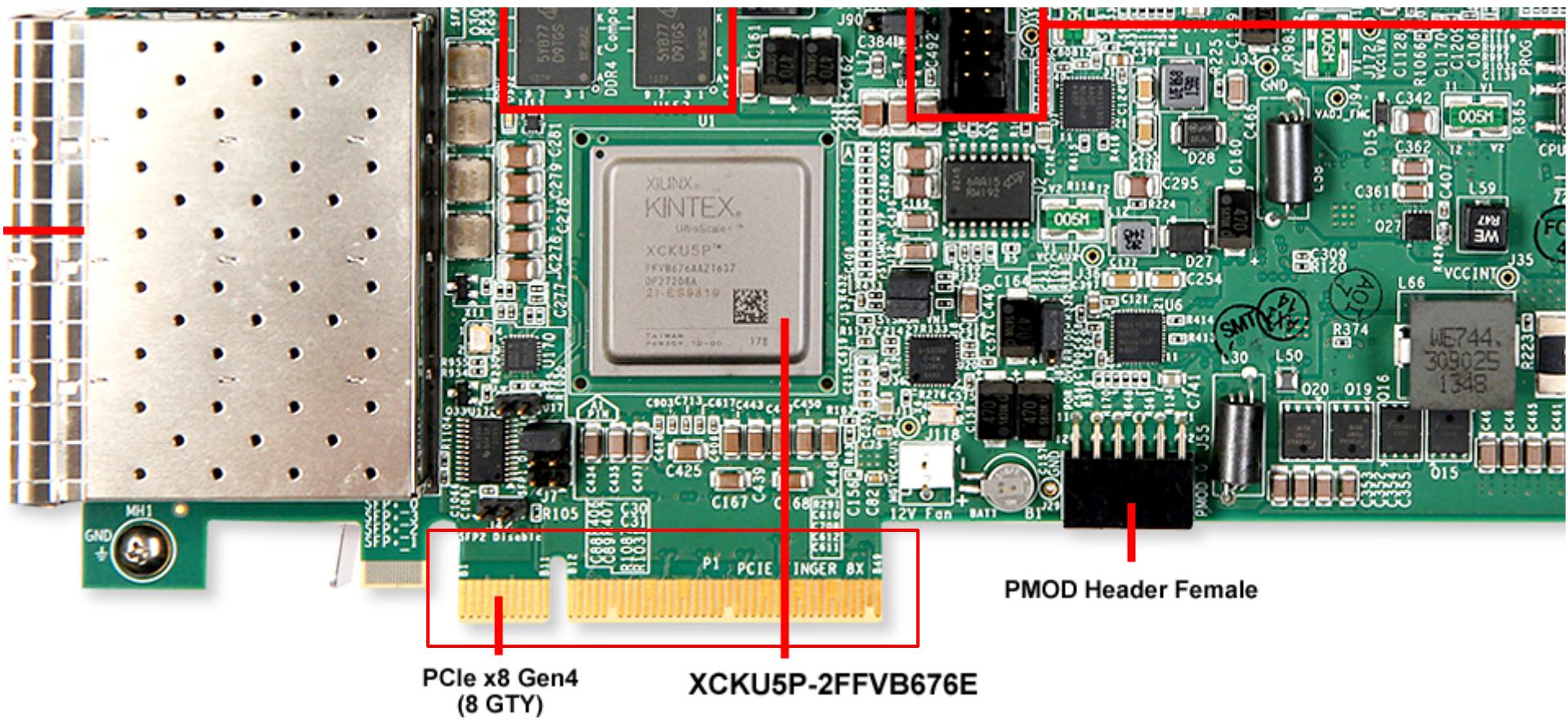


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Note: For PMOD loopback testing in IPI App design

