Advanced BIOS Features

You can setup more detail parts than standard setup. This has items that related system performance. So you have to consult to expert or A/S center.

Advanced Chipset Features

This is setting menu for chipset that is related system performance. Beginner does not change before consultation for expert.

Integrated Peripherals

The menu has an item that controls each Input / Output devices.

Power Management Setup

This section provides information of functioning the Green PC power management features.

PnP / PCI Configurations

By choosing the PnP / PCI configurations, each plug and play devices and PCI devices can be controlled.

PC Health Status

By choosing the PC Health status, you can see voltage of CPU, RPM of cooling Fan, temperature.

Frequency / Voltage Control

There are three parts that control for clock of memory. PCI, CPU clock and related EMI. No booting or burning CPU may occur by wrong setting.

Load Fail-Safe Defaults

If you want to restore the original system setting, choose this item.

Load Optimized Defaults

The menu makes optimized system setting, choose this item.

Set Supervisor Password

The menu prevent to indiscreet BIOS setup. Use carefully.

Set User Password

The menu requires password before system boot and operate OS. Setting menu for user's password.

Save & Exit Setup

Selecting this option let you exit with recording setup.

Exit Without Saving

Selecting this option let you exit without recording setup.

It is recommend that BIOS setting needs expert's help.

> **Caution** : Don't lost password after setting password. Lost password
>
> Causes complicated recover procedure.

Chapter9. Qrex Mainboard (LPC-815)

Introduction

Product description

LPC-815 is a high-performance flexible motherboard that comes with Socket 370 that supports up to 1.2GHz Pentium III processors. It has built-in VGA with TMDS panel support and an Intel 82562ET Ethernet controller. LPC-815 also supports a micro AGP socket for high performance micro AGP VGA cards.

LPC-815 is based on the Intel 815E(B) chipset that contains the Graphics and Memory Controller Hub (GMCH), the I/O Controller Hub (ICH2) and the Firmware Hub (FWH). It supports 66/100/133MHz system bus, up to 1.2GHz CPU speed, integrated 2D/3D graphics accelerator, and 100/133MHz SDRAM modules.

System memory is provided by two 168-pin DIMM sockets that accommodate SDRAM with a maximum capacity of 512MB. The Award BIOS facilitates easy system configuration and peripheral setup. The board also features include 4 USB port support and IrDA interface.

Checklist

Your LPC-815 package should include the items listed below.
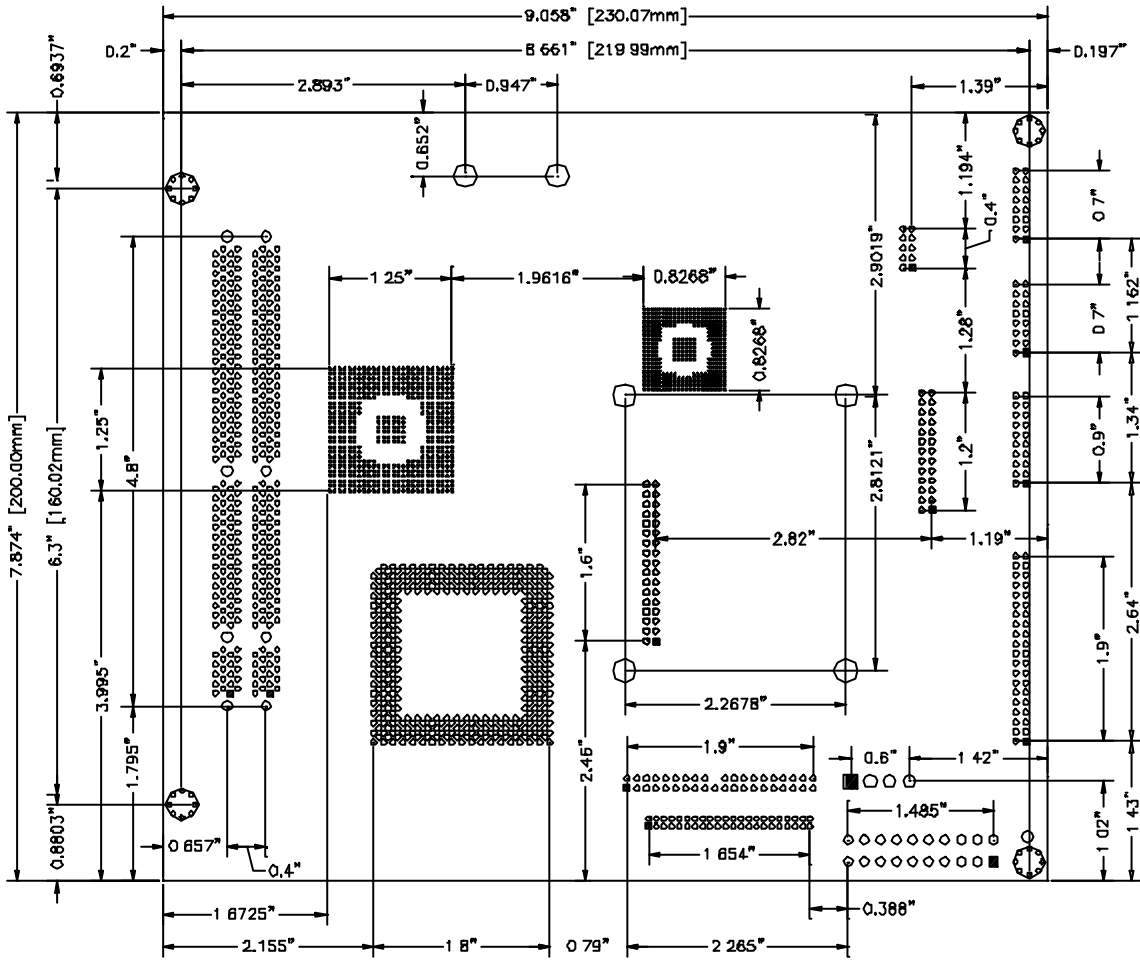
?? The LPC-815 Motherboard

?? This User' s Manual

?? LPC-SP Silicon image graphics daughter with TMDS panel support or LPC-N200 nVidia micro AGP VGA card

Specifications

|	
Processor Supported	Socket 370 support Intel Celeron / Pentium III, 533MHz~1.2GHz, 66/100/133MHz Bus Speed
Chipset	Intel 815E(B) Chipset
BIOS	Award BIOS Supports ACPI, DMI, PnP
System Memory	2x DIMM sockets support up to 512MB capacity PC100/PC133 supported
LPC I/O Chipset	ITE IT8712 (keyboard controller is built-in)
I/O Features	1x FDD (up to 2.88MB, 3 Mode, LS120) 1x Parallel Port (EPP, ECP Port) 2x Serial Ports (2x RS232) 1x IrDA TX/RX pin headers 4x USB ports interface
Bus Master IDE	2x IDE interfaces for up to 4 devices; supports PIO Mode 3/4 or UDMA/33/66/100 HDD, and ATAPI CD-ROM
VGA	815E(B) integrated graphics Shared memory Optional LPC-SP VGA daughter card with TMDS (SiI851) with panel connector or LPC-N200 NVIDIA micro AGP VGA card
LAN	Intel 82562ET Ethernet controller 10Base-T / 100Base-TX protocol RJ-45 connector cable via pin header
Hardware Monitoring	Built-in IT8712 Monitors CPU/system temperature and voltages
Power Supply Connector	ATX type
Keyboard and Mouse Connector	Pin headers
Form Factor	Custom size motherboard
Dimensions	200mm x 230mm (9.06" x 7.87")

Board Dimensions

Installations

This section provides information on how to use the jumpers and connectors on the LPC-815 in order to set up a workable system. The topics covered are:

Installing the CPU

The LPC-815 Motherboard supports a Socket 370 processor socket for Intel Pentium III and Celeron processors.

