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## VA-502 Mainboard Manual

## Standard CMOS Setup

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 highlight 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 predefined 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 Bytes.

**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 cylinders is below 1024.

## BIOS Features Setup

ROM PCI/ISA BIOS (2A5L9F09) 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
Quick Power On Self Test	: Disabled	D0000 - D3FFF Shadow	: Disabled
Boot Sequence	: A, C	D4000 - D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000 - DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000 - DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Port 82/4 Fast A20G	: Fast		
Typeomatic Rate Setting	: Disabled		
Typeomatic Rate (Chars/Sec)	: 6		
Typeomatic Delay (Msec)	: 250		
Security Option	: Setup	ESC : Quit	↑ ↓ → ← : Select Item
PCI/VGA Palette Snoop	: Disabled	F1 : Help	PU/PD/+/- : Modify (Shift) F2 : Color
OS Select For DRAM > 64MB	: Non-OS2	F5 : Old Values	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

Moving around the BIOS and Chipset Features (refer to the next section) Setup programs shown works the same way as moving around the Standard CMOS Setup program. Users are not encouraged to run the BIOS and Chipset Features Setup programs. Your system should have been fine-tuned before shipping. Improper Setup may cause the system to fail, consult your dealer before making any changes.

### 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.

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.

#### 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.

#### Port 92H Fast A20G

When enabled, allows the A20G bus line signal generated from the chipset 82C586 PC/AT to directly pass to port 92H, instead of the keyboard controller. It will speed up the system performance.

The options are: Fast (Default), Normal.

#### 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).

#### OS Select For DRAM > 64MB

If your operating system (OS) is OS2, select the options OS2; otherwise, stay with the default setting Non-OS2.  
The options are: Non-OS2 (Default), OS2.

#### Video BIOS Shadow

When enabled, allows the BIOS to copy the video ROM code of the add-on video card 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 its 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).

## Chipset Features Setup

ROM PCI/ISA BIOS (2A5L9F09) CMOS SETUP UTILITY CHIPSET FEATURES SETUP			
Video BIOS Cacheable	: Enabled	Onboard FDC Controller	: Enabled
System BIOS Cacheable	: Disabled	Onboard UART 1	: 3F8/IRQ4
Memory Hole At 15Mb Addr.	: Disabled	Onboard UART 2	: 2F8/IRQ3
		Onboard UART 2 Mode	: Standard
Sustained 3T write	: Enabled		
CPU Pipeline	: Enabled	Onboard Parallel Port	: 378H/IRQ7
DRAM Timing Control	: Fast	Onboard Parallel Mode	: Normal
Enhanced Page Mode	: Enabled	OnChip USB	: Disabled
Linear Burst Mode	: Disabled		
OnChip IDE first channel	: Enabled		
OnChip IDE second channel	: Enabled		
IDE Prefetch Mode	: Enabled	ESC: Quit	↑ ↓ → ← : Select Item
IDE HDD Block Mode	: Enabled	F1 : Help	PU/PD/-/+ : Modify
IDE Primary Master PIO	: Auto	F5 : Old Values (Shift)	F2 : Color
IDE Primary Slave PIO	: Auto	F6 : Load BIOS Defaults	
IDE Secondary Master PIO	: Auto	F7 : Load Setup Defaults	
IDE Secondary Slave PIO	: Auto		

### Video BIOS Cacheable

When enabled, allows the system to use the video BIOS codes from SRAMs, instead of the slower DRAMs or ROMs.

The options are: Enabled (Default), Disabled.

### System BIOS Cacheable

When enabled, allows the ROM area F000H-FFFFH to be cacheable when cache controller is activated. The recommended setting is Disabled especially for high speed CPUs (200 MHz and above).

### Memory Hole At 15MB Addr.

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: Enabled, Disabled (Default).

### Sustained 3T Write

When enabled, allows the CPU to complete the memory writes in 3 clocks.

