12th Academic Sessions
University of Ruhuna, Matara, Sri Lanka ISSN 2362-0412

Application of Low Cost SCADA System for Existing Air Conditioning System Apparatus

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Abstract

Modern laboratory apparatus facilitates students to measure required data with a reasonable speed and accuracy in experiments and researches. However, for purchasing modern laboratory apparatus may cost several million rupees. Therefore, this study has examined the possibility of updating existing apparatus to modern one by applying SCADA (Supervisory Control and Data Acquisition) software and microcontroller. In the field of automation and control engineering,widely applied technology is SCADA systems. The modern SCADA systems consistof high cost PLC systems, Sensing equipment and application software. In order to reduce the cost associated with this modernization process,the present study introduces low cost SCADA system using Arduino controller, low-cost sensing equipment and an open source software of LabVIEW. Arduino controller is the main functional component in the system and it controls all the sensing equipment and controlling devices. LabVIEW software is used to monitor and to control the Arduino controller. The present low cost SCADA system is applied to an existing conventional air conditioning apparatus in the Department of Mechanical and Manufacturing and the modernized one provides measuring of data at high accuracy and a user friendly graphical interface in which variation of all necessary parameters related to the air conditioning process are displayed in graphical manner.

Keywords: *SCADA System, Arduino Controler, Labview, PLC, Air Conditioning Apparatus*