



Pro Vision Software Ltd.

**SYSTEM BOARD
Spring Circle[®] ST 586 Rev. P 564-3
User's Guide**



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1. Features

CPU

- Supports Pentium™ Microprocessor P54C/CT/CS/CQS, P55C; Cyrix™ Microprocessor 6x86™, 6x86L; AMD™ Microprocessors 5k86™, K5™; K6™;
- Provides 321-pin ZIF socket (Socket 7).

Chipset

- System board based on Intel 430 VX chipset (Intel Triton VX)
- Super I/O chip LGS™ Prime 3C™

Green functions

- Supports power management operation via BIOS.
- Power down timer from 2 mins to 30 mins.
- Wakes up by any key pressed or mouse activity.
- Green mode selection via software or hardware.

Speed

- Supports CPU bus clock from 50 MHz to 75 MHz.
- Supports 25-37.5 MHz PCI Bus speed.
- Speed selection via software.
- I/O Clock 8 MHz for ISA Bus.

Shadow RAM

- A memory controller that provides shadow RAM and supports 8-bit ROM BIOS.

DRAM Memory

- Supports 2 banks (4 pcs) 72-pin 4MB/8MB/16MB/32MB SIMM module socket.
 - Supports DRAM memory 8MB to 128 MB on board.
 - Supports EDO, BEDO & FPM DRAM.
 - Supports Symmetrical and Asymmetrical DRAM.
-

Cache Memory

- Supports Pipelined Burst SRAM 256 KB.

Bus Slots

- Provides three 16-bit ISA Bus slots and three PCI Bus slots.

Flash Memory

- Supports PnP mode for BIOS function.

PCI Enhanced IDE Built-in On Board

- Supports 4 IDE hard disk drives.
- Supports PIO mode 4, Master mode, high performance hard disk drives.
- Supports IDE interface with CD-ROM.
- Supports high capacity hard disk drives.
- Supports LBA mode.

ISA I/O Built-in On Board

- Supports one multi-mode parallel port (SPP/EPP/ECP).
- Supports two serial ports, 16550 UART, with 16 Byte FIFO.
- Supports 360 KB, 720KB, 1.2MB, 1.44MB and 2.88MB floppy disk drives.
- Supports one Infrared transmission (IR). (optional)
- Supports PS/2 mouse.

