

A Novel Concept for a Long Lifetime Wireless Geofencing System With an Integrated Sub-10 μ A Wake-Up Receiver

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Summary

This paper shows the benefits of a sub-10 μ A wake-up receiver circuit used for wireless geofencing and localisation applications with very low maintenance. The wake-up receiver is a wireless receiver which continuously scans the radio channel for certain messages. Having received and decoded such a message containing additional data, the wake-up receiver triggers different actions in smart objects. The wake-up receiver consumes only 7.5 Microwatts and is suitable for mobile battery-operated smart objects. It is shown how the wake-up receiver can be used to implement a wireless in-door geofencing system. This application profits the most from the low and deterministic current consumption and the short reaction time below 500 ms.