

# SL-65EP2/EP2+/EP2B

# **USER MANUAL v1.1**

	Product Model	: SL-65EP2/EP2+/EP2B
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# **ITEM LIST CHECKUP**

Mainboard

- Support CD
- 🛛 User's Manual
- Bundled Bonus Pack CD
- Promise Driver Diskette (for 65EP2+ & 65EP2B only)
- Bundled Bonus Pack Manual
- ☑ Temperature Sensor Cable
- ATA66/100 IDE Cable
- □ RS232 Cable
- Section 2018 FDD Cable

# CHAPTER 1 \_\_\_\_\_\_ INTRODUCTION

• This chapter briefly introduces the characteristics of the mainboards. It includes the information regarding the chipset, CPU types, built-in functions and layout. Users will have more ideas about mainboards after reading this chapter.

This chapter contains the following topics :

- **1-1 MAINBOARD SPECIFICATION**
- **1-2 MAINBOARD LAYOUT**
- 1-3 MAINBAORD SPECIFICATION TABLE OF 65EP2, 65EP2+ &65EP2B
- **1-4 CHIPSET DIAGRAM**

#### **1-1 MAINBOARD SPECIFICATION**

#### 1-1.1 CPU

- Supporting Intel<sup>®</sup> FC-PGA Pentium III<sup>™</sup> up to 1GHz.
- Supporting Intel® FC-PGA 370 Celeron & PPGA 370 Celeron up to 900MHz.
- Supporting Intel® FC-PGA 2 Processors.
- Supporting VIA Cyrix III up to 800MHz or above.
- Supporting CPU voltage Auto-Detect circuit.

# 1-1.2 CHIPSET

- INTEL 82815EP B-Stepping Memory Controller Hub (MCH) & INTEL 82801BA I/O Controller Hub (ICH2)
- ITE 8712 EC-LPC I/O chip.

# 1-1.3 INTEGRATED SDRAM CONTROLLER

- Providing 3pcs DIMM slots for double-sided DIMMs.
- Supporting 100/133MHz SDRAM spec.
- Supporting total memory from 32MB to 512MB using 32Mb/64Mb/128Mb/ 256Mb technology.
- Supporting up to 3 double sided DIMMs at 100MHz system memory bus.
- Supporting up to 2 double sided or 3 single sided DIMMs at 133MHz system memory bus.
- Unbuffered , Non-ECC SDRAM supported only.

## 1-1.4 AWARD BIOS V6.0

- Supporting Plug & Play V1.0.
- FLASH MEMORY for easy upgrade.
- Supporting BIOS writing protection.
- Year 2000 compliant.

## **1-1.5 HARDWARE MONITORING**

- Programmable control, status, to provide monitoring and alarm for flexible desktop management of hardware temperature (software provided in support CD).
- 5-positive voltage.
- 2-temperature monitoring.
- 3 Fan-speed monitoring.

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# **1-1.6 SOUND CONTROLLER**

- Built-in AC'97 Audio Codec (for 65EP2 only).
- Built-in Creative CT5880 Audio chip (for 65EP2+ & 65EP2B only).

# 1-1.7 MULTI-I/O FUNCTION

- TWO IDE Connector IDE1/IDE2, supporting 4 IDE devices of Ultra ATA 100/66/33 mode.
- (For 65EP2+ only) Other two IDE RAID Connectors IDE3/IDE4, supporting up to 4 RAID disks.
- Two UARTs for Complete Serial Ports.
- · Dedicated IR connector:
  - -- Third serial port dedicated to IR function either through the two complete serial ports or the third dedicated port Infrared-IrDA (HPSIR) and ASK (Amplitude Shift Keyed) IR.
- Multi-mode parallel connector:
  - -- Standard mode, ECP and EPP support.
- Floppy Disk connector:
  - -- One FDD connector with drive swap support.
- Universal Serial Bus connector:
  - -- USB V1.1 compliant.
  - -- 2 built-in USB connectors and one USB Header (USB2) which requires an optional USB cable to provide 2 more optional USB ports.
- PS/2 Keyboard connector.
- PS/2 Mouse connector.

# **1-1.8 EXPANSION SLOTS**

- Six PCI bus Master slots.
- One AGP Pro 4x mode slot.
- One CNR slot.
- Three DIMM slots.
- One SCR (Smart Card Reader) slot.

# 1-1.9 FULL FEATURED ACCELERATED GRAPHICS PORT (AGP) CONTROLLER

- Provides 1x/ 2x/ 4x AGP controller.
- · AGP v2.0 compliant.

#### 1-1.10 POWER MANAGEMENT

- ACPI 1.0 compliant (Advanced Configuration and Power Interface).
- APM V1.2 compliant (Legacy power management).
- Supporting ACPI suspend STR mode (Suspend To DRAM) and POS mode (Power On Suspend).
- System event monitoring with two event classes.
- Supporting PS/2 Keyboard & Mouse power on.
- Supporting Wake On LAN (WOL) & Wake On Modem.
- Supporting real time clock (RTC) with date alarm, month alarm, and century field.
- USB wake-up Function.

#### 1-1.11 FORM FACTOR

- ATX form factor 4-layer PCB.
- Mainboard size: 30.5cm x 22.0cm.

#### 1-1.12 ON BOARD RAID CONTROLLER

- Promise FastTrak100-Lite RAID controller on board.
- Supporting striping (RAID 0) or mirroring (RAID 1) for master only.
- Supporting Ultra ATA/100 specification up to 100MB/sec per drive.
- Compatible with Ultra ATA/100/66/33 and EIDE.

#### 1-1.13 REDSTORM OVERCLOCKING TECHNOLOGY

- BIOS detecting CPU Frequency.
- Automatically overclocking with the highest acceptable CPU Host Frequency.

# **1-2 MAINBOARD LAYOUT**

# 1-2.1 MAINBOARD LAYOUT --- 65EP2



Using non-compliant memory with higher bus clock (over clocking) may severely compromise the integrity of system.

#### 1-2.2 MAINBOARD LAYOUT --- 65EP2+



Using non-compliant memory with higher bus clock (over clocking) may severely compromise the integrity of system.



#### 1-2.3 MAINBOARD LAYOUT --- 65EP2B

Using non-compliant memory with higher bus clock (over clocking) may severely compromise the integrity of system.

# 1-3 MAINBOARD SPECIFICATION TABLE OF 65EP2, 65EP2+ & 65EP2B

Model	65EP2	65EP2+	65EP2B			
Memory Controller Hub	Intel 815EP B-Stepping (MCH)					
I/O Controller Hub		Intel 82801BA (ICH2)				
LPC I/O Chip		ITE 8712				
Memory	Supports P	C133 and PC100 SDRAM u 3 DIMM Slots	p to 512GB			
AGP Interface		AGP 4X Mode				
Audio	On-Chip AC'97	Creative CT5880	Creative CT5880			
Onboard IDE	2 x ATA 33/66/100 IDE ports	4 x ATA 33/66/100 IDE ports	2 x ATA 33/66/100 IDE ports			
Onboard IDE RAID Controller	None	Supports up to 4 IDE devices	None			
I/O	4 x USB ports, 1 x FDD port, 2 x COM ports, 1 x LPT port, 1 IrDA, 1 PS/2 Mouse, 1 PS/2 K/B					
PCI slot	6 PCI Master Slots					
CNR slot	1 x CNR slot					
Smart card reader support	Yes* (Provides a Smart Card Reader connector)					
Hardware Monitoring	Yes					
BIOS writing Protection	Yes					
Keyboard power on function & USB wake up Function	Yes					
Remark						

# **1-4 CHIPSET SYSTEM BLOCK DIAGRAM**



Intel 815EP B-Stepping MCH Chipset Diagram



# CHAPTER 2 HARDWARE SETUP

#### ATTENTION !!!

- 1. Please refer to your processor installation or other documentation attached to your CPU for detailed installing instruction.
- 2. Installing a heat sink and cooling fan is necessary for proper heat dissipation from your CPU. Incorrect installation may result in overheating and damage of your CPU.
- 3. Before changing the setting of CPU Vcore from BIOS program, user SHOULD make sure of correct specification both of CPU CLOCK and RATIO. Incorrect setting may cause damage to your CPU.

This chapter contains the following topics :

- 2-1 CPU INSTALLATION
- 2-2 MEMORY INSTALLATION
- 2-3 AGP PRO INSTALLATION
- 2-4 HDD/FDD INSTALLATION

2-5 JUMPER SETTING FOR DEVICES ON BOARD

**2-6 CONNECTORS CONFIGURATION** 

1

2

## **2-1 CPU INSTALLATION**

#### WARNING !!!

- *Make sure that* + 5*V DCV and* + 3.3 *DCV capabilities of your power supply are suitable for the processor.*
- Any attempt to operate the Celeron or PIII processor without a suitable cooling Fan will damage processor and other component.
  - Pull out the lever from the socket, and then raise the lever up to a 90-degree angle.

Take notice of the red circles as shown here. While inserting the CPU into the socket, you can find out there is a definite pin orientation for CPU and socket.

**3** Make sure that the CPU is placed in the socket tightly. Then lower down the lever to complete the CPU installation.



#### 2-1.1 CPU FREQUENCY

- The CPU's "CPU CLOCK RATIO" and "CPU HOST/PCI CLOCK" settings are automatically detected to be default value by BIOS in the "Frequency/ Voltage Control" section.
- We do not suggest and assume the responsibility for any action that changes the CPU default setting such as overclocking. Incorrect CLOCK RATIO and HOST/PCI CLOCK settings may cause damage to your CPU.

# 2-2 MEMORY INSTALLATION PROCEDURES

#### WARNING!!!

- Make sure to unplug your power supply before adding or removing memory modules or other system components. Failure to do so may cause severe damage to both your mainboard and expansion cards.
- Be careful when inserting or removing DIMM. Forcing a DIMM in or out of a socket improperly may damage the memory module or the socket. Some DIMMs which contain EDO or FTP DRAM are incompliant with the mainboard. The M/B supports 3.3V true SDRAM DIMMs only.

#### Installing DIMM:

- Make sure you have the correct memory module type for your mainboard
- Insert the module(s) as shown below. DIMMs have 168-pins and two notches that will be matched by the ON BOARD DIMM socket. Memory modules are installed by inserting them straight into the slot until they "click" in the right place. They only fit in one direction, so do not force them in by an incorrect direction.



#### Removing:

• Press down the holding clips on both sides of socket and the module will be released from the DIMM socket.



# 2-2.1 SUPPORTED SYSTEM BUS AND SYSTEM MEMORY BUS FREQUENCIES TABLE

 The 82815EP B-Stepping MCH has a new type of clocking architecture. It has integrated SDRAM buffers that run at either 100 or 133 MHz, dependent of the system bus frequency. See table below for supported system bus and system memory bus frequencies of 82815EP B-Stepping.

Front Side Bus Frequency	System Memory Bus Frequency	AGP Bus Frequency	PCI Bus Frequency	Supported Maximum DIMM numbers
66MHz	100MHz	66MHz	33MHz	3 single sided DIMMs
100MHz	100MHz	66MHz	33MHz	3 single sided DIMMs
133MHz	100MHz	66MHz	33MHz	2 double sided or 3 single sides DIMMs
133MHz	133MHz	66MHz	33MHz	2 double sided or 3 single sides DIMMs

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#### 2-3 ACCELERATED GRAPHICS PORT (AGP) PRO INSTALLATION

• The AGP Pro connector is an extension of the existing AGP connector and it is compatible with existing AGP cards.



#### CAUTION!!

The AGP Pro slot comes with a warning label over the 20-pin bay. Do not remove this label and the safety tab underneath if you use an AGP card without a retention notch. Without the labels, AGP cards may be placed into the wrong place, which certainly will damage your card, slot, and mainboard. Remove the label ONLY if you will be using an AGP Pro card.

#### 2-4 HDD/FDD INSTALLATION

To install HDD (Hard Disk Drive), you may connect the cable's blue connector to the mainboard's primary (IDE1) or secondary (IDE2) connector, and then connect the gray connector to your slave device and the black connector to your master device. If you install two hard disks, you must configure the second drive to Slave mode by setting its jumper accordingly. Please refer to your hard disk documentation for the jumper settings.





• To install FDD (Floppy Disk Drive), you may connect the end with single connector to the board , and connect the other and with two plugs to the floppy drives.







#### **2-5 JUMPER DEFINITION**

• The following diagrams show the locations of jumper blocks on the mainboard.

#### CAUTION !!

- Do not remove the jumper when power is on. Always make sure the power is off before changing any jumpers. Otherwise, mainboard could be damaged.
- In diagrams below, all jumper pins covered with black marks stand for closed pins.



#### 2-5.1 JP1 Keyboard/Mouse Power On

**NOTE:** This function allows you to use PS/2 keyboard or PS/2 mouse to power on your system. The function must be set in conjunction with "Power on function" state in BIOS setup "Integrated peripherals" section.



