VCU118 Evaluation Kit

Quick Start Guide

The VCU118 Evaluation Kit contains all the necessary hardware, tools, and IP to evaluate and develop your Xilinx® Virtex® UltraScale+™ FPGA design. This guide provides instructions for running the VCU118 built-in self-test (BIST) and installing the Xilinx tools.

VCU118 Evaluation Kit

For more information, visit **www.xilinx.com/VCU118**.

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Built-In Self-Test (BIST) Instructions

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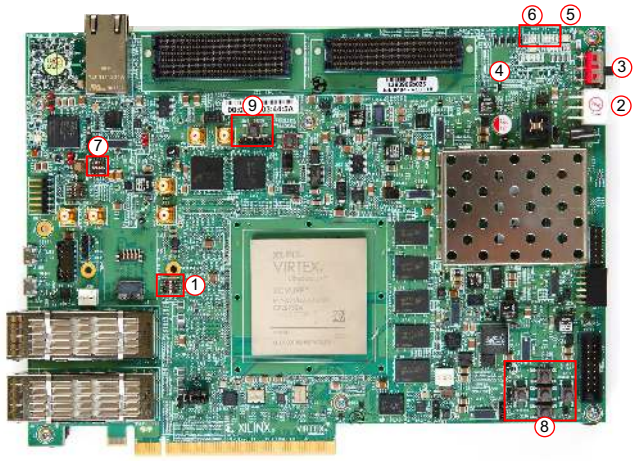
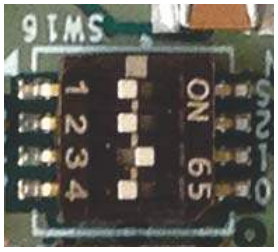
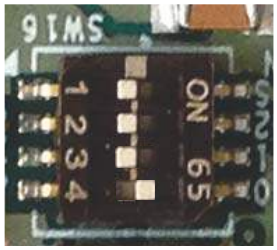
The built-in self-test FPGA configuration file is stored in onboard memory:

- Byte Peripheral Interface (BPI) flash memory for board revision 1.x
- Quad Serial Peripheral Interface (QSPI) flash memory for board revision 2.x





BPI



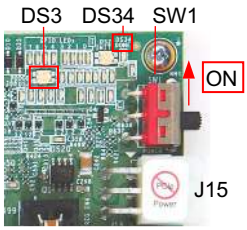
QSPI

STEP 1: Set Configuration Switches

Set the configuration mode DIP switch (SW16) so that the BIST file is loaded at power-up from the flash memory as shown below:

Switch	BPI Setting*	QSPI Setting*	Purpose
SW16-1	0	0	SYSCTLR_ENABLE
SW16-2	0	0	FPGA configuration mode pins
SW16-3	1	0	
SW16-4	0	1	

* 1=ON, 0=OFF



STEP 2: Connect Power to the Board

Connect the 6-pin power supply plug to J15, and power up the board using the SW1 switch.

When LED DS3 glows green, the power system is good.

When DONE LED DS34 glows blue, the Virtex UltraScale+ FPGA is configured successfully.

STEP 3: Run the Built-In Self-Test

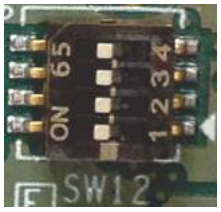
The BIST consists of a set of pass/fail tests. On power-up, the Clock, DDR, BRAM, flash memory, and I2C tests are run without user input.

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.

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.

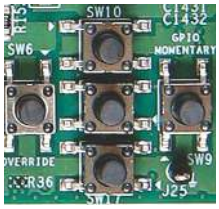
Board Self-Test Assignments for GPIO LEDs

GPIO LEDs							
7	6	5	4	3	2	1	0
Clock	DDR	BRAM	Flash	I2C	DIP	PB	NA



SW12 is the GPIO DIP switch. To complete the test, push all four switches to the ON position.

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 SW4 (PROG).

For information on testing FMC, PCIe, FireFly, and QSFP board interfaces, visit www.xilinx.com/kits/VCU118bit.

Install Xilinx Tools and Redeem the License Voucher

A Vivado® Design Suite: Design Edition voucher code is included with this VCU118 Evaluation Kit. This Vivado license is node-locked and device-locked to the XCVU9P 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 code can only be used once and must be redeemed within one year of purchase.

Important

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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/kits/VCU118-nextsteps 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.