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SV-1A

AMD Athlon™ 64 Server Board
Socket 939

User's Manual

Rev. 1.00

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Table of Contents

Chapter 1. Introduction 1-1

1.1. Specifications 1-1
1.2. Layout 1-3
1.3. Jumpers & Connectors Description 1-4

Chapter 2. Hardware Setup 2-1

2.1. CPU Socket 2-1
2.2. System Memory 2-2
  2.2.1. Installing and Removing Memory Modules 2-3
2.3. Connectors, Headers, and Switches 2-4
  2.3.1. ATX Power Connectors (ATXPWR1, ATX12V1).. 2-4
  2.3.2. FAN Power Connectors (CPUFAN1, SYSFAN1, AUXFAN1~4) 2-5
  2.3.3. CMOS Memory Clearing Header (CCMOS1) 2-6
  2.3.4. USB Device Wake-up Connection Header (USB-PWR1) 2-7
  2.3.5. Front Panel Switches & Indicators Connection Headers (FPIO1) 2-8
  2.3.6. PCI Slots (PCI1, PCIXA1, PCIXB1, PCIXB2) 2-9
  2.3.7. Additional USB Port Connection Header (FPUSB1) 2-10
  2.3.8. System Management Bus Connection Header (SMB1) 2-11
  2.3.9. Additional COM2 Port Connection Header (CMO2) 2-12
  2.3.10. Floppy and IDE Disk Drive Connectors (FDC1, IDE1/IDE2) 2-13
  2.3.11. Serial ATA (SATA1~2), Serial ATAII (SATA3~10) Connectors 2-14
  2.3.12. Low Pin Count Connection Header (J1) 2-15

2.3.13. NIC-LED1: LED Connector for Network Interface 2-16
2.3.14. SATA-LED1/SATA-LED2: LED Connector for SATA Devices 2-17
2.3.15. External I/O Panel Connectors 2-18

Chapter 3. BIOS Setup 3-1
3.1. Standard CMOS Features 3-2
3.2. Advanced BIOS Features 3-6
3.3. Advanced Chipset Features 3-8
3.4. Integrated Peripherals 3-11
3.5. Power Management Setup 3-16
3.6. PnP/PCI Configurations 3-19
3.7. PC Health Status 3-21
3.8. Load Fail-Safe Defaults 3-24
3.9. Load Optimized Defaults 3-24
3.10. Set Password 3-24
3.11. Save & Exit Setup 3-24
3.12. Exit Without Saving 3-24

Chapter 4. Driver Installation 4-1

Appendix A. How to Get Technical Support A-1

Chapter 1. Introduction

1.1. Specifications

CPU

- Supports AMD Athlon 64 Socket 939 processor

Chipset

- VIA-K8T800 Pro / VIA-8237 / VIA VPX II
- Supports Advanced Configuration and Power Interface (ACPI)

Memory

- Four 184-pin DIMM slots
- Supports 144-bit wide Dual Channel DDR 400/333 memory
- Up to 8GB, un-buffered with ECC/Non-ECC memory capacity

VGA

- Onboard ATi Rage XL, default 8MB Local memory (Optional 4MB)

Serial ATA

- 4-channel Serial ATAII 3Gb/s data transfer rate (Marvell 88SX-6041)(Default)
- 8-channel Serial ATAII 3Gb/s data transfer rate (Marvell 88SX-6081) (Optional)
- 2 channel Serial ATA 1.5Gb/s data transfer rate VIA-8237 (Default)

System BIOS

- Supports Plug-and-Play (PNP)
- Supports Advanced Configuration Power Interface (ACPI)
- Write-Protect Anti-Virus function by AWARD BIOS
- 4MB Flash ROM

LAN

- Broadcom 5704 Dual port 64-bit Gigabit Ethernet Controller

Expansion Slot

- 3x PCI-X 64bit/100MHz (3.3V)
- 1x PCI, 32bit/33MHz (5V)

Internal I/O Connectors

- 1x Floppy Port supports up to 2.88MB
- 2x 40-Pin IDE Ultra DMA 133/100/66/33 Connectors
- 1x Printer Port Header
- 1x COM port header (COM2)
- 6x Serial ATA Connectors (4-port Marvell 88SX-6041, 2-port VIA-8237)
- 1x USB 2.0 header (supporting two USB 2.0 devices)
- 1x SM Bus header (For SM Bus and I^2C)

Back Panel I/O

- 1x PS/2 keyboard and mouse connector
- 1x COM port (COM1)
- 1x VGA port
- 1x Dual USB 2.0 Connector
- 1x Dual RJ-45 w/ transformer LAN Connector

Miscellaneous

- ATX form factor (305mm x 265mm)
- Hardware monitoring – including fan speeds, voltages, and system environment temperature
- Chassis intrusion detector header
- 3.3V/5V riser card supported (Optional)

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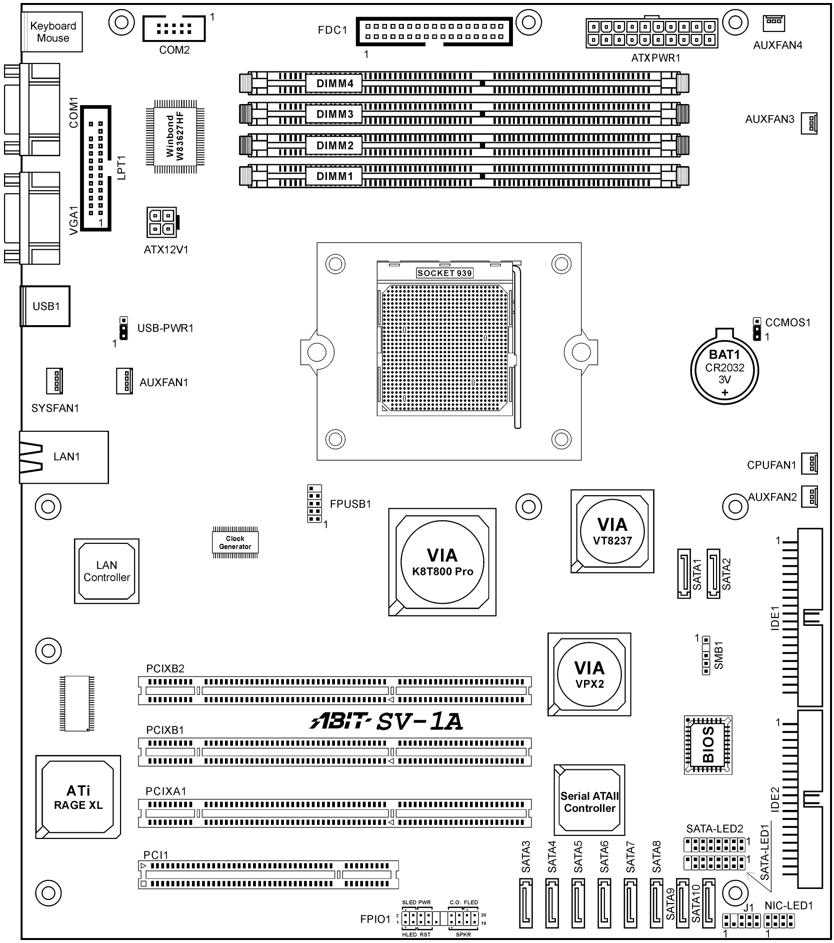
❈ **Specifications and information contained herein are subject to change without notice.**

1.2. Layout


Keyboard Mouse
COM2
1
FDC1
1
ATXPWR1
AUXFAN4
DIMM4
DIMM3
DIMM2
DIMM1
COM1
LPT1
1
Winbond W83627HF
AUXFAN3
VGA1
ATX12V1
SOCKET 939
USB1
USB-PWR1
1
CCMOS1
1
BAT1
CR2032
3V
+
SYSFAN1
AUXFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
1
Clock Generator
VIA
VT8237
VIA
K8T800 Pro
LAN Controller
SATA1
SATA2
1
IDE1
1
SMB1
VIA
VPX2
PCIXB2
ABIT SV-1A
PCIXB1
1
BIOS
ATi
RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
1
1
SATA-LED1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
J1
NIC-LED1
SLED PWR
C.O. FLED
FPIO1
2
1
20
19
HLED RST
SPKR
1
1

1.3. Jumpers & Connectors Description

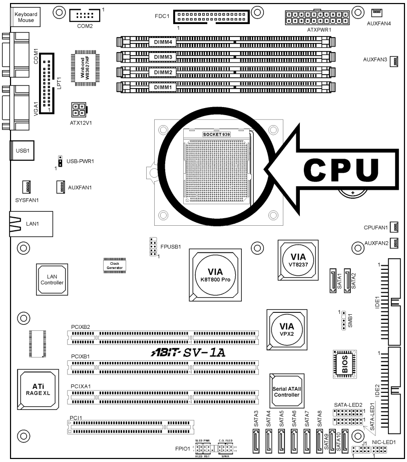
Jumpers	Description	Default Setting
CCMOS1	CMOS Memory Clearing Header	Pins 1-2 Closed (Normal)
JP1	Chassis Intrusion Device Header	Opened

Connectors	Description
ATXPWR1/ATX12V1	ATX Power Connectors
COM2	Connection Header for Additional COM Port
CPUFAN1 SYSFAN1 AUXFAN1~4	CPU Fan Power Connector System Fan Power Connector Auxiliary Fan Power Connectors
DIMM 1~ DIMM 4	184-pin DDR Memory Slots
FDC1	Floppy Disk Drive Connector
FPIO1	Front Panel Switches & Indicators Connection Headers
FPUSB1	Additional USB Port Connection Header
IDE1/IDE2	Hard Disk Drive Connectors
J1	Low Pin Count Connection Header (Reserved for internal testing)
LPT1	Connection Header for Parallel Port
NIC-LED1	LED Connector for Network Interface
PCI1	32bit/33MHz PCI Slot
PCIXA1/ PCIXB1/PCIXB2	64bit/100MHz PCI-X Slots
SATA1~SATA2	Serial ATA Connectors
SATA3~SATA10	Serial ATAII Connectors
SATA-LED1/ SATA-LED2	LED Connector for SATA Devices
SMB1	System Management Bus Connection Header
USB-PWR1	USB Device Wake-up Connection Header

Chapter 2. Hardware Setup

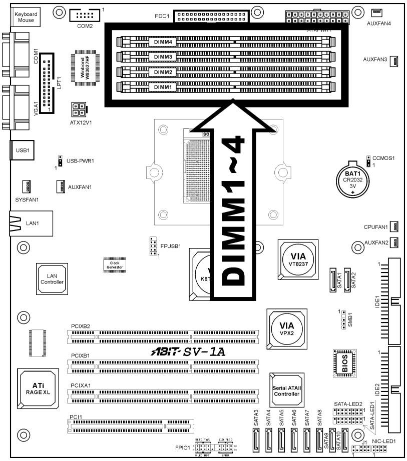
2.1. CPU Socket

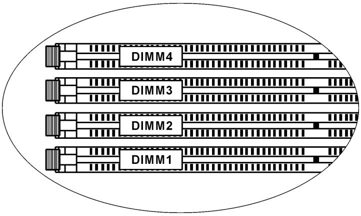
This motherboard provides a ZIF (Zero Insertion Force) Socket 939 to install AMD Socket 939 CPU. The CPU you bought should contain with a kit of heatsink, cooling fan, retention frame and back plate. If that's not the case, buy one specially designed for Socket 939.


Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
AUXFAN3
COM1
LPT1
VGA1
Winbond W83627HF
DIMM4
DIMM3
DIMM2
DIMM1
ATX12V1
SOCKET 939
CPU
USB1
USB-PWR1
AUXFAN1
SYSFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
Clock Generator
LAN Controller
VIA K8T800 Pro
VIA VT8237
SATA1
SATA2
IDE1
SMB1
VIA VPX2
PCIXB2
PCIXB1
ABIT SV-1A
BIOS
ATi RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
SATA-LED1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
NIC-LED1
FPIO1

2.2. System Memory

This board provides four 184-pin DDR DIMM slots for single/dual channel DDR400/333 memory modules. The expansible size is available up to 8GB by un-buffered ECC/Non-ECC memory modules.

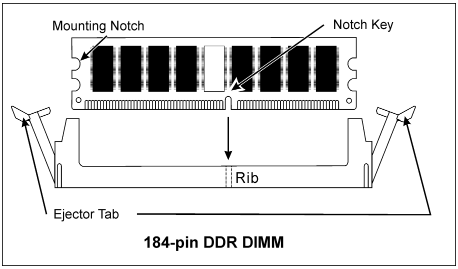

DIMM1~4
DIMM4
DIMM3
DIMM2
DIMM1
Keyboard Mouse
COM2
COM1
FDC1
ATXPWR1
AUXFAN4
AUXFAN3
LPT1
VGA1
ATX12V1
USB1
USB-PWR1
CCMOS1
BAT1
CR2032
3V
AUXFAN1
SYSFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
Clock Generator
LAN Controller
VIA
VT8237
K8T
SATA1
SATA2
IDE1
SMB1
PCIXB2
VIA
VPX2
PCIXB1
ABIT SV-1A
BIOS
ATi
RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
SATA-LED1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
FPIO1
NIC-LED1


DIMM4
DIMM3
DIMM2
DIMM1

DIMM Population Table							
Single Channel				Dual Channel			
DIMM1	DIMM2	DIMM3	DIMM4	DIMM1	DIMM2	DIMM3	DIMM4
X				X	X		
		X				X	X
X		X		X	X	X	X

2.2.1. Installing and Removing Memory Modules

Power off the computer and unplug the AC power cord before installing or removing memory modules.



