PAM-0056I

High Performance

Pentium PCI Mainboard

User's Guide

Edition 3.02

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WARNING

For the system to operate normally, please make sure JP5 of the mainboard is set as below. Refer to Fig. 4 in this manual for the location JP5.

JP5 ◯ ◯

If JP5 is closed, no CMOS data can be retained.

CONTENTS

CHAPTER 1   INTRODUCTION

The motherboard is a 4-layer, 2/3 baby AT size high-performance mainboard. It includes Intel 82430VX system chipset, Winbond W83877F Super I/O controller.

1.1   GENERAL SPECIFICATION

Processor

- Intel Pentium P54C series, P55C series.
- Cyrix 6x86 and AMD-K5 64-bit microprocessor.
- The mainboard can run with following speeds:
    75, 90, 100, 110, 120, 133, 150, 166 and 200MHz

Chipset

- Intel 82437VX System Controller (TVX)
- Intel 82371SB PCI ISA IDE Xcelerator
- Intel 82438VX Datapath (TDX) EDS
- Winbond W83877F Super I/O Controller

Cache Size

- Built in 256KB Sychronized Pipelined Burst Mode SRAM to achieve the high Pentium system performance.
- Optional 512KB Sychronized Pipeline Burst Mode SRAM is also available.

Main Memory

- Supports Mixed memory Technologies: - EDO (Extended Data Output), Standard Page Mode (SPM) and Fast Page Mode (FPM) can work together.

- Memory configurations from 4MB to 128MB are possible using combination of 512K*32 to 8M*32 SIMM modules. (32 bits non-parity 72-pin SIMM Module).
- 3V or 5V SIMM can be supported.

Multi I/O

- On board Multi-I/O supports two serial, one parallel port and floppy drive controller.
- Serial ports are 16550 Fast UART compatible.
- Parallel port has EPP and ECP capabilities.
- PS/2 mouse support
- PS/2 keyboard support (optional)
- IrDA support (optional)
- Two standard USB connectors support (optional)

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. DMA mode transfer rate can be up to 22Mb/s.

System BIOS

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

Slots

- Four PCI slots
- Three ISA slots

Board

- 4 Layers

Form Factor

- 2/3 Baby AT Size (220 x 230mm)

1.2   MAINBOARD COMPONENTS

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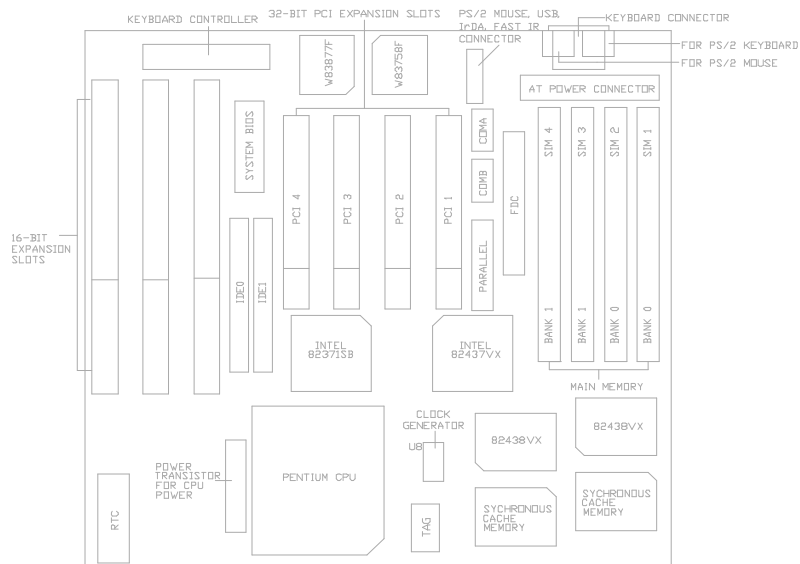
Fig. 1 Key Components of the Mainboard

CHAPTER 2   MEMORY CONFIGURATION

2.1   SYSTEM MEMORY

The mainboard lets user add system memory via SIMM sockets on the mainboard. Both single sided and double sided DRAM modules are supported. The mainboard can edcode the DRAM space up to 128MB. The system memory is divided into two banks:

Bank 0: SIM1 & SIM2 - which are assigned as row 0 (when single sided SIMMs are used) or row 0, 1 (when double sided SIMMs are used) by System BIOS .

Bank 1: SIM3 & SIM2 - which are assigned as row 2 (when single sided SIMMs are used) or row 2, 3 (when double sided SIMMs are used) by System BIOS .

Only 32 bits (non-parity) SIMM are supported, and user can install either 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 type of SIM1/SIM2 must be same.*
            • *The type of SIM3/SIM4 must be same.*
            • *3V or 5V SIMM can be used, however the voltage of the DRAM should be selected correctly by S7, S8. (please refer to Section 3.5.4)*

Table 1 provides some typical DRAM configurations supported by the mainboard:

Bank 0 (SIM1, 2)	Bank 1 (SIM3, 4)	Total Size
1Mx32 Single	None	8M
1Mx32 Double	None	16M
4Mx32 Single	None	32M
4Mx32 Double	None	64M
None	1Mx32 Single	8M
None	1Mx32 Double	16M
None	4Mx32 Single	32M
None	4Mx32 Double	64M
1Mx32 Single	1Mx32 Single	16M
1Mx32 Single	1Mx32 Double	24M
1Mx32 Single	4Mx32 Single	40M
1Mx32 Single	4Mx32 Double	72M
1Mx32 Single	1Mx32 Single	16M
1Mx32 Double	1Mx32 Single	24M
4Mx32 Single	1Mx32 Single	40M
4Mx32 Double	1Mx32 Single	72M
To be continued...		

Table 1A: Memory Configuration

Bank 0 (SIM1, 2)	Bank 1 (SIM3, 4)	Total Size
1Mx32 Double	1Mx32 Single	24M
1Mx32 Double	1Mx32 Double	32M
1Mx32 Double	4Mx32 Single	48M
1Mx32 Double	4Mx32 Double	80M
1Mx32 Single	1Mx32 Double	24M
1Mx32 Double	1Mx32 Double	32M
4Mx32 Single	1Mx32 Double	48M
4Mx32 Double	1Mx32 Double	80M
4Mx32 Single	1Mx32 Single	40M
4Mx32 Single	1Mx32 Double	48M
4Mx32 Single	4Mx32 Single	64M
4Mx32 Single	4Mx32 Double	96M
1Mx32 Single	4Mx32 Single	40M
1Mx32 Double	4Mx32 Single	48M
4Mx32 Single	4Mx32 Single	64M
4Mx32 Double	4Mx32 Single	96M
To be continued...		