**NOTE:** This Function allows you to use USB mouse or keyboard to wake up the system and it also allows "USB keyboard wake up from S3 (Suspend To RAM). The function must be set in conjunction with "USB keyboard wake up from S3" that states in BIOS setup "Power Management Setup" section.

## 2-5.2 JP2 USB Wake Up

#### 2-5.3 JP4/JP5 Bus Clock Select

JP4/JP5 settings for FSB (Front Side Bus) Frequency Select is a redundancy device designed for professional CPU overclocking only. Since this mainboard is designed with CPU clock auto-detection function, you are recommended to use the JP4/JP5 default setting for a stable system performance. In case of CPU overclocking to higher frequency, there exists high possibility of failure due to the high complexity of components adopted on board. On the other hand, selecting a lower frequency setting for a CPU with higher frequency (e.g. select 100MHz setting for a 133MHz CPU) will also cause system failure.



**Bus Clock Select:** 

66MHz /100MHz / 133MHz Auto Select (default)	JP4 JP5
For 100MHz Bus Only	
For 133MHz Bus Only	

# 2-5.4 JP7/JP8 USB Port Select (1)

JP7/JP8 setting is for future use when there is a need to connect USB 0 and USB1 to AGP port. Currently USB port to AGP is not connected. Please keep JP7/JP8 default setting at 2-3 closed for enabling USB 0/1. Changing the default setting will disable the USB 0/1.



USB Port Select (1):

Redirect USB port to USB 0/1 connector (default)	~ <b>00</b> ~ JP8
Redirect USB port to AGP (Not yet Connected)	JP7 - UU - JP8

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## 2-5.5 JP14/JP15 USB Port Select (2)

JP14/JP15 setting is for future use when there is a need to connect USB 2 Header to CNR port. Currently USB 2 Header to CNR is not connected. Please keep JP14/JP15 default setting at 2-3 closed for enabling USB 2 Header to USB connector. Changing the default setting will disable USB 2 Header.



#### USB Port Select (2):



#### 2-5.6 JBAT1/JBAT2 For Clear CMOS Data

A battery must be used to retain the mainboard configuration in CMOS RAM.



**NOTE**: You can clear CMOS by 2-3 pin when the system is POWER OFF. Then, return to 1-2 pin position (default). You may damage the mainboard if clearing the CMOS with POWER ON. Unplugging the power cord from power supply before clearing CMOS will be a safest bet for user.

# 2-5.7 JP9 On-board RAID Controller Select

Before installing disk array, you must first set JP9 enabled. (See chapter 5 for Disk Array Installation.)



# 2-5.8 JP13 On-board Creative Sound Select



# 2-6 CONNECTORS CONFIGURATIONS

• This section lists out all connectors configurations for users' reference.

# 2-6.1 On Board FAN Connector (CPUFA1, AUXFA1, CHAFA1)



These fan connectors support CPU/System/chassis cooling fan with +12V. When connecting wire to FAN connectors, users should pay attention that the red wire is for the positive current and should be connected to pin +12V, and the black wire is Ground and should be connected to pin GND. If your mainboard has Hardware Monitor chipset on-board, you must use a specially designed fan with speed sensor to take advantage of this function.

For fans with speed sensors, each rotation of the fan blades will send out 2 electric pulses, by which System Hardware Monitor will work out the fan rotation speed by counting the pulses.

**NOTE 1:** Always consult vendor for proper CPU cooling fan. **NOTE 2:** CPU FAN is supported by Hardware Monitor, with a warning will be given out to high CPU temperature.

#### 2-6.2 JWOL1 Wake On LAN



This connector connects to a LAN card with a Wake On LAN output. The connector powers up the system when it receives a wake-up packet or signal through the LAN card.

This feature requires that Wake On LAN feature is enabled in the BIOS setting called *"Power Management Setup"* and that your system must be on ATX power supply with at least 720mA / +5V standby power.

CD IN2

CD IN2

Left

Channel

GND

GND

Right

Channel



# 2-6.3 CD-ROM Audio Connector (CD IN1/CD IN2)

# 2-6.4 TAD1/TV1 Connector





TAD1/TV1 Connector:

PIN NO.	TAD1	TV1
PIN 1	PHONE	TV_L CHANNEL
PIN 2	GND	GND
PIN 3	GND	GND
PIN 4	TADOUT	TV_R CHANNEL

TAD1 : Telephone Answering Device / Modem connector. Connects a voice modem to transmit and receive audio signals. TV1 : TV Tuner connector. Connects a TV card or second CD-ROM drive. TAD1 / TV1 is only for 65EP2+ & 65EP2B.



#### 2-6.5 Thermal Sensor Connector (RT2)

We provide a thermal cable in the mainboard package. This thermal cable is to monitor device which will generates a lot of heat, such as HDD, Graphics card etc. Please connect one end of the thermal cable (A) to mainboard RT2 header, and tape another end of thermal cable (B) on to the device which you want to monitor. After you have finished the thermal cable installation, you will **see the detected temperature in BIOS setup or Hardware monitor utility**.
# 2-6.6 Complex Header J2&J3

• This complex Header consists of 10 connectors providing various supports:



#### 1. J2 SMI Connector (System Management Interrupt):

**CONNECTION:** This 2-pin connector is connected to the case-mounted Suspend Switch.

FUNCTION: Manually placing the system into a Suspend mode or "Green" mode.

### 2. J2 Power Switch Connector:

CONNECTION: Connected to a momentary button or switch. FUNCTION: Manually switching the system between "On" and "Soft Off". Pressing the momentary button for more than 4 seconds will also turn the system off.

### 3. J2 IR Connector (Infrared Connector):

CONNECTION: Connected to Connector IR on board. FUNCTION: Supporting wireless transmitting and receiving module on board.

 4. J2 1st HDD LED Connector / J2 2nd HDD LED Connector: CONNECTION: Connected to HDD LED.
 FUNCTION: To supply power to HDD LED.

#### J3 Suspend LED Connector: CONNECTION: Connected to Suspend indicator. FUNCTION: To supply power to "Suspend indicator".

#### 6. J3 Keylock Connector:

**CONNECTION:** Connected to keylock switch. **FUNCTION:** To lock keyboard for security purpose.

#### 7. J3 Power LED Connector:

**CONNECTION:** Connected to System Power LED. **FUNCTION:** To supply power to "System Power LED".

#### J3 Reset Switch Connector: CONNECTION: Connected to the case-mounted "Reset Switch".

**FUNCTION:** To supply power to "Reset Switch" and support system reboot function.

#### 9. J3 Speaker Connector:

**CONNECTION:** Connected to the case-mounted Speaker. **FUNCTION:** To supply power to the case-mounted Speaker.

### 2-6.7 ATX Power Supply Connector

- This connector connects to an ATX power supply. The plug from the power supply should only be inserted to ATX Power connector in a specific orientation. Find the proper orientation and push it down firmly to make sure that all pins are aligned.
- Your power supply should support at least 10mA on the 5V standby voltage. It may cause difficulty to turn on the system power if the power supply does not support the load.
- For Wake On LAN function, the power supply should support at least 720mA current.







- A : PS/2 MOUSE PORT
- B : USB 0 PORT
- C : LPT1 PORT
- D : GAME/MIDI PORT
- E : PS/2 KEYBOARD PORT
- F : USB 1 PORT
- G : COM1 PORT
- H : COM2 PORT
- I : LINE/SPEAKER OUT
- J : LINE IN (or second speaker out for 65EP2+ only)
- K : MICROPHONE INPUT

# 2-6.9 Smart Card Reader Connector (SCR1)

• The connector "SCR1" allows you to use Smart Card Reader. It is compliant with Personal Computer Smart Card (PC/SC) working group standard and smart card (ISO 7816) protocols.





NC

GND

1

# 2-6.10 Communication And Networking Riser Slot (CNR)

• This connector allows you to use network, modem or audio riser cards.



#### Note:

- 1. If modem CNR is installed, the modem CNR must be set as primary.
- 2. Only one LAN CNR can be supported.
- 3. The audio CNR must be set as secondary, if on-chip AC 97 is enabled.
- 4. CNR devices are not provided with this mainboard.

## 2-6.11 USB Header (USB2 Header)

• This header is for connecting the additional USB cable to provide you additional two USB ports. User can order the additional USB cable from your mainboard dealers and venders.



Additional USB Cable (Optional)



• When plugging the USB cable into USB2 Header, users must make sure the red wire is connected to the first pin.

## 2-6.12 PS/2 Mouse And PS/2 Keyboard



# **2-7 IRQ DESCRIPTION**

IRQ	Function Description	Priority
IRQ 0	System Timer	1
IRQ 1	Keyboard Controller	2
IRQ 2	Programmable Interrupt	N/A
IRQ 3	Serial Port (COM 2)	11
IRQ 4	Serial Port (COM 1)	12
IRQ 5		13
IRQ 6	Floppy Disk Controller	14
IRQ 7	Parallel Port (LPT1)	15
IRQ 8	Real Time Clock (RTC)	3
IRQ 9		4
IRQ 10		5
IRQ 11		6
IRQ 12	PS/2 Mouse Port	7
IRQ 13	Coprocessor	8
IRQ 14	Primary IDE Channel	9
IRQ 15	Secondary IDE Channel	10

- Both ISA and PCI expansion cards may require IRQs. System IRQs are available to cards installed in the ISA expansion bus first, then any remaining IRQs are available to PCI cards. Currently, there are two types of ISA cards.
- The original ISA expansion card design, now referred to as "Legacy" ISA card, requires you to configure the card's jumpers manually and then install it in any available slot on the ISA bus. To see a map of your used and free IRQs in Windows 98, the *Control Panel* in *My Computer*, contains a *System* icon, which gives you a *Device Manager* tab. Double-Clicking on a specific hardware device gives you a *Resources* tab which shows the Interrupt number and address. Double-Clicking *Computers* to see all the interrupts and addresses for your system. Make sure that each ISA device should be assigned to one IRQ respectively. If ISA device share IRQ with any other device, your computer will easily get into trouble.



# CHAPTER 3

# SOFTWARE SETUP

# ABOUT SUPPORT CD

 In Support CD, it contains most informations for user's requirement, such as Acrobat Reader, BIOS, User's full version Manual, Driver, Hardware Monitor (if mainboard supports this function), Patch, and Utilities etc., User can browse the CD and get further details in regard of our mainboard. Of course, welcome to vendor's website for the newest release.

This chapter contains the following topics :
3-1 INTEL CHIPSET DRIVER INSTALLATION
3-2 INTEL ULTRA ATA STORAGE DRIVER
INSTALLATION
3-3 AC'97 AUDIO CODEC INSTALLATION
(FOR 65EP2 ONLY)
3-4 CREATIVE SOUND DRIVER INSTALLATION
(FOR 65EP2+ & 65EP2B ONLY)
3-5 INSTALLING ITE HARDWARE MONITOR
UTILITY (SMARTGUARDIAM)

3

Intel® V2.30

# **3-1 INTEL CHIPSET DRIVER INSTALLATION**



Click on the "INTEL

Chipsets Driver".

Next

Chinset Software Installation Utility

🔒 🚆

• When a welcome window appears on the screen, users should choose "**Install Driver**".

4 • Click on the "INF Utility for All INTEL Chipsets".



6

ment.

2

• Press "Next" button to continue.





 After all the setup process is finished, please restart your computer by clicking on "Finish".

• Press "Yes" to accept

Software License Agree-

# **3-2 INTELL ULTRA ATA STORAGE DRIVER INSTALLATION**

4



• When a welcome window appears on the screen, users should choose "Install Driver".



 Click on the "INTEL Driver".  Click on the "INTEL 815EP Chipsets".







- 8
- Press "Next" to continue.



• Press "Next" to continue.



10 • After all the setup process is finished, please restart your computer by clicking on "Finish".

# 3-3 AC'97 DRIVER INSTALLATION (FOR 65EP2 ONLY)



• When a welcome window appears on the screen, users should choose "Install Driver".



5

6

• Click on the "INTEL Driver".

- Click on the "INTEL 815EP Chipsets".
- Click on the "AC'97 Driver".
- The next screen will appear for user to select which AC'97 driver you need to install depending on what operation system you are using. Supposing that your system is Windows 98SE/ME/Win2000, then click on the "Install AC'97 Driver for Win98SE/ME/Win2000".



# 3-4 CREATIVE SOUND DRIVER INSTALLATION (FOR 65EP2+ & 65EP2B ONLY)

## 3-4.1 To Install Creative Sound Driver

- Please put the Support CD • When a welcome window 2 1 provided in your mainboard appears on the screen, package into the CD-ROM users should choose "Install drive. Driver". Click on the "INTEL Click on the "INTEL 815EP 3 4 Driver". Chipsets". • Click on the "Creative Follow the instruction on 5
  - Sound Driver".
- 6 screen to complete the installation, after which

please restart your PC.

# 3-4.2 To Enable The Rear Line Out (For 4 Speakers) After Installation Of Creative Sound Driver



• Click the "Device Manager" button.



6

• Click the "Creative sound Blaster PCI128" selection, then Click on the "Properties" button.



