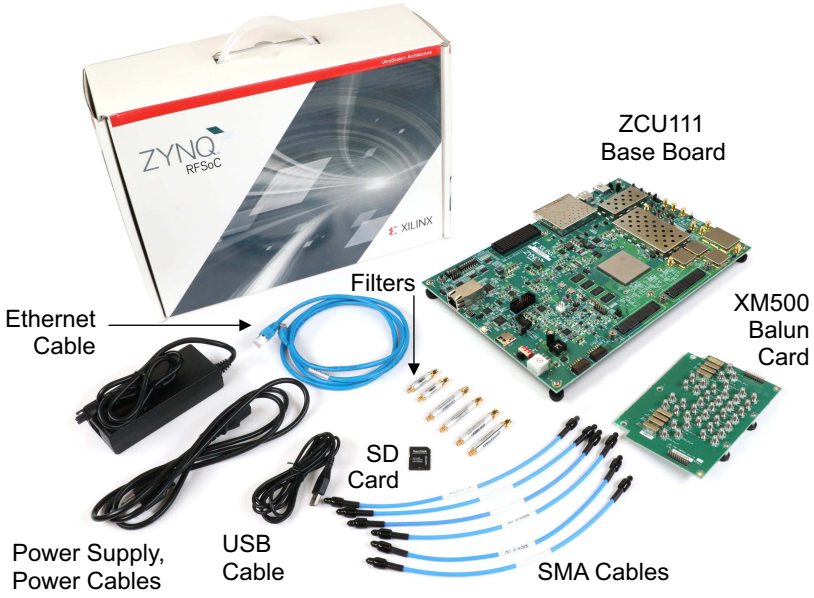
Zynq UltraScale+ RFSoC ZCU111 Evaluation Kit

Quick Start Guide

The ZCU111 Evaluation Kit contains all the hardware, tools, and IP required to evaluate and develop your Zynq® UltraScale+™ RFSoC design.

This quick start guide provides instructions to set up and configure the board, run the built-in self-test (BIST), install the Xilinx tools, and redeem the license voucher. The guide also provides a link to additional design resources including reference design schematics, user guides, and reference designs.

ZCU111 Evaluation Kit

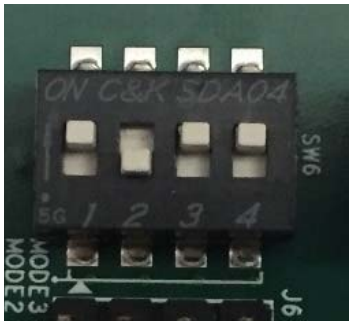


For more information, visit **www.xilinx.com/ZCU111**.

Send Feedback

Built-In Self-Test (BIST) Instructions

ZCU111 Evaluation Kit

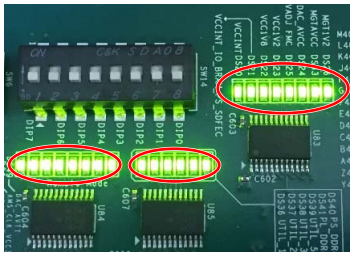


STEP 1: Set Configuration Switches

Set mode switch SW6 to QSPI32.

Boot Mode	Mode Pins [0:3]			
QSPI32	1	2	3	4
	0	1	0	0

Note: For this DIP switch, moving the switch up toward the ON label is a 0, and down is a 1. DIP switch pins [1:4] correspond to mode pins [0:3].



Power Good LEDs

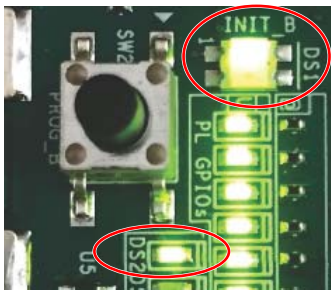
STEP 2: Connect Power

Plug the power supply into a power outlet with one of the included power cords.

Connect the 6-pin power supply plug to J52.

Turn on the board power with the SW1 slide switch.

If the three circled sets of Power Good LEDs glow green, the power system is good.



Note: The FMC power good LED (DS25) will remain OFF unless an FMC card with a valid IIC EEPROM reading is attached or if the FMC voltage has been set using the system controller user interface.

If the INIT_B (DS1) and DONE LED (DS2) glow green, the Zynq UltraScale+ device has configured successfully.



STEP 3: Initialize Configuration

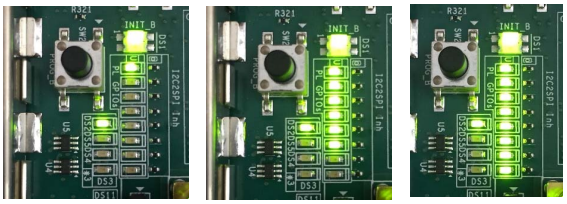
The built-in self-test (BIST) starts shortly after power on.

