

PAM-0036S

High Performance
Pentium PCI Mainboard



Edition 2.03
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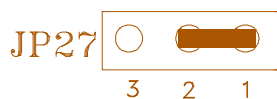
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WARNING

For the system to operate normally, please make sure JP27 of the mainboard is set as below. Refer to Fig 2 in this manual for the location JP27.



If JP27 is open, no CMOS data can be retained.

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CHAPTER 1 INTRODUCTION

The mainboard is designed based on the latest PCI (Peripheral Component Interconnect) local bus standard that provides the highest performance with the basic elements to build an advanced computer. It is developed around the pentium microprocessor (P54C) with 64-bit access to data transfer, running at 75MHz, 80MHz, 90MHz, 100MHz, 120MHz, 133MHz, 150MHz up to 166MHz.

Using the share memory architecute, the on board graphics controller, SIS 6205 is allowed to share the main memory with the video RAM to provide a effective and flexiable computer system.

1.1 GENERAL SPECIFICATION

Processor

- ! Intel Pentium P54C series - P54C, P54CS, P54C-VR, P54C-VRE, P54CT.
- ! Cyrix 6x86 and AMD5_k86 64-bit microprocessor.
- ! The mainboard can run with following speeds:
75, 80, 90, 100, 120, 133, 150 and 166 MHz

Chipset

- ! SiS 5511 PCI/ISA Cache Memory Controller
- ! SiS 5512 PCI Local Data Buffer
- ! SiS 5513 PCI System I/O
- ! SiS 6205 PCI Graphics & Video Accelerator
- ! Winbond W83787 (Super I/O Controller)
- ! Winbond W83768 (I/O TTL Integration)

Cache Size

- ! Cache size option is 256KB/512KB/1MB.
- ! Optional Pipelined Burst Mode SRAM to achieve the high Pentium system performance.

Main Memory

- ! Mainboard can decode the DRAM space up to 512MB, but limited by the current DRAM SIMM on the market possible memory configurations are from combination of 256K*36 to 4M*36 double side SIMM module (32-bit non-parity 72-pin SIMM module also available).
- ! Support both Fast Page Mode and Extended Data Output (EDO) Mode DRAM Modules.
- ! Hidden DRAM Refresh for higher system performance.
- ! 32 bit DRAM feature is supported - one piece of DRAM SIMM (min. 4MB) can start up the system.

Graphics Controller

- ! Built-in an enhanced 64-bit BITBLT graphics engine VGA feature connector on board.

Multi I/O

- ! On board Multi-I/O supports two serial, one parallel ports and floppy drive controller.
- ! Serial ports are 16550 Fast UART compatible.
- ! Parallel port has EPP and ECP capabilities.
- ! Optional PS/2 keyboard and PS/2 mouse connector is provided.

PCI IDE

- ! On board supports PCI Master IDE Controller, two connectors support up to four IDE devices such as HDD, CD ROM drive and Tape Back-up drives, etc.
- ! PCI Master IDE controller supports PIO Mode 3 and 4 devices, I/O data transfer rate can be up to 17Mb/s.

System BIOS

- ! Award/AMI BIOS (128KB Flash EPROM).

Slots

- ! Three PCI slots
- ! Four ISA slots

Board

- ! 4 Layer

Form Factor

- ! 220mm (W) x 330mm (L)

1.2 MAINBOARD COMPONENTS

This section gives a brief description of key components on the mainboard. Please refer to Fig 1 for component locations.

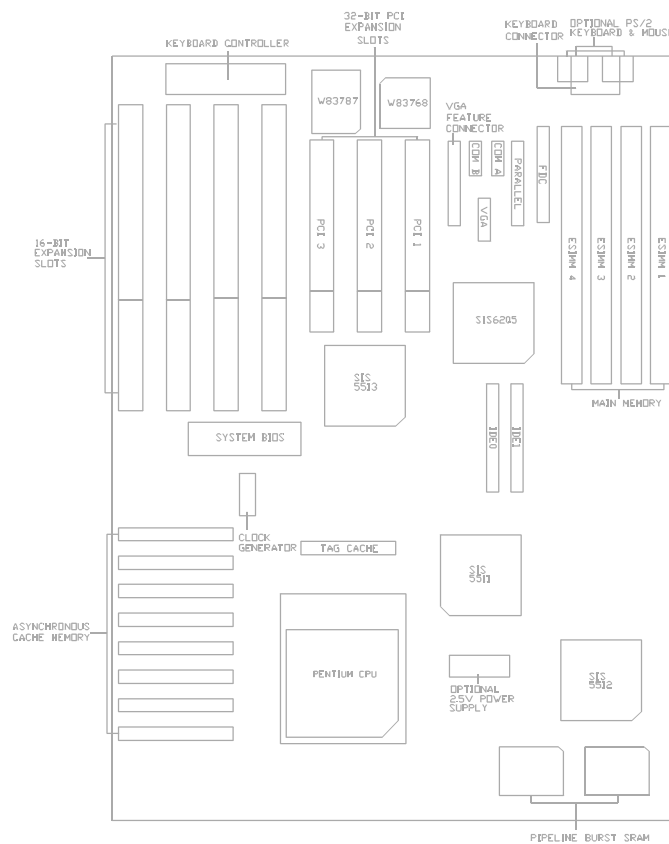


Fig. 1 Key Components of the Mainboard

CHAPTER 2 MEMORY CONFIGURATION

2.1 SYSTEM MEMORY

The mainboard lets user add system memory via SIMM sockets on the mainboard. On-board memory is located in two banks: Bank 0 - ESIMM1 & ESIMM2, and Bank 1 - ESIMM 3 & ESIMM 4. 32 bit DRAM feature is provided by the mainboard, so only one piece of DRAM SIMM can start the system.

Both single sided and double sided DRAM modules are supported. The mainboard can decode the DRAM space up to 512MB, but limited by the current DRAM SIMM on the market, 128MB is the maximum now.

Both 36 bits and 32 bits (non-parity) SIMM are supported, and user can install either 1/2/4/8/16/32MB SIMM (72-pin) in each SIMM socket. Note that all SIMM modules in a bank must be the same capacity. SIMM speed required for best performance depends on the CPU speed, which requires 70ns SIMM.

Note: *The SIMM type installed on a bank (ESIMM1 and ESIMM2; ESIMM3 and ESIMM4) must be same.*

BANK 0		BANK 1		MEMORY SIZE
ESIMM1	ESIMM2	ESIMM3	ESIMM4	
256Kx36 single	256Kx36 single	None	None	2MB
None	None	256Kx36 single	256Kx36 single	2MB
256Kx36 double	256Kx36 double	None	None	4MB
1Mx36 single	None	None	None	4MB
None	None	256Kx36 double	256Kx36 double	4MB
None	None	1Mx36 single	None	4MB
256Kx36 double	256Kx36 double	256Kx36 single	256Kx36 single	6MB
256Kx36 single	256Kx36 single	256Kx36 double	256Kx36 double	6MB
256Kx36 double	256Kx36 double	256Kx36 double	256Kx36 double	8MB
1Mx36 single	1Mx36 single	None	None	8MB
2Mx36 single	None	None	None	8MB
1Mx36 double	None	None	None	8MB
None	None	1Mx36 single	1Mx36 single	8MB
None	None	2Mx36 single	None	8MB
None	None	1Mx36 double	None	8MB
256Kx36 single	256Kx36 single	1Mx36 single	1Mx36 single	10MB
1Mx36 single	1Mx36 single	256Kx36 single	256Kx36 single	10MB
256Kx36 double	256Kx36 double	1Mx36 single	1Mx36 single	12MB
1Mx36 single	1Mx36 single	256Kx36 double	256Kx36 double	12MB
1Mx36 single	1Mx36 single	1Mx36 single	1Mx36 single	16MB
To be continue...				

BANK 0		BANK 1		MEMORY SIZE
ESIMM1	ESIMM2	ESIMM3	ESIMM4	
2Mx36 single	2Mx36 single	None	None	16MB
1Mx36 double	1Mx36 double	None	None	16MB
4Mx36 single	None	None	None	16MB
2Mx36 double	None	None	None	16MB
None	None	2Mx36 single	2Mx36 single	16MB
None	None	1Mx36 double	1Mx36 double	16MB
None	None	4Mx36 single	None	16MB
None	None	2Mx36 double	None	16MB
256Kx36 single	256Kx36 single	2Mx36 single	2Mx36 single	18MB
256Kx36 single	256Kx36 single	1Mx36 double	1Mx36 double	18MB
2Mx36 single	2Mx36 single	256Kx36 single	256Kx36 single	18MB
1Mx36 double	1Mx36 double	256Kx36 single	256Kx36 single	18MB
256Kx36 double	256Kx36 double	2Mx36 single	2Mx36 single	20MB
256Kx36 double	256Kx36 double	1Mx36 double	1Mx36 double	20MB
2Mx36 single	2Mx36 single	256Kx36 double	256Kx36 double	20MB
1Mx36 double	1Mx36 double	256Kx36 double	256Kx36 double	20MB
1Mx36 single	1Mx36 single	2Mx36 single	2Mx36 single	24MB
1Mx36 single	1Mx36 single	1Mx36 double	1Mx36 double	24MB
2Mx36 single	2Mx36 single	1Mx36 single	1Mx36 single	24MB
1Mx36 double	1Mx36 double	1Mx36 single	1Mx36 single	24MB
2Mx36 single	2Mx36 single	2Mx36 single	2Mx36 single	32MB
1Mx36 double	1Mx36 double	2Mx36 single	2Mx36 single	32MB
To be continue...				

