

Chapter 4

AWARD BIOS Description

Entering Setup

Power on the computer, when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test), press key or simultaneously press <Ctrl> + <Alt> + <Esc> keys.

Press to enter SETUP

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will be appeared on the screen. The Main Menu allows you to select from twelve setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

ROM PCI/ISA BIOS (2A69HQ1C) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SYSTEM MONITOR
CHIPSET FEATURES SETUP	PASSWORD SETTING
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION SETUP	HDD LOW LEVEL FORMAT
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color

Time, Date, Hard Disk Type ...

Figure-1 Main Menu

Load BIOS Defaults

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The BIOS Defaults is conventional and safe setting.

Load Setup Defaults

The Setup Defaults is common and efficient setting.

Standard CMOS Setup

Use the arrow keys to highlight the item, then use the <PgUp> or <PgDn> keys to select the value you want in each item.

ROM PCI/ISA BIOS (2A69HQ1C) STANDARD CMOS SETUP AWARD SOFTWARE, INC.								
Date (mm:dd:yy) : Tues, Apr 22, 1997								
Time (hh:mm:ss) : 00:00:00								
HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0	0	0	0	0	0	AUTO
Primary Slave	: Auto	0	0	0	0	0	0	AUTO
Secondary Master	: Auto	0	0	0	0	0	0	AUTO
Secondary Slave	: Auto	0	0	0	0	0	0	AUTO
Drive A	: 1.44M, 3.5 in.					Base Memory : 640 K		
Drive B	: None					Extended Memory : 7168K		
Video	: EGA/VGA					Other Memory : 384 K		
Halt On	: All Errors					Total Memory : 8192K		
ESC : Quit		↑ ↓ → ← : Select Item				PU/PD/+/- : Modify		
F1 : Help		(Shift)F2: Change Color						

Figure-2 Standard CMOS Setup Menu

Hard Disk

Primary Master/Primary Slave/Secondary Master/Secondary Slave

The categories identify the types of 2 IDE channels that have been installed in the computer. There are 45 predefined types and 4 user definable types are

used for Enhanced IDE BIOS. Type 1 to Type 45 are predefined. Type “User” is user-definable. If your hard disk drive type is not matched with drive table or listed in it, you can use Type “User” to define your own drive type manually.

If you select Type “**Auto**”, that means the system can autodetect your hard disk when boots up. If you select Type “**User**”, related information is asked to be entered into the following items. Enter the information directly from the keyboard and press <**Enter**>:

CYLS	number of cylinders	HEAD	number of heads
PRECOMP	write precom	LANDZ	landing zone
SECTOR	number of sectors	MODE	HDD access mode

Video

You have two ways to boot up the system:

- I. When VGA is used as primary and monochrome is used as secondary, the selection of the video type is “**VGA Mode**”.
- II. When monochrome is used as primary and VGA is used as secondary, the selection of the video type is “**Monochrome Mode**”.

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

Error Halt

The category determines that whether the computer will stop or not if an error is detected during powering up.

No errors	The system boot will not stop for any error that may be detected.
All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system boot will not stop for a keyboard

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	error, but it will stop for all the other errors.
All, But Diskette	The system boot will not stop for a disk error; but it will stop for all the other errors.
All, But Disk/Key	The system boot will not stop for a keyboard or disk error, but it will stop for all the other errors.

Memory

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

Base Memory	The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.
Extended Memory	The BIOS determines that how much extended memory is presented during the POST.
Other Memory	This is the memory that can be used for different applications. Most use for this area is Shadow RAM.
Total Memory	Total memory of the system is the sum of the above memory.

BIOS Features Setup

ROM PCI/ISA BIOS (2A69HQIC) BIOS FEATURES SETUP AWARD SOFTWARE, INC.			
Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU L1 Internal Cache	: Enabled	C8000~CBFFF Shadow	: Disabled
CPU L2 Internal Cache	: Enabled	CC000~CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000~D3FFF Shadow	: Disabled
Boot Sequence	: A,C, SCSI	D4000~D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000~DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled	DC000~DFFFF Shadow	: Disabled
Boot Up Numlock Status	: On		

