

AndOr FPGA-ARM development board

Authors:

Ádám Pete, Péter Balogh

University of Óbuda

Kandó Kálmán Faculty of Electrical Engineering, BSc. III. and IV. year

Consultant: Tamás Sándor, lecturer

The goal of our project to create a development board where an ARM M3 based STM32 microcontroller and a Xilinx Spartan 6 FPGA are placed. With this combination it's possible to get know the multiprocessor systems, furthermore take a look into the process of the development of a multiprocessor based embedded system. The user can use the main units separately or in a combination to take advantage of the FPGA's and the ARM's positive properties.

Our system has really wide range of peripherals such as digital and analog video outputs, two channel analog output which easily can be used as a stereo audio output, furthermore CAN, RS-485, USB, Ethernet connections are also can be found on the AndOr.

Thanks to the bootloader the board is shown as standard mass storage device on the PC side. Any other client or PC application needed to load new binary to the FPGA or STM32 via USB. This process is operating system independent on the PC.

The fast DAs-ADs are ideals for almost any kind of signal processing applications. For examples spectrum analyzer, oscilloscope.

The Spartan 6 can be used as a multiplexer between the ARM and the peripherals, the FPGA peripherals can be used by the microcontroller in this way.