

# SQ595

# Users Setup Manual

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## Section 1 Introduction

### 1-1 How To Use This Manual

This manual provides information necessary for Original Equipment Manufacturers (OEMs) to build a PC-AT compatible system using the Pentium PCI motherboard. For the end-users, this manual is a good reference to understand and properly use the motherboard. Section 1 gives an overview of the SQ595 Triton motherboard. Section 2 guides user through configuration and installation. Section 3 provides the information for the system setup procedure. Section 4 provides the Basic Input Output System (BIOS) firmware related information.

### 1-2 Overview

The Pentium PCI motherboard is designed by Triton 82371/437/438 chipset which is developed by *intel*. The Triton chipset provides an integrated IDE controller with two enhanced PCI IDE interfaced up to four devices. The SMC FDC37C665IR supports super I/O function and floppy interface up to 2.88MB. The I/O provides two enhanced UART 16C550 fast serial ports, one **IR** port and one parallel port with EPP/ECP capability.

The motherboard supports Write-Back cache, which can be 256KB or 512KB, to provide workstation level computing performance. It can be option to use 256/512K burst SRAM by 160-pin SIMM. A Pentium OverDrive<sup>TM</sup> socket provides access to future performance enhancements, and SIMM sockets support 8MB of system memory up to 128MB DRAM or EDO RAM.

The Triton motherboard supports 75/90/100/120/133/150MHz Pentium CPU. It can be upgrade by P55C/55CT CPU with VRM module support

### 1-3 Product Specification

#### CPU

- *intel* Pentium 75/90/100/120/133/150 MHz processors
- *intel* Pentium P55C/P55CT processor

#### System Chipset

- High performance *intel Triton* SB82371/82437/82438 chipset

#### Memory/Cache

- High performance direct mapped cache controller with write-back scheme
- 256KB SRAM on board and option to 512KB SRAMs
- 256KB PIPELINE BURST/BURST/ASYNC SRAM SIMM module and option to 512KB.
- Support 72-pin Fast Page and EDO DRAM SIMM.
- Support four 72-pin memory sockets up to 128MB on board by using 1MB, 2MB, 4MB and 8MB x 32/36 parity or non-parity SIMM modules.  
4MB - 1MBx32/36      8MB - 2MBx32/36      16MB - 4MBx32/36  
32MB - 8MBx32/36
- Support FLASH EPROM (optional) for Windows 95 Plug & Play

#### Expansion Bus

- Four PCI slots and four ISA slots

#### I/O Devices

- Two PCI enhanced IDE interface for four devices
- 1.2/1.44/2.88MB Floppy
- Two faster serial ports
- One IR port - option with COM 2
- One parallel port with EPP/ECP capability
- One AT keyboard connector and PS/2 mouse connector
- One PS/2 mouse header

#### Software Compatibility

- Compatible with UNIX, NOVELL, WINDOWS 3.X, WINDOWS 95, WINDOW NT, OS/2, and DOS etc.

#### BIOS

- AWARD BIOS- Flash EPROM Option



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## Section 2 Configuration Guide

### 2-1 Memory Configuration

The Triton motherboard supports standard Fast Page DRAM or EDO DRAM to improve the DRAM read performance. The motherboard provides four 72-pin SIMM sockets. It can be 1MBx32/36(4MB), 2MBx32/36(8MB), 4MBx32/36(16MB), 8MBx32/36(32MB). The memory requires 70ns for fast Page DRAM and 60ns for EDO DRAM. The SQ595 must use 2 pieces SIMM module which can be setup on "SIMM 1 & SIMM 2" or "SIMM 3 & SIMM 4".

### 2-2 Jumper Settings

There are several jumper blocks that are used to configure the motherboard.

