

8S661FXM-RZ

Intel Pentium® 4 Processor Motherboard

User's Manual

Rev. 1101

12ME-S661FXMRZ-1101

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Notice

Please do not remove any labels on motherboard, this may void the warranty of this motherboard.

Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.

The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein.

Declaration of Conformity

Q.E.T. Technology Trading GmbH
 The Manufacturer of the product
 Amalanger Weg 15, 17 20227 Hamburg Germany
 Declares that the product
 (Other types of the apparatus, system, installation to which it refers)

is in conformity with
 reference to the specific technical conformity is declared
 in accordance with 00539 FCC-CMTC Directive
 853615X0-72
Mother Board

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| <input checked="" type="checkbox"/> EN 60952 | Limits and methods of measurement of radio emissions (disturbance of mobile services and associated equipment) | <input checked="" type="checkbox"/> EN 60954-1 | Requirements for radio equipment of mobile telephony (interference of portable mobile and mobile cellular apparatus) |
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| <input checked="" type="checkbox"/> EN 60956 | Limits and methods of measurement of radio emissions (interference of household telephony and facsimile equipment) | <input checked="" type="checkbox"/> EN 60958-1-2 | EMC requirements for communication systems (1.2.1) |
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The standards also fulfill the category of these equipment product with the latter required safety standards in accordance with IEC 7093 EEC

Manufacturer's Name: Ericc Ltd
 Date: Mar. 20, 2004
 Signature: Ericc Ltd
 Name: Ericc Ltd

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)



Responsible Party Name: **G.E.T. INC. (U.S.A.)**
 Address: **17358 Railroad Street**
 City of Industry, CA 91748
 Phone/Fax No: (818) 854-9338 / (818) 854-9339

Product Name: **Motherboard**
 Model Number: **8S661FXM-RZ**

hereby declares that the product
 conforms to the following specifications:
 FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109
 (a) Class B Digital Device

Supplementary Information:
 This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any interference received, including that may cause undesired operation.

Representative Person's Name: **ERICC LTD**
 Signature: Ericc Ltd
 Date: Mar. 20, 2004

Preparing Your Computer

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.



Installing the motherboard to the chassis

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

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Chapter 1 Introduction

Features Summary

| | |
|----------------------|---|
| CPU | <ul style="list-style-type: none"> • Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor • Support Intel® Pentium® 4 (Northwood, Prescott) processor • Support Intel® Pentium® 4 Processor with HT Technology^{<Note >} • Intel® Pentium® 4 800/533/400MHz FSB • 2nd cache depends on CPU |
| Chipset | <ul style="list-style-type: none"> • North Bridge:SiS® Chipset 661FX • South Bridge:SiS® 963L |
| Memory | <ul style="list-style-type: none"> • 2 184-pin DDR sockets • Supports DDR400/DDR333/DDR266 • Supports up to 2 unbuffered DIMM DDR400 • Supports up to 2GB (Max) |
| Slots | <ul style="list-style-type: none"> • 1 AGP slot 4X/8X (1.5V) device support • 3 PCI slot |
| On-Board IDE | <ul style="list-style-type: none"> • 2 IDE bus master (UDMA33/ATA66/ATA100/ATA133) IDE ports for up to 4 ATAPI devices • Supports PIO mode3,4 (UDMA 33/ATA66/ATA100/ATA133) IDE & ATAPI CD-ROM |
| On-Board Floppy | <ul style="list-style-type: none"> • Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes |
| On-Board Peripherals | <ul style="list-style-type: none"> • 1 Parallel port • 1 Serial port (COMA),1 VGA port,COMB on board • 6 x USB 2.0/1.1 (2 x Rear, 4 xFront by cable) • 1 Front Audio Connector • PS/2 Keyboard interface and PS/2 Mouse interface |
| On-Board VGA | <ul style="list-style-type: none"> • Build in SiS661FX Chipset |
| On-Board LAN | <ul style="list-style-type: none"> • Build in ICS1883 Chipset |
| On-Board Sound | <ul style="list-style-type: none"> • CMedia 9761 codec • Line Out / 2 front speaker • Line In / 2 rear speaker(by s/w switch) • Mic In / center& subwoofer(by s/w switch) • SPDIF Out /SPDIF In • CD_In / Game Port |
| BIOS | <ul style="list-style-type: none"> • Licensed Award BIOS • Supports Q-Flash |

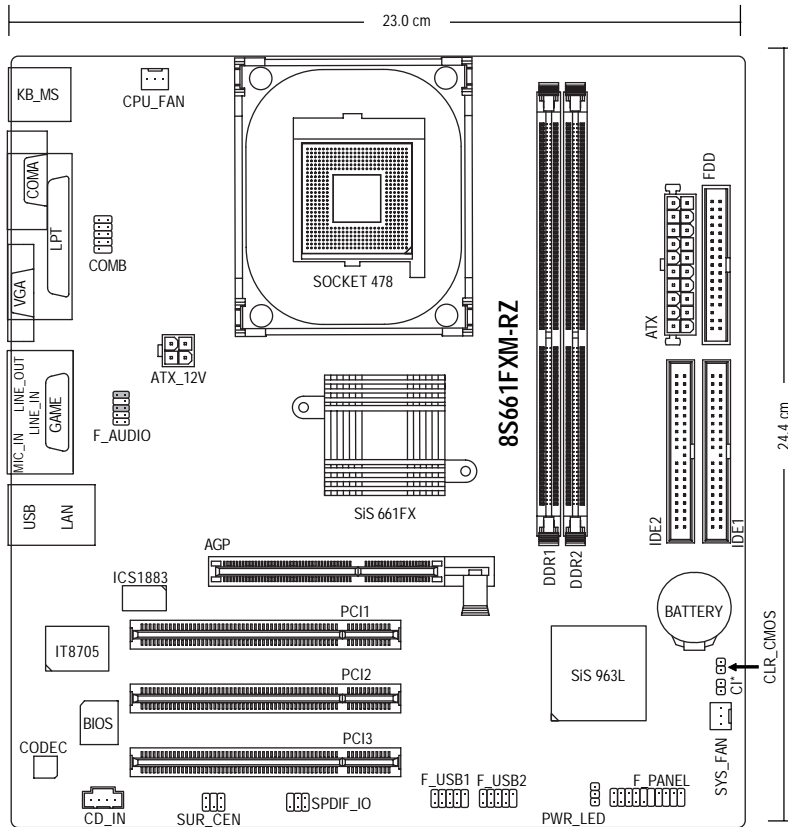
to be continued.....

| | |
|---------------------|---|
| I/O Control | <ul style="list-style-type: none">• IT8705 |
| Hardware Monitor | <ul style="list-style-type: none">• CPU/System Fan Revolution detect• CPU temperature detect• System Voltage Detect |
| Additional Features | <ul style="list-style-type: none">• Supports EasyTune 4• Supports @BIOS |
| Form Factor | <ul style="list-style-type: none">• 23.0cm x 24.4cm Micro ATX size form factor, 4 layers PCB. |



Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, Memory, Cards....etc.

