

EC Declaration of Conformity

We

**Iwill Corp.
No. 9-1, Kong 6th RD.,
Lin Kou 2nd Industrial
Park, Taipei, Taiwan R.O.C.**

declare under sole responsibility that the

P55TV Lite motherboard

**meets the intent of Directive 89/336/ECC for Electromagnetic Compatibility.
Compliance was demonstrated to the following specifications as listed in the
official Journal of the European Communities:**

EN 50081-1 Emissions:

**EN 55022 Radiated, Class B
EN 55022 Conducted, Class B
EN 60555-2 Power Harmonics**

EN 50082-1 Immunity:

**IEC 801-2 Electrostatic Discharge
IEC 801-3 RF Radiat
IEC 801-4 Fast Transient**

About This Manual

This P55TV/TVS Lite EIDE Motherboard is the newest member to our EIDE Motherboard solution products families. It incorporated with Intel 4th generation 430VX Chipset. In order to support fully plug and play Ultra I/O , an Ultra I/O that contain keyboard and real time clock is used for users to enjoy the plug and play function.

Run with faster CPU is very important function that this EIDE Motherboard support. It support both P54C up to 200 MHz* and Intel's next generation P55C processor that support MMX technology.

Run with faster system memory is another plus on this EIDE Motherboard to outperform the whole system performance. It equipe 4 of the 72 pin SIMM that support both fast page and EDO DRAM also with two of the 168 pin DIMM memory socket that support the new synchronous DRAM.

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Warning

This motherboard is carefully designed with Intel® spec. to fully support P54C processor up to 200Mhz and the new P55C. Since Intel® is not shipping the P54C with 200Mhz and the new P55C CPU at the point that we deliver this motherboard so we hold the responsibility on if Intel change any spec. that cause the new processor not function properly in this motherboard.

Contents

Chapter 1- Overview	
1.1 Features	P1
1.2 Specifications	P3
Chapter 2- Quick Installation	P4
Chapter 3- Hardware Installation	
3.1 Preparation and Inspection	P6
3.2 Placement	P8
3.3 CPU group	P11
3.4 Cache Memory	P14
3.5 D-RAM Configuration	P14
3.7 Creative Sound	P17
3.8 IDE Interface	P19
3.9 USB	P19
3.10 Enhanced Multi-IO	P20
3.11 Other	P21
Chapter 4- Award BIOS Setup	P24
4.1 Entering Setup	P28
4.2 Standard CMOS Setup	P31
4.3 BIOS Features Setup	P35
4.4 Chipset Feature Setup	P41
4.5 Power Management Setup	P48
4.6 PNP/PCI Configuration	P51
4.7 Integrated Peripherals	P54
4.8 Load Setup Defaults	P56
4.9 Supervisor/User Password	P56
4.10 IDE HDD Auto Detection	P57
4.11 HDD Low Level Format	P57
4.12 Save & Exit Setup	P57
4.13 Exit Without Saving	P57

CHAPTER 1

Overview

Thank you for purchasing this **P55TV/TVS Lite EIDE Motherboard**. This operation manual will guide you to proper configure and install. It has an overview of the engineer design and feature of this board. Also, this manual provides useful information for your later upgrade or change the configuration. Keep this, for your future need.

1.1 Features

This P55TV/TVS Lite EIDE Motherboard is a powerful combination of performance, quality and innovative design to address the need of today's market. With current Intel P54C, Cyrix 6x86, AMD 5k86 and next generation on Intel P55C with MMX technology supported, 512K external Level 2 Pipelined burst fast Write-Back Cache, 64 bit Burst Bus DRAM, fully plug and play Ultra I/O, this EIDE Motherboard brings exceptional processing power that could only be achieved by Mini-computer. Incorporating the new emerging industrial standard Peripheral Component interconnect (PCI) Local Bus together with the standard 16-bit Industrial Standard Architecture (ISA), this EIDE Motherboard dramatically boots system I/O through for even the most demanding application in today's market.

■ CPU:

CPU socket (socket 7) supports the flexibility of different type of current and future Intel Pentium, AMD (K5) and Cyrix (M1) processor. One easy jumper design, while choosing your CPU speed from 75 to 200MHz.

■ Cache memories:

High performance write back secondary cache. This supports Pipelined Burst Cache 512K on-board to achieve the highest performance.

■ BIOS:

Award BIOS, on-screen "Plug & Play" setup for Enhanced IDE, and Ultra multi-IO. Support **Flash ROM** (This ROM provides better upgrade ability for user to update their BIOS data on the system board, user can down-load newer version BIOS from Internet or diskette file.

■ Expansion slots:

5 X 16-bits **ISA** slots for P55TV, 4 X 16-bits **ISA** slots for P55TVS .

3 X 32-bits **PCI** slots for PCI compatible add-on cards. (**PCI Rev 2.1**)

■ **Memories:**

4 X 72-pin SIMM(Single In Line Memory Module)

2 X 168-pin DIMM(Dual In Line Memory Module) (Rev 1.1)

Support up to **128MB** (minimum of 8MB) on board. for both the Fast Page Mode and Extended Data Output (EDO) module.

■ **Creative Sound (P55TVS Lite only):**

Built in Creative Vibra CD quality stereo sound on board. (CT2505) Wave table option. Reference to Chapter 3.7 for more detail.

■ **IDE functions:**

Built in dual PCI Bus EIDE Channels.

Support ATAPI (AT Attachment Packet Interface)

■ **USB interface (Universal Serial Bus):**

Plug and Play outside the box

Up to 12Mbit

Easy of use

■ **Floppy Interface:**

Support both 3 1/2" and 5 1/4" **floppy disk drives** and **Tape Drive** (360K / 720K / 1.2M / 1.44M / **2.88MB**)

Enabled/Disable selectable from system BIOS

Non-Burst Mode DMA Option, 16 Byte Data FIFO

3 Mode Driver (option)

■ **Serial Port**

Two high speed 16550 UART serial port

IRQ selectable from BIOS.

Address changeable form system BIOS

NS16C550 compatible, Programmable Baud Rate Generator

■ **Parallel Port**

IRQ selectable for IRQ5(278h), IRQ7(378h) from system BIOS.

Standard mode--Compatible with IBM PC/AT Printer port

EPP Mode --Enhanced Parallel Port compatible(EPP) compatible IEEE 1284

ECP Mode --Microsoft & Hewlett Packard Extended Capabilities Port (ECP) Compatible

Incorporates ChiProtect Circuit for protection against damage due to printer power-on

1.2 Specifications

■ **Physical Dimensions:** Length: 330mm / Width: 220mm

■ **Environmental Requirements:**

Temperature 0-55 degrees C (operating or storage)
5% to 95% non-condensing relative humidity

CHAPTER 2

Quick Installation

This EIDE Motherboard is shipped with manufacture preset at :

1. CPU Clock at **100 MHz**
2. **512K Pipeline Burst Cache** on board
3. Printer ECP Mode at **DMA3**
4. Printer at **IRQ7**, Address at **378h**
5. Serial 1 at **IRQ4**, Serial 2 at **IRQ3**
6. PS/2 MOUSE at **IRQ 12**

Reference to the **Chapter 3 & Chapter 4**, if you have devices conflict with the manufacture default.

Step 1. Install CPU and Cooler

Make sure the Clock Frequency is set to the same as the CPU installed. (Choose the CPU speed by one jumper on JP15)

Step 2. Install the memory

Plug at least 2 PCS of 72 pins Micro Edge DRAM modules or at least 1 piece of 168 pins DIMM.

Step 3. Install display controller and connect I/O ports

This system board is designed using **PCI** (Peripheral Component Interconnect) and **ISA** (Industry Standard Architecture) interface controller. This support +5Volt interface slots. All PCI interface controllers must be PCI Rev 2.1 compliant.

Step 4. Connect the power supply

Connect P8 and P9 from power supply output.

Step 5. Power on the system

Turn on the Computer power.

Step 6. Setting up the system

Enter the "**Setup Menu**" screen by press the "**Del**" key while power on or warm reset the system. Always "**LOAD SETUP DEFAULT**" at first and select others necessary that your system require.

Step 7. Save the setup data to the CMOS

Exit the "Setup Menu " screen and then write to CMOS RAM.
And enjoy the high performance system board.

CHAPTER 3

Hardware Installation

3.1 Preparation and Inspection

The P55TV/TVS Lite EIDE Motherboard, like all electronic equipment is static sensitive. Please take the proper precautions when handling this board. You should avoid static up. If possible, You should ground yourself by touching a metal table or your computer frame. Keep the board in its conductive wrapping until it is configured and ready to be installed in your system.