#### 2-2-1 CPU TYPE SELECTION

CPU Speed	Clock Speed	JP1	JP2	JP4	JP5	JP6
75MHz	50MHz	Open	Open	Close	Open	Open
90MHz	60MHz	Open	Open	Open	Close	Open
100MHz	66MHz	Open	Open	Open	Open	Close
120MHz	60MHz	Close	Open	Open	Close	Open
133MHz	66MHz	Close	Open	Open	Open	Close
150MHz	60MHz	Close	Close	Open	Close	Open

#### 2-2-2 CPU VOLTAGE SELECTION

JP3	1-2	3.52V	(DEFAULT)
	2-3	3.385V	

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**2-2-3 CACHE SIZE/TYPE**

Cache Size/Type	JP7	JP8	JP9	JP10	JP11
256K/Async	1-2	Open	Close	Close	Open
512K/Async	2-3	Open	Close	Open	Close
256K/Burst	1-2	Close	Open	Close	Open
256K/PIPE Burst	1-2	Open	Open	Close	Open
512K/Burst	1-2	Close	Open	Open	Close
512K/PIPE Burst	1-2	Open	Open	Open	Close

- Note: 1. The jumper is default as 256K/Async.  
 2. If you want to use the BURST CACHE module, please remove the Async SRAM from the mainboard.

**2-2-4 OTHER JUMPER SETTING**

JP13	1-2	SYSClk=1/3 PCI CLK (25M/3=8.3MHz)	
	2-3	SYSClk=1/4 PCI CLK (33M/4=8.3MHz)(DEFAULT)	
JP14	Open	Normal ROM	
	Close	Flash ROM	
J4	Open	Normal	(DEFAULT)
	Close	Clear CMOS	
VGA/MONO	Open	Color Monitor	(DEFAULT)
	Close	Mono Monitor	
COM1		COM 1 Connector	
COM2		COM 2 Connector	
PRN		Printer Port Connector	
IDE 0		IDE 0 Connector - Primary	
IDE 1		IDE 1 Connector - Secondary	
FDD		Floppy Connector	
SPEAKER		Speaker Connector	
HDD LED		HDD LED Connector	
KEY LOCK		Key Lock Connector	
GREEN LED		Green LED Connector	

PS/2	PS/2 Mouse Connector
J14	Key Board Connector
J15	Power Connector
RESET	Reset Button Connector
EXTSMI	Suspend Green Button Connector
IR REMORT	IR Remort Connector
IRDA	IRDA Connector

### **2-3 IR CONFIGURATION**

The SQ595 Triton mainboard offer the special function - IR. The AT case must reserve the IR module space if you want to use the IR function. The IR connector link with COM2 connector. So you can option one of them. The IR main functions are shown as following.

#### **2-3-1 COMMERCIAL IR**

The module should be setup on the "IR REMORT" connector. It can operate the commercial IR products. For example : Computer TV tuner etc.

#### **2-3-2 IRDA IR**

The module should be setup on the "IRDA" connector. The function is transfer data from one system to another system (it could be Laser Printer). The efficient distance is 100 mm. The transfer rate is 14400 Byte/Sec.

## Section 3 System Setup

This section provides the information for the system setup procedure and also briefs the setup procedures for system BIOS

### 3-1 SYSTEM SETUP

The system BIOS supports an internal ROM-based system setup utility. When the first time you power up the system, the system CMOS memory contains incorrect configuration information and the BIOS prompts you to get into the SETUP utility. The system requires correct configuration information stored in the CMOS memory. The SETUP utility will guide you to properly configure the system in a simple and straightforward way. A typical setup procedure is as follows:

1. Properly install the system.
  - A basic system should include at least
  - the SQ595 motherboard with CPU and cooler installed
  - a standard AT case with power supply
  - an AT compatible keyboard
  - the floppy driver and hard disk
  - the monitor and VGA card
  - minimum two SIMM with total 8MB memory
2. Turn the system power on.
3. The system BIOS will run Power-On-Self-Test(POST). When the test is completed, the system prompts you to go through the system SETUP utility. You can ignore the prompt if system setup has been configured correctly.
4. Follow the on-screen instructions provided by the SETUP utility to
  - Set Date and Time
  - Select correct floppy disk type and number
  - Select correct hard disk type and number
  - Set the advanced features if necessary
5. Exit the SETUP utility when done
6. System starts to reboot.

7. The system should have correct configuration information by now and should have no problem booting up the operating system from floppy or hard disk. If not, check the peripheral types, memory size and connections and go through the SETUP utility again.