9 • Your Audio System can now support 4 speakers out. Inset second pain of speakers to the Rear Line out jack to verify this function. (See the following Section 3-4.3 for identifying the Rear Line out jack.)



# 3-4.3 Identifying Connectors On The Built-in Audio

- 1 LINE OUT FIRST SPEAKER OUT
- 2 LINE IN REAR LINE OUT JACK (Second pair of speakers output for 65EP2+ only)
- **3** MICROPHONE IN JACK
- 4 GAME/MIDI CONNECTOR

- 5 CD AUDIO CONNECTOR 2
- 6 CD AUDIO CONNECTOR 1
- TELEPHONE ANSWERING DEVICE / MODEM CONNECTOR (65EP2+ & 65EP2B only)
- 8 TV TUNER CONNECTOR (65EP2+ & 65EP2B only)

# 3-5 INSTALLING ITE HARDWARE MONITOR UTILITY (SMARTGUARDIAM)

1 Please put the Support CD provided in your mainboard package into the CD-ROM drive. 2 When a welcome window appears on the screen, users should choose "Install Driver".

4

7

3

5

6

- Click on the "INTEL Driver".
- Driver .

Chipsets".

Click on the "INTEL 815EP

- Click on the "Hardware monitor utility".
- Click on the "Explore CD" or user can install it through directory CD-ROM \hardware monitor utility\ITE\install.exe.

🔍 Exploring - Ite	
<u>File Edit ⊻iew Iools H</u> elp	
All Folders	Contents of 'Ite'
(F)         (F)           (F)         Acrobat           (F)         Acrobat           (F)         Bitel Manual           (F)         Data           (F)         Diver           (F)         Ite           (F)         Ite           (F)         Marcus           (F)         Ite           (F)         Marcus           (F)         Marcus           (F)         Marcus           (F)         Petch	Mg, Uninet Schutzel (1) Instal Jorresmon
1 object(s) selected 30.5KB	li.

 When "Exploring-ITE" window appears, please click on the file "install".



IT 8712 Smartguardian
IT8712 SmartGuardian Install
Welcome to IT9712 SmartGuardin Install program. To install SmartGuardian on your computer now, click Install. To exit without install SmartGuardian, click Exit. Your Platform is Window NT/2000, this program will copy 3 first to your HD 1. "ITESmart.exe" to D: WINNT directory. 2. "Itelo sys" to D: WINNT directory. 3. "_Unlinet.exe" to D: WINNT directory.
To execute SmartGuardian automatically at startup.
Install

8

• Then Follow the instruction on screen to complete the installation.

**9** • The following screen shows the ITE SMARTGUARDIAM, which shows the information about system temperatures, voltages and Fan speed. You can also change some Value settings for your system to optimize its performance.

Integrated Technology Express Inc. SMARTGUARDIAN Current Temperature CPU System Panel 033°C 028°C -055°C 000 000 0411411 000000 000000 001 001 000 00000 001 000 000 001 000 001 000 000 001 000 000	118712 SmartGuard	ian	_ 0 >
SMARTGUARDIAN           Current Temperature           CPU         System         Panel           033°C         028°C         -055°C           000         000         000           041141         00000         00000           000         000         00000           000         000         00000           000         000         000           000         000         000           000         000         000           000         000         000           000         000         000           000         000         000           000         000         000           000         000         000           000         000         000           000         000         000           000         1.61V         +12           12.03V         VGG3         3.37V           VBAT         3.07V         -12           000         000         000	Integrated	Technology E	xpress Inc.
Current Temperature           CPU         System         Panel           D33°C         D28°C         -055°C           ****         ************************************	SM	ARTGUARDI	AN
CPU System Panel C33°C 028°C -055°C en en en en Current Voltage +1.8 1.84V +5 5.05V VCOR 1.61V +12 12.03V VCCS 3.37V -12-12.60V VBATT 3.07V -5 4.95V	🗧 🧹 🖌 Cur	rent Temperat	ure
□33°C         □28°C         -055°C           ••••         ••••         ••••           Current Fan Speed         Joint         ••••           0/411/4/1         00000         00000           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         ••••         ••••           ••••         •••• <t< td=""><td>CPU</td><td>System</td><td>Panel</td></t<>	CPU	System	Panel
Son         Son           Current Fan Speed         Imm           0/41/41         00000         00000           Son         Son           Son         Son           Current Fan Speed         Imm           Son         Son           Son	033°C	058.C	-055°C
Current Fan Speed           041441         0'0'0'0         00000           Son         Son         Son           +1.0         1.84V         +5         5.05V           VG0R         1.61V         +12         12.03V           VG0R         3.37V         -12         12.03V           VBATT         3.07V         -12         -12.60V	🥯 0 n	<b>0</b> n	🔍 0 n
04141 0000 00000 Current Voltage +1.8 1.84V +5 5.05V VCOR 1.61V +12 12.03V VCC3 3.37V -12-12.60V VBAT 3.07V -5 4.95V	Cu	rrent Fan Spee	di dinnid
On         On         On	04141	00000	00000
Current Voltage           +1.8         1.84V         +5         5.05V           VCORE         1.61V         +12         12.03V           VCORE         3.37V         -12         12.60V           VBATT         3.07V         -6         4.95V	🥯 0 n	🥯 0 n	🥯 0 n
+1.0 1.84V +5 5.05V VCOR: 1.61V +12 12.03V VCC3 3.37V -12 - 12.60V VBATT 3.07V -5 - 4.95V	+ C	urrent Voltage	
VOORE         1.61V         +12         12.03V           VCC3         3.37V         -12         -12.60V           VBATT         3.07V         -5         -4.95V	+1.8 1 .	84V 🕴	₹ 5.05V
VECS 3.37V -12-12.60V VBATT 3.07V -5- 4.95V	VCORE 1.	61V 🕴	2 12.031
TERIT 5.07V -1-4.95V	VCCS 3.	377 -	2-12.60V
	TOATT 5.	070	- 4.950
11-80-2000	50 St	1	1-30-2000
About Exit Hide Option 14:06:03	About Exit	Hide Option	14:06:03

📙 Option			? ×
CPU Fan System	Fan   Panel Fan   1	disc Voltage	
C Automatic mo Off		ure Range Control m High	0ver 0C
25 3 Fan Speed ( Reset To D	0 40	50 Hig	р р
C Software prog Fan Speed Low	rammable mode Control High	Temperature	Alarm Setting
	OK Car	cel <u>Apply</u>	Help



# CHAPTER 4

# **BIOS SETUP**

# THE BIOS

- BIOS stands for Basic Input and Output System. It is sometimes called ROM BIOS because it is stored in a Read-Only Memory(ROM) chip on the mainboard. BIOS is the first program to run when you turn on your computer.
- BIOS performs the following functions:
  - 1. Initializing and testing hardware in your computer (a process called "POST", for Power On Self Test).
  - 2. Loading and running your operating system.
  - Helping your operating system and application programs to manage your PC hardware by means of a set of routines called BIOS Run-Time Service.

This chapter contains the following topics :

4-1 WHAT IS BIOS SETUP 4-2 HOW TO RUN BIOS SETUP 4-3 WHAT IS CMOS 4-4 WHAT IS POST 4-5 BIOS UPGRADE 4-6 BIOS SETUP

## **4-1 WHAT IS BIOS SETUP**

- BIOS setup is an interactive BIOS program that you need to run when:
  - 1. Changing the hardware of your system. (For example: installing a new Hard Disk etc.)
  - 2. Modifying the behavior of your computer. (For example: changing the system time or date, or turning special features on or off etc.)
  - 3. Enhancing your computer's behavior. (For example: speeding up performance by turning on shadowing or cache.)

## **4-2 HOW TO RUN BIOS SETUP**

• To access BIOS setup menu, press < DEL > key after "POST", and before the OS is loaded. The BIOS usually displays the following message:

Press DEL to enter SETUP

## 4-3 WHAT IS CMOS

CMOS is the memory maintained by a battery. The BIOS uses CMOS to store the settings you have selected in SETUP. The CMOS also maintains the internal clock. Every time you turn on your computer, the BIOS Looks into CMOS for the settings you have selected and configures your computer accordingly. If the battery is out of power, the CMOS data will be lost and POST will issue a "CMOS invalid" or "CMOS checksum invalid" message. If this happens, you have to replace the battery and do some proper settings in SETUP.

## **4-4 WHAT IS POST**

 POST is an acronym for Power On Self Test. POST will test all things the BIOS does before the operating system is started. Each of POST routines is assigned a POST code, a unique number which is sent to I/O port 080h before the routine is executed.

## 4-5 BIOS UPGRADE

 System BIOS is incorporated into a Flash memory component of the mainboard. Flash BIOS allows user to upgrade BIOS without the need to replace an EPROM component.

• The upgrade utility can be loaded on a floppy diskette and used to provide the capability to save, verify, and update the system BIOS. The upgrade utility can be run from a hard disk drive or a network drive.

# 4-5.1 Before Upgrading BIOS

• It is highly recommended that you save a copy of the original mainboard BIOS along with a Flash EPROM Programming utility (AWDFLASH.EXE) to a bootable floppy disk in case you need to reinstall the BIOS later.

# 4-5.2 Upgrade Process

**Note:** Normally, to upgrade BIOS is unnecessary if the system is working fine without any problem. Users should not upgrade the BIOS unless you experience incompatible problems or need to create new features. However, please read all information in this section before upgrading.

"AWDFLASH.EXE" is a Flash EPROM Programming utility that updates the BIOS by uploading a new BIOS file to the programmable flash ROM on the mainboard. This program only works in **DOS environment**, the utility can not be executed in win95/98, ME, NT or WINDOWS 2000 environment.

## Upgrading the system BIOS

- Step 1. Please visit the board maker's website, download latest BIOS file and award flash utility "AWDFLASH.EXE". The BIOS file format will be \*.bin, of which "\*" stands for the specific file name.
- Step 2. Create a bootable diskette. Then copy the BIOS file and award flash utility "AWDFLASH.EXE" into the diskette.
- Step 3. Insert the diskette into drive A, reboot your system and boot from the diskette.

- Step 4. Type **awdflash \*.bin** /sn/py/cc and then press <Enter> to run BIOS upgrade program. (\*.bin depends on your mainboard model and version code. Instead of typing "\*", you should type specific file name for your specific mainboard).
- Step 5. Please press <F1> or <F10> to exit or reset your system, *Warning !* If the message *"Write Fail"* appears while Award "FLASH MEMORY WRITER" is verifying Flash memory, just repeat the process. Please DO NOT reset or turn off the system. If the award memory flash utility is not able to update the BIOS successfully, your system may not be able to boot up.
- Step 6. You will need a message "CMOS checksum error-Default loaded" during booting the system. Press <Del> to run CMOS setup utility, then reload "LOAD SETUP DEFAULTS" or "Load Optimized Defaults" and save this change.



Figure 1 : Award Flash Memory Writer Start Screen



Figure 2 : Award Flash Memory Writer Start Screen

The parameters of AWDFLASH.EXE

/sn: No original BIOS backup

/py: Program flash memory

/cc: Clear CMOS data (and update data automatically) after programming

**NOTE:** Users can type AWDFLASH /? to get further details about the parameters. Incorrect usage of the parameter will damage the BIOS information, so we strongly recommend user to leave parameters alone unless you fully understand their function.

# 4-6 BIOS SETUP --- CMOS SETUP UTILITY

# 4-6.1 CMOS SETUP UTILITY

- This mainboard comes with the AWARD BIOS from AWARD Software Inc. Enter the CMOS Setup Utility Main Menu by:
- 1. Turn on or reboot your system. After a series of diagnostic checks, the following message will appear:

#### PRESS <DEL> TO ENTER SETUP

2. Press the <DEL> key and the main program screen will appear as follows.

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software

Standard CMOS Features	Frequency/Voltage Control
<ul> <li>Advanced BIOS Features</li> </ul>	Load Optimized Defaults
<ul> <li>Advanced Chipset Features</li> </ul>	Set Supervisor Password
► Integrated Peripherals	
<ul> <li>Power Management Setup</li> </ul>	Set User Password
<ul> <li>PnP/PCI Configurations</li> </ul>	SAVE & EXIT SETUP
PC Health Status	EXIT WITHOUT SAVING
Esc : Quit↑↓→←: Select ItemF10 : Save & Exit Setup	
Time, Date, Hard Disk Type	

- Use the arrow keys on your keyboard to select an option, and press <Enter>. Modify the system parameters to reflect the options installed in your system.
- 4. You may return to the Main Menu anytime by pressing <ESC>.
- 5. In the Main Menu, "SAVE AND EXIT SETUP" saves your changes and reboots the system, and "EXIT WITHOUT SAVING" ignores your changes and exits the program.

# 4-6.2 STANDARD CMOS SETUP

 Standard CMOS Setup records some basic system hardware configuration and sets the system clock and error handling. You only need to modify the configuration values of this option if you want to change your system hardware configuration or when the data stored in the CMOS memory gets lost or damaged.

