

FreescalE gives 3G phones extreme cellular makeover

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Three-to-one reduction enables slim, elegant handsets

Delivering on its ongoing commitment to miniaturize the 3G mobile phone, FreescalE Semiconductor announces a fourth generation, multimode 3G WCDMA/EDGE cellular RF subsystem. This gives cell phone manufacturers design freedom by shrinking board space 70 percent, creating exciting possibilities for a new breed of slim, elegant 3G handsets.

Typically, subsystems require greater than a hundred components. FreescalE's 3G WCDMA/EDGE dual-mode RF cellular subsystem for handsets allows customers a three-to-one component reduction in less than 649 mm² of board space. The high integration allows manufacturers the ability to add features such as MP3 players, Bluetooth connectivity, digital cameras, DVB-H, and GPS while reducing handset size. Additionally, consumers are expected to enjoy one-third longer talk and standby times over previous generation subsystems.

“In offering an RF cellular subsystem for 3G WCDMA/EDGE with the industry's smallest footprint, FreescalE products will be attractive to customers throughout the handset market who want to build sleek devices with the multimedia features consumers want,” says Will Strauss, president of the electronic market research firm Forward Concepts.

According to Strauss, the handset market for WCDMA/UMTS is

growing 168 percent in 2005 to the 45.6-million-unit level.

“While other companies are still experimenting with early generations of WCDMA RF subsystems, Freescale is now providing a fully mature, robust fourth-generation solution,” said Kent Heath, director of cellular operations, Radio Products Division for Freescale. “This paves the way for our customers to provide smaller, cheaper 3G phones with extended talk times.”

Freescale’s WCDMA/EDGE-supported RF subsystem integrates digital interfacing to the baseband processor for industry-wide compatibility and continues to support emerging standards such as DigRF. DigRF is a global standard of an efficient physical interconnection between baseband and RF integrated circuits for digital cellular terminals. The world’s first fully DigRF-compliant radio for EDGE handsets was introduced by Freescale earlier this year. Freescale is one of the world’s largest suppliers of RF transceivers for GSM/EDGE handsets and has been providing WCDMA RF solutions since the standard’s creation.

Customers are beginning to implement the RF chipset, integrating the analog baseband, RF transmitter, RF receiver, power amplifier, power control and many traditionally passive components into four manufacturing-friendly packages. The RF subsystem, designed to receive and transmit voice and data for dual-mode 3G handsets, is comprised of the following components:

- MMM6007: Tri-band WCDMA transceiver with digital interface
- MMM6032: WCDMA integrated power amplifier module with power detection
- MMM6000: Quad-band GSM/EDGE transceiver with DigRF
- MMM6029: GSM/EDGE integrated power amplifier module with power control

These devices, which work with Freescale's baseband processors, are part of the i.300 Innovative Convergence platform solution. The RF subsystem with the digital interface, however, is designed to allow communication with other digital baseband processors as well.

The combined products – MMM6007, MMM6032, MMM6000 and MMM6029 – are sampling now and are expected to be available for production in Q3 2005.

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