865EB Mainboard

User's Manual

Rev：3.0

Date：2010.12

CONTENTS

Chapter 1 Package Contents

Your mainboard package contains the following items:

1   One Intel 865EB mainboard

2   One 80-Pin Ultra DMA 66/100 IDE drive ribbon cable

3   Drives installed CD

4   One user's manual

5   SATA cable (optional)

6   SATA Power cable (optional)

7   One I/O Backboard

Chapter 2 Introduction

Key Features：

-Chipset：

 MCH：Intel 845GV/GL+ICH5

-CPU：

 Supports Intel Pentium HT (Hyper Threading Technology) CPU

 Supports Intel SOCKET 478 CPU

 Supports Intel Pentium 4 SOCKET 478 CPU

 Supports Intel Celeron D SOCKET 478 CPU
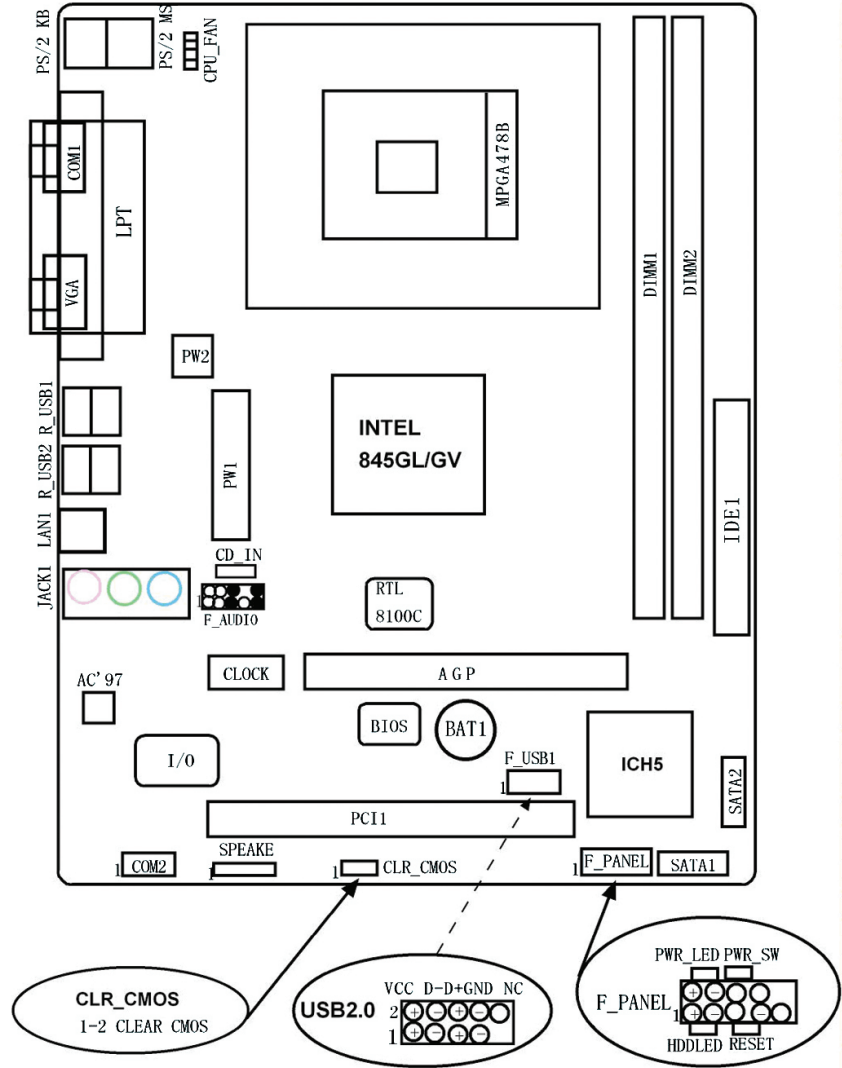
-Supports 533MHz/800MHz HOST BUS Frequency

-Memory：

 Supports DDR333/400 Memory

 Provides Two 184 pin DDR slots

3

-Supports 4X/8X Fast Write Protocol (1.5V only)

 Supports AGP 3.0 compliant

-Built Intel Extreme 2 Graphics display

 Integrated display function technologies without extend VGA card

 Integrated 2D/3D Graphics Controller

-I/O :

 One IDE Ports

 Two serial port

 One parallel port, supports EPP/ECP/SPP transfers

 Six USB ports

 One PS/2 Keyboard port

 One PS/2 Mouse port

 One VGA Port

 Two SATA port

-Onboard AC'97 2.3 specification compliant

 Support six channels sound input (example Realtek ALC655)

 Support 16 bit ADC (Analog Digital Converter)

 Support multiple stereo input mixer

 Provides Mic In、Line In、Line Out jack

-Onboard LAN Card

 Onboard RTL8100C LAN Card

-Expansion slot：

 One 4X/8X AGP slot(supports 1.5V only)

