

Industry`s First Single-Chip CMOS EDGE Transceiver Reduces RF Board Space in EDGE Mobile Phones

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Infineon Technologies AG today announced sample availability of the SMARTi PM, a single-chip CMOS radio frequency (RF) transceiver for GSM, GPRS and EDGE mobile phones. With SMARTi PM, a complete GPRS/EDGE radio can be implemented on 50 percent less board space saving 30 percent in components' cost compared to competing solutions. The high integration level of the SMARTi PM allows handset manufacturers to minimize the number of external components needed for a GSM/GPRS/EDGE RF design to less than 15. The polar modulator architecture eliminates the need of any isolator or extra filter components in the transmitter path. The latest member of Infineon's successful SMARTi RF transceiver family features GPRS/EDGE data service class 1 to 12 for fast data transfer and quad-band applications. The single-chip solution providing ease-of-use and high manufacturability allows handset manufacturers to rapidly enter the market with multiple designs based on the same chip platform.

The SMARTi PM (PMB 6272) is a quad-band single-chip CMOS transceiver for GSM/GPRS/EDGE 850/900/1800/1900 voice and high-performance data transfer applications. Existing products using Infineon's SMARTi SD and SD2 transceivers can easily be upgraded to EDGE capability due to interface compatibility between SMARTi SD, SD2 and SMARTi PM.

“The introduction of an integrated GSM/GPRS/EDGE CMOS

transceiver is an important milestone in rolling out our new line of highly competitive RF transceivers based on low-power CMOS technology,” said Stefan Wolff, Vice President and General Manager of Infineon’s RF Engine business unit. “By reusing the core IP from our successful GPRS transceivers SMARTi SD and SD2 and leveraging from our CMOS process experience we could significantly speed up development time and offer faster time-to-market for our customers. With the SMARTi PM, Infineon once again underlines its technology leadership in RF transceivers.”

With the SMARTi PM a new digital transceiver concept is introduced, perfectly fitting to the characteristics of the 0.13- μm CMOS technology. The transceiver provides an analogue I/Q base band interface, a Zero IF direct conversion receiver and a quadband Polar Modulator for EDGE with integrated PGA (Programmable Gain Amplifier) functionality. Based on its standard I/Q interface the SMARTi PM can be combined with all major EDGE base band chips. It will operate with a standard linear power amplifier, already available from multiple vendors.

SMARTi PM is entirely controllable through a 3-wire bus. In combination with Infineon’s S-GOLD2 (PMB 8876) base band chip and the SM-POWER-3 (PMB 6821) power management chip a compact 3-chip EDGE system approach is achieved resulting in a very small and cost-effective solution.

Availability

The SMARTi PM is manufactured in Infineon’s 0.13- μm CMOS process and currently available in sample quantities. Few selected customers are already working on designs for next-generation cell phones using the SMARTi PM. It operates at 2.8 V and 1.5 V and comes in a 40-pin green VQFN package (5.5 mm x 6.5 mm).

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