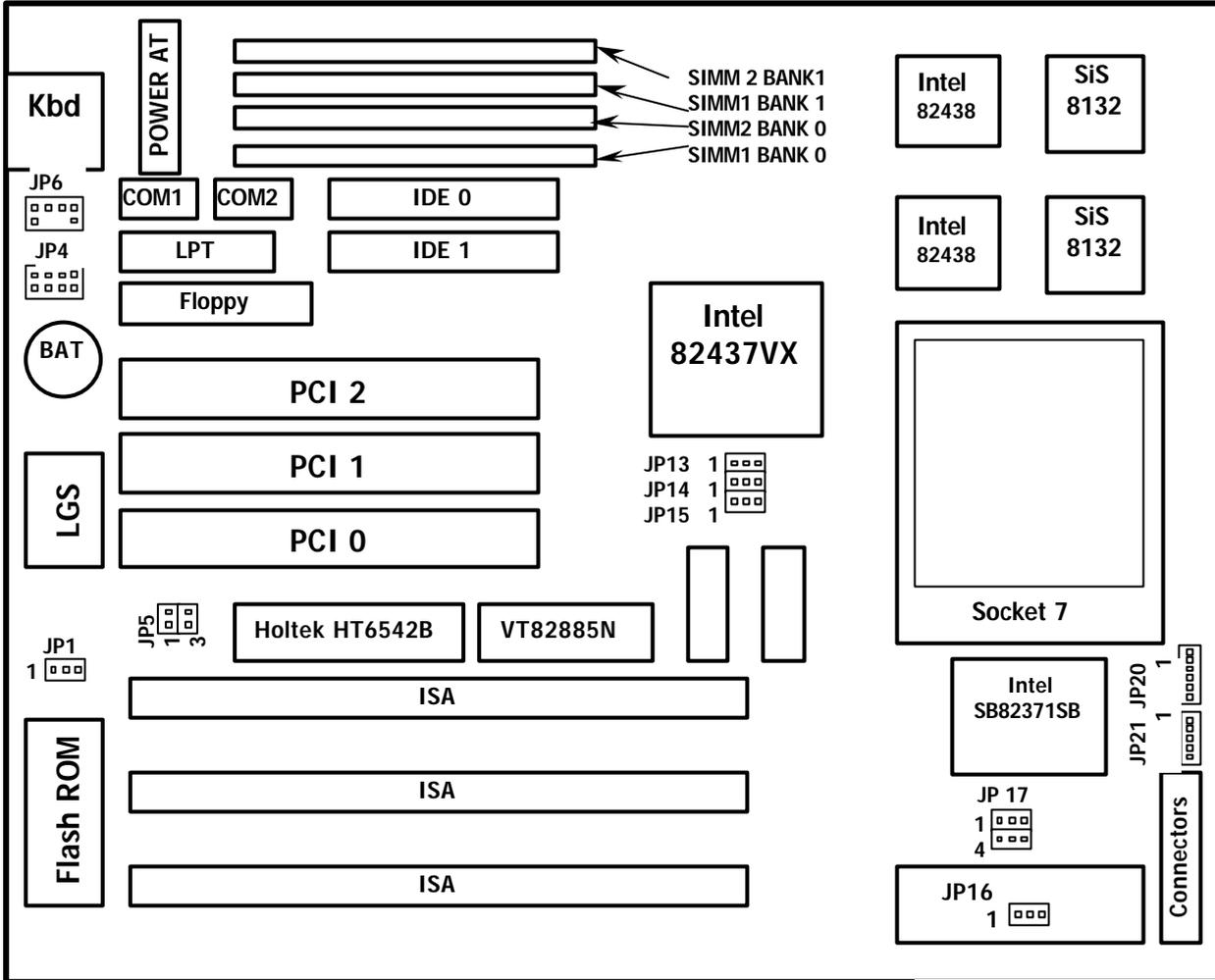
Universal Serial Bus

- Supports two Universal Serial Bus (USB) Port (optional).
- Supports 48 MHz USB (optional).

Software

- Award legal friendly BIOS
 - Offers the highest performance for MS-DOS, OS/2, Windows, Novell, UNIX, SCO UNIX etc.
-

2. Mainboard installation



Remark: Connectors block:

Power LED	Lock	JP 19	Speaker	HDD LED
Turbo LED	Turbo switch	SMI	Reset switch	

Connectors.

Kbd – Keyboard connector.

[JP 6] – PS/2 mouse connector

[JP4] – USB port connector

[JP 21] – IR port connector

Power AT - AT Power supply.

Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

IDE0 – Primary IDE interface

IDE1 – Secondary IDE interface

Floppy – Floppy drives interface connector

COM1, COM2 – Serial ports

LPT – Parallel port

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3. Jumper settings

A jumper is several pins which may or may not be covered by a plastic jumper cap. A jumper is used to select different system options.

JP1 Flash ROM Type voltage Select / Flash ROM rewrite option

Description	Pin
5V flash /Write disabled	1-2
12V flash/Write enabled	2-3

JP5 (1-2) – CMOS clear function

Description	JP5 (1-2)
Normal	open
Clear	short

This function offer to clear non-volatile (CMOS) memory (password clear purposes for example).

JP5A or JP5 3-4 pins can be used for CMOS Battery check functions. Voltage between this pins means battery cell goodness.

JP 13, 14, 15 – System bus (FSB) speed select

Jumper	50MHZ	51 MHZ	55MHZ	62MHZ	60MHZ	66MHZ	69MHz	75MHZ
JP 13	1-2	2-3	1-2	2-3	1-2	1-2	2-3	2-3
JP 14	2-3	2-3	1-2	2-3	2-3	1-2	1-2	1-2
JP 15	2-3	2-3	1-2	1-2	1-2	2-3	2-3	1-2
PCICLK	25	25.5	27.5	31	30	33.3	34.5	37.5

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JP 20 – CPU/Bus multiplier select

Multiplier	1.5/3.5*	2.0	2.5	3.0
JP20	2-3	1-2	1-2	2-3
	5-6	5-6	4-5	4-5

* - 3.5 multiplier supports for Intel Pentium MMX-technology processors only.

