

Philips ramps 90-nm CMOS products into high-volume and test-chips process options

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Royal Philips Electronics today announced that it has ramped three key 90-nm CMOS products into volume production at the Crolles2 Alliance wafer fab in Crolles, France. The three Philips products, one of which is already shipping at more than 1 million pieces per month, are baseband chips for highly integrated System-in-Package (SiP) connectivity solutions, demonstrating the power of 90-nm CMOS to reduce the size and power consumption of these solutions and keep them on highly competitive price curves.

This fast ramp-up to high volume 90-nm CMOS production means that Philips will soon begin transfer manufacturing to TSMC. This agreement originated from a joint development program that guarantees process alignment between Philips' and TSMC's 90-nm CMOS process technologies.

"Our strategic decision to develop 90-nm CMOS as part of the Crolles2 Alliance and to jointly align the process technology with TSMC has given us the manufacturing flexibility we need to design and develop leading-edge CMOS products and to ramp them into production in line with customer requirements," said Frans van Houten, Chief Executive Officer of Philips Semiconductors. "By enabling short time-to-market coupled with security of supply, it has allowed us to meet two of the main criteria for maximizing our own and our customers' return on investment."

It is no coincidence that the high volume 90-nm CMOS products being

produced by Philips in the Crolles2 fab are destined for integration into the company's SiP solutions for applications such as Bluetooth and wireless LAN connectivity. Unlike System-on-Chip (SoC) solutions for these applications, which are often constrained to older process technologies because of the need to fabricate the entire chip (analog, digital, RF, memory etc.) in a single process, SiP solutions can leverage immediate benefits in terms of size, cost and power consumption by migrating their digital baseband functionality to the latest CMOS technologies. It is, for example, one of the main reasons why Philips produces the world's lowest power consumption IEEE 802.11g system solution - the BGW211.

Although Philips' 90-nm CMOS process is today being used mainly for digital circuit implementations, options for special functions such as embedded non-volatile memory and RF circuitry are not that far away. In addition to the volume production of the three digital baseband chips, several dedicated test-chips and around 15 new-product tape outs have been realized thus far. Next to using the Crolles2 wafer fab for the above CMOS, Philips is working on the implementation of Flash/EEPROM non-volatile memory in 90 nm as well as RFCMOS technologies.

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