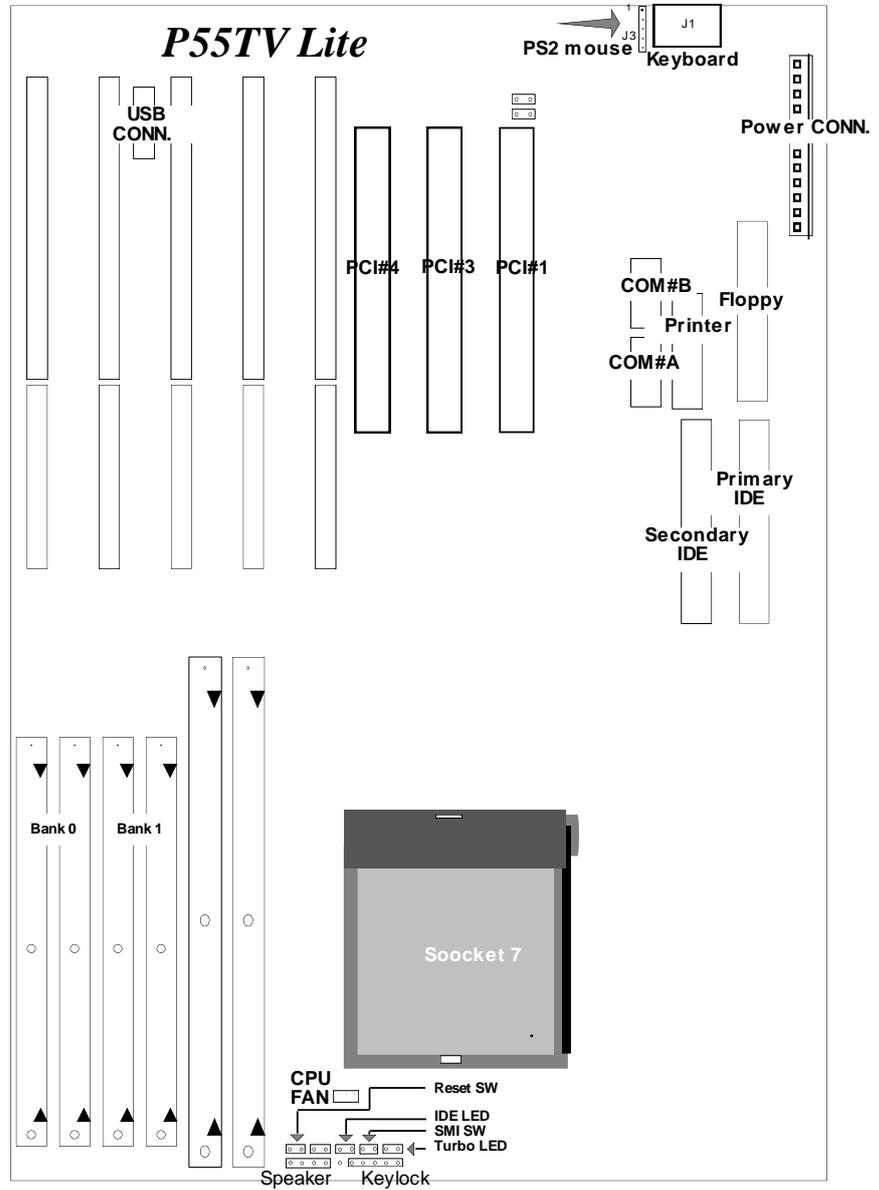
For installation, you may need some or all of the following tools:

- IDE HDD drive/devices and floppy drive manual(s).
- Peripherals that connect to your system's manual(s).
- MS DOS diskettes with FDISK and FORMAT programs.
- Medium size flat blade screwdriver.
- Medium sized Phillips head screwdriver.
- A 3/16 inch nut driver or wrench.

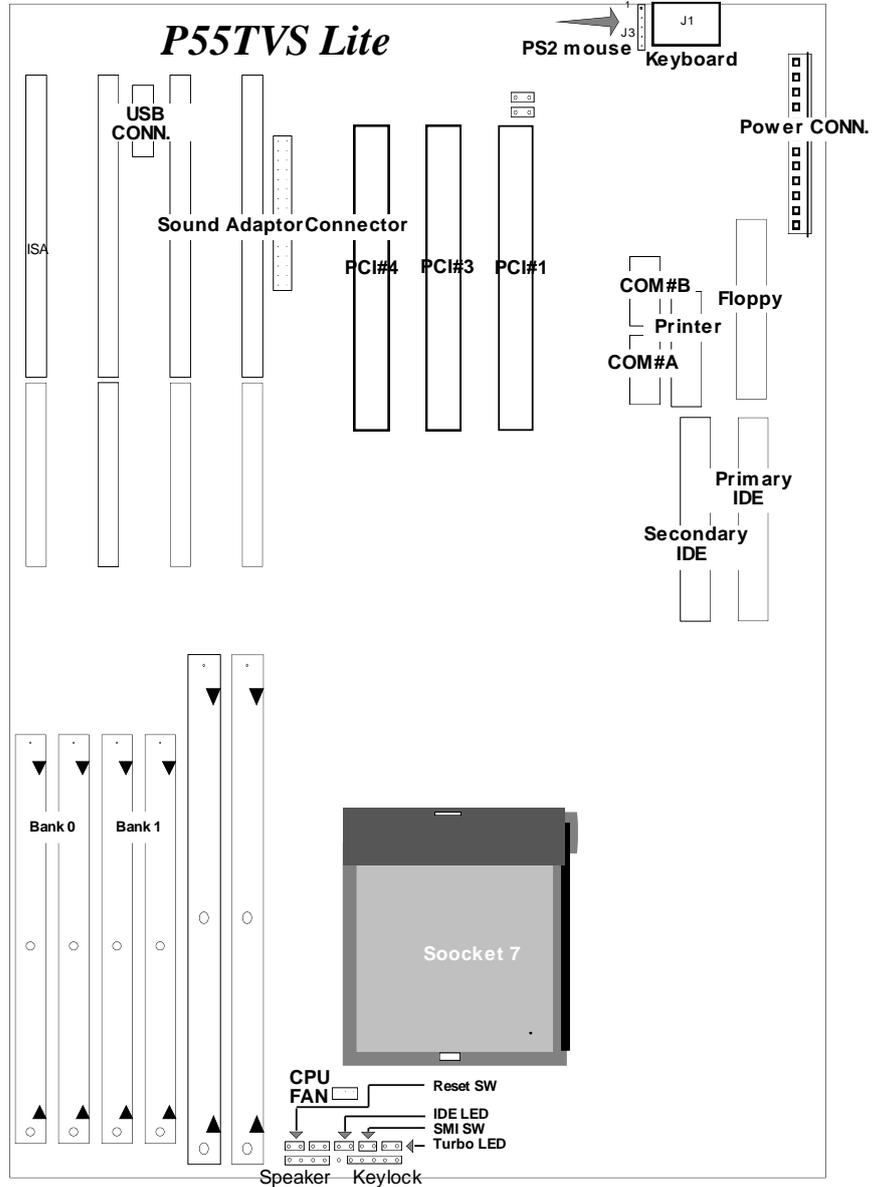
You should find the Following components when open the box :

1. P55TV/TVS Lite EIDE Motherboard.
2. This Operation Manual
3. Sound Input/Output adaptor (P55TVS Lite only).
4. Software driver for Creative Vibra sound. (P55TVS Lite only).
5. 40 pins internal IDE signal cable.
6. 34 pins internal Floppy Disk Drive signal cable.
7. 10 pins IDC flat cable to 9 pins D-Sub male RS-232 connector.
8. 26 pins IDC flat cable to 25 pins D-Sub female printer signal flat cable.
9. 10 pins IDC flat cable to 25 pins D-Sub male RS-232 connector.
10. 1 x 5 pins IDC flat cable to L-frame 5 pins PS-2 mouse port.
11. Musical CPU Cooler (optional).
12. External SCSI-2 port expansion kit (optional).
13. High speed printer port software driver (optional).
14. 3 Mode Driver (optional)

