EPE-1814V2NAR

EPE 全长主板带 VGA 和双千兆 LAN

EPE Full-size Motherboard with VGA and Double Gigabit LAN

Version：A0

声明

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订购产品前，请向经销商详细了解产品性能是否符合您的需求。

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安全使用小常识

1. 产品使用前，务必仔细阅读产品说明书；
2. 对未准备安装的板卡，应将其保存在防静电保护袋中；
3. 在从防静电保护袋中拿出板卡前，应将手先置于接地金属物体上一会儿（比如 10 秒钟），以释放身体及手中的静电；
4. 在拿板卡时，需佩戴静电保护手套，并且应该养成只触及其边缘部分的习惯；
5. 为避免人体被电击或产品被损坏，在每次对主板、板卡进行拔插或重新配置时，须先关闭交流电源或将交流电源线从电源插座中拔掉；
6. 在需对板卡或整机进行搬动前，务必先将交流电源线从电源插座中拔掉；
7. 对整机产品，需增加 / 减少板卡时，务必先拔掉交流电源；
8. 当您需连接或拔除任何设备前，须确定所有的电源线事先已被拔掉；
9. 为避免频繁开关机对产品造成不必要的损伤，关机后，应至少等待 30 秒后再开机。

目录

第一章　产品介绍

简介

EPE-1814V2NAR 采用 EPE 规范（兼容 PICMG1.3 总线标准），是一款支持双核/四核 CPU 和 DDR3 内存的高性能全长 CPU 卡，且新的 EPE 标准使得该长卡的稳定性强于过去的 PICMG1.3 主板。

该产品采用 Intel® 4 系列嵌入式平台：Intel® G41 + ICH7R 的技术方案实现。集成 VGA 显示，支持 DVMT 模式最大共享内存 352MB；板载两条 DDR3 内存插槽，支持双通道 DDR3 800/1066MHz，最大支持到 4GB；八个 USB2.0(其中主板上四个，底板上引出四个)、两个 RS-232 COM 口、一个并口、两个千兆网口、四 个 SATA 接口（其中主板上两个，底板上引出两个)、一个 IDE 接口、一个 PS/2 键盘鼠标接口、一个八位数字 I/O；支持 HD Audio 接口，支持 MIC-in、Line-in、Speaker-out。

机械尺寸、重量与环境

- 外形尺寸：338.6 mm（长）×129.7 mm（宽）×35mm（高）
- 净重：496.9g
- 工作环境：

  温度：　0℃～60℃；

  湿度：　5%～90%（非凝结状态）；
- 贮存环境：

  温度：　-20℃～ 80℃；

  湿度：　5%～90%（非凝结状态）；

典型功耗

CPU：Intel Core 2 Quad Q9300 1333 2.5GHz 95W

内存：Kingston/1333/2G*2

- +5V@ 1.47A；+5%/-3%；
- +3.3V@ 1.75A；+5%/-3%；
- +12V@ 1.07A；+5%/-3%；

微处理器

支持 Intel® LGA775封装的Core™2 Quad 、Core™2 Duo， Celeron® E1000Δ和Celeron®400Δ系列CPU，支持FSB总线频率800/1066/1333MHz。

不支持Intel® Core™2 Extreme 、Pentium® 4 ，Pentium® D和Celeron® D等系列CPU。

芯片组

Intel® G41+Intel® ICH7R

系统内存

提供 2 条 240 Pin DDR3 内存插槽，支持 DDR3 800/1066MHz Un-buffered non-ECC 内存，可支持最大内存容量 4GB；

显示功能

Intel® G41北桥芯片集成VGA显示，支持最高分辨率 2048 X 1536@75Hz。

网络功能

提供 2 个10/100/1000Mbps网络接口，LAN1支持网络唤醒功能。

音频功能

采用 ALC888音效芯片，支持 MIC-in、Line-in、Speaker-out功能。

电源特性

采用ATX电源，支持 ACPI　S0/S1/S4/S5等状态。

扩展总线

采用EPE总线标准，支持1个PCIE x16、4个PCIE x1或1个PCIE x4、4个USB、2个SATA、SMBUS及4个PCI master等扩展。

Watchdog 功能

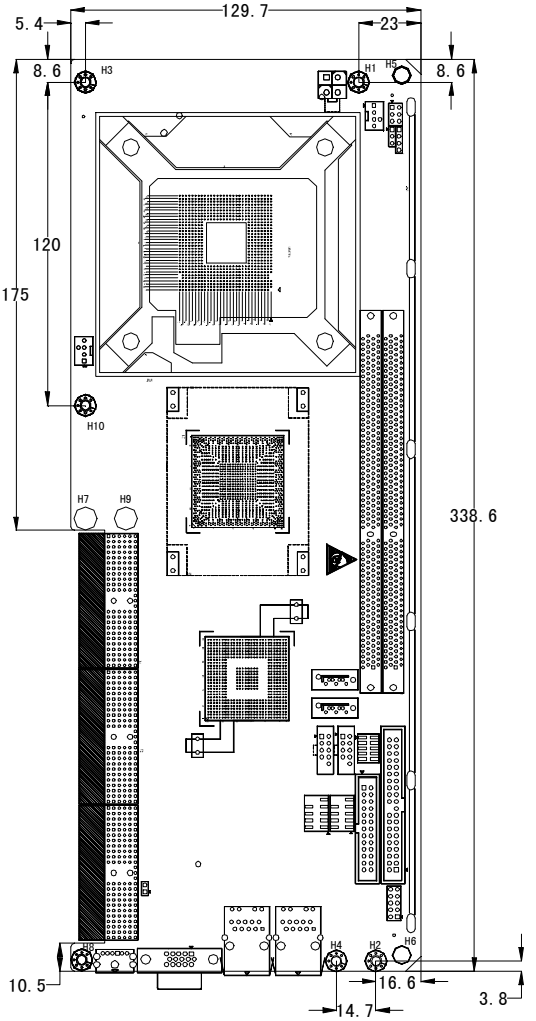
- 支持 255 级，可编程按分或秒；
- 支持看门狗中断或复位系统。

I/O 接口

- 提供 1 个并口；
- 提供 2 个串口；其中 COM1 支持唤醒功能；
- 提供 1 个 IDE 接口；
- 提供 4 个 SATA 接口（其中 2 个由底板引出），支持 RAID0、1、5，10；
- 提供 8 个 USB2.0 端口（其中 4 个由底板引出）；
- 提供 1 个 PS/2 键盘/鼠标接口；
- 提供 1 个 8 位数字 I/O 接口。

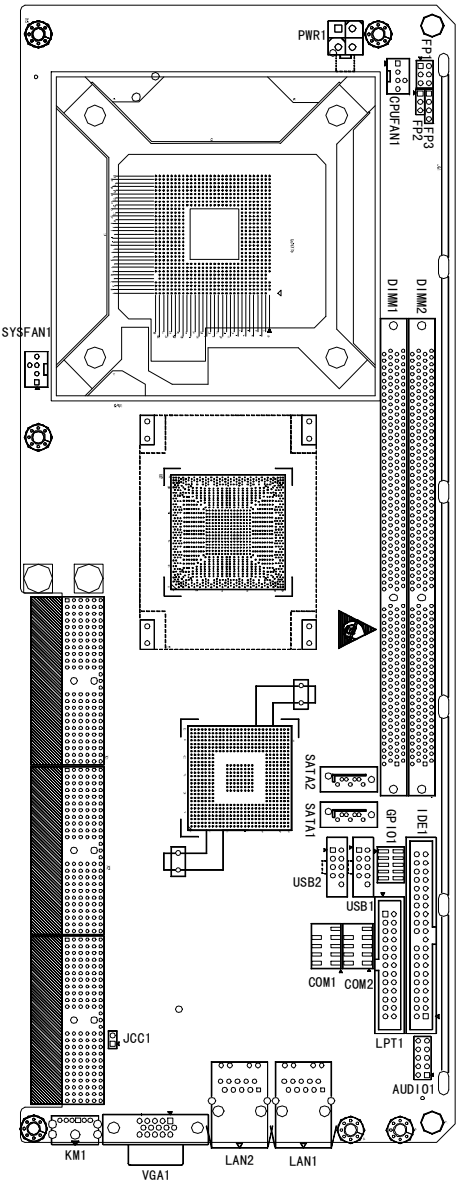
第二章　安装说明

产品外形尺寸图

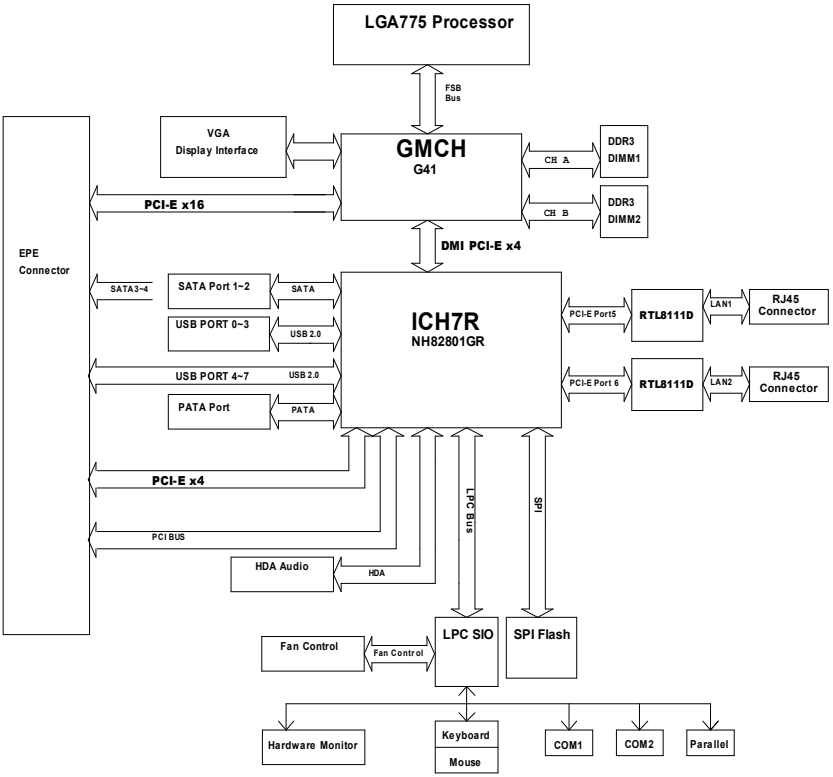


单位：mm

接口位置示意图


PWR1
FP1
CPUFAN1
FP3
FP2
DIMM1
DIMM2
SYSFAN1
SATA2
SATA1
GPIO1
IDE1
USB2
USB1
COM1
COM2
JCC1
LPT1
AUDIO1
KM1
VGA1
LAN2
LAN1

主板架构图


LGA775 Processor
FSB
Bus
VGA
Display Interface
GMCH
G41
CH A
CH B
DDR3
DIMM1
DDR3
DIMM2
PCI-E x16
DMI PCI-E x4
EPE
Connector
SATA3~4
SATA Port 1~2
SATA
USB PORT 0~3
USB 2.0
USB PORT 4~7
USB 2.0
PATA Port
PATA
ICH7R
NH82801GR
PCI-E Port5
RTL8111D
LAN1
RJ45
Connector
PCI-E Port 6
RTL8111D
LAN2
RJ45
Connector
PCI-E x4
PCI BUS
HDA Audio
HDA
LPC Bus
SPI
Fan Control
Fan Control
LPC SIO
SPI Flash
Hardware Monitor
Keyboard
Mouse
COM1
COM2
Parallel

提示：如何识别跳线、接口的第一脚

1、观察插头、插座旁边的文字标记，通常用“1”或加粗的线条或三角符号表示。

2、看看背面的焊盘，通常方型焊盘为第一脚。

3、电缆上的红线或其它第一脚标记要与插座的第一脚相接。

跳线设置

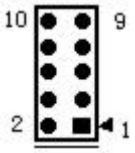
JCC1：CMOS内容清除/保持设置（脚距： 2.54 mm）

CMOS由板上钮扣电池供电。清CMOS会导致永久性消除以前系统配置并将其设为原始（工厂设置）系统设置。其步骤:(1)关闭计算机，断开电源；(2)瞬间短接JCC1插针；(3)开计算机；(4)启动时按屏幕提示按键进入BIOS设置，重新加载最优缺省值；(5)保存并退出设置。设置方式如下：

JCC1

设置	功能
1-2 开路	正常工作状态(Default)
1-2 短路	清除CMOS内容，所有BIOS设置恢复成出厂值。

音频接口



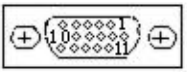
AUDIO1

(脚距：2.54mm)

管脚	信号名称	管脚	信号名称
1	LOUT_R	2	LOUT_L
3	GND_AUDIO	4	GND_AUDIO
5	LIN_R	6	LIN_L
7	GND_AUDIO	8	GND_AUDIO
9	MIC_L	10	MIC_R

显示接口

15芯D型VGA显示器插座 VGA1。

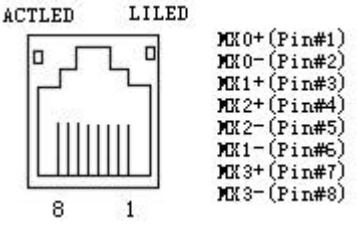


VGA1

管脚	信号名称	管脚	信号名称
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	NC	12	DDCDATA
13	HSYNC	14	VSYNC
15	DDCCLK		

网络接口

主板上有两个10/100/1000Mbps以太网接口，LILED和ACTLED是以太网接口两边的LED指示灯，它们显示着LAN的活动和传输状态。请参考以下每一个LED的状态描述：

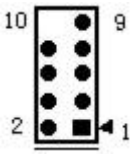


LAN1，LAN2

ACTLED（单色：绿色灯）	网络活动指示状态		LILED（双色：黄/绿灯）	网络速度指示状态
			绿色	1000Mbps
闪烁	有数据传输		黄色	100Mbps
灭	无数据传输		灭	10Mbps

串口

本板提供2个2×5Pin插针串口（脚距：2.54mm），支持RS-232模式，管脚定义如下：

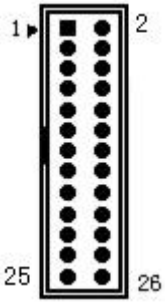


COM1/2

管脚	信号名称	管脚	信号名称
1	DCD#	6	DSR#
2	RXD	7	RTS#
3	TXD	8	CTS#
4	DTR#	9	RI#
5	GND	10	NA

并口

本板提供1个2×13Pin标准并行接口（脚距：2.54mm），可依据您的需求用来连接并行接口外设，管脚定义如下：

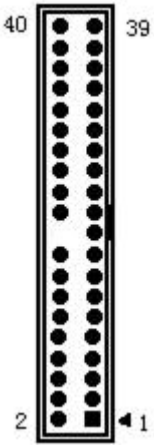


LPT1

管脚	信号名称	管脚	信号名称
1	STB#	2	AFD#
3	PD0	4	ERR#
5	PD1	6	INIT#
7	PD2	8	SLIN#
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	ACK#	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

IDE 接口

本板提供1个2×20Pin标准IDE接口（脚距：2.54mm），支持Ultra100/66/33 BMIDE和PIO模式，管脚定义如下：

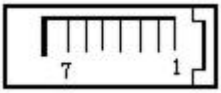


IDE1

管脚	信号名称	管脚	信号名称
1	RESET#	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	Key
21	DREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IORDY	28	GND
29	DACK#	30	GND
31	IRQ	32	NC
33	DA1	34	ATA66_DET
35	DA0	36	DA2
37	CS1#	38	CS3#
39	LED#	40	GND

SATA 接口

本板支持4个SATA，其中2个需通过底板引出。主板上提供的2个标准接口管脚定义如下：



SATA1/2

管脚	信号名称
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

SATA 硬盘热插拔

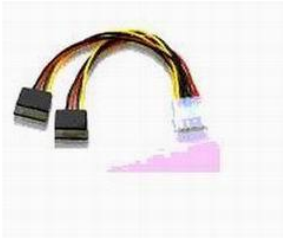
SATA 硬盘热插拔需注意：

（1）　硬盘必须支持：SATA 2.0 接口，并且采用 15 芯 SATA 硬盘电源接口。

（2）　芯片组驱动程序支持 SATA 硬盘的热插拔。

（3）　不能对操作系统所在的 SATA 硬盘进行带电热插拔。

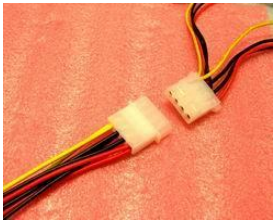
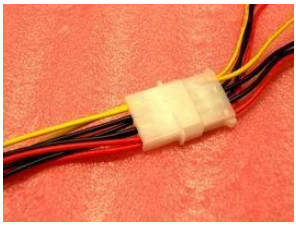
SATA 硬盘数据线



