Microbolometer Setup Instructions

1. FPGA cable assignments are located with the cables.
2. The microbolometer is a Photon 320.
3. The VHDL project to use is 320\_ethernet
4. The FPGA board to use is the ML-506.
5. The bitstream file to use is already present in the 320\_ethernet directory. The VHDL does not need to be recompiled; the FPGA merely needs to be programmed. Programming instructions are included with the project documentation.
6. The Ethernet driver does not work.
7. A Camera Link cable is used to connect the FPGA to the computer framegrabber. A breakout cable is located between the FPGA and the Camera Link cable.
8. The Camera Link output is 324 columns x 256 rows x 14 bits, monochrome.
9. For the Matlab display and acquisition software in the project, use Matlab R2010b SP2, 32 bit version.
10. The camera is connected to the cable labeled “Photon 320 camera”. The serial port on the camera cable is NOT to be connected to the serial port on the FPGA board.
11. The configuration dip switches on the FPGA board must be set for the 320. These settings are in the project documentation.
12. The FPGA is connected to the Camera Link cable using the cable labeled “Photon 320 Camera Link”

FPGA Wiring Instructions

1. Connector headers go in the differential column of J4 on the ML-506 board.
2. The header from the Photon 320 breakout cable is plugged in such that the wires are connected to the differential column of J4, with the port marked “22” connected to pin 2 and the other ports connected in increasing order.

**Camera Link Breakout Cable**

The connector headers on the Camera Link breakout cable are connected to the differential column of J4, as shown in the chart below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Twisted Pair Colors** | **Wire 1/Pin 1** | **Wire 2/Pin 2** | **Notes** |
| Red, White | White/18 | Red/20 | Arrow at position 20 |
| Green, Red | Red/22 | Green/24 | Arrow at position 24 |
| Yellow, Brown | Brown/26 | Yellow/28 | Arrow at position 28 |
| Pink, Black | Black/30 | Pink/32 | Arrow at position 32 |
| Brown, White | White/34 | Brown/36 | Arrow at position 36 |

To use the chart, chose a wire pair listed in column 1. Plug in the connector such that the arrow is at the position located in column 4. The individual wires should thereby be connected as shown in columns 2 and 3.