This User's Guide & Technical Reference is for assisting system manufacturers and end-users in setting up and installing the mainboard.

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Model : SL-65F+
Edition : March 2000
Version : 2.0

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e-mail: support@soltek.com.tw

CONTENT

SL-65F+

INTEL 82440ZX SOCKET-370

F E A T U R E

■PROCESSOR

- **Supports Intel PPGA Celeron 370 CPUs 300 ~ 533MHz or higher.**
- **Supports Intel FC-PGA Pentium III (Coppermine) CPUs 500E ~ 750 MHz or higher.**
- **Supports Cyrix Joshua CPUs.**
- **Supports 66/ 75*/ 83*/ 100/ 103*/ 112*/ 124*/ 133*/ 140*/**
- **150*MHz system bus speeds.**
  Clock multipliers up to 8x.

■CHIPSET

- **Intel 82440ZX chipset.**

■SYSTEM MEMORY

- **3x 3.3V DIMM sockets.**
- **8MB to 256MB DRAM size.**

■SLOT

- **1x AGP slot supports 1x / 2x mode bus; 3x PCI Bus Master slots; 1x PCI Slave slot; 2x ISA slots.**

■ONBOARD I/O

- **2x Ultra ATA/33 Bus Master IDE ports.**
- **2x USB ports.**
- **1x PS/2 mouse connector and 1x PS/2 keyboard connector.**
- **1x 2.88MB Floppy port, 2x High Speed 16550A UART ports and 1x IrDA TX / RX Header.**

■POWER

- **ATX power supply connector.**
- **Power-On by LAN(WOL), RTC Alarm, Modem Ring.**

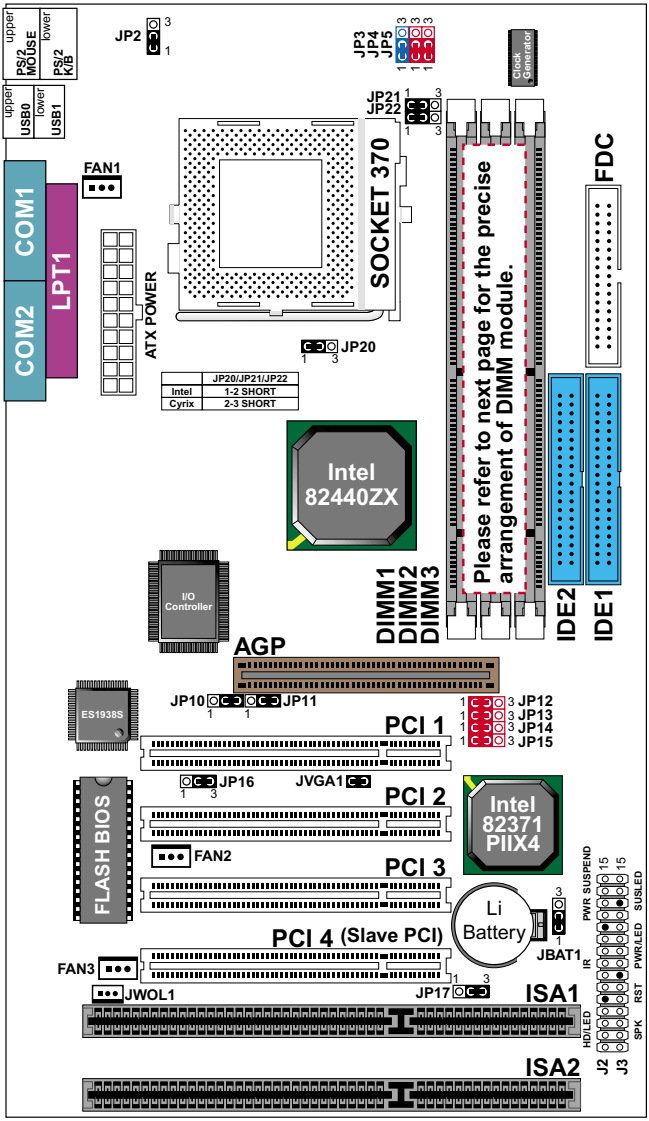
■BIOS

- **2MB FLASH BIOS.**
- **Licensed AWARD BIOS, supports SCSI / ZIP / LS-120 / CD-ROM boot and ACPI Power Management.**

■FORM FACTOR / PCB

- **ATX, 4 layers PCB, 17.0cm x 30.5cm size.**

MOTHERBOARD DIAGRAM



Default setting: Intel Celeron 300A/66MHz.

NOTE: For 100MHz/133MHz CPU environment, the SDRAM sepc must comply with PC-100/PC-133 spec.

SYSTEM MEMORY CONFIGURATION

The 82440ZX motherboard supports 168 pins DIMM of 4MB, 8MB, 16MB, 32MB, 64MB, 128MB and 256MB to form a memory sie between 8MB to 256MB(SDRAM).
82440ZX chipset provides "Table-Free" function, but do remember that the DRAM must be 3.3V Unbuffered and 4 clock type. User can use two DIMMs without any limit but if uses three DIMMs then must follow the rules below:

A.

