

CP3000 family development tools

State-of-the-art rapid prototyping

National Semiconductor provides a complete and industry-proven solution for developing CP3000 family applications. Components of this solution are:

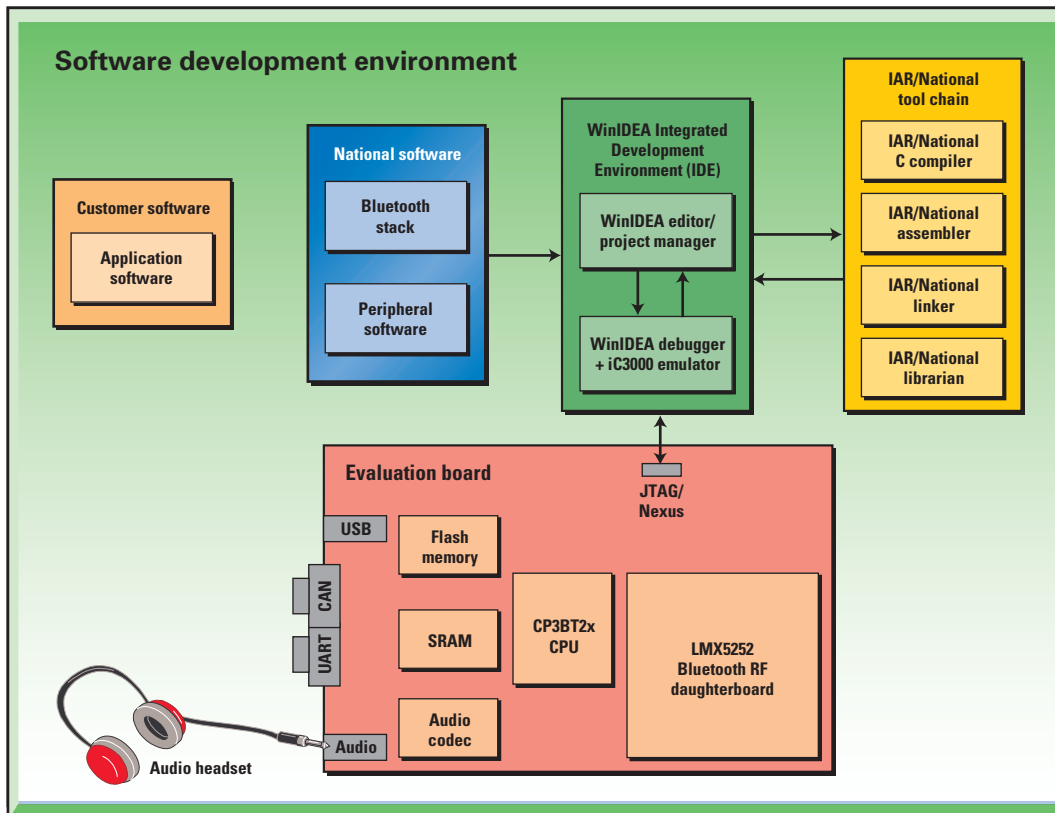
- IAR/National Semiconductor tool chain
- iSYSTEM WinIDEA™ and iC3000 emulator
- Evaluation board
- National's Bluetooth® stack and peripheral software

By combining off-the-shelf software components with an advanced integrated development environment, National provides designers with the fastest path from product concept to market — a necessity for competing in rapidly emerging Bluetooth applications.

Tool flow

The recommended tool flow is based on the iSYSTEM Windows Integrated Development Environment Advanced (WinIDEA) platform as the front-end for all aspects of project management, source editing, and debugging. The IAR/National tool chain provides the compiler, assembler, linker, and librarian. The WinIDEA debugger communicates with the evaluation board through the iC3000 active emulator unit. The iC3000 provides the hardware interface between the host PC and a JTAG/Nexus 5001™ interface on the BDB. This tool flow is shown below.

Overview



Technical specifications

WinIDEA features

- Integrated environment
- Project manager
- Third-party tools integrator
- Multi-file C source editor
- High-level source debugger
- Unified user interface for all tools
- Extensive on-line help
- 32-bit Windows application
- Microsoft Windows 98/NT/2000/XP compatible

C/embedded C++ compiler

- Support for CR16C architecture
- Multiple levels of optimization for code size and execution speed
- Extended keywords specific for the CR16C
- Built-in advanced CR16C-specific optimizer
- Easy and fast interrupt handling directly in C/EC++
- Mixed C/EC++ and assembler listings

Evaluation board

The evaluation board provides an array of external peripherals, to serve as a prototyping platform for a wide range of CP3000 Family applications. A large external SRAM memory supports fast downloads for accelerating software development cycles. Downloads can also target the on-chip flash memory, for exercising the operation of the chip as it would behave in the final system. A large external flash memory supports applications

which supplement the on-chip flash memory. The development kit includes the evaluation board and a Bluetooth RF daughterboard. The daughterboard holds the LMX5252 Bluetooth radio chip and its support circuitry. All features of the CP3000 Family silicon can be exercised with the board set.

Evaluation board features

- CP3BT2x processor
- LMX5252-based Bluetooth RF interface
- External SRAM
- External flash memory
- Audio codec

Bluetooth protocol stack features

- Baseband (link controller)
- Link Manager (LM)
- Software-based Host Controller Interface (HCI)
- Logical Link Control and Adaptation Protocol (L²CAP)
- Service Discovery Protocol (SDP)
- RFCOMM serial port emulation
- Profile support: GAP, GOEP, HFP/HF, HSP/HSPS, OBEX, OPP, SDAP, SPP

Development tool chain

The software development environment is supported by National's C compiler as well as industry-proven C/EC++ compiler.

μC/OS-II features

The μC/OS-II real-time kernel is a portable, ROMable, scalable, preemptive, and real-time, multitasking kernel.

National Semiconductor

2900 Semiconductor Drive
PO Box 58090
Santa Clara, CA 95052
1 800 272 9959

Visit our website at:
www.national.com/CP3000

For more information,
send email to:
new.feedback@nsc.com