

## XE1401

### Ultra low power Bluetooth™ Baseband Controller Complete Bluetooth™ software stack up to the HCI

#### General Description

The XE1400 series is a family of highly optimized Bluetooth™ integrated circuits. The XE1400 series offers a generic Bluetooth™ baseband solution to enable your battery operated applications with the Bluetooth™ wireless communication standard in the worldwide available 2.4 GHz ISM band. The XE1400 series is optimized for ultra low power consumption as well as low cost.

The XE1401 device is a stand alone Bluetooth™ baseband protocol-on-chip solution providing the full Bluetooth™ functionality up to the Host Controller Interface (HCI). This ultra low power “add-on” Bluetooth™ baseband solution targets all battery powered applications with an already existing host controller.

#### Applications

- PCs, PDAs, Cell Phones and wireless games, peripherals and accessories.
- Headset applications.
- Home surveillance and security.

#### Product Features

- Single chip Bluetooth™ baseband add-on solution; no external memory required.
- Fully integrated lower layer Bluetooth™ protocol, compliant to revision 1.1 based on qualified NewLogic™ IP.
- Supports one simultaneously SCO (HV , DV packages) and up to three simultaneously ACL (DM, DH, AUX packages) channels.
- Supports various Bluetooth™ radio chips, e.g. Conexant CX7230x.
- Supports Class 1, Class 2 and Class 3 radio modules.
- 13 MHz or 16 MHz clock sources supported.
- High speed UART and parallel port for host processor interfacing. Glueless audio interface to XEMICS XE3000 CODECs.
- Core operating voltage 1.8V, I/O supply voltage 2.7V ... 3.3V.
- Ultra low power consumption, below 2mA.

## Bluetooth™ Baseband Controller IC

The Bluetooth™ Controller IC is designed to be manufactured in a 0.18µm CMOS process. It includes all required hardware blocks to comply with the Bluetooth™ communication standard.

The embedded baseband sequencer will manage all Bluetooth™ baseband tasks of the lower layer protocol up to the HCI (Host Controller Interface). The baseband controller insures a “transparent” usage of the Bluetooth™ wireless communication via the HCI. It receives the data directly from your application and then performs the various transmits, receive and protocol timing tasks without any interaction from the host controller. The radio interface gluelessly links the Bluetooth™ baseband controller IC to various Radio ICs.

## Software

The XE1401 incorporates the complete lower layer protocol software. A state of the art upper layer protocol Development Tool will be provided by our partners as well as configuration and control software for our XE3000 CODEC.

## Memory

No external memory is required to run the lower layer Bluetooth™ protocol. Additional memory to run the upper layer protocol must be considered at the host controller.

## Radio

The XE1401 supports several 3<sup>rd</sup> party radio devices. To benefit most from the low power features of the baseband chip, XEMICS recommends the Conexant CX72303 Bluetooth™ transceiver.

## CODEC

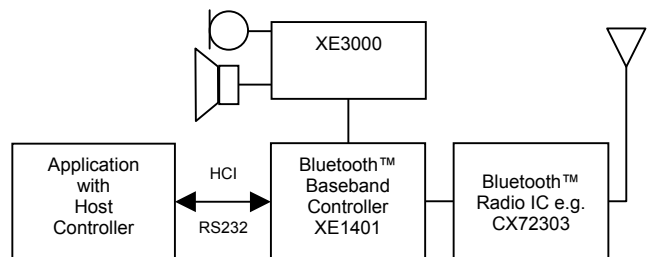
The XE1401 supports both CODEC utilizing log PCM as well as CVSD (Continuous Variable Slope Delta) coding. Due to the on chip CVSD coder lin PCM CODECs can also be used.

## Fast time to market

The XE1400 series is targeted for battery powered Bluetooth™ wireless communication applications. Products with an already existing host controller can rapidly be brought to market using the XEMICS XE1401 add-on fully integrated Bluetooth™ baseband controller.

XEMICS will offer a wealth of application examples, demonstrating the XE1400’s ease of integration into your products.

## Application integration example



Bluetooth™ front end application

This integration example shows your application enabled with Bluetooth™ wireless communication via a fully functional and self contained front end. The Bluetooth™ baseband controller firmware is pre-programmed into the IC’s ROM for easy start up on power up sequence.

Data transmission can be encrypted following the Bluetooth™ standard for secure transactions.

## Circuits availability

The XE1401 is in development with engineering samples scheduled to become available at the end of Q1/2002.

Various application examples will become available during the same time frame. The XE1401 circuit specifications outlined herein are of preliminary nature and subject to change without prior notice.