

GA-7VM400A-FA
AMD Socket A Processor Motherboard

USER'S MANUAL

AMD Athlon™ / Athlon™ XP / Duron™ Socket A Processor Motherboard

Rev. 1001

12ME-7VM400AFA-1001

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Warning



CAUTION

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.

Chapter 1 Introduction

Features Summary

CPU	<ul style="list-style-type: none"> • Socket A processor AMD Athlon™/Athlon™ XP/ Duron™ (K7) 128K L1 & 512K/256K/64K L2 cache on die 200/266/333/400MHz FSB and DDR bus speeds • Supports 1.4GHz and faster
Chipset	<ul style="list-style-type: none"> • Northbridge:VIA KM400A • Southbridge:VIA VT8237
Memory	<ul style="list-style-type: none"> • 2 184-pin DDR DIMM sockets,supports up to 2GB DRAM (Max) • Supports DDR400/333/266/200 DIMM • Supports only 2.5V DDR DIMM
I/O Control	<ul style="list-style-type: none"> • IT8705F
Slots	<ul style="list-style-type: none"> • 1 AGP slot supports 8X/4X/2X mode • 3 PCI slots
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"> • 1 Floppy port supports 2 FDD
On-Board Serial ATA	<ul style="list-style-type: none"> • 2 Serial ATA connectors
On-Board Peripherals	<ul style="list-style-type: none"> • 1 Parallel port supports Normal/EPP/ECP mode • 1 Serial port (COMA), 1 VGA port, COMB on Board • 8 USB 2.0/1.1 ports (4 x Rear, 4 xFront by cable) • 1 Front Audio Connector • 1 PS/2 keyboard • 1 PS/2 mouse
On-Board VGA	<ul style="list-style-type: none"> • Build in VIA KM400A Chipset
On-Board LAN	<ul style="list-style-type: none"> • RealTek RTL8100C (10/100 Mbit) • 1 RJ45 port

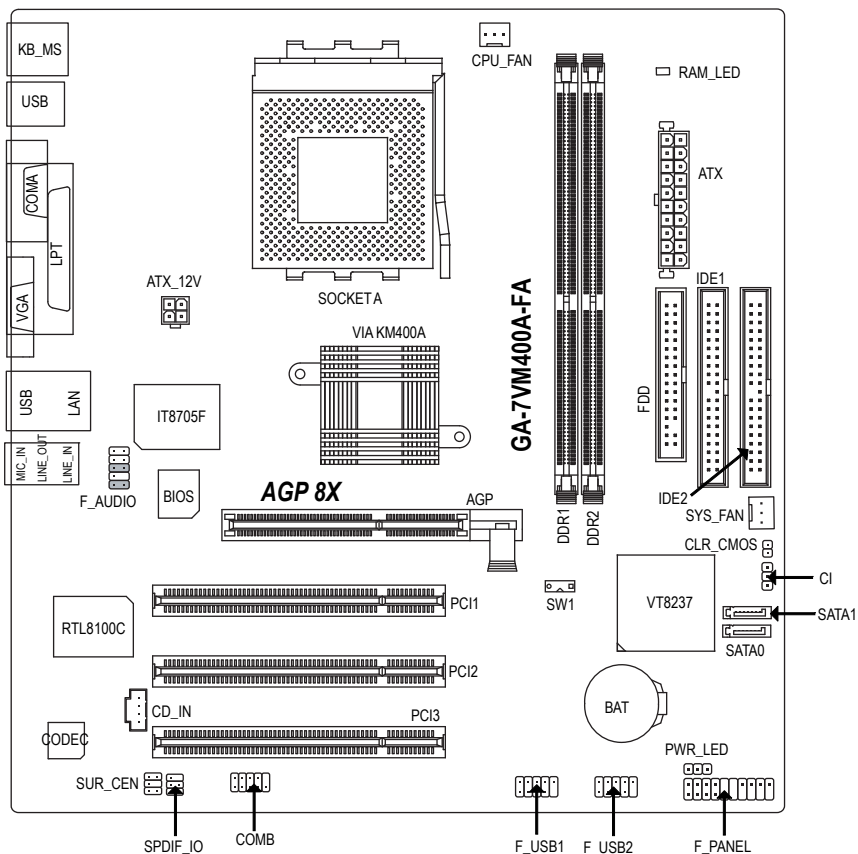
to be continued.....

On-Board Sound	<ul style="list-style-type: none"> • Realtek ALC655 CODEC • Support Jack-Sensing • 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 connector
On-Board SATA RAID	<ul style="list-style-type: none"> • Built in VT8237 • Supports Disk striping (RAID0) or DISK Mirroring (RAID1) • Supports UDMA up to 150 MB/sec • Up to 2 SATA Device
Hardware Monitor	<ul style="list-style-type: none"> • CPU/System FAN Revolution detect • CPU/System temperature detect • CPU/System FAN fail warning • System Voltage Detect
BIOS	<ul style="list-style-type: none"> • Licensed Award BIOS • Supports Q-Flash
Additional Features	<ul style="list-style-type: none"> • Support Thermal shutdown function • Supports @BIOS • Supports EasyTune
Overclocking	<ul style="list-style-type: none"> • Over Clock (DDR/CPU) by BIOS • Over Voltage (DDR/AGP) by BIOS
Form Factor	<ul style="list-style-type: none"> • 24.4cm x 23.3cm Flex ATX size form factor, 4 layers PCB.

