

SP701 Evaluation Kit

Quick Start Guide

The Xilinx® Spartan®-7 SP701 Evaluation Kit contains all the necessary hardware, tools, and IP to evaluate and develop your Spartan-7 FPGA design. This guide provides instructions for running the SP701 built-in self-test (BIST) and installing the Xilinx tools.

SP701 Evaluation Kit

SP701 Evaluation Board



Ethernet Cable



Micro USB Cable



Power Cords and Adapters



For more information, visit www.xilinx.com/SP701.

Built-In Self-Test (BIST) Instructions

SP701 Evaluation Kit

The built-in self-test FPGA configuration file is stored in the onboard Quad Serial Peripheral Interface flash memory.

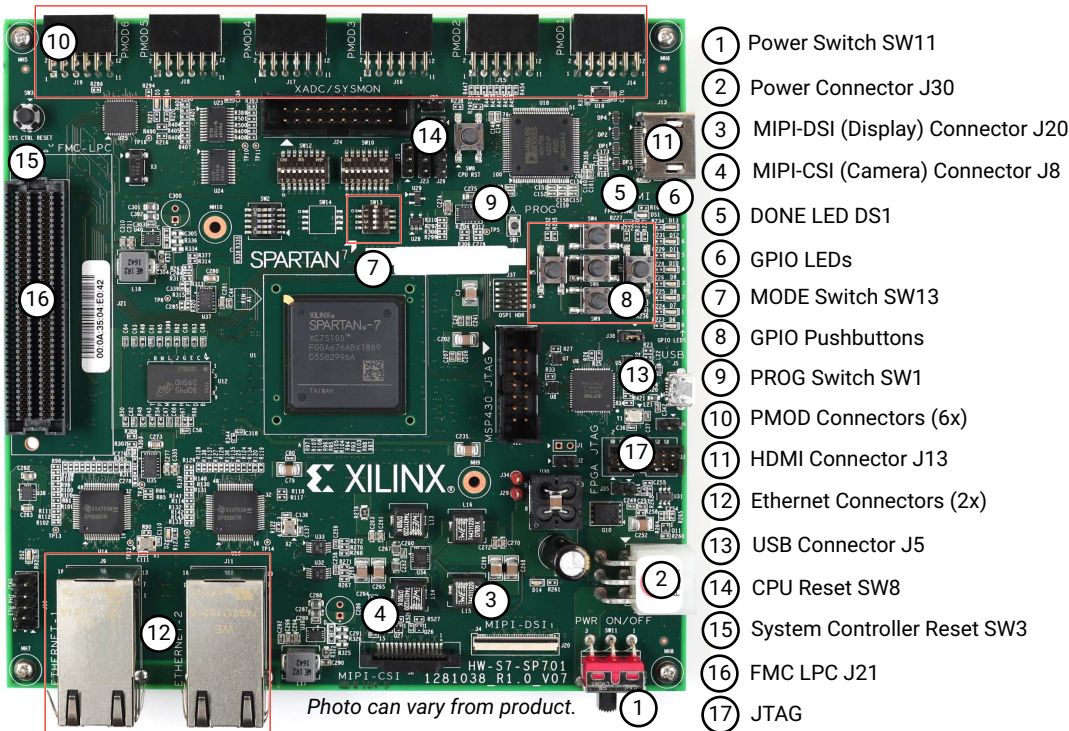
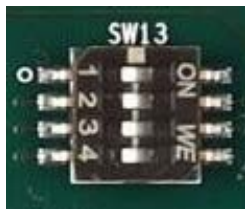


Photo can vary from product.



STEP 1: Set the FPGA Configuration Mode

Set the FPGA configuration mode DIP switch to load the BIST configuration by setting SW13 1–4 OFF as shown. (All switches in the photo are in the OFF position.)

For BlinkBIST, the setting is down, up, up, down (1001). Down is OFF, which equals 1.

Note: Do not connect anything to the PMOD headers while running the BIST.

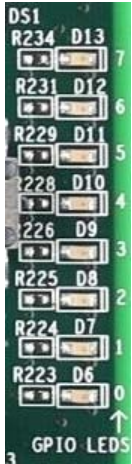


STEP 2: Connect Power to the Board

Connect the 6-pin power supply plug to J30, and power up the board using the SW11 switch.

Power on LED D14 for 12 V lets you know power is switched on and present.

When DONE LED DS1 glows blue, the Spartan-7 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, DDR3, BRAM, Serial Peripheral Interface (SPI) flash memory, I2C, and SYSMON tests 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 SYSMON test does not require user interaction. The 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 (D13)	6 (D12)	5 (D11)	4 (D10)	3 (D9)	2 (D8)	1 (D7)	0 (D6)
Clock	DDR3	BRAM	SPI	I2C	SYSMON	PB	All tests done



The PB test checks pushbutton operation.

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

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



To run the built-in self-test again, press SW1 (PROG).

For information on testing FMC board interfaces, visit www.xilinx.com/SP701.

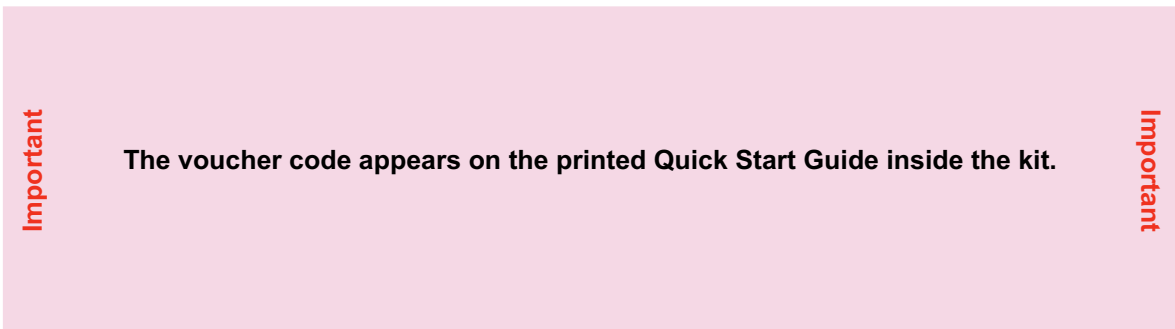
Install Xilinx Tools and Redeem the License Voucher

A Vivado® Design Suite: Design Edition voucher code is included with this SP701 Evaluation Kit. This Vivado license is node-locked and device-locked to the XC7S100 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.



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/SP701 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.