Run the STANDARD CMOS SETUP as follows:

1. Choose "STANDARD CMOS SETUP" from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software Standard CMOS Features

Date (mm:dd:yy)	Thu, Dec 30 2000	Item Help
Time (hh:mm:ss)	9:52:15	Menu Level 🕨
<ul> <li>IDE Primary Master</li> <li>IDE Primary Slave</li> <li>IDE Secondary Master</li> <li>IDE Secondary Slave</li> </ul>	Press Enter 13022 MB Press Enter None Press Enter None Press Enter None	
Drive A Drive B	1.44M, 3.5 in. None	
Video Halt On	EGA/VGA All Errors	
Base Memory Extended Memory Total Memory	640K 31744K 32768K	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

 Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys.

- Date (mm:dd:yy) The BIOS determines the day of the week from the other date information. This field is for information only.
   Press the left or right arrow key to move to the desired field (date, month, year). Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.
- **Time (hh:mm:ss)** The time format is based on the 24-hour militarytime clock. For example, 1 p.m. is 13:00:00. Press the left or right arrow key to move to desired field. Press the PgUp or PgDn key to increment the setting, or type the desired value into the field.
- Primary / SecondaryThis field records the specifications for all non-SCSIMaster / Slavehard disk drives installed in your system. Refer to<br/>the respective documentation on how to install the<br/>drives.

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software IDE Primary Master

IDE HDD Auto-Detection	Press Enter	Item Help
IDE Primary Master Access Mode	Auto Auto	Menu Level ►►
Capacity	13022 MB	
Cylinder Head Precomp Landing Zone Sector	25232 16 0 25231 63	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

- Drive A / Drive B Select this field to the type(s) of floppy disk drive(s) installed in your system. The choices are: 360KB, 5.25in; 1.2MB, 5.25in; 720KB, 3.5in; 1.44MB, 3.5in; 2.88MB, 3.5in; None.
  - Video Select the type of primary video subsystem in your computer. The BIOS usually detects the correct video type automatically. The BIOS supports a secondary video subsystem, but you do not select it in setup.
  - Halt On During the power-on self-test (POST), the computer stops if the BIOS detects a hardware error. You can tell the BIOS to ignore certain errors during POST and continue the boot-up process.
  - **Base Memory** Typically 640KB. Also called conventional memory. The DOS operating system and conventional applications use this area.
- **Extended Memory** Above the 1MB boundary. Early IBM personal computers could not use memory above 1MB, but current PCs and their software can use extended memory.
  - Total Memory This option shows system memory capacity.

Press <ESC> to return to the Main Menu when you finish setting up all items.

# **4-6.3 ADVANCED BIOS FEATURES**

 ADVANCED BIOS FEATURES improves your system performance or sets up system features according to your preference.

Run the ADVANCED BIOS FEATURES as follows:

1. Choose "ADVANCED BIOS FEATURES" from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software Advanced BIOS Features

Virus Warning	Disabled	Item Help
CPU Internal Cache	Enabled	Menu Level 🕨
External Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	
Processor Number Feature	Disabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	HDD-0	
Third Boot Device	CDROM	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
$_{ imes}$ Typematic Rate (Chars/Sec)	6	
imes Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report No FDD For WIN95	No	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

- Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:
- <F1>: "Help" gives options available for each item.
- <F5>: Get the previous values. These values are the values with which the user starts the current session.
- <F6>: Load all options with the BIOS default values.
- <F7>: Load all options with the Setup default values.
  - Virus Warning When enabled, you receive a warning message if a program (specifically, a virus) attempts to write to the boot sector or the partition table of the hard disk drive. You should then run an antivirus program. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

**NOTE:** Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you disable the virus warning.

CPU Internal Cache/ External Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for faster access by the CPU.

CPU L2 Cache ECC When you select *Enabled*, it will speed up memory Checking checking when the external cache contains ECC SRAMs.

The choices: Enabled; Disabled.

- Processor Number Choose Disabled or Enabled. When enabled, the processor serial number will display during the boot up screen.
- Quick Power On Self Select Enabled to reduce the amount of time required to Test run the power-on self-test (POST). A quick POST skips certain steps. We recommend that you normally enable quick POST.
  - First/Second/Third/ The BIOS attempts to load the operating system from Other Boot Device the devices in the sequence selected in these items. The choices: Floppy; LS/ZIP; HDD; SCSI; CDROM; Disabled.
  - Swap Floppy Drive When enabled, floppy drives A and B will be exchanging without any physical connection and modification on the cables.
- Boot Up Floppy Seek When enabled, the BIOS tests (seeks) floppy drives to determine whether they have 40 or 80 tracks. Only 360-KB floppy drives have 40 tracks; drives with 270KB, 1.2MB, and 1.44MB capacity all have 80 tracks. Because very few modern PCs have 40-track floppy drives, we recommend that you set this field to disabled to save time.
  - Boot Up NumLock Toggle between On or Off to control the state of Status the NumLock key when the system boots. If On, the numeric keypad is in numeric mode. If off, the numeric keypad is in cursor control mode.
    - Gate A20 Option Gate A20 refers to the way the system addresses memory above 1 MB (extended memory). When set to *Fast*, the system chipset controls Gate A20. When set to *Normal*, a pin in the keyboard controller controls Gate A20. Setting Gate A20 to Fast improves system speed, particularly with OS/2 and Windows.

Typematic Rate SettingWhen Disabled, the following two items (Typematic Rate<br/>and Typematic Delay) are irrelevant. Keystroke repeats<br/>at a rate determined by the keyboard controller in your<br/>system.<br/>When Enabled, you can select a typematic rate and<br/>typematic delay.

- Typematic Rate (CharsWhen the typematic rate setting is enabled, you can<br/>select a typematic rate (the rate at which character<br/>repeats when you hold down a key) of 6, 8, 10, 12,<br/>15, 20, 24, or 30 characters per second.
  - Typematic Delay Choices: 250; 500; 750; 1000. This option sets the (Msec) time interval for displaying the first and the second characters. If enabled, the time interval is optional.
    - Security Option If you have set a password, select whether the password is required every time the System boots, or only when you enter setup. The choices: system; setup.
- **OS Select For DRAM >** Select OS2 only if you are running OS/2 operating **64MB** system with greater than 64MB of RAM on your system.
  - Report No FDD For
     Yes: BIOS reports "NO FDD" to Win95.

     Win95
     No (default): BIOS will not report "NO FDD" to Win95.

Press <ESC> to return to the Main Menu when you finish setting up all items.

# 4-6.4 ADVANCED CHIPSET FEATURES

• ADVANCED CHIPSET FEATURES is used to modify the values of chipset buffers. These buffers control the system options.

Run the ADVANCED CHIPSET FEATURES as follows:

1. Choose "ADVANCED CHIPSET FEATURES" from the Main Menu and a list of option will appear:

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software Advanced Chipset Features

SDRAM CAS Latency Time	3	Item Help
SDRAM Cycle Time Tras/Trc	7/9	Menu Level 🕨
SDRAM RAS-To-CAS Delay	3	
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
CPU Latency Timer	Enabled	
Delayed Transaction	Enabled	
AGP Graphics Aperture Size	64MB	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

- Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:
- <F1>: "Help" gives options available for each item.
- <F5>: Get the previous values. These values are the values with which the user starts the current session.
- <F6>: Load all options with the BIOS default values.
- <F7>: Load all options with the Setup default values.

SDRAM CAS Latency Time	When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Do not reset this field from the de- fault value specified by the system designer.
SDRAM Cycle Time Tras/Trc	Select the number of SCLKs for an access cycle. The choices: 5/7; 7/9
SDRAM RAS-To-CAS Delay	This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. Fast gives faster performance and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The Choices: 2; 3
SDRAM RAS Precharge Time	If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be incomplete and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field applies only when synchronous DRAM is installed in the system. The Choices: 2; 3
System BIOS Cacheable	Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance.
Video BIOS Cacheable	Selecting Enabled allows caching of the system BIOS ROM at C0000h to C7FFFh, resulting in video performance. However, if any program writes to this memory area, a system error may result.
Memory Hole At 15M-	You can reserve this area of system memory for ISA

**16M** adapter ROM. When this area is reserved, it cannot be cached.
CPU Latency Timer Use Default setting.

- **Delayed Transaction** The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.
- AGP Graphics Aperture Size Choices: 32; 64 MB. Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will automatically report the starting address of this buffer to the O.S.

Press <ESC> to return to the Main Menu when you finish setting up all items.

#### **4-6.5 INTEGRATED PERIPHERALS**

• INTEGRATED PERIPHERALS option allows you to get some information inside your system when it is working.

Run the INTEGRATED PERIPHERALS as follows:

- Choose "INTEGRATED PERIPHERALS" from the Main Menu and a list of options will appear:
- Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:
- <F1>: "Help" gives options available for each item.
- <F5>: Get the previous values. These values are the values with which the user starts the current session.
- <F6>: Load all options with the BIOS default values.
- <F7>: Load all options with the Setup default values.

On-Chip Primary PCI IDE	Enabled	Item Help
On-Chip Secondary PCI IDE	Enabled	Menu Level 🕨
IDE Primary Master PIO	Auto	
IDE Primary Slave PIO	Auto	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	
USB Controller	Enabled	
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	
Init Display First	PCI Slot	
	Auto	
AC97 Modem	Auto	
	Auto	
IDE HDD Block Mode		
X KB Dower ON Deseword	Entor	
× Hot Key Power On	Ctrl - F1	
Onboard EDC Controller	Enabled	
Onboard Serial Port 1		
Onboard Serial Port 2	Auto	
UART Mode Select	Normal	
× UR2 Duplex Mode	Half	
Onboard Parallel Port	378/IRO7	
Parallel Port Mode	SPP	
× ECP Mode Use DMA	3	
PWRON After PWR-Fail	Former Sts	
Game Port Address	201	
Midi Port Address	330	
Midi Port IRQ	10	

#### CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software Intergrated Peripherals

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

On-Chip Primary/	The chipset contains a PCI IDE interface with support
Secondary PCI IDE	from two IDE channels. Select Enabled to activate
	the first and/or the second IDE interface. Select
	Disabled to inactivate an interface if you install a
	primary and/or second add-on IDE interface.
	The choices: Enabled; Disabled.

PrimaryChoose Auto or Mode 0~4. The BIOS will detect theMaster / Slave PIOHDD mode type automatically when you chooseSecondaryAuto. You need to set to a lower mode than AutoMaster / Slave PIOwhen your hard disk becomes unstable.<br/>The choices: Auto; Mode 0; Mode 1; Mode 2; Mode

3; Mode 4.

PrimaryUltra DMA33/66/100 implementation is possible onlyMaster / Slave UDMAif your IDE hard drive supports it, if the operating<br/>environment includes a DMA drive, and if yourMaster / Slave UDMAsystem software supports Ultra DMA33/66/100.<br/>Select "Auto" to enable BIOS support.<br/>The choices: Auto; Disabled.

- **USB Controller** Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.
- USB Keyboard Sup- Select Enabled if your system contains a Universal port Serial Bus (USB) controller and you have a USB keyboard.
- USB Mouse Support Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB mouse.
  - Init Display First Initialize the AGP video display before initializing any other display device on the system. Thus the AGP display becomes the primary display.

AC97 Audio/Modem This option allows you to decide to enable/disable the 815 chipset to support AC97 Audio/Modem. The choices: Auto; Disabled

Onboard/CNR LAN Use the default setting. Selection The choices: Auto; Onboard

IDE HDD Block Mode Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

The choices: Enabled; Disabled.

- Power ON Function This option allows you to select <KB Power ON Password> , <Hot-Key Power ON> or others. The choices: Any Key, Button only, Keyboard 98, Password, Hot-Key, Mouse Move, Mouse Click.
- **KB Power ON Pass-** When user sets a password for keyboard, the password word user set that return the system to Full On state.
  - Hot-Key Power ON Boot up the system via predetermined keyboard hot key. The choices: <Ctrl>+<F1>...<F12>

Onboard FDC Select Enabled if your system has a floppy drive controller (FDC) installing in the system board and you want to use it. If you install add-in FDC or the system has no floppy drive, select Disabled in this field.

The choices: Enabled; Disabled.

Onboard Serial Port 1 / Port 2	Select a logical COM port name and matching address for the first and second serial ports. Select an address and corresponding interrupt for the first and second serial ports.	
UART Mode Select	The second serial port on your system may offer a variety of infrared port modes. Click here for a description of various modes. (Click your browser's Back button, or your right mouse button, to return to this page.) The choices: Standard; HPSIR; ASKIR	
UR2 Duplex Mode	This item allows you to select the IR half / full duplex function. The choices: Half; Full.	
Onboard Parallel Port	This item allows you to determine onboard parallel port controller I/O address setting. The choices: 378H/IRQ7; 278H/IRQ5; 3BC/IRQ7; Disabled.	
Parallel Port Mode	Select an operating mode for the on-board parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes.	
ECP Mode Use DMA	Select a DMA channel for the port.	
PWRON After PWR- Fail	Off: Disable Power Lost Resume function. On: Enable Power Lost Resume function. Former Sts: Use Former status. The choices: Off; On; Former Sts.	
Game Port Address	This item allows you to select the Game Port Address. The choices: Disabled; 201; 209	

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- MIDI Port Address Select a DMA channel for the parallel port for use during ECP mode. The choices: Disabled; 330; 300
  - MIDI Port IRQ This item allows you to select the MIDI Port IRQ. The choices: 5; 10

3. Press <ESC> to return to the Main Menu when you finish setting up all items.

#### 4-6.6 POWER MANAGEMENT SETUP

 POWER MANAGEMENT SETUP allows you to set the system's power saving functions.