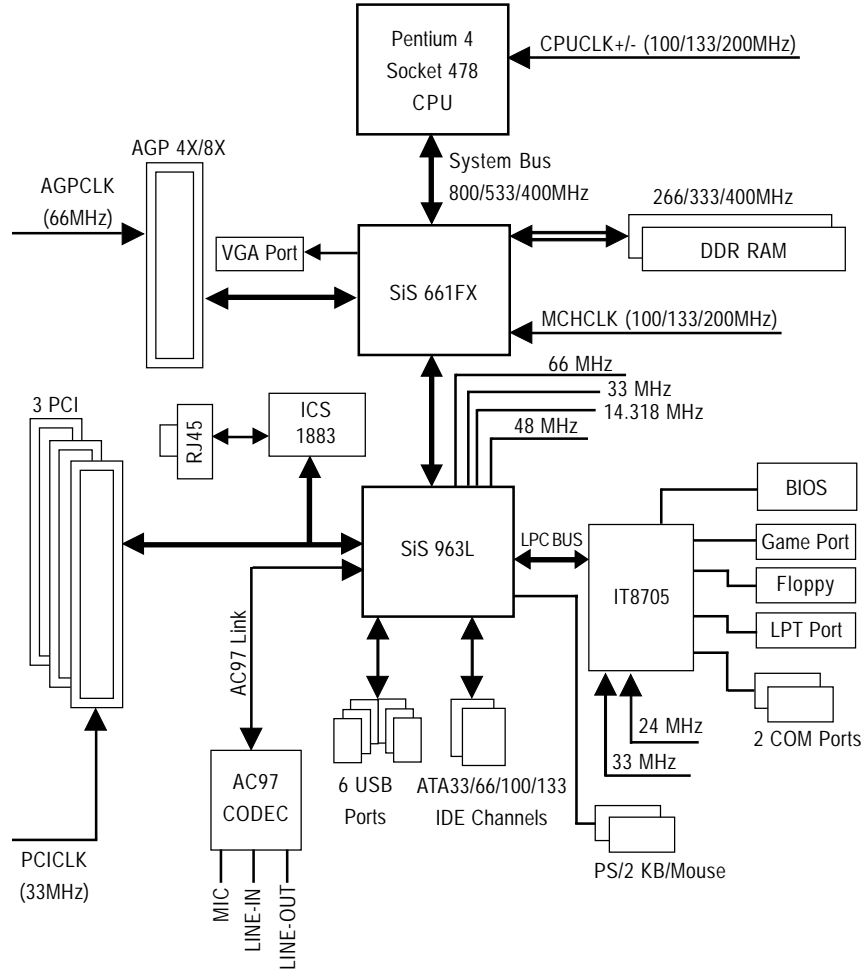
8S661FXM-RZ Motherboard Layout



English

*** Only for 8S661FXM-RZ Rev. 1.1

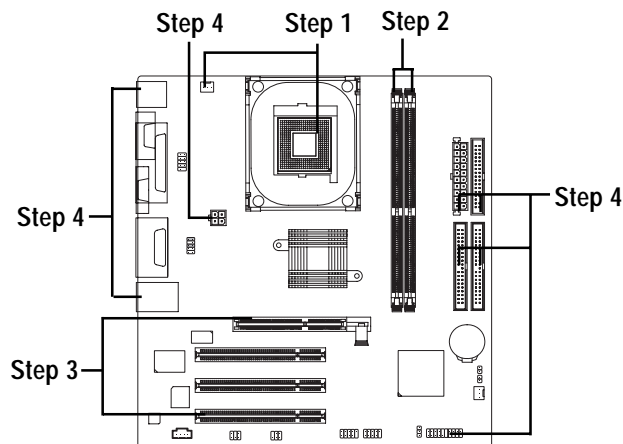
Block Diagram



Hardware Installation Process

To set up your computer, you must complete the following steps:

- Step 1- Install the Central Processing Unit (CPU)
- Step 2- Install memory modules
- Step 3- Install expansion cards
- Step 4- Install I/O Peripherals cables



Step 1: Install the Central Processing Unit (CPU)



Before installing the processor, adhere to the following warning:

1. Please make sure the CPU type is supported by the motherboard.
2. The processor will overheat without the heatsink and/or fan, resulting in permanent irreparable damage.
3. If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.
4. Apply thermal grease between the processor and cooling fan.
5. Never run the processor without the heatsink properly and firmly attached. Permanent damage will result.
6. Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Memory, Cards...etc.



HT functionality requirement content :

Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:

- CPU: An Intel® Pentium 4 Processor with HT Technology
- Chipset: A SiS® Chipset that supports HT Technology
- BIOS: A BIOS that supports HT Technology and has it enabled
- OS: An operation system that has optimizations for HT Technology

Step 1-1: CPU Installation

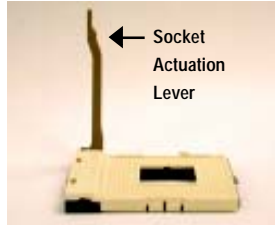


Figure 1.
Pull the rod to the 90-degree directly.

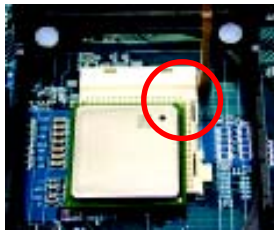


Figure 2.
Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Insert the CPU into the socket. (Do not force the CPU into the socket.) Then move the socket lever to the locked position while holding pressure on the center of the CPU.

Step 1-2: CPU Cooling Fan Installation



Figure 1.
Apply the thermal tape(or grease) to provide better heat conduction between your CPU and cooling fan.



Figure 2.
Fasten the cooling fan supporting-base onto the CPU socket on the motherboard.

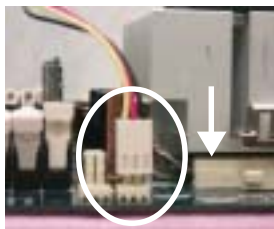


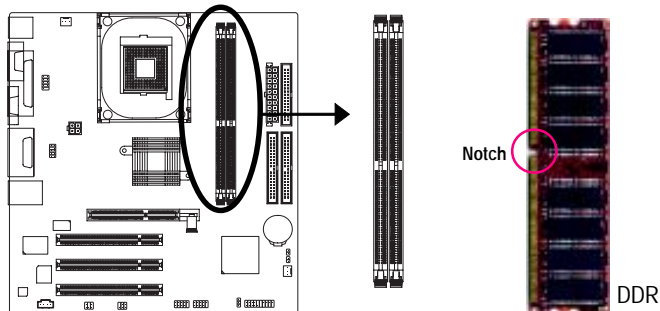
Figure 3.
Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

Step 2: Install memory modules



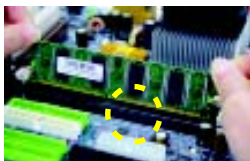
Before installing the memory modules, adhere to the following warning:
Please note that the DIMM module can only fit in one direction due to the one notch. Wrong orientation will cause improper installation. Please change the insert orientation.

The motherboard has 2 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.



Support Unbuffered DDR DIMM Sizes type:

| | | |
|-------------------------|-------------------------|-------------------------|
| 64 Mbit (2Mx8x4 banks) | 64 Mbit (1Mx16x4 banks) | 128 Mbit(4Mx8x4 banks) |
| 128 Mbit(2Mx16x4 banks) | 256 Mbit(8Mx8x4 banks) | 256 Mbit(4Mx16x4 banks) |
| 512 Mbit(16Mx8x4 banks) | 512 Mbit(8Mx16x4 banks) | |



1. The DIMM socket has a notch, so the DIMM memory module can only fit in one direction.



2. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.