Table 1B: Memory Configuration

Bank 0 (SIM1, 2)	Bank 1 (SIM3, 4)	Total Size
4Mx32 Double	1Mx32 Single	72M
4Mx32 Double	1Mx32 Double	80M
4Mx32 Double	4Mx32 Single	96M
4Mx32 Double	4Mx32 Double	128M
1Mx32 Single	4Mx32 Double	72M
1Mx32 Double	4Mx32 Double	80M
4Mx32 Single	4Mx32 Double	96M
4Mx32 Double	4Mx32 Double	128M

Table 1C: Memory Configuration

**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 <u>same type and size.</u>

2.2 CACHE MEMORY CONFIGURATION

256KB or 512KB secondary cache system is built in with Pipeline Burst SRAM:

Cache Tag RAM Location: U12
Size of the Tag RAM: 16Kx8 or 32Kx8
Synchronous Pipeline Burst SRAM Location: U9, U10

Cache Size	Tag RAM (U12)	Data Cache U9, U10
256KB	16Kx8 or 32Kx8	32Kx32
512KB		64Kx32

CHAPTER 3 JUMPER SETTINGS AND CONNECTORS

3.1 CPU TYPE

3.1.1 INTEL PENTIUM CPU

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

```
XXXXXXXXXX
XXXXXXXXXX
A80502-MMM


SXXXX/XYZ
```

Fig.2a CPU Description
(Bottom Side)
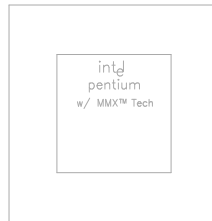
Description :

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   INTEL PENTIUM w/ MMX™ TECH (P55C) CPU

The Intel Pentium w/ MMX™ Tech (P55C) CPU is offered with dual voltage supply - 2.8V for core and 3.3V for I/O interface. The following is the marking for identify the CPU type. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)

Fig. 2b CPU Description
(Top Side)

	I/O Voltage	Core Voltage
Intel Pentium w/ MMX™ Tech (P55C)	3.3V	2.8V

3.1.3   AMD-K5 CPU

The AMD-K5 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. (The following diagram is provided as an example only. It does not necessarily indicate a valid product marking.)
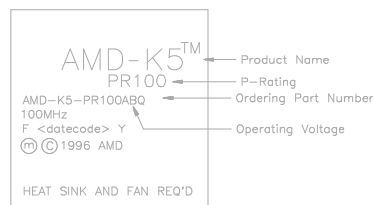
```
  AMD-K5ᵀᴹ        ——— Product Name
    PR100    ←       ——— P-Rating
  AMD-K5-PR100ABQ  ←  ——— Ordering Part Number
  100MHz
  F <datecode> Y      ——— Operating Voltage
  ⓜⒸ1996 AMD

  HEAT SINK AND FAN REQ'D
```

Fig. 2c CPU Description
(Top Side)

Description:

Operating Voltage
 B = 3.45V - 3.60V
 C = 3.30V - 3.465V
 F = 3.135V - 3.465V
 H = 2.86V - 3.0V (core)
        3.30V - 3.46V (I/O)
 J = 2.57V - 2.84V (core)
        3.30V - 3.46V (I/O)
 K = 2.38V - 2.63V (core)
        3.30V - 3.46V (I/O)

3.1.4   CYRIX 6x86 CPU

The Cyrix 6x86 has different nominal voltage depends on different lot. Please refer to the CPU marking.

```
                   Cyrix



  6x86-P166+GP
  133MHz
  3.52V (028)  ◄─────────────── Operating Voltage
```
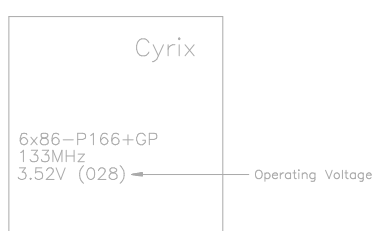
Fig. 2d CPU Description
(Top Side)

Marketing	Recommended Nominal Voltage
3.3V or 3.52V	3.52V
028	3.52V
016	3.3V
Blank	3.52V

3.2   SETTING THE JUMPERS

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

Function			Jumper Settings	
CPU Voltage Selection	2 Transistors Installed in Q2	3.4V Single Voltage CPU For P54C, P54CS, P54C-VR, P54CT, AMD-K5(C,F)	JP1: S4: S5: S6:	short short short short
		3.5V Single Voltage CPU For P54C-VRE, AMD-K5(B), Cyrix 6x86	JP1: S4: S5: S6:	open short short short
		3.4V (I/O)/2.8V (core) Dual Voltage CPU For P55C, AMD-K5(H), Cyrix 6x86L	JP1: S4: S5: S6:	short open open open
CPU Speed Selection	For 75MHz Intel Pentium, AMD-K5-PR75 CPU		JP6: JP7: S1: S2: S3:	1-2 short 1-2 short short short open
	For 90MHz Intel Pentium, AMD-K5-PR90 and AMD-K5-PR120 CPU		JP6: JP7: S1: S2: S3:	1-2 short 1-2 short short open open
	For 100MHz Intel Pentium, AMD-K5-PR100, AMD-K5-PR133 and AMD-K5-PR150 CPU		JP6: JP7: S1: S2: S3:	1-2 short 1-2 short open short open
To be continued...				

Table 2A: Jumper Setting

Function		Jumper Settings	
CPU Speed Selection	For 100MHz Cyrix 6x86-P120+ CPU	JP6: JP7: S1: S2: S3:	1-2 short 2-3 short short short open
	For 110MHz Cyrix 6x86-P133+ CPU	JP6: JP7: S1: S2: S3:	1-2 short 2-3 short open open open
	For 120MHz Intel Pentium and Cyrix 6x86-P150+ CPU	JP6: JP7: S1: S2: S3:	1-2 short 2-3 short short open open
	For 133MHz Intel Pentium and Cyrix 6x86-P166+ CPU	JP6: JP7: S1: S2: S3:	1-2 short 2-3 short open short open
	For 150MHz Intel Pentium CPU	JP6: JP7: S1: S2: S3:	2-3 short 2-3 short short open open
	For 150MHz Cyrix 6x86-P200+ CPU (valid only when PLL52C59-14T is used as clock generator on U8)	JP6: JP7: S1: S2: S3:	1-2 short 2-3 short open open short
To be continued...			

Table 2B: Jumper Setting

|	Function	Jumper Setting	
CPU Speed Selection	For 166MHz Intel Pentium and AMD-K5-PR166 CPU	JP6: JP7: S1: S2: S3:	2-3 short 2-3 short open short open
	For 200MHz Intel Pentium CPU	JP6: JP7: S1: S2: S3:	2-3 short 1-2 short open short open
DRAM Voltage Selection	5V SIMM	S7: S8:	1-2 short 1-2 short
	3.3V SIMM	S7: S8:	2-3 short 2-3 short
Clear RTC CMOS Data	Normal	JP5:	open
	Clear	JP5:	short
System ROM Selection	5V Flash EPROM	JP4:	2-3 short
	12V Flash EPROM	JP4:	1-2 short

Table 2C: Jumper Setting

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. 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 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
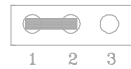
Pins 1 and 2 are shorted with a jumper cap.

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 speed setting
Black: Other
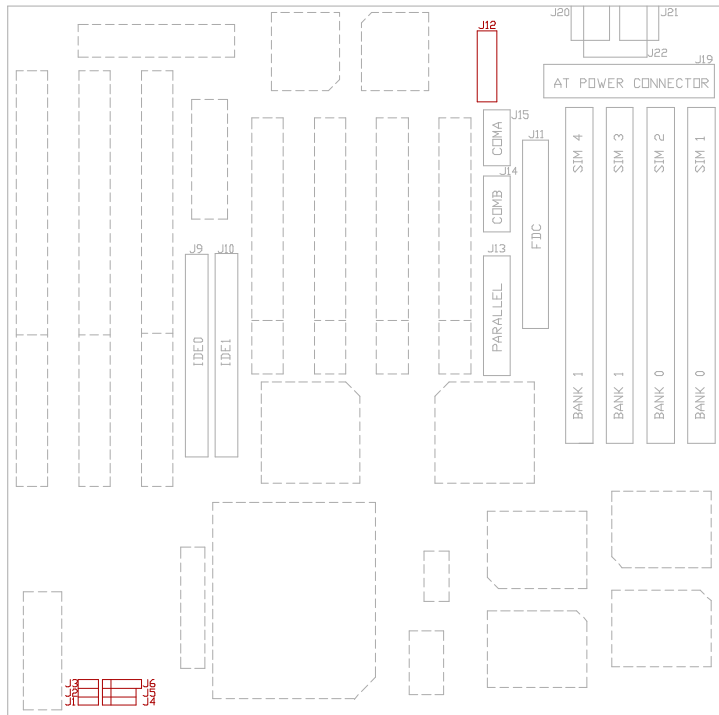
3.3.3   CONNECTOR LOCATIONS

Fig. 3 Connector Location

3.4   CONNECTORS

3.4.1   J1 - RESET SWITCH CONNECTOR

Attach the Reset switch cable to this connector. The Reset switch restarts the system.

