Abstracts

Harmonic boosting for high performance mixers

S. Chakraborty, Ching-Lang Lin, B. Matinpour and J. Laskar. "Harmonic boosting for high performance mixers." 2002 MTT-S International Microwave Symposium Digest 02.2 (2002 Vol. II [MWSYM]): 1253-1256 vol.2.

We propose a novel harmonic boosting technique for development of high performance subharmonic mixers. This technique alleviates major problems associated with the use of 4/sup th/ and higher order subharmonic mixers. By utilizing the odd-order harmonics of the main subharmonic LO, we demonstrate significant performance improvements while reducing the LO power. Measurements confirm a 6 dB savings in LO power level, up to 10 dB improvement in output P1dB and up to 6 dB improvement in conversion loss. Measurements also confirm that harmonic boosting does not degrade in-band LO leakage, IIP2 and dc offset levels, thus favoring its application in very-low-IF and direct conversion transceivers.

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