English

PTBG965EFN LF

Mainboard Manual

English

Copyright

Handling Precautions

Warning:

1. Static electricity may cause damage to the integrated circuits on the motherboard. Before handling any motherboard outside of its protective packaging, ensure that your body carries no static electric charge.
2. There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same type of battery, or an equivalent type recommended by the manufacturer.
3. Discard used batteries according to the manufacturer's instructions.
4. Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!

Observe the following basic precautions when handling the motherboard or other computer components:

- Wear a static wrist strap which is connected to a natural earth ground.
- Touch a grounded or anti-static surface or a metal fixture such as a water pipe.
- Avoid contacting the components on add-on cards, motherboards, and modules with the golden finger connectors plugged into the expansion slot. It is best to handle system components by their mounting brackets.

The above methods prevent static build-up and cause it to be discharged properly.

Trademark

All trademarks mentioned in this manual are registered properly by the respective owners.

English

Chapter 1
Overview

Overview

Thank you for choosing the PTBG965EFN LF mainboard. This mainboard is a Micro-BTX sized board. It comes with an 775-pin Intel CPU Socket (LGA 775 package) designed for latest generation of E6000 Series Dual Core processor at FSB 1066 MHz.

The PTBG965EFN LF mainboard provides 2 slots for 240-pin DDR2 DIMM, supports the memory size up to 4GB. The memory module supports DDR2 memory which features data transfer of 800/667/533 MHz to meet the higherbandwidth requirements of the latest 3D graphic, multimedia, and Internet application.

The Intel G965/ P965/ Q965 (North Bridge) is the latest and powerful chipset. It supports dual-channel DDR2 memory and PCI Express technology. Combined with the ICH8/ ICH8R/ ICH8DH (South Bridge) that supports 4/2 Serial ATA ports.

PCI Express architecture produces a high performance I/O infrastructure for desktop platform with transfer rate starting at 3Giga transfers per second over a PCI Express lane for Fast Ethernet, TV Tuner, 1394 controller and general purpose I/O.

This mainboard is equipped with advanced I/O ports in the rear panel, including PS/2 connectors, COM , 1394 port, 2 USB ports, one D-Sub (VGA) port, and 2x IR Blasters.

English

PTBG965EFN LF Layout
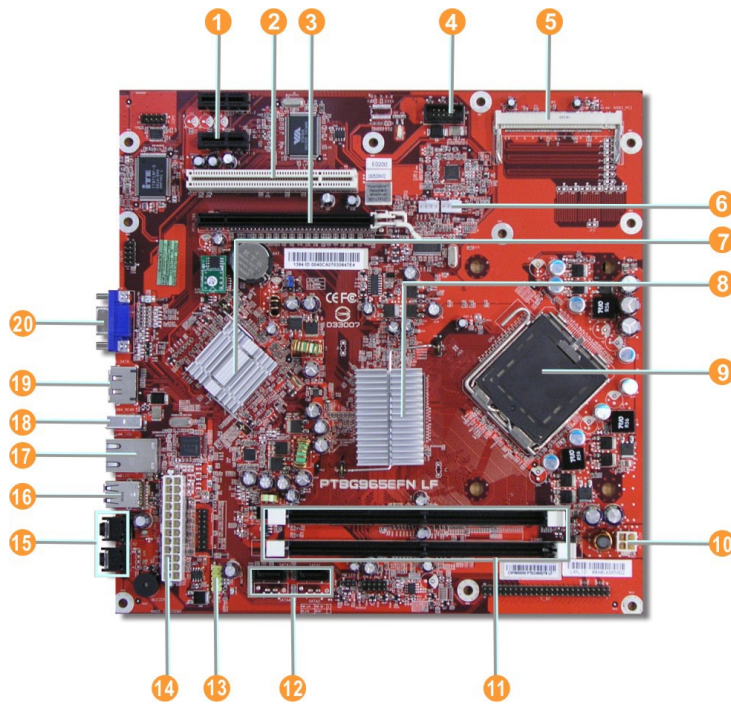
①	**2x PCI Express x1 Slot**
②	**PCI Expansion Slot**
③	**PCI Express x16 Slot**
④	**1394 connector**
⑤	**MINI_PCI**
⑥	**CPU_FAN CONNECTOR**
⑦	**South Bridge: ICH8/ICH8R**
⑧	**North Bridge: Intel G965/ P965**
⑨	**775-pin Intel CPU Socket**
⑩	**4-pin 12V ATX Power Connector**
⑪	**2 x DDR2 SDRAM Sockets**
⑫	**4/2x SATA Ports**
⑬	**USB Connectors**
⑭	**ATX Power Connecor**
⑮	**2 x IR BLASTER**
⑯	**2 x USB**
⑰	**LAN RJ45 Port**
⑱	**1394 Port**
⑲	**E-SATA**
⑳	**D-Sub (VGA) Port**

