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

P55TU 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 P55TU SCSI Motherboard is the newest member to our SCSI Motherboard solution products families. It incorporated with Intel 4th generation 430HX Chipset with BGA technology and with Adaptec new Ultra / Ultra Wide SCSI embedded which is equilevent to AHA 2940UW. Adaptec RAID port option ready is a big advantage in this P55TU SCSI motherboard. It can turn this SCSI motherboard to support hardware SCSI RAID by adding the RAIDBUS 1000 or the ARO 1130 adapter from Adaptec.

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

Feature with Error Check Correction (ECC) system memory is another plus on this SCSI Motherboard to outperform the whole system stability. It equipe 4 of the 72 pin SIMM that supports EDO DRAM with ECC.

This manual is subject to change without notice.

Trademark

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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 shiping 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

Thank you for purchasing this **P55TU SCSI 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 P55TU SCSI 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 and Adaptec Wide/Ultra Wide SCSI (AHA-2940UW), fully plug and play Super I/O, this SCSI 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 SCSI 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 (5k86) and Cyrix (6x86) 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 Adaptec SCSI, Enhanced IDE, and Super 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,BBS or get the diskette file from your vender.

■ Expansion slots:

5 X 16-bits **ISA** slots.
3 X 32-bits **PCI** slots for PCI compatible add-on cards. (PCI#2 is occupied by the Adaptec SCSI, it is flexible for your choose while you install a prior or minor controller on this PCI bus.)

■ Memories:

4 X 72-pin SIMM(Single In Line Memory Module)
Support up to 256**MB** (minimum of 8MB) on board. for both the Fast Page Mode and Extended Data Output (EDO) module with ECC support.

■ Ultra/ Ultra Wide SCSI interface:

- **Built in Adaptec PCI Ultra Wide SCSI (AIC 7880 chip) which is equilevent to Adaptec AHA-2940UW PCI SCSI controller.**
- **Data transfer rate up to 40MB/Sec.**
- **Complete software driver from Adaptec Inc., include EZ-SCSI for**

DOS/Windows, 7800 Family Set Driver for Netware, Windows NT , OS/2 , SCO Unix , Unixware.

■ IDE functions:

- Built in dual PCI Bus EIDE Channels.
- Support ATAPI (AT Attachment Packet Interface)

■ USB interface (Universal Serial Bus):

- Plug and Play peripherals 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
- Byte Data FIFO
- Mode Driver (option)

■ Serial Port

- Two high speed 16550 UART serial port
- Address changeable form system BIOS
- Programmable Baud Rate Generator

■ Parallel Port:

IRQ selectable for IRQ5(278h), 7IRQ(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 Chip Protect Circuit for protection against damage due to printer power-on

■ Others function:

Support both Fast Page DRAM or EDO DRAM SIMM.
Support Pentium CPU SMM (System Management Mode).
Using Embeded Battery in RTC (Real Time Clock) which provides environmental protection and longer battery life.

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 SCSI Motherboard is shipped with manufacture preset at :

1. CPU Clock at **100 MHz**
2. Adaptec Ultra Wide SCSI Chip **Enabled**
3. Wide SCSI Mode **Enabled**
4. SCSI Terminator **Control by BIOS**
5. **512K Pipeline Burst Cache** on board
6. Printer ECP Mode at **DMA3**
7. Printer at **IRQ7**, Address at **378h**
8. Serial 1 at **IRQ4,** Serial 2 at **IRQ3**
9. 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 JP10)

Step 2. Install the memory

Plug at least 2 PCS of 72 pins Micro Edge DRAM modules to either Bank0 or Bank1.

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.

Step 8. After boot your system O.S., insert the Adaptec EZ-SCSI Installation diskette in a floppy disk drive and follow the EZ-SCSI operation manual or reference to Adaptec 7800 Family Set manual which will guide you to install the DOS/Windows, Netware, Windows NT, OS/2 , SCO UNIX, Unixware.

CHAPTER 3

Hardware Installation

3.1 Preparation and Inspection

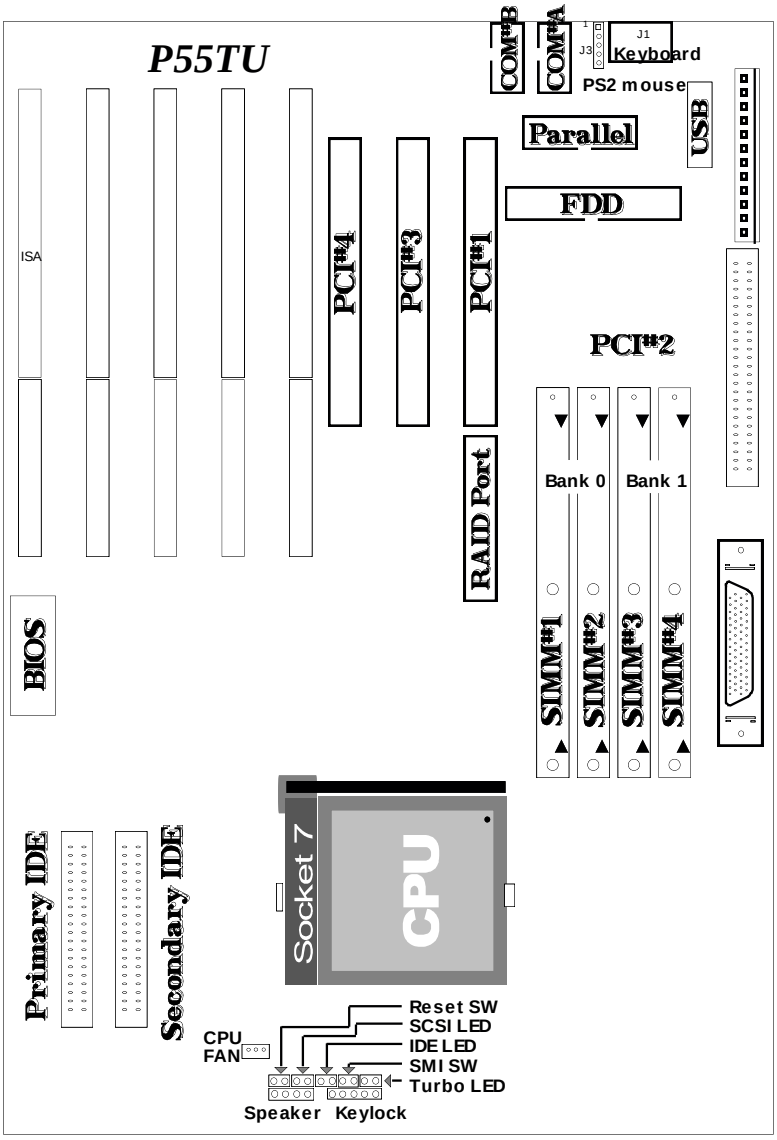
The **P55TU** SCSI Motherboard, like all electronic equipment is static sensitive. Please take the proper precautions when handling this board. You should avoid static up. If possible, You should ground yourself by touching a metal table or your computer frame. Keep the board in its conductive wrapping until it is configured and ready to be installed in your system.
For installation, you may need some or all of the following tools:

- SCSI HDD drive/devices manual(s).
- 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.

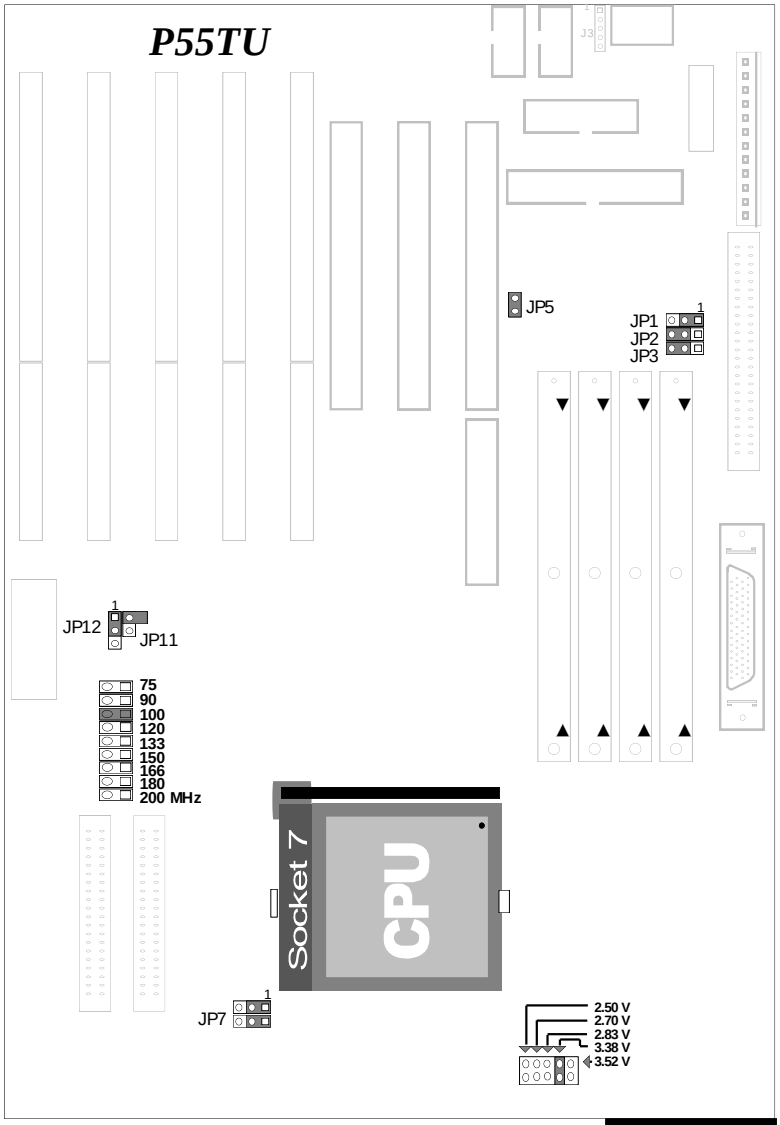
You should find the Following components when open the box :

1. P55TU SCSI Motherboard.
2. This Operation Manual
3. Adaptec software driver Diskette (EZ-SCSI).
4. Adaptec 7800 Family Manager Set software driver Diskettes.
5. Adaptec EZ-SCSI Manual.
6. Adaptec 7800 Family Manager Set Manual.
7. 68 pins high density internal Wide SCSI signal flat cable
8. 50 pins internal SCSI signal flat cable.
9. 40 pins internal IDE signal cable.
10. 34 pins internal Floppy Disk Drive signal cable.
11. 10 pins IDC flat cable to 9 pins D-Sub male RS-232 connector.
12. 26 pins IDC flat cable to 25 pins D-Sub female printer signal flat cable.
13. 10 pins IDC flat cable to 25 pins D-Sub male RS-232 connector.
14. 1 x 5 pins IDC flat cable to L-frame 5 pins PS-2 mouse port.
15. Musical CPU Cooler.
16. External SCSI-2 port expansion kit (optional).
17. External Wide SCSI port expansion kit (optional).
18. High speed printer port software driver(optional).
19. 3 Mode Driver (option)