BANK 0		BANK 1		MEMORY SIZE
ESIMM1	ESIMM2	ESIMM3	ESIMM4	
2Mx36 single	2Mx36 single	1Mx36 double	1Mx36 double	32MB
1Mx36 double	1Mx36 double	1Mx36 double	1Mx36 double	32MB
4Mx36 single	4Mx36 single	None	None	32MB
2Mx36 double	2Mx36 double	None	None	32MB
4Mx36 double	None	None	None	32MB
None	None	4Mx36 single	4Mx36 single	32MB
None	None	2Mx36 double	2Mx36 double	32MB
None	None	4Mx36 double	None	32MB
256Kx36 single	256Kx36 single	4Mx36 single	4Mx36 single	34MB
256Kx36 single	256Kx36 single	2Mx36 double	2Mx36 double	34MB
4Mx36 single	4Mx36 single	256Kx36 single	256Kx36 single	34MB
2Mx36 double	2Mx36 double	256Kx36 single	256Kx36 single	34MB
256Kx36 double	256Kx36 double	4Mx36 single	4Mx36 single	36MB
256Kx36 double	256Kx36 double	2Mx36 double	2Mx36 double	36MB
4Mx36 single	4Mx36 single	1Mx36 single	1Mx36 single	40MB
2Mx36 double	2Mx36 double	1Mx36 single	1Mx36 single	40MB
1Mx36 single	1Mx36 single	4Mx36 single	4Mx36 single	40MB
1Mx36 single	1Mx36 single	2Mx36 double	2Mx36 double	40MB
2Mx36 single	2Mx36 single	4Mx36 single	4Mx36 single	48MB
2Mx36 single	2Mx36 single	2Mx36 double	2Mx36 double	48MB
1Mx36 double	1Mx36 double	4Mx36 single	4Mx36 single	48MB
To be continue...				

BANK 0		BANK 1		MEMORY SIZE
ESIMM1	ESIMM2	ESIMM3	ESIMM4	
1Mx36 double	1Mx36 double	2Mx36 double	2Mx36 double	48MB
4Mx36 single	4Mx36 single	2Mx36 single	2Mx36 single	48MB
2Mx36 double	2Mx36 double	2Mx36 single	2Mx36 single	48MB
4Mx36 single	4Mx36 single	1Mx36 double	1Mx36 double	48MB
2Mx36 double	2Mx36 double	1Mx36 double	1Mx36 double	48MB
4Mx36 single	4Mx36 single	4Mx36 single	4Mx36 single	64MB
4Mx36 single	4Mx36 single	2Mx36 double	2Mx36 double	64MB
2Mx36 double	2Mx36 double	4Mx36 single	4Mx36 single	64MB
2Mx36 double	2Mx36 double	2Mx36 double	2Mx36 double	64MB
4Mx36 double	4Mx36 double	None	None	64MB
None	None	4Mx36 double	4Mx36 double	64MB
256Kx36 single	256Kx36 single	4Mx36 double	4Mx36 double	66MB
4Mx36 double	4Mx36 double	256Kx36 single	256Kx36 single	66MB
256Kx36 double	256Kx36 double	4Mx36 double	4Mx36 double	68MB
4Mx36 double	4Mx36 double	256Kx36 double	256Kx36 double	68MB
1Mx36 single	1Mx36 single	4Mx36 double	4Mx36 double	72MB
4Mx36 double	4Mx36 double	1Mx36 single	1Mx36 single	72MB
2Mx36 single	2Mx36 single	4Mx36 double	4Mx36 double	80MB
1Mx36 double	1Mx36 double	4Mx36 double	4Mx36 double	80MB
To be continue...				

BANK 0		BANK 1		MEMORY SIZE
ESIMM1	ESIMM2	ESIMM3	ESIMM4	
4Mx36 double	4Mx36 double	2Mx36 single	2Mx36 single	80MB
4Mx36 double	4Mx36 double	1Mx36 double	1Mx36 double	80MB
4Mx36 single	4Mx36 single	4Mx36 double	4Mx36 double	96MB
4Mx36 double	4Mx36 double	4Mx36 single	4Mx36 single	96MB
2Mx36 double	2Mx36 double	4Mx36 double	4Mx36 double	96MB
4Mx36 double	4Mx36 double	2Mx36 double	2Mx36 double	96MB
4Mx36 double	4Mx36 double	4Mx36 double	4Mx36 double	128MB

****Note:** based on above chart, the different types of SIMM can be in different bank, but within same bank, the two SIMM modules must be of same type and size.

2.2 CACHE MEMORY CONFIGURATION

Asynchronous Standard SRAM and pipelined burst mode SRAM cannot coexist.

If the optional pipelined burst mode SRAM are installed on U39, U40 on the mainboard, the maximum size is 256KB.

If external standard SRAM is installed on U8-U15 for the cache system. Sizing of 256KB, 512KB and 1MB may be configured. The cache controller is direct mapping with selectable write-back or write-through operation.

The following table describes the chip capacity and socket location required for each cache size configuration. User can use 32Kx8-bit, 64Kx8-bit, or 128Kx8-bit SRAM chips in the Data RAM sockets, and 8Kx8-bit, 16Kx8-bit or 32Kx8-bit SRAM chips in the Tag RAM socket. 15ns (tag and data) SRAM is recommended.

Cache Type	Cache Size	Tag RAM (U5)	Data RAM Group 1 U8-U15	Data RAM Group 2 U39, U40
Asyn.	256KB	8Kx8	32Kx8	None
		16Kx8		
Asyn.	512KB	16Kx8	64Kx8	None
		32Kx8		
Asyn.	1MB	32Kx8	128Kx8	None
TO BE CONTINUE...				

Secondary Cache Configuration Table

Cache Type	Cache Size	Tag RAM (U5)	Data RAM Group 1 U8-U15	Data RAM Group 2 U39, U40
Pipeline Burst	256KB	8Kx8	None	32Kx32
		16Kx8		32Kx36

Secondary Cache Configuration Table

**Note: Tag RAM are all 5V device, Asyn. data RAM are Mix-Voltage device, e.g. Winbond W24M257 and Pipeline Burst data RAM are 3.3V device e.g. Winbond W259010AF.*

CHAPTER 3 JUMPER SETTINGS AND CONNECTORS

3.1 CPU TYPE

3.1.1 INTEL PENTIUM CPU TYPE

The pentium processors have different operation voltage. In order to use the CPU Voltage correctly, the following is the marking for identify the CPU type.



**Fig. 2 CPU Description
(Bottom Side)**

Description:

X = Voltage Specification (S or V)

S = Standard Voltage (3.4V)

V = VRE 3.4 - 3.6V (3.5V)

Y = Timing Specification (S or M)

S = Standard EDS timings

M = Min Valid Delay Spec.

Z = Dual Processing Support (S or U)

S = Support DP/MP/UP

U = Not tested to support DP

3.1.2 AMD SSA/5 CPU TYPE

The AMD 5_k86 family CPU is operated on different operation voltage depending on the CPU Type. The operating voltage can be known through the marking on the surface of the CPU.

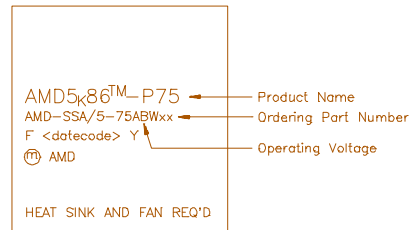


Fig. 2b CPU Description

Description:

Operating Voltage

B = 3.45V - 3.60V

C = 3.30V - 3.465V

F = 3.135V - 3.465V

H = 2.76V - 3.0V/3.135V - 3.465V (core/IO)

J = 2.57V - 2.84V/3.135V - 3.465V (core/IO)

K = 2.38V - 2.63V/3.135V - 3.465V (core/IO)

3.2 SETTING THE JUMPERS

The table below summaries the functions and settings of each jumper of the mainboard.

Function	Option	Selection	Jumper Setting
CPU Voltage Selection	No Power Transistor Q9	3.4V For P54C, P54CS, P54C-VR, P54CT, Cyrix 6x86, AMD5 _K 86(C,F)	JP3 close (Default)
		3.5V For P54C-VRE, AMD5 _K 86-(B)	JP3 open
	Power Transistor Q9 is installed - For 3.3V/2.5V Mixed CPU option	3.4V CPU For P54C, P54CS, P54C-VR, P54CT, Cyrix 6x86, AMD5 _K 86(C,F)	JP3 close S4, S5, S6: open
		3.5V CPU For P54C-VRE, AMD5 _K 86(B)	JP3 open S4, S5, S6: open
		3.3V/2.5V Mixed CPU	JP3 close S4, S5, S6: close
CPU Clock	Clock Generator on U36 - MX8325	For 75MHz Intel Pentium, AMD5 _K 86-P100(AMD-K5-75) and AMD5 _K 86-P75(AMD-SSA/5-75) CPU	S1 close S2 close S3 open JP4 1-2 close JP5 1-2 close
		For 80MHz Cyrix 6x86 CPU	S1 open S2 close S3 open JP4 1-2 close JP5 2-3 close
TO BE CONTINUE...			

Function	Option	Selection	Jumper Setting
CPU Clock	Clock Generator on U36 - MX8325	For 90MHz Intel Pentium, AMD5 _k 86-P90(AMD- SSA/5-90) and AMD5 _k 86- P120 (AMD-K5-90) CPU	S1 close S2 open S3 close JP4 1-2 close JP5 1-2 close
		For 100MHz Intel Pentium, AMD5 _k 86- P100(AMD-SSA/5-100) and AMD5 _k 86-P133 (AMD-K5-100) CPU	S1 close S2 close S3 close JP4 1-2 close JP5 1-2 close
		For 100MHz Cyrix 6x86- P120 CPU	S1 close S2 close S3 open JP4 1-2 close JP5 2-3 close
		For 120MHz Intel Pentium, Cyrix 6x86-P150 and AMD5 _k 86- P150(AMD-K5-120) CPU	S1 close S2 open S3 close JP4 1-2 close JP5 2-3 close
		For 133MHz Intel Pentium, Cyrix 6x86- P166, AMD5 _k 86-P75 (AMD-SSA/5-66) and AMD5 _k 86-P166(AMD- K5-133) CPU	S1 close S2 close S3 close JP4 1-2 close JP5 2-3 close
		For 150MHz Intel Pentium CPU	S1 close S2 open S3 close JP4 2-3 close JP5 2-3 close
TO BE CONTINUE...			