1. Locate the DIMM slot on the board.
2. Hold two edges of the DIMM module carefully, keep away of touching its connectors.
3. Align the notch key on the module with the rib on the slot.
4. Firmly press the module into the slots until the ejector tabs at both sides of the slot automatically snaps into the mounting notch. Do not force the DIMM module in with extra force as the DIMM module only fit in one direction.
5. To remove the DIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the DIMM module.

ATTENTION: Static electricity can damage the electronic components of the computer or optional boards. Before starting these procedures, ensure that you are discharged of static electricity by touching a grounded metal object briefly.

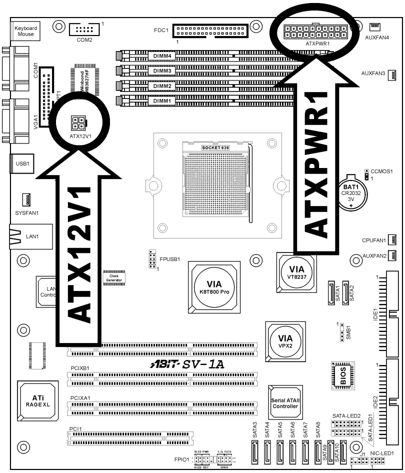
2.3. Connectors, Headers, and Switches

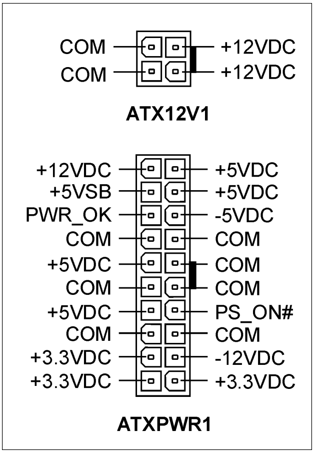
All the connectors, headers and switches mentioned here are depending on your system configuration. Some features you may (or may not) have to connect or to configure depending on the peripherals you have connected.

WARNING: Always power off the computer and unplug the AC power cord before adding or removing any peripheral or component. Failing to do so may cause severe damage to your workstation board and/or peripherals. Plug in the AC power cord only after you have carefully checked everything.

2.3.1. ATX Power Connectors (ATXPWR1, ATX12V1)

These two connectors connect to ATX12V power supply.


ATXPWR1
ATX12V1
Keyboard Mouse
COM2
FDC1
AUXFAN4
AUXFAN3
DIMM4
DIMM3
DIMM2
DIMM1
COM1
VGA1
SOCKET 939
USB1
SYSFAN1
LAN1
BAT1 CR2032 3V
CCMOS1
CPUFAN1
AUXFAN2
FPUSB1
VIA K8T800 Pro
VIA VT8237
VIA VPX2
SATA1
SATA2
IDE1
IDE2
SMB1
BIOS
ABIT SV-1A
PCIXB1
PCIXA1
PCI1
ATi RAGE XL
Serial ATAII Controller
SATA-LED2
SATA-LED1
NIC-LED1
FPIO1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10


COM
COM
+12VDC
+12VDC
ATX12V1
+12VDC
+5VSB
PWR_OK
COM
+5VDC
COM
+5VDC
COM
+3.3VDC
+3.3VDC
+5VDC
+5VDC
-5VDC
COM
COM
COM
PS_ON#
COM
-12VDC
+3.3VDC
ATXPWR1

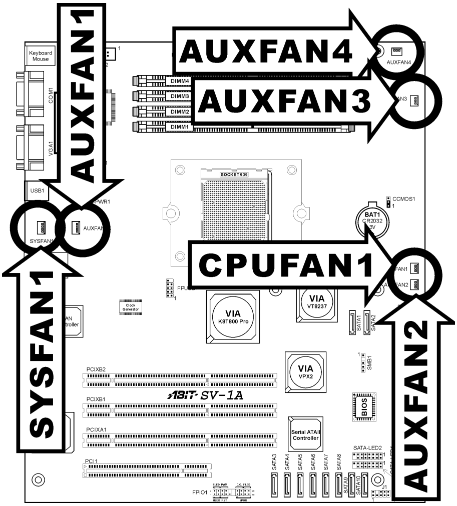
2.3.2. FAN Power Connectors (CPUFAN1, SYSFAN1, AUXFAN1~4)

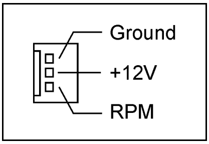
These 3-pin connectors each provide power to the cooling fans installed in your system.

The CPU must be kept cool by using a powerful fan with heatsink. The system is capable of monitoring the speed of the CPU fan.

- **CPUFAN1:** CPU Fan Power Connector
- **SYSFAN1:** System Fan Power Connector
- **AUXFAN1~AUXFAN4:** Auxiliary Fan Power Connectors

WARNING: These fan connectors are not jumpers. DO NOT place jumper caps on these connectors.

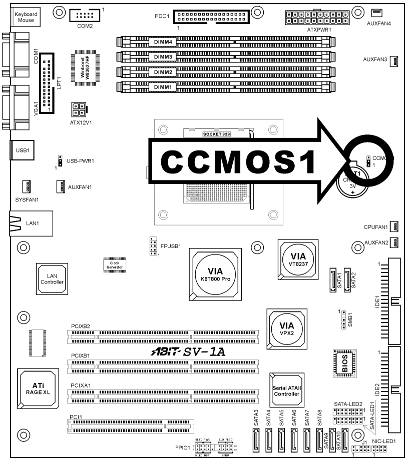

AUXFAN1
AUXFAN4
AUXFAN3
CPUFAN1
SYSFAN1
AUXFAN2
SOCKET 939
VIA K8T800 Pro
VIA VT8237
VIA VPX2
BIOS
ABIT SV-1A

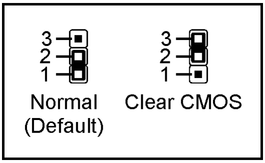

Ground
+12V
RPM

2.3.3. CMOS Memory Clearing Header (CCMOS1)

This header uses a jumper cap to clear the CMOS memory.

- **Pin 1-2 shorted (default):** Normal operation.
- **Pin 2-3 shorted:** Clear CMOS memory.


CCMOS1
Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
AUXFAN3
COM1
VGA1
LPT1
DIMM4
DIMM3
DIMM2
DIMM1
Winbond W83627HF
ATX12V1
SOCKET 939
USB1
USB-PWR1
AUXFAN1
SYSFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
Clock Generator
LAN Controller
VIA K8T800 Pro
VIA VT8237
SATA1
SATA2
IDE1
VIA VPX2
SMB1
PCIXB2
PCIXB1
ABIT SV-1A
BIOS
ATi RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
SATA-LED1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
FPIO1
NIC-LED1
3V

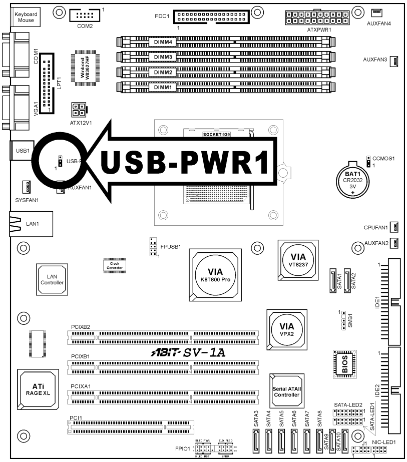

3
2
1
Normal (Default)
3
2
1
Clear CMOS

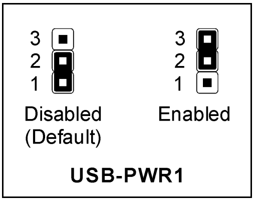
WARNING: Turn the power off first (including the +5V standby power) before clearing the CMOS memory. Failing to do so may cause your system to work abnormally or malfunction.

2.3.4. USB Device Wake-up Connection Header (USB-PWR1)

These headers use a jumper cap to enable/disable the wake-up function.

- **USB-PWR1:**
  Pin 1-2 shorted (default): Disable wake-up function support at USB1 port.
  Pin 2-3 shorted: Enable wake-up function support at USB1 port.

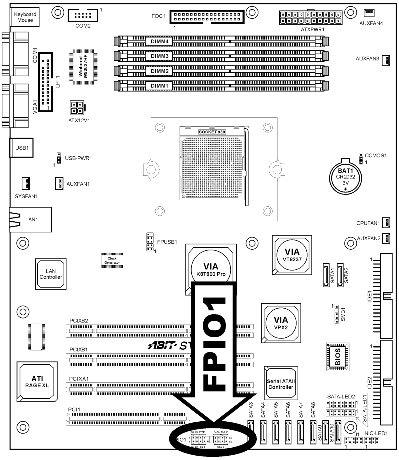

USB-PWR1
Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
COM1
LPT1
VGA1
ATX12V1
SOCKET 939
USB1
CCMOS1
BAT1 CR2032 3V
AUXFAN1
SYSFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
Clock Generator
LAN Controller
VIA K8T800 Pro
VIA VT8237
SATA1
SATA2
IDE1
SMB1
VIA VPX2
PCIXB2
PCIXB1
ABIT SV-1A
BIOS
ATi RAGE XL
PCIXA1
Serial ATAII Controller
SATA-LED2
IDE2
SATA-LED1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
FPIO1
NIC-LED1

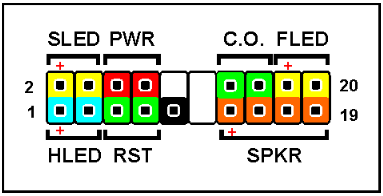

3
2
1
Disabled
(Default)
3
2
1
Enabled
USB-PWR1

2.3.5. Front Panel Switches & Indicators Connection Headers (FPIO1)

This header is used for connecting switches and LED indicators on the chassis front panel.

Watch the power LED pin position and orientation. The mark "+" align to the pin in the figure below stands for positive polarity for the LED connection. Please pay attention to connect these headers. A wrong orientation will only cause the LED not lighting, but a wrong connection of the switches could cause system malfunction.


Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
COM1
LPT1
VGA1
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
BAT1 CR2032 3V
SYSFAN1
AUXFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
VIA VT8237
VIA K8T800 Pro
LAN Controller
Clock Generator
SATA1
SATA2
IDE1
SMB1
VIA VPX2
PCIXB2
PCIXB1
ATi RAGE XL
PCIXA1
PCI1
BIOS
IDE2
Serial ATAII Controller
SATA-LED2
SATA-LED1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
NIC-LED1
FPIO1

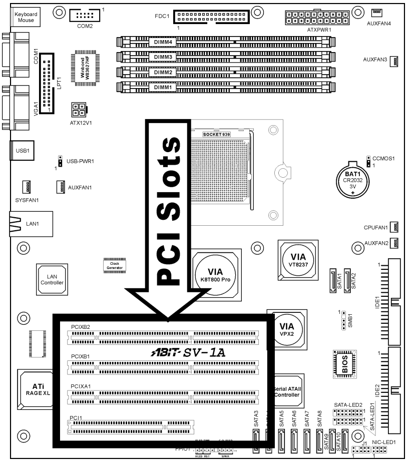

SLED PWR
C.O. FLED
+
+
2
1
20
19
+
+
HLED RST
SPKR

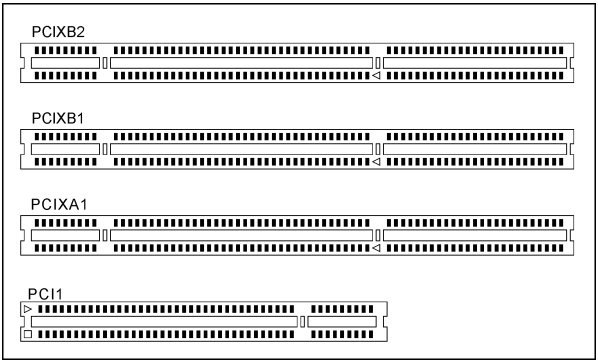
- **HLED (Pin 1, 3):** Connects to the HDD LED cable.
- **RST (Pin 5, 7):** Connects to the Reset Switch cable.
- **SPKR (Pin 13, 15, 17, 19):** Connects to the System Speaker cable.
- **SLED (Pin 2, 4):** Connects to the Suspend LED cable.
- **PWR (Pin 6, 8):** Connects to the Power Switch cable.
- **C.O. (Pin 14, 16):** Connects to Case Open (Intrusion) device.
- **FLED (Pin 18, 20):** Connects to the Fault LED cable.