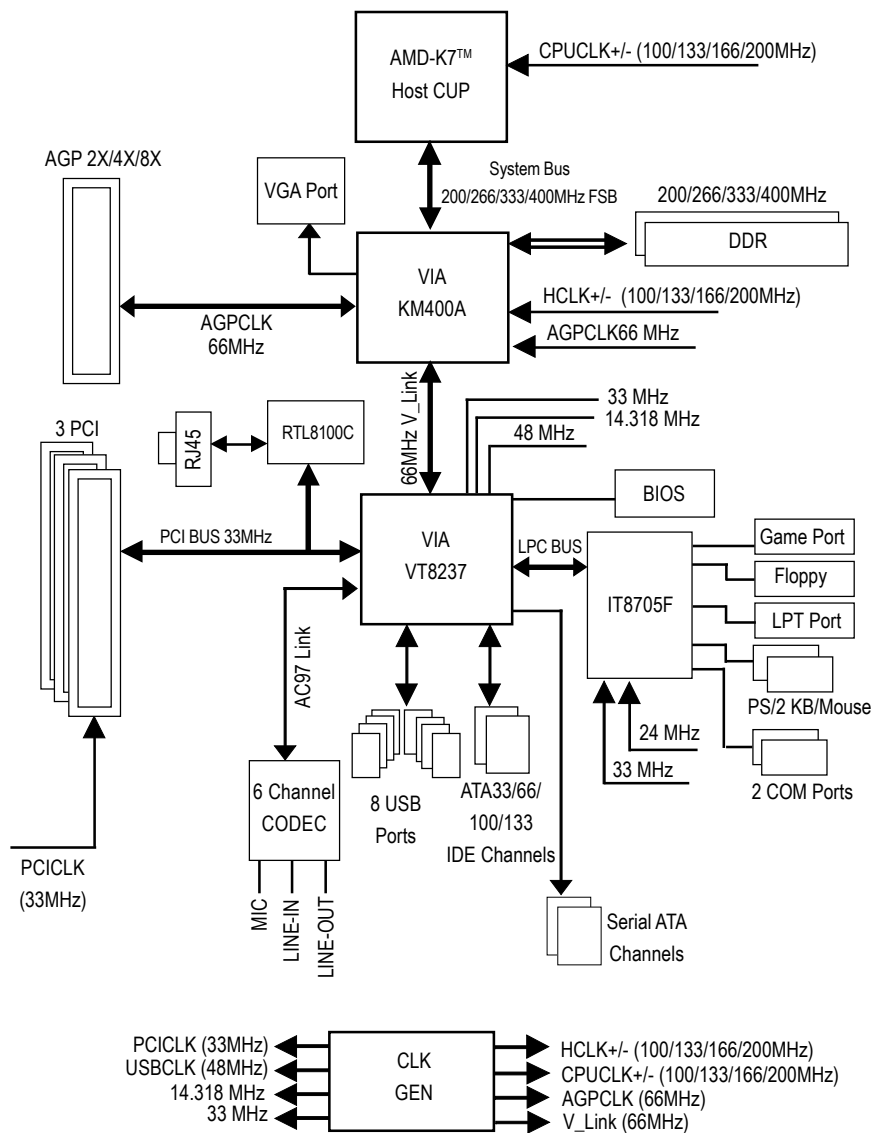


Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your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

GA-7VM400A-FA Motherboard Layout



Block Diagram

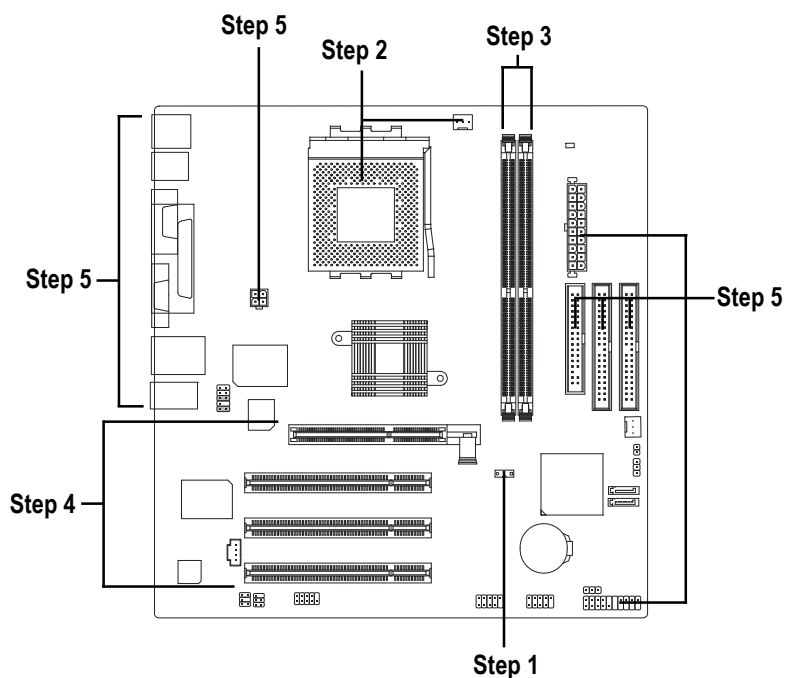


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Chapter 2 Hardware Installation Process

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

- Step 1- Set system Switch (SW1)
- Step 2- Install the Central Processing Unit (CPU)
- Step 3- Install memory modules
- Step 4- Install expansion cards
- Step 5- Install I/O Peripherals Cables

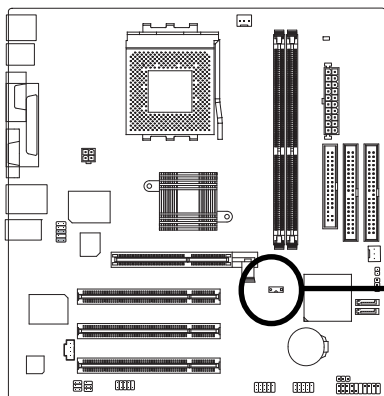


Congratulations you have accomplished the hardware installation!

Turn on the power supply or connect the power cable to the power outlet. Continue with the BIOS/ software installation.

Step 1: Set System Switch (SW1)

The CPU FSB can be switched by SW1 and refer to below table.



O: ON / X: OFF



SW1	CPU CLOCK	
	100MHz	AUTO
1	ON	OFF

100MHz: Fix FSB 200MHz CPU

AUTO: Support FSB 266/333/400MHz
CPU



You must set SW1 to 100MHz when
you used FSB 200MHz CPU.

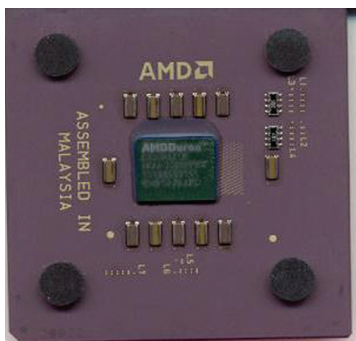
Step 2: Install the Central Processing Unit (CPU)



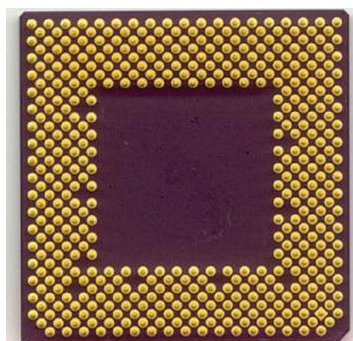
Before installing the processor, adhere to the following warning:

1. Please make sure the CPU type is supported by the motherboard.
2. 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.

