MATLAB GUI AND THE SHARC EZ-KIT LITE

Ing. Marek Kupczak

VŠB – Technical University of Ostrava
Faculty of Mechanical Engineering
Department of Control Systems and Instrumentation

This contribution is motivated by the desire to have the PC communicate with the SHARC EZ-KIT Lite DSP board. There was created a graphical user interface (GUI) in Matlab that controls DSP process and presents results in Matlab environment.

Concretely, there was used EZ-KIT Lite with 32-bit ADSP-21065L SHARC DSP, codec 1819A, UART 16550 and input/output stereo channels.

Matlab GUI can choose some digital filters and their filter coefficients via RS-232 serial port, further to transmit input signals via input stereo channel and presents processed signals via output stereo channel.

There were tested different signals by using digital FIR and IIR filters. The results using digital signal processor were compared with results using Matlab, concretely Signal Processing Toolbox. First of all, there were compared 16-bit fixed-point DSP results with different numeric formats in Matlab like format e which is floating point format with 15 digits for double and 7 digits for single.

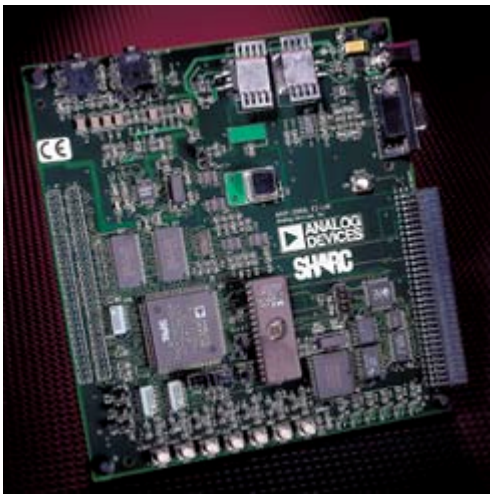

Figure 1: EZ-KIT Lite with ADSP-21065L SHARC DSP