Project

On

VGA interfacing and Low-bit video card designing

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Abstract

The objective is to make a video card that stores a low-bit (low resolution and colour-accurate) image and a VGA interface to display on an LCD monitor.
As we know, VGAs are used in old displays as a medium to transmit data to be displayed.

A stand-alone VGA interface cannot display anything; thus, a supporting graphics card or video card is required to fetch and send the data in proper order. This project could be extended to output a simple game on a screen and can be played by user input from FPGA.

Objective:

- To store an image in low-bit RGB format to be displayed.
- To make a video card to pipe the data in particular order and format to VGA interface
- VGA interface then sending this data to LCD for displaying the image.
- Trying to experiment with other possible ideas.

Hardware and software components required:

- FPGA programming tool like Vitis or Vivado
- FPGA to implement the project
- Breadboard and conducting wires to connect VGA output cable to FPGA
- VGA cable and adapter
- LCD monitor with VGA support