



G586VPA

Rev. 0
System Board
User's Manual



- D26150309 -





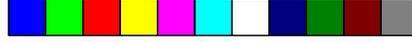
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❖ **FCC Statement on Class B**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and the receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio TV technician for help.*

Notice:

1. *The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.*
2. *Shielded interface cables must be used in order to comply with the emission limits.*



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❖ *Introduction*

The G586VPA is an Energy Star Compliant system board that supports the Environmental Protection Agency's Green PC requirements. It reduces energy consumption by automatically turning off peripherals, or the entire system, when not in use.

The G586VPA system board offers several advanced features integrated into the system board. Its design is based on the Peripheral Component Interconnect (PCI) and Industry Standard Architecture (ISA) standards.

The G586VPA supports a 320-pin Zero Insertion Force (ZIF) CPU socket and an optional Flash EPROM. Flash EPROM is a memory chip for the storage of BIOS which can be erased in bulk or modified using a software utility. The ZIF socket allows users to easily upgrade the CPU.

The G586VPA is equipped with four PCI, one VESA VL-bus and four 16-bit ISA slots.

The G586VPA can be configured to several different sizes of memory up to 128MB using 256Kx36, 512Kx36, 1Mx36, 2Mx36, 4Mx36 and 8Mx36 SIM modules.





G586VPA

Features and Specifications

Processor

- Intel's Pentium™ (3.3V) 75/90/100MHz

Chipset

- VIA - VT82C535MV: system and cache controller
VT82C505: VL-PCI bridge
VT82C406MV: integrated clock generator, real time clock, keyboard controller and PS/2 mouse
VT82C531MV: data buffer

Architecture

- PCI/L-B/ISA

Power Management

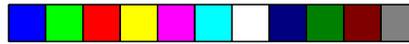
- Supports SIMM mode and CPU stopped clock
- Hardware provides flexible event-driven power management scheme and easy CPU transition state: Ready, Doze and Suspend
- Microsoft APM 1.1 compliant
- EPA Energy Star compliant design

BIOS

- Award Plug & Play BIOS
- Flash EPROM for easy BIOS upgrades

Cache Memory

- 256K, 512K or 1MB direct map write-back cache
- Uses 32Kx8, 64Kx8 or 128Kx8 SRAM: pure 3.3V or 3.3/5V mixed voltage SRAM



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Memory Onboard

- Up to 128MB
- Four 72-pin SIMM sockets, two banks
- Supports single and/or double density SIMMs
- 256Kx36, 512Kx36, 1Mx36, 2Mx36, 4Mx36 or 8Mx36 SIMMs
- Supports 60ns or 70ns page mode DRAM

Expansion Slots

- Four dedicated PCI slots
- One VL-Bus slot
- Four dedicated 16-bit ISA slots

ZIF Socket

- 320-pin ZIF socket (Intel Socket 5)

Board Dimensions

- 27cm (10.5") x 22cm (8.58")
Baby AT form factor



G586VPA

Package Checklist

The G586VPA package contains the following items:

- The G586VPA system board
- The G586VPA user's manual
- One DB-25S hole cover containing the PS/2 mouse port

If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.



❖ *Installation Overview*

This chapter summarizes the steps in installing the G586VPA system board into your system unit. It also includes a description of the area in which you must work and directions for memory installation. Before installing the system board, obtain the memory you plan to install. Please refer to the memory chart on pages 2-3 and 2-4 for the number and type of SIM modules needed for the amount of memory you require.

Preparing the Area

Before unpacking the system board, make sure the location you have selected is relatively free of dust and static. Excessive exposure to dust, static electricity, direct sunlight, excessive humidity, extreme cold, and water can damage the operational capabilities of your system board. Avoid soft surfaces such as beds and carpeted floors which can hinder air circulation. These areas also attract static electricity which can damage some circuits on your system board.

Be sure that the power source has a properly grounded, three-pronged socket. It is essential that the power connection be properly grounded for correct functioning of your system board. For further protection, we recommend that you use a surge protection socket. This will protect the system board from damage that may result from a power surge on the line.

Move items that generate magnetic fields away from your system board, since magnetic fields can also damage your system board. Once you have selected the ideal location, unpack the G586VPA system board carefully.





G586VPA

Handling the System Board

It is quite easy to inadvertently damage your system board even before installing it to your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling the system board to ensure against electrostatic build-up.

Tips in Handling the System Board

- 1) To prevent electrostatic build-up, leave the board in its anti-static bag until you are ready to install it.
- 2) Wear an antistatic wriststrap.
- 3) Do all preparation work on a static-free surface with components facing up.
- 4) Hold the system board by its edges only. Be careful not to touch any of the components, contacts or connections, especially gold contacts on the board.
- 5) Avoid touching the pins or contacts on all modules and connectors. Hold modules and connectors by their ends.

Hardware Installation

Memory Installation

The G586VPA system board can support up to 128MB of memory using HSIM modules. HSIM is an acronym for High Density Single In-line Memory.



Green PCI/L-BSA System Board

An HSIM module consists of several RAM chips soldered onto a small circuit board. An HSIM module connects to the system board via a 72-pin card-edge connector.

The SIMM sockets are divided into two banks. Bank 0 consists of SIM2 and SIM4 SIMM sockets, and Bank 1 consists of SIM1 and SIM3 SIMM sockets. The G586VPA system board uses 256Kx36, 512Kx36, 1Mx36, 2Mx36, 4Mx36 and 8Mx36 SIM modules.

When installing the HSIM modules, populate Bank 0 first and then Bank 1. Failure to do so will cause the system board to work improperly.

The following table summarizes the bank locations and modules needed for the corresponding memory sizes.

Note:

Make sure that the SIMM sockets belonging to the same Bank (e.g. SIM2 and SIM4 - Bank 0) contain the same type of DRAM. If any of the banks is populated by different type of DRAM, the system will not boot.

MemorySize	Bank0	Bank1
2MB	256Kx36	-
4MB	256Kx36	256Kx36
4MB	512Kx36	-
6MB	256Kx36	512Kx36
6MB	512Kx36	256Kx36
8MB	512Kx36	512Kx36
8MB	1Mx36	-
10MB	256Kx36	1Mx36
10MB	1Mx36	256Kx36
12MB	512Kx36	1Mx36
12MB	1Mx36	512Kx36

2-3 ♦ Installation Overview



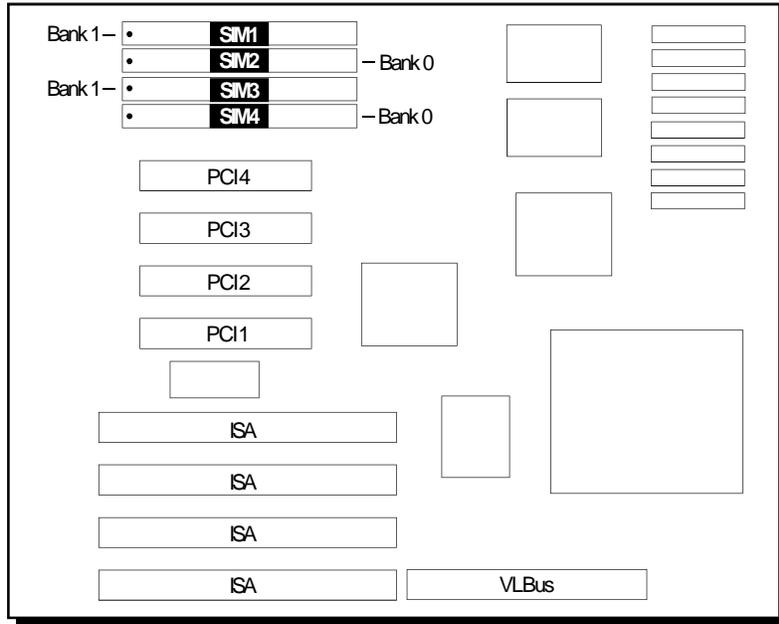


G586VPA

MemorySize	Bank0	Bank1
16MB	1Mx36	1Mx36
16MB	2Mx36	-
18MB	256Kx36	2Mx36
18MB	2Mx36	256Kx36
20MB	512Kx36	2Mx36
20MB	2Mx36	512Kx36
24MB	1Mx36	2Mx36
24MB	2Mx36	1Mx36
32MB	2Mx36	2Mx36
32MB	4Mx36	-
34MB	256Kx36	4Mx36
34MB	4Mx36	256Kx36
36MB	512Kx36	4Mx36
36MB	4Mx36	512Kx36
40MB	1Mx36	4Mx36
40MB	4Mx36	1Mx36
48MB	2Mx36	4Mx36
48MB	4Mx36	2Mx36
64MB	4Mx36	4Mx36
64MB	8Mx36	-
66MB	256Kx36	8Mx36
66MB	8Mx36	256Kx36
68MB	512Kx36	8Mx36
68MB	8Mx36	512Kx36
72MB	1Mx36	8Mx36
72MB	8Mx36	1Mx36
80MB	2Mx36	8Mx36
80MB	8Mx36	2Mx36
96MB	4Mx36	8Mx36
96MB	8Mx36	4Mx36
128MB	8Mx36	8Mx36



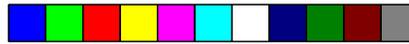
Green PCI/VL-B/ISA System Board



Locations of the SIMM Sockets on the System Board

2-5 ♦ Installation Overview

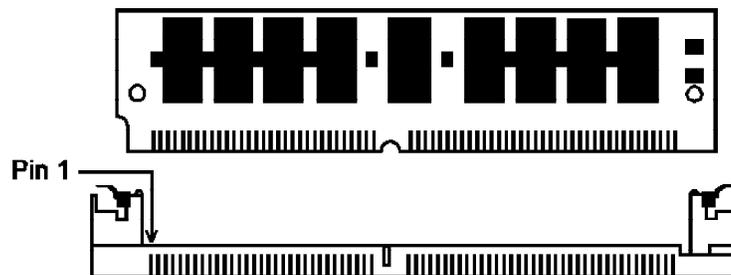




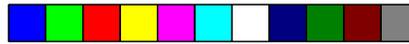
G586VPA

Installing the Modules

An HSIM module simply snaps into a socket on the system board. Pin 1 of the HSIM module must correspond with Pin 1 of the socket.