J1	Description
	Reset
	Normal (default)

3.4.2   J2 - SMI SWITCH

J2 is for SMI Break Switch Setting. When J2 is triggered from OPEN to CLOSE and back to OPEN, the system would suspend immediately.

3.4.3   J3 - SUSPEND LED CONNECTOR

J3 is usually connected to a LED on front of the system case. If the system board select is in Suspend mode, the LED will be off.

+ Anode
− Cathode

3.4.4   J4 - SPEAKER CONNECTOR

J4 is a four pins connector, which is used to connect with the system speaker.

```
1  ( )  Data  Out
   ( )  VCC
   ( )  Data  Out
   ( )  VCC
```
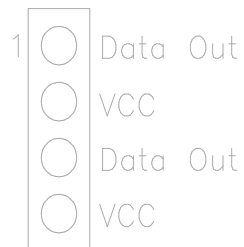
3.4.5   J5 - HDD LED CONNECTOR

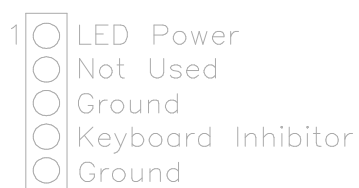J5 is usually connected to a HDD LED on front of the system case. If the HDD is in operation, the indicator lights during operation.

```
1  ( )  +Anode
   ( )  −Cathode
   ( )  −Cathode
   ( )  GND
```
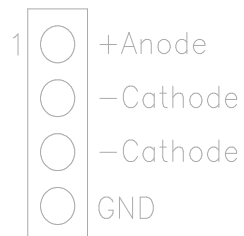
3.4.6   J6 - KEYLOCK CONNECTOR

J6 is a keylock connector that enables and disables the keyboard.

```
1 ◯ LED  Power
  ◯ Not  Used
  ◯ Ground
  ◯ Keyboard  Inhibitor
  ◯ Ground
```

3.4.7   J9 - PRIMARY IDE CONNECTOR

The bootable Hard Disk must connect to this Primary IDE Connector. It is located in between the PCI Slot and the ISA Slot. Please refer to Fig. 3 for its location.

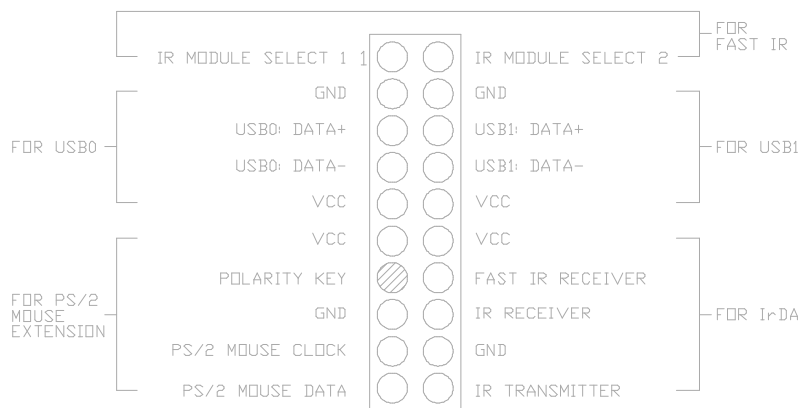### 3.4.8   J10 - SECONDARY IDE CONNECTOR

J10 locates right to J9, the primary IDE connector. Please refer to Fig. 3 for its location.
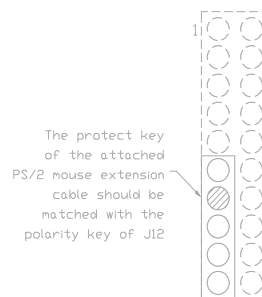
3.4.9   J11 - FLOPPY DRIVE CONTROLLER

J11 locates in between the PCI Slot and the SIMM socket. Please refer to Fig. 3 for its location. This Floppy drive controller also supports 2.88M FDD format.

3.4.10 J12 - USB0, USB1, PS/2 MOUSE EXTENSION, IrDA AND FAST IR CONNECTOR

J12 is a 2x10 pin header for USB0, USB1, PS/2 mouse extension, IrDA and Fast IR connector, and it is also designed as the connector for the optional USB extension card.

```
                                                              FOR
                                                              FAST IR
    IR MODULE SELECT 1  1 ( ) ( )  IR MODULE SELECT 2
                 GND      ( ) ( )  GND
           USB0: DATA+    ( ) ( )  USB1: DATA+
    FOR USB0                                                  FOR USB1
           USB0: DATA-    ( ) ( )  USB1: DATA-
                 VCC      ( ) ( )  VCC

                 VCC      ( ) ( )  VCC
          POLARITY KEY    (///) ( )  FAST IR RECEIVER
    FOR PS/2         GND  ( ) ( )  IR RECEIVER           FOR IrDA
    MOUSE
    EXTENSION
        PS/2 MOUSE CLOCK  ( ) ( )  GND
         PS/2 MOUSE DATA  ( ) ( )  IR TRANSMITTER
```

The attached PS/2 mouse extension cable is installed as follows:

```
                              1 ( ) ( )
                                ( ) ( )
                                ( ) ( )
                                ( ) ( )
                                ( ) ( )
          The protect key
          of the attached
    PS/2 mouse extension        ( ) ( )
         cable should be       (///) ( )
         matched with the       ( ) ( )
       polarity key of J12      ( ) ( )
                                ( ) ( )
```

3.4.11 J13 - PARALLEL PORT

J13 is under J14, please refer to Fig. 3 for its location. Pin 1 is on the up left hand side.

3.4.12 J14 - SERIAL PORT 2

J14 is under J15, please refer to Fig. 3 for its location. Pin 1 is on the up left hand side.

3.4.13 J15 - SERIAL PORT 1

Both COMA and B are 16550 fast UART compatible. J15 is located in between the PCI Slot and the SIMM socket, please refer to Fig. 3 for its location. Pin 1 is on the up left hand side.