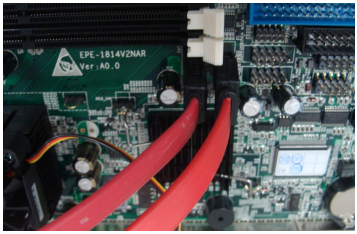
SATA 硬盘电源线

请按照如下步骤进行 SATA 硬盘热插拔，否则，操作不当会导致硬盘损坏和数据丢失。

热插入SATA硬盘步骤：

步骤1：请将SATA电源线1x4-针脚(白色)一端接到电源适配器的1x4-针脚电源线一端。



步骤2：将SATA 数据线接到主板上的SATA接口。

步骤3：将SATA电源线15-针脚接口(黑色)一端接到SATA硬盘。

步骤4：将SATA数据线接到SATA硬盘。

热拔出SATA硬盘步骤：

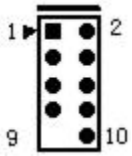
步骤 1：从设备管理器中卸载该硬盘。


步骤 2：从 SATA 硬盘一侧拔去 SATA 数据线。


步骤 3：从 SATA 硬盘一侧拔去 SATA 15-针脚电源线接口(黑色)。

USB 接口

本主板支持8个USB端口，其中4个通过底板引出。主板上提供了两组USB标准接口（脚距：2.54mm），可转接出4个USB端口。其管脚定义如下：

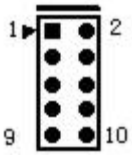


USB1/2

管脚	信号名称	管脚	信号名称
1	+5V	2	+5V
3	USB1_Data-	4	USB2_Data-
5	USB1_Data+	6	USB2_Data+
7	GND	8	GND
9	NA	10	GND

数字 IO 接口

本板提供的1个8位数字I/O接口(脚距：2.00mm)，其管脚定义如下：

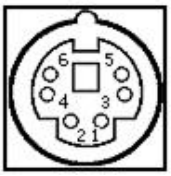


GPIO1

管脚	信号名称	管脚	信号名称
1	DIO_IN0	2	DIO_OUT0
3	DIO_IN1	4	DIO_OUT1
5	DIO_IN2	6	DIO_OUT2
7	DIO_IN3	8	DIO_OUT3
9	GND	10	NC

键盘与鼠标接口

键盘与鼠标接口



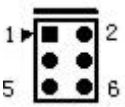
KM1

管脚	信号名称
1	KB_DATA
2	MS_DATA
3	GND
4	+5V
5	KB_CLK
6	MS_CLK

状态指示灯控制接口

FP1，FP2，FP3用于连接至机箱前面板上所设的功能按钮或指示灯。

ATX电源开关及硬盘指示灯接口(脚距：2.54mm)



FP1

管脚	信号名称	管脚	信号名称
1	PWRBTN#	2	GND
3	GND	4	RESET#
5	HDD_LED-	6	HDD_LED+

电源指示灯接口(脚距：2.54mm)

FP2

管脚	信号名称
1	PWR_LED+
2	NC
3	GND

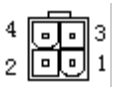
扬声器输出接口(脚距：2.54mm)

FP3

管脚	信号名称
1	SPEAKER
2	NC
3	GND
4	+5V

电源接口

+12V电源接口（脚距：4.20mm）



PWR1

管脚	信号名称
1	GND
2	GND
3	+12V
4	+12V

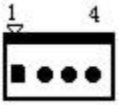
风扇接口

本CPU卡提供两组标准风扇插座(脚距：2.50mm)，使用风扇插座时要注意以下三点：

- 风扇电流不大于 700 毫安（12 伏特）。
- 请确认风扇接线和本插座的接线是否相符。电源线（通常为红色）在中间

位置。另外就是地线（通常为黑色）和风扇转速输出脉冲信号线（其它颜色）。有些风扇没有转速检测，但该引线却有高达 12V 的输出，会损坏 CPU 卡，这是非标准接线。建议使用带转速检测风扇。

- 将风扇气流调整成能将热量排出的方向。



CPUFAN1/ SYSFAN1

管脚	信号名称
1	GND
2	+12V
3	FAN_IO
4	FAN_PWM

FAN_IO：风扇转速脉冲输出； FAN_PWM：风扇转速PWM控制

CPU 安装

安装 CPU 按以下步骤进行（安装见下图）：

- 将 CPU 的凹起部分对准 CPU 插座上的凸起记号，将 CPU 放入插座。
- 检查 CPU 完全安装到位后，把 CPU 座子的上盖盖好 CPU,然后再将卡钩对 CPU 进行锁定。

CPU 散热风扇安装

安装 CPU 散热风扇按以下步骤进行（安装见下图）：

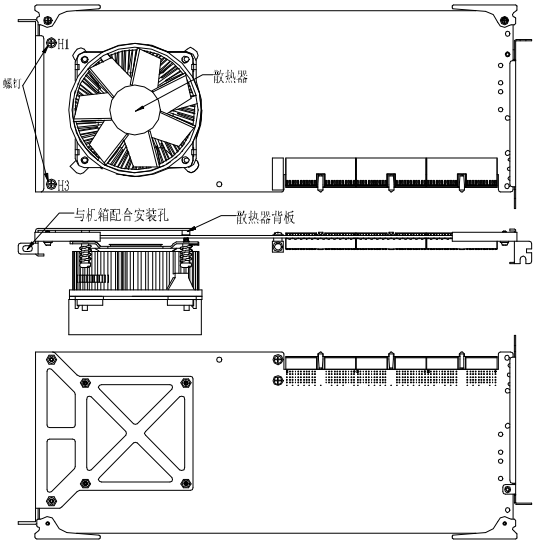
- 先将散热片背板(如图④)从 CPU 卡背面的固定孔放置好；
- 把散热片(如图⑤)从正面与背板对接固定，注意散热片与 CPU 的晶片的平面接触良好；

- 然后用两颗螺丝固定散热片的对角两端（先不要拧到紧），再添加另外对角两颗螺丝，再将四个螺丝拧紧；
- 最后将风扇电源线接到 CPU 卡上的风扇插座上。

注意！

1) 建议使用经Intel认证过的散热风扇；在安装风扇前，先把散热膏涂抹在CPU与风扇散热片接触的表面上以增强散热效果；经常检查CPU风扇是否正常工作，以确保机箱内的散热情况。拿板时不能拿着散热片，要拿板边。

2) 装机时，为加固和保证系统的稳定性，请务必使用包装内标配的散热片背板与机箱一起固定。安装示意图如下图所示：



步骤：1、H1、H3 位置通过两个螺钉将散热器背板和 PCB 固定；

2、将散热器的四个螺钉与散热器背板固定。

注意事项：

1、H1、H3 的螺钉先不要锁紧，待散热器四个螺钉旋进部分与背板的固定铆柱完全结合之后，再锁紧 H1、H3 位置的螺钉；

2、锁紧散热器的四个螺钉时，应呈对角线交替锁紧，不应一次锁紧一个或者一边的螺钉。

第三章 BIOS 功能简介

简介

BIOS（Basic Input and Output System：基本输入输出系统）固化在 CPU 板上的闪存存储器中，主要功能包括：初始化系统硬件，设置各系统部件的工作状态，调整各系统部件的工作参数，诊断系统各部件的功能并报告故障，给上层软件系统提供硬件操作控制接口，引导操作系统等。BIOS 提供用户一个菜单式的人机接口，方便用户配置各系统参数设置，控制电源管理模式，调整系统设备的资源分配等等。

正确设置 BIOS 各项参数，可使系统稳定可靠地工作，同时也能提升系统的整体性能。不适当的甚至错误的 BIOS 参数设置，则会使系统工作性能大为降低，使系统工作不稳定，甚至无法正常工作。

BIOS 参数设置

每当系统接通电源，正常开机后，便可看见进入 BIOS 设置程序提示的信息。此时(其它时间无效)，按下提示信息所指定的按键（通常为<Del>键）即可进入 BIOS 设置程序。

CMOS 中 BIOS 设置内容被破坏时，系统也会要求进入 BIOS 设置或选择某种默认设置值。

通过BIOS修改的所有设置值都保存在系统的CMOS存储器中，该CMOS存储器由电池供电，即使切断外部电源，其内容也不会丢失，除非执行清除CMOS内容的操作。

注意！BIOS的设置直接影响到电脑的性能，设置错误的参数将造成电脑的损坏，甚至不能开机，请使用BIOS内置缺省值来恢复系统正常运行。

由于本公司不断研发更新BIOS，其设置界面也会略有不同，以下的画面供您参考，有可能跟您目前所使用的BIOS设置程序不完全相同。

BIOS 基本功能设置

当SETUP程序启动之后，您可以看到CMOS Setup Utility主画面如下：

Phoenix - AwardBIOS CMOS Setup Utility	
▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
▶ PC Health Status	
Esc : Quit F10 : Save & Exit Setup	←→↑↓ : Select Item
Time, Data, Hard Disk Type...	

◆ **Standard CMOS Features**

Standard CMOS Features		Item Help
Date (mm:dd:yy)	Fri,Jan 12 2007	
Time (hh:mm:ss)	19:18:17	
		Menu Level
► IDE Channel 0 Master	[None]	Change the internal
► IDE Channel 0 Slave	[None]	clock.
► IDE Channel 1 Master	[None]	
► IDE Channel 1 Slave	[None]	
► IDE Channel 2 Master	[None]	
► IDE Channel 3 Master	[None]	
Drive A	[1.44M,3.5 in]	
Video	[EGA/VGA]	
Halt On	[All Errors]	
Base Memory	639K	
Extended Memory	487424K	
Total Memory	488448K	

➢ **Date**

选择此选项，按键盘PageUp / PageDown键设置目前的日期。以月/日/年的格式来表示。各项目合理的范围是：Month/月(Jan.-Dec.), Date/日(01-31),Year/年(最大至 2099), Week/星期(Mon.～ Sun.)。

➢ **Time**

选择此选项，按键盘PageUp / PageDown键来设置目前的时间。以时/分/秒的格式来表示。各项目合理的范围是：Hour/时(00-23), Minute/分(00-59),Second/秒(00-59)。

➢ **IDE Channel 0 Master**

IDE Channel 0 Master/Slave, IDE Channel 1 Master/Slave, IDE Channel 2 Master, IDE Channel 3 Master选项表示主板上集成有四组IDE通道，通道0和1可以接两个设备（主/从），通道2和3分别可以接一个IDE主设备。

此选项在该IDE通道没有检测到IDE设备时，显示[None]。如果检测到IDE设备，则会显示该设备的名字。

IDE Channel 0 Master		
IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Channel 0 Master	[Auto]	Menu Level
Access Mode	[Auto]	To auto-detect the HDD’s size, head...on this channel
Capacity	0 MB	
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

以按下IDE Channel 0 Master 为例，新弹出画面中包含如下选项:

- IDE HDD Auto-Detection

此选项允许按下Press Enter来侦测IDE装置的参数，这些参数会自动显示在下方屏幕上。

- IDE Channel 0 Master

默认值是Auto，系统会自动检测是哪种IDE装置，选择Manual则为用户手动输入各项参数（一般不提倡，除非用户对各项参数非常了解）。选择None则关掉该通道。

- Access Mode

默认值是Auto，CHS选项中C表示Cylinder；H表示Head；S表示Sector。Large选项表示扩展的CHS，在早期硬盘容量突破512M时采用在BIOS层加入转换使得硬

盘寻址能突破512M的瓶颈。LBA选项放弃了柱，道，扇区的规范，采用全硬盘以扇区统一编址，选择此选项需要BIOS和硬盘都支持LBA模式。Auto表示由系统决定存取硬盘方式。

Capacity：硬盘当前的容量。

Cylinder：硬盘磁柱的数量。

Head： 读/写磁头的数量。

Precomp： 写入预补偿值，以调整写入时间。

Landing zone：读/写头停放区。

Sector： 每个磁道的扇区数量。

- **Drive A**

<Drive A>选项表示1.44M，3.5寸软驱。

- **Video**

<Video>选项有四种显示模式，EGA/VGA：EGA（Enhanced Graphics Adapter），每个像素4bits，共16种颜色，支持640*350分辨率。VGA（Video Graphics Array）支持16色，分辨率为640*480和256色，分辨率为320*200。CGA40/CGA80：CGA（Color Graphics Adapter）支持4色，分辨率为320*200。40和80则代表40列和80列显示。MONO：单色显示。

- **Halt On**

<Halt On>:设置系统自我检测的中断位置。All Errors: BIOS在POST阶段遇到任何错误都停止自检。No Errors: BIOS忽略错误，继续自检。All, But Keyboard: 在POST阶段跳过对键盘的检测。

Base Memory: 基本内存。

Extended Memory: 扩展内存。

Total Memory: 内存总数。

◆ **Advanced BIOS Features**

Advanced BIOS Features		
▶ CPU Feature	[Press Enter]	Item Help
▶ Hard Disk Boot Priority	[Press Enter]	
Virus Warning	[Disabled]	Menu Level
CPU L3 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Hard Disk]	
Second Boot Device	[CDROM]	
Third Boot Device	[LS120]	
Boot other Device	[Enabled]	
Boot Up NumLock Status	[On]	
Typematic Rate Setting	[Fast]	
Typematic Rate(Chars/Sec)	[Disabled]	
Typematic Delay(Msec)	6	
Security Option	250	
APIC Mode	[Setup]	
Small Logo(EPA) Show	[Disabled]	
Auto Detect PCI CLK	[Enabled]	
Spread Spectrum	[Enabled]	

➢ **CPU Feature**

CPU Feature		
PPM Mode	[Native Mode]	Item Help
Limit CPUID MaxVal	[Disabled]	Menu Level Native Mode is for fully support ACPI OS (ex.WINXP, VISTA...), SMM mode is for legacy OS (ex. Win2K)
C1E Function	[Auto]	
Execute Disable Bit	[Enabled]	
Virtualization Technology	[Disabled]	
Core Multi-Processing	[Enabled]	

● PPM Mode

即EIST（Enhanced intel Speedstep Technology）这是一个根据处理器负载来调节主频和电压的模块，需要操作系统和BIOS的支持，系统通过ACPI进行调节。Speedstep Technology提供了更多的CPU频率和电压的调节级别，因此可以比C1E更加精确的调节处理器的状态。

Native Mode 应用于完整支持ACPI的操作系统，如：WINXP，VISTA。(默认值)

SMM Mode 应用于传统的操作系统，如：WIN2000。

- Limit CPUID MaxVal

此项设置可开启支持较旧的操作系统的CPUID的最大值限制功能，防止CPU执行完CPUID指令后返回一个大于3的值引起系统错误。

Disabled 关闭，此选项WINXP系统下必须关闭。(默认值)

Enabled 开启。

- C1E Function

这项功能的作用与EIST类似，打开后能让CPU在空载状态下以这颗CPU所支持的最低的倍频运行。但从节能的角度看，效果不如EIST选项。

Disabled 关闭。

Auto BIOS自动侦测。(默认值)

- Execute Disable Bit

硬件防病毒技术，是Intel在新一代处理器中引入的一项功能，开启该功能，可以防止病毒，木马等程序破坏系统内存并取得系统控制权。其基本工作原理是：处理器才内存中划出几块区域，部分区域可执行应用程序代码，而另一区域则不允许。

Disabled 关闭。

Enabled 开启。(默认值)

<Virtualization Technology>: 虚拟化技术

Disabled 关闭。(默认值)

Enabled 开启。

- Core Multi-Processing

多核心处理器，如果关掉，那么一个多核心处理器将只有单核心在工作。

Disabled 关闭。

Enabled 开启。(默认值)

- **Hard Disk Boot Priority**

当主机接多个硬盘时，选择此选项，回车后可以看到硬盘列表，排在最上面的硬盘就是当前要启动的硬盘，使用pagedown和pageup可以调整顺序。<Bootable Add-in Cards>表示在扩展卡中的启动硬盘。

- **Virus Warning**

启动此项功能后，IDE硬盘的引导区被保护起来，如果有程序试图写数据进引导区，BIOS会在屏幕上显示一条报警信息，同时蜂鸣器报警。

Disabled 关闭。(默认值)

Enabled 开启。

- **CPU L3 Cache**

使能CPU L3缓存。

Disabled 关闭。

Enabled 开启。(默认值)

- **Quick Power On Self Test**

启动此功能可以使系统在启动过程中跳过一些检测，缩短启动时间。

Disabled 关闭。

Enabled 开启。(默认值)

- **First Boot Device**

首选开机设备

LS120: 120M的软驱动器，可以使用120M软盘作为启动盘。

Hard Disk: 硬盘作为启动盘。 (默认值)

CDROM: 光盘驱动器，可以使用光盘作为启动盘。

ZIP100: 100M的软驱动器。

USB-FDD: USB接口的软驱动器。

USB-ZIP: 以USB-ZIP作为第一优先开机装置。

USB-CDROM: USB接口的光盘驱动器。

Legacy LAN: 网卡作为启动装置。

Disabled: 关闭此项功能。

- **Second Boot Device**

  第二顺序开机设备。

- **Third Boot Device**

  第三顺序开机设备。

- **Boot other Device**

开启此项功能可以在上述的启动设备无法成功启动计算机时，从其他设备启动。

Disabled 关闭。

Enabled 开启。(默认值)

- **Boot Up NumLock Status**

该选项可选择On和Off。当设置为On时，表示在系统启动阶段自动打开NumLock键。

Off 关闭。

On 开启。(默认值)

- **Typematic Rate Setting**

该选项可选择Enabled和Disabled。当设置为Enabled时，如果按下键盘的某个键不放，机器按你重复按下该键对待，当设置为Disabled时，如果按下键盘的某个键不放，机器按键入该键一次对待。

Disabled 关闭。(默认值)

Enabled 开启。

- **Typematic Rate(Chars/Sec)**

如果 Typematic Rate Setting 选项设置为 Enabled，那么可以用此选项设定当按下键盘的某一个键一秒钟，相当于按键多少次。

- **Typematic Delay (Msec)**

  如果Typematic Rate Setting选项设置为Enabled，那么可以用此选项设定按下某一键时，延时多长时间后开始视为重复键入该键,单位为毫秒。

- **Security Option**

  选择system时，每次开机启动都会提示输入密码，选择setup时，仅在进入BIOS设置时会提示输入密码。

  system：系统。

  setup： 进setup界面。(默认值)