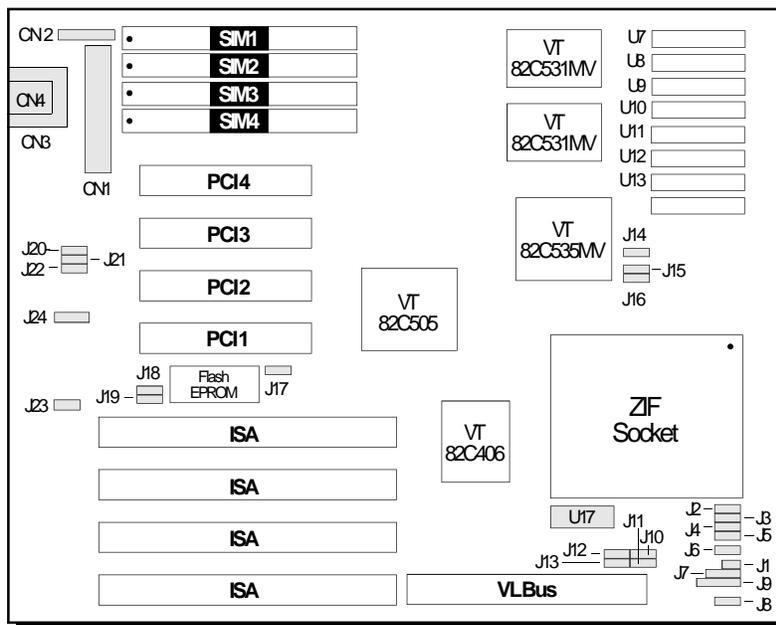
1. Position the HSIM module above the socket with the “notch” in the module aligned with the “key” on the socket.
2. Seat the module at a 45° angle into the bank. Make sure it is completely seated. Tilt the module upright until it locks in place in the socket.



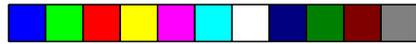
Green PCI/L-ISA System Board

Board Configuration

The G586VPA is designed with jumpers and connectors onboard. Make sure that the jumpers are set correctly before installing the system board into your system unit.



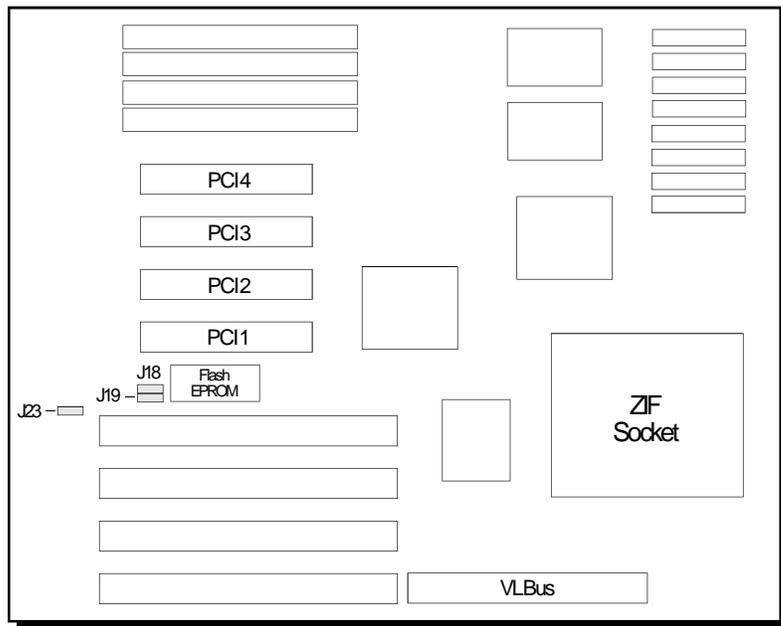
**Locations of Jumpers and Connectors
on the G586VPA System Board**



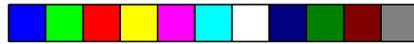
G586VPA

Jumper Settings

Jumper Settings for PS/2 Mouse, Flash EPROM and CMOS Clean



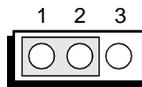
**Locations of Jumpers J18, J19 and J23
on the G586VPA System Board**



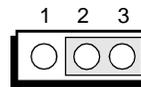
Green PCI/ISA System Board

Jumper J18 PS/2 Mouse

The G586VPA package includes one DB-25S hole cover containing the PS/2 mouse port. If you set Jumper J18 to Enabled, make sure you connect the PS/2 mouse port to Connector CN2.



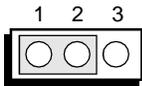
1-2 On: PS/2 Mouse
Enabled



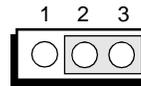
2-3 On: PS/2 Mouse
Disabled (Default)

Jumper J19 Flash EPROM Programming Voltage

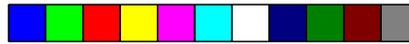
Jumper J19 should be set to match the voltage of the Flash EPROM installed on the G586VPA system board. See page 2-7 for the location of the Flash EPROM.



1-2 On: +12V
(Default)



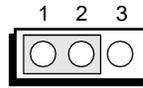
2-3 On: +5V



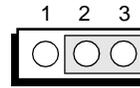
G586VPA

Jumper JP23 CMOS Clean Select

If, for some reason, the CMOS becomes corrupted, the system can be reconfigured with the default values stored in the ROM chips. To load the default values, set JP23 pins 2-3 On for approximately one to two minutes, then return to the default position.

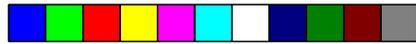


1-2 On: Normal
(Default)



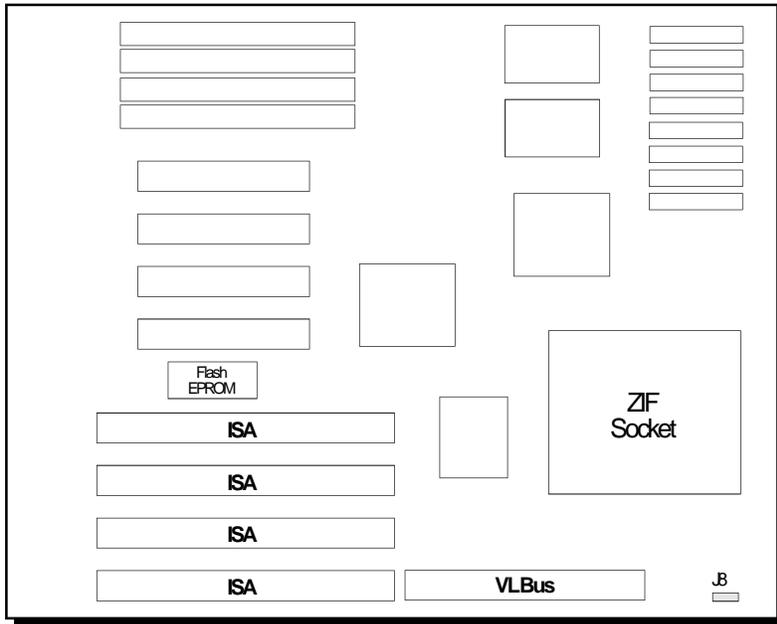
2-3 On: CMOS Clean



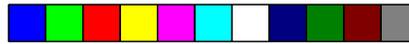


Green PCI/VL-B/ISA System Board

Jumper Settings for VESA VL-Bus Add-On Boards



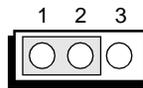
Locations of Jumper J8 on the G586VPA System Board



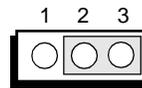
Jumper J8

Write Wait State for VESA Bus

Set Jumper J8 pins 2 and 3 to On if the VESA VL-Bus add-on board(s) installed in the VL-Bus slots support Zero Wait State. If you are not sure that your add-on board(s) support Zero Wait State, set J8 pins 1 and 2 to On; otherwise, a system error may occur.



1-2 On: Write One Wait State (Default)



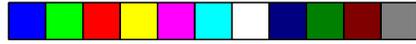
2-3 On: Write Zero Wait State

Note:

These are the steps to follow when you use a VESA Master VL-Bus card.

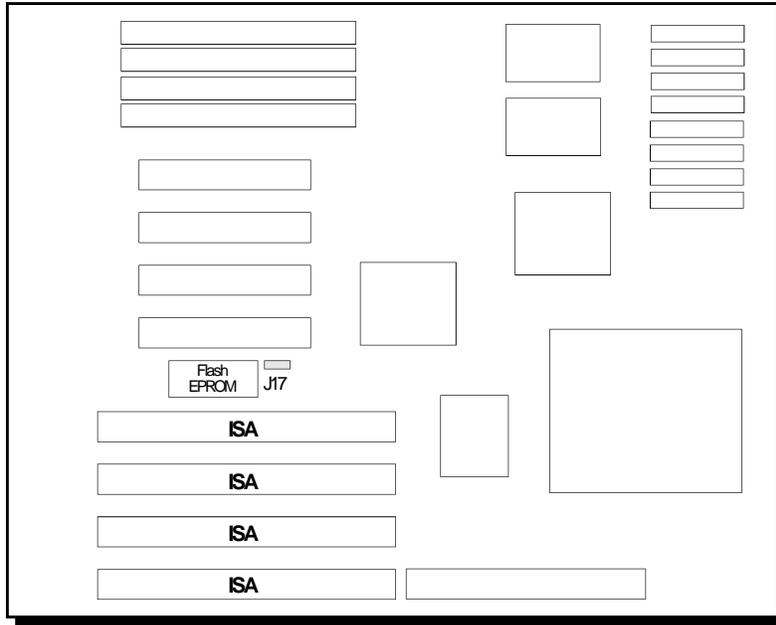
- 1. Make sure that pins 2 and 3 of the jumper J2 are set to On (CPU write through mode).*
- 2. Load the PCI Configuration Setup with BIOS Setup Default values, then change "PCI Slot 1 or 2 used as PCI Master" to "PCI Slot 1 or 2 used as PCI Slave".*

The G586VPA system board supports three Master slots. The function of PCI3 and PCI4 is both Master and Slave. PCI1, PCI2 and VL-Bus slots share the function of the third Master slot. If you insert a Bus Master card into one of these slots (PCI1, PCI2 or VL-Bus) then the other two slots can support Slave function only.