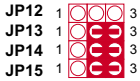
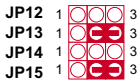
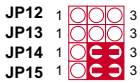
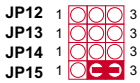
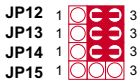
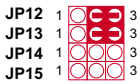
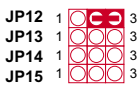
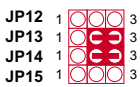
B.

C.

NOTE: ONLY SINGLE SIDE SDRAM CAN BE PLUGGED WHEN DIMM2/DIMM3 SIMULTANEOUSLY USED.

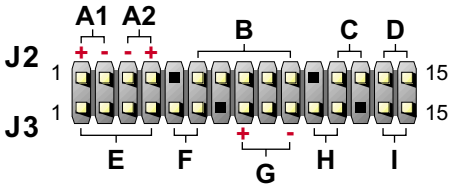
C P U C L O C K S E T T I N G

CPU Type Configuration

CPU MODEL	BUS RATIO	BUS CLOCK
Pentium III 533EB/133# **(133MHz * 4.0x)**		
Celeron 300/66 **(66MHz * 4.5x)** **Pentium III 600EB/133#** **(133MHz * 4.5x)**		
Celeron 333/66 **(66MHz * 5.0x)** **Pentium III 500E/100#** **(100MHz * 5.0x)** **Pentium III 667B/133#** **(133MHz * 5.0x)**		
Celeron 366/66 **(66MHz * 5.5x)** **Pentium III 550E/100#** **(100MHz * 5.5x)** **Pentium III 733B/133#** **(133MHz * 5.5x)**		
Celeron 400/66 **(66MHz * 6.0x)** **Pentium III 600E/100#** **(100MHz * 6.0x)**		
Celeron 433/66 **(66MHz * 6.5x)** **Pentium III 650/100#** **(100MHz * 6.5x)**		
Celeron 466/66 **(66MHz * 7.0x)** **Pentium III 700/100#** **(100MHz * 7.0x)**		
Celeron 500/66 **(66MHz * 7.5x)** **Pentium III 750/100#** **(100MHz * 7.5x)**		
Celeron 533/66 **(66MHz * 8.0x)**		

NOTE: (#) Pentium III Coppermin FC-PGA CPUs.

JUMPER SETTING



A1 : 1st HDD LED
A2 : 2nd HDD LED
B. : INFRARED (IR)
C. : POWER SWITCH
D. : SUSPEND CONNECTOR
E. : SPEAKER
F. : RESET SWITCH
G. : POWER LED
H. : KEYLOCK
I. : SUSPEND LED

FAN#: Onboard FAN (12V) Connector

FAN#	FUNCTION
FAN1	CPU FAN
FAN2	POWER FAN
FAN3	CHASSIS FAN

JP2: Keyboard Power On

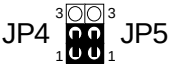
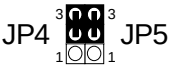
Keyboard Power On	JP2
Disabled (default)	
Enabled	

NOTE 1: If motherboard does not support keyboard power on function, the JP2 will be fixed by jumperwire.
NOTE 2: When the keyboard power on function shows any compatible problem, choose Disabled and report the keyboard model to your vender/maker.
NOTE 3: Keyboard power on function must be set from the BIOS. Refer to the "Integrated Peripherals" sector.

JP3: Signal Level Shift Control

Signal Level Shift Control	JP3
Factory default setting (default)	

JP4 / JP5: CPU Host Clock Select

CPU Host Clock	JP4 / JP5
Auto (default)	
100MHz (overlock)	

JP10 / JP11: USB Port Select

USB Port	JP10 / JP11
Redirect USB port1 to USB connector (default)	
Redirect USB port1 to AGP	

JP17: Power Lost Resume

This jumper allows user to use the switch of ATX power supply to control ON/ OFF switch directly instead of using the power switch on the motherboard.

Power Lost Resume	JP17
Enabled	
Normal (default)	

NOTE: This feature must work with BIOS. Please refer to the BIOS "Power On After PWR-Fail" sector.

JP20 / JP21 / JP22: Intel / Cyrix CPU Select

CPU TYPE	JP20	JP21	JP22
Intel CPU (Default)			
Cyrix Joshua CPU			

JVGA1: VGA Use

This jumper is set for the PCI VGA card only. Open this jumper when the system is not able to boot up. If you use AGP card, it is important to set default with JVGA1.

	JVGA1
For PCI VGA card	
Normal (default)	

JBAT1: Clear CMOS data

Clear the CMOS memory by shorting this jumper 2 & 3 momentarily, and then remove the cap back to 1 & 2 to retain original CMOS setting.

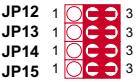
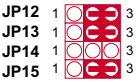
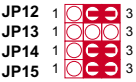
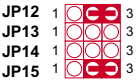
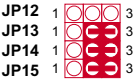
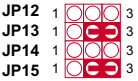
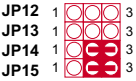
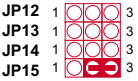
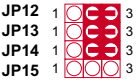
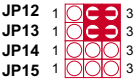
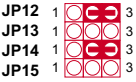
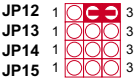
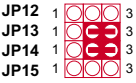
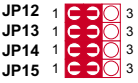
JBAT1	JBAT1
Clear CMOS Data	
Retain Data (default)	

JWOL1: Wake On LAN (WOL) Connector

This jumper is designed to use LAN to boot up the system. Connect the wake on signal from LAN card to this connector.