 One 32-bit PCI slots 2.3 specification compliant

 Two DDR support DDR333/DDR400 Memory

-Dimension

 MicroATX form factor

Chapter 3 Mainboard Locations

PS/2 KB · PS/2 MS · CPU_FAN · MPGA478B · DIMM1 · DIMM2 · COM1 · LPT · VGA · PW2 · JACK1 · LAN1 · R_USB2 · R_USB1 · PW1 · INTEL 845GL/GV · IDE1 · CD_IN · F_AUDIO · RTL 8100C · AC'97 · CLOCK · A G P · BIOS · BAT1 · I/O · F_USB1 · ICH5 · PCI1 · SATA2 · COM2 · SPEAKE · CLR_CMOS · F_PANEL · SATA1

CLR_CMOS
1-2 CLEAR CMOS

USB2.0 — VCC D- D+ GND NC

F_PANEL — PWR_LED PWR_SW / HDDLED RESET

Chapter 4 Installation

4.1 Jumper Setting and Slot

CLR_CMOS：Clear CMOS Jumper setting

1-2	Clear CMOS

Audio：Front panel Jumper setting

PIN	Function	PIN	Function
1	MIC+	2	Ground
3	Vbias	4	AuD_Vcc(AVCC)
5	AuD_R_Out	6	R_Out Back
7	N.C.	8	Key
9	AuD_L_Out	10	L_Out Back

USB: Expansion Connector

PIN	Function	PIN	Function
1	VCC：Power	2	VCC：Power
3	D-：Data - Signal	4	D-：Data - Signal
5	D+：Data + Signal	6	D+：Data + Signal
7	GND：Ground	8	GND：Ground
9	Key	10	N.C.

F_PANEL Port

Power Supply LED	Pin2:Power Supply Anode ；Pin4：Ground
HDD LED	Pin1：Power Supply Anode；Pin3：LED Signal
Power Supply Switch	Pin6、8：Switch Signal
Reset Switch	Pin5、7、9：Reset Switch
Speaker Switch	Speaker Switch

Expansion slot

DIMM1/2	184 PIN DDR MEMORY SLOT
PCI1	32 bit PCI BUS expansion slots
AGP1	AGP Display expansion slots

Connectors

PS/2 (Bottom)	PS/2 Keyboard (Purple)
PS/2 (Top)	PS/2 Mouse Header(Green)
LAN	LAN Connector Port
R_USB1/ R_USB2	USB postposition Connector Port
F_USB1	USB front Connector Port

LPT	Printer Connector Port
COM1/2	Serial Port COM1 Connector Port
JACK1	Audio Output/Audio Input/Microphone
F_AUDIO	Audio front Connector Port
CD_IN	CDROM Audio Input Port
IDE1	IDE Port
SATA1/SATA2	SATA Port
PW1/PW2	ATX Power Supply Connector Port
CPU FAN	CPU FAN Port

4.2 CPU Installation

The system board is equipped with a surface mount socket 478. This socket is exclusively designed for installing a Socket 478 packaged Prescott CPU.
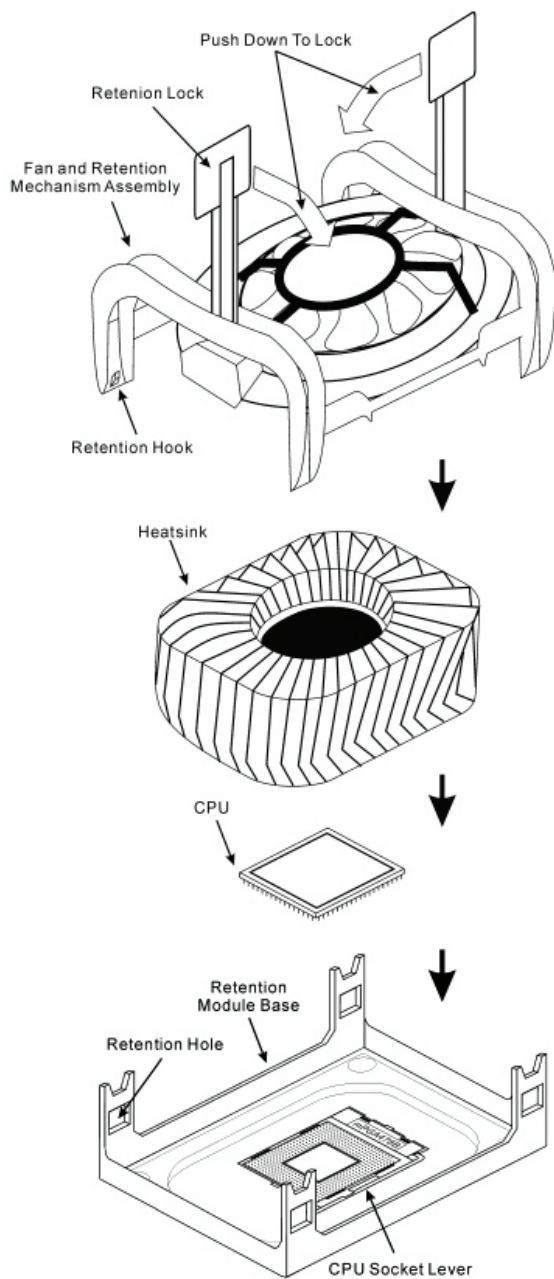
1. Make sure the PC and all other peripheral devices connected to it has been powered down.

