

choose FEATURES DIAGRAMS JUMPERS MEMORY BIOS

DX-9200 FEATURES

CPUs SUPPORTED

肘 Intel 486 SX, DX, DX2, DX4 Non-SL and SL Enhanced Microprocessors
匹 Cyrix/IBM/SGS/TI 486 DX, DX2, DX2-V80, DX4 SL Enhanced Microprocessors
柁 MD 486 SX, DX, DX2, DX4, Non-SL and SL Enhanced Microprocessors
百 supports 3.3V, 4V, and 5V CPUs with ZIF Sockets

MEMORY

俵 p to 256MB Main Memory
彦 our 72-pin SIMM slots for Fast Page Mode DRAM Modules

CACHE

髟 external write-back cache for up to 1MB cache size
百 supports Cyrix cpu (Internal L1) write-back cache

BUS ARCHITECTURE

彦 our 32-Bit PCI Slots
謬 wo 32-Bit VLB Slots
彦 our 16-Bit ISA Slots

ONBOARD I/O

謬 wo PCI Enhanced IDE Ports
Supports 4 Devices PIO Mode 3

ENERGY SAVING FUNCTIONS

百 MM/SMI Power Management with APM Software Interface
Monitor CPU & I/O status with fully user configurable parameters in BIOS

BIOS

柁 ward BIOS supports up to 4 IDE drives with LBA mode implemented
稗 uilt-in NCR SCSI 810 BIOS
桧 n-board lithium battery for reliable CMOS backup

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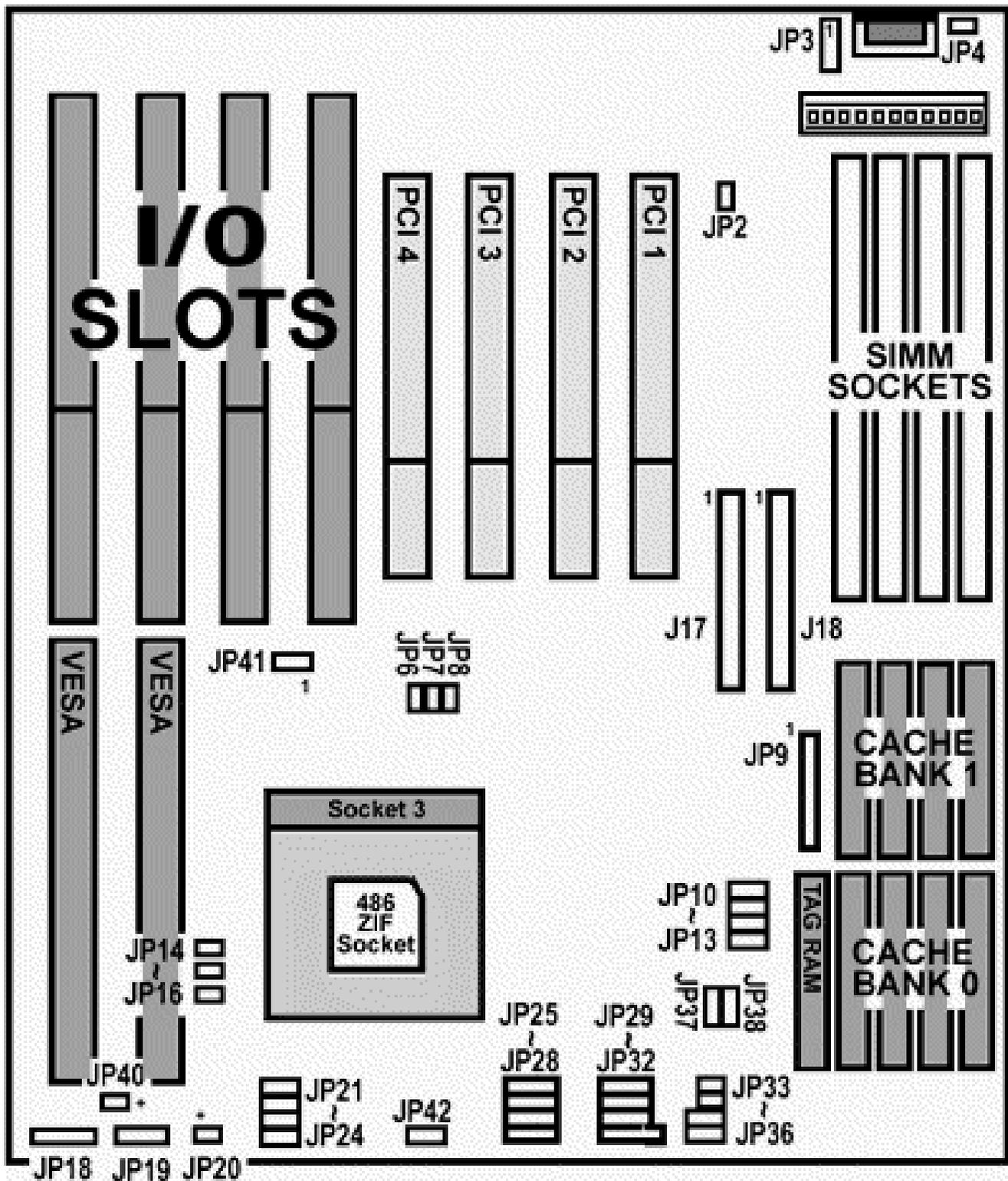
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SYSTEM BOARD