Gate A20 Option	: Fast	
Typematic Rate Setting	: Disabled	
Typematic Rate (Chars/Sec)	: 6	
Typematic Delay(Msec)	: 250	
Security Option	: Setup	ESC: Quit ↑↓→← : Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help PU/PD/+/- : Modify
OS Select For DRAM>64MB	: Non-OS2	F5 : Old Values (Shift)F2: Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

Figure-3 BIOS Features Setup Menu

The following pages tell you the options of each item and describe the meaning of each option.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• Virus Warning	<i>Enabled</i>	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
	<i>Disabled</i>	No warning message appears when anything attempts to access the boot sector or hard disk partition table.
		Note: This function is available only for DOS and other OS that do not trap INT13.
• CPU L1/L2 Internal Cache	<i>Enabled</i>	Enable CPU internal Level1/ Level2 cache.
	<i>Disabled</i>	Disable CPU internal Level1/ Level2 cache.
• Quick Power On Self Test	<i>Enabled</i>	Enable quick POST. BIOS will shorten or skip some check items during POST to speed up POST after you power on the computer.
	<i>Disabled</i>	Normal POST.
• Boot Sequence	A,C,SCSI...C, CDROM,A	You can choose any search sequence for bootup.

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• Swap Floppy Drive	<i>Enabled</i>	It will exchange the assignment of A&B floppy drives.
	<i>Disabled</i>	The assignment of A&B floppy drives are normal.
• Boot Up Floppy Seek	<i>Enabled</i>	BIOS searches for floppy disk drive to determine if drive is ready for diskette read/write during booting.
	<i>Disabled</i>	skip drive seeking to speed up system booting.
• Boot Up Numlock Status	<i>On</i>	Keypad is used as number keys.
	<i>Off</i>	Keypad is used as arrow keys.
• Gate A20 Option	<i>Normal</i>	The A20 signal is controlled by keyboard controller or chipset hardware.
	<i>Fast</i>	It is default. The A20 signal is controlled by Port 92 or chipset specific method.
• Typematic Rate Setting	<i>Enabled</i>	Enable typematic rate and typematic delay programming.
	<i>Disabled</i>	Disable typematic rate and typematic delay programming. The system BIOS will use default value of these two items.
• Typematic Rate Chars/Sec)	6 ~ 30	Set the speed of the typematic rate (characters per second).
• Typematic Delay (Msec)	250 ~ 1000	Set the time of the typematic delay.
• Security Option	<i>System</i>	The system will not boot and access to Setup will be denied if the correct password is not entered when prompting.
	<i>Setup</i>	The system will boot up, but access to Setup will be denied if the correct password is not entered when prompting.
• PCI/VGA Palette Snoop	<i>Enabled</i>	Enable PCI/VGA palette snoop.
	<i>Disabled</i>	Disable PCI/VGA palette snoop.
• OS Select For DRAM>64MB	<i>Non-OS2</i>	If your operating system is not OS/2, please select this item.
	<i>OS2</i>	If system DRAM is more than 64MB and operating system is OS/2, please select this item.
• Video BIOS	<i>Enabled</i>	Video BIOS will be copied to RAM. Video

Shadow	Disabled	Shadow will increase the video speed.
• C8000 – CBFFF	Enabled	Video shadow is disabled.
Shadow ...		Optional ROM will be copied to RAM by
DC000-DFFFF		16K bytes per unit.
Shadow:	Disabled	The shadow function is disabled.

Chipset Features Setup

ROM PCI/ISA BIOS (2A69HQ1C) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	:Enabled	System BIOS Cacheable	:Disabled
		Video BIOS Cacheable	:Disabled
DRAM Speed Selection	:60ns	8Bit I/O Recovery Time	:1
DRAM RAS# Precharge Time	:3	16 Bit I/O Recovery Time	:1
MA Additional Wait State	:Disabled	Memory Hole At 15M~ 16M	:Disabled
RAS# To CAS# Delay	:Disabled	DRAM Fast Leadoff	:Disabled
DRAM Read Burst (B/E/F)	:x2/2/3	Delayed Transaction	:Disabled
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DRAM Write Burst (B/E/F)	:x2/2/3	
ISA Bus Clock	:PCICLK/4	
DRAM Refresh Queue	:Enabled	
DRAM RAS Only Refresh	:Disabled	
DRAM ECC/PARITY Select	:Disabled	
Single Bit Error Report	:Enabled	
Fast Dram Refresh	:Disabled	
Read - Around - Write	:Enabled	
PCI Burst Write Combine	:Disabled	
PCI-To-DRAM Pipeline	:Enabled	ESC: Quit ↑↓→← : Select Item
CPU-To-PCI Write Post	:Enabled	F1 : Help PU/PD/+/- : Modify
CPU-To-PCI IDE Posting	:Enabled	F5 : Old Values (Shift)F2: Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

