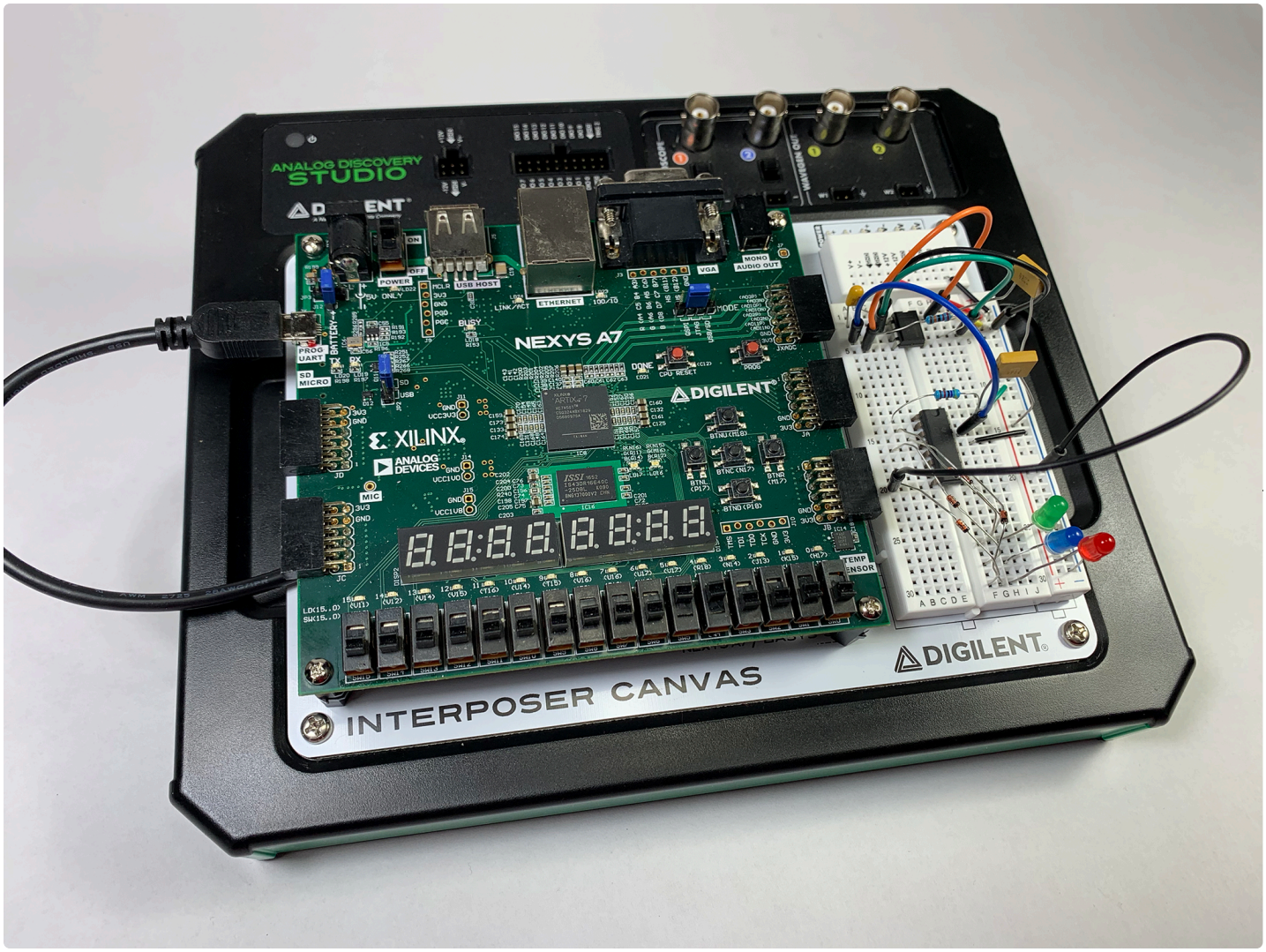
Getting Started with the FPGA Board Adapter Canvas



Introduction

This guide explains the use of the FPGA Board Adapter Canvas with the Analog Discovery Studio. The FPGA Board Adapter Canvas is used to host one of our FPGA boards and user-designed circuitry. The FPGA Board Adapter Canvas connects to the Analog Discovery Studio through the magnets beneath each of the four standoffs in the corners of the canvas. The FPGA Board Adapter Canvas includes the following features:

- One 300 tie-point solderless breadboard
- One 50 tie-point power rail
- Six power supply indication LEDs
- One 24 tie-point breadboard power supplies contact points

