



G486-EVB
Rev. C
System Board
User's Manual



-D24350415-





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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 to an outlet on a circuit different from that to which the receiver is connected, or*
- *Consult the dealer or an experienced radio TV technician for help.*

Notice:

1. *Any 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.*



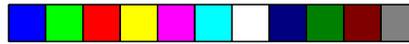
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Green 486 VL-Bus System Board

❖ *Introduction*

The G486-EVB is a green system board that meets the Environmental Protection Agency's Green PC requirements. It reduces energy consumption to 15 Watts or less by automatically turning off peripherals or the entire system, when not in use.

The G486-EVB may be equipped with 5V or 3.3V CPU. It accommodates all of the Intel 486 family of CPUs including the energy saving SL Enhanced CPUs. It will also support the AMD and Cyrix CPUs.

The G486-EVB uses 256KB x 36, 1MB x 36 and 4MB x 36 HSIM modules. The memory can be configured to six different sizes from 1MB to 64MB. In addition, the G486-EVB is equipped with three 32-bit VL-Bus, and six 16-bit and one 8-bit ISA expansion slots.

Features and Specifications

Processor

Intel 486SX/SX-S/DX/DX2/DX-S/DX2-S/DX4 (full series) and Pentium OverDrive

AMD 486DX/DX2/DXL/DXL2 (full series) /
DX2 NV8T/DX4 NV8T/DX2 SV8B/
DX4 SV8B

Cyrix 486S/DX/DX2 (full series) /DX2V/
DX4V/M1SC



G486-EVB

Chipset

- EFAR - EC802GL: system and cache controller
EC100G: data buffer

Architecture

- VLB/ISA

Energy Efficient Design

- Supports 3.3V/3.45V/3.6V/4V/5V CPUs (jumper selectable)
- Ready for Intel SL Enhanced CPUs
- Supports system power management
- Supports CPU stopped clock
- Supports optional external power management switch
- Supports power saving video mode
- Four power-saving stages: Ready, Doze, Standby and Suspend
- Built-in hardware auto-transition mechanism
- Microsoft APM supported

BIOS

- Award system BIOS
- Supports IDE HDDs larger than 528MB under DOS (LBA mode only)
- Flash EPROM (option)

Cache Memory

- 128KB, 256KB or 512KB direct map write-back or write-through cache subsystem
- Uses 32KBx8, 64KBx8 or 128KBx8 SRAM



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Memory Onboard

- Up to 64MB
- Four 72-pin SIMM sockets
- Supports single and/or double density SIMMs
- Supports 256KBx36, 512KBx36, 1MBx36, 2MBx36, 4MBx36 or 8MBx36 SIMMs

Expansion Slots

- Three VESA VL-Bus slots
- Six 16-bit ISA slots
- One 8-bit ISA slot

Slot Limitations:

Due to the height of the heat sink, once the processor is in place, you cannot install full-length add-in cards in ISA slot connectors J4/J10, J5/J11 and J6/J12. You may still install half-length or shorter cards in those slots.

ZIF Socket

- 237-pin ZIF socket (Intel Socket 3)

Board Dimensions

- 22cm (8.58") x 25cm (9.75")
Baby AT form factor

Package Checklist

The G486-EVB package contains the following items:

- The G486-EVB system board
- One G486-EVB user's manual

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





❖ *Installation Overview*

This chapter summarizes the steps in installing the G486-EVB 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 page 2-3 for the number and type of High Density Single In-line Memory (HSIM) modules needed.

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 placing the unit on 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 G486-EVB system board carefully.



Handling the System Board

It is quite easy to inadvertently damage your system board even before installing it in 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 that no static build-up is present.

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) Do all preparation work on a static-free surface with components facing up.
- 3) 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.
- 4) Avoid touching the pins or contacts on all modules and connectors. Hold modules and connectors by their edges.

Warning:

Electrostatic discharge (ESD) can damage your upgrade processor, disk drives, add-in boards, and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.





G486-EVB

Hardware Installation

Memory Installation

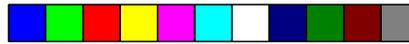
The G486-EVB system board can support 1MB to 64MB of memory using HSIMM. HSIMM is an acronym for High Density Single In-line Memory Module.

A HSIMM consists of RAM chips soldered onto a small circuit board. A HSIMM connects to the system board via a 72-pin card-edge connector.

The HSIMM sockets are divided into four banks on the system board. The G486-EVB system board uses 256K x 36, 512K x 36, 1M x 36, 2M x 36, 4M x 36 and 8M x 36 HSIM modules.

A list of tested memory brands and speeds is given in Appendix A.

You will need 1 to 4 pieces of HSIM modules, depending on the amount of memory you intend to install. Your system board can be configured with 1MB, 4MB, 8MB, 16MB, 32MB or 64MB of onboard memory.



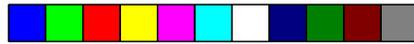
Green 486 VL-Bus System Board

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

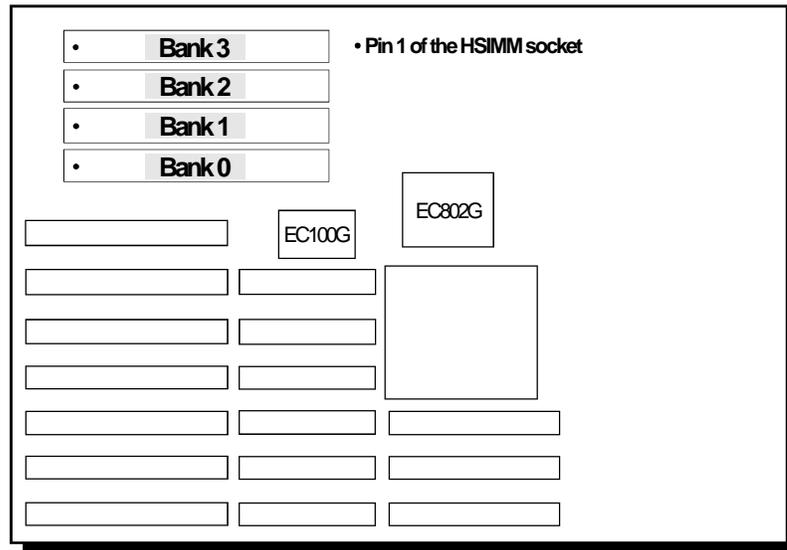
The following table summarizes the bank locations and modules needed for the corresponding memory sizes. Each bank consists of one HSIMM socket.

Memory Size	Bank 0	Bank 1	Bank 2	Bank 3
1MB	256K x 36	-	-	-
2MB	512K x 36	-	-	-
4MB	256K x 36	256K x 36	256K x 36	256K x 36
4MB	512K x 36	-	512K x 36	-
4MB	1M x 36	-	-	-
8MB	1M x 36	1M x 36	-	-
8MB	2M x 36	-	-	-
16MB	1M x 36	1M x 36	1M x 36	1M x 36
16MB	2M x 36	-	2M x 36	-
16MB	4M x 36	-	-	-
32MB	4M x 36	4M x 36	-	-
64MB	4M x 36	4M x 36	4M x 36	4M x 36

2-4 ♦ Installation Overview



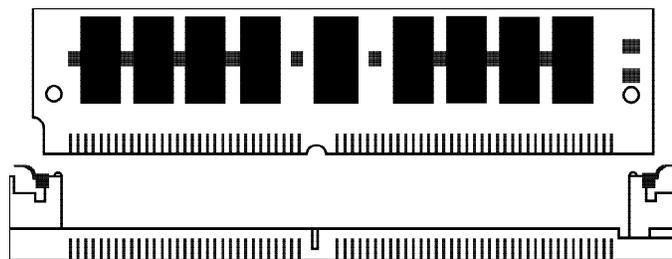
G486-EVB



Locations of the HSIMM Sockets on the G486-EVB System Board

Installing the Modules

HSIMMs simply snap into a socket on the system board. Pin 1 of the HSIMM must correspond with Pin 1 of the socket.



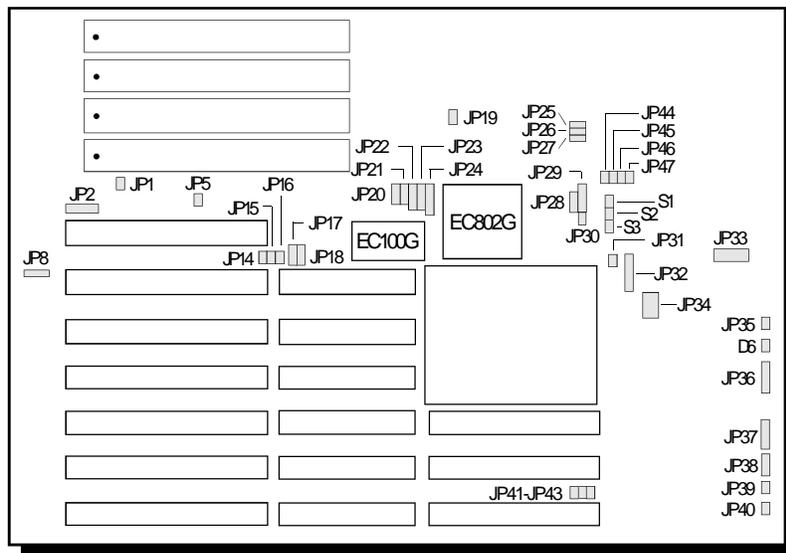


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1. Position the HSIM module above the socket with the “notch” in the module aligned with the “key” on the socket.
2. Seat the module at an angle into the bank. Make sure it is completely seated. Tilt the module upright until it locks in place in the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

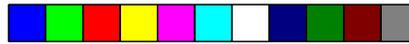
Board Configuration

The G486-EVB is designed with jumpers to configure the board. Make sure that the jumpers are set correctly before installing the system board into your system unit.



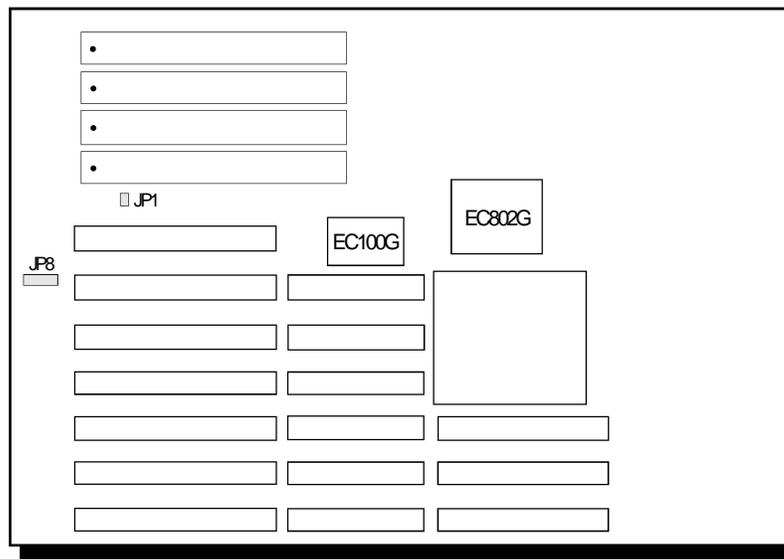
**Locations of Jumpers and Connectors
on the G486-EVB System Board**





Jumper Settings

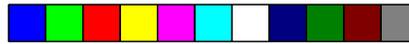
Jumper Settings for Flash EPROM and Internal Battery



Locations of Jumpers JP1 and JP8
on the G486-EVB System Board

Jumper JP1 EPROM Type

Jumper JP1 should be set to match the type of EPROM installed on the G486-EVB system board.



Green 486 VL-Bus System Board



On: Flash EPROM 28F010

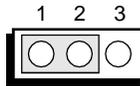


Off: EPROM 27512
(Default)

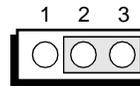
Jumper JP8

Internal Battery Select

The G486-EVB comes with an internal battery. If you wish to install an external battery, set JP8 pins 1 and 2 to On.



1-2 On:
External Battery Enabled
(Default)



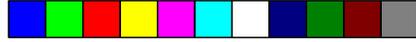
2-3 On:
Internal Battery Enabled

Note:

If you enable the external battery, you must connect an external battery to connector JP2 or your system will lose its CMOS settings when powered off.

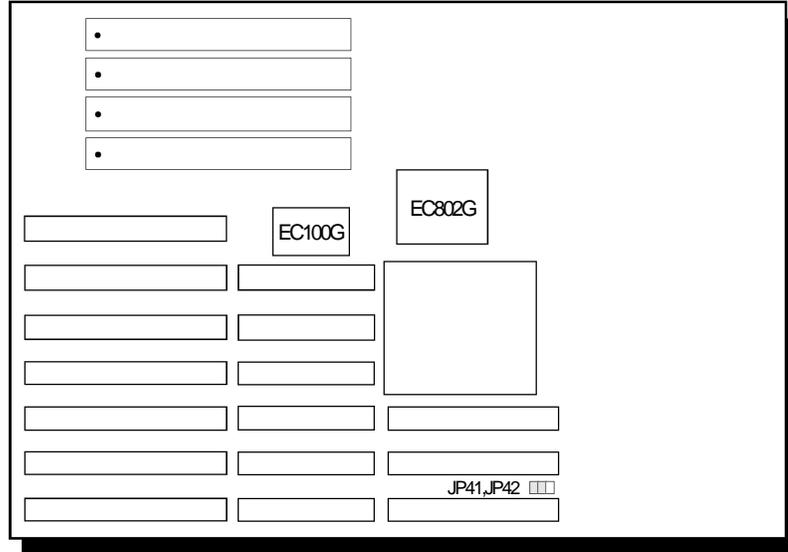
The jumper below is for factory testing only and should always be set to its default configuration. Reconfiguring this jumper will cause problems with your G486-EVB system board.

Jumper JP14 - On

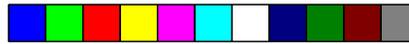


G486-EVB

Jumper Settings for VL-Bus Add-in Boards



**Locations of Jumpers JP41 and JP42
on the G486-EVB System Board**



Green 486 VL-Bus System Board

Jumper JP41

High Speed Mode for VL-Bus Board

Set Jumper JP41 to Off only 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 JP41 to On; otherwise, a system error may occur.



On: Write One Wait State
(Default)



Off: Write Zero Wait State

Jumper JP42

CPU Speed for VL-Bus Board

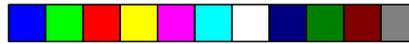
If a VL-Bus board is installed in the G486-EVB system board, Jumper JP42 must be set to On if the CPU speed is greater than 33MHz. Set JP42 to Off if the CPU speed is less than or equal to 33MHz.



