82374EB/82374SB EISA SYSTEM COMPONENT (ESC)

- Integrates EISA Compatible Bus Controller
  - Translates Cycles Between EISA and ISA Bus
  - Supports EISA Burst and Standard Cycles
  - Supports ISA Zero Wait-State Cycles
  - Supports Byte Assembly/ Disassembly for 8-, 16- and 32-Bit Transfers
  - Supports EISA Bus Frequency of up to 8.33 MHz
- Supports Eight EISA Slots
  - Directly Drives Address, Data and Control Signals for Eight Slots
  - Decodes Address for Eight Slot Specific AENs
- Provides Enhanced DMA Controller
  - Provides Scatter-Gather Function
  - Supports Type A, Type B, Type C (Burst), and Compatible DMA Transfer
  - Provides Seven Independently Programmable Channels
  - Integrates Two 82C37A Compatible DMA Controllers
- Integrates the Functionality of two 82C59 Interrupt Controllers and two 82C54 Timers
  - Provides 14 Programmable Channels for Edge or Level Interrupts
  - Provides 4 PCI Interrupts Routible to any of 11 Interrupt Channels
  - Supports Timer Function for Refresh Request, System Timer, Speaker Tone, Fail Safe Timer, and CPU Speed Control
- Advanced Programmable Interrupt Controller (APIC)
  - Multiprocessor Interrupt Management
  - Separate Bus For Interrupt Messages
- 5V CMOS Technology
- Provides High Performance Arbitration
  - Supports Eight EISA Masters and PCEB
  - Supports ISA Masters, DMA Channels, and Refresh
  - Provides Programmable Arbitration Scheme for Fixed, Rotating, or Combination Priority
- Integrates Support Logic for X-Bus Peripherals
  - Generates Chip Selects/Encoded Chip Selects for Floppy and Keyboard Controller, IDE, Parallel/ Serial Ports , and General Purpose Peripherals
  - Provides Interface for Real Time Clock
  - Generates Control Signals for X-Bus Data Transceiver
  - Integrates Port 92, Mouse Interrupt, and Coprocessor Error Reporting
- Generates Non-Maskable Interrupts (NMI)
  - PCI System Errors
  - PCI Parity Errors
  - EISA Bus Parity Errors
  - Fail Safe Timer
  - Bus Timeout
  - Via Software Control
- Provides BIOS Interface
  - Supports 512K Bytes of Flash or EPROM BIOS on the X-Bus
  - Allows BIOS on PCI
  - Supports Integrated VGA BIOS
- 82374SB System Power Management (Intel SMM Support)
  - Fast On/Off Support via SMI GenerationHardware Events, Software Events, EXTSMI#, Fast Off Timer, System Events
  - Programmable CPU Clock Control
  - Enables Energy Efficient Desktop Systems
- Only Available as Part of a Supported Kit
- 208-Pin QFP Package