### **3-2 PCI Device Setup**

PCI device setup allows user to allocate IRQs and specify IRQ's sensitivity for PCI and ISA devices. Follow the on-screen setup instructions and refer to the manual provided with the PCI device for proper installation.

## SECTION 4 BIOS SETUP

### 4-1 Entering Setup

Power on the computer and press <Del> immediately will allow you to enter Setup. The other way to enter Setup is to power on the computer, when the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> Keys.

TO ENTER SETUP BEFORE BOOT PRESS <CTRL-ALT-ESC> OR <DEL>  
KEY

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, <CTRL-ALT-ESC> OR <DEL> TO ENTER  
SETUP

### 4-2 Control Key

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
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	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu



**Standard CMOS setup**

This setup page includes all the items in a standard compatible BIOS. See Page 13 to Page 17 for details.

**BIOS features setup**

This setup page includes all the items of Award special enhanced features. See Page 18 to Page 23 for details.

**Power Managementsetup**

This category determines how much power consumption for system after selecting below items. Default value is Disable. See Page 23 to Page 28 for details.

**PCI Configuration setup**

This category specifies the bale (in units of PCI bus clocks) of the latency timer for this PCI bus master and the IRQ level for PCI device. See Page 28 to Page 30 for details.

**Load setup defaults**

Chipset default indicates the values required by the system for the maximum performance. The OEM manufacturer may change to default through MODBIN before the binary image burn into the ROM.

**Password setting**

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup. See Page 30 for details.

**IDE HDD auto detection**

Automatically configure hard disk parameters. See Page 31 to Page 32`1 for details.

**Save & exit setup**

Save CMOS value changes to CMOS and exit setup.

**Exit without save**

Abandon all CMOS value changes and exit setup.

#### 4-4 Standard CMOS Setup

The items in Standard CMOS Setup Menu divide into 10 categories. Each category includes no, one or more than one setup item. 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 ISA BIOS (2A51A000)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Fri, Apr 7 1995											
Time (hh:mm:ss) : 00:00:00											
		CYLS	HEADS	PRECOMP	LANDZONE	SECTOR	MODE				
Drive C	: User (105MB)	755	16	65535	754	17	Normal				
Drive D	: None( 0MB)	0	0	0	0	0	-----				
Drive A	: 1.2M , 5.25in.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Base Memory : 640K</td> </tr> <tr> <td style="text-align: center;">Extended Memory 328K</td> </tr> <tr> <td style="text-align: center;">Other Memory : 128K</td> </tr> <tr> <td style="text-align: center;">Total Memory : 4096K</td> </tr> </table>						Base Memory : 640K	Extended Memory 328K	Other Memory : 128K	Total Memory : 4096K
Base Memory : 640K											
Extended Memory 328K											
Other Memory : 128K											
Total Memory : 4096K											
Drive B	: None										
Video	: EGA / VGA										
Halt On	: All Errors										
ESC : Quit		↑ ↓ → ← : Select Item			PU / PD / + / - : Modify						
F1 : Help		(Shift) F2 : Change Color									

Figure 2 Standard CMOS Setup Menu (Support 2HD)

ROM PCI/ISA BIOS (2A5IA000)  
 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	: None	0	0	0	0	0	0	0					
Primary Slave	: None	0	0	0	0	0	0	0					
Secondary Master	: None	0	0	0	0	0	0	0					
Secondary Slave	: None	0	0	0	0	0	0	0					
Drive A : 1.2M , 5.25in.					<table border="1"> <tr> <td>Base Memory : 640K</td> </tr> <tr> <td>Extended Memory 3328K</td> </tr> <tr> <td>Other Memory : 128K</td> </tr> <tr> <td><hr/>Total Memory : 4096K</td> </tr> </table>					Base Memory : 640K	Extended Memory 3328K	Other Memory : 128K	<hr/> Total Memory : 4096K
Base Memory : 640K													
Extended Memory 3328K													
Other Memory : 128K													
<hr/> Total Memory : 4096K													
Drive B : None													
Video : EGA / VGA													
Halt On : All Errors													
ESC : Quit		↑ ↓ → ← : Select Item			PU / PD / + / - : Modify								
F1 : Help		(Shift) F2 : Change Color											

Figure 3 Standard CMOS Setup Menu (Support Enhanced IDE)

**Date**

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

day	The day of week, from Sun to Sat, determined by the BIOS, is read only
date	The date, from 1 to 31 (or the maximum allowed in the month), can key in the numerical / function key
month	The month, Jan through Dec
year	The year, depend on the year of BIOS

**Time**

The time format is <hour> <minute> <second>. Which accepts both function keys or numerical key. The time calculated which base on the 24-hour military-time clock. For example, 1 p.m. Is 13:00:00.