Inventory

- FPGA Board Adapter Canvas
    - Note: The FPGA Board Adapter Canvas was formerly known as the Interposer Canvas, and the original product name is reflected on the printed circuit board
- USB Cable to connect to FPGA board
- 4 standoffs for mounting the FPGA board above the FPGA Board Adapter Canvas
- 8 screws for mounting the FGA Board and standoffs to the FPGA Board Adapter Canvas

Demonstration

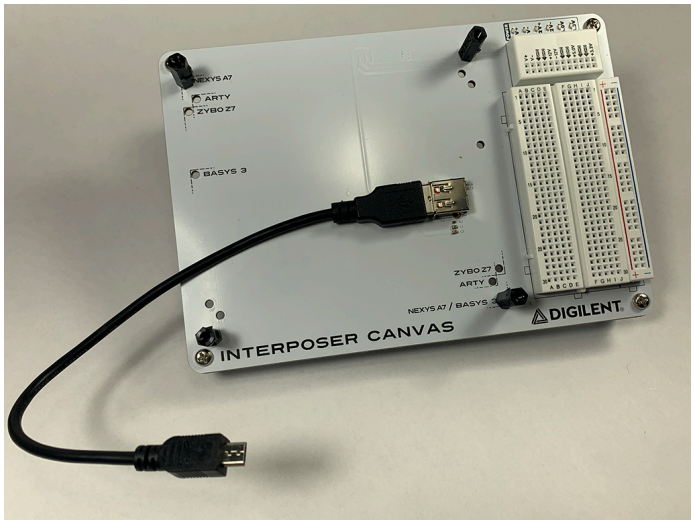
1. Setup

1.1

The FPGA Board Adapter Canvas is an optional accessory for the Analog Discovery Studio. The FPGA Board Adapter Canvas is attached to the Analog Discovery Studio through magnets beneath each of the four standoffs in the corners. To begin setting up install the four black standoffs in the designated location for your FPGA board. In this example, we are installing a Nexys A7 (https://digilent.com/reference/programmable-logic/nexys-a7/start) FPGA board onto the FPGA Board Adapter Canvas. Use four of the provided screws to fasten the spacers in place.

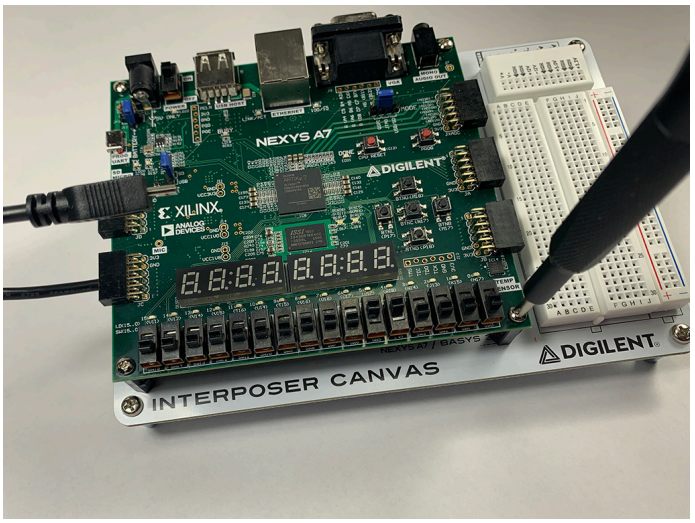
1.2

Plug the included USB cable into the USB type A slot on the FPGA Board Adapter Canvas.



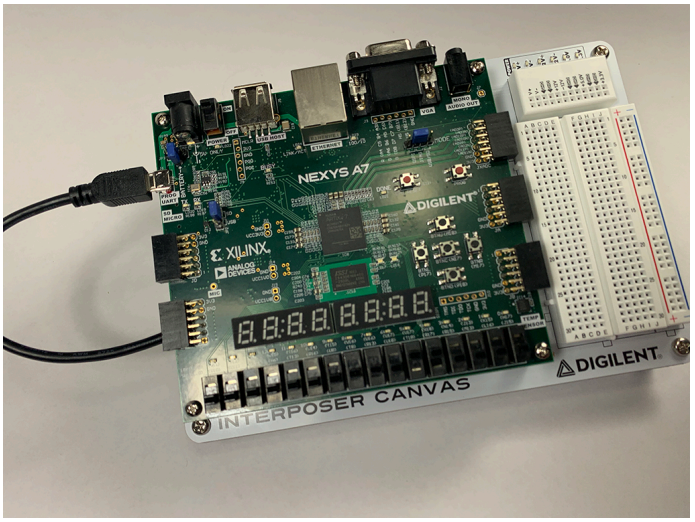
1.3

With the remaining 4 screws, attach the FPGA board to the standoffs you screwed into place on the FPGA Board Adapter Canvas.