2. Disconnect all power cords and cables.
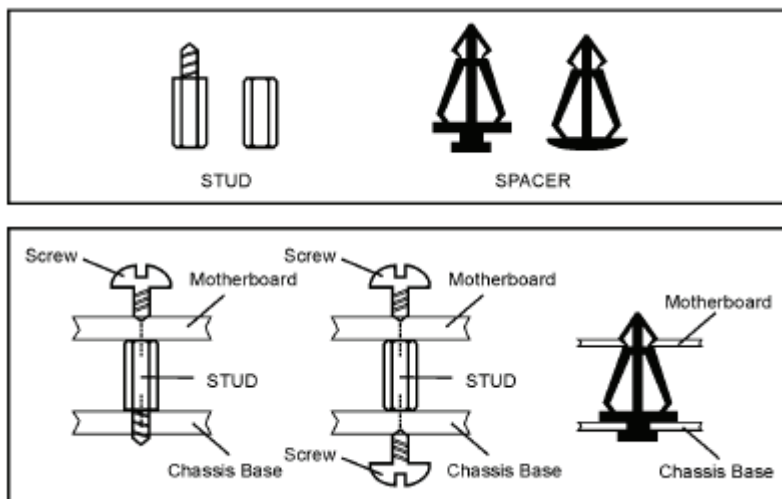
3. Locate the 478 CPU socket on the system board.

4. The CPU socket comes with a cover that is attached with a removable protective cap. The cap is used to protect the CPU socket against dust and harmful particles. Remove the protective

cap only when you are about to install the CPU.

5. Lift the protective cap from the location pointed below to detach the cap from the cover.

6. Unlock the socket by pushing the lever down, moving it away from the side tab of the socket, then lifting it up.

7. Now lift the cover.

8. Position the CPU above the socket. The gold mark on the CPU must align with pin 1 of the CPU socket.

9. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force.

10. Once the CPU is in place, move the cover down.

11. Push the lever down to lock the socket. The lever should hook onto the side tab to indicate that the CPU is completely secured in the socket.

12. Before you install the fan / heat sink, you must apply a thermal paste onto the top of the CPU. The thermal paste is usually supplied when you purchase the CPU or fan heat sink assembly. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.
    Do not apply the paste if the fan / heat sink already has a patch of thermal paste on its underside. Peel the strip that covers the Paste before you place the fan / heat sink on top of the CPU.

13. Place the heat sink on top of the CPU. The 4 studs around the heat sink which are used to secure the heat sink onto the system board must match the 4 mounting holes around the socket. Position each stud so that the groove faces the heat sink then push it down firmly until it clicks into place.

14. Connect the CPU fan's cable connector to the CPU fan connector on the system board.

8

Push Down To Lock

Retenion Lock

Fan and Retention
Mechanism Assembly

Retention Hook

Heatsink

CPU

Retention
Module Base

Retention Hole

CPU Socket Lever

4.3 Memory installation

This mainboard supports DDR333/DDR400 DDR memory，you may install 184 pin DDR memory。DDR SDRAM uses additional power and ground lines and requires 184-pin 2.5V unbuffered DIMM module rather than the 168-pin 3.3V unbuffered DIMM used by SDRAM.

Follow these instructions to install the Memory:

1. Push the latches on each side of the DIMM slot down.
2. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMM are keyed with cutouts so that they can only be installed correctly.
3. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
4. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
5. Install any remaining DIMM modules.
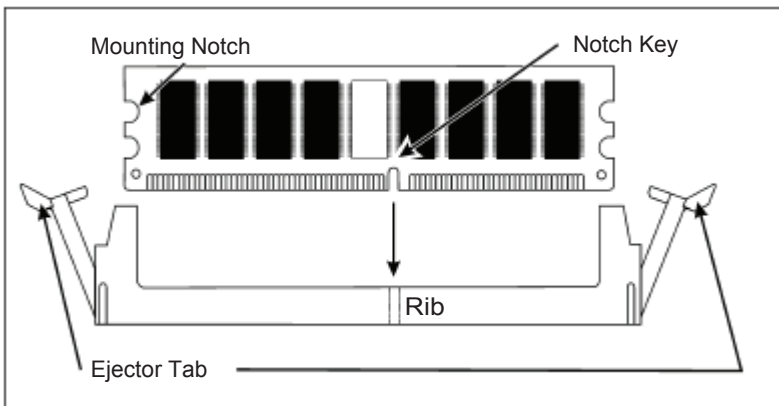
4.4 AGP Card Installation