Function	Option	Selection	Jumper Setting
CPU Clock	Clock Generator on U36 - MX8325	For 166MHz Intel Pentium CPU	S1 close S2 close S3 close JP4 2-3 close JP5 2-3 close
		For 75MHz Intel Pentium, AMD5 _K 86-P100(AMD-K5-75) and AMD5 _K 86-P75(AMD-SSA/5-75) CPU	S1 open S2 open S3 close JP4 1-2 close JP5 1-2 close
	Clock Generator on U25 - MX8318-01, CMA8818, or CMA8819	For 80MHz Cyrix 6x86 CPU	S1 close S2 close S3 open JP4 1-2 close JP5 2-3 close
		For 90MHz Intel Pentium, AMD5 _K 86-P90(AMD-SSA/5-90) and AMD5 _K 86-P120 (AMD-K5-90) CPU	S1 open S2 close S3 open JP4 1-2 close JP5 1-2 close
		For 100MHz Intel Pentium, AMD5 _K 86-P100(AMD-SSA/5-100) and AMD5 _K 86-P133 (AMD-K5-100) CPU	S1 close S2 open S3 close JP4 1-2 close JP5 1-2 close
		For 100MHz Cyrix 6x86-P120 CPU	S1 open S2 open S3 close JP4 1-2 close JP5 2-3 close
TO BE CONTIUNE...			

Function	Option	Selection	Jumper Setting
CPU Clock	Clock Generator on U25 - MX8318-01, CMA8818, or CMA8819	For 120MHz Intel Pentium, Cyrix 6x86-P150 and AMD5K86- P150(AMD-K5-60) CPU	S1 open S2 close S3 open JP4 1-2 close JP5 2-3 close
		For 133MHz Intel Pentium, Cyrix 6x86- P166, AMD5K86-P75 (AMD-SSA5-66) and AMD5K86-P166(AMD- K5-66) CPU	S1 close S2 open S3 close JP4 1-2 close JP5 2-3 close
		For 150MHz Intel Pentium CPU	S1 open S2 close S3 open JP4 2-3 close JP5 2-3 close
		For 166 MHz Intel Pentium CPU	S1 close S2 open S3 close JP4 2-3 close JP5 2-3 close
Cache Size		256KB	JP6 1-2 close JP7 1-2 close
		512KB	JP6 2-3 close JP7 1-2 close
		1MB	JP6 2-3 close JP7 2-3 close
Clear RTC CMOS Data	Internal RTC	Normal	JP27 1-2 close (Default)
		Clear	JP27 2-3 close

3.3 CONNECTION THE MOTHERBOARD

Once the mainboard have been fastened into the system case, the next step is to connect the internal cables. The internal cables are wire leads with plastic female connectors that attach to the connectors. Make sure the cables and the connectors are all aligned with Pin 1 position. The mainboard connectors have varying numbers of pins and are the points of contact between the mainboard and other parts of the computer.

A description of each connector and its connector pins follows. See following Fig. 3 for the location of the connectors on the mainboard.

Note: Before making connectors on the board, make sure that power to the system is turned off.

3.3.1 JUMPER PRESENTATION



Pins 1 and 2 are shorted with a jumper cap.



Pins 2 and 3 are shorted with a jumper cap.



The jumper is shorted when the jumper cap is placed over the two pins of the jumper.



The jumper is open when the jumper cap is removed from jumper.

3.3.2 JUMPER CONVENTION OF THE MOTHERBOARD

Different colour of jumper caps (mini-jumpers) are used on the board to represent different usage of the jumpers:

Red : CPU Clock Setting
Yellow : Cache Setting
Black : Other

3.3.3 CONNECTOR LOCATIONS

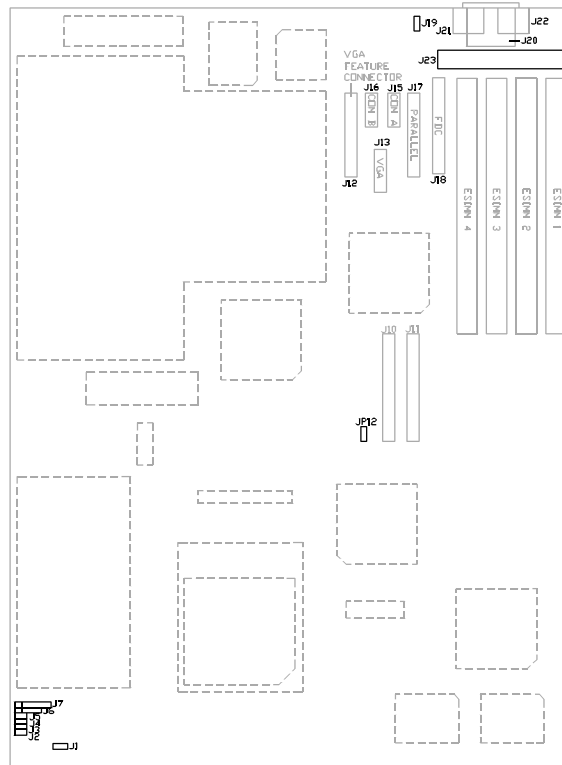
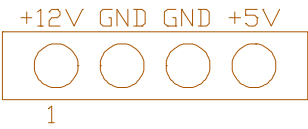


Fig. 3 Connector Locations

3.4 CONNECTORS



3.4.1 J1 - CPU FAN POWER CONNECTOR

J1 connects to the cooling fan of the CPU



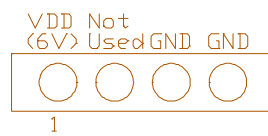
3.4.2 J2 - RESET SWITCH CONNECTOR

Attach the Reset switch cable to this connector. The Reset switch restarts the system. Refer to Fig. 3 for its location.

J2	Description
	Reset
	Normal (default)

3.4.3 J19 - EXTERNAL BATTERY CONNECTOR

User can attach an external battery on connector JP19. Using an external battery helps to conserve the on-board battery.



3.4.4 J4 - TURBO LED CONNECTOR

J4 is usually connected to a Turbo LED on front of the system case. If the system board select is in Turbo mode, the indicator lights during high-speed operation.



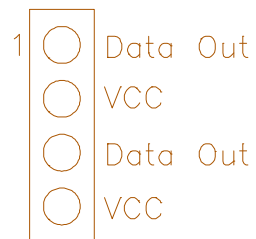
3.4.5 J5 - HARD DISK LED CONNECTOR

J5 connects to the HDD LED on the front panel of the system case.



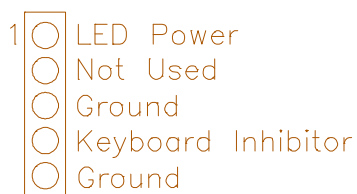
3.4.6 J6 SPEAKER CONNECTOR

Attached the system speaker to connector J6. Refer to Fig. 3 for its location.



3.4.7 J7 - KEYLOCK CONNECTOR

J7 is a keylock connector that enables and disables the keyboard.



3.4.8 J10 PRIMARY IDE CONNECTOR

The bootable Hard Disk must connect to this Primary IDE Connector, it locates under the chip SIS6205, U35.

3.4.9 J11 SECONDARY IDE CONNECTOR

J11 locates right to J10, the primary IDE connector

3.4.10 J12 - ON BOARD VGA FEATURE CONNECTOR

J12 is a 26-pin VGA Feature connector. Refer to Fig. 3 for its location.

3.4.11 J13 - ON BOARD VGA CONNECTOR

J13 is a 16-pin VGA connector. Refer to Fig. 3 for its location.

3.4.12 J15 SERIAL PORT 1 CONNECTOR

Both COM A and B are 16550 fast UART compatible. J15 is located left beside J23 Power Connector. Pin 1 is on the up left hand side.

3.4.13 J16 SERIAL PORT 2 CONNECTOR

J16 is left to J15. Pin 1 is on the up left hand side.

3.4.14 J17 PARALLEL PORT CONNECTOR

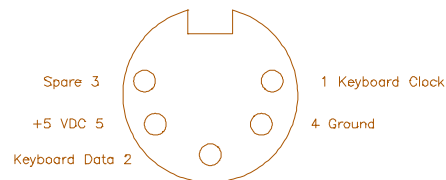
J17 is right to J15. Pin 1 is on the up left hand side.

3.4.15 J18 FLOPPY DRIVE CONTROLLER

J18 locates between DRAM SIMM socket and J17 Parallel Port Connector. This Floppy drive controller also supports 2.88M FDD format.

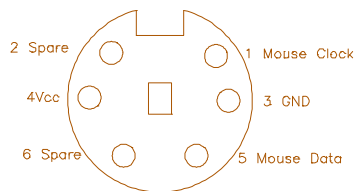
3.4.16 J20 - KEYBOARD CONNECTOR

A standard five-pin female DIM keyboard connector is located at the rear of the keyboard. Plug the jack on the keyboard cable into this connector.



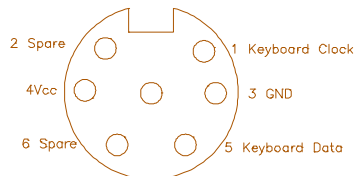
3.4.17 J21 - OPTIONAL PS/2 MOUSE CONNECTOR

An optional six-pin female mini DIM connector is located at the rear of the mainboard. Plug the jack on the PS/2 mouse cable into this connector.



3.4.18 J22 - OPTIONAL PS/2 KEYBOARD CONNECTOR

An optional six-pin female mini DIM connector is located at the rear of the mainboard. Plug the jack on the PS/2 keyboard cable into this connector.





3.4.19 J23 - POWER SUPPLY CONNECTOR

The power supply connector has two six-pin male header connectors. Plug the dual connectors from the power directly onto the board connector.