3.2 Placement



Placement & Connector

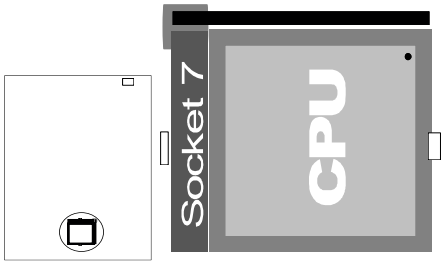

P55TU
JP5
JP1
JP2
JP3
JP12
JP11
75
90
100
120
133
150
166
180
200 MHz
Socket 7
CPU
JP7
2.50 V
2.70 V
2.83 V
3.38 V
3.52 V

Jumper

3.3 CPU group

3.3.1 CPU Socket

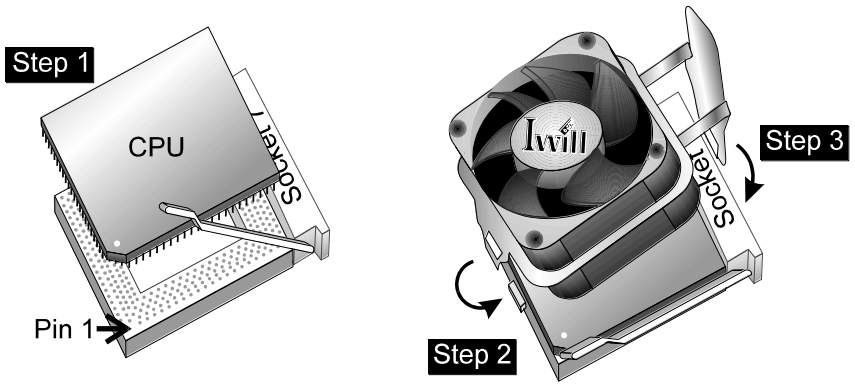
This CPU socket provides flexibility for Intel Pentium , Pentium OverDrive, Pentium future processors, AMD (5k86) and Cyrix (6x86) processor. When installing the CPU into the Zero Insertion Force (ZIF) socket should be very carefully. Lift the handle of this 321 Pin ZIF socket up carefully and insert 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.



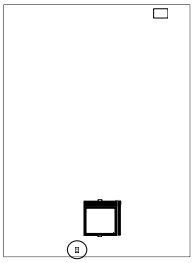
3.3.2 J22 CPU Cooler Fan Power Connector

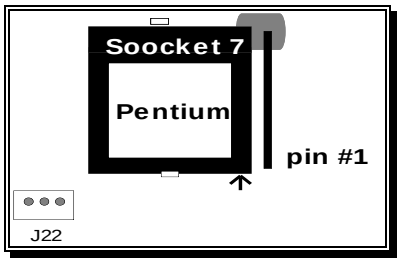
Warning !!! Warning !!! Warning !!!

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

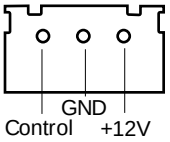


The CPU fan power connector is a 1 x 3 pin.



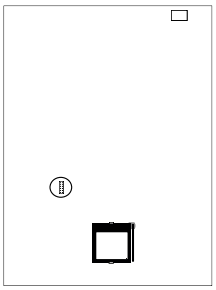


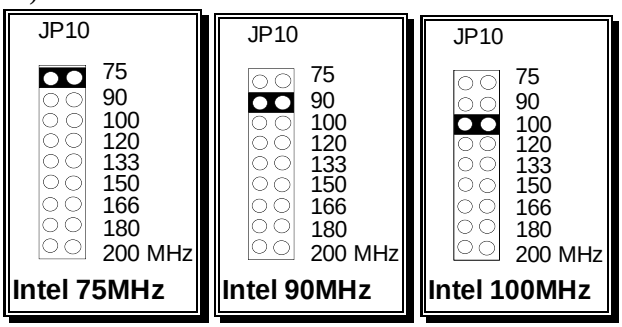
J22 Pin

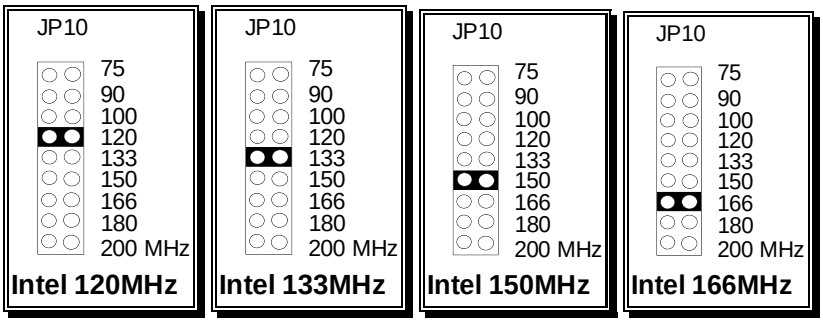


3.3.3 CPU Clock Select

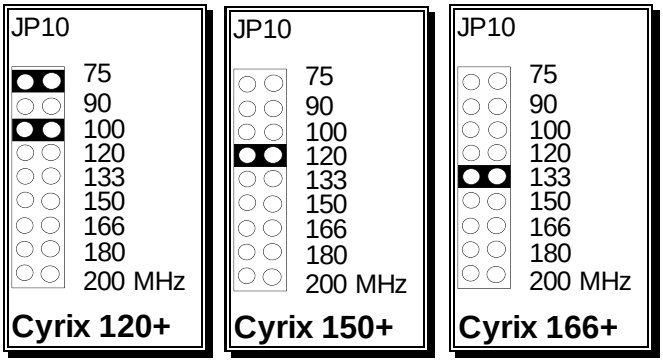
To set the correct CPU clock select for the Intel Penitum based CPU to this motherboard. You need to set both the CPU External Clock Frequency and the CPU to bus frequency ratio correctly. But this motherboard special design with a one jumper move to set the CPU clock select and you only need to place the jumper cap into the CPU clock that you desire. The JP10 is a 2 X 9 pin jumper, with one "colored" jumper cap on it. One and only one jumper cap (Expect when you use the Cyrix 120+ CPU) need to put on this connector for selecting the CPU clock. Simply place the colored yellow jumper cap to the speed of the CPU really is (the CPU internal/external clock ratio and ISA clock will be automatically selected by setup the JP10)