Figure-4 Chipset Features Setup Menu

The following pages tell you the options of each item and describe the meaning of each option.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• Auto Configuration	<i>Enabled</i>	Automatically configure DRAM Timing according to the value of “DRAM Speed Selection”.
	<i>Disabled</i>	Manually configure. Note: It is recommended to choose “Enabled” option for common users.
• DRAM Speed Selection	<i>60ns,</i> <i>70ns</i>	This item is of selected DRAM read/write timing. You must ensure that your SIMMs are as fast as 60ns, otherwise you have to select 70ns.
• DRAM RAS# Precharge Time	<i>3</i>	DRAM RAS# Precharge time=3x system clocks.
	<i>4</i>	DRAM RAS# Precharge time=4x system clocks.
• MA Additional Wait State	<i>Enabled</i>	One additional wait state is inserted before the assertion of the first MA and CAS#/RAS# during DRAM read or write

	<i>Disabled</i>	leadoff cycles. This affects page hit, row miss and page miss cases.
• RAS# To CAS# Delay	<i>Enabled</i>	Without additional wait state. Add a delay time between the assertion of RAS# and CAS#
• DRAM Read Burst (B/E/F)	<i>Disabled</i>	Without additional delay time.
	<i>x 1 / 2 / 3,</i>	The DRAM read burst timing depends on the type of DRAM on a per-row basis.
	<i>x 2 / 2 / 3,</i>	Slower rates may be required to support slower DRAM.
	<i>x 2 / 3 / 4,</i>	
	<i>x 3 / 4 / 4</i>	
• DRAM Write Burst (B/E/F)	<i>x 2 / 2 / 3,</i>	The DRAM write burst timing depends on the type of DRAM on a per-row basis.
	<i>x 3 / 3 / 3,</i>	Slower rates may be required to support slower DRAM.
	<i>x 3 / 3 / 4,</i>	
	<i>x 4 / 4 / 4</i>	
• ISA Bus Clock	<i>PCICLK/3</i>	Sets ISA Bus clock to PCICLK/3.
	<i>PCICLK/4</i>	Sets ISA Bus clock to PCICLK/4.
• DRAM Refresh Queue	<i>Enabled</i>	Note: PCICLK = System Clock / 2. The internal DRAM refresh queue is enabled.
	<i>Disabled</i>	The refresh queue is disabled and all refreshes are priority requests.
• DRAM RAS Only Refresh	<i>Enabled</i>	Defines DRAM Refresh type as RAS Only Refresh.
	<i>Disabled</i>	Defines DRAM Refresh type as CAS - before - RAS.
• DRAM ECC/PARITY Select	<i>ECC</i>	Provide ECC (Error Checking and Correction) function.
	<i>Parity</i>	Provide DRAM Parity generation and checking.
	<i>Disabled</i>	Disable ECC / PARITY function.
• Single Bit Error Report	<i>Enabled</i>	Allows to report the Single Bit Error to Operating System.
	<i>Disabled</i>	Disable Single Bit Error report