KCU116 Optional Hardware Setup

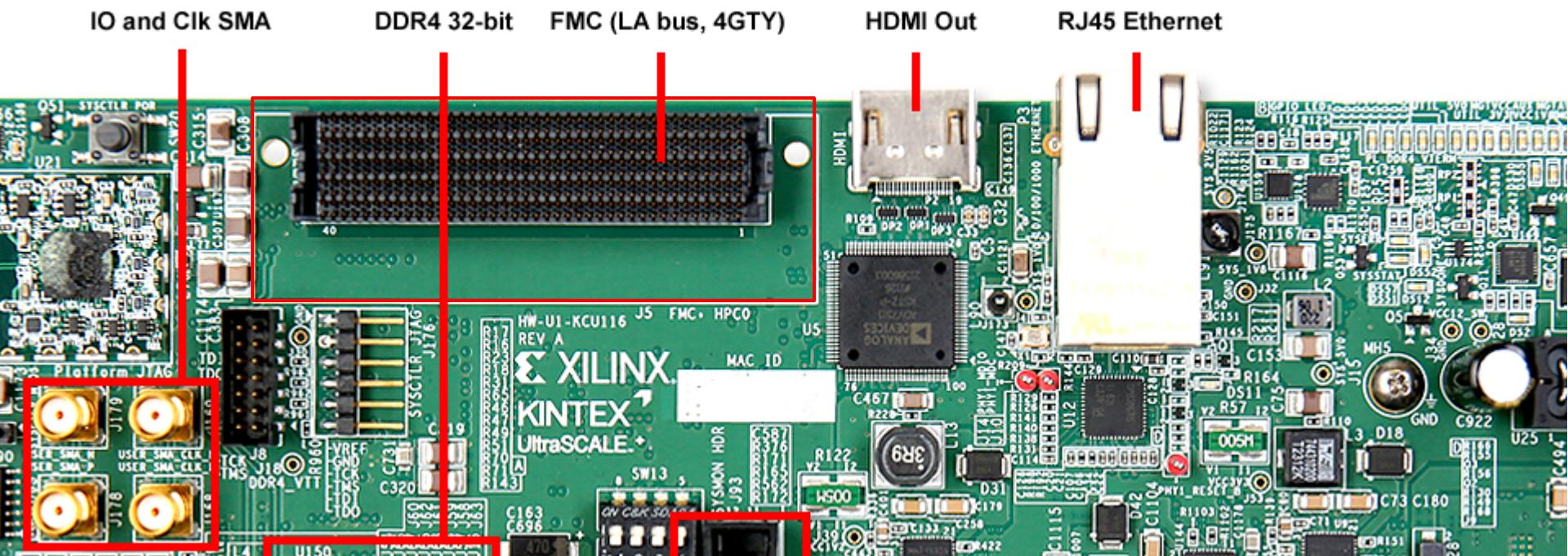
- > **Whizz PCIe Loopback connector**
 - > **Connect a micro USB cable to the PCIe Loopback card for power**
 - » Connect this cable to your PC
 - > **Attach to the PCIe connector (P1) on the KCU116**