JP 16, JP 17 – CPU Voltage selection

IO/core voltage, Volts	3.3 /3.3	3.45/3.45	3.3/2.8	3.3/2.5
JP 17	2-3	2-3	1-2	1-2
	4-5	5-6	4-5	4-5
JP 16	-	-	2-3	1-2

WARNING!!! INCORRECT CPU VOLTAGE SELECTION CAN BE DANGEROUS FOR YOUR MICROPROCESSOR OR MAINBOARD. SOME MICROPROCESSORS MAY BE SERIOUSLY DAMAGED. BEFORE PROCESSOR INSTALLATION CHECK SUPPORTED VOLTAGE(S) ON THE PROCESSOR FRONT SIDE. SEE ALSO TABLE BELOW.

Supported CPUs

Type	CPU speed, MHz	Bus clock, MHz	Multiplier	IO/core voltage, volts
Intel				
Pentium	75	50	1.5	3.3/3.3
Pentium	90	60	1.5	3.3/3.3
Pentium	100	66	1.5	3.3/3.3
Pentium	120	60	2.0	3.3/3.3
Pentium	133	66	2.0	3.3/3.3
Pentium	150	60	2.5	3.3/3.3
Pentium	166	66	2.5	3.3/3.3
Pentium	200	66	3.0	3.3/3.3
Pentium MMX	166	66	2.5	3.3/2.8

Type	CPU speed, MHz	Bus clock, MHz	Multiplier	IO/core voltage, volts
Pentium MMX	200	66	3.0	3.3/2.8
Pentium MMX	233	66	3.5	3.3/2.8
AMD				
K5	PR75	50	1.5	3.45/3.45
K5	PR90	60	1.5	3.45/3.45
K5	PR100	66	1.5	3.45/3.45
K5	PR133	66	2.0	3.45/3.45
K5	PR150	60	2.5	3.3/2.8
K5	PR166	66	2.5	3.3/2.8
K5	PR200	66	3.0	3.3/2.5
K6	166	66	2.5	3.3/2.8
K6	200	66	3.0	3.3/2.8
K6	233	66	3.5	3.3/2.8
Cyrix				
6x86	P-120+	50	2.0	3.45/3.45
6x86	P-133+	55	2.0	3.45/3.45
6x86	P-150+	60	2.0	3.45/3.45
6x86	P-166+	66	2.0	3.45/3.45
6x86	P-200+	75	2.0	3.45/3.45

4. DRAM installation

Total memory size, MB	Bank 0 (SIMM 1-2)	Bank 1 (SIMM 3-4)
8	4M x 2 pcs	---
8	---	4M x 2 pcs
16	8M x 2 pcs	---
16	---	8M x 2 pcs
32	16M x 2 pcs	---
32	---	16M x 2 pcs
64	32M x 2 pcs	---
64	---	32M x 2 pcs
16	4M x 2 pcs	4M x 2 pcs
24	4M x 2 pcs	8M x 2 pcs
32	8M x 2 pcs	8M x 2 pcs
40	4M x 2 pcs	16M x 2 pcs
48	8M x 2 pcs	16M x 2 pcs
64	16M x 2 pcs	16M x 2 pcs
72	4M x 2 pcs	32M x 2 pcs
80	8M x 2 pcs	32M x 2 pcs
96	16M x 2 pcs	32M x 2 pcs
128	32M x 2 pcs	32M x 2 pcs

DRAM Access Time: fast page mode 70ns required or EDO mode 60ns required.
 DRAM Type: 4/8/16/32 MB SIMM module (72 pins).

Each bank can be installed and worked individually, the mainboard provides optimal performance and free choices depending on your needs.

The list above for DRAM configuration is just for reference.

EDO Type DRAM and FAST PAGE Type DRAM can be mixed in each bank.

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8. AWARD™ BIOS Setup description

Award's ROM BIOS provides a built-in Setup program which allows user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS ram so data will be retained even when the power is turned off.