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• Fast DRAM Refresh	<i>Enabled</i>	Defines DRAM refresh rate as fast refresh mode.
	<i>Disabled</i>	Defines DRAM refresh rate as normal refresh mode.
• PCI Burst Write Combine	<i>Enabled</i>	Enables PCI burst write combining.
	<i>Disabled</i>	Disables PCI burst write combining.
• PCI-To-DRAM Pipeline	<i>Enabled</i>	Provides PCI-To-DRAM pipeline operating.
	<i>Disabled</i>	Disable PCI-To-DRAM pipeline operating.
• CPU-To-PCI Write Post	<i>Enabled</i>	Enables CPU-To-PCI write post.
	<i>Disabled</i>	Disables CPU-To-PCI write post.
• System BIOS Cacheable	<i>Enabled</i>	Besides conventional memory, the system BIOS area is also cacheable.
	<i>Disabled</i>	The system BIOS area is not cacheable.
• Video BIOS Cacheable	<i>Enabled</i>	Besides conventional memory, video BIOS area is also cacheable.
	<i>Disabled</i>	Video BIOS area is not cacheable.
• 8 Bit I/ O Recovery Time	<i>1 ~ 8</i>	Defines the ISA Bus 8 bit I/O operating recovery time.
	<i>NA</i>	8 bit I/O recovery time is not exist.
• 16 Bit I / O Recovery Time	<i>1 ~ 4</i>	Defines the ISA Bus 16 bit I/O operating recovery time.
	<i>NA</i>	16 bit I/O recovery time is not exist.
• Memory Hole At 15M-16M	<i>Enabled</i>	Memory Hole at 15-16M is reserved for expanded PCI card.
	<i>Disabled</i>	Do not set this memory hole.

Power Mangement Setup

ROM PCI/ISA BIOS (2A69HQ1C) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.	
<div><div>** Special Features **</div><div><div>Ring Power On :Disabled</div><div>Auto Start On AC Loss :Disabled</div><div>Power Management :Disabled</div><div>PM Control by APM :Yes</div><div>Video Off Method :V/H SYNC +Blank</div><div>MODEM Use IRQ :NA</div></div></div> <div><div>** Wake up Events In Doze & Standby **</div><div><div>IRQ 3 (Wake-Up Event) : ON</div><div>IRQ 4 (Wake-Up Event): ON</div><div>IRQ 8 (Wake-Up Event): ON</div><div>IRQ12 (Wake-Up Event): ON</div></div></div>	<div><div>** Wake up Events In Suspend **</div><div><div>IRQ 3 (COM2) : ON</div><div>IRQ 4 (COM1) : ON</div><div>IRQ 5 (LPT 2) : ON</div><div>IRQ 6 (Floppy Disk) : ON</div><div>IRQ 7 (LPT1) : ON</div><div>IRQ 8 (RTC Alarm) : OFF</div><div>IRQ 9 (IRQ2 Redir) : OFF</div><div>IRQ10 (Reserved) : OFF</div><div>IRQ11 (Reserved) : OFF</div><div>IRQ12 (PS/2 Mouse) : ON</div><div>IRQ13 (Coprocessor) : OFF</div><div>IRQ14(Hard Disk) : ON</div><div>IRQ15 (Reserved) : ON</div></div></div> <div><div>ESC: Quit ↑↓→← : Select Item</div><div>F1 : Help PU/PD/+/- : Modify</div><div>F5 : Old Values (Shift)F2: Color</div><div>F6 : Load BIOS Defaults</div><div>F7 : Load Setup Defaults</div></div>

Figure-5 Power Management Setup Menu

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

Item	Option	Description
• Ring Power-On	Enabled	Allows the system to be powered on when a Ring Indicator signal comes up to UART1 or UART2

AWARD BIOS Description

• Auto Start On AC Loss	<i>Disabled</i>	from external modem. Be sure the “Auto Start On AC Loss” item be enabled.
	<i>Enabled</i>	Do not allow Ring Power - On.
	<i>Disabled</i>	Sets the power control for returning to the last known state of the system.
• Power Management	<i>Disabled</i>	Powering down the system if the mainboard detects that the power supply has lost AC.
	<i>User Define</i>	Global Power Management (PM) will be disabled.
	<i>Min Saving</i>	Users can configure their own Power Management Timer.
	<i>Max Saving</i>	Pre - defined timer value are used such that all timers are in their MAX values
• PM Control by APM	<i>No</i>	Pre - defined timer value are used such that all timers are in their MIN value
	<i>Yes</i>	System BIOS will ignore APM when Power Management is enabled.
		System BIOS will wait for APM's prompt before it enter any PM mode e.g. Standby or Suspend.
Note: If APM is installed, and if there is a task running, even the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode. But if APM is not installed, this option has no effect.		
• Video Off Method	<i>Blank Screen</i>	The system BIOS will only blank off the screen when disabling video.
	<i>V / H SYNC + Blank</i>	In addition to Blank Screen, BIOS will also turn off the V-SYNC & H - SYNC signals from VGA cards to monitor.
	<i>DPMS</i>	This function is enabled only for the VGA card supporting DPMS.
Note: Green monitors detect the V/H-SYNC signals to turn off its electron gun.		