On: CPU Speed > 33MHz
(Default)

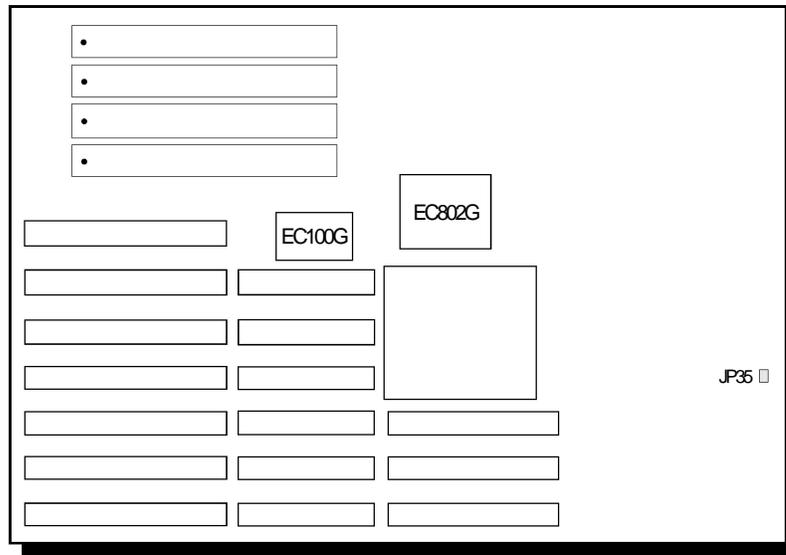


Off: CPU Speed ≤ 33MHz



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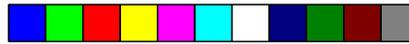
Jumper Settings for Light and Deep Green



Location of Jumper JP35 on the G486-EVB System Board

Jumper JP35 Light/Deep Green Select

The different types of CPUs supported by the G486-EVB allow you to select from two different energy saving modes. If you have a standard Intel 486DX, SX, OverDrive Processor or AMD 486DXL, the G486-EVB will run in Light Green mode. If you have an energy saving SL Enhanced Intel 486DX, 486DX4 or Cyrix Cx486S/Cx486S2 CPU, then the G486-EVB will run in Deep Green mode. Set Jumper JP35 according to the type of CPU installed on the board.



Green 486 VL-Bus System Board



On: Light Green
 486DX, 486SX,
 Intel486™ OverDrive
 Processor, AMD 486DXL



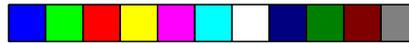
Off: Deep Green
 SL Enhanced Intel486™ DX,
 486DX4, Cyrix Cx486S/Cx486S2
 (Default)

Cache Configuration

The G486-EVB system board can be configured to three different cache sizes: 128KB, 256KB and 512KB. 128KB of cache memory is the default size. Either 32K x 8 (20ns) or 128K x 8 (20ns) SRAM chips are used for cache depending on the size of cache desired. One 8K x 8 or 32K x 8 (20ns) SRAM is needed for tag RAM to store the cacheable addresses (refer to the table below). The location of the SRAM sockets on the system board is shown on the next page.

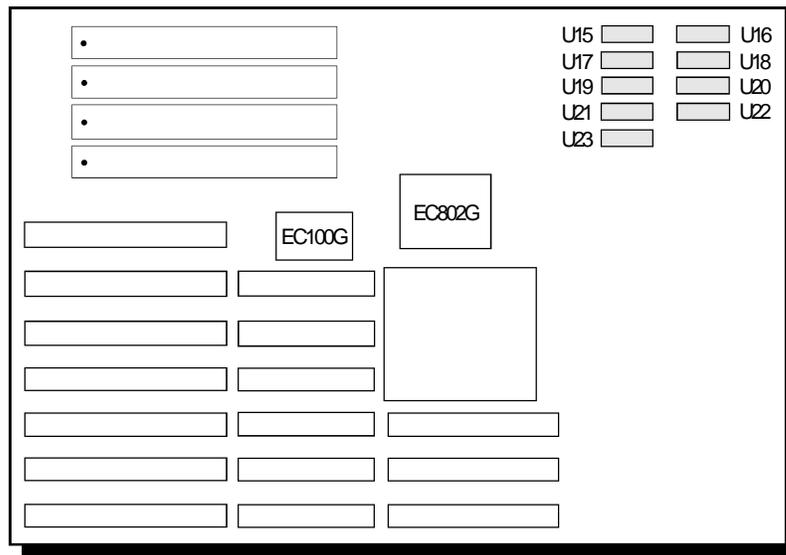
Cache Size	U15/U17/U19/U21	U16/U18/U20/U22	U23
128KB*	32K x 8 (20ns)	None	8K x 8 (20ns)
256KB	32K x 8 (20ns)	32K x 8 (20ns)	32K x 8 (20ns)
512KB	128K x 8 (20ns)	None	32K x 8 (20ns)

* Default setting

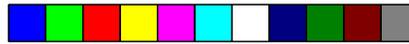


Note:

When the G486-EVB is equipped with 128KB cache, cacheable memory is limited to 32MB. Any memory over 32MB will be non-cacheable.

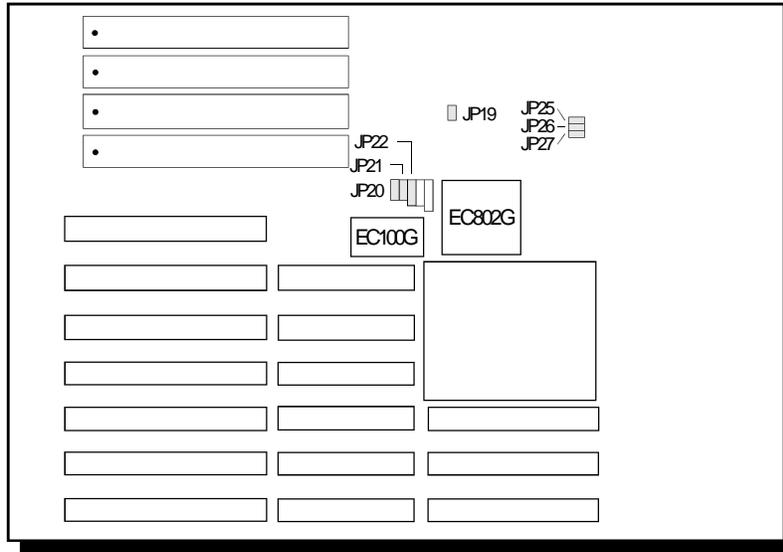


Locations of the SRAMs on the G486-EVB System Board



Green 486 VL-Bus System Board

Jumper Settings for Cache Memory



Locations of Jumpers JP19-JP21 and JP25-JP27 on the G486-EVB System Board

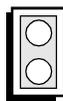
Jumpers	CacheMemorySize		
	128KB*	256KB	512KB
JP19	Off	Off	On
JP20	2-3On	1-2On	2-3On
JP21	2-3On	1-2On	1-2On
JP25	On	On	On
JP26	On	On	On
JP27	Off	On	On

*Default setting

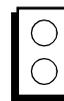


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JP19

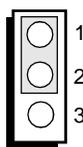


On

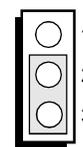


Off

JP20 or JP21

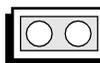


1-2: On

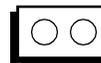


2-3: On

JP25, JP26 or JP27



On



Off

CPU Installation and Upgrade

The G486-EVB is equipped with a 237-pin Zero Insertion Force (ZIF) socket at location U29 of the system board, to make upgrading flexible and easy. Make sure the jumpers are set correctly before applying power, or you may damage the CPU or system board.

The G486-EVB system board supports three VESA VL-Bus slots. VESA-1 and VESA-2 are master slots and VESA-3 is a slave slot with all CPUs except Cyrix. When the system board is equipped with a Cyrix CPU, VESA-1 is the only master slot and VESA-2 becomes a second slave slot.

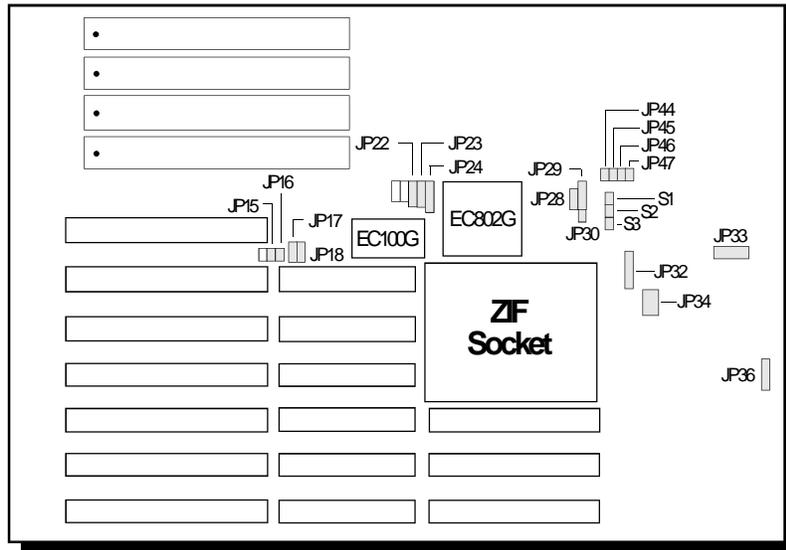


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Note:

Level 1 write-back requires VL-Bus mastering cards to comply with VESA specification version 2.0.

Jumper Settings for CPUs



Locations of Jumpers JP15-JP18, JP22-JP24, JP28-JP30, JP32-JP34, JP36, JP44-47, S1, S2 and S3 on the G486-EVB System Board

Caution:

You will need to change the CPU-type jumper settings. (Please refer to the following pages of the manual.)

Before proceeding with the upgrade, take note of the following: The microprocessor and heat sink may be hot if the system has been running. To avoid the possibility of a burn, power the system off and let the processor and heat sink cool for 10 minutes.

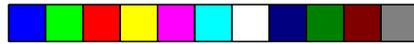


Write-Back CPUs Special Notice

The following CPUs support Internal Cache Write-Back Mode: Intel Write-Back CPU, Intel Pentium OverDrive and Cyrix CPU. If your CPU is not a Write-Back CPU, you may skip over this part of the manual.

Before proceeding with the following installation, make sure your CPU is a Write-Back CPU. Please follow through the steps below:

- Step 1:*** Adjust the jumper settings by the type of your CPU (refer to the pages between page 2-18 and page 2-49).
- Step 2:*** Complete the hardware installation (refer to the pages from page 2-50 through page 2-55).
- Step 3:*** Power up your system, enter the CMOS Setup Utility by pressing (refer to page 3-1 and page 3-2).
- Step 4:*** Use arrow keys to highlight the item "CHIPSET FEATURES SETUP" (refer to page 3-7).
- Step 5:*** Select the item "CPU Inter. Cache Policy", and change it to "WRITE-BK".
- Step 6:*** Save all your changes and exit Setup Utility (refer to page 3-14).
- Step 7:*** Reboot your system.

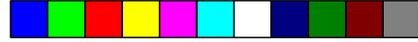


Green 486 VL-Bus System Board

Warning:

Most of these Write-Back CPUs can be set as Internal Cache Write-Back Mode or Internal Cache Write-Through Mode. If you adjust the CPU jumper settings to Write-Through Mode (WT), you must change the "CPU Inter. Cache Policy" to WRITE-TH at the same time. If you adjust the CPU jumper settings to Write-Back Mode (WB), you also must change the "CPU Inter. Cache Policy" to WRITE-BK at the same time. Both the system board and CPU will be damaged if you fail to do so.



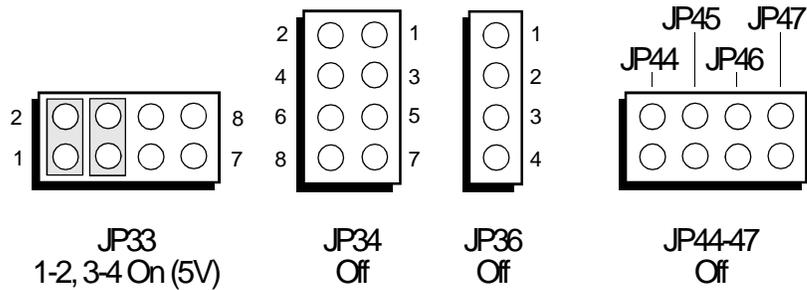
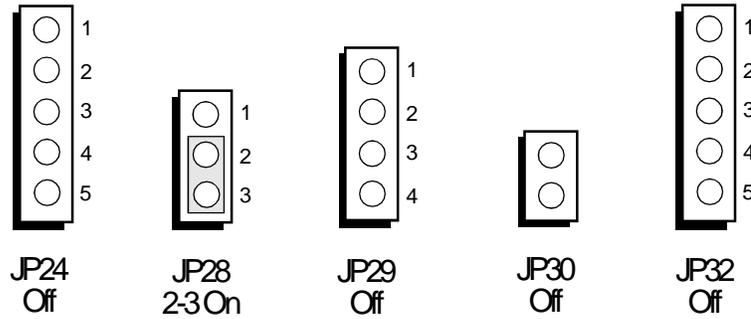
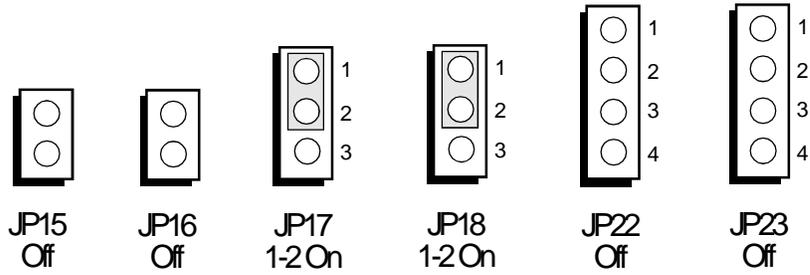


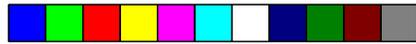
G486-EVB

Jumpers JP15-JP18, JP22-JP24, JP28-JP30, JP32-JP34, JP36 and JP44-47

CPU Type Select

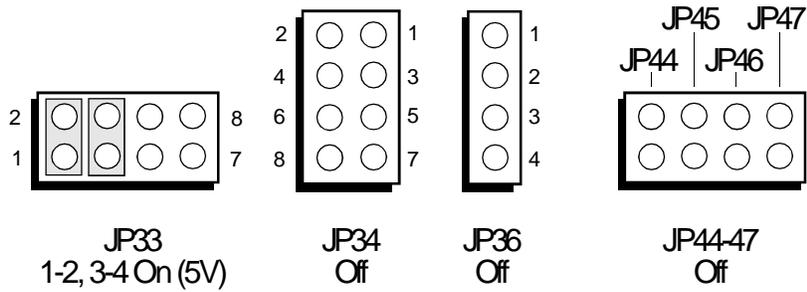
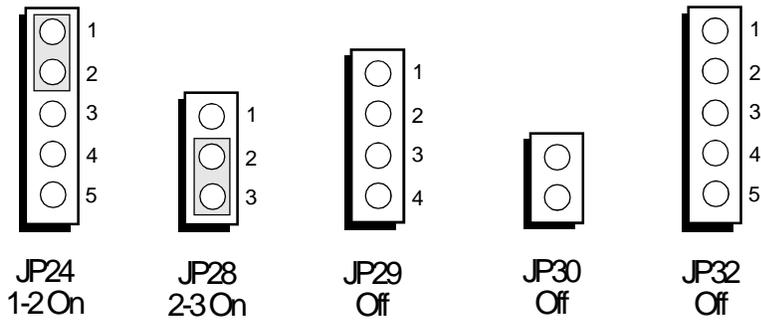
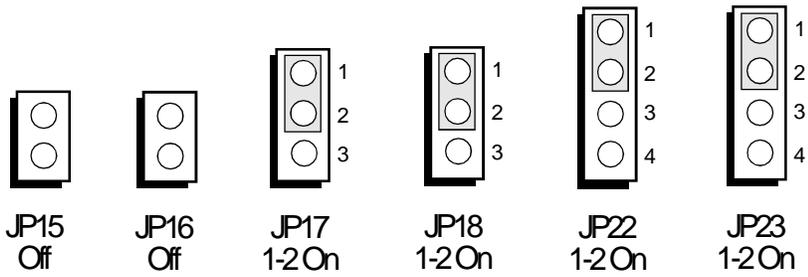
Intel 486SX



