




PCPartner[®]

M O T H E R B O A R D

MB600ND/NX/NA *Series*

Technical Reference Booklet
Manuel Technique de Référence
Technisches Handbuch
Libretto Tecnico di Riferimento



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HARDWARE KONFIGURATION	45
Haupteigenschaften	45
Hauptplatinen-Layout	47
Baby AT Formfaktor-Version	47
ATX Formfaktor-Version (CPU-Dualprozessoren-Unterstützung)	48
ATX Formfaktor-Version (CPU-Einzelprozessoren-Unterstützung)	49
Hardware Setup	51
Steckbrückeneinstellung	51
Speicherkonfiguration	54
BIOS SETUP	55
Hauptmenü	56
Standard CMOS Setup	57
BIOS Funktionen-Setup	59
Chipset-Eigenschaften	60
Integrierte Peripherie-Komponenten	60
Supervisor/Benutzer-Passwort	61
Power Management Setup	62
PNP/PCI Konfiguration Setup	63
Flash Update	64
CONFIGURAZIONE DELL'HARDWARE	65
Specifiche Principali	65
Layout della Scheda Madre	67
Versione Fattore di Forma Baby AT	67
Versione Fattore di Forma ATX (Supporto del Doppio Processore CPU)	68
Versione Fattore di Forma ATX (Supporto del Singolo Processore CPU)	69
Preparazione dell'Hardware	71
Settaggi del Jumper	71
Configurazione della Memoria	74
SETUP (PREPARAZIONE) DEL BIOS	75
Menu Principale	75
Settaggio Standard del CMOS	77
Settaggio delle Caratteristiche BIOS	79
Settaggio Caratteristiche del Chipset	79
Periferali Integrati	80
Settaggio del Supervisore/della Parola d'Ordine dell'Utente	81
Settaggio Power Management	82
Settaggio di Configurazione PnP/PCI	83
Procedimento dell'Aggiornamento del Flash	84

HARDWARE CONFIGURATION

The Pentium® Pro motherboard is based on the Intel® 82440FX Chipset. The chipset is a highly integrated solution for a cost-effective and compact motherboard. Features on-board include super-I/O, PCI bus master IDE, PCI Ver 2.1 compliant, USB, on-board 3.3V power supply, on-board VRM or Header 8 and ECC.

Key Features

Processor

- ZIF socket 8.
- Full support for the P6, P6S and P6T processors using socket 8.
- Two ZIF type sockets for single or dual Intel® Pentium® Pro microprocessors at same or individual speeds (at the same bus speed).
- Supports 60 and 66MHz bus speed including all Pentium® Pro processors operating from 150MHz to 200MHz.

VRM (Voltage Regulator Modules) on Board or Header 8

- Flexible motherboard design with two on-board VRMs or header 8. Easy to upgrade with Intel's future overdrive processors.

Cache

CPU Built-in L2 Cache.

Core Frequency	Operating Voltage	L1 Cache size Instruction/Data	L2 Cache Size	Dynamic Execution
150MHz	3.1V	8K bytes / 8K bytes	256K bytes	Yes
166MHz	3.3V	8K bytes / 8K bytes	512K bytes	Yes
180MHz	3.3V	8K bytes / 8K bytes	256K bytes	Yes
200MHz	3.3V	8K bytes / 8K bytes	256K bytes	Yes
200MHz	3.3V	8K bytes / 8K bytes	512K bytes	Yes

System Memory

- System memory is divided into two banks. Each bank has two 72-pin SIMM slots.
- Supports Fast Page Mode (FPM), Extended Data Out (EDO) and Burst Extended Data Out (BEDO) DRAM at 50, 60 and 70ns speeds.
- Supports Symmetrical and Asymmetrical DRAM addressing.
- Memory size from 8M byte up to 512M byte.
- Supports single-density SIMMs of 1MB, 2MB, 4MB and 16MB depth (x32 or x36).
- Supports double-density SIMMs of 2MB, 4MB, 8MB and 32MB depth (x32 or 36).
- Supports DRAM parity or error checking and correction (ECC) using parity DRAM modules.
- Banks of different DRAM types and depths can be mixed.