*****For support WOL, the ATX power supply has to have at least 5V/720mA standby current.*****

JP12 / JP13 / JP14 / JP15: Bus Ratio Select

BUS RATIO	*JP12~JP15*	*BUS RATIO*	*JP12~JP15*
2.0x		**2.5x**	
3.0x		**3.5x**	
4.0x		**4.5x**	
5.0x		**5.5x**	
6.0x		**6.5x**	
7.0x		**7.5x**	
8.0x		**By BIOS (jumperless setting) (DEFAULT)**	

This Intel 82440ZX chipset comes with the AWARD BIOS from AWARD Software Inc. Enter the AWARD BIOS program Main Menu by:

1. Turn on or reboot the system. After a series of diagnostic checks, the following message will appear:

   PRESS <DEL> TO ENTER SETUP

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

ROM PCI/ISA BIOS (2A69KSNH)
CMOS SETUP UTILITY
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	HDD LOW LEVEL FORMAT
LOAD SETUP DEFAULTS	SAVE & EXIT SETUP
	EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

3. Using the arrows on your keyboard, select an option, and press <Enter>. Modify the system parameter to reflect the options installed in your system.
4. You may return to the Main Menu anytime be pressing <ESC>.
5. In the Main Menu, “SAVE AND EXIT SETUP” saves your changes and reboots the system, and “EXIT WITHOUT SAVING” ignores your changes and exits the program.

STANDARD CMOS SETUP

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

Run the Standard CMOS Setup as follows:

1. Choose “STANDARD CMOS SETUP” from the Main Menu and a screen with a list of options will appear.
2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/- keys.

ROM PCI/ISA BIOS (2A69KSNH)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Tue, Oct 19 1999
Time (hh:mm:ss) : 15 : 6 : 26

HARD DISK	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: Auto	0M	0	0	0	0	0	AUTO
Primary Slave	: Auto	0M	0	0	0	0	0	AUTO
Secondary Master	: Auto	0M	0	0	0	0	0	AUTO
Secondary Slave	: Auto	0M	0	0	0	0	0	AUTO

Drive A : 1.44, 3.5 in.
Drive B : None

Video : EGA/VGA
Halt On : All Errors

Base Memory : 640K
Extended Memory : 64512K
Other Memory : 384K

Total Memory : 65536K

Esc : Quit ↑ ↓ → ← : Select Item PU/PD/+/- : Modify
F1 : Help (Shift) F2 : Change Color

Date (mm:dd:yy) **Time (hh:mm:ss)**	Set the current date and time.
Primary (Secondary) **Master / Slave**	This field records the specification for all non-SCSI Hard Disk Drives installed in your system. Refer to the respective documentation on how to install the drives.
Drive A / B	Set the field to the type(s) of Floppy Disk drive(s) installed in your system. The choice: 360KB, 5.25in. 1.2MB, 5.25in. 720KB, 3.5in. 1.44MB, 3.5in. 2.88MB, 3.5in.
Video	Set the field to the type of video display card installed in your system. The choice: Monochrome, Color 40x25, EGA / VGA, (default) Color 80x25
Halt On	Set this warning feature for the type of errors that will cause the system to halt. The choice: All Errors, (defaults) No Errors, All But Keyboard, All But Diskette, All But Disk / Key

3. Press <ESC> and follow the screen instructions to save or disregard your setting.

BIOS FEATURES SETUP

BIOS Features Setup allows you to improve your system performance or set up system features according to your preference.

Run the BIOS Features Setup as follows:

1. Choose “BIOS FEATURES SETUP” from the Main Menu and a screen with a list of options will appear.

ROM PCI/ISA BIOS (2A69KSNH)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
CPU L2 Cache ECC Checking	: Enabled	D0000-D3FFF Shadow	: Disabled
Processor Number Feature	: Disabled	D4000-D7FFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D8000-DBFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	DC000-DFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled		
Boot Up Floppy Seek	: 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		
PCI/VGA Palette Snoop	: Disabled	ESC : Quit	↑↓→← : Select Item
Assign IRQ For VGA	: Enabled	F1 : Help	PU/PD/+/- : Modify
OS Select For DRAM > 64MB	: Non-OS2	F5 : Old Value	(Shift)F2 : Color
Report No FDD For WIN 95	: No	F7 : Load Setup Defaults	

2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/- keys. An explanation of the <F>keys follows:

<F1>: “Help” gives options available for each item.
<Shift> + <F2>: Change BIOS screen color.
<F5>: Get the previous values. These values are the values with the user started in the current session.
<F6>: Load all options with the BIOS default values.
<F7>: Load all options with the Setup default values.

Virus Warning

Enabled: Activates automatically when the system boots up causing a warning message to appear if there is anything attempting to access the boot sector or Hard Disk partition table.
Disabled: No warning message will appear when there is something attempting to access the boot sector or Hard Disk partition table.

> ***Note: Many diagnostic (or boot manager) programs which attempt to access the boot sector table can cause the above warning message. If you will be running such a program, we recommend that you disable the virus protection first.***

CPU Internal Cache

Choose Enabled (default) or Disabled. This option allows user to enable or disable the CPU internal cache.