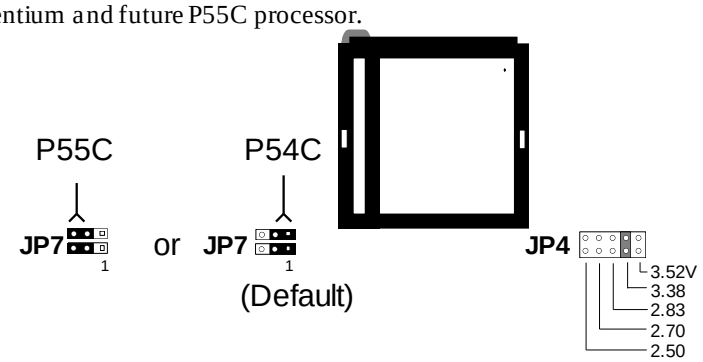
If you are using Cyrix 6X86 CPU, please be noted on Cyrix 6X86 120+ which is 100 MHz CPU. Both jumpers caps on 75 MHz and 100 MHz need to be placed. To use other Cyrix CPU speed please refernce following table.



Cyrix 120+ (100MHz) Cyrix 150+ (120MHz) Cyrix166+ (133MHz)

3.3.4 CPU Voltage Select (JP4)

The on-board regulator provides different voltage selection for Intel P54C Pentium and future P55C processor.



Different CPU require change the JP4 set to different voltage.

3.52V (VRE) is design when Cyrix CPU is installed
3.38V (Default) is for all the Intel P54C CPU
2.83V is reserve for the Intel P55C
2.7V and 2.5V is reserve for Cyrix M2 CPU

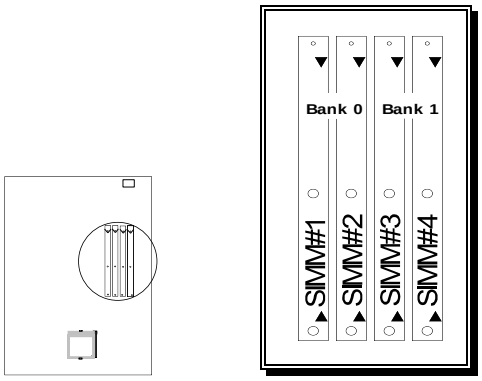
3.3.5 P54C/P55C Select (JP4)

CPU	JP4	Note
P54C/P54CS/P54CT	1-2, 1-2	*Default
P55C	2-3, 2-3	

3.4 Cache Memory

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

3-5 D-RAM Configuration



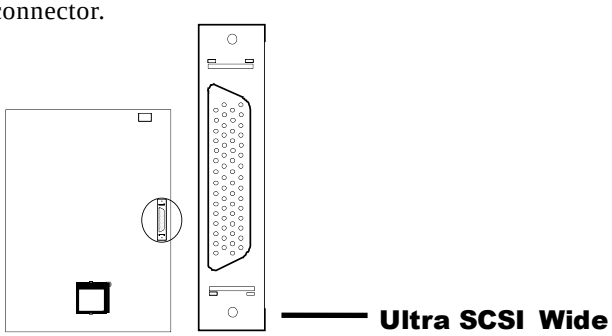
The P55TU supports different type of system memory. No jumper needed for this function or configure. This mainboard separates four pieces of 72 pins SIMM(Single In Line Memory Module) into two banks.

NOTE: 1. P55TU supports EDO DRAM.
2 . The 60 ns EDO DRAM is required.

3.6 SCSI Interface

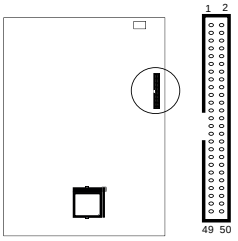
3.6.1 J3 Ultra Wide SCSI Connector

J3 is a 68 pins 16 bit internal Ultra Wide SCSI connector. It attaches the SCSI cable(s) from the P55TU SCSI controller to the SCSI peripherals. The external SCSI port expansion kit is a optional for your connecting external devices. Be-sure the cable's colored side should align to pin #1 of this connector.



3.6.2 J2 Ultra SCSI Connector

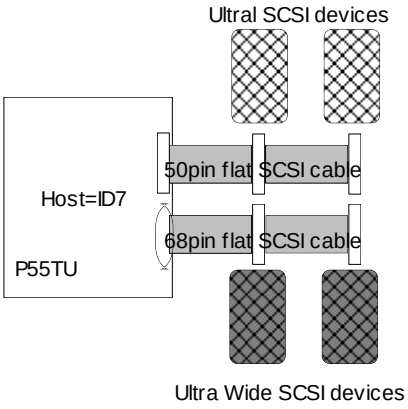
J2 is a 50 pins 8 bit internal Ultra SCSI connector. It attaches the SCSI cable(s) from the P55TU SCSI controller to the SCSI peripherals. The external SCSI port expansion kit is a optional for your connecting external devices. Be-sure the cable's colored side should align to pin #1 of this connector.



3.6.3 Link Internal Ultra & Ultra Wide SCSI devices

The SCSI devices are cabled together in a single, connected series. This SCSI cable must run sequentially from one device to the next, with no branches.