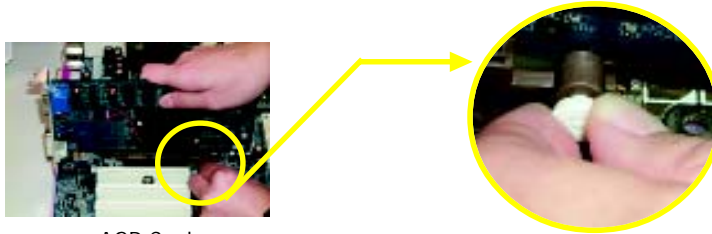
3. Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.
Reverse the installation steps when you wish to remove the DIMM module.

Step 3: Install expansion cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Please make sure your AGP card is AGP 4X/8X (1.5V).



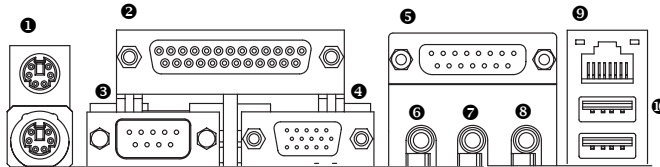
3. Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/ Uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot. Make sure your AGP card is locked by the small white-drawable bar.



AGP Card

Step 4: Install I/O Peripherals Cables

Step 4-1: I/O Back Panel Introduction



- ❶ **PS/2 Keyboard and PS/2 Mouse connector**
This connector supports standard PS/2 keyboard and PS/2 mouse.
- ❷ **Parallel port (LPT)**
Device like printer can be connected to Parallel port.
- ❸ **Serial port (COMA)**
Mouse and modem etc. can be connected to Serial port.
- ❹ **VGA port**
Monitor can be connected to VGA port.
- ❺ **Game/MIDI port**
This connector supports joystick, MIDI keyboard and other relate audio devices.
- ❻ **Line Out jack**
Connect the stereo speakers or earphone to this connector.
- ❼ **Line In jack**
Devices like CD-ROM, walkman etc. can be connect to Line In jack.

⑨ **MIC In jack**

Microphone can be connect to MIC In jack.

After installation of the audio driver, you are able to use 2/4/6-channel audio feature by software selection. You can connect "Front speaker" to "Line Out" jack, Connect "Rear speaker" to "Line In" jack and connect "Center/Subwoofer" to "MIC In" jack.

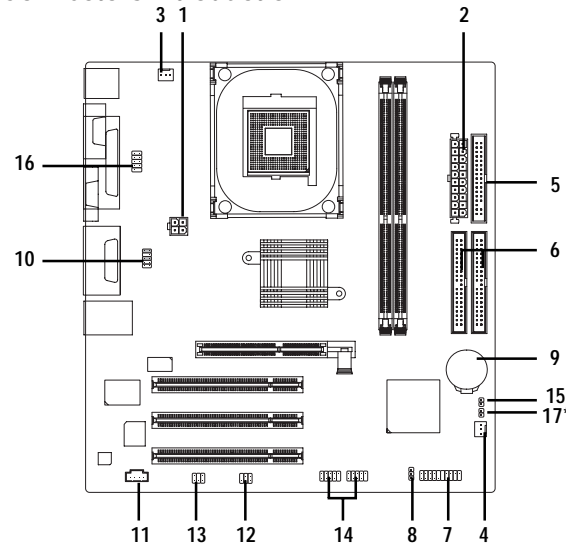
⑩ **LAN port**

LAN is fast Ethernet with 10/100Mbps speed.

⑩ **USB port**

Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. Have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

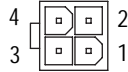
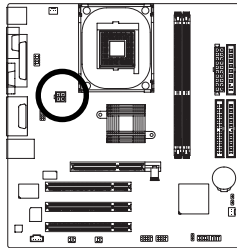
Step 4-2: Connectors Introduction



| | |
|----------------|--|
| 1) ATX_12V | 10) F_AUDIO |
| 2) ATX | 11) CD_IN |
| 3) CPU_FAN | 12) SPDIF_IO |
| 4) SYS_FAN | 13) SUR_CEN |
| 5) FDD | 14) F_USB1 / F_USB2 |
| 6) IDE1 / IDE2 | 15) CLR_CMOS |
| 7) F_PANEL | 16) COMB |
| 8) PWR_LED | 17) CI* (***) Only for 8S661FXM-RZ Rev. 1.1) |
| 9) BAT | |

1) ATX_12V (+12V Power Connector)

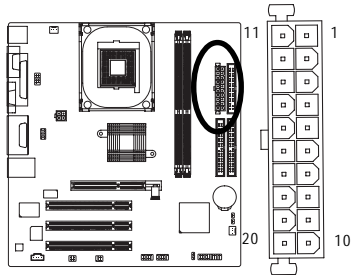
This connector (ATX_12V) supplies the CPU operation voltage (Vcore).
 If this "ATX_12V connector" is not connected, system cannot boot.



| Pin No. | Definition |
|---------|------------|
| 1 | GND |
| 2 | GND |
| 3 | +12V |
| 4 | +12V |

2) ATX (ATX Power)

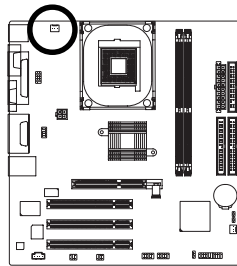
AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.



| Pin No. | Definition | Pin No. | Definition |
|---------|----------------------|---------|--------------------|
| 1 | 3.3V | 11 | 3.3V |
| 2 | 3.3V | 12 | -12V |
| 3 | GND | 13 | GND |
| 4 | VCC | 14 | PS_ON(soft on/off) |
| 5 | GND | 15 | GND |
| 6 | VCC | 16 | GND |
| 7 | GND | 17 | GND |
| 8 | Power Good | 18 | -5V |
| 9 | 5V SB (stand by +5v) | 19 | VCC |
| 10 | +12V | 20 | VCC |

3) CPU_FAN (CPU FAN Connector)

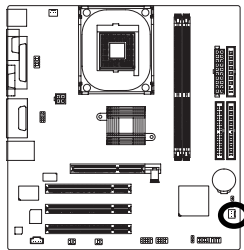
Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.



| Pin No. | Definition |
|---------|------------|
| 1 | GND |
| 2 | +12V |
| 3 | Sense |

4) SYS_FAN (System FAN Connector)

This connector allows you to link with the cooling fan on the system case to lower the system temperature.

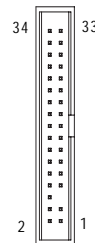
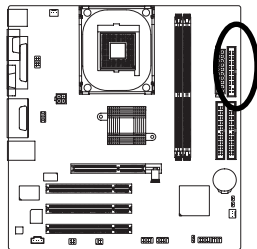


| Pin No. | Definition |
|---------|------------|
| 1 | GND |
| 2 | +12V |
| 3 | Sense |

5) FDD (Floppy Connector)

Please connect the floppy drive ribbon cables to FDD. It supports 360K,720K,1.2M,1.44M and 2.88Mbytes floppy disk types.