3.4.14 J19 - 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.

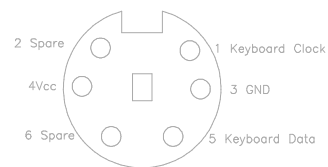| Pin	Description
1	Power Good (Orange)
2	+5 VDC (Red)
3	+12 VDC (Yellow)
4	-12 VDC (Blue)
5	Ground (Black)
6	Ground (Black)
7	Ground (Black)
8	Ground (Black)
9	-5 VDC (White)
10	+5 VDC (Red)
11	+5 VDC (Red)
12	+5 VDC (Red)

3.4.15 J20 - OPTIONAL PS/2 MOUSE CONNECTOR

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

```
2 Spare                    1 Mouse Clock

4Vcc                       3 GND

6 Spare                    5 Mouse Data
```
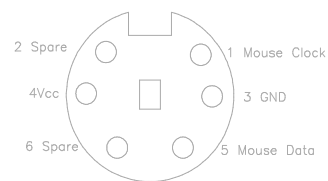
3.4.16 J21 - OPTIONAL PS/2 KEYBOARD CONNECTOR

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

```
2 Spare                    1 Keyboard Clock

4Vcc                       3 GND

6 Spare                    5 Keyboard Data
```

3.4.17 J22 - KEYBOARD CONNECTOR

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

Spare 3   1 Keyboard Clock

+5 VDC 5   4 Ground

Keyboard Data 2
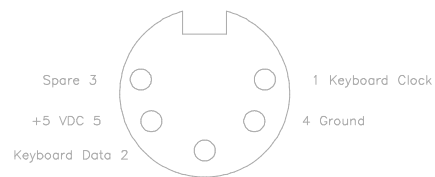
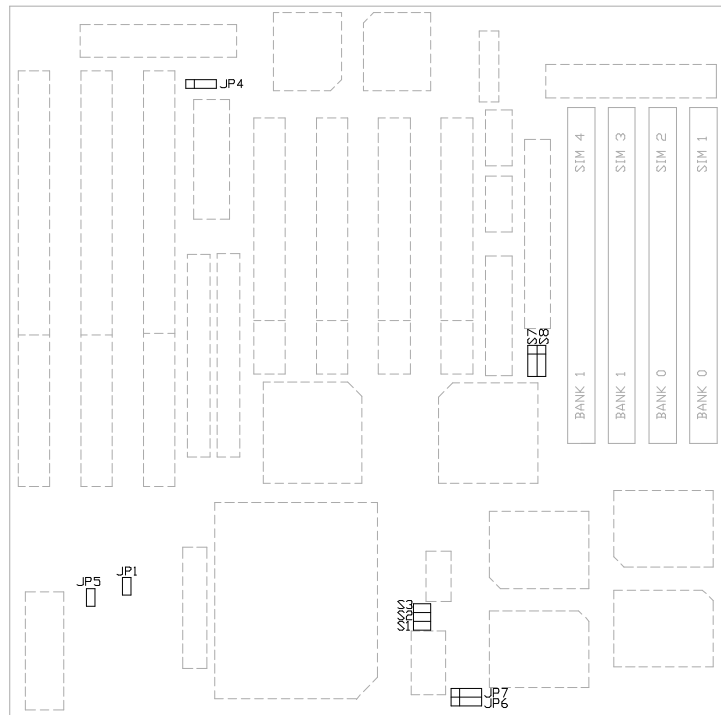## 3.5   GRAPHICAL DESCRIPTIONS OF JUMPER SETTINGS

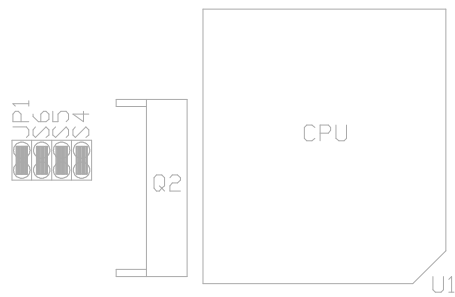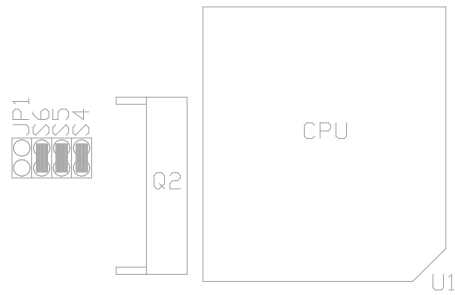**Fig. 4 Jumper Location**

3.5.1 CPU VOLTAGE SELECTION FOR 2 TRANSISTORS INSTALLED IN Q2
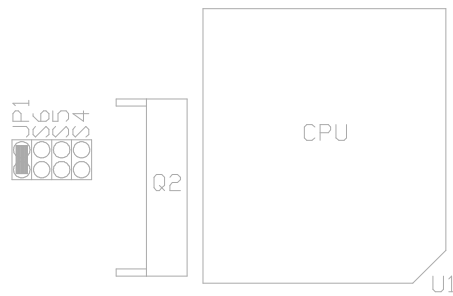
1. For 3.4V Single Voltage CPU: P54C, P54CS, P54C-VR, P54CT, AMD-K5(C,F)

2. For 3.5V Single Voltage CPU: P54C-VRE, AMD-K5(B), Cyrix 6x86

3.   For 3.4V (I/O)/2.8V (core) Dual Voltage CPU: P55C, AMD-K5(H),
        Cyrix 6x86L

3.5.2   CPU SPEED

1.   For 75MHz Intel Pentium, AMD-K5-PR75 CPU
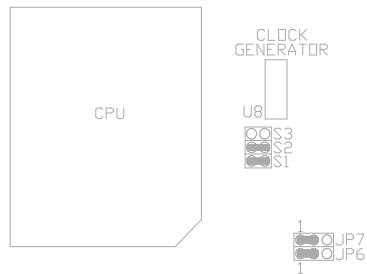
2.   For 90MHz Intel Pentium, AMD-K5-PR90 and AMD-K5-PR120 CPU

```
                          CLOCK
                         GENERATOR

         CPU             U8

                         □□S3
                         □□S2
                         ■■S1


                    1
                         ■■□JP7
                         ■■□JP6
                    1
```

3.   For 100MHz Intel Pentium, AMD-K5-PR100, AMD-K5-PR133 and
            AMD-K5-PR150 CPU

```
                          CLOCK
                         GENERATOR

         CPU             U8

                         □□S3
                         ■■S2
                         □□S1


                    1
                         ■■□JP7
                         ■■□JP6
                    1
```
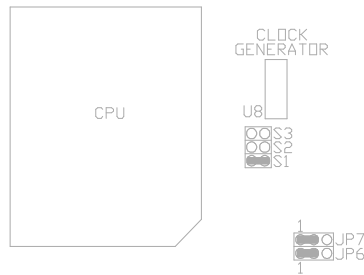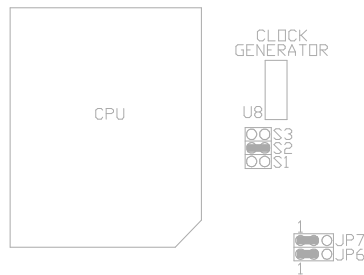
4.   For 100MHz Cyrix 6x86-P120+ CPU
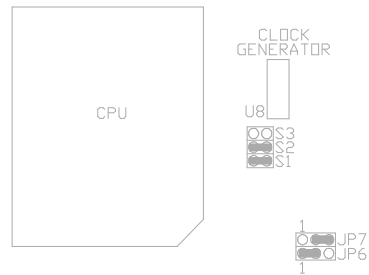
5.   For 110MHz Cyrix 6x86-P133+ CPU
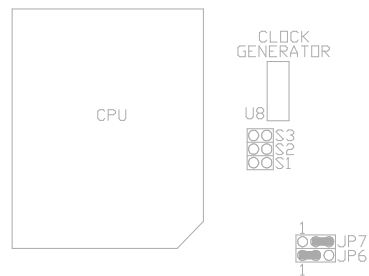
6.   For 120MHz Intel Pentium and Cyrix 6x86-P150+ CPU

```
                          CLOCK
                        GENERATOR

        CPU             U8
                          S3
                          S2
                          S1


                              1
                               JP7
                               JP6
                              1
```

