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IBM Unveiled Next Generation Silicon Germanium Technology

SiGe BiCMOS technology



IBM is ready with its fourth generation silicon germanium foundry technology, named 8HP. The new 130 nanometer (nm) silicon germanium (SiGe) bipolar complementary metal oxide semiconductor (BiCMOS) foundry technology can reduce the cost of mobile consumer products, advance high-bandwidth wireless communications, and help enable innovative new applications such as collision-avoidance automobile radar. Along with 8HP, IBM is offering a lower cost variation (8WL) specifically targeted at wireless applications that can enable longer battery life and increased functionality in cellular handsets in order to help proliferate wireless local area networking and global positioning satellite (GPS) technology. "Silicon germanium technology is increasingly influencing next generation consumer devices and applications," said Bernie Meyerson, Chief Technologist for Systems & Technology Group, IBM. "IBM introduced the technology in 1989 to allow chip designers to increase computer performance. Over the years, SiGe revolutionized the wireless industry by providing a high volume Silicon-based technology. The fourth generation of SiGe will continue to enable wireless connectivity on an increasingly global scale." IBM was the first foundry in the world to offer SiGe BiCMOS technology and since 1995, has shipped hundreds of millions of SiGe devices. CMOS chips are the foundation for digital computing applications, while silicon germanium (SiGe) BiCMOS chips provide enhanced radio frequency communications and analog functions in addition to the core digital computing capabilities. At 130 nanometers (or 130 billionths of a meter), IBM's new SiGe BiCMOS technology delivers higher performance, lower power and higher levels of integration than current 180nm SiGe offerings. The technology maintains compatibility with IBM's application specific integrated circuit (ASIC) technology platform, enabling foundry clients to port a wide range of intellectual property circuit blocks and standard cell library elements. The 130nm foundry platform also includes an RF CMOS technology option, giving IBM foundry customers a broad range of technology choices for RF and mixed-signal applications.