Airfast RF Power Solutions Deliver New Levels of Performance

RF power market leader Freescale Semiconductor has introduced new Airfast™ transistors engineered to boost the efficiency, peak power and signal bandwidth of next-generation base stations. With the new offerings, Freescale's flagship Airfast RF power product line now includes at least one solution for each cellular band and supports both small and large cell base station deployments.

The cost-effective, small-configuration Airfast RF power solutions are designed to help network equipment manufacturers and operators support multiple wireless standards, manage escalating data transmission rates and keep capital and operating costs low.

To complement the new Airfast devices, Freescale is also announcing a new class of control products called advanced Doherty alignment modules (ADAM) that enables real-time adjustment of phase and amplitude for the optimization of traditional Doherty power amplifiers. The modules are designed to work with Airfast devices to boost overall system performance, including increased power efficiency, output power and linearity across the frequency band.

"The newest additions to Freescale's Airfast portfolio of RF power solutions deliver substantial leaps forward in linear efficiency and higher power for small cell and macrocell base stations," said Ritu Favre, vice president and general manager of Freescale's RF Division. "As the long-time leader in this market and a pioneer in LDMOS technology, Freescale offers customers a broad selection of RF transistors that advance power amplifier performance while reducing cost and design cycles."

Product details

The AFT09S282N is Freescale's 900 MHz, 28V LDMOS product. The device offers state-of-the-art RF performance from 720-960 MHz and delivers the highest peak power in OMNI plastic over-molded packaging available on the market (490W load pull peak power).

The AFT18S230S is a 1.8 GHz, 28V RF power LDMOS transistor that delivers a symmetric Doherty efficiency of 45 percent and 17 dB of gain at 8 dB OBO. This represents a level of efficiency typically achieved by more complex and expensive solutions employing asymmetric-only Doherty techniques. The device, when used in asymmetric Doherty PA's, is designed to deliver even higher-efficiency performance.

The AFT21S230S is a 2.1 GHz 28V device delivering outstanding efficiency for a 230W-rated RF power LDMOS transistor. Housed in NI-780S-6 packaging for VBW up

to 100 MHz, the product is designed for use in either symmetric or asymmetric Doherty applications. In symmetric deployment the product is engineered to deliver 45 percent efficiency at 8 dB OBO and 15.5 dB of gain.

The AFT18HW355S is an in-package Doherty device for high-power PCS- and DCS-band applications. Delivering 56 dBm of peak power in a single device with efficiency exceeding 48 percent at average power 8 dB OBO, the product offers performance that rivals much more expensive GaN-based solutions. Capable of operating at either 1805-1880 MHz or 1930-1995 MHz, this compact device uses Freescale's enhanced video bandwidth technology to enable full-band, multi-carrier operation.

The MMDS25254H ADAM is a sophisticated gallium arsenide (GaAs) monolithic microwave integrated circuit (MMIC) that allows phase and peaking adjustments from 2300 to 2800 MHz. Product families for 700-1000 MHz and 1800-2200 MHz are also in development.

Pricing and availability

Please contact your local Freescale sales representative for pricing information and to inquire about advance sampling. For more information on Freescale RF power LDMOS solutions, please visit www.freescale.com/RFpower [1].

www.freescale.com [2]

Posted by Sara Cohen, Editorial Intern

June 18, 2012

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[1] http://www.freescale.com/webapp/sps/site/homepage.jsp?code=RF_POWER_HOMEPAGE&tid=vanRFPOWER
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