On-Board I/O

- Two PCI fast IDE ports supporting up to 4 ATA2 IDE devices.
- Supports Bus Master IDE and PIO mode 4 (up to 22M bytes/sec) transfer.
- One ECP/EPP parallel port (via a header for baby AT).
- Two 16550-compatible UART serial ports (via a header for baby AT).
- One floppy port supporting two FDDs of 360KB, 720KB, 1.2MB or 1.44MB formatted capacity.
- Two USB ports (via a header).
- PS/2 keyboard port (factory option for baby AT).
- PS/2 mouse port (via a header for baby AT).
- Infrared (IrDA) support (via a header).

System BIOS

- 1MB or 2MB flash BIOS supporting PnP, APM, ATAPI and Windows® 95.
- Jumper selection for 5V or 12V flash memory voltage.
- Auto detects and supports LBA hard disks with formatted capacities up to 8.4GB.
- Easily upgradable by end-user.

Plug-and-Play

- Supports plug-and-play specification 1.1.
- Plug-and-play for DOS, Windows® 3.X as well as Windows® 95.
- Fully steerable PCI interrupts.

Power Management

- Supports SMM and APM.
- Break switch for instant suspend/resume on system operation.
- Energy star "Green PC" compliant.

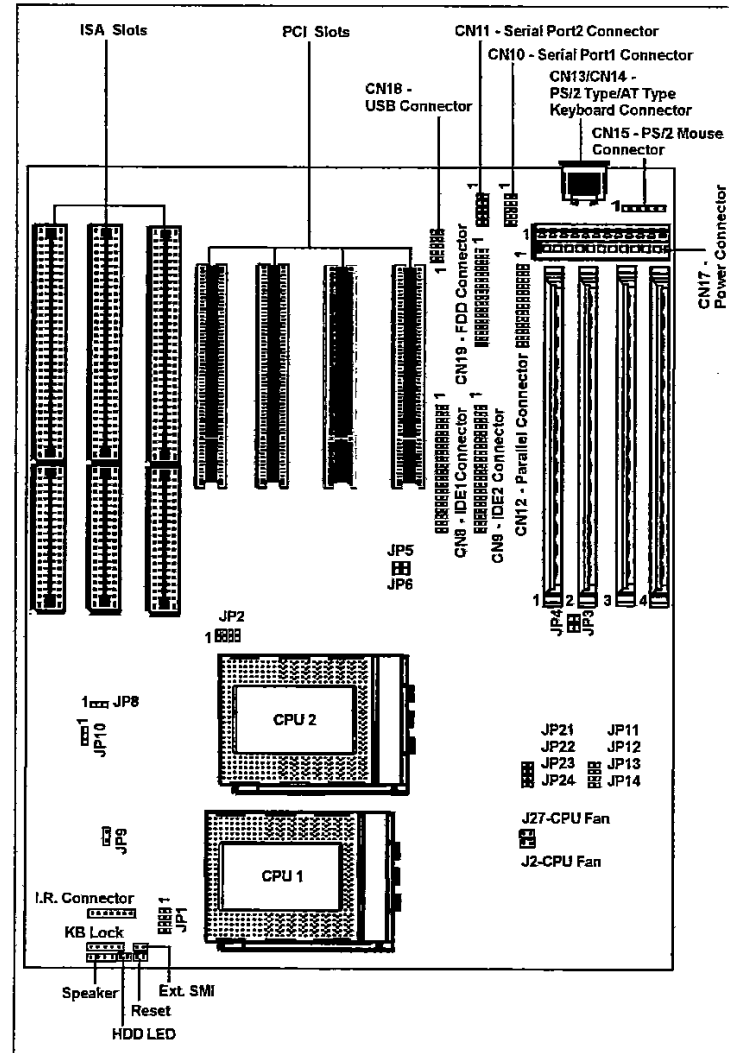
Expansion Slots

- 4 PCI bus master slots (rev. 2.1 compliant, with 1 PCI slot sharing with 1 ISA slot)
- 3 ISA slots (1 ISA slot sharing with 1 PCI slot).

