Abstracts

Effects of output harmonic termination on PAE and output power of AlGaN/GaN HEMT power amplifier

Y. Chung, C.Y. Hang, S. Cai, Y. Chen, W. Lee, C.P. Wen, K.L. Wang and T. Itoh. "Effects of output harmonic termination on PAE and output power of AlGaN/GaN HEMT power amplifier." 2002 Microwave and Wireless Components Letters 12.11 (Nov. 2002 [MWCL]): 421-423.

The authors experimentally investigate and discuss the effects of output harmonic termination on power added efficiency (PAE) and output power of an AlGaN/GaN high electron mobility transistor (HEMT) power amplifier (PA). The AlGaN/GaN HEMT PA with gate periphery of 1 mm was built and tested at L-band. Large-signal measurements and comparisons of the PAE and output power were carried out at different DC bias conditions from 50% of saturated drain current (I/sub dss/) to 1% of Id., for the PA with and without output harmonic termination. For class-AB operation at 25% of I/sub dss/, an increase of about 10% in peak PAE and 1 dBm in output power were observed in saturated output power range. Improvements of up to 9% in PAE and 1.2 dBm in output power were achieved over the measured DC bias conditions provided the output harmonics are properly terminated.

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