In general, the information saved in the CMOS ram stay unchanged unless there is config. change in the system, such as hard drive replacement or new equipment change.

It is possible that CMOS had a battery failure which cause data loss in CMOS ram. If so, re-enter system config. parameters become necessary.

TO ENTER SETUP PROGRAM

Power on the computer and press key immediately will bring you into BIOS CMOS SETUP UTILITY.

```
ROM PCI/ISA BIOS (2A59GS9B)
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 BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING

Esc : Quit	_ _ _ _ : Select Item
F10 : Save & Exit Setup	(Shift)F2 : Change Color

The menu displays all the major selection items and allows user to select any one of show item. The selection is made by moving cursor (press any direction key) to the item and press "enter" key. An on line help message is displayed at the bottom of the screen as cursor is moving to various items which provides user

better understanding of each function. When a selection is made, the menu of selected item will appear so the user can modify associated configuration parameters.

8.1. Standard CMOS setup

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ROM PCI/ISA BIOS (2A59GS9B)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.
-----
Date (mm:dd:yy) : Sun, Feb 11 1997
Time (hh:mm:ss) : 19 : 6 : 9

HARD DISKS          TYPE      SIZE      CYLS  HEAD  PRECOMP  LANDZ  SECTOR  MODE
-----
Primary Master    : None      0          0    0      0         0      0      0 -----
Primary Slave     : None      0          0    0      0         0      0      0 -----
Secondary Master  : None      0          0    0      0         0      0      0 -----
Secondary Slave   : None      0          0    0      0         0      0      0 -----

Drive A : None
Drive B : None

Video  : EGA/VGA
Halt On : All Errors

Base Memory: 0K
Extended Memory: 0K
Other Memory: 512K
-----
Total Memory: 512K

ESC : Quit                : Select Item          PU/PD/+/- : Modify
F1  : Help                (Shift)F2 : Change Color
-----

```

The Standard CMOS setup screen is displayed above, System BIOS automatically detects memory size, thus no changes are necessary, it has a few items for setting.

Each item may have one or more option settings. It allows you to change the system Date and Time, IDE hard disk, floppy disk drive types for drive A: and B: boot up video display mode, and POST error handling selection. Use the arrow keys to highlights the item and then use the <Pgup> or <Pgdn> keys to select the value you want in each item.

Hard Disk Configurations

TYPE : Select from "1" to "45" to fill remaining fields with redefined values of disk drives. Select "User" to fill the remaining fields. Select "Auto" to detect the HDD type automatically.

SIZE : The hard disk size. The unit is Mega Byte.

CYLS : The cylinder number of the hard disk.

HEAD : The read/write head number of hard disk. The range is from "1" to "16".

PRECOMP : The cylinder number at which the disk drive changes the write timing.

LANDZ :The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.

SECTOR : The sector number of each track defined on the hard disk. The range is from "1" to "64".

Mode : Select "AUTO" to detect the mode type automatically. If your hard disk supports the LBA mode, select "LBA" or "Large". However, if your hard disk cylinder is more than 1024 and does not support the LBA function, you have to set at "Large". Select "Normal" if your hard disk supporting cylinder is below 1024.

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5.2. BIOS Features Setup

ROM PCI/ISA BIOS (2A59GS9B)
 BIOS FEATURES SETUP
 AWARD SOFTWARE, INC.

Virus Warning	: Enabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: C,CDROM,A	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		
Boot Up System Speed	: High		
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		
OS Select For DRAM > 64MB	: Non-OS2	ESC : Quit	_____ : Select Item
		F1 : Help	PU/PD/+/- : Modify
		F5 : Old Values (Shift)	F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Selecting the "BIOS FEATURES SETUP" option in the CMOS setup utility menu allows user to change system related parameters in the display menu. This menu shows high-performance values of ST586. Again, user can move the cursor by pressing direction keys and <PgDn> or <PgUp> key to modify the parameters. Pressing [F1] key to display help message of the selected item.

The setup program also provides 2 convenient ways to load the default parameter data from CMOS [F7] area if shown data is corrupted. This provides the system a capability to recover from any possible error.

Virus Warning:

When enabled, assigns the BIOS to monitor the master boot sector and the DOS boot sector of the first hard disk drive.

