Abstracts

Predistortion circuit design for II and III order simultaneous linearization in multiservice telecommunications apparatuses

L. Roselli, V. Borgioni, F. Zepparelli, M. Comez, P. Faccin and A. Casini. "Predistortion circuit design for II and III order simultaneous linearization in multiservice telecommunications apparatuses." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1711-1714 vol.3.

We have developed a completely analog, low-cost, multioctave predistortion circuit to compensate second- and third-order distortions in Radio-over-Fiber laser-based telecommunications equipment. The predistorter has been designed on the basis of both a circuit model of commercial DFB lasers and a complete compensation procedure previously developed. A first prototype has been realized and fully tested in the frequency range 500 MHz - 2 GHz, used with GSM, DCS and GPRS cellular services. Some modifications to the relevant architecture have led to a second final predistorter prototype able to reduce of about 9 to 15 dB both the laser second- and third-order harmonic distortion components falling within the DCS band (1710-1880 MHz).

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