Internal SCSI Connection

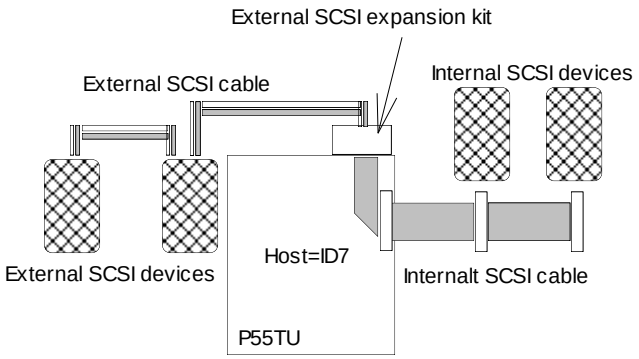


Note: The 50 pin SCSI is an 8 bit SCSI bus, the 68 pin SCSI is a 16 bit SCSI bus which has a pin-to- pin connected to the 50 pins SCSI connector.

Note: The SCSI termination must be on for the both side. The beginer and end must set the terminator on - otherwise the SCSI bus will not operate properly. For linking both the 50 & 68 pin SCSI together, the High byte terminator must set to on and Low byte set to off.

3.6.4 Link Internal & External SCSI devices

The concept of linking the internal and external SCSI devices is still the same--- cabled together in a single, connected series. This SCSI cable must run sequentially from one device to the next, with no branches. The manufacture provides two kinds of option --- Fast SCSI and Wide SCSI external expansion kit for user's multiple choices.



The manufacture provides tw o kinds of SCSI expansion kit for user's choices.
*SCSI-2 external expansion kit
*Wide SCSI external expansion kit

*Reference to Chapter 5. SCSI Select Utility for software setup.

3.6.3 Set SCSI IDs

You must assign a different SCSI ID to each device on the SCSI bus connected to the P55TU system board. See your SCSI device documentation for directions on how to determine the ID and change it.
■Ultra/ Ultra Wide SCSI devices that connect to this mainboard's SCSI connector can be assigned ID from 0 to 15(for 68 pin Wide SCSI connection). Normally, the host will use ID7. Or reference to Chapter 5 for more information.
■The SCSI ID0 is the best use for SCSI hard disk to be used as your computer's boot device, ID1 is best reserved for a secondary SCSI hard disk.(This is only when you use the SCSI hard disks and devices.)

3.6.4 SCSI Chip Select

JP3 is a 3 pin jumper connector. This is for SCSI Enabled/ Dsiabled control.

Function	JP3	Note

Enabled	1-2	*Default
Disabled	2-3	

3.6.5 SCSI Terminator Control

JP1&JP2 are both 3 pin jumper connectors. These are for Low/ High Byte SCSI Terminator.

Function	JP1	Note
Low Byte SCSI Terminator Always On	1-2	
Low Byte SCSI Terminator Always Off	off	
Low Byte SCSI Terminator Controlled by BIOS	2-3	*Default

Function	JP2	Note
High Byte SCSI Terminator Always On	1-2	*Default
High Byte SCSI Terminator Always Off	Off	
High Byte SCSI Terminator Controlled by BIOS	2-3	

3.6.6 Wide SCSI Select

JP5 is a 2 pin jumper connector. This is for Wide SCSI function enabled.

Function	JP5	Note
Wide SCSI Enabled	On	*Default
Wide SCSI Disabled	Off	

3.6.7 SCSI LED

J29 pin jumper connector. This is for SCSI LED. Reference to Chaptor 3.9 for more detail.

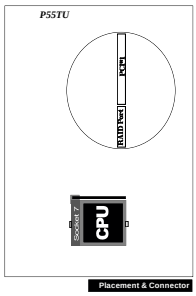
3.7 Adaptec® RAIDport option

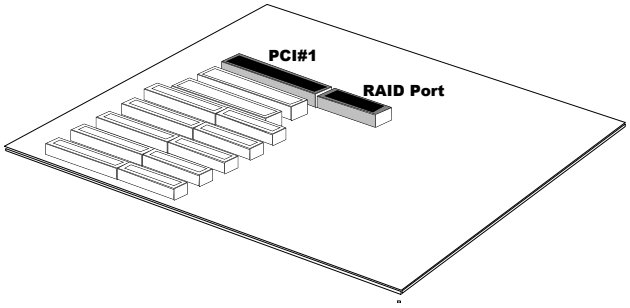
3.7.1 SCSI RAIDPort

Turn this SCSI embedded Motherboard to be hardware assist RAID ready by adding the RAIDBUS 1000 or the Adaptec ARO 1130 adapter.
This RAID port option by adding the RAIDBUS 1000 adapter can support :

- Bus Master DMA
- Up to 133 Mbyte/Sec Burst rate
- RAID level :5,1,0 and 0/1
- Fully Netware 3.11, 3.12, 4.x & WinNT 3.51 supported by Adaptec

The PCI solt #1 uses the 120 pin for PCI Local Bus with 60 pin RAID Port option.

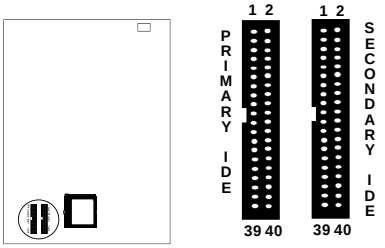




3.8 IDE Interface

3.8.1 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.



3.8.2 IDE LED

J26 pins LED connector. Reference to Chaptor 3.9 for more detail.

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

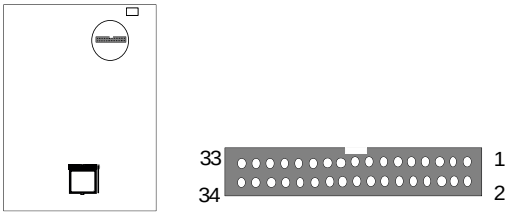
3.9 USB (Unversal Serial Bus)

J4 is a 2 x 8 pin connector, this feature is reserved for future USB use.