This mainboard has an Accelerated Graphics Port (AGP) slot that support 8X (+1.5V) cards. When you buy an AGP card, make sure that you ask for on with (+1.5V) specification.
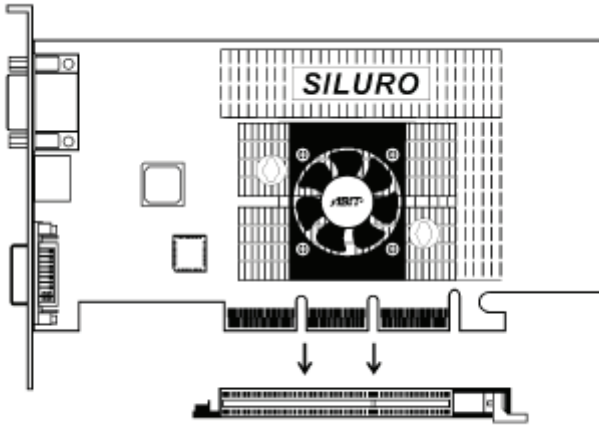
4.5 IDE Devices Installation

IDE devices include hard disk drives, high-density diskette drives, and CD-ROM or DVD-ROM drives, among othes.

The mainboard ships with and IDE cable that can support one or two IDE devices. If you connect two devices to a single cable, you must configure one of the drives as Master and one of the drives as Slave. The documentation of the IDE device will tell you how to configure the device as a Master or Slave device.

4.6 Other Device Installation

4.6.1 Serial ATA Installation (7-Pin SATA1/SATA2)

The motherboard bundles the new Serial ATA technology through the SATA interfaces onboard. The SATA specification allows for thinner, more flexible cables with lower pin count, reduced voltage requirement. These connectors support Serial ATA HDDs and allow up to 150MB/s data transfer rate using thin 4-conductor SATA cables. faster than the standard parallel ATA with 133MB/s(Ultra ATA/133)

Note1: The Serial ATA cable is smaller and more flexible allowing easier routing inside the chassis. The lower pin count of the Serial ATA cable eliminates the problem caused by the wide, flat ribbon cables of the

Parallel ATA interface.

Hot plug support for Serial ATA drive and connections are not available in this motherboard.

4.6.2   Sound Connector Port Installation

This mainboard has three audio ports connect audio device.

The left side jack(green) is for a stereo line-out signal. The middle jack (blue)is for a stereo line-in signal. The right side jack (red)is for a microphone.

4.6.3   Clear CMOS (Clear RTC RAM) (CLR_CMOS)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The RAM data in CMOS, that include system setup information such as system passwords, is powered by the onboard button cell battery.

1、Turn OFF the computer and unplug the power cord.

2、place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.

3、Plug the power cord and turn ON the computer.

4、Hold down the<DEL> key during the boot process and enter BIOS setup to re-enter data.

Note1: Except when clearing RTC RAM, never remove the cap on CLRTC1 jumper default position. Removing the cap will cause system boot failure!

Note2: You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so BIOS can automatically reset parameter settings to default values.

4.6.4 ATX Power connectors (20-pin PW1, 4-pin PW2)

These connectors connect to an ATX 12V power supply. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors

12

completely fit. In addition to the 20-pin PWR1 connector, connect the 4-pin
PW2 +12V power plug to provide sufficient power to the CPU.

**Note1: Make sure that you ATX 12V power supply can provide at least 15A
on the +12V lead and at least 2A on the +5-volt standby lead (+5VSB).The
minimum recommended wattage is 300W or above for a fully configured system.
The system may become unstable and may experience difficulty powering up
if the power supply is inadequate.**

**Note2: Do not forget to connect the 20-pin PWR1 and 4-pin PW2 power plugs.
Failure to do so may cause severe damage to the CPU or motherboard!**

Chapter 5 Driver Installation

5.1 Installation Directory

The utility CD is supplied with that mainboard the connects contained in
it are showed as below:

Directory	Driver	OS
INTEL\INF\8XX	Intel chipset software	Windows 9x Windows 2000/XP Windows NT4.0
TOOLS\DirectX 9.0C	DirectX 9.0C setup	Windows 9x Windows 2000 Windows XP
SOUND\REALTEK\ Realtek ALC101_655	Realtek AC' 97 Audio driver	Windows 9x Windows 2000/XP Windows NT4.0
INTEL\VGA\845	VGA driver setup	Windows 9x Windows 2000/XP Windows NT4.0

Before installing audio driver, you must identify the mode of AC' 97 codec.
Fox example: If you use Realtek serial codec, you need to enter into the
Realtek directory installing.

