

Exhibit 2



EE Times

[EE Times:](#)

IBM touts single-chip phone

[R. Colin Johnson](#)

(09/12/2007 10:18 AM EDT)

URL: <http://www.eetimes.com/showArticle.jhtml?articleID=201805776>

PORTLAND, Ore. — Seven RF front-end functions can be integrated onto a single CMOS chip using silicon-on-insulator technology, according to IBM Corp., which unveiled its CMOS 7RF SOI semiconductor technology Wednesday (Sept. 12).

IBM said it would provide the single-chip CMOS solution for [RF front ends](#) used in cellphones. Ken Torino, director of foundry products at IBM, added: "Our solution minimizes insertion loss and maximizes isolation, which will prevent dropped calls even on the most inexpensive handsets."

RF front-end functions in cellphones are currently handled by five to seven chips, including at least two using expensive gallium arsenide technologies. IBM claims its RF front-end will reduce costs by eliminating the need for GaAs as well as by reducing chip counts in wireless devices. IBM predicts its customers, cellphone chip set makers, will initially utilize its technology to reduce chip counts to two or three chip sets before implementing a single-chip solution.

IBM said one major stumbling block to implementing a [single-chip, SOI RF front-end in CMOS](#) is voltage surges that an antenna input must endure. The surges can occur when a user brushes, say, a nylon coat against a cellphone antenna, producing voltage spikes as high as 30 volts. CMOS technology often can't tolerate such high voltages. IBM said it solved the problem with an input that divides any surges across several layers, thereby keeping the voltage low across any individual layer.

"CMOS is perfect for integrating all the multimode, multiband RF switches, complex switch biasing networks and power controllers in a single device," said Jim Dunn, senior manager for analog and mixed signal technology development at IBM's Semiconductor Research and Development Center. "GaAs does tolerate voltage surges better than CMOS, but our layered architecture gives us equivalent performance."

IBM said it will fabricate its RF front-end chips for mobile wireless devices using its 180-nm process technology. It expects foundry partners such as Chartered Semiconductor to provide second sources for its chips to cellphone chip set makers.

IBM's chip set customers will begin delivering CMOS chip sets to mobile phone manufacturers in 2008. Phone makers are expected to introduce their first handsets based on IBM's technology in 2009. IBM said it expects its largest market to be providers of low-cost handsets for entry-level users in China, India and Latin America.

Initial hardware evaluations by IBM's largest customers has already been completed. General availability of foundry design kits is planned for the first half of 2008, IBM said.

All materials on this site [Copyright © 2008 TechInsights, a Division of United Business Media LLC](#). All rights reserved.

[Privacy Statement](#) | [Your California Privacy Rights](#) | [Terms of Service](#) | [About](#)

[Real-time motion control](#)
Increase yield, uptime with Rexroth IndraMotion
www.BoschRexroth-US.com

Ads by Google