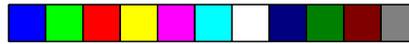


Green PCI/WL-B/ISA System Board

Jumper Settings for PCI Slots



Location of Jumper J17 on the G586VPA System Board

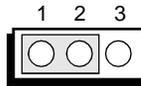


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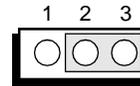
Jumper J17

Delay 5ns for PCI Slot 1 or 3

If you encounter problems with the PCI add-on card installed in the G586VPA system board (e.g. Adaptec AHA2940), insert the PCI card in PCI slot 1 or 3 and set J17 pins 2 and 3 to On. This will allow your PCI clock to be 5ns slower than the CPU clock.



1-2 On: Normal
(Default)



2-3 On: Delay 5ns



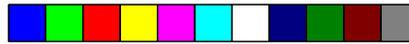


Green PCIWL-B/SA System Board

Cache Configuration

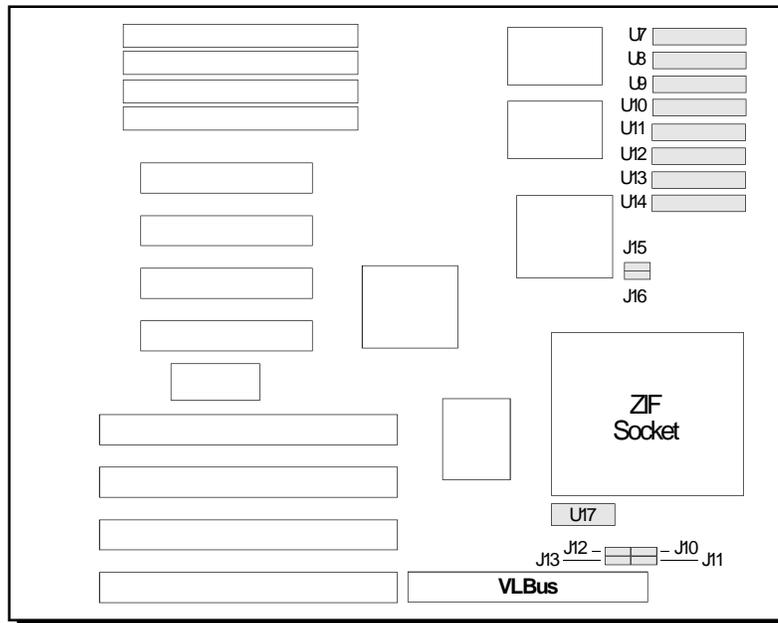
The G586VPA system board can be configured to three different cache sizes: 256KB (Default size), 512KB and 1MB. Either 32Kx8, 64Kx8 or 128Kx8 SRAM chips are used for cache depending on the size of cache desired. The G586VPA supports both pure 3.3V and 3.3/5V mixed voltage SRAM. Listed below are the brands of SRAM that passed a factory testing.

Brand/Model	CacheSize	TypeofSRAM
Winbond: W24M257AK-15	(32Kx8)	Mixed voltage SRAM
UMC: UM61M256K-15	(32Kx8)	Mixed voltage SRAM
ISSI: IS61LV256-15	(32Kx8)	Pure 3.3V SRAM
Alliance: ASTC3256-15	(32Kx8)	Pure 3.3V SRAM



G586VPA

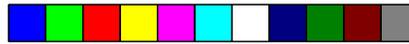
Jumper Settings for Cache Memory



Locations of Jumpers J10-J13, J15-J16, U7-U14 and U17 on the G586VPA System Board

Jumpers J10-J13, U7-U14 and U17 Cache Size Setting

	1MB	512KB	256KB*
J10	2-3On	2-3On	1-2On
J11	2-3On	1-2On	1-2On
J12	2-3On	2-3On	1-2On
J13	2-3On	1-2On	2-3On



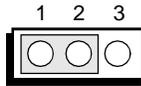
Green PCI/L-B/ISA System Board

	U7-U14	U17
256K*	32Kx8-15ns	32Kx8-15ns
512K	64Kx8-15ns	32Kx8-15ns
1MB	128Kx8-15ns	32Kx8-15ns

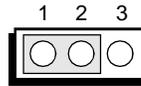
* Default setting

Jumpers J15 and J16 SRAM Type Selection

The G586VPA can support two types of SRAM, 3.3V SRAM and 3.3/5V mixed voltage SRAM. Settings for jumpers J15 and J16 should match the voltage of the SRAM on your system board.



J15, 1-2 On: Pure
3.3V SRAM (Default)

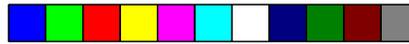


J16, 1-2 On: Pure
3.3V SRAM (Default)

	J15	J16
3.3V SRAM	1-2 On	1-2 On
3.3/5V SRAM	2-3 On	2-3 On

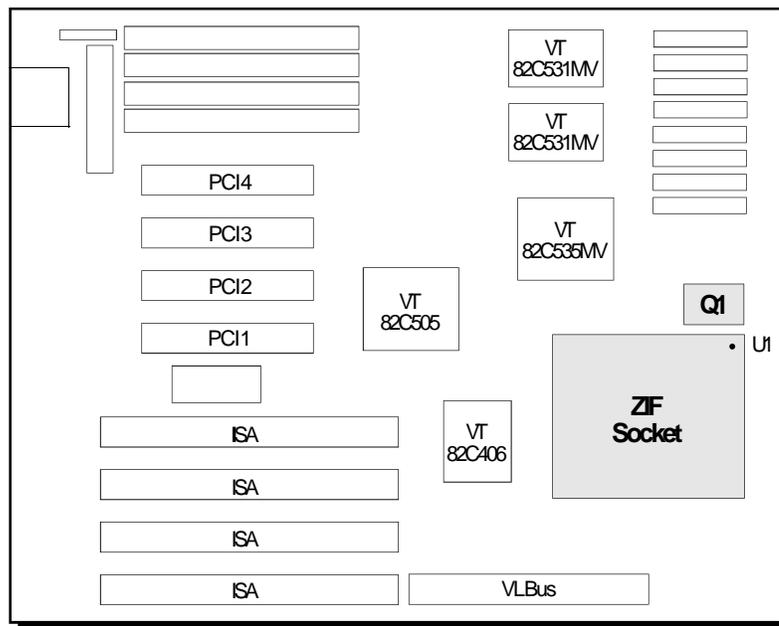
Note:

We recommend that you do not change the settings of these jumpers because the settings have already been determined according to the voltage of the SRAM chips before their installation on the system board.



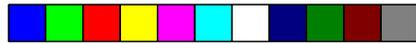
CPU Installation

The G586VPA is equipped with a 320-pin Zero Insertion Force (ZIF) socket at location U1 of the system board. The ZIF socket allows for easy installation of upgrade CPUs as your system needs grow. Make sure all jumpers are set correctly before applying power, or you may damage the CPU or system board.



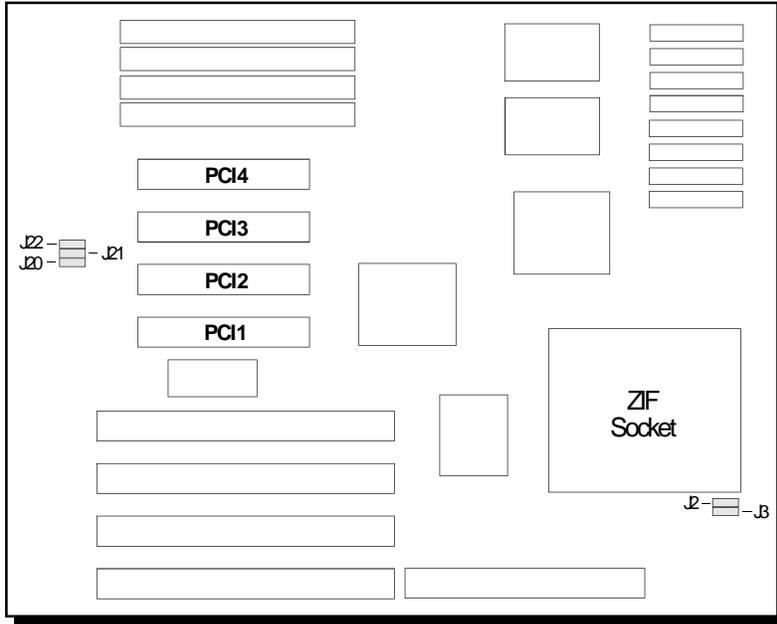
- Pin 1 of the ZIF socket

Location of the ZIF Socket on the G586VPA System Board

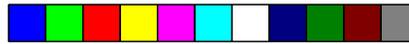


Green PCI/VL-B/ISA System Board

Jumper Settings for CPU

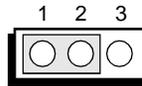


Locations of Jumpers J2, J3 and J20-J22 on the G586VPA

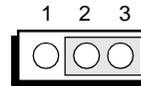


Jumper J2 CPU Write Back/Through Control

Jumper J2 is used to select write back or write through mode for CPU. Normally the write back mode is selected. Note that some types of interface card require the write through mode (e.g. Bus master VESA cards like Adaptec AHA-2842VL or BusLogic BT445S).



1-2 On: Write Back Mode
(Default)



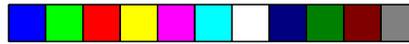
2-3 On: Write through
Mode

Jumper J20, J21 and J23 System Base Clock Setting

The G586VPA supports System Base Clock external frequency of 50MHz, 60MHz or 66MHz. Set the jumpers J20-J23 according to the type of CPU installed in the CPU socket.

	J20	J21	J22
50MHz	2-3 On	1-2 On	2-3 On
60MHz*	1-2 On	1-2 On	1-2 On
66MHz	2-3 On	2-3 On	1-2 On

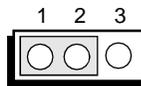
* Default setting



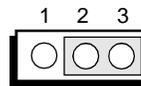
Green PCI/L-BSA System Board

Jumper J3 CPU Mode Setting

Jumper J3 is used to select CPU internal frequency. You should not change the default setting of this jumper unless the CPU installed on the system board is 3.3V Pentium Processor, System Base Clock frequency 50MHz.



1-2 On: Fx1.5 (50MHz/
75MHz, 60MHz/90MHz
or 66MHz/100MHz CPU)
(Default)



2-3 On: Fx2 (50MHz/
100MHz)

Jumper Settings for CPU

Summary

CPU Clock	J2	J3	J20	J21	J22
75MHz	1-2 On (write back) or 2-3 On (write through)	1-2 On	2-3 On	1-2 On	2-3 On
90MHz	1-2 On (write back) or 2-3 On (write through)	1-2 On	1-2 On	1-2 On	1-2 On
100MHz	2-3 On (write through) or 2-3 On (write through)	1-2 On 2-3 On	2-3 On 2-3 On	2-3 On 1-2 On	1-2 On 2-3 On



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Note:

The G586VPA supports the CPU clock of 100MHz if the CPU Base Clock Frequency is 50MHz or 66MHz.