- **APIC Mode**

  打开或关闭APIC(高级程序中断管理)。

  Disabled 关闭。

  Enabled 开启。(默认值)

- **Small Logo(EPA) Show**

  此选项开启为在boot阶段显示EPA(环境保护机构)的energy star logo。

  Disabled 关闭。(默认值)

  Enabled 开启。

- **Auto Detect PCI CLK**

  Enabled:开启,自动检测所有的PCI,AGP插槽,如果没有外接卡使用该插槽,则关闭供给该插槽的时钟信号,减少EMI。(默认值)

  Disabled:关闭，全部的时钟信号都正常供给，不管是否使用插槽。

- **Spread Spectrum**

  <Disabled>: 关闭,关闭系统展频功能。

  <Enabled>: 开启，扩展系统的时钟频率，可以减少EMI。(默认值)

◆ **Advanced Chipset Features**

Advanced Chipset Features	
Memory Hole At 15M-16M [Disabled] Disable MCHBAR MMIO [Enabled] VT-d [Disabled] ** VGA Setting ** PEG/Onchip VGA Control On-Chip Frame Buffer Size DVMT Mode Total GFX Memory PAVP Mode	Item Help Menu Level

➢ **Memory Hole At 15M-16M**

打开此项功能可以把15M-16M这段地址空间保留出来，给一些ISA设备使用，这样系统得地址会减少。

Disabled 关闭。(默认值)

Enabled 开启。

➢ **Disable MCHBAR MMIO**

打开此功能可以在BIOS POST结束后release北桥的MMIO空间。

Disabled 关闭。

Enabled 开启。(默认值)

➢ **PEG/Onchip VGA Control**

此选项选择系统启动时使用板载的图形处理器或者是PCIE插槽的显卡。

Onchip VGA: 板载图形处理器。

PEG Port: PCIE插槽外接显卡。

Auto: BIOS自动侦测。(默认值)

➢ **On-Chip Frame Buffer Size**

此选项选择分配给集成显卡的系统内存资源的大小。选项有： 32MB(默认值)，64MB，128MB。

- **DVMT Mode**

  动态显存技术。打开此功能可以动态的分配系统内存给集成显卡。

  Disabled 关闭。

  Enabled 开启。(默认值)

- **Total GFX Memory**

  在XP系统下，GFX显存最大值是基于系统内存大小的。例如：系统内存1GB，最大GFX显存512MB\ 128MB (默认值)\ 256MB

- **PAVP Mode**

  Protected Audio/Video Path mode

  Disabled 关闭。(默认值)

  Enabled 开启。

◆ **Integrated Peripherals**

Integrated Peripherals	
► OnChip IDE Device	Item Help
► SuperIO Device	Menu Level
OnChip Audio Device [Enabled]	
► USB Device Setting	

- **OnChip IDE Device**

OnChip IDE Device	
IDE HDD Block Mode [Enabled] IDE DMA transfer access [Enabled] IDE Primary Master PIO [Auto] IDE Primary Slave PIO [Auto] IDE Primary Master UDMA [Auto] IDE Primary Slave UDMA [Auto] On-Chip Secondary PCI IDE [Enabled] IDE Secondary Master PIO [Auto] IDE Secondary Slave PIO [Auto] IDE Secondary Master UDMA [Auto] IDE Secondary Slave UDMA [Auto] LEGACY Mode Support [Disabled]	Item Help Menu Level If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support

- IDE HDD Block Mode

打开此功能可以在一次中断时传送多个扇区数据。现在的主流硬盘都支持此功能，建议打开。

Disabled 关闭。

Enabled 开启。(默认值)

- IDE DMA transfer access

此选项使能IDE设备的DMA功能。

Disabled 关闭。

Enabled 开启。(默认值)

- IDE Primary Master PIO

此选项表示IDE第一通道中的主硬盘PIO模式选择。

PIO Mode	Cycle Time	Transfer Rate	Standard

Mode 0	600	3.3 (MB/S)	ATA
Mode 1	383	5.2 (MB/S)	ATA
Mode 2	240	8.3 (MB/S)	ATA
Mode 3	180	11.1 (MB/S)	ATA-2
Mode 4	120	16.7 (MB/S)	ATA-2

Auto: BIOS自动侦测选择。(默认值)

- IDE Primary Slave PIO

此选项表示IDE第一通道中的从硬盘PIO模式选择。

- IDE Primary Master UDMA

此选项开启IDE第一通道中的主硬盘的Ultra DMA传送数据模式。Ultra DMA模式与普通DMA模式的区别是Ultra DMA模式在时钟的上升沿和下降沿都传送数据，在同一时钟频率下，速度是普通DMA的两倍。

Disabled: 关闭。

Auto: BIOS自动监测。(默认值)

- IDE Primary Slave UDMA

同上。

- On-Chip Secondary PCI IDE

此选项选择是否使用南桥下第二个IDE通道。

Disabled 关闭。

Enabled 开启。(默认值)

- IDE Secondary Master PIO

此选项表示IDE第二通道中的主硬盘PIO模式选择。

- IDE Secondary Slave PIO

此选项表示IDE第二通道中的从硬盘PIO模式选择。

- IDE Secondary Master UDMA

此选项开启IDE第二通道中的主硬盘的Ultra DMA传送数据模式。

- IDE Secondary Slave UDMA

此选项开启IDE第二通道中的从硬盘的Ultra DMA传送数据模式。

- LEGACY Mode Support

该选项开启可以支持老版本的软件，数据，或操作系统。

Disabled 关闭。(默认值)

Enabled 开启。

➢ **Super IO Device**

Super IO Device		
OnBoard FDC Controller	[Enabled]	Item Help
OnBoard Serial Port 1	[3F8/IRQ4]	
OnBoard Serial Port 2	[2F8/IRQ3]	Menu Level
OnBoard Parallel Port	[3F8/IRQ7]	
Parallel Port Mode	[Normal]	

- <OnBoard FDC Controller>

用于使能软驱控制器。

- <OnBoard Serial Port 1>

设定主机板上串口1的地址及IRQ。

- OnBoard Serial Port 2

设定主机板上串口2的地址及IRQ。

- OnBoard Parallel Port

设定主机板上并口的地址，地址缺省值为378

- Parallel Port Mode

该项设置指定并行口的工作模式：Normal,ECP,EPP,SPP,ECP+EPP表示双向数据传输下的最大速度；而ECP表示在双向数据传输下比EPP更快的速度

➢ **OnChip Audio Device**

该选项选择是否开启芯片上集成的声卡控制器。

➢ **USB Device Setting**

USB Device Setting	
USB 1.0 Controller USB 2.0 Controller USB Storage Function *** USB Mass Storage Device Boot Setting ***	Item Help Menu Level [Enable] or [Disable] Universal Host Controller Interface for Universal Serial Bus.

- USB 1.0 Controller

该选项选择是否开启USB1.0控制器。

- USB 2.0 Controller

该选项选择是否开启USB2.0控制器。

- USB Storage Function

开启支持USB存储设备。

◆ **Power Management Setup**

USB Device Setting

ACPI Function	[Enabled]	Item Help
Restore on AC Power Loss	[Last State]	
Resume by Alarm	[Disabled]	Menu Level
Date(of Month) Alarm	0	
Time(hh:mm:ss) Alarm	0 : 0 : 0	

➢ **ACPI Function**

该选项选择是否开启高级电源管理。

Disabled 关闭。

Enabled 开启。(默认值)

➢ **Restore on AC Power Loss**

Off: 在电源恢复后不自动重新启动。(默认值)

On: 在电源恢复后自动重新启动。

Last State：在电源恢复后系统恢复到掉电前的状态。

➢ **Resume by Alarm**

该选项使能系统在特定的时间唤醒，用户必须设定具体的时间。

<Disabled> 关闭。(默认值)

<Enabled> 开启。

◆ **PnP/PCI Configurations**

PnP/PCI Configurations		
Init Display First	[PCI Slot]	Item Help
Reset Configuration Data	[Disabled]	Menu Level
Resources Controlled By	[Auto(ESCD)]	
PCI/VGA Palette Snoop	[Disabled]	

➢ **Init Display First**

该选项选择在系统启动时使用是板载显卡还是PCI显卡。

PCI Slot: PCI插槽外接显卡。(默认值)

Onboard: 板载显卡。

➢ **Reset Configuration Data**

此选项的功能是清除ESCD(Extended System Configuration Data),当出现新安装的硬件和原先系统冲突时，打开此选项。

Disabled 关闭。(默认值)

Enabled 开启。

➢ **Resources Controlled By**

Auto(ESCD): 选择此选项,BIOS自动分配PnP/PCI设备的资源,如:IRQ,DMA,内存。(默认值)

Manual: 手动分配各种资源。

在Resources Controlled By选项设为<Manual>之后，IRQ资源就可以手动分配了。

IRQ 3-5, 7, 9-12, 14, 15 assigned to

PCI Device: 分配给PCI设备。(默认值)

Reserved: 保留。

➢ **PCI/VGA Palette Snoop**

此选项的功能是在ISA和PCI总线上分别使用两块显示板卡时出现色彩不正常时可设为<Enabled>。

Disabled 关闭。(默认值)

Enabled 开启。

◆ **PC Health Status**

PC Health Status

System Temperature	34℃/ 93℉	Item Help
CPU Temperature	38℃/ 100℉	
SYSFAN1 Speed	2136 RPM	Menu Level
CPUFAN1 Speed	2136 RPM	
Vcore	1.28v	
V5.0	5.05v	
V12.0	12.09v	
VBAT	3.15v	

◆ **Load Failsafe Defaults**

该选项的功能是将各项设置初始化为实现最基本的和最安全的系统功能的值。要执行此项功能，先选中此选项按下< Enter >即可，接着系统会在屏幕上显示出要您确认的信息，按下< Enter >键确定执行该项功能

◆ **Load Optimal Defaults**

此菜单用于在系统配置中装入缺省值。这些缺省设置是最优的，可以发挥所有硬件的高性能

◆ **Set Supervisor Password**

设定管理员密码。

◆ **Set User Password**

设定用户密码。

◆ **Save & Exit Setup**

当您完成了所有的修改操作，想将原来的设置参数覆盖掉时，可执行此项功能，新的设置参数将保存在CMOS的存储器中。要执行此操作，先选定此选项并按下< Enter >键，再按< Enter >键即可可退出

◆ **Discard Changes and Exit**

当您所做的任何更改设置的动作不想存入CMOS的存储器中，可先选定此选项并按下< Enter >键，再按<Enter >键即可。

x86 平台下 BIOS 所要管理的系统资源

这里的系统资源我们定义三种：I/O端口地址，IRQ中断号和DMA号。

◆ DMA

级别	功能
DMA0	DRAM 刷新
DMA1	未分配
DMA2	软盘
DMA3	未分配（有时用于硬盘）
DMA4	用于 DMAC 的级联
DMA5	未分配
DMA6	未分配
DMA7	未分配

◆ APIC

高级可编程中断控制器。在现代P4以上级别的主板中，大都支持APIC，可以提供多于16个中断源，如IRQ16—IRQ23，部分主板如支持PCI-X的主板可以有多达28个中断源。但要启用该功能必须相应的操作系统支持，目前只有windows 2000以上的操作系统支持。

◆ IO端口地址

系统I/O地址空间总共有64K，每一外围设备都会占用一段I/O地址空间。下表给出了本CPU卡部分设备的I/O 地址分配，由于PCI设备（如PCI网卡）的地址是由软件配置的，表中没有列出。

地址	设备描述
000h - 00Fh	DMA 控制器#1

000h – CF7h	PCI 总线
010h – 01Fh	底板资源
020h – 021h	可编程中断控制器#1
022h – 03Fh	底板资源
040h – 043h	系统计时器
044h – 05Fh	底板资源
060h	标准 101/102 键或 Microsoft 自然 PS/2 键盘
061h	System speaker
062h – 063h	底板资源
064h	标准 101/102 键或 Microsoft 自然 PS/2 键盘
065h – 06Fh	底板资源
070h – 071h	实时时钟， NMI
072h – 07Fh	底板资源
080h	底板资源
081h – 083h	DMA 控制器#2
084h – 086h	底板资源
087h	DMA 控制器#3
088h	底板资源
089h – 08Bh	DMA 控制器#4
08Ch – 08Eh	底板资源
08Fh	DMA 控制器#5
090h – 09Fh	底板资源
0A0h – 0A1h	可编程中断控制器#2
0A2h – 0BFh	底板资源
地址	**设备描述**
0C0h – 0DFh	DMA 控制器#6

0E0h - 0EFh	底板资源
0F0h - 0FFh	数据数值处理器
170h - 177h	从 IDE
1F0h - 1F7h	主 IDE
274h - 277h	ISAPNP Read Data Port
279h	ISAPNP Read Data Port
2F8h - 2FFh	串行端口 #2(COM2)
376h	从 IDE(dual FIFO)
378h - 37Fh	并行端口#1(LPT1)
3B0h - 3BBh	Intel(R) Q965/Q963 Express Chipset Family
3C0h - 3DFh	Intel(R) Q965/Q963 Express Chipset Family
3F0h - 3F5h	标准软磁盘控制器
3F6h	主 IDE(dual FIFO)
3F8h - 3FFh	串行端口#1(COM1)
400h - 41Fh	Intel(R) 82801G (ICH8 Family) SMBus Controller - 27DA
480h - 4BFh	底板资源
4D0h - 4D1h	底板资源
800h - 87Fh	底板资源
B00h-B0Fh	底板资源
B10h-B1Fh	底板资源
A79h	ISAPNP Read Data Port
D000h-DFFFh	Intel(R) ICH8 Family PCI Express Root Port-2849
0D00h-FFFFh	PCI bus

◆ **IRQ中断分配表**

系统共有15个中断源，有些已被系统设备独占。只有未被独占的中断才可分配给其它设备使用。ISA设备要求独占使用中断；只有即插即用ISA设备才可由BIOS或操作系统分配中断。而多个PCI设备可共享同一中断，并由BIOS或操作系统分配。下表给出了X86平台部分设备的中断分配情况，但没有给出PCI设备所占用的中断资源。

级别	功能
IRQ0	系统计时器
IRQ1	标准 101/102 键或 Microsoft 键盘
IRQ2	可编程的中断控制器
IRQ3	串口#2
IRQ4	串口#1
IRQ5	并行口#2
IRQ6	标准软磁盘控制器
IRQ7	并口#1
IRQ8	系统 CMOS/实时时钟
IRQ9	软件改道到 Int 0Ah
IRQ10	保留
IRQ11	保留
IRQ12	保留
IRQ13	鼠标端口
IRQ14	主 IDE
IRQ15	从 IDE

第四章　驱动程序安装说明

本产品的驱动程序可依据配套光盘内容安装，在此不做介绍。

附录

Watchdog 编程指引

本主板提供一个可按分或按秒计时的，最长达255级的可编程看门狗定时器(以下简称WDT)。通过编程，WDT超时事件可用来将系统复位或者产生一个可屏蔽中断。

本主板可使用的中断号为：3，4，5，7，9，10，11。

使用前请把BIOS Setup界面PCIPnP组中对应的IRQ号选项值改成Reserved。

以下用C语言形式提供了WDT的编程范例，对WDT的编程需遵循以下步骤：

- 进入WDT编程模式
- 设置WDT工作方式/启动WDT/关闭WDT

(1) **进入WDT编程模式。**

```
#define   INDEX_PORT     0x2E
#define   DATA_PORT      0x2F

outportb(INDEX_PORT, 0x87);
outportb(INDEX_PORT, 0x87);
outportb(INDEX_PORT, 0x07);
outportb(DATA_PORT, 0x08);
outportb(INDEX_PORT, 0x30);
outportb(DATA_PORT, 0x01);
```

(2) **配置WDT工作方式，复位或中断方式，选择一种：**

```
unsigned char oldval;
outportb(INDEX_PORT,0x2d);
oldval = inportb(DATA_PORT);
```

a. **配置WDT成复位工作方式**

```
oldval &= 0xfe;
```

```
outportb(DATA_PORT, oldval);
```

b. **配置WDT成中断工作方式**

```
oldval |= 0x01;
outportb(DATA_PORT, oldval);
outportb(INDEX_PORT,0xf7);
outportb(DATA_PORT, IRQ_NO); /*此处请用需要使用的中断号替换掉常量IRQ_NO，文档前端已经列出可使用中断号的范围*/
```

(3) **配置WDT按分或秒计时：**

a. **按分计时：**

```
outportb(INDEX_PORT,0xf5);
outportb(DATA_PORT,0x08);
```

b. **按秒计时：**

```
outportb(INDEX_PORT,0xf5);
outportb(DATA_PORT,0x00);
```

(4) **启动/禁止WDT**

a. **启动WDT：**

```
outportb(INDEX_PORT,0xf6);
outportb(DATA_PORT,TIME_OUT_VALUE); /*请以超时时间单位数量(0x01~0xFF)替换掉常量TIME_OUT_VALUE*/
```

b. **停止WDT：**

```
outportb(INDEX_PORT,0xf6);
outportb(DATA_PORT,0x00);
```

数字 IO 编程指引

本主板提供8路可编程数字I/O引脚，其中4路为输入，4路为输出。以下用C语言形式提供了数字I/O的编程范例，对数字I/O的编程需遵循以下步骤：

- 初始化数字I/O
- 输入输出编程

(1) **初始化数字I/O:**

```
#define  BAR  0x400

unsigned char tmp_val;
outportb(BAR,0xbf);
outportb(BAR+0x04,0x40);
outportb(BAR+0x03,0x03);
outportb(BAR+0x05,0x0F);
tmp_val =(inportb(BAR+0x02)|0x08)&0xeb;
tmp_val |= 0x40;
outportb(BAR+0x02, tmp_val);
delay(30);
tmp_val =inportb(BAR);
while((tmp_val &0x02)!=0x02)
     {
          tmp_val =inportb(BAR);
          if((tmp_val &0x04)!=0)
          {
               printf("ERROR\n");
               return 0;
          }
     }
```