2.3.6. PCI Slots (PCI1, PCIXA1, PCIXB1, PCIXB2)

PCI1: 32bit/33MHz PCI Slot

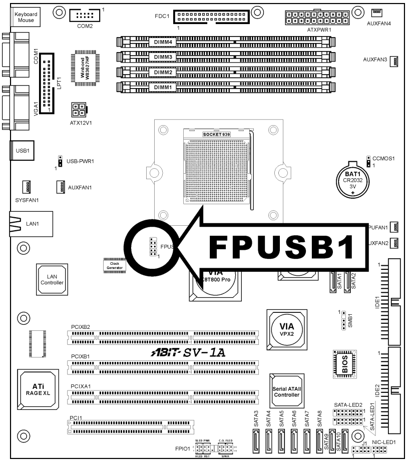
PCIXA1/PCIXB1/PCIXB2: PCI-X 64bit/100MHz

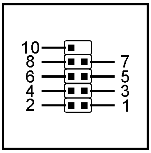

PCI Slots
Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
COM1
LPT1
VGA1
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
BAT1 CR2032 3V
AUXFAN1
SYSFAN1
LAN1
CPUFAN1
AUXFAN2
LAN Controller
Clock Generator
VIA K8T800 Pro
VIA VT8237
SATA1
SATA2
IDE1
SMB1
VIA VPX2
PCIXB2
PCIXB1
ABIT SV-1A
BIOS
ATi RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
SATA-LED1
PCI1
SATA3
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
NIC-LED1
FPIO1


PCIXB2
PCIXB1
PCIXA1
PCI1

2.3.7. Additional USB Port Connection Header (FPUSB1)

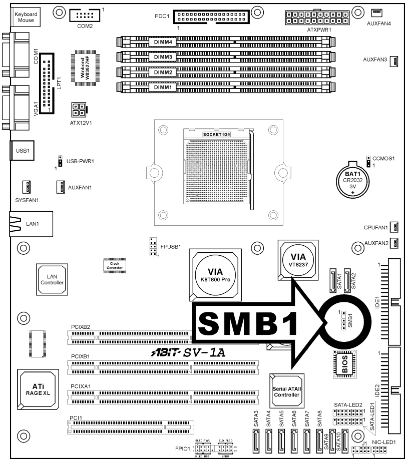
This header provides two additional USB port connections.

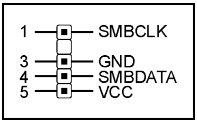

FPUSB1
Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
COM1
LPT1
VGA1
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
BAT1
CR2032
3V
SYSFAN1
AUXFAN1
LAN1
LAN Controller
Clock Generator
VIA
8T800 Pro
SATA1
SATA2
IDE1
SMB1
VIA
VPX2
PCIXB2
ABIT SV-1A
PCIXB1
BIOS
ATi
RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
SATA-LED1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
NIC-LED1
FPIO1

	Pin	Signal	Pin	Signal
 10 8 6 4 2 7 5 3 1	1	VCC	2	VCC
	3	- Data 0	4	- Data 1
	5	+ Data 0	6	+ Data 1
	7	GND	8	GND
			10	NC

2.3.8. System Management Bus Connection Header (SMB1)

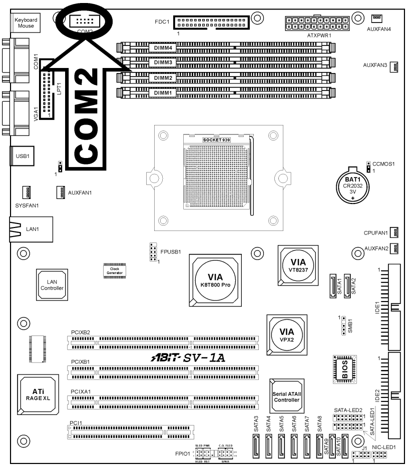
This header provides one external System Management Bus connection.

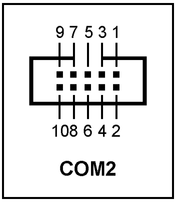

Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
COM1
LPT1
Winbond W83627HF
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
VGA1
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
BAT1 CR2032 3V
SYSFAN1
AUXFAN1
LAN1
CPUFAN1
FPUSB1
AUXFAN2
LAN Controller
Clock Generator
VIA K8T800 Pro
VIA VT8237
SATA1
SATA2
IDE1
SMB1
PCIXB2
ABIT SV-1A
PCIXB1
BIOS
ATi RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
SATA-LED1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
FPIO1
NIC-LED1


1 SMBCLK
3 GND
4 SMBDATA
5 VCC

2.3.9. Additional COM2 Port Connection Header (CMO2)

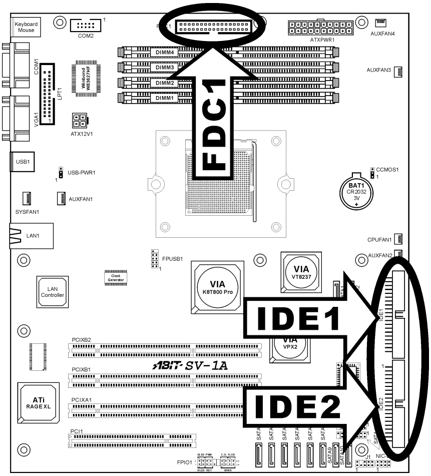
This header provides an additional COM2 port connection.

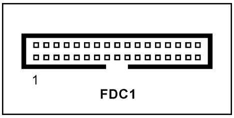

Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
DIMM4
DIMM3
DIMM2
DIMM1
COM1
LPT1
VGA1
AUXFAN3
SOCKET 939
USB1
CCMOS1
BAT1 CR2032 3V
AUXFAN1
SYSFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
VIA VT8237
VIA K8T800 Pro
Clock Generator
LAN Controller
SATA1
SATA2
IDE1
SMB1
VIA VPX2
PCIXB2
ABIT SV-1A
PCIXB1
BIOS
ATi RAGE XL
PCIXA1
Serial ATAII Controller
SATA-LED2
IDE2
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10
SATA-LED1
FPIO1
J1
NIC-LED1

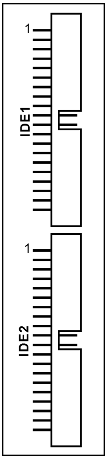
	Pin	Signal	Pin	Signal
	1	DCDA	2	SINA
	3	SOUTA	4	DTRA
	5	GND	6	DSRA
	7	RTSA	8	CTSA
	9	RIA	10	VCC

9 7 5 3 1
10 8 6 4 2
COM2

2.3.10. Floppy and IDE Disk Drive Connectors (FDC1, IDE1/IDE2)


FDC1
IDE1
IDE2
Keyboard Mouse
COM2
COM1
VGA1
LPT1
ATX12V1
ATXPWR1
AUXFAN4
AUXFAN3
DIMM4
DIMM3
DIMM2
DIMM1
USB1
USB-PWR1
AUXFAN1
SYSFAN1
LAN1
CCMOS1
BAT1
CR2032
3V
CPUFAN1
AUXFAN2
FPUSB1
Clock Generator
LAN Controller
VIA K8T800 Pro
VIA VT8237
VIA VPX2
PCIXB2
PCIXB1
PCIXA1
PCI1
ABIT SV-1A
ATi RAGE XL
FPIO1
SATA



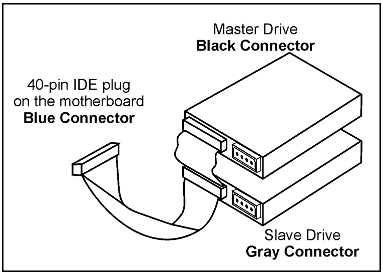

1
IDE1
1
IDE2

The FDC1 connector connects up to two floppy drives with a 34-wire, 2-connector floppy cable. Connect the single end at the longer length of ribbon cable to the FDC1 on the board, the two connectors on the other end to the floppy disk drives connector. Generally you need only one floppy disk drive in your system.

NOTE: The red line on the ribbon cable must be aligned with pin-1 on both the FDC1 port and the floppy connector.

Each of the IDE port connects up to two IDE drives at Ultra ATA/100 mode by one 40-pin, 80-conductor, and 3-connector Ultra ATA/66 ribbon cables.

Connect the single end (blue connector) at the longer length of ribbon cable to the IDE port of this board, the other two ends (gray and black connector) at the shorter length of the ribbon cable to the connectors of your hard drives.

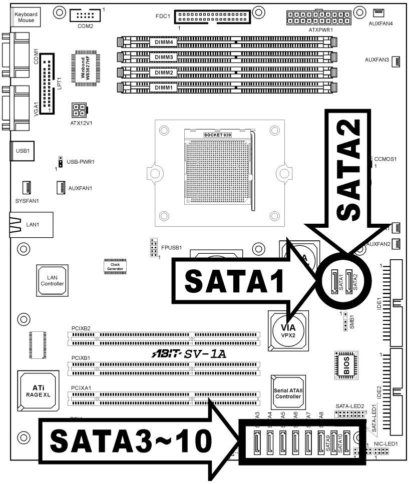

Master Drive
Black Connector
40-pin IDE plug
on the motherboard
Blue Connector
Slave Drive
Gray Connector

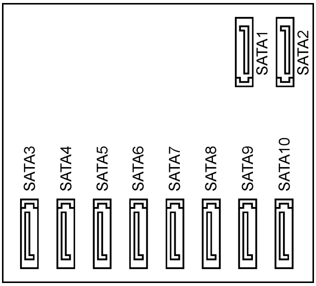
NOTE: Make sure to configure the “Master” and “Slave” relation before connecting two drives by one single ribbon cable. The red line on the ribbon cable must be aligned with pin-1 on both the IDE port and the hard-drive connector.

2.3.11. Serial ATA (SATA1~2), Serial ATAII (SATA3~10) Connectors

These connectors each provide one Serial ATA channel connection.

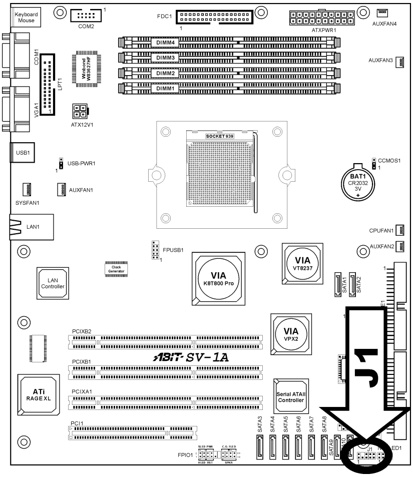
- SATA1~2: Serial ATA Connectors
- SATA3~10: Serial ATAII Connectors

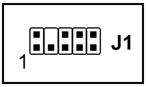

SATA2
SATA1
SATA3~10
Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
AUXFAN3
DIMM4
DIMM3
DIMM2
DIMM1
COM1
LPT1
VGA1
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
SYSFAN1
AUXFAN1
LAN1
FPUSB1
AUXFAN2
LAN Controller
Clock Generator
IDE1
SMB1
VIA VPX2
PCIXB2
PCIXB1
PCIXA1
ABIT SV-1A
BIOS
ATi RAGEXL
Serial ATAII Controller
SATA-LED2
IDE2
SATA-LED1
NIC-LED1


SATA1
SATA2
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
SATA10

2.3.12. Low Pin Count Connection Header (J1)

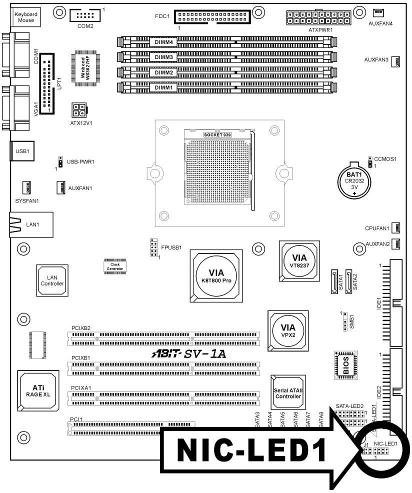
(Reserved for internal testing)

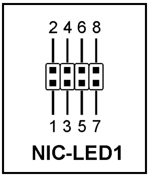

Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
COM1
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
Winbond W83627HF
VGA1
LPT1
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
BAT1 CR2032 3V
AUXFAN1
SYSFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
Clock Generator
LAN Controller
VIA K8T800 Pro
VIA VT8237
SATA1
SATA2
PCIXB2
VIA VPX2
ABIT SV-1A
PCIXB1
ATi RAGE XL
Serial ATAII Controller
PCIXA1
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA9
FPIO1
J1
LED1