The options are: Enabled, Disabled (Default)

CPU Internal Cache:

When enabled, improves the system performance. Disable this item when testing or trouble-shooting.

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The options are : Enabled (Default), Disabled

External Cache:

When enabled, supports an optional cache SRAM.

The options are : Enabled (Default), Disabled

Quick Power On Self Test:

When enabled, allows the BIOS to bypass the extensive memory test.

The options are : Enabled, Disabled (Default)

Boot Sequence:

Allows the system BIOS to first try to boot the operating system from the selected disk drive.

The options are : A,C(Default); C,A; C,CDROM,A; CDROM,C,A; C only.

Swap Floppy Drive:

When enabled, allows you to switch the order in which the operating system accesses the floppy drives during boot up.

The options are : Enabled, Disabled (Default)

Boot Up Floppy Seek:

When enabled, assigns the BIOS to perform floppy diskette drive tests by issuing the time-consuming seek commands.

The options are : Enabled (Default), Disabled

Boot Up Numlock Status:

When set to On, allows the BIOS to automatically enable the Num Lock function when the system boots up.

The options are : On (Default), Off

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Gate A20 Option:

When enabled, allows the A20 bus line signal generated from the chipset PC/AT to directly pass to port 92H, instead of the keyboard controller. It will speed up the system performance.

The options are : Fast, Normal(Default)

Typematic Rate Setting:

The term "typematic" means that when a keyboard key is held down, the character is repeatedly entered until the key is released. When this item is enabled, you may change the typematic repeat rate.

The options are : Disabled (Default), Enabled

Typematic Rate (Chars/Sec):

Sets the rate of a character repeat when the key is held down.

The options are : 6 (Default), 8, 10, 12, 15, 20, 24, 30

Typematic Delay (Msec):

Sets the delay time before a character is repeated.

The options are : 250 (Default), 500, 750, 1000 millisecond

Security Option:

Allows you to set the security level of the system.

The options are : Setup (Default), System

PCI/VGA Palette Snoop:

When enabled, allows you install an enhanced graphics adapter card. If your graphics adapter card does not support the Palette Snoop function, please set at Disable to avoid system malfunctions.

The options are : Enabled, Disabled (Default)

Video BIOS Shadow:

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When enabled, allows the BIOS to copy the video ROM code of the add-on video cards to the system memory for faster access.

The options are : Enabled (Default), Disabled

C8000-CBFFF to DC000-DFFFF Shadow:

When enabled, allows the BIOS to copy the BIOS ROM code of the add-on card to system memory for faster access. It may improve the performance of the add-on card. Some add-on cards will not function properly if it's BIOS ROM code is shadowed. To use these options correctly, you need to know the memory address range used by the BIOS ROM of each add-on card.

The options are : Enabled, Disabled (Default)

5.3. Chipset Features Setup

ROM PCI/ISA BIOS (2A59GS9B)
 CHIPSET FEATURES SETUP
 AWARD SOFTWARE, INC.

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+-----+
| Auto Configuration      : Enabled      | Delayed Transaction      : Disabled | |
| DRAM Timing            : 60 ns         |                          |
|                          |                          |                          |
| DRAM RAS# Precharge Time : 4           |                          |
| DRAM R/W Leadoff Timing : 6           |                          |
| Fast RAS To CAS Delay   : 3           |                          |
| DRAM Read Burst (EDO/FP) : x222/x333   |                          |
| DRAM Write Burst Timing : x333        |                          |
| Fast MA to RAS# Delay CLK: 1          |                          |
| Fast EDO Path Select    : Disabled     |                          |
| Refresh RAS# Assertion  : 5 Clks      |                          |
| ISA Bus Clock           : PCICLK/4     |                          |
| SDRAM(CAS Lat/RAS-to-CAS): 2/2       |                          |
| System BIOS Cacheable   : Enabled      |                          |
| Video BIOS Cacheable    : Enabled      |-----+
| 8 Bit I/O Recovery Time : 1           | ESC : Quit             _____ : Select Item |
| 16 Bit I/O Recovery Time : 1          | F1 : Help              PU/PD/+/- : Modify  |
| Memory Hole At 15M-16M  : Disabled     | F5 : Old Values       (Shift)F2 : Color  |
| Peer Concurrency        : Enabled      | F6 : Load BIOS Defaults |
| Passive Release         : Enabled      | F7 : Load Setup Defaults |
+-----+
    
