

## Energy Management System and Interactive Functions of Smart Plug for Smart Home

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**Abstract :** Intelligent electronic equipment and automation network is the brain of high-tech energy management systems in critical role of smart homes dominance. Smart home is a technology integration for greater comfort, autonomy, reduced cost, and energy saving as well. These services can be provided to home owners for managing their home appliances locally or remotely and consequently allow them to automate intelligently and responsibly their consumption by individual or collective control systems. In this study, three smart plugs are described and one of them tested on typical household appliances. This article proposes to collect the data from the wireless technology and to extract some smart data for energy management system. This smart data is to quantify for three kinds of load: intermittent load, phantom load and continuous load. Phantom load is a waste power that is one of unnoticed power of each appliance while connected or disconnected to the main. Intermittent load and continuous load take in to consideration the power and using time of home appliances. By analysing the classification of loads, this smart data will be provided to reduce the communication of wireless sensor network for energy management system.

**Keywords :** energy management, load profile, smart plug, wireless sensor network

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