• MODEM Use IRQ	3, 4, 5, 7, 9, 10, 11 NA	Special wake - up event for Modem. Invalidates this feature.
• Doze mode	Disabled 1Min ~ 1 Hr	The system will never enter Doze mode. Defines the continuous idle time before the system entering Doze mode. If any item defined in “Wake Up Events In Doze & Suspend” is On and activated, the system will be waken up.
• Standby Mode	Disabled 1 Min ~ 1Hr	The system will never enter Standby mode. Defines the continuous idle time before the system entering Standby mode. If any item defined in “Wake Up Events In Doze & Suspend” is On and activated, the system will be waken up.
• Suspend Mode	Disabled 1 Min ~ 1Hr	The system will never enter Suspend mode. Defines the continuous idle time before the system entering Suspend mode. If any item defined in “Wake Up Events In Suspend” is On and activated, the system will be waken up.
• HDD Power Down	Disabled 1 ~15 Min	HDD’s motor will not be off. Defines the continuous HDD idle time before the HDD entering power saving mode (motor off).
• IRQ3~IRQ12 (Wake-Up Event)	OFF	The specified event’s activity will not make the system wake up from Doze & Standby mode.
	ON	The specified event’s activity will make the system wake up from Doze & Standby mode.
• IRQ3~IRQ15	OFF	The specified event’s activity will not make the system wake up from Suspend mode.
	ON	The specified event’s activity will make the system wake up from Suspend mode.

PNP/PCI Configuration Setup

ROM PCI/ISA BIOS (2A69HQ1C) PNP/PCI CONFIGURATION SETUP AWARD SOFTWARE, INC.
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AWARD BIOS Description

Resources Controlled By	: Manual	PCI IRQ Active By	: Level
Reset Configuration Data	: Disabled	PCI IDE IRQ Map To	: PCI-AUTO
		Primary IDE INT#	: A
		Secondary IDE INT#	: B
IRQ-3 assigned to	: Legacy ISA	Used MEM Base Addr	: C800
IRQ-4 assigned to	: Legacy ISA	Used MEM Length	: 8K
IRQ-5 assigned to	: PCI/ISA PnP		
IRQ-7 assigned to	: PCI/ISA PnP		
IRQ-9 assigned to	: PCI/ISA PnP		
IRQ-10 assigned to	: PCI/ISA PnP		
IRQ-11 assigned to	: PCI/ISA PnP		
IRQ-12 assigned to	: PCI/ISA PnP		
IRQ-14 assigned to	: Legacy ISA		
IRQ-15 assigned to	: Legacy ISA		
DMA-0 assigned to	: PCI/ISA PnP		
DMA-1 assigned to	: PCI/ISA PnP		
DMA-3 assigned to	: PCI/ISA PnP	ESC: Quit	↑↓→← :Select Item
DMA-5 assigned to	: PCI/ISA PnP	F1 : Help	PU/PD/+/- : Modify
DMA-6 assigned to	: PCI/ISA PnP	F5 : Old Values (Shift)F2	: Color
DMA-7 assigned to	: PCI/ISA PnP	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure-6 PNP/PCI Configuration Setup Menu

The following pages will tell you the options of each item and describe the meaning of each option.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• Resources Controlled By	<i>Manual</i>	Assigns system resources (IRQ and DMA) manually by user.
	<i>Auto</i>	Assigns system resources (IRQ and DMA) automatically by BIOS.
• Reset Configuration Data	<i>Enabled</i>	Forces ESCD (device list in BIOS) update once, then this item automatically reset to “Disabled”.
	<i>Disabled</i>	Invalidates this BIOS feature.