```



Video BIOS Cacheable:

When enabled, allows the system to use the video BIOS codes C0000H-C7FFFH from cache, instead of the slower DRAMs or ROMs. Video BIOS must be shadowed first.

The options are : Enabled (Default), Disabled

System BIOS Cacheable:

When enabled, allows the ROM area E0000H-FFFFFFH to be cacheable when cache controller is activated.

The options are : Enabled (Default), Disabled

Memory Hold At 15M-16M:

When enabled, the memory hole at the 15MB address will be relocated to the 15~16MB address range of the ISA cycle when the processor accesses the 15~16MB address area.

When disabled, the memory hole at the 15MB address will be treated as a DRAM cycle when the processor accesses the 15~16MB address.

The options are : Enabled, Disabled (Default)

Peer Concurrency, Passive Release, Delayed Transaction:

PCI ver. 2.1 (Bus Mastering) control. Enabled, Enabled, Disabled options – PCI 2.1 enabled.

The options are : Enabled, Disabled (Default)

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5.4. Power Management Setup

ROM PCI/ISA BIOS (2A59GS9B)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define	
PM Control by APM	: No	
Video Off Method	: Blank Screen	
MODEM Use IRQ	: NA	
Doze Mode	: Disable	
Standby Mode	: Disable	
Suspend Mode	: Disable	
HDD Power Down	: Disable	
** Wake Up Events In Doze & Standby **		
IRQ3 (Wake-Up Event)	: OFF	
IRQ4 (Wake-Up Event)	: OFF	
IRQ8 (Wake-Up Event)	: OFF	
IRQ12 (Wake-Up Event)	: OFF	
		ESC : Quit _____ : Select Item
		F1 : Help PU/PD/+/- : Modify
		F5 : Old Values (Shift)F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

Power Management:

When enable, allows you to use Power Management features.

PM Control by APM:

The option "No" allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting "Yes" will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into the power saving mode after all tasks are done.

Video Off Method:

The option "V/H SYNC+ Blank" allows the BIOS to blank off screen display by turning off the V-Sync signals sent from add-on VGA card. "DPMS Supported" allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function). "Blank Screen" allows the BIOS to blank screen display by turning off the red-green-blue signals.

Modem use IRQ:

When the system is in green function, modem wakes up the system through IRQ.

HDD Power Down:

Selecting "Disabled" will turn off the hard disk drive (HDD) motor.

Selecting "1Min ...15Min" allows you to define the HDD idle time before the HDD enters Power Saving mode. The option "When Suspend" lets the BIOS turn the HDD motor off when the system is in Suspend mode.

The options "1Min ... 15Min" and "When Suspend" will not work concurrently.

When HDD is in Power Saving Mode, any access to the HDD will wake the HDD up.

Doze Mode:

When disabled, the system will not enter Doze mode. The specified time option define the idle time the system takes before it enters Doze mode.

Suspend Mode:

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode.

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5.5. PNP/PCI Configuration

ROM PCI/ISA BIOS (2A59GS9B)
 PNP/PCI CONFIGURATION
 AWARD SOFTWARE, INC.

Resources Controlled By : Manual	PCI IRQ Activated By : Edge
Reset Configuration Data : Disabled	PCI IDE IRQ Map To : PCI-AUTO
	Primary IDE INT# : A
	Secondary IDE INT# : A
IRQ-3 assigned to : PCI/ISA PnP	Used MEM base addr : N/A
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 Values (Shift)F2 : Color
DMA-7 assigned to : PCI/ISA PnP	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

PCI IRQ Activated By:

If your IDE cards is triggered by edge, set it at "Edge".

The options are : Level, Edge (Default)

PCI IDE IRQ Map To:

Set to auto to allow the system BIOS to automatically detect which interrupt is used by the PCI master drive.

The options are : PCI-AUTO (Default), PCI-SLOT1, PCI-SLOT2, PCI-SLOT3, PCI-SLOT4, ISA

5.6. Load BIOS Defaults

The BIOS defaults contain the most appropriate values of the system parameters that allows minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

