

Abstract

The thesis presents the design of the software components of an electronic scale. The mechanical structure of the scale was complete, and I wasn't be able to modify it. The measuring system consists of an ADSP BF-537 Digital Signal Processor (DSP), manufactured by Analog Devices. My task was to improving and developing the next version of system.

The development had two main directions: the first goal was the design of software interfaces of a display device (LCD), and the second goal was the development, implementation and test of a fast and accurate method, which can predict the weight of the measured object with minimal mistake.

I have tested several predicting methods such as the simple averaging, weighted averaging, exponential averaging and system identification. I have implemented the best one on the DSP. I have presented the basic concept of every method, and after that, the results of measurements can be seen. The simulations were created by an interactive environment, the Matlab.