Pin	Description
1	Power Good (Orange)
2	+5 VDC (Red)
3	+12 VDC (Yellow)
4	-12 VDC (Blue)
5	Ground (Black)
6	Ground (Black)
7	Ground (Black)
8	Ground (Black)
9	-5 VDC (White)
10	+5 VDC (Red)
11	+5 VDC (Red)
12	+5 VDC (Red)

3.4.20 JP12 - GREEN PC BREAK SWITCH

JP12 is for Green PC Break Switch setting. When the break switch is pressed, it caused an suspend immediately or leave power saving state. Refer to Fig. 3 for its location.

JP12	Description
	Normal
	Power Down

3.5 JUMPERS

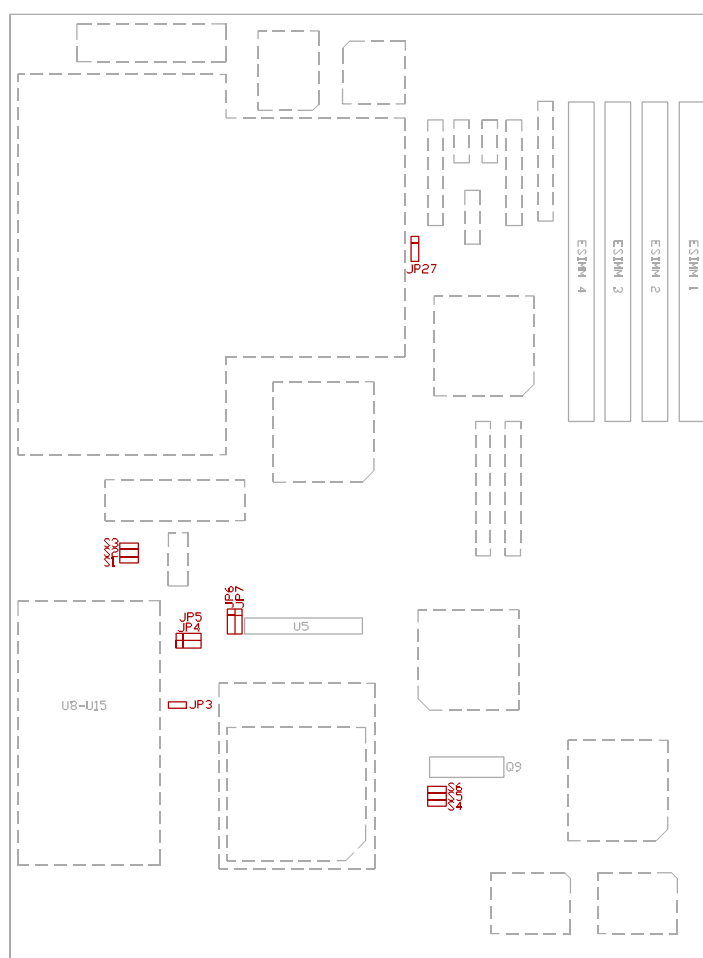


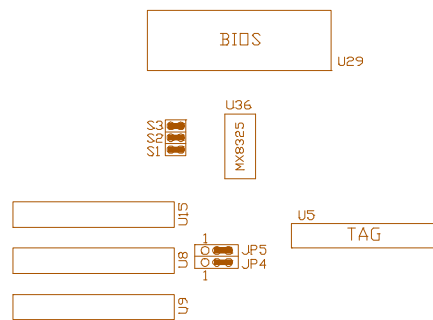
Fig. 4 Jumper and Memory Bank Locations

3.6 GRAPHICAL DESCRIPTION OF THE JUMPER

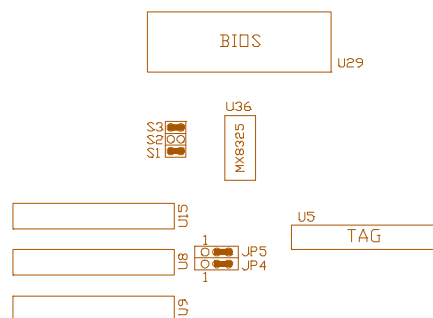
SETTINGS

3.6.1 CPU CLOCK SELECTION WITH CLOCK GENERATOR ON U36 - MX8325

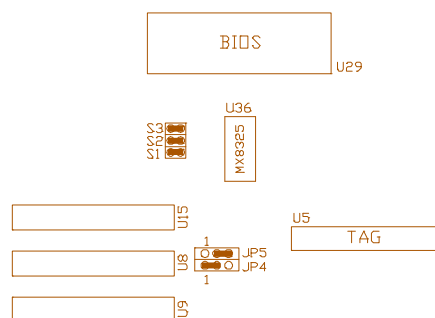
1. For 166MHz Intel Pentium CPU



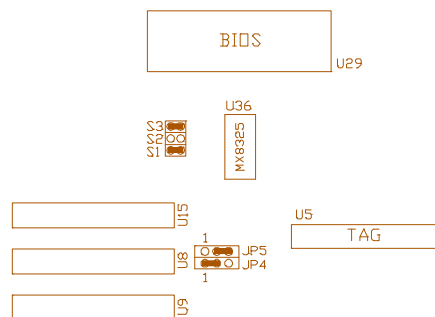
2. For 150MHz Intel Pentium CPU



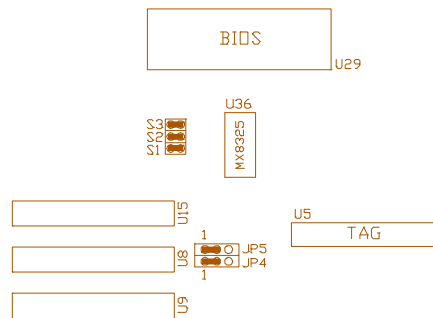
3. For 133MHz Intel Pentium, Cyrix 6x86-P166, AMD5_k86-P75(AMD- SSA/5-66) and AMD5_k86-P166(AMD-K5-133) CPU



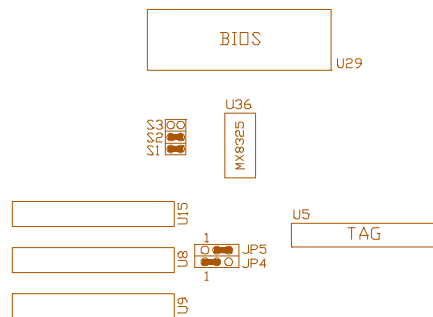
4. For 120MHz Intel Pentium, Cyrix 6x86-P150 and AMD5_k86-P150(AMD-K5-120) CPU



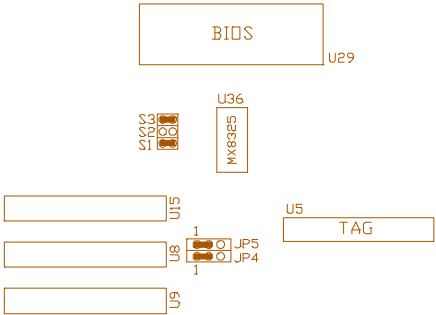
5. For 100MHz Intel Pentium, AMD5_k86-P100(AMD-SSA/5-100) and AMD5_k86-P133(AMD-K5-100) CPU



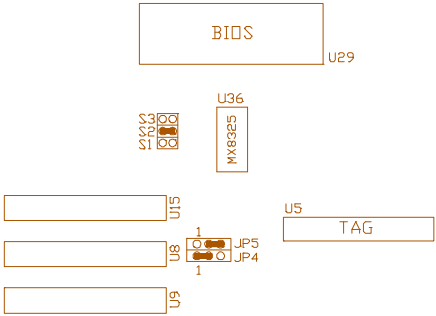
6. For 100MHz Cyrix 6x86-P120 CPU



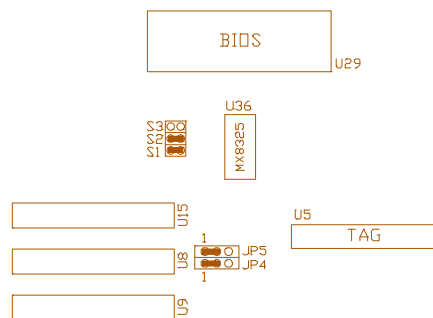
7. For 90MHz Intel Pentium, AMD5_k86-P90(AMD-SSA/5-90) and AMD5_k86-P120(AMD-K5-90) CPU



8. For 80MHz Cyrix 6x86 CPU

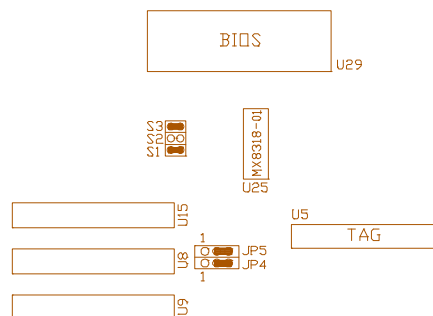


9. For 75MHz Intel Pentium, AMD5_k86-P100(AMD-K5-75) and AMD5_k86-P75(AMD-SSA/5-75) CPU

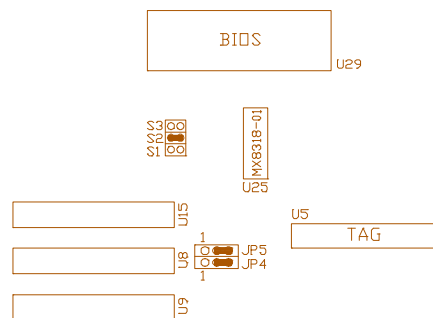


3.6.2 CPU CLOCK SELECTION WITH CLOCK GENERATOR ON U25 - MX8318-01, CMA8818 OR CMA8819

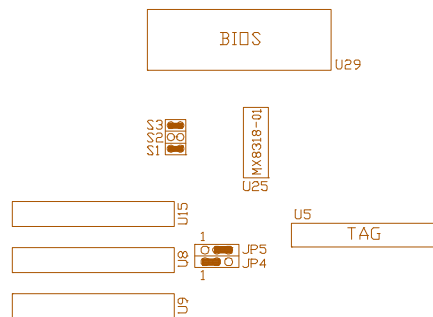
1. For 166MHz Intel Pentium CPU



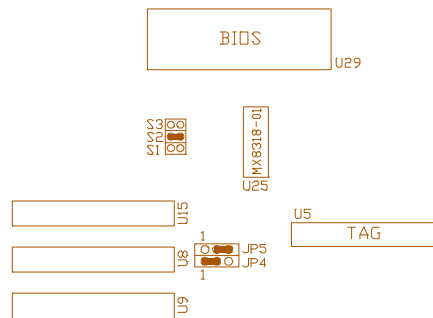
2. For 150MHz Intel Pentium CPU



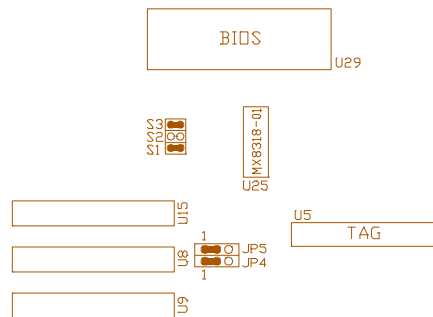
3. For 133MHz Intel Pentium, Cyrix 6x86-P166, AMD5_k86-P75(AMD- SSA/5-66) and AMD5_k86-P166(AMD-K5-133) CPU