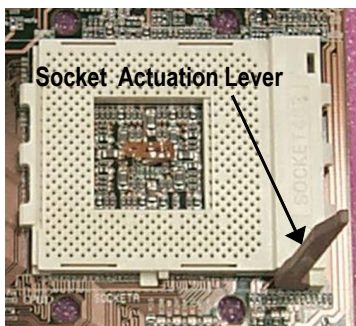
Step 2-1: CPU Installation



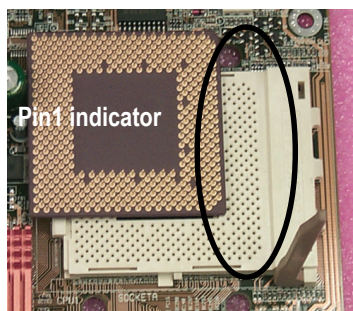
CPU Top View



CPU Bottom View



1. Pull up the CPU socket lever and up to 90-degree angle.



2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

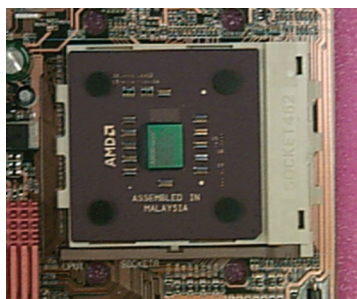
Step 2-2: CPU Cooling Fan Installation



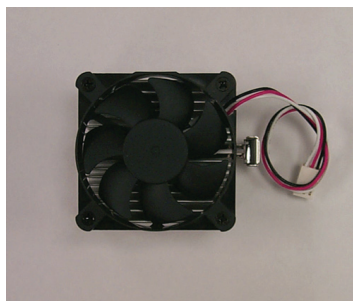
Before installing the CPU Heat Sink , adhere to the following warning:

1. Please use AMD approved cooling fan.
2. We recommend you to apply the thermal paste to provide better heat conduction between your CPU and Cooling Fan.
3. Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.

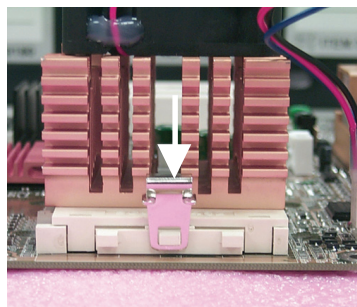
Please refer to CPU cooling fan user's manual for more detail installation procedure.



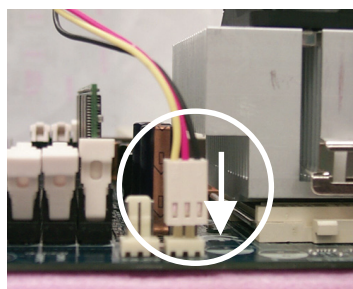
1. Press down the CPU socket lever and finish CPU installation.



2. Use qualified fan approved by AMD.



3. Fasten the cooling fan supporting-base onto the CPU socket on the mainboard.



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

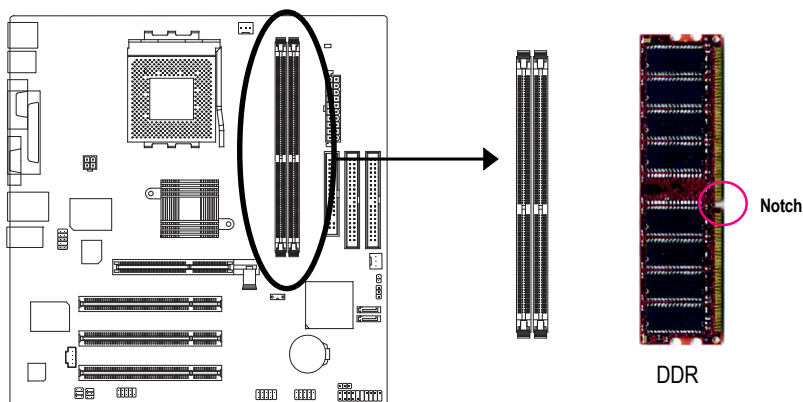
Step 3: Install Memory Modules



Before installing the memory modules, adhere to the following warning:

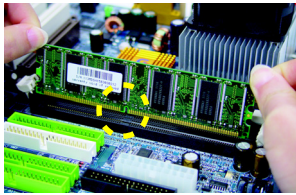
1. When RAM_LED is ON, do not install / remove DIMM from socket.
2. Please note that the DIMM module can only fit in one direction due to the one notch. Wrong orientation will cause improper installation. Please change the insert orientation.

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 Slot. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

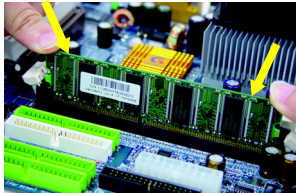


Support Unbuffered DDR DIMM Sizes type:

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



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



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

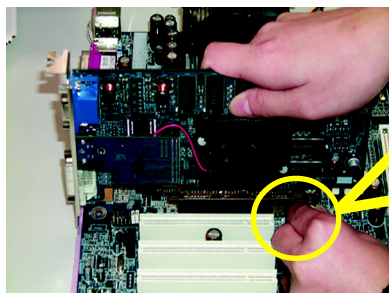
DDR Introduction

Established on the existing SDRAM infrastructure, DDR (Double Data Rate) memory is a high performance and cost-effective solution that allows easy adoption for memory vendors, OEMs, and system integrators.

DDR memory is a great evolutionary solution for the PC industry that builds on the existing SDRAM architecture, yet make the awesome advances in solving the system performance bottleneck by doubling the memory bandwidth. Nowadays, with the highest bandwidth of 3.2GB/s of DDR400 memory and complete line of DDR400/333/266/200 memory solutions, DDR memory is the best choice for building high performance and low latency DRAM subsystem that are suitable for servers, workstations, and full range of desktop PCs.

Step 4: Install Expansion Cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, necessary screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.

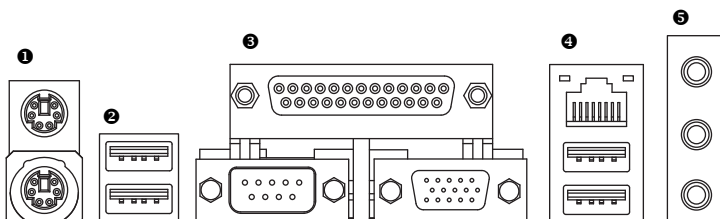


AGP Card

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.

Step 5: Connect ribbon cables, cabinet wires, and power supply

Step 5-1: I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

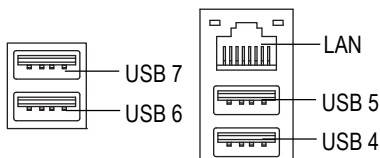


PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

- This connector supports standard PS/2 keyboard and PS/2 mouse.

