Abstract

This paper focuses on the design and implementation of a single phase energy meter with remote monitoring capacity using short-message service (SMS). The energy meter was designed using ADE7755 metering chip and other discrete components. The SMS communication with the meter was established with the aid of Neoway M590 GSM module; AT-commands are sent to the GSM module from a mobile phone for communication. Also, a 4x3-keypad was employed for loading energy tokens and obtaining energy information from the meter; the energy data (query) is then viewed on the liquid crystal display unit. The project was implemented on a locally-made single layer printed circuit board with the aid of Diptrace software. Simulation of the electronic circuit designs was carried out using Proteus software, 8051 development kit and a serial port monitor. Results obtained show that the energy meter is capable of measuring instantaneous and average real time power consumed while being remotely monitored and queried. The energy meter has a capacity of measuring minimum and maximum loads of 2mA and 40A respectively.
Design and Implementation of Remotely-Monitored Single Phase Smart Energy Meter via Short Message Service

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Index Terms

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