

WCDMA power amplifier requirements and efficiency optimization criteria

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In this paper the WCDMA mobile transmitter requirements are studied. HPSK modulation method with multicode transmission capability has been adopted for the WCDMA system. Power amplifier requirements and efficiencies are studied with the measured class-AB HBT amplifier. In order to achieve long talk times for WCDMA terminal, it is essential that efficiency is optimized for medium power levels. However, it is also identified that power amplifier efficiency is important at the maximum output powers, because otherwise too much thermal heating occurs. This paper also proposes a procedure for WCDMA talk time standardization.

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