The Socket 370 processor socket comes with a lever to secure the processor. Raise this lever to about a 90? angle to allow the insertion of the processor. Place the processor into the socket by making sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket. Once the processor has slide into the socket, return the lever to the lock position. Refer to the figures below.
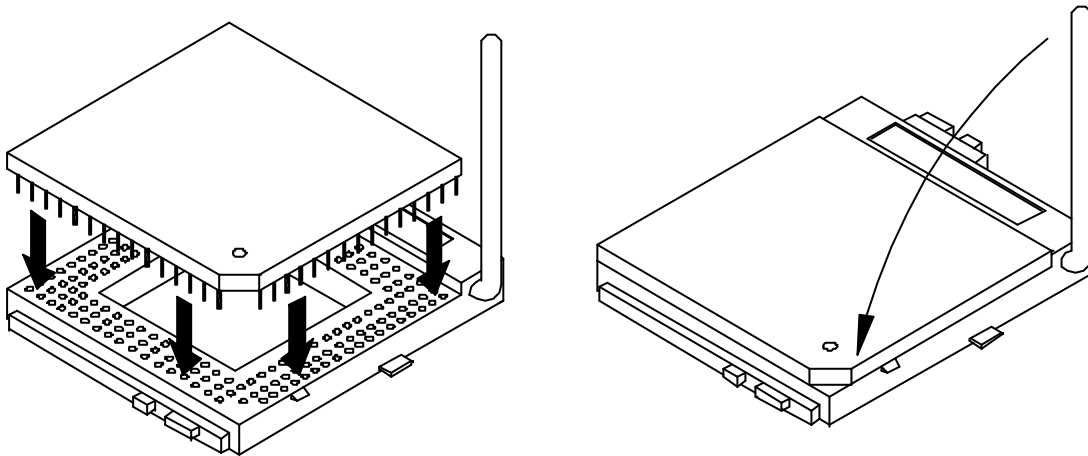
After you have installed the processor into the socket, check if the jumpers for the CPU type and speed are correct.

> **Note** : Ensure that the CPU heat sink and the CPU top surface are
>
> In total contact to avoid CPU overheating problem that
>
> would cause your system to hang or be unstable

Installing the Memory (DIMM)

The LPC-815 Motherboard supports two 168-pin DIMM sockets for a maximum total memory of 512MB in

SDRAM type. The memory module capacities supported are 32MB, 64MB, 128MB and 256MB.

Installing and Removing DIMMs

To install the DIMM, locate the memory slot on the Motherboard and perform the following steps:

1. Hold the DIMM so that the two keys of the DIMM align with those on the memory slot.

2. Gently push the DIMM in an upright position until the clips of the slot close to hold the DIMM in
   place when the DIMM touches the bottom of the slot.
3. To remove the DIMM, press the clips with both hands
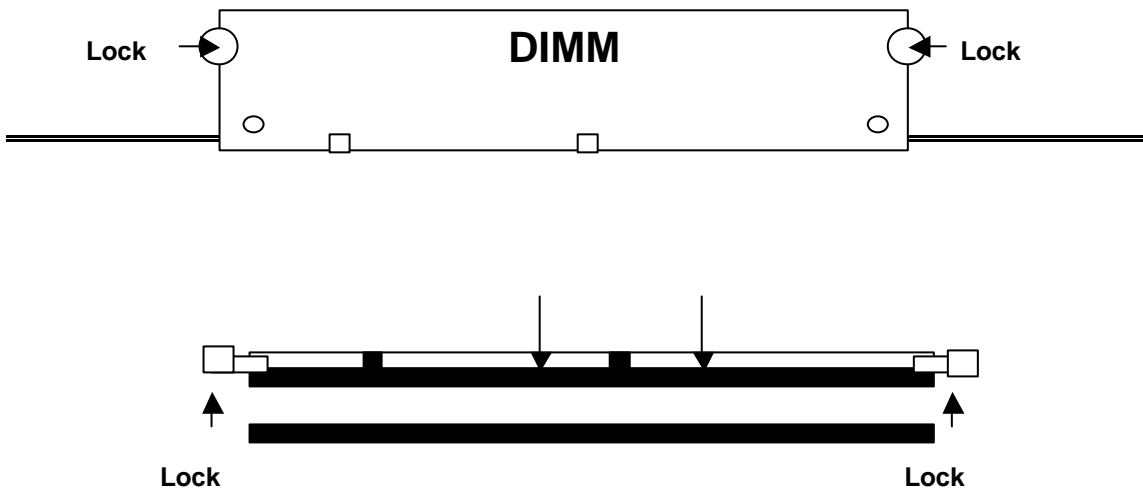
Setting the jumper

Jumpers are used on LPC815 to select various setting and features according to you needs and applications.

Contact your supplier if you have doubts about the best configuration for your needs. The following lists

the connectors on LPC-815 and their respective functions.