External Cache

Choose Enabled (default) or Disabled. This option allows user to enable or disable the external cache memory.

CPU L2 Cache ECC Checking

Choose Enabled (default) or Disabled.

Processor Number Feature

Choose Enabled or Disabled (default).

Quick Power On Self Test

Choose Enabled (default) or Disabled. This option allows user to speed up the Power-On-Self-Test routine.

Boot Sequence

Default is “A , C, SCSI”. This option determines which drive to boot at first for an operating system.

Swap Floppy Drive

Default is “A, C, SCSI”. This option determines which drive to boot at first for an operating system.

Boot Up Floppy Seek

Enabled (default): During POST, BIOS checks the track number for Floppy Disk drive to see whether it's 40 or 80 tracks.
Disabled: During POST, BIOS will not check the track number for Floppy Disk drive.

Boot Up NumLock Status

On (default): Activate the NumLock function at boot up.
Off: Close the NumLock function at boot up.

Gate A20 Option

Choose Normal or Fast (default): This option allows the RAM to access the memory above 1MB by using the fast gate A20 line.

Typematic Rate Setting

Choose Enabled or Disabled (default): Enable this option to adjust the deystroke repeat rate.

Typematic Rate (Char / Sec)

Range between 6 (default) and 30 characters per second. This option controls the speed of repeating keystrokes.

Typematic Delay (Msec)

Choose 250 (default), 500, 750 and 1000. This option sets the time interval for displaying the first and the second characters.

Security Option

Choose System or Setup (default). This option prevents unauthorized system boot up or use of BIOS Setup.

Assign IRQ For VGA

Choose Enabled (default) or Disabled.
Enabled: Assign one IRQ to VGA controller.
Disabled: Remove IRQ from VGA controller. The system will have extra IRQ for other devices but the VGA controller will still work (only IRQ will be removed).

PCI / VGA Palette Snoop

Choose Enabled or Disabled (default). It determines whether or not the MPEG ISA cards can work with PCI / AGP.

OS Select for DRAM > 64MB	Non-OS2 (default): For Non-OS/2 operating system. OS: For OS/2 operating system.
Report No FDD For WIN95	Yes: BIOS reports “NO FDD” to Win95. No (default): BIOS will not report “NO FDD” to Win95.
Video BIOS Shadow	Enabled (default): Map the VGA BIOS to system RAM. Disabled: Don’t map the VGA BIOS to system RAM.
C8000-CBFFF to DC000-DFFFF Shadow	These options are used to shadow other expansion card ROMs.

3. Press <ESC> and follow the screen instructions to save or disregard your setting.

CHIPSET FEATURES SETUP

Chipset Features Setup changes the values of the chipset registers. These registers control the system options.

Run the Chipset Features Setup as follows:

1. Choose “CHIPSET FEATURES SETUP” from the Main Menu and a screen with a list of options will appear.
2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/- keys.

ROM PCI/ISA BIOS (2A69KSNH)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	Auto Detect DIMM/PCI Clk	: Disabled
EDO DRAM Speed Selection	: 60ns	Spread Spectrum	: Disabled
EDO CASx# MA Wait State	: 2	CPU Host Clock (CPU/PCI)	: Default
EDO RASx# Wait State	: 2	CPU Ratio	: 3.0X
SDRAM RAS-to-CAS Delay	: 3		
SDRAM RAS Precharge Time	: 3		
SDRAM CAS latency Time	: 3		
SDRAM Precharge Control	: Disabled		
DRAM Data Integrity Mode	: Non-ECC		
System BIOS Cacaheable	: Disabled		
Video BIOS Cacacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8 bit I/O Recovery Time	: 3		
16 bit I/O Recovery Time	: 2		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	ESC : Quit	↑↓→← : Select Item
Delayed Transaction	: Disabled	F1 : Help	PU/PD/+/- : Modify
AGP Aperture Size (MB)	: 64	F5 : Old Value	(Shift)F2 : Color
		F7 : Load Setup Defaults	

Auto Configuration

Choose Enabled (default) or Disabled. The system sets all options on the left of the screen automatically when you choose enabled.

EDO DRAM Speed Selection

Choose 50ns or 60ns (default). Don't change this setting unless you know the DRAM access time spec.

EDO CASx# MA Wait State

You could select the timing control type of the EDO DRAM CAS MA (Memory Address bus).
The choice: 1, 2 (default).

EDO RASx# Wait State

You could select the timing control type of the EDO DRAM RAS.
The choice: 1(default), 2.

SDRAM RAS-to-CAS Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, used when DRAM is written to, read from, or refreshed. *Fast* gives faster performance. *Slow* gives more stable performance.
This field applies only when synchronous DRAM is installed in the system.
Ther choice: 2, 3 (default).

SDRAM RAS Precharge Time

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh maybe incomplete and the DRAM may fail to retain data. *Fast* gives faster performance. *Slow* gives more stable performance.
This field applies only when synchronous DRAM is installed in the system.
Ther choice: 2, 3 (default).

SDRAM CAS latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing. Don't reset this field from the default value specified by system designer.
The choice: 2T, 3T.

SDRAM Precharge Control

Use the default setting.