With the CPU clock of 100MHz, the G586VPA supports write through mode only.

The jumpers below are for factory testing only and should always be set to their default configurations. Reconfiguring these jumpers will cause problems with your system board.

J4: 2-3 On
J5: 2-3 On
J6: 1-2 On
J14: 1-2 On

Installing Upgrade CPUs

The G586VPA is equipped with a 320-pin Zero Insertion Force (ZIF) socket at location U1 of the system board. This socket is designed for easy removal of the old CPU and easy insertion of the upgrade CPU. The socket allows you to carefully place the new CPU into its position. If you need to apply excessive force to insert the CPU, the installation is being done incorrectly.

Warning:

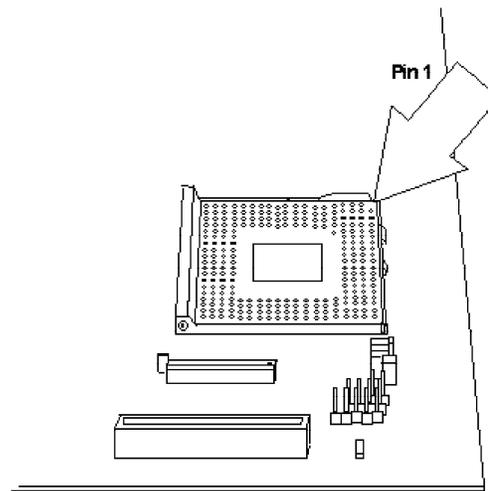
Open the socket only if actually installing a CPU. The warranty on the original CPU will be voided if the S/N seal is broken.

The 320-pin ZIF socket consists of four rows of pin holes on each side. To avoid improper installation, the ZIF socket is designed with a Plug/Keying mechanism.



Green PCI/L-BISA System Board

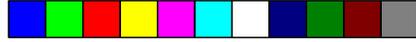
There are several holes in the socket that are plugged so the CPU will only go in one way. If you are unable to easily insert the CPU, please verify pin 1 of the CPU is being plugged into pin 1 of the socket. The location of the pin 1 is shown below.



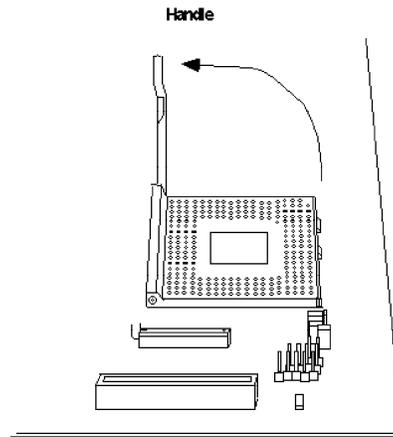
Zero Insertion Force (ZIF) Socket

To install an upgrade CPU do the following.

1. Make sure the handle on the side of the ZIF socket is up. To raise the handle, pull it out to the side a little and raise it as far as it will go. The top plate will slide back. Do not use screw drivers or other tools to open the socket, or damage may occur to the system or socket. It may be necessary to initially apply a small amount of sideways force to free the handle from its retaining “tab.” Once clear of the “tab,” the handle will open relatively easily.

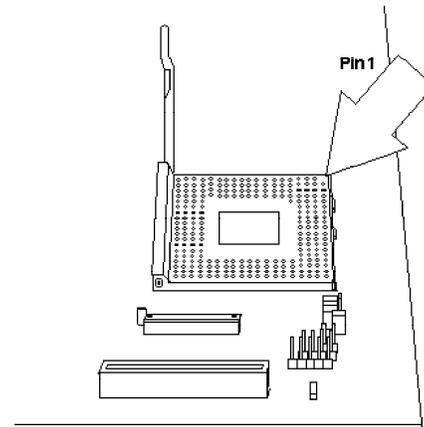


G586VPA



Lifting the Handle

2. Once the lever is completely up, remove the old CPU by carefully lifting it straight out of the socket. You are now ready to insert the new CPU.



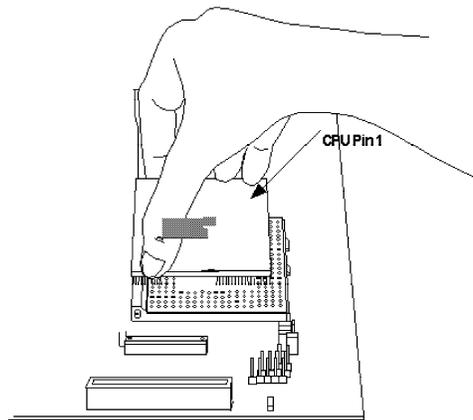
Pin 1 of the ZIF Socket

Installation Overview ◆ 2-24

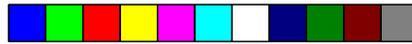


Green PCI/WL-B/SA System Board

3. Position the CPU above the ZIF socket. Make sure pin 1 of the CPU is aligned with pin 1 of the socket. Lower the chip until the pins are inserted properly in their corresponding holes. Remember that very little force is needed to install the CPU. If the CPU will not easily insert, please verify you have pin 1 of the CPU aligned with pin 1 of the socket. Applying too much pressure can damage the CPU or the socket.



4. Push the handle down until the handle locks into place. The top plate will slide forward. You will feel some resistance as the pressure starts to secure the CPU in the socket. This is normal and will not damage the CPU. However, if the handle is not completely closed, damage to the CPU and/or system board may result.



G586VPA

Note:

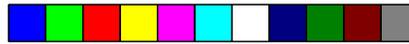
The cables (floppy drive, hard drive, CD-ROM, etc.) must be routed clear of the CPU with a minimum of 0.25" horizontal clearance to allow heat dissipation.

A minimum of 1.4" vertical clearance (measured above the socket surface) must be kept free above the CPU. Do not run cables or other obstructions in this area.,

Warning:

The Power Regulator Q1, shown on page 2-18, supports all the power to the CPU. Q1 generates high temperature. Be careful not to touch it when handling the area around the CPU.

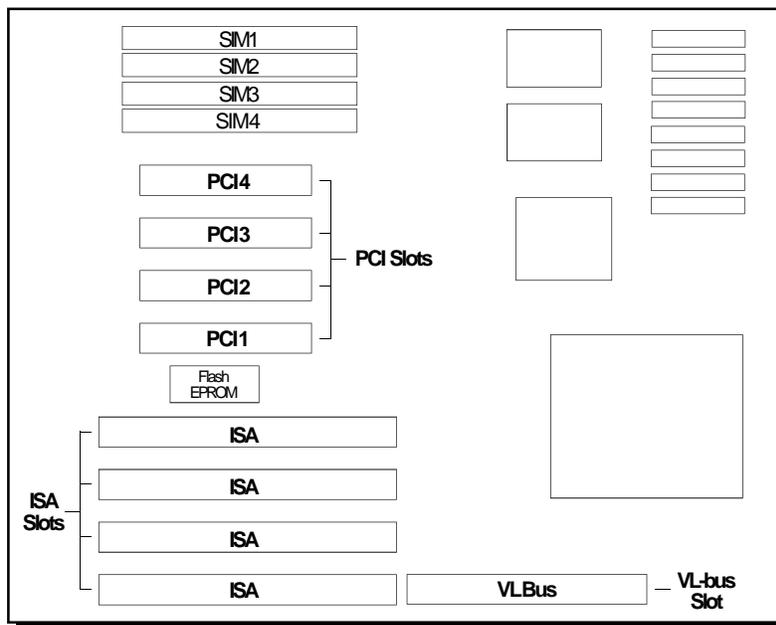




Green PCI/VL-ISA System Board

Installing Expansion Cards

The G586VPA is equipped with four PCI slots, four 16-bit ISA slots and one VL-Bus slot. The location of the expansion slots are shown below.



The system board supports three Master slots. The function of PCI3 and PCI4 is both Master and Slave. PCI1, PCI2 and VL-Bus slots share the function of the third Master slot. If you insert a Bus Master card into one of these slots (PCI1, PCI2 or VL-Bus) then the other two slots can support Slave function only.



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Notes:

The PCI slots are numbered from 1-4; PC11 is located next to Flash EPROM and PC14 is located next to SIMM socket SM4.

The BIOS needs to be configured for the PCI add-on cards installed in the PCI slots. Refer to the PCI Configuration Setup on pages 3-9 to 3-12 for more information.

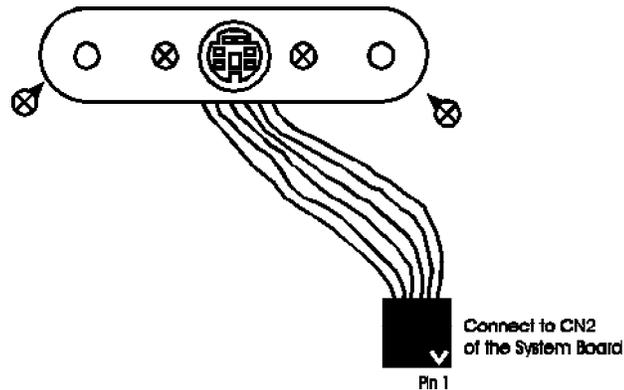


Installing the PS/2 Mouse Port

The G586VPA package includes a DB-25S hole cover which contains the PS/2 mouse port attached to a ribbon cable.

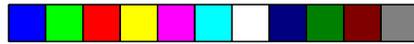
To install:

1. Use the two screws provided with the package to secure the DB-25S hole cover to the DB-25S hole normally found at the rear of a system chassis.
2. Connect the cable to Connector CN2 of the system board.



Note:

Make sure that the jumper J18 is set to Enabled (pins 1-2 On). For more information, refer to page 2-9.



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Installing the System Board

Before installing the system board into your system unit, you should prepare the tools you will use:

You will need:

- *one medium size, flat-bladed screwdriver*
- *one medium Phillips screwdriver*

Step 1

Unlock your system unit. Turn off the power and disconnect all power cords and cables.

Step 2

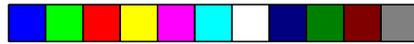
Remove the system unit cover. Refer to the manufacturer's instructions if necessary.