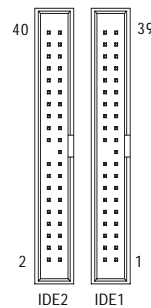
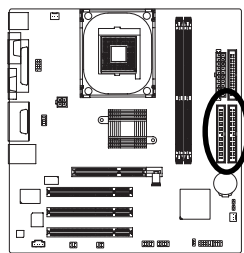
The red stripe of the ribbon cable must be the same side with the Pin1.



6) IDE1/ IDE2(IDE1/IDE2 Connector)

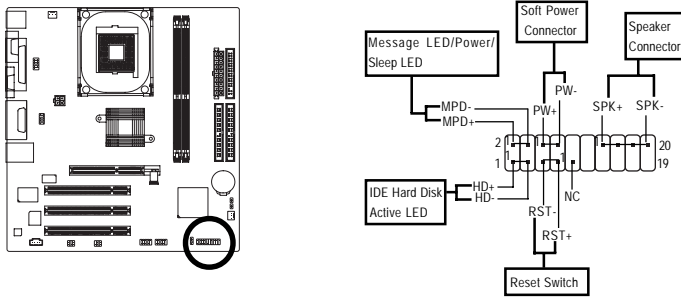
Please connect first harddisk to IDE1 and connect CDROM to IDE2.

The red stripe of the ribbon cable must be the same side with the Pin1.



7) F_PANEL (2x10 pins connector)

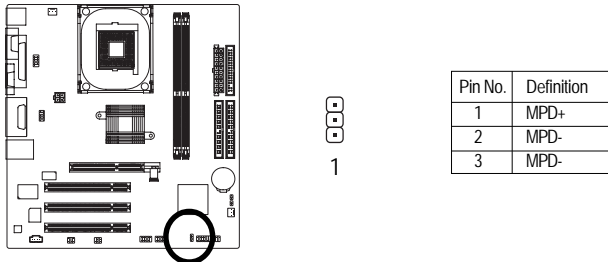
Please connect the power LED, PC peaker, reset switch and power switch etc of your chassis front panel to the F_PANEL connector according to the pin assignment above.



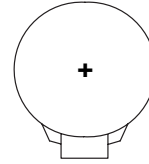
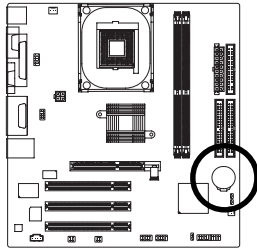
| | |
|--------------------------------------|--|
| HD (IDE Hard Disk Active LED) | Pin 1: LED anode(+) Pin 2: LED cathode(-) |
| SPK (Speaker Connector) | Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-) |
| RST (Reset Switch) | Open: Normal Operation Close: Reset Hardware System |
| PW (Soft Power Connector) | Open: Normal Operation Close: Power On/Off |
| MPD(Message LED/Power/ Sleep LED) | Pin 1: LED anode(+) Pin 2: LED cathode(-) |
| NC | NC |

8) PWR_LED

PWR_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode. If you use dual color LED, power LED will turn to another color.



9) BAT (Battery)



CAUTION

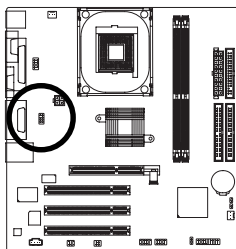
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS...

1. Turn OFF the computer and unplug the power cord.
2. Remove the battery, wait for 30 second.
3. Re-install the battery.
4. Plug the power cord and turn ON the computer.

10) F_AUDIO (F_AUDIO Connector)

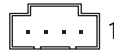
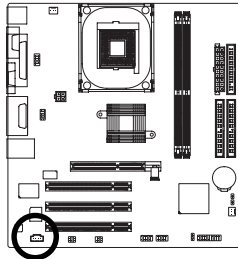
If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer. Please note, you can have the alternative of using front audio connector or of using rear audio connector to play sound.



| Pin No. | Definition |
|---------|---------------|
| 1 | MIC |
| 2 | GND |
| 3 | REF |
| 4 | POWER |
| 5 | FrontAudio(R) |
| 6 | RearAudio(R) |
| 7 | Reserved |
| 8 | No Pin |
| 9 | FrontAudio(L) |
| 10 | RearAudio(L) |

11) CD_IN

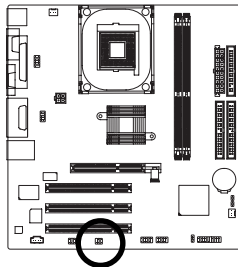
Connect CD-ROM or DVD-ROM audio out to the connector.



| Pin No. | Definition |
|---------|------------|
| 1 | CD-L |
| 2 | GND |
| 3 | GND |
| 4 | CD_R |

12) SPDIF_IO (SPDIF In/Out)

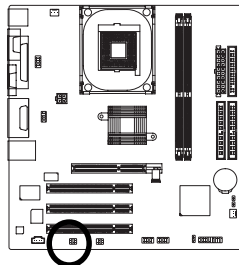
The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. Use SPDIF IN feature only when your device has digital output function. Be careful with the polarity of the SPDIF_IO connector. Check the pin assignment carefully while you connect the SPDIF_IO cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional SPDIF_IO cable, please contact your local dealer.



| Pin No. | Definition |
|---------|------------|
| 1 | VCC |
| 2 | No Pin |
| 3 | SPDIF |
| 4 | SPDIF |
| 5 | GND |
| 6 | GND |

13) SUR_CEN

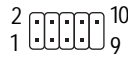
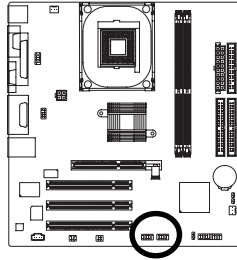
Please contact your nearest dealer for optional SUR_CEN cable.



| Pin No. | Definition |
|---------|------------|
| 1 | SUR OUTL |
| 2 | SUR OUTR |
| 3 | GND |
| 4 | No Pin |
| 5 | CENTER_OUT |
| 6 | BASS_OUT |

14) F_ USB1 / F_USB2 (Front USB Connector)

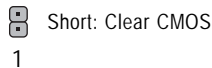
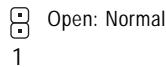
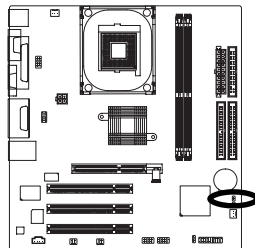
Be careful with the polarity of the F_USB connector. Check the pin assignment carefully while you connect the F_USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional F_USB cable, please contact your local dealer.



| Pin No. | Definition |
|---------|------------|
| 1 | Power |
| 2 | Power |
| 3 | USB DX- |
| 4 | USB Dy- |
| 5 | USB DX+ |
| 6 | USB Dy+ |
| 7 | GND |
| 8 | GND |
| 9 | No Pin |
| 10 | NC |

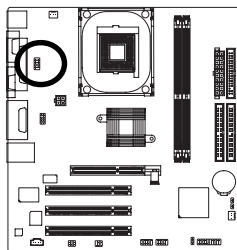
15) CLR_CMOS (Clear CMOS)

You may clear the CMOS data to its default values by this jumper. To clear CMOS, temporarily short 1-2 pin. Default doesn't include the "Shunter" to prevent from improper use this jumper.