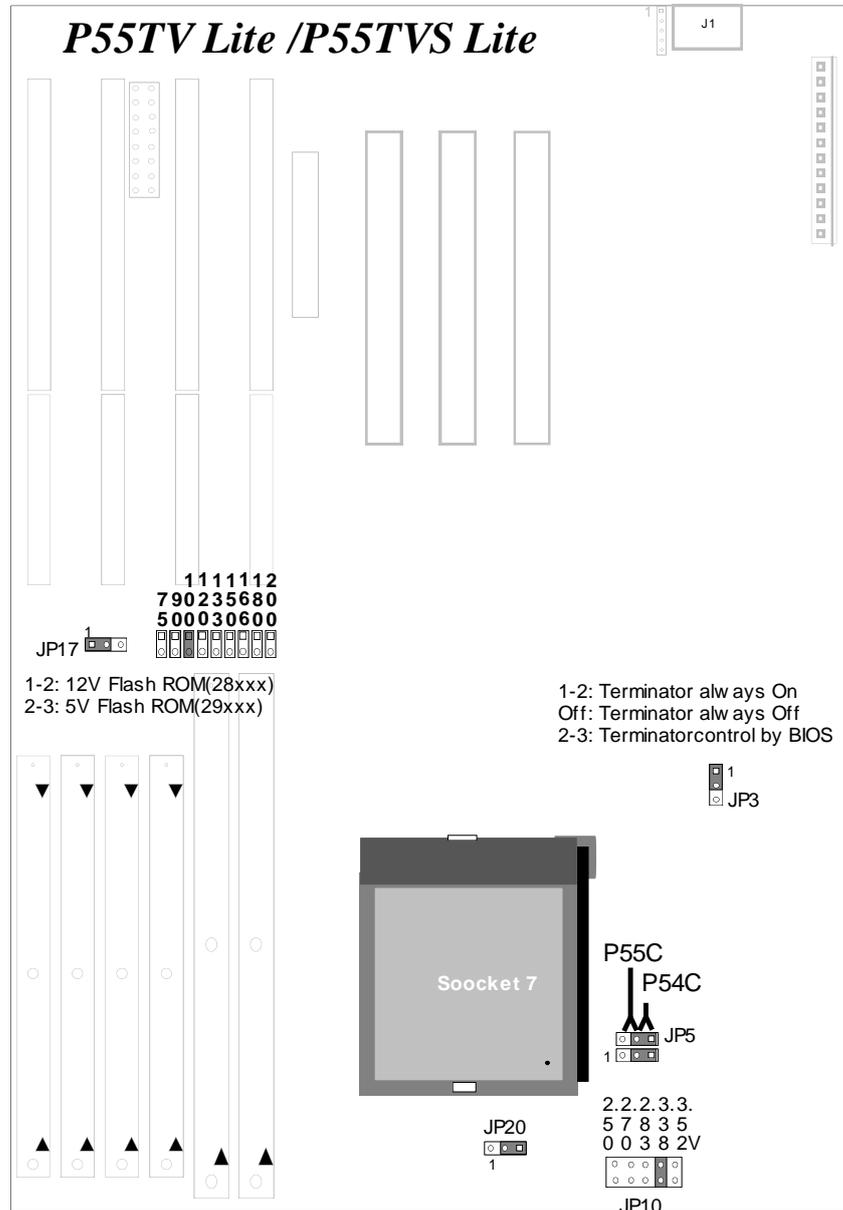
3.2 Placement



Placement & Connector



Placement & Connector

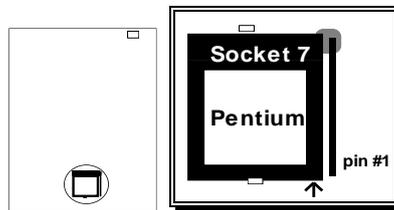


Jumpers

3.3 CPU group

3.3.1 CPU Socket

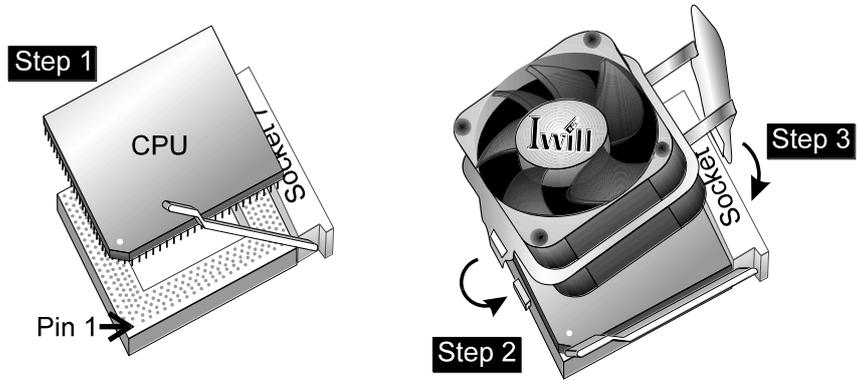
This CPU socket provides flexibility for Intel Pentium , Pentium OverDrive, Pentium future processors, AMD K5(5k86) and Cyrix M1(6x86) processor. When installing the CPU into the Zero Insertion Force (ZIF) socket should be very carefully. Lift the handle of this 321 Pin ZIF socket up carefully and insert the CPU into ZIF socket. And make sure the CPU Pin 1 is with the square base and it goes to particular hole on the ZIF socket. Once you match the hole with Pin 1 then gently insert the CPU and press socket handle down.



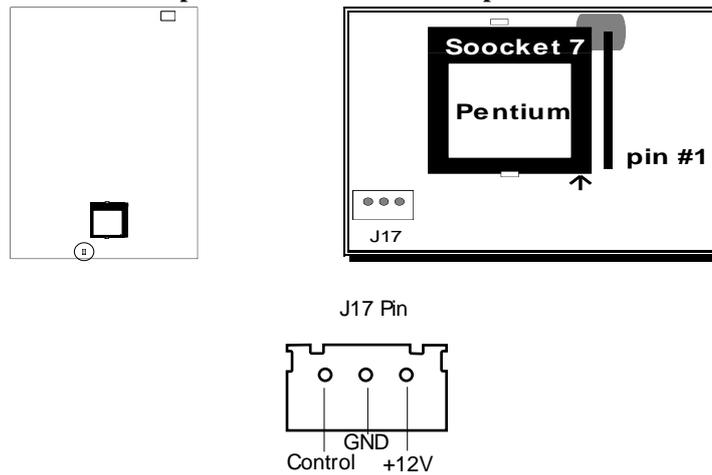
3.3.2 J17 CPU Cooler Fan Power Connector

Warning !!! Warning !!! Warning !!!

CPU Cooler is required to be placed on top of the CPU all the times to prevent CPU over-heat.



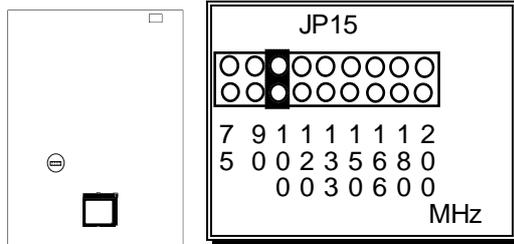
The CPU fan power connector is a 1 x 3 pin.



3.3.3 CPU Clock Select

JP15 is a 2 X 9 pin jumper, with one "colored" jumper cap on it. One and only one jumper cap need to put on this connector for selecting the CPU

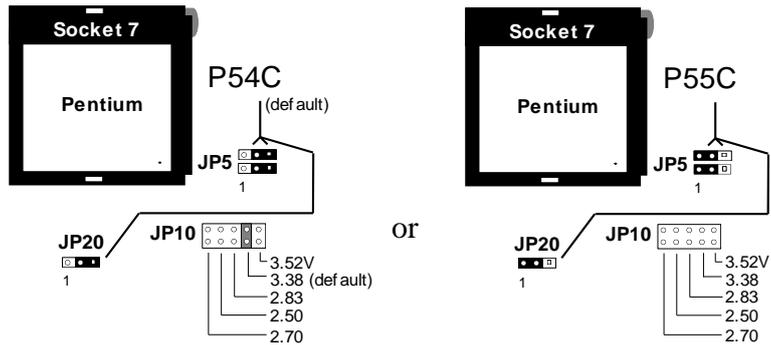
clock. Just put the colored yellow jumper cap to the speed your CPU really is (the CPU internal/external clock ratio and ISA clock will be automatically selected by setup the JP15)



Regarding Cyrix CPU clock setting, please refer to Appendix A for detail.

3.3.4 CPU Voltage Select (JP10)

The default 3.38V is for most CPU that runs 3.3V. Others voltage is reserved for future and other brand CPU use. Check your CPU vendor for more information.



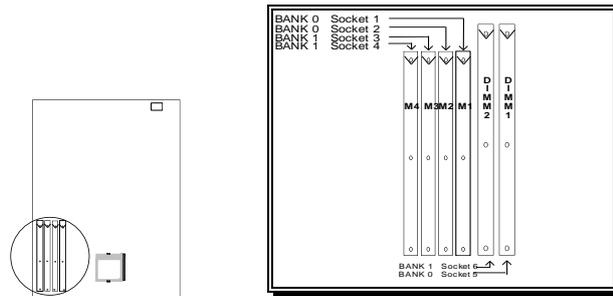
3.3.5 P54C/P55C Select (JP5 & JP20)

CPU	JP5	JP20	Note
P54C/P54CS/P54CT	2-3, 2-3	2-3	*Default
P55C	1-2, 1-2	1-2	

3.4 Cache Memory

The cache memory support for pipelined burst SRAM, this will perform at least 10% faster than traditional asynchronous SRAM. Manufacture default is 512K on-board.

3-5 D-RAM Configuration



The P55TV Lite/TVS Lite supports different type of system memory. No jumper needed for this function or configure. This mainboard separates four pieces of 72 pins SIMM(Single In Line Memory Module) into two banks, and also two pieces 168 pins DIMM(Dual In Line Memory Module) into two banks, they use the same address. This means the Bank 0 and Bank 1 only can recognize either two pieces of 72 pins SIMM or one pieces of 168 pins DIMM on each bank.

- NOTE:**
1. P55TV Lite/TVS Lite support both Fast Page DRAM or EDO DRAM SIMM/DIMMs also the ECC are supported, but they cannot be mixed within the same memory bank.
 2. They are the same in Bank 0 or Bank 1. Socket 1,2 and socket 5 are using the same memory block (Bank 0). They can not install in the same time. Socket 3,4 and socket 6 are using the same memory block (Bank 1).
 3. The 70 ns Fast Page Mode or 60 ns EDO DRAM is recommended.
 4. DIMM specification: 3.3V/ Unbuffered
 5. This motherboard supports 4 Clock for each DIMM Socket



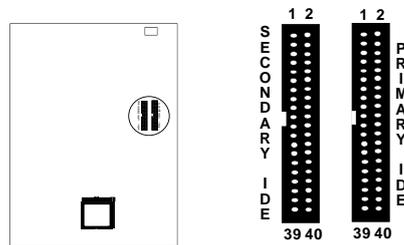
Make sure the DIMM module is 3.3V/ Unbuffered and support the Intel Pentium processor while you insert into the DIMM socket.

Note: End user should not populate both 5V SIMM modules & 3.3V DIMM modules at the same time.

3.6 IDE Interface

3.6.1 Primary, Secondary IDE Connectors

Primary / Secondary IDE are 40 pins internal IDE port connectors. Use a 40 pins flat cable to connect between this connector and the IDE devices. Normally put the boot-up hard disk at the primary IDE channel and other IDE devices at the secondary IDE channel (like CD-ROM). Each IDE connector can connect for two IDE devices and do not forget to set the first IDE device to "Master" and second IDE device to "Slave" when you connect two IDE devices in one connector.



3.6.2 IDE LED

A 2 pins LED connector.

Pin	Assignment
1	LED anode (+)
2	LED cathode (-)

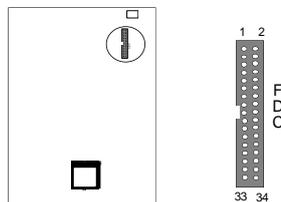
3.7 USB (Unversal Serial Bus)

J11 is a 2 x 8 pin connector, this feature is reserved for future USB use.

3.8 Enhanced Multi-IO

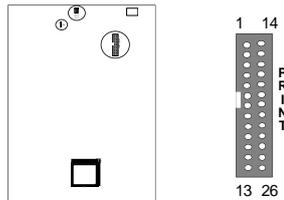
3.8.1 J3 FDC Connector

J3 is a 34 pins internal Floppy port connector. Use 34 pins flat cable to connect between this connector and floppy drives.