(2) **输入输出编程：**

a. **输出编程**

函数输入： int pin - 取值1~4分别对应输出引脚1~4

int lev_val - 1为输出高电平，0为输出低电平

函数输出：无

```
void Out_Lev(int pin ,int lev_val)
  {
    unsigned int reg_val ;
    outportb(BAR,0xbf);
    outportb(BAR+0x04,0x40);
    outportb(BAR+0x03,0x01);
    reg_val = inportb(BAR+0x05);
    reg_val = lev_val ?
reg_val|(0x01<<pin+3) :reg_val&(~(0x01<<pin+3)) ;
    outportb(BAR+0x05, reg_val);
    reg_val =(inportb(BAR+0x02)|0x08)&0xeb;
    reg_val |= 0x40;
    outportb(BAR+0x02, reg_val);
    delay(30);
    reg_val =inportb(BAR);
    while((reg_val &0x02)!=0x02)
        {
            reg_val =inportb(BAR);
            if((reg_val &0x04)!=0)
            {
                printf("ERROR\n");
                return 0;
            }
        }
}
```

b. **输入编程**

函数输入：int pin - 取值1~4分别对应输入引脚1~4

函数输出：int lev_val - 1: 输入引脚为高电平，0: 输入引脚为低电平

```
int In_Lev(int pin)
{
    unsigned int reg_val ;
    int lev_val ;
    outportb(BAR,0xbf);
    outportb(BAR+0x04,0x41);
    outportb(BAR+0x03,0x00);
    reg_val =(inportb(BAR+0x02)|0x08)&0xeb;
    reg_val |= 0x40;
    outportb(BAR+0x02, reg_val);
    delay(30);
    reg_val =inportb(BAR);
    while((reg_val &0x02)!=0x02)
        {
            reg_val =inportb(BAR);
            if((reg_val &0x04)!=0)
            {
                printf("ERROR\n");
                return 0;
            }
        }
    lev_val = inportb(BAR+0x05)&( 0x01<<pin-1);
    lev_val = lev_val ? 1:0; /*此处得到变量lev_val的值，为1表示输入引
    脚为高电平，为0表示输入引脚为低电平*/
    return lev_val ;
  }
```

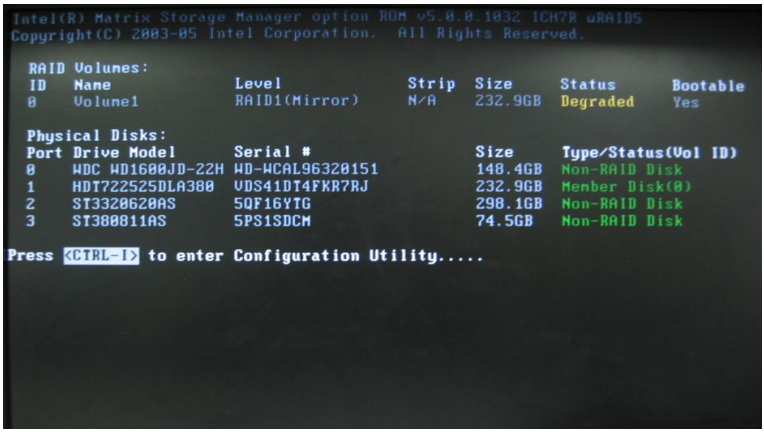
RAID 安装方法及步骤

首先设定BIOS：

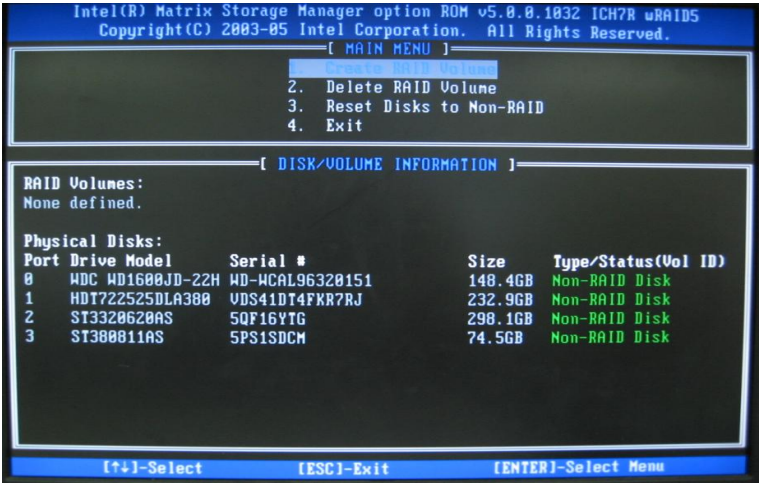
Intergraded Peripherals—〉Onchip IDE Device—〉SATA Mode改为RAID，设置成Raid后，按”F10”保存设置。具体请参考BIOS设置指南。

然后进入RAID Configuration Utility：

Serial ATA RAID卷可在Intel RAID Option ROM的RAID Configuration Utility中进行设置。

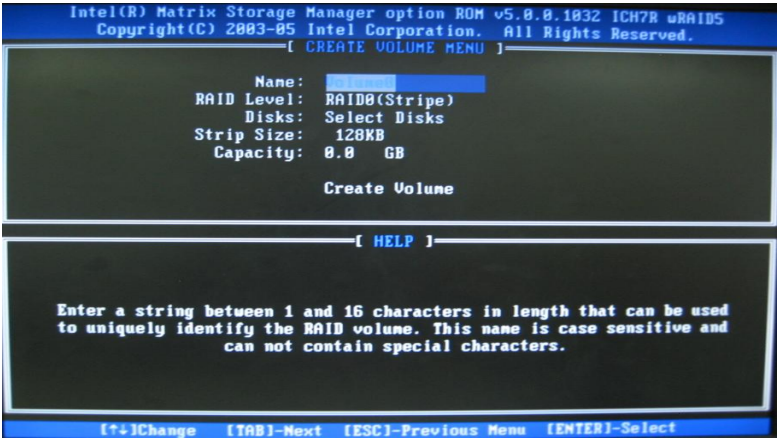


显示了以上信息后，同时按<Ctrl>+<I>以进入RAID Configuration Utility。再同时按<Ctrl>和<I>组合键之后，将出现如下的屏幕：



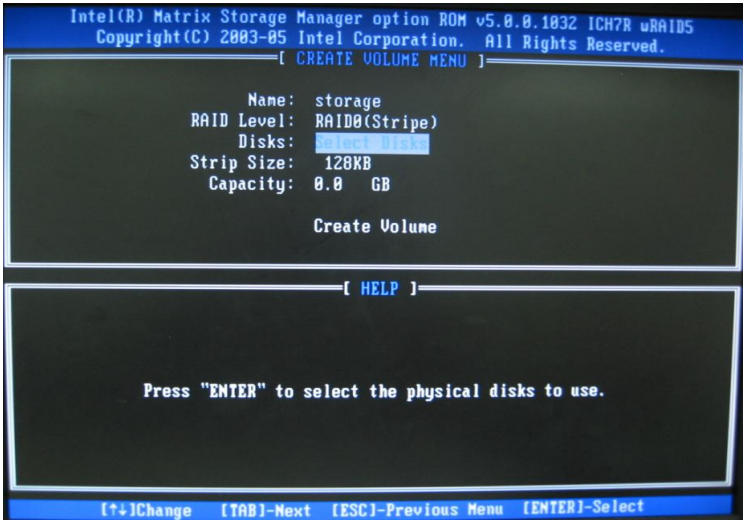
创建RAID卷：

A. 选择选项1“Create RAID Volume”，并按<Enter>键,将出现如下屏幕。然后在Name区域，指定一个RAID卷名称(该名称可以任意，只是起个标示作用)，并按<TAB>或<Enter>键以进入下个区域。

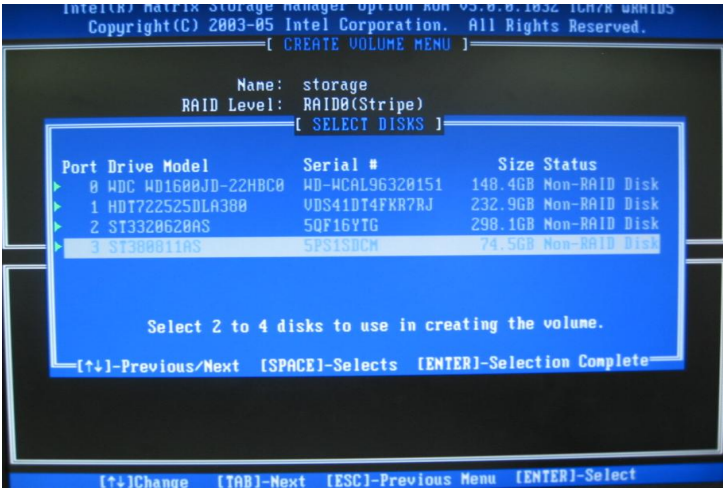


B. 在RAID Level区域中，使用方向键选择您所要的择RAID的级别。

C. Disk区域中，按<Enter>键会出现以下屏幕。通过使用向上或向下的箭头键选择您要创建的RAID卷，然后按< Enter>键以完成此项选择，进入下个区域。



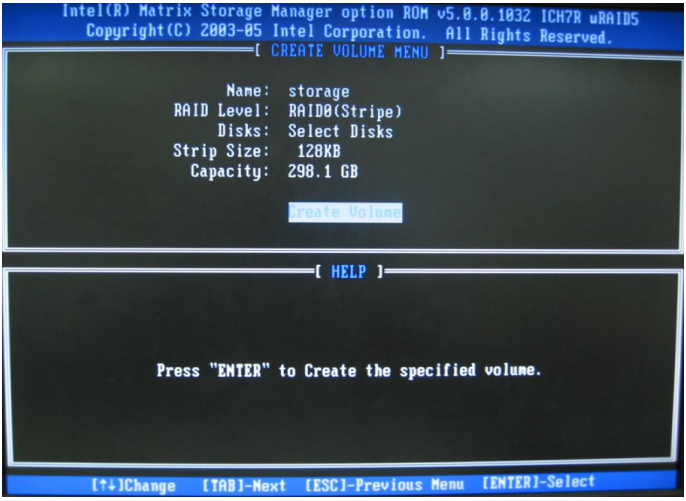
D．按<SPACE>键，即空格键选择你想采用的HDD，如果按空格键选择该HDD后，该HDD信息前就会出现一个绿色三角图标，如图：



注意：

组建Raid0/1/10时，必须选择2个或4个HDD。

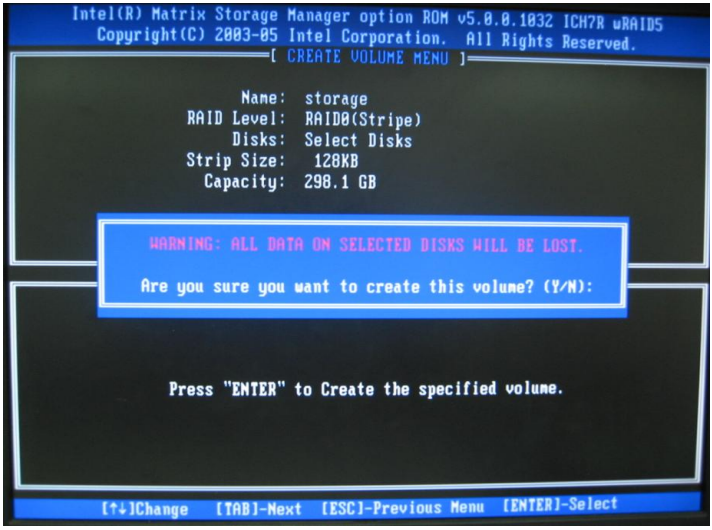
E．选好合适的HDD后，按< Enter>键以进入下一个设置界面。



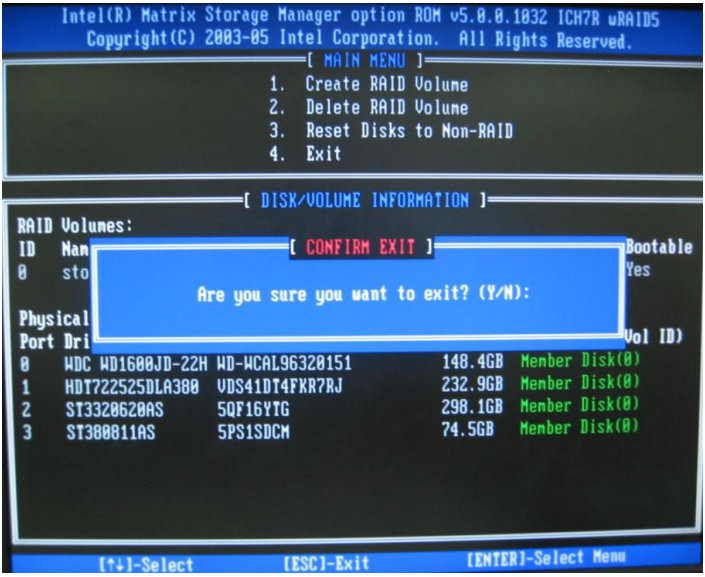
F. 通过使用向上或向下的箭头，为RAID阵列选择串行可选值，并按<Enter>键以确定并进入下个区域。可选值的范围从4KB到128 KB，成倍增加。串行值的选择是基于驱动使用方法。这里有些建议选项：RAID0-128KB RAID10-64KB RAID5-64KB

G. 然后，在Capacity区域中选择卷的容量。此项的默认值是该被选中的磁盘的最大容量。

H. 随后出现以下屏幕，让您确认是否要创建RAID卷。按<Y>以继续。



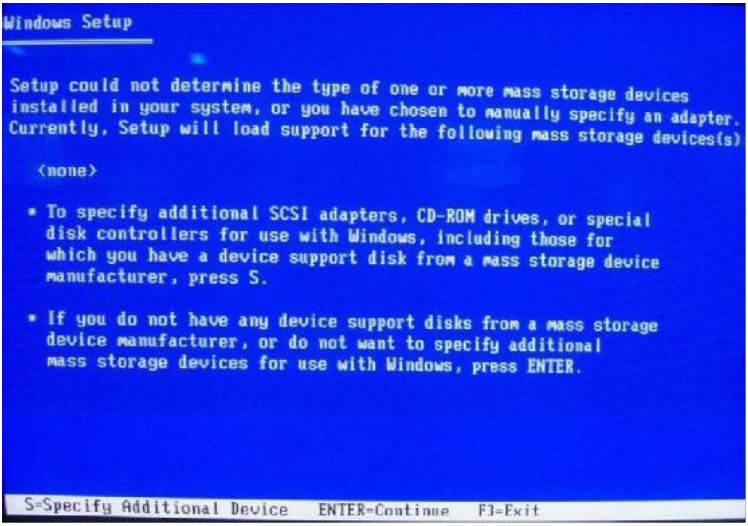
I:当出现下图字幕时，则表示您的创建步骤已经完成。



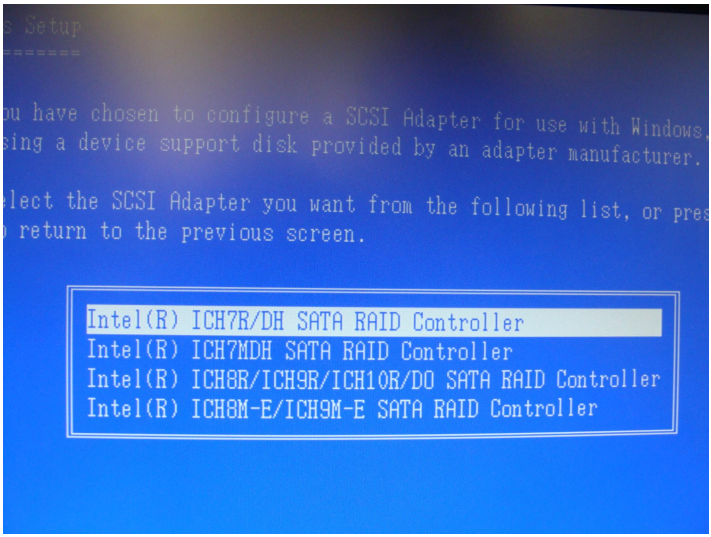
J. 组建完成后,按< ESC>键则可以退出Raid 配置界面,出现如下图,此时按<Y>表示确认。至此设置完成，可以进行系统安装。

开始安装：

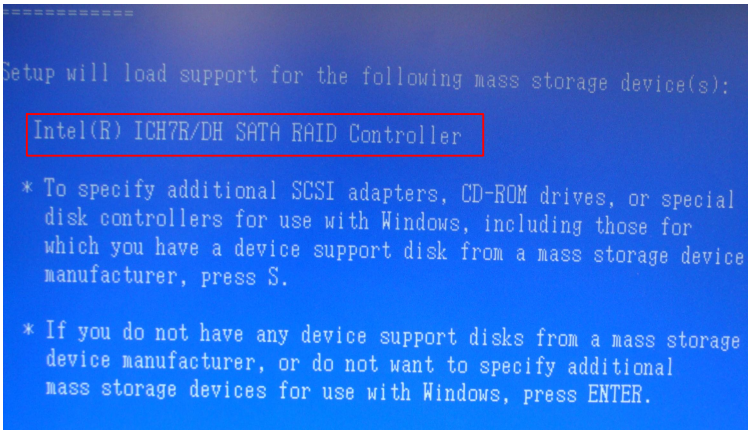
从CD-ROM启动，当“Press F6 if you need to install third party SCSI orRAIDdriver” 出现时，按F6。



插入有Intel IAA RAID XP Driver For ICH7R (NH82801GR)的软盘到A:盘(注:本主板没有软驱接口,请务必使用IBM USB软驱)，按<Enter>。在Windows XP Setup屏幕的下拉列表中选（选择相对应南桥）并按<Enter>键：



按< E n t e r > 以继续安装，如果您要指定任何附加的设备，请在此时安装。当所有设备都配置完毕，请按< E n t e r > 以继续安装。



按<Enter>键，设置将载入所有设备的文件，然后继续安装。

欲获更多信息请访问研祥网站：http://www.evoc.com。

Announcement

What contained in this User Manual does not represent the commitments of EVOC Company. EVOC Company reserves the right to revise this User Manual, without prior notice, and will not be held liable for any direct, indirect, intended or unintended losses and/or hidden dangers due to installation or improper operation.