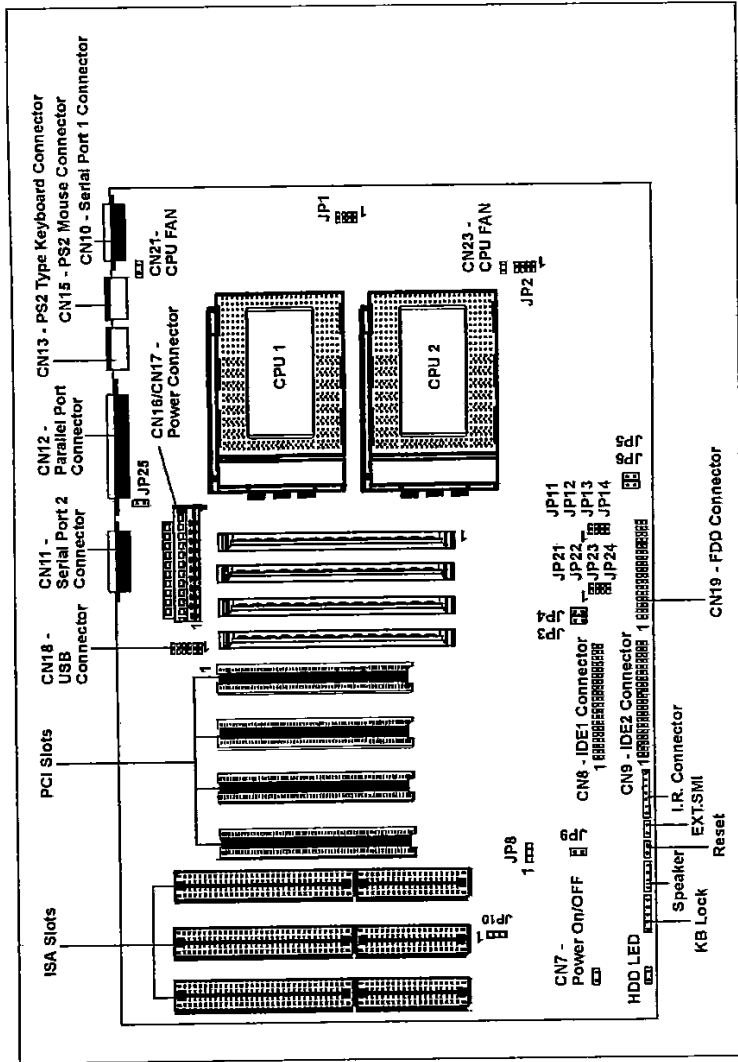
Motherboard Layout

The following diagrams show the relative positions of the jumpers, connectors, major components and banks on the motherboard.