The options: Enabled (Default), Disabled.

#### CPU Pipeline

When enabled, allows the CPU to execute the pipeline function.  
The options: Enabled (Default), Disabled.

#### DRAM Timing Control

Allows you to speed up the data access of 82C586.  
The options: Normal, Fast (Default), Turbo.

#### Enhanced Page Mode

When enabled, it allows the system BIOS to pre-determine the next access is on or off page. This leads the start of precharge time if off page.  
The options: Enabled (Default), Disabled.

#### Linear Burst Mode

When enabled, allows you to configure the CPU to SRAM data read/write mode. If you use a Cyrix CPU, select Enabled; if you use an Intel CPU or AMD-K5 CPU, please stay with the default value, Disabled. Please refer to page 5, SRAM.

#### OnChip IDE First Channel

When enabled, allows the IDE drive to use the first channel of the primary IDE.  
The options: Enabled (Default), Disabled.

#### OnChip IDE Second Channel

When enabled, allows the IDE drive to use the second channel of the primary IDE.  
The options are: Enabled (Default), Disabled.

#### IDE Prefetch Mode

When enabled, allows the system BIOS to utilize the prefetch buffer of the onboard IDE controller to prefetch the next sequential data of the current access.  
The options are: Enabled (Default), Disabled.

#### IDE HDD Block Mode

When enabled, allows the system to execute read/write requests to hard disk in block mode.  
The options are: Enabled (Default), Disabled.



#### IDE Primary Master PIO

Allows you to select first PCI IDE channel of the primary master hard disk mode or to detect it by the BIOS.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

#### IDE Primary Slave PIO

Allows you to select the first PCI IDE channel of the primary slave hard disk mode or to detect it by the BIOS.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

#### IDE Secondary Master PIO

Allows you to select first PCI IDE channel of the primary master hard disk mode or to detect it by the BIOS.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

#### IDE Secondary Slave PIO

Allows you to select the first PCI IDE channel of the primary slave hard disk mode or to detect it by the BIOS.

The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

#### Onboard FDC Controller

When enabled, the floppy diskette drive (FDD) controller is activated.

The options are: Enabled (Default), Disabled.

#### Onboard UART 1

If the serial port 1 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed.

The options are: 3F8/IRQ4 (Default), 3E8/IRQ4, 2E8/IRQ3, 2F8/IRQ3, Disabled.

#### Onboard UART 2

If the serial port 2 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed.

The options are: 2F8/IRQ3 (Default), 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled.



#### OnBoard UART 2 Mode

Allows you to select the IR modes if the serial port 2 is used as an IR port.  
Set at Standard, if you use COM2 as the serial port, instead as an IR port.  
The options are: HPSIR, ASKIR, Standard (Default).

#### IR Duplex Mode

If the option ASKIR of UART 2 Mode is selected, this feature will be shown in your monitor for allowing you to select the infrared transaction modes.  
The options are: Half (Default), Full.

#### Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.  
The options are: 378H/IRQ7 (Default), 278H/IRQ5, 3BCH/IRQ7, Disabled.

#### Onboard Parallel Mode

Allows you to connect with an advanced printer I/O mode.  
The options are: EPP, ECP, ECP, ECP+EPP, Normal (Default).

#### ECP Mode Use DMA 3

Allows you to select the DMA channel number 3 or 1 for the ECP printer mode.  
The options are: 1, 3 (Default).

#### Parallel Port EPP Type

Allows you to select the EPP version.  
The options are: EPP1.7 (Default), EPP1.9.

#### OnChip USB

If you connect an external USB device, please set at Enabled.  
The options are: Disabled (default), Enabled.

#### BIOS Support USB Keyboard

This item appears after the above item is set at Enabled. If your USB keyboard cannot be detected automatically by the system BIOS or some driver diskettes came with your USB keyboard, please set at DOS for allowing you to install the driver.  
The options are: Setup (default), DOS.