Note: Pressing the POR_B (SW3) switch resets the device, causing the DONE LED to turn off momentarily while the BIST restarts.

The PL LEDs flash on and off several times at the start of the BIST.

STEP 4: Run the Built-In Self-Test

The BIST consists of a set of pass/fail tests that run sequentially. These figures show the progression of the test.



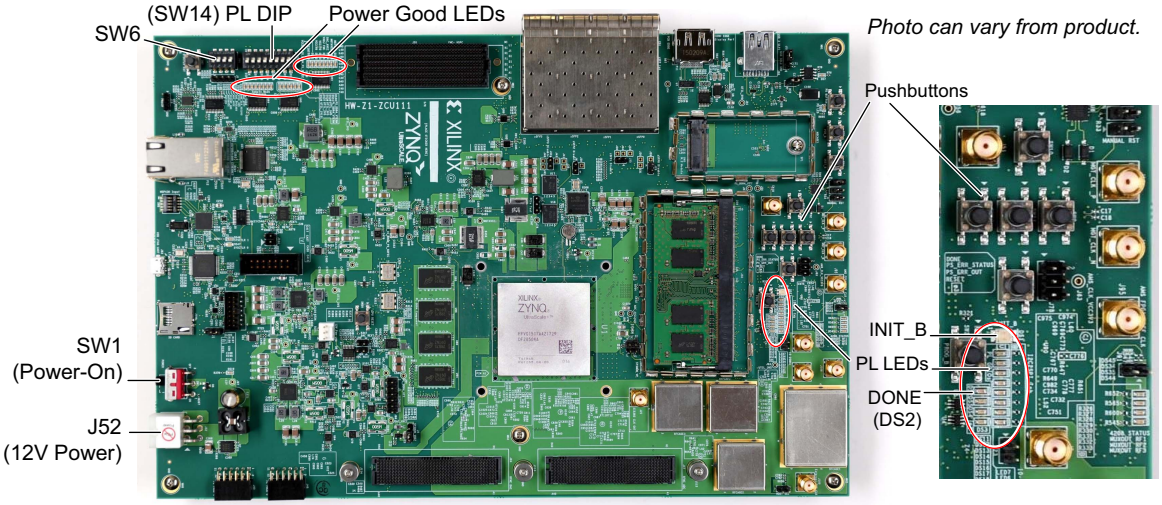
As each test passes, its corresponding LED glows green. If a test fails, its corresponding LED is off. Each of the bottom two LEDs flash during their respective tests, indicating the test is awaiting user input.

To pass the PL DIP test, all the switches in SW14 must be up before any of them are moved down. The LEDs flash faster after you begin the DIP or pushbutton (PB) test.

- The Clock, BRAM, PL-DDR4, PS-DDR4, EEPROM, and I2C tests run without user input.
- The DIP switch test (SW14) waits for you to move all the DIP switches toward the label ON, and then back.
- The PB test waits for you to push all the pushbuttons. Push all five pushbuttons in any order.
- The LED for the test that is waiting for your input slowly flashes on and off.

Self-Test Assignments for PL LEDs

MSB→LSB							
7	6	5	4	3	2	1	0
Clock	BRAM	PL-DDR4	PS-DDR4	EEPROM	I2C	DIP	PB



Install Xilinx Tools and Redeem the License Voucher

A Vivado® Design Suite: System Edition voucher code is included with the ZCU111 Evaluation Kit. This Vivado license is node-locked and device-locked to the XCZU28DR device.

STEP 5: Redeem the Vivado Tools License Voucher

To redeem the voucher code, go to www.xilinx.com/getlicense and enter the voucher code shown below. After it is redeemed, the licenses appear in your entitlement account, and you can generate a license file, which will be emailed to you. For additional assistance redeeming your voucher, go to www.xilinx.com/kits/voucher.

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

Important

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STEP 6: Install the Vivado Design Suite

a. To install the Vivado Design Suite, go to www.xilinx.com/download. Select and download the latest version of Vivado tools for your operating system.
b. The Vivado installation flow will open the Vivado License Manager. Under the **Get License** heading, select **Load License.** Click **Copy License.** In the **Select License File** dialog, navigate to where you saved the license file that was emailed to you in Step 5. Select the .lic file. Click **Open**.
c. If you need assistance, review the Vivado installation guide at www.xilinx.com/kits/vivadoinstall.

Next Steps

Learn More

To learn more, please go to the product page (www.xilinx.com/zcu111) which provides an extensive collection of resources, including a detailed reference design guide, schematics, a hardware user guide, and other reference designs to accelerate you through developing your 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.

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