Video Acquisition Multi-touch Controller Design Report

Tony Kim
Nevada Sanchez
April 7, 2008

Abstract

The Video Acquisition Multi-touch Controller provides an innovative method of input utilizing only the user's hands. A camera is first mounted at an appropriate viewing angle outlining the user's workspace. A specially designed glove will have LED's on each of the user's index fingers that act as markers for the video processor. This will allow the user to control two mouse cursors within the on-screen display. Also in the glove are four buttons placed on the index and middle finger tips. The user will click by depressing these (e.g. by lightly pressing on a hard surface). The multiple buttons provide the means necessary to develop a highly robust input scheme—transforming complex tasks into simple and intuitive motions. Pressing multiple buttons will have different actions such as zooming, scrolling, rotating, and scaling. A demonstration application will be implemented on the FPGA utilizing the VGA output. The application will demonstrate the usability and possible applications of this technology.