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Evaluation of Cypress FM4-176L-S6E2CC-ETH to Work as Audio-Analyzer for Measuring Children's Talk.

ABSTRACT - Masterthesis

The development of children has always been a very important thing for parents, especially the educational environment and development speed of children. As the development of the Internet of Things (IoT) becomes more and more popular, the application of the Internet of Things to children's education will also be one of the future trends. In the United States, LENA has successfully developed a preliminary experimental product based on the environment around children, using words and parents' education methods. The problems have not been favored by the consumer market because of supported languages, size of the machine and the cost. This thesis will use the Cypress FM4-S6E2CC-ETH DSP board, which is less than 50 dollars, as a research object to further evaluate the possibility of applying an audio analyzer to this DSP board.

The ultimate aims of this paper is to build a portable instrument to help children and their parents understand the growth of children. At present, working hard to achieve the goal of "developing an audio analyzer with Cypress S6E2CC-ETH" is the goal at the current stage, hoping to have the opportunity to achieve the ultimate aims in the future.

This article will be divided into three architectures-Matlab, Simulink and Keil (the IDE of Cypress S6E2CC-ETH). Construct an audio analyzer model on Matlab and Simulink respectively, and implement it on Keil to test the function and performance of the audio analyser.