#### Video Off Method

The option V/H SYNC+Blank allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from add-on VGA card. DPMS Support 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.

The options are: DPMS Support (Default), V/H SYNC+Blank, Blank Screen.

#### MODEM Use IRQ

This feature allows you to select the IRQ# to meet your modem's IRQ#.

The options are: NA, 3 (Default), 4, 5, 7, 9, 10, 11.

#### HDD Power Management

Selecting Disabled will turn off the hard disk drive (HDD) motor. Selecting 1 Min..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 1 Min..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.

The options are: Disabled (Default), 1 Min..15 Min, When Suspend.

#### Doze Mode

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

The options are: Disabled (Default), 10, 20, 30, 40 sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 min, 1h.

#### 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.

The options are: Disabled (Default), 10, 20, 30, 40 sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 min, 1h.

#### VGA

Selecting ON will enable the power management timers when a no activity events is detected in the VGA. Selecting OFF to disable the PM timer even if a no activity event is detected.

The options are: OFF (Default), ON.

#### LPT & COM

Selecting LPT & COM will enable the power management timers when a no activity event is detected in the LPT and COM ports. Selecting LPT (COM) will enable the power management timers when a no activity event is detected in the LPT (COM) ports. Selecting NONE to disable the PM timer even if a no activity event is detected.

The options are: LPT & COM (Default), LPT, COM, NONE.

#### HDD & FDD

Selecting ON will enable the power management timers when a no activity event is detected in the hard disk drive and floppy disk drive. Selecting OFF to disable the PM timer even if a no activity event is detected.

The options are: OFF, ON (Default).

#### IRQ# Activity

After the time period which you set at in Suspend Mode Feature, the system advances from Doze Mode to Suspend Mode in which the CPU clock stops and the screen display is off. At this moment, if the IRQ activity which is defined as Primary occurs, the system goes back to Full-on Mode directly.

If the IRQ activity which is defined as Secondary takes place, the system enters another low power state, Dream Mode, in which the system will act as Full-on Mode except that the screen display remains off until the corresponding IRQ handler finishes, then back to Suspend Mode.

For instance, if the system connects to a LAN and receives an interruption from its file server, the system will enter the dreaming mode to execute the corresponding calling routine.

The options are: Primary, Secondary.

The default values of IRQ3, 4, 5, 7, 9, 10, 11, 12, 14, 15 are: Primary.

The default value of IRQ8 is: Secondary.

<p><b>NOTE :</b> Under certain operating system such as Windows NT 4.0 (Build 1381), the CD auto-insertion feature might have some effect on the power management. It is recommended that the CD-ROM drive to use the secondary channel, and set the following features in the feature Power Management Setup. - HDD &amp; FDD : Off ; IRQ15 (Reserved) : Secondary</p>
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## PCI Configuration Setup

ROM PCI/ISA BIOS (2A5L9F09) PCI CONFIGURATION SETUP AWARD SOFTWARE, INC.	
PCI IRQ Activated By : Level	CPU to PCI Write Buffer : Enabled
IDE Primary Master UDMA : Auto	PCI Dynamic Bursting : Enabled
IDE Primary Slave UDMA : Auto	PCI Burst : Enabled
IDE Secondary Master UDMA : Auto	PCI Master 0 WS Write : Enabled
IDE Secondary Slave UDMA : Auto	Quick Frame Generation : Enabled
ESC : Quit      ↑ ↓ → ← : Select Item	
F1 : Help      PU/PD/+/- : Modify	
F5 : Old Values      (Shift) F2 : Color	
F6 : Load BIOS Defaults	
F7 : Load Setup Defaults	

### PCI IRQ Activated By

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

The options are: Level (Default), Edge.

### IDE Primary Master UDMA

Allows you to select the first PCI IDE channel of the first master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

The options are: Auto (Default), Disabled.