3.8.2 J8 Printer Connector

J8 is a 26 pins connector for parallel port. Use a 26 pin IDC flat cable to convert internal port to a standard 25 pin external D-Sub connector.



Following selection is all controlled by the BIOS:

**ECP Mode DMA Channel Select by BIOS
printer Port Address and IRQ Select by BIOS
(378h/3BC with IRQ7, 278h with IRQ5.)**

Printer and IEEE 1284 cable

The IEEE 1284 compliant cables have better features on the following:

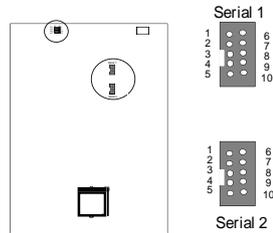
- Twisted pairs of conductors
- Full foil shield
- Wire braid
- Controlled impedance -- 62 ohm
- Limited cross-walk

With these features will guarantee the IEEE 1284 cable perform at much higher bandwidth rates that the fast Centronics, EPP and ECP modes perform at.

If you are using the ordinary parallel cables running at the EPP or ECP mode that this controller provided, you may experience that the data efforts.

3.8.3 J9/J10 Serial Port & IRQ Select

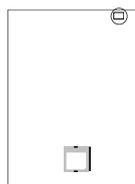
J9/J10 are 10 pins internal Serial 1/Serial 2 port connector. This system board provides two flat cable to convert internal Serial ports to a standard 9 and 25 pins external RS-232 port.



3.9 Others

3.9.1 Keyboard Connector

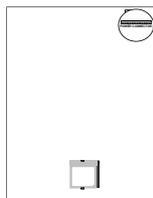
The keyboard connector is a 5-pin, circular-type DIN socket. It is used to connect the system board keyboard interface to any standard AT-compatible keyboard (84 or 101key type keyboards). The pin assignment are as follows:



Pin	Assignment
1	Keyboard clock
2	Keyboard data
3	n/c
4	Ground
5	VCC

3.9.2 Power Supply Connector

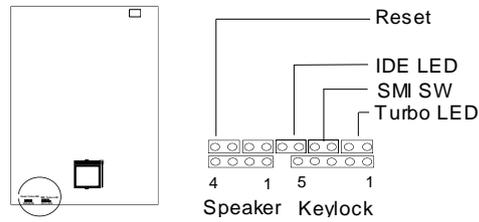
The power supply connector is 12-pin AT standard power connectors. They are used to connect power lines and power good signal from the power supply's P8 and P9 headers to the system board. The pin assignments for P8 and P9 are indicated below:



Pin	P8 Description	Pin	P9 Description
1	Power Good	7	Ground
2	+5VDC	8	Ground
3	+12VDC	9	-5VDC
4	-12VDC	10	+5VDC
5	Ground	11	+5VDC
6	Ground	12	+5VDC

3.9.3 Keylock, Speaker Turbo Switch, Turbo LED SMI Switch Connectors

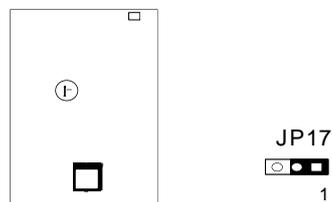
Note: This motherboard does not support both the “Keylock” & “Turbo” function. The Turbo LED will active as power indicator.



	Function
Reset Switch	On = Reset , Off = Normal
IDE LED	Anode , Cathode
SMI Switch	On = SMI , Off = Normal
Turbo LED	Anode , Cathode
Speaker	Sound Signal,NC,NC,+5V
Keylock	Anode,NC,Cathode, Keyboard Inhibit, Gnd

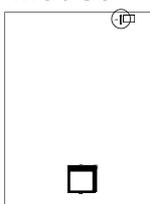
3.9.4 Flash EPROM Jumper Setting

Supports flash EPROM (ROM data can be changed on-board, without change/replace the ROM chip) are supported.



JP17	EPROM type	Note
1-2	12V Flash EPROM support (28xxx)	
2-3	5V Flash EPROM support (29xxx)	*Default

3.9.5 PS/2 Mouse



- 1
- Mouse data(Red)
 - Mouse clock(Blue)
 - Ground(green)
 - NC
 - Mouse VCC(Yellow)

J5 is a 5 pin connector, connect this port by a 1 x 5 IDC flat cable to a L-frame mini-din PS/2 mouse connector.

CHAPTER 4

Award BIOS Setup

Notice

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Introduction

This section discusses Award's Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

The Award BIOS installed in your computer system ROM (Read Only Memory) is a custom version of an industry standard BIOS. This means that it supports Intel/ Cyrix/ AMD processors in a standard IBM-AT compatible input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.

The Award BIOS has been customized by adding important, but non-standard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

The rest of this manual is intended to guide you through the process of configuring your system using Setup.

Starting Setup

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

While the BIOS is in control, the Setup program can be activated in one of two ways:

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

Press DEL to enter SETUP.

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

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved

F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

Getting Help

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

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the Award BIOS supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

A Final Note About Setup

Not all systems have the same Setup. While the basic look and function of the Setup program remains the same for all systems, individual motherboard and chipset combinations require custom configurations. For example, you may find that your Setup main menu has a different number of entries from the main menu displayed in this manual. These are simply features not supported (or not user configurable) on your system.

The final appearance of the Setup program also depends on the Original Equipment Manufacturer (OEM) who built your system. If your OEM has decided that certain items should only be available to their technicians, those items may very well be removed from the Setup program.

4.1 Main Menu

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

ROM PCI/ISA BIOS (2A59GI39)

CMOS SETUP UTILITY

AWARD SOFTWARE, INC.

STANDARD CMOS	PASSWORD SETTING
BIOS FEATURES SETUP	IDE HDD AUTO DETECTION
CHIPSET FEATURES SETUP	HDD LOW LEVEL FORMAT
POWER MANAGEMENT SETUP	SAVE & EXIT SETUP
PNP/ PCI CONFIGURATION SETUP	EXIT WITHOUT SAVING
INTEGRATED PERIPHERALS	
LOAD SETUP DEFAULTS	
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Time, Date, Hard Disk Type...	

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Setup

This setup page includes all the items in a standard, AT-compatible BIOS.

BIOS Features Setup

This setup page includes all the items of Award special enhanced features.

**Setting Password
Setting**

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

**Chipset Features
Setup**

This setup page includes all the items of chipset special features.

**Power
Management
Setup**

This entry only appears if your system supports Power Management, screen PC”, standards.

**PNP / PCI
Configuration
Setup**

This entry appears if your system supports PNP / PCI.

**Integrated
Peripherals**

This section page includes all the items of IDE hard drive and Programmed Input / Output features.

**Load Setup
Defaults**

The chipset defaults are settings which provide for maximum system performance. While Award has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet their needs.

IDE HDD Auto

Detection

Automatically detect and configure hard disk parameters. The Award BIOS includes this ability in the event you are uncertain of your hard disk parameters.

**HDD Low Level
Format**

If supported by your system, this provides a hard disk low level format utility.

Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Save

Abandon all CMOS value changes and exit setup.

4.2 Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

ROM PCI/ISA BIOS (2A59GI39)

STANDARD CMOS SETUP

AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Fri, Apr 7 1995									
Time(hh:mm:ss) : 00:00:00									
<u>HARD DISKS</u>	<u>TYPE</u>	<u>SIZE</u>	<u>CYLS</u>	<u>HEAD</u>	<u>PRECOMP</u>	<u>LANDE</u>	<u>SECTOR</u>	<u>MODE</u>	
Primary Master	: Auto	0	0	0	0	0	0	Auto	
Primary Slave	: Auto	0	0	0	0	0	0	Auto	
Secondary Master	: Auto	0	0	0	0	0	0	Auto	
Secondary Slave	: Auto	0	0	0	0	0	0	Auto	
Drive A : 1.44M , 3.5in.						Base Memory : 640K			
Drive B : None						Extended Memory : 15360K			
Video : EGA / VGA						Other Memory : 384K			
Halt On : All Errors						Total Memory : 16384K			
ESC : Quit			↑↓→← : Select Item			PU / PD / + / - : Modify			
F1 : Help			(Shift) F2 : Change Color						

Date

The date format is <day>, <date> <month> <year>. Press <F3> to show the calendar.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
date	The date, from 1 to 31 (or the maximum allowed in the month)
month	The month, Jan through Dec.
year	The year, from 1900 through 2099

Time

The time format is <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

Daylight saving

The category adds one hour to the clock when daylight-saving time begins. It also subtracts one hour when standard time returns.

Enabled	Enable daylight-saving
Disabled	Disable daylight-saving

Primary Master/

Primary Slave/

Secondary Master/

Secondary Slave

The categories identify the types of 2 channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type user is user-definable.

Press PgUp or PgDn to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type "User" to define your own drive type manually.

If you select Type "User", you will need to know the information listed below. Enter the information directly from the keyboard and press <Enter>. This information should be included in the documentation from your hard disk vendor or the system manufacturer.

If the controller of HDD interface is ESDI, the selection shall be "Type 1".

If the controller of HDD interface is SCSI, the selection shall be "None".

If you select Type "Auto", BIOS will Auto-Detect the HDD & CD-ROM Drive at the POST stage and showing the IDE for HDD & CD-ROM Drive.

TYPE	drive type
CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precom
LANDZONE	landing zone
SECTORS	number of sectors
MODE	mode type

Drive A Type /

Drive B Type

If a hard disk has not been installed Select NONE and press <Enter>.