DRAM Data Integrity Mode

Choose Non-ECC (default) or ECC, depends on the DRAM type.
Non-ECC: Disable the ECC check function.
ECC: Enable the ECC check function. ECC stands for error check and correct.

Memory Hole At 15M-16M

Choose Enabled or Disabled (default). In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory's space below 16MB. Enable this option will cause memory only connect to 16MB.

System BIOS Cacheable

Choose Enabled or Disabled (default). When Enabled, the access to the system BIOS ROM addressed at F0000H-FFFFFH is cached.

Video BIOS Cacheable

Choose Enabled or Disabled (default). When enabled, the access to the VGA BIOS ROM addressed at C0000H ~ C7FFFH is cached.

Video RAM Cacheable

Choose Enabled or Disabled (default). When enabled, the access to the VGA RAM addressed is cached.

8 bit I/O Recovery Time

This delay happens when the CPU is running so much faster than the I/O bus that the CPU must be delayed to allow for the completion of the I/O.
The choice for 8 bit I/O: NA, 1, 2, 3 (default), 4, 5, 6, 7, 8.

16 bit I/O Recovery Time

This delay happens when the CPU is running so much faster than the I/O bus that the CPU must be delayed to allow for the completion of the I/O.
The choice for 16 bit I/O: NA, 1, 2 (default), 3, 4.

Passive Release

When enabled, CPU to PCI bus accesses are allowed when passive release. Otherwise, the arbiter only accepts another PCI master access to local DRAM.
The choice: Enabled (default), Disabled.

Delay Transaction

The chipset has an embedded a 32-bit posted write buffer to support delay transaction cycles. Select enabled to support compliance with PCI specification version 2.1.
The choice: Enabled (default), Disabled.

AGP Aperture Size (MB)

Choose 4, 8, 16, 32, 64 (default), 128 or 256MB. Memory map and graphics data structures can reside in a Graphics Aperture. This area is like a linear buffer. BIOS will automatically report the starting address of this buffer to the O.S.

Auto Detect DIMM/PCI clk

Choose Disabled (default) or Enabled. The clock generator will turn off the DIMM clock if this slot is empty.

Spread Spectrum

Choose Disabled (default) or Enabled. This function is designed to EMI test only.

CPU Host Clock (CPU/PCI)

Select the CPU Host Clock.
The choice: default, 66/33MHz, 75/37MHz, 83/41MHz, 100/33MHz, 103/34MHz, 112/37MHz, 124/41MHz, 133/44MHz, 124/31MHz, 133/33MHz, 140/35MHz, 150/37MHz.

CPU Ratio

Select the CPU Ratio.
The choice: 2.0x, 2.5x, 3.0x (default), 3.5x, 4.0x, 4.5x, 5.0x, 5.5x, 6.0x, 6.5x, 7.0x, 7.5x, 8.0x.

3. Press <ESC> and follow the screen instructions to save or disregard your setting.

POWER MANAGEMENT SETUP

Power Management Setup changes the system power savings function.

Run the Power Management Setup as follows:

1. Choose “POWER MANAGEMENT SETUP” from the Main Menu and a screen with a list of options will appear.
2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/- keys.

ROM PCI/ISA BIOS (2A69KSNH)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

ACPI function	: Disabled	** Reload Global Timer Events **	
Power Management	: User Define	IRQ[3-7,9-15],NMI	: Enabled
PM Control by APM	: Yes	Primary IDE 0	: Enabled
Video Off Method	: V/H SYNC+Blank	Primary IDE 1	: Enabled
Video Off After	: Standby	Secondary IDE 0	: Enabled
MODEM Use IRQ	: 3	Secondary IDE 1	: Enabled
Doze Mode	: Disabled	Floppy Disk	: Enabled
Standby Mode	: Disabled	Serial Port	: Enabled
Suspend Mode	: Disabled	Parallel Port	: Enabled
HDD Power Down	: Disabled		
Throttle Duty Cycle	: 62.5%		
PCI/VGA Act-Monitor	: Disabled		
Soft-Off by PWRBTN	: Instant-Off		
PowerOn by Ring	: Disabled		
Wake Up On LAN	: Disabled		
IRQ 8 Break Suspend	: Disabled	ESC : Quit	↑↓→← : Select Item
Resume by Alarm	: Disabled	F1 : Help	PU/PD/+/- : Modify
		F5 : Old Value	(Shift)F2 : Color
		F7 : Load Setup Defaults	

ACPI Function	Enabled: Turn on ACPI function. Disabled (default): Turn off ACPI function.
Power Management	Choose Max. Saving, User Define (default), Disabled, or Min. Saving.
PM Control By APM	Choose Yes (default) or No. You need to choose Yes when the operating system has the APM functions, otherwise choose No.
Video Off Method	Choose Blank, DPMS or V/H Sync+Blank (default). You can choose either DPMS or V/H Sync+Blank when ther monitor has the Green function. You need to choose Blank when the monitor has neither the Green function.
Video Off After	Choose NA, Suspend, Standby (default) or Doze.
Modem Use IRQ	Assign the IRQ number to the modem which is being used so that the ring signal can wake up the system. The default setting is 3 (COM2).
Doze Mode	This mode sets the CPU speed down to 33MHz.
Standby Mode / Suspend Mode	These two options allow you to choose the mode for the different timer. The Standby mode turns off the VGA monitor, and the Suspend mode turns off the CPU and saves the energy of the system.
HDD Power Down	Time is adjustable from 1 to 15 minutes. When the set time has elapsed, the BIOS sends a command to the HDD to power down which turns off the motor.
Throttle Duty Cycle	Choose the duty cycle time: 12.5%, 25%, 37.5%, 50%, 62.5% (default) or 75%. The bigger percentage, the more power saving.

