i960® Microprocessor Family Networking Application

Maximum amount of processing per packet without clogging data flow

- **Superscalar architecture executes multiple instructions per clock**

- **Up to 16-Kbyte of instruction cache and 4-Kbyte of data cache keep external accesses to a minimum**

Move network data with lightning speed

- **Pipelined burst bus with prefetch processor provides 132-Mbytes/ second bandwidth to high speed external memory subsystem**

- **128-bit internal data paths**

- **Unaligned big endian features**

Guaranteed maximum performance for critical protocols/routines

- **Cache locking feature keeps critical algorithms in the internal instruction cache**

OVERVIEW

The i960® microprocessor family is ideally suited for today's high performance networking applications. High peripheral integration reduces system complexity and speeds time-to-market. There are fourteen commercial implementations of the i960 architecture available to meet the price and performance requirements of network designers. The i960 architecture is supported by more than 200 independent hardware and software vendors to assist in the development process.

The new Mini-PBGA package available with the i960 Jx processor series is outstanding wherever high performance, small form factor requirements are needed. The Mini-PBGA package enables higher port densities for space constrained applications such as remote access equipment.

Intel offers the world's most advanced RISC compiler technology that can increase application performance by as much as 45 percent. These new compilers use profile information collected during execution of the application code to streamline it for optimum performance. The compiler supports both the little endian and big endian data formats of the i960 processors.

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BENEFITS OF THE i960® ARCHITECTURE IN NETWORKING APPLICATIONS

Amortize engineering investment from network interface cards to bridges/routers

- **Scalable architecture based on a common instruction set and programming model allows software investment to be moved to another i960® processor with higher performance and integration**

- **i960 SA processor provides 7 MIPS performance for under $10 for terminal servers of network interface cards**

- **i960 Jx and Hx processors offer high levels of embedded RISC performance for demanding applications such as bridges and routers**

Register set is ideally suited for bridge/router applications

- **16 global and 16 local registers allow for storage of frequently used variables**

- **On-chip register cache minimizes call/return latency**

Maximum memory utilization

- **Pipelined burst bus with prefetch processor provides 132-Mbytes/second bandwidth to high speed external memory subsystem**

i960 Microprocessor family reduces system cost

- **Family members feature integrated interrupt controller and memory control unit eliminating the need for additional support chips**

Peripheral chips and software solutions provide for cost-effective networking solutions

- **National SONIC Ethernet coprocessor**

- **Brooktree Bt8220 ATM receiver/transmitter**

- **Brooktree UGA-210 SMDS control and reassembly formatter**

- **Router engine iFX780 FLEXlogic FPGA DRAM controller**

- **STAC LZS221-960 lossless compression software**