### Install Xilinx Tools and Redeem the License Voucher

A Vivado® Design Suite: Design Edition voucher code is included with this KCU116 Evaluation Kit. This Vivado license is node-locked and device-locked to the XCKU5P device.

### STEP 4: Redeem the Vivado Tools License Voucher

To redeem the Vivado Tools voucher code, go to www.xilinx.com/getlicense and enter the voucher code shown below. This will put the licenses into your account. You can then generate the license file, which will be emailed to you. For additional assistance redeeming your voucher, go to www.xilinx.com/kits/voucher.

Note: This voucher code can only be used once and must be redeemed within one year of purchase.

Important

Important

### STEP 5: Install the Vivado Design Suite

a. To install the Vivado Design Suite, go to www.xilinx.com/download to select and download the latest version of Vivado tools for your operating system.
b. The Vivado installation flow will open the Vivado License Manager. 1. Under the **Get License** heading, select **Load License**. 2. Click **Copy License**. 3. In the **Select License File** dialog box, click **Browse**. 4. Navigate to the License file that you received from Xilinx. 5. Select the file and click **Open**.
c. If you need assistance, review the Vivado installation guide at www.xilinx.com/kits/vivadoinstall.

### Next Steps

**More Information**

To learn more, visit www.xilinx.com/KCU116 for an extensive collection of resources, including tutorials, instructional videos, detailed reference design guides, schematics, hardware user guides, and other reference designs to move you from the evaluation and learning phase to developing your own product.

**Support**

For support options related to this product, see the Xilinx support website at www.xilinx.com/support.

**Warranty**

For the product warranty, go to www.xilinx.com/kits/warranty.





XILINX ALL PROGRAMMABLE

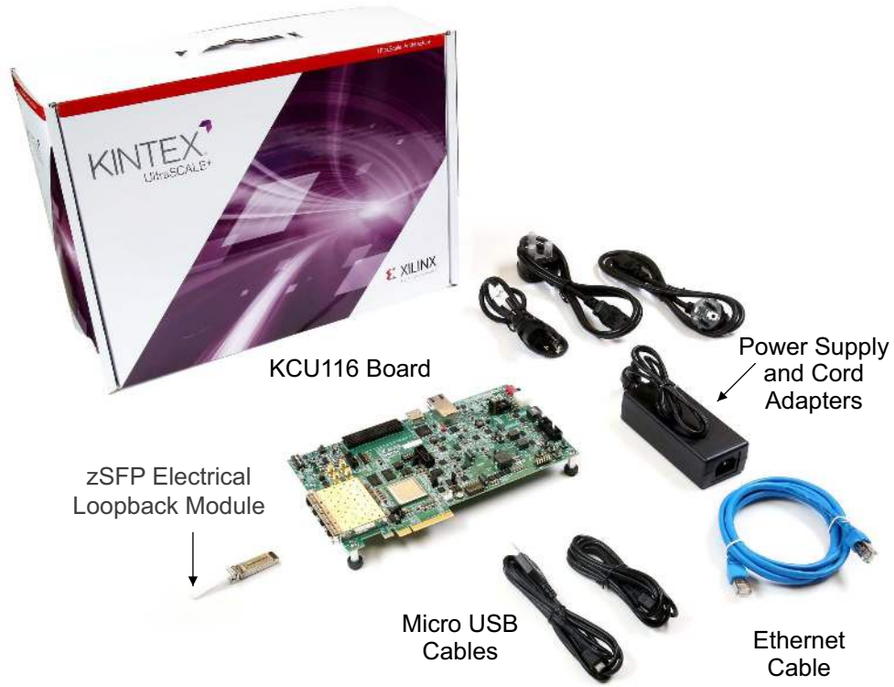
KINTEX UltraSCALE+

# KCU116 Evaluation Kit

## Quick Start Guide

The KCU116 Evaluation Kit contains all the necessary hardware, tools, and IP to evaluate and develop your Xilinx® Kintex® UltraScale+™ FPGA design. This guide provides instructions for running the KCU116 built-in self-test (BIST) and installing the Xilinx tools.