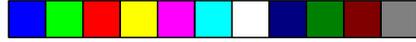


Green 486 VL-Bus System Board

Intel 486SX-S

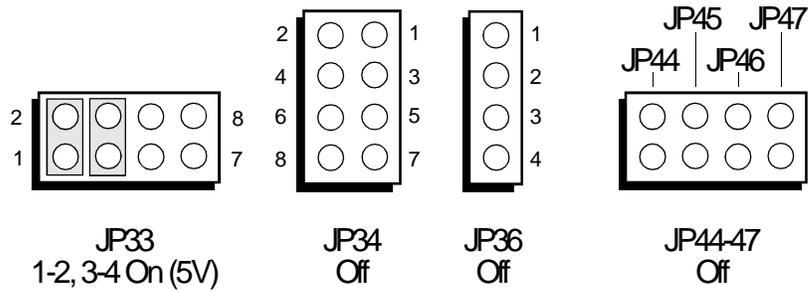
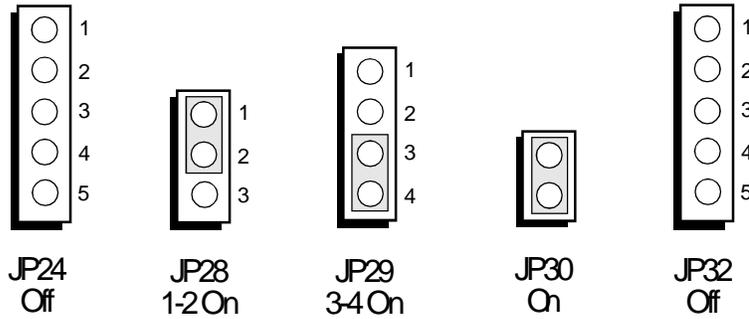
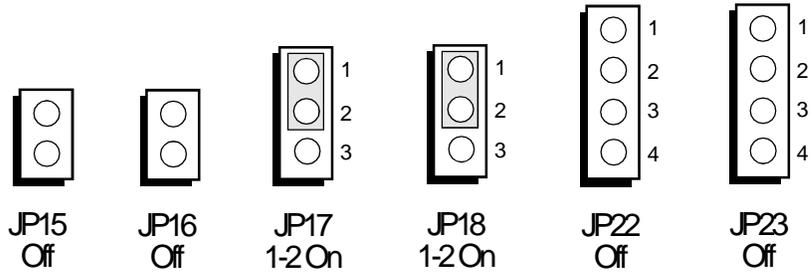


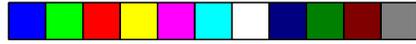
2-20 ♦ Installation Overview



G486-EVB

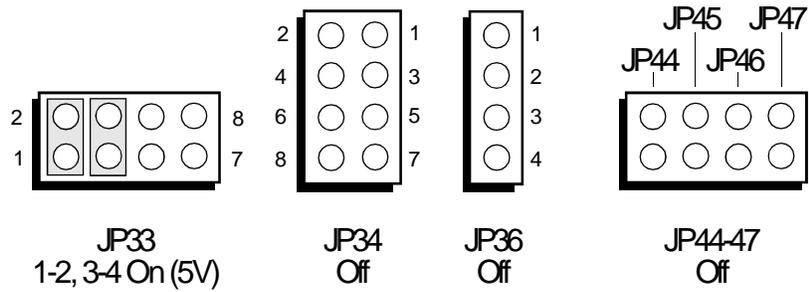
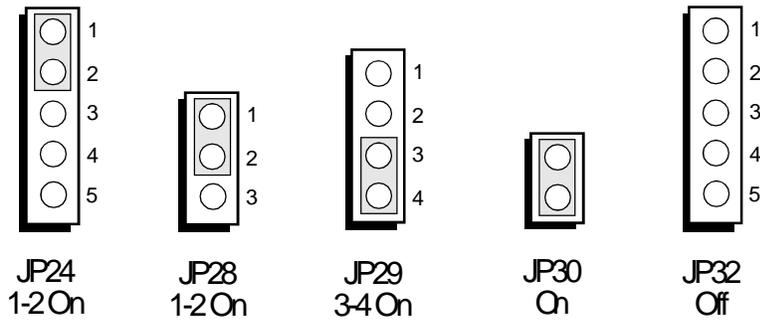
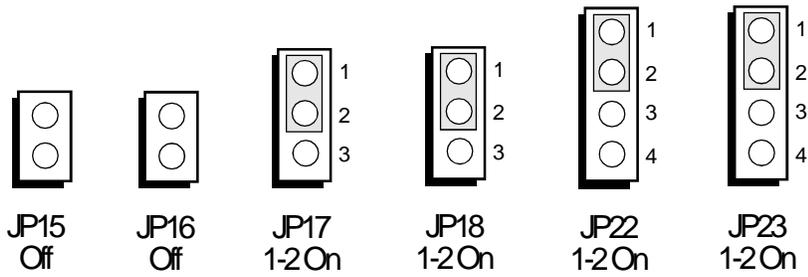
Intel 486DX/DX2



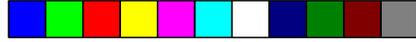


Green 486 VL-Bus System Board

Intel 486DX/DX2-S

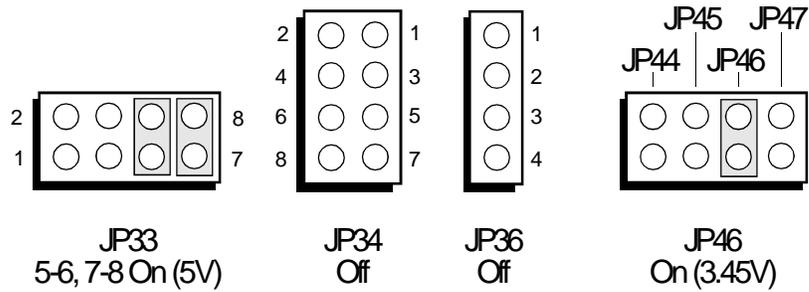
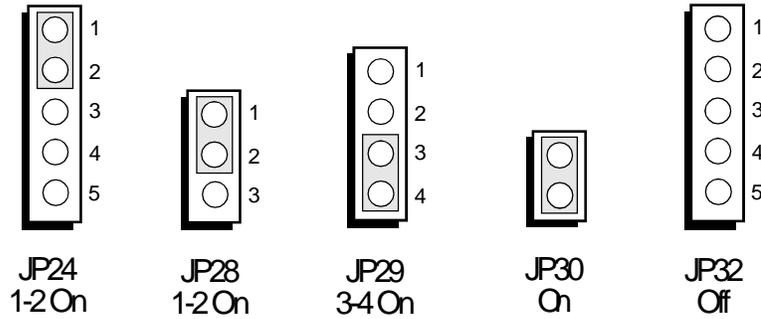
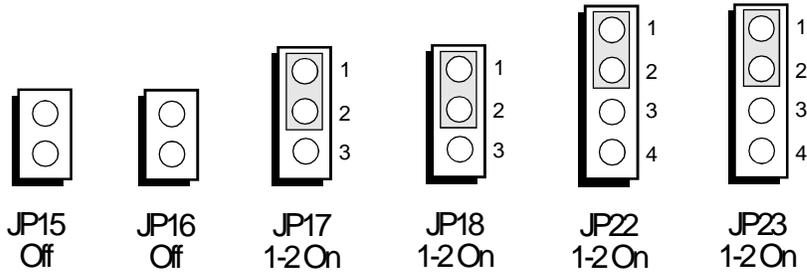


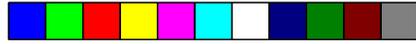
2-22 ♦ Installation Overview



G486-EVB

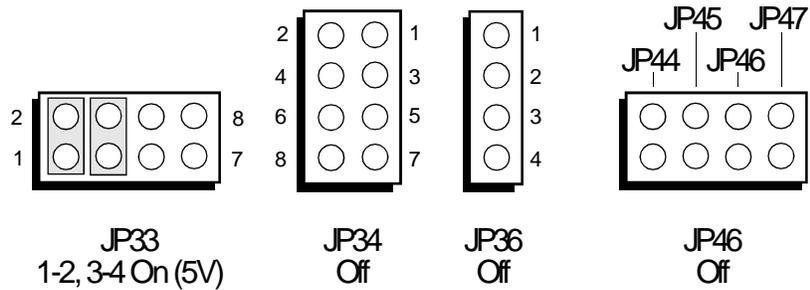
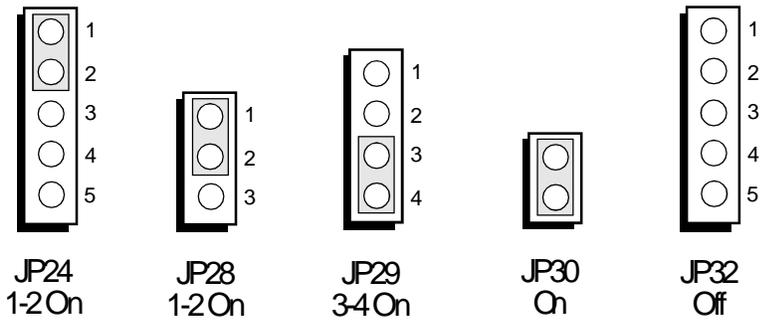
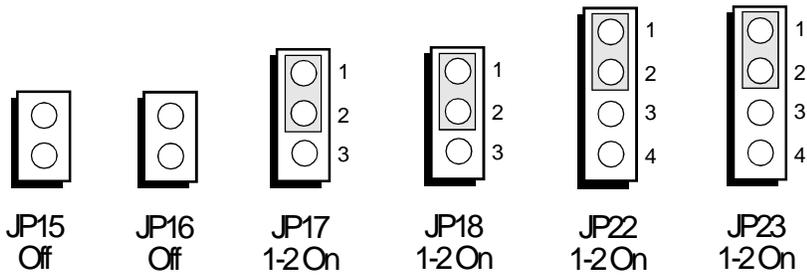
Intel 486DX4 (75/100)



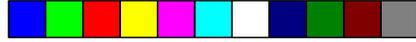


Green 486 VL-Bus System Board

Intel DX4 OverDrive (5V)

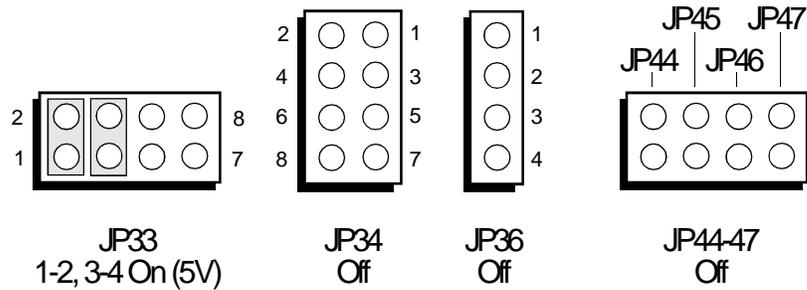
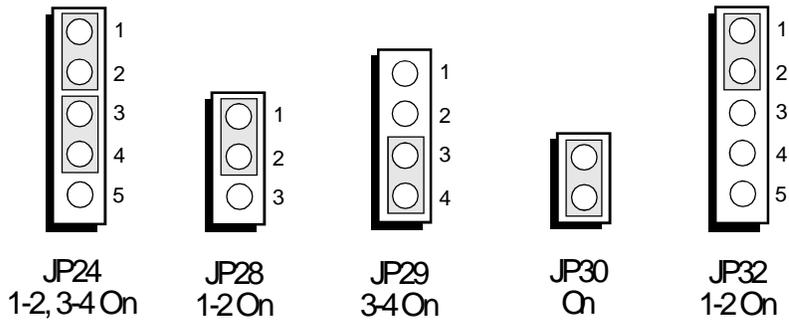
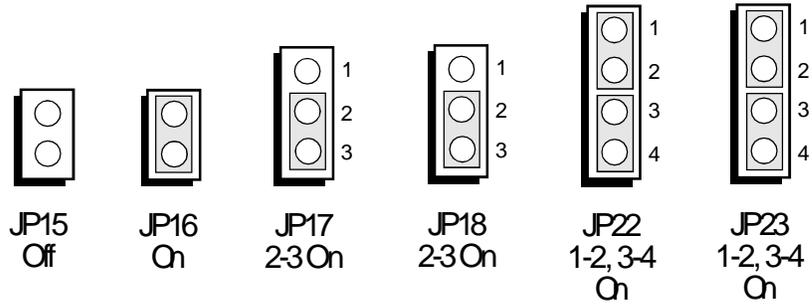


2-24 ♦ Installation Overview

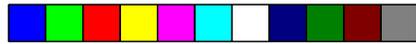


G486-EVB

Intel Write-back 486 CPU (5V)

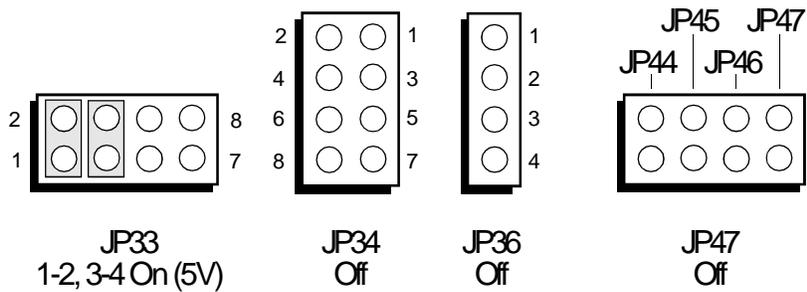
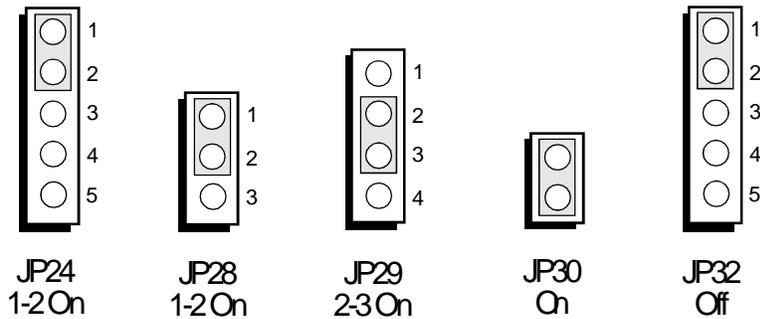
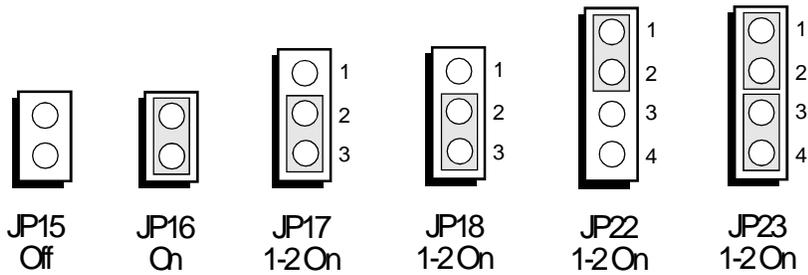