DX-9200 DIAGRAM PAGE

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DX-9200 JUMPER SETTINGS

[JP3 - EXTERNAL BATTERY CONNECTOR/CLEAR CMOS](#)

[JP4 - PERIPHERAL POWER CONTROL CONNECTOR](#)

[JP6 JP7 & JP8 - CPU CLOCK SELECTION JUMPER](#)

[JP14 - TURBO SWITCH](#)

[JP15 - SYSTEM RESET](#)

[JP16 - GREEN MODE TRIGGER SWITCH](#)

[JP18 - KEYLOCK & POWER LED](#)

[JP19 - SPEAKER](#)

[JP20 - TURBO LED](#)

[JP40 - ONBOARD IDE HDD LED](#)

[JP41 - CPU COOLING FAN POWER CONNECTOR](#)

[JP21 JP22 JP23 JP24 & JP42 - CPU VOLTAGE SELECTOR](#)

[CPU TYPE SELECTION JUMPER](#)

JP3 - External Battery Connector/Clear CMOS

```
=====
JUMPER  PIN  ASSIGNMENT
-----
 2 - 3      NORMAL OPERATION
 3 - 4      CLEAR CMOS
           1  EXTERNAL BATTERY (+)
           4  EXTERNAL BATTERY (-)
=====
```

Please make sure the pins 2-3 are shorted before using the system board. The system board is shipped from the factory with pins 3-4 shorted to prevent battery drain during storage. Failure to reset this jumper at pins 2-3 would prevent the board from powering up.

JP4 - Peripheral Power Control Connector

```
=====
PIN      ASSIGNMENT
-----
 1        LED (+)
 2        LED (-)
=====
```

JP14 - Turbo Switch

```
=====
JUMPER    STATE
-----
 OPEN     TURBO
 1 - 2    NON-TURBO
=====
```

JP15 - System Reset

```
=====
PIN      ASSIGNMENT
-----
 1        RESET
 2        GROUND
=====
```

JP16 - Green Mode Trigger Switch

```
=====
JUMPER    STATE
-----
 TRIGGER ONCE  GREEN MODE
 TRIGGER AGAIN NORMAL OPERATION
=====
```

This is a toggle switch so please do not keep this jumper shorted or else the system will have a problem waking up or booting after a reset. For this reason, do not use the Turbo button on the system chassis for this switch, since one may forget to release the button after triggering the system into green mode.