Note: For IBERT testing on the PCIe GTs

Optional Hardware Setup

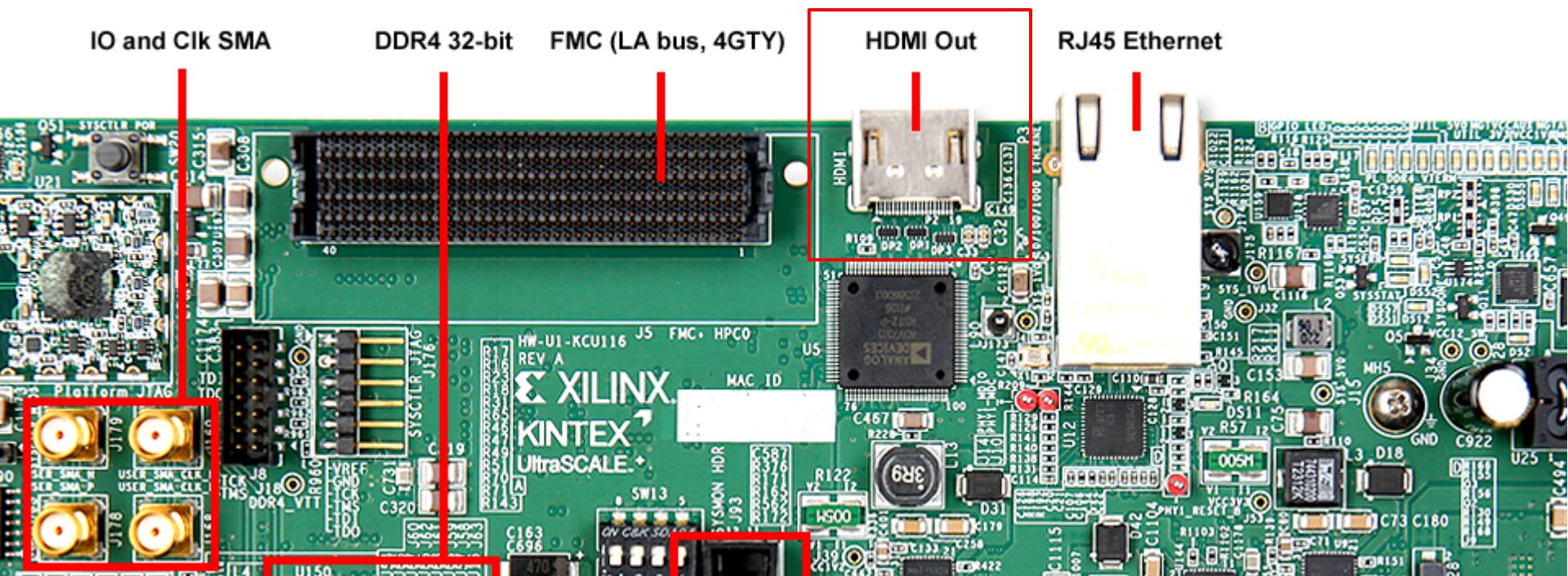
- > Attach a Whizz FMC XM107 board to the FMC HPC0 connector (J5)
- > Available through [Whizz Systems](#)



Note: For IBERT and LVDS loopback testing on FMC slot

Optional Hardware Setup

- > Using a common HDMI cable, connect an HDMI Monitor to the HDMI port (P2)



Note: For HDMI Colorbar test in IPI App design

References



References

> Vivado Release Notes

- » Vivado Design Suite User Guide - Release Notes – UG973
 - https://www.xilinx.com/support/documentation/sw_manuals/xilinx2019_1/ug973-vivado-release-notes-install-license.pdf
- » Vivado Design Suite 2019 - Vivado Known Issues
 - <https://www.xilinx.com/support/answers/72162.html>

> Vivado Programming and Debugging

- » Vivado Design Suite Programming and Debugging User Guide – UG908
 - https://www.xilinx.com/support/documentation/sw_manuals/xilinx2019_1/ug908-vivado-programming-debugging.pdf

Documentation



Documentation

> Kintex UltraScale+

- » Kintex UltraScale+ FPGA Family
 - <https://www.xilinx.com/products/silicon-devices/fpga/kintex-ultrascale-plus.html>

> KCU116 Documentation

- » Kintex UltraScale FPGA KCU116 Evaluation Kit
 - <https://www.xilinx.com/products/boards-and-kits/ek-u1-kcu116-g.html>
- » KCU116 Board User Guide – UG1239
 - https://www.xilinx.com/support/documentation/boards_and_kits/kcu116/ug1239-kcu116-eval-bd.pdf
- » KCU116 Evaluation Kit Quick Start Guide User Guide – XTP471
 - https://www.xilinx.com/support/documentation/boards_and_kits/kcu116/xtp471-kcu116-quickstart.pdf
- » KCU116 - Known Issues Master Answer Record
 - <https://www.xilinx.com/support/answers/68360.html>