Installation Overview ◆ 2-25



Green 486 VL-Bus System Board

Intel Pentium OverDrive (Internal Cache Write-Back Mode)

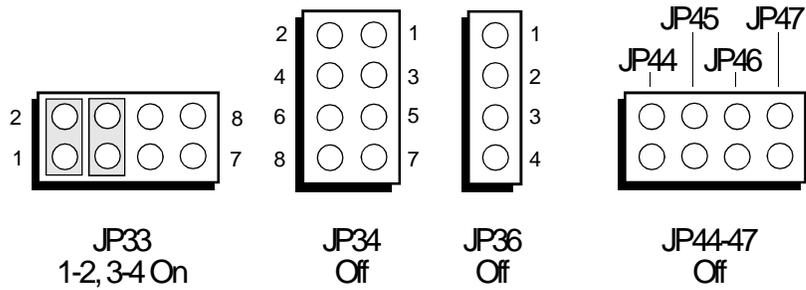
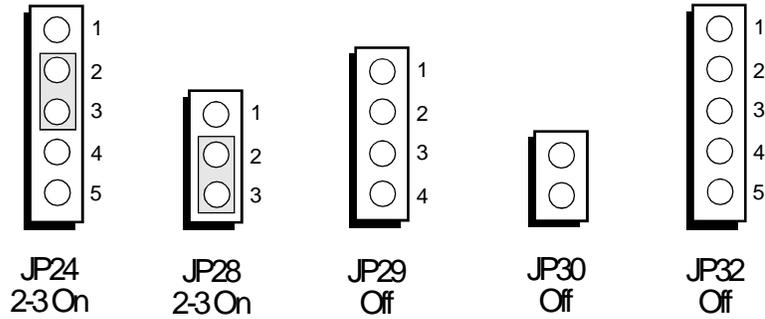
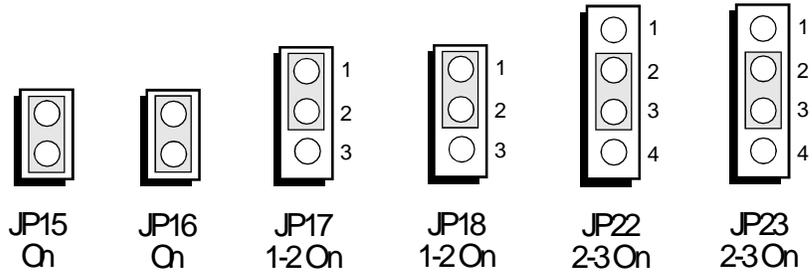


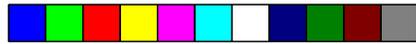
2-26 ♦ Installation Overview



G486-EVB

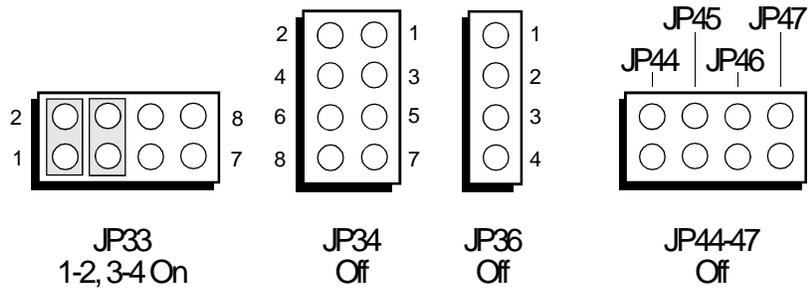
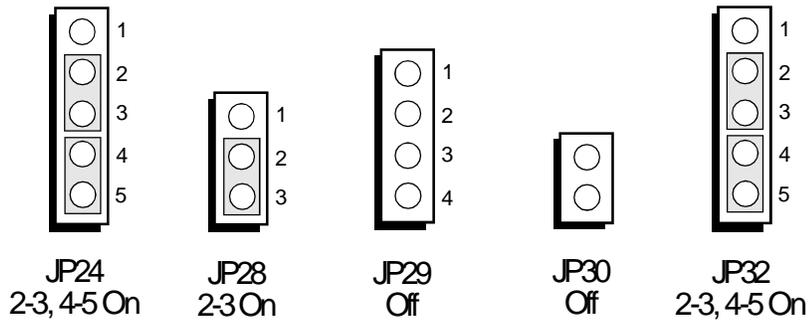
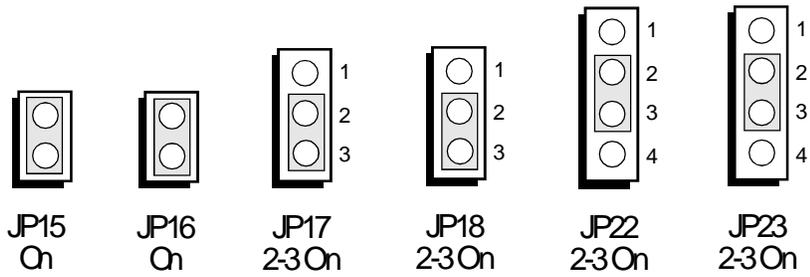
Cyrix 486SX (WT)



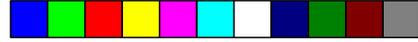


Green 486 VL-Bus System Board

Cyrix 486SX (WB)

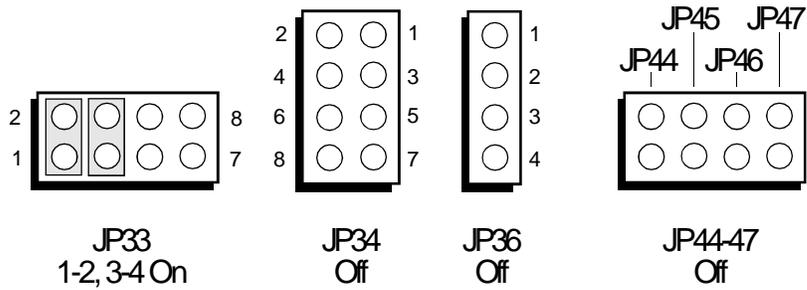
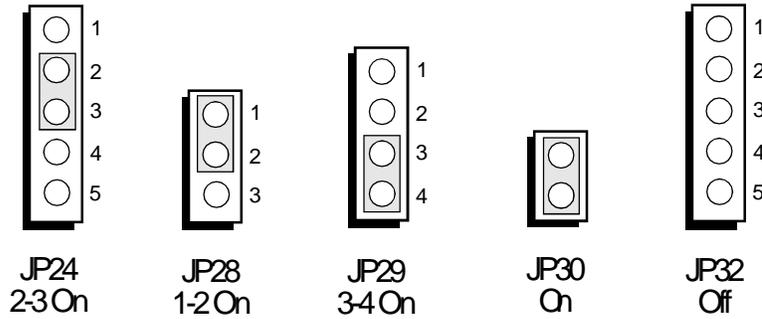
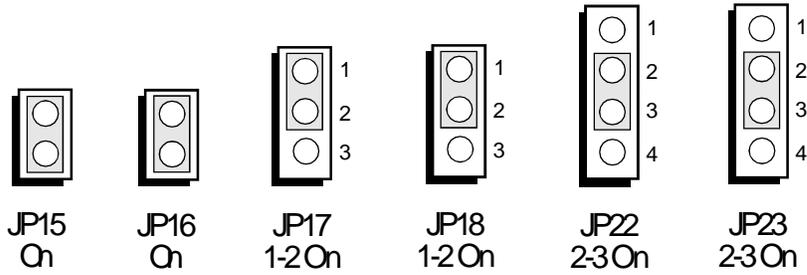


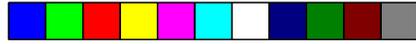
2-28 ♦ Installation Overview



G486-EVB

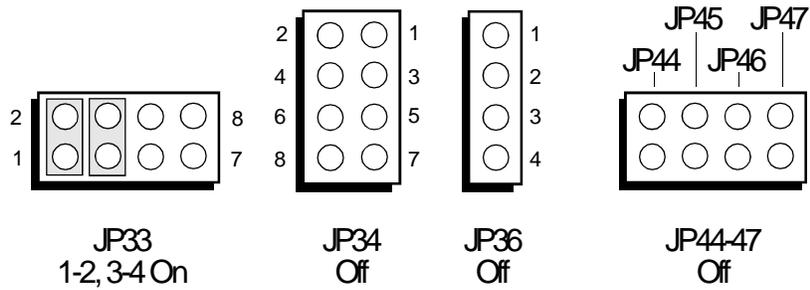
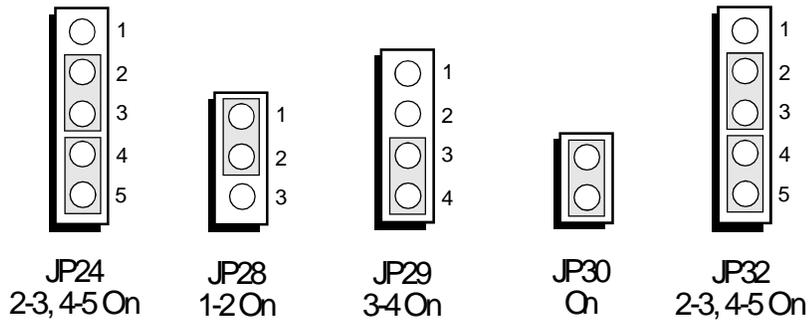
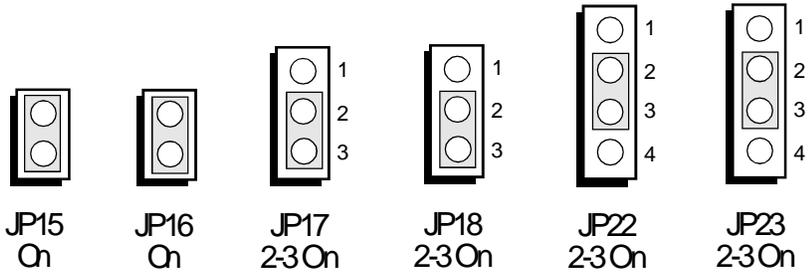
Cyrix 486DX/DX2 (WT)



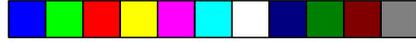


Green 486 VL-Bus System Board

Cyrix 486DX/DX2 (WB)

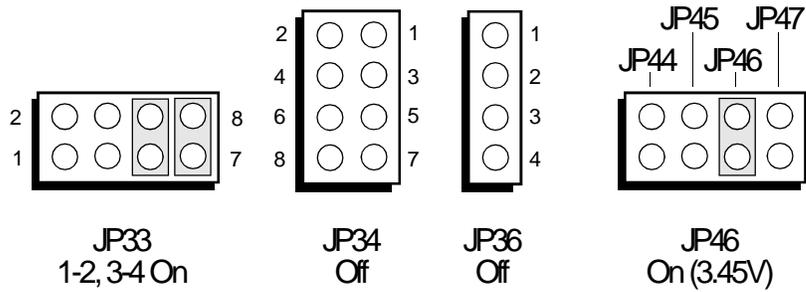
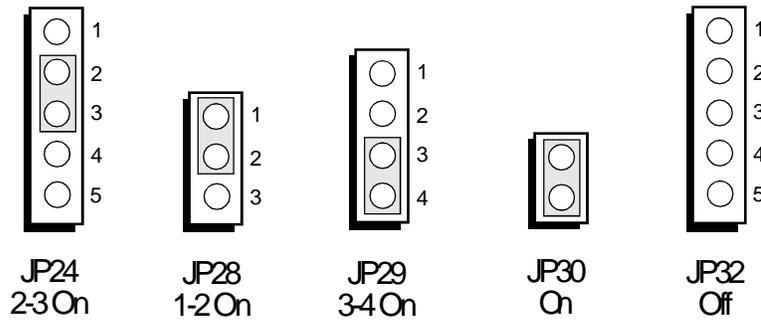
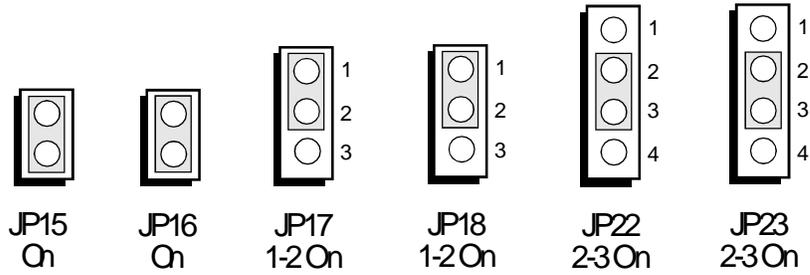


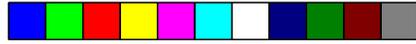
2-30 ♦ Installation Overview



G486-EVB

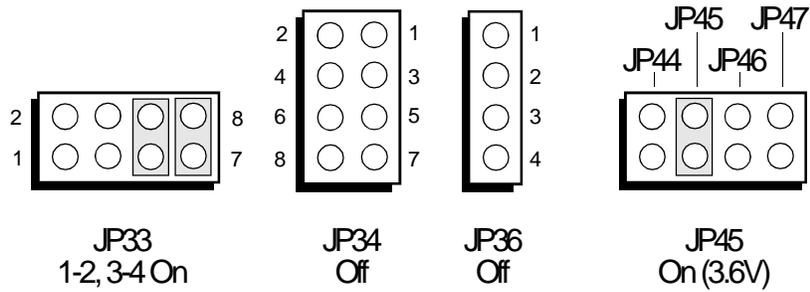
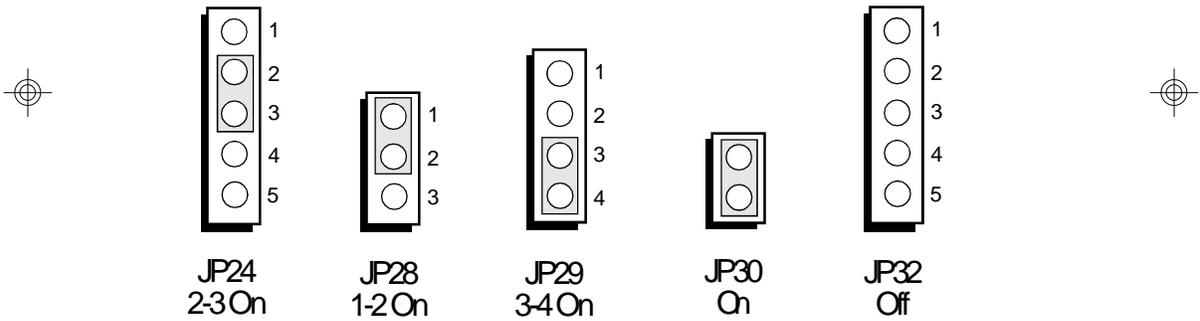
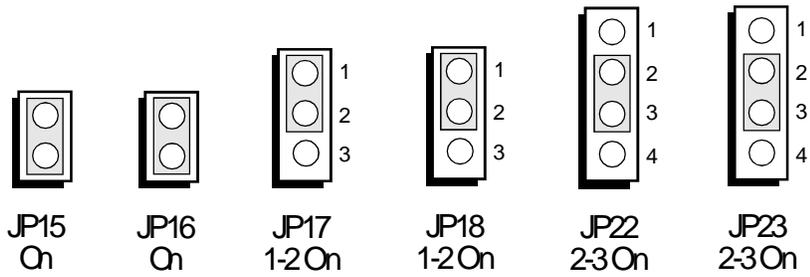
Cyrix 486DX2V-50 (WT)