JP18 - Keylock & Power LED

PIN	ASSIGNMENT
1	LED POWER
2	NC
3	GROUND
4	KEYBOARD LOCK
5	GROUND

JP19 - Speaker

PIN	ASSIGNMENT
1	SPEAKER DATA OUT
4	+5V

JP20 - Turbo LED

PIN	ASSIGNMENT
1	LED (+)
2	LED (-)

JP40 - OnBoard IDE HDD LED

PIN	ASSIGNMENT
1	LED (+)
2	LED (-)

JP41 - CPU Cooling Fan Power Connector

PIN	ASSIGNMENT
1	+ 12V
2	GROUND
3	GROUND
4	+ 5V

JP6 JP7 & JP8 - CPU Clock Selection Jumper

CPU CLOCK	CPU FREQUENCY	JP6	JP7	JP8
25MHz	DX2-50MHz	OPEN	OPEN	SHORT
33MHz	DX/SX-33MHz DX2-66MHz DX4-100MHz	SHORT	SHORT	SHORT
40MHz	DX-40MHz DX2-80MHz	OPEN	SHORT	SHORT

JP(21-24) & JP42 - CPU Voltage Jumpers

VOLTAGE	JP21	JP22	JP23	JP24	JP42
5 VOLTS	2 - 3	2 - 3	2 - 3	2 - 3	OPEN

4 VOLTS 1 - 2 1 - 2 1 - 2 1 - 2 OPEN
 3.3 VOLTS 1 - 2 1 - 2 1 - 2 1 - 2 SHORT

CPU Type Selection Jumper

	486 NON-SL ENHANCED			486 SL ENHANCED		
	INTEL/AMD	AMD		INTEL	CYRIX	
	SX	DX DX2-66/80	DX4	SX	DX, DX2 DX4	DX, DX2 DX2-V80
JP25	2 - 3	1 - 2 3 - 4	1 - 2 3 - 4	2 - 3	1 - 2 3 - 4	1 - 2 3 - 4
JP26	OPEN	3 - 4	3 - 4	OPEN	3 - 4	3 - 4
JP27	OPEN	OPEN	OPEN	1 - 2	1 - 2	1 - 2
JP28	OPEN	OPEN	OPEN	OPEN	OPEN	2 - 3
JP29	2 - 3	2 - 3	2 - 3	1 - 2	1 - 2	1 - 2
JP30	OPEN	OPEN	OPEN	1 - 2	1 - 2	2 - 3
JP31	OPEN	OPEN	OPEN	OPEN	OPEN	2 - 3
JP32	OPEN	OPEN	OPEN	2 - 3 4 - 5	2 - 3 4 - 5	1 - 2 3 - 4
JP33	SHORT	SHORT	OPEN	OPEN	OPEN	OPEN
JP34	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN
JP35	OPEN	OPEN	OPEN	OPEN	OPEN	1 - 2
JP36	2 - 3	2 - 3	1 - 2	2 - 3	2 - 3	OPEN
JP37	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2
JP38	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	2 - 3

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SYSTEM BOARD

DX-9200 MEMORY SETTINGS

THE CACHE MEMORY

SOME CACHE MEMORY CONSIDERATIONS

CACHE MEMORY CONFIGURATIONS

CACHE MEMORY JUMPER CONFIGURATIONS

THE MEMORY

SOME MEMORY CONSIDERATIONS

POSSIBLE MEMORY CONFIGURATIONS

The Cache Memory

This system board can support an optional 64KB, 128KB, 256KB, 512KB or 1MB external write back, direct-mapped cache.

Some Cache Memory Considerations:

ⓐ Since single bank cache installations (B, D, F) prevent the cache sub-system from using interleaving access, the "Auto Configuration" in the Advanced Chipset Setup must be disabled and the "Cache Read Wait State" must also be set to "3-2-2-2" to ensure proper operation.