### KCU116 Evaluation Kit

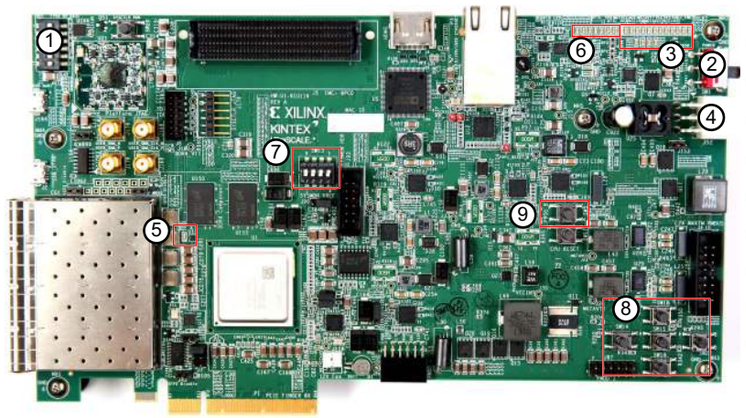



For more information, visit **www.xilinx.com/KCU116**.

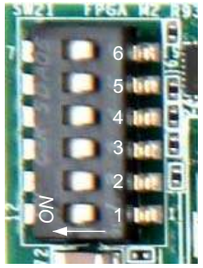
# Built-In Self-Test (BIST) Instructions

## KCU116 Evaluation Kit

The built-in self-test FPGA configuration file is stored in the onboard QSPI flash memory.



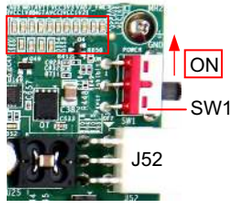

1. MODE DIP Switch SW21
2. Power Switch SW1
3. Power Good LEDs
4. Power Jack J52
5. DONE LED DS32
6. GPIO LEDs
7. GPIO DIP Switch SW13
8. GPIO Pushbuttons
9. SW5 – PROG B




**STEP 1: Set the FPGA Configuration Mode**

Set the FPGA configuration mode DIP switch to load the BIST configuration by setting SW21-6 OFF as shown. (All switches in the photo are in the OFF position.)

**Power Good LEDs**




**STEP 2: Connect Power to the Board**

Connect the 6-pin power supply plug to J52, and power up the board using the SW1 switch.

When the Power Good LEDs glow green, the power system is operating correctly.

When DONE LED DS32 glows green, the Kintex UltraScale+ FPGA is configured successfully.



**GPIO LEDs**

**STEP 3: Run the Built-In Self-Test**

The BIST consists of a set of pass/fail tests. On power-up, the Clock, DDR, BRAM, flash memory, and I2C tests are run without user input.

A passing test is indicated when the corresponding GPIO LED for each test is ON. See the following table for the LED that corresponds to each test. As a test starts, its corresponding LED flashes quickly.

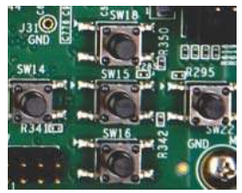
The DIP and pushbutton (PB) tests require user interaction as described in the following section. The blinking LED indicates which test is waiting for user input.

### Board Self-Test Assignments for GPIO LEDs

| GPIO LEDs | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| Clock | DDR | BRAM | Flash | I2C | DIP | PB | All tests done |


SW13 is the GPIO DIP switch. To complete the test, push all four switches to the ON position, and then back to OFF.

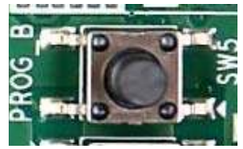
A passing test is indicated when GPIO LED 2 is ON.




The PB test checks pushbutton operation.

To complete the test, push the N, W, S, and E pushbuttons in any order. Then push the center pushbutton.

A passing test is indicated when GPIO LED 1 is ON.




To run the built-in self-test again, press SW5 (PROG).

For information on testing FMC, PCIe, and zSFP board interfaces, visit www.xilinx.com/KCU116.