Warning:

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2.There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer.

3.Discard used batteries according to the manufacturer's instructions.

4.Never run the processor without the heatsink properly and firmly attached.

PERMANENT DAMAGE WILL RESULT!

Main Features

English
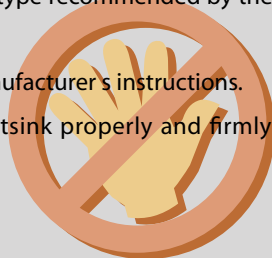
Form Factor	uBTX - 10.5" x 10.4"
CPU	Intel ® LGA 775 E6000 Series Dual Core processor at FSB 1066 MHz
Chipset	North Bridge: Intel G965/ P965 Q965/ Q963 South Bridge: ICH8/ ICH8R/ ICH8DO ICH8DH
Memory	2 x DDR2 memory sockets Support 240-pin 800/667/533 DDR2 SDRAM memory size up to 4GB memory total
Expansion Slots	1 x PCIe X16 Slot 2 x PCIe X1 Slots 1 x PCI Slot 1 x mini PCI (for Wireless LAN module)

Serial ATA	1 x eSATA (3Gbps) port 2 x SATA (3Gbps) ports
Audio Features	Azalia/ HD (High definition) Audio link to rear AV Board
I/O Ports	2 x IR Blaster 1 x D-Sub 2 x USB Ports 1 x 1394 port 1 x RJ45 1x eSATA (3Gbps) port
LAN	Intel Ekron-N 10/100 Mbps Ethernet
OS Support	Windows XP Home/Professional Edition/ Media Center Edition/Vista^{TM} (Ultimate)
Miscellaneous	RoHS compliant for all components

*Conroe E6000/E4000 CPU features Dual Core, 65W, 4MB Catch

Chapter 2
BIOS Setup

English

BIOS Setup

This mainboard comes with a chip from Award BIOS that contains the ROM Setup information for your system. (This chip serves as an interface between the processor and the rest of the mainboard components.) This section explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

```
           Phoenix - AwardBIOS CMOS Setup Utility

  ▶ Standard CMOS Features        Load Optimized Defaults

  ▶ Advanced BIOS Features        Set Supervisor Password

  ▶ Advanced Chipset Features     Set User Password

  ▶ Integrated Peripherals        Save & Exit Setup

  ▶ Power Management Setup         Exit Without Saving

  ▶ Frequency/Voltage Control


  Esc : Quit                      ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

               Time, Date, Hard Disk Type...
```

The Setup utility program allows updates to the mainboard configuration settings. The BIOS setup values will be saved in the **CMOS**. It is executed when you change the system

configuration, you change the system backup battery, or the system detects a configuration error and asks you to run the Setup program. Use the arrow keys to select, and press Enter to run the selected program.

Standard CMOS Features

```
        Phoenix - AwardBIOS CMOS Setup Utility
                Standard CMOS Features
 ┌──────────────────────────────────────┬──────────────────┐
 │ Date (mm:dd:yy)      Fri, Jul 14 2006 │    Item Help     │
 │ Time (hh:mm:ss)        17 :  4 : 41   │                  │
 │                                       │ Menu Level   ▶   │
 │ ▶ IDE Channel 0 Master                │                  │
 │ ▶ IDE Channel 0 Slave                 │ Change the day, month,│
 │ ▶ IDE Channel 1 Master                │ year and century │
 │ ▶ IDE Channel 1 Slave                 │                  │
 │                                       │                  │
 │ Video               [EGA/VGA]         │                  │
 │ Halt On             [All , But Keyboard]│                │
 │                                       │                  │
 │ Base Memory              640K         │                  │
 │ Extended Memory        65472K         │                  │
 │ Total Memory            1024K         │                  │
 │                                       │                  │
 │                                       │                  │
 └──────────────────────────────────────┴──────────────────┘
 ↑↓←→:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
            F5:Previous Values              F7: Optimized Defaults
```

