Abstracts

Linearized mixer using predistortion technique

Youngwook Kim, Youngsik Kim and Soonghak Lee. "Linearized mixer using predistortion technique." 2002 Microwave and Wireless Components Letters 12.6 (Jun. 2002 [MWCL]): 204-205.

A predistortion technique has been proposed to reduce intermodulation distortion (IMD) generated from the conversion process of a mixer. In this technique, the IMD generated from a mixer in the IF band was cancelled by the controlled RF error signal, which is generated by a predistorter. The magnitude and phase of the RF error signal were properly adjusted through a vector modulator. This linearization technique has been verified by experiment of a down conversion mixer in the cellular band. A two tone test has been performed at the frequency of 836 MHz with 442 kHz separation. The results show that this method improves about 16 dB of IMD3 at -18 dBm IF output power in 10 MHz frequency band and increases about 3.5 dB of P1 dB of the mixer. Simple topology and good performance in linearization of IF signals renders this technique suitable for highly linear frequency conversion in communication systems.

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