# i960® KA/KB 32-Bit Embedded Microprocessors

## Product Overview

The i960® KA/KB embedded RISC processors were introduced in 1988 as the first members of the Intel i960 32-bit microprocessor family. They are based on the family's high-performance, common core architecture and are capable of execution rates in excess of 9.4 MIPS. The i960 KA/KB processors are well-suited for a wide range of embedded applications, including page printers, image processing, industrial control, robotics and telecommunications products.

The i960 KB processor is pin-compatible with the i960 KA processor and integrates an IEEE 754 compatible floating point unit. The i960 KA/KB processors are object code-compatible with all of the i960 microprocessor family members, including the low-cost i960 SA/SB processors; the superscalar i960 CA/CF processors; and the military i960 MC processor, enabling a strong growth path in both performance enhancement and cost reduction.

## Product Highlights:

- High-Performance 32-bit Embedded Architecture
- 512-byte Direct Mapped Instruction Cache
- 4 Gigabyte, Linear Address Space
- Multiple Register Sets with Register Scoreboarding
- Built-in Interrupt Controller
- Built-in IEEE 754 Compatible Floating Point Unit (i960 KB processor only)
- Available in 16, 20 and 25 MHz
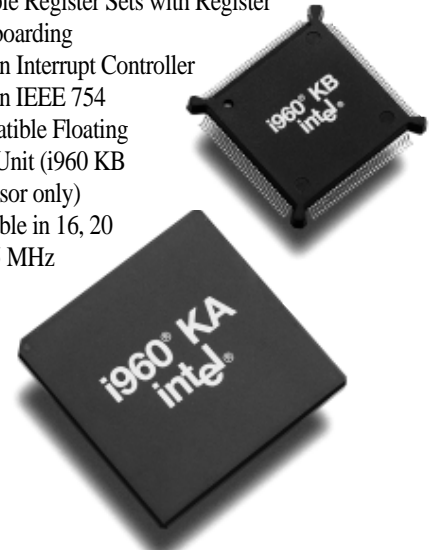
*The i960® KA and i960 KB processors are available in 132-lead Pin Grid Array (PGA) and 132-lead Plastic Quad Flat Pack (PQFP) packages.*
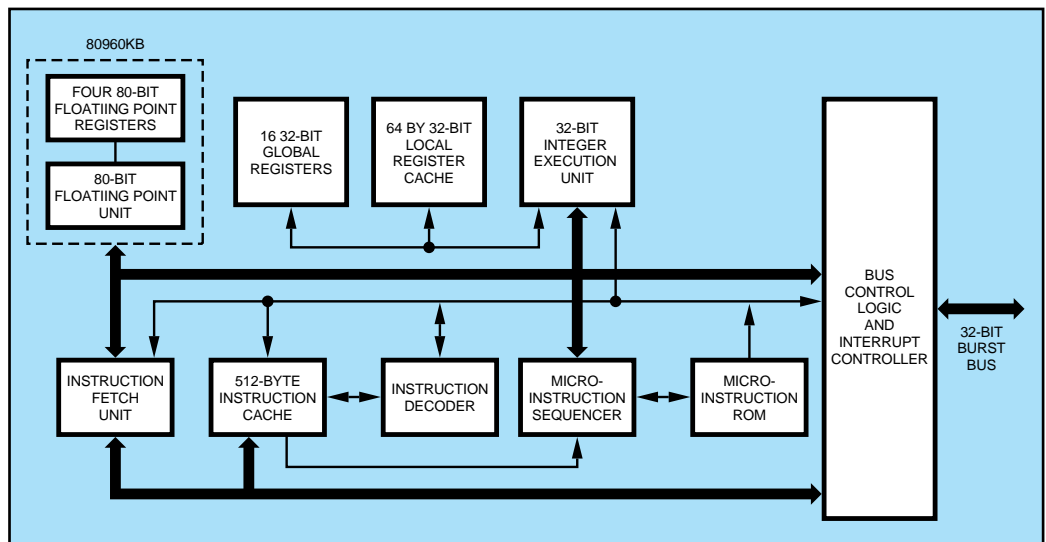


**i960® KA/KB Microprocessor Block Diagram**

## Features

- High-Performance 32-bit RISC Processor
    25 MIPS burst
    9.4 MIPS sustained

- Integrated Interrupt Controller
    4 direct interrupt inputs
    256 interrupt vectors
    32 priority levels
    8259A support

- 32-bit Address Space

- Integrated FPU (i960 KB processor only)
    Full IEEE 754 Compatible

- Integrated 512-byte Instruction Cache
    Direct mapped
    Parallel load/decode for uncached instructions

- Large Register Set
    16 32-bit Local registers
    16 32-bit Global registers

- Integrated 256-byte Register Cache
    Four local on-chip register sets
    Register scoreboarding

- Object-code Compatible with other i960 Products such as the i960 SA/SB and the i960 CA/CF processors.

- System Level Testing
    ONCE Mode
    Integrated debug and tracing

- Integrated Self-Test

- Full Solutions960™ Program Support Including:
    Evaluation Board    Debug Tools
    C Compiler    Operating Systems
    Assemblers    Support Components

- Complete Technical Services

## Benefits

- Brings high performance to your design.

- Reduces board level costs by reducing chip count.

- Offers flexibility in memory mapping peripherals and memory components.

- Provides high speed arithmetic without additional parts.

- Fast execution for critical routines.

- Fewer memory accesses means faster execution.

- Fast context switching for critical routines.

- Offers a strong growth path and cost reduction path for the future.

- Makes testing and debug of surface mount systems possible using ICE™ In-Circuit Emulator.

- Aids in assuring system reliability.

- Provides a complete development environment from hardware debug to software development and debug.

- Helps you get to market sooner.

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## Support Information

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| **Product and Sales Information** | Intel product information, sales office and distributor phone numbers. | **800-628-8686** |
| **Literature Department** | To order Intel product literature. | **800-548-4725** |
| **Development Tools Hotline** | Technical applications support for Intel development tools. | **800-843-4481** |
| **FaxBack Service** | Automated response system that faxes Intel documents to your fax machine at no cost. For a listing of all i960 micro-processor documents, order FaxBack service document #2068. | **800-628-2283** |
| **Applications Bulletin Board Service** | 24-hour access via modem to publicly available technical infor-mation. For a complete listing of all files available on BBS, call the FaxBack service and request catalog #6 (BBS Master File Listing). | **916-356-3600** |

*Phone numbers listed above are for U.S. and Canada only.*

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