Characterization of Onboard Reliable Error Correction Code for SDRAM Controller

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Abstract : In the process of conveying the information there may be a chance of signal being corrupted which leads to the erroneous bits in the message. The message may consist of single, double and multiple bit errors. In high-reliability applications, memory can sustain multiple soft errors due to single or multiple event upsets caused by environmental factors. The traditional hamming code with SEC-DED capability cannot be address these types of errors. It is possible to use powerful non-binary BCH code such as Reed-Solomon code to address multiple errors. However, it could take at least a couple dozen cycles of latency to complete first correction and run at a relatively slow speed. In order to overcome this drawback i.e., to increase speed and latency we are using reed-Muller code.

Keywords : SEC-DED, BCH code, Reed-Solomon code, Reed-Muller code

Conference Title : ICEMA 2015 : International Conference on Electronics, Mechatronics and Automation

Conference Location : San Francisco, United States

Conference Dates : June 07-08, 2015