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McRory

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(54) **RF AMPLIFIER WITH FEEDBACK BASED LINEARIZATION**

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(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) **Appl. No.:** 10/035,483

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(65) **Prior Publication Data**

J.S. Kenney and A. Leka, "Power Amplifier Spectral Regrowth for Digital Cellular and PCS Applications", Microwave Journal, Oct. 1995, pp. 74-92.

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Related U.S. Application Data

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(60) **Provisional application No.** 60/245,190, filed on Nov. 3, 2000.

(51) **Int. Cl.⁷** H03F 1/26

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(58) **Field of Search** 330/107, 149; 455/63; 375/297

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(57) **ABSTRACT**

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A complex baseband model of the power amplifier within a DSP domain is used to develop a feedback signal that would be equivalent to the optimum negative feedback used for the analog amplifier. Once the feedback signal is available, it can be processed to compensate for the effects of the group delay and for optimum loop gain, hence resulting in a broadband response with no theoretical limitations on the linearization of the amplifier.

8 Claims, 3 Drawing Sheets

