

数字远传燃气表的低功耗设计与实现

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摘要:

无线传感器网络中节点的能量是一种非常有限资源, 考虑到低功耗实现的三个主要解决方面, 设计并实现了一款低功耗的数字远传燃气表节点, 提出了节点的节能设计要点, 给出了各个模块的具体设计。理论计算和实验表明: 本文的低功耗设计可以使燃气表节点的使用寿命提高至 3年-5年, 极大程度的满足了燃气公共事业计量抄表的应用需要。

关键词: 无线传感器网络 低功耗 电源管理 远传抄表

Low-Power Design and Implementation of Wireless Remote Gas Meter Reading

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Abstract:

Low-power design of nodes is critical in wireless sensor networks. We consider three main aspects of low power consumption and design and implement the node for remote gas meter reading. This paper describes the main energy saving methods and the modules of implementation in details. The simulation and experiment results show that our design can extend 3-5 years of the battery lifetime for gas meter thus fulfills the application requirement of the gas utility reading system.

Keywords: wireless sensor network, low power consumption, power management, automatic meter reading

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