7.   For 133MHz Intel Pentium and Cyrix 6x86-P166+ CPU

```
                          CLOCK
                        GENERATOR

        CPU             U8
                          S3
                          S2
                          S1


                              1
                               JP7
                               JP6
                              1
```
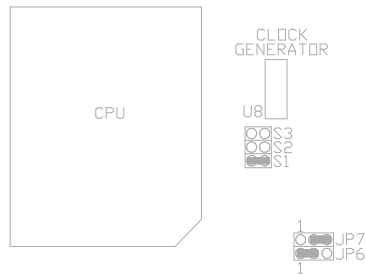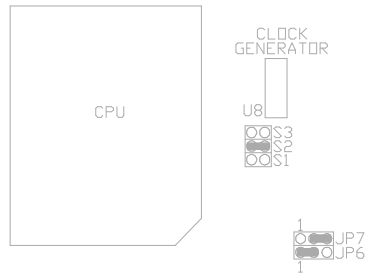
8.   For 150MHz Intel Pentium CPU
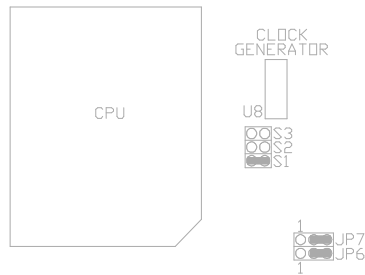
9.   For 150MHz Cyrix 6x86-P200+ CPU (It is valid only if **PLL52C59-14T** is used as clock generator on U8).
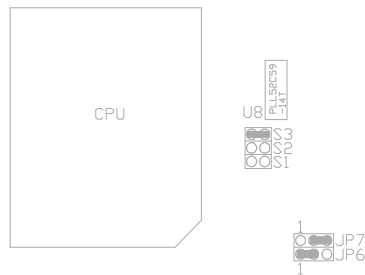
10.   For 166MHz Intel Pentium and AMD-K5-PR166 CPU

```
                CLOCK
              GENERATOR

  CPU        U8

              ☐☐ S3
              ▬ S2
              ☐☐ S1


                 1
                ☐▬ JP7
                ☐▬ JP6
                 1
```

11.   For 200MHz Intel Pentium CPU

```
                CLOCK
              GENERATOR

  CPU        U8

              ☐☐ S3
              ▬ S2
              ☐☐ S1


                 1
                ▬☐ JP7
                ▬☐ JP6
                 1
```
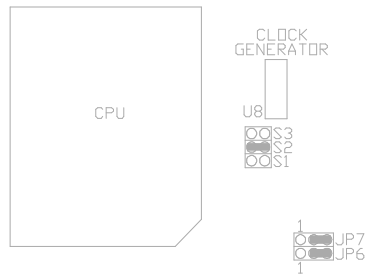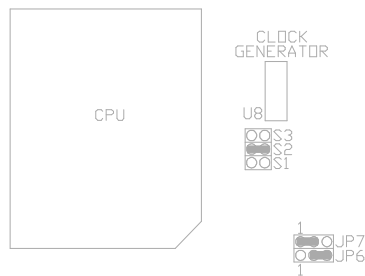
3.5.3   S7, S8 - DRAM VOLTAGE SELECTION

1.   5V SIMM is selected
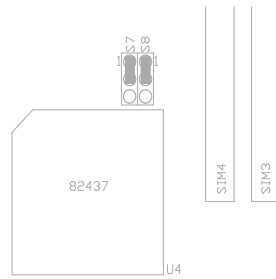
2.   3.3V SIMM is selected
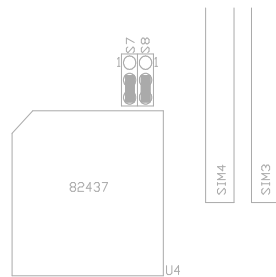
3.5.4   JP5 - DISCHARGE CMOS RAM

JP5 is used to clear the content of the CMOS Data in the Real Time Clock Chip.

1.   Normal Mode
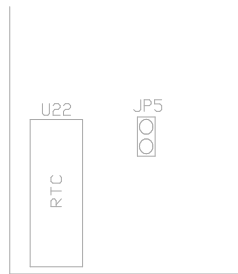
2.   Reset Content of RTC
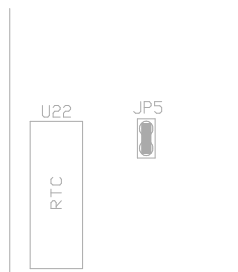
Procedures to clear the content on the RTC:
For VT82885N installed on U22: Power Off $\rightarrow$ Clear CMOS $\rightarrow$ Power On
For DS12887A installed on U22: Power Off $\rightarrow$ Clear CMOS $\rightarrow$ Power On
For DS12B887 installed on U22: Power On $\rightarrow$ Clear CMOS $\rightarrow$ H/W Reset
For M48T86   installed on U22: Power On $\rightarrow$ Clear CMOS $\rightarrow$ H/W Reset

3.5.5   JP4 - VOLTAGE SELECT FOR SYSTEM ROM

1.   5V Flash EPROM as system ROM
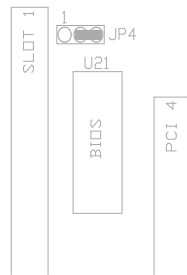
2.   12V Flash EPROM as system ROM
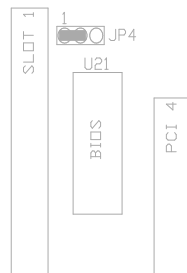
CHAPTER 4   AWARD BIOS SETUP GUIDE

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.

4.1   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 <DEL> key to enter the AWARD BIOS setup program and the following screen appears:

```
              ROM PCI/ISA BIOS (2A59GG39)
                  CMOS SETUP UTILITY
                 AWARD SOFTWARE, INC.
┌─────────────────────────────────────────────────────────────┐
│                                                             │
│  STANDARD CMOS SETUP          INTEGRATED PERIPHERALS        │
│                                                             │
│  BIOS FEATURES SETUP          SUPERVISOR PASSWORD           │
│                                                             │
│  CHIPSET FEATURES SETUP       USER PASSWORD                 │
│                                                             │
│  POWER MANAGEMENT SETUP       IDE HDD AUTO DETECTION        │
│                                                             │
│  PNP/PCI CONFIGURATION        HDD LOW LEVEL FORMAT          │
│                                                             │
│  LOAD SETUP DEFAULTS          SAVE & EXIT SETUP             │
│                                                             │
│                               EXIT WITHOUT SAVING          │
├─────────────────────────────────────────────────────────────┤
│  Esc : Quit                                  ↑ ↓ →          │
│                             ← : Select Item                 │
│  F10 : Save & Exit Setup            (Shift)F2 : Change      │
│                             Color                           │
├─────────────────────────────────────────────────────────────┤
│                                                             │
│              Time, Data, Hard Disk Type...                 │
│                                                             │
└─────────────────────────────────────────────────────────────┘
```

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.

4.2   STANDARD CMOS SETUP

ROM PCI/ISA BIOS (2A59GG39)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

```
Date (mm:dd:yy) : Thu, Jan 31 1991
Time (hh:mm:ss) : 15 : 23 : 15

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   --------
Secondary Master : None      0    0    0      0       0      0   --------
Secondary Slave  : None      0    0    0      0       0      0   --------


Drive A : 1.44M , 3.5in.                        Base Memory:        640K
Drive B : None                             Extended Memory:       7168K
                                              Other Memory:         384K
Video   : EGA/VGA
Halt On : All Errors                           Total Memory:       8192K


Esc : Quit          ↑↓→← : Select Item          PU/PD/+/- : Modify
F1  : Help          (Shift)F2 : Change Color
```

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

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

Hard Disks

Choose from the standard hare disk types 1 to 45. Type 47 is user definable. Type Auto is for auto detect the hard disk type.