Jumper locations on LPC-815
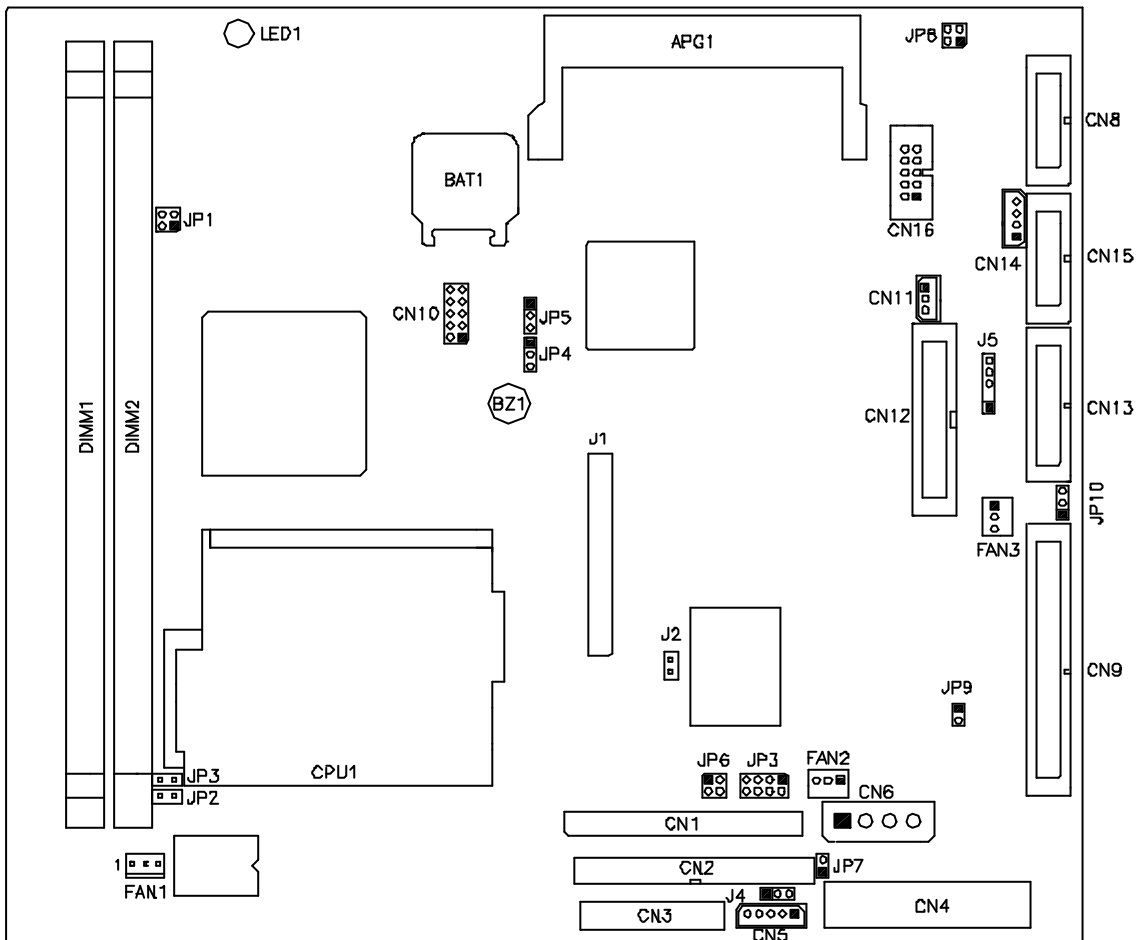
Jumper location LPC-815
Configuring the CPU frequency
J4: Back Light Control Select
JP4: Clear CMOS Contents
JP5: Clear Keyboard Password
JP6: Touch Panel Interface Select
JP7: CF Card Master/Slave Select
JP9: BIOS Write Protect
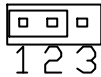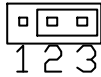JP10: Keyboard Wakeup
LED1: Suspend to DRAM

Configuring the CPU Frequency

The LPC-815 Motherboard does not provide DIP switches to configure the processor speed (CPU frequency). However, the processor speed can be automatically detected by the motherboard.
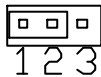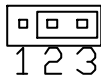
J4: Back Light Control Select

J4 can be used to select the back light control either from LPC-SP Silicon Image VGA daughter card or from the LPC-N200 NVIDIA micro AGP VGA card.

JP4	Setting	Backlight control
1 2 3	Pin 1-2 Short/Closed	LPC-815
1 2 3	Pin 2-3 Short/Closed	LPC-N200
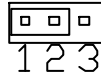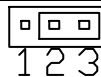
JP4: Clear CMOS Contents

Use JP4, a 3-pin header, to clear the CMOS contents. Note that the ATX-power connector should be disconnected from the Motherboard before clearing CMOS.

JP4	Setting	Function
1 2 3	Pin 1-2 Short/Closed	Normal
1 2 3	Pin 2-3 Short/Closed	Clear CMOS

JP5: Clear Keyboard Password

JP5, a 3-pin header, can be used to clear the keyboard password when you have forgotten the keyboard password configured in the BIOS Setup. After clearing the keyboard password, you can then turn on the system through the power button.

JP5	Function
1 2 3	Normal
1 2 3	Clear keyboard password
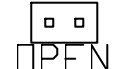
JP6: Touch Panel Interface Select

JP6, a 4-pin header, can be used to select the interface for the touch panel function either TTL or RS232.

JP6	Touch Panel Interface
1 2 SHORT SHORT 3 4	RS232
1 2 OPEN OPEN 3 4	TTL

JP7: CF Card Master/Slave Select

JP7 is used to select the connection of the Compact Flash card, if one is used, as Master or Slave. Note that the Compact Flash card is used in conjunction with IDE2 connector.

JP7	CF Card Connection
SHORT	Master
OPEN	Slave

JP9: BIOS Write Protect

JP9 can be used to protect the BIOS from being overwritten due to accidental modification or virus attacks.

JP9	BIOS Write
SHORT	Write Enabled
OPEN	Write Protect

JP10: Keyboard Wakeup

JP10, a 3-pin header, can be used so that the system can be 'wakeup' or powered on when it is turned off by pressing the 'wakeup' key as set in the BIOS. Please refer to the BIOS Setup regarding this function. This function is used in conjunction with an ATX power supply and with a standby current.

JP10	Function
1 2 3	Disabled
1 2 3	Enabled

LED1: Suspend to DRAM

This LED will light when the system enters the S3 suspend mode after it is enabled in the operating system that supports Suspend to DRAM. Note that the S3 mode should be set first in the BIOS Setup.

Connectors on LPC-815

The connectors on LPC-815 allows you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers, etc. The following table lists the connectors on LPC-815 and their respective functions.

Connector Locations on LPC-815
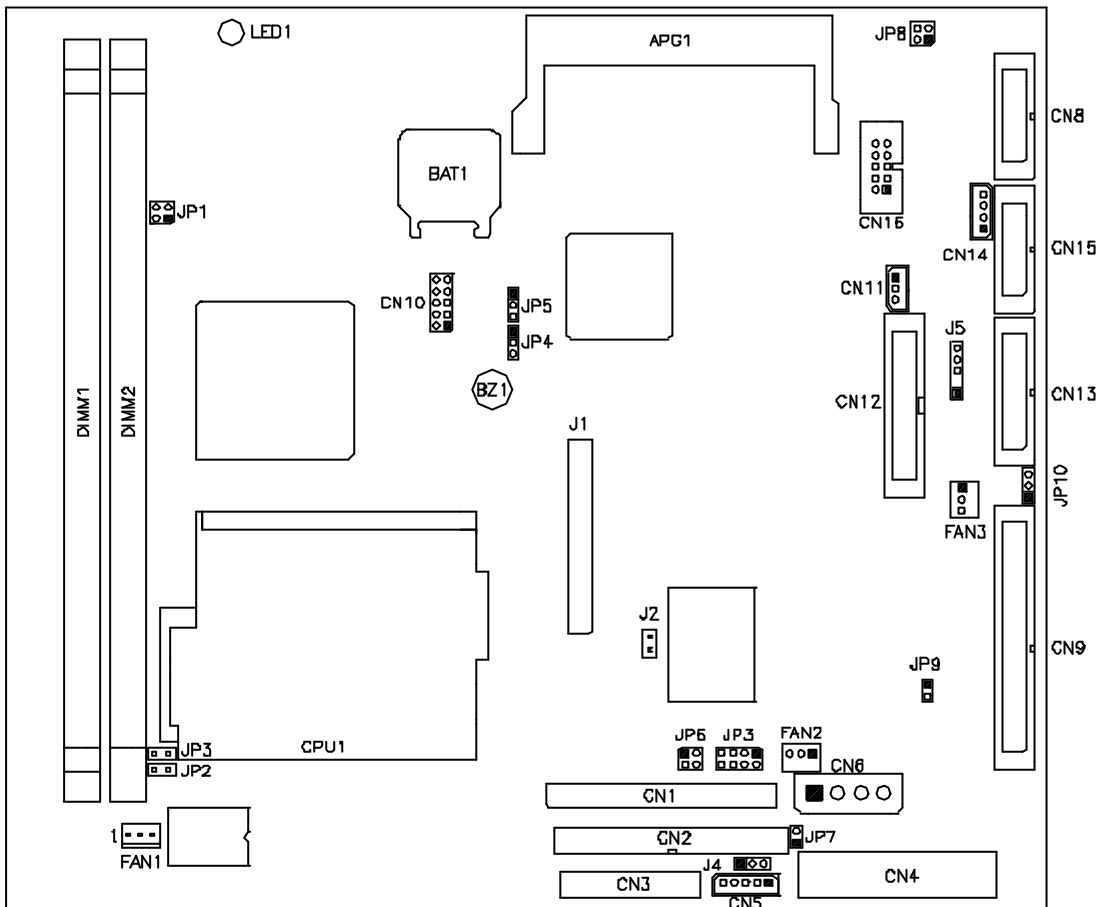
Connector Locations on LPC-815