The category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

None	No floppy drive installed
360K, 5.25 in	5-1/4 inch PC-type standard drive; 360 kilobyte capacity
1.2M, 5.25 in	5-1/4 inch AT-type high-density drive; 1.2 megabyte capacity
720K, 3.5 in	3-1/2 inch double-sided drive; 720 kilobyte capacity
1.44M, 3.5 in	3-1/2 inch double-sided drive; 1.44 megabyte capacity
2.88M, 3.5 in	3-1/2 inch double-sided drive; 2.88 megabyte capacity

Video

The category selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, SVGA or PGA monitor adapters.
CGA 40	Color Graphics Adapter, power up in 40 column mode
CGA 80	Color Graphics Adapter, power up in 80 column mode
MONO	Monochrome adapter, includes high resolution monochrome adapters

Error Halt

The category determines whether the computer will stop if an error is detected during power up.

No errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted.
All errors	The system boot will not be stopped for any error that may be detected.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

Other Memory

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers in an effort to keep as much base memory free for application programs. The BIOS is the most frequent user of this RAM area since this is where it shadows RAM.

4.3 BIOS Features Setup

This section allows you to configure your system for basic operation. You have the opportunity to select the system default speed, boot-up sequence, keyboard operation, shadowing and security.

ROM / PCI ISA BIOS (2A59GI39)

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	: Enabled	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		
Security Option	: Setup		
PCI / VGA Palett Snoop	: Disabled		
OS Select For DRAM > 64MB	: Non-OS2		
		ESC: Quit	↑ ↓ → ←: Select Item
		F1 : Help	PU/PD/+/-: Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Virus Warning

When this item is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive for any attempt at modification. If an attempt is made, the BIOS will halt the system and the following error message will appear. Afterwards, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

! WARNING !
 Disk boot sector is to be modified
 Type "Y" to accept write or "N" to
 abort write
 Award Software, Inc.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

NOTE: *Many disk diagnostic programs which attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you first disable Virus Protection beforehand. CPU Internal Cache/ External Cache*

These two categories speed up memory access. However, it depends on CPU/chipset design. **The default value is enable.**

Enabled	Enable cache
Disabled	Disable cache

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST
Disabled	Normal POST

Boot Sequence

This category determines which drive to search first for the disk operating system (i.e., DOS). Default value is A,C.

C,A	System will first search for hard disk drive then floppy disk drive.
A,C	System will first search for floppy disk drive then hard disk drive.
CDROM, C, A	System will first search for CDROM drive, then hard disk drive and then floppy disk drive.
C, CDROM, A	System will first search for hard disk drive , then CDROM drive, and then floppy disk drive.

Swap Floppy Drive

This item allows you to determine whether enable the swap floppy drive or not.

The choice: Enabled/Disabled.

Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 760K, 1.2M and 1.44M are all 80 tracks.

Enabled	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

Boot Up NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on.

On	Keypad is number keys
Off	Keypad is arrow keys

Boot Up System Speed

Selects the default system speed -- the normal operating speed at power up.

High	Set the speed to high
Low	Set the speed to low

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 Mbytes. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20.

Normal	keyboard
Fast	chipset

Typematic Rate Setting

This determines if the typematic rate is to be used. When disabled, continually holding down a key on your keyboard will generate only one instance. In other words, the BIOS will only report that the key is down. When the typematic rate is enabled, the BIOS will report as before, but it will then wait a moment, and, if the key is still down, it will begin the report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys.

Enabled	Enable typematic rate
Disabled	Disable typematic rate

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, this selection allows you select the rate at which the keys are accelerated.

6	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

Typematic Delay (Msec)

When the typematic rate is enabled, this selection allows you to select the delay between when the key was first depressed and when the acceleration begins.

250	250 msec
500	500 msec
750	750 msec

1000	1000 msec
------	-----------

Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

OS Select for DRAM > 64

This item allows you to access the memory that over

64MB in OS/2.

The choice: Non-OS2, OS2.

PCI / VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not.

Enabled	When PCI/VGA working with MPEG ISA/VESA VGA Card.
Disabled	When PCI/VGA not working with MPEG ISA/VESA VGA Card.

Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

Enabled	Video shadow is enabled
Disabled	Video shadow is disabled

C8000 - CBFFF
DC000 - DFFFF

These categories determine whether option ROMs will be copied to RAM. An example of such option ROM would be support of on-board SCSI.

Enabled	Optional shadow is enabled
Disabled	Optional shadow is disabled

4.4 Chipset Features Setup

ROM PCI / ISA BIOS (2A59GI39)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Disabled	
DRAM Timing	: 60s	
DRAM RAS# Precharge Time	: 4	
DRAM R/W Leadoff Timing	: 7/6	
Fast RAS# To CAS# Delay	: 3	
DRAM Read Burst <EDO/FPM>	: x333/x444	
DRAM Read Burst Timing	: x444	
Turbo Read Leadoff	: Enabled	
DRAM Speculative Leadoff	: Disabled	
Turn-Around Insertion	: Disabled	
ISA Clock	: PCI CLK/3	
System BIOS Cacheable	: Disabled	
Video BIOS Cacheable	: Enabled	
8 Bit I/O Recovery Time	: 1	
16Bit I/O Recovery Time	: 1	
Memory Hole At 15M-16M	: Disabled	
Peer Concurrency	: Disabled	
		ESC: Quit ↑ ↓ → ←: Select Item
		F1 : Help PU/PD/+/- : Modify
		F5 : Old Values (Shift) F2 : Color

	F6 : Load BIOS Defaults F7 : Load Setup Defaults
--	---

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.

DRAM Settings

The first chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timings have been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

Auto Configuration

Pre-defined values for DRAM, cache.. timing according to CPU type & system clock.

The Choice: Enabled, Disabled.

Note: When this item is enabled, the pre-defined items will become SHOW-ONLY.

DRAM Timing

The DRAM timing is controlled by the DRAM Timing Registers. The timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

60ns	DRAM Timing Type.
70ns	DRAM Timing Type.

DRAM RAS# Precharge Time

P55TV^{Lite}/TVS^{Lite}

DRAM must continually be refreshed or it will lose its data. Normally, DRAM is refreshed entirely as the result of a single request. This option allows you to determine the number of CPU clocks allocated for the **Row Address Strobe** to accumulate its charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and data lost.

3	Three clocks.
4	Four clocks.

Four clocks is the default.

DRAM R/W Leadoff Timing

This sets the number of CPU clocks allowed before reads and writes to DRAM are performed.

7/6	Seven clocks leadoff for reads and six clocks leadoff for writes.
6/5	Six clocks leadoff for reads and five clocks leadoff for writes.

7/6 Leadoff timing is the default.

Fast RAS# to CAS# Delay

When DRAM is refreshed, both rows and columns are addressed separately. This setup item allows you to determine the timing of the transition from Row Address Strobe (RAS) to Column Address Strobe (CAS).

3	Three CPU clock delay.
2	Two CPU clock delay.

3 CPU clocks is the default.

DRAM Read <EDO/FPM>

This sets the timing for burst mode reads from two different DRAM(EDO/FPM). Burst read and write requests are generated by the CPU in four separate parts. The first part provides the location within the DRAM where the read or write is to take place while the remaining three parts provide the actual data. The lower the timing numbers, the faster the system will address memory.

x222/x333	Read DRAM (EDO/FPM) timings are 2-2-2/3-3-3
x333/x444	Read DRAM (EDO/FPM) timings are 3-3-3/4-4-4

x444/x444	Read DRAM (EDO/FPM) timings are 4-4-4/4-4-4
-----------	---

x222/x333 timings is the default.

DRAM Write Burst Timing

This sets the timing for burst mode writes from DRAM. Burst read and write requests are generated by the CPU in four separate parts. The first part provides the location within the DRAM where the read or write is to take place while the remaining three parts provide the actual data. The lower the timing numbers, the faster the system will address memory.

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

x222 timings is the default.

Turbo Read Leadoff

The turbo read leadoff may be required in certain system designs to support layouts or faster memories.

DRAM Speculative Leadoff

Disabled is the default.

The 430HX chipset is capable of allowing a DRAM read request to be generated slightly before the address has been fully decoded. This can reduce all read latencies.

More simply, the CPU will issue a read request and included with this request is the place (address) in memory where the desired data is to be found. This request is received by the DRAM controller. When the speculative Leadoff' is enabled, the controller will issue the read command slightly before it has finished determining the address.

Disabled is the default.

**Turn-Around
Insertion**

When this is enabled, the chipset will insert one extra clock to the turn-around of back-to-back DRAM cycles.

Disabled is the default.

ISA Clock

This item allows you to select the PCI clock type.

PCI CLK/3	PCI clock type
PCI CLK/4	PCI clock type

Cache Features

**System BIOS
Cacheable**

When enabled, accesses to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled.

Enabled	BIOS access cached
Disabled	BIOS access not cached

Disabled is the default.

**Video BIOS
Cacheable**

As with caching the System BIOS above, enabling the Video BIOS cache will cause access to video BIOS addressed at C0000H to C7FFFH to be cached, if the cache controller is also enabled.

Enabled	Video BIOS access cached
Disabled	Video BIOS access not cached

Disabled is the default.

PCI and IDE Configuration

8 Bit I/O Recovery Time

The recovery time is the length of time, measured in CPU clocks, which the system will delay after the completion of an input/output request. This delay takes place because the CPU is operating so much faster than the input/output bus that the CPU must be delayed to allow for the completion of the I/O.

This item allows you to determine the recovery time allowed for 8 bit I/O. Choices are from NA, 1 to 8 CPU clocks.

1 clock is the default.

16 Bit I/O Recovery Time

This item allows you to determine the recovery time allowed for 16 bit I/O. Choices are from NA, 1 to 4 CPU clocks.

1 clock is the default.

Memory Hole At 15M-16M

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported.
Disabled	Memory hole not supported.

Disabled is the default.

Peer Concurrency

Peer concurrency means that more than one PCI device can be active at a time.

Enabled	Multiple PCI devices can be active.
Disabled	Only one PCI device can be active at a time.

Enabled is the default.

4.5 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your own style of computer use.