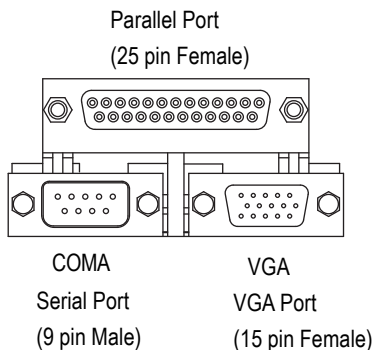
❷/❹ USB / LAN Connector



- LAN is fast Ethernet with 10/100Mbps speed.

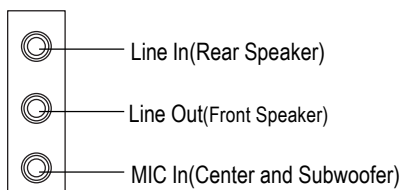
- Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS supports USB controller.
If your OS does not support USB controller, please contact OS vendor for possible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

④ Parallel Port, Serial Port and VGA Port (LPT/COMA/VGA)



- This connector supports 1 standard COM port, 1 Parallel port and 1 VGA port. Device like printer can be connected to Parallel port ; mouse and modem etc can be connected to Serial ports.

⑤ Audio Connectors



- After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack. Device like CD-ROM , walkman etc can be connected to Line-In jack.

Please note:

You are able to use 2-/4-/6- channel audio feature by S/W selection.

If you want to enable 6-channel function, you have 2 choose for hardware connection.

Method1:

Connect "Front Speaker" to "Line Out"

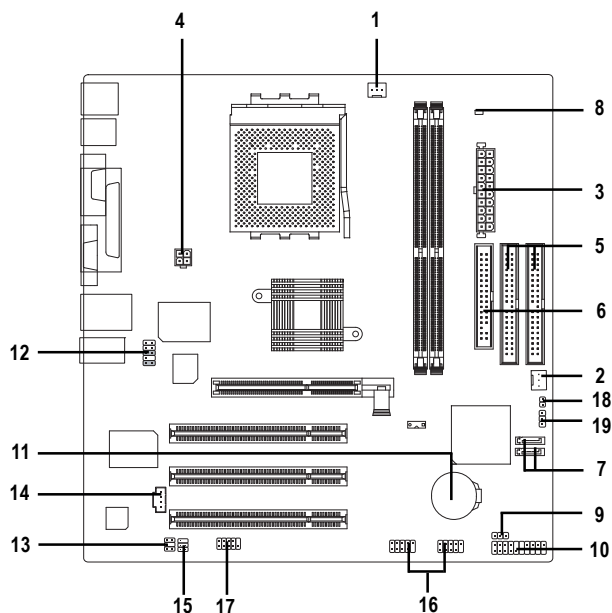
Connect "Rear Speaker" to "Line In"

Connect "Center and Subwoofer" to "MIC Out".

Method2:

You can refer to page 25, and contact your nearest dealer for optional SUR_CEN cable.

Step 5-2: Connectors Introduction

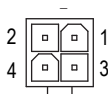
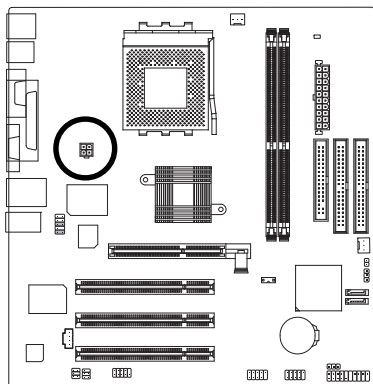


1) CPU_FAN	11) BAT
2) SYS_FAN	12) F_AUDIO
3) ATX	13) SUR_CEN
4) ATX_12V	14) CD_IN
5) IDE1 / IDE2	15) SPDIF_IO
6) FDD	16) F_USB1 / F_USB2
7) SATA0 / SATA1	17) COMB
8) RAM_LED	18) CLR_CMOS
9) F_PANEL	19) CI
10) PWR_LED	

1) ATX_12V (+12V Power Connector)

This connector (ATX_12V) supplies the CPU operation voltage (Vcore).

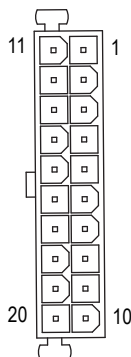
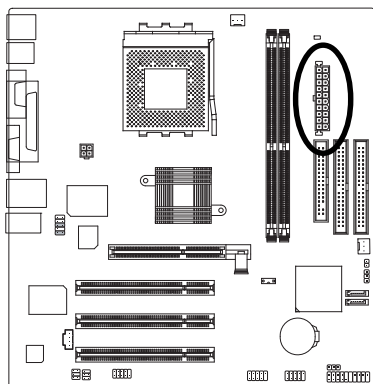
If this "ATX_12V connector" is not connected, system cannot boot.



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

2) ATX (ATX Power Connector)

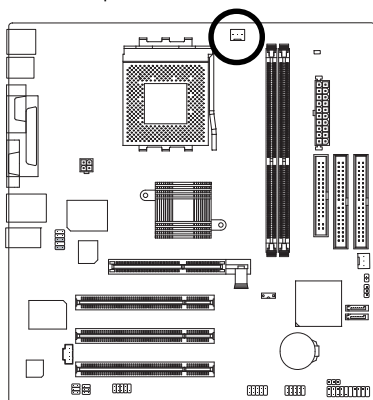
AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the motherboard.



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

3) CPU_FAN (CPU FAN Connector)

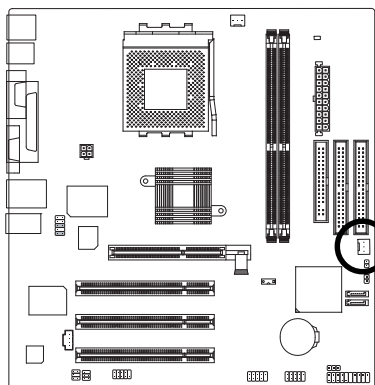
Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.



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

4) SYS_FAN (System FAN Connector)

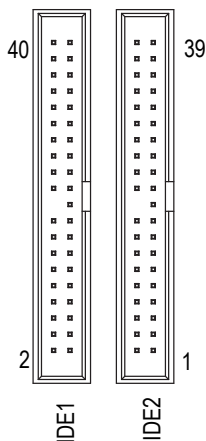
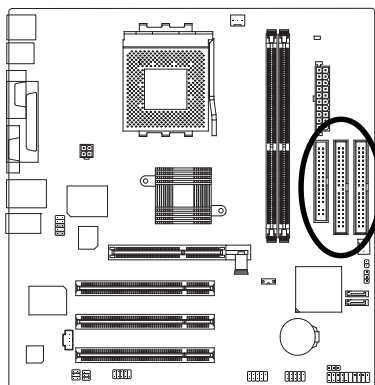
This connector allows you to link with the cooling fan on the system case to lower the system temperature.



