

一种用于RFID传感阅读器的载波抵消射频前端方案

作者：赵洪新 颜力 王成国 洪伟

单位：东南大学毫米波国家重点实验室

基金项目：

摘要：

为了改善传统RFID（射频识别）传感阅读器体制的载波泄漏问题、提高射频前端动态范围和解调信号的质量，提出了一种采用自适应载波抑制技术的新型射频收发前端电路方案。计算机仿真结果表明，采用该方案可以获得60dB以上的载波抑制性能改善；实验验证结果表明，采用该方案获得约42dB的载波抑制性能及动态范围改善，解调信号的波形失真显著降低；现场实测结果证明，系统能够有效抑制强背景反射干扰，有效阅读距离最长达11米。

关键词：RFID，传感阅读器，载波抑制，射频前端

A Novel RF Front End with Adaptive Carrier-Nulling in RFID Sensor Reader

Author's Name: ZHAO Hongxin, Yanli, Wangchengguo, Hongwei

Institution: State Key Lab. of Millimeter Waves, Southeast University

Abstract:

A novel RF front end to be used in RFID(Radio Frequency Identify) sensor reader was proposed. Dramatic improvement of leakage suppression has been achieved by the adoption of adaptive carrier-nulling technique, as well as high quality of demodulated signal and better dynamic range of the reader. The computer simulation results show that more than 60dB improvement with carrier suppression could be achieved against normal architecture. Carrier suppression improvement of 42dB and better fidelity of demodulated signal has been manifested by prototype system. Fairly suppression of Background reflection was verified by field tests, which yield effective operation range up to 11 meters.

Keywords: RFID, Sensor reader, Carrier-nulling, RF Front End

投稿时间：2010-04-27

[查看pdf文件](#)