Run the POWER MANAGEMENT SETUP as follows:

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a list of options will appear:

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software Power Management Setup

ACPI Function	Enabled	Item Help
ACPI Suspend Type	S1(POS)	Menu Level ►
Power Management	User Define	
Video Off Method	V/H SYNC+Blank	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
MODEM Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Wake-up by PCI card	Disabled	
Power On by Ring	Disabled	
USB KB Wake-Up From S3	Disabled	
Resume by Alarm	Disabled	
×Date (of Month) Alarm	0	
×Time (hh:mm:ss)	0 0 0	
** Reload Global Timer Even	ts **	
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD, COM, LPT Port	Disabled	
PCI PIRQ[A-D] #	Disabled	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

- Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:
- <F1>: "Help" gives options available for each item.
- <F5>: Get the previous values. These values are the values with which the user starts the current session.
- <F6>: Load all options with the BIOS default values.
- <F7>: Load all options with the Setup default values.

<b>ACPI Function</b>	Select Enabled only if your computer's operating
	system supports the Advanced Configuration and
	Power Interface (ACPI) specification.

ACPI Suspend Type	This item allows you to select the ACPI suspend
	type. You can select S3(STR) for suspending to
	DRAM or S1(POS) for power on suspend under
	Windows 98 ACPI mode.
	The choices: S1(POS), S3(STR).

Power Management This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes. This table describes each power management mode:

Max Saving	Maximum power savings. Only Available for SL CPUs. Inactivity period is 1 minute in each mode.	
User Define	Set each mode individually. Select time-out period in the section for each mode stated below.	
Min Saving	Minimum power savings. Inactivity period is 1 hour in each mode (except the hard drive).	

Video Off Method This determines the manner by 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 Supports	Select this option if you monitor supports the Display Power Management Signaling (DPMS) standard of the Video Elect- ronics Standards to select video power management values.

Video Off in Suspend This determines the manner in which the monitor is blanked. The choices: Yes; No.

- Suspend Type Select the Suspend Type. The choices: PWRON Suspend; Stop Grant.
- MODEM Use IRQ Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. The choices: 3; 4; 5; 7; 9; 10; 11; NA.
  - Suspend Mode After the selected period of system inactivity, the chipset enters a hardware suspend mode, stopping the CPU clock and possibly causing other system devices to enter power management modes.
- 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.
- **Soft-Off by PWRBTN** When Enabled, turning the system off by pressing the on/off button places the system in a very low-power-usage state.

- Wake-up by PCI card This function allows you to enabled the system by wake-up by PCI card. The choices: Delay 4 Sec: Instant-Off.
  - Power On by Ring An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state. The choice: Enabled; Disabled.
  - USB KB Wake-Up This item will enable you to Wake-up the system by
     From S3 USB keyboard when you shut down the computer in S3 Mode.
     The choices: Enabled: Disabled.
  - **Resume by Alarm** When Enabled, you can set the data and time at the which the RTC (Real Time Clock) alarm awakens the system from suspend mode.
- Date (of Month) Alarm Set a certain date when RTC Alarm Resume option is Enabled to awaken the system. This option is concurrent with Resume Time option.
  - **Time (hh:mm:ss)** Set a certain time when RTC Alarm Resume option is Enabled to awaken the system. This option is concurrent with Date option.

Reload Global TimerReload Global Timer Events are I/O events whose<br/>occurrence can prevent the system from entering a<br/>power saving mode or can awaken the system from<br/>such a mode. In effect, the system remains alert for<br/>anything which occurs to a device which is configured as<br/>Enabled, even when the system is in a power down<br/>mode.

Primary IDE 0 Primary IDE 1 Secondary IDE 0 Secondary IDE 1 FDD, COM, LPT Port PCI PIPQ[A-D]

3. Press <ESC> to return to the Main Menu when you finish setting up all items.

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# 4-6.7 PNP / PCI CONFIGURATION

 PNP/PCI CONFIGURATION allows you to modify the system's power saving functions.

Run the PNP/PCI CONFIGURATION as follows:

1. Choose "PNP/PCI CONFIGURATION" from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software PnP/PCI Configurations

Reset Configuration Data	Disabled	Item Help
Resources Controlled By × IRQ Resources × DMA Resources PCI/VGA Palette Snoop	Auto(ESCD) Press Enter Press Enter Disabled	Menu Level≯

- ↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults
- Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / - keys. An explanation of the <F> keys follows:
- <F1>: "Help" gives options available for each item.
- <F5>: Get the previous values. These values are the values with which the user starts the current session.
- <F6>: Load all options with the BIOS default values.
- <F7>: Load all options with the Setup default values.

Reset Configuration Normally, you leave this Disabled. Select Enabled Data to reset Extended System Configuration Data (ESCD), when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

Resource Controlled The Plug and Play AwardBIOS can automatically By configure all the boot and Plug and Play-compatible devices. If you select *Auto*, all the interrupt request (IRQ) and DMA assignment fields disappear, as the BIOS automatically assigns them.

**IRQ RESOURCES** Press Enter. Please refer to the list below:

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software IRQ Resources

IRQ-3 assigned to	PCI Device	Item Help
IRQ-4 assigned to	PCI Device	Menu Level ►
IRQ-5 assigned to	PCI Device	
IRQ-7 assigned to	PCI Device	
IRQ-9 assigned to	PCI Device	
IRQ-10 assigned to	PCI Device	
IRQ-11 assigned to	PCI Device	
IRQ-12 assigned to	PCI Device	
IRQ-14 assigned to	PCI Device	
IRQ-15 assigned to	PCI Device	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults DMA Resources Press Enter. Please refer to the below list.

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software DMA Resources

DMA-0	assigned to	PCI/ISA PnP	Item Help
DMA-1 DMA-3 DMA-5 DMA-6	assigned to assigned to assigned to assigned to	PCI/ISA PnP PCI/ISA PnP PCI/ISA PnP PCI/ISA PnP PCI/ISA PnP	Menu Level >
DMA-7	assigned to	PCI/ISA PnP	

- ↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults
- PCI/VGA Palette Snoop This option allows the BIOS to preview VGA status, and to modify the information delivered from the feature Connector of the VGA card to MPEG card. This option can solve the display inversion to black after you have used MPEG card.

Press <ESC> to return to the Main Menu when you finish setting up all items.

# 4-6.8 PC HEALTH STATUS

 This section helps you to get more information about your system including CPU temperature, FAN speed and voltage. It is recommended that you contact your mainboard supplier to get proper values about the setting of the CPU temperature.

Run the "PC Health Status" as follows:

1. Choose "PC Health Status" from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1984 - 2001 Award Software PC Health Status

Shutdown T	emperature	Disabled	Item Help
1.8V	0	1.87 V	Menu Level
CPU Vcore	1	2.00 V	
DIMM	2	3.37 V	
+5V	3	5.02 V	
+12V	4	12.28 V	
- 12V	5	(-)12.52 V	
- 5	6	(-)5.10 V	
5VSB	7	5.08 V	
Voltage Bat	tery	3.08 V	
Temperatur	e 1	41°C	
Temperatur	e 2	(-)55°C	
Temperatur	e 3	(-)55°C	
Fan 1 Speed	ł	5625 RPM	
Fan 2 Speed	ł	0 RPM	
Fan 3 Speed	ł	0 RPM	
·			

- ↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults
- 2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / keys.
- <F1>: "Help" gives options available for each item.
- <F5>: Get the previous values. These values are the values with which the user starts the current session.
- <F6>: Load all options with the BIOS default values.
- <F7>: Load all options with the Setup default values.

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- Shutdown Temperature This feature prevents your CPU from damage by over heat. If the CPU's temperature is higher than "CPU warning temperature" that you select in this field, the BIOS will shut down your system within 3 seconds.
  - CPU Vcore Shows CPU core actual voltage value.
    - **DIMM** Shows DDR DIMM actual voltage value.
    - Voltage Shows power supply actual voltage value.
  - Temperature Shows current temperature.
  - **FAN 1/2/3 Speed** These fields display the speeds of up to 3 working fans, if your computer contains a monitoring system.

Press <ESC> to return to the Main Menu when you finish setting up all items.

# 4-6.9 FREQUENCY/VOLTAGE CONTROL

Run the "FREQUENCY/VOLTAGE CONTROL" as following:

1. Choose "FREQUENCY/VOLTAGE CONTROL" from the Main Menu and a screen with a list of options will appear:

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software Frequency Control

RedStorm Overclocking Tech	Press Enter	Item Help
Auto Detect DIMM/PCI Clk × Spread Spectrum Modulated × Linear Spread Model Linear Spread Range CPU Skew Adjust PCI Skew Adjust SDRAM Skew Adjust AGP Skew Adjust CPU Host/PCI Clock CPU Voltage Regulator CPU Clock Ratio	Enabled Disabled 3 O Disabled Disabled Disabled 100/33MHz Default x3	Menu Level ▶

- ↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults
- 2. Use one of the arrow keys to move between options and modify the selected options by using PgUp / PgDn / + / keys.
- <F1>: "Help" gives options available for each item.
- <F5>: Get the previous values. These values are the values with which the user starts the current session.
- <F6>: Load all options with the BIOS default values.
- <F7>: Load all options with the Setup default values.

RedStorm Press "Enter" to execute this function, by which BIOS Overclocking Tech will defect CPU Frequency, until the unacceptable one is reached. BIOS will then stop and reboot automatically with the optimal CPU Frequency. If system does not reboot after Frequency detection, user should reboot system manually.

Auto Detect To reduce the occurrence of electromagnetic DIMM/PCI CLK interference (EMI), the BIOS detects the presence or absence of components in DIMM and PCI slots and turns off system clock generator pulses against empty slots.

Spread Spec- When the system clock generator pulses, the extreme values of the pulse generate excess EMI. Enabling pulse spectrum spread modulation changes the extreme values from spikes to flat curves, thus reducing EMI. This benefit may in some cases be outweighed by problems with timing-critical devices, such as a clock-sensitive SCSI device.

Linear Spread This item allows you to enable/disable the linear Model spread model.

The choices: Enabled; Disabled.

- Linear Spread This item allows you to enable/disable the linear Range spread range. The choices: Enabled; Disabled.
  - CPU Skew This item allows you to reduce CPU transfer rate. Adjust Users should leave this item at default value. The choices: Disabled; 150ps; 300ps; 450ps.
- PCI Skew Adjust This item allows you to reduce PCI transfer rate. Users should leave this item at default value. The choices: Disabled; 150ps; 300ps; 450ps.

- SDRAM SkewThis item allows you to reduce SDRAM transfer rate.AdjustUsers should leave this item at default value.<br/>The choices: Disabled; 150ps; 300ps; 450ps.AGP SkewThis item allows you to reduce AGP transfer rate.<br/>Users should leave this item at default value.<br/>The choices: Disabled; 150ps; 300ps; 450ps.CPU Host/PCISelect Default or select a timing combination for the<br/>CPU and the PCI bus. When set to Default, the BIOS<br/>uses the actual CPU and PCI bus clock values.CPU Voltage<br/>RegulatorThis item allows users to adjust the CPU Vcore<br/>voltage. The instant damage of CPU is due to the<br/>wrong Vcore voltage setting, so we recommend
  - **CPU Clock** This item allows you to select the CPU ratio, if CPU

unless you fully understand it.

that user should leave this item to Default setting

**Ratio** clock Ratio is locked, the function will be disabled.

Press <ESC> to return to the Main Menu when you finish setting up all items.

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# 4-6.10 LOAD OPTIMIZED DEFAULTS

• When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:

```
" Load Optimized Defaults (Y/N) ? N "
```

"Y" is for "Yes", and "N" is for "No".

Pressing "Y" loads the BIOS default values that are factor settings for optimal performance of system operations.

# 4-6.11 SET SUPERVISOR / USER PASSWORD

- These two options allow you to set your system passwords. Normally, the supervisor has a higher priority to change the CMOS setup option than the users. The way to set up the passwords for both Supervisor and Users are as follows:
- 1. Choose "Change Password" in the Main Menu and press <Enter>. Then following message appears:

"Enter Password : "

- 2. The first time you run this option, enter your password up to 8 characters and press <Enter>. (The screen does not display the entered characters.)
- 3. After you enter the password, the following message appears prompting you to confirm the password:

#### "Confirm Password : "

- 4. Enter the same password "exactly" the same as you have just typed to confirm the password and press <Enter>.
- 5. Move the cursor to Save & Exit Setup to save the password.
- If you need to delete the password entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you have entered before.
- Move the cursor to Save & Exit Setup to save the option you have just configured; otherwise the old password will still be there the next time you turn your system on.
- 8. Press <Enter> to exit to the Main Menu.