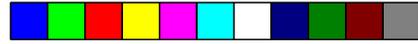


Green 486 VL-Bus System Board

Cyrix 486DX2V-66 (WT)

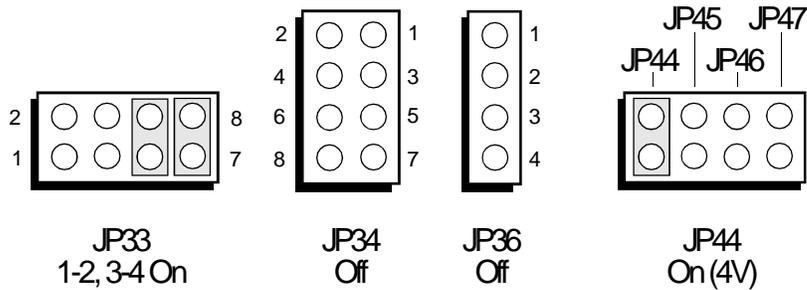
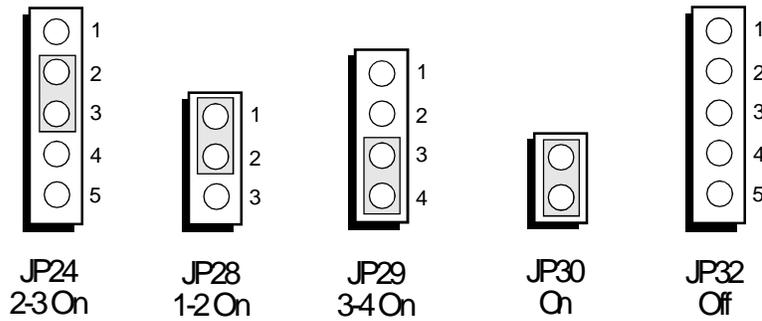
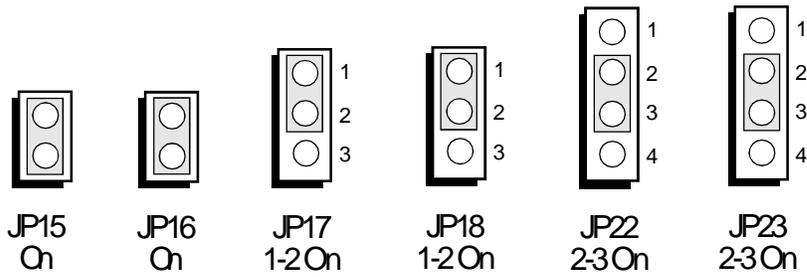


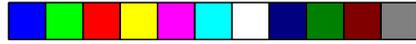
2-32 ♦ Installation Overview



G486-EVB

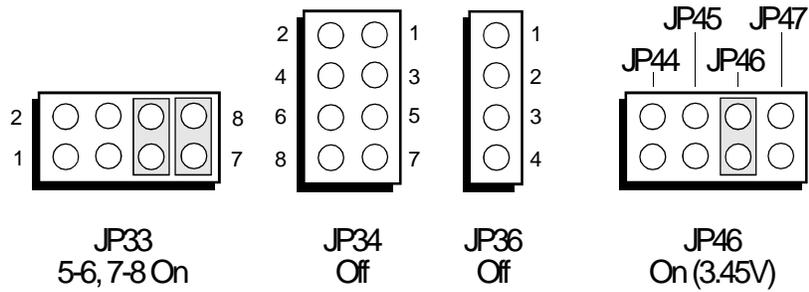
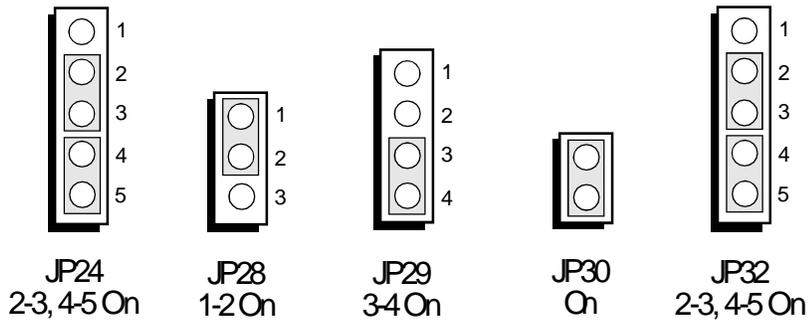
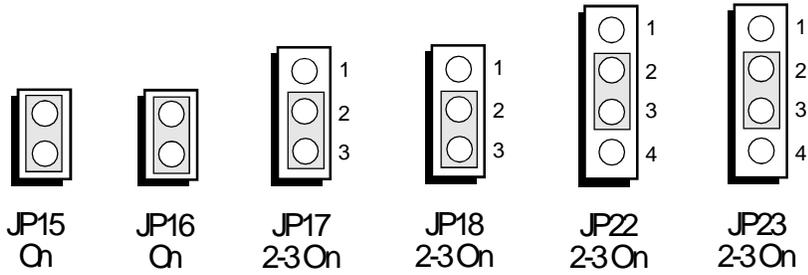
Cyrix 486DX2V-80 (WT)



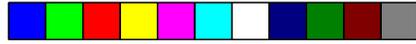


Green 486 VL-Bus System Board

Cyrix 486DX2V-50 (WB)

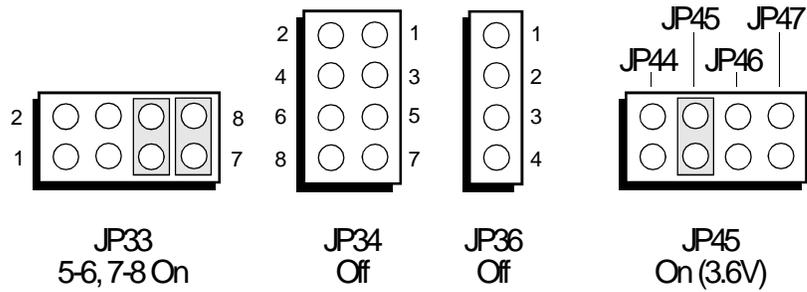
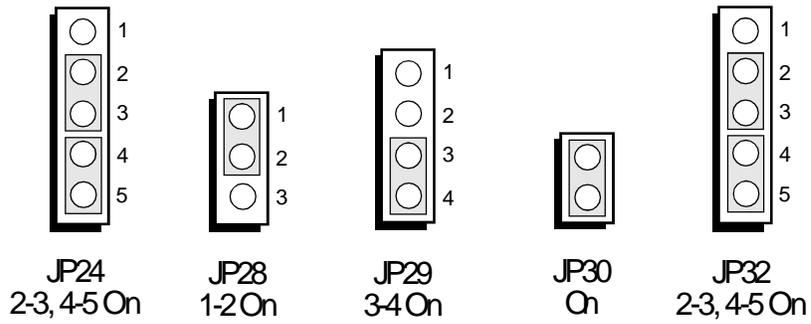
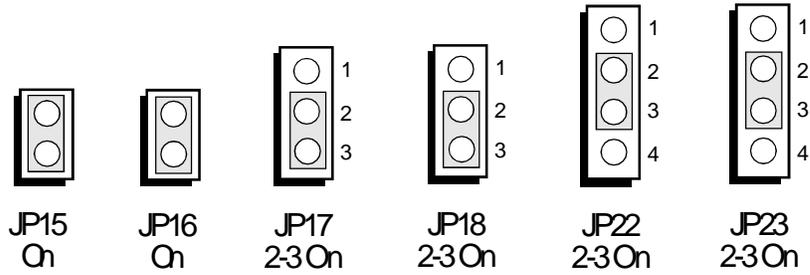


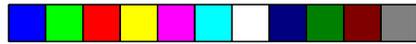
2-34 ♦ Installation Overview



G486-EVB

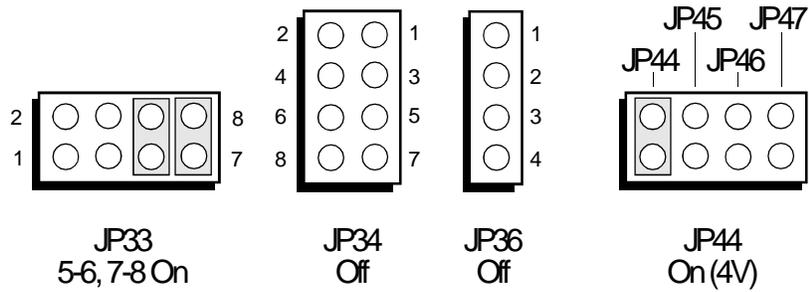
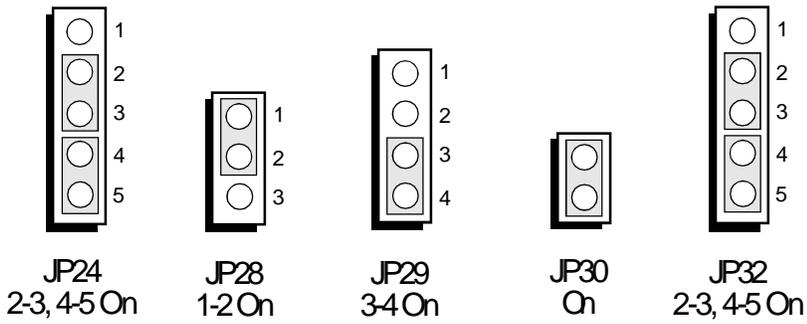
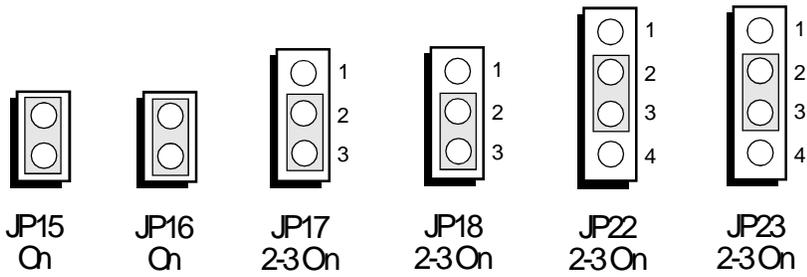
Cyrix 486DX2V-66 (WB)



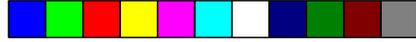


Green 486 VL-Bus System Board

Cyrix 486DX2V-80 (WB)

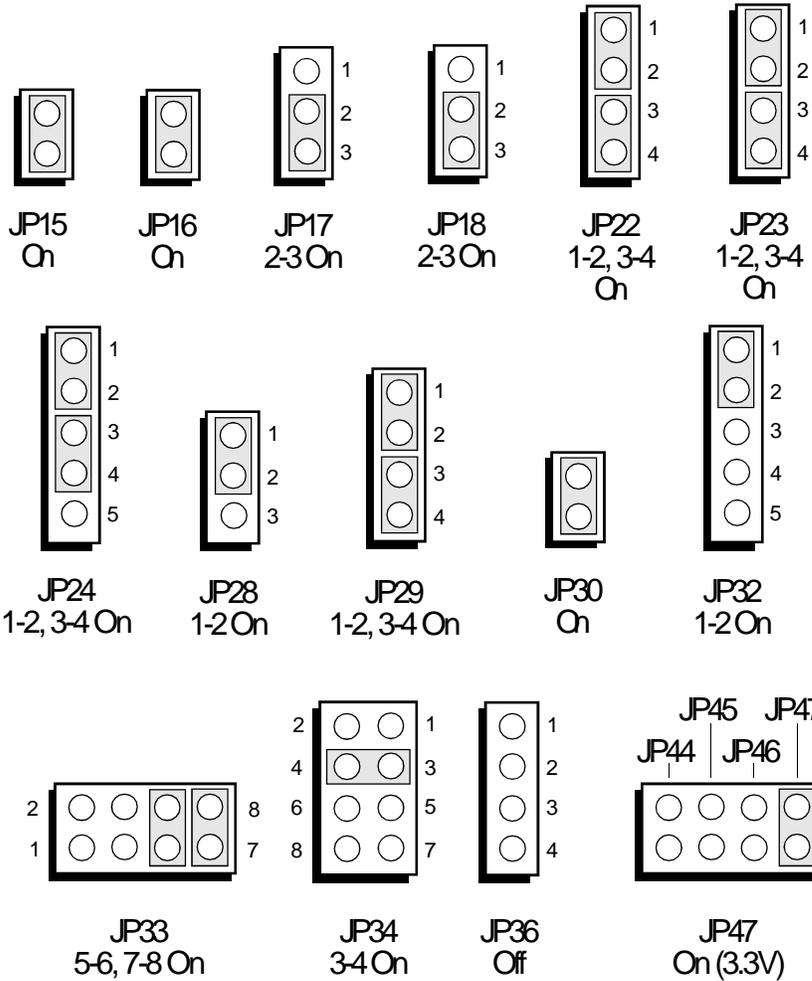


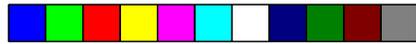
2-36 ♦ Installation Overview



G486-EVB

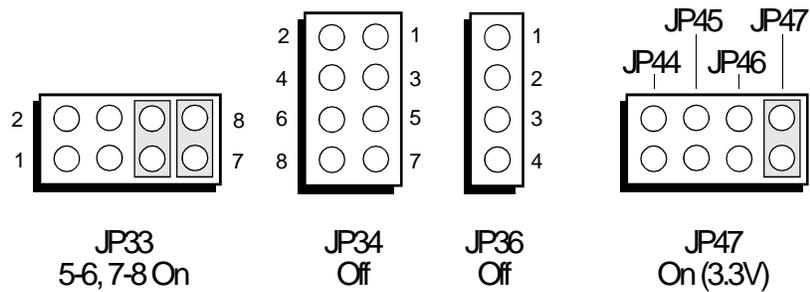
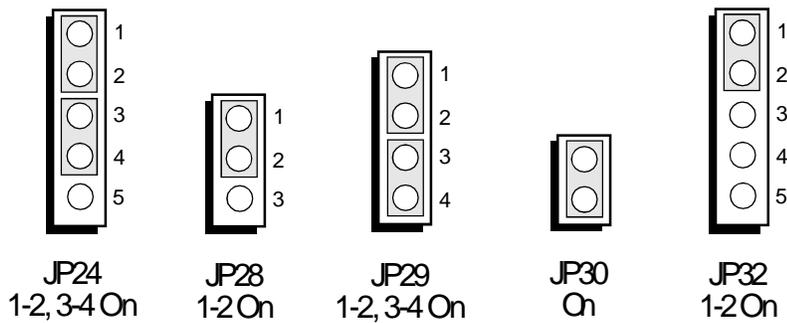
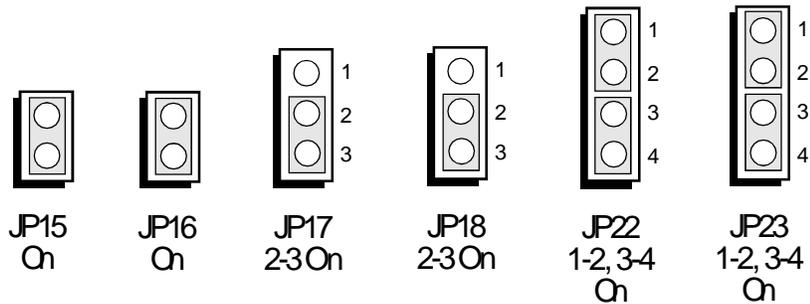
Cyrix M1SC