5.2 Intel Chipset Software Setup

Insert the driver CD, running driver software CD, choose the directory :\
CD-ROM: INTEL\INF\8XX
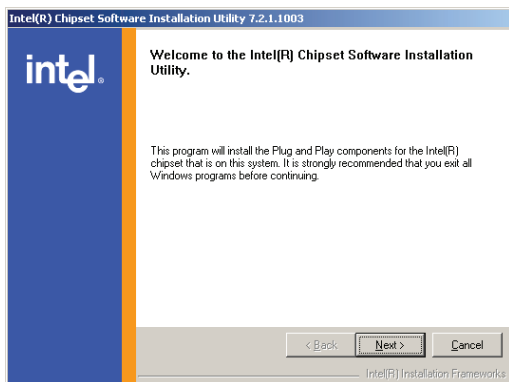
Click "NEXT" to continue
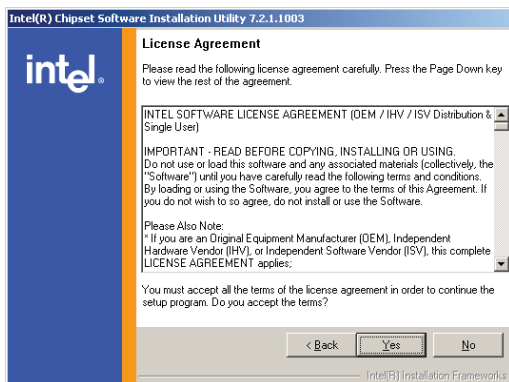
Select "YES" to continue

Select "NEXT" to continue

14
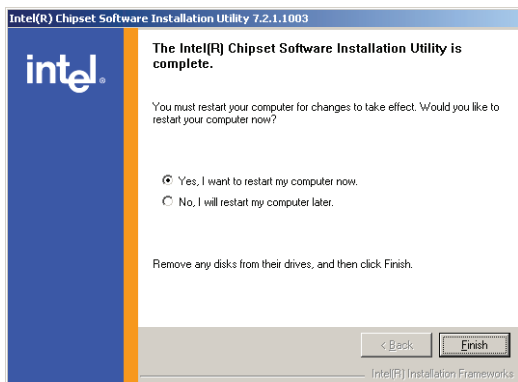
Select "FINISH" to complete the installation.

5.3 DirectX9.0C Setup

CD-ROM:\TOOLS\DirectX 9.0C\

Select "I agree" to continue

15
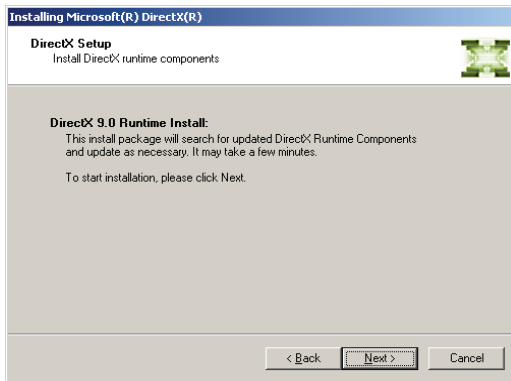
Select "NEXT" to continue
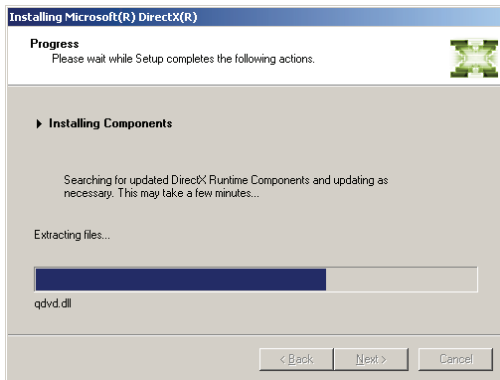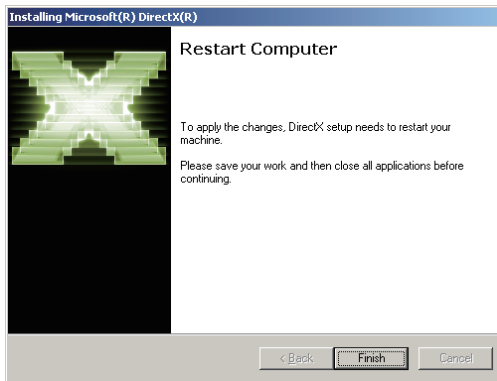
continue

Select "FINISH" to complete the installation.

5.4 Sound Driver Setup

Insert the driver CD, running driver software CD, choose the directory:\CD-ROM:\SOUND\REALTEK\ Realtek ALC101_655\
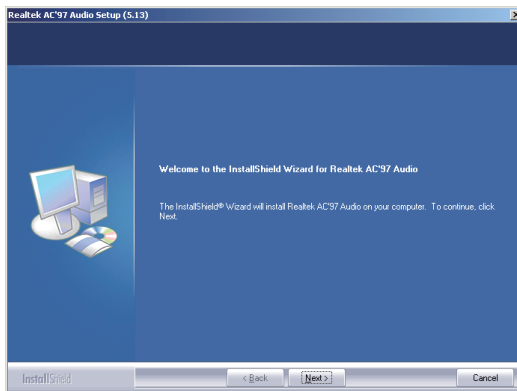
Select "Next" to continue
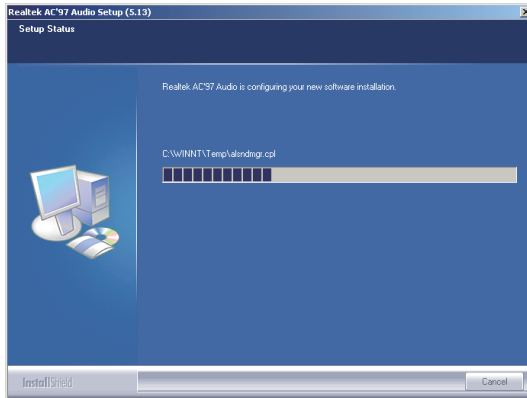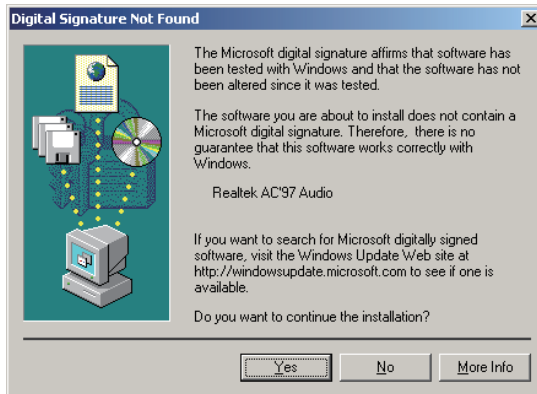
Continue