2.3.13. NIC-LED1: LED Connector for Network Interface

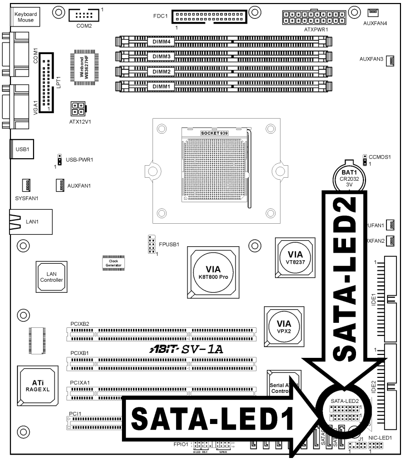
These headers are reserved for connecting LED indicators of Network Interface

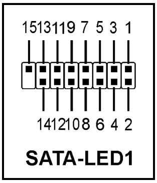

Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
COM1
LPT1
Winbond W83627HF
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
VGA1
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
BAT1 CR2032 3V
SYSFAN1
AUXFAN1
LAN1
CPUFAN1
AUXFAN2
FPUSB1
Clock Generator
LAN Controller
VIA K8T800 Pro
VIA VT8237
SATA1
SATA2
IDE1
SMB1
PCIXB2
VIA VPX2
ABIT SV-1A
PCIXB1
BIOS
ATi RAGE XL
PCIXA1
Serial ATAII Controller
IDE2
SATA-LED2
PCI1
SATA3
SATA4
SATA5
SATA6
SATA7
SATA8
SATA-LED1
NIC-LED1
NIC-LED1

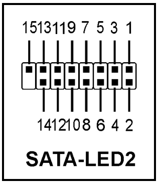
	Pin	Signal	Pin	Signal
 2 4 6 8 1 3 5 7 NIC-LED1	1	Active_LED1	2	Link_LED1
	3	Speed_100_LED1	4	Speed_1000_LED1
	5	Active_LED2	6	Link_LED2
	7	Speed_100_LED2	8	Speed_1000_LED2

2.3.14. SATA-LED1/SATA-LED2: LED Connector for SATA Devices

These headers are reserved for connecting LED indicators of SATA devices

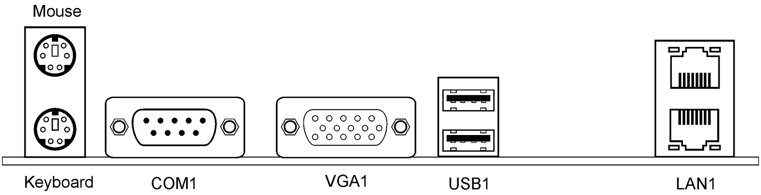

Keyboard Mouse
COM2
FDC1
ATXPWR1
AUXFAN4
DIMM4
DIMM3
DIMM2
DIMM1
AUXFAN3
COM1
LPT1
VGA1
Winbond W83627HF
ATX12V1
SOCKET 939
USB1
USB-PWR1
CCMOS1
BAT1 CR2032 3V
AUXFAN1
SYSFAN1
LAN1
FPUSB1
Clock Generator
LAN Controller
VIA K8T800 Pro
VIA VT8237
IDE1
VIA VPX2
PCIXB2
PCIXB1
ABIT SV-1A
ATi RAGE XL
PCIXA1
IDE2
PCI1
SATA-LED2
SATA-LED1
FPIO1
NIC-LED1

	Pin	Signal	Pin	Signal
 15 13 11 9 7 5 3 1 14 12 10 8 6 4 2 SATA-LED1	1	Active_LED1 (SATA_GPIO8)	2	Link_LED1 (SATA_GPIO0)
	3	Active_LED2 (SATA_GPIO9)	4	Link_LED2 (SATA_GPIO1)
	5	Active_LED3 (SATA_GPIO10)	6	Link_LED3 (SATA_GPIO2)
	7	Active_LED4 (SATA_GPIO11)	8	Link_LED4 (SATA_GPIO3)
	9	GND	10	RESET
	11	SATA_GPIO18	12	SATA_GPIO19
	13	SATA_GPIO20	14	SATA_GPIO21
	15	VCC		

	Pin	Signal	Pin	Signal
 15 13 11 9 7 5 3 1 14 12 10 8 6 4 2 SATA-LED2 (Optional)	1	Active_LED5 (SATA_GPIO12)	2	Link_LED5 (SATA_GPIO4)
	3	Active_LED6 (SATA_GPIO13)	4	Link_LED6 (SATA_GPIO5)
	5	Active_LED7 (SATA_GPIO14)	6	Link_LED7 (SATA_GPIO6)
	7	Active_LED8 (SATA_GPIO15)	8	Link_LED8 (SATA_GPIO7)
	9	GND	10	RESET
	11	SATA_GPIO22	12	SATA_GPIO23
	13	SATA_GPIO24	14	SATA_GPIO25
	15	VCC		

NOTE: Pin 1~8 and pin 11~14 are GPIO pin headers; you may need software efforts to implement these suggested features.

2.3.15. External I/O Panel Connectors


Mouse
Keyboard
COM1
VGA1
USB1
LAN1

- **Mouse:** PS/2 mouse connector.
- **Keyboard:** PS/2 keyboard connector.
- **COM1:** Serial port connector.
- **VGA1:** Monitor connector
- **LAN:** Local Area Network connector.
- **USB1:** Universal Serial Bus connector.

Chapter 3. BIOS Setup

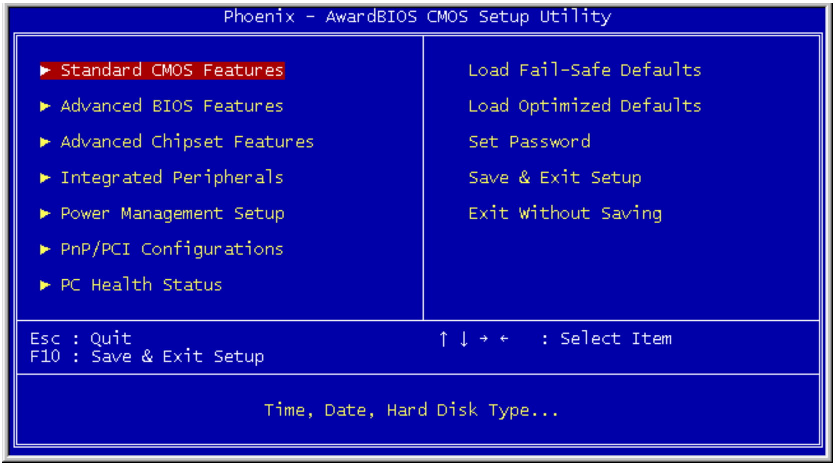
This motherboard provides a programmable EEPROM that you can update the BIOS utility. The BIOS (Basic Input/Output System) is a program that deals with the basic level of communication between processor and peripherals. Use the BIOS Setup program only when installing motherboard, reconfiguring system, or prompted to "Run Setup". This chapter explains the Setup Utility of BIOS utility.

After powering up the system, the BIOS message appears on the screen, the memory count begins, and then the following message appears on the screen:

`PRESS DEL TO ENTER SETUP`

If this message disappears before you respond, restart the system by pressing <Ctrl> + <Alt> + <Del> keys, or by pressing the Reset button on computer chassis. Only when it failed by these two methods can you restart the system by powering it off and then back on.

After pressing <Del> key, the main menu screen appears.

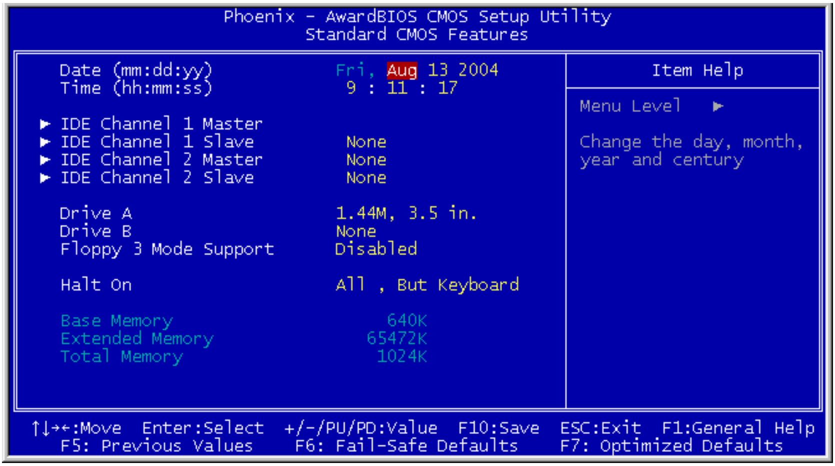


```
                  Phoenix - AwardBIOS CMOS Setup Utility

 ► Standard CMOS Features              Load Fail-Safe Defaults
 ► Advanced BIOS Features              Load Optimized Defaults
 ► Advanced Chipset Features           Set Password
 ► Integrated Peripherals              Save & Exit Setup
 ► Power Management Setup              Exit Without Saving
 ► PnP/PCI Configurations
 ► PC Health Status

 Esc : Quit                          ↑ ↓ → ←   : Select Item
 F10 : Save & Exit Setup

                     Time, Date, Hard Disk Type...
```

NOTE: In order to increase system stability and performance, our engineering staffs are constantly improving the BIOS menu. The BIOS setup screens and descriptions illustrated in this manual are for your reference only, may not completely match what you see on your screen.

3.1. Standard CMOS Features

This section contains the basic configuration parameters of the BIOS. These parameters include date, hour, VGA card, FDD and HDD settings.



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                        Standard CMOS Features

    Date (mm:dd:yy)            Fri, Aug 13 2004        Item Help
    Time (hh:mm:ss)             9 : 11 : 17
                                                      Menu Level   ►
  ► IDE Channel 1 Master
  ► IDE Channel 1 Slave         None                  Change the day, month,
  ► IDE Channel 2 Master        None                  year and century
  ► IDE Channel 2 Slave         None

    Drive A                    1.44M, 3.5 in.
    Drive B                    None
    Floppy 3 Mode Support      Disabled

    Halt On                    All , But Keyboard

    Base Memory                     640K
    Extended Memory               65472K
    Total Memory                   1024K

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

Date (mm:dd:yy):

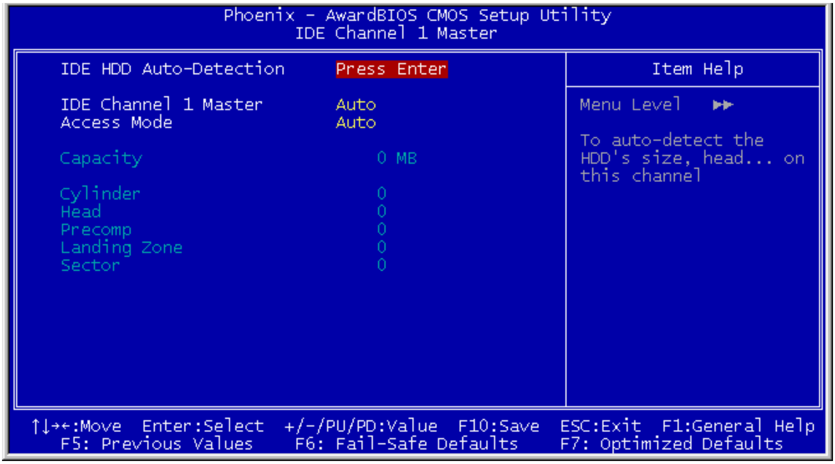
This item sets the date you specify (usually the current date) in the format of [Month], [Date], and [Year].

Time (hh:mm:ss):

This item sets the time you specify (usually the current time) in the format of [Hour], [Minute], and [Second].