**NOTE:** If you forget or lose the password, the only way to access the system is to clear the CMOS RAM. All setup informations will be lost and you need to run the BIOS setup program again.

#### 4-6.12 SAVE & EXIT SETUP

• SAVE & EXIT SETUP allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and the following message appears:

 $^{\rm \scriptscriptstyle N}$  SAVE to CMOS and EXIT (Y/N) ? Y  $^{\rm \scriptscriptstyle N}$ 

"Y" is for "Yes", and "N" is for "No".

Press <Enter> key to save the configuration changes.

#### 4-6.13 EXIT WITHOUT SAVING

• EXIT WITHOUT SAVING option allows you to exit the Setup Utility without saving the modifications that you have specified. Highlight this option on the Main Menu and the following message appears:

```
" Quit Without Saving (Y/N) ? N "
```

"Y" is for "Yes", and "N" is for "No".

You may change the prompt to "Y" and press <Enter> key to leave this option .



# CHAPTER 5 RAID CONTROLLER (FOR 65EP2+ ONLY)

This chapter contains the following topics :

5-1 CREATING YOUR DISK ARRAY 5-2 USING FASTBUILD™ CONFIGURATION

UTILITY

5-3 INSTALLING DRIVERS FOR FAST TRAK100-LITE

# **BEFORE CREATING DISK ARRAY**

- Please locate the Promise RAID Controller on your mainboard to make sure that you are using the right board (for example, SL-65EP2+, not SL-65EP2).
- (2) Locate the RAID Controller Select Jumper JP9 on SL-65EP2+, and make sure this Jumper is set at Pin 1-2 closed for enabling IDE RAID controller. Please refer to the following Setup illustration of JP9 on board 65EP2+:



On-Board	RAID	Controller
Select For	65EP2	<u>!+:</u>

Enabled (default)	
Disabled	

# **5-1 CREATING YOUR DISK ARRAY**

To create your disk array, you have to open the FastBuild Utility, which should have already been built in your system BIOS through the Promise Controller. You can create two types of array with the help of FastBuild Utility.

- (1) An array for Performance in Striping type with 1 or 2 drives (or called RAID 0).
- (2) An array for Data Security in Mirroring type with 2 drives treated as one disk array (or called RAID 1).

*WARNING*: To create a Security array using an existing hard drive, backup any necessary data. Failure to follow this could result in data loss.

# 5-1.1 Creating An Array For Performance

FastTrak100-Lite allows users to create striped arrays with 1 or 2 drives.

 Boot your system with FastTrak100-Lite Controller enabled by JP9 and your hard drive(s) connected to IDE3/IDE4. Suppose this is the first time to create a Disk Array. The Promise BIOS on board with FastBuild Utility built in will scan the IDE devices and display the result as below:

FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx) (c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

No array is defined...

Press <Ctrl-F> to enter FastBuild (tm) Utility Or press <ESC> key to continue booting the system.

2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu.

3. Press "1" to display the Auto Setup Menu below. This is the fastest and easiest method to create your first array.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc. [Auto Setup Options Menu]	
Optimize Array for:	Performance
Typical Application usage:	Desktop
[Array Setup Cont	figuration]
Mode	Stripe
Spare Drive	0
Drives used in Array	1
Array Disk Capacity	38166
[Keys Available]	
[↑] Up [↓] Down [←,→, Spac	ce] Change Option
[ESC] Exit [Ctr	I-Y] Save

- 4. Using the Spacebar, choose "Performance" under the **Optimize Array for** section.
- Select how you will use your PC under the Typical Application usage section The choices are A/V Editing, Server, and Desktop (the default).
- 6. Press <Ctrl-Y> keys to save and create the array.
- 7. Reboot your system.
- 8. Once the array has been created on new drive(s), you would need to FDISK and format the array as if it were a new single hard drive.
- Also proceed to "Installing Drivers" section of this Chapter (see Section 5-3) for system and FastTrak100 Driver setup.

# 5-1.2 Creating A Security (Mirror) Array With New Drives

FastTrak100-Lite on board permits only two drives to be used for a single Mirroring array with FastBuild Utility.

1. Boot your system with FastTrak100-Lite Controller enabled by JP9 and your hard drive(s) connected to IDE3/IDE4. Suppose this is the first time to create a Disk Array. The Promise BIOS on board with FastBuild Utility built in will scan the IDE devices and display the result as below:

FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx) (c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

No array is defined...

Press <Ctrl-F> to enter FastBuild (tm) Utility Or press <ESC> key to continue booting the system.

- 2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu.
- 3. Press "1" to display the Auto Setup Menu below. This is the fastest and easiest method to create your first array.

 FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc.

 [Auto Setup Options Menu]

 Optimize Array for:
 Performance

 Typical Application usage:
 Desktop

 [Array Setup Configuration]

 Mode
 Stripe

 Spare Drive
 0

 Drives used in Array
 1

 Array Disk Capacity
 38166

 [Keys Available]

 [↑] Up [↓] Down [←, →, Space] Change Option

 [ESC] Exit

- 4. Using the Spacebar, choose "Security" under the **Optimize Array for** section.
- 5. Press <Ctrl-Y> keys to save and create the array.
- 6. The window below will appear:

Do you want the disk image to be duplicated to anther? (Yes/No) Y - Create and Duplicate N - Create Only

- 7. Press "N" for the Create Only option.
- 8. A window will appear almost immediately confirming that your Security array has been created. Press any key to reboot the system.

Array has been created. <Press Any key to Reboot>

- 9. Proceed with normal FDISK and format procedures as if you had just installed a new hard drive.
- Once the arrayed drives have been formatted, proceed to Section 5-3 "Installing Driver" to install your operating system and FastTrak100-Lite driver.

#### 5-1.3 Creating A Security (Mirror) Array With An Existing Data Drive

FastTrak100-Lite on board permits only two drives to be used for a single Mirroring array with FastBuild Utility.

Checkpoints before creating a Security Array:

- (1) You may use a drive that is containing data or a bootable O/S. Then you will need another new drive of identical or larger storage capacity.
- (2) Backup any necessary data before proceeding. Failure to follow this accepted PC practice could result in data loss.
- (3) If you wish to include your current bootable drive holding Window NT 4.x or Windows 2000 O/S as part of a bootable Mirroring (RAID 1) array on your FastTrak100-Lite controller, you SHOULD first install the Windows NT4 or 2000 driver software to this drive while it is still attached to your system hard drive controller (e.g. IDE1/IDE2). For all other Operating Systems except Win NT4.0 and 2000, you can proceed with your hard driver(s) connected to IDE3/DIE4.
- Boot your system with FastTrak100-Lite Controller enabled by JP9 and your hard drive(s) connected to IDE3/IDE4. Suppose this is the first time to create a Disk Array. The Promise BIOS on board with FastBuild Utility built in will scan the IDE devices and display the result as below:

FastTrak100-Lite (tm) BIOS Version 1.xx (Build xxxx) (c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

No array is defined...

Press <Ctrl-F> to enter FastBuild (tm) Utility Or press <ESC> key to continue booting the system.

2. Press <Ctrl-F> keys to display the FastBuild (tm) Utility Main Menu.

3. Press "1" to display the Auto Setup Menu below. This is the fastest and easiest method to create your first array.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc. [Auto Setup Options Menu]	
Optimize Array for:	Performance
Typical Application usage:	Desktop
[Array Setup Co	nfiguration]
Mode	Stripe
Spare Drive	0
Drives used in Array	1
Array Disk Capacity	38166
[Keys Availab	le]
[↑] Up [↓] Down  [←,→, Sp	ace] Change Option
[ESC] Exit  [C	trl-Y] Save

- 4. Using the Spacebar, choose "Security" under the **Optimize Array for** section.
- 5. Press <Ctrl-Y> keys to Save your selection. The window below will appear:

Do you want the disk image to be duplicated to anther? (Yes/No) Y - Create and Duplicate N - Create Only

oreate only

6. Press "Y" for the "Create and Duplicate" option. The window below will appear asking you to select the Source drive to use.

Channel: ID	Source Disk Drive Model	Capacity (MB)
Channel: ID	Target Disk Drive Model	Capacity(MB)
Channel: ID	[Please Select A Source Disk] Drive Model	Capacity (MB)
1 : Master 2 : Master	QUANTUMCR8.4A QUANTUMCR8.4A	8063 8063
	[↑] Up [↓] [ESC] Exit [Ctrl-Y] S	ave

- Use the arrow keys to choose which drive contains the existing data to be copied. FastBuild will copy all data from the Source drive to the Target drive.
- 8. Press [Ctrl-Y] keys to save selection and start duplication. The following progress screen will appear:

Start to duplicate the image ..... Do you want to continue? (Yes/No)

Y - Continue N - Create Only

- 9. Select "Y" continue. If you choose "N", you will return to step 4.
- 10. Once complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system.

Array has been created. <Press Any key to Reboot>

11. Proceed to Section **5-3 Installing Driver** to install the FastTrak100-Lite driver and/or operating system.

# 5-2 USING FASTBUILD™ CONFIGURATION UTILITY

The FastBuild<sup>™</sup> Configuration Utility offers several menu choices to create and configure the drive array on the Promise FastTrak100-Lite. In this Section, it is assumed you have already created an array in the previous Section and now wish to make a change to the array or view other status.

#### 5-2.1 Viewing FastTrak100-Lite BIOS Screen

When you boot your system with the FastTrak100-Lite Controller enabled and drives connected to RAID IDE3 / IDE4, the Promise BIOS on board will detect the drives attached and show the following screen.

FastTrak100-Lite (tm) BIOS Version1.xx (Build xx) (c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

Scanning IDE drives ......

If an array exists already, the BIOS will display the following screen showing the Promise BIOS version and status of the array.

 FastTrak100-Lite (tm) BIOS Version1.xx (Build xxxx)

 (c) 1995-2000 Promise Technology, Inc. All Rights Reserved.

 ID
 MODE SIZE
 TRACK-MAPPING
 STATUS

 1\*
 2+0 Stripe
 16126M
 611/128/32
 Functional

 Press <Ctrl-F> to enter FastBuild (tm) Utility ......

The array status consists of three possible conditions: Functional, Critical, Off-line.

Functional - The array is operational.

**Critical** - A mirroring array contains a drive that has failed or disconnected. The remaining drive member in the array is functional. However, the array has temporarily lost its ability to provide fault tolerance. The user should identify the failed drive through the FastBuild<sup>™</sup> Setup utility, and then replace the problem drive.

**Off-line** - A striped array having only 1 drive has failed or been disconnected. When the array condition is "Off-line", the user must replace the failed drive (s), then restore data from a backup source.

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# 5-2.2 Navigating the FastBuild<sup>™</sup> Setup Menu

When using the menus, there are some of the basic navigation tips: Arrow keys highlights through choices; [ESC] key is used to abort or exit the current menu.

# 5-2.3 Using the Main Menu

This is the first option screen when entering the FastBuild<sup>™</sup> Setup.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc. [Main Menu]
Auto Setup[1]View Drive Assignments[2]View Array[3]Delete Array[4]Rebuild Array[5]Controller Configuration[6]
[Keys Available] Press 16 to Select Option [ESC] Exit

To create a new array automatically, follow the setups under "Creating Arrays Automatically" in Section 5-1. Promise recommends this option for most users.

To view drives assigned to arrays, see "Viewing Drive Assignments" in Section 5-2.5.

To delete an array (but not delete the data contained on the array), select "Deleting An Array" in Section 5-2.12.

To rebuild a mirroring array, see "Rebuilding an Array" in Section 5-2.13. To view controller settings, see "Viewing Controller Configuration" in Section 5-2.14.

**NOTE:** After configuring an array of new blank drive(s) using FastBuild, you should FDISK and format the arrayed drive(s), in a way depending on the type of system you are using.

# 5-2.4 Creating Arrays Automatically

The Auto Setup <1> selection from the Main Menu can intuitively help create your disk array. It will assign all available drives appropriate for the disk array you are creating. After making all selections, use Ctrl-Y to save selections. FastBuild will automatically build the array.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc. [Auto Setup Option Menu]
Optimize Array for: Performance Typical Application usage: A/V Editing
[Auto Setup Option Menu]
ModeStripe Spare Drive Count1 Drives used in Array2 Array Disk Capacity16126
[Keys Available]
Press 16 to Select Option [ESC] Exit
## 5-2.4-1 Optimize Array For

Select whether you want Performance (RAID 0), or Security (RAID 1) under the "Optimize Array for" setting.

## (1) Performance (RAID 0 Striping)

Supports the maximum performance. The storage capacity equals the number of drives times the capacity of the smallest drive in the disk array.

**NOTE:** FastTrak100-Lite permits striped arrays of 1 or 2 drives attached in Auto Setup mode.

#### (2) Security (RAID 1 Mirroring)

Creates a mirrored (or fault tolerant) array for data security.

