Design of Local Interconnect Network Controller for Automotive Applications

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Abstract : Local interconnect network (LIN) is a communication protocol that combines sensors, actuators, and processors to a functional module in automotive applications. In this paper, a LIN ver. 2.2A controller was designed in Verilog hardware description language (Verilog HDL) and implemented in field-programmable gate array (FPGA). Its operation was verified by making full-scale LIN network with the presented FPGA-implemented LIN controller, commercial LIN transceivers, and commercial processors. When described in Verilog HDL and synthesized in 0.18 μm technology, its gate size was about 2,300 gates.