16) COMB (COM B Connector)

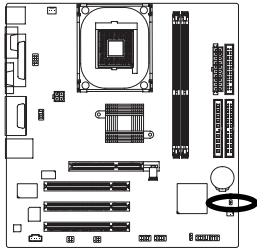
Be careful with the polarity of the COMB connector. Check the pin assignment carefully while you connect the COMB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional COMB cable, please contact your local dealer.



| Pin No. | Definition |
|---------|------------|
| 1 | NDCDB- |
| 2 | NSINB |
| 3 | NSOUTB |
| 4 | NDTRB- |
| 5 | GND |
| 6 | NDSRB- |
| 7 | NRTSB- |
| 8 | NCTSB- |
| 9 | NRIB- |
| 10 | No Pin |

17) CI (Chassis Intrusion, Case Open) *

This 2-pin connector allows your system to enable or disable the "Case Open" item in BIOS, if the system case begin remove.



1

| Pin No. | Definition |
|---------|------------|
| 1 | Signal |
| 2 | GND |

*** Only for 8S661FXM-RZ Rev. 1.1

Chapter 2 BIOS Setup

Chapter 2 provides an overview of the BIOS Setup Program, which allows users to modify the basic system configurations. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING BIOS Setup

Turning on the computer and pressing immediately allow you to enter BIOS Setup. If you need more advanced BIOS settings, please press **Ctrl** and **F1** keys on the BIOS main screen to access the the advanced BIOS settings.

CONTROL KEYS

| | |
|--------------|---|
| <↑><↓><←><→> | Move to select item |
| <Enter> | Select Item |
| <Esc> | Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu |
| <+/PgUp> | Increase the numeric value or make changes |
| <-/PgDn> | Decrease the numeric value or make changes |
| <F1> | General help, only for Status Page Setup Menu and Option Page Setup Menu |
| <F2> | Item Help |
| <F5> | Restore the previous CMOS value from CMOS, only for Option Page Setup Menu |
| <F6> | Load the file-safe default CMOS value from BIOS default table |
| <F7> | Load the Optimized Defaults |
| <F8> | Q-Flash utility |
| <F9> | System Information |
| <F10> | Save all the CMOS changes, only for Main Menu |

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

The Main Menu (For example: BIOS Ver. : F8c)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (as figure below) will appear on the screen. The Main Menu allows you to select from eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software

| | |
|---|---|
| <ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI Configurations ▶ PC Health Status ▶ MB Intelligent Tweaker (M.I.T.) | <ul style="list-style-type: none"> Top Performance Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password Save & Exit Setup Exit Without Saving |
| ESC: Quit | ↑↓←→: Select Item |
| F8: Q-Flash | F10: Save & Exit Setup |
| Time, Date, Hard Disk Type... | |



If you can't find the settings you want, press Ctrl and F1 in BIOS main menu to access the hidden advanced options.

- **Standard CMOS Features**
This setup page includes all the items in standard compatible BIOS.
- **Advanced BIOS Features**
This setup page includes all the items of Award special enhanced features.
- **Integrated Peripherals**
This setup page includes all onboard peripherals.
- **Power Management Setup**
This setup page includes all the items of Green function features.
- **PnP/PCI Configuration**
This setup page includes all the configurations of PCI & PnP ISA resources.
- **PC Health Status**
This setup page includes the information of the System auto-detected temperature, voltage, fan, and speed.
- **MB Intelligent Tweaker (M.I.T.)**
This setup page allows to control CPU clock and frequency ratio.
- **Top Performance**
If you wish to maximize the performance of your system, enable Top Performance.
- **Load Fail-Safe Defaults**
Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.
- **Load Optimized Defaults**
Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.
- **Set Supervisor Password**
Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- **Set User Password**
Change, set, or disable password. It allows you to limit access to the system.
- **Save & Exit Setup**
Save CMOS value settings to CMOS and exit setup.
- **Exit Without Saving**
Abandon all CMOS value changes and exit setup.

Standard CMOS Features

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software
Standard CMOS Features

| | | Item Help |
|--|---------------------|---|
| Date (mm:dd:yy) | Fri, Jan 9 2004 | Menu Level ▶ |
| Time (hh:mm:ss) | 22:31:24 | Change the day, month, year |
| ▶ IDE Primary Master | [None] | <Week> |
| ▶ IDE Primary Slave | [None] | Sun. to Sat. |
| ▶ IDE Secondary Master | [None] | <Month> |
| ▶ IDE Secondary Slave | [None] | Jan. to Dec. |
| Drive A | [1.44M, 3.5"] | <Day> |
| Drive B | [None] | 1 to 31 (or maximum allowed in the month) |
| Floppy 3 Mode Support | [Disabled] | <Year> |
| Halt On | [All, But Keyboard] | 1999 to 2098 |
| Base Memory | 640K | |
| Extended Memory | 127M | |
| Total Memory | 128M | |
| ↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Save Defaults F7: Optimized Defaults | | |

☞ Date

The date format is <week>, <month>, <day>, <year>.

- ▶▶ Week From Sun. to Sat., determined by the BIOS and for display only.
- ▶▶ Month From Jan. to Dec.
- ▶▶ Day From 1st to 31st (or the maximum allowed in the month)
- ▶▶ Year From Year 1999 to 2098

☞ Time

The times format in <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is displayed as 13:00:00.

☞ IDE Primary Master, Slave / IDE Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type automatically detects HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

- ▶▶ Cylinder Number of cylinders
- ▶▶ Head Number of heads
- ▶▶ Precomp Write precomp
- ▶▶ Landing Zone Landing zone
- ▶▶ Sector Number of sectors

If a hard disk has not been installed, select NONE and press <Enter>.

☞ Drive A / Drive B

The category identifies the types of floppy disk (drive A and drive B) installed in the computer.

- ▶▶ None No floppy disk is installed
- ▶▶ 360K, 5.25" 5.25 inch PC-type standard drive; 360K byte capacity.
- ▶▶ 1.2M, 5.25" 5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
- ▶▶ 720K, 3.5" 3.5 inch double-sided drive; 720K byte capacity
- ▶▶ 1.44M, 3.5" 3.5 inch double-sided drive; 1.44M byte capacity.
- ▶▶ 2.88M, 3.5" 3.5 inch double-sided drive; 2.88M byte capacity.

☞ Floppy 3 Mode Support (for Japan Area)

- ▶▶ Disabled Normal Floppy Drive. (Default value)
- ▶▶ Drive A Enable Drive A 3 Mode support.
- ▶▶ Drive B Enable Drive B 3 Mode support.
- ▶▶ Both Enable both Drive A and B 3 Mode support.

☞ Halt on

The category determines whether the computer will stop if an error is detected during power up.