IDE Channel 1 Master/Slave, IDE Channel 2 Master/Slave:

Click <Enter> key to enter its submenu:



```
             Phoenix - AwardBIOS CMOS Setup Utility
                      IDE Channel 1 Master

   IDE HDD Auto-Detection      Press Enter  |       Item Help
                                            |
   IDE Channel 1 Master        Auto         |  Menu Level    ▸▸
   Access Mode                 Auto         |
                                            |  To auto-detect the
   Capacity                       0 MB      |  HDD's size, head... on
                                            |  this channel
   Cylinder                       0         |
   Head                           0         |
   Precomp                        0         |
   Landing Zone                   0         |
   Sector                         0         |

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

IDE HDD Auto-Detection:

This item allows you to detect the parameters of IDE drives by pressing <Enter> key. The parameters will be shown on the screen automatically.

IDE Channel 1 Master/Slave, IDE Channel 2 Master/Slave:

When set to [Auto], the BIOS will automatically check what kind of IDE drive you are using. If you want to define your own drive by yourself, set it to [Manual] and make sure you fully understand the meaning of the parameters. Please refer to the instruction manual provided by the device's manufacturer to get the setting right.

Access Mode:

This item selects the mode to access your IDE devices. Leave this item to its default [Auto] setting to detect the access mode of your HDD automatically.

Capacity:

This item displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk-checking program.

Cylinder:

This item configures the numbers of cylinders.

Head:

This item configures the numbers of read/write heads.

Precomp:

This item displays the number of cylinders at which to change the write timing.

Landing Zone:

This item displays the number of cylinders specified as the landing zone for the read/write heads.

Sector:

This item configures the numbers of sectors per track.

➾ Back to Standard CMOS Features Setup Menu:

Drive A & Drive B:

This item sets the type of floppy drives (usually only Drive A) installed.

Floppy 3 Mode Support:

This item allows you to use “3 Mode Floppy Drive” in Japanese computer system by selecting drive A, B, or both. Leave this item to its default [Disabled] setting if you are not using this Japanese standard floppy drive.

Halt On:

This item determines whether the system stops if an error is detected during system boot-up.

[All Errors]: The system-boot will stop whenever the BIOS detect a non-fatal error.

[No Errors]: The system-boot will not stop for any error detected.

[All, But Keyboard]: The system-boot will stop for all errors except a keyboard error.

[All, But Diskette]: The system-boot will stop for all errors except a diskette error.

[All, But Disk/Key]: The system-boot will stop for all errors except a diskette or keyboard error.

Base Memory:

This item displays the amount of base memory installed in the system. The value of the base memory is typically 640K for system with 640K or more memory size installed on the motherboard.

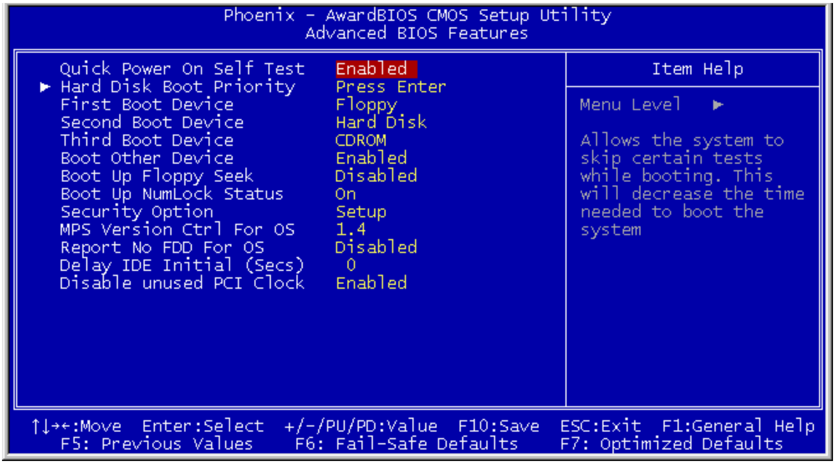
Extended Memory:

This item displays the amount of extended memory detected during system boot-up.

Total Memory:

This item displays the total memory available in the system.

3.2. Advanced BIOS Features



```
              Phoenix - AwardBIOS CMOS Setup Utility
                      Advanced BIOS Features

     Quick Power On Self Test      Enabled          Item Help
   ► Hard Disk Boot Priority       Press Enter
     First Boot Device             Floppy         Menu Level   ►
     Second Boot Device            Hard Disk
     Third Boot Device             CDROM          Allows the system to
     Boot Other Device             Enabled        skip certain tests
     Boot Up Floppy Seek           Disabled       while booting. This
     Boot Up NumLock Status        On             will decrease the time
     Security Option               Setup          needed to boot the
     MPS Version Ctrl For OS       1.4            system
     Report No FDD For OS          Disabled
     Delay IDE Initial (Secs)       0
     Disable unused PCI Clock      Enabled

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

Quick Power On Self Test:

When set to [Enabled], this item speeds up the Power On Self Test (POST) after powering on the system. The BIOS shorten or skip some check during the POST.

Hard Disk Boot Priority:

This item selects the hard disks booting priority. By pressing <Enter> key, you can enter its submenu where the hard disks detected can be selected for the booting sequence to boot up system.

This item functions only when there is the option of [Hard Disk] in any one of the First/Second/Third Boot Device items.

First Boot Device / Second Boot Device / Third Boot Device / Boot Other Device:

Select the drive to boot first, second and third in the [First Boot Device], [Second Boot Device], and [Third Boot Device] items respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set [Boot Other Device] to [Enabled] if you wish to boot from another device other than these three items.

Boot Up Floppy Seek:

When set to [Enabled], the BIOS will check whether the floppy disk drive is installed or not.

Boot Up NumLock Status:

This item determines the default state of the numeric keypad at system booting up.

[On]: The numeric keypad functions as number keys.

[Off]: The numeric keypad functions as arrow keys.

Security Option:

This item determines when the system will prompt for password - every time the system boots or only when enters the BIOS setup.

[Setup]: The password is required only when accessing the BIOS Setup.

[System]: The password is required each time the computer boots up.

NOTE: Don’t forget your password. If you forget the password, you will have to open the computer case and clear all information in the CMOS before you can start up the system. But by doing this, you will have to reset all previously set options.

MPS Version Ctrl For OS:

This item specifies which version of MPS (Multi-Processor Specification) this motherboard will use. Leave this item to its default setting.

Report No FDD For OS:

When set to [Yes], this item allows you to run some older operating system without floppy disk drive. Leave this item to its default setting.

Delay IDE Initial (Secs):

This item allows the BIOS to support some old or special IDE devices by prolonging this delay time. A larger value will give more delay time to the device for which to initialize and to prepare for activation.

Disable Unused PCI Clock:

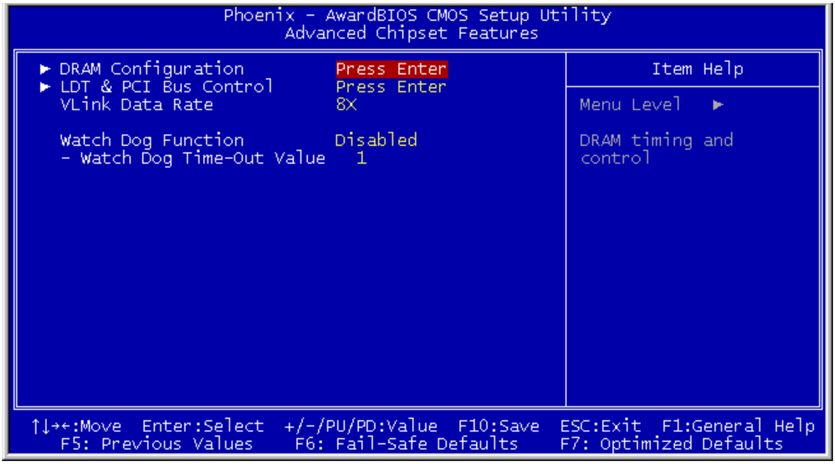
This option disables the clock of PCI slot that is not in use.

[Yes]: The system automatically detect the unused DIMM and PCI slots, and stop sending clock signal to these unused PCI slots.

[No]: The system always send clock signal to all PCI slots.

NOTE: Set this option to [No] setting if there are adapters that cannot be automatically detected by the system and will cause malfunction.

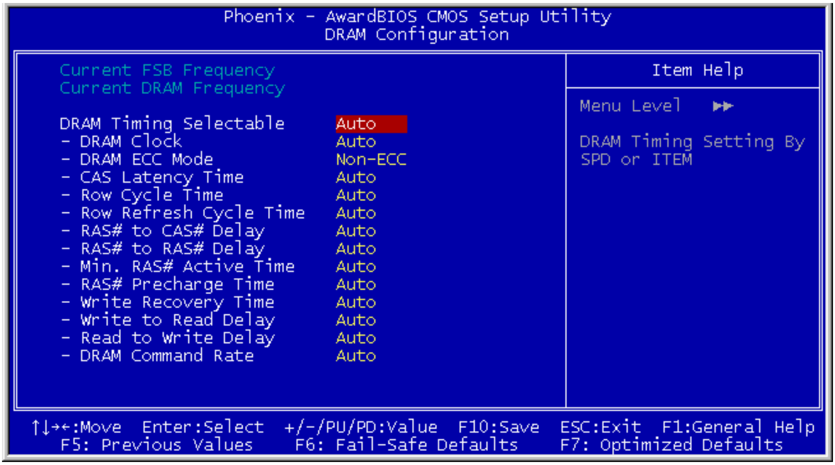
3.3. Advanced Chipset Features



```
              Phoenix - AwardBIOS CMOS Setup Utility
                   Advanced Chipset Features

 ▶ DRAM Configuration         Press Enter   |       Item Help
 ▶ LDT & PCI Bus Control      Press Enter   |
   VLink Data Rate            8X            | Menu Level   ▶
                                            |
   Watch Dog Function         Disabled      | DRAM timing and
   - Watch Dog Time-Out Value   1           | control

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

➥ DRAM Configuration:

Click <Enter> key to enter its submenu:



```
              Phoenix - AwardBIOS CMOS Setup Utility
                      DRAM Configuration

   Current FSB Frequency                    |       Item Help
   Current DRAM Frequency                   |
                                            | Menu Level   ▶▶
   DRAM Timing Selectable     Auto          |
   - DRAM Clock               Auto          | DRAM Timing Setting By
   - DRAM ECC Mode            Non-ECC       | SPD or ITEM
   - CAS Latency Time         Auto          |
   - Row Cycle Time           Auto          |
   - Row Refresh Cycle Time   Auto          |
   - RAS# to CAS# Delay       Auto          |
   - RAS# to RAS# Delay       Auto          |
   - Min. RAS# Active Time    Auto          |
   - RAS# Precharge Time      Auto          |
   - Write Recovery Time      Auto          |
   - Write to Read Delay      Auto          |
   - Read to Write Delay      Auto          |
   - DRAM Command Rate        Auto          |

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

Current FSB Frequency:

This item displays the FSB frequency currently using.

Current DRAM Frequency:

This item displays the DRAM frequency currently using.

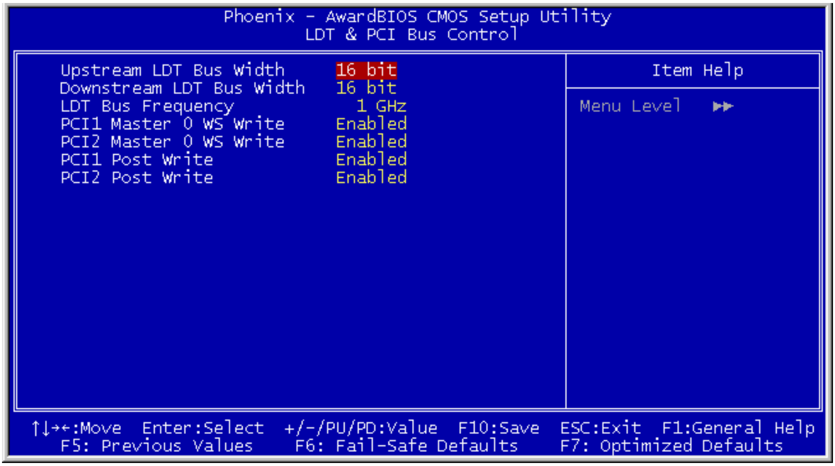
DRAM Timing Selectable:

This item sets the optimal timings for the following four items, depending on the memory module you are using.

Leave this item to its default [Auto] setting, or if you want to configure its following options manually by selecting [Manual] setting.

