

Chapter 1 Specification

Introduction

This mainboard features an integration of the powerful processor Intel Pentium 4 and the single-chip North Bridge Intel 82845E. The Intel P4 processor is a rapid execution engine providing 533/400MHz system bus, while North Bridge Intel 845E is a high performance integrated chipset providing processor interface, DDR266/200 SDRAM memory interface, Hub interface and AGP interface to work for the whole system.

Integrated with i845E, South Bridge Intel ICH2 supports the LPC Super I/O, upstream Hub interface, PCI interface, IDE interface, USB interface V1.1, AC'97 Audio interface as well as the interrupt control. This chapter is to introduce to users every advanced function of this high performance integration.

Topics included in this chapter are:

1-1 Mainboard Components Locations

1-2 Mainboard Specifications

1-3 Chipset System Block Diagram

**** If any difference is found between the mainboard description and the Mainboard you are using, please look up the Errata/Update Slip enclosed inside for the correction or updated information, or else contact the mainboard Dealer or visit our Web Site for the latest manual update.**

1-2 Mainboard Specifications

1-2.1 CPU Socket

- CPU Socket 478B on board, supporting Intel® Pentium 4(including Intel Hyper-Threading CPUs) and Northwood processors in the 478-pin package for 533/400MHz System Bus

1-2.2 System Chipset

INTEL 82845E Memory Control Hub (MCH) working with Intel Pentium 4 Processor for managing and arbitrating between 4 interfaces:

- the System Bus (Host Interface)
- the memory Interface
- the AGP Port
- the Hub Interface

MCH Clockings:

- Asynchronous
- System Bus target speed at 533/400MHz
- AGP and Hub Interface constantly at 66MHz base

Intel ICH2 Chipset (Second generation I/O Controller Hub) communicating with Intel 82845E by the Hub interface for

- Transmitting Interrupt related messages
- Transmitting Power management events
- Transmitting SMI, SCI, SERR indication messages

1-2.3 Memory

2 DDR DIMM 184-pin slots on board for DDR 266/200 SDRAMs :

- Supporting unregistered, non-ECC DDR266/200 SDRAM up to 2 GBs
- Supporting installation of mixed volumes yet same type of DDR SDRAM modules
- No support for double-sided x16 DDR DIMMs

1-2.4 AMI BIOS

- Supporting Plug & Play V1.0.
- FLASH MEMORY for easy upgrade.
- Supporting BIOS writing protection.
- Year 2000 compliant.

1-2.5 Multi-I/O Function

- Integrated IDE Controller, supporting:
 - 2x Ultra ATA100 / 66 / 33 Connectors
 - Two UARTs for Complete Serial Ports (2x COM)
- Dedicated IR Connector:
 - Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR
- Multi-mode parallel connector:
 - Standard mode, ECP and EPP support
- Floppy Disk connector:
 - One FDD connector with drive swap support.
- Universal Serial Bus connector:
 - USB V1.1 compliant
 - 2 built-in USB connectors and one USB Header (USB1) which requires an additional USB cable to provide 2 more optional USB ports
- PS/2 Keyboard connector
- PS/2 Mouse connector
- UARTs (Universal Asynchronous Receiver / Transmitter):
 - Two complete Serial Ports (COM1 & COM2) on board

1-2.6 Expansion Slots

- Six PCI Bus Master slots
- One AGP 4x slot
- One CNR slot
- Two DDR DIMM slots

1-2.7 Sound Controller

Avance AC97 Audio Codec on board, AC'97 2.1 compatible stereo audio code for PC multimedia systems. Avance AC'97 Audio Codec Driver is provided in Support CD for user's installation.

1-2.8 CNR Slot on board

CNR Slot on board for Modem Riser card or Audio Riser Card.

1-2.9 Hardware Monitoring

Winbond Hardware Monitor in W83627HF, providing monitoring and alarm for flexible desktop management of hardware voltage, temperatures and fan speeds. Utility Software Winbond HWDoctor for displaying Monitoring statuses is enclosed in Support CD for user's installation.

1-2.10 Power Management

- ACPI 1.0B compliant (Advanced Configuration and Power Interface)
- APM V1.2 compliant (Legacy power management)
- Supporting ACPI suspend POS mode (Power On Suspend)
- System event monitoring with two event classes
- Supporting Wake On LAN & Wake On Ring (with WOL1 connector)
- Supporting Real Time Clock (RTC) with date alarm, month alarm, and century field

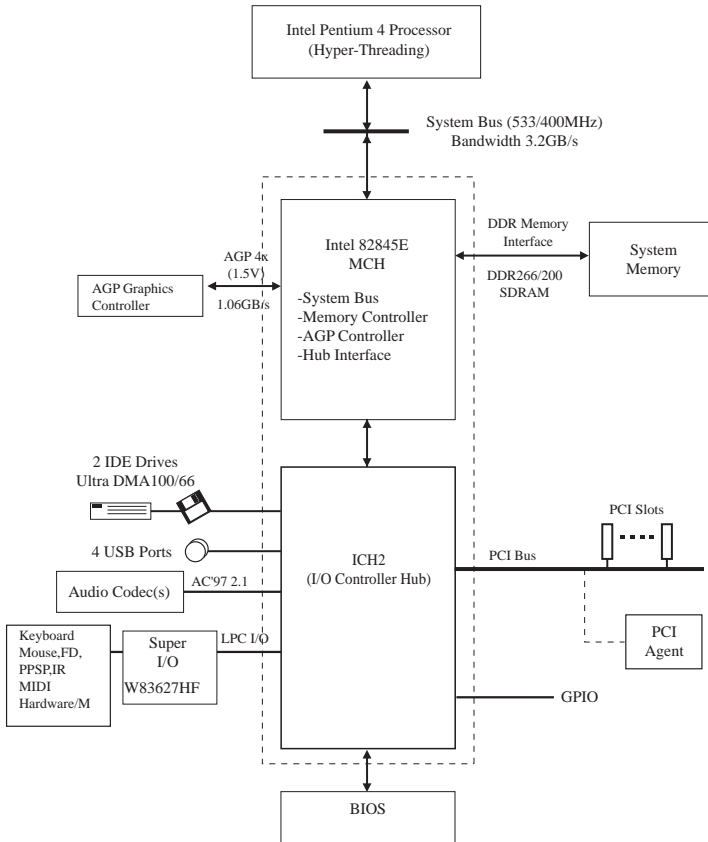
1-1.11 Redstorm Overclocking Technology (optional)

Redstorm Overclocking Tech is a program embedded in BIOS for CPU automatic overclocking. Please see “ Frequency / Voltage Control “ of BIOS Setup for Redstorm Overclocking Technology setting.

1-2.12 Form Factor

- ATX form factor
- Compatible with both ATX Power Supply Version 2.03 (with +12V Power Connector) and the older ATX Power Supply (with Peripheral Power Connector)
- Mainboard size: 30.5cm x 21.0 cm

1-3 Chipset System Block Diagram



Intel Pentium 4 + Intel 82845E + Intel ICH2 Diagram