Step 3

Remove expansion cards seated in any of the expansion slots and detach all connectors from the old system board.

Step 4

Loosen the screws holding the original system board and remove the board from the system. Save the screws.



Green PCI/L-BSA System Board

Step 5

Remove the G586VPA from its original packing box. Be careful to avoid touching all connectors and pins on the board. Please refer to the handling instructions on pages 2-1 and 2-2 for proper handling techniques.

Step 6

Insert the SIM modules into the SIMM banks on the G586VPA. The quantity and location of the SIM modules depend upon the memory configuration and type of modules you intend to use.

Step 7

Set the corresponding jumpers.

Step 8

Install the prepared G586VPA system board into the case and replace the screws.

Step 9

Reinstall all cards and connectors and replace the system unit cover. Reconnect all power cords and cables.



❖ *Initial Setup Program*

After you power up your system, the BIOS message appears on your screen and the memory count begins.

After the memory test, the following message will appear on the screen:

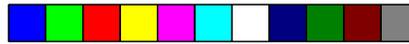
Press DEL to enter setup

If the message disappears before you respond, restart your system or press the “Reset” button. You may also restart the system by pressing the <Ctrl> <Alt> keys. If you do not press these keys at the correct time and the system does not boot, the following error message will appear:

Press F1 to continue or Del to enter Setup

If you have set a password and selected “System” in the Security Option of the BIOS Feature Setup menu, you will be prompted for the password everytime the system is rebooted or any time you try to enter Setup. Type in the correct password and press <Enter>.

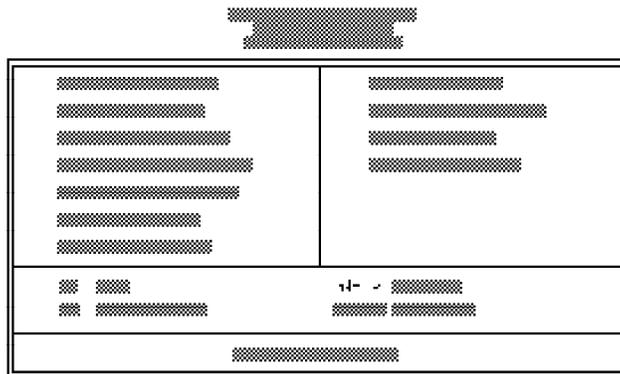
If you selected “Setup” in the Security Option, you will be prompted for the password only when you try to enter Setup. Refer to the “BIOS Features Setup” section for more information.



Green PCWL-BISA System Board

Award BIOS CMOS Setup Utility

Press to enter the Setup utility. A screen similar to the one below will appear.



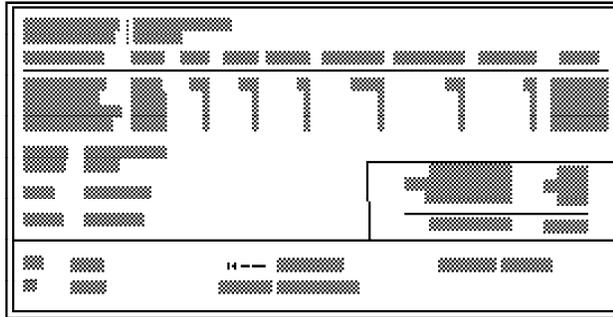
Use the arrow keys to highlight the option you want and press <Enter>.

Standard CMOS Setup

Use the arrow keys to highlight the “Standard CMOS Setup” and press <Enter>, a screen similar to the one on the next page will appear.



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Date and Time

Sets the time and date for the system. Press <F3> for the calendar.

Primary Master, Primary Slave, Secondary Master and Secondary Slave

If you have added an IDE hard drive, you must select the appropriate type for the drive. You may use the "IDE HDD Auto Detection" from the main CMOS setup menu or you can set it manually. The G586VPA has 46 pre-set types and one user-definable type. Use the <Page Up> or <Page Down> keys to select the appropriate type for the drive.

The table in Appendix H gives a complete listing of the available drive types. Any given hard drive must be set to one specific drive-type number. Please refer to your hard drive documentation to find the appropriate type number.



Green PCI/L-ISA System Board

If none of the pre-set types is appropriate for your hard drive, choose “User”, which is the user-definable type. To use this type, highlight the hard disk Primary Master, Primary Slave, Secondary Master or Secondary Slave, depending on your hard drive configuration. Use the arrow keys until type “User” is showing. Fill in all the parameters as specified by the drive manufacturer. If either of the drives is not present, select “None” and press <Enter>.

Drive A and Drive B

These options are used to select the type of floppy disk drives installed in your system. If either of the drives is not present, select “None.” Make sure you choose the correct drive type; otherwise, your system might format the device improperly.

Video

This is used to select the type of video adapter installed in your system.

Halt on

This option selects when the system will halt if an error is detected during power up.

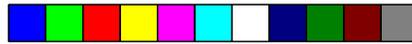
No Errors: The system boot will not stop for any errors detected.

All Errors: The system will stop whenever the BIOS detects a non-fatal error.

All, But Keyboard: The system will stop for any errors except a keyboard error.

All, But Diskette: The system will stop for any errors except a disk error.





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All, But Disk/Key: The system will stop for any errors except a keyboard or disk error.

Memory

The lower right hand corner shows the base memory size, extended memory size, expanded memory size and the other memory size of your system. You cannot alter these items; your computer automatically detects and displays them.

The Other Memory size refers to the memory located in the 640K to 1024K address space. This is the memory used for different applications. DOS uses this area to load device drivers to keep as much base memory free for application programs. Most program use this address space for the Shadow RAM.

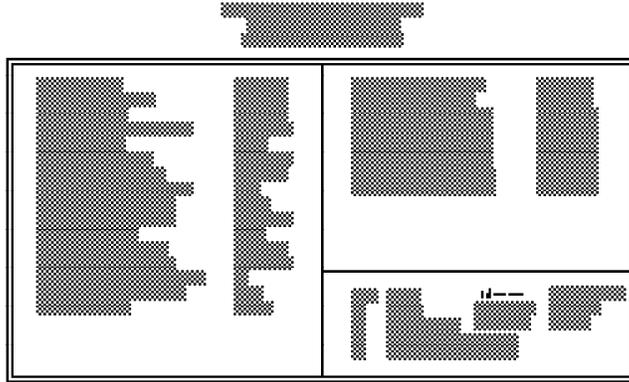
When you are through making changes in the Standard CMOS Setup, press <Esc> to return to the main menu.

BIOS Features Setup

Use the arrow keys to highlight the “BIOS Features Setup” and press <Enter>, a screen similar to the one on the next page will appear.



Green PCI/L-ISA System Board



The Virus Warning option may be set to “enabled” or “disabled.” When enabled, the BIOS issues a warning when any program or virus sends a Disk Format command or attempts to write to the boot sector of the hard disk drive.

If you choose “System” in the Security Option, you will be prompted for a password every time you cold boot your system or access setup. If you choose “Setup,” you will be prompted for a password only when trying to access setup.

If the changes you made are incorrect or you change your mind, press <F6> or <F7> to return to the default settings. Press <Esc> after making the changes to return to the main menu.

3-6 ◆ Initial Setup Program

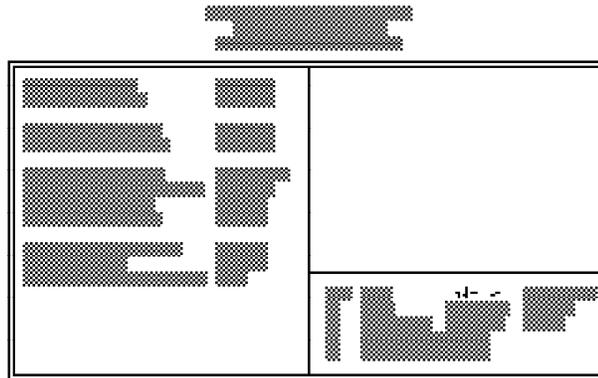


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Chipset Features Setup

The G586VPA uses the VIA (VT82C535MV, VT82C505, VT82C406MV and VT82C531) chipset. The Chipset Features Setup allows you to modify some functions to optimize system performance.

If you press <Enter>, a screen similar to the one below will appear.



Use the arrow keys to move the highlight bar to the option you wish to change or modify. Use the <Page Up>, <Page Down>, <+> or <-> keys to make the corresponding changes.

If the changes you made are incorrect or you change your mind, press <F6> or <F7> to return to the default settings. Press <Esc> after making the changes to return to the main menu.



Green PC/WL-B/SA System Board

Power Management Setup

Use the arrow keys to highlight the “Power Management Setup” and press <Enter>, a screen similar to the one below will appear.

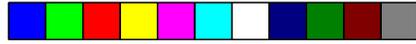


Choosing “Enabled” in the Power Management option will allow you to set the Doze Timer, Sleep Timer, Sleep Mode, HDD Power Management, VGA Activity Wakeup, INTR Enabled PMI, IO Activity and Video Off Method. Choose “Disabled” if you do not wish your system to enter the Standby mode.

Use the arrow keys to move the highlight bar to the option you wish to change or modify. Use the <Page Up>, <Page Down>, <+> or <-> keys to make the corresponding changes.

If the changes you made are incorrect or you change your mind, press <F6> or <F7> to return to the default settings. Press <Esc> after making the changes to return to the main menu.

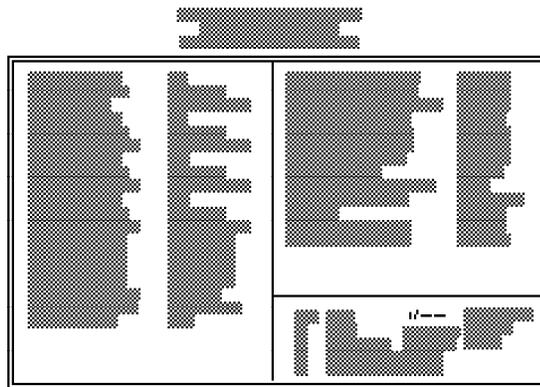
3-8 ◆ Initial Setup Program



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PCI Configuration Setup

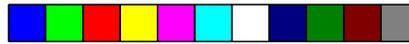
Use the arrow keys to highlight the “PCI Configuration Setup” and press <Enter>, a screen similar to the one below will appear.



The G586VPA supports three PCI master cards. The master cards may be inserted in either PCI Slot 1 or 2, Slot 3 and Slot 4.