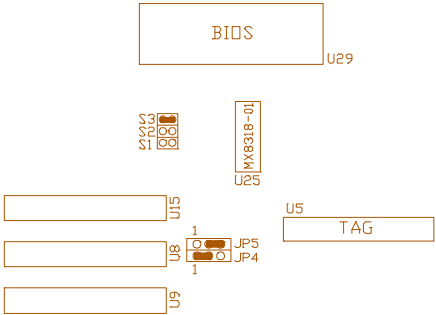
4. For 120MHz Intel Pentium, Cyrix 6x86-P150 and AMD5_k86-P150(AMD-K5-120) CPU



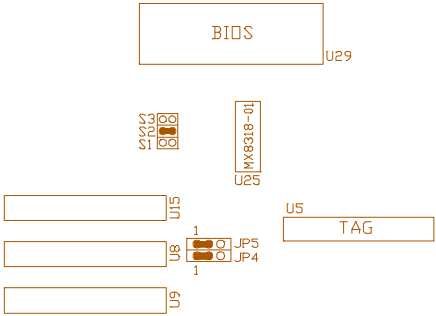
5. For 100MHz Intel Pentium, AMD5_k86-P100(AMD-SSA/5-100) and AMD5_k86-P133(AMD-K5-100) CPU



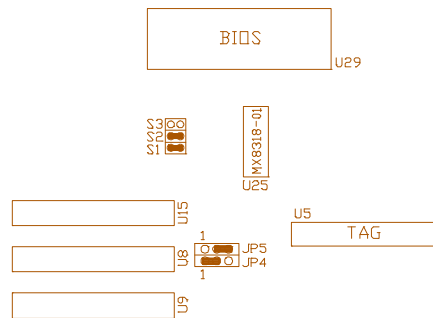
6. For 100MHz Cyrix 6x86-P120 CPU



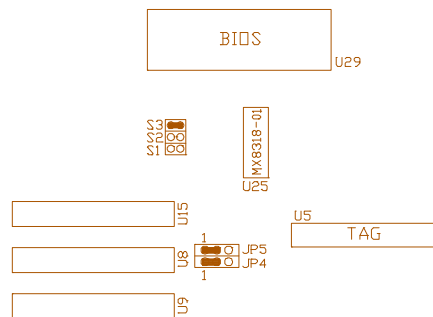
7. For 90MHz Intel Pentium, AMD5_k86-P90(AMD-SSA/5-90) and AMD5_k86-P120(AMD-K5-90) CPU



8. For 80MHz Cyrix 6x86 CPU



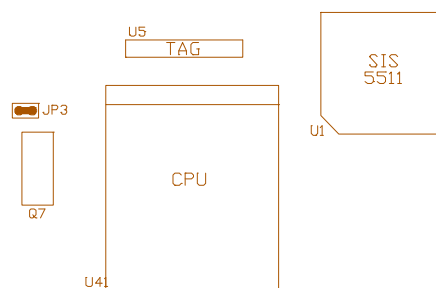
9. For 75MHz Intel Pentium, AMD5_k86-P100(AMD-K5-75) and AMD5_k86-P75(AMD-SSA/5-75) CPU



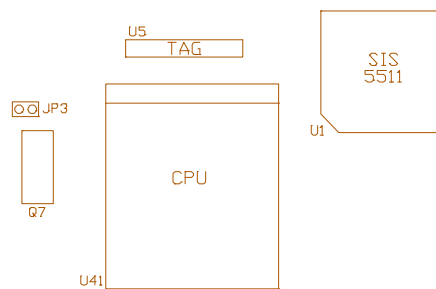
3.6.3 JP3 - CPU VOLTAGE SELECTION

JP3 is for the setting the CPU voltage selection.

1. 3.4V for P54C, P54CS, P54C-VR, P54CT, Cyrix 6x86, AMD5_k86(C,F)



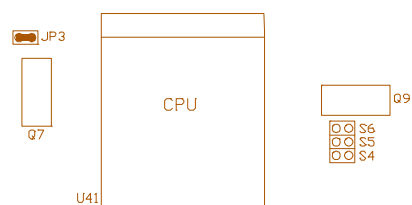
2. 3.5V for P54C-VRE, AMD5_k86(B)



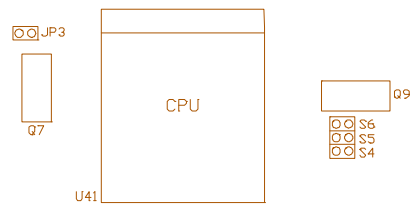
3.6.4 S4, S5, S6, JP3 - OPTIONAL 2.5V SUPPLY FOR CPU

Q9 is an optional parts of 2.5V supply for advanced CPU. (Refer to Fig 1 for the location). S4, S5, S6 are the optional jumpers to select the CPU Voltage supply for 2.5V.

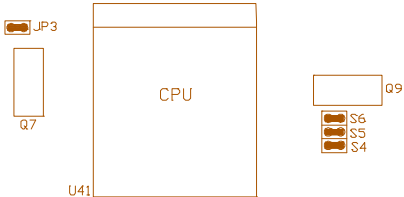
1. For single voltage 3.4V CPU - P54C, P54CS, P54C-VR, P54CT, Cyrix 6x86, AMD5_k86(C,F)



2. For single voltage 3.5V CPU - P54C-VRE, AMD5_k86(B)

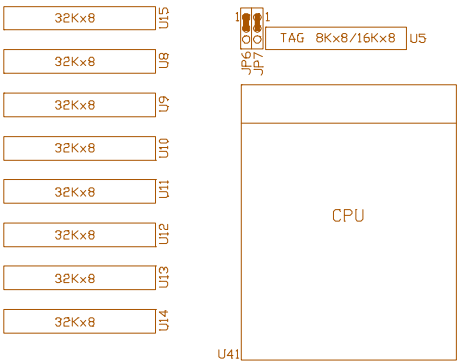


- 3. For 3.3V/2.5V mixed CPU used

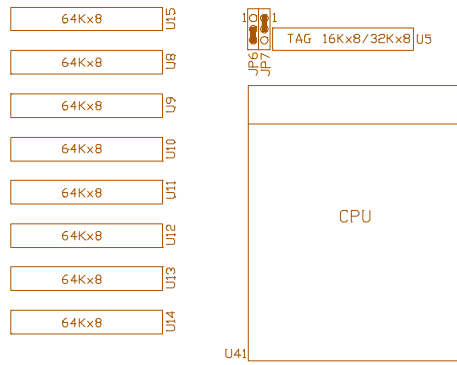


3.6.5 CACHE SIZE SETTING

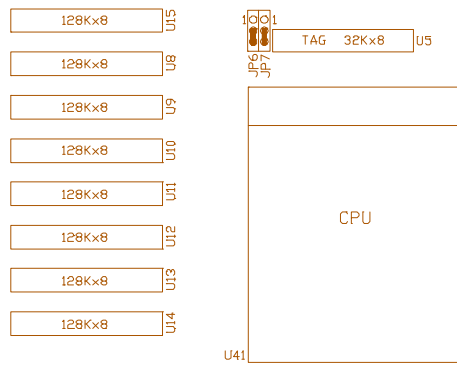
- 1. 256KB (32Kx8) Cache Size



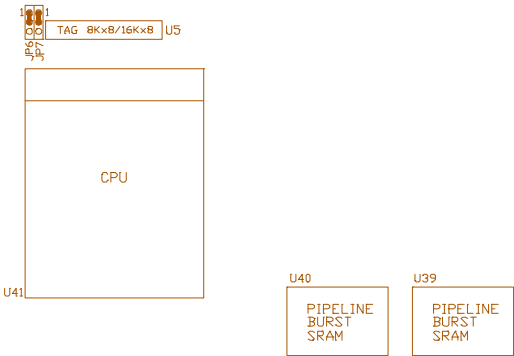
2. 512KB (64Kx8) Cache Size



3. 1MB (128Kx8) Cache Size



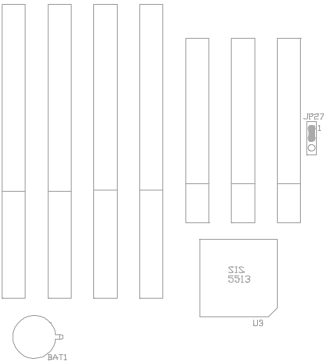
4. 256KB (32Kx32 or 36Kx32) Cache Size - Pipeline Burst Mode



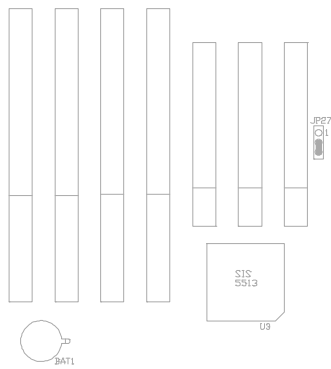
3.6.6 JP27 - DISCHARGE CMOS RAM

JP27 is used to clear the content stored on the CMOS RAM.