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

4.3   BIOS FEATURES SETUP

ROM PCI/ISA BIOS (2A59GG39)
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		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250	ESC: Quit ↑↓→ ←: Select Item	
Security Option	: Setup	F1: Help PU/PD/+/-: Modify	
PCI/VGA Palette Snoop	: Disabled	F5: Old Values (Shift)F2: Color	
Assign IRQ for VGA	: Disabled	F7: Load Setup Defaults	
OS Select For DRAM > 64MB	: Non-OS2		

BIOS Setup Defaults

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.

Assign IRQ for VGA: Select Disabled or Enabled. Disable this option will make the system BIOS not assign IRQ for the VGA card, so one more IRQ can be spare for another device.

OS Select For DRAM > 64MB: Select Disabled or Enabled. If the system memory is larger than 64MB and running OS/2, please enable this item. However, if it use other operating system, please disable this feature. Furthermore, if the system memory is less than 64MB, the BIOS will ignore this function.

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

C8000-CFFFF Shadow: If enabled and BIOS is present in this segment, then the BIOS is shadowed.

D0000-DFFFF Shadow: If enabled and BIOS is present in this segment, then the BIOS is shadowed.

4.4 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.

ROM PCI/ISA BIOS (2A59GG39)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

```
Auto Configuration          : Enabled
DRAM Timing                 : 70 ns
DRAM Read Burst (EDO/FP)    : x222/x333
DRAM Write Burst Timing     : x222
ISA Bus Clock               : PCICLK/3
System BIOS Cacheable       : Enabled
Video BIOS Cacheable        : Enabled
Memory Hole At 15M-16M      : Disabled
Peer Concurrency            : Enabled

                                          ESC: Quit       ↑↓→ ←: 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: When Auto Configuration is Enabled, BIOS will sets the CPU Clock according to CPU speed. Otherwise, set it manually.

DRAM Timing: Choose 60ns or 70ns according to the DRAM SIMM Module on the motherboard.

DRAM Read Burst (EDO/FP): This sets the timing for burst mode reads from DRAM:

x444/x444	Read EDO and FP DRAM Timings are x-4-4-4.
x333/x444	Read EDO DRAM Timings are x-3-3-3, and FP DRAM's are x-4-4-4.
x222/x333	Read EDO DRAM Timings are x-2-2-2, and FP DRAM's are x-3-3-3.
x322/x333	Read EDO DRAM Timings are x-3-2-2, and FP DRAM's are x-3-3-3.

DRAM Write Burst Timing: This sets the timings for burst write to DRAM:

x444	Write DRAM timings are x-4-4-4
x333	Write DRAM timings are x-3-3-3
x222	Write DRAM timings are x-2-2-2

ISA Bus Clock: It is used to select the bus clock for the ISA bus. The available options are "PCICLK/4" and "PCICLK/3", the suggested setting are:

CPU Clock	ISA Bus Clock
50/55MHz	PCICLK/4
60/66MHz	PCICLK/3

System BIOS Cacheable: Choose Enabled or Disabled. "Enabled" allows system BIOS be cacheable.

Video BIOS Cacheable: Choose Enabled or Disabled. "Enabled" allows Video BIOS to be cacheable.

Memory Hole At 15M-16M: Choose Enabled or Disabled. "Enabled" allows some linear VGA Cards to run larger frame port, or it can be reserved or some operating system.

Peer Concurrency: Choose Enabled or Disabled. To enable this option will let the system active more than one PCI Device at a time.

4.5   POWER MANAGEMENT SETUP MENU

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

ROM PCI/ISA BIOS (2A59GG39)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

```
Power Management     : User Define        **Power Down & Resume Events**
 PM Control by APM   : Yes                               : ON
 Video Off Method    : V/H SYNC+Blank                    : ON
 MODEM Use IRQ       : 3                                 : ON
 Suspend Mode        : Disabled                          : ON
 HDD Power Down      : Disabled                          : ON
                                                         : OFF
                                                         : ON
                                                         : ON
                                                         : ON
                                                         : ON
                                                         : ON
                                                         : ON

                                        ESC: Quit          ↑↓→ ←: Select Item
                                        F1: Help           PU/PD/+/-: Modify
                                        F5: Old Values     (Shift)F2: Color
                                        F7: Load Setup Defaults
```

Note: Change these Settings only if user is familiar with the Chipset and system power management functions.

A short description of the screen items follows:

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

MODEM Use IRQ: Available options are 3, 4, 5, 7, 9, 10, 11 and NA. It is used to choose the interrupt line that the Modem is used. "NA" means not available.

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

HDD Power Down: 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.

IRQ 3 - IRQ15: When it is enabled, the system will monitor the activity of the corresponded system IRQ to turn on or off the power management functions.

4.6   PCI CONFIGURATION SETUP

The PCI Configuration Setup option is used to configure the PCI add-on Cards on PCI Slots. Without proper setup the PCI Add-on Cards might not function properly.

ROM PCI/ISA BIOS (2A59GG39)
PCI CONFIGURATION SETUP
AWARD SOFTWARE, INC.

Resources Controlled By	: Manual	PCI IRQ Actived By	: Level
Reset Configuration Data	: Disabled	PCI IDE IRQ Map To	: PCI-AUTO
		Primary IDE INT#	: A
IRQ-3 assigned to	: Legacy ISA	Secondary IDE INT#	: B
IRQ-4 assigned to	: Legacy ISA		
IRQ-5 assigned to	: PCI/ISA PnP	Used Mem Base Addr.	: N/A
IRQ-7 assigned to	: Legacy ISA		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: Legacy ISA		
IRQ-15 assigned to	: Legacy ISA		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP	ESC: Quit	↑↓→ ←: Select Item
DMA-3 assigned to	: PCI/ISA PnP	F1: Help	PU/PD/+/-: Modify
DMA-5 assigned to	: PCI/ISA PnP	F5: Old Values	(Shift)F2: Color
DMA-6 assigned to	: PCI/ISA PnP	F7: Load Setup Defaults	
DMA-7 assigned to	: PCI/ISA PnP		

Note: Change these Settings only if user is familiar with the Chipset and all the PCI Add-on Cards functions.

A short description of the screen items follows:

Resources Controlled By: Available options are "Manual" and "Auto". If "Auto" is selected, the system BIOS will use the ESCD with the legacy information. If "Manual" is selected, the BIOS will not refer the ESCD for IRQ and DMA information. Instead, it will refer the items in the items in this setup menu for assigning IRQ and DMA.

Reset Configuration Data: If enable this option, the BIOS will clear and reset the ESCD after hardware reset.

IRQ#/DMA# assigned to: These items will be shown only when "Resources Controlled By" option is set the "Manual". The available options are "Legacy ISA: and "PCI/ISA PnP". If the option is set to "Legacy ISA", the BIOS will never assign the specified IRQ/DMA resource to PCI or ISA PnP Devices. If "PCI/ISA PnP" is chosen, the BIOS will make the specified IRQ/DMA have a chance to be assigned to the PCI or ISA PnP devices.

PCI IRQ Active By: Choose Level or Edge. The default settings is Level.

PCI IDE IRQ Map To: Choose PCI-AUTO, PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, ISA. The default setting is PCI-AUTO.

Used Mem Base Addr/Used Mem Length: These items will be shown only when "Resources Controlled By" option is set to "Manual". They are used to reserve the memory space for the memory installed on the ISA card in the specified memory segment (such as some network card). The available options for "User Mem Base Addr" are "N/A", "C800", "CC00", "D000", "D400", "D800" and "DC00", which is used to select the base memory address of the ISA card used. With the "Used Mem Base Addr" is selected, the size of the memory installed on ISA card is chosen by "Used Mem Length": "8K", "16K", "32K" or "64K".

4.7   INTEGRATED PERIPHERALS SETUP MENU

The Integrated Peripherals setup option is need to change the values of the I/O chipset registers for I/O functions.

ROM PCI/ISA BIOS (2A59GG39)
PCI CONFIGURATION SETUP
AWARD SOFTWARE, INC.