• IRQ-3 ~ IRQ-15 assigned to	Legacy ISA	The specified IRQ-x will be assigned to ISA only.
	PCI/ISA PnP	The specified IRQ-x will be assigned to ISA or PCI.
• DMA-0 ~ DMA-7 assigned to	Legacy ISA	The specified DMA-x will be assigned to ISA only.
	PCI/ISA PnP	The specified DMA-x will be assigned to ISA or PCI.
• PCI IRQ Active By	Level, Edge	Tells the chipset that the IRQ signal input is level or edge trigger.
• PCI IDE IRQ Map To	PCI-AUTO	The BIOS will scan for PCI IDE devices and determine the location of the PCI IDE device.
	PCI - SLOT5~1	The BIOS will scan IRQ14 for primary IDE INT# and IRQ15 for secondary IDE INT# at the specified slot.
	ISA	The BIOS will not assign any IRQs even if PCI IDE card is found. Because some IDE cards connect the IRQ14&15 directly from ISA slot through a card.
• Primary IDE INT#	A ~ D	Tells which INT# the PCI IDE card uses for its interrupt of 1st IDE channel.
• Secondary IDE INT#	A ~ D	Tells which INT# the PCI IDE card uses for its interrupt of 2nd IDE channel.
• Used MEM Base Addr/Used MEM Length	C800/8 ~ 64K	Claim a memory space occupied by legacy ISA card.
	N/A	Invalidates this feature.

Integrated Peripherals

ROM PCI/ISA BIOS (2A69HQ1C) INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
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AWARD BIOS Description

IDE HDD Block Mode	: Enabled	USB Controller	: Disabled
IDE Primary Master PIO	: Auto		
IDE Primary Slave PIO	: Auto		
IDE Secondary Master PIO	: Auto		
IDE Secondary Slave PIO	: Auto		
On-Chip Primary PCI IDE	: Enabled		
On-Chip Secondary PCI IDE	: Enabled		
PCI Slot IDE 2nd Channel	: Disabled		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3		
Serial Port 2 Mode	: Standard		
Onboard Paralleled Port	: 378H/IRQ7		
Parallel Port Mode	: ECP		
ECP Mode Use DMA	: 3	ESC: Quit	↑↓→← : Select Item
		F1 : Help	PU/PD/+/-: Modify
		F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Figure 7 Integrated Peripherals Menu

The following pages tell you the options of each item and describe the meaning of each option.

<u>Item</u>	<u>Option</u>	<u>Description</u>
• IDE HDD Block Mode	<i>Enabled</i>	Allows IDE HDD read/write several sectors one time.
	<i>Disabled</i>	IDE HDD only reads/writes a sector one time.
• IDE Primary/Secondary Master/Slave PIO	<i>Mode 0 - 4</i>	Defines the IDE primary/secondary master/slave PIO mode.
	<i>Auto</i>	The IDE PIO mode is defined according to auto - detect.

• On-chip Primary/Secondary PCI IDE	<i>Enabled</i>	On-chip primary/secondary PCI IDE port is enabled.
	<i>Disabled</i>	On-chip primary/secondary PCI IDE port is disabled.
• PCI Slot IDE 2nd Channel	<i>Enabled</i>	The second IDE channel on PCI slot is enabled.
	<i>Disabled</i>	The second IDE channel on PCI slot is disabled.
• Onboard FDC Controller	<i>Enabled</i>	Onboard floppy disk controller is enabled.
	<i>Disabled</i>	Onboard floppy disk controller is disabled.
• Onboard Serial Port 1/2	<i>3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled, Auto</i>	Defines onboard serial port address and required interrupt number.
		Onboard serial port is disabled. Set address and interrupt number automatically.
• Onboard Parallel Port	<i>378/IRQ7, 278/IRQ5, 3BC/IRQ7 Disabled</i>	Defines onboard parallel port address and IRQ channel.
		Onboard parallel port is disabled.
• Serial Port 2 Mode	<i>Standard, Sharp IR,</i>	Defines Serial Port 2 as standard serial port This mode provides bi-directional communication by transmitting and receiving infrared radiation. In this mode, infrared I/O circuits receive the serial UART output signal. The rate of the signal is 38.4K Baud in half-duplex, and it uses normal UART serial data formats with physical ASKIR modulation.
	<i>IrDA SIR</i>	The system function is the same as in Sharp-IR mode, but at 115.2K Baud.
• Parallel Port Mode	<i>SPP</i>	Defines the parallel port mode as
	<i>EPP1.7</i>	Standard Parallel Port (SPP), Enhanced
	<i>EPP1.9</i>	Parallel Port (EPP), or Extended
	<i>ECP, ECP+EPP</i>	Capabilities Port (ECP).