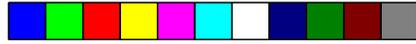


Green 486 VL-Bus System Board

Cyrix 486DX4V M9

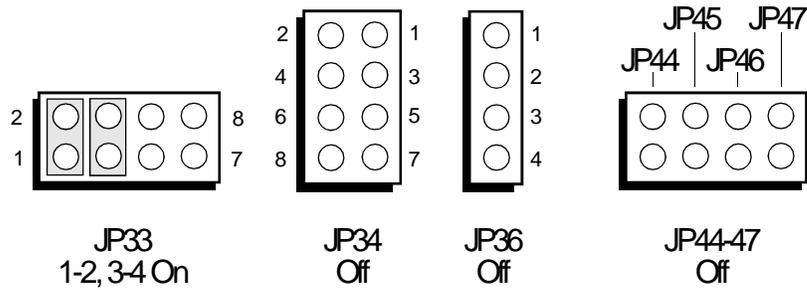
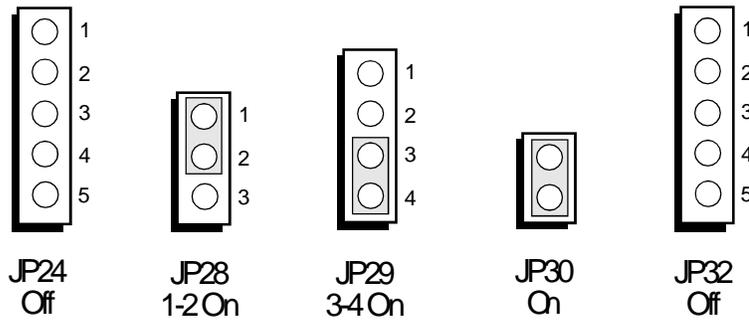
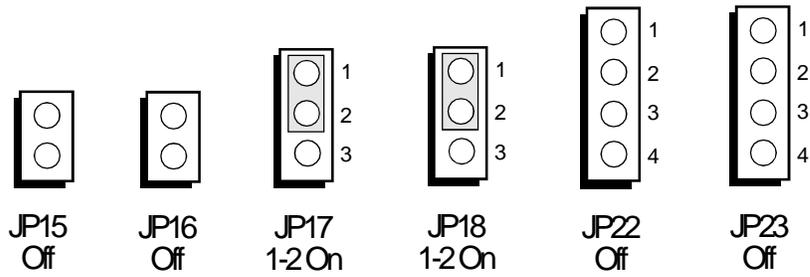


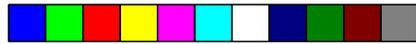
2-38 ♦ Installation Overview



G486-EVB

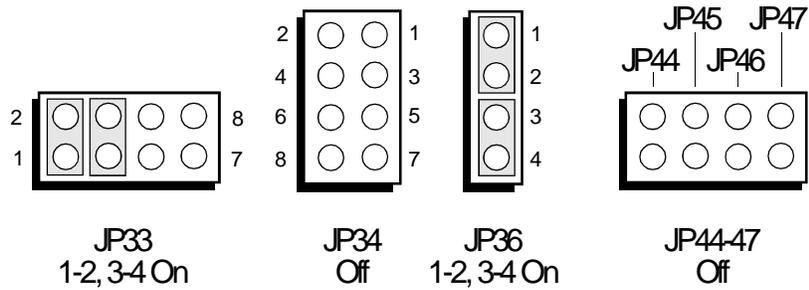
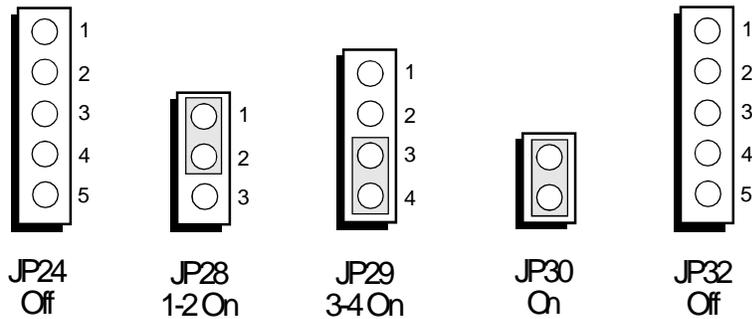
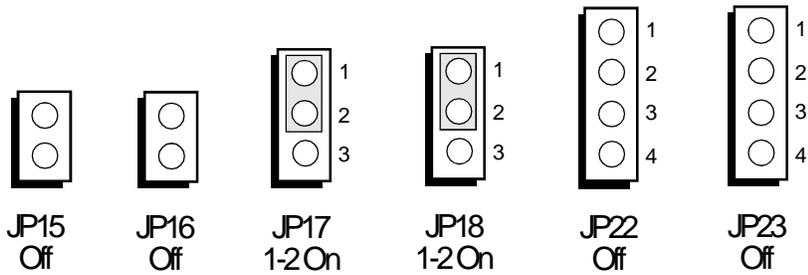
AMD 486DX/DX2



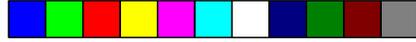


Green 486 VL-Bus System Board

AMD 486DXL/DXL2

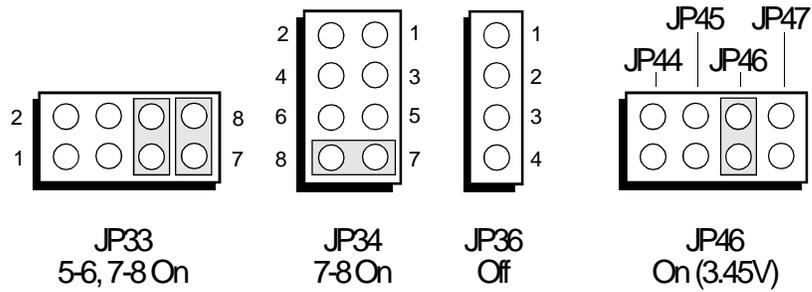
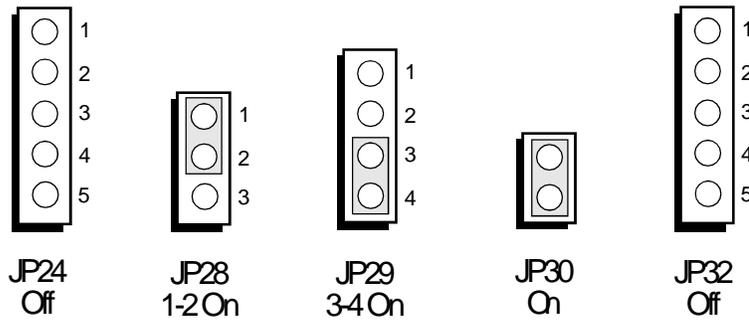
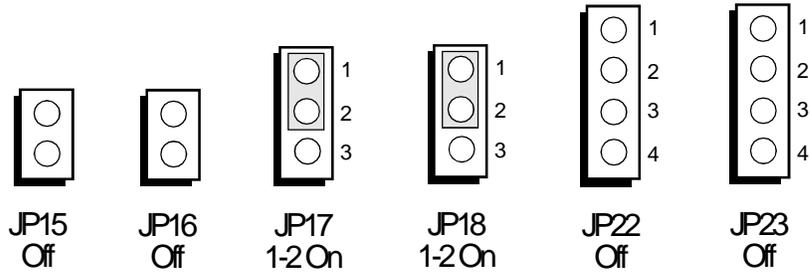


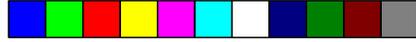
2-40 ♦ Installation Overview



G486-EVB

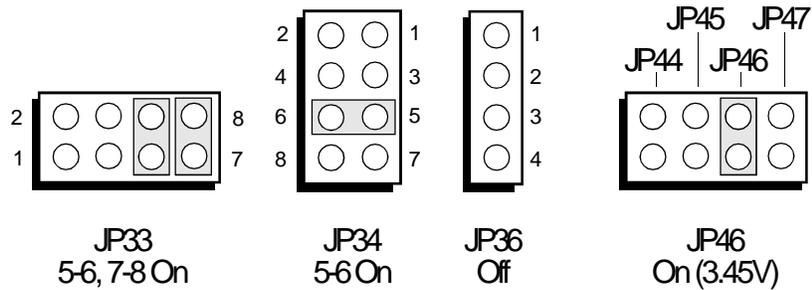
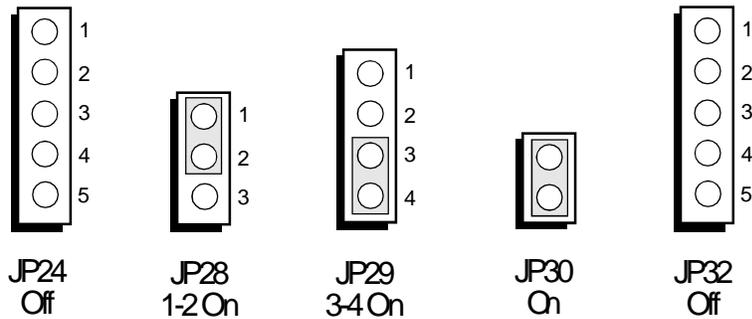
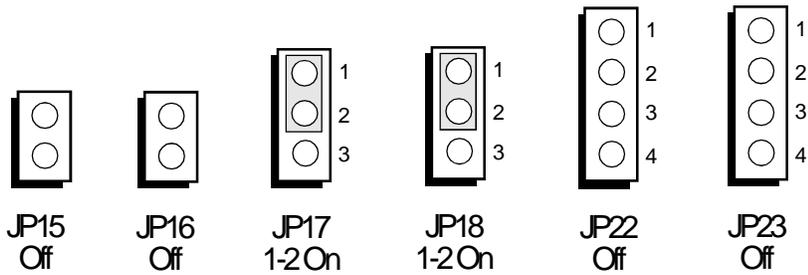
AMD 486DX2 NV8T



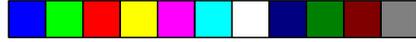


Green 486 VL-Bus System Board

AMD 486DX4 NV8T (75/100)

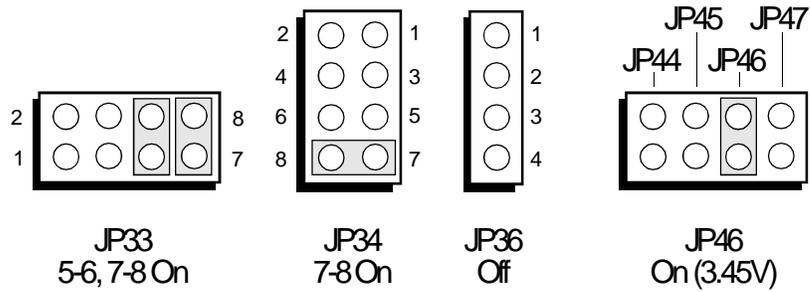
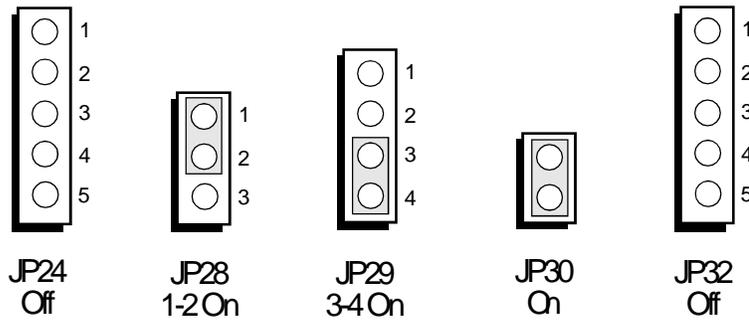
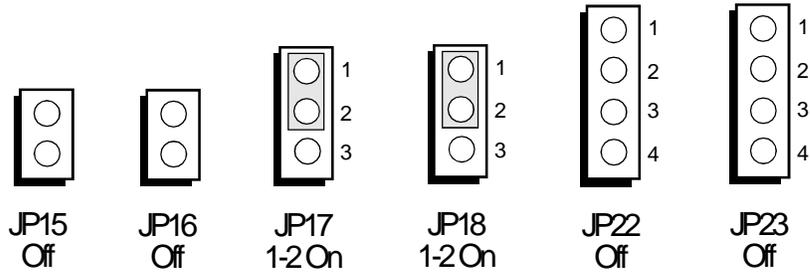


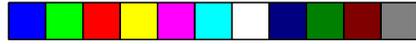
2-42 ♦ Installation Overview



G486-EVB

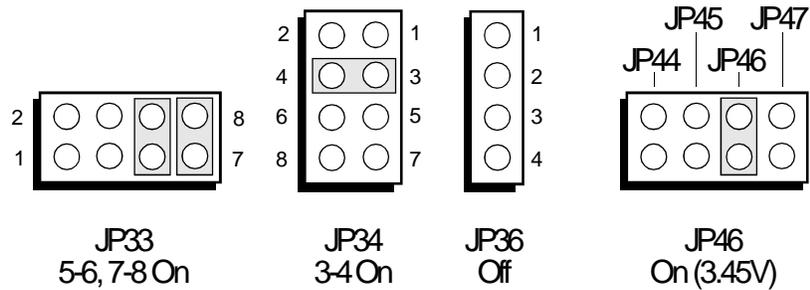
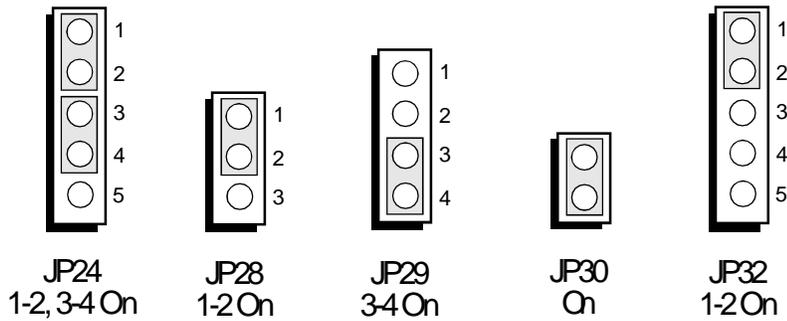
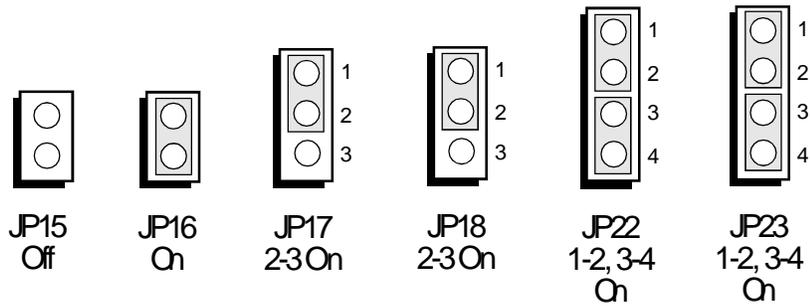
AMD 486DX4 NV8T (50/66/80)



