

ELECTRICAL HOME APPLIANCES PROTECTION SYSTEM

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Abstract

Power line communication is called power line carrier or a mains communication. At present several kind of transmission mediums are available in residential and industrial areas like coaxial cable, radio, microwave, millimeter wave, power line and fiber optics. Electrical power line is used as a communication medium in domestic and industrial automation, where the appliances are controlled through a controlling system. The communication medium exhibits complex characteristics in multipath propagation which provides inconvenient in data transmission and controlling the signal. The existing technology which provides the protection system in electrical domestic and industrial appliances has been developed to eliminate the said problem. Moreover, it will read out the consumers' metering data and increases the capability of controlling devices through AC power line. The protection system consists of many devices like Peripheral Interfacing controller, AC power line modem, sensors, relays, memory and display unit. The designer of the controller needs to program accordingly by considering all these peripherals. As well as he has to consider the number of appliances connected to the controller and manage the same using extra large cable which resulted into high maintenance cost, noise interferences, more power consumption and possibility of short circuit. The proposed monitoring system facilitated with Global System for Mobile communication i.e. GSM technology and automated circuit breaker. System is designed to enable subscriber about the load capacity and remotely control the devices using dual tone multiple frequency techniques. The system is also equipped with the short circuit protection and self informing about the problem through

SMS. The proposed model is real power informative at low frequency, compact in design and shows satisfactory results in real time application.

Keywords: AC power line modem, GSM controller, DTMF, Cooperative technique, Selective approach, system reliability.