

VCU118 Built In Test (BIT)

May 2019



Revision History

Date	Version	Description
07/19/19	9.1	Updated bitstreams.
05/29/19	9.0	Updated for 2019.1.
12/10/18	8.0	Updated for 2018.3.
06/18/18	7.0	Updated for 2018.2.
04/09/18	6.0	Updated for 2018.1.
12/20/17	5.0	Updated for 2017.4.
10/26/17	4.0	Updated for 2017.3.1. For Rev 2.0, with Production Silicon.
06/20/17	3.0	Updated for 2017.2.
04/19/17	2.0	Updated for 2017.1.
03/28/17	1.1	Minor update to SCUI config.json.
12/19/16	1.0	Initial version for 2016.4.

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VCU118 BIT Test Overview

- > **Xilinx VCU118 Board**
- > **Software Requirements**
- > **VCU118 Setup**
- > **Run the BIT Test**
- > **Notes**
- > **References**

VCU118 Software Install and Board Setup

> Complete setup steps in XTP449 – VCU118 Software Install and Board Setup:

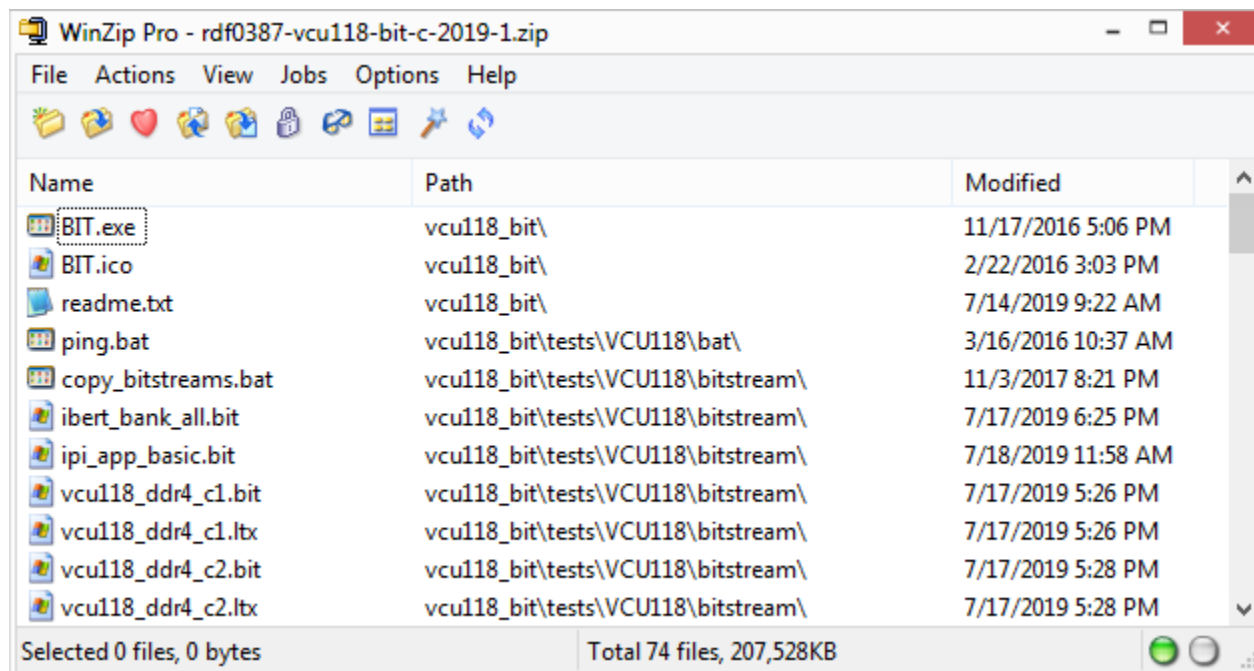
- >> Software Requirements
- >> VCU118 Board Setup
- >> UART Driver Install
- >> Ethernet Setup



Setup for the VCU118 BIT Test

> Open the VCU118 Built In Test Design Files (2019.1 C) ZIP file:

>> Extract these files to your C:\ drive



Running the Board Interface Test

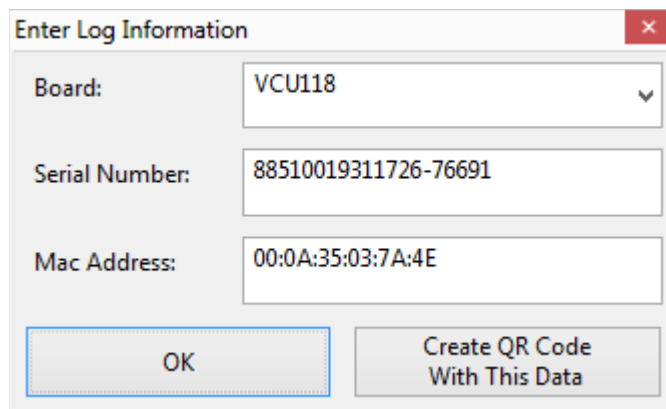
> From C:\vcu118_bit, double click on vcu118_bit.exe



Note: Executable requires 64-bit Windows

Basic Board Interface Test

- > Enter the Board Serial Number and Mac Address and click OK



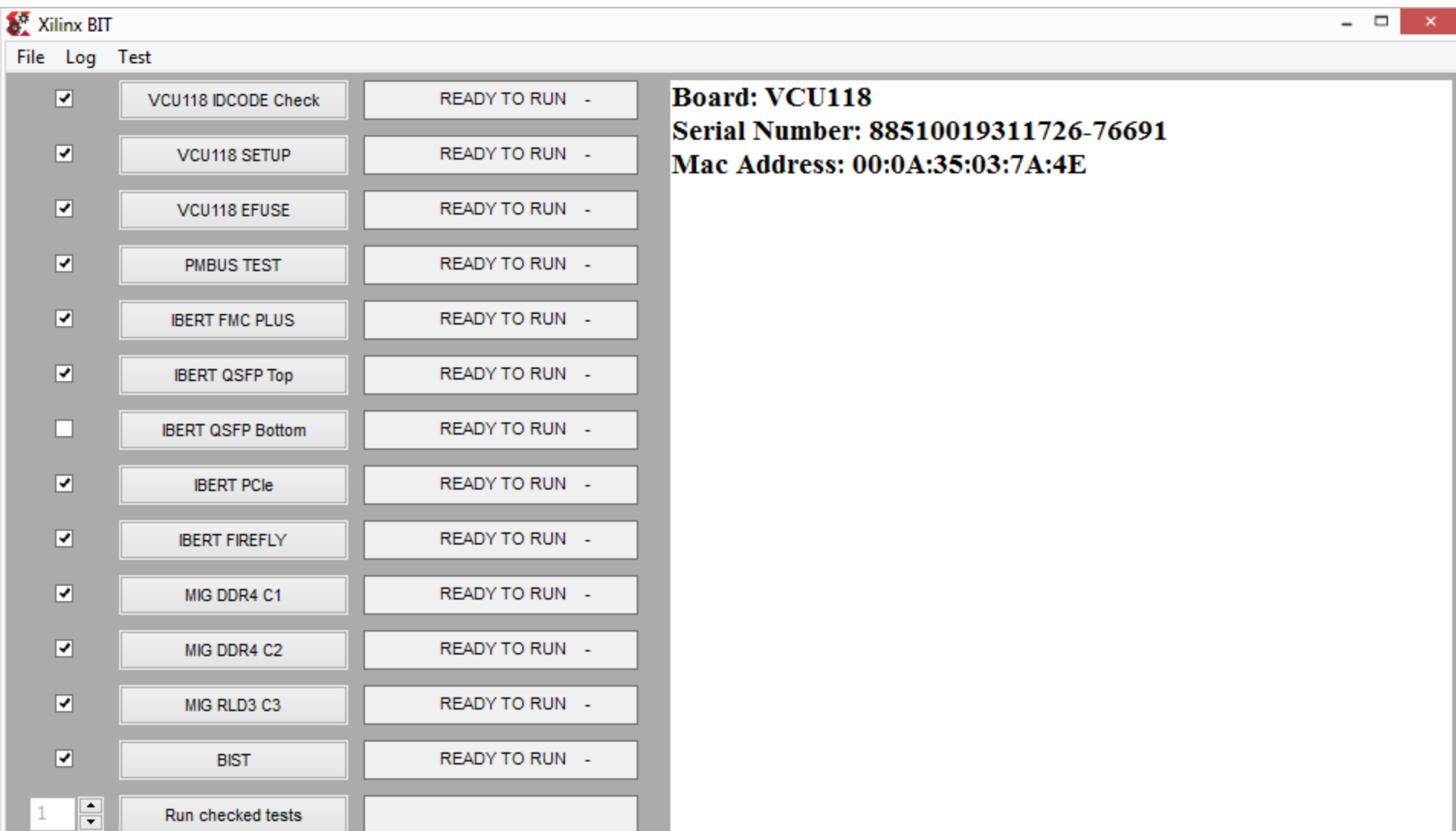
The screenshot shows a dialog box titled "Enter Log Information" with a close button (X) in the top right corner. The dialog contains three input fields: "Board:" with a dropdown menu showing "VCU118", "Serial Number:" with the text "88510019311726-76691", and "Mac Address:" with the text "00:0A:35:03:7A:4E". At the bottom, there are two buttons: "OK" and "Create QR Code With This Data".