The Standard CMOS Setup screen is displayed above. Each feature may have one or more option settings. Use the arrow keys to highlight the feature you want to change and then use PgUp or PgDn to select the value you want for that feature.

NOTE:
The system BIOS automatically detects memory size, thus no changes are necessary.

Date

To set the date, highlight the Date field and then press PgUp/PgDn or +/- keys to set the current date. Follow the month, day and year format.

Time

To set the time, highlight the Time field and then press PgUp/PgDn or +/- keys to set the current time. Follow the hour, minute, and second format.

IDE Channel 0/1 Master/Slave

The onboard PCI IDE connectors provide 2 Channels (IDE Channel 0 and IDE Channel 1). Each channel can support up to two IED devices, the first of which is the Master and the second is the Slave.

Note:

The system will automatically detect and configure IDE device during botting. If the system fails to find a device, change the value to [Manual] to configure the hard disk/ optical disk by the specifications supplied by manufacturer.

English

| Hard Disk Configurations	
Capacity:	The hard disk size. The unit is Bytes.
Cylinder:	The cylinder number of the hard disk.
Head:	The read/write head number of the hard disk.
Precomp:	The cylinder number at which the disk drive changes the write current.
Landing Zone:	The cylinder number on which the disk drive heads (read/write) are seated when the disk drive is parked.
Sector:	The sector number of each track defined on the hard disk.

Video

Set this field to the type of video display card installed in the system.

Halt On

This field determines which types of errors will cause the system to halt.
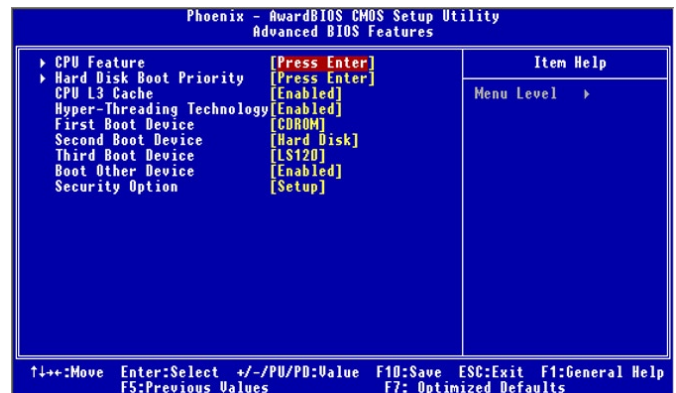
CPU Feature

This feature allows you to select Intel CPU technology. Press enter to set up Thermal Management, TM2 Bus Ratio, CIE Function, etc.

Hard Disk Boot Priority

This feature will auto detect all hard disks of bootable devices on the system. It also allows you to select hard disk device booting priority.

CPU L3 Cache

This feature allows you to Enable/Disabled CPU L3 Catch.

Hyper-Threading Technology

When enabled, it performs as Hyper-Threading tech. if the CPU support it. Hyper-Threading technology to increase transaction rates and reduces end-user response times. The options are: Enabled, Disabled.

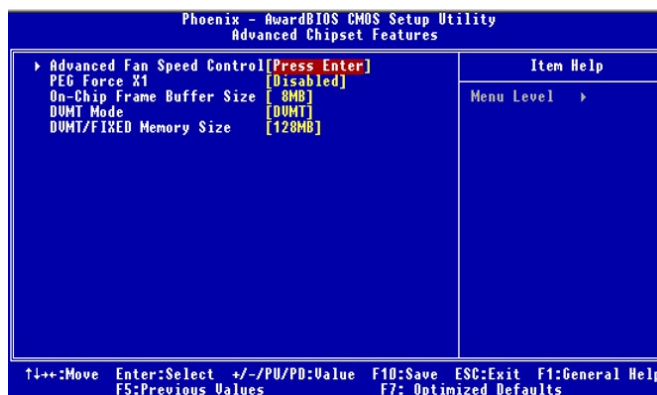### First/ Second/ Third/ Boot Device

This feature allows you to select the boot device priority. The options are: Floppy, LS 20, Hard Disk, CDROM, ZIP 00, USB-FDD, USBZIP, USB-CDROM, LAN, Disabled.