3.10 Enhanced Multi-IO

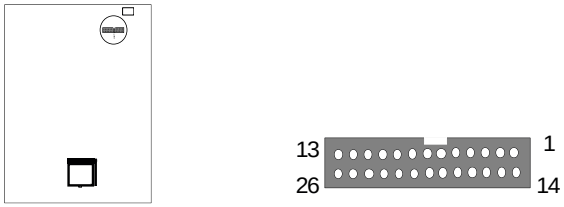
3.10.1 J11 FDC Connector

J11 is a 34 pins internal Floppy port connector. Use 34 pins flat cable to connect between this connector and floppy drives.



3.10.2 J12 Printer Connector

J12 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 controled 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:

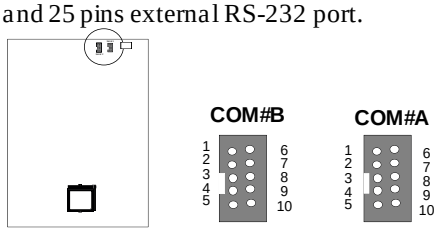
- Twisted pairs of conductors
- Full foil shield
- Wire braid
- Controlled impedance -- 62 ohm
- Limited cross-walk

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.

3.10.3 J14/J15 Serial Port

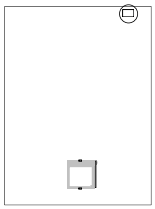
J14/J15 are 10 pins internal Serial 1/Serial 2 port connector. This system board provides two flat cable to convert internal Serial ports to a standard 9 and 25 pins external RS-232 port.



3.11 Others

3.11.1 Keyboard Connector

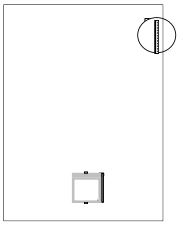
The keyboard connector is a 5-pin, circular-type DIN socket. It is used to connect the system board keyboard interface to any standard AT-compatible keyboard (84 or 101key type keyboards). The pin assignment are as follows:



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

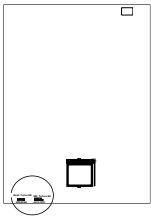
3.11.2 Power Supply Connector

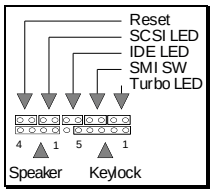
The power supply connector is 12-pin AT standard power connectors. They are used to connect power lines and power good signal from the power supply's P8 and P9 headers to the system board. The pin assignments for P8 and P9 are indicated below:



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

3.11.3 Reset, SCSI LED, IDE LED, SMI Switch, Turbo LED, Speaker, KeylockConnectors



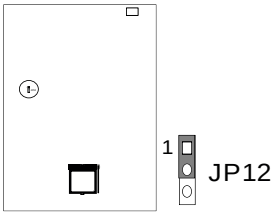


	Left pin	Right pin
Reset Switch	On = Reset , Off = Normal	
SCSI LED	Cathode	Anode
IDE LED	Cathode	Anode
SMI Switch	On=SMI, Off= Normale	
Turbo LED	Cathode	Anode
Speaker	VCC, GND, NC, Sound	
Keylock	LED Anode, NC, GND, Keylock, GND	

Note: This mainbaord has no Turbo function, it will not support Turbo switch. The Turbo LED will light-on when you connect a computer case that mounted Turbo LED and power on this system.

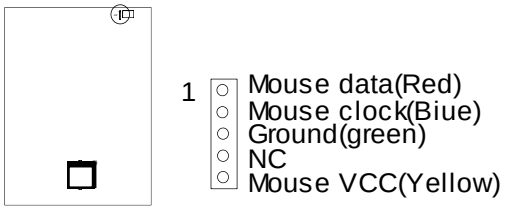
3.11.4 Flash EPROM Jumper Setting

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



JP12	EPROM type	Note
1-2	5V Flash EPROM support (29xxx)	*Default
2-3	12V Flash EPROM support (28xxx)	

3.11.5 PS/2 Mouse



J10 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

The information in this guide is subject to change without 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 <Del> immediately after switching the system on, or
2. by pressing the <Del> 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.
Note that a brief description of each highlighted selection appears at the bottom

ROM PCI/ISA BIOS (2A59F13D)

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 F10 : Save & Exit Setup	↑↓ →← : Select Item (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.

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 (2A59F13D)

STANDARD CMOS SETUP

AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Fri, Apr 7 1995

Time(hh:mm:ss) : 00:00:00

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDE	SECTOR	MODE
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.

Drive B : None

Video : EGA / VGA

Halt On : All Errors

Base Memory : 640K

Extended Memory : 15360K

Other Memory : 384K

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 (2A59FI3D)

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 (2A59FI3D)

CHIPSET FEATURES SETUP

AWARD SOFTWARE, INC.

Auto Configuration	: Disabled	Memory Parity / ECC Check	: Auto
DRAM Timing	: 70ns	Signal Bit Error Report	: Enabled
DRAM RAS# Precharge Time	: 4	L2 Cache Cacheable Size	: 64MB
DRAM R/W Leadoff Timing	: 7/6	Chipset NA# Asserted	: Enabled
Fast RAS# To CAS# Delay	: 3	Pipeline Cache Timing	: Faster
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	: Disabled		
8 Bit I/O Recovery Time	: 1		
16Bit I/O Recovery Time	: 1	ESC : Quit	↑↓→←: Select Item
Memory Hole At 15M-16M	: Disabled	F1 : Help	PU/PD/+/- : Modify
Peer Concurrency	: Disabled	F5 : Old Values	(Shift) F2 : Color
Chipset Special Features	: Disabled	F6 : Load BIOS Defaults	
DRAM ECC / PARITY Select	: Parity	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

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 **R**ow **A**ddress **S**trobe 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.