```
IDE HDD Block Mode            : Enabled
IDE 32-bit Transfer Mode      : Disabled
IDE Primary Master PIO        : Auto
IDE Primary Slave PIO         : Auto
IDE Secondary Master PIO      : Auto
IDE Secondary Slave PIO       : Auto
On-Chip Primary PCI IDE       : Enabled
On-Chip Secondary PCI IDE     : Enabled
PCI Slot IDE 2nd Channel      : Enabled
USB Controller                : Disabled

Onboard FDD Controller        : Enabled
Onboard Serial Port 1         : Auto
Onboard Serial Port 2         : Auto         ESC: Quit      ↑↓→ ←: Select Item
UART 2 Mode                   : Standard     F1: Help      PU/PD/+/-: Modify
                                             F5: Old Values  (Shift)F2: Color
Onboard Parallel Port         : 378/IRQ7     F6: Load BIOS Defaults
Onboard Parallel Mode         : ECP          F7: Load Setup Defaults
ECP Mode Use DMA              : 3
```

A short description of the screen items follows:

IDE HDD Block Mode: This allows your hard disk controller to use the fast block mode to transfer data to your hard disk drive.

IDE 32-bit Transfer Mode: Enabling 32-bit transfer mode allows faster access to data on the hard disk drive.

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.

Some harddisks cannot work properly with its corresponding timing, please set a slower timing.

On-Chip Primary PCI IDE: This item is used to enable or disable the on board primary IDE controller. User can disable it if higher performance or specialized controller is added to the system.

On-Chip Secondary PCI IDE: This item is used to enable or disable the on board secondary IDE controller. User can disable it if higher performance or specialized controller is added to the system.

PCI Slot IDE 2nd Channel: This item the user design at an IDE controller board inserted on the PCI Slots as your secondary IDE controller.

USB Controller: Choose Enabled or Disabled. "Enabled" allows the on board Universal Serial Bus (USB) Controller to be functioned.

Onboard FDC Controller: Choose Enabled or Disabled. "Enabled" allows onboard Floppy Drive Controller to be functioned, otherwise the users should use other sources.

Onboard Serial Port 1: Choose None, Auto or from COM1, COM3, COM4 with different I/O Address. While choosing proper I/O Address, be sure not to cause Address conflict with other I/O devices.

Onboard Serial Port 2: Choose None, Auto or from COM1, COM2, COM3, COM4 with different I/O Address. While choosing proper I/O Address, be sure not to cause Address conflict with other I/O devices.

UART 2 Mode: Choose Standard, ASKIR and HPSIR for IrDA serial interface.

IR Function Duplex: This item will be shown only when **UART 2 Mode** is selected to ASKIR or HPSIR. The available options are Full and Half. It is used to choose the IR function working in full duplex mode or half duplex mode correspondingly.

RxD, TxD Active: This item will be shown only when **UART 2 Mode** is selected to ASKIR or HPSIR. The available options are "Hi, Hi", "Hi, Lo", "Lo, Hi", "Lo, Lo". It is used to configure the logic level of Receive and Transmit signal in IrDA interface.

Onboard Parallel Port: Choose None or with four different I/O Address and corresponding IRQx. While choosing proper I/O Address, be sure not to cause Address conflict with other I/O devices.

Onboard Parallel Mode: Choose SPP, EPP/SPP, ECP, ECP/EPP Mode. Make proper selection with the attached printer port device.

ECP Mode Use DMA: Choose "1" or "3" to select the DMA channel used for the ECP device. This item is shown if the **Onboard Parallel Mode** is chosen as "ECP" or "ECP/EPP" option.

Parallel Port EPP Type: Choose "EPP1.7" or "EPP1.9", which is used to configure the EPP using either EPP1.7 or 1.9 timing specification. This item is shown if the **Parallel Mode** is chosen as "EPP" or "ECP/EPP" option.

4.8   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:

<div align="center">

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