ROM PCI / ISA BIOS (2A59GI39)

POWER MANAGEMENT SETUP

AWARD SOFTWARE, INC.

Power Management	: Disabled	* Power Down & Resume Events *
PM Control by APM	: Yes	IRQ3 (COM 2) : ON
Video Off Method	: V/H SYNC+ Blank	IRQ4 (COM 1) : ON
Modem Use IRQ	: 3	IRQ5 (COM 2) : ON
Doze Mode	: Disabled	IRQ6 (Floppy Disk) : ON
Standby Mode	: Disabled	IRQ7 (LPT 1) : OFF
Suspend Mode	: Disabled	IRQ8 (RTC Alarm) : OFF
HDD Power Down	: Disabled	IRQ9 (IRQ2 Redir) : ON
		IRQ10 (Reserved) : ON
** Wake Up Events In Doze & Standby **		IRQ11 (Reserved) : ON
IRQ3 (Wake - Up Event)	: ON	IRQ12 (PS/2 Mouse) : ON
IRQ4 (Wake - Up Event)	: ON	IRQ13 (Coprocessor) : ON
IRQ8 (Wake - Up Event)	: ON	IRQ14 (Hard Disk) : ON
IRQ12 (Wake - Up Event)	: ON	IRQ15 (Reserved) : ON
		ESC: Quit ↑↓→←: Select Item
		F1 : Help PU/PD/+/- : Modify
		F5 : Old Values (Shift) F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

This category allows you to select the type (or degree) of power saving and is directly related to the following modes:

1. Doze Mode
2. Standby Mode
3. Suspend Mode
4. HDD Power Down

There are four selections for Power Management, three of which have fixed mode settings.

Disable (default)	No power management. Disables all four modes
Min. Power Saving	Minimum power management. Doze Mode = 1 hr. Standby Mode = 1 hr., Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management -- ONLY AVAILABLE FOR SL CPU. Doze Mode = 1 min., Standby Mode = 1 min., Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

PM Control APM

When enabled, an Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU internal clock. If the Max. Power Saving is not enabled, this will be preset to *No*.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

PM Timers

The following four modes are Green PC power saving functions which are only user configurable when *User Defined* Power Management has been selected. See above for available selections.

Doze Mode

When enabled and after the set time of system inactivity, the CPU clock will run at slower speed while all other devices still operate at full speed.

Standby Mode

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

Suspend Mode

When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Power Down & Resume Events

Power Down and Resume events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such a mode. In effect, the system remains alert for anything which occurs to a device which is configured as *On*, even when the system is in a power down mode. The following is a list of IRQ, **I**nterrupt **R**e**Q**uests, which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

As above, the choices are *On* and *Off*. *Off* is the default.

When set *On*, activity will neither prevent the system from going into a power management mode nor awaken it.

- **IRQ3 (COM 2)**
- **IRQ4 (COM 1)**
- **IRQ5 (LPT 2)**
- **IRQ6 (Floppy Disk)**
- **IRQ7 (LPT 1)**
- **IRQ8 (RTC Alarm)**
- **IRQ9 (IRQ2 Redir)**
- **IRQ10 (Reserved)**
- **IRQ11 (Reserved)**
- **IRQ12 (Reserved)**
- **IRQ13 (Coprocessor)**
- **IRQ14 (Hard Disk)**
- **IRQ15 (Reserved)**

4.6 PnP/ PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

ROM PCI / ISA BIOS (2A59GI39)

POWER MANAGEMENT SETUP

AWARD SOFTWARE, INC.

Resources Controlled by	: Manual	PCI IRQ Activated By	: Level
Reset Configuration Date	: Disabled	PCI IDE IRQ Map To	: PCI-AUTO
IRQ-3 assigned to	: PCI/ISA PnP	Primary IDE INT#	: A
IRQ-4 assigned to	: PCI/ISA PnP	Secondary IDE INT#	: B
IRQ-5 assigned to	: PCI/ISA PnP	on board PCI SCSI chip	: Enabled
IRQ-7 assigned to	: PCI/ISA PnP		
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	: PCI/ISA PnP		
IRQ-15 assigned to	: PCI/ISA PnP		
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	F6 : Load BIOS Defaults	
DMA-7 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults	

Resource Controlled by

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows® 95.

Choices are *Auto* and **Manual (default)**.

**Reset
Configuration Data**

This item allows you to determine reset the configuration data or not.

Choices are *Enabled* and *Disabled (default)*.

**IRQ3/4/5/7/9/10/11/
12/14/15,
DMA0/1/3/5/6/7
assigned to**

This item allows you to determine the IRQ / DMA assigned to the ISA bus and is not available to any PCI slot.

Choices are *Legacy ISA* and *PCI/ISA PnP*.

**PCI IRQ Activated
by**

This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system manufacturer.

Choices are *Level (default)* and *Edge*.

PCI IDE IRQ Map

This allows you to configure your system to the type of IDE disk controller in use. By default, Setup assumes that your controller is an ISA (Industry Standard Architecture) device rather than a PCI controller. The more apparent difference is the type of slot being used.

If you have equipped your system with a PCI controller, changing this allows you to specify which slot has the controller and which PCI interrupt (A, B,C or D) is associated with the connected hard drives.

Remember that this setting refers to the hard disk drive itself, rather than individual partitions. Since each IDE controller supports two separate hard drives, you can select the INT# for each. Again, you will note that the primary

has a lower interrupt than the secondary as described in • *lot x Using INT#*” above.

Selecting “*PCI Auto*” allows the system to automatically determine how your IDE disk system is configured.

Award's ROM BIOS provides a built-in Setup program which allows user modify the system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS RAM, so data will be retained even the system power is off. In general, you are not required to change any data. Unless there is a conflict or you re-configuring system, this will need to enter new setup information. Following section describes how to use this program and propriate entries.

The "LOAD SETUP DEFAULT" is recommended in your first time setup this system or you change the system's configuration. You will need "LOAD SETUP DEFAULT" first and re-confirure your system. This will be described in later chapter.

And, it is possible that battery failed which might cause data lose in CMOS RAM, then you need to re-enter the system's CMOS RAM and re-configure to get the suitable parameters.

4.7 Integrated Peripherals

ROM PCI / ISA BIOS (2A59GI39)
INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	
--------------------	-----------	--

IDE Primary Master PIO	: Auto	
IDE Primary Slave PIO	: Auto	
IDE Secondary Master PIO	: Auto	
IDE Secondary Slave PIO	: Auto	
PCI Slot IDE 2nd Channel	: Enabled	
On-Chip Primary PCI IDE	: Enabled	
On-Chip Secondary PCI IDE	: Enabled	
Onboard FDC Controller	: Enabled	
Onboard Serial port 1	: COM1	ESC: Quit ↑↓→←: Select Item
Onboard Serial port 2	: COM2	F1 : Help PU/PD/+/-: Modify
Onboard Parallel port	: 378H	F5 : Old Values (Shift) F2 : Color
Parallel port Mode	: ECP+EPP1.9	F6 : Load BIOS Defaults
ECP mode Use DMA	: 3	F7 : Load Setup Defaults

IDE HDD Block Mode

This allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD).

Enabled	IDE controller uses block mode.
Disabled	IDE controller uses standard mode.

Enabled is the default.

PCI Slot IDE 2nd Channel

This item allows you designate an IDE controller board inserted into one of the physical PCI slots as your secondary IDE controller.

Enabled	External IDE controller designated as the secondary controller
Disabled	No IDE controller occupying a PCI slot.

Disabled is the default.

IDE PIO

IDE hard drive controllers can support up to two separate hard drives. These drives have a master/slave relationship which are determined by the cabling configuration used to attach them to the controller. Your system supports two IDE controllers--a primary and a secondary--so you have to ability to install up to four separate hard disks.

PIO means Programmed Input/ Output. Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS

P55TV^{Lite}/TVS^{Lite}

to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves. This simpler and more efficient (and faster).

Your system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When *Auto* is selected, the BIOS will select the best available mode. This is true for the next four setup items:

1. IDE Primary Master PIO
2. IDE Primary Slave PIO
3. IDE Secondary Master PIO
4. IDE Secondary Slave PIO

**On-Chip Primary
PCI IDE**

As stated above, your system includes two built-in IDE controllers, both of which operate on the PCI bus. This setup item allows you either to enable or disable the primary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

Enabled	Primary HDD controller used -- Default
Disabled	Primary HDD controller not used.

**On-Chip
Secondary PCI IDE**

As above for the Primary controller, this setup item you either to enable or disable the secondary controller. You might choose to disable the controller if you were to add a higher performance or specialized controller.

Enabled	Primary HDD controller used
Disabled	Primary HDD controller not used.

Enabled is the default.

4.8 Load Setup Defaults

The chipset defaults are settings which provide for maximum system performance. While Award has designed the custom BIOS to maximize performance, the manufacturer has the right to change these defaults to meet their needs.

4.9 Supervisor/User Password Setting

You can set either supervisor or user password, or both of them. The differences between are:

supervisor password : can enter and change the options of the setup menus.
user password : just can enter but do not have the right to change the options of the setup menus.

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

4.10 IDE HDD Auto Detection

Automatically detect and configure hard disk parameters. The Award BIOS includes this ability in the event you are uncertain of your hard disk parameters.

4.11 HDD Low Level Format

If supported by your system, this provides a hard disk low level format utility.

4.12 Save & Exit Setup

Save CMOS value changes to CMOS and exit setup.

4.13 Exit Without Saving

Abandon all CMOS value changes and exit setup.

CHAPTER 5

SCSI BIOS Setup

5.1 When to Use the SCSISelect Utility

Use the SCSISelect utility if you need to

- Change any of the default values.
- Check and / or change SCSI device settings that may conflict with those of other devices (e.g., SCSI ID).
- Perform low - level formatting on new SCSI disk devices.