***Disabled* is the default.**

DRAM Speculative Leadoff

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 • peculative 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.**

Chipset Special Features

When disabled, the chipset behaves as if it were the earlier

DRAM ECC/PARITY Select

This item allows you to select between two methods of DRAM error checking, ***ECC and Parity (default).***

Memory Parity / ECC Check

This item allows you to select between three methods of memory error checking, Auto, Enabled and Disabled

Single Bit Error Report

L2 Cache Cacheable Size

When a single bit error is detected, the offending DRAM row ID is latched. The latched Valued is held until software explicit clears the error status flag. You can select Enabled or Disabled.
This item determines the size of the L2 cacheability: 64MB / 512MB.

Chipset NA# Asserted

This item allows you to select between two method of chipset NA# asserted during CPU write cycles /CPU line fills, Enabled and Disabled.

Pipeline Cache Timing

This item allows you to select two timing of pipeline cache, Faster and Fastest.

4.5 Power Management Setup

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

ROM PCI / ISA BIOS (2A59FI3D)

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
		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

Power Management

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 singaling.

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 **P**ersonal **C**omputer **I**nterconnect, 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 (2A59FI3D)

POWER MANAGEMENT SETUP

AWARD SOFTWARE, INC.

Resources Controlled by	: Manual	PCI IRQ Actived By	: Level
Reset Configuration Date	: Disabled	PCI IDE IRQ Map To	: PCI-AUTO
		Primary IDE INT#	: A
IRQ-3 assigned to	: PCI/ISA PnP	Secondary IDE INT#	: B

IRQ-4 assigned to	: PCI/ISA PnP	On-Board SCSI Chip	:Enabled
IRQ-5 assigned to	: PCI/ISA PnP		
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 (2A59FI3D)

INTEGRATED PERIPHERALS

AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	
PCI Slot IDE 2nd Channel	: Enabled	
On-Chip Primary PCI IDE	: Enabled	
On-Chip Secondary PCI IDE	: Enabled	
IDE Primary Master PIO	: Auto	
IDE Primary Slave PIO	: Auto	
IDE Secondary Master PIO	: Auto	
IDE Secondary Slave PIO	: Auto	
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 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 then. 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 SCSI Select Utility

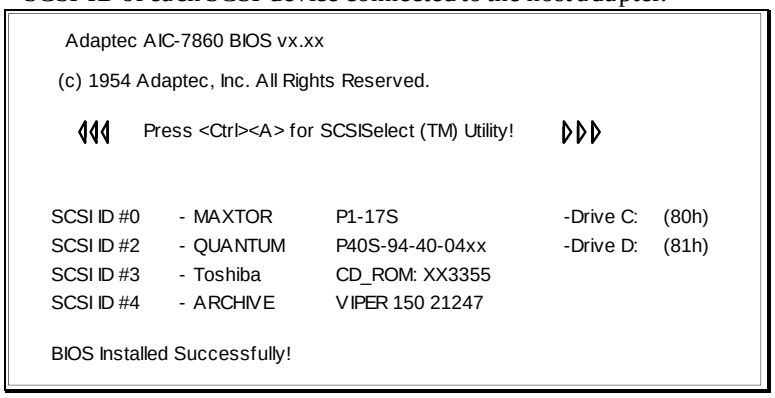
Use the SCSI Select utility if you need to

- 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.

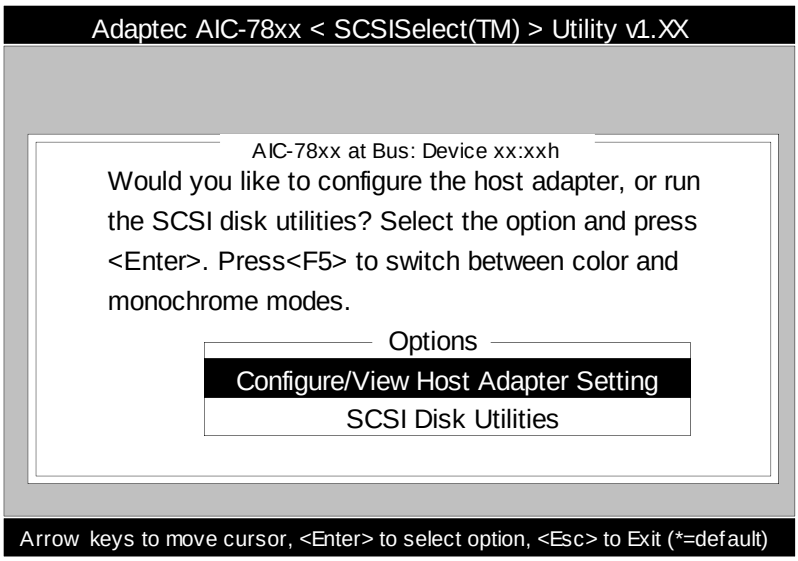


To start SCSI Select, press **Ctrl + A** when the BIOS banner first appears on the screen.

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.