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

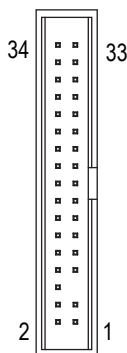
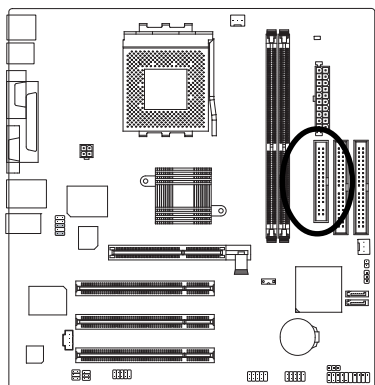
5) IDE1/ IDE2(IDE1/IDE2 Connector)

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.



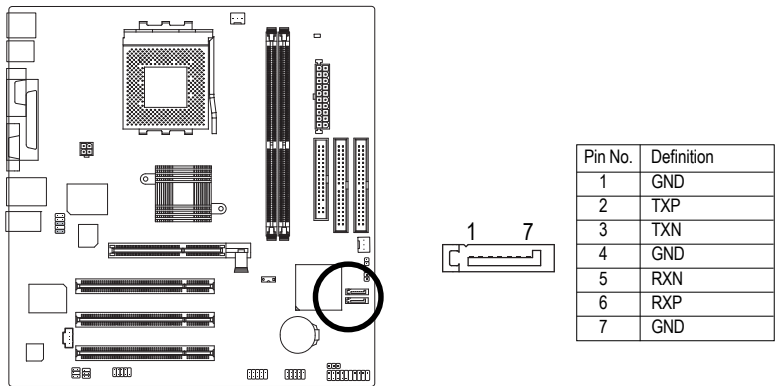
6) FDD (Floppy Connector)

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.



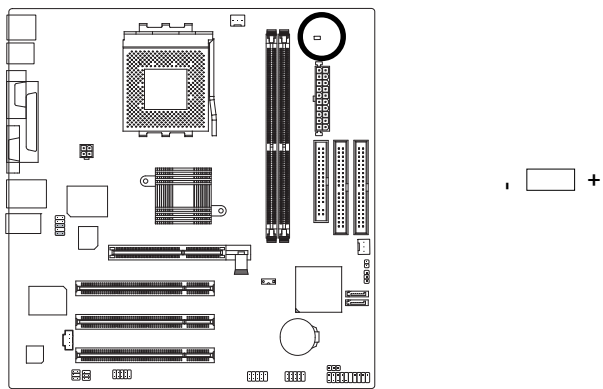
7) SATA0/SATA1 (Serial ATA Connector)

You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).



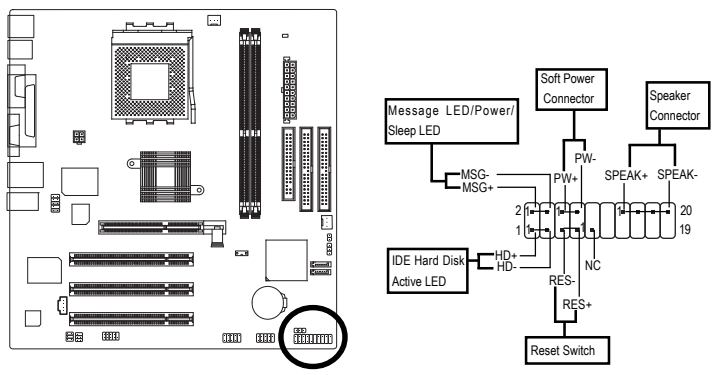
8) RAM_LED

Do not remove memory modules while RAM LED is on. It might cause short or other unexpected damages due to the standby voltage. Remove memory modules only when AC Power cord is disconnected.



9) F_PANEL (2x10 pins connector)

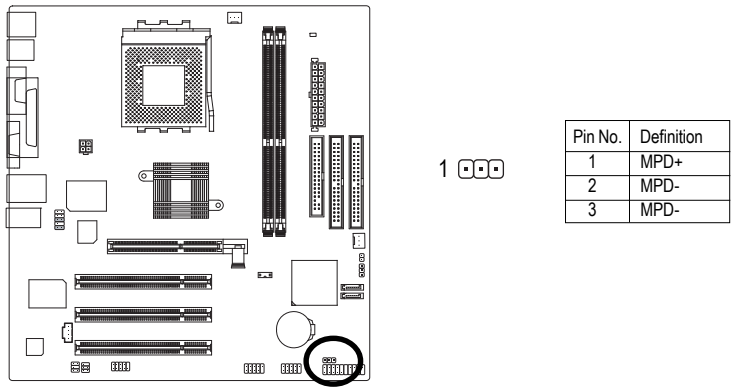
Please connect the power LED, PC peaker, reset switch and power switch etc of your chassis front panel to the F_PANEL connector according to the pin assignment above.



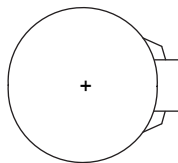
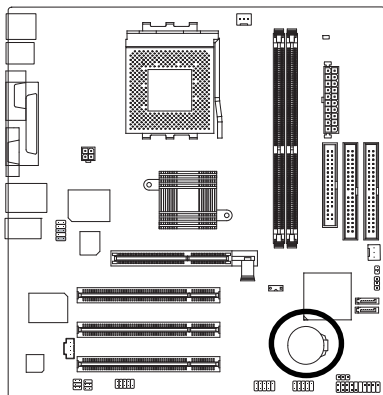
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPEAK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RES (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation Close: Power On/Off
MSG(Message LED/Power/Sleep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

10) 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.



11) BAT (Battery)



CAUTION

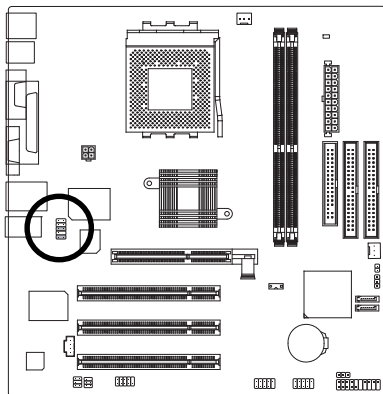
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

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.