Before purchasing, please have a detailed understanding of the product performance to see whether it meets your requirements.

Safety Instructions

1. Please carefully read the users' manual before handling the product;
2. For the board which is not ready to be installed, please put it in the anti-static packaging;
3. Before taking the board out from anti-static packaging, please put your hand on grounded metal object for a while (about 10 seconds) to discharge static;
4. Please wear static protective gloves when holding the board; and always hold the board by edges;
5. Before inserting, removing or re-configuring the motherboard or the expansion card, please firstly disconnect the AC power or unplug the AC power cable from the power source to prevent damage to the product and ensure your personal safety;
6. Before removing the boards or Box PC, firstly turn off all power resources and unplug the power cable from power source;
7. For Box PC products, when inserting or removing boards, please disconnect the AC power in advance;
8. Before connecting or disconnecting any device, make sure all power cables are unplugged in advance;
9. To avoid unnecessary damage caused by turning on/off computer frequently, wait at least 30 seconds before re-turning on the computer.

Contents

Chapter 1 Product Introduction

Overview

EPE-1814V2NAR is a sort of high-performance full-size CPU card which adopts EPE specification (compatible with PICMG1.3 bus specification) and supports dual-core/quad-core CPU and DDR3 memory; the latest EPE specification enables the stability of the card better than the PICMG1.3 motherboard.

The product adopts Intel® 4 series embedded platform: technique scheme realization of Intel® G41 + ICH7R. Integrate VGA display, support DVMT mode with shared memory up to 352MB; on-board two DDR3 memory slots, support dual-channel DDR3 800/1066MHz up to 4GB; eight USB2.0 ports (four on motherboard and the other four are educed via the carrier), two RS-232 COMs, one parallel port, two Gigabit LAN ports, four SATA connectors (two on motherboard and the other two are educed via the carrier), one IDE connector, one PS/2 keyboard and mouse connector, one 8-bit digital I/O; support HD Audio connector, MIC-in, Line-in and Speaker-out.

Mechanical Dimension, Weight and Environment

- Dimension: 338.6 mm (L) × 129.7 mm (W) × 35mm (H)
- Net Weight: 496.9g
- Operating Environment:

  Temperature: 0°C ~ 60°C;

  Humidity: 5% ~ 90% (Non-condensing);
- Storage Environment:

  Temperature: -20°C ~ 80°C;

  Humidity: 5% ~ 90% (Non-condensing);

Typical Consumption

CPU: Intel Core 2 Quad Q9300 1333 2.5GHz 95W

Memory: Kingston/1333/2G*2

- +5V@ 1.47A; +5%/-3%;
- +3.3V@ 1.75A; +5%/-3%;
- +12V@ 1.07A; +5%/-3%;

Microprocessor

Support Intel® LGA775 socket Core™2 Quad ,Core™ 2 Duo, Celeron® E1000 **and** Celeron®400 series CPU, 800/1066/1333MHz FSB.

Not support Intel® Core™2 Extreme, Pentium® 4, Pentium® D and Celeron® D series CPU.

Chipset

Intel® G41 + Intel® ICH7R

System Memory

Provide two 240 Pin DDR3 memory slots, support DDR3 800/1066MHz Un-buffered non-ECC memory up to 4GB;

Video Function

Intel® G41 North Bridge chip integrates VGA display with maximum resolution up to 2048 X 1536@75Hz.

Network Function

Provide two 10/100/1000Mbps network ports; LAN1 supports Wake-on-LAN function.

Audio Function

Adopt ALC888 sound effect chip, it supports MIC-in, Line-in and Speaker-out functions.

Power Feature

Adopt ATX power, support ACPI S0/S1/S4/S5 status, etc.

Expansion Bus

Adopt EPE bus specification; support one PCIE x16, four PCIE x1 or one PCIE x4, four USBs, two SATAs, SMBUS and four PCI master expansions.

Watchdog Function

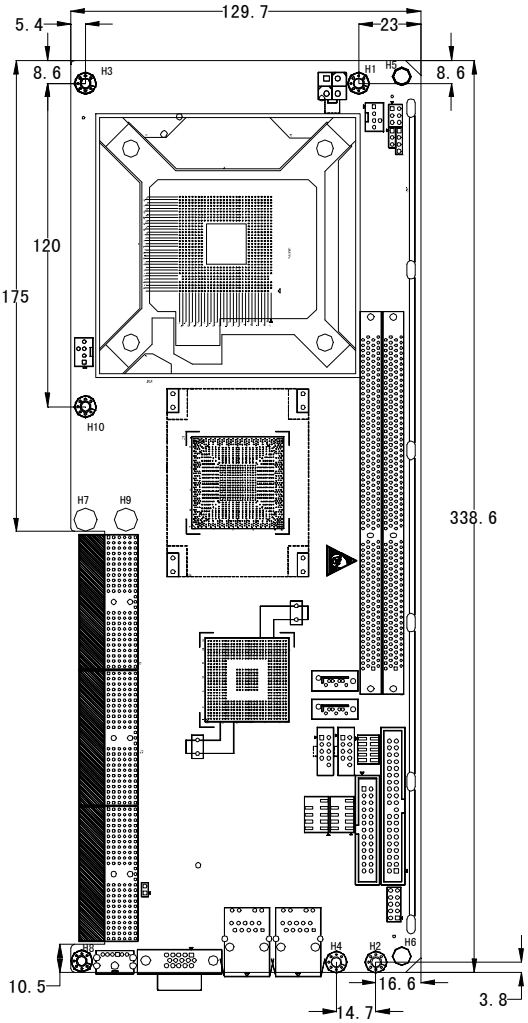
- Support 255 levels, programmable, by minute or second;
- Support watchdog interrupt or reset system.

I/O Connector

- One parallel port;
- Two COMs, COM1 supports Wake-up function;
- One IDE connector;
- Four SATA connectors (two of which are educed via carrier), support RAID0, 1, 5 and 10;
- Eight USB2.0 ports (four of which are educed via carrier);
- One PS/2 keyboard/mouse connector;
- One 8-bit digital I/O connector.

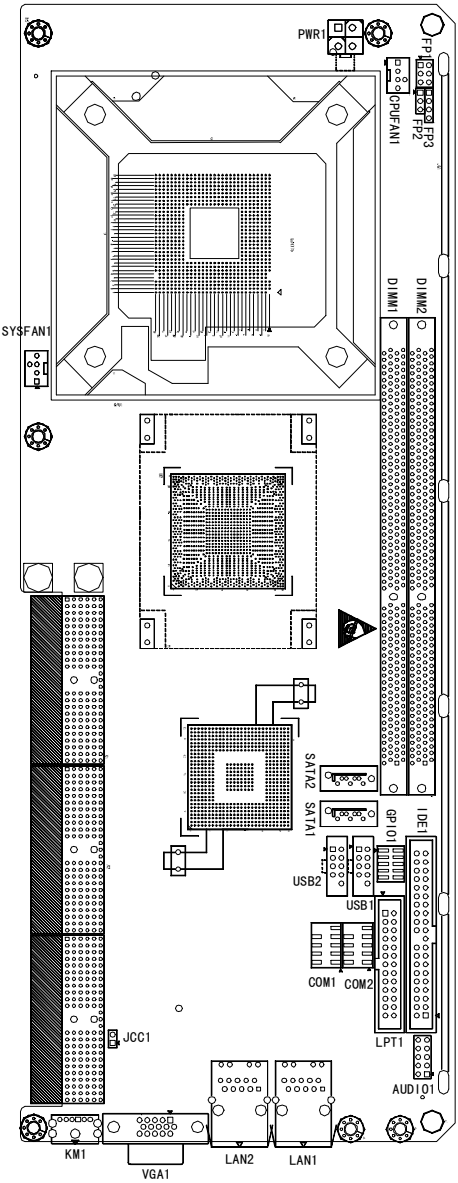
Chapter 2 Installation

Product Outline

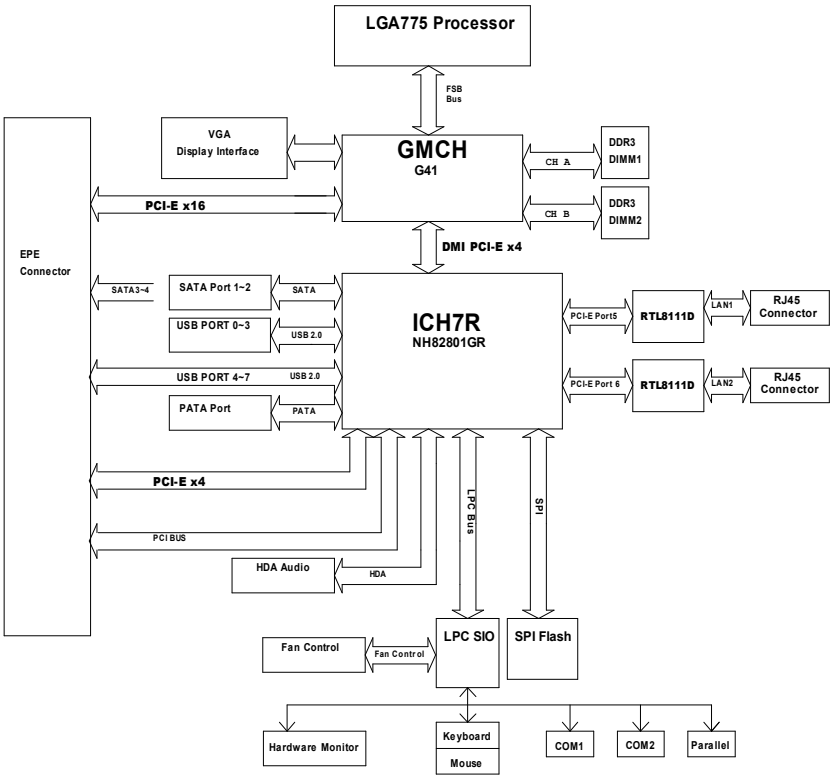


Unit: mm

Locations of Connectors



Motherboard Structure



Tip: How to identify the first pin of the jumpers and connectors?

1. Observe the letter beside the socket, it would be marked with "1" or thickened lines or triangular symbols;
2. The square pad on the rear is the first pin;
3. The red line on the cable or other marks show that they should be connected with the first pin of the socket.

Jumper Setting

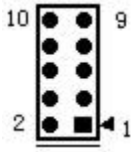
JCC1: Clear/Keep CMOS Setting (Pin Distance: 2.54 mm)

CMOS is powered by the button battery on board. Clear CMOS will restore original settings (factory default). The steps are listed as follows: (1) Turn off the computer and unplug the power cable; (2) Instantly short circuit JCC1; (3) Turn on the computer; (4) Follow the hint on screen to enter BIOS setup when starting the computer, load optimized defaults; (5) Save and exit. Please setup as follows:

JCC1

Setup	Function
1-2 Open	Normal (Default)
1-2 Short	Clear the contents of CMOS, all BIOS setting will restore to factory default values.

Audio Connector

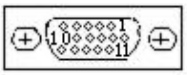


AUDIO1
(Pin Distance: 2.54mm)

Pin	Signal Name	Pin	Signal Name
1	LOUT_R	2	LOUT_L
3	GND_AUDIO	4	GND_AUDIO
5	LIN_R	6	LIN_L
7	GND_AUDIO	8	GND_AUDIO
9	MIC_L	10	MIC_R

Video Connector

15-Pin D-Sub VGA socket, VGA1.

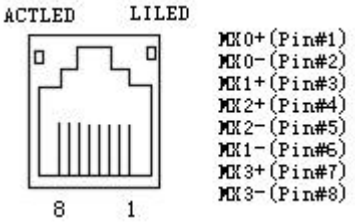


VGA1

Pin	Signal Name	Pin	Signal Name
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	NC	12	DDCDATA
13	HSYNC	14	VSYNC
15	DDCCLK		

LAN Port

The board provides two 10/100/1000Mbps Ethernet ports; LILED and ACTLED are the two LED indicators beside Ethernet ports, which respectively show the activity and transmitting status of LAN. Please refer to the status descriptions for each LED:

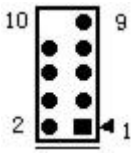


LAN1/LAN2

ACTLED (Green)	LAN Activity Indicator		LILED (Dual Color: Y/G)	LAN Speed Indicator
			Green	1000Mbps
Blink	Data Transmitting		Yellow	100Mbps
Off	No Data to Transmit		Off	10Mbps

Serial Port

The board provides two 2×5Pin serial ports (Pin Distance: 2.54 mm), they support RS-232 modes and the pin definitions are as follows:

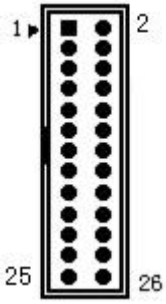


COM1/2

Pin	Signal Name	Pin	Signal Name
1	DCD#	6	DSR#
2	RXD	7	RTS#
3	TXD	8	CTS#
4	DTR#	9	RI#
5	GND	10	NA

Parallel Port

The board provides one standard 2×13Pin parallel port (Pin Distance: 2.54 mm), it could connect with peripheral devices with parallel port according to requirements. The pin definitions are as follows:

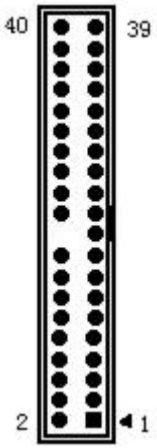


LPT1

Pin	Signal Name	Pin	Signal Name
1	STB#	2	AFD#
3	PD0	4	ERR#
5	PD1	6	INIT#
7	PD2	8	SLIN#
9	PD3	10	GND
11	PD4	12	GND
13	PD5	14	GND
15	PD6	16	GND
17	PD7	18	GND
19	ACK#	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

IDE Connector

The board provides one standard 2×20Pin IDE connector (Pin Distance: 2.54 mm), it supports Ultra100/66/33 BMIDE and PIO mode. The pin definitions are as follows:

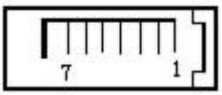


IDE1

Pin	Signal Name	Pin	Signal Name
1	RESET#	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	Key
21	DREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IORDY	28	GND
29	DACK#	30	GND
31	IRQ	32	NC
33	DA1	34	ATA66_DET
35	DA0	36	DA2
37	CS1#	38	CS3#
39	LED#	40	GND

SATA Connector

The board supports four SATA connectors, two of which are educed via carrier. The pin definitions of the two standard connectors on motherboard are listed as follows:



SATA1/2

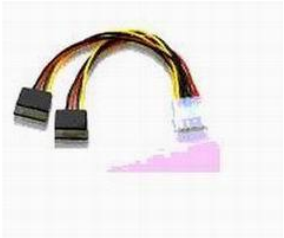
Pin	Signal Name
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

Hot-swap of SATA Hard Disk

Notices for Hot-swap of SATA Hard Disk:

1. The hard disk shall support SATA 2.0 and use 15-pin SATA hard disk power connector.
2. The driver of chipset shall support the hot-swap of SATA hard disk.
3. Hot-swap of SATA hard disk with the operating system is forbidden when system is power-on.

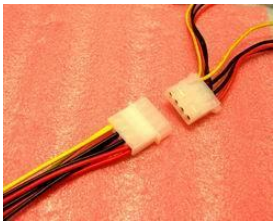
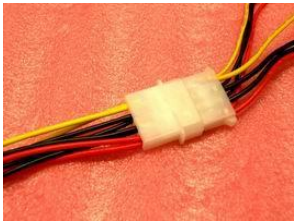
SATA Data Cable



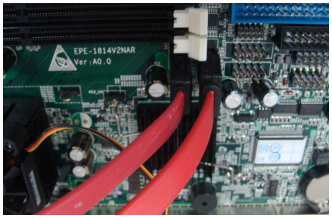
SATA Power Cable

Please carry out hot plug as follows, improper operation may destroy the hard disk or result in data lost.

Hot Plug

Step 1: Please plug the 1 x 4 pin SATA power connector (white) into the power adapter.



Step 2: Please connect the SATA data cable to the SATA connector on the board.