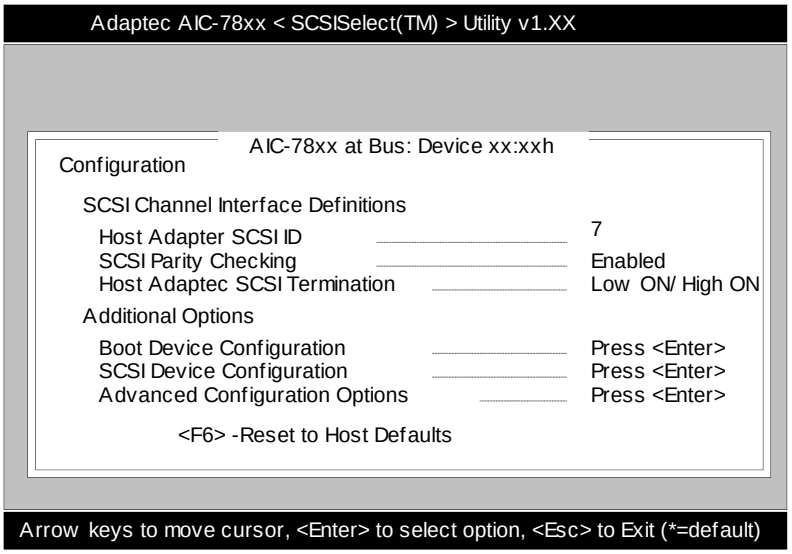


Use the Up and Down keys and the **Enter** key to make selections in the SCSI Select utility . Press **Esc** at any time to return to the previous menu .

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 Menu

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 P54TS and the 16 available IDs for the P5TSW/TSW2. The default setting for both models is SCSI ID 7 , which has the highest priority on the SCSI bus. (We recommend that you not to change this setting).

Note: Both in P54TS or P54TSW/TSW2 will show the8 IDs, once jumper JP26 is set to "**off**".

Note: Only in P54TSW/TSW2 shows the following screen, when jumper JP26 is set to "**on**". Reference to SCSI interface at Chapter 3.6.5.

Each SCSI device on the SCSI bus, including the host adapter , must be set to a unique SCSI ID.
The SCSI ID serves two purposed : 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 to 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. These show the choices available if you have an P54TS (AIC-7850) and P54TSW2 (AIC-7880). The default setting for the P54TS is **Enabled**. The default setting for the P54TSW2 is *Low* **ON** / *High* **ON** ; this menus that termination is enabled for both the low and the high bytes of the 16-bit Wide SCSI bus.

Note: Bits 0 through 7 are the low byte; bits 8 through 15 are the high byte.

Use the cursor (⇧ ⇩) and **Enter** keys to make your selection . P54TS/P54TSW2 SCSI Termination is determined by which of the SCSI connectors on the board have devices attached to them . The possible P54TS 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

The possible P54TSW2 termination setting are as follows:

Host Adapter Termination		
Low	**High**	**Devices Are Attached to**
On	On	68-pin internal connector only
On	On	68-pin external connector only
On	On	50-pin internal connector only
Off	Off	68-pin internal and 68-pin external connectors
Off	On	50-pin and 68-pin internal connectors
Off	On	50-pin internal and 68-pin external connectors
Invalid		50-pin and 68-pin internal connectors, and 68-pin external connector

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 keysx (⇧ ⇩) 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 Fast SCSI maximum of 10.0 MBytes / sec. The default value is 10.0. The P54TSW has a 16- bit (2-byte) channel that provides an effective maximum synchronous transfer rate of 20.0 MBytes /sec. (10.0 MBytes per 8-bit channel). Valid settings are

SCSI Select Transfer Rate	P54TS SCSI-2 Devices Effective Transfer rate	P54TSW2 + Wide Ultra SCSI-2 Devices Effective Transfer Rate
10.0	10.0 MBytes/sec.	40 MBytes/sec.
8.0	8.0 MBytes/sec.	32 MBytes/sec.
6.7	6.7 MBytes/sec.	26.8 MBytes/sec.
5.0	5.0 MBytes/sec.	20 MBytes/sec.

In most cases , you can use the maximum value of 10.0. If the host adapter is set not to negotiate for synchronous data transfer (i.e., Initiate Sync Negotiation is set to **no**), then the value selected here is the maximum rate that the host adapter accepts from the device during negotiation. (This is standard SCSI protocol.)

Note : Some older SCSI-1 devices do not support Fast SCSI data transfer rate (10.0,8.0 , and 6.7). This may cause your computer to operate erratically or hang if the transfer rate is set too high . Select a Maximum Sync Transfer Rate of 5.0 for these devices.

■ **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.

- **Include in BIOS Scan**

The option determines whether the host adapter BIOS supports devices attached to the SCSI bus without the need for device driver software. When set to **yes**, the host adapter BIOS controls the SCSI device. When set to **no** the host adapter BIOS does not search the SCSI ID for devices to control ; device driver software is need to control the SCSI device . The default setting is yes.

Note : The Include in BIOS Scan setting is valid only if the host adapter BIOS is enabled.

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.

■ **Reset SCSI Bus at Host Adapter Initialization**

This option allows you to enable or disable a SCSI bus reset generated by the host adapter during its power - on initialization and after a hard reset. If enabled, the SCSI bus is reset the first time the host adapter is initialized. If the host adapter BIOS is enabled, the BIOS resets the SCSI bus, then wait two seconds before scanning the bus for SCSI devices. If Reset SCSI Bus at Host Adapter Initialization is disabled, there is no two - second delay. The default setting is Enabled. Normally, SCSI Bus Reset at Host Adapter Initialization should always be enabled.

● 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.

- **Muitiple Lun Support**
  This option allows you to enable or disable the SCSI Lun support

- **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.

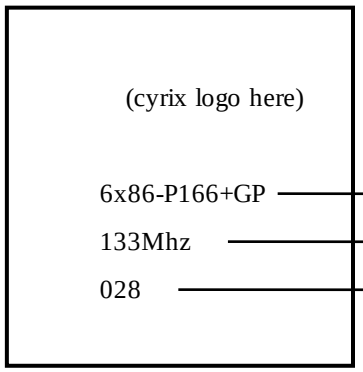
Note: You can press **Esc** at any time to abort the Verity Disk Media utility.

APPEDIX A

CPU 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 CPU Ordering Number

Internal CPU Frequency

Operating Voltage:

Blank = 3.3V±5% , 6x86 full spec.

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 B

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.