5.7 Load Setup Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

5.8. Integrated Peripherals

ROM PCI/ISA BIOS (2A59GS9B)

INTEGRATED PERIPHERALS

AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Disabled	Parallel Port EPP Type	: EPP1.9
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	: Enabled		
USB Controller	: Enabled		
Onboard FDD Controller	: Enabled		
Onboard Serial Port 1	: 3F8/IRQ4		
Onboard Serial Port 2	: 2F8/IRQ3		
Onboard Parallel Port	: 3BC/IRQ7	ESC	: Quit
Onboard Parallel Mode	: ECP/EPP	F1	: Help
ECP Mode Use DMA	: 1	PU/PD/+/-	: Modify
		F5	: Old Values (Shift)F2 : Color
		F6	: Load BIOS Defaults
		F7	: Load Setup Defaults

On-Chip Primary PCI IDE:

When enabled, allows the IDE driver to use the first channel of the primary IDE.

On-Chip Secondary PCI IDE:

When enabled, allows the IDE drive to use the second channel of the primary IDE.

IDE Primary Master PIO, IDE Primary Slave PIO, IDE Secondary Master PIO, IDE Secondary Slave PIO,:

The default value is Auto.

Auto: BIOS will automatically detect IDE HDD accessing mode.

Mode 0-4 : Manually set the IDE accessing mode.

Onboard FDD Controller:

The default value is Enabled.

Enabled : Enabled the onboard I/O Chip's floppy drive interface controller.

Disabled : Disabled the onboard I/O Chip's floppy drive interface controller. When use on-card ISA FDC's controller.

Onboard Serial Port 1:

The field allows the user to select the serial port. The default value is AUTO.

3F8H/IRQ4: Enable onboard serial port1 and address is COM1/3F8H

2F8H/IRQ3: Enable onboard serial port1 and address is COM2/2F8H

3E8H/IRQ4: Enable onboard serial port1 and address is COM3/3E8H

2E8H/IRQ3: Enable onboard serial port1 and address is COM4/2E8H

Disabled: Disable onboard I/O Chip's Serial port 1.

AUTO : BIOS will automatically detect the Onboard Serial Port.

Onboard Serial Port 2:

The field allows the user to select the serial port. The default value is AUTO.

3F8H/IRQ4: Enable onboard serial port2 and address is COM1/3F8H

2F8H/IRQ3: Enable onboard serial port2 and address is COM2/2F8H

3E8H/IRQ4: Enable onboard serial port2 and address is COM3/3E8H

2E8H/IRQ3: Enable onboard serial port2 and address is COM4/2E8H

Disabled: Disable onboard I/O Chip's Serial port 1.

AUTO : BIOS will automatically detect the Onboard Serial Port.

Onboard Parallel Port:

The field allows the user to select the LPT port. The default value is 378H/IRQ7.

378H : Enable onboard LPT port and address is 378H and IRQ7

278H : Enable onboard LPT port and address is 278H and IRQ5

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3BCH : Enable onboard LPT port and address is 3BCH and IRQ7

Disabled : Disable onboard I/O Chip's LPT port

5.9. Supervisor password/ User Password

1.If CMOS is corrupted or the option was not used, a default password stored in the ROM will be used. The screen will display the following message:

Enter Password

Press the [Enter] key to continue after proper password is given

2.If CMOS is corrupted or the option was used earlier and the user wish to change default password, the SETUP UTILITY will display a message and ask for a confirmation.

Confirm Password:

3.After pressing the [Enter] key (ROM password if the option was not used) or current password (user-defined password), the user can change the password and store new one in CMOS RAM. A maximum of 8 characters can be entered.

5.10. IDE HDD Auto Detection

The "IDE HDD AUTO DETECTION" utility is a very useful tool specially when you do not know which kind of hard disk type you are using. You can use this utility to detect the correct disk type installed in the system automatically. But now you can set HARD DISK TYPE to auto in the STANDARD CMOS SETUP. You don't need the "IDE HDD AUTO DETECTION" utility. The BIOS will Auto-detect the hard disk size and model on display during POST.

Note: HDD modes

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

Normal mode:

Generic access mode in which either the BIOS or the IDE controller will make any transformations during accessing.

The maximum number of cylinders, head & sectors for Normal mode are 1024, 16 & 63.