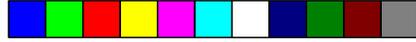


Green 486 VL-Bus System Board

AMD 486DX2 SV8B (Internal Cache Write-Back Mode)

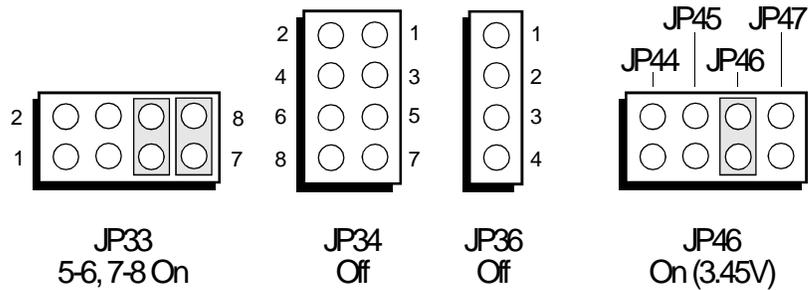
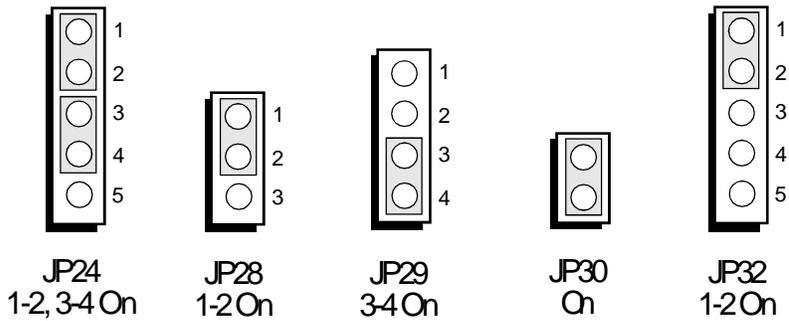
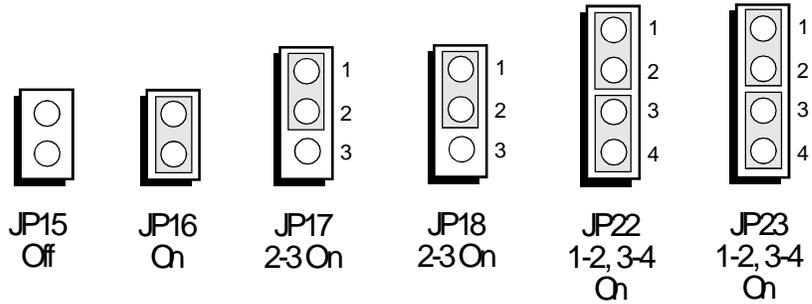


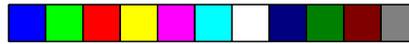
2-44 ♦ Installation Overview



G486-EVB

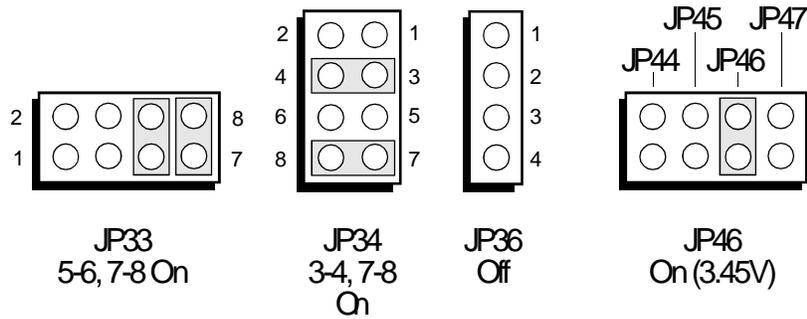
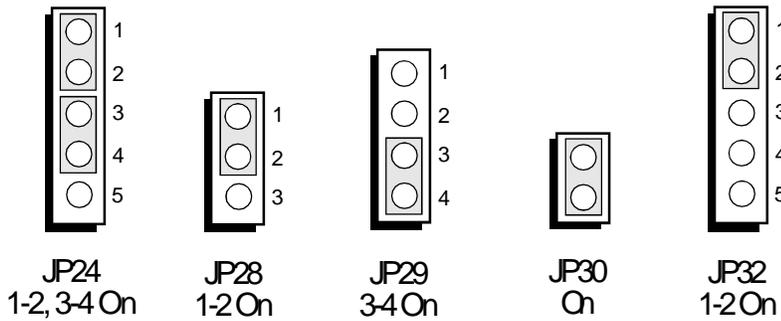
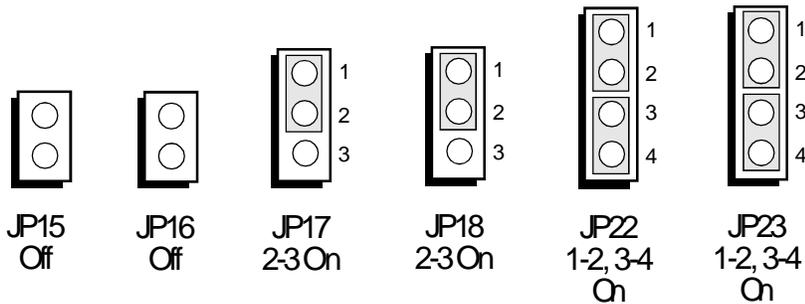
AMD 486DX4 SV8B (Internal Cache Write-Back Mode)



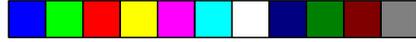


Green 486 VL-Bus System Board

AMD 486DX2 SV8B (Internal Cache Write-Through Mode)

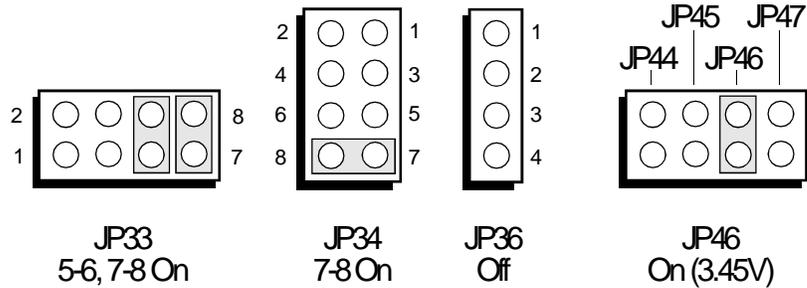
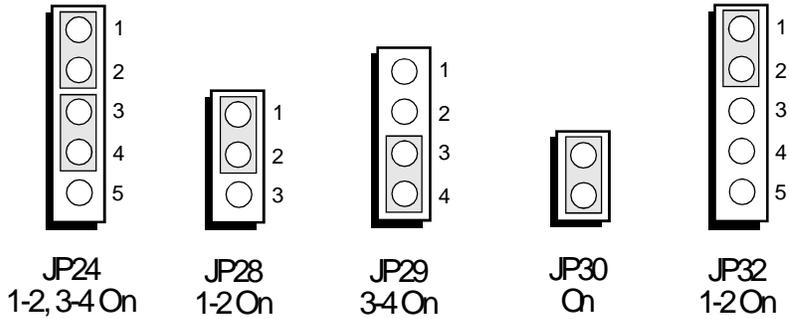
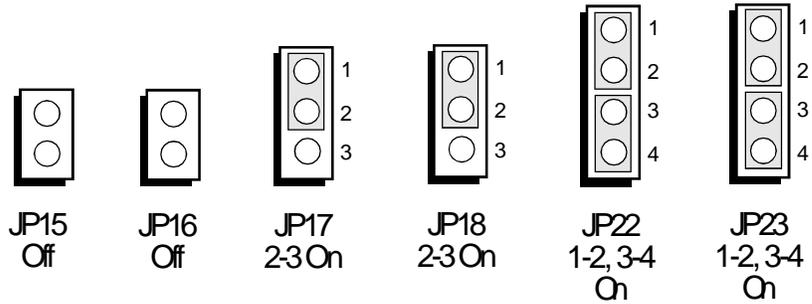


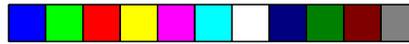
2-46 ♦ Installation Overview



G486-EVB

AMD 486DX4 SV8B (Internal Cache Write-Through Mode)





Green 486 VL-Bus System Board

Jumpers S1, S2 and S3 Clock Selection

These jumpers should be set to match the speed of the CPU installed on the G486-EVB system board.

CPU Speed	S1	S2	S3
25MHz	On	Off	Off
33MHz*	On	On	On
40MHz	On	On	Off

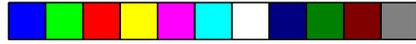
* Default setting



On



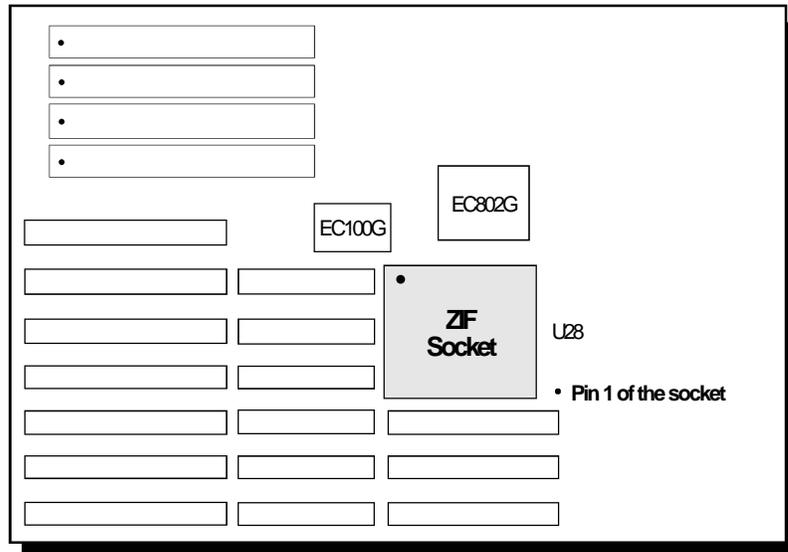
Off



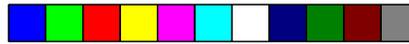
G486-EVB

Installing Upgrade CPUs

The G486-EVB is equipped with a 237-pin ZIF socket at location U28 of the system board. The ZIF socket allows easy CPU upgrades and minimizes the chance of breaking off CPU pins. The location of the ZIF socket on the G486-EVB system board is shown below.



Location of the ZIF Socket on the G486-EVB System Board

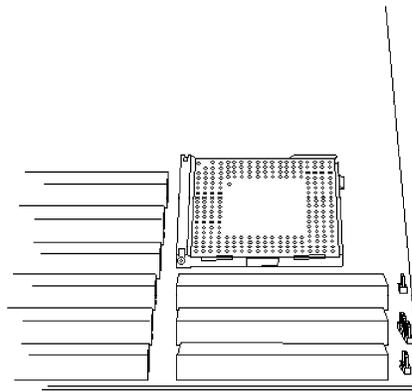


Green 486 VL-Bus System Board

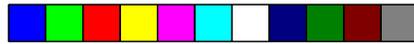
Warning:

Open the socket only if actually installing an upgrade CPU. The warranty on the original CPU will be voided if the S/N seal is broken. Installation of an OverDrive™ Processor will not affect the original system warranty.

The 237-pin ZIF socket consists of four rows of pin holes on each side.

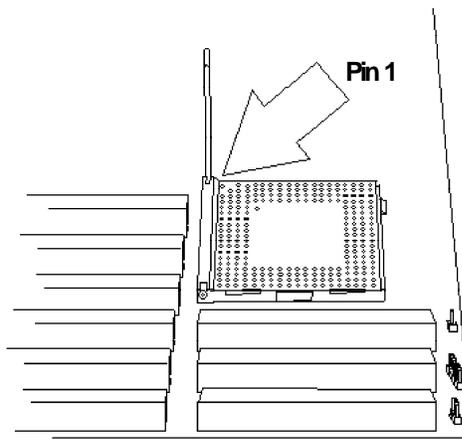


Zero Insertion Force (ZIF) Socket

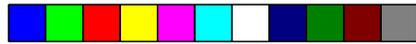


G486-EVB

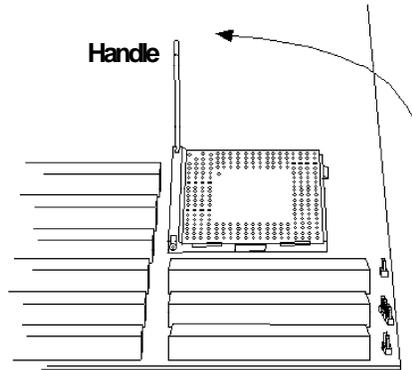
To install an upgrade CPU, move the handle of the ZIF socket upward. Position the upgrade CPU above the socket. Make sure pin 1 of the CPU is aligned with pin 1 of the socket. Lower the chip until the pins are inserted properly in their corresponding holes.



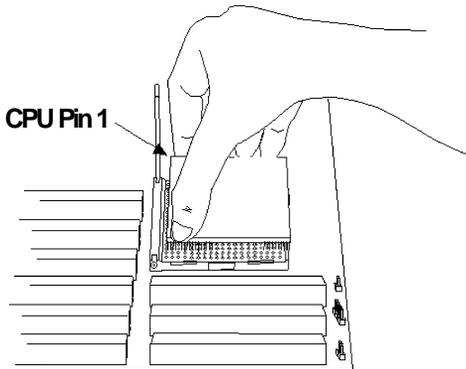
Pin 1 of the ZIF Socket



Green 486 VL-Bus System Board



Lifting the Handle



Positioning the CPU Above the ZIF Socket



G486-EVB

Gently push the handle down until the handle locks into place. You will hear a click when the handle is secure.

Clearance Requirements

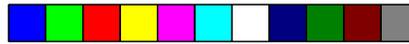
The processor comes with a heat sink mounted on top. To maintain proper airflow once the upgrade is installed on the system board, the processor and heat sink require certain space clearance.

The clearance above the processor's fan/heat-sink must be at least 0.4 in. The clearance on at least 3 of 4 sides of the processor must be at least 0.2 in. The cables (for floppy drive, hard drive, CD-ROM, etc.) must be routed clear of the CPU and its airspace.

Temperature Rating

The ambient or room temperature must be below 37°C (99°F) for a system installed with the processor.





Green 486 VL-Bus System Board

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*
- *one nutdriver, 3/16" or 5 mm*
- *one grounded wriststrap is strongly recommended to protect the board against static electricity discharges.*

Step 1

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

Step 2

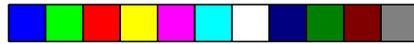
Remove the system unit cover. Refer to the manufacturer's instructions if necessary.

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.



G486-EVB

Step 5

Insert the HSIM modules into the HSIMM banks on the G486-EVB. The quantity and location of the HSIM modules are dependent upon the memory configuration and type of modules you intend to use.

Step 6

Set the appropriate jumpers.

Step 7

Install the prepared G486-EVB system board into the case and replace the screws.