12) F_AUDIO (F_AUDIO Connector)

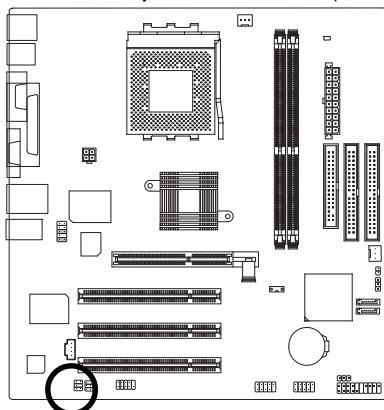
If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the MB header. To find out if the chassis you 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)

13) SUR_CEN

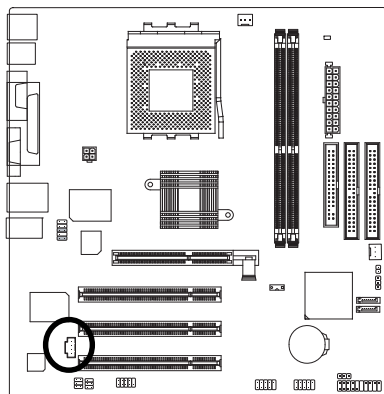
Please contact your nearest dealer for optional SUR_CEN cable.



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

14) CD_IN (CD IN, Black)

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

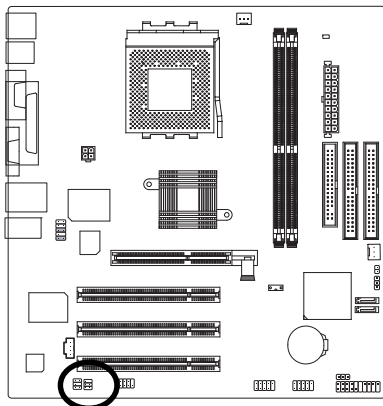


Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD_R

15) 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.

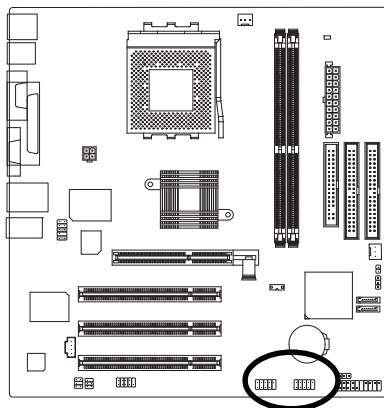
Be careful with the polarity of the SPDIF_IO connector. Check the pin assignment carefully while you connect the SPDIF_IO cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional SPDIF_IO cable, please contact your local dealer.



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

16) F_USB1 / F_USB2(Front USB Connector, Yellow)

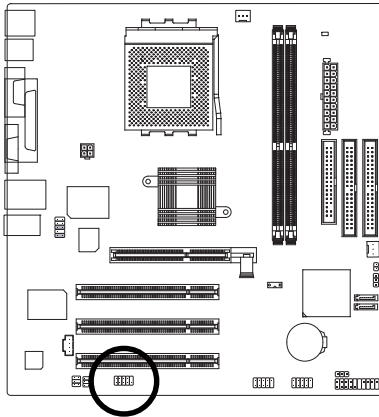
Be careful with the polarity of the F_USB connector. Check the pin assignment carefully while you connect the F_USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional F_USB cable, please contact your local dealer.



Pin No.	Definition
1	Power
2	Power
3	USB0 DX-/USB2 DX-
4	USB1 Dy-/USB3 Dy-
5	USB0 DX+/USB2 DX+
6	USB1 Dy+/USB3 Dy+
7	GND
8	GND
9	No Pin
10	NC

17) COMB (COM B Connector)(White)

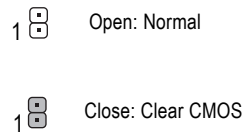
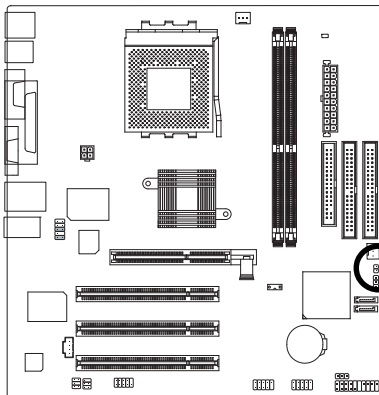
Be careful with the polarity of the COMB connector. Check the pin assignment while you connect the COMB cable. Please contact your nearest dealer for optional COMB cable.



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

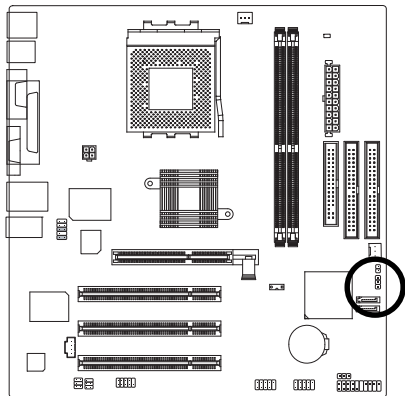
18) CLR_CMOS (Clear CMOS)

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.



19) CI (Chassis Intrusion, Case Open)

This 3-pin connector allows your system to enable or disable the "case open" item in BIOS if the system case begin remove.



Pin No.	Definition
1	GND
2	Signal
3	NC

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. 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 SETUP

After power on the computer, pressing **** immediately during POST (Power On Self Test) it will allow you to enter standard BIOS CMOS SETUP.

If you require more advanced BIOS settings, please go to "Advanced BIOS" setting menu. To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
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
<F3>	Reserved
<F4>	Reserved
<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 function
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu

GETTINGHELP

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. : FA)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) 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.

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<ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI Configurations ▶ PC Health Status ▶ Frequency/Voltage Control 	<ul style="list-style-type: none"> 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...	

Figure 1: Main Menu



If you can't find the setting you want, please press "Ctrl+F1" to search the advanced option widden.

