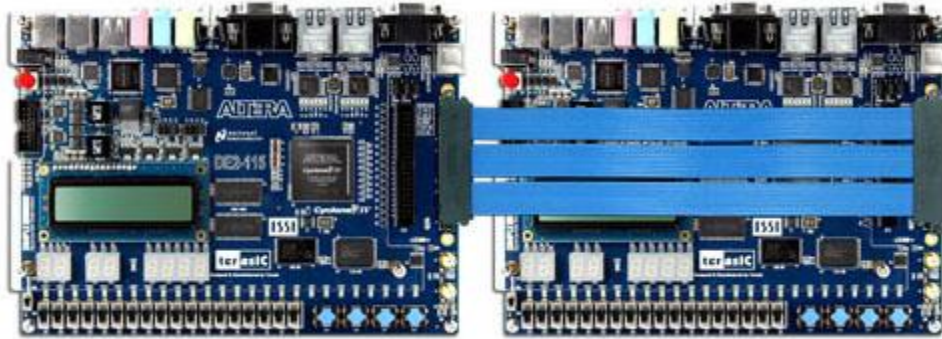## Interfacing Two DE2 Boards Together

Step-by-step guide:

1. Connect the two DE2 board with a 40-pin ribbon cable as shown below.

2. Power up one board. Both boards should turn on due to the power pins on the GPIO.

Sender Board

3. In the top level VHDL file of the sender board (it doesn't matter which board has the power plugged in) declare the GPIO pins as OUT.

4. Connect the GPIO pins to the pins that contain the data you want to send through VHDL.

Receiver Board

5. In the top level VHDL file of the receiver board, declare the GPIO pins as IN.

6. Connect the GPIO pins to the pins that you want to receive the data with. The GPIO pins should have the same pin map between the two boards so you send and receive in the same GPIO pin number. For example, data sent over GPIO_0(4 downto 0) is received from the other board with GPIO_0(4 downto 0).

Please see the attached project for an example on how to set up a dual board system.

Setup:

1. Open quartus and load project.qpf.

2. Set project_top_level_to_gpio.vhd as the top level, compile, and program the .sof or .pof to the sender board.

3. Set the project_top_level.vhd as the top level, compile, and program the .sof or .pof to the receiver board.