PCI / VGA Act-Monitor

Enabled: The system can not enter the power saving mode when monitor is on.
Disabled (default): The system can enter the power saving mode when monitor is on.

Soft-Off By PWR-BTTN

Instant-Off (default): Turn off the system power at once after pushing the power button.
Delay 4 Sec: Turn off the system power 4 seconds after pushing the power button (to meet PC97/98 spec)

PowerOn by Ring

When user sets Enabled, a signal from ring returns the system to Full On state.
The choice: Enabled, Disabled (default).

Wake On LAN

Enabled: Wake on the system from the LAN card (LAN card must support wake on LAN function and the power supply must provide at least 5V/7750mA standby current)
Disabled(default): Disable Wake On LAN function.

IRQ 8 Break Suspend

You can enable or disable monitoring of IRQ 8, so that it doesn't awaken the system from suspend mode.
The choice: Enabled, Disabled (default).

Resume by Alarm

Enabled: Wake up the system at assigned time, and also, then user needs to set both "Date Alarm" and "Time Alarm" options.
Disabled (default): Disable this feature.

Primary INTR

When set to On, any event occurring at will awaken a system which has been powered down.
On(default): The system can not enter the power saving mode when I/O ports or IRQ# is activated.
Off: The system still can enter the power saving mode when I/O ports or IRQ# is activated.

The following is a list of IRQ's(Interrupt ReQuests), which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.
When set On, activity will neither prevent the system from going into a power management mode nor awaken it.

IRQ3 (COM2)
IRQ4 (COM1)
IRQ5 (LPT2)
IRQ6 (Floppy Disk)
IRQ7 (LPT1)
IRQ8 (RTC Alarm)

3. Press <ESC> and follow the screen instructions to save or disregard your setting.

PnP/PCI CONFIGURATION SETUP

PnP/PCI Configuration Setup defines PCI bus slots.

Run the PnP/PCI Configuration Setup as follows:

1. Choose “PnP/PCI CONFIGURATION SETUP” from the Main Menu and a screen with a list of options will appear.
2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/- keys.

ROM PCI/ISA BIOS (2A69KSNH)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed	: No	Used Mem base addr	: N / A
Resources Controlled By	: Manual		
Reset Configuration Data	: Disabled	Assign IRQ For USB	: Enabled
IRQ 3 assigned to	: PCI/ISA PnP		
IRQ 4 assigned to	: PCI/ISA PnP		
IRQ 5 assigned to	: PCI/ISA PnP		
IRQ 7 assigned to	: PCI/ISA PnP		
IRQ 9 assigned to	: PCI/ISA PnP		
IRQ 10 assigned to	: PCI/ISA PnP		
IRQ 11 assigned to	: PCI/ISA PnP		
IRQ 12 assigned to	: PCI/ISA PnP		
IRQ 14 assigned to	: PCI/ISA PnP		
IRQ 15 assigned to	: PCI/ISA PnP		
DMA 0 assigned to	: PCI/ISA PnP		
DMA 1 assigned to	: PCI/ISA PnP		
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 Value	(Shift)F2 : Color
DMA 7 assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults	

PNP OS Installed

Yes: OS supportsss Plug and Play function.
No (default): OS doesn't support Plug and Play function.

Note: BIOS will automatically diable all PnP resources except the boot device card when you select Yes on Non-PnP O.S.

Resources Controlled By

Choose Manual (default) or Auto. The BIOS checks the IRQ/DMA chaannel number on the ISA and PCI card manually if you choose Manual. And the IRQ/DMA channel number will be checked automatically if you choose Auto.

Reset Configuration Data

Choose Enabled or Disabled (default). Disable retains Enabled PnP configuration data in BIOS and resets the PnP configuration data in the BIOS.

IRQ-x assigned to
DMA-x assigned to

Legacy ISA: Manually assigns IRQ / DMA to device.
PCI / ISA PnP: BIOS assigns IRQ / DMA to device automatically.

Assign IRQ for USB

Enabled (default): Add one IRQ to USB controller.
Disabled: Remove IRQ from USB controller. The system will have extra IRQ for other devices but the USB controller will still not be diabled (only IRQ was removed)

3. Press <ESC> and follow the screen instructions to save or disregard your setting.

LOAD SETUP DEFAULTS

Load Setup Defaults option loads the default system values to the system configuration fields. If the CMOS is corrupted the defaults are loaded automatically.

Choose this option and the following message will appear:

"Load Setup Defaults (Y/N)? N"

To use the Setup Defaults, change the prompt to "Y" and press <Enter>.

INTEGRATED PERIPHERALS

Integrated Peripherals option changes the values of the chipset registers. These registers control system options in the computer.