1.4

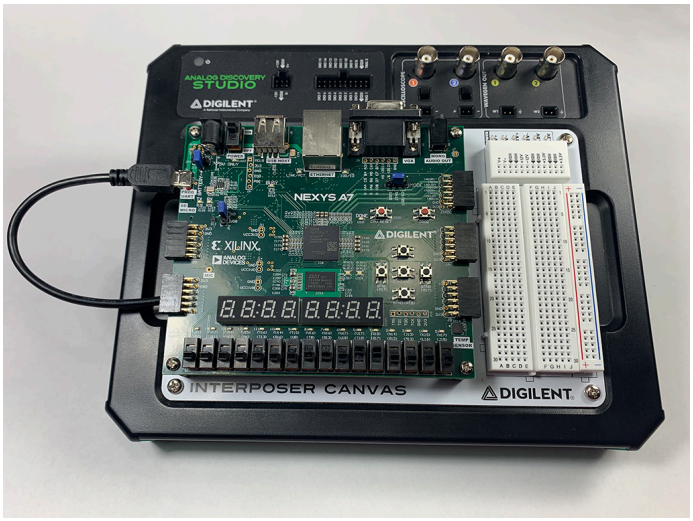
Plug the micro USB plug into the FGA board.



1.5

Unplug your Analog Discovery Studio board from both the USB and power connectors. Place the FPGA Board Adapter Canvas back into its slot, connect the Analog Discovery Studio to the host computer using the included USB Type B cable. Connect the included 15V power supply to the Analog Discovery Studio and turn on the Analog Discovery Studio by flipping the switch on the left-hand side of the platform.

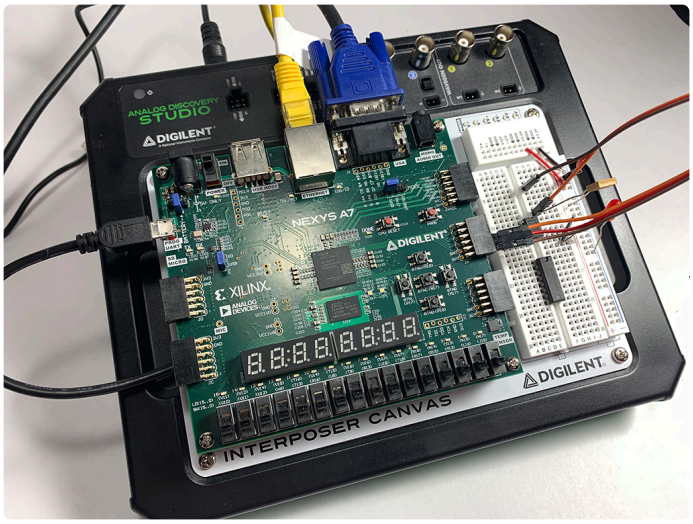
Ensure that the Analog Discovery Studio is turned OFF before installing the FPGA Board Adapter Canvas board. Plugging a Canvas board into a powered Analog Discovery Studio can cause damage to either the Analog Discovery Studio, the FPGA Board Adapter Canvas, the FPGA board, or your custom circuitry.



2. Out of the Box Demo Mode

2.1

Each compatible FPGA board comes with an "Out-of-Box" demo programmed into nonvolatile memory, which can be used to show everything is working correctly. To run this demo, ensure that the programming mode jumper for the board is set to QSPI (or in the case of the Arty A7, just that the jumper is installed) and power the board on. The board will boot, and you will see several LEDs light up. The behavior of the Out-of-Box demo differs depending on the board, so make sure to review the board's documentation for more information on what it does.



Next Steps

For more guides on how to use your Analog Discovery Studio device, check out its resource center: Analog Discovery Studio (https://digilent.com/reference/test-and-measurement/analog-discovery-studio/start).

To find more information on the FPGA Board Adapter canvas, and for links to the resource centers for the various compatible FPGA development boards, check out the FPGA Board Adapter Canvas's Resource Center (https://digilent.com/reference/test-and-measurement/analog-discovery-studio/canvases/fpga-board-adapter-canvas/start).

For more information on WaveForms, visit the WaveForms Reference Manual (https://digilent.com/reference/software/waveforms/waveforms-3/reference-manual).