1. Normal



2. Reset Content of RTC



CHAPTER 4 HARDDISK INSTALLATION

The mainboard on-board built-in the PCI IDE Controller which supports 2 enhanced IDE channels with Primary IDE address on 1F0-1F7, 3F6, 3F7; and Secondary IDE address on 170-177, 376, 377. Please following the steps shown below to process installation.

4.1 CONNECTING THE IDE DEVICES TO THE MAINBOARD

- (1) Properly connect the IDE device(s) to the on-board IDE Connector (J10, J11) with the IDE cable. The cable should have colored band to indicate the Pin 1 position. Make sure the IDE device, IDE cable and the on-board IDE connector are all aligned with Pin 1 position. Please notice that the bootable IDE device have to connect to J10, primary IDE connector.
- (2) 2 Drives System:
Case A: Set Drive C: to Master; and Drive D: to slave and connect both drives on Primary IDE Connector, J10. Set Drive C: and D: disk parameters in CMOS.

Case B: Set Drive C: to Master and connect it on Primary IDE Connector, J10; and Drive D: to Master and connect it on Secondary IDE Connector J11. Set Drives C: and D: disk parameters in CMOS.
- (3) 4 Drives System:
Set Drive C: to Master; and Drive D: to slave, and connect both drives on Primary IDE Connector, J10. Set Drive E: to Master; and Drive F: to slave and connect both drives on Secondary IDE Connector, J11. Set Drive C:, D:, E: and F: disk parameters in CMOS

4.2 HARDWARE/SOFTWARE PCI IDE DRIVER INSTALLATION

- (1) Enter the correct disk parameters to the Standard CMOS Setup, or use the "IDE HDD AUTO DETECTION" feature on the CMOS SETUP UTILITY to let the BIOS to use the IDE hard disk parameters detected. (Refer to Section 6.9)
- (2) Set "Internal PCI/IDE" option in "PCI & Onboard I/O Configuration Setup" menu according to the IDE channel used (Refer to Section 6.6).
- (3) Install the PCI IDE Device Driver
Please refer to the **README.NOW** file in PCI IDE Driver Diskette for detail installation procedures to be used in various kind of operating system (DOS, Windows95, Windows 3.1, Windows NT, OS/2, Novel 3.1X/4.0X).

CHAPTER 5 VGA INSTALLATION

The mainboard built-in the PCI True-Color Graphics accelerator with 64-bit BITBLT GUI Controller. Please follows the steps shown below to process installation.

5.1 VGA CABLE CONNECTION

- (1) Plug the attached VGA cable to J13, the cable should have a Pin-1 position mark. Make sure the VGA cable and VGA connector (J13) are all aligned with Pin 1 position.
- (2) Connect the Monitor Cable with the VGA cable.
- (3) You may simply insert another VGA Display card into the slots (ISA or PCI) to disable the on-board PCI Graphics Controller.

5.2 HARDWARE/SOFTWARE PCI VGA DRIVER INSTALLATION

- (1) Set VGA Share Memory Size to "1MB" or "2MB" in BIOS Setup (refer to Section 6.4) to configure the video memory size shared by the VGA controller.

- (2) Install the PCI VGA Device Driver
Please refer to the **DISK.TXT** file in **PCI VGA Driver-DOS APPLICATION SOFTWARE DRIVER** for detail installation procedures to be used in various kind of operating system (DOS, Windows95, Windows 3.1, Windows NT, OS/2 Warp).

CHAPTER 6 AWARD BIOS SETUP GUIDE

This following manual is specially provided for the BIOS supported system. After the configuration of the mainboard, and have assembled the components, user can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the system board is achieved through Basic Input-Output System (BIOS) programming. Use the BIOS setup program to tell the operating system what type of devices (such as disk drives) are connected to the system board.

The system setup is also called CMOS setup. Normally, users need to run system setup if either the hardware configuration is not identical with information contained in the CMOS RAM, or the CMOS RAM has lost power.

6.1 AWARD BIOS SETUP

The setup program provided with the mainboard is the Award BIOS from Award Software, Inc. Enter the AWARD Setup program's Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic check, the following message appear:

"Press DEL to enter SETUP"

2. Press the key to enter the AWARD BIOS setup program and the following screen appears:

ROM PCI/ISA BIOS (2A5IDG3A)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	HDD LOW LEVEL FORMAT
POWER MANAGEMENT SETUP	SAVE & EXIT SETUP
PCI CONFIGURATION SETUP	EXIT WITHOUT SAVING
LOAD SETUP DEFAULTS	
Esc : Quit	8 9 6 7 : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color
{Description}	

3. Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (see the following sections for more information).
4. Press <ESC> at anytime to return to the Main Menu.
5. In the Main Menu, choose "SAVE AND EXIT SETUP" to save change and reboot the system. Choosing "EXIT WITHOUT SAVING" to ignore all changes and exists the program.

6.2 STANDARD CMOS SETUP

Run the Standard CMOS Setup as follows.

1. Choose "STANDARD CMOS SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS (2A5IDG3A)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Fri, Jan 6 1995									
Time (hh:mm:ss) : 15 : 17 : 49									
HARD DISKS		TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master : Auto			0	0	0	0	0	0	AUTO
Primary Slave : None			0	0	0	0	0	0	NORMAL
Secondary Master : None			0	0	0	0	0	0	NORMAL
Secondary Slave : None			0	0	0	0	0	0	NORMAL
Drive A : 1.44M , 3.5in.						Base Memory: 640K			
Drive B : None						Extended Memory: 3072K			
Video : EGA/VGA						Other Memory: 384K			
Halt On : All Errors						Total Memory: 4096K			
Esc : Quit		8 9 6 7 : Select Item				PU/PD/+/- : Modify			
F1 : Help		(Shift)F2 : Change Color							

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn key. Some fields let user enter numeric values directly.

Date(mm/dd/yy) Type the current date.

Time(hh:mm:ss) Type the current time.

Drive C&D Choose from the standard hard disk types 1 to 46. See Section 4.2, Type 47 is user definable. If a hard disk is not installed choose "None".

Drive A&B Choose 360K, 5.25 in.
1.2M, 5.25 in.
720K, 3.5 in.
1.44M, 3.5 in.
2.88MB 3.5 in. or
None

Video Choose EGA/VGA,
CGA 40,
CGA 80, or
MONO,

Halt On Choose All Errors
No Errors,
All, But Keyboard,
All, But Diskette, or
All, But Disk/Key

3. After user finished with the Standard CMOS Setup program, press the <ESC> key to go back to the main menu.

6.3 BIOS FEATURES SETUP

Run the Advanced CMOS Setup as follows.

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS (2A5IDG3A)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning : Disabled	Video BIOS Shadow : Enabled
CPU Internal Cache : Enabled	C8000-CBFFF Shadow: Disabled
External Cache : Enabled	CC000-CFFFF Shadow: Disabled
Quick Power On Self Test : Disabled	D0000-D3FFF Shadow: Disabled
Boot Sequence : A,C	D4000-D7FFF Shadow: Disabled
Swap Floppy Drive : Disabled	D8000-DBFFF Shadow: Disabled
Boot Up Floppy Seek : Enabled	DC000-DFFFF Shadow:Disabled
Boot Up Numlock Status : On	
Boot Up System Speed : High	
IDE HDD Block Mode : Disabled	
Gate A20 Option : Fast	
Typematic Rate Setting : Disabled	
Typematic Rate (Chars/Sec) : 6	
Typematic Delay (Msec) : 250	
Security Option : Setup	
PCI/VGA Palette Snoop : Disabled	
	ESC: Quit 896 7: Select Item
	F1: Help PU/PD/+/-: Modify
	F5: Old Values (Shift)F2: Color
	F7: Load Setup Defaults

BIOS Setup Defaults

2. Use the arrow keys to move between items and to select values. Modify the selected fields by using the PgUp/PgDn keys. An explanation of the <F> keys follows:

<F1>	"Help gives options available for each item.
------	--

(Shift)<F2>	Change color.
-------------	---------------

<F5>	Get the old values. These values are the values with which the user started the current session. If the CMOS was good, then the old values are either the CMOS values or the BIOS Setup default values.
------	---

<F6>	Load all options in the BIOS Setup default values.
------	--

<F7>	Load all options with the Power-On default values.
------	--

3. After user finished with the BIOS Features Setup program, press the <ESC> key to go back to the main menu.

A short description of the screen items follows:

Virus Warning: Enable Virus from invading the Boot area in either Hard Disk or Floppy Drive.

CPU Internal Cache: Choose Enabled or Disabled. This option lets user choose whether to use CPU internal cache memory. The default is Enabled.

External Cache: Choose Enabled or Disabled. This option lets user choose whether to use secondary cache memory. The default is Enabled.

Quick Power On Self Test: Choose Enabled or Disabled. This option let the POST sequence runs longer for through tests.

Boot Sequence: With the default setting the BIOS first attempts to boot from drive A: and then, if unsuccessful, from hard disk C:. User can reverse this sequence with "C: A:", but then drive A: cannot boot directly.

Swap Floppy Drive: Choose Enabled or Disabled. This option lets end users to change the Drive A: or B: to others.

Boot Up Floppy Seek: Choose Enabled or Disabled. "Disabled" provides a fast boot and reduces the possibility of damage to the heads.

Boot Up NumLock Status: Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts numeric keypad in arrow key mode at boot-up.

Boot Up System Speed: Choose High or Low. Set the CPU timing at Boot Up, the default is high.

Gate A20 Option: Choose Fast or Slow. The system switch back an forth from real mode to virtue mode, fast means the system will switch through logic, slow through keyboard. The default is Fast.

Typematic Rate Setting: Choose Enabled or Disabled. Enabled will determines the typematic rate defined by following two options.

Typematic Rate: The number selected 6,8,10... indicates how fast the number of characters can response in one second.

Typematic Delay (Msec): The number selected indicates the time period between two identical keys appear.