- ▶▶ All Errors Whenever the BIOS detects a non-fatal error the system will stop.
- ▶▶ No Errors The system boot will not stop for any error that may be detected and you will be prompted.
- ▶▶ All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
- ▶▶ All, But Diskette The system boot will not stop for a disk error; it will stop for all other errors.
- ▶▶ All, But Disk/Key The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

☞ Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

▶▶ Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

▶▶ Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

⌄ Password Check

- ▶▶ Setup The system will boot but will not access to Setup page if the correct password is not entered at the prompt. (Default value)
- ▶▶ System The system will not boot and will not access to Setup page if the correct password is not entered at the prompt.

⌄ CPU Hyper-Threading

- ▶▶ Disabled Disable CPU Hyper Threading.
- ▶▶ Enabled Enable CPU Hyper Threading Feature. Please note that this feature is only working for operating system with multi processors mode supported. (Default value)

⌄ Init Display First

Select the first initiation of the monitor display from AGP or PCI VGA card.

- ▶▶ PCI Set Init Display First to PCI.
- ▶▶ AGP Set Init Display First to AGP. (Default value)

Onboard LAN device

- ▶▶ Enabled Enable Onboard LAN function. (Default value)
- ▶▶ Disabled Disable this function.

USB Controller

- ▶▶ Enabled Enable USB Controller. (Default value)
- ▶▶ Disabled Disable USB Controller.

USB Legacy Support

- ▶▶ Enabled Enable USB Legacy Support.
- ▶▶ Disabled Disable USB Legacy Support. (Default value)

Onboard Serial Port 1

- ▶▶ Disabled Disable onboard Serial port 1.
- ▶▶ 3F8/IRQ4 Enable onboard Serial port 1 and address is 3F8. (Default value)
- ▶▶ 2F8/IRQ3 Enable onboard Serial port 1 and address is 2F8.
- ▶▶ 3E8/IRQ4 Enable onboard Serial port 1 and address is 3E8.
- ▶▶ 2E8/IRQ3 Enable onboard Serial port 1 and address is 2E8.
- ▶▶ Auto BIOS will automatically setup the port 1 address.

Onboard Serial Port 2

- ▶▶ Disabled Disable onboard Serial port 2
- ▶▶ 3F8/IRQ4 Enable onboard Serial port 2 and address is 3F8.
- ▶▶ 2F8/IRQ3 Enable onboard Serial port 2 and address is 2F8. (Default value)
- ▶▶ 3E8/IRQ4 Enable onboard Serial port 2 and address is 3E8.
- ▶▶ 2E8/IRQ3 Enable onboard Serial port 2 and address is 2E8.
- ▶▶ Auto BIOS will automatically setup the port 2 address.

Onboard Parallel port

- ▶▶ Disabled Disable onboard LPT port.
- ▶▶ 378/IRQ7 Enable onboard LPT port and address is 378/IRQ7. (Default Value)
- ▶▶ 278/IRQ5 Enable onboard LPT port and address is 278/IRQ5.
- ▶▶ 3BC/IRQ7 Enable onboard LPT port and address is 3BC/IRQ7.

Parallel Port Mode

- ▶▶ SPP Use Parallel port as Standard Parallel Port.
- ▶▶ EPP Use Parallel port as Enhanced Parallel Port.
- ▶▶ ECP Use Parallel port as Extended Capabilities Port. (Default Value)
- ▶▶ ECP+EPP Use Parallel port as ECP & EPP mode.

ECP Mode Use DMA

This feature allows you to select Direct Memory Access(DMA) channel if the ECP mode selected.

- ▶▶ 1 Set ECP Mode Use DMA to 1.
- ▶▶ 3 Set ECP Mode Use DMA to 3. (Default value)

Game Port Address

- ▶▶ Disabled Disable this function.
- ▶▶ 201 Enable gameport and set gameport address to 201. (Default Value)
- ▶▶ 209 Enable gameport and set gameport address to 209.

Midi Port Address

- ▶▶ Disabled Disable this function.(Default Value)
- ▶▶ 300 Enable midiport and set midiport address to 300.
- ▶▶ 330 Enable midiport and set midiport address to 330.

Midi Port IRQ

- ▶▶ 5 Set Midi Port IRQ to 5.
- ▶▶ 10 Set Midi Port IRQ to 10. (Default Value)

Power Management Setup

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Power Management Setup

| | | |
|--|------------|------------------------|
| ACPI Suspend Type | [S1(POS)] | Item Help |
| Soft-Off by PWR_BTN | [Off] | Menu Level ▶ |
| System After AC Back | [Off] | [S1] |
| IRQ [3-7, 9-15], NMI | [Enabled] | Set suspend type to |
| ModemRingOn | [Enabled] | Power On Suspend under |
| PME Event Wake Up | [Enabled] | ACPI OS |
| Power On by Keyboard | [Disabled] | |
| Power On by Mouse | [Disabled] | [S3] |
| Resume by Alarm | [Disabled] | Set suspend type to |
| x Month Alarm | NA | Suspend to RAM under |
| x Day (of Month) | 0 | ACPI OS |
| x Time (hh:mm:ss) | 0 0 0 | |
| ↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Save Defaults F7: Optimized Defaults | | |

ACPI Suspend Type

- ▶▶ S1(POS) Set ACPI suspend type to S1. (Default Value)
- ▶▶ S3(STR) Set ACPI suspend type to S3.

Soft-off by PWR_BTN

- ▶▶ Off Once a user presses the power button, the system will be turned off. (Default Value)
- ▶▶ Suspend Once a user presses the power button, the system will enter suspend mode.

☞ System after AC Back

- ☞ Off When AC-power back to the system, the system will be in "Off" state. (Default Value)
- ☞ On When AC-power back to the system, the system will be in "On" state.
- ☞ LastState When AC-power back to the system, the system will return to the Last state before AC-power off.

☞ IRQ [3-7, 9-15], NMI

- ☞ Disabled Disable this function.
- ☞ Enabled Enable this function. (Default value)

☞ ModemRingOn

- ☞ Disabled Disable Modem Ring on function.
- ☞ Enabled Enable Modem Ring on function. (Default Value)

☞ PME Event Wake Up

- ☞ Disabled Disable this function.
- ☞ Enabled Enable PME Event Wake up. (Default Value)

☞ Power On by Keyboard

- ☞ Any Key Set Keyboard power on by any key.
- ☞ Password Input password (from 1 to 8 characters) and press Enter to set the Keyboard Power On Password.
- ☞ Disabled Disable this function. (Default Value)

☞ Power On by Mouse

- ☞ Enabled Enable Power On by Mouse function.
- ☞ Disabled Disable this function. (Default Value)

☞ Resume by Alarm

You can enable **Resume by Alarm** and key in month/date/time to turn on system.

- ☞ Disabled Disable this function. (Default Value)
- ☞ Enabled Enable alarm function to POWER ON system.
 - If RTC Alarm Lead To Power On is Enabled.
 - Month Alarm : NA, 1-12
 - Day (of Month) : 0-31
 - Time (hh: mm: ss) : (0-23) : (0-59) : (0-59)

PnP/PCI Configurations

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PnP/PCI Configurations

| | | |
|--|--------|---------------------------------------|
| PCI 1 IRQ Assignment | [Auto] | Item Help |
| PCI 2 IRQ Assignment | [Auto] | Menu Level ▶ |
| PCI 3 IRQ Assignment | [Auto] | Device(s) using this INT: |
| | | Display Cntrlr -Bus 1 Dev 0 Func 0 |
| ↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Save Defaults F7: Optimized Defaults | | |

⏪ PCI 1 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI 1. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 1.