**Drive C type/Drive D type**

The categories identify the types of hard disk drive C or drive D that has been installed in the computer. There are 45 predefined types and 2 user definable types are for Normal BIOS. Type 1 to Type 45 are predefined. Type User is user-definable.

**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 does not match or list, you can use Type User to define your own drive type manually.

If you select Type User, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. This information should provide 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 the controller of HDD interface is CD-ROM, the selection shall be "None".

CYLS.	number of cylinders
HEADS	number of heads
PRECOMP	write precom
LANDZONE	landing zone
SECTORS	number of sectors
MODE	HDD access mode

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

**Drive A type/Drive B type**

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 adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors supported, you do not have to select the type in Setup.

You have two ways to boot up the system:

1. When VGA as primary and monochrome as secondary, the selection of the video type is "VGA Mode".
2. When monochrome as primary and VGA as secondary, the selection of the video type is "Monochrome Mode".

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SEGA, 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 stop and you will prompt.
All errors	The system boot will not stop for any error that may detect.
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.

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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 of the BIOS 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 to keep as much base memory free for application programs. Most use for this area is Shadow RAM

**Total Memory** System total memory is the sum of basic memory, extended memory, and other memory.

## 4-5 BIOS Feature Setup

ROM PCI/ISA BIOS (2A4IBG33)  
 BIOS FEATURES SETUP  
 AWARD SOFTWARE, INC.

Virus Warning : Disabled	Video BIOS Shadow : Enabled
CPU Internal Cache : Enabled	C8000-CFFFF Shadow : Disabled
External Cache : Enabled	D0000-D7FFF Shadow : Disabled
Quick Power On Self Test : Disabled	D8000-DFFFF Shadow : Disabled
Boot Sequence : A ,C	
Swap Floppy Drive : Disabled	
Boot Up Floppy Seek : Enabled	
Boot Up NumLock Status : On	
Gate A20 Option : Fast	
Typematic Rate Setting : Disabled	
Typematic Rate (Chars/Sec) : 6	
Typematic Delay (Msec) : 250	
Security Option : Setup	
	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

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the mean time, you can run an anti-virus program to locate the problem.

<p><b>! WARNING !</b>            Disk boot sector is to be modified            Type "Y" to accept write or "N" to abort write            Award Software, Inc.</p>
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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 to appear when anything attempts to access the boot sector or hard disk partition table.

Note: This function is available only for DOS and other OSes that do not trap INT13

#### **CPU Internal Cache/External Cache**

These two categories speed up memory access. However, it depends on CPU/chipset design. The default value is Enable. If your CPU without Internal Cache then this item "CPU Internal Cache" will not be show.

Enabled	Enable cache
Disabled	Disable cache

#### **Quick Power On Self Test**

These category speeds up Power On Self Test (POST) after you power on the computer. If it 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 computer searches 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.

Note: This function is only available for IDE type  
For SCSI type is always boot from A.

**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**

The default value is On

On	Keypad is number keys
Off	Keypad is arrow keys

**IDE HDD Block Mode**

Enabled	Enable IDE HDD Block Mode. The BIOS will detect the block size of the HDD and send block command automatically.
Disabled	Disable IDE HDD Block Mode

**Gate A20 Option**

Normal	The A20 signal is controlled by keyboard controller or chipset hardware.
Fast	Default : Fast. The A20 signal is controlled by Port 92 or chipset specific method.

**Memory Parity Check**

Enabled	Normal memory parity check. System DRAM is no parity bit then the system will display "RAM parity error".
Disabled	Ignore memory parity check even the DRAM has no parity bit. The system will not display "RAM parity error".