**NOTE:** Under the Security setting, FastTrak100-Lite permits two drives to be used for a single Mirrored array.

## 5-2.4-2 Defining Typical Application Usage

Allows the user to choose the type of PC usage that will be performed in order to optimize how FastTrak100-Lite handles data blocks to enhance performance. Your choice will determine the block size used. You may choose from: A/V Editing (for audio/video applications, or any similar application that requires large file transfers), Server (for numbers of small file transfers), or Desktop (a combination of large and small file sizes).

## 5-2.5 Viewing Drive Assignments

The View Drive Assignments <2> option in the Main Menu displays whether drives are assigned to a disk array or are unassigned.

Under the "Assignment" column, drives are labeled with their assigned disk array or shown as "Free" if unassigned. Such "Free" drives can be used for a future array or used as a spare drive when a drive fails in a mirrored array. Unassigned drives are not accessible by the OS. The menu also displays the data transfer mode that relates to speed used by each drive (U5 refers to 100MB/sec transfers, U4 refers to 66MB/sec transfers, etc ...)

 FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc. [View Drive Assignments]

 Channel: ID Drive Model Capacity (MB) Assignment Mode

 1: Master QUANTUMCR8.4A 8063
 Array 1
 U5

 1: Slave QUANTUMCR8.4A 8063
 Free
 U5

 2: Master QUANTUMCR8.4A 8063
 Free
 U5

 [Keys Available]
 [Keys Available]
 [1] Up [↓] Down [ESC] Exit Mode (U=UDMA, P=PIO, D=DMA)

## 5-2.6 View an Array

The View Array <3> option from the Main Menu allows users to view the defined elements and RAID status that have already been defined by FastBuild Utility.

FastBuild (t	m) Utility 1.xx (c [Vie <sup>.</sup>	c) 1995-2000 w Array Mer	) Promise Tech nu]	nology, Inc.
Array No *Array 1	RAID Mode Stripe	<b>Total drv</b> 2	Capacity(MB 16126	<b>5) Status</b> Functional
Array 2 Array 3 Array 4				
		[Keys Avail	able]	
Note:*	Bootable Arra	ay		
[	↑ ] Up [↓] Dow Space] Change	n [ESC] Ex Boot Drive	it [Enter] Seleo	ct

## 5-2.7 Adding Fault Tolerance to an Existing Drive

FastTrak100-Lite will create a mirroring array using an existing system drive with data. You must assign the existing drive and another drive of same or larger capacity to the Mirroring array. The BIOS will send the existing data to the new blank drive.

#### WARNING :

- Backup any necessary data before proceeding. Failure to follow this practice will result in data loss.
- If you wish to include your current bootable drive using the Windows NT 4.x or Window 2000 operating system as part of a bootable Mirrored (RAID 1) array on your FastTrak100-Lite, do NOT connect the hard drive to the Fast Trak100-Lite Controller yet. You MUST install the drive of Fast Trak100-Lite Controller first (see Section 5-3) to this drive while it is still attached to your existing hard drive controller. For all other Operating System proceed like here.
- 1. After assigning the drives to a Mirroring array, press <Ctrl-Y> key to save your selection. The window below will appear.

Do you want the disk image to be duplicated to anther? (Yes/No)

- Y Create and Duplicate
- N Create Only
- 2. Press "Y" for the Create and Duplicate option. The window below will appear asking you to select the Source drive to use. FastBuild will copy all data from the Source drive to the Target drive.



Use the arrow keys to choose which drive containing the existing data to be copied.

*WARNING* : All target drive data will be erased. Make sure you choose the correct drive.

 Press <Ctrl-Y> keys to save selection and start duplication. The following confirmation screen will appear.

> Start to duplicate the image ... Do you want to continue? (Yes/No) Y - Continue N - Abort

- 5. Select "Y" continue. If you choose "N", you will be returned to step 1.
- 6. Once "Y" is selected, the following progress screen will appear. The process will take a few minutes.



Once mirroring is complete, the following screen will appear confirming that your Security array has been created. Press any key to reboot the system.

> Array has been created. <Press Any key to Reboot>

#### 5-2.8 Making a FastTrak100-Lite Disk Array Bootable

**WARNING**: In order for you to boot from an array on the FastTrak100-Lite, your PC or server must be configured in the CMOS Setup to use the FastTrak100-Lite as a bootable device (versus the onboard controller or another add-in card). This option is not available if the FastTrak100-Lite is being used as a secondary controller. 1. Once you have returned to the Define Array Menu window (below), you will see the array(s) you have created. You now may use the menu to select which previously-defined array will be used as the bootable array.

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Inc. [Define Array Menu]				
Array No * Array 1	RAID Mode Stripe	Total Drv 2	Capacity(MB 13044	<b>) Status</b> Functional
Note: * B	ootable Array			
[´ [S	[ ] Up [ ↓ ] Dow pace] Change	n [ESC] Ex Boot Drive	it [Enter] Selec	ct

- 2. Use the [↑] Up [↓] Down keys to highlight the array which you want to from boot.
- 3. Press the [Space] bar.
- 4. An\* asterisk will appear next to the array number indicating it as bootable. The system will now recognize this array as the first array seen.
- 5. The system will then use this bootable array as the (fixed) boot C: drive.

*NOTE:* The bootable array must contain your configured operating system.

## 5-2.9 Creating a "Hot" Spare Drive for Mirroring Arrays

For automatic rebuilds of a mirroring array, attach an extra "spare" drive to the FaskTrak100-Lite. Drives that are not assigned to an array and are the same size or larger than the original will be used for the automatic rebuild. This is performed in the background under all supported operating systems, except DOS. At a later time, the system can be turned off and the failed drive can be physically removed.

#### 5-2.10 How FastTrak100-Lite Orders Arrays

During startup, the disk arrays on the FastTrak100-Lite are recognized in this order: 1) The array set to bootable in the FastBuild<sup>™</sup> Setup, and 2) the Array number (i.e. Array 0, Array 1 ...). This would involve determining which drive letters will be assigned to each disk array.

## 5-2.11 How FastTrak100-Lite Saves Array Information

All disk array data are saved into the reserved sector on each array member. Promise suggests that users record their disk array information for future reference.

Another feature of the FastTrak100-Lite disk array system is to recognize drive members event if drives are moved between different FastTrak100-Lite card connectors. Since each drive's array data identifies itself to the array, it is possible to move or swap drives without modifying the array setup. This is valuable when adding drives, or during a rebuild.

## 5-2.12 Deleting An Array

The Delete Array <4> Menu option allows for deletion of disk array assignments. This is not the same as deleting data from the drives themselves. If you delete an array by accident (and before it be used again), the array can normally be recovered by defining the array identically as deleted array (by Using Auto Setup).

**WARNING:** Deleting an exiting disk array could result in its data loss. Make sure to record all array information including the array type, the disk members, and stripe block size in case you wish to undo a deletion.

FastBuild (t	m) Utility 1.xx (c [ Delete	c) 1995-2000 ∋ Array Menι	) Promise Techn រ ]	ology, Inc.
<b>Array No</b> Array 1 Array 2 Array 3 Array 4	RAID Mode Stripe 	<b>Total Drv</b> 2 	Capacity(MB) 16126 	Status Functional
[↑]	[Ke ]Up [↓]Down	∍ys Available [Esc] Exit	, ] [Del] Delete	

- 1. To delete an array, highlight the Array you wish to delete and press the [Del] key.
- 2. The View Array Definition menu will appear (see below) showing which drives are assigned to this array.

FastBuild (tn	n) Utility 1.xx ( [ Dele	c) 1995-2000 te Array Mer	) Promise Teo nu ]	chnology, Ine.
Array No Array 1	RAID Mode	Total Drv	Capacity(N	/IB) Status 
Stripe Block	: 64 KB [ Dri	ive Assignme	ents]	
Channel : ID 1 : Master 2 : Master	D Drive Mo QUANTUM QUANTUM	<b>del Capa</b> CR8.4A & CR8.4A &	<b>city (MB)</b> 3063 3063	Assignment Y Y

3. Confirm yes to the follow warning message with the <Ctrl-Y> key to continue array deletion:

Are you sure you want to delete this array ? Press Ctrl-Y to Delete, others to Abort

4. After deleting the array, you should create a new array using Auto Setup.

## 5-2.13 Rebuilding A Mirroring Array

The Rebuild Array <5> Menu option is necessary for recovering from an error in a mirrored disk array. You will receive an error message when booting your system from the FastTrak BIOS.

*NOTE*: Drives MUST be replaced if they contain any physical errors.

Follow these steps BEFORE using the Rebuild Array menu option:

- On bootup, the FastTrak100-Lite Startup BIOS will display an error message identifying which drive has failed.
- 2. Press <Ctrl-F> keys to enter FastBuild Main Menu.
- 3. Select submenu Define Array <3>.
- 4. Select the failed array and identify the Channel and ID of the failed drive.
- 5. Power off and physically remove the failed drive.
- 6. Replace the drive with an identical model.
- 7. Reboot the system and enter the FastBuild Main Menu.
- 8. Select the <5> Rebuild Array option. The following screen will appear.

FastBuild (tm	n) Utility 1.xx (c	) 1995-2000	) Promise Techno	ology, Ine.
	[ Dele	te Array Mei	nu ]	
Array No	RAID Mode	Total Drv	Capacity(MB)	Status
Array 1	Mirror	2	16126	Critical
Array 1				
Array 1				
Array 1				
	[ Ke	eys Available	e]	
[↑]	] Up  [↓] Dowi	n [Esc] Ex	it [Del] Delete	

- 9. Highlight the array whose Status is "Critical".
- 10. Press [Enter]. The following screen will then appear (see next page).

FastBuild (tm) Utility 1.xx (c) 1995-2000 Promise Technology, Ine. [ Delete Array Menu ]				
Array No	RAID Mode	Total Drv	Status	
Array 2	Mirror	2	Critical	
Stripe Block:	Not Available [ Select Drive f	or Rebuild ]		
Channel : ID	Drive Model C	apacity (MB)	Assignment	
1 : Slave G	UANTUMCR8.4A	8063	Y	
[↑] U	[Keys Avail c [↓]Down [Esc	lable ] ] Exit [Del] D	elete	

- 11. Under [Select Drive for Rebuild], highlight the replacement drive.
- 12. Press [Enter] and confirm that the data will be copied on to the selected drive. All data on the replacement drive will be written over with mirrored information from the array drive. A progress bar will appear as below.



13. Once the rebuild process is complete, user will be asked to reboot the system.

## 5-2.14 Viewing Controller Settings

The Controller Configuration <6> menu selection allows you to enable or disable the halting function of FastTrak100-Lite BIOS (the default) if it detects an error on boot up. You may also view the system resources (Interrupt and I/O port address) of FastTrak's data channels.



## 5-2.15 Halting FastTrak BIOS On Bootup Errors

The [Adapter Configuration ---- Options] section allows you to enable or disable FastTrak100-Lite to Halt operation at the BIOS startup screen should an error be detected. This is the only option that can be changed on this screen.

# **5-3 INSTALLING DRIVERS**

This section details the FastTrak100-Lite driver installation for various operating systems. The driver should have been included either into the Support CD or into a Support Floppy Diskette.

Checkpoints for the driver installation:

- (1) To install FastTrak100-Lite Driver for an operating system, you must use the driver in Floppy Diskette instead of the one in CD. If you are not provided with a Driver Diskette, you should create one by copying the driver files through the support CD with the path "E:\Driver\Promise\FastTrak100-Lite. (Suppose that CD-ROM title is E).
- (2) Set JP9 on board enabled (Pin 1-2 closed) for RAID Controller Select.

The following sections describe the detailed procedures of installing FastTrak 100-Lite Driver for windows 2000, Windows 95/98, Windows NT4.0, and Windows 3.1 / DOS.

## 5-3.1 For Windows 2000

#### 5-3.1-1 Installing Driver During New Windows 2000 Installation

- 1. Connect your hard driver(s) for RAID Array to IDE3/IDE4, and enable FastTrak100-Lite Controller with JP9.
  - Bootable floppy: Boot from bootable floppy and type "WINNT". After files have been copied, the system will reboot. On the reboot, press <F6> after the message "Setup is inspecting your computer's hardware configuration... "appears.
  - CD-ROM Install: Boot from the windows 2000 CD. Press <F6> after the message " Press F6 if you need to install third party SCSI or RAID driver" appears.
- 2. When the "Windows 2000 Setup" window is generated, Press "S" to Specify an Additional Device(s).
- 3. Press "O" to select "Other" and press the "Enter" key.
- 4. Insert into drive A the Promise Technology ® driver diskette that you have made from your support CD: and press "Enter" key.
- 5. Choose "Win2000 Promise FastTrak100-Lite Controller" from the list that appears on screen, then press the "Enter" key.

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 The Windows 2000 Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win2000 Promise FastTrak100-Lite controller".

*Note:* If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.

7. From the Windows 2000 Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows 2000 installation.

#### 5-3.1-2 Installing Driver To Existing Windows 2000 System

*WARNING:* Your must first complete installing the driver before moving the boot drive containing the existing Windows 2000 operating system on to the FastTrak100-Lite controller (e.g. IDE3/IDE4). On mainboard 65EP+, IDE1/0 are for system IDE controller, while IDE3 & IDE4 are for RAID IDE controller.