➭ LDT & PCI Bus Control:

Click <Enter> key to enter its submenu:



```
         Phoenix - AwardBIOS CMOS Setup Utility
                 LDT & PCI Bus Control

   Upstream LDT Bus Width       16 bit            Item Help
   Downstream LDT Bus Width     16 bit
   LDT Bus Frequency              1 GHz      Menu Level   ▶▶
   PCI1 Master 0 WS Write       Enabled
   PCI2 Master 0 WS Write       Enabled
   PCI1 Post Write              Enabled
   PCI2 Post Write              Enabled

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

Upstream LDT Bus Width:

Select the upstream LDT bus width between [8 bit] and [16 bit].

Downstream LDT Bus Width:

Select the downstream LDT bus width between [8 bit] and [16 bit].

LDT Bus Frequency:

Select the LDT bus frequency among [200 MHz], [400 MHz], [600 MHz] [800 MHz], [1 GHz], or [Auto].

PCI1 Master 0 WS Write / PCI2 Master 0 WS Write:

[Enabled]: Writes to the PCI bus are executed with zero wait state (immediately) when PCI bus is ready to receive data.

[Disabled]: The system will wait one state before data is written to the PCI bus.

PCI1 Post Write / PCI2 Post Write:

[Enabled]: Data transmissions from CPU to PCI bus are buffered and compensate for the different speed between CPU and PCI bus.

[Disabled]: Data transmissions are not buffered and CPU must wait until the data transmission is complete and then start another transmission cycle.

➪ Back to Advanced Chipset Features Setup Menu:

VLink Data Rate:

Selects the speed of VLink that links the North Bridge and South Bridge.

Watch Dog Function

This option controls the function for Watch Dog.

[Disabled]: Disable the Watch Dog function.

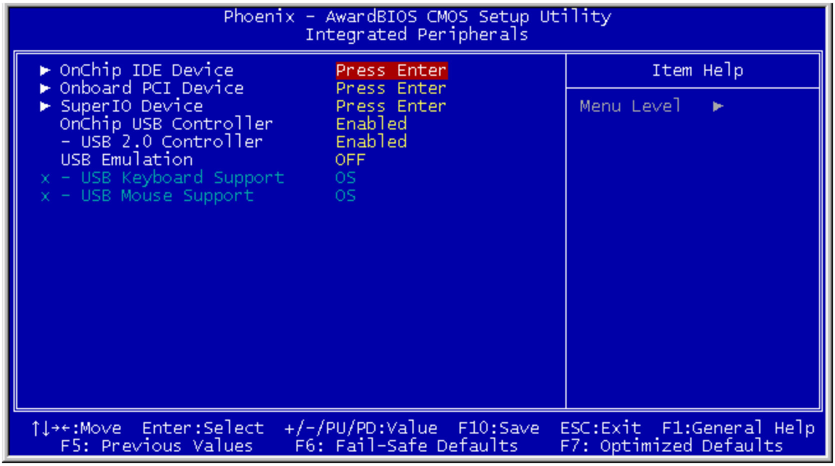
[Enabled/Sec.]: Enable the Watch Dog function by the timer based on seconds.

[Enabled/Min.]: Enable the Watch Dog function by the timer based on minutes.

❈ Watch Dog Time-Out Value

Type in the Time-Out value for your Watch Dog function.

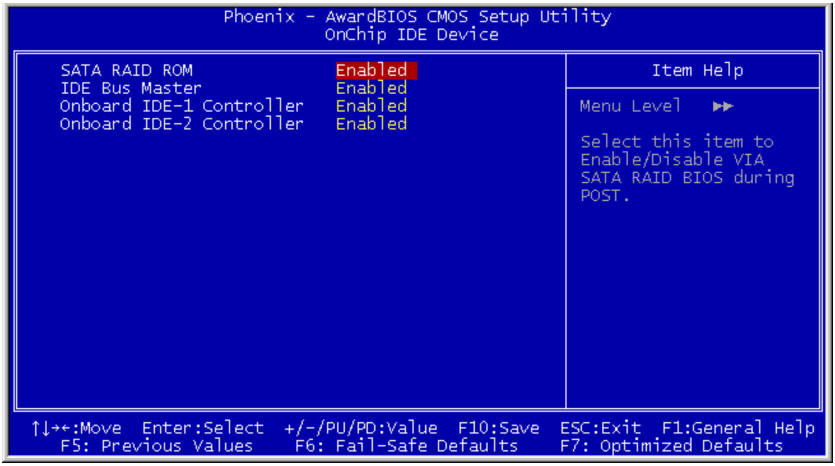
3.4. Integrated Peripherals



```
             Phoenix - AwardBIOS CMOS Setup Utility
                     Integrated Peripherals

 ▶ OnChip IDE Device            Press Enter       Item Help
 ▶ Onboard PCI Device           Press Enter
 ▶ SuperIO Device               Press Enter     Menu Level   ▶
   OnChip USB Controller        Enabled
   - USB 2.0 Controller         Enabled
   USB Emulation                OFF
 x - USB Keyboard Support       OS
 x - USB Mouse Support          OS

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

↳ OnChip IDE Device:

Click <Enter> key to enter its submenu:



```
             Phoenix - AwardBIOS CMOS Setup Utility
                        OnChip IDE Device

   SATA RAID ROM                Enabled           Item Help
   IDE Bus Master               Enabled
   Onboard IDE-1 Controller     Enabled         Menu Level   ▶▶
   Onboard IDE-2 Controller     Enabled
                                                Select this item to
                                                Enable/Disable VIA
                                                SATA RAID BIOS during
                                                POST.

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

SATA RAID ROM:

Select this item to enable/disable the SATA RAID BIOS during POST.

IDE Bus Master:

This option enables or disables the IDE bus mastering capability under the DOS environment.

Onboard IDE-1 Controller:

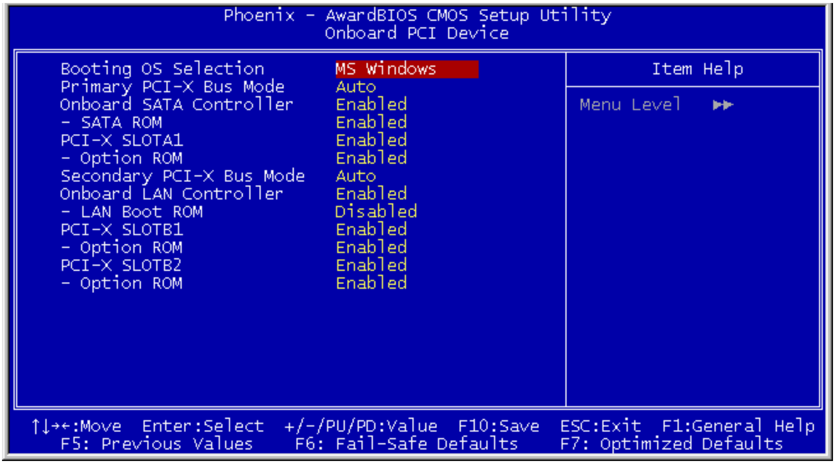
This item allows you to enable or disable the primary and secondary IDE controller. Select [Disabled] if you want to add a different hard drive controller.

Onboard IDE-2 Controller:

The description is same as the *OnChip IDE-1 Controller.*

↳ Onboard PCI Device:

Click <Enter> key to enter its submenu:



```
                Phoenix - AwardBIOS CMOS Setup Utility
                          Onboard PCI Device

     Booting OS Selection          MS Windows        |      Item Help
     Primary PCI-X Bus Mode        Auto              |
     Onboard SATA Controller       Enabled           | Menu Level   ▶▶
     - SATA ROM                    Enabled           |
     PCI-X SLOTA1                  Enabled           |
     - Option ROM                  Enabled           |
     Secondary PCI-X Bus Mode      Auto              |
     Onboard LAN Controller        Enabled           |
     - LAN Boot ROM                Disabled          |
     PCI-X SLOTB1                  Enabled           |
     - Option ROM                  Enabled           |
     PCI-X SLOTB2                  Enabled           |
     - Option ROM                  Enabled           |

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

Booting OS Selection:

This item selects the booting OS.

Primary PCI-X Bus Mode:

This item selects the bus mode for primary PCI-X slot.

Onboard SATA Controller:

This item enables or disables the Serial ATA controller.

❋ **SATA ROM:**

This item enables or disables the boot ROM of the Serial ATA devices.

PCI-X SLOTA1:

This option enables or disables PCIXA1 slot.

❋ **Option ROM:**

This item enables or disables the boot ROM of the device added at PCIXA1 slot.

Secondary PCI-X Bus Mode:

This item selects the bus mode for secondary PCI-X slot.

Onboard LAN Controller:

This option enables or disables the LAN controller.

❋ **LAN Boot ROM:**

This item allows you to use the boot ROM (instead of a disk drive) to boot-up the system and access the local area network directly.

PCI-X SLOTB1:

This option enables or disables PCIXB1 slot.

❋ **Option ROM:**

This item enables or disables the boot ROM of the device added at PCIXB1 slot.

PCI-X SLOTB2:

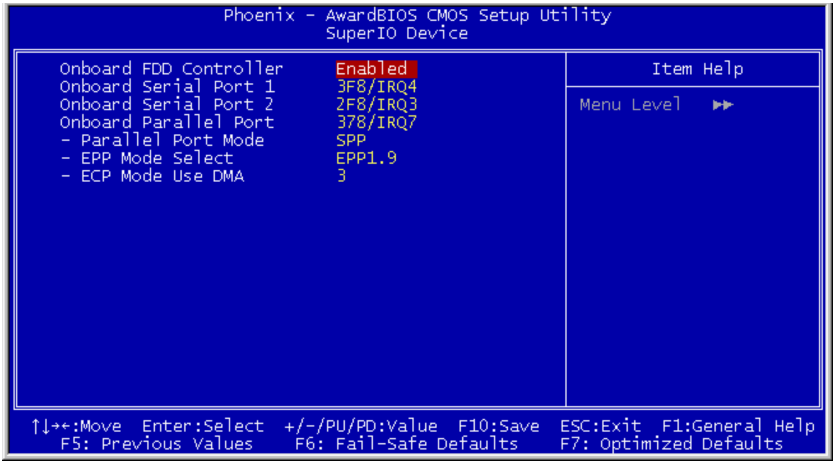
This option enables or disables PCIXB2 slot.

❋ **Option ROM:**

This item enables or disables the boot ROM of the device added at PCIXB2 slot.

SuperIO Device:

Click <Enter> key to enter its submenu:



```
                Phoenix - AwardBIOS CMOS Setup Utility
                          SuperIO Device

    Onboard FDD Controller       Enabled     |       Item Help
    Onboard Serial Port 1        3F8/IRQ4    |
    Onboard Serial Port 2        2F8/IRQ3    | Menu Level   ▶▶
    Onboard Parallel Port        378/IRQ7    |
    - Parallel Port Mode         SPP         |
    - EPP Mode Select            EPP1.9      |
    - ECP Mode Use DMA           3           |

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

Onboard FDD Controller:

This option enables or disables the onboard FDC controller.

Onboard Serial Port 1 / Onboard Serial Port 2:

This item determines which I/O addresses the onboard Serial Port controller will access.

[Auto]: The system automatically select an I/O address for the onboard Serial Port.

[3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3]: Allows you to manually select an I/O address for the onboard Serial Port.

[Disabled]: Disables the onboard Serial Port.

Onboard Parallel Port:

This item specifies the I/O address used by the parallel port.

[Disabled]: This option prevents the parallel port from accessing any system resources. When the value of this option is set to [Disabled], the printer port becomes unavailable.

[378/IRQ7]: This option allows the parallel port to use [378/IRQ7] as its I/O port address. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

[278/IRQ5]: This option allows the parallel port to use [278/IRQ5] as its I/O port address.

[3BC/IRQ7]: This option allows the parallel port to use [3BC/IRQ7] as its I/O port address.

Parallel Port Mode:

This item specifies the parallel port mode.

[SPP]: (Standard Parallel Port) Allows bi-directional parallel port operation at normal speed.

[EPP]: (Enhanced Parallel Port) Allows bi-directional parallel port operation at maximum speed.

[ECP]: (Extended Capabilities Port) Allows bi-directional parallel port operation at a speed faster than the normal mode’s data transfer rate.

[ECP+EPP]: Allows parallel port operation at ECP and EPP mode.

EPP Mode Select:

This item selects the EPP mode.

ECP Mode Use DMA:

This item selects the DMA channel of the parallel port.

➥ Back to Integrated Peripherals Setup Menu:

OnChip USB Controller:

This item enables the USB controller at all USB ports or specific port(s).

❈ **USB 2.0 Controller:**

This item enables the USB 2.0 controller.

USB Emulation:

This item selects the options of keyboard/mouse and storage devices to be supported in DOS environment.

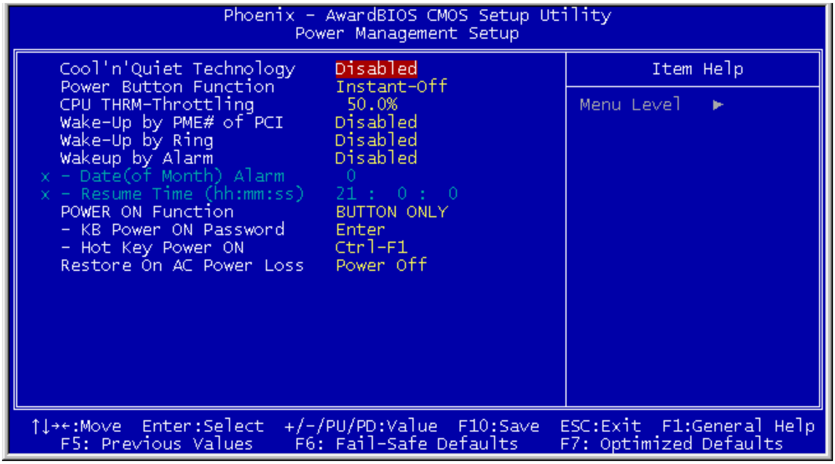
❈ **USB Keyboard Support:**

This item allows you to select [**BIOS**] for using USB keyboard in DOS environment, or [**OS**] in OS environment.

❈ **USB Mouse Support:**

This item allows you to select [**BIOS**] for using USB mouse in DOS environment, or [**OS**] in OS environment.

3.5. Power Management Setup



```
                Phoenix - AwardBIOS CMOS Setup Utility
                       Power Management Setup

     Cool'n'Quiet Technology      Disabled          |      Item Help
     Power Button Function        Instant-Off       |
     CPU THRM-Throttling           50.0%            | Menu Level   ►
     Wake-Up by PME# of PCI       Disabled          |
     Wake-Up by Ring              Disabled          |
     Wakeup by Alarm              Disabled          |
   x - Date(of Month) Alarm        0                |
   x - Resume Time (hh:mm:ss)     21 :  0 :  0      |
     POWER ON Function            BUTTON ONLY       |
     - KB Power ON Password       Enter             |
     - Hot Key Power ON           Ctrl-F1           |
     Restore On AC Power Loss     Power Off         |

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

Cool ‘n’ Quiet Technology:

This item enables the VIA Cool ‘n’ Quiet Technology for Windows XP/2000.