FAN1 : CPU fan power connector	FAN1, FAN2 : System fan power connector 1/2
J1 : Interface connector for LPC-SP card	CN1, CN2 : EIDE connectors
CN3 : FDD slim-type connector	CN4 : ATX power supply connector
CN5 : Panel inverter connector	J5 : IrDA connector
CN6 : HDD power connector	CN7 : TMDS panel connector (on LPC-SP card)
CN8 : VGA and TV-Out connector	CN9 : Parallel & COM1 / COM2 connector
CN10 : Touch panel connector	CN11 : Mic-in connector
CN12 : Audio and PWR / RST switch connector	CN13 : Keyboard, Mouse & Game port connector
CN14 : USB4 Camera connector	CN15 : USB ports connector
CN16 : LAN port connector	

FAN1: CPU Fan Power Connector

FAN1 is a 3-pin header for the CPU fan. The fan must be a 12V fan.
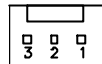
Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

FAN2, FAN3: System Fan Power Connector 1 / 2

FAN2 and FAN3 are 3-pin headers for a 12V fan.
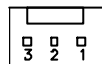
Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

J1: Interface Connector for LPC-SP card

J1 is the interface connecting to the LPC-SP Silicon Image VGA daughter card.
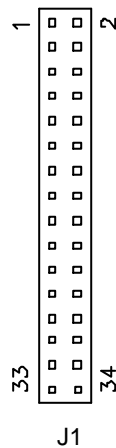
Signal Name	Pin #	Pin #	Signal Name
VCC	1	2	VCC
GND	3	4	GND
LTVD1	5	6	LTVD0
LTVD3	7	8	LTVD2
LTVD5	9	10	LTVD4
LTVD7	11	12	LTVD6
LTVD9	13	14	LTVD8
LTVD11	15	16	LTVD10
VCC3	17	18	VCC3
PCIRST	19	20	GND
DE	21	22	HSYNC
GND	23	24	VSYNC
3VFTSCL	25	26	PWROK
3VFTSDA	27	28	5VFTSDA
VCC1V8	29	30	5VFTSCL
CLK0	31	32	BACKLIGHT
CLK1	33	34	CLKIN

J1

CN1, CN2: EIDE Connectors
CN1 is the primary IDE connector.
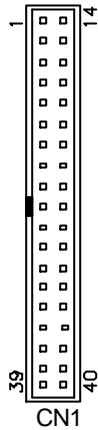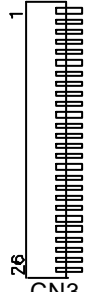
Signal Name	Pin #	Pin #	Signal Name
IDE_RESET#	1	2	GND
IDE_DATA7	3	4	IDE_DATA8
IDE_DATA6	5	6	IDE_DATA9
IDE_DATA5	7	8	IDE_DATA10
IDE_DATA4	9	10	IDE_DATA11
IDE_DATA3	11	12	IDE_DATA12
IDE_DATA2	13	14	IDE_DATA13
IDE_DATA1	15	16	IDE_DATA14
IDE_DATA0	17	18	IDE_DATA15
GND	19	20	N.C
DDRQ0	21	22	GND
IOW#	23	24	GND
IOR#	25	26	GND
IORDY#	27	28	P-Down 470ohm
DDACK0	29	30	GND
IRQ14	31	32	N.C
DA1	33	34	80P Cable Select
DA0	35	36	DA2
HDD_CS0#	37	38	HDD_CS1#
HDD_ACT#	39	40	GND

CN1

CN2 is the secondary IDE connector.
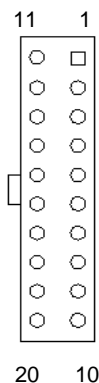
Signal Name	Pin #	Pin #	Signal Name
CD_L	1	2	CD_R
CD_GND	3	4	GND
IDE_RESET#	5	6	IDE_DATA8
IDE_DATA7	7	8	IDE_DATA9
IDE_DATA6	9	10	IDE_DATA10
IDE_DATA5	11	12	IDE_DATA11
IDE_DATA4	13	14	IDE_DATA12
IDE_DATA3	15	16	IDE_DATA13
IDE_DATA2	17	18	IDE_DATA14
IDE_DATA1	19	20	IDE_DATA15
IDE_DATA0	21	22	DDRQ0
GND	23	24	IOR#
IOW#	25	26	GND
IORDY#	27	28	DDACK0
INT	29	30	P-Down 470ohm
SA1	31	32	NC
SA0	33	34	SA2
CS0#	35	36	CS1#
ACT#	37	38	VCC
VCC	39	40	VCC
VCC	41	42	GND
M/S#	43	44	GND

CN2

CN3: FDD Slim-Type Connector
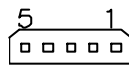
Signal Name	Pin	Pin	Signal Name	Signal Name	Pin	Pin	Signal Name
VCC	1	2	INDEX	GND	15	16	WDATA
VCC	3	4	DRV_SEL	GND	17	18	EGATE
VCC	5	6	DSK_CH	GND	19	20	TRACK
N.C	7	8	N.C	N.C	21	22	WPROT
N.C	9	10	MOTOR	GND	23	24	RDATA
DINST	11	12	DIR	GND	25	26	SIDE
N.C	13	14	STEP				

CN3

CN4: ATX Power Supply Connector

Signal Name	Pin #	Pin #	Signal Name
3.3V	11	1	3.3V
-12V	12	2	3.3V
Ground	13	3	Ground
PS-ON	14	4	+5V
Ground	15	5	Ground
Ground	16	6	+5V
Ground	17	7	Ground
-5V	18	8	Power good
+5V	19	9	5VSB
+5V	20	10	+12V
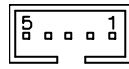
CN5: Panel Inverter Connector

Pin #	Signal Name
1	+12VDC
2	GND
3	GND
4	GND
5	INV Off/On(H=ON)

J5: IrDA Connector

J5 is used for an optional IrDA connector for wireless communication.

