Abstract

Low-power design is one of the most significant challenges to maximize battery life time in portable devices and to save the energy during system process. Discrete Cosine Transform (DCT) is widely used in image and video compression process. Here in this paper, we review on low power Discrete Cosine Transform architecture by using varies methods. Discrete Cosine Transform (DCT) is most popular method used today in video compression systems. A number of algorithms have been proposed for implementation of the DCT. Loeffler (1989) has specified a new class of 1D-DCT using only 29 additions and 11 multiplications. To implement such an algorithm, one or more than one multipliers have to be integrated. This process requires a high occupation of silicon area. Arithmetic distribution is generally used for such algorithms. The coding for reconfigurable 8-point Discrete Cosine Transform (DCT) has been done using VHDL, under Xilinx platform.
3. Liyi Xiao Member, IEEE and Hai Huang, “Novel CORDIC Based Unified Architecture for DCT and IDCT”, 2012 International Conference on Optoelectronics and Microelectronics (ICOM) 978-1-4673-2639-1/12/$31.00 ©2012 IEEE.

Index Terms

Computer Science Circuits and Systems

Keywords

Discrete Cosine Transform (DCT), Inverse Discrete Cosine Transform (IDCT), Very High Speed Integrated Circuit Hardware Description Language (VHDL)