Abstracts

Digital controlled adaptive feedforward amplifier for IMT-2000 band

Youngoo Yang, Youngsik Kim, Jeahyok Yi, Joongjin Nam, Bumman Kim, Wonwoo Kang and Shinwook Kim. "Digital controlled adaptive feedforward amplifier for IMT-2000 band." 2000 MTT-S International Microwave Symposium Digest 00.3 (2000 Vol. III [MWSYM]): 1487-1490.

We present a broadband adaptive control method for IMT-2000 band multi-carrier power amplifiers adopting feedforward linearization. We have analyzed and implemented an error cancellation detection method employing a frequency hopping pilot and IF synchronous sampling correlator with DSP controller. An adaptive delta-modulated power gradient algorithm is used to adjust the signal and error cancellation loop control parameters. A 2.15 GHz feedforward power amplifier with digital controller is implemented. Band test results show that it covers over a 90 MHz band with more than 50 dBc of IMD at 5 MHz offset frequency for an 8.3 MHz WCDMA signal. The adaptation result shows very fast convergence.

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