Pin #	Signal Name
1	+5V
2	No connect
3	Ir RX
4	Ground
5	Ir TX

CN6: HDD Power Connector
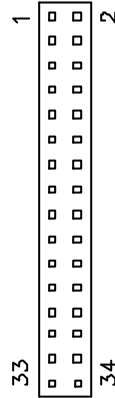
Pin #	Signal Name
1	+12VDC
2	GND
3	GND
4	+5VDC
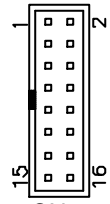
CN7: TMDS Panel Connector (on LPC-SP card)

TMDS stands Transition Minimized Differential Signaling. The table below shows the pin assignments

of this CN7 connector located on the LPC-SP Silicon Image VGA daughter card.

Signal Name	Pin#	Pin#	Signal Name
GND	1	2	GND
GND	3	4	TX2+
TX2-	5	6	GND
TX1+	7	8	TX1-
GND	9	10	TX0+
TX0-	11	12	GND
TXC+	13	14	TXC-
GND	15	16	HPD
DDC_CLK_INPUT	17	18	DDC_DATA_INPUT
DDC_5V	19	20	DDC_5V
GND	21	22	VSYNC
HSYNC	23	24	GND
DDC_5V	25	26	DDC_DATA_OUT
DDC_CLK_OUT	27	28	GND
VCC3	29	30	VCC3
VCC	31	32	VCC
VCC	33	34	GND

CN7

CN8: VGA and TV-Out Connector

Signal Name	Pin	Pin	Signal Name
RED	1	2	GND
GRN	3	4	GND
BLU	5	6	GND
V_SYNC	7	8	GND
H_SYNC	9	10	GND
DDC_CLK	11	12	GND
DDC_DAT	13	14	GND
TV-OUT	15	16	GND

CN8

CN9: Parallel & COM1/COM2 Connector
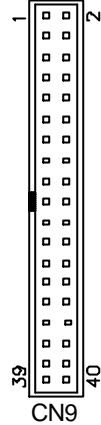
Signal Name	Pin	Pin	Signal Name
STB#	1	2	AFD#
PD0	3	4	ERR#
PD1	5	6	INIT#
PD2	7	8	SLIN#
PD3	9	10	GND
PD4	11	12	ACK#
PD5	13	14	BUSY
PD6	15	16	PE
PD7	17	18	SLCT
GND	19	20	GND
GND	21	22	DCD1
RXD1	23	24	TXD1
DTR1	25	26	GND
DSR1	27	28	RTS1
CTS1	29	30	RI1
GND	31	32	DCD2
RXD2	33	34	TXD2
DTR2	35	36	GND
DSR2	37	38	RTS2
CTS2	39	40	RI2

CN10: Touch Panel Connector
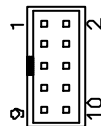
Signal Name	Pin	Pin	Signal Name
COM2_RX	1	2	232 COM2 RX
COM2_TX	3	4	232 COM2 TX
GND	5	6	GND
GND	7	8	+5VDC
GND	9	10	+3.3VDC

CN11: Mic_In Connector

Pin #	Signal Name
1	Mic_in
2	GND
3	Mic_VREF

CN12: Audio and PWR/RST Switch Connector
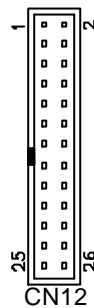
Signal Name	Pin	Pin	Signal Name
LIN_L	1	2	LIN_R
GND	3	4	SPK_L+
SPK_L-	5	6	SPK_R+
SPK_R-	7	8	HP-IN control
MIC_IN	9	10	GND(MIC)
MIC_VREF	11	12	GND
PWR-SW	13	14	GND
RESET-SW	15	16	GND
PWR_LED	17	18	PWR-VCC
HDD_LED	19	20	HDD-VCC
CDROM_LED	21	22	CDROM-VCC
FDD_LED	23	24	FDD-VCC
LAN_LED	25	26	LAN-VCC

CN13: Keyboard, Mouse & Game Port Connector
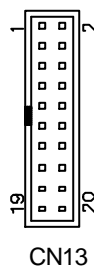
Signal Name	Pin	Pin	Signal Name
KBD_DATA	1	2	KBD_CLK
VCC	3	4	GND
MS_DATA	5	6	MS_CLK
J1BUTTON2	7	8	MIDI_IN
JOY1Y	9	10	J2BUTTON2
GND	11	12	JOY2Y
GND	13	14	MIDI_OUT
JOY1X	15	16	JOY2X
J1BUTTON1	17	18	J2BUTTON1
VCC	19	20	VCC

CN14: USB4 Camera Connector
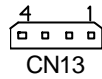
Signal Name	Pin	Pin	Signal Name
USB_VCC	1	2	USB4_D4-
USB4_D+	3	4	USB_GND

CN15: USB Ports Connector
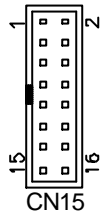
Signal Name	Pin	Pin	Signal Name
USB_VCC	1	2	USB1_D-
USB1_D+	3	4	USB_GND
USB_VCC	5	6	USB2_D-
USB2_D+	7	8	USB_GND
USB_VCC	9	10	USB3_D-
USB3_D+	11	12	USB_GND
USB_VCC	13	14	USB4_D-
USB4_D+	15	16	USB_GND

CN16: LAN Port Connector
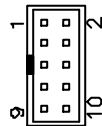
Signal Name	Pin	Pin	Signal Name
LAN_GND	1	2	LAN_TX+
LAN_TX-	3	4	LAN_GND
LAN_RX+	5	6	LAN_RX-
LAN10/100VCC	7	8	LAN_10/100LED
LAN_ACT LED	9	10	LAN_ACT GND

Chapter10. BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the Motherboard. The topics covered in this chapter are as follows:

BIOS Introduction

The Award BIOS (Basic Input/Output System) installed in your computer system' s ROM supports Intel Pentium II/III processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press  <DEL>  to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

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Standard CMOS Features	Frequency/Voltage Control
Advanced BIOS Features	Load Fail-Safe Defaults
Advanced Chipset Features	Load Optimized Defaults
Integrated Peripherals	Set Supervisor Password
Power Management Setup	Set User Password
PnP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
ESC : Quit	✍ ✍ ✍ ✍ : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type…	

The section below the setup items of the Main Menu displays the control keys for this menu. At the bottom of the Main Menu just below the control keys section, there is another section which displays information on the currently highlighted item in the list.

> **Note** :   If the system cannot boot after making and saving
>   system changes with setup, the Award BIOS supports
>   an override to the CMOS settings that resets your
>   system to it's default
>
> **Warning :** It is strongly recommended that you avoid making any
>   Changes to the chipset default. These default have been
>   Carefully chosen by both Award and your system
>   manufacturer to provide the absolute maximum performance
>   and reliability. Changing the defaults could cause the system
>   to become unstable and crash in some cases.