</div>

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

4.9   SUPERVISOR PASSWORD

Two level of password is supported. Depending on the setting of the "Security Option" in the "BIOS FEATURES SETUP", the system BIOS will ask for password every time booting up the System or entering BIOS Setup. With the supervisor password, both the system booting and BIOS setup changing is allowed.

This main menu item lets the user to set up the Supervisor Password.

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.*

4.10   USER PASSWORD

With the user password, only booting up the system is accepted, but changing the BIOS setup is not allowed.

4.11   IDE HDD AUTO DETECTION

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

4.12   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.

4.13   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)?

4.14   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)?

AMENDMENT FOR
GMB-P56IPS V1 VERSION 3.01/
PAM-0056I E-1 EDITION 3.01
RELEASE 1.00

I.   In order to support 233MHz Intel Pentium; AMD-K6-PR166/PR200/PR233 CPUs and clarify the CPU jumper setting, the jumper setting table in Chapter 2 are modified as follow:

3.2   SETTING THE JUMPERS

Function		Jumper Settings	
CPU Voltage Selection	3.3V Single Voltage CPU For P54C, P54CT	JP1: JP12: JP13: S4: S5: S6:	short open open short short short
	3.5V Single Voltage CPU For P54C-VRE, AMD-K5, Cyrix 6x86	JP1: JP12: JP13: S4: S5: S6:	open open open short short short
	3.3V (I/O)/2.8V (core) Dual Voltage CPU For P55C, Cyrix 6x86L	JP1: JP12: JP13: S4: S5: S6:	short open short open open open
	3.3V (I/O)/2.9V (core) Dual Voltage CPU For AMD-K6-PR166/PR200	JP1: JP12: JP13: S4: S5: S6:	short short open open open open
To be continued...			

Function	Jumper Settings

CPU Voltage Selection	3.3V (I/O)/3.2V (core) Dual Voltage CPU For AMD-K6-PR233	JP1: JP12: JP13: S4: S5: S6:	short open open open open open
CPU Speed Selection	For 100MHz and 233MHz Intel Pentium, AMD-K6-PR233, AMD-K5-PR100 and AMD-K5-PR150 CPU	JP6: JP7: S1: S2: S3:	1-2 short 1-2 short open short open
	For 133MHz Intel Pentium, AMD-K5-PR133 (REV C) and Cyrix 6x86-P166+ CPU	JP6: JP7: S1: S2: S3:	1-2 short 2-3 short open short open
	For 150MHz Cyrix 6x86-P200+ CPU (for future support only)	JP6: JP7: S1: S2: S3:	1-2 short 2-3 short open open short
	For 166MHz Intel Pentium, AMD-K6-PR166 and AMD-K5-PR166 CPU	JP6: JP7: S1: S2: S3:	2-3 short 2-3 short open short open
	For 200MHz Intel Pentium and AMD-K6-PR200 CPU	JP6: JP7: S1: S2: S3:	2-3 short 1-2 short open short open

II.   The corresponding graphical descriptions of jumper settings in Chapter 3 are changed as follows:

3.5.1   CPU VOLTAGE SELECTION
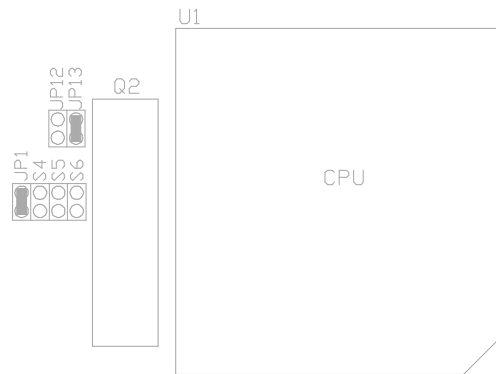
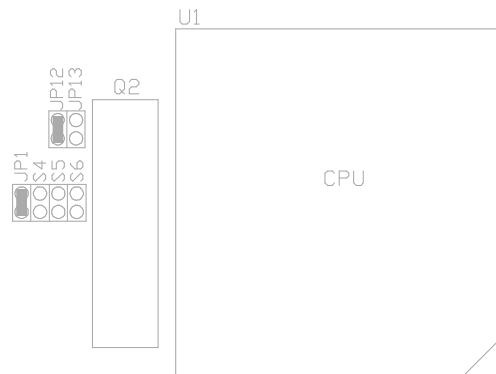1.   For 3.3V Single Voltage CPU: P54C, P54CT
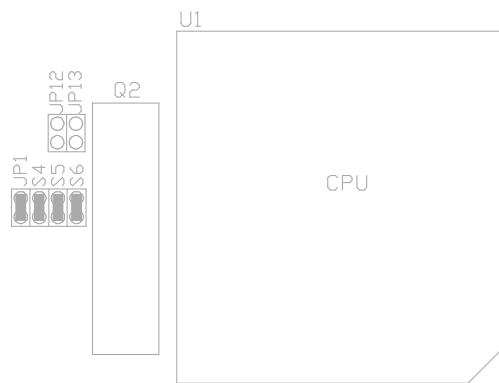
2.   3.5V Single Voltage CPU: P54C-VRE, AMD-K5, Cyrix 6x86
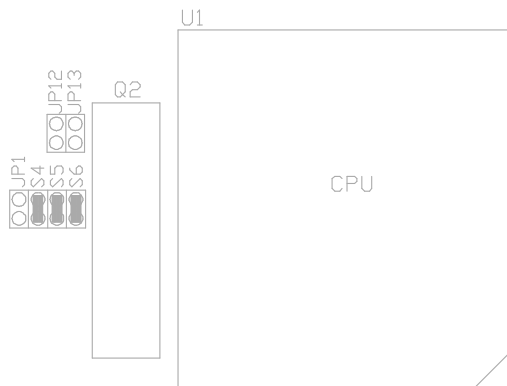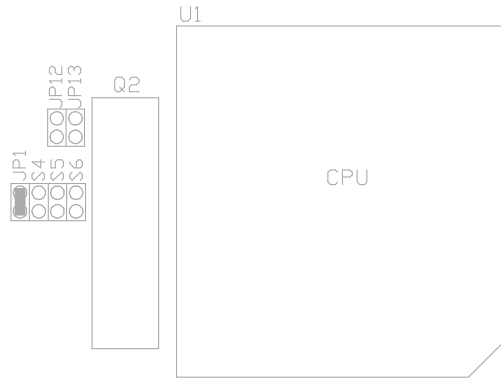
3.   3.3V (I/O)/2.8V (core) Dual Voltage CPU: P55C, Cyrix 6x86L

4.   3.3V (I/O)/2.9V (core) Dual Voltage CPU: AMD-K6-PR166/PR200
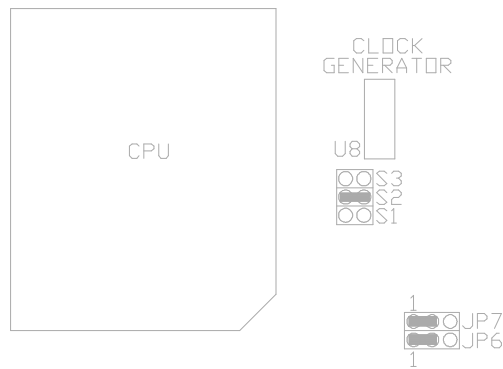
5.   3.3V (I/O)/3.2V (core) Dual Voltage CPU: AMD-K6-PR233
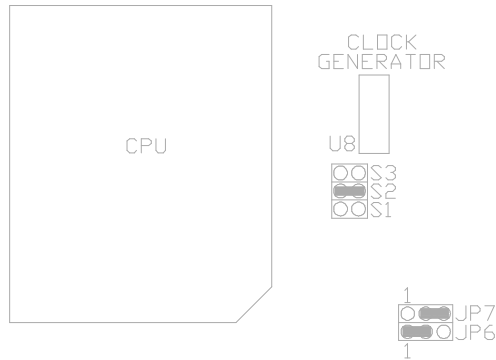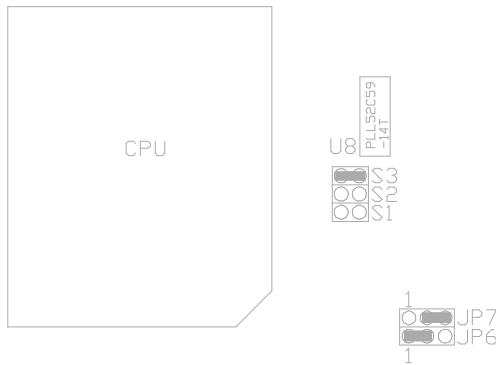

3.5.2   CPU SPEED

3.   For 100MHz and 233MHz Intel Pentium; AMD-K6-PR233,
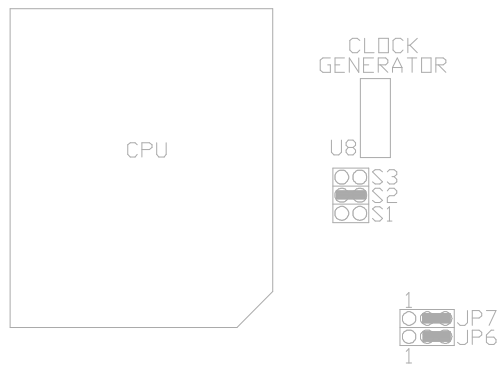   AMD-K5-PR100 and AMD-K5-PR150 CPU

7.   For 133MHz Intel Pentium, AMD-K5-PR133 (REV C) and
        Cyrix 6x86-P166+ CPU

CLOCK
GENERATOR

CPU

U8

S3
S2
S1

1
JP7
JP6
1

9.   For 150MHz Cyrix 6x86-P200 CPU (for future support only)

CPU

U8 PLL52C59
    -14T

S3
S2
S1

1
JP7
JP6
1

10.   For 166MHz Intel Pentium, AMD-K6-PR166 and AMD-K5-PR166 CPU

CPU

CLOCK
GENERATOR

U8

S3
S2
S1

1
JP7
JP6
1

11.   For 200MHz Intel Pentium and AMD-K6-PR200 CPU

CPU

CLOCK
GENERATOR

U8

S3
S2
S1

1
JP7
JP6
1