

ABSTRACT

Internet of Things (IoT) refers to a physical object with an intelligent network which has connection to the internet to exchange information and usually communicating through sensing devices (sensors) with agreed protocols. The IoT itself help a lot for people's daily activities to finish people's job easily without having a real-interface. Application Specific Instruction Processor (ASIP) is a component used in system-on-a-chip design. The instruction of ASIP is tailored to benefit a specific application.

To reduce size of images, compressing images are required. This thesis presents a proof about the advantage using DeLuXe (DLX) microprocessor to do image compression and ASIP which help to reduce the power of microprocessor to save more energy for long term using. The simulation using winDLX processor which have to show the algorithm for Discrete Cosine Transform (DCT) in image compression process, coded in assembly DLX programming language.

The result of the programs made to simulate Discrete Cosine Transform using DLX Microprocessor it requires total of 14763 cycles executed by total of 5920 instructions. The instructions that are often used on this experiment is Load Float which is used to load the value of matrices before being multiplied to other matrices because mostly the matrices multiplied in this simulation contains decimal numbers.
Keywords: ASIP, Discrete Cosine Transform, DLX Microprocessor.