

221. ENCODING TECHNIQUE FOR REDUCING SWITCHING IN SERIAL LINKS

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In all electronic circuits, reducing the energy dissipation is one of the major concerns. The main objective is to minimize the power dissipation and switching activity in the interconnect lines. Serial link interconnection has been proposed for reducing crosstalk and area. Therefore on serializing the parallel bus, bit transition and power dissipation is increased. Various schemes are used to reduce bit transition such as Serial followed by encoding (SE), Transition Inversion Coding (TIC), and Embedded Transition Inversion (ETI). TIC is more efficient than SE, but extra indication bit is added in every data word to perform inversion indication. In this project ETI is used to solve the problem of extra indication bit and reduces switching activity in serial links. Parallel buses multiplexed into a serial link increase the overall switching activity factor (AF) and energy dissipation. It is an important issue in serial interconnects design. Therefore, an efficient coding method needed to reduce the switching AF and. Existing method solves the problem of increased switching activity for the parallel buses. ETI coding scheme also eliminates the need of sending an extra bit by embedding the inversion information in the phase difference between the clock and the encoded data. In this phase, checktransition, B2INV, phase encoder, phase detector and ETI architecture is designed with Xilinx. In future this technique is to be compared with TIC .

Index Terms-Coding techniques, low switching activity, serial link, bit transition.

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