Security Option: Choose Setup or System. If system is selected, the password should be set.

PCI/VGA Palette Snoop: Select Disabled or Enabled. If Enabled the MPEG Card can synchronised with PCI/VGA.

Video BIOS Shadow: ROM Shadow copies Video BIOS code from slower ROM to faster RAM. Video BIOS can then execute from RAM.

C8000-CBFFF Shadow: If enabled and BIOS is present in this segment, then a image of the Slower ROM BIOS is created on the faster DRAM. The BIOS on this segment will be executed from the DRAM image.

D0000-D3FFF Shadow: If enabled and BIOS is present in this segment, then a image of the Slower ROM BIOS is created on the faster DRAM. The BIOS on this segment will be executed from the DRAM image.

D4000-D7FFF Shadow: If enabled and BIOS is present in this segment, then a image of the Slower ROM BIOS is created on the faster DRAM. The BIOS on this segment will be executed from the DRAM image.

D8000-DBFFF Shadow: If enabled and BIOS is present in this segment, then a image of the Slower ROM BIOS is created on the faster DRAM. The BIOS on this segment will be executed from the DRAM image.

DC000-DFFFF Shadow: If enabled and BIOS is present in this segment, then a image of the Slower ROM BIOS is created on the faster DRAM. The BIOS on this segment will be executed from the DRAM image.

6.4 CHIPSET FEATURES SETUP

The Advanced Chipset Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Note: Change these Settings only if user is familiar with the Chipset.

Run the Advanced Chipset Setup as follows:

1. Choose "CHIPSET FEATURE SETUP" from the Main Menu and a screen with a list of items appears. Following is suggested setting:

ROM PCI/ISA BIOS (2A5IDG3A)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	Slow Refresh (1:4)	: Enabled
Asyn. SRAM Leadoff Tim.	: R3 W4 Ck	ISA Bus Clock Frequency	: CPUCLK/4
Asyn. SRAM Burst Tim.	: 2Ck	Video BIOS Cacheable	: Enabled
Sync. SRAM Leadoff Tim.	: 3Ck	Memory Hole at 15M-16M	: Disabled
EDO CAS Pulse Width	: R1 W2 Ck	VGA Share Memory Size	: 1MB
EDO CAS Precharge Time	: 1Ck	VGA Memory Clock (MHz)	: 55
EDO MDLE Timing	: 1Ck	Linear Mode SRAM Support	: Disabled
EDO BRDY# Timing	: 1Ck		
EDO RAS Precharge Timing	: 4Ck		
EDO RAMW# Power Saving	: Disable		
		ESC: Quit	896 7: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values (Shift)	F2: Color
		F7: Load Setup Defaults	

A short description of the screen items follows:

Auto Configuration: The default value of the following options in this menu will be different according to the CPU clock speed:

Asyn. SRAM Leadoff Tim.
Asyn. SRAM Burst Tim.
EDO CAS Pulse Width
EDO RAS Precharge Timing
ISA Bus Clock Frequency

To enable the "Auto Configuration" option will let the system BIOS to detect the CPU clock speed, and it will use the pre-defined value for these options according to speed detected, and the corresponding setting will be protected from making change. It is strongly recommended to enable this option.

Asyn. SRAM Leadoff Tim.: It is used control the leadoff cycle of the asynchronous SRAM type cache. The option "R3 W4 Ck", "R3 W3 Ck" and "R3 W4 Ck" should be set depending on the CPU clock speed. The following is the optimum setting:

CPU Speed	Asyn. SRAM Leadoff Tim.
75MHz	R3 W3 Ck
90MHz or above	R3 W4 Ck

Asyn. SRAM Burst Tim.: It is used to control the burst cycle timing of the asynchronous SRAM type cache. The option "2 Ck" and "3 Ck" should be set depending on the CPU clock speed, "2 Ck" is the optimum setting for this option over all range of CPU speed.

Syn. SRAM Leadoff Tim.: It is used to control the leadoff cycle timing of the synchronous SRAM type cache. The options are "3 Ck" and "4 Ck", and the optimum setting is "3 Ck".

EDO CAS Pulse Width, EDO CAS Precharge Time, EDO MDLE Timing, EDO Brdy# Timing, EDO RAS Precharge Timing: All of these options are used to control the EDO timing. The default settings for these options are

	Default Setting
EDO CAS Precharge Time	1 Ck
EDO MDLE Timing	1 Ck
EDO BRDY# Timing	1 Ck

The setting of "EDO CAS Pulse Width" and "EDO RAS Precharge Timing" depends on the CPU clock speed, the followings are the optimum settings:

CPU Speed	EDO CAS Pulse Width	EDO RAS Precharge Timing
75MHz	R1 W2 Ck	3 Ck
90MHz or above	R1 W2 Ck	4 Ck

EDO RAMW# Power Saving: It is used to enable or disable the power saving mode when the EDO bank is being accessed.

Slow Refresh (1:4): To enable this function will allow the DRAM refresh in a slower rate.

ISA Bus Clock Frequency: It is used to select the bus clock for the ISA bus. The available options are "7.159MHz", "CPUCLK/4" and "CPUCLK/3".

CPU Speed	ISA Bus Clock Frequency
75MHz	CPUCLK/3
Other than 75MHz	CPUCLK/4

Video BIOS Cacheable: It is used to enable or disable the Video BIOS being cacheable.

Memory Hole at 15M-16M: To enable this function will allow the VGA controller to run larger frame port.

VGA Share Memory Size: If external VGA card is installed, this option will not be shown. It is used to select the video ram size shared with the system memory, the available options are "1MB" or "2MB".

VGA Memory Clock (MHz): If external VGA card is installed, this option will not be shown. It is used to select the VGA memory clock frequency of the on-board graphics controller used. The available frequency ranges from 40MHz to 70MHz. The default value is 55MHz.

Note: If EDO RAM or slower DRAM is used as system memory, 50MHz is recommended.

Linear Mode SRAM Support: This item is shown when Cyrix CPU is installed. To enable this option to use the Cyrix linear burst mode for pipeline burst SRAM. The default value of this option is "Disabled".

6.5 POWER MANAGEMENT SETUP MENU

The Power Management Setup option is used to change the values of the chipset registers for system power management functions.

Run the Advanced Chipset Setup as follows:

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS (2A5IDG3A)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: Max Saving	VGA Activity	: Disabled
PM Control by APM	: Yes	IRQ3 (COM 2)	: Enabled
Video Off Option	: Suspend->Off	IRQ4 (COM 1)	: Enabled
Video Off Method	: V/H SYNC+Blank	IRQ5 (LPT 2)	: Enabled
PM Timers		IRQ6 (Floppy Disk)	: Enabled
HDD Off After	: 5 Min	IRQ7 (LPT 1)	: Enabled
Suspend Mode	: 20 Sec	IRQ8 (RTC Alarm)	: Disabled
PM Events		IRQ9 (IRQ2 Redir)	: Enabled
COM Ports Activity	: Enabled	IRQ10 (Reserved)	: Enabled
LPT Ports Activity	: Enabled	IRQ11 (Reserved)	: Enabled
HDD Ports Activity	: Enabled	IRQ12 (PS/2 Mouse)	: Enabled
PCI/ISA Master Act.	: Disabled	IRQ13 (Coprocessor)	: Enabled
IRQ1-15 Activity	: Enabled	IRQ14 (Hard Disk)	: Enabled
		IRQ15 (Reserved)	: Enabled
		ESC: Quit 896 7: Select Item	
		F1: Help PU/PD/+/-: Modify	
		F5: Old Values (Shift)F2: Color	
		F7: Load Setup Defaults	

A short description of the screen items follows:

Power Management: Available selection are "Disabled", "User Define", "Max Saving" and "Min Saving":

"Disable" will disable all the power saving functions.

"User Define" makes the time period waiting for Suspend Mode to be programmed.

"Max Saving" will set the time period waiting for Suspend Mode to be 20 seconds.

"Min Saving" will set the time period waiting for Suspend Mode to be 40 minutes.

PM Control by APM: Available options are "Yes" and "No". To choose "Yes" to let the Power Management Function to be control by the MS APM software.

Video Off Option: Available options are "Suspend->Off" and "Always On". To choose "Suspend->Off" option will make the video off during the Suspend Mode. "Always On" will keep the video on for all the modes.

Video Off Method: Choose V/H SYNC+Blank, DPMS or Blank Screen. This is monitor Power Saving Method. V/H SYNC+Blank means turn off Vertical, Horizontal scanning and blank the screen. Blank Screen will blank the display screen. DPMS (Display Power Management System) can allow the System BIOS control the Display Card to turn off the Display.

Suspend Switch: It is used to enable or disable the function of the Green PC Break Switch - JP12.

HDD Off After: To select the time period will turn the HDD off. Accessing the HDD again will take a few seconds for HDD to spin up for operation.

Suspend Mode: To set the time period waiting for Suspend Mode when the Power Management function is set to "User Define".

COM Ports Activity/LPT Ports Activity/HDD Ports Activity/PCI/ISA Master Act./IRQ1-15 Activity/VGA Activity: All of these functions are used to control the wake up event from the Suspend Mode. Once the function is enabled, the corresponded activity will trigger the system back to the Normal Mode from the Suspend Mode.

IRQ3 - IRQ15: When it is enabled, the system will monitor the activity of the corresponded system IRQ to decide whether to turn on or off the power management functions.

6.6 PCI & ONBOARD I/O CONFIGURATION SETUP

The PCI & Onboard I/O Configuration Setup option is used to configure the PCI add-on Cards on PCI Slots and the onboard I/O chips. Without proper setup the PCI Add-on Cards might not function properly.

ROM PCI/ISA BIOS (2A5IDG3A) PCI & ONBOARD I/O CONFIGURATION SETUP AWARD SOFTWARE, INC.