**Typematic Rate Setting**

This determines the typematic rate.

Enabled	Enable typematic rate and typematic delay programming
Disabled	Disable typematic rate and typematic delay programming. The system BIOS will use default value of these 2 items and the default is controlled by keyboard.

**Typematic Rate (Chars/Sec)**

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 holding a key, the time between the first and second character displayed.

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. Setup will deny if the correct password does not enter at the prompt.
Setup	The system will boot, but access to Setup will deny if the correct password does not enter 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

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disable security. Once the securities disable, the system will boot and you can enter Setup freely.

### **System BIOS Shadow**

It determines whether system BIOS copies to RAM or the system BIOS is always shadow to support LBA HDD.

Enabled	System shadow is enabled
Disabled	System shadow is disabled

### **Video BIOS Shadow**

It determines whether video BIOS will copy to RAM, however, it is optional from chipset design. VideoShadow will increase the video speed.

Enabled	Videoshadow is enabled
Disabled	Videoshadow is disabled

### **C8000 - CFFFF Shadow/E8000 - EFFFF Shadow**

These categories determine whether optional ROM will copy to RAM by 16K byte or 32K byte per/unit and the size depends on chipset..

Enabled	Optional shadow is enabled
Disabled	Optional shadow is disabled

- Note:
1. For C8000-DFFFF option-ROM on PCI BIOS, BIOS will automatically Enable the shadow RAM. User does not have to select the item.
  2. IDE second channel control  
Enable: enable secondary IDE port and BIOS will assign IRQ15 for this port  
Disable: Disable secondary IDE port and IRQ15 is available for other device  
The item is optional only for PCI BIOS.
  3. Some of the sound cards have an onboard CD-ROM controller that uses IDE Secondary Port. In order to avoid PCI IDE conflict, the IDE secondary channel control has to select "disable" then CD-ROM can work.

## 4-6 Power Management Setup

The Power management setup will appear on your screen like this:

ROM PCI/ISA BIOS (2A4IBG33)  
POWER MANAGEMENT SETUP  
AWARD SOFTWARE, INC.

Power Management: Max Saving	IRQ4 (COM 1) : Enable
PM Control by APM Yes	IRQ5 (LPT 2) : Enable
VideoOff Option : Susp, Stby -> Off	IRQ6 (Floppy Disk) : Enable
VideoOff Method : V/H SYNC + Blank	IRQ7 (LPT 1) : Enable
Suspend Switch : Enable	IRQ8 (RTC Alarm) : Disable
	IRQ9 (IRQ2 Redir) : Enable
<b>** PM Timers **</b>	IRQ10 (Reserved) : Enable
HDD Off After : Disable	IRQ11 (Reserved) : Enable
Doze Mode : 10 Sec	IRQ12 (PS/2 Mouse) : Enable
Standby Mode : 10 Sec	IRQ13 (Coprocesor) : Enable
Suspend Mode : 10 Sec	IRQ14 (Hard Disk) : Enable
	IRQ15 (Reserved) : Enable
<b>** PM Events **</b>	
PCI Master Activity : Enable	
COM Ports Activity : Enable	
LPT Ports Activity : Enable	
HDD Ports Activity : Enable	
DMA Ports Activit : Enable	
VGA Activity : Disable	
IRQ3 (COM 2) : Enable	
	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 determines how much power consumption for system after selecting below items. Default value is Disable. The following pages tell you the options of each item & describe the meanings of each options.

Item	Options	Descriptions
A. Power Management	1. Disable	Global Power Management will be disabled
	2. User Define	Users can configure their own power management
	3. Min Saving	Pre-defined timer values are used such that all timers are in their MAX value
	4. Max Saving	Pre-defined timer values are used such that all timers MIN value