Boot Other Device

This feature allows the system to try to boot from other devices if the system fails to boot from the First/ Second/ Third boot device.

Security Option

Allows you to set the security level of the system. The options are: Setup, System.

Advanced Chipset Features

```
            Phoenix - AwardBIOS CMOS Setup Utility
                   Advanced Chipset Features
 ▶ Advanced Fan Speed Control[Press Enter]          Item Help
   PEG Force X1             [Disabled]
   On-Chip Frame Buffer Size [ 8MB]         Menu Level    ▶
   DVMT Mode                 [DVMT]
   DVMT/FIXED Memory Size    [128MB]




 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
              F5:Previous Values          F7: Optimized Defaults
```

Advanced Fan Speed Control

Press Enter to set up Fan Speed Control, fan speed will act smartly by temperature level.
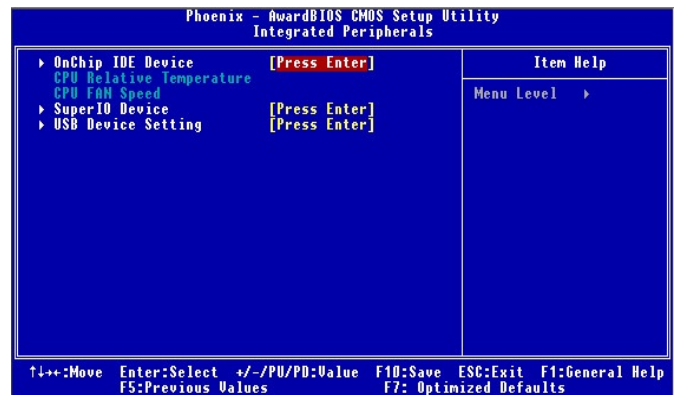
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English

On-Chip Frame Buffer Size

This feature allows users to select the onchip frame buffer size. The options are: 1MB, 8MB.

DVMT Mode

To activate memory to control as much memory size required for different applications. The options are: Fixed, DVMT (default), Both.

DVMT/F IXED Memory Size

To control graphics memory size. The options are: 128, 256, and MAX.

On Chip IDE Device

This item allows you to use OnChip IDE Devices. Press Enter to set up SATS Mode.

CPU Relative Tempture

This field is to show CPU Temperature.

CPU FAN Speed

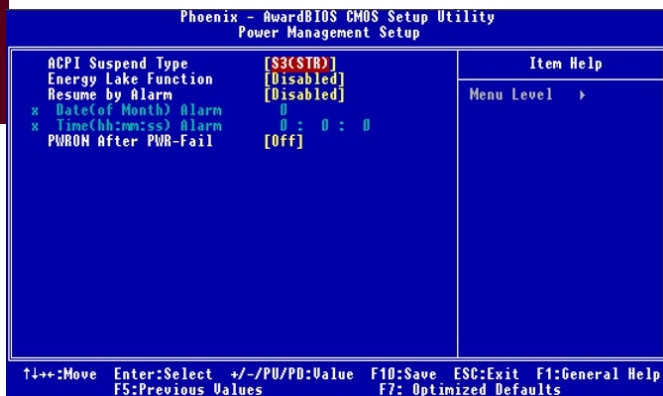This field is to show CPU FAN Speed.

Super IO DEvice

This item allows the user to set up Super IO devices.
Press Enter to setup Onboard Serial Port 1.

USB Device Setting

This item allows the user to setup USB controller.
Press Enter Enable/Disable USB 1.0 and USB 2.0
device, and set up USB storage device.