Running the SCSISelect Utility

You will see a banner similar to the one shown in below when you turn on or reboot your computer. The BIOS banner lists the model number and SCSI ID of each SCSI device connected to the host adapter.

```

Adaptec AIC-7860 BIOS vx.xx
(c) 1954 Adaptec, Inc. All Rights Reserved.

<<< Press <Ctrl><A> for SCSISelect (TM) Utility! >>>

SCSI ID #0 - MAXTOR      P1-17S          -Drive C: (80h)
SCSI ID #2 - QUANTUM    P40S-94-40-04xx -Drive D: (81h)
SCSI ID #3 - Toshiba    CD_ROM: XX3355
SCSI ID #4 - ARCHIVE    VIPER 150 21247

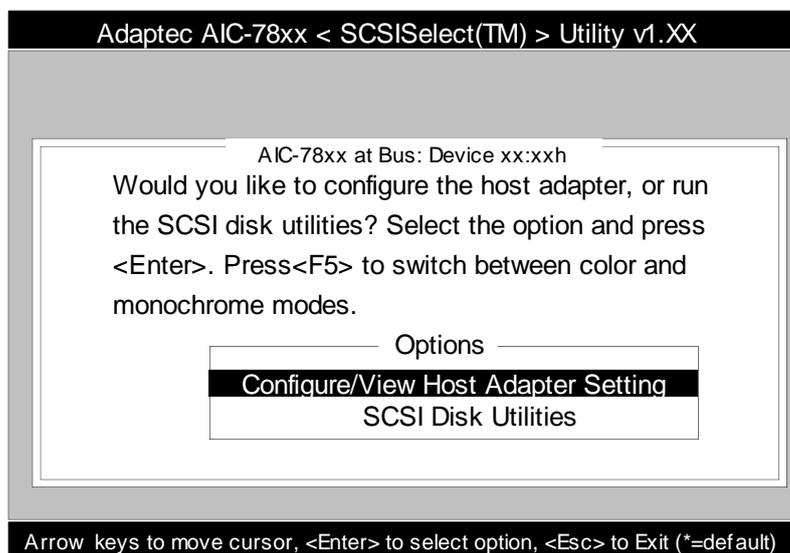
BIOS Installed Successfully!
    
```

To start SCSI Select, press **Ctrl + A** when the BIOS banner first appears on the screen.

Note: If you only connect a non-bootable device, this BIOS can not be installed.

5.2 SCSI Select Utility Options

After you press Ctrl + A then it will displays the Options menu as below.

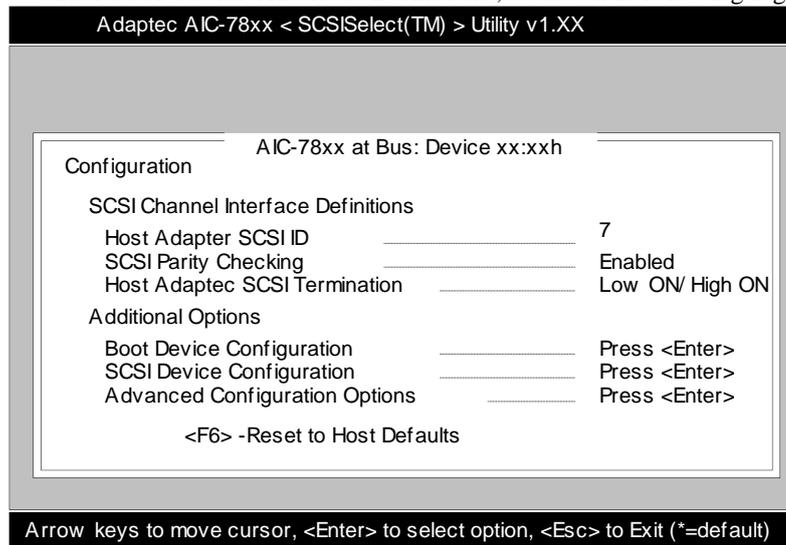


Use the Up and Down keys and the **Enter** key to make selections in the SCSI Select utility . Press **Esc** at any time to return to the previous menu .

Note: You can press **F5** to toggle the display between color and monochrome modes . (This feature may not work on some kinds of monitors.)

5.3 Configure/View Host Adapter Settings

The Configure / View Host Adapter Settings menu lists three settings under SCSI Channel Interface Definitions, as shown in following Figure.



Use the cursor (Up, Down) to move to your selection. Press **Enter** to display a pop-up menu of choices or to make selections . Press **Esc** at any time to return to the previous menu.

Note : Press F6 to reset all settings to the host adapter defaults. Host adapter default settings are marked with an asterisk (*) throughout the selection submenus.

5.3.1 Host Adapter SCSI ID

This option allows you to change the host adapter SCSI ID. There are 8 available IDs for the P54TV. The default is ID 7, which has the highest priority on the SCSI bus. (We recommend that you not to change this setting).

Each SCSI device on the SCSI bus, including the host adapter, must be set to a unique SCSI ID.

The SCSI ID serves two purposes : it uniquely identifies each SCSI device on the bus, and it determines the device's priority on the bus during the Arbitration phase. The Arbitration phase determines which device controls the bus when two or more devices request use of it .

Use the cursor (↑ ↓) and Enter keys to select the SCSI ID, if you need to change it . Press Esc at any time to return to the previous menu.

When selecting the host adapter SCSI ID, consider the following:

- .. If you install more than one SCSI host adapter in the computer, each board has its own SCSI bus. This means devices can have duplicate SCSI IDs, as long as they are not on the same SCSI bus (e.g. each SCSI bus can have a device with SCSI ID 0 , ets.).
- .. If you plan to connect two host adapters in two different computers to the same SCSI bus so they can share SCSI devices (see Appendix C, Multiple Computer Configuration), set the host adapters to different SCSI IDs . IDs 6 and 7 are preferable , since they have the highest priority on the SCSI bus.

5.3.2 SCSI Parity Checking

Select this option to enable or disable SCSI Parity Checking on the host adapter. **The default setting is Enable.**

The host adapter always checks parity when reading from the SCSI bus to verify the correct transmission from your SCSI devices . You should disable SCSI Parity Checking if any attached SCSI devices do not support SCSI parity . (Most currently available SCSI devices do support SCSI parity.)

Use the cursor (↑ ↓) and **Enter** keys to make selections . Press **Esc** at any time to return to the previous menu.

5.3.3 Host Adapter SCSI Termination

This option allows you to configure host adapter SCSI termination.. The default setting for the is **Enabled**.

Use the cursor (↑ ↓) and **Enter** keys to make your selection .

The Termination is determined by which of the SCSI connectors on the board have devices attached to them . The possible P54TV termination settings are as follows:

Host Adapter Termination	Devices Are Attached to
Enabled	Internal connector only
Enabled	External connector only
Disabled	Internal and external connectors

5.3.4 Boot Device Configuration

This option allows you to choose which SCSI ID device has the Boot right for system O.S.

5.3.5 SCSI Device Configuration

This option allows you to configure certain parameters of each SCSI device on the SCSI bus.

Use the cursor keys (↑ ↓) to move between options. Press **Enter** to display a pop-up menu with a selection of values. Use the cursor keys (↑ ↓) to select a value, and press **Enter** to make your selection.

■ **Initiate Sync Negotiation**

This option determines whether the host adapter initiates synchronous negotiation with the SCSI device.

When set to **yes**, the host adapter initiates synchronous negotiation with the SCSI device. When set to **no**, the host adapter does not initiate synchronous negotiation. The host adapter, however, always responds to synchronous negotiation if the SCSI device initiates it. The default setting is **yes**.

Data is transferred in asynchronous mode if neither the on board SCSI nor the SCSI peripheral negotiates for synchronous data transfers.

Note: Some older SCSI-1 devices do not support synchronous negotiation. This may cause your computer to operate erratically or hang if Initiate Sync Negotiation is enabled. Set Initiate Sync Negotiation to **no** for these devices.

■ **Maximum Sync Transfer Rate**

This option determines the maximum synchronous data transfer rate that the host adapter can support. The host adapter supports rates up to the Ultra SCSI maximum of 20.0 MBytes/sec.

■ **Enable Disconnection**

This option determines whether the host adapter allows a SCSI device to disconnect from the SCSI bus (sometimes called Disconnect / Reconnect). Disconnect / Reconnect allows the host adapter to perform other operations on the SCSI bus while the SCSI device is temporarily disconnected.

When set to **yes**, the SCSI device may disconnect from the SCSI bus. The SCSI device, however, may choose not to disconnect, even if permitted by the host adapter (this can usually be configured on the SCSI device).

When set to **no**, the SCSI device is not allowed to disconnect from the SCSI bus. The default setting is **yes**.

You should leave Enable Disconnection set to **yes** if two or more SCSI devices are connected to the on board SCSI port. This optimizes SCSI bus performance. If only one SCSI device is connected to SCSI port, set Enable Disconnection to **no** to achieve slightly better performance.

■ **Send Start Unit Command**

This option, which is supported by some SCSI devices, determines whether the Start Unit Command (SCSI command 1B) is sent to the

SCSI device (most devices do not require this). Enabling this option reduces the load on your computer's power supply by allowing the host adapter to power -up SCSI devices one - at - a-time when you boot your computer. Otherwise , the devices all power -up at the same time . Most devices require you to set a jumper before they can respond to this command .

When set to **yes**, the Start Unit Command is sent to the SCSI device during bootup. When set to **no**, each SCSI device powers -up in its normal fashion. The default setting is **no** .

Note: The Send Start Unit Command setting is valid only if the host adapter BIOS is enabled.

If this option is enabled for more than one SCSI device , the Start Unit Command is sent first to the device with the lowest SCSI ID. When this device responds to the host adapter , the Start Unit Command is sent to the next highest SCSI ID with a setting of **yes**. The process continues until all supported devices responds to the host adapter.