Select "YES" to continue
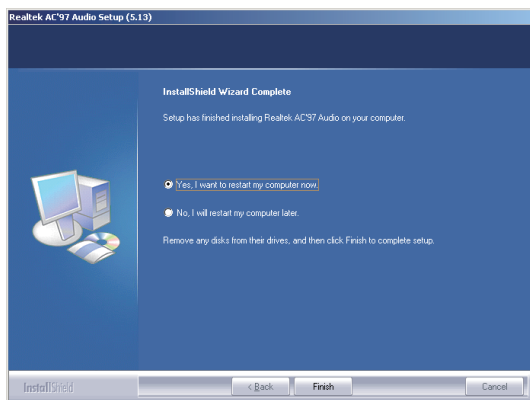
Select "Finish" to complete the installation

6-Channel Sound Output Support

Please follow the steps below for operation（optional）：

1. After install sound driver, click "Sound effect", "AC97 Audio configuration" options;

2. Click "Sound configuration", select "6 Channel mode for 5.1 speakers output" options。

3. Click "Sound effect" menu "Environment", you must choose one Sound effect realization 6-Channel sound output。
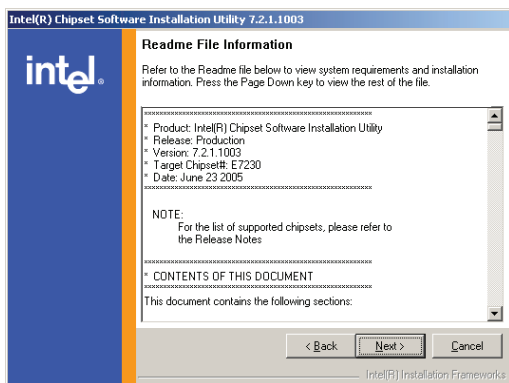
5.5 VGA Driver Setup

Insert the driver CD, running driver software CD, choose the directory: \CD-ROM:\INTEL\VGA\845\
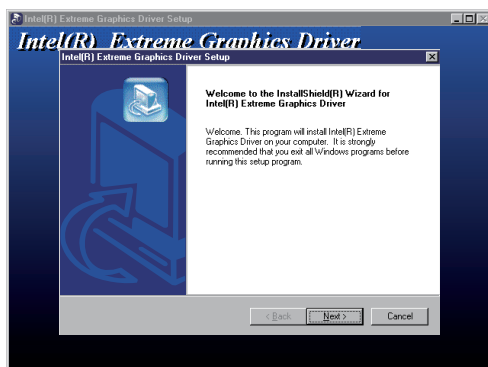
Select "Next" to continue
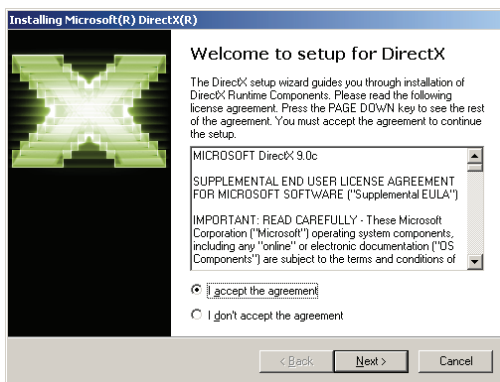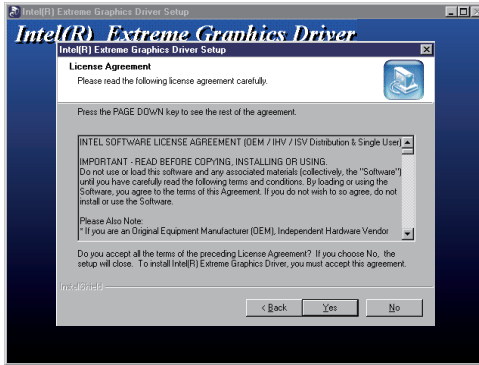

Select "Next" to continue
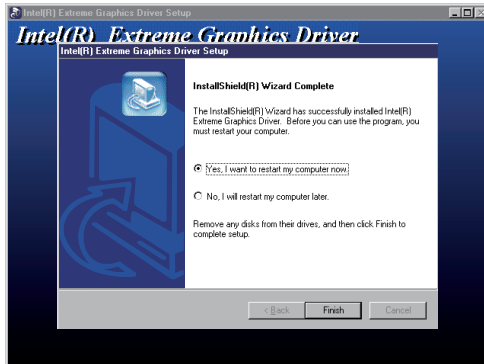
Select "Finish" to continue

Chapter 6 BIOS Setup

The BIOS Setup Utility record settings and information of your computer, such as date and time, the type of hardware installed, and various configuration settings. Your computer applies those information to initialize all the components when booting up and basic function of coordination between system components.