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Item	Options	Descriptions
B. PM Control by APM	1. No	System BIOS will ignore APM when power managing the system
	2. Yes	System BIOS will wait for APM's prompt before it enter any PM mode e.g. DOZE, STANDBY or SUSPEND Note: If APM is installed, & there is a task running, even the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode!
		Note: – If APM is not installed, this option has no effect
C. Video Off Option	1. Always On	System BIOS will never turn off the screen
	2. Suspend – > Off	Screen off when system is in SUSPEND mode
	3. Susp, Stby -> Off	Screen off when system is in STANDBY or SUSPEND mode
	4. All Modes -> Off	Screen off when system is in DOZE, STANDBY or SUSPEND mode
		Note: The M/B markers are recommended to fix this item to (2) or (3) & hidden it by using MODBIN Utility
D. Video Off Method	1. Blank Screen	The system BIOS will only blanks off the screen when disabling video
	2. V/H SYN C+Blank	In addition to (1), BIOS will also turn off the V-SYNC & H-SYNC signals form VGA cards to monitor
	3. DPMS	This function is enabled for only the VGA card supporting DPM Note: Green monitors detect the V/H SYNC signals to turn off its electron gun

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E. Suspend Switch	1. Disable	The External Suspend Switch is disabled
	2. Enable	The External Suspend Switch is enabled
F. HDD Off After (#) Remark 2	1. Disable	HDD's motor will not off
	2. 1 Min 2 Min 3 Min 4 Min 5 Min 6 Min 7 Min 8 Min 9 Min 10 Min 11 Min 12 Min 13 Min 14 Min 15 Min	Defines the continuous HDD idle time before the HDD entering power saving mode (motor off)
	3. When Suspend	BIOS will turn the HDD's motor off when system is in SUSPEND mode
		Note: – (2) & (3) can't be selected at the same time – When HDD is in power saving mode, any access to the HDD will wake the HDD up

Item	Options	Descriptions
G. Doze Mode (*) Remark 1	1. Disable	System will never enter DOZE mode
	2. 10 Sec 20 Sec 30 Sec 40 Sec 1 Min 3 Min 5 Min	Defines the continuous idle time before the system entering DOZE mode.  if any item defined in (J) is enabled & active, DOZE timer will be reloaded

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	10 Min 15 Min 20 Min 30 Min 40 Min 1 Hr 2 Hr 3 Hr	
		Note: Normally, STANDBY mode puts the system into low speed or 8 MHz, screen may be off depend on (E)
H. Standby Mode (* ) Remark 1	1. Disable	System will never enter STANDBY mode
	2. 10 Sec 20 Sec 30 Sec 40 Sec 1 Min 3 Min 5 Min 10 Min 15 Min 20 Min 30 Min 40 Min 1 Hr 2 Hr 3 Hr	Defines the continuous idle time before the system entering STANDBY mode.  if any item defined in (J) is enabled & active, STANDBY timer will be reloaded
		Note: Normally, STANDBY mode puts the system into low speed or 8 MHz, screen may be off depend on (E)

Item	Options	Descriptions
I. Suspend Mode (* ) Remark 1	1. Disable	System will never enter SUSPEND mode
	2. 10 Sec 20 Sec 30 Sec 40 Sec 1 Min 3 Min 5 Min 10 Min 15 Min 20 Min 30 Min 40 Min 1 Hr 2 Hr 3 Hr	Defines the continuous idle time before the system entering SUSPEND mode.  if any item defined in (J) is enabled & active, SUSPEND timer will be reloaded
		Note: Normally,SUSPEND mode puts the system into low speed or 8 MHz, clock is stopped, screen may be off depend on (E)
J. PCI Master Activity COM Ports Activity LPT Ports Activity	1. Disable	The specified event's activity will not affect the PM timers
HDD Ports Activity DMA Ports Activity VGA Activity IRQ3 (COM 2) IRQ4 (COM 1) IRQ5 (LPT 2) IRQ6 (Floppy Disk) IRQ7 (LPT 1) IRQ8 (RTC Alarm) IRQ9 (IRQ2 Redir) IRQ10 (Reserved)	2. Enable	The specified event's activity causes the PM Timers to be reloaded. i.e. the Power ManagementUnit(PMU) monitors the specified activities as PM events

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IRQ11 (Reserved)		
IRQ12 (PS/2 Mouse)		
IRQ13 (Coprocessor)		
IRQ14 (Hard Disk)		
IRQ15 (Reserved)		

\* Remark 1: All items mark with (\*) in this menu, will be loaded with predefined values as long as the item 'Power Management' is not configured to 'User Defined'

These items are:

Item 'System Doze', 'System Standby' & 'System Suspend'

\* Remark 2: Although the item 'HDD Power Down' is not controlled by item 'Power Management' in terms of timer value, the HDD (s) will not power down if the global power management is disabled!