Power Button Function:

This item selects the method of powering off your system:

[Delay 4 Sec.]: Pushing the power button for more than 4 seconds will power off the system. This will prevent the system from powering off in case you accidentally hit or pushed the power button.

[Instant-Off]: Pressing and then releasing the power button at once will immediately power off the system.

CPU THRM-Throttling

This item controls the CPU speed by cutting down its regular power to a percentage during the STR (Suspend To RAM) state.

Wake-Up by PME# of PCI:

When set to [Enabled], access to the onboard LAN or a PCI card such as a modem or LAN card will cause the system to wake up. The PCI card must support the wake up function.

Wake-Up by Ring:

When set to [Enabled], telephone calls coming through an external or internal modem will power-on your system.

WakeUp by Alarm:

When set to [**Enabled**], you can set the date and time you would like the Soft-Off PC to power-on in the "**Date (of Month) Alarm**" and "**Time (hh:mm:ss) Alarm**" items. However, if the system is being accessed by incoming calls or the network (Resume On Ring/LAN) prior to the date and time set in these items, the system will give priority to the incoming calls or network instead.

❋ **Date (of Month) Alarm**

[0]: This option power-on the system everyday according to the time set in the "Time (hh:mm:ss) Alarm" item.

[1-31]: This option selects a date you would like the system to power-on. The system will power-on on the date set, and the time set in the "Time (hh:mm:ss) Alarm" item.

❋ **Resume Time (hh:mm:ss)**

This item sets the time you would like the system to power-on.

POWER ON Function:

This item selects the way you want your system to power on.

[Password]: Use a password to power on the system, select this option then press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, and then press <Enter>.

[Hot KEY]: Use any of the function keys between <F1> to <F12> to power on the system.

[Mouse Left]: Double click the mouse left button to power on the system.

[Mouse Right]: Double click the mouse right button to power on the system.

[Any KEY]: Use any keyboard keys to power on the system.

[BUTTON ONLY]: Use only the power button to power on the system.

[Keyboard 98]: Use the power-on button on the "Keyboard 98" compatible keyboard to power on the system.

NOTE: To enable this "Power On" function, the wake-up header of [USB-PWR1] must be set to [Enabled] position. Please refer to the configuration of "Wake-up Header" [USB-PWR1] in section 2-4, chapter 2.

❋ **KB Power ON Password:**

This item sets the password required in order to power on your computer.

NOTE: Do not forget your password, or you will have to clear the CMOS and reset all parameters in order to utilize this function again.

❋ **Hot Key Power ON:**

This item powers on the system by pressing <Ctrl> key plus one of each function key (<F1> ~ <F12>) simultaneously.

Restore On AC Power Loss:

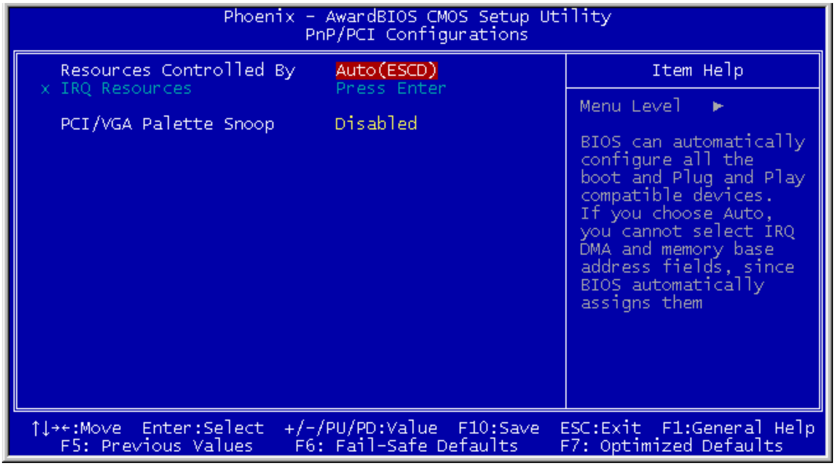
This item selects the system action after an AC power failure.

[Power Off]: When power returns after an AC power failure, the system's power remains off. You must press the Power button to power-on the system.

[Power On]: When power returns after an AC power failure, the system's power will be powered on automatically.

[Last State]: When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

3.6. PnP/PCI Configurations



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                        PnP/PCI Configurations

   Resources Controlled By      Auto(ESCD)            Item Help
 x IRQ Resources                Press Enter
                                                 Menu Level   ►
   PCI/VGA Palette Snoop        Disabled
                                                 BIOS can automatically
                                                 configure all the
                                                 boot and Plug and Play
                                                 compatible devices.
                                                 If you choose Auto,
                                                 you cannot select IRQ
                                                 DMA and memory base
                                                 address fields, since
                                                 BIOS automatically
                                                 assigns them

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

Resources Controlled By:

This item configures all of the boot and Plug-and-Play compatible devices.

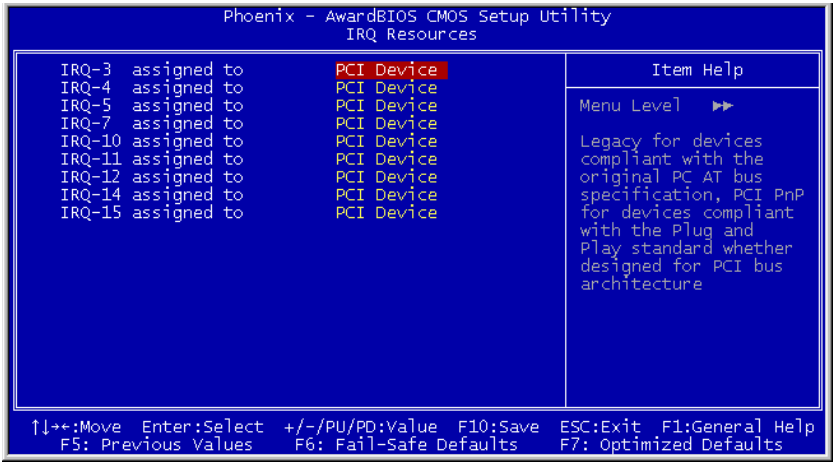
[Auto(ESCD)]: The system will automatically detect the settings.

[Manual]: Choose the specific IRQ resources in the “IRQ Resources” menu.

❈ IRQ Resources:

Click <Enter> key to enter its submenu:

This item sets each system interrupt to either [PCI Device] or [Reserved].



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                             IRQ Resources

    IRQ-3  assigned to          PCI Device          Item Help
    IRQ-4  assigned to          PCI Device
    IRQ-5  assigned to          PCI Device      Menu Level   ▶▶
    IRQ-7  assigned to          PCI Device
    IRQ-10 assigned to          PCI Device      Legacy for devices
    IRQ-11 assigned to          PCI Device      compliant with the
    IRQ-12 assigned to          PCI Device      original PC AT bus
    IRQ-14 assigned to          PCI Device      specification, PCI PnP
    IRQ-15 assigned to          PCI Device      for devices compliant
                                                with the Plug and
                                                Play standard whether
                                                designed for PCI bus
                                                architecture

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

⇘ Back to PnP/PCI Configurations Setup Menu:

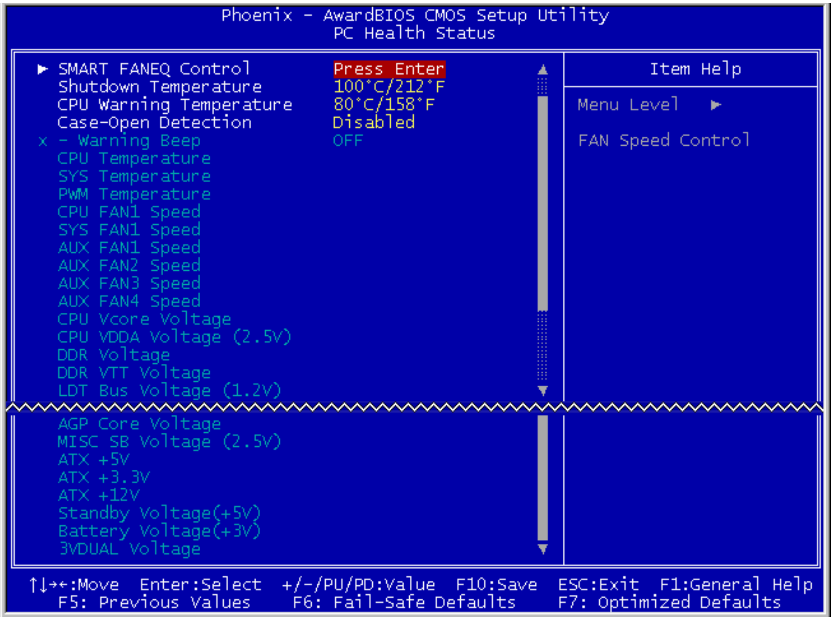
PCI/VGA Palette Snoop:

This item determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

[Enabled]: MPEG ISA/VESA VGA cards work with PCI/VGA.

[Disabled]: MPEG ISA/VESA VGA cards do not work with PCI/VGA.

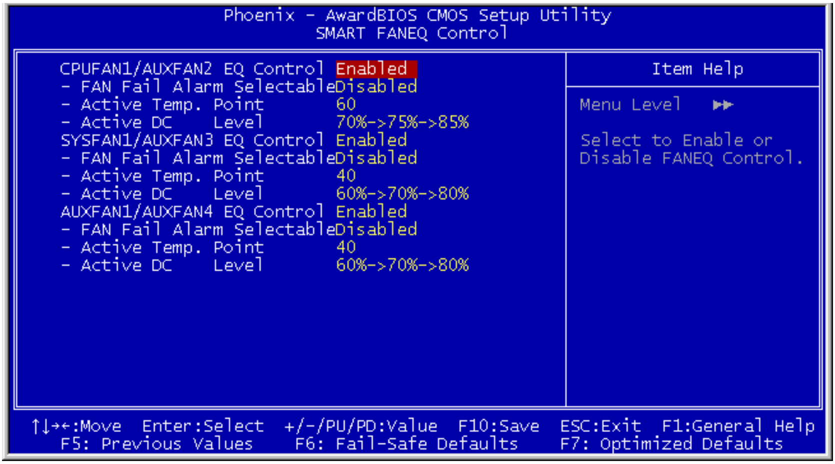
3.7. PC Health Status



```
            Phoenix - AwardBIOS CMOS Setup Utility
                       PC Health Status

 ► SMART FANEQ Control        Press Enter    ▲ |        Item Help
   Shutdown Temperature       100°C/212°F      |
   CPU Warning Temperature    80°C/158°F       | Menu Level   ►
   Case-Open Detection        Disabled         |
 x - Warning Beep             OFF              | FAN Speed Control
   CPU Temperature
   SYS Temperature
   PWM Temperature
   CPU FAN1 Speed
   SYS FAN1 Speed
   AUX FAN1 Speed
   AUX FAN2 Speed
   AUX FAN3 Speed
   AUX FAN4 Speed
   CPU Vcore Voltage
   CPU VDDA Voltage (2.5V)
   DDR Voltage
   DDR VTT Voltage
   LDT Bus Voltage (1.2V)                    ▼
^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
   AGP Core Voltage
   MISC SB Voltage (2.5V)
   ATX +5V
   ATX +3.3V
   ATX +12V
   Standby Voltage(+5V)
   Battery Voltage(+3V)
   3VDUAL Voltage                            ▼

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

SMART FANEQ Control:

Click <Enter> key to enter its submenu:



```
                 Phoenix - AwardBIOS CMOS Setup Utility
                          SMART FANEQ Control

    CPUFAN1/AUXFAN2 EQ Control Enabled          Item Help
    - FAN Fail Alarm SelectableDisabled
    - Active Temp. Point        60           Menu Level   ▶▶
    - Active DC     Level       70%->75%->85%
    SYSFAN1/AUXFAN3 EQ Control Enabled       Select to Enable or
    - FAN Fail Alarm SelectableDisabled      Disable FANEQ Control.
    - Active Temp. Point        40
    - Active DC     Level       60%->70%->80%
    AUXFAN1/AUXFAN4 EQ Control Enabled
    - FAN Fail Alarm SelectableDisabled
    - Active Temp. Point        40
    - Active DC     Level       60%->70%->80%

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

CPUFAN1/AUXFAN2 EQ Control:

This item selects to enable or disable the FANEQ option for headers CPUFAN1 and AUXFAN2.

❈ FAN Fail Alarm Selectable

This item selects the fan that will be monitored for malfunction.

❈ Active Temp. Point:

This item selects the point of active temperature for FANEQ option.

