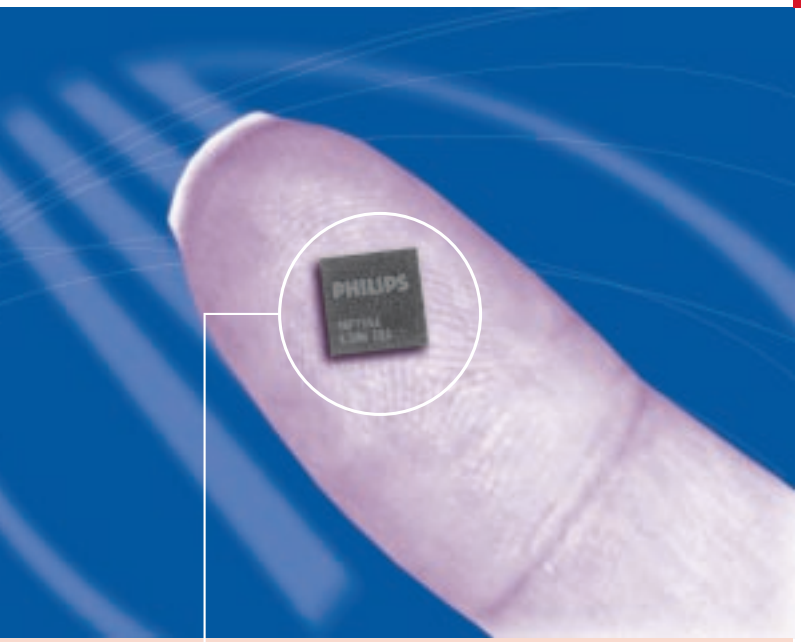
VWS26002
Bluetooth Baseband

Powerful single-chip architecture for Bluetooth-enabled applications



Features

- Compliant with Bluetooth specification 1.0
- Integrated ARM7TDMI microprocessor
- Bluetooth core encapsulating Ericsson IP (EBC)
- Ericsson Bluetooth Protocol Stack executes on-chip
- On-chip UART, as well as USB, PCM and I2C™ interfaces
- Implemented in 0.25 um CMOS technology
- Power range from 1.8V – 2.5V (+/- 10%) for the digital core
- I/O power range from 2.5V – 3.3V (+/- 10%)
- 3.2kHz low power mode feature
- Transmit/receive timing
- FEC, CRC, ARQ
- Encryption and authentication
- Radio interface
- Implemented in 96-pin FPBGA package for small 8x8 mm footprint
- Supports key Bluetooth features such as:
  - Fast frequency hopping
  - CVSD (Continuously Variable Slope Delta-modulation) speech coding
  - Advanced security functions

Overview

The VWS26002 is a highly-integrated Bluetooth baseband processor designed to form the heart of Bluetooth wireless communication systems.

Bluetooth is a low-cost cable replacement technology using short-range wireless links to provide "ad hoc" networking between portable devices. Bluetooth provides ubiquitous communication capabilities for a range of consumer electronics devices ranging from cell phones, PDAs and computers to digital cameras and fax machines. The five founding members of the Bluetooth consortium (Ericsson, IBM, Intel, Nokia and Toshiba) have since been joined by over a thousand companies, thus setting the standard for worldwide success and rapid market growth.

Bluetooth technology offers the following benefits:

- Open standard
- Both voice and data support
- Usable worldwide
- "Ad hoc" operation simplifies network setup
- Designed to withstand interference in unlicensed bands
- Can be implemented in very small modules, saving space in end equipment
- Very low power consumption
- Designed to reduce system bill-of-materials costs

The VWS26002 Bluetooth Processor, the second member of the VWS2600x Bluetooth family, is fully compatible with the Bluetooth 1.0 specification. The integrated enhanced ARM7TDMI microprocessor is able to run the complete Bluetooth protocol stack, while the on-chip peripherals provide for easy interfacing to a Bluetooth radio and to a host system.

Low risk

The VWS26002 can be connected with the Philips UAA3558 Bluetooth RF, as well as with the Ericsson PBA313, thus reducing development time and risk.

Low power

The VWS26002 device makes use of our low-power design expertise and is implemented in leading-edge 0.25 um CMOS technology to deliver minimal power consumption with correspondingly longer battery lifetimes.

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Bluetooth Baseband VWS26002

Bluetooth module

The first generation of Bluetooth-enabled products will make use of Bluetooth 'modules' which include both radio and baseband functionality. The VWS26002 baseband processor and UAA3558 are at the heart of a number of Bluetooth modules currently under development by OEMs. Here are the key features of the radio and protocol stack to be combined with the VWS26002 baseband processor:

Protocol Stack

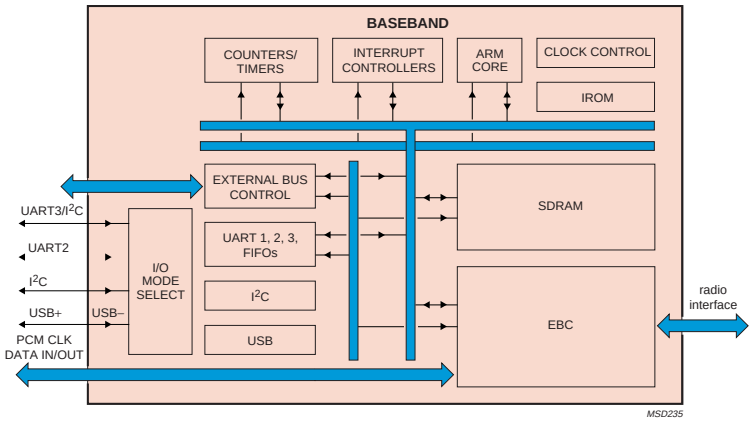
- Compliant with Bluetooth specification 1.0
- Link Manager (LM)
- Host Controller Interface (HCI)

Radio

- Compliant with Bluetooth specification 1.0
- Operates in 2.4GHz ISM band (unlicensed)
- Frequency hopping, spread spectrum technology
- 79 "hop" channels (for US/Europe, Spain/France and Japan ISM bands)
- 1MHz bandwidth per channel
- Bit rate of 1Mb/s

Availability

The VWS26002 Baseband Processor is now sampling and will be available in pre-production quantities in October 1999.



Baseband Processor Block Diagram

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