Standard CMOS Setup

"Standard CMOS Setup" choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the Motherboard is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

```
                    CMOS Setup Utility – Copyright ©1984-2001 Award Software
                                  Standard CMOS Features

    Date (mm:dd:yy)            Tue, Mar 26, 2001              Item Help

    Time (hh:mm:ss)            00 : 00 : 00          Menu Level

    IDE Primary Master         Press Enter 13020 MB  Change the day, month,
    IDE Primary Slave          Press Enter None      Year and century
    IDE Secondary Master       Press Enter None
    IDE Secondary Slave        Press Enter None

    Drive A                    1.44M, 3.5 in.
    Drive B                    None

    Video                      EGA/VGA
    Halt On                    All Errors

    Base Memory                640K
    Extended Memory            129024K
    Total Memory               130048K
```

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

Date
The date format is:

Day :	**Sun to Sat**
Month :	**1 to 12**
Date :	**1 to 31**
Year :	**1994 to 2079**

To set the date, highlight the "Date" field and use the PageUp/ PageDown or +/- keys to set the current time.

Time
The time format is:

	Hour :	**00 to 23**
	Minute :	**00 to 59**
	Second :	**00 to 59**

To set the time, highlight the "Time" field and use the <PgUp>/ <PgDn> or +/- keys to set the current time.

IDE Primary HDDs / IDE Secondary HDDs
The onboard PCI IDE connectors provide Primary and Secondary channels for connecting up to four IDE hard disks or other IDE devices. Each channel can support up to two hard disks; the first is the "Master" and the second is the "Slave".

Press <Enter> to configure the hard disk. The selections include Auto, Manual, and None. Select 'Manual' to define the drive information manually. You will be asked to enter the following items.

> **CYLS :** Number of cylinders
> **HEAD :** Number of read/write heads
> **PRECOMP :**   Write precompensation
> **LANDZ :**   Landing zone
> **SECTOR :**   Number of sectors

The Access Mode selections are as follows:
> Auto
> Normal   (HD < 528MB)
> Large   (for MS-DOS only)
> LBA   (HD > 528MB and supports Logical Block Addressing)

Drive A / Drive B
These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

> 360KB   1.2MB   720KB   1.44MB 2.88MB
> 5.25 in.   5.25 in.   3.5 in.   3.5 in.   3.5 in.

Video
This field selects the type of video display card installed in your system. You can choose the following video display cards:
> EGA/VGA   For EGA, VGA, SEGA, SVGA
>   or PGA monitor adapters. (default)
> CGA 40   Power up in 40 column mode.
> CGA 80   Power up in 80 column mode.
> MONO   For Hercules or MDA adapters.

Halt On
This field determines whether or not the system will halt if an error is detected during power up.

> No errors   The system boot will not be halted for any error
>   that may be detected.
> All errors   Whenever the BIOS detects a non-fatal error, the
>   system will stop and you will be prompted.
> All, But Keyboard   The system boot will not be halted for a keyboard
>   error; it will stop for all other errors
> All, But Diskette   The system boot will not be halted for a disk
>   error; it will stop for all other errors.
> All, But Disk/Key   The system boot will not be halted for a key-
>   board or disk error; it will stop for all others.

Advanced BIOS Features

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

```
CMOS Setup Utility – Copyright ©1984-2001 Award Software
                   Advanced BIOS Features
```

Virus Warning	**Disabled**	ITEM HELP
CPU Internal Cache	Enabled	Menu Level
External Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	Allows you choose
Processor Number Feature	Enabled	the VIRUS warning
Quick Power On Self Test	Enabled	feature for IDE Hard
First Boot Device	Floppy	Disk boot sector
Second Boot Device	HDD-0	protection. If this
Third Boot Device	CDROM	function is enabled
Boot Other Device	Enabled	and someone
Swap Floppy Drive	Disabled	attempt to write
Boot Up Floppy Seek	Disabled	data into this area,
Boot Up Numlock Status	On	BIOS will show a
Gate A20 Option	Fast	warning message
Typematic Rate Setting	Disabled	on screen and
Typematic Rate (chars/Sec)	6	alarm beep
Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM>64MB	Non-OS2	
Report No FDD For WIN 95	No	
Video BIOS Shadow	Enabled	
C8000-CBFFF Shadow	Disabled	
CC000-CFFFF Shadow	Disabled	
D0000-D3FFF Shadow	Disabled	
D4000-D7FFF Shadow	Disabled	
D8000-DBFFF Shadow	Disabled	
DC000-DFFF Shadow	Disabled	
Small Logo (EPA) Show	Enabled	

Virus Warning
This item protects the boot sector and partition table of your hard disk against accidental modifications. If an attempt is made, the BIOS will halt the system and display a warning message. If this occurs, you can either allow the operation to continue or run an anti-virus program to locate and remove the problem.

CPU Internal Cache / External Cache
Cache memory is additional memory that is much faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. These items allow you to enable (speed up memory access) or disable the cache function. By default, these items are *Enabled*.

CPU L2 Cache ECC Checking
This field enables or disables the ECC (Error Correction Checking) checking of the CPU level-2 cache. The default setting is ***Enabled***.

Processor Number Feature
When enabled, this feature allows external systems to detect the processor number/type of the CPU.

Quick Power On Self Test
When enabled, this field speeds up the Power On Self Test (POST) after the system is turned on. If it is set to *Enabled*, BIOS will skip some items.

First/Second/Third Boot Device
These fields determine the drive that the system searches first for an operating system. The options available include *Floppy*, *LS/ZIP*, *HDD-0*, *SCSI*, *CDROM*, *HDD-1*, *HDD-2*, *HDD-3*, *LAN* and *Disable*.

Boot Other Device
These fields allow the system to search for an operating system from other devices other than the ones selected in the First/Second/Third Boot Device.

Swap Floppy Drive
This item allows you to determine whether or not to enable Swap Floppy Drive. When enabled, the BIOS swaps floppy drive assignments so that Drive A becomes Drive B, and Drive B becomes Drive A. By default, this field is set to ***Disabled.***

Boot Up Floppy Seek
When enabled, the BIOS will seek whether or not the floppy drive installed has 40 or 80 tracks. 360K type has 40 tracks while 760K, 1.2M and 1.44M all have 80 tracks.

Boot Up NumLock Status
This allows you to activate the NumLock function after you power up the system.

Gate A20 Option
This field allows you to select how Gate A20 is worked. Gate A20 is a device used to address memory above 1 MB.

Typematic Rate Setting

When disabled, continually holding down a key on your keyboard will generate only one instance. When enabled, you can set the two typematic controls listed next. By default, this field is set to *Disabled.*

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, the system registers repeated keystrokes speeds. Settings are from 6 to 30 characters per second.

Typematic Delay (Msec)

When the typematic rate is enabled, this item allows you to set the time interval for displaying the first and second characters. By default, this item is set to *250msec.*

Security Option

This field allows you to limit access to the System and Setup. The default value is *Setup*. When you select *System,* the system prompts for the User Password every time you boot up. When you select *Setup,* the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

OS Select for DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is *Non-OS/2*.

