
Summer 08 Project by Markus Kandler

Spartan3 FPGA Board

I developed a few demo designs for the new FPGA boards which will be used in the DigitalSystemDesign (DSD) lecture at FH Kaernten.

A Spartan 3 FPGA from Xilinx is used on the new boards. I used VHDL and the Xilinx ISE development environment.

All in all I developed seven demo designs for the FPGA boards which are able to access all the built in interfaces (VGA, stereo audio connector, USB and the H bridge of the motor).

There are two designs which generate sine signals by using pwm and RC filter.

Another two designs drive the USB interface. For these two designs I wrote two C++ applications that enables the PC to communicate with the FPGA.

Furthermore I developed a design that controls the VGA interface. The design is able generate a picture for an ordinary VGA monitor with a resolution of 640x480 pixel and 16 different colours at two different levels. This functionality is realized without using an AD converter.

Finally I designed three different designs which are able to control the H bridge and the motor.



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