If the Setup Utility configuration is incorrect, it may cause the system to malfunction. It can even stop you computer booting properly. If it happens, you can use the clear CMOS jumper to clear the CMOS memory which has stored the configuration information; or you can hold down the Page

20

Up key while rebooting your computer. Holding down the Page Up key also
clears the setup information,

6.1 Main menu

```
┌──────────────────────────────────────────────────────────────┐
│           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        │
│                                │                             │
│                                │                             │
│                                │                             │
├────────────────────────────────┴─────────────────────────────┤
│ Esc:Quit                      ↑ ↓ → ← :Select Item          │
│ F10:Save & Exit Setup                                        │
├──────────────────────────────────────────────────────────────┤
│               Time,Date,Hard Disk Type…                      │
└──────────────────────────────────────────────────────────────┘
```

You can use cursor arrow keys to highlight anyone of options on the main
menu page. Press **Enter** to select the highlighted option. Press the **Escape**
key to leave the setup utility. Press the **F9** key to go back to menu in BIOS.
Some options on the main menu page lead to tables of items with installed
value that you can use cursor arrow keys to highlight on item, and press
Page Up and **Page Down** keys to cycle through alternative values of that item.
The other options on the main menu page lead to dialog boxes that require
your answer Yes or No by hitting the Y or N keys. If you have already changed
the setup utility, press F10 to save those changes and exit the utility.

✧ Standard CMOS Features

Setup date、time、floppy type

✧ Advanced BIOS Features

Setup BIOS provides function，for example virus、boot-strap induct

✧ Advanced Chipset Features

21

Setup mainboard chipset parameter, for example DRAM Timing

✦ Integrated Peripherals

Setup include mainboard all peripherals drive

✦ Power Management Setup

Setup CPU、Hard disk、Monitor drive power save mode

✦ PnP/PCI Configurations

Setup PnP and PCI interface parameter

✦ Load Fail-Safe Defaults

Setup the default values in system

✦ Load Optimized Defaults

Setup the best performance values in system

✦ Set Supervisor Password

Setup supervisor password in system

✦ Set User Password

Setup user password in system

✦ Save & Exit Setup

Setup save and exit, press Y to save and exit

✦ Exit Without Saving

Setup without save and exit, press N to without save and exit

6.2 Standard CMOS Features

Standard BIOS Features

✦ Date（mm：dd：yy）

These items set up system date

✦ Time（hh：mm：ss）

These items set up system time

✦ IDE Channel 0 Master/Slave   Default:None

✦ IDE Channel 1 Master/Slave   Default:None

✦ IDE Channel 2 Master   Default:None

✦ IDE Channel 3 Master   Default:None

✦ Video   Default: EGA/VGA

✦ Halt On   Default: All,But Keyboard

◇ Base Memory   Default：640K

◇ Extanded Memory   Default：XXXXXXK

◇ Total Memory   Default：XXXXXXK

6.3 Advanced BIOS Features

◇ CPU Feature   Default:Press Enter

　Delay Prior to Thermal   Default:16Min

　Thermal Management   Default:Thermal Monitor 1

　Hard Disk Boot Priority   Default: Press Enter

◇ CPU L1&L2 Cache   Default:Enabled

　Leave these items enabled since all the processors that can be
　installed on this board have internal L2 cache memory.

◇ Quick Power On Self Test   Default：Enabled

◇ First Boot Device

　When system boot-strap first time detect device.

◇ Second/Third Boot Device

　When system boot-strap first time detect device.

◇ Boot Other Device   Default:Enabled

　If you enable this item, the system will also search for other boot
　devices if it fails to find an operating system from the first two
　locations.

