Abstracts

A Double Balanced 3-18 GHz Resistive HEMT Monolithic Mixer (1992 [MCS])

T.H. Chen, K.W. Chang, S.B.T. Bui, L.C.T. Liu and S. Pak. "A Double Balanced 3-18 GHz Resistive HEMT Monolithic Mixer (1992 [MCS])." 1992 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 92.1 (1992 [MCS]): 167-170.

A double balanced (DB) 3-18 GHz resistive HEMT monolithic mixer has been successfully developed. This mixer consists of a AIGaAs/InGaAs HEMT quad, an active LO balun and two passive baluns, RF and IF. At 16 dBm LO power, this mixer achieves the conversion losses of 7.5-9 dB for 4-14 GHz RF and 7.5-11 dB for 3-18 GHz RF. The simulated conversion loss is very much in agreement with the measured results. Also, a third order input intercept of +26 dBm is achieved for a 10-11 GHz RF and 1 GHz IF at a LO drive of 16 dBm. This design is believed to be the first DB resistive HEMT MMIC mixer covering up to 6:1 bandwidth.

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