

Domestic chip bottleneck breakthrough paves the way for China's 3G launch

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Comlent Technology Inc., the only Radio Frequency Integrated Circuit (RFIC) corporate member of China's 3G standard TD-SCDMA Industry Alliance (TDIA), announced today that it starts sampling RFIC transceiver and analog baseband (ABB) chipset in advanced CMOS technology for TD-SCDMA, the world's first of its kind.

The chipset includes a single chip transceiver CL4020 that uses a direct-conversion architecture that integrates the voltage-controlled oscillator (VCO), fractional-N phase-locked loop (PLL), a receiving channel select filter and a transmit driver amplifier and an analog baseband (ABB) chip CL4520 that uses digital signal processing (DSP) to compensate for the imperfections in the analog channel-select filter and to perform dc-offset cancellation. The transmit channel achieves the root mean square (RMS) of the error vectors, EVM, of less than 4%. The phase locked loop integrated phase noise from 1KHz through 640KHz achieves 0.85 degree and noise figure of whole receiving channel is below 4dB, to name a few performance indicators. The testing was conducted in "Agilent-Comlent TD-SCDMA RF Labs", the only such RF testing lab for TD-SCDMA in Asia. Nearly a dozen inventions have been disclosed during the development of this chip set. Most of them are being filed for patents in both China and the US.

Before this, TD-SCDMA transceivers provided by two foreign companies were both BiCMOS technology based and cover only one of the two allocated frequencies (1880MHz-1920MHz and 2010MHz-2025MHz) to TD-SCDMA in China. CL4020 is world's first dual-band CMOS TD-SCDMA transceiver that also lifts China's final bottleneck of domestic TD-SCDMA equipment and chip supplying chain. RF transceiver has been identified as the bottleneck of domestic industrial base by China for both TD-SCDMA and other modern wireless communications.

Comlent, established in Shanghai Zhangjiang Hi-tech Park in 2002 as the first and currently leading RF and mixed signal IC design house in China, has built a hybrid team of local fresh talent combined with experienced overseas expatriates, CMOS RF and SoC

design capability, market channel and strong local government support from ground up. Comlent has been the only RFIC transceiver chip vendor sponsored by Chinese 3G national research grants as well as the only RFIC chip vendor in TD-SCDMA Industry Alliance (TDIA) since April 2006 through a very selective process.

"In the past 4 years, Comlent has envisioned and executed a unique "local plus mobile" strategy. The cornerstone of this strategy is to focus on enabling however cost effective chip solution for explosive wireless and broadcasting consumer markets in China", stated Dr. Kai Chen, co-founder and CEO of Comlent, "Following two trends lend Comlent strong support and leverage. On the one hand, China has become the global manufacturing center of consumer electronics. On the other China has drafted and is implementing a series of national standards such as 3G mobile communications (TD-SCDMA vs. CDMA2000 in the US), Digital TV (DMB-T/H and STiMi vs. DVB-H in Europe) and satellite global positioning system (Beidou or CNSS vs. GPS in the US)", continued Dr. Kai Chen, "To better equip Comlent to benefit most from the opportunities, Comlent has strategically evolved and transformed itself from a BiCMOS based RF only company when started four years ago into a CMOS based RF, mixed signal and digital SoC company".

"RF transceiver chip has been identified and considered the bottleneck for China's domestic wireless communication industry that hindered the China 3G (TD-SCDMA) deployment in the past 2 years", stated by Mr. Hua YANG, the general secretary of China's TD-SCDMA Industry Alliance (TDIA), "Comlent's selection into TDIA and achievement in sampling RF transceiver for TD-SCDMA removes one of major concerns in the dawn of TD-SCDMA launch".

"Comlent's 3G transceiver is very indicative of rapid acquaintance of high end chip design capability by China based design houses in recent years", commented by Dr. Datong Chen, the co-founder and CTO of Spreadtrum Communications, "The fact that Comlent brings world class CMOS RF and SoC design capability to local opens wide opportunity for baseband chip suppliers such as Spreadtrum to more closely and strategically team up with to benefit from exponential growth of personal mobile and multi-media platform markets in China and elsewhere".

As world's largest mobile handset market, China's total number of mobile subscribers has exceeded 431 million in June with annual growth of approximately 50 million according to China Ministry of Information Industry (MII). China also manufactures world's most mobile handsets for both domestic and oversea markets. According to MII, China in 2005 manufactured approximately 290 million mobile handsets, or over 40% of world's projected total handset output in the year.