⏪ PCI 2 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI 2. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2.

⏪ PCI 3 IRQ Assignment

- ▶▶ Auto Auto assign IRQ to PCI 3. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15 Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 3.

PC Health Status

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PC Health Status

| | | |
|--|------------|--|
| Reset Case Open Status * | [Disabled] | Item Help |
| Case Opened * | No | Menu Level ▶ |
| VCORE | 1.71V | [Disabled] |
| DDR2.5V | 4.99V | Don't reset case open status |
| +3.3V | 3.29V | [Enabled] |
| +12V | 11.73V | Clear case open status and set to be Disabled at next boot |
| Current CPU Temperature | 27° C | |
| Current CPU FAN Speed | 4821 RPM | |
| Current SYSTEM FAN Speed | 0 RPM | |
| ↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Save Defaults F7: Optimized Defaults | | |

Reset Case Open Status *

- ▶▶ Disabled Don't reset case open status. (Default value)
- ▶▶ Enabled Clear case open status at next boot.

Case Opened *

If the case is closed, Case Opened will show "No".
 If the case have been opened, **Case Opened** will show "Yes".
 If you want to reset "Case Opened" value, enable **Reset Case Open Status** and save CMOS, your computer will restart.

Current Voltage (V) VCORE / +3.3V / DDR2.5V / +12V

- ▶▶ Detect system's voltage status automatically.

Current CPU Temperature

- ▶▶ Detect CPU Temp. automatically.

Current CPU/SYSTEM FAN Speed (RPM)

- ▶▶ Detect CPU/SYSTEM Fan speed status automatically.

*** Only for 8S661FXM-RZ Rev. 1.1

MB Intelligent Tweaker (M.I.T.)

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MB Intelligent Tweaker (M.I.T.)

| | | |
|--|------------|--|
| Configure DRAM Timing | [Auto] | Item Help |
| x Cas Latency Setting | 2.5T | Menu Level ▶ |
| x DRAM RAS Active Time | 6T | [AUTO] Configure DRAM Timing automatically |
| x DRAM RAS Precharge Time | 3T | [Normal] Configure DRAM Timing by manual |
| x DRAM RAS to CAS Delay | 3T | Warning: Wrong DRAM Timing may make system can't boot. Clear CMOS to overcome wrong Timing issue |
| CPU Clock Ratio | [10X] | |
| Linear Frequency Control | [Disabled] | |
| x CPU Clock (MHz) | 100 | |
| x DRAM Clock (MHz) | AUTO | |
| AGP/PCI Clock Control | [AUTO] | |
| x AGP Clock (MHz) | 66 | |
| x PCI Clock (MHz) | 33 | |
| ↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Save Defaults F7: Optimized Defaults | | |

☞ Configure DRAM Timing

- ▶▶ Auto BIOS will automatically setup the DRAM Timing by DRAM SPD data. (Default value)
- ▶▶ Manual This item allows user to set DRAM Timing manually.

☞ CAS Latency Setting

- ▶▶ 2T/2.5T/3T Set CAS Latency to 2T/2.5T/3T (Default value is 2.5T).
- ▶▶ Auto BIOS will automatically detect CAS Latency.

☞ DRAM RAS Active Time

- ▶▶ 4T/5T/6T/7T/8T/9T Set DRAM RAS Active Time to 4T/5T/6T/7T/8T/9T. (Default value:6T)

☞ DRAM RAS Precharge Time

- ▶▶ 3T/2T/4T/5T Set DRAM RAS Precharge time to 2T/3T/4T/5T. (Default value:3T)

☞ DRAM RAS to CAS Delay

- ▶▶ 3T/2T/4T/5T Set DRAM RAS to CAS Delay to 3T/2T/4T/5T. (Default value:3T)

☞ CPU Clock Ratio

This setup option will automatically assign by CPU detection.

For Willamette CPU:

8X-23X default: 14X

For C-Stepping P4:

8X,10X-24X default: 15X

For Northwood CPU:

12X-24X default: 16X

The option will display "Locked" and read only if the CPU ratio is not changeable. ☞

☞ Linear Frequency Control

- ▶▶ Disabled Disable this function. (Default value)
- ▶▶ Enabled Enable this function.

☞ CPU Clock (MHz)

- ▶▶ 100-355 Select CPU Clock to 100MHz-355MHz.

If you use FSB400 Pentium 4 processor, please set "CPU Clock" to 100MHz. If you use FSB533 Pentium 4 processor, please set "CPU Clock" to 133MHz. If you use FSB800 Pentium 4 processor, please set "CPU Clock" to 200MHz.

Incorrect using it may cause your system broken. For power End-User use only!

☞ DRAM Clock (MHz)

- ▶▶ Please set DRAM Clock according to your requirement.

If you use DDR200 DRAM module, please set "DRAM Clock(MHz)" to 200. If you use DDR333 DRAM module, please set "DRAM Clock(MHz)" to 333.

Incorrect using it may cause your system broken. For power End-User use only!

☞ AGP/PCI Clock Control

- ▶▶ AUTO Set AGP/PCI clock automatically. (Default Value)

- ▶▶ Manual Set AGP/PCI clock manually.

⚠ Incorrect using it may cause your system broken. For power End-User use only!

☞ AGP Clock (MHz)

- ▶▶ Please set AGP Clock according to your requirement.

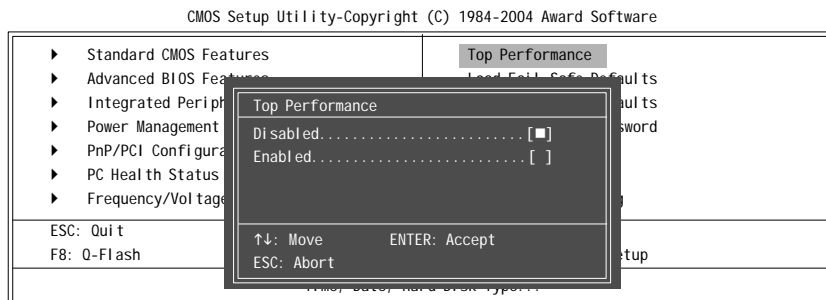
Incorrect using it may cause your system broken. For power End-User use only!

☞ PCI Clock (MHz)

- ▶▶ Please set PCI Clock according to your requirement.

Incorrect using it may cause your system broken. For power End-User use only!

Top Performance



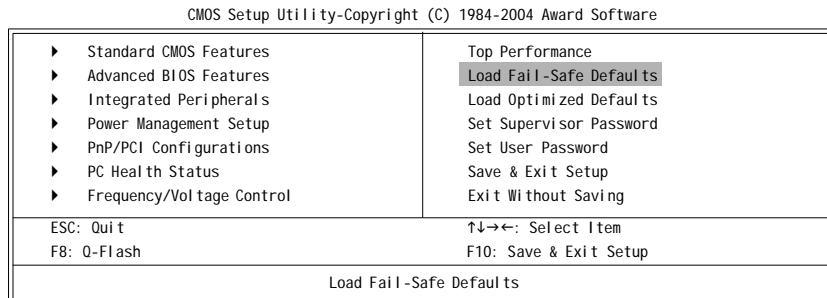
If you wish to maximize the performance of your system, enable "Top Performance."