PCI Slots 1, 2, 3 and 4 are mapped to PIRQ 0, 1, 2 and 3 respectively. The IRQ of each PCI slot must correspond to the IRQ of its associated PIRQ.

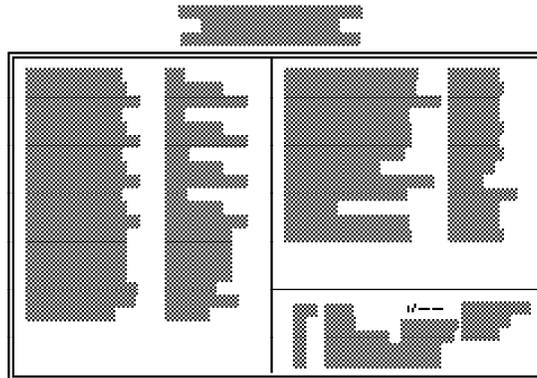
The latency timer controls the duration a PCI bus-master card can control the bus. A larger value may be faster; a smaller value will give greatest compatibility with other PCI devices.



Green PCI/WL-B/ISA System Board

Example 1:

	DFI SHA-1000P (NCR 53C810)	DFI NET-800P
PCI Slot	PCI3	PCI4
System IRQ	IRQ11	IRQ9
INT on Adapter	INT A	INT A

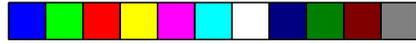


Example 2:

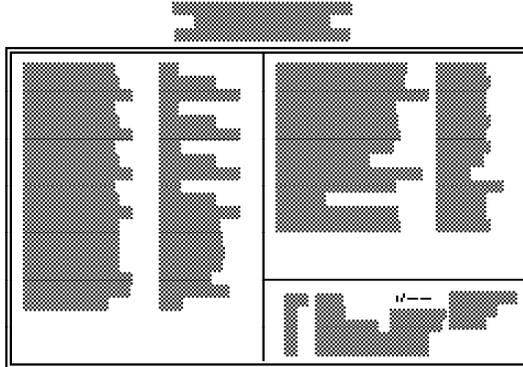
	Adaptec AHA-2940	DFI NET-800P
PCI Slot	PCI1	PCI3
System IRQ	IRQ5	IRQ11
INT on Adapter	INT A	INT A

3-10 ♦ Initial Setup Program



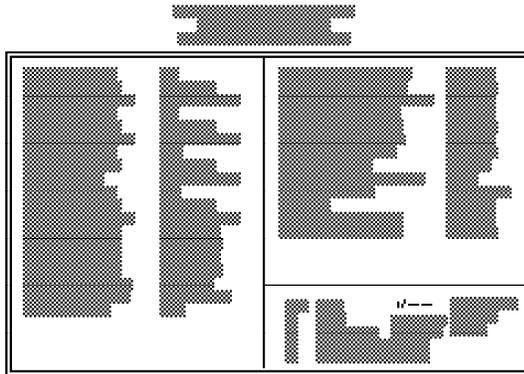


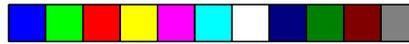
G586VPA



Example 3:

	Buslogic BT-946C	DFI NET-800P
PCI Slot	PCI2	PCI4
System IRQ	IRQ10	IRQ11
INT on Adapter	INT A	INT A

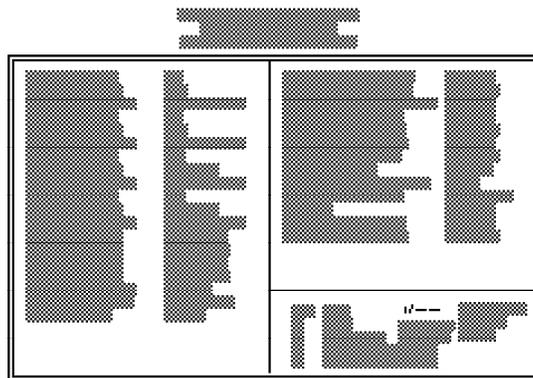




Green PCI/WL-B/ISA System Board

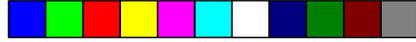
Example 4:

	DFI SHA-1000P (NCR 53C810)	DFI NET-800P
PCI Slot	PCI3	PCI4
System IRQ	IRQ11	IRQ9
INT on Adapter	INT B	INT C



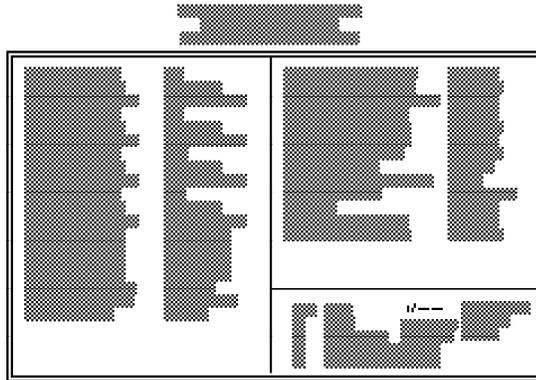
Example 5:

	WG-3000P (S3 82C864P)	DFI NET-800P (AMD79C970)	DFI NET-800P (AMD79C970)
PCI Slot	PCI1	PCI2	PCI3
System IRQ	None	11	9
INT on Adapter	None	INT A	INT A
Card Type (Master/Slave)	Slave	Master	Master



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SHA-1000P (NCR 53C810)	
PCI Slot	PCI4
System IRQ	10
INT on Adapter	INT A
Card Type (Master/Slave)	Master

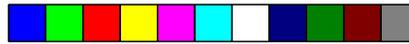


Note:

If either DFI NET-800P or SHA-1000P PCI Bus Master card is inserted into PCI Slot 2, PCI Slot 1 can support Slave PCI cards only.

Example 6:

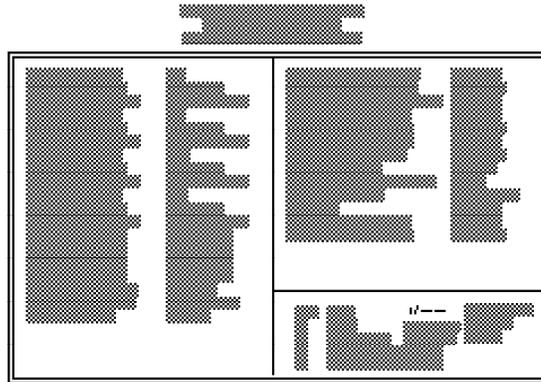
	SHA-1X00P (NCR 53C81X)	WG-3000P (S3 82C860-P)	SHA-1X00P (NCR 53C81X)
PCI Slot	PCI1	PCI2	PCI3
System IRQ	9	None	11
INT on Adapter	INT A	None	INT A
Card Type (Master/Slave)	Master	Slave	Master



Green PCI/WL-B/SA System Board

NET-800P (AMD79C970)

PCI Slot	PCI4
System IRQ	10
INT on Adapter	INT A
Card Type (Master/Slave)	Master



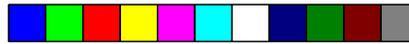
Note:

If either DFI NET-800P or SHA-1X00P Bus PCI Master card is inserted into PCI Slot 1, PCI Slot 2 can support PCI Slave cards only.

Use the arrow keys to move the highlight bar to the option you wish to change or modify. Use the <Page Up>, <Page Down>, <+> or <-> keys to make the corresponding changes.

If the changes you made are incorrect or you change your mind, press <F6> or <F7> to return to the default settings. Press <Esc> after making the changes to return to the main menu.

3-14 ◆ Initial Setup Program



G586VPA

Load BIOS Defaults

If, for some reason, the CMOS becomes corrupted, the system can be reconfigured with the default values stored in the ROM chips. The BIOS Setup default values should provide optimum performance for the system. You should use these values unless you are having hardware problems.

Highlight this option on the main menu and press <Enter>. The message below will appear.

Load BIOS Defaults (Y/N)? N

Type “Y” and press <Enter> to return to the BIOS setup default values. After pressing <Enter>, you will be returned to the main menu.

Load Setup Defaults

The Setup defaults are similar to the BIOS Setup defaults. These defaults are the most stable values for the system and should be used if you are having hardware problems.

Highlight this option on the main menu and press <Enter>. The message below will appear.

Load Setup Defaults (Y/N)? N

Type “Y” and press <Enter> to return to the Setup default values. After pressing <Enter>, you will be returned to the main menu.



Green PCIWL-B/ISA System Board

Password Setting

If you want to set a password, make sure that the Security Option under the BIOS Features Setup is set to “System” or “Setup”. Refer to the BIOS Features Setup option for more information.

Use the arrow keys to highlight the Password Setting option and press <Enter>. The message below will appear.

Enter Password:

Type in the password. You are limited to eight characters. Type in a password that is eight characters long or shorter. When done, the message below will appear:

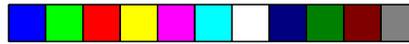
Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. Otherwise, enter a new password.

To delete or disable the password function, simply press <Enter> instead of typing in a new password.

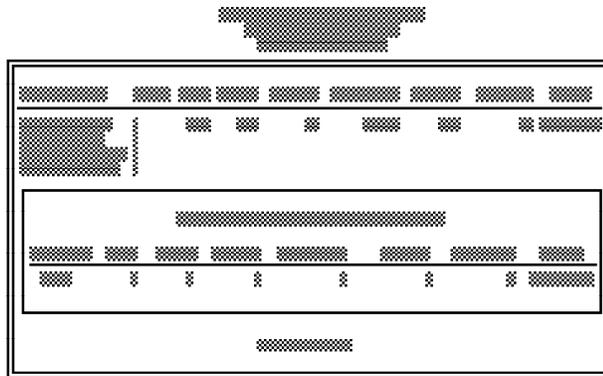
Press the <Esc> key to return to the main menu.





IDE HDD Auto Detection

This option detects the hard disk parameters for the hard disk drives installed in your system. Highlight this option and press <Enter>. A screen similar to the one below will appear.

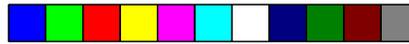


The screen displays the parameters detected and allows you to accept or reject the parameters. Type “Y” and press <Enter> to accept the parameters or press <Esc> to abort. If you select “Y”, the parameters of the hard disk will be displayed in the Standard CMOS Setup.