Step 3: Please connect the 15-pin SATA power connector (black) to the SATA hard disk.

Step 4: Please connect the SATA data cable to the SATA hard disk.

Hot Unplug

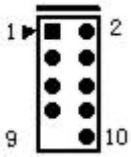
Step 1: uninstall the hard disk from the device manager.


Step 2: Unplug the data cable from the SATA hard disk.


Step 3: Unplug the SATA 15-pin power connector (black) from the SATA hard disk.

USB Port

The board supports eight USB ports, four of which are educed out via carrier. The board provides two sets of standard USB ports (Pin Distance: 2.54 mm), which could educe out four USB ports. The pin definitions are as follows:

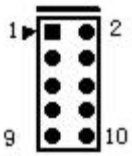


USB1/2

Pin	Signal Name	Pin	Signal Name
1	+5V	2	+5V
3	USB1_Data-	4	USB2_Data-
5	USB1_Data+	6	USB2_Data+
7	GND	8	GND
9	NA	10	GND

Digital IO Connector

The board provides one 8-bit digital I/O connector (Pin Distance: 2.00 mm); the pin definitions are as follows:

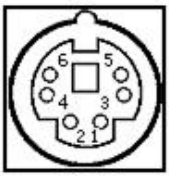


GPIO1

Pin	Signal Name	Pin	Signal Name
1	DIO_IN0	2	DIO_OUT0
3	DIO_IN1	4	DIO_OUT1
5	DIO_IN2	6	DIO_OUT2
7	DIO_IN3	8	DIO_OUT3
9	GND	10	NC

Keyboard and Mouse Connector

Keyboard and mouse connector



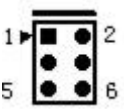
KM1

Pin	Signal Name
1	KB_DATA
2	MS_DATA
3	GND
4	+5V
5	KB_CLK
6	MS_CLK

Status Indicating and Controlling Connectors

FP1, FP2 and FP3 are used to connect with the function button or indicators on front panel of the chassis.

ATX Power Switch and Hard Disk Indicator Connector (Pin Distance: 2.54 mm)



FP1

Pin	Signal Name	Pin	Signal Name
1	PWRBTN#	2	GND
3	GND	4	RESET#
5	HDD_LED-	6	HDD_LED+

Power Indicator Connector (Pin Distance: 2.54 mm)

FP2

Pin	Signal Name
1	PWR_LED+
2	NC
3	GND

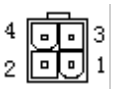
Loudspeaker Output Connector (Pin Distance: 2.54 mm)

FP3

Pin	Signal Name
1	SPEAKER
2	NC
3	GND
4	+5V

Power Connector

+12V Power Connector (Pin Distance: 4.20 mm)



PWR1

Pin	Signal Name
1	GND
2	GND
3	+12V
4	+12V

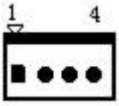
Fan Connector

The CPU card provides two sets of standard fan sockets (Pin Distance: 2.50 mm). Pay attention as following three issues when using the fan sockets:

- The current for fan shall not be over 700 mA (12V);
- Please confirm that the fan cable complies with the socket cable. Power cable (usually red) is in the middle position. In addition, please confirm the earth

cable (usually black) and fan speed output impulse signal cable (other colors). Some fans have no speed detecting while the output of the cable is up to 12V, usage of these substandard connection will destroy the CPU card. It is recommended to use a fan with speed detection.

- Adjust the fan's airflow to the direction of heat venting.



CPUFAN1/ SYSFAN1

Pin	Signal Name
1	GND
2	+12V
3	FAN_IO
4	FAN_PWM

FAN_IO: Fan Speed Impulse Output; FAN_PWM: Fan Speed PWM Control

Install the CPU

Please install the CPU as follows (Refer to the figure below):

- Aim the concave of the CPU at the heave mark on the CPU socket; then put the CPU in the socket;
- After the CPU is installed properly, cover the CPU via the upper cover of the CPU socket; then fasten the CPU with hooks.

Install the CPU Cooling Fan

Please install the CPU cooling fan as follows (Refer to the figure below):

- Firstly, aim the bracketof the cooling fin (see figure ④) at the fixing holes on

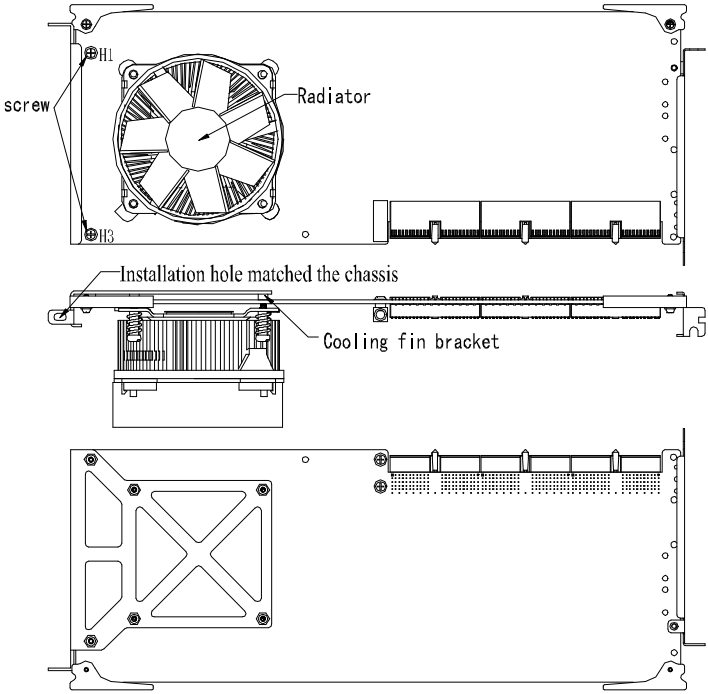
the rear of the CPU card;

- Connect the front side of cooling fin (see figure ⑤) with the bracketand fix them; pay attention that the surface between the cooling fin and the CPU crystal wafer shall be well contacted;
- Fix the cooling fin with two screws on the cross (do not tighten them) and then the other two screws; then tighten the four screws;
- Lastly, connect the fan power cable to the fan socket on the CPU card.

Note!

1) It is recommended to use cooling fan authenticated by Intel; before installing the fan, smear the heat sink compound on the surface between CPU and the fan cooling fin to improve the heat dissipation performance; always check whether the fan is operating normally to ensure the heat dissipation within the chassis. When holding a board, please hold the edge instead of the cooling fin.

2) When assembling the computer, please fix the attached cooling fin bracket to the chassis, so as to reinforce and guarantee the stability of the system. The installation figure is shown as follows:



Steps: 1. Fix the cooling fin bracket with PCB via two screws at the locations of H1 and H3;

2. Fix the four screws on cooling fin with the cooling fin bracket.

Notes: 1: Do not tighten the screws at H1 and H3 until the four screws on cooling fin are well contacted with the rivet holder of the cooling fin bracket;

2. When tightening the four screws on cooling fin, tighten them in diagonal sequence instead of one at a time or the screws at the same side.

Chapter 3 BIOS Setup

Overview

BIOS (Basic Input and Output System) is solidified in the flash memory on the CPU board. Its main functions include: initialize system hardware, set the operating status of the system components, adjust the operating parameters of the system components, diagnose the functions of the system components and report failures, provide hardware operating and controlling interface for the upper level software system, guide operating system and so on. BIOS provides users with a human-computer interface in menu style to facilitate the configuration of system parameters for users, control power management mode and adjust the resource distribution of system device, etc.

Setting the parameters of the BIOS correctly could enable the system operating stably and reliably; it could also improve the overall performance of the system at the same time. Inadequate even incorrect BIOS parameter setting will decrease the system operating capability and make the system operating unstably even unable to operate normally.

BIOS Parameter Setup

Prompt message for BIOS setting may appear once powering on the system. At that time (inefficient at other time), press the key specified in the prompt message (usually <Del>) to enter BIOS setting.

When the BIOS setting in CMOS is destroyed, system may also require entering BIOS setting or selecting certain default value.

All the setup values modified by BIOS are saved in the CMOS storage in system. The CMOS storage is powered by battery; unless clearing CMOS contents, or else its contents will not be lost even if powered off.

Note! BIOS setting will influent the computer performance directly. Setting parameter improperly will cause damage to the computer; it may even unable to power on. Please use the internal default value of BIOS to restore the system.

Our company is constantly researching and updating BIOS, its setup interface may be a bit different. The figure below is for reference only; it may be different from your BIOS setting in use.

Basic Function Setting for BIOS

After starting SETUP program, the main interface of CMOS Setup Utility will appear:

Phoenix – AwardBIOS CMOS Setup Utility	
▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Advanced Chipset Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI Configurations ▶ PC Health Status	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving
Esc : Quit F10 : Save & Exit Setup	←→↑↓ : Select Item
Time, Data, Hard Disk Type...	

◆ **Standard CMOS Features**

Standard CMOS Features		
Date (mm:dd:yy)	Fri,Jan 12 2007	Item Help
Time (hh:mm:ss)	19:18:17	
		Menu Level
▶ IDE Channel 0 Master	[None]	Change the internal clock.
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 1 Master	[None]	
▶ IDE Channel 1 Slave	[None]	
▶ IDE Channel 2 Master	[None]	
▶ IDE Channel 3 Master	[None]	
Drive A	[1.44M, 3.5 in]	
Video	[EGA/VGA]	
Halt On	[All Errors]	
Base Memory	639K	
Extended Memory	487424K	
Total Memory	488448K	

➢ **Date**

Choose this option and set current data by PageUp /PageDown, which is displayed in format of month/date/year. Reasonable range for each option is: Month (Jan.-Dec.), Date (01-31), Year (Maximum to 2099), Week (Mon. ~ Sun.).

➢ **Time**

Choose this option and set current time by PageUp /PageDown which is displayed in format of hour/minute/second. Reasonable range for each option is: Hour (00-23), Minute (00-59), Second (00-59).

➢ **IDE Channel 0 Master**

The four options: IDE Channel 0 Master/Slave, IDE Channel 1 Master/Slave, IDE Channel 2 Master and IDE Channel 3 Master indicate that the motherboard integrates four sets of IDE channels on board; channel 0 and channel 1 could connect with two devices (master/slave); channel 2 and channel 3 could connect with one IDE master device respectively.

When there is no IDE device detected, it will show [None]; if there are IDE devices detected, it will show the name of the device.

IDE Channel 0 Master		
IDE HDD Auto-Detection	[Press Enter]	Item Help
IDE Channel 0 Master	[Auto]	Menu Level
Access Mode	[Auto]	To auto-detect the HDD's
Capacity	0 MB	size, head...on this channel
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone	0	
Sector	0	

Take IDE Channel 0 Master as an example, the newly appeared menu includes the following options:

- IDE HDD Auto-Detection

  This option allows detecting the parameters of the IDE device via pressing Enter, and these parameters will automatically be displayed at the bottom of the screen.

- IDE Channel 0 Master

  The default value is Auto; system will automatically detect which IDE device it is; select "Manual" means that users have to input all these parameters manually (it is not recommended unless the user is quite familiar with all these parameters). Select "None" to disable that channel.

- Access Mode

  The default value is Auto; In CHS option, "C" represents Cylinder, "H" represents Head, "S" represents Sector; while the "Large" option represents extended CHS. In early times, by adding transmission in BIOS layer, the hard disk addressing exceeds the bottleneck of 512M. LBA option abandons the specifications of column, channel and sector and takes sector as unified addressing for all the hard disks. To choose this option, it requires both the BIOS and hard disk to support LBA mode. Auto means that system will decide the way of accessing the hard disks.

  Capacity: current capacity of the hard disk

  Cylinder: number of the hard disk cylinder

  Head: number of the read/write head

  Precomp: write in the pre-compensation value to adjust write-in time

  Landing zone: landing zone of read/write head

  Sector: sector number of each track

➢ **Drive A**

<Drive A> means 1.44M, 3.5″ floppy disk.

➢ **Video**

There are four displaying modes in <Video> option, EGA/VGA: EGA (Enhanced Graphics Adapter), each pixel is 4bits, 16 colors in all and support resolution of

640*350. VGA (Video Graphics Array) supports 16 colors, resolution 640*480 and 256 colors, resolution 320*200. CGA40/CGA80: CGA (Color Graphics Adapter) supports 4 colors, resolution 320*200. 40 and 80 represent to display in 40 and 80 rows respectively. MONO: single color display.

➢ **Halt On**

<Halt On>: set the interrupt location for system self-test. All Errors: during POST phase, BIOS will stop self-test whenever there is an error. No Errors: BIOS ignores the error and continues self-inspection. All, But Keyboard: during POST phase, skip the inspection for keyboard.

Base Memory

Extended Memory

Total Memory

◆ **Advanced BIOS Features**

Advanced BIOS Features		
▶ CPU Feature	[Press Enter]	Item
▶ Hard Disk Boot Priority	[Press Enter]	Help
Virus Warning	[Disabled]	
CPU L3 Cache	[Enabled]	Menu Level
Quick Power On Self Test	[Enabled]	
First Boot Device	[Hard Disk]	
Second Boot Device	[CDROM]	
Third Boot Device	[LS120]	
Boot other Device	[Enabled]	
Boot Up NumLock Status	[On]	
Typematic Rate Setting	[Fast]	
Typematic Rate(Chars/Sec)	[Disabled]	
Typematic Delay(Msec)	6	
Security Option	250	
APIC Mode	[Setup]	
Small Logo(EPA) Show	[Disabled]	
Auto Detect PCI CLK	[Enabled]	
Spread Spectrum	[Enabled]	

➢ **CPU Feature**

CPU Feature	
PPM Mode [Native Mode] Limit CPUID MaxVal [Disabled] C1E Function [Auto] Execute Disable Bit [Enabled] Virtualization Technology [Disabled] Core Multi-Processing [Enabled]	Item Help Menu Level Native Mode is for fully support ACPI OS (ex.WINXP, VISTA...), SMM mode is for legacy OS (ex. Win2K)

- PPM Mode

That is EIST (Enhanced Intel Speedstep Technology); it is a module to adjust the basic frequency and voltage according to the load of the processor, which requires supports from both OS and BIOS; system will adjust via ACPI. Speedstep Technology provides more adjusting levels for CPU frequency and voltage; therefore, it could adjust the status of the processor more accurately than C1E.

Native Mode: applied in the OS supporting ACPI completely, such as: WINXP, and VISTA (Default)

SMM Mode: applied in the traditional OS, such as: WIN2000.

- Limit CPUID MaxVal

This option could be enabled to support the maximum limitation function of CPUID in former operating system, so as to prevent CPU from returning a value above 3 after implementing CPUID command and cause system error.

Disabled: this option shall be disabled under WINXP system. (Default)

Enabled

- C1E Function

The function of this option is similar with that of EIST. When enabled, it could make the unloaded CPU operate under the lowest frequency multiplication supported by CPU. However, from power saving point of view, the effect is no better than EIST option.

Disabled

Auto: BIOS automatic detection (Default)

- Execute Disable Bit

Hardware anti-virus technique is a function educed into new generation processor by Intel. Enabling this function could prevent virus, Trojan and so on from destroying the system memory and control the system. The basic operating principle is that the processor will divide several areas in memory, part of the areas are allowed to implement application code while other areas are not allowed.

Disabled

Enabled (Default)

<Virtualization Technology>: virtualization technology

Disabled (Default)

Enabled

- Core Multi-Processing

Multi-core processor. If it is disabled, only one core is operating.

Disabled

Enabled (Default)

- **Hard Disk Boot Priority**

When the host is connected with several hard disks, choose this option; press "Enter" and you'll see the hard disk list; the hard disk at the top of the list is the one to be boot; using "pagedown" and "pageup" to adjust the sequence. <Bootable Add-in Cards> represents the boot hard disk in expansion card.

- **Virus Warning**

After enabling this option, the booting area of the IDE hard disk is under protection. If certain program is trying to write data into the booting area, BIOS will show warning information on the screen and the buzzer will alarm.

Disabled (Default)

Enabled

- **CPU L3 Cache**

Enable CPU L3 cache.

Disabled

Enabled (Default)

- **Quick Power On Self Test**

  If this function is enabled, certain tests during booting may be skipped to reduce booting time.

  Disabled

  Enabled (Default)

- **First Boot Device**

  First boot device

  LS120: 120M floppy driver, it could take 120M floppy disk as boot disk.

  Hard Disk: take hard disk as boot disk. (Default)

  CDROM: CD-ROM, it could take CD as boot disk.

  ZIP100: 100M floppy disk driver

  USB-FDD: floppy disk driver of USB port

  USB-ZIP: take USB-ZIP as the first boot device

  USB-CDROM: CD-ROM of USB port

  Legacy LAN: take the network card as boot devices

  Disabled: disable this function

- **Second Boot Device**

  Second boot device

- **Third Boot Device**

  Third boot device

- **Boot other Device**

  This option is used to boot the computer by other devices, when the foresaid devices cannot start up the computer successfully.

  Disabled

  Enabled (Default)

- **Boot Up NumLock Status**

  This option can be set to “On” or “Off”. When it is set to “On”, it means to enable the “NumLock” key automatically during system booting.

  Off

On (Default)

- **Typematic Rate Setting**

  This option can be set to "Enabled" or "Disabled". When it is set to "Enabled", if press certain key without release, the computer will regard that you've pressed the key repeatedly. When it is set to "Disabled", if press certain key without release,

  Disabled (Default)

  Enabled

- **Typematic Rate(Chars/Sec)**

  If "Typematic Rate Setting" is set to "Enabled", then you may set to press certain key for one second equals to pressing the key for several times via this option.