## 4-7 PCI Configuration Setup

You can manually configurate the PCI Device's IRQ. The following pages tell you the options of each item & describe the meanings of each options.

ROM PCI/ISA BIOS (2A4IBG33)  
PCI CONFIGURATION SETUP  
AWARD SOFTWARE, INC.

Slot 1 Using INT# : AUTO	
Slot 2 Using INT# : AUTO	
Slot 3 Using INT# : AUTO	
Slot 4 Using INT# : AUTO	
1st Available IRQ : 9	
2nd Available IRQ : 10	
3rd Available IRQ : 11	
4th Available IRQ : 12	
PCI IRQ Actived By : Edge	
PCI IDE 2nd Channel : Enable	
PCI IDE IRQ Map To : PCI-AUTO	
Primary IDE INT# : A	
Secondary IDE INT# : B	
Master Arbitration Protocol : Weak	ESC: Quit      ↑↓→←: Select Item
CPU->PCIMem Post WriteBuf : Disable	F1 : Help      PU / PD / + / - : Modify
CPU->PCI Memory Burst Write: Disable	F5 : Old Values (Shift)F2 : Color
PCI Master Burst Read/Write : Disable	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

The following pages tell you the options of each item & describe the meanings of each options.

Item	Options	Descriptions
A. Slot 1 Using INT# Slot 2 Using INT# Slot 3 Using INT# Slot 4 Using INT#	AUTO A B C D	A,B,C,D : These options are reserved for "Dirty" cards from which the system BIOS cannot tell which INT does it use!
		Note: – Choose "AUTO" for all devices unless you know exactly which card is a dirty device & which INTs does that card uses!  – Choose only "AUTO" for Multi-Func PCI devices because options A, B, C, D will force the BIOS to assign IRQs for function 0 only!
B. 1st Available IRQ 2nd Available IRQ 3rd Available IRQ 4th Available IRQ	3 4 5 7 9 10 11 12 14 15 NA	The system BIOS will assign these 4 available IRQs to the found PCI devices
C. PCI IRQ Activated by	Edge Level	To tell the chipset the IRQ signals input is level or edge trigger
D. PCI IDE 2nd Channel	Enable Disable	Enable/disable 2nd channel of PCI/IDE card. It includes I/O port (170H~177H) and IRQ 15 assignment
E. PCI IDE IRQ Map To	PCI-AUTO PCI-SLOT1	<u>PCI-AUTO</u> The BIOS will:

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	PCI-SLOT2 PCI-SLOT3 PCI-SLOT4 ISA	– scan for PCI IDE devices & determine the location of the PCI IDE device (See below item)  PCI-SLOT1 PCI-SLOT2 PCI-SLOT3 <u>PCI-SLOT4</u>  – assign IRQ 14 for primary IDE INT# IRQ 15 for secondary IDE INT# for the specified slot  <u>ISA</u> – The BIOS will not assign anyIRQs even if PCI IDE card is found! Because some IDE cards connect the IRQ 14 & 15 directly from ISA slot thru a cord. (This cord is called Legacy Header)
F. Primary IDE INT# Secondary IDE INT#	A B	To tell which INT3 does the PCI IDE card is using for its interrupts

Remarks: Master Arbitration Protocol, CPU->PCMem Post WriteBuf, CPU->PCI Memory Burst Write, and PCI Master Burst Read/Write please see the reference: Chipset Data Sheet.

### 4-8 Password Setting

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, 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 password, just press <Enter> when you prompt to enter password. A message will confirm the password being disabled. Once the passwords disable, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

#### 4-9 IDE HDD Auto Detection

Award BIOS includes the Enhanced IDE feature

##### 1. Setup Changes

<I> Auto-detection

- BIOS setup will display all possible modes that supported by the HDD including NORMAL, LBA & LARGE.
- if HDD does not support LBA modes, noLBA'option will be shown.
- if no of cylinders is less than or equal to 1024, no 'LARGE' option will be show
- Users can select a mode that is appropriate for them.