Cache Memory Configurations

TYPE	TOTAL CACHE	BANK 0 (U33-36)	BANK 1 (U25-28)	TAG RAM	PIECES (U32)
A	64K	8K x 8	8K x 8	8K X 8	9
B	128K	32K x 8		8K X 8	5
C	256K	32K x 8	32K x 8	32K X 8	9
D	256K	64K x 8		32K X 8	5
E	512K	64K x 8	64K x 8	32K X 8	9
F	512K	128K x 8		32K X 8	5
G	1024K	128K x 8	128K X 8	64K X 8	9

Cache Memory Jumper Configurations

TYPE	CACHE	JUMPER JP9	JP10	JP11	JP12	JP13
A	64K	OPEN		OPEN	OPEN	OPEN
B	128K	1 - 2, 3 - 4		OPEN	OPEN	SHORT
C	256K	2 - 3, 4 - 5		OPEN	OPEN	SHORT
D	256K	1 - 2, 3 - 4, 5 - 6		OPEN	OPEN	SHORT
E	512K	2 - 3, 4 - 5, 6 - 7		OPEN	SHORT	SHORT
F	512K	1 - 2, 3 - 4, 5 - 6, 7 - 8		OPEN	SHORT	SHORT
G	1024K	2 - 3, 4 - 5, 6 - 7, 8 - 9		SHORT	SHORT	SHORT

The Memory

There are 4 banks of 72 pin SIMM sockets on this board with each bank of 72 pin SIMM consisting of only one SIMM socket as denoted as Bank 0, Bank 1, Bank 2 & Bank 3. The system board has auto-detection circuitry to sense which bank or banks are filled. Any SIMM module in the

configurations listed below with Fast Page Mode, single or double sided memory can be used.

Some Memory Considerations:

- ⓐ Maximum memory on-board can not exceed 256 MB in any combination.
- ⓑ The memory installed in banks 0 & 1 must be more than or equal to the memory installed in banks 2 & 3.
- ⓒ If both of the SIMM sockets in any single group (i.e. banks 0 & 1) are filled then both of the SIMM modules must be of the same type. However, you do not have to fill up a single group with SIMM modules before starting on the next. See below for more clarification on these considerations.

Possible Memory Configurations

#	GROUP 1		GROUP 2	
	BANK 0	BANK 1	BANK 2	BANK 3
1	256KB-16MB	NONE	NONE	NONE
2	NONE	256KB-16MB	NONE	NONE
3	NONE	NONE	256KB-16MB	NONE
4	NONE	NONE	NONE	256KB-16MB
5	256KB-16MB	256KB-16MB	NONE	NONE
6	256KB-16MB	NONE	256KB-16MB	NONE
7	256KB-16MB	NONE	NONE	256KB-16MB
8	NONE	256KB-16MB	256KB-16MB	NONE
9	NONE	256KB-16MB	NONE	256KB-16MB
10	NONE	NONE	256KB-16MB	256KB-16MB
11	256KB-16MB	256KB-16MB	256KB-16MB	NONE
12	NONE	256KB-16MB	256KB-16MB	256KB-16MB
13	256KB-16MB	256KB-16MB	NONE	256KB-16MB
14	256KB-16MB	NONE	256KB-16MB	256KB-16MB
15	256KB-16MB	256KB-16MB	256KB-16MB	256KB-16MB



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SYSTEM BOARD

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DX-9200 BIOS SETTINGS

SYSTEM BIOS SETUP

LOAD SETUP DEFAULTS

BIOS default values
SETUP default values

STANDARD CMOS SETUP OPTION

Date and time options
Hard disk primary & secondary drive types
Floppy Drives A & B
Video
Halt On

BIOS FEATURES SETUP

Virus warning
CPU internal & external cache
Quick power on self test
Boot sequence
Swap floppy drive
IDE HDD block mode, 32-bit transfer & PIO mode 3 support
Gate A20 option
Security option
Virus warning
IDE second channel control
System, video & adapter ROM shadow

CHIPSET FEATURES SETUP

Auto configuration and AT bus clock
System & Video BIOS cacheable
L1 cache update scheme
L2 cache update scheme

POWER MANAGEMENT SETUP

Power management
PM Control by APM
Video off method
HDD standby timer
Doze, standby and suspend modes
Mode control
Monitor even in full on mode

PCI/GREEN FUNCTION SETUP

Slot 1-4 using INT#
1st - 4th available IRQ
PCI IRQ activated by
PCI IDE controller
PCI IDE IRQ map to
Wakeup event in inactive mode

EXITING SETUP UTILITY

System BIOS Setup

Due to frequent update of system BIOS, the actual options available in your system board BIOS setups may vary comparing with this manual. If technically necessary, we would provide a special insert for instruction of the difference in regard to any changes of the BIOS setup option.