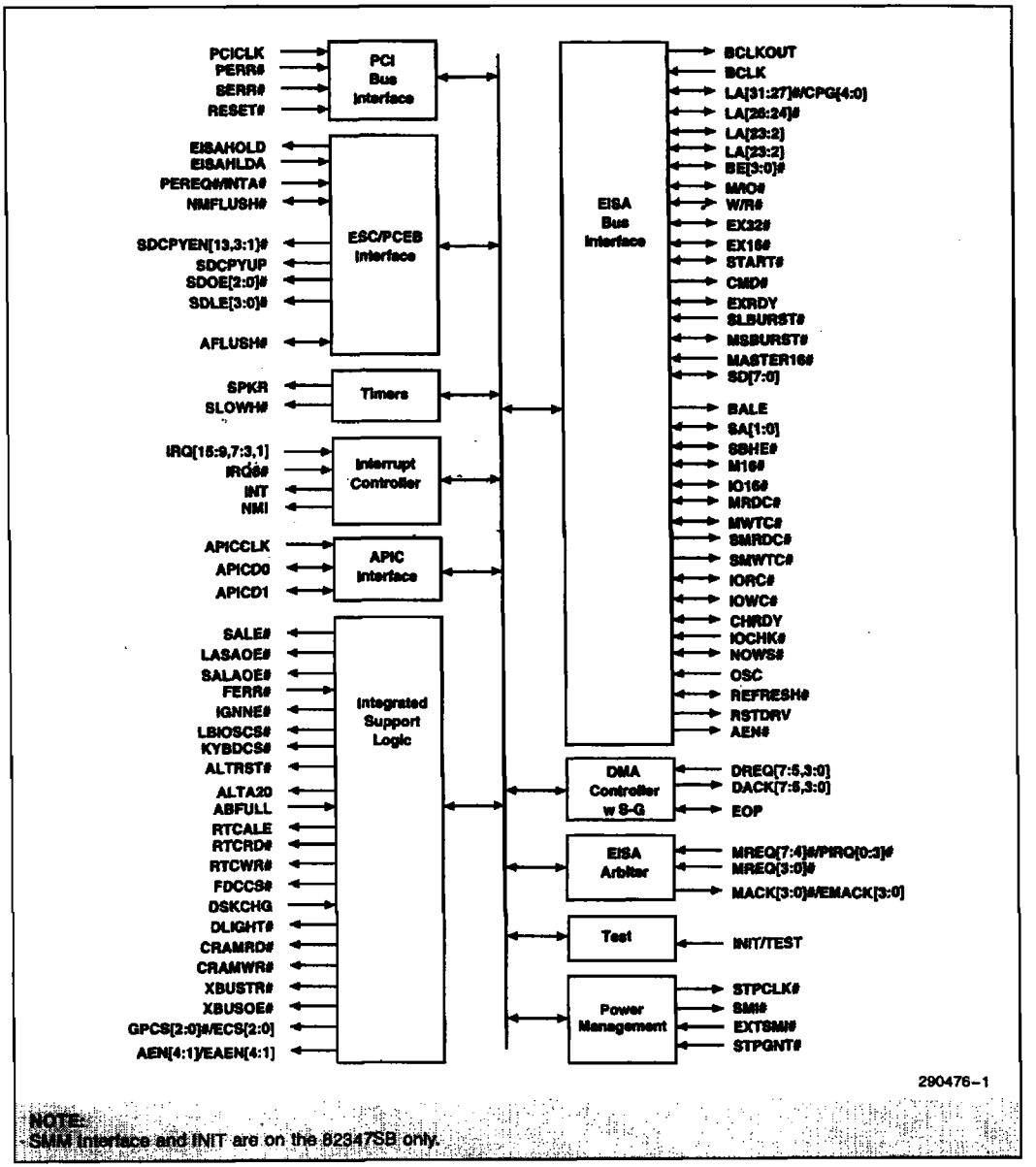
March 1996

Order Number: 290476-004

This document describes both the 82374EB and 82374SB components. Unshaded areas describe the 82374EB. Shaded areas like this one describe the 82374SB operations that differ from the 82374EB.

The 82374EB/SB EISA System Component (ESC) provides all the EISA system compatible functions. The ESC with the PCEB provide all the functions to implement an EISA-to-PCI bridge and EISA I/O subsystem. The ESC integrates the common I/O functions found in today's EISA-based PC systems. The ESC incorporates the logic for an EISA (master and slave) interface, EISA bus controller, enhanced seven channel DMA controller with scatter-gather support, EISA arbitration, 14 channel interrupt controller, Advanced Programmable Interrupt Controller (APIC), five programmable timer/counters, and non-maskable-interrupt (NMI) control logic. The ESC also integrates support logic to decode peripheral devices such as the Flash BIOS, real time clock, keyboard/mouse controller, floppy controller, two serial ports, one parallel port, and IDE hard disk drive.

The 82374SB also contains support for SMM power management.



NOTE:
SMM interface and INIT are on the 82347SB only.

Simplified ESC Block Diagram