### IDE Primary Slave UDMA

Allows you to select the first PCI IDE channel of the first slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

The options are: Auto (Default), Disabled.

### IDE Secondary Master UDMA

Allows you to select the second PCI IDE channel of the secondary master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

The options are: Auto (Default), Disabled.

#### IDE Secondary Slave UDMA

Allows you to select the second PCI IDE channel of the secondary slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

The options are: Auto (Default), Disabled.

#### CPU to PCI Write Buffer

When enabled, allows data and address access to the internal buffer of 82C586 so the processor can be released from the waiting state.

The options are: Enabled (Default), Disabled.

#### PCI Dynamic Bursting

When enabled, the PCI controller allows Bursting PCI transfer if the consecutive PCI cycles come with the address falling in same 1KB space. This improves the PCI bus throughput.

The options are: Enabled (Default), Disabled.

#### PCI Burst

When enabled, data transfer on PCI Buses will improve. Disable this item during trouble-shooting.

The options are: Disabled, Enabled (Default).

#### PCI Master 0 WS Write

When enabled, allows a zero-wait-state-cycle delay when the PCI master drive writes data to DRAM.

The options are: Enabled (Default), Disabled.

#### Quick Frame Generation

When enabled, allows the system to start the PCI Bus (by asserting frame) as soon as possible when the bus cycle is going to forward to the PCI Bus.

The options are: Disabled, Enabled (Default).



## PnP Configuration Setup

ROM PCI/ISA BIOS (2A5L9F09) PNP CONFIGURATION SETUP AWARD SOFTWARE, INC.	
Resources Controlled By : Auto Reset Configuration Data : Disabled	PNP OS Installed : No Assign IRQ For VGA : Enabled
<div>ESC: Quit      ↑ ↓ → ← : Select Item F1 : Help      PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults</div>	

### Resources Controlled By

If you set at Auto, the BIOS automatically arranges all system resources for you. If there are conflicts or you are not satisfy with the configuration, simply set all the resources listed in the above figure by selecting Manual.

The options are: Auto (default), Manual.

The manual options of IRQ- / DMA- assigned to are: Legacy ISA, PCI/ISA PnP.

### Reset Configuration Data

When enabled, this feature allows the system to clear the last BIOS configuration data and reset them with the default BIOS configuraton data.

The options are: Enabled, Disabled (default).

### PNP OS Installed

If the operating system (OS) you installed supports PNP (Plug-and-Play), such as Windows 95, please select Yes; otherwise, stay with the default value, Disabled.

The options are: No (default), Yes.

### Assign IRQ For VGA

If your PCI VGA card does not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use.

The options are: Enabled (Default), Disabled.

## Load BIOS Defaults

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

## Load Setup Defaults

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

## Supervisor/User Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press **Enter**. 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. To disable password, press **Enter** when you are prompted to enter password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup, if System is selected under the Security Option field and the Supervisor Password is enabled, you will be prompted for the Supervisor Password every time you try to enter the CMOS Setup Utility. If System is selected and the User Password is enabled, you will be requested to enter the User Password every time you reboot the system. If Setup is selected under the Security Option field and the User Password is enabled, you will be prompted only when you reboot the system.

IDE HDD Auto Detection

The IDE Hard Disk Drive Auto Detection feature automatically configures your new hard disk. Use it for a quick configuration of new hard drives. This feature allows you to set the parameters of up to four IDE HDDs. The option with (Y) is recommended by the system BIOS. You may also key in your own parameters instead of setting by the system BIOS. After all settings, press Esc key to to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

ROM PCI/ISA BIOS (2A5L9F09)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
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Primary Master :

Select Primary Master Option (N=Skip) : N								
OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE	
2 (Y)	851	825	32	0	1650	63	LBA	
1	852	1651	16	65535	1650	63	NORMAL	
3	851	825	32	65535	1650	63	LARGE	

Note : Some OSes (like SCO-UNIX) must use "NORMAL" for Installation



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