Video BIOS Shadow

This item allows you to change the Video BIOS location from ROM to RAM. Video Shadow will increase the video speed.

C8000 - CBFFF Shadow/DC000 - DFFFF Shadow

Shadowing a ROM reduces the memory available between 640KB to 1024KB. These fields determine whether or not optional ROM will be copied to RAM.

Small Logo (EPA)

The EPA logo appears at the right side of the monitor screen when the system is boot up. The default setting is *Enabled*.

Advanced Chipset Features

This Setup menu controls the configuration of the chipset.

```
CMOS Setup Utility – Copyright ©1984-2001 Award Software
                      Advanced Chipset Features

 SDRAM CAS Latency Time         3                 ITEM HELP
 SDRAM Cycle Time Tras/Trc      7/9          Menu Level
 SDRAM RAS-to-CAS Delay         3
 SDRAM RAS Precharge Time       3
 System BIOS Cacheable          Disabled
 Video BIOS Cacheable           Disabled
 CPU Latency Timer              Enabled
 Delayed Transaction            Enabled
 AGP Graphics Aperture Size     64MB
 User VGA BIOS in VBU Block     Enabled
 System Memory Frequency        Auto
 On-Chip Video Window Size      64MB
```

SDRAM CAS Latency Time
You can select CAS latency time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The choices are 2 and 3.

SDRAM Cycle Time Tras/Trc
The default setting for the SDRAM Cycle Time Tras/Trc is *7/9*.

SDRAM RAS-to-CAS Delay
You can select RAS to CAS Delay time in HCLKs of 2/2 or 3/3. The system board designer should set the values in this field, depending on the DRAM installed. Do not change the values in this field unless you change specifications of the installed DRAM or the installed CPU. The choices are *2* and *3*.

SDRAM RAS Precharge Time
This option defines the length of time for Row Address Strobe is allowed to precharge. The choices are *2* and *3*.

System BIOS Cacheable
The setting of *Enabled* allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video BIOS Cacheable

The Setting *Enabled* allows caching of the video BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

CPU Latency Timer

The default setting for the CPU Latency Timer is *Enabled* .

Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1.

AGP Aperture Size

The field sets aperture size of the graphics. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. The default setting is *64M*.

Use VGA BIOS in VBU Block

When enabled, this field allows the use of VGA BIOS in VBU block.

System Memory Frequency

This field sets the frequency of the memory installed in the Motherboard. The default setting is *100MHz*.

On-Chip Video Window Size

The setting choices for the On-Chip Video Window Size are *64MB* and *32MB*. By default, this option is set to 64MB

Integrated Peripherals

This section sets configurations for your hard disk and other integrated peripherals.

```
            CMOS Setup Utility – Copyright ©1984-2001 Award Software
                            Integrated Peripherals
┌─────────────────────────────────────────────┬──────────────────────────┐
│ On-Chip Primary    PCI IDE      Enabled       │         ITEM HELP        │
│ On-Chip Secondary PCI IDE       Enabled       │  Menu Level              │
│ IDE Primary Master PIO          Auto          │                          │
│ IDE Primary Slave   PIO         Auto          │                          │
│ IDE Secondary Master PIO        Auto          │                          │
│ IDE Secondary Slave   PIO       Auto          │                          │
│ IDE Primary Master UDMA         Auto          │                          │
│ IDE Primary Slave   UDMA        Auto          │                          │
│ IDE Secondary Master UDMA       Auto          │                          │
│ IDE Secondary Slave   UDMA      Auto          │                          │
│ USB Controller                  Enabled       │                          │
│ USB Keyboard Support            Disabled      │                          │
│ Init Display First              PCI Slot      │                          │
│ AC97  Audio                     Auto          │                          │
│ IDE Block Mode                  Enabled       │                          │
│ POWER ON Function               Any KEY       │                          │
│ KB Power ON Password            Enter         │                          │
│ Hot Key Power ON                Ctrl-F1       │                          │
│ Onboard FDC Controller          Enabled       │                          │
│ Onboard Serial Port 1           3F8/IRQ4      │                          │
│ Onboard Serial Port 2           2F8/IRQ3      │                          │
│ UART Mode Select                Normal        │                          │
│ UR2 Duplex Mode                 Half          │                          │
│ Onboard Parallel Port           378/IRQ7      │                          │
│ Parallel Port Mode              SPP           │                          │
│ ECP Mode Use DMA                3             │                          │
│ PWRON After PWR Fail            Off           │                          │
│ Game Port Address               201           │                          │
│ Midi Port Address               330           │                          │
│ Midi Port IRQ                   10            │                          │
└─────────────────────────────────────────────┴──────────────────────────┘
```

OnChip Primary/Secondary PCI IDE

The integrated peripheral controller contains an IDE interface with support for two IDE channels. Select *Enabled* to activate each channel separately.

IDE Primary/Secondary Master/Slave PIO

These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with the controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

IDE Primary/Secondary Master/Slave UDMA
These fields allow your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

USB Controller
The options for this field are *Enabled* and *Disabled*. By default, this field is set to **Enabled**.

USB Keyboard Support
The options for this field are *Enabled* and *Disabled*. By default, this field is set to **Disabled**.

Init Display First
This field allows the system to initialize first the VGA card on chip or the display on the PCI Slot. By default, the *PCI Slot* VGA is initialized first.

AC97 Audio
The default setting of the AC97 Audio is **Auto**.

IDE HDD Block Mode
This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

POWER ON Function
This field allows powering on by the following methods:

Password	Hot KEY	Mouse Left	Mouse Right
Any KEY	BUTTON ONLY	Keyboard 98	

KB Power ON Password
This field allows you to set the power on function via the keyboard.

Hot Key Power ON
This field allows you to set the power on function via hot keys on the keyboard including Ctrl-F1 to Ctrl-F12.

Onboard FDC Controller
Select *Enabled* if your system has a floppy disk controller (FDC) installed on the Motherboard and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field. This option allows you to select the onboard FDD port

Onboard Serial/Parallel Port
These fields allow you to select the onboard serial and parallel ports and their addresses. The default values for these ports are:

Serial Port 1	3F8/IRQ4
Serial Port 2	2F8/IRQ3
Parallel Port	378H/IRQ7

UART Mode Select
This field determines the UART 2 mode in your computer. The default value is ***Normal***. Other options include *IrDA* and *ASKIR*.

Parallel Port Mode
This field allows you to determine parallel port mode function.

SPP	Standard Printer Port
EPP	Enhanced Parallel Port
ECP	Extended Capabilities Port

PWRON After PWR Fail
This field sets the power status of the system when the system powers on again from a power fail status.

Game Port Address
The default setting for the game port address is ***210***.

Midi Port Address
The option settings for this field are *330, 400* and *Disabled*. The default setting is ***330***.

Midi Port IRQ
The default Midi Port IRQ is ***10***.

Power Management Setup

The Power Management Setup allows you to save energy of your system effectively.

