

NXP unveils world's first fully integrated Doherty amplifiers

January 27 2009

NXP Semiconductors, the independent semiconductor company founded by Philips, today launched the world's first fully integrated Doherty amplifiers for TD-SCDMA and WCDMA base stations, expanding its extensive portfolio of industry-leading RF power transistors.

Maintaining NXP's RF technology innovation, the advanced BLD6G21-50 and BLD6G22-50 fully integrated amplifiers offer ease-of-design while delivering unsurpassed efficiency of > 40% at an average power of 10W. This enables 35% lower power dissipation under multi-carrier signal operation compared to class AB amplifiers.

The new fully integrated Doherty amplifier is plug and play and can be applied in the same way as a standard class AB transistor, hence speeding time to market. The NXP BLD6G21-50 and BLD6G22-50 amplifiers bring savings in form factor and design effort, while eliminating the need for extra tuning during manufacturing, providing significant cost efficiencies during the development process of cellular base station power amplifiers.

The BLD6G21-50 incorporates an integrated Doherty concept leveraging NXP's state of the art GEN6 LDMOS technology specifically designed for TD-SCDMA operation at frequencies from 2010 MHz to 2025 MHz, whereas its twin device operates at frequencies between 2110MHz to 2170MHz for W-CDMA transmission. Both main and peak devices and delay lines as well as the input splitter and output combiner are integrated into a standard transistor package with single input and output leads, thus minimizing required board space. The package has

two additional pins, one of which is being used for external biasing purposes.

NXP developed the integrated Doherty technology in direct response to demand from base station providers and telecoms operators. "Integrated Doherty technology is considered a holy grail in amplifiers," said Mark Murphy, Director of marketing for RF power products, NXP Semiconductors. "Through this innovation we have achieved the smallest realized Doherty design and record efficiency, cutting total system power consumption significantly, thereby helping our customers reduce cost while boosting performance."

NXP's BLD6G21-50 and BLD6G22-50 integrated Doherty amplifiers are sampling now. Higher power devices in this portfolio will become available throughout this year.

Provided by NXP

Citation: NXP unveils world's first fully integrated Doherty amplifiers (2009, January 27) retrieved 14 August 2024 from <https://phys.org/news/2009-01-nxp-unveils-worlds-fully-doherty.html>

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