Note : If many drivers are set to **yes** for Send Start Unit Command , the boot time varies depending on how long it takes each drive to spin up.

5.3.6 Advanced Configuration Options

When you select Advanced Configuration Options. Do not change these five options unless absolutely necessary.

Use the cursor keys (↑ ↓) to move between options . Press **Enter** to display a pop-up menu with a selection of options . Use the cursor keys (↑ ↓) to select an options , and press **Enter** to make your selection.

■ Plug & Play SCAM Support

This SCSI port provides the Plug & Play specification, this is different with Microsoft Windows 95's specification.

When the SCAM function is enabled, the devices ID & Termination will be automatically done. Of course, this need both the devices and Host have the SCAM function. Otherwise, keep this function disabled.

The SCAM is a Plug & Play specification

● Host Adapter BIOS

This option enables or disables the on board SCSI BIOS . The default setting is Enabled.

The host adapter BIOS must be enabled if you want the computer to boot from a SCSI hard disk drive connected to the host adapter . Several SCSISelect options cannot be used unless the SCSI BIOS is enabled .

● Support Removable Disk Under BIOS as Fixed Disks

This option allows you to control which removable - media drives are supported by the SCSI BIOS . It is only valid if the SCSI BIOS is

enabled . The default setting is Boot Only. The following choices are available :

- Boot Only** - Only the removable - media drive designated as the boot device are treated as a hard disk drive .
- All Disks** - All removable - media drives supported by the BIOS are treated as hard disk drives.
- Disabled** - No removable - media drives are treated as hard disk drives . In this situation , software drives are needed because the drive are not controlled by the BIOS.

Caution: Support for removable - media drives means only that the host adapter BIOS allows you to use a removable - media drive as if it were a hard disk drive ;it does not mean you can remove the disk media during operation . If a removable - media SCSI device is controlled by the host adapter BIOS , do not remove the media while the drive is powered - on or you may lose data. If you want to be able to remove media while the power is on , install the removable - media device driver and set this option to Disabled.

● **Extended BIOS Translation for DOS Drives > 1 GByte**

This option allows you to enable or disable extended translation for SCSI hard disks with a capacity greater than 1 GByte. It is only valid if the host adapter BIOS is enabled . The default setting is Enabled.

If this option is enabled , the following translation schemes are used:
 SCSI hard disks 1 GByte use a translation schema of 64 heads , 32 sectors per track
 SCSI hard disks 1 GByte use a translation schema of 255 heads , 63 sectors per track

● **Display <Ctrl-A> Message Durig BIOS initialization.**

This option allows you to enable or disable the BIOS prompt for the SCSI utility.

● **Multiple Lun Support**

This option allows you to enable or disable the SCSI Lun support

■ **BIOS Support for Int13 Extensions**

This option allows you to Enabled or Disabled the Int13 Extensions. The SCSI BIOS need to change the Int13h to make the SCSI been recognized by O.S.

■ **Support for Ultra SCSI speed**

Enabled the Ultra SCSI functin by change this option. The maximum Data Transfer Rate of this SCSI Bus is 20MB/Sec. For support this function,

check your SCSI device vendor to make sure your SCSI device support the Ultra function.

- **BIOS Support for More Than 2 Drives**

This option allows you to enable or disable BIOS support for more than two , and up to eight, SCSI hard disk drives . It is only valid if the host adapter BIOS is enabled . This feature is supported by BIOS 5.0 and above . The default setting is Enabled.

5.4 SCSI Disk Utilities

When you select SCSI Disk Utilities from the Options menu the SCSI Select utility scans the SCSI bus and lists all SCSI devices installed on the SCSI bus. You can easily determine from this screen which SCSI ID is assigned to each device on the SCSI bus.

When you highlight a disk drive by moving to it with the cursor keys and press **Enter** , a small menu window appears . You then select **Format Disk** or **Verify Media** from this menu .

Use the cursor keys (↑ ↓) to move between options . Press **Enter** to display a pop-up menu with a selection of values . Use the cursor keys (↑ ↓) to select a value , and press **Enter** to make your selection.

- **Format Disk**

The Format Disk utility performs a low - level format on disk devices . Your fixed disk media must be low-level formatted before you can use your operating system's partitioning and file preparation utilities, such as MS- DOS fdisk and format.

Most SCSI disk devices are pre-formatted and do not need to be formatted again . The Adapter Format Disk utility is compatible with the vast majority of SCSI disk drives .Run it on hard disk drives or removable - media drives that were previously used with a non - Adaptec host adapter.

Caution : A low - level format destroy all data on the drive. Be sure to back up your data before performing this operation. You cannot abort a low - level format once it is started.

- **Verify Disk Media**

The Verify Disk Media utility scans the selected device's media for defects. If the utility finds bad blocks , it prompts you to reassign them ; if you select **yes**, those blocks will no longer be used.

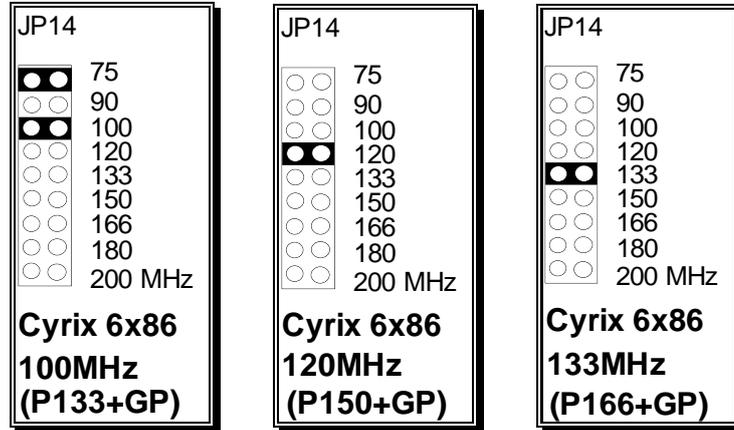
Note: You can press **Esc** at any time to abort the Verity Disk Media utility.

APPEDIX A

CPU Clock for Cyrix 6x86 Processor

The Cyrix 6x86 100/120/133Mhz processor rivals the performance of a Intel Pentium 120/150/166Mhz, so the 120+/150+/166+ will be marked on Cyrix CPU Front Size and the motherboard BIOS will show the same reference on the screen.

The jumper setting for Cyrix 100Mhz, please refer the following diagram.
The jumper setting for Cyrix 120Mhz/133Mhz is the same as Intel's setting.



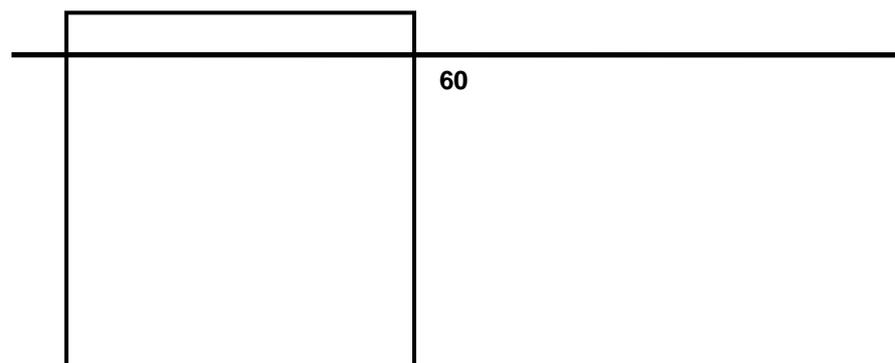
Because of the Cyrix 6x86 Power Consumption is higher than intel Pentium, the temperature of Cyrix CPU and On-board Regulator are hotter than using Intel Pentium.

APPEDIX B

CPU Voltage Selection for Cyrix Processor

The Cyrix also ship their 6x86 Processors at the voltage specification of 3.52 Volts(also knows as the VRE spec.). Ensure that your motherboard voltage jumper setting are set accordingly.

Example: Cyrix 6x86 family of processors



(cyrix logo here)

6x86-P166+GP ———— Cyrix CPU Ordering Number

133Mhz ———— Internal CPU Frequency

028 ———— Operating Voltage:

Blank = 3.3V±5% , 6x86 fullspec.

016 = 3.3V±5% , 6x86 Cspec 016

028 = 3.52V±5% , 6x86 C spec 028

3.52V (028) = 3.52V with new Marking

Note: For Dual supply devices. knows as M2, M3 project. please contact with your Local Cyrix sales offices for advanced information.

APPEDIX C

CPU Voltage Selection for AMD Processor

The members of the AMD5K86 family of processors will be designated by a P-rating as part of their product name. The first members of the AMD5K86 family are based on the SSA/5 core, as indicated in the Part Number listed below.

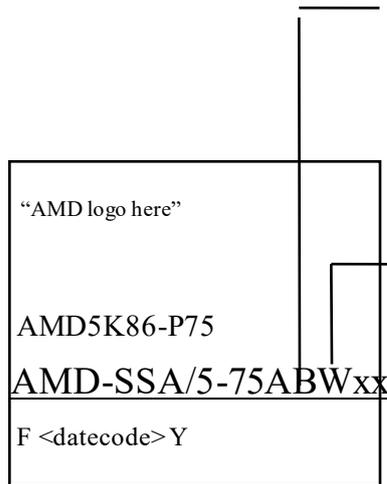
Example: AMD5K86 family of processors

The marking shown below is provided as an example only. It is intended to help you to set the correct CPU Voltage for AMD Processor. The AMD reserves the right to change on this proposed product without notice.

Internal CPU Frequency

Package Type:

61



A=SPGA

Operating Voltage:

B=3.45V-3.60V

C=3.30V-3.465V

F=3.135V-3.465V

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

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

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

Case Temperature:

W=55°C Q=60°C X=65°C

R=70°C Y=75°C Z=85°C