- **Typematic Delay (Msec)**

  If "Typematic Rate Setting" is set to "Enabled", then you may set to press certain key and then regard as pressing this key repeatedly after certain time delay via this option; the unit is ms.

- **Security Option**

  When chosen "system", it will prompt to enter password when booting; when chosen "setup", it will prompt to enter password when entering BIOS setup.

  System

  Setup: enter "Setup" interface. (Default)

- **APIC Mode**

  Enable or disable APIC

  Disabled

  Enabled (Default)

- **Small Logo (EPA) Show**

  When this option is enabled, it is to display the energy star logo of EPA during booting.

  Disabled (Default)

  Enabled

- **Auto Detect PCI CLK**

Enabled: automatically detect all the PCI and AGP slots; if no inserted cards are occupying that slot, disable the clock signal for that slot to reduce EMI. (Default)

Disabled: no matter the slots are used or not, all the clock signals are provided normally.

- **Spread Spectrum**

  <Disabled>: disable Spread Spectrum function for system.

  <Enabled>: extend clock frequency for the system to reduce EMI. (Default)

◆ **Advanced Chipset Features**

Advanced Chipset Features		
		Item Help
Memory Hole At 15M-16M	[Disabled]	
Disable MCHBAR MMIO	[Enabled]	Menu Level
VT-d	[Disabled]	
** VGA Setting **		
PEG/Onchip VGA Control		
On-Chip Frame Buffer Size		
DVMT Mode		
Total GFX Memory		
PAVP Mode		

- **Memory Hole At 15M-16M**

  By enabling this function, users may reserve this portion of the address space 15M-16M for ISA device; therefore, the system address may decrease.

  Disabled (Default)

  Enabled

- **Disable MCHBAR MMIO**

  By enabling this function, users may release the MMIO space of the North Bridge after BIOS POST ends.

  Disabled

  Enabled Default)

- **PEG/Onchip VGA Control**

This option chooses to use the on-chip graphic controller or video card with PCIE slot when booting the system.

Onchip VGA: on-chip graphic processor;

PEG Port: external video card with PCIE slot;

Auto: BIOS Automatic Detection Selection. (Default)

- **On-Chip Frame Buffer Size**

  This option chooses the system memory resource size assigned to the Graphics Media Accelerator. The options are: 32MB (Default), 64M and 128MB.

- **DVMT Mode**

  Dynamic Video Memory Technology. By enabling this function, users may assign system memory to integrated video card dynamically.

  Disabled

  Enabled (Default)

- **Total GFX Memory**

  Under Windows XP, the maximum value of GFX memory is based on the size of the system memory. For example, the system memory is 1GB, the maximum GFX video memory 512MB\ 128MB (Default)\ 256MB

- **PAVP Mode**

  Protected Audio/Video Path mode

  Disabled (Default)

  Enabled

◆ **Integrated Peripherals**

Integrated Peripherals	
▶ OnChip IDE Device	Item Help
▶ SuperIO Device	Menu Level
OnChip Audio Device [Enabled]	
▶ USB Device Setting	

➢ **OnChip IDE Device**

OnChip IDE Device	
IDE HDD Block Mode [Enabled] IDE DMA transfer access [Enabled] IDE Primary Master PIO [Auto] IDE Primary Slave PIO [Auto] IDE Primary Master UDMA [Auto] IDE Primary Slave UDMA [Auto] On-Chip Secondary PCI IDE [Enabled] IDE Secondary Master PIO [Auto] IDE Secondary Slave PIO [Auto] IDE Secondary Master UDMA [Auto] IDE Secondary Slave UDMA [Auto] LEGACY Mode Support [Disabled]	Item Help Menu Level If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support

- IDE HDD Block Mode

  By enabling this function, it could transmit data from several sectors in one interrupt. All of the main stream hard disks support this function and it is recommended to set it to “Enabled”.

  Disabled

  Enabled (Default)

- IDE DMA transfer access

  This option enables the DMA function of the IDE device.

  Disabled

  Enabled (Default)

- IDE Primary Master PIO

  This option represents the PIO mode selection for the master hard disk in IDE channel 1.

PIO Mode	Cycle Time	Transfer Rate	Standard
Mode 0	600	3.3 (MB/S)	ATA
Mode 1	383	5.2 (MB/S)	ATA
Mode 2	240	8.3 (MB/S)	ATA
Mode 3	180	11.1 (MB/S)	ATA-2
Mode 4	120	16.7 (MB/S)	ATA-2

Auto: BIOS Automatic Detection Selection. (Default)

- IDE Primary Slave PIO

This option represents the PIO mode selection for the slave hard disk in IDE channel 1.

- IDE Primary Master UDMA

This option enables the Ultra DMA data transmitting mode of the master hard disk in IDE channel 1. The differences between Ultra DMA and common DMA are: under Ultra DMA mode, data are transmitted both in rising edge and descending edge of the clock; under the same time frequency, its speed is twice that of DMA.

Disabled

Auto: BIOS Automatic Detection Selection. (Default)

- IDE Primary Slave UDMA

The same as above.

- On-Chip Secondary PCI IDE

This option chooses whether to use the second IDE channel on South Bridge.

Disabled

Enabled (Default)

- IDE Secondary Master PIO

This option represents the PIO mode selection of the master hard disk on IDE channel 2.

- IDE Secondary Slave PIO

This option represents the PIO mode selection of the slave hard disk on IDE channel 2.

- IDE Secondary Master UDMA

This option enables the Ultra DMA data transmitting mode of the master hard disk on IDE channel 2.

- IDE Secondary Slave UDMA

This option enables the Ultra DMA data transmitting mode of the slave hard disk on IDE channel 2.

- LEGACY Mode Support

This option enables the software, data or OS that can support legacy version.

Disabled (Default)

Enabled

➢ **Super IO Device**

Super IO Device		
OnBoard FDC Controller	[Enabled]	Item Help
OnBoard Serial Port 1	[3F8/IRQ4]	
OnBoard Serial Port 2	[2F8/IRQ3]	Menu Level
OnBoard Parallel Port	[3F8/IRQ7]	
Parallel Port Mode	[Normal]	

- <OnBoard FDC Controller>

Used to enable floppy disk driver controller.

- <OnBoard Serial Port 1>

Set the address and IRQ of COM1 on motherboard.

- OnBoard Serial Port 2

Set the address and IRQ of COM2 on motherboard.

- OnBoard Parallel Port

Set the address of the parallel port on motherboard and the default value is 378.

- Parallel Port Mode

This option sets the operating mode for the specified parallel port: Normal, ECP, EPP, SPP; ECP + EPP represent the maximum speed for bi-direction data transmission; ECP represents the speed for bi-direction data transmission faster than EPP.

➢ **OnChip Audio Device**

This option selects whether to enable the audio card controller integrated on chip.

➢ **USB Device Setting**

USB Device Setting	
USB 1.0 Controller USB 2.0 Controller USB Storage Function *** USB Mass Storage Device Boot Setting ***	Item Help Menu Level [Enable] or [Disable] Universal Host Controller Interface for Universal Serial Bus.

- **USB 1.0 Controller**

This option is used to select whether to enable USB1.0 controller.

- **USB 2.0 Controller**

This option is used to select whether to enable USB2.0 controller.

- **USB Storage Function**

Enable to support USB storage device.

◆ **Power Management Setup**

USB Device Setting	
ACPI Function [Enabled] Restore on AC Power Loss [Last State] Resume by Alarm [Disabled] Date(of Month) Alarm 0 Time(hh:mm:ss) Alarm 0 : 0 : 0	Item Help Menu Level

➢ **ACPI Function**

This option is used to select whether to enable ACPI power management.

Disabled

Enabled (Default)

➢ **Restore on AC Power Loss**

Off: do not boot automatically after resuming power. (Default)

On: automatically boot after resuming power.

Last State: system restores its last status after resuming power.

➢ **Resume by Alarm**

This option enables Resume by Alarm function of the system; users shall set specified time first.

<Disabled> (Default)

<Enabled>

◆ **PnP/PCI Configurations**

PnP/PCI Configurations		
Init Display First	[PCI Slot]	Item Help
Reset Configuration Data	[Disabled]	Menu Level
Resources Controlled By	[Auto(ESCD)]	
PCI/VGA Palette Snoop	[Disabled]	

➢ **Init Display First**

This option is used to select whether to use on-board video card or PCI video card when system boots.

PCI Slot: PCI slot external video card. (Default)

Onboard: on-board video card.

➢ **Reset Configuration Data**

The function of the option is to clear ESCD (Extended System Configuration Data); when the newly installed hardware conflicts with the former system, please enable this option.

Disabled (Default)

Enabled

- **Resources Controlled By**

Auto (ESCD): choose this option and BIOS will automatically assign the resource of the PnP/PCI device, such as, IRQ, DMA and memory. (Default)

Manual: assign various resources manually.

When "Resources Controlled By" is set to <Manual>, IRQ resource can be assigned manually.

IRQ 3-5, 7, 9-12, 14, 15 assigned to

PCI Device: assign to PCI device (Default)

Reserved

- **PCI/VGA Palette Snoop**

The function of this option is that when two palettes are adopted on ISA and PCI bus respectively and the colors display abnormally, please set this option to <Enabled>.

Disabled (Default)

Enabled

◆ **PC Health Status**

PC Health Status		
System Temperature	34℃/ 93℉	Item Help
CPU Temperature	38℃/ 100℉	
SYSFAN1 Speed	2136 RPM	Menu Level
CPUFAN1 Speed	2136 RPM	
Vcore	1.28v	
V5.0	5.05v	
V12.0	12.09v	
VBAT	3.15v	

◆ **Load Failsafe Defaults**

The function of this option is to initialize the setup of each option to the values realizing the most fundamental and secure system function. To implement this

function, choose this option and press < Enter >; messages to be confirmed will display on the screen, press < Enter > to implement this function.

◆ **Load Optimal Defaults**

This menu is used to input default value in system configuration. These default values are optimized and could give play to the high capability of all hardware.

◆ **Set Supervisor Password**

Set Supervisor Password

◆ **Set User Password**

Set User Password

◆ **Save & Exit Setup**

When you've finished all the modification and want to cover the former parameters, you may implement this option; the new parameter will be saved in the CMOS storage. To implement this option, choose this option and press < Enter >; press < Enter > again to exit.

◆ **Discard Changes and Exit**

If you do not want to save the action of modifying the setting into CMOS storage, please choose this option and press < Enter >; press < Enter > again to exit.

The System Resource Managed by BIOS under x86 Platform

We define three types of system resources here: I/O port addresses, IRQ number and DMA number.

- **DAM**

Level	Function
DMA0	DRAM Refresh
DMA1	Not Assigned
DMA2	Floppy Disk
DMA3	Not Assigned (sometimes used for hard disk)
DMA4	Used for the cascade of DMAC
DMA5	Not Assigned
DMA6	Not Assigned
DMA7	Not Assigned

- **APIC**

Advanced programmable interrupt controller. Most motherboards above P4 level support APIC and provide more than 16 interrupt sources, like IRQ16 - IRQ23; some others can have up to 28 interrupt sources such has motherboard supporting PCI-X. However, relevant OS are required to enable that function, and currently, only the OS above Windows 2000 could support that function.

- **IO Port Address**

There is 64K for the system I/O address space. Each external device will occupy portion of the space. The table below shows parts of the distribution of the I/O address. As the address of PCI device (e.g. PCI network card) is configured by software, it is not listed in this table.

Address	Device Description
000h - 00Fh	DMA Controller #1
000h - CF7h	PCI Bus
010h - 01Fh	Carrier Resource
020h - 021h	Programmable Interrupt Controller #1
022h - 03Fh	Carrier Resource
040h - 043h	System Timer
044h - 05Fh	Carrier Resource
060h	Standard 101/102 Key or Microsoft Natural PS/2 Keyboard
061h	System speaker
062h – 063h	Carrier Resource
064h	Standard 101/102 Key or Microsoft Natural PS/2 Keyboard
065h - 06Fh	Carrier Resource
070h - 071h	Real Time Clock, NMI
072h – 07Fh	Carrier Resource
080h	Carrier Resource
081h - 083h	DMA Controller #2
084h - 086h	Carrier Resource
087h	DMA Controller #3
088h	Carrier Resource
089h - 08Bh	DMA Controller #4
08Ch - 08Eh	Carrier Resource
08Fh	DMA Controller #5
090h - 09Fh	Carrier Resource
0A0h - 0A1h	Programmable Interrupt Controller #2
0A2h – 0BFh	Carrier Resource

Address	Device Description
0C0h - 0DFh	DMA Controller #6
0E0h - 0EFh	Carrier Resource
0F0h - 0FFh	Numeric Data Processor
170h - 177h	Slave IDE
1F0h - 1F7h	Master IDE
274h – 277h	ISAPNP Read Data Port
279h	ISAPNP Read Data Port
2F8h - 2FFh	COM2
376h	Slave IDE(dual FIFO)
378h - 37Fh	LPT1
3B0h – 3BBh	Intel(R) Q965/Q963 Express Chipset Family
3C0h – 3DFh	Intel(R) Q965/Q963 Express Chipset Family
3F0h - 3F5h	Standard Floppy Disk Controller
3F6h	Master IDE(dual FIFO)
3F8h - 3FFh	COM1
400h - 41Fh	Intel(R) 82801G (ICH8 Family) SMBus Controller - 27DA
480h - 4BFh	Carrier Resource
4D0h –4D1h	Carrier Resource
800h - 87Fh	Carrier Resource
B00h-B0Fh	Carrier Resource
B10h-B1Fh	Carrier Resource
A79h	ISAPNP Read Data Port
D000h-DFFFh	Intel(R) ICH8 Family PCI Express Root Port-2849
0D00h-FFFFh	PCI bus

◆ **IRQ Assignment Table**

There are 15 interrupt sources of the system. Some are exclusively occupied by the system devices. Only the ones that are not exclusively occupied can be distributed. The ISA devices claim to engross the interrupt .Only the plug and play ISA devices can be distributed by the BIOS or the OS .And several PCI devices share one interrupt through the distribution of BIOS or OS. The diagram below shows parts of the interrupt distribution under X86 platform, but it does not show the interrupt source occupied by the PCI devices.

Level	Function
IRQ0	System Timer
IRQ1	Standard 101/102 Key or Microsoft Keyboard
IRQ2	Programmable Interrupt Controller
IRQ3	COM #2
IRQ4	COM #1
IRQ5	Parallel Port #2
IRQ6	Standard Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	System CMOS/Real-Time Clock
IRQ9	Software Transfer to Int 0Ah
IRQ10	Reserved
IRQ11	Reserved
IRQ12	Reserved
IRQ13	Mouse Connector
IRQ14	Master IDE
IRQ15	Slave IDE

Chapter 4 Install the Driver

Please refer to the equipped CD for the driver program of this product, and it is omitted here.

Appendix

Watchdog Programming Guide

This board provides a programmable watchdog timer (WDT) up to 255 levels and time by minute or second. Watchdog timer overtime event can be programmed to reset system or generate maskable interrupts.

The available IRQ numbers for this board are: 3, 4, 5, 7, 9, 10 and 11.

Before using, please modify the corresponding IRQ number in PCIPnP of BIOS Setup interface into "Reserved".