Run the Integrated Peripherals as follows:

1. Choose “INTEGRATED PERIPHERALS” from the Main Menu and a screen with a list of options will appear.
2. Use one of the arrow keys to move between options and modify the selected options by using PgUp/PgDn/+/- keys.

ROM PCI/ISA BIOS (2A69KSNH)
INTEGRATED PERPHERALS
AWARD SOFTWARE, INC.

Primary Master PIO	: Auto	Onboard Parallel Port	: 378/IRQ7
Primary Slave PIO	: Auto	Parallel Port Mode	: ECP + EPP
Secondary Master PIO	: Auto	ECP Mode Use DMA	: 3
Secondary Slave PIO	: Auto	EPP Mode Select	: EPP1.7
Primary Master UDMA	: Auto	POWER ON Function	:
Primary Slave UDMA	: Auto	KB Power ON Password	: Enter
Secondary MasterUDMA	: Auto	Hot Key Power On	: Ctrl - F1
Secondary Slave UDMA	: Auto		
OnChip Primary PCI IDE	: Enabled		
OnChip Secondary PCI IDE	: Enabled		
USB Keyboard Support	: Enabled		
Init Display First	: PCI Slot		
KBC input clock	: 8MHz		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3	ESC : Quit	↑↓→← : Select Item
UART Mode Select	: IrDA	F1 : Help	PU/PD/+/- : Modify
UART Duplex Mode	: Half	F5 : Old Value	(Shift)F2 : Color
RxD, TxD Active	: Lo,Lo	F7 : Load Setup Defaults	
IR Transmission delay	: Disabled		

Primary Master/Slave PIO
Secondary Master/Slave PIO

Choose Auto (default) or Mode 0~4. The BIOS will detect the HDD mode type automatically when you choose Auto. You need to set to a lower mode than Auto when your hard disk becomes unstable.

Primary Master/Slave UDMA
Secondary Master/Slave UDMA

Enabled (default): Turn on the onboard IDE function.
Disabled: Turn off the onboard IDE function.

OnChip Primary/ Secondary PCI IDE

Enabled (default): Turn on the onboard IDE function.
Disabled: Turn off the onboard IDE function.

USB Keyboard Support

Enabled: Enables this function when USB keyboard is being used.
Disabled (default): Disableds this function when USB keyboard is not being used.

Init Display First

Choose PCI Slot(default), AGP.

KBC input clock

Choose 6MHz, 8MHz(default), 12MHz or 16MHz.

Onboard FDC Controller

Choose Enabled (default) or Disabled. Choose Disabled when you use an ISA card with FDD function, or choose Enabled to use the onboard FDD connector.

Onboard Serial Port1

Choose Auto (default), 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3 or Disabled. Don't set port 1 & 2 to the same value, except when setting at Disabled.

Onboard Serial Port2

Choose Auto (default), 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3 or Disabled.

UART Mode Select Choose Standard (default), HPSIR or ASKIR.

UART2 Duplex Mode Choose Half (default) or Full.

RxD, TxD Active Choose Lo,Lo (default) / Lo,Hi / Hi,Hi / Hi,Lo.

IR Transmission Delay Enabled: Enable delay when transferring data.
Disabled (default): Disable delay when transferring data.

Onboard Paralle Port Choose the printer I/O address: 378H/IRQ7 (default), 3BCH/IRQ7, 278H/IRQ5 or Disabled.

Parallel Port Mode Choose Normal (default), ECP/EPP, SPP mode. The mode depends on the external device connected to this port.

ECP Mode Use DMA Choose DMA3 (default) or DMA1. Most sound cards use DMA1. Check with your sound card configuration to make sure that there is no conflict with this function.

Note: This option will not be displayed unless the EPP/ECP is selected.

EPP Mode Select Choose EPP1.7 (default) or EPP1.9. EPP1.9 supports hardware handshake. This setting is dependent upon your EPP device.

Note: The above 2 options will not be displayed unless the EPP/ECP is selected.

KB Power On Password	When user sets a password for keyboard, the password user set that return the system to Full On state.
Hot Key Power On	Boot up the system via predetermined keyboard hot key. The choice: <Ctrl> + <F1>...<F12>

3. Press <ESC> and follow the screen instructions to save or disregard your setting.

SUPERVISOR/USER PASSWORD

These two options allow you to set your system passwords. Normally, the supervisor has a higher ability to change the CMOS setup option than the user. The way to set up the passwords for both supervisor and user are as follows:

1. Choose “CHANGE PASSWORD” from the Main Menu and press <Enter>. The following message appears:

   “Enter Password:”

2. The first time you run this option, enter your own password up to 8 characters and press <Enter>. The screen doesn’t display the entered characters.
3. After you entered the password, the following message appears prompting you to confirm the password:

   “Confirm Password:”

4. Enter the same password “exactly” as you just typed again to confirm the password and press <Enter>.
5. Move the cursor to Save & Exit Setup to save the password.
6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.
7. Move the cursor to Save & Exit Setup to save the option you did, otherwise the old password will still be there the next time you turn your machine on.
8. Press <ESC> to exit to the Main Menu.

Note: If you forget or lose the password, the only way to access the system is to clear the CMOS RAM by setting JBAT1. All setup information will be lost and back to default seting. You need to run the BIOS setup program and re-define all settings again.