AWARD BIOS Description

• ECP Mode Use DMA	<i>1</i> <i>3</i>	Define channel 1 or channel 3 used for DMA
• USB Controller	<i>Enabled</i> <i>Disabled</i>	Enable for using USB peripheral devices. Disable for using no USB peripheral devices.

System Monitor

ROM PCI/ISA BIOS (2A69HQ1C) SYSTEM MONITOR AWARD SOFTWARE, INC.			
ITEM MONITORED	VALUE	LOW LIMIT	HIGH LIMIT
CPU #1 Voltage	: 3.32V	3.15V	3.45V
CPU #2 Voltage	: 3.31V	3.15V	3.45V
+5V Voltage	: 4.96V	4.75V	5.25V
+3.3V Voltage	: 3.28V	3.15V	3.45V
GTL+ Voltage	: 1.50V	1.40V	1.60V
-12V Voltage	: -11.7V	-11.0V	-12.5V
-5V Voltage	: -4.97V	-4.75V	-5.25V
CPU #1 Temperature	: 45		60
CPU #2 Temperature	: 43		60
Board Temperature	: 29		40
FAN #1 Speed	: 3550 rpm	2700 rpm	
FAN #2 Speed	: 3500 rpm	2700 rpm	
Chassis Fan Speed	: 2400 rpm	Disabled	

Figure-8 System Monitor

The following table tell you the options of each item and the description of the items.

<u>Item</u>	<u>Description</u>
CPU #1 Voltage	CPU #1 Core Voltage supplied by VRM1
CPU #2 Voltage	CPU #2 Core Voltage supplied by VRM2

+5V Voltage	“+5V” Voltage of ATX Power Supply
+3.3V Voltage	“+3.3V” Voltage of ATX Power Supply
GTL+Voltage	GTL+Bus (Host Bus between CPU and Chipset) Voltage which should be 1.5V nominally
-12V Voltage	“-12V” Voltage of ATX Power Supply
-5V Voltage	“-5V” Voltage of ATX Power Supply
Board Temperature	Temperature of Mainboard or Chassis inside
CPU #1 Temperature	Temperature nearby CPU #1
CPU #2 Temperature	Temperature nearby CPU #2
Fan #1 Speed	Tachometer count of Fan #1
Fan #2 Speed	Tachometer count of Fan #2
Chassis Fan Speed	Tachometer count of Chassis Fan

The Value of System Monitor is testing results of each item.

Fan speed value is based on an assumption that tachometer signal is two pulses per revolution; In other cases, you should regard it relatively.

When Power-Management is enabled, if item value overflow the range defined by low limit and high limit, system would warn you with several beeps. You could modify Low/High Limit by press PU/PD/+/- key. It's not recommended to modify important items such as CPU voltage, 3.3V voltage and GTL + voltage.

Password Setting

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

ENTER PASSWORD

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

AWARD BIOS Description

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

PASSWORD DISABLED

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

If you select “**Setup**” at “Security Option” of “BIOS Features Setup” Menu, you will be prompted for the password only when you try to enter “CMOS Setup”.

IDE HDD Auto Detection

The Enhanced IDE features was included in all Award BIOS. Below is a brief description of this features.

ROM/PCI/ISA BIOS (2A69HQ1C) IDE HDD AUTO DETECTION AWARD SOFTWARE, INC.							
HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE							
Primary Master:							
Select Primary Master Option (N=Skip): N							
Option	Size	Cyls	Heads	Precomp	Landzone	Sectors	Mode
2(Y)	541	525	32	0	1049	67	LBA
1	541	1050	16	65535	1049	63	NORMAL
3	541	525	32	65535	1049	63	LARGE

Note: Some OSES (like SCO-UNIX) must use “NORMAL” for installation

Figure-9 IDE HDD Auto Detection Menu

1. Setup Changes

With auto-detection

- BIOS setup will display all possible modes that is supported by the HDD including NORMAL, LBA and LARGE.
- If HDD does not support LBA modes, no “LBA” option will be shown.
- If number of physical cylinders is less than or equal to 1024, “LARGE” option may not be shown.
- Users can select a mode which is appropriate for them.

