3D_controller

Description:

The design implements a 3D controller. Input comes from the on-board accelerometer. The input data is processed through the design and outputted to an external screen via a VGA connection. The external screen displays a white square. When the board is tilted, the square moves around the screen.

The external display is 640x480.

Resources used:

Quartus DE10-Lite System Builder.

EEC180 Tutorial: Using the accelerometer on the DE10-LITE board (ucdavis.edu)
EEC180 Tutorial: Displaying to a VGA monitor using a combinational circuit (ucdavis.edu)
https://www.intel.com/content/www/us/en/programmable/support/support-resources/design-examples/design-software/verilog/ver_statem.html#:~:text=Verilog%20HDL%3A%20Synchronous%20State%20Machine%20This%20is%20a,state%20machine%20and%20the%20conditions%20that%20control%20them
verilog_modules.pdf (oregonstate.edu)
https://www.javatpoint.com/verilog-arrays#:~:text=Verilog%20arrays%20are%20used%20to%20group%20elements%20into,as%20nets%2C%20regs%2C%20and%20other%20Verilog%20variable%20types.