English

Power Management Setup

```
        Phoenix - AwardBIOS CMOS Setup Utility
                 Power Management Setup

 ACPI Suspend Type        [S3(STR)]           Item Help
 Energy Lake Function     [Disabled]
 Resume by Alarm          [Disabled]      Menu Level  ▶
x  Date(of Month) Alarm      0
x  Time(hh:mm:ss) Alarm      0 :  0 :  0
 PWRON After PWR-Fail     [Off]

↑↓←→:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
           F5:Previous Values              F7: Optimized Defaults
```

ACPI Suspend Type

This feature allows you to select suspend mode when the system is in ACPI mode. The options are: S1 (POS), S3 (PTR), S1 & S3.

Energy Lake Function

Enable this function will allow you to implement "Visual off" function on your system. In "Visual Off" the PC appears to be Off but is actually active and able to run program tasks.

Resume by Alarm

This feature allows you to set when the system being turned on from the system power-off status. The options are: Enabled, Disabled.

Date (of Month) Alarm

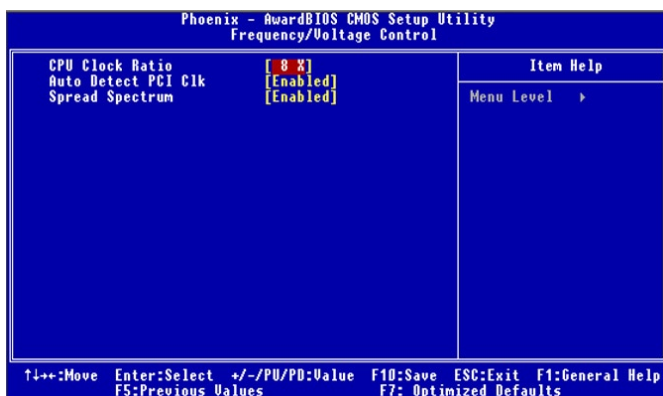This field is to set Date of the month.

Time (hh:mm:ss) Alarm

This field is to set time of the day.

PWRON After Pwr-Fail

When the system is shut down owing to the power failure, the system will not be back to power on by itself. This feature allows you to set the system back to which power status of the system when the system power is resumed. The options are: Former-Sts, On, Off.

Frequency/Voltage Control

```
         Phoenix - AwardBIOS CMOS Setup Utility
                 Frequency/Voltage Control
 CPU Clock Ratio        [ 8 X]          ┌──────────────────┐
 Auto Detect PCI Clk    [Enabled]       │     Item Help    │
 Spread Spectrum        [Enabled]       ├──────────────────┤
                                        │ Menu Level   ►   │
                                        │                  │
                                        │                  │
                                        │                  │
                                        │                  │
                                        │                  │
                                        │                  │
                                        │                  │
                                        │                  │
 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
        F5:Previous Values              F7: Optimized Defaults
```

Spread Spectrum

This feature allows users to disable the spread spectrum function. The options are: Disabled, Enabled.

CPU Clock Ratio

This item allows users to set the wanted CPU clock ratio.

Auto Detect PCI Clk

When enabled, BIOS will detect the PCI slot. If no any device in, BIOS will auto disable its clock. The options are: Enabled, Disabled.

English

Load Optimized Defaults

This submenu is selected for default settings which provide the best system performance.

Supervisor / User Password

To enable the Supervisor / User passwords, select the item from the
Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press Enter. You will be asked to confirm the password. Type the password again and press Enter. To disable the password, press Enter twice when you are prompted to enter a password. A message will appear, confirming the password is disabled.

Under the BIOS Feature Setup, if Setup is selected under the Security Option field and the Supervisor Password is enabled, you will be prompted for the password every time you try to enter the CMOS Setup Utility. If System is selected and the Supervisor/User Password is enabled, you will be requested to enter the Password every time you reboot the system or enter the CMOS Setup utility.

Save and Exit Setup

After you have made changes under Setup, press Esc to return to the main menu. Move the cursor to Save and Exit Setup or press F10 and then press Y to change the CMOS Setup. If you did not change anything, press Esc again or move the cursor to Exit Without Saving and press Y to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility: SAVE to CMOS and EXIT (Y/N)?

Exit without Saving
If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications: Quit Without Saving (Y/N)?

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memo