

# Philips announces new WLAN and Bluetooth solutions that work together seamlessly in mobile phones and portable devices

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*Philips system-in-a-package technology achieves highest integration and smallest size*

Royal Philips Electronics today announced new 802.11b low-power Wireless Local Area Network (WLAN) and Bluetooth semiconductor 'system-in-a-package' (SiP) solutions specifically designed to operate at the same time in small form-factor systems such as smart phones, PDAs and other portable devices. Both WLAN and Bluetooth technologies are popular wireless connections for voice and data communications. The two technologies use the same frequency spectrum, which must be shared effectively for both technologies to be used at the same time. Philips has developed specialized hardware and software that is embedded in its WLAN and Bluetooth SiPs to meet this challenge.

This means a consumer can use a mobile phone equipped with a Bluetooth wireless headset to make a call while using the same phone to simultaneously check information on the Internet via a WLAN network - without experiencing interference. Philips will be demonstrating its WLAN/Bluetooth coexistence technology at the Wireless Connectivity World Exhibition in Amsterdam, the Netherlands, June 8-11 (Stand 324).

The new SiP technology from Philips allows essentially all of the components needed for a complete WLAN or Bluetooth subsystem to be

contained in a single semiconductor package, and it results in significant space savings. The new Philips BGW200 WLAN SiP requires only three external components and requires less than half the space of competing solutions. The Bluetooth SiP integrates some 15 to 20 separate components that typically surround a Bluetooth IC. Both the WLAN and Bluetooth SiPs are the industry's smallest solutions enabling easy integration into today's advanced, miniature communication devices.

"The market for converged mobile devices, which will surpass 20 million units in 2004, has demonstrated strong growth potential as consumers continue to show interest in improved devices combining data and telephony capabilities," said David Linsalata, analyst, IDC. "This growth will be driven by evolutions in form factor, pricing and power consumption, made possible in part by advances in chip technology from vendors such as Philips."

"The size reduction advantage, the extremely low power consumption and the co-existence technology for 802.11 and Bluetooth create a compelling combination for a wide range of mobile devices," said Paul Marino, vice president and general manager, Connectivity, Philips Semiconductors. "We expect that these WLAN/Bluetooth capabilities will contribute to a dramatic change in the way people use their phones and PDAs, and help to drive increased revenues to service providers."

The new Philips 802.11b SiP (BGW200) has a small footprint of 150 mm<sup>2</sup>, 1.3 mm height, and requires some 30 fewer components than its closest competitor. The high-performance radio transmitter also delivers up to +18 dBm at the antenna port, which is up to 6 dB better than competing solutions. Such an output power advantage translates into nearly twice the signal range and enables a high-quality, consistent wireless networking user experience. The 802.11b WLAN SiP also offers the industry's lowest standby power, consuming less than 2 milliwatts (mW) in order to extend battery life. This low-power WLAN

SiP is the industry's only zero host load solution, so it has the unique ability to listen for and process incoming traffic with the host processor powered down. The host processor only wakes up when a valid data packet arrives - thereby saving even more battery power.

Philips' Bluetooth SiP solutions (BGB203/4) offer the industry's highest level of integration and implement of the new Bluetooth 1.2 standard. The Bluetooth SiPs include everything needed for connectivity (radio, baseband, memory, filters, baluns, and other discrete components) in a single, low-cost HVQFN package as small as 49 mm<sup>2</sup> and just 0.8 mm thin. Philips Bluetooth solutions are built on a robust, high-performance radio, which provides industry-leading receive sensitivity (-86 dBm, typical) and transmit power output (+5 dBm, typical) at the antenna port. The radio also exceeds the required cellular/PCS-band blocking specification by 20 dB to ensure its immunity to interference within a mobile phone. This excellent RF performance results in best-in-class range, throughput and audio quality.

The BGB203 Bluetooth SiP integrates 268 kB of Flash memory, making it easy for customers to develop software for self-reliant products such as voice headsets, car kits and PC peripherals. The BGB204 is cost-optimized with a proven Bluetooth HCI software stack in on-chip ROM for hosted applications such as mobile phones and PDAs. A smooth and easy cost-reduction path from BGB203 Flash- to BGB204 ROM-based products is enabled by a patch RAM mechanism and compatible footprint. The BGB204 baseband processor is produced in Philips' advanced CMOS090LP low-leakage 90nm CMOS process that delivers breakthrough chip size and low power consumption.

The Philips WLAN/Bluetooth co-existence solution incorporates dedicated hardware interfaces and controller software embedded in its latest WLAN BGW200 and Bluetooth 1.2 BGB203/04 SiPs - as well as in the previously announced low-power WLAN chipsets (BGW100,

SA2443) and Bluetooth 1.1 SiPs (BGB201/02). An advanced Packet Traffic Arbitration (PTA) algorithm with voice packet prioritization ensures seamless collaboration between Bluetooth and WLAN and excellent voice/audio quality. Philips' new Bluetooth 1.2 products add Adaptive Frequency Hopping (AFH) capability to actively avoid WLAN frequency channels that are in use. For further technical information, please visit [www.semiconductors.philips.com ... markets/connectivity](http://www.semiconductors.philips.com...markets/connectivity).

#### Availability

Philips' WLAN 802.11b BGW200 SiP will be sampling in July 2004 and will be available in production quantities in Q4 2004. Philips' Bluetooth BGB203 (Flash version) SiP will be sampling in July 2004 and will be available in production quantities in Q4 2004. The BGB204 (ROM version), which is footprint-compatible with the BGB203, will be available in production quantities in Q1 2005.

The original press release: [www.philips.com](http://www.philips.com)

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