Save and Exit Setup

When all the changes have been made, highlight “Save & Exit Setup” and press <Enter>. The message below will appear:

Save to CMOS and Exit (Y/N)? N



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Type “Y” and press <Enter>. The following message will appear:

Reboot System (Y/N)? N

Type “Y” and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot. You will once again see the initial diagnostics on the screen. If you wish to make additional changes to the setup, press <Ctrl> <Alt> <Esc> or after memory testing is done.

Exit Without Saving

When you do not want to save the changes you have made, highlight this option and press <Enter>. The message below will appear:

Quit Without Saving (Y/N)? N

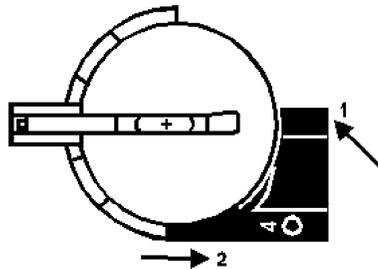
Type “Y” and press <Enter>. The system will reboot and you will once again see the initial diagnostics on the screen. If you wish to make any changes to the setup, press <Ctrl> <Alt> <Esc> or after memory testing is done.



❖ *Troubleshooting Checklist*

If you experience difficulty with the G586VPA system board, please refer to the checklist below. If you still cannot isolate the problem, please contact your dealer.

- 1) Check the jumper settings to ensure that the jumpers are properly set. If in doubt, refer to the “Board Configuration” section.
- 2) Verify that all HSIM modules are seated securely into the bank sockets.
- 3) Make sure that the HSIM modules are in the correct locations.
- 4) Check that all populated memory banks are filled with valid size HSIM modules.
- 5) If your board fails to function, place the board on a flat surface and seat all socketed components (gently press each component into the socket).
- 6) Check if the internal battery needs to be replaced. To remove the battery, push the black button downward (1) and the battery to the right (2).





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- 7) When using a VESA Master VL-Bus card, make sure that pins 2 and 3 of the jumper J2 are set to On (CPU write through mode). Load the PCI Configuration Setup with BIOS Setup Default values, then change "PCI Slot 1 or 2 used as PCI Master" to "PCI Slot 1 or 2 used as PCI Slave".

Note that the slots PCI3 and PCI4 support both Master and Slave functions. There are three Master slots on the mother board. The function of the third Master slot is shared, so only one of these slots, PCI1, PCI2 or VL-Bus, can support the Master function.

- 8) If you experience difficulty with the External Battery, check that pin 1 of External Battery Plug corresponds to pin 1 of J24.

When using an External Battery, do not choose any setting for jumper J23. (J23, pins 2-3 On, still supports CMOS Clean function.)

4-2 ◆ Troubleshooting Checklist



❖ *Appendix A: Types of Modules*

The G586VPA system board allows you to populate memory with 256Kx36, 512Kx36, 1Mx36, 2Mx36, 4Mx36 and 8Mx36 HSIM modules. The following modules have been tested with this board. Most untested brands will work but a few may fail to do so.

For HSIM 256Kx36 Modules

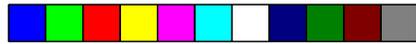
Brand	Chip Number
OKI	M51C256A-70

For HSIM 512Kx36 Modules

Brand	Chip Number
OKI	M514256B-70J

For HSIM 1Mx36 Modules

Brand	Chip Number
Toshiba	TC511000AJL
OKI	GT-1M*36B
Fujitsu	81C1000A-70



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For HSIM 2Mx36 Modules

Brand	Chip Number
OKI	M511000B

For HSIM 4Mx36 Modules

Brand	Chip Number
OKI	M514100A-70S

For HSIM 8Mx36 Modules

Brand	Chip Number
OKI	M514100AL-70K



❖ **Appendix B: System Error Report**

When the BIOS encounters an error that requires the user to correct something, either a beep code will sound or a message will be displayed in a box in the middle of the screen and a message **PRESS F1 TO CONTINUE**, **CTRL-ALT-ESC** or **DEL TO ENTER SETUP** will be shown in the information box at the bottom.

POST Beep

Currently, there is only one beep code in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST.

CMOS BATTERY HAS FAILED

CMOS battery is no longer functional. It should be replaced.

CMOS CHECKSUM ERROR

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.



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DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER

No boot device was found. Insert a system disk into Drive A and press <Enter>. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also be sure the disk is formatted as a boot device. Then reboot the system.

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP

Type of diskette drive installed in the system is different from the CMOS definition. Run setup to reconfigure the drive type correctly.

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also, be sure the correct hard drive type is selected in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER

Cannot initialize controller. Make sure the card is correctly and firmly installed in the bus. Be sure the correct hard drive type is selected in Setup. Also, check to see if any jumper needs to be set correctly on the hard drive.



FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT

Cannot find or initialize the floppy drive controller. Make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

KEYBOARD ERROR OR NO KEYBOARD PRESENT

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

MEMORY ADDRESS ERROR AT_

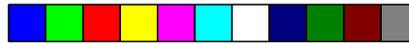
Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY PARITY ERROR AT_

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY SIZE HAS CHANGED SINCE LAST BOOT

Memory has been added or removed since the last boot. Enter Setup to read the new memory size into the memory fields.



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MEMORY VERIFY ERROR AT...

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

OFFENDING ADDRESS NOT FOUND

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

OFFENDING SEGMENT

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

PRESS A KEY TO REBOOT

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

PRESS F1 TO DISABLE NMI, F2 TO REBOOT

When BIOS detects a Non-Maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM PARITY ERROR - CHECKING FOR SEGMENT

Indicates a parity error in Random Access Memory.

SYSTEM HALTED, (CTRL-ALT-DEL) TO REBOOT...

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.



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❖ *Appendix C: Memory & I/O Maps*

Memory Address Map

Address	Name	Function
0000000 to 009FFFF	640K System Board RAM	System Board Memory
00A0000 to 00BFFFF	128K Video Display Memory	Reserved for Graphics Display Memory
00C0000 to 00DFFFF	128K I/O Expansion ROM	Reserved for ROM on I/O Adapter Card
00E0000 to 00FFFFFF	128K ROM on the System Board	System Board BIOS
0100000 to 7FFFFFFF	Maximum Memory 128M	System Board Memory

I/O Address Map

I/O Address	Function
000-01F	DMA Controller 1, 8237A-5
020-03F	Interrupt Controller 1, 8259A, Master
040-05F	Timer, 8254-2
060-06F	8742 (Keyboard Controller)
070-07F	Real-time Clock, NMI (Non-maskable Interrupt) Mask
080-09F	DMA Page Memory, 74LS612
0A0-0BF	Interrupt Controller 2, 8259A
0C0-0DF	DMA Controller 2, 8237A-5
0E8	Shadow RAM and Cache Control Bit
0F0	Clear Numeric Processor Extension Busy
0F1	Reset Numeric Processor Extension
0F8-0FF	Numeric Processor Extension
1F0-1F8	Fixed Disk
200-207	Game I/O
278-27F	Parallel Printer Port 2
2F8-2FF	Serial Port 2
300-31F	Prototype Card
360-36F	Reserved
378-37F	Parallel Printer Port 1
380-38F	SDLC, Bisynchronous 2
3A0-3AF	Bisynchronous 1
3B0-3BF	Monochrome Display and Printer Adapter
3C0-3CF	Reserved
3D0-3DF	Color/Graphics Monitor Adapter
3F0-3F7	Diskette Controller
3F8-3FF	Serial Port 1

Note:

The I/O address hex 000 to 0FF are reserved for the system board I/O. Hex 100 to 3FF are available on the I/O channels.

❖ Appendix D: PCI I/O Pin Assignments

Component Side	B	A	Solder Side
	-12V	-01 -	TRST#
	TCK	-02 -	+12V
	Ground	-03 -	TMS
	TDO	-04 -	TDI
	+5V	-05 -	+5V
	+5V	-06 -	INTA#
	INTB#	-07 -	INTC#
	INTD#	-08 -	+5V
	PRSNT1#	-09 -	Reserved
	Reserved	-10 -	+5V (I/O)
	PRSNT2#	-11 -	Reserved
	Ground	-12 -	Ground
	Ground	-13 -	Ground
	Reserved	-14 -	Reserved
	Ground	-15 -	RST#
	CLK	-16 -	+5V (I/O)
	Ground	-17 -	GNT#
	REQ#	-18 -	Ground
	+5V (I/O)	-19 -	Reserved
	AD[31]	-20 -	AD[30]
	AD[29]	-21 -	+3.3V
	Ground	-22 -	AD[28]
	AD[27]	-23 -	AD[26]
	AD[25]	-24 -	Ground
	+3.3V	-25 -	AD[24]
	C/BE[3]#	-26 -	IDSEL
	AD[23]	-27 -	+3.3V
	Ground	-28 -	AD[22]
	AD[21]	-29 -	AD[20]
	AD[19]	-30 -	Ground
	+3.3V	-31 -	AD[18]
	AD[17]	-32 -	AD[16]
	C/BE[2]#	-33 -	+3.3V
	Ground	-34 -	FRAME#
	IRDY#	-35 -	Ground
	+3.3V	-36 -	TRDY#
	DEVSEL#	-37 -	Ground
	Ground	-38 -	STOP#
	LOCK#	-39 -	+3.3V
	PERR#	-40 -	SDONE
	+3.3V	-41 -	SBO#
	SERR#	-42 -	Ground
	+3.3V	-43 -	PAR
	C/BE[1]#	-44 -	AD[15]
	AD[14]	-45 -	+3.3V
	Ground	-46 -	AD[13]
	AD[12]	-47 -	AD[11]
	AD[10]	-48 -	Ground
	Ground	-49 -	AD[09]
	AD[08]	-52 -	C/BE[0]#
	AD[07]	-53 -	+3.3V
	+3.3V	-54 -	AD[06]
	AD[05]	-55 -	AD[04]
	AD[03]	-56 -	Ground
	Ground	-57 -	AD[02]
	AD[01]	-58 -	AD[00]
	+5V (I/O)	-59 -	+5V (I/O)
	ACK64#	-60 -	REQ64#
	+5V	-61 -	+5V
	+5V	-62 -	+5V