CMOS Setup Utility – Copyright ©1984-2001 Awar d Software
Power Management Setup

		ITEM HELP
ACPI Function	Enabled	
ACPI Suspend Type	S1 (POS)	Menu Level
Power Management	User Define	
Video Off Method	DPMS	
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
Modem Use IRQ	NA	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Wake-Up by PCI Card	Disabled	
Power On by Ring / LAN	Enabled	
USB KB Wake-Up From S3	Disabled	
Resume by Alarm	Disabled	
Date (of Month) Alarm	0	
Time (hh:mm:ss) Alarm	0	
** Reload Global Timer Events **		
Primary IDE 0	Enabled	
Primary IDE 1	Enabled	
Secondary IDE 0	Enabled	
Secondary IDE 1	Enabled	
FDD, COM, LPT Port	Enabled	
PCI PIRQ[A-D] #	Enabled	

ACPI Function
Enable this function to support ACPI (Advance Configuration and Power Interface).

ACPI Suspend Type
This option sets the ACPI Power Management standby state. The default is S1 (POS).

Power Management
This field allows you to select the type of power saving management modes. There are four selections for Power Management.

Min. Power Saving	Minimum power management
Max. Power Saving	Maximum power management.
User Define	Each of the ranges is from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min. (Default)

Video Off Method

This field defines the Video Off features. There are three options.

V/H SYNC + Blank	Default setting, blank the screen and turn off vertical and horizontal scanning.
DPMS	Allows the BIOS to control the video display card if it supports the DPMS feature.
Blank Screen	This option only writes blanks to the video buffer.

Video Off In Suspend

When enabled, the video is off in suspend mode. The default setting is *Yes*.

Suspend Type

The default setting for the Suspend Type field is *Stop Grant*.

Modem Use IRQ

This field sets the IRQ used by the Modem. By default, the setting is *3*.

Suspend Mode

When enabled, and after the set time of system inactivity, all devices except the CPU will be shut off.

HDD Power Down

When enabled, and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Soft-Off by PWRBTN

This field defines the power-off mode when using an ATX power supply. The *Instant Off* mode allows powering off immediately upon pressing the power button. In the *Delay 4 Sec* mode, the system powers off when the power button is pressed for more than four seconds or enters the suspend mode when pressed for less than 4 seconds. The default value is *Instant Off*.

Wake-Up by PCI Card

This field enables or disables the wake up function from a PCI card in the system.

Power On by Ring / LAN

This field enables or disables the power on of the system through the modem connected to the serial port or LAN.

USB KB Wake-Up From S3
This field enables or disables the USB keyboard wake-up function from S3 mode.

Resume by Alarm
This field enables or disables the resumption of the system operation. When enabled, the user is allowed to set the *Date* and *Time*.

Reload Global Timer Events
The HDD, FDD, COM, LPT Ports, and PCI PIRQ are I/O events which can prevent the system from entering a power saving mode or can awaken the system from such a mode. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service.

PNP/PCI configurations

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

```
                    CMOS Setup Utility – Copyright ©1984-2001 Award Software
                                   PnP/PCI Configurations

   Reset Configuration Data        Disabled            ITEM HELP
                                                        Menu Level
   Resources Controlled By         Auto (ESCD)
   IRQ Resources                   Press Enter          Default is Disabled.
                                                        Select Enabled to reset
                                                        Extended System
   PCI/VGA Palette Snoop           Disabled             Configuration Data
                                                        (ESCD) when you exit
                                                        Setup if you have
                                                        installed a new add-on
                                                        and the system
                                                        reconfiguration has
                                                        caused such a serious
                                                        conflict that the OS
                                                        cannot boot
```

Reset Configuration Data
This field allows you to determine whether to reset the configuration data or not. The default value is
Disabled.

Resources Controlled by
This PnP BIOS can configure all of the boot and compatible devices automatically with the use of a use a PnP operating system such as Windows 95.

PCI/VGA Palette Snoop
Some non-standard VGA display cards may not show colors properly. This field allows you to set whether or not MPEG ISA/VESA VGA cards can work with PCI/VGA. When this field is enabled, a PCI/VGA can work with an MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with an MPEG ISA/VESA card.

PC Health Status

This section shows the parameters in determining the PC Health Status. These parameters include temperatures, fan speeds and voltages.

```
               CMOS Setup Utility – Copyright ©1984-2001 Award Software
                                 PC Health Status
┌────────────────────────────────────────────┬──────────────────────────┐
│ Shutdown Temperature      [60°C / 140°F]     │        ITEM HELP         │
│ Vcore (V)                     1.63V          │                          │
│ +1.8(V)                       1.79V          │                          │
│ VCC3(V)                       3.37V          │                          │
│ +5(V)                         5.05V          │                          │
│ +12(V)                        12.09V         │                          │
│ -12(V)                      (-)12.03V        │                          │
│ 5VSB(V)                       5.05V          │                          │
│ Voltage Battery               3.24V          │                          │
│ CPU Temp.                      69?C          │                          │
│ System Temp.                   44?C          │                          │
│ System Temp.                   51?C          │                          │
│ CPU Fan Speed              4166 RPM          │                          │
│ System Fan Speed              0 RPM          │                          │
│ Mico Fan Speed                0 RPM          │                          │
│                                              │                          │
│                                              │                          │
│                                              │                          │
└────────────────────────────────────────────┴──────────────────────────┘
```

Shutdown Temperature
This field allows the user to set the temperature by which the system automatically shuts down once the threshold temperature is reached. This function can help prevent damage to the system that is caused by overheating.

Temperatures/Fan Speeds/Voltages
These fields are the parameters of the hardware monitoring function feature of the Motherboard. The values are read-only values as monitored by the system and show the PC health status.

Frequency / Voltage Control

This section shows the user how to configure the processor frequency.

```
         CMOS Setup Utility – Copyright ©1984-2001 Award Software
                      Frequency/Voltage Control
 ┌──────────────────────────────────────────┬──────────────────┐
 │ Auto Detect DIMM/PCI Clk      Disabled    │    ITEM HELP     │
 │ Spread Spectrum               Disabled    │  Menu Level      │
 │ CPU Clock Ratio               X 3         │                  │
 │                                           │                  │
 │                                           │                  │
 │                                           │                  │
 └──────────────────────────────────────────┴──────────────────┘
```

Auto Detect DIMM/PCI Clk
This field enables or disables the auto detection of the DIMM/PCI clock. The default setting is *Disabled*.

Spread Spectrum
This field sets the value of the spread spectrum. The default setting is *Disabled*. This field is for CE testing use only.

CPU Clock Ratio
The CPU Ratio, also known as the CPU bus speed multiplier, can be configured through this field. The default setting is *X 3*. This parameter can be used in conjunction with the above field to change the processor's speed.

Load Fail-Safe Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

Load Setup Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

Set Supervisor / User Password

These two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Save & Exit Setup

This option allows you to determine whether or not to accept the modifications. If you type "Y", you will quit the setup utility and save all changes into the CMOS memory. If you type "N", you will return to Setup utility.

Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing "Y" will quit the Setup utility without saving the modifications. Typing "N" will return you to Setup utility.