no.Cylinder	(1024)
x no.Head	(16)
x no.Sector	(63)



x no.per sector (512)

528 Megabytes

If user set in Normal mode, the maximum accessible HDD size will be 528 Megabyte even though its physical size may be greater than that !

LBA (Logical Block Addressing) mode:

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

During HDD accessing, the IDE controller will transform the logic address described by sector, head & cylinder into its own physical address inside the HDD. The maximum HDD size supported by LBA mode is 8.4 Gigabytes which is obtained by the following formula:

no.Cylinder (1024)

x no.Head (255)

x no.Sector (63)

x bytes.per sector (512)

8.4 Gigabytes

LARGE mode:

Extended HDD access mode supported by Award Software.

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 LARGE mode:

<u>CYLS.</u>	<u>HEADS</u>	<u>SECTOR</u>	<u>MODE</u>
1120	16	59	Normal
560	32	59	Large

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. Averse transformation process will be made inside INT 12h in order to access the right HDD address the right HDD address !

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no.Cylinder	(1024)
x no.Head	(32)
x no.Sector	(63)
x bytes.per sector	(512)

1 Gigabytes

Note:

To support LBA or LARGE mode of HDDs, there must be some softwares involved. All these softwares are located in the Award HDD Service Routine (INT 13h). It may be failed to access a HDD with LBA (LARGE) mode selected if you are running under a operating system which replaces the whole INT 13h. UNIX operating systems do not support either or LARGE and must utilize the standard mode. UNIX can support drives large than 528MB.

5.11. Save & Exit Setup

After you have made changes under Setup, press <ESC> to return to the main menu. Move cursor to "Save and Exit Setup" or press "F10" and then press "Y" to change the CMOS setup. If you did not change anything, press <ESC> again or move cursor to "Exit Without Saving" and press "Y" to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility.

SAVE to CMOS and EXIT (Y/N)?

5.12. Exit Without Saving

The "EXIT WITHOUT SAVING" option will bring you back to normal boot up procedure without saving any into CMOS RAM. All of the old data in the CMOS will not be destroyed.

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If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications:

Quit Without Saving(Y/N)?



6. Password / CMOS Clear procedure

To clear CMOS setup memory or password stored in CMOS follow the procedures below:

- a) Power Off your system;
- b) On the mainboard close (short) jumper JP5;
- c) Power On;
- d) After memory count finished, Power Off;
- e) Open JP5 jumper;
- f) Power On;
- g) Reset your desired password.



7. BIOS Update procedure.

To update flash ROM BIOS:

1. Use original Award Flash Memory Writer, for example FLASH MEMORY WRITER version 5.35A and later.
2. Prepare bootable diskette with MS-DOS ver. 3.30 – 6.22.
3. Copy new BIOS file and flash memory writer to floppy disk.
4. Reboot from diskette.
5. Execute AWDFLASH.EXE
6. Under prompt File Name To Program enter name of new BIOS name and press ENTER.
7. After prompt Do You Want To Save BIOS (Y/N)? press Y as an Yes answer.
8. Under Filename To Save enter name BIOS to save.
9. On Are You Sure To Program? prompt press Y for flash programming.
10. After displaying message: Don't Turn Off Power Or Reset System! – do not touch any key and don't reboot your system.
11. After displaying: Please Power Off Or Reset System ! – reset your system.

If flash ROM updated successfully computer reboots and new BIOS will work. If system do not reboots you can use the Boot Block BIOS feature to program your old BIOS.

Award Boot Block BIOS update procedure.

1. Remove any PCI Video card, installed on your system.
2. Install ISA video card.
3. Reboot your system from diskette prepared on previous procedure.
4. Use AWDFLASH program to flash your old BIOS.
5. Reboot system.

WARNING! Use only original flash ROM update files designed specially for your mainboard model.

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