

Experimental investigation on efficiency and linearity of microwave Doherty amplifier

Youngoo Yang, Jaehyok Yi, Young Yun Woo and Bumman Kim. "Experimental investigation on efficiency and linearity of microwave Doherty amplifier." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1367-1370 vol.2.

We have investigated the microwave Doherty amplifier, testing for efficiency and linearity. For the experiment, a 1.4 GHz Doherty amplifier has been implemented using a silicon LDMOSFET. The Doherty amplifier-I (a combination of a class B carrier amplifier and a class C peaking amplifier) and the Doherty amplifier-II (a combination of a class AB carrier amplifier and a class C peaking amplifier) have been compared with class B and AB amplifiers, respectively, using single-tone, two-tone, and forward-link CDMA signals. It demonstrated the superior performance of Doherty amplifiers. The results provide a topology selection guide of the CDMA base station power amplifier to achieve both linearity and efficiency enhancements.

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