DESIGN AND DEVELOPMENT OF CPLD BASED TEMPERATURE MEASUREMENT AND CONTROL SYSTEM

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ABSTRACT

This paper deals with the design and development of CPLD based VLSI system to measure and control the temperature. The RTD (resistance temperature detector) Pt100 is used as a temperature sensor, and is interfaced with the CPLD (XC9572) manufactured by Xilinx. The output that is produced by the sensor needs to be converted into quantized voltage levels in order to send it as an input to an ADC. This can be achieved by a signal conditioning circuit built in the laboratory using LM324. The necessary code is written in the hardware description language VHDL. ISE (Integrated Simulation Environment) version 9.1i suite is used for software development which is one of the EDA (Electronic Design Automation) tool offered by the Xilinx Company.

KEYWORDS: CPLD, ISE9.1i, ADC, RTD Pt100, LCD, Relay