❖ Appendix E: VL-Bus IO Pin Assignments

Component Side	B	A	Solder Side
	DAT00	-01-	DAT01
	DAT02	-02-	DAT03
	DAT04	-03-	GND
	DAT06	-04-	DAT05
	DAT08	-05-	DAT07
	GND	-06-	DAT09
	DAT10	-07-	DAT11
	DAT12	-08-	DAT13
	Vcc	-09-	DAT15
	DAT14	-10-	GND
	DAT16	-11-	DAT17
	DAT18	-12-	Vcc
	DAT20	-13-	DAT19
	GND	-14-	DAT21
	DAT22	-15-	DAT23
	DAT24	-16-	DAT25
	DAT26	-17-	GND
	DAT28	-18-	DAT27
	DAT30	-19-	DAT29
	Vcc	-20-	DAT31
	ADR31	-21-	ADR30
	GND	-22-	ADR28
	ADR29	-23-	ADR26
	ADR27	-24-	GND
	ADR25	-25-	ADR24
	ADR23	-26-	ADR22
	ADR21	-27-	Vcc
	ADR19	-28-	ADR20
	GND	-29-	ADR18
	ADR17	-30-	ADR16
	ADR15	-31-	ADR14
	Vcc	-32-	ADR12
	ADR13	-33-	ADR10
	ADR11	-34-	ADR08
	ADR09	-35-	GND
	ADR07	-36-	ADR06
	ADR05	-37-	ADR04
	GND	-38-	WBAC#
	ADR03	-39-	BE0#
	ADR02	-40-	Vcc
	nc	-41-	BE1#
	RESET#	-42-	BE2#
	DC#	-43-	GND
	MIO#	-44-	BE3#
	WR#	-45-	ADS#
	RDYRTN#	-48-	LRDY#
	GND	-49-	LDEV<>>#
	IRC9	-50-	LREQ<>>#
	BRDY#	-51-	GND
	BLAST#	-52-	LCNT<>>#
	ID0	-53-	Vcc
	ID1	-54-	ID2
	GND	-55-	ID3
	LCLK	-56-	ID4
	Vcc	-57-	LDEN#
	LBS16#	-58-	LEADS#

Note:

Side "A" of the connector is the add-in board component side.

Side "B" of the connector is the add-in board solder side.



Pin Name	No.	LBC ¹	LBC ²	LBM ³	LBT
ADR<31..2>	30	O	I	O	I
ADS#	1	O	I	O	I
BE<3..0>	4	O	I	O	I
BLAST#	1	O	I	O	I
BRDY#	1	I	O	I	O
DC#	1	O	I	O	I
DAT<31..0>	32	I/O	I/O	I/O	I/O
ID<4..0>	5	O	O	I	O
IRQ9	1	I	I	O	O
LBS16#	1	I	O	I	O
LCLK	1	O	O	I	I
LDEV<>># ⁴	1	I	N/A	N/A	O
LEADS#	1	O	I	O	I
LGNT<>># ⁴	1	O	O	I	N/A
LKEN#	1	O	O	I	I
LRDY#	1	I	I	N/A	O
LREQ<>># ⁴	1	I	I	O	O
MIO#	1	O	I	O	I
RDYRTN#	1	O	O	I	I
RESET#	1	O	O	I	I
WR#	1	O	I	O	I
WBACK#	1	O	O	I	N/A
(power)	8				
(ground)	14				
(reserved)	1				
Total per slot	112				

¹ Direction of signals for the LBC if the host CPU or a system I/O bus master is active.

² Direction of signals for the LBC if an LBM is active.

³ Direction of signals for any LBM while it owns the VL-Bus.

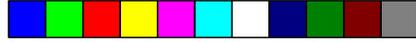
⁴ One unique signal per slot or device.

Note:

LBC = VL Local Bus Controller

LBM = VL Local Bus Master

LBT = VL Local Bus Target

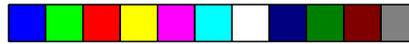


Green PCIWL-B/ISA System Board

❖ Appendix F: 16-Bit ISA I/O Pin Assignments

B		A
Grnd	- 01 -	-I/OChck
ResetDrv	- 02 -	SD7
+5VDC	- 03 -	SD6
IRQ9	- 04 -	SD5
-5VDC	- 05 -	SD4
DRQ2	- 06 -	SD3
-12VDC	- 07 -	SD2
OAS	- 08 -	SD1
+12VDC	- 09 -	SD0
Grnd	- 10 -	-I/OChrdy
-SEMEMW	- 11 -	AEN
-SEMEMR	- 12 -	SA19
-IOW	- 13 -	SA18
-IOR	- 14 -	SA17
-Dack3	- 15 -	SA16
DRQ3	- 16 -	SA15
-Dack1	- 17 -	SA14
DRQ1	- 18 -	SA13
-Refresh	- 19 -	SA12
CLK	- 20 -	SA11
IRQ7	- 21 -	SA10
IRQ6	- 22 -	SA9
IRQ5	- 23 -	SA8
IRQ4	- 24 -	SA7
IRQ3	- 25 -	SA6
-Dack2	- 26 -	SA5
TC	- 27 -	SA4
Bale	- 28 -	SA3
+5VDC	- 29 -	SA2
OCS	- 30 -	SA1
Grnd	- 31 -	SA0

D		C
-MemCS16	- 01 -	SBHE
-I/OCS16	- 02 -	LA23
IRQ10	- 03 -	LA22
IRQ11	- 04 -	LA21
IRQ12	- 05 -	LA20
IRQ13	- 06 -	LA19
IRQ14	- 07 -	LA18
-Dack0	- 08 -	LA17
DRQ0	- 09 -	-Memr
-Dack5	- 10 -	-Memw
DRQ5	- 11 -	SD08
-Dack6	- 12 -	SD09
DRQ6	- 13 -	SD10
-Dack7	- 14 -	SD11
DRQ7	- 15 -	SD12
+5VDC	- 16 -	SD13
-Master	- 17 -	SD14
Grnd	- 18 -	SD15



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❖ *Appendix G: Connector Pin Assignments*

Connector J1 Hardware Reset Connector

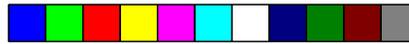
Pin	Function
On	Hardware Reset
Off	Normal

Connector J7 Speaker Connector

Pin	Function
1	Data
2	N.C.
3	GND
4	+5V

Connector J9 Keylock and Power LED Connector

Pin	Function
1	LED Anode (+)
2	LED Anode (-)
3	GND
4	Keylock
5	GND



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Connector J24 External Battery Input

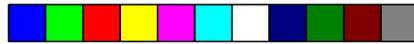
Pin	Function
1	Battery & Input
2	N.C.
3	GND
4	GND

Note:

When External Battery is used, connector J24 must not be set to position 1-2.

Before you connect the External Battery to connector J24, make sure that pin 1 of External Battery Plug corresponds to pin 1 of J24.

When using External Battery, do not choose any setting for jumper J23. (J23, pins 2-3 On, still supports CMOS Clean function.)



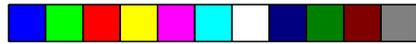
G586VPA

Connector CN1
Power Connector

Pin	Function
1	Power Good
2	+5V
3	+12V
4	-12V
5	GND
6	GND
7	GND
8	GND
9	-5V
10	+5V
11	+5V
12	+5V

Connector CN2
PS/2 Mouse Connector

Pin	Function
1	Mouse Data
2	N.C.
3	GND
4	VCC
5	Mouse Clock
6	N.C.



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Connector CN3
AT Keyboard Connector

Pin	Function
1	Keyboard Clock input
2	Keyboard Data Input
3	N.C.
4	GND
5	VCC

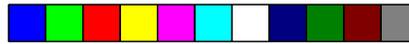
Connector CN4
PS/2 Keyboard Connector

Pin	Function
1	PS/2 Keyboard
2	N.C.
3	GND
4	VCC
5	PS/2 Keyboard Data Input
6	N.C.



❖ Appendix H: Award BIOS Hard Disk Table

Type	Size (MB)	Cylinders	Heads	Sectors	Write Precomp	Land Zone	Example Model
1	10	306	4	17	128	305	TEAC SD510, MMI 112, 5412
2	20	615	4	17	300	615	Seagate ST225, ST4026
3	30	615	6	17	300	615	
4	62	940	8	17	512	940	
5	46	940	6	17	512	940	
6	20	615	4	17	None	615	Seagate ST125, Tandon TM262
7	30	462	8	17	256	511	
8	30	733	5	17	None	733	Tandon TM 703
9	112	900	15	17	None	901	
10	20	820	3	17	None	820	
11	35	855	5	17	None	855	
12	49	855	7	17	None	855	
13	20	306	8	17	128	319	Disctron 526, MMI M125
14	42	733	7	17	None	733	
15				(Reserved)			
16	20	612	4	17	0	663	Microscience HH725, Syquest 3250, 3425
17	40	977	5	17	300	977	
18	56	977	7	17	None	977	
19	59	1024	7	17	512	1023	
20	30	733	5	17	300	732	
21	42	733	7	17	300	732	
22	30	306	5	17	300	733	Seagate ST4038
23	10	977	4	17	0	336	
24	40	1024	5	17	None	976	Seagate ST4051
25	76	1224	9	17	None	1023	Seagate ST4096
26	71	1224	7	17	None	1223	Maxtor 2085
27	111	1224	11	17	None	1223	Maxtor 2140, Priam S14
28	152	1024	15	17	None	1223	Maxtor 2190, Priam S19



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Type	Size (MB)	Cylinders	Heads	Sectors	Write Precomp	Land Zone	Example Model
29	68	1024	8	17	None	1023	Maxtor 1085, Micropolis 1325
30	98	918	11	17	None	1023	Maxtor 1105 1120, 4780
31	88	925	11	17	None	1023	Maxtor 1170
32	69	1024	9	17	None	926	CDC 9415
33	85	1024	10	17	None	1023	
34	102	1024	12	17	None	1023	
35	110	1024	13	17	None	1023	
36	119	1024	14	17	None	1023	
37	17	1024	2	17	None	1023	
38	136	1024	16	17	None	1023	
39	114	918	15	17	None	1023	Maxtor 1140, 4380
40	40	820	6	17	None	820	Seagate ST251
41	42	1024	5	17	None	1023	Seagate 4053 Miniscribe 3053/6053
42	65	1024	5	26	None	1023	Miniscribe 3053/6053 RLL
43	40	809	6	17	None	852	Miniscribe 3650
44	61	809	6	26	None	852	Miniscribe 3675 RLL
45	100	776	8	33	None	775	Conner CP3104
46	203	684	16	38	None	685	Conner CP3204
User							



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