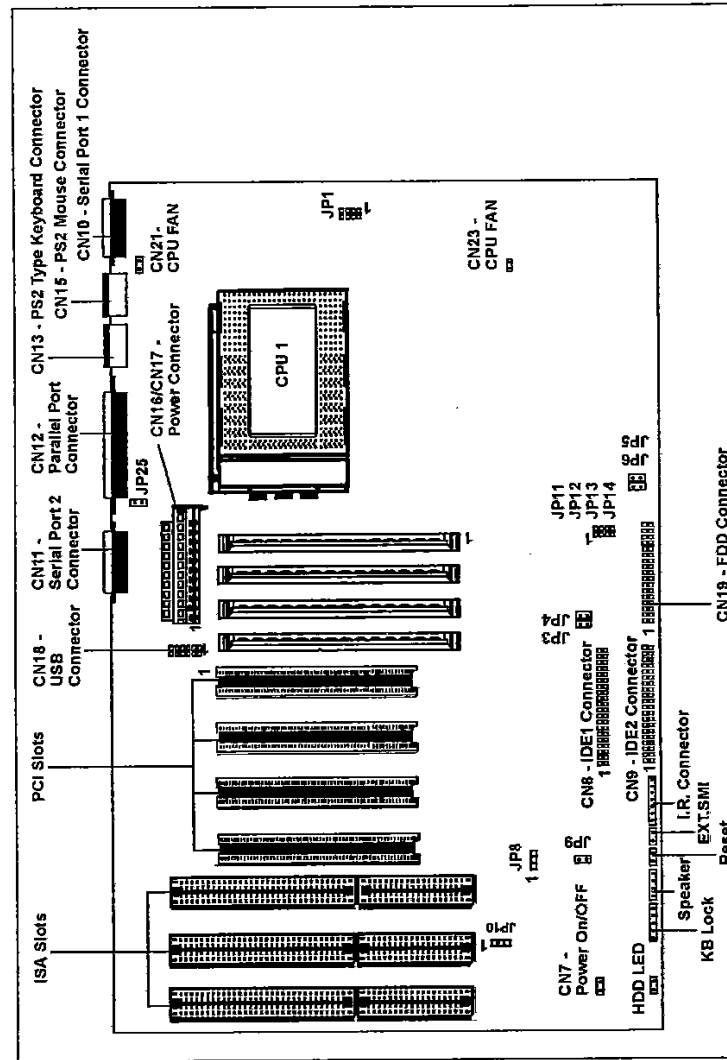
Baby AT Form Factor Version



**ATX Form Factor Version
(Dual CPU Processor Support)**



**ATX Form Factor Version
(Single CPU Processor Support)**



Connectors

- 1). CN1
- 2). CN2
- 3). CN3
- 4). CN4
- 5). CN5
- 6). CN6
- 7). CN7
- 8). CN8,CN9
- 9). CN10,CN11
- 10). CN12
- 11). CN13, CN14
- 12). CN15
- 13). CN16, CN17
- 14). CN18
- 15). CN19

Jumpers

- 1). JP1
- 2). JP2
- 3). JP3, JP4
- 4). JP5, JP6
- 5). JP11, JP12, JP13, JP14
- 6). JP21, JP22, JP23, JP24
- 7). JP8
- 8). JP9
- 9). JP10
- 10). JP25

Installation

- HDD LED
- Keyboard Lock
- Speaker
- Reset
- Suspend
- IR
- Power On/Off (ATX Version Only)
- Primary/Secondary IDE
- COM1/COM2 Serial Port
- Parallel Port
- PS/2 Type Keyboard , AT Type Keyboard
- PS/2 Mouse
- ATX Power Connector, STD Power Connector
- USB Port
- Floppy Disk Drive

Description

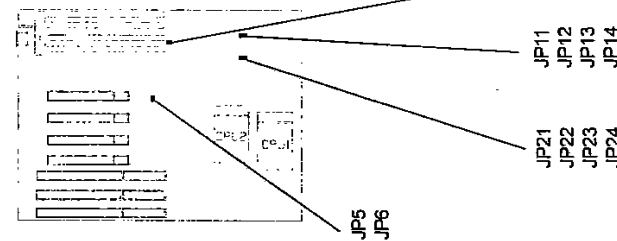
- VID for Primary CPU
- VID for Secondary CPU (Dual Pentium® Pro Version Only)
- CPU External Clock Frequency
- CPU Bus Frequency
- Primary CPU Frequency Ratio
- Secondary CPU Frequency Ratio (Dual Pentium® Pro Version Only)
- SMI Selection
- Clear CMOS
- Program Voltage for Flash BIOS
- Power On/Off Selection (ATX Version only)

Hardware Setup

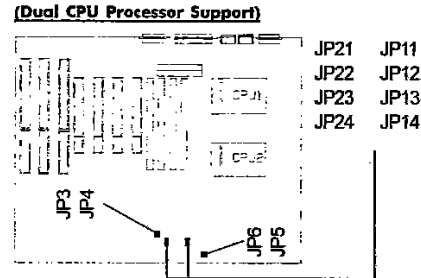
This chapter explains how to configure the motherboard's hardware. Before using your computer, make sure all jumpers and DRAM modules are set correctly. Refer to this chapter whenever in doubt.

Jumper Settings - CPU Type Selection

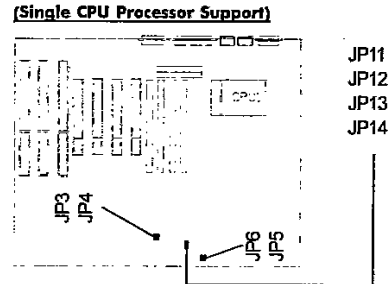
Baby AT Form Factor Version



ATX Form Factor Version (Dual CPU Processor Support)



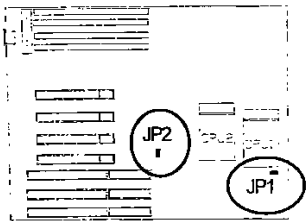
ATX Form Factor Version (Single CPU Processor Support)