At booting with Windows 2000 system and your hard drive(s) connected to IDE1/2, Windows 2000 setup will show a "New Hardware Found" dialog box. Under Windows 2000, the "PCI RAID Controller" will be displayed.

- 1. In the dialog box, choose "Driver from disk provided by hardware manufacturer " button.
- 2. In the A: drive, insert the FastTrak100-Lite driver diskette.
- 3. Type "A:\WIN2000" in the text box. Press "Enter".
- 4. Choose "Win2000 Promise FastTrak100-Lite Controller" from the list that appears on screen, then press the "Enter" key.
- 5. The Windows 2000 setup screen will appear again saying "Setup will load support for the following mass storage device - Win2000 Promise FastTrak100-Lite controller. The FastTrak100-Lite driver will now be copied on to the system and entered into the Windows 2000 driver database.
- 6. When the "System Setting Change" dialog box appears, remove the floppy diskette and click on "Yes" to restart the system. Windows 2000 will then restart for the driver installation to take effect.

7. Power off your system, then attach your hard drive to the FastTrak100-Lite controller card, e.g. IDE3/IDE4.

#### 5-3.1-3 Confirming Windows 2000 Installation

- 1. From Windows 2000, open the Control Panel from "My Computer" followed by the System icon.
- 2. Choose the "Hardware" tab, then click the "Device Manager" tab.
- 3. Click the "+" in front of "SCSI & RAID Controllers hardware type." The driver "Win2000 Promise FastTrak/FastTrak100-Lite Controller" should appear, informing user that the controller driver is already installed.

## 5-3.2 Windows 95/98

#### 5-3.2-1 Installing Drivers During Windows 95/98 Installation

The following three sections detail the installation of the FastTrak100-Lite drivers while installing Windows 95/98 (with the FastTrak100-Lite controller card already in place). If you're installing the FastTrak100-Lite drivers on a system with Windows 95/98 already installed, see "Installing Drivers with Existing Windows 95/98".

#### 5-3.2-2 Windows 98

- 1. Connect your hard drive(s) for RAID Array to IDE3/IDE4, and enable FastTrak100-Lite Controller with JP9. Configure the hard drive(s), partition and format your hard driver(s).
- 2. Install Windows 98 normally.
- 3. After installation, go to "Start" menu and choose "Settings."
- 4. Form the "Settings" menu, choose "Control Panel."
- 5. In the "Controller Panel" window, double-click on the "System" icon.
- 6. In the "System" window, choose the "Device Manager" tab.
- 7. In the hierarchical display under "Other Devices" is a listing for "PCI RAID Controller." Choose it and then press the "Properties" button.
- 8. Choose the "Driver" tab in the "Properties" window, choose "Update Driver," and then press "Next."
- 9. Choose "Search for a better driver than the one your device is using now (recommended), "then press "Next".

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- 10. Choose "Specify Location," and then type "A:\WIN9x-ME" in the text box.
- 11. Insert the "FastTrak100-Lite Driver" diskette into the A: drive.
- Press the "Next" button. A message informing you that Windows 98 has found "Win95-98 Promise FastTrak100-Lite (tm) Controller" should appear.
- 13. Press "Next," then "Finish," then "Yes" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

#### 5-3.2-3 Windows 95

- 1. Connect your hard drive(s) for RAID Array to IDE3/IDE4, and enable FastTrak100-Lite Controller with JP9. Configure the hard drive(s) for RAID Array, partition and format your hard driver(s).
- 2. Install Windows 95 normally.
- 3. After installation, go to "Start" menu and choose "Settings."
- 4. Form the "Settings" menu, choose "Control Panel."
- 5. In the "Controller Panel" window, double-click on the "System" icon,
- 6. In the "System" window, choose the "Device Manager" tab.
- 7. In the hierarchical display under "Other Devices" is a listing for "PCI RAID Controller." Choose it and then press the "Properties" button.
- 8. Choose the "Driver" tab in the "Properties" window, and then press the "Update Driver" button.
- 9. When asked if you want Windows to research for the driver, choose "Yes (recommended)."
- 10. Insert the "FastTrak100-Lite Driver" diskette into the A: drive, then press "Next."
- 11. When Windows informs you that it was unable to find the drivers, press "Other Locations..."
- 12. In the "Select Other Location" dialog box, type "A:\WIN9x-ME".
- Press "Next" button. A message informing you that Windows 95 has found " Win95-98 Promise FastTrak100-Lite (tm) Controller" should appear.
- Press "Finish." (If Windows can't find the "FastTrak100-Lite.MPD" file, type "A:\WIN9x-ME" in the copy files from:" text box).
- 15. Choose "Yes" when asked if you wish to restart the system, and remove the diskette from Drive A.

#### 5-3.2-4 Installing Drivers With Existing Windows 95/98

The following three sections detail the installation of the FastTrak100-Lite drivers on a system that has Windows 95/98 already installed. If you're installing the FastTrak100-Lite drivers on a system during a Windows 95/98 installation, see "Installing Drivers During Windows 95/98 Installation".

#### 5-3.2-5 Windows 98

- 1. Connect your hard drive(s) for RAID Array to IDE3/IDE4, and enable FastTrak100-Lite Controller with JP9. Configure the hard drive(s) for RAID Array, power up the system and boot Windows.
- 2. The "Add New Hardware Wizard" will appear, informing you that it has found a "PCI RAID Controller."
- 3. Check the "Search for the best driver for your device" box and click the Next button.
- 4. Check the "Specify a Location" box and click the Next button.
- 5. Type "A:\WIN9x-ME" in the text box that appears.
- 6. Insert the "FastTrak100-Lite Driver" diskette in drive A:.
- 7. Click on "Next." The Add New Hardware wizard will say it has found "Win95-98 Promise FastTrak100-Lite Controller".
- 8. Click on "Next," and then on "Finish."
- 9. Choose "Yes" when asked if you want to restart your computer. Be sure to remove the diskette from drive A:.

#### 5-3.2-6 Windows 95

- 1. Connect your hard drive(s) for RAID Array to IDE3/IDE4, and enable FastTrak100-Lite Controller with JP9. Configure the hard drive(s) for RAID Array, power up the system and boot Windows.
- 2. The "Update Device Drive Wizard" will appear, informing you that it has found a "PCI Mass Storage Controller."
- 3. Insert the "FastTrak100-Lite Driver" diskette in drive A:.
- Type "A:\WIN9x-ME" in the text box, then click on "Next." Windows will inform you that it has found the "Win95/98 Promise FastTrak100-Lite controller".
- Click on "Finish," and when prompted to insert the "FastTrak100-Lite Driver" diskette, click on "OK."

- If a message informing you that the file "Win95/98 Promise FastTrak100-Lite.MPD" cannot be found, go to the "Copy files from:" text box and type: "A:\WIN9x-ME".
- 7. Choose "Yes" when asked whether you want to start your computer. Be sure to remove the diskette from drive A.

#### 5-3.2-7 Confirming Driver Installation in Windows 98/95

To confirm that the driver has been properly loaded in Win 95/98, perform the following steps:

- 1. Choose "Settings" from the "Start" menu.
- 2. Choose "Controller Panel", and then double-click on the "System" icon.
- Choose the "Device Manager" tab, and click the "+" in front of "SCSI & RAID controllers." "Win95-98 Promise FastTrak100-Lite controller" should appear.

#### 5-3.3 DOS/Windows 3.1x

For first -time installation, follow the standard procedure of installing DOS on to your hard disk (partition all hard drive with FDISK and format before performing the following procedure):

- 1. Insert "Disk 1" of your DOS installation diskettes into drive A:.
- 2. Type "A:\SETUP" at the "A:\" prompt.
- Continue with normal DOS installation procedure, and refer to your DOS manual for additional details.

*Note:* The FastTrak100-Lite BIOS supports both DOS and Windows 3.1x without software drivers installed.

## 5-3.4 Windows NT4.0

#### 5-3.4-1 Installing Drivers During Windows NT 4.0 Installation

- 1. Connect your hard drive(s) for RAID Array to IDE3/IDE4, and enable FastTrak100-Lite Controller with JP9. Start the system installation by booting from the Windows NT disk:
  - a) Floppy install: boot the system with the Windows NT installation diskettes.
  - b) Other bootable Floppy: boot from the bootable floppy and type "WINNT /B". After files have been copied, the system will reboot. On the reboot, press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
  - c) CD-ROM disk install: boot from the CD-ROM disk and press the "F6" key when the message "Setup is inspecting your computer's hardware configuration..." appears.
- 2. When the "Windows NT Setup" windows is generated, press "S" to Specify an Additional Device(s).
- 3. Press "O" to select "Other" and press the "Enter" key.
- Insert into drive A the Promise Technology 
   FastTrak100-Lite driver diskette that you have made from the support CD: and press "Enter" key.
- 5. Choose "Win NT Promise FastTrak100-Lite (tm) Controller" from the list that appears on screen, then press the "Enter" key.
- 6. The Windows NT Setup screen will appear again saying "Setup will load support for the following mass storage devices:" The list will include "Win NT Promise FastTrak100-Lite (tm) controller".

*Note:* If you need to specify any additional devices to be installed, do so at this time. Once all devices are specified, continue to step 7.

- From the Windows NT Setup screen, press the Enter key. Setup will now load all device files and then continue the Windows NT installation.
- After a successful installation, the "SCSI Adapter Setup" box will show that the "Win NT Promise FastTrak100-Lite (tm) Controller" driver has been installed.

#### 5-3.4-2 Installing Drivers With Existing Windows NT4.0

*WARNING:* Your must first complete installing the driver before moving the boot drive containing the existing Windows 2000 operating system on to the FastTrak100-Lite controller (e.g. IDE3/IDE4). On mainboard 65EP+, IDE1/0 are for system IDE controller, while IDE3 & IDE4 are for RAID IDE controller.

With your bootable hare drive connected to IDE1/IDE2 and FastTrak100-Lite enabled by JP9, boot Win NT4.0.

- 1. Choose "Settings" from the "Start" menu.
- 2. Choose "Controller Panel" from the "Settings" menu.
- Double-click on the "SCSI Adapters" icon, which generates the "SCSI Adapters" dialog box.
- 4. Choose "Drivers," and then press "Add."
- 5. In the "Install Drivers" dialog box, press "Have Disk ... "
- 6. When the "Install From Disk" appears, insert into Drive A the "FastTrak100-Lite Driver" diskette that you have made from support CD:.
- 7. Type "A:\NT4" in the text box window, then choose "OK."
- 8. When the "Install Driver" dialog box appears, select "Win NT Promise FastTrak100-Lite controller" and then press "OK."
- 9. When the "Select SCSI Adapter Option" dialog box appears, press "Install".
- After a successful installation, the "SCSI Adapter Setup" box will show that the "Win NT Promise FastTrak100-Lite (tm) Controller" driver has been installed.
- 11. Power off your system.
- 12. Now you can move the boot drive to the FastTrak100-LiteController.



# **APPENDICES**

APPENDIX-1 TECHNICAL TERMS APPENDIX-2 IDENTIFYING BIOS VERSION/ BIOS PART NUMBER APPENDIX-3 IDENTIFYING MAINBOARD MODEL NUMBER

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# **APPENDIX-1 TECHNICAL TERMS**

	Technical Terms Introduction
Tech Term	Meaning
AGP	Accelerated Graphic Port
AMR	Audio Modem Riser
ACR	Advanced Communication Riser
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Check and Correct
EPP	Exhanced Parallel Port
FDD	Floppy Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt ReQuest
I/O	Input/Output
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Local Emitting Diode
MHz	Megahertz
PNP	Plug & Play
USB	Universal Serial Bus
VCM	Virtual Channel Memory

## APPENDIX-2 IDENTIFYING BIOS VERSION AND BIOS PART NUMBER

- When you boot up your computer, you may see a screen which shows your computer is phoenixnet<sup>™</sup> enabled. Please see Picture-1 below for an illustration.
- When the screen shows up press "Tab" key for BIOS information.

phoenix	AwardBIOS May 7, 2001 03:4	6 pm	your computer is phoenixnet enabled
Checking Processor Intel® Pentium® 800EB MH	Memory: 128 MB	are: Drive(s): Checking	Virus Scan:
energy	press Tab key for I	BIOS information.	Copyrigid Q 1009 Planatic Technologies Did

Picture-1

• See Picture-2 below for BIOS version and BIOS part number identification.



- 1. BIOS VERSION example: REV T2.1
- 2. BIOS ID STRING example: 6A69RSNCC

## APPENDIX-3 IDENTIFYING MAINBOARD MODEL NUMBER

• Usually the mainboard model number is labeled on the side of ISA side of slot or PCI slot. Please see the picture below as an illustration:



- 1. MAINBOARD MODEL NUMBER example: SL-65KV2
- 2. MAINBOARD SERIAL NUMBER example: 0012000T005679