- **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 Configurations**
This setup page includes all the configurations of PCI & PnP ISA resources.
- **PC Health Status**
This setup page is the System auto detect Temperature, voltage, fan, speed.
- **Frequency/Voltage Control**
This setup page is control CPU's clock and frequency ratio.
- **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 better performance configuration.
- **Load Top Performance Defaults**
Top Performance 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

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Standard CMOS Features

Date (mm:dd:yy)	Mon, Jan 12 2004	Item Help
Time (hh:mm:ss)	22:31:24	Menu Level ►
►IDE Primary Master	[None]	Change the day, month, year
►IDE Primary Slave	[None]	
►IDE Secondary Master	[None]	<Week>
►IDE Secondary Slave	[None]	Sun. to Sat.
Drive A	[1.44M, 3.5 "]	<Month>
Drive B	[None]	Jan. to Dec.
Floppy 3 Mode Support	[Disabled]	
Halt On	[All, But Keyboard]	<Day>
		1 to 31 (or maximum allowed in the month)
Base Memory	640K	
Extended Memory	130048K	<Year>
Total Memory	131072K	1999 to 2098
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 2: Standard CMOS Features

☞ Date

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

- » Week The week, from Sun to Sat, determined by the BIOS and is display only
- » Month The month, Jan. Through Dec.
- » Day The day, from 1 to 31 (or the maximum allowed in the month)
- » Year The year, from 1999 through 2098

☞ Time

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

☞ IDE Primary Master, Slave / 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 which will automatically detect 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 from your hard disk vendor or the system manufacturer.

- » Capacity: The hard disk size. The unit is Mega Bytes.
- » Access Mode: The options are: Auto / Large / LBA / Normal.
- » Cylinder: The cylinder number of hard disk.
- » Head The read / Write head number of hard disk.
- » Precomp The cylinder number at which the disk driver changes the write current.
- » LandingZone The cylinder number that the disk driver heads(read/write) are seated when the disk drive is parked.
- » SECTORS The sector number of each track define on the hard disk.

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 or drive B that has been installed in the computer.

- » None No floppy drive 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 Enabled 3 mode function of Drive A.
- ▶ Drive B Enabled 3 mode function of Drive B.
- ▶ Both Drive A & B are 3 mode Floppy Drives.

☞ **Halt on**

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

- ▶ NO Errors The system boot will not stop for any error that may be detected and you will be prompted.
- ▶ All Errors Whenever the BIOS detects a non-fatal error the system will be stopped.
- ▶ 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 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K 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.

Advanced BIOS Features

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Advanced BIOS Features

First Boot Device	[Floppy]	Item Help
Second Boot Device	[HDD-0]	Menu Level ►
Third Boot Device	[CDROM]	Select Boot Device
Password Check	[Setup]	priority
		[Floppy]
		Boot from floppy
		[LS120]
		Boot from LS120
		[HDD-0]
		Boot from First HDD
		[HDD-1]
		Boot from second HDD
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 3: Advanced BIOS Features

First / Second / Third Boot device

● This feature allows you to select the boot device priority.

- ▶ Floppy Select your boot device priority by Floppy.
- ▶ LS120 Select your boot device priority by LS120.
- ▶ HDD-0~3 Select your boot device priority by HDD-0~3.
- ▶ SCSI Select your boot device priority by SCSI.
- ▶ CDROM Select your boot device priority by CDROM.
- ▶ LAN Select your boot device priority by LAN.
- ▶ USB-CDROM Select your boot device priority by USB-CDROM.
- ▶ USB-ZIP Select your boot device priority by USB-ZIP.
- ▶ USB-FDD Select your boot device priority by USB-FDD.

- » USB-HDD Select your boot device priority by USB-HDD.
- » ZIP Select your boot device priority by ZIP.
- » Disabled Disable this function.

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.

Integrated Peripherals

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Integrated Peripherals		
OnChip IDE Channel0	[Enabled]	Item Help
OnChip IDE Channel1	[Enabled]	Menu Level ►
OnChip Serial ATA	[Enabled]	If a hard disk controller card is used, set at Disabled
AC97 Audio	[Auto]	
USB 1.1 Controller	[Enabled]	[Enabled]
USB 2.0 Controller	[Enabled]	
USB Keyboard Support	[Disabled]	Enable onboard IDE
USB Mouse Support	[Disabled]	Channel
Onboard H/W LAN	[Enabled]	[Disabled]
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	Disable onboard IDE
Onboard Parallel Port	[378/IRQ7]	Channel
Parallel Port Mode	[SPP]	
<div> <div> ↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help </div> <div> F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults </div> </div>		

Figure 4: Integrated Peripherals

(*) For GA-7VM400AMF only.

☞ **OnChip IDE Channel0**

●☞ When enabled, allows you to use the onboard primary PCI IDE. If a hard disk controller card is used, set at Disabled.

- » Enabled Enable onboard 1st channel IDE port. (Default value)
- » Disabled Disable onboard 1st channel IDE port.

☞ **OnChip IDE Channel1**

●☞ When enabled, allows you to use the onboard secondary PCI IDE. If a hard disk controller card is used, set at Disabled.

- » Enabled Enable onboard 2nd channel IDE port. (Default value)
- » Disabled Disable onboard 2nd channel IDE port.

☞ **OnChip Serial ATA**

- » Enabled Enable VT8237 Serial ATA support. (Default value)
- » Disabled Disable VT8237 Serial ATA support.

☞ **AC97 Audio**

- » Auto Enable onboard AC'97 audio function. (Default Value)
- » Disabled Disable this function.

☞ **USB 1.1 Controller**

●☞ Disable this option if you are not using the onboard USB feature.

- » Enabled Enable USB1.1 Controller. (Default value)
- » Disabled Disable USB1.1 Controller.

☞ **USB 2.0 Controller**

●☞ Disable this option if you are not using the onboard USB 2.0 feature.

- » Enabled Enable USB 2.0 Controller. (Default value)
- » Disabled Disable USB 2.0 Controller.

☞ **USB Keyboard Support**

●☞ When a USB keyboard is installed, please set at Enabled.

- » Enabled Enable USB Keyboard Support.
- » Disabled Disable USB Keyboard Support. (Default value)

USB Mouse Support

- » Enabled Enable USB Mouse Support.
- » Disabled Disable USB Mouse Support. (Default value)

Onboard H/WLAN

- » Enabled Enable onboard LAN function.(Default value)
- » Disabled Disable onboard LAN function.


Onboard Serial Port 1

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

Onboard Serial Port 2


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

OnBoard Parallel port

 This feature allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.

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

Parallel Port Mode

 This feature allows you to connect with an advanced print via the port mode it supports.

- » SPP Using Parallel port as Standard Parallel Port using IRQ7. (Default Value)
- » EPP Using Parallel port as Enhanced Parallel Port IRQ5.
- » ECP Using Parallel port as Extended Capabilities Port using IRQ7.
- » ECP+EPP Using Parallel port as ECP & EPP mode.

