Abstracts

Investigation into intermodulation distortion in HEMTs using a quasi-2-D physical model

P.J. Rudge, R.E. Miles, M.B. Steer and C.M. Snowden. "Investigation into intermodulation distortion in HEMTs using a quasi-2-D physical model." 2001 Transactions on Microwave Theory and Techniques 49.12 (Dec. 2001 [T-MTT] (Special Issue on 2001 International Microwave Symposium)): 2315-2321.

The need for both linear and efficient pseudomorphic high electron-mobility transistors (pHEMTs) for modern wireless handsets necessitates a thorough understanding of the origins of intermodulation distortion at the device level. For the first time, the dynamic large-signal internal physical behavior of a pHEMT is examined using a quasi-two-dimensional physical device model. The model accounts fully for device-circuit interaction and is validated experimentally for a two-tone experiment around 5 GHz.

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