Step 8

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:

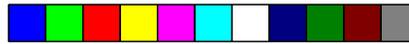
Press CTRL-ALT-ESC/DEL to enter setup

If you want to enter Setup and 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 the above keys at the correct time, the following error message will appear:

Press F1 to continue, Ctrl-Alt-Esc or Del to enter Setup

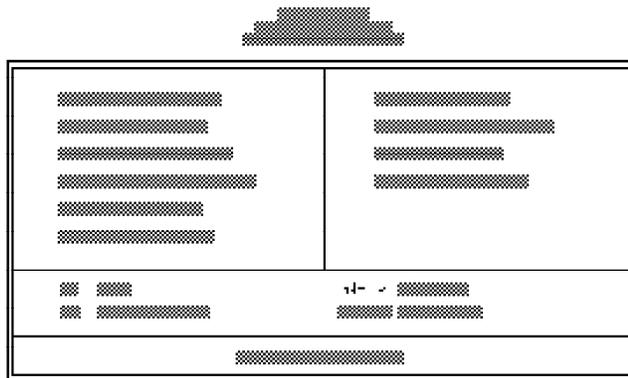
If you have set a password and selected “System” in the Security Option of the BIOS Feature Setup menu, you will be prompted for the password every time the system is rebooted, or any time you try to enter Setup. At the prompt, type in the correct password, and press <Enter>.

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.



Award BIOS CMOS Setup Utility

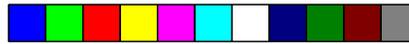
Press <Ctrl> <Alt> <Esc> or to enter the Setup utility. A screen similar to the one below will appear.



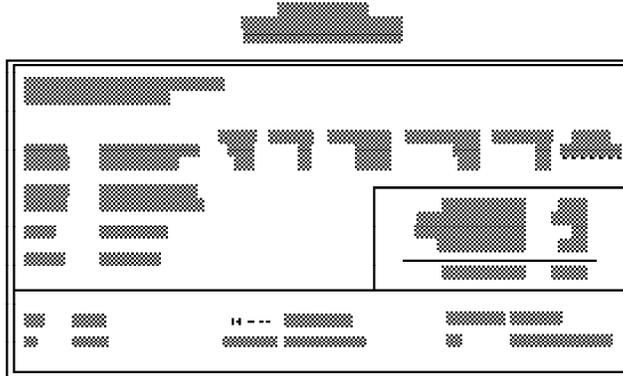
Use the arrow keys to highlight the option you want and press <Enter>.

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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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.

Date and Time

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

Drive C and Drive D

If you have added a hard drive, you must select the appropriate type for the drive. The G486-EVB 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 G 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.

Note:

SCSI drives are usually set to NOT INSTALLED in the BIOS setup area.



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 either hard disk C or D, 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. You may also use the “IDE HDD Auto Detection” from the Main Menu to set up your HDD parameters. If either of the drives is not present, select “None” and press <Enter>.

Note:

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

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 improperly format diskettes.

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 detected a non-fatal error.





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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.

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.

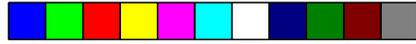
The Other Memory size refers to the memory located between 640K and 1024K. This is the memory address space used for different applications. DOS and Shadow RAM use this area to load device drivers to keep base memory free for application programs.

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

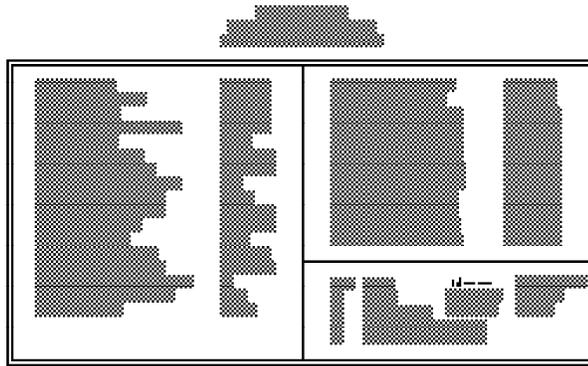
BIOS Features Setup

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.





G486-EVB



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.

The IDE HDD Block Mode and IDE 32-bit Transfer options are functions for ISA IDE. These options may be “Enabled” or “Disabled.” However, if your system is using a VESA IDE, these options should always be set to “Disabled.”

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.

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.

3-6 ◆ Initial Setup Program

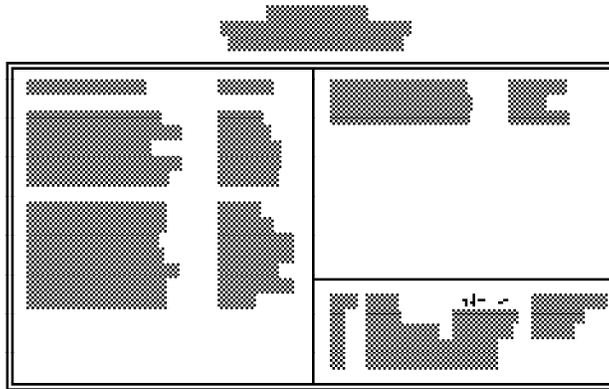


Green 486 VL-Bus System Board

If the changes you make 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.

Chipset Features Setup

The G486-EVB uses the EFAR EC802G 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.



The IDE Hard Disk Prefetch, IDE Turbo Read and IDE Turbo Write options are functions for ISA IDE. These options may be “Enabled” or “Disabled.” However, if your system is using a VESA IDE, these options should always be set to “Disabled.”

The default setting of the CPU Cache Update Policy option is set to Write Through. If you are using a Cyrix write-back CPU, this option must be set accordingly.



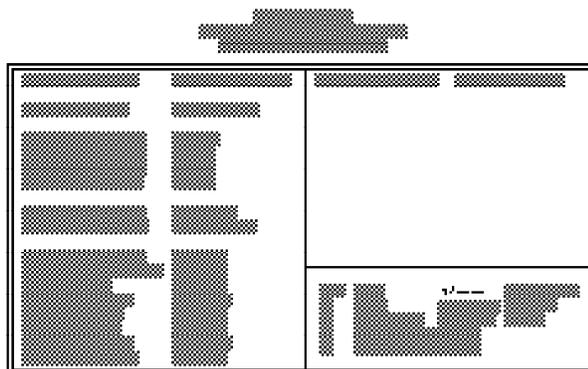
G486-EVB

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 make 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.

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 “User Defined” in the Power Management option will allow you to set the time of the Standby Mode Timer, Suspend Mode Timer, Video Standby Timer, HDD Standby Timer, Suspend Mode Speed and Standby Mode Speed. “Min Power Saving” and “Max Power Saving” will show the minimum and maximum value of these options. Choose “Disabled” if you do not wish your system to enter the Standby mode.

3-8 ◆ Initial Setup Program



Green 486 VL-Bus System Board

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.

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 possibly 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 possibly having hardware problems.

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

Load Setup Defaults (Y/N)? N



G486-EVB

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

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:

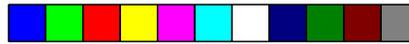
Type in the password. You are limited to eight characters. Type in a password that is eight characters long or shorter. When done, the message below will appear:

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.

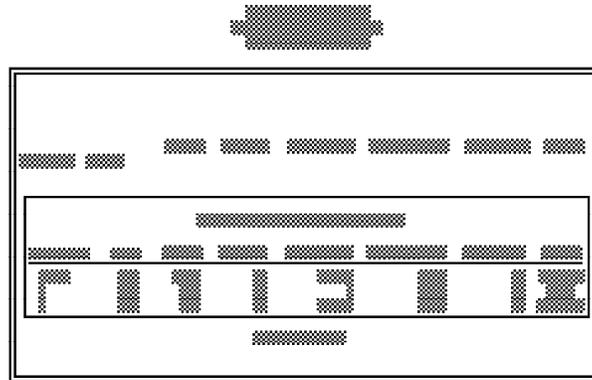
Press the <Esc> key to return to the main menu.



Green 486 VL-Bus System Board

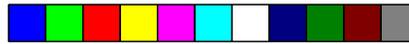
IDE HDD Auto Detection

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 G486-EVB supports three HDD modes: Normal, LBA, and Large. If your HDD does not support LBA mode, the “LBA” option under Mode will not appear. If your HDD has 1024 or fewer cylinders, the “Large” option under Mode will not 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.



Normal Mode

Normal mode is the generic access mode in which neither the BIOS nor the IDE controller will make any transformations during accessing.

The maximum number of cylinders, heads and sectors for Normal mode are 1024, 16 and 63.

	no. Cylinders	(1024)
x	no. Heads	(16)
x	no. Sectors	(63)
x	bytes per sector	(512)
		<hr/>
		528 Megabyte

If you set your HDD to Normal mode, the maximum accessible HDD size will be 528 Megabytes even though its physical size may be greater than that.

LBA (Logical Block Addressing) Mode

The LBA mode is a new HDD accessing method to overcome the 528 Megabyte limitation. The number of cylinders, heads and sectors shown on the screen may not be the actual number for the HDD.

During HDD accessing, the IDE controller will transform the logical address described by the sector, head and cylinder number into its own physical address inside the HDD.

The maximum HDD size supported by the LBA mode is 8.4 Gigabytes which is obtained by the following formula:



Green 486 VL-Bus System Board

no. Cylinders (1024)
x no. Heads (255)
x no. Sectors (63)
x bytes per sector (512)

8.4 Gigabyte

Large Mode

The Large mode is the extended HDD access mode supported by the G486-EVB system board. Some IDE HDDs have more than 1024 cylinders without LBA support (in some cases, you may not want the LBA mode). The system board provides another alternative to support these kinds of HDD.

The BIOS tells the operating system that the number of cylinders is 1/2 of actual and that the number of heads is double the actual. During disk access, the reverse conversion is done by the INT13h routine.

Example of Large mode:

CYLS.	HEADS	SECTORS	MODE
1120	16	59	NORMAL
560	32	59	LARGE

Maximum HDD size:

no. Cylinders (1024)
x no. Heads (32)
x no. Sectors (63)
x bytes per sector (512)

1 Gigabyte

**Note:**

To support LBA or Large mode HDDs, there must be some software involved. All of this software is included in the Award HDD Service Routine (INT13h). It may fail to access a HDD with LBA or Large mode selected if you are running under an operating system which replaces the entire INT13h.

Save & 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

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



Green 486 VL-Bus System Board

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*

If you experience difficulty with the G486-EVB 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 location.
4. Make sure that the power source is delivering power and is correctly connected.
5. Make sure that pin 1 of the CPU is in pin 1 of the CPU socket.
6. 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).

❖ *Appendix A: Types of Modules*

The G486-EVB system board allows you to populate memory with 256K x 36, 1M x 36, and 4M x 36 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 256K x 36 Modules

Brand	Chip Number
OKI	M51C256A-70

For HSIM 1M x 36 Modules

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

For HSIM 4M x 36 Modules

Brand	Chip Number
OKI	M514100A-70S



❖ **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. Please contact your dealer or sales representative for battery replacement.

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. Please contact your dealer or sales representative for battery replacement.

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 SWITCH IS SET INCORRECTLY

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

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 initialize. 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 cord 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.



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MEMORY SIZE HAS CHANGED SINCE LAST BOOT

Memory has been added or removed since the last boot. Enter Setup and enter the new memory size in the memory fields.

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.





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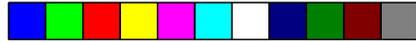
RAM PARITY ERROR - CHECKING FOR SEGMENT

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 00EFFFF	192K I/O Expansion ROM	Reserved for ROM on I/O Adapter Card
00F0000 to 00FFFFFF	64K ROM on the System Board	System Board BIOS
0100000 to 3FFFFFF	Maximum Memory 63M	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: 16-Bit ISA I/O Pin Assignments

B	A
Gnd	- 01 -
Reset.Drv	- 02 -
+5VDC	- 03 -
IRQ9	- 04 -
-5VDC	- 05 -
DRQ2	- 06 -
-12VDC	- 07 -
OAS	- 08 -
+12VDC	- 09 -
Gnd	- 10 -
-SEMEMM	- 11 -
-SEMEMR	- 12 -
-IOW	- 13 -
-IOR	- 14 -
-Dack3	- 15 -
-DRQ3	- 16 -
-Dack1	- 17 -
-DRQ1	- 18 -
-Refresh	- 19 -
CLK	- 20 -
IRQ7	- 21 -
IRQ6	- 22 -
IRQ5	- 23 -
IRQ4	- 24 -
IRQ3	- 25 -
-Dack2	- 26 -
TC	- 27 -
Bale	- 28 -
+5VDC	- 29 -
CSC	- 30 -
Gnd	- 31 -

D	C
-MemCS16	- 01 -
-I/OCS16	- 02 -
IRQ10	- 03 -
IRQ11	- 04 -
IRQ12	- 05 -
IRQ13	- 06 -
IRQ14	- 07 -
-Dack0	- 08 -
DRQ0	- 09 -
-Dack5	- 10 -
DRQ5	- 11 -
-Dack6	- 12 -
DRQ6	- 13 -
-Dack7	- 14 -
DRQ7	- 15 -
+5VDC	- 16 -
-Master	- 17 -
Gnd	- 18 -

A	C
-I/OChck	SBHE
SD7	LA23
SD6	LA22
SD5	LA21
SD4	LA20
SD3	LA19
SD2	LA18
SD1	LA17
SD0	-Memr
-I/OChrdy	-Memw
AEN	SD08
SA19	SD09
SA18	SD10
SA17	SD11
SA16	SD12
SA15	SD13
SA14	SD14
SA13	SD15
SA12	
SA11	
SA10	
SA9	
SA8	
SA7	
SA6	
SA5	
SA4	
SA3	
SA2	
SA1	
SA0	

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Pin Name	No.	LBC ¹	LBC ²	LBM ³	LBT
ADR<31..2>	30	O		O	
ADS#	1	O		O	
BE<3..0>	4	O		O	
BLAST#	1	O		O	
BRDY#	1		O		O
DC#	1	O		O	
DAT<31..0>	32	IO	IO	IO	IO
ID<4..0>	5	O	O		O
IRQ9	1			O	O
LBS16#	1		O		O
LCLK	1	O	O		
LDEV<<>#	1		NA	NA	O
LEADS#	1	O		O	
LGNT<<>#	1	O	O		NA
LKEN#	1	O	O		
LRDY#	1			NA	O
LREQ<<>#	1			O	O
MIO#	1	O		O	
RDYRTN#	1	O	O		
RESET#	1	O	O		
WR#	1	O		O	
WBACK#	1	O	O		NA
(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.

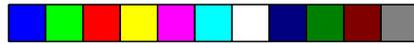
⁴ One unique signal per slot or device.

Note:

LBC = VL Local Bus Controller

LBM = VL Local Bus Master

LBT = VL Local Bus Target



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❖ *Appendix F: Connector Pin Assignments*

Connector JP14
External Battery Connector

Pin	Function
1	Voltage
2	Reserved
3	Ground
4	Ground

Connector JP40
Power LED/Keylock Connector

Pin	Function
1	LED Signal
2	Reserved
3	Ground
4	Keylock Signal
5	Ground



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Connector JP41
Speaker Connector

Pin	Function
1	Signal
2	Connector to Buzzer
3	Ground
4	+5V

Connector D6
Standby Mode LED



Pin	Function
1	Ground
2	Signal



Jumper JP44
Standby Mode Switch Connector

Pin	Function
1	Ground
2	Signal





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Connector JP45
Reset Switch Connector

Pin	Function
1	Reset
2	Ground

❖ Appendix G: 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
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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