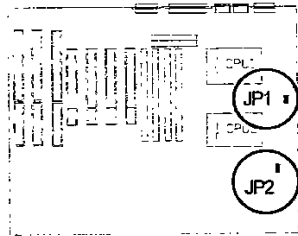
CPU Type	Host Bus FREQ	1st CPU	2nd CPU
		JP3, JP4	JP11 JP12
	JP6, JP5	JP13 JP14	JP23 JP24
150MHz			
166MHz			
180MHz			
200MHz			

Jumper Settings - CPU Voltage Selection

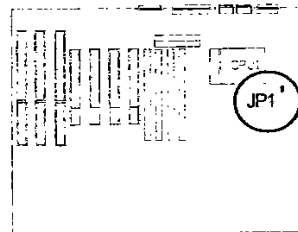
Baby AT Form Factor Version



ATX Form Factor Version (Dual CPU Processor Support)



ATX Form Factor Version (Single CPU Processor Support)



150MHz(3.1V)	JP2	JP1
166/180/200 MHz (*Auto)	JP2	JP1

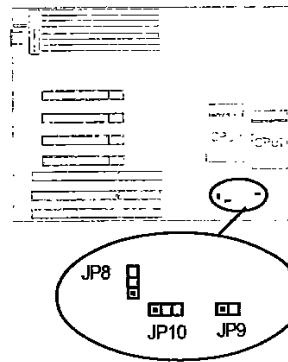
CPU Voltage	2.1V	2.2V	2.3V	2.4V	2.5V	2.6V	2.7V	2.8V
JP1 & JP2								

CPU Voltage	2.9V	3.0V	3.1V	3.2V	3.3V	3.4V	3.5V	*Auto
JP1 & JP2								

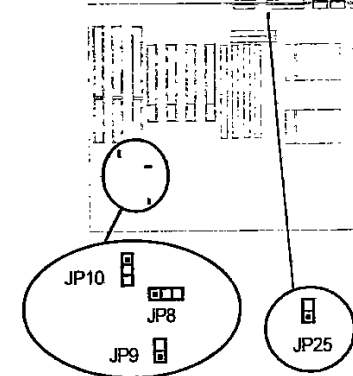
Note : * = Default = Open = Closed

If you use 150MHz Pentium® Pro, set CPU voltage to 3.1 V.

Baby AT Form Factor Version



ATX Form Factor Version



JP8 - SMI Selection

	Baby AT Version	ATX Version
Normal (default)		
From I/O APIC		

JP9 - CMOS Clear

	Baby AT Version	ATX Version
CMOS Clear		
Normal (default)		

JP10 - PnP BIOS Voltage

	Baby AT Version	ATX Version
5V		
12V		

Note: Do not change the default setting.

JP25 - Power On/Off Selection (ATX Version Only)

	Baby AT Version	ATX Version
Enable (default)	--	<input checked="" type="checkbox"/>
Disable	--	<input type="checkbox"/>

Memory Configuration

There are four SIMM sockets on the motherboard. The first two sockets are designated BANK 0 and the second two BANK 1. The motherboard supports 4/8/16/32/64/128MB 72-pin SIMMs. The table below shows some of the possible DRAM configurations.

BANK 0 (SIMM 1, 2)	BANK 1 (SIMM 3, 4)	TOTAL
4MB x 2	Empty	8MB
Empty	4MB x 2	8MB
4MB x 2	4MB x 2	16MB
8MB x 2	Empty	16MB
16MB x 2	Empty	32MB
8MB x 2	8MB x 2	32MB
32MB x 2	Empty	64MB
16MB x 2	16MB x 2	64MB
8MB x 2	32MB x 2	80MB
32MB x 2	16MB x 2	96MB
64MB x 2	Empty	128MB
32MB x 2	32MB x 2	128MB
64MB x 2	64MB x 2	256MB
128MB x 2	128MB x 2	512MB

BIOS SETUP

This chapter discusses Award's Setup Program built into the ROM BIOS. The Setup Program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM, which retains the setup information when the power is turned off.

Starting Setup

The Award BIOS is immediately activated when you turn on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup Program can be activated:

1. By pressing immediately after switching the system on, or
2. By pressing the key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test)

Press DEL to enter SETUP

If the message disappears before you can respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing the <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not reset, an error message will be displayed and you will again be asked to ...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP**Getting Help**

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with the Setup Program, you discover that your computer does not reset, use the Award BIOS defaults to override the CMOS settings.

Main Menu

Once you enter the Award BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from various setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.