ROM/PCI/ISA BOPS (2XXXXXXX)  
 CMOS SETUP UTILITY  
 AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :								
Select Primary Master Option (N = Skip) : N								
OPTION	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTORS	MODE	
1(Y)	516	1120	16	65535	1119	59	NORMAL	
2	516	524	32	0	1119	63	LBA	
3	516	560	32	65535	1119	59	LARGE	

<II> Standard CMOS Setup

		CYLS	HEADS	PRECOMP	LANDZONE	SECTOR	MODE
Drive C	: User (516MB)	1120	16	65535	1119	59	NORMAL
Drive D	: None(203MB)	684	16	65535	685	38	-----

When HDD type is in 'user' type, the "MODE option will be opened for user to select their own HDD mode.

2 HDD Modes

The Award BIOS supports 3 HDD modes : NORMAL, LBA & LARGE

#### 4-10 Power-On Boot

After you have made all the changes to CMOS values and the system cannot boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or Pressing the "RESET" button on the system case. You may also restart by simultaneously press <Ctrl>, <Alt>, and <Delete> keys. Upon restart the system, immediately press <Insert> to load BIOS default CMOS value for boot up.

#### 4-11: BIOS Reference - Post Message

When the BIOS encounters an error that requires the user to correct something, either a beep code will sound or a message will be displayed in a box in the middle of the screen and the message PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP will be shown in the information box at the bottom.

##### POST Beep

Currently there are two kinds of beep codes in BIOS. The one code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by three short beeps. The other one code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

##### Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list indicates the error messages for all AwardBIOSes:

##### CMOS BATTERY HAS FAILED

CMOS battery is no longer functional. It should be replaced.

**CMOS CHECKSUM ERROR**

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may cause a weak battery. Check the battery and replace if necessary.

**DISPLAY SWITCH IS SET INCORRECTLY**

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

**FLOPPY DISK(S) fail (80)→ Unable to reset floppy subsystem.**

**FLOPPY DISK(S) fail (40)→ Floppy Typedismatch.**

**Hard Disk(s) fail (80) → HDD reset failed**

**Hard Disk(s) fail (40) → HDD controller diagnostics failed.**

**Hard Disk(s) fail (20) → HDD initialization error.**

**Hard Disk(s) fail (10) → Unable to recalibrate fixed disk.**

**Hard Disk(s) fail (08) → Sector Verify failed.**

**Keyboard is locked out - Unlock the key.**

BIOS detects the keyboard is locked. P17 of keyboard controller is pulled low.

**Keyboard error or no keyboard present.**

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

**Manufacturing POSTloop.**

System will repeat POST procedure infinitely while the P15 of keyboard controller is pull low. This is also used for M/B burn in test.

**BIOS ROM checksum error - System halted.**

The checksum of ROM address F0000H-FFFFFH is bad.

**Memory test fail.**

BIOS reports the memory test fail if the onboard memory is tested error.

## SQ595 CPU Jumper Revision ( S2-P75/xxx-TPI )

04/10/96

<b>CPU Speed</b>	<b>Ext Clock Speed</b>	<b>JP1</b>	<b>JP2</b>	<b>JP4</b>	<b>JP5</b>	<b>JP6</b>
75 MHz	50	Open	Open	<b>Close</b>	Open	Open
90 MHz	60	Open	Open	Open	Open	<b>Close</b>
100 MHz	66	Open	Open	Open	<b>Close</b>	Open
120 MHz	60	<b>Close</b>	Open	Open	Open	<b>Close</b>
133 MHz	66	<b>Close</b>	Open	Open	<b>Close</b>	Open
150 MHz	60	Open	<b>Close</b>	<b>Close</b>	Open	Open
166 MHz	66	<b>Close</b>	<b>Close</b>	Open	<b>Close</b>	Open
200 MHz	66	Open	<b>Close</b>	Open	<b>Close</b>	Open

**Cyrix 6x86 Set as Intel And Close Jumper 22**

**Example : 6x86 - 133 P166 set as Intel 133Mhz and Close JP22**