- ▶▶ Disabled Disable this function. (Default Value)

- ▶▶ Enabled Enable Top Performance function.

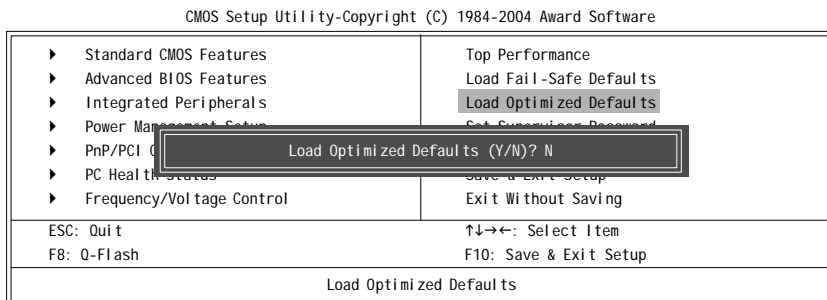
⚠ "Top Performance" will increase H/W working speed. Different system configuration (both H/W component and OS) will effect the result. For example, the same H/W configuration might not run properly with Windows XP, but works smoothly with Windows NT. Therefore, if your system is not perform enough, the reliability or stability problem will appear sometimes, and we will recommend you disabling the option to avoid the problem as mentioned above.

Load Fail-Safe Defaults



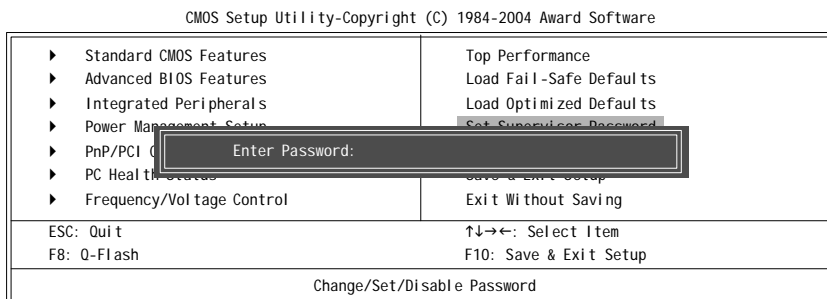
Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

Load Optimized Defaults



Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Set Supervisor/User Password



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

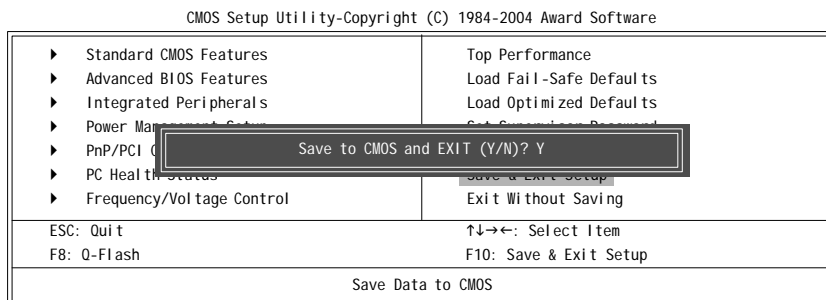
Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password. To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

The BIOS Setup program allows you to specify two separate passwords: SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

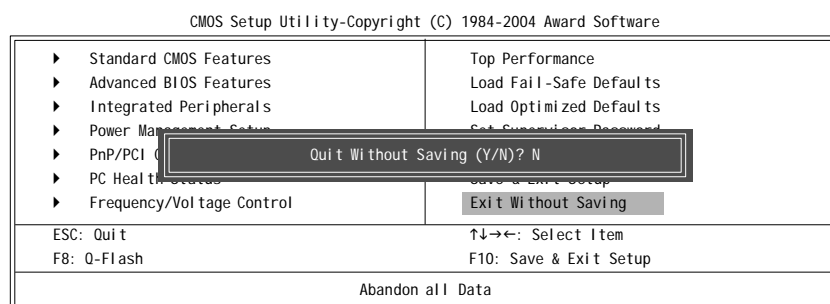
Save & Exit Setup



Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.

Type "N" will return to Setup Utility.

Exit Without Saving



Type "Y" will quit the Setup Utility without saving to RTC CMOS.

Type "N" will return to Setup Utility.

Chapter 3 Install Drivers


Install Drivers



Pictures below are shown in Windows XP


Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

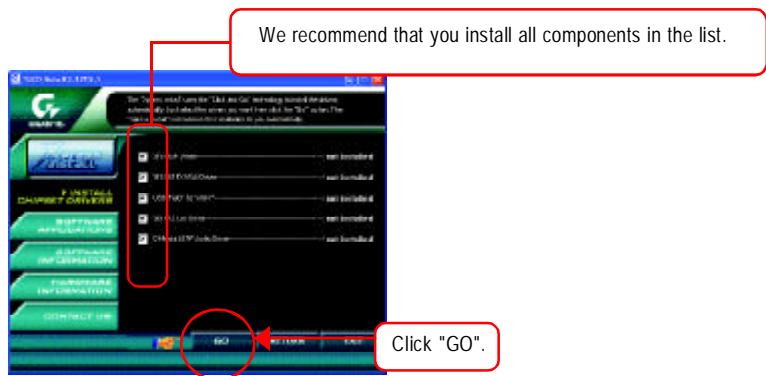
INSTALL CHIPSET DRIVER

This page shows the drivers that need to be installed for the system. Click each item to install the driver manually or switch to the  to install the drivers automatically.



Message: Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers.

The "Xpress Install" uses the "Click and Go" technology to install the drivers automatically. Just select the drivers you want then click the "GO" button. The  will execute the installation for you by itself.





Driver install finished!! you have to reboot system!!

Item Description

- SIS AGP Driver
AGP interface driver for SiS series chipset.
- SIS 661FX VGA Driver
VGA driver for VGA integrated SiS 661FX chipset.
- USB Patch for WinXP
This patch driver can help you to resolve the USB device wake up S3 hang up issue in XP.
- SIS PCI Lan Driver
SiS Series Lan driver.
- C-Media AC97 Audio Driver
Audio driver for C-Media AC97 codec chipset.
- SIS USB 2.0 Driver
USB2.0 driver for SiS series chipset.



If your CD doesn't have SiS® USB2.0 driver, please download the USB2.0 driver from Microsoft® website (www.microsoft.com) for USB2.0 devices support. Please also note that Microsoft® USB2.0 driver is currently supported by Windows XP and Windows 2000 only.

Once we get the latest SiS® USB2.0 driver for Windows 98 and Windows ME, we will put the driver on GIGABYTE website asap. (<http://www.gigabyte.com.tw>).



For USB2.0 driver support under Windows XP operating system, please use Windows Service Pack. After install Windows Service Pack, it will show a question mark "?" in "Universal Serial Bus controller" under "Device Manager". Please remove the question mark and restart the system (System will auto-detect the right USB2.0 driver).

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<http://nz.giga-byte.com/TechSupport/ServiceCenter.htm>
Non-Tech. Support (Sales/Marketing issues):
<http://gfts.gigabyte.com.tw/nontech.asp>
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