◇ Boot Up NumLock Status   Default：On

◇ Gate A20 Option   Default：Fast

◇ Security Option   Default:Setup

◇ APIC Mode   Default：Enabled

◇ MPS Version Control For OS   Default：1.4

◇ OS Select For DRAM ＞ 64MB   Default：Non-OS2

◇ Report No FDD For WIN 95   Default:NO

◇ Video BIOS Shadow   Default:Enabled

◇ Full Screen LOGO Show   Default：Enabled

◇ Small Logo (EPA) Show   Default：Enabled

23

6.4 Advanced Chipset Features

❖ DRAM Timing Selectable   Default: By SPD

    X CAS Latency Time   Default：2

    X Active to Precharge Delay   Default:6

    X DRAM RAS# to CAS# Delay   Default：3

    X DRAM RAS# Precharge   Default：3

❖ Turbo Mode   Default:Disabled

❖ Memory Frequency For   Default:Auto

❖ System BIOS Cacheable   Default：Enabled

❖ Video BIOS Cacheable   Default:Disabled

❖ Memory Hole At 15M-16M   Default：Disabled

❖ AGP Aperture Size(MB)   Default:64

    On-Chip VGA Setting

❖ On-Chip VGA   Default:Enabled

❖ On-Chip Frame Buffer Size   Default：8MB

❖ DVMT Mode   Default：DVMT

❖ Init Display First   Default:PCI Slot

6.5 Integrated Peripherals

❖ OnChip IDE Device   Default: Press Enter

❖ IDE HDD Block Mode   Default：Enabled

❖ IDE DMA transfer access   Default：Enabled

❖ On-Chip Primary PCI IDE   Default：Enabled

❖ IDE Primary/ Master/Slave PIO/UDMA   Default：Auto

❖ On-Chip Secondary PCI IDE   Default：Enabled

❖ IDE Secondary Master/Slave PIO/UDMA   Default：Auto

    *** On-Chip Serial ATA Setting ***

❖ On-chip serial ATA   Default: Auto

❖ X Serial ATA Port0 Mode   Default: SATA0 master

❖ Serial ATA port1 Mode   Default:SATA1 master

❖ Onboard Device   Default: Press Enter

❖ USB Controller   Default:Enabled

- USB 2.0 Controller   Default:Enabled
- USB Keyboard Support   Default：Enabled
- USB Mouse Support   Default：Disabled
- AC97 Audio   Default: Auto
- Onboard LAN Control   Default:Enabled
- Onboard LAN Boot Rom   Default:Disabled
- BIOS ROM Write Protect   Default:Disabled
- SuperIO Device   Default: Press Enter
- Onboard Serial Port 1   Default：3F8/IRQ4
- Onboard Serial Port 2   Default：2F8/IRQ3
- UART Mode Select   Default:Normal
- X RxD,TxD Active   Default:Hi,Lo
- X IR Transmission Delay   Default:Enabled
- X UR2 Duplex Mode   Default:Half
- X Use IR Pins   Default:IR-Rx2Tx2
- Onboard Parallel Port   Default:378/IRQ7
- Parallel Port Mode   Default:SPP
- X EPP Mode Select   Default:EPP1.7
- X ECP Mode Use DMA   Default:3
- PWRON After PWR-Fail   Default: Off

6.6 Power Management Setup

- ACPI Function(Setup if use ACPI function) Default：Enabled
- Power Management   Default : User Define
- Video off Method   Default：DPMS
- Video off In Suspend   Default：Yes
- Suspend Type   Default：Stop Grant
- MODEM Use IRQ   Default：3
- Suspend Mode   Default：Disabled
- HDD Power Down   Default：Disabled
- Soft-Off by PWR-BTTN   Default：Instant-Off

◇ Wake-Up by PCI Card   Default：Disabled
◇ Resume by Alarm   Default：Disabled
   X Date (of Month) Alarm   Default：0
   X Time (hh:mm:ss) Alarm   Default：0:0:0
         ** Reload Global Timer Events **
◇ Primary/ Secondary IDE 0/1   Default：Disabled
◇ FDD,COM,LPT Port   Default:Disabled
◇ PCI PIRQ [A-D]#   Default：Disabled

6.7 PNP/PCI Configurations

◇ Reset Configuration Data   Default：Disabled
◇ Resources Controlled By   Default：Auto(ESCD)
   X IRQ Resources   Default：Press Enter
   X DMA Resources   Default:Press Enter
◇ PCI/VGA Palette Snoop   Default：Disabled

6.8 Load Fail-Safe Defaults

If you select this item and press enter a dialog box appears. If you
press Y, and then Enter, the setup utility loads a set of fail-safe
default values. These default values are not very demanding and they
should allow your system to function with most kinds of hardware and
memory chips.

Note: It is highly recommended that uses enter this option to load
optimal values for accessing the best performance.

6.9 Load Optimized Defaults

If you select this item and press enter a dialog box appears.
If you press Y, and then Enter, the setup utility loads a set of
best-performance default values. These default values are quite
demanding and your system might not function properly if you are using
slower memory chips or other low-performance components.

6.10 Set Supervisor & User Password

If you highlight this item and press Enter, a dialog box appears that
you can enter a supervisor password. You can enter no more than six

letters or numbers. Press Enter after you have typed in the password.
There will be the second dialog box asking you to retype the password
for confirmation. Press Enter after you have retyped it correctly. Then
the password is required for the access to the setup utility or for it
at start-up, depending on the setting of the password check item in
advanced setup.

6.11 Save Exit & Without Saving

Highlight this item and press Enter to save the changes that you have
made in the setup utility configuration and exit the program. When
the save and exit dialog box appears, press Y to save and exit, or
press N to exit without saving.