With Standard CMOS Setup

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

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

2. HDD Modes

The Award BIOS supports 3 HDD modes: NORMAL, LBA and LARGE, and Auto detect.

NORMAL

Generic access mode in which neither the BIOS nor the IDE controller will make any transformation during accessing. The maximum number of cylinders, heads and sectors for NORMAL mode are 1024,16 and 63.

If user sets his HDD to NORMAL mode, the maximum accessible HDD size will be 528 megabytes even though its physical size may be greater than that.

LBA (Logical Block Addressing) mode

AWARD BIOS Description

A new HDD accessing method to overcome the 528 Megabyte bottleneck. The number of cylinders, heads and sectors shown in setup may not be the number physically contained in the HDD.

During HDD accessing, the IDE controller will transform the logical address described by sector, head and cylinder number into its own physical address inside the HDD. The maximum HDD size supported by LBA mode is 8.4Gigabytes.

LARGE mode

Some IDE HDDs contain more than 1024 cylinder without LBA support (in some cases, user do not want LBA). The Award BIOS provides another alternative to support these kinds of HDD.

BIOS tricks DOS (or other OS) that the number of cylinders is less than 1024 by dividing it by 2. At the same time, the number of heads is multiplied by 2. A reverse transformation process will be made inside INT13h in order to access the right HDD address.

Auto detect

If using Auto detect, the BIOS will automatically detect IDE hard disk mode and set it to one kind of HDD modes.

3. Remark

To support LBA or LARGE mode of HDDs, there must be some software involved which are located in Award HDD Service Routine(INT13h).It maybe fail to access a HDD with LBA (LARGE) mode selected if you are running under an Operating System which replaces the whole INT 13h.

Hard Disk Low Level Format Utility

This Award Low-Level-Format Utility is designed as a tool to save your time formatting your disk. The Utility automatically looks for the necessary information of the drive you selected. Utility also searches for bad tracks and list them for your reference.

Shown below is the Main Menu after you enter into the Award Low-Level-Format Utility.

Hard Disk Low-Level-Format Utility	NO. CYLS HEAD
SELECT DRIVE	
BAD TRACK LIST	

PREFORMAT							
Current select drive is : C							
DRIVE : C CYLINDER : 0 HEAD : 0							
SIZE	CYL	HEAD	PRECOMP	LANDZ	SECTORS	MODE	
Primary Master : 40MB	977	5	300	977	17	NORMAL	
Primary Slave : None	0	0	0	0	0	AUTO	
Secondary Master: None	0	0	0	0	0	AUTO	
Secondary Slave : None	0	0	0	0	0	AUTO	
Up/Down - Select item			Enter - Accept		ESC - Exit/Abort		
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Figure-10 Hard Disk Low Level Format Utility Menu

Select Drive

Select from installed hard disk drive C or D. List at the bottom of the screen is the drive detected automatically by the utility.

Bad Track List

Auto scan bad track

The utility will automatically scan bad tracks and list the bad tracks in the window at the right side of the screen.

Add bad track

Directly type in the information of the known bad tracks in the window at the right side of the screen.

Modify bad track

Modifies the information of the added bad tracks in the window at the right side of the screen.

Delete bad track

Deletes the added bad tracks in the window at the right side of the screen.

Clear bad track table

Clears the whole bad track list in the window at the right side of the screen.

AWARD BIOS Description

Preformat

Interleave

Selects the interleave number of the hard disk drive you wish to perform low level format. You must select from 1 to 8. Check the documentation that came with the drive for the correct interleave number, or select 0 for utility automatic detection.

Auto scan bad track

This allows the utility to scan bad track or not.

Start

Press < Y > to start low level format.

Power - On Boot

If you have made all the changes to CMOS values and the system can not boot with the CMOS values selected in Setup, restart the system by turning it OFF then ON or press the "RESET" button on the system case. You may also restart the system by simultaneously pressing < Ctrl >, < Alt > and < Del > keys.

Appendix

BIOS Upgrade Diskette

You may use this diskette to update your BIOS when necessary.

For the most update and additional information about BIOS upgrade, please refer to “README” in the “BIOS Upgrade Diskette”.

Warning:

Before you update your BIOS, you should look over the “README” file to avoid making mistake.

