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# Chapter 1

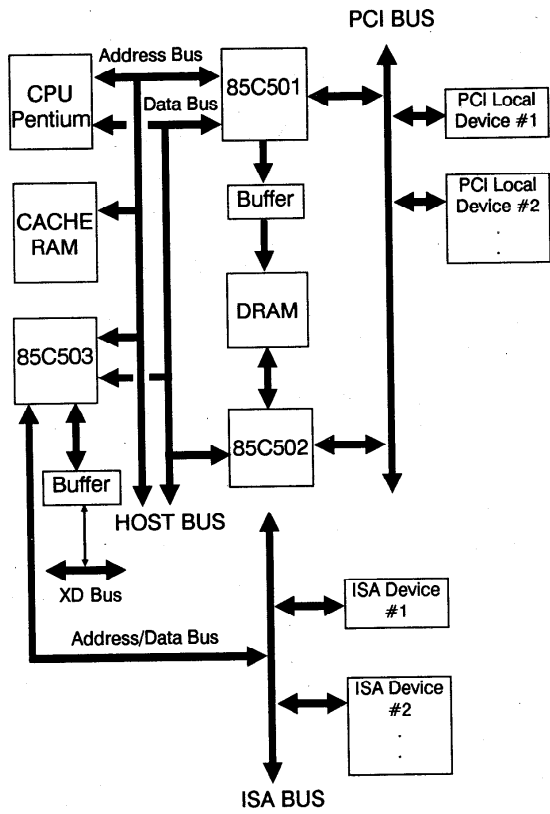
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## System Board Overview

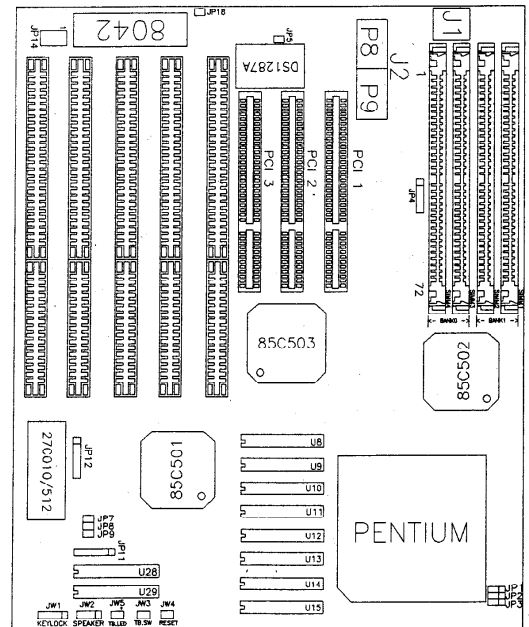
### 1.1 The mainboard specifications

1. CPU: Intel Pentium 60/66 MHz
2. Cache memories: Primary: Built-in 16KB in Pentium  
Secondary: Standard 256KB  
Optional: 256K/512K/1024KB
3. I/O slots : Three 32-bit PCI slots five 16-bit slots for AT compatible add-on cards.
4. Memories : 128MB max on board  
Using 4-72pin SIMM module.  
Support 2/4/8/16/32/64MB memory.
5. BIOS : Award BIOS.
6. PCI-Bus function: Provides three PCI-Bus masters or slaves support PCI-Bus SYNC/ASYN mode and clock up to 33MHz.

### 1.2 The system block diagram



### 1.3 Placement



## 1.4 Function of jumpers and connectors

### 1.4.1 Jumper Settings and Connectors

Connector Name	Pin Assignments	Description
Turbo Connector: JW3 (3 Pins)	Pin 1: Ground. Pin 2: Turbo signal. Pin 3: +5VDC.	1-2: Turbo mode. 2-3: Low speed mode. Connect the pin2, pin3 to the cable of the chassis' turbo button.
Turbo LED Connector JW5 (2 Pins)	Pin 1: Cathode terminal of LED. Pin 2: Anode terminal of LED.	If the connection is correct, the turbo LED will light up when the system is in turbo speed mode. Otherwise the turbo LED will be off.
Hardware Reset Connector: JW4 (2 Pins)	Pin 1: Reset input Pin 2: Ground	Connect this switch to the cable of the chassis' reset button. Press and hold the reset button for at least one second to reset the system.
Keylock and Power LED connector: JW1 (5 Pins)	Pin 1: +5VDC. Pin 2: No connection. Pin 3: Ground. Pin 4: Keyboard inhibit Signal. Pin 5: Ground.	Connect this switch to the cable of the chassis' keylock button.
Speaker connector: JW2 (4 Pins)	Pin 1: Sound signal. Pin 2: Ground. Pin 3: Ground. Pin 4: +5VDC.	Connect to the speaker connector in the front panel of the chassis.
Keyboard connector: J1 (5 Pins)	Pin 1: Keyboard clock. Pin 2: Keyboard data. Pin 3: No connection. Pin 4: Ground. Pin 5: +5VDC.	Connect to the Keyboard connector.

Connector Name	Pin Assignments	Function
Power input connector: J2 (12 Pins)	Pin 1: Powergood. Pin 2: +5V. Pin 3: +12V. Pin 4: -12V. Pin 5: Ground Pin 6: Ground Pin 7: Ground Pin 8: Ground Pin 9: -5V Pin10: +5V Pin11: +5V Pin12: +5V.	Connect to the power connector from the power supply. Usually, the color marking of the power connector cables will be as listed above. Connect the power connector to the exact position. Any mistake will cause the mainboard power supply or add-on card to be damaged.

Jumper No.	No. of Pins		Description	Default Setting
JP5	2	ON OFF	Discharge Normal	OFF
JP18	2	ON OFF	Color Monol	ON
JP14	8	1,3,5,7 2,4,6,8	Ground SM Out*	
JP1	3	1-2 2-3	CPU internal cache write back CPU internal cache Write through	1-2
JP2	3	1-2 2-3	Pipeline disable Pipeline enable	1-2
JP3	3	1-2 2-3	Always invalid Only invalid in write cycle	2-3

Note: SM Out\* is System Management Output control pin. It is used to control peripheral's power, clock .... etc. You can use it to save your system power. SM Out is a Low-active signal, normal is high.

### 1.4.2 Installation of DRAMs

In order to provide flexible DRAM configurations between four 72pin SIMM, jumper is implemented to configure the DRAMs.

There are four banks of Memory (Bank0 to Bank1) on the system board. Each bank consists of two 72pin SIMM sockets.

The possible combinations of bank selection are as below:

JP4	Bank 0	Bank1
1-2, 3-4	SIMM3-4(S)	SIMM1-2(S)
	SIMM3-4(S)	SIMM1-2(D)
2-3, 4-5	SIMM3-4(D)	SIMM1-2(D)
	SIMM3-4(D)	SIMM1-2(S)

Item	SIMM4	SIMM3	SIMM2	SIMM1	Total
0	256K-S	256K-S			2MB
1	512K-D	512K-D			4MB
2	1M-S	1M-S			8MB
3	2M-D	2M-D			16MB
4	4M-S	4M-S			32MB
5	8M-D	8M-D			64MB
6	256K-S	256K-S	256K-S	256K-S	4MB
7	256K-S	256K-S	512K-D	512K-D	6MB
8	512K-D	512K-D	512K-D	512K-D	8MB
9	256K-D	256K-S	1M-S	1M-S	10MB
10	512K-D	512K-D	1M-S	1M-S	12MB
11	1M-S	1M-S	1M-S	1M-S	16MB
12	256K-S	256K-S	2M-D	2M-D	18MB
13	512K-D	512K-D	2M-D	2M-D	20MB
14	1M-S	1M-S	2M-D	2M-D	24MB
15	2M-D	2M-D	2M-D	2M-D	32MB
16	256K-S	256K-S	4M-S	4M-S	34MB
17	512K-D	512K-D	4M-S	4M-S	36MB
18	1M-S	1M-S	4M-S	4M-S	40MB
19	2M-D	2M-D	4M-S	4M-S	48MB
20	4M-S	4M-S	4M-S	4M-S	64MB
21	256K-S	256K-S	8M-D	8M-D	66MB
22	512K-D	512K-D	8M-D	8M-D	68MB
23	1M-S	1M-S	8M-D	8M-D	72MB
24	4M-S	4M-S	8M-D	8M-D	80MB
25	4M-S	4M-S	8M-D	8M-D	96MB
26	8M-D	8M-D	8M-D	8M-D	128MB

Note: (S) Single side 72pin SIMM  
(D) Double side 72pin SIMM

256K-S	=	256K x 32bits	=	1MBytes
1M-S	=	1M x 32bits	=	4MBytes
4M-S	=	4M x 32bits	=	16MBytes
16M-S	=	16M x 32bits	=	64MBytes
512K-D	=	2 x 256K x 32bits	=	2MBytes
2M-D	=	2 x 1M x 32bits	=	8MBytes
8M-D	=	2 x 4M x 32bits	=	32MBytes

### 1.4.3 Installation of Cache memory

This mainboard supports very flexible Cache SRAM configuration: 256KB, 512KB, and 1MB.

Main Board Cache Size		256KB	512KB	1MB
TAG SRAM	Location	U29		
	Type	8Kx8	32Kx8	32Kx8
Data SRAM	Location	U8-U15	U8-U15	U8-U15
	Type	32Kx8	64Kx8	128Kx8
Jumper setting	JP11	2-3	1-2	1-2
		5-6	5-6	4-5

#### 1.4.4 CPU frequency selection

##### a). IMI IMISC466 Clock Generator

	JP7	JP8	JP9
60 MHz	OFF	OFF	ON
66 MHz	OFF	OFF	OFF

##### b). MXIC MX8315 Clock Generator

	JP7	JP8	JP9
60 MHz	OFF	ON	OFF
66 MHz	ON	OFF	ON

### 1.5 Quick reference for installation

Step 1. Please verify the following jumpers:

#### A. JP7, JP8, JP9 :

Make sure the jumper setting is consistent with the installed CPU. (refer section 1.4.4)

Step 2. Connect J1 to the keyboard.

Step 3. Plug at least 2 DRAM modules into the SIMM sockets SIMM3, SIMM4(BANK0).

Step 4. Verify the cache size selection jumpers JP11 (refer section 1.4.3).

Step 5. Connect the following connectors to your case :

A. JW4 to H/W reset button.

B. JW2 to speaker.

C. JW3 to turbo switch.

D. JW5 to turbo LED, the LED will light up.

E. JW1 to keylock.

Step 6. Plug in the display card and HDD/FDD driver card into slots.

Step 7. Connect J2 to P8 and P9 of power supply.

Step 8. Power on.