❈ Active DC Level:

This item selects the 1st, 2nd and 3rd DC level for FANEQ option.

SYSFAN1/AUXFAN3 EQ Control:

This item selects to enable or disable the FANEQ option for headers SYSFAN1 and AUXFAN3.

❈ FAN Fail Alarm Selectable

This item selects the fan that will be monitored for malfunction.

❋ **Active Temp. Point:**

This item selects the point of active temperature for FANEQ option.

❋ **Active DC Level:**

This item selects the 1^{st}, 2^{nd} and 3^{rd} DC level for FANEQ option.

AUXFAN1/AUXFAN4 EQ Control:

This item selects to enable or disable the FANEQ option for headers AUXFAN1 and AUXFAN4.

❋ **FAN Fail Alarm Selectable**

This item selects the fan that will be monitored for malfunction.

❋ **Active Temp. Point:**

This item selects the point of active temperature for FANEQ option.

❋ **Active DC Level:**

This item selects the 1^{st}, 2^{nd} and 3^{rd} DC level for FANEQ option.

➯ Back to PC Health Status Setup Menu:

Shutdown Temperature:

This item sets the temperature that would shutdown the system automatically in order to prevent system overheats.

CPU Warning Temperature:

This item selects the CPU's warning temperature limit. Once the system has detected that the CPU's temperature exceeded the limit, warning beeps will sound.

NOTE: The onboard hardware monitor function is capable of detecting these system health conditions. If you want a warning message to pop-up or a warning alarm to sound when an abnormal condition occurs, you must install the "Hardware Doctor" utility. This utility is included in the "Driver & Utility CD" that came packed with this motherboard.

Case-Open Detection

This option controls the action to take when the chassis intrusion device connected to header JP1 is activated.

[Disabled]: Disable the case-open warning.

[Enabled]: Enable the case-open warning.

[Cleared]: Clear the warning message in the monitor.

❋ **Warning Beep:**

After setting the [Case-Open Detection] item to [Enabled] or [Cleared], this item selects the chassis beeper to activate or not when the chassis intrusion device connected to the "**C.O.**" of header "**FPIO1**" is activated.

All Voltages, Fans Speed and Thermal Monitoring:

These unchangeable items list the current status of the CPU and environment temperatures, fan speeds, and system power voltage.

NOTE: The hardware monitoring features for temperatures, fans and voltages will occupy the I/O address from 294H to 297H. If you have a network adapter, sound card or other add-on cards that might use those I/O addresses, please adjust your add-on card I/O address to avoid using these addresses.

3.8. Load Fail-Safe Defaults

This option loads the BIOS default values for the most stable, minimal-performance system operations.

3.9. Load Optimized Defaults

This option loads the BIOS default values that are factory settings for optimal-performance system operations.

3.10. Set Password

This option protects the BIOS configuration or restricts access to the computer itself.

3.11. Save & Exit Setup

This option saves your selections and exits the BIOS setup menu.

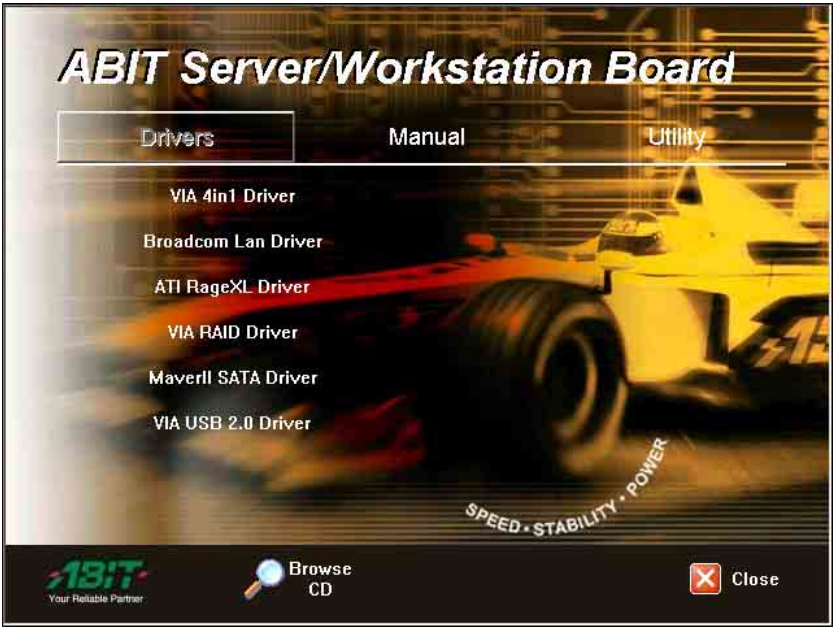
3.12. Exit Without Saving

This option exits the BIOS setup menu without saving any change.

Chapter 4. Driver Installation

After all the hardware has been installed, you must first install the operating system and then the software drivers. The necessary drivers are all included within the Drivers & Utilities CD that came packaged with your workstation board.

The display shown in the following figure should appear after inserting this CD into your CD-ROM drive, if not, enter ➔ [My Computer] ➔ CD-ROM drive ➔ double click [Launch].


ABIT Server/Workstation Board
Drivers
Manual
Utility
VIA 4in1 Driver
Broadcom Lan Driver
ATI RageXL Driver
VIA RAID Driver
Maverll SATA Driver
VIA USB 2.0 Driver
SPEED • STABILITY • POWER
Your Reliable Partner
Browse CD
Close

Setup Items

- **Drivers**
  Install the drivers for Windows Operating System.
- **Manual**
  View the user's manual in PDF file.
- **Utility**
  Click to enter the sub-screen for installing software like Acrobat Reader, Award Flash, DirectX, and LoFormat utility.
- **Browse CD**
  Browse the contents of this CD-ROM.
- **Close**
  Exit the CD setup Items Menu.

Appendix A. How to Get Technical Support

(From our website) http://www.abit.com.tw
(In North America) http://www.abit-usa.com
(In Europe) http://www.abit.nl

Thank you for choosing ABIT products. ABIT sells all our products through distributors, resellers and system integrators; we have no direct sales to end-users. Before sending email for tech support please check with your resellers or integrators if you need any services, they are the ones who sold you your system and they should know best as to what can be done, how they serve you is a good reference for future purchases.

We appreciate every customer and would like to provide the best service to you. Providing fast service to our customers is our top priority. However we receive many phone calls and a huge amount of email from all over the world. At the present time it is impossible for us to respond to every single inquiry. Therefore it is quite possible that if you send an email to us that you may not receive a response.

We have done many compatibility tests and reliability tests to make sure our products have the best quality and compatibility. In case you need service or technical support, please understand the constraint we have and **always check with the reseller who sold the product to you first.**

To expedite service, we recommend that you follow the procedures outlined below before contacting us. With your help, we can meet our commitment to provide the best service to the **greatest number of ABIT customers:**

1. **Check the Manual.** It sounds simple but we have taken a lot of care in making a well-written and thorough manual. It is full of information that doesn't only pertain to motherboards. The CD-ROM included with your board will have the manual as well as drivers. If you don't have either one, go to our Program Download Area of the Website or FTP server.

2. **Download latest BIOS, software or drivers.** Please go to our Program Download area on our Website to check to see if you have the latest BIOS. They are developed over periods of time to fixes bugs or incompatibilities. **Also please make sure you have the latest drivers from your peripheral cards makers!**

3. **Check the ABIT Technical Terms Guide and FAQ on our Website.** We are trying to expand and make the FAQs more helpful and information rich. Let us know if you have any suggestions. For hot topics check out our HOT FAQ!

4. **Internet Newsgroups.** They are a great source of information and many people there can offer help. ABIT's Internet News group, alt.comp.periphs.mainboard.abit, is an ideal forum for the public to exchange information and discuss experiences they have had with ABIT products. Many times you will see that your question has already been asked before. This is a public Internet news group and it is reserved for free discussions. Here is a list of some of the more popular ones:

alt.comp.periphs.mainboard.abit
comp.sys.ibm.pc.hardware.chips
alt.comp.hardware.overclocking
alt.comp.hardware.homebuilt
alt.comp.hardware.pc-homebuilt

5. **Ask your reseller.** Your ABIT authorized distributor should be able to provide the fastest solution to your technical problem. We sell our products through distributors who sell to resellers and stores. Your reseller should be very familiar with your system configuration and should be able to solve your problem much more efficiently than we could. After all, your reseller regards you as an important customer who may purchase more products and who can urge your friends to buy from him or her as well. They integrated and sold the system to you. They should know best what your system configuration is and your problem. They should have reasonable return or refund policies. How they serve you is also a good reference for your next purchase.

6. **Contacting ABIT.** If you feel that you need to contact ABIT directly you can send email to the ABIT technical support department. First, please contact the support team for the branch office closest to you. They will be more familiar with local conditions and problems and will have better insight as to which resellers offer what products and services. Due to the huge number of emails coming in every day and other reasons, such as the time required for problem reproduction, we will not be able to reply to every email. Please understand that we are selling through distribution channels and don't have the resources to serve every end-user. However, we will try to do our best to help every customer. Please also remember that for many of our technical support team English is a second language, you will have a better chance of getting a helpful answer if your question can be understood in the first place. Be sure to use very, simple, concise language that clearly states the problem, avoid rambling or flowery language and always list your system components. Here is the contact information for our branch offices:

7. **RMA Service.** If your system has been working but it just stopped, but you have not installed any new software or hardware recently, it is likely that you have a defective component. Please contact the reseller from whom you bought the product. You should be able to get RMA service there.

8. **Reporting Compatibility Problems to ABIT**. Because of tremendous number of email messages we receive every day, we are forced to give greater weight to certain types of messages than to others. For this reason, any compatibility problem that is reported to us, giving detailed system configuration information and error symptoms will receive the highest priority. For the other questions, we regret that we may not be able to reply directly. But your questions may be posted to the Internet news group in order that a larger number of users can have the benefit of the information. Please check the news group from time to time.

North America and South America	***ABIT Computer (U.S.A.) Corporation*** 45531 Northport Loop West, Fremont CA, 94538, U.S.A. Tel: 1-510-623-0500 Fax: 1-510-623-1092 Sales: sales@abit-usa.com Latin America Sales: ventas@abit-usa.com Marketing: marketing@abit-usa.com Web Site: http://www.abit-usa.com
RMA Center	46808 Lakeview Blvd. Fremont, CA 94538, U.S.A.
UK and Ireland	***ABIT Computer (U.K.) Corporation Ltd.*** Unit 3, 24-26 Boulton Road, Stevenage, Herts SG1 4QX, UK Tel: 44-1438-228888 Fax: 44-1438-226333 E-mail: sales@abitcomputer.co.uk
Germany and Benelux (Belgium, Netherlands, Luxembourg), France, Italy, Spain, Portugal, Greece, Denmark, Norway, Sweden, Finland, and Switzerland	***AMOR Computer B.V. (ABIT's European Office)*** Jan van Riebeeckweg 15, 5928LG, Venlo, The Netherlands Tel: 31-77-3204428 Fax: 31-77-3204420 Sales: sales@abit.nl Web Site: http://www.abit.nl
Austria, Czech, Romania, Bulgaria, Slovakia, Croatia, Bosnia, Serbia, and Macedonia	***Asguard Computer Ges.m.b.H*** Schmalbachstrasse 5, A-2201 Gerasdorf / Wien, Austria Tel: 43-1-7346709 Fax: 43-1-7346713 E-mail: asguard@asguard.at
Shanghai	***ABIT Computer (Shanghai) Co. Ltd.*** Tel: 86-21-6235-1829 Fax: 86-21-6235-1832 Web Site: http://www.abit.com.cn
Russia and CIS	***ABIT Computer (Russia) Co. Ltd.*** Sales: sales@abit.ru Info: info@abit.ru Web Site: http://www.abit.ru
Poland	***ABIT Computer (Poland) Co. Ltd.*** Przedstawicielstwo w Polsce ul. Wita Stwosza 28, 50-149 Wrocław Tel: 48 71 780 78 65 / 66 Fax: 48 71 372 30 87
Japan	Web Site: http://www.abit4u.jp
Taiwan Head Office *(Serving all other territories not listed above. Taiwan is 8+ GMT time, and may have different holiday calendar from yours.)*	***ABIT Computer Corporation*** No. 323, Yang Guang St., Neihu, Taipei, 114, Taiwan Tel: 886-2-8751-8888 Fax: 886-2-8751-3382 Sales: sales@abit.com.tw Marketing: market@abit.com.tw Web Site: http://www.abit.com.tw

Technical Support Form

Company Name:

Phone Number:

Contact Person:

Fax Number:

E-mail Address:

Model	*	BIOS ID #	*
Motherboard Model No.		DRIVER REV	
OS/Application	*		
Hardware Name	Brand	Specifications	
CPU	*		
HDD ☐IDE1 ☐IDE2			
CD-ROM-Drive ☐IDE1 ☐IDE2			
System Memory			
ADD-ON CARD			

Problem Description: