FEATURES

- 4 Kbytes SRAM
- 128 Kbytes EEPROM
- Additional 32x32 multiply instruction
- Hardware random number generator
- 30MHz Clock Rate
- 5V and 3.3V versions planned
- Sixteen 16-bit general registers
- Flexible instruction set built on 62 basic instruction types
- 8/16/32-bit data transfer, arithmetic, and logic instructions
- Signed and unsigned multiply and divide instructions
- Extensive bit manipulation instructions
- Bus controller with 8-bit access
- 3-function refresh controller
- DMA controller with short or full address mode
- 16-bit integrated timer unit (ITU) with 5 channels
- Programmable timing pattern controller (TPC)
- Watchdog timer
- Serial communications interface (SCI) with built-in smart card interface
- Eight 10-bit A/D converter channels
- Two 8-bit D/A converter channels
- Clock pulse generator
- Interrupt controller with 37 sources
- Seventy input/output pins and eight input-only pins
- Available in 100 pin QFP package

The IA64F3048SEC is code compatible with the original Hitachi® H8/300H family of microcontrollers, with additional security enhancements designed into the device. innovASIC produces replacement ICs using its MILES™, or Managed IC Lifetime Extension System, cloning technology. This technology produces replacement ICs far more complex than "emulation" while ensuring they are compatible with the original IC. MILES™ captures the design of a clone so it can be produced even as silicon technology advances. MILES™ also verifies the clone against the original IC so that even the "undocumented features" are duplicated.

This Advanced Information Sheet contains preliminary information for this the IA64F3048SEC. The complete data sheet which documents all necessary engineering information about the IA64F3048SEC including functional and I/O descriptions, electrical characteristics, and applicable timing will be available when the device nears completion.

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DESCRIPTION

The IA64F3048SEC Security-Enhanced Microcontroller is the ideal solution for many embedded applications, combining the flexibility of the Hitachi® H8/300H family of microcontrollers with the power of additional on-chip features. This combination allows the development of more complex embedded applications than is possible with the H8 alone. It also eases the implementation of more robust security features that are required of products today.

The IA64F3048SEC provides an upward compatibility path for Hitachi® H8/300H users who need higher performance and on-chip security features. The IA64F3048SEC is code compatible with the H8/300H family of microcontrollers and is pin compatible with the 100-pin QFP of the H8/3048 microcontroller series. Code development for the IA64F3048SEC utilizes standard H8/300H software development tools, including compilers, assemblers, and linkers.

The IA64F3048SEC offers all of the standard features of the advanced H8/3048 microcontroller series with a nearly doubled operating frequency of 30 MHz. InnovASIC has also added new security-related features to make the IA64F3048SEC a compelling choice for embedded applications that require higher levels of integrity, authenticity and data protection without loss of performance. These security features include an extremely flexible 128 Kbytes of nonvolatile memory in two independent partitions. The NV also has read-out protection and locking mechanisms to protect vital data. Additional security enhancements include a high quality physical random number generator and a fast 32x32 multiply with 64-bit result executed as an additional instruction. The IA64F3048SEC also facilitates PKI and other challenge-response protocols.

• Ordering Information

The IA64F3048SEC prototypes will be available in Q1 2002. Additional versions, including a 3.3V version, are scheduled for release in 2002.

For additional information, contact Mike Berg, V.P. Sales and Marketing, at 1-888-824-4184, extension 128.

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