

Light Weight Energy Transfer Module Using DPR

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Abstract —The scale and fields of IOT (Internet of Things)-based applications are increasing every day. Applications designed for enhanced IOT applications are one of the current growth drivers of today's industry. In the process of realizing this kind of IOT system, optimizing such applications to achieve the lowest power consumption, maximize functionality and best performance is an important part. During this period, data security is the main challenge for such Internet of Things (IOT) applications. Therefore, we must consider the available power budget and improve data security. Unfortunately, the issue of low power budget does not essentially mean that other performance requirements are relaxed. Therefore, this article is aimed at designers of IOT devices, including sensors, wireless communication devices, and near field communication devices. . It will focus on how to use automatic power consumption methods to enhance existing design capabilities, thereby reducing power consumption with the best data security technology, without affecting existing performance.

In this article, we have included some encryption technologies that provide different power consumption and security levels for IOT applications. From a given security module, some modes provide a higher security level at the expense of high power consumption, while some modes provide lower power consumption and a lower security level. Mainly perform dynamic partial reconfiguration (DPR) to adaptively configure the hardware security module according to the available power budget. The DPR control module of the system improves energy efficiency by maintaining data security and dynamically selecting the best transmission power budget with the least energy consumption. For a given power limit, the DPR controller configures the safety components using a safety method that meets the available power limit.