IDE HDD AUTO DETECTION

IDE HDD Auto Detection detects the parameters of an IDE Hard Disk drive and automatically enters them to the Standard CMOS Setup screen.

The screen will ask you to select a specific Hard Disk for Primary Master after you selected this option. If you accept a Hard Disk detected by the BIOS, you can enter “Y” to confirm and then press <Enter> to check next Hard Disk. This function allows you to check four Hard Disks and you may press the <ESC> after the <Enter> to skip this function and go back to the Main Menu.

SAVE & EXIT SETUP

Save & Exit Setup allows you to save all modifications you have specified into the CMOS memory. Highlight this option on the Main Menu and the following message appears:

SAVE to CMOS and EXIT (Y/N)? Y

Press <Enter> key to save the configuration changes.

EXIT WITHOUT SAVING

Exit Without Saving allows you to exit the Setup utility without saving the modifications that you have specified. Highlight this option on the Main Menu and following message appears:

Quit Without Saving (Y/N)? N

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

APPENDIX A

FLASH MEMORY UPDATE INSTALLATION

1. Download BIOS files and flash utility from your board vendor. They are: awdflash.exe and .bin file.
2. Copy them to bootable diskette and boot from diskette.
3. The diskette cannot include memory manager e.g. emm386.exe,qemm and himem.sys, otherwise there will appear an error message “insufficient memory”.
4. Type “awdflash filename(XXXX.bin)”.
5. Next screen will ask you save current bios to file or not? Depend on your diskette capacity, choose Y or N for this option.
6. Then screen ask you programming the flash memory now? type Y for this option.
7. Programming finish,utility will ask you reboot system.
8. Reset system and press DEL key enter bios setup screen.
9. Select LOAD SETUP DEFAULTS, press ENTER, press Y, press F10, press Y
10. Finish update procedure.

APPENDIX B DRIVER INSTALLATION

If you are using Windows 98 SE**, you do not need to install the** 4-in-1 driver **as the IRQ Routing Driver and the ACPI Registry are already incorporated into the operating system. Users with Windows 98 SE may update the IDE Busmaster and AGP drivers by installing them individually.**

PART 1:

1. Put the CD into your CD-ROM.
2. There appears a welcome window.
   (If doesn't, it means that your CD-ROM auto-run function does not enable, but you still can browser the CD via Windows Explorer and change the directory to where your CD-ROM directory is. Then run the **autorun.exe**)
3. Select "**Install Driver**".
4. Select "**Install VIA Chipsets Driver**".
5. Select "I**nstall 4in1 Driver**".
6. Then the program will automatically setup all drivers your system needs.
7. Finally, the system will re-boot.

NOTE: AFTER INSTALLED " 4in1 Driver***", USER DOESN'T NEED TO INSTALL ANY OTHER PROGRAM IN PART 2.***

PART 2:

CAUTION!! ALL THE VIA MAINBOARD MUST INSTALL FOLLOWING 3 DRIVERS!!!

VIA Patch Code Installation

Windows95/Windows98:

1. Go to the CD-ROM disk, we suggest the CD-ROM title is D:\.
2. Find and run D:\Patch\Via\patch9x\Setup\Setup.exe
3. Select "Install VIA Chipset Functions' Registry", then it will automatically install this program.

Note! This program should be installed before any other VIA's drivers.

VIA AGP VxD Driver for Windows 9x Installation

Windows95/Windows98:

1. Go to the CD-ROM disk, we suggest the CD-ROM title is D:\.
2. Find and run D:\Driver\Via\Agp\Setup\Setup.exe
3. Select "Install VIA AGP VxD in turbo mode" or "Install VIA AGP VxD normal mode", then it will automatically install this program.

VIA PCI IRQ Routing Miniport for Windows 9x Installation

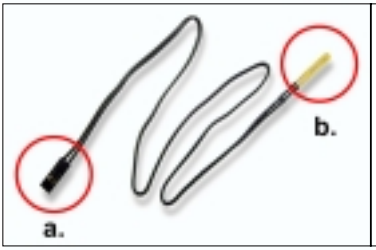
Windows95/Windows98:

1. Go to the CD-ROM disk, we suggest the CD-ROM title is D:\.
2. Find and run D:\Patch\Via\Virq9x\Setup.exe

Note: Before install Windows98, user must enable two functions for this miniport driver in the BIOS menu, one is "*OnChip USB***" in the "Chipset Features Setup" and another is "***Assign IRQ for USB***" in the "PNP/PCI Configuration Setup".**

APPENDIX C THERMAL SENSOR

■ Thermal Sensor Connector



a: Connect to RT2.
b: Connect this thermal sensor to particular device which generates lots of heat such as Hard Disk, VGA chip, etc. When connected, user could observe the temperature change from the BIOS program.

■ VIA Hardware Monitor Setup

1. Make sure that the CD is in the CD-ROM.
2. There will appear a welcome window, please use the mouse to choose "**Install Driver**" item.
   (If not, that means user's CD-ROM autorun function is disabled, but user could still install the program via Windows Explorer.)
3. Choose "**Install VIA Chipset Driver**" item, then choose "**Install VIA Hardware Monitor**" item.
4. The setup program will install Hardware Monitor software automatically.