Power Management Setup

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Power Management Setup

ACPI Suspend Type	[S1(POS)]	Item Help
x USB Device Wake-Up From S3	Disabled	Menu Level ►
Power LED in S1 state	[Blinking]	[S1]
Soft-Off by PWRBTN	[Instant-off]	Set suspend type to
AC Back Function	[Soft-Off]	Power On Suspend under
Keyboard Power On	[Disabled]	ACPI OS
Mouse Power On	[Disabled]	
PME Event Wake Up	[Enabled]	[S3]
ModemRingOn/WakeOnLAN	[Enabled]	Set suspend type to
Resume by Alarm	[Disabled]	Suspend to RAM under
x Date(of Month) Alarm	Everyday	ACPI OS
x Time(hh:mm:ss) Alarm	0 : 0 : 0	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 5: Power Management Setup

☞ ACPI Suspend Type

- » S1/POS Set suspend type to Power On Suspend under ACPI OS
(Power On Suspend). (Default value)
- » S3/STR Set suspend type to Suspend To RAM under ACPI OS (Suspend To RAM).

☞ USB Device Wakeup From S3(When ACPI Suspend Type is set [S3/STR])

USB device wakeup From S3 can be set when ACPI standby state set to S3/STR.

- » Enabled USB Device can wakeup system from S3.
- » Disabled USB Device can't wakeup system from S3. (Default value)

☞ **Power LED in S1 state**

- » Blinking In standby mode(S1), power LED will blink. (Default Value)
- » Dual/OFF In standby mode(S1):
 - a. If use single color LED, power LED will turn off.
 - b. If use dual color LED, power LED will turn to another color.

☞ **Soft-off by PWRBTN**

- » Instant-off Press power button then Power off instantly. (Default value)
- » Delay 4 Sec. Press power button 4 sec to Power off. Enter suspend if button is pressed less than 4 sec.

☞ **AC Back Function**

- » Memory System power on depends on the status before AC lost.
- » Soft-Off Always in Off state when AC back. (Default value)
- » Full-On Always power on the system when AC back.

☞ **Keyboard Power On**

This feature allows you to set the method for powering-on the system.

The option "Password" allows you to set up to 8 alphanumeric characters to power-on the system.

The option "Keyboard 98" allows you to use the standard keyboard 98 to power on the system.

- » Password Enter from 1 to 8 characters to set the Keyboard Power On Password.
- » Disabled Disabled this function. (Default value)
- » Keyboard 98 If your keyboard have "POWER Key" button, you can press the key to power on your system.

☞ **Mouse Power On**

- » Disabled Can't Power on system by Mouse Event. (Default value)
- » Enabled Can Power on system by Mouse Event.

☞ **PME Event Wake up**

- When set at Enabled, any PCI-PM event awakes the system from a PCI-PM controlled state.
- This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.
 - ▶ Disabled Disable PME Event Wake up function.
 - ▶ Enabled Enable PME Event Wake up function. (Default Value)

☞ **Modem Ring On/ WakeOnLAN (When AC Back Function is set to [Soft-Off])**

- You can enable wake on LAN feature by the "ModemRingOn/WakeOnLAN" or "PME Event Wake up" when the M/B has "WOL" onboard connector. Only enabled the feature by "PME Event Wake up".
- An incoming call via modem awakes the system from its soft-off mode.
- When set at Enabled, an input signal comes from the other client.
 - Server on the LAN awaks the system from a soft off state if connected over LAN.
 - ▶ Disabled Disable Modem Ring On / Wake On LAN function.
 - ▶ Enabled Enable Modem Ring On / Wake On LAN function. (Default Value)

☞ **Resume by Alarm**

You can set "Resume by Alarm" item to enabled and key in Data/time to power 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.

Date (of Month) Alarm : Everyday, 1~31

Time (hh: mm: ss) Alarm :(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]	Decice(s) using this INT:
<p>↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults</p>		

Figure 6: PnP/PCI Configurations

☞ PCI1 IRQ Assignment

- » Auto Auto assign IRQ to PCI 1. (Default value)
- » 3,4,5,7,9,10,11,12,14,15 Set 3,4,5,7,9,10,11,12,14,15 to PCI1.

☞ PCI2 IRQ Assignment

- » Auto Auto assign IRQ to PCI 2. (Default value)
- » 3,4,5,7,9,10,11,12,14,15 Set 3,4,5,7,9,10,11,12,14,15 to PCI2.

☞ PCI3 IRQ Assignment

- » Auto Auto assign IRQ to PCI 3. (Default value)
- » 3,4,5,7,9,10,11,12,14,15 Set 3,4,5,7,9,10,11,12,14,15 to PCI3.

PC Health Status

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PC Health Status		
Reset Case Open Status	[Disabled]	Item Help
Case Opened	Yes	Menu Level ►
Vcore	1.772V	
25VSTR	2.480V	
+3.3V	3.280V	
+12V	11.968V	
Current System Temperature	31°C	
Current CPU Temperature	45°C	
Current CPU FAN Speed	4440RPM	
Current SYSTEM FAN speed	0 RPM	
CPU FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure7: PC Health Status

- 🔍 **Reset Case Open Status**
- 🔍 **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, set "Reset Case Open Status" to "Enabled" and save CMOS, your computer will restart.
- 🔍 **Current Voltage (V) Vcore / 25VSTR / +3.3V / +12V**
 Detect system's voltage status automatically.
- 🔍 **Current System/CPU Temperature**
 ▶▶ Detect System/CPU Temp. automatically.
- 🔍 **Current CPU FAN / SYSTEM FAN Speed (RPM)**
 Detect Fan speed status automatically.
- 🔍 **Fan Fail Warning (CPU / SYSTEM)**
 ▶▶ Disabled Don't monitor current fan speed (Default value)
 ▶▶ Enabled Alarm when stops.

Frequency/Voltage Control

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Frequency/Voltage Control

Auto Detect PCI/DIMM Clk	[Enabled]	Item Help
Spread Spectrum	[Enabled]	Menu Level ►
CPU Host Clock Control	[Disabled]	
x CPU Clock	100MHz	
DRAM Clock(MHz)	[By SPD]	
AGP OverVoltage Control	[Auto]	
DIMM OverVoltage Control	[Auto]	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 8: Frequency/Voltage Control

☞ Auto Detect PCI/DIMM Clk

- » Disabled Disable auto detect PCI/DIMM Clk.
- » Enabled Enable auto detect PCI/DIMM Clk. (Default value)

☞ Spread Spectrum

- » Disabled Disable clock spread spectrum.
- » Enabled Enable clock spread spectrum. (Default value)

☞ CPU Host Clock Control


- » Disