

研究简报

一种新的数字接收机AGC电路

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摘要

该文提出一种新的数字接收机自动增益控制(AGC)电路。该电路将传统的两级级连负反馈AGC电路中后级AGC电路的反馈控制改为前馈控制,前后两级AGC电路共用一套功率检波器和环路滤波器,前级AGC电路的增益控制误差能够在后级AGC电路中得到修正,故新的AGC电路的总增益控制误差仅取决于后级AGC电路的增益控制误差。计算机仿真和硬件电路测试结果均表明,与传统的AGC电路相比,该文提出的新AGC电路能够提高增益控制精度,降低AGC响应时间。

关键词 [数字接收机](#) [自动增益控制\(AGC\)](#) [级连结构](#) [前馈控制](#)

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A New AGC Circuitry for Digital Receiver

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Abstract

A new Automatic Gain Control (AGC) circuitry is proposed in this paper. The feedback control scheme of subsequent AGC closed-loop in conventional AGC frame is converted to forward control scheme in new circuitry. The power detector and the loop filter are shared by two cascaded AGC loops in new AGC circuitry, so the gain errors in foregoing AGC closed-loop can be corrected by subsequent AGC closed-loop, and total gain errors of new AGC circuitry is determined only by the gain errors in subsequent AGC closed-loop. Simulation and measurement results verify that the new AGC circuitry not only improved the gain control precision, but also decreased the response time, compared with conventional AGC circuitry.

Key words [Digital receiver](#) [Automatic Gain Control \(AGC\)](#) [Cascaded frame](#) [Forward control](#)

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