Load Setup Defaults

There is a set of BIOS values stored in the ROM files:

The "Bios" default values

The "BIOS" default values are those which should provide optimum

performance for the system. They are the best case default values.

The "Setup" default values

The "Setup" default values are the most conservative default settings but are also the most stable default values for the system. They are to be used if the system is performing erratically because of hardware problems.

Standard CMOS Setup Option

Date and Time Options

If you would like to set your date and time options, move your cursor to highlight the specific items and use PgUp/PgDn to modify the values.

Primary Master & Slave, Secondary Master & Slave Drive Types

According to your actual equipment, you can select the type of hard disks for C, D, E, & F from 'Not Installed' to type 46 for standard hard disks. As for type 47, user may define by himself. If a ATAPI IDE CD-ROM is connected to any on-board IDE port, the HARD DISKS "Type" should be set to "None". The DOS CD-ROM driver or the Win95 built-in driver will handle the communication by themselves. You may also use the "IDE HDD Auto Detection" option in the Main Menu to allow the system to detect and enter these information for you.

Floppy Drives A & B

Sets your floppy drive type.

Video

Set your video type and if set to not installed, the system will ignore the primary display while doing the POST test.

Halt On

This option determines whether the system will stop if an specified error in this option is detected during power up

BIOS Features Setup

Virus Warning

This function, If enabled, will detects boot sector viruses and warning will be given when a program attempted to change boot sector information.

CPU Internal & External Cache

These options allows user to enable or disable the on-board (External) and the on-chip (CPU Internal) cache memories (SRAM) when special peripheral or software implemented indicate such requirement.

Quick Power On Self Test

This option speeds up the POST by shortening and skipping some test items during POST.

Boot Sequence

The system maybe set to seek the operating system during power up either from the floppy drive A: or from the hard drive C: by using this option.

Swap Floppy Drive

Floppy A: and B: will be swapped under DOS. For example, if the original definition of the foppy A: is 1.2M 5.25" and the B: is 144M 3.5", they will be swapped when this option is enabled.

IDE HDD Block Mode, 32-bit Transfer & PIO Mode 3 Support

All three of these options, if enabled with the use of the on-board IDE controller will enhance you hard drive performance. Most new hard drives should support these functions, so be sure to check with you hard drive manufacturer before using this option.

Gate A20 Option

Use the "Fast" option whenever possible, since it will enable the Fast Gate A20 and the fast reset for protected mode operation.

Security Option

This option allow a password be set up so that a password will be needed to enter the CMOS Setup or to boot the system including entering CMOS Setup. After this option is enabled, you must use the "Password Setting" option in the main menu to setup your password. If in any case the password is lost or forgotten, the jumper JP 5A - Clear CMOS can be used to clear the configuration.

IDE Second Channel Control

This option, in combination with the "PCI IDE Controller" option in the "PCI/Green Functions Setup" would enable the second onboard IDE channel (Drive E: & F:) or the BIOS will attempt to control the external second IDE port, if a external dual IDE controller card is installed.

System, Video & Adapter ROM Shadows

Video and/or adaptor ROM shadowing is a procedure in which BIOS codes from your peripheral adapter's ROM are copied from slower ROM to faster RAM and executed from there. Each option allows for a segment of 8 KB to be shadowed from ROM to RAM. If one of these options is enabled and there is BIOS present in that particular 8 KB segment, then the BIOS will be shadowed.

Chipset Features Setup

Most of the options in this group have major influence to the system. If options are not set properly, it may not only the performance will be greatly affected, but also it may bring the system down unexpectedly in most cases. Therefore, it is only wise to leave the defaults alone unless there are specific reason to do any change.

Auto Configuration, and AT Bus Clock

The Auto Configuration option should be always enabled for the system to automatically configure the AT bus clock to AT standard by detecting the system clock rate.

System & Video BIOS Cacheable

The system and video BIOS shadows can be cached into external cache memory for improved performance.

L1 Cache Update Scheme

This option would enable the CPU internal cache to use Write-Through or Write-Back schemes. The DX & DX2 CPUs from Cyrix and its compatibles support L1 Write-Back cache in comparison to the DX, DX2 & DX4 CPUs from Intel and its compatibles supporting only Write-Through cache.

It is very important to properly set this option according to the CPU installed. Do not turn on the L1 Write-Back cache if the CPU installed does not support this feature or the system will fail.

L2 Cache Update Scheme

This option allows the external cache scheme to be changed to suit a particular application.

Power Management Setup

Power Management

This option served as a master switch to turn-on the power management.

PM Control By APM

APM function allows applications that use the Advanced Power Management interface to control the system's power management features.

Video Off Method

If the Graphic Controller installed is VESA compliant, then you may want to use the V/H Syn+Blk option. Otherwise set the option to Blank Screen

HDD Standby Timer

The HDD Standby Timer supports hard drives that have such a feature. However, if this option is enabled and you experience erratic hard drive behavior, this option must be disabled. This option uses the SMM/SMI specification for hard drive power saving control.

Doze, Standby, and Suspend Modes

Defined the length of time of continuous inactivity before the system enters into different PM modes. The Suspend Mode is not implemented.

Mode Control

The options under this category allow you to specify the system clock speeds at different power saving modes. The video can also be set to on or off at different modes by this option.

Monitor Event In Full On Mode

These options allow you to specify what activities the system should monitor which will prevent the system from entering the power saving modes when activity is detected as defined in here.

PCI/Green Function Setup

Slot 1 - 4 Using Int#

Using Auto settings will work with most controllers. However, you may manually assign INT A - D to the 4 different slots according to the controller setting in that slot.

1st- 4th Available IRQ

These options tell the system which system's IRQ should be used first if any controller installed should need an IRQ. If an IDE HDD is installed, you may want to set the 1st Available IRQ to 14 since IDE HDD using IRQ14 is the de facto industry standard.

PCI IRQ Activated By

The "Level" setting should work most of the time, and it is the PCI standard. It may need to be set as "Edge" when the IDE controller requires to use a legacy connector or any other kind of direct hardware IRQ assignment scheme such as using the on-board JP1.

PCI IDE Controller

This option is the master switch to turn on the on-board dual channel IDE controller. If any IDE devices are installed on the connectors J17 and/or J18, this option has to be enabled after the "standard CMOS Setup" is properly configured. If the second IDE port (J17) is also being used, the "IDE Second Channel Control" in the "BIOS Features Setup" will be enabled. Disable this option when an add-on IDE controller is installed. In this case, the following option "PCI IDE IRQ Map To" will appear and it has to be configured in addition to the "1st - 4th Available IRQ" options.

PCI IDE IRQ Map To

Use "PCI-Auto" and it should work with most PCI IDE controllers or you may specifically inform the system which physical slot the IDE controller is inserted. If an ISA controller is inserted in one of the ISA slots, set the option to "ISA"; or if the PCI IDE controller requires to use a legacy connector or any other kind of direct hardware IRQ assignment scheme, then the option should be set to "ISA."

WakeUp Event In Inactive Mode

These options allow you to specify what activities the system should monitor which will wake-up the system from power saving modes when activity is detected as defined in here.

Exiting Setup Utility

At this point, you can either choose to confirm your setup entries and exit by using "ESC" key and taking the "Save & Exit Setup" or the "Exit Without Saving" option to restore the original setup parameters and exit. After you highlight the desired option and press <<ENTER>>, the system will reset itself. The new or original setup parameters, depend on the option which you have chosen, will become the current setting.



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