The following describes WDT program in C language. The steps to program WDT are listed as follows:

- Enter WDT programming mode
- Set WDT operating mode/enable WDT/disable WDT

(1) **Enter** WDT **Programming Mode**

```
#define     INDEX_PORT   0x2E
#define     DATA_PORT          0x2F

outportb(INDEX_PORT, 0x87);
outportb(INDEX_PORT, 0x87);
outportb(INDEX_PORT, 0x07);
outportb(DATA_PORT, 0x08);
outportb(INDEX_PORT, 0x30);
outportb(DATA_PORT, 0x01);
```

(2) **Configure WDT operating mode, reset mode or interrupt mode:**

```
unsigned char oldval;
outportb(INDEX_PORT,0x2d);
oldval = inportb(DATA_PORT);
```

a. **Configure** WDT **to reset mode**

```
oldval &= 0xfe;
outportb(DATA_PORT, oldval);
```

b. **Configure** WDT **to interrupt mode**

```
oldval |= 0x01;
outportb(DATA_PORT, oldval);
outportb(INDEX_PORT,0xf7);
outportb(DATA_PORT, IRQ_NO); /*Please replace the constant IRQ_NO with the interrupt number need to be used and evaluate the variable IRQ. The available range of the interrupt number has been listed in the beginning of this chapter.*/
```

(3) **Configure WDT to time by minute/second:**

a. **Time by minute:**

```
outportb(INDEX_PORT,0xf5);
outportb(DATA_PORT,0x08);
```

b. **Time by second:**

```
outportb(INDEX_PORT,0xf5);
outportb(DATA_PORT,0x00);
```

(4) **Enable/Disable** WDT

a. **Enable WDT:**

```
outportb(INDEX_PORT,0xf6);
outportb(DATA_PORT,TIME_OUT_VALUE); /*Please replace the constant TIME_OUT_VALUE with the unit number of timeout value(0x01~0xFF)*/
```

b. **Disable WDT:**

```
outportb(INDEX_PORT,0xf6);
outportb(DATA_PORT,0x00);
```

Digital I/O Programming Guide

The motherboard provides 8-channel programmable digital I/O pins, four of which are for input while the other four are for output. The following describes digital I/O program in C language. The steps to program digital I/O are as follows:

- Initialize digital I/O
- I/O programming

(1) **Initialize Digital I/O:**

```
#define     BAR 0x400

unsigned char tmp_val;
outportb(BAR,0xbf);
outportb(BAR+0x04,0x40);
outportb(BAR+0x03,0x03);
outportb(BAR+0x05,0x0F);
tmp_val =(inportb(BAR+0x02)|0x08)&0xeb;
tmp_val |= 0x40;
outportb(BAR+0x02, tmp_val);
delay(30);
tmp_val =inportb(BAR);
while((tmp_val &0x02)!=0x02)
    {
        tmp_val =inportb(BAR);
        if((tmp_val &0x04)!=0)
        {
            printf("ERROR\n");
            return 0;
        }
    }
```

(2) **I/O Programming**

a. Output Programming

Functions input: int pin – Value 1~4 are corresponding with output pin 1~4

int lev_val – 1: output pin is active high; 0: output pin is active low

Functions Output: None

```
void Out_Lev(int pin ,int lev_val)
   {
      unsigned int reg_val ;
      outportb(BAR,0xbf);
      outportb(BAR+0x04,0x40);
      outportb(BAR+0x03,0x01);
      reg_val = inportb(BAR+0x05);
      reg_val = lev_val ?
reg_val|(0x01<<pin+3) :reg_val&(~(0x01<<pin+3)) ;
      outportb(BAR+0x05, reg_val);
      reg_val =(inportb(BAR+0x02)|0x08)&0xeb;
      reg_val |= 0x40;
      outportb(BAR+0x02, reg_val);
      delay(30);
      reg_val =inportb(BAR);
      while((reg_val &0x02)!=0x02)
            {
                  reg_val =inportb(BAR);
                  if((reg_val &0x04)!=0)
                  {
                        printf("ERROR\n");
                        return 0;
                  }
            }
}
```

b. Input Programming

Functions Input: int pin – Value 1~4 are corresponding with the input pin 1~4

Functions Output: int lev_val – 1: input pin is active high; 0: input pin is active low

```
int In_Lev(int pin)
{
    unsigned int reg_val ;
    int lev_val ;
    outportb(BAR,0xbf);
    outportb(BAR+0x04,0x41);
    outportb(BAR+0x03,0x00);
    reg_val =(inportb(BAR+0x02)|0x08)&0xeb;
    reg_val |= 0x40;
    outportb(BAR+0x02, reg_val);
    delay(30);
    reg_val =inportb(BAR);
    while((reg_val &0x02)!=0x02)
        {
            reg_val =inportb(BAR);
            if((reg_val &0x04)!=0)
            {
                printf("ERROR\n");
                return 0;
            }
        }
    lev_val = inportb(BAR+0x05)&( 0x01<<pin-1);
    lev_val = lev_val ? 1:0; /*Get the variable lev_val, 1 represents
    that the input pin is active high, while 0 represents the input pin is
    active low*/
    return lev_val ;
}
```

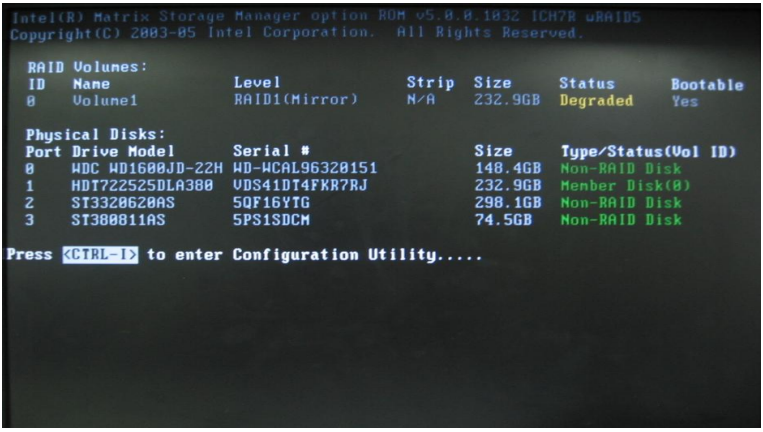
Way and Steps for RAID Installation

Firstly, set BIOS:

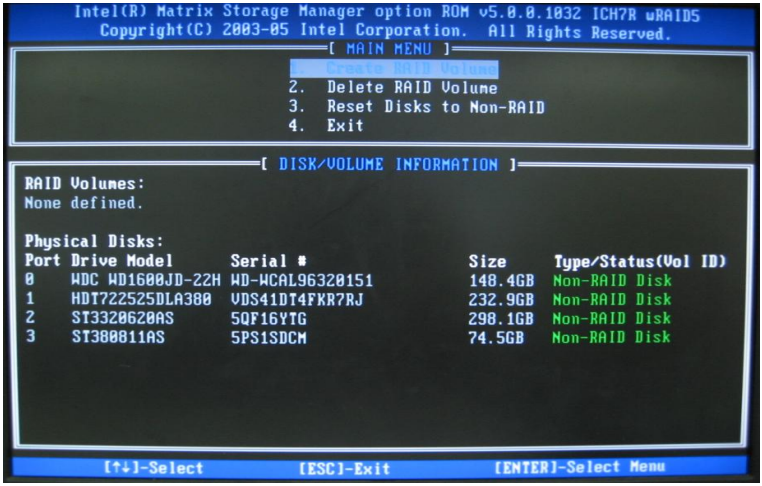
Integrated Peripherals—〉Onchip IDE Device—〉change SATA Mode to RAID; After setting to Raid, press "F10" to save setting. Please refer to *BIOS Setup Guide* for detailed information.

Then enter "RAID Configuration Utility":

Serial ATA RAID volume could be set in the RAID Configuration Utility of Intel RAID Option ROM.

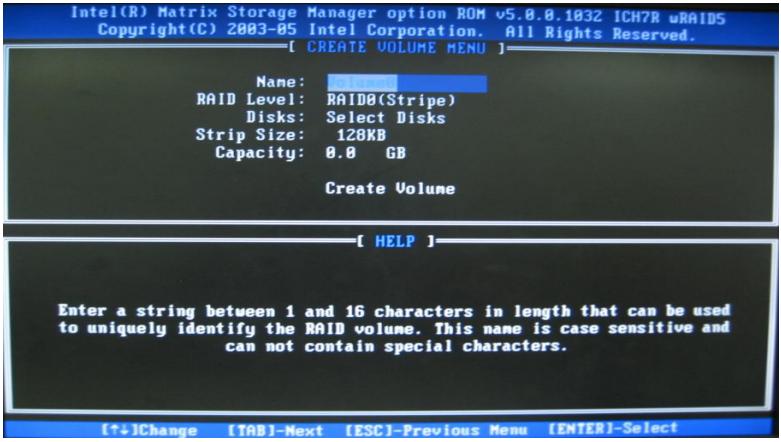


After showing the above information, press <Ctrl>+<I> to enter RAID Configuration Utility; and then press <Ctrl>+<I> again and the following screen will appear:



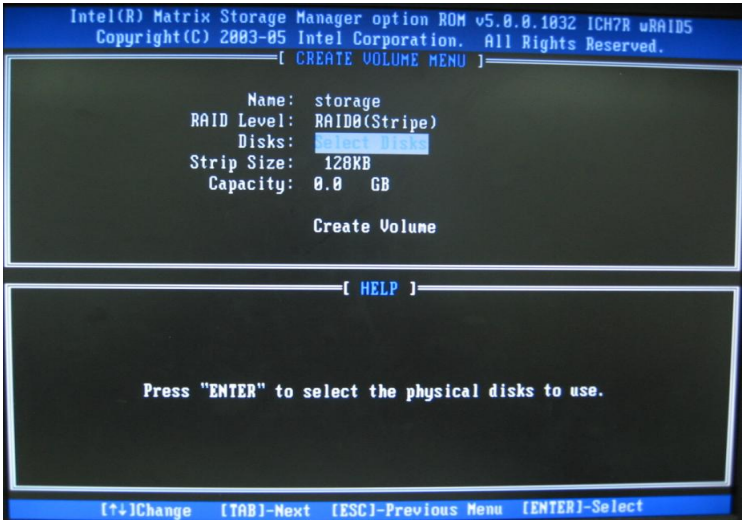
Create RAID Volume:

A: Choose Option 1 “Create RAID Volume”, and press <Enter>; the following screen will appear. Specify a name for the RAID volume within the name field (the name could be arbitrary and is only used as a prompt); then press <TAB> or <Enter> to enter the following field.

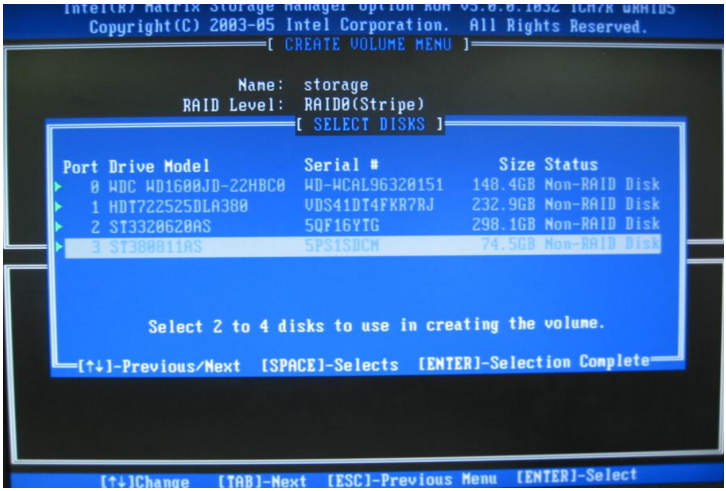


B: Use the direction key to select the required RAID level within the RAID Level field.

C: Press <Enter> within the Disk field and the following screen will appear. Choose the RAID volume you want to create via upper and down arrow key, press <Enter> to complete the selection of this option and enter the next field.



D: Press <SPACE> to select the HDD you want to use; after you've chosen the HDD via pressing <SPACE>, a green triangle icon will appear before the HDD information. As shown in the figure:



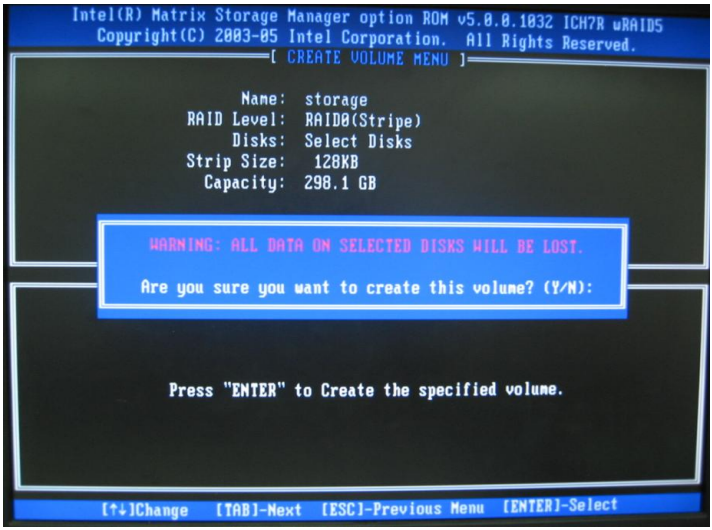
Note: When creating Raid0/1/10, two or four HDDs must be chosen.

E: After choosing the appropriate HDD, press < Enter> to enter the next setting interface.

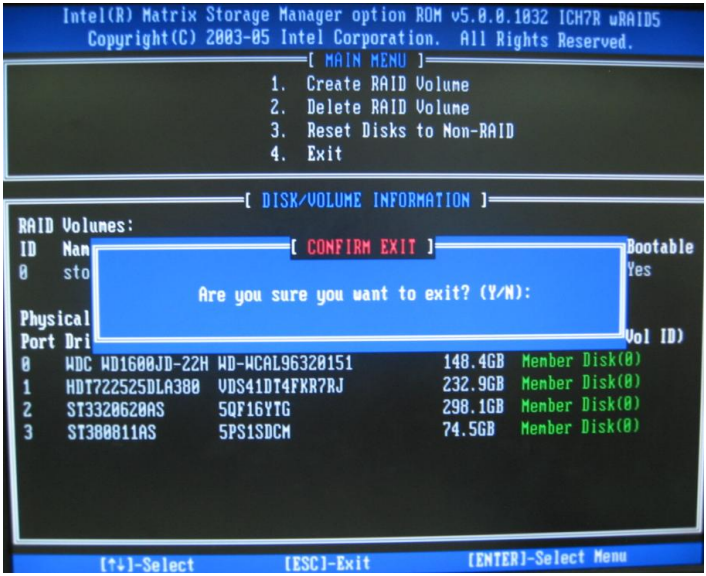
F: Choose the serial optional value for RAID array via upper or down arrow and press < Enter> to confirm and enter the next region. The optional value ranges between 4KB and 128 KB and increases in fold. The selection of serial value is based on the operating method of the driver. There are some recommended options: RAID0-128KB RAID10-64KB RAID5-64KB

G: Then, select the capacity of the volume within the Capacity field. The default value of this option is the maximum capacity of the disk chosen.

H: The following screen will appear to let you confirm whether to create RAID volume. Press <Y> to continue.



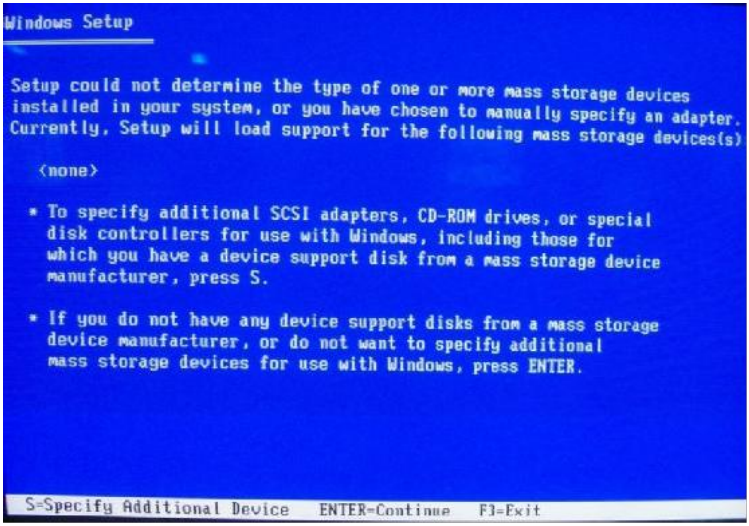
I: When the title within the red line frame appears, it indicates that your creation has completed.



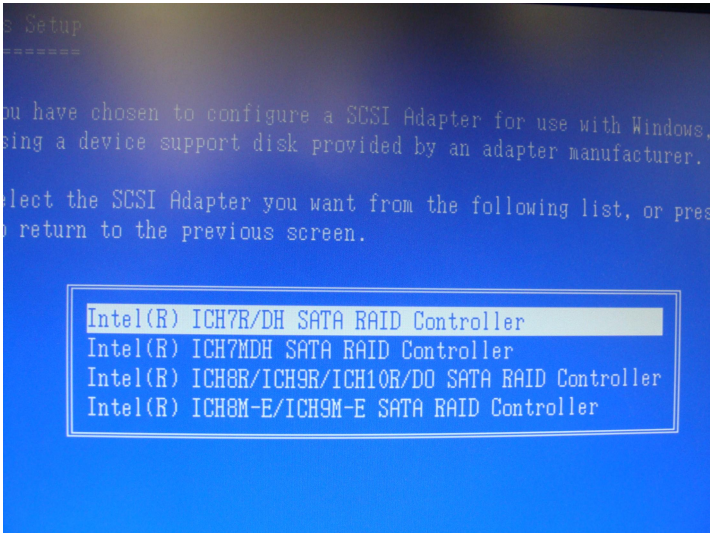
J: After finishing creation, press < ESC> to exit Raid configuration interface; the below figure will appear and press <Y> to confirm. Thus, the setting is completed and may implement system installation.

Begin to install:

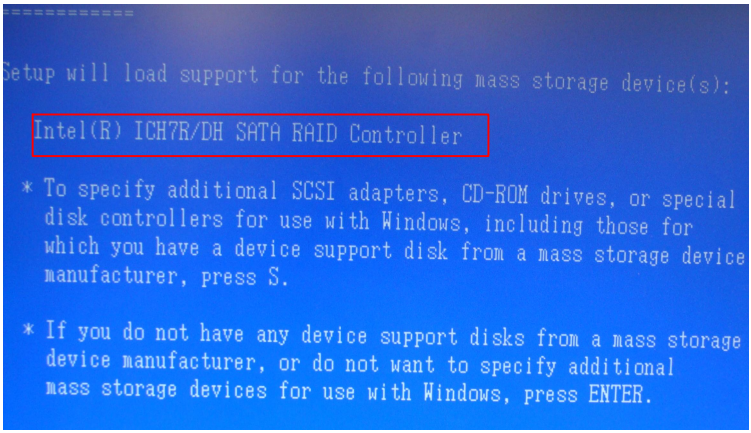
Boot from CD-ROM, when “Press F6 if you need to install third party SCSI or RAID driver” appears, press F6.



Insert Intel IAA RAID XP Driver for ICH8R (NH82801HR) disk to disk A and press <Enter>. (Note: the board has no floppy disk connector; please adopt the IBM USB floppy driver). Select in the drop list of the Windows XP Setup screen (choose the corresponding south bridge) and press < Enter >:



Press < Enter > to continue installation; if you want to appoint any additional devices, please install now. When all the devices are installed, press < Enter > to continue installation.



Press <Enter> and it will load all the device files and continue installation.

Please visit http://www.evoc.com for more information.