Board:	VCU118
Serial Number:	88510019311726-76691
Mac Address:	00:0A:35:03:7A:4E

Buttons: OK, Create QR Code With This Data

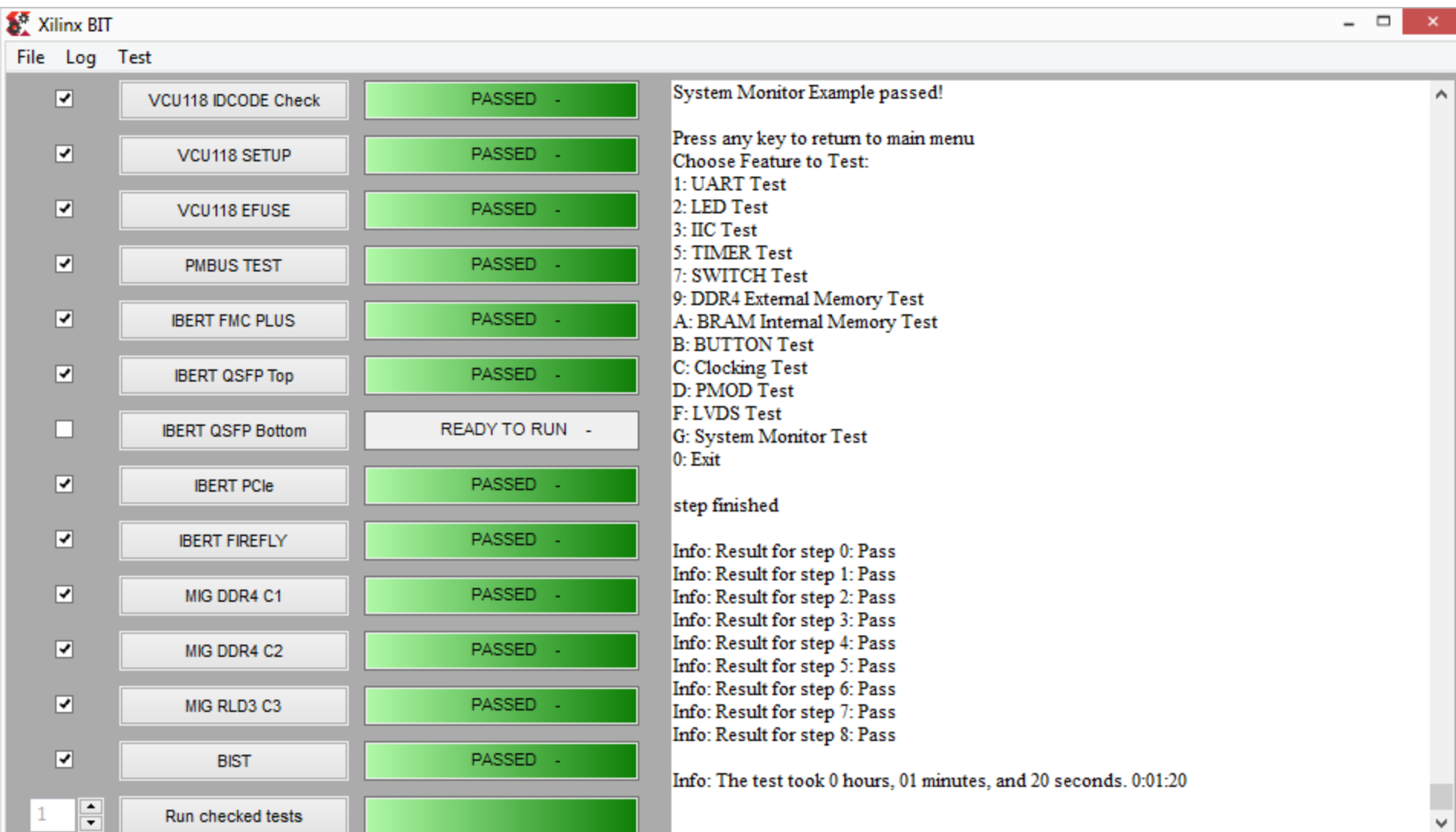
Basic Board Interface Test

> Click the Run checked tests button



Basic Board Interface Test

> All selected tests passed



The screenshot displays the Xilinx BIT application window. The interface is divided into a left pane for test selection and a right pane for test results and instructions.

Test Selection Table:

Checkbox	Test Name	Result
<input checked="" type="checkbox"/>	VCU118 IDCODE Check	PASSED -
<input checked="" type="checkbox"/>	VCU118 SETUP	PASSED -
<input checked="" type="checkbox"/>	VCU118 EFUSE	PASSED -
<input checked="" type="checkbox"/>	PMBUS TEST	PASSED -
<input checked="" type="checkbox"/>	IBERT FMC PLUS	PASSED -
<input checked="" type="checkbox"/>	IBERT QSFP Top	PASSED -
<input type="checkbox"/>	IBERT QSFP Bottom	READY TO RUN -
<input checked="" type="checkbox"/>	IBERT PCIe	PASSED -
<input checked="" type="checkbox"/>	IBERT FIREFLY	PASSED -
<input checked="" type="checkbox"/>	MIG DDR4 C1	PASSED -
<input checked="" type="checkbox"/>	MIG DDR4 C2	PASSED -
<input checked="" type="checkbox"/>	MIG RLD3 C3	PASSED -
<input checked="" type="checkbox"/>	BIST	PASSED -
1	Run checked tests	

Right Pane Content:

System Monitor Example passed!

Press any key to return to main menu

Choose Feature to Test:

- 1: UART Test
- 2: LED Test
- 3: IIC Test
- 5: TIMER Test
- 7: SWITCH Test
- 9: DDR4 External Memory Test
- A: BRAM Internal Memory Test
- B: BUTTON Test
- C: Clocking Test
- D: PMOD Test
- F: LVDS Test
- G: System Monitor Test
- 0: Exit

step finished

Info: Result for step 0: Pass
Info: Result for step 1: Pass
Info: Result for step 2: Pass
Info: Result for step 3: Pass
Info: Result for step 4: Pass
Info: Result for step 5: Pass
Info: Result for step 6: Pass
Info: Result for step 7: Pass
Info: Result for step 8: Pass

Info: The test took 0 hours, 01 minutes, and 20 seconds. 0:01:20

Appendix

- > **Ensure that you have followed all instructions in XTP453 - VCU118 Evaluation Kit Quick Start Guide and XTP449, VCU118 Software Install and Board Setup**
- > **Ensure that no other Terminal program is connected to the VCU118's two COM ports while the Board Interface Test is running**
 - >> See XTP449 for details on COM Ports
- > **Only one board can be connected to your PC during the test**
 - >> Both USB UART (J4) and USB JTAG (J106) are required for this test
 - >> Disconnect any other board UARTs or Programming Cables
- > **If you missed any set-up instructions and experience problems, then please follow these steps:**
 - >> Recheck your setup
 - >> End any hw_server processes and cycle board power
 - >> Open Vivado Hardware Manager and test PC-board JTAG connectivity

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

> Virtex UltraScale+

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

> VCU118 Documentation

- >> Virtex UltraScale+ FPGA VCU118 Evaluation Kit
 - <https://www.xilinx.com/products/boards-and-kits/vcu118.html>
- >> VCU118 Board User Guide – UG1224
 - https://www.xilinx.com/support/documentation/boards_and_kits/vcu118/ug1224-vcu118-eval-bd.pdf
- >> VCU118 Evaluation Kit Quick Start Guide User Guide – XTP453
 - https://www.xilinx.com/support/documentation/boards_and_kits/vcu118/xtp453-vcu118-quickstart.pdf
- >> VCU118 - Known Issues and Release Notes Master Answer Record
 - <https://www.xilinx.com/support/answers/68268.html>