PnP BIOS Auto-Config	: Enabled	Primary IDE Prefetch	: Disabled
PCI IRQ Activated By	: Level	Secondary IDE Prefetch	: Disabled
PCI IDE 2nd Channel	: Enabled	IDE Burst Mode	: Disabled
PCI IDE IRQ Map To	: PCI-AUTO	IDE Post Write	: Disabled
Primary IDE INT#	: A	IDE HDD Block Mode	: Enabled
Secondary IDE INT#	: B	Onboard FDD Controller	: Enabled
CPU-PCI Post Write Rate	: 3Ck	Onboard Serial Port 1	: COM1/3F8
Latency for CPU-PCI	: 1Ck	Onboard Serial Port 2	: COM2/2F8
CPU-PCI Burst Mem Write	: Enabled	Onboard Parallel Port	: 378H/IRQ7
CPU-PCI Post Mem Write	: Enabled	Onboard Parallel Mode	: EPP
Internal PCI/IDE	: Both		
IDE Primary Master PIO	: Auto		
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
		ESC: Quit	896 7: Select Item
		F1: Help	PU/PD/+/-: Modify
		F5: Old Values (Shift)	F2: Color
		F7: Load Setup Defaults	

A short description of the screen items follows:

PnP BIOS Auto-Config: To enable this function will make the system BIOS to assign the IRQ automatically. If this function is disabled, the following options will be shown:

1st Available IRQ
2nd Available IRQ
3rd Available IRQ

The user should assign the IRQ manually.

PCI IRQ Activated By: Available selection are "Level" and "Edge", it is used to define the trigger mode of the PCI IRQ.

PCI IDE 2nd Channel: It is used to enable or disable the IRQ15 used by the secondary channel of the on board PCI IDE controller.

PCI IDE IRQ Map to: Available selection are "PCI-AUTO" and "ISA". To select "PCI-AUTO" will make the system BIOS to scan for PCI devices and determine the location of the PCI IDE device. It will assign INT#A for the primary IDE, and INT#B for secondary IDE. To select "ISA" will make the BIOS not to assign any IRQs for the PCI IDE controller.

CPU-PCI Post Write Rate: Available selection are "4Ck" and "3Ck", it is used to control the post write rate of the CPU to PCI bus.

Latency for CPU-PCI: Available selection are "1Ck" and "2Ck", it is used to define the latency for CPU on PCI bus.

CPU-PCI Burst Mem Write: It is used to enable or disable the CPU to PCI burst memory write cycle.

CPU-PCI Post Mem Write: It is used to enable or disable the CPU to PCI post memory write buffer.

Internal PCI/IDE: Available selection are "Disabled", "Primary", "Secondary", "Both".

It is used to configure the built in PCI IDE controller.

"Disabled" will disable the internal PCI IDE controller.

"Primary" will configure the internal PCI IDE controller to enable the primary channel only.

"Secondary" will configure the internal PCI IDE controller to enable the secondary channel only.

"Both" will configure the internal PCI IDE controller to enable both the primary and secondary channels.

IDE Primary Master PIO/IDE Primary Slave PIO/IDE Secondary Master PIO/IDE Secondary Slave PIO: Available selection are "Auto", "Mode 0", "Mode 1", "Mode 2", "Mode 3" and "Mode 4". To choose "Auto", the system BIOS will scan the IDE device and decide which mode of the device is. Otherwise the user should key in the mode of the device to the corresponding field.

Primary IDE Prefetch/Secondary IDE Prefetch: It is used to enable or disable the prefetch buffer of the corresponding IDE channel.

IDE Burst Mode: It is used to enable or disable the IDE burst mode.

IDE Post Write: It is used to enable or disable the IDE post write buffer.

IDE HDD Block Mode: It is used to enable or disable the IDE harddisk block mode.

Onboard FDD Controller: It is used to enable or disable the on board floppy disk controller.

Onboard Serial Port 1: Available options are "COM4/2E8", "COM3/3E8", "COM1/3F8" and "Disabled". It is used to configure the on board serial port 1 to different port address or disable it. Make proper selection to avoid address conflict with other I/O devices.

Onboard Serial Port 2: Available options are "COM3/3E8", "COM4/2E8", "COM2/2F8" and "Disabled". It is used to configure the on board serial port 1 to different port address or disable it. Make proper selection to avoid address conflict with other I/O devices.

Onboard Parallel Port: Available options are "3BCH/IRQ7", "278/IRQ5", "378H/IRQ7" and "Disabled". It is used to configure the on board parallel port to different port address and IRQ or disable it. Make proper selection to avoid address and IRQ conflict with other I/O devices.

Onboard Parallel Mode: Available options are "SPP", "EPP", "ECP/EPP". It is used to configure the on board parallel port to "Standard Printer Port Mode", "Enable Parallel Mode", "Extended Capabilities Port Mode" or "ECP or EPP Mode". Make proper selection with the attached printer port device.

6.7 LOAD SETUP DEFAULTS MENU

This Main Menu item uses the default setup values. Use this option as a diagnostic aid if the system behaves erratically. Choose this item and the following message appears:

"Load SETUP Defaults (Y/N)? N"

To use the Power-On defaults, change the prompt to "Y" and press <Enter>.

6.8 PASSWORD SETTING

The Main Menu item lets user to configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program.

Change the password as follows:

1. Choose "PASSWORD SETTING" in the Main Menu and press <Enter>. The following message appears:

"ENTER PASSWORD:"

2. Enter the Password and press <Enter>. The following message appears:

"CONFIRM PASSWORD:"

Important: Keep a safe record of the new password. If forget or lose the password, the only way to access the system is to disconnect the CMOS batteries and then re-enter the password.

6.9 IDE HDD AUTO DETECTION

When users can not find the Hard Disk information, it is very helpful to use his option.

1. Choose this item and press <Enter>.
2. After couple seconds, the screen will appear the Hard Disk information and following message:

"SELECT PRIMARY MASTER OPTION(N=SKIP): N"

3. Enter Y or N to confirm the acceptance then enter.
4. The process will repeat for Primary Slave, Secondary Master and Secondary Slave Hard Disks.

6.10 HDD LOW LEVEL FORMAT MENU

Three utilities are provided in the HDD Low Level Format menu:

- (1) SELECT DRIVE
- (2) BAD TRACK LIST
- (3) PREFORMAT

<div>Hard Disk Low Level Format Utility</div> <div><div>SELECT DRIVE BAD TRACK LIST PREFORMAT</div></div>		<div>BAD TRACKS TABLE NO. CYLS HEAD</div>																																								
Current select drive is : C DRIVE : C CYLINDER : 0 HEAD : 0																																										
<table><thead><tr><th></th><th>SIZE</th><th>CYLS</th><th>HEAD</th><th>PRECOMP</th><th>LANDZ</th><th>SECTOR</th><th>MODE</th></tr></thead><tbody><tr><td>Primary Master :</td><td>270</td><td>944</td><td>14</td><td>65535</td><td>943</td><td>40</td><td>NORMAL</td></tr><tr><td>Primary Slave :</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>NORMAL</td></tr><tr><td>Secondary Master :</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>NORMAL</td></tr><tr><td>Secondary Slave :</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>NORMAL</td></tr></tbody></table>				SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	Primary Master :	270	944	14	65535	943	40	NORMAL	Primary Slave :	0	0	0	0	0	0	NORMAL	Secondary Master :	0	0	0	0	0	0	NORMAL	Secondary Slave :	0	0	0	0	0	0	NORMAL
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Up/Down-Select item ENTER-Accept ESC-Exit/Abort Copyright (c) Award Software, Inc. 1992-94 All Rights Reserved																																										

Setup Screen shown when "SELECT DRIVE" option is selected

Hard Disk Low Level Format Utility		BAD TRACKS TABLE NO. CYLS HEAD																																								
<div style="border: 2px solid black; padding: 5px; text-align: center;">SELECT DRIVE BAD TRACK LIST PREFORMAT</div>																																										
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Up/Down-Select item ENTER-Accept ESC-Exit/Abort Copyright (c) Award Software, Inc. 1992-94 All Rights Reserved																																										

Setup Screen shown when "BAD TRACK LIST" option is selected

<p>Hard Disk Low Level Format Utility</p> <hr style="border: 1px solid black; margin: 10px 0;"/> <div style="border: 3px double black; padding: 10px; margin: 20px auto; width: 80%;"> <p>SELECT DRIVE BAD TRACK LIST PREFORMAT</p> </div> <p>Interleave (1-8) : 0 (0 for auto detect) Auto scan bad track : N START : N</p> <p>DRIVE : C CYLINDER : 0 HEAD : 0</p>	<p>BAD TRACKS TABLE</p> <hr style="border: 1px solid black; margin: 10px 0;"/> <p>NO. CYLS HEAD</p>																																								
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<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Up/Down-Select item</td> <td style="width: 40%; text-align: center;">ENTER-Accept</td> <td style="width: 20%; text-align: right;">ESC-Exit/Abort</td> </tr> <tr> <td colspan="3" style="text-align: center;">Copyright (c) Award Software, Inc. 1992-94 All Rights Reserved</td> </tr> </table>		Up/Down-Select item	ENTER-Accept	ESC-Exit/Abort	Copyright (c) Award Software, Inc. 1992-94 All Rights Reserved																																				
Up/Down-Select item	ENTER-Accept	ESC-Exit/Abort																																							
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Setup Screen shown when "PREFORMAT" option is selected

6.11 SCSI HARD DISK INSTALLATION

In Standard CMOS Setup Utility, select hard disk type to be "Not Installed". In Advanced CMOS Setup Utility, Disable "Adapter ROM Shadow DC00". On the SCSI Controller card, set the jumpers which configure the SCSI card BIOS segment address located at DC00 or DE00. Format the SCSI disk by the Formatter provided in the SCSI BIOS.

6.12 SAVE & EXIT SETUP MENU

When you select this function, the following message will appear at the centre of the screen to assist you to Save data to CMOS and Exit the Setup.

SAVE to CMOS and EXIT (Y/N)?

6.13 EXIT WITHOUT SAVING MENU

When you select this function, the following message will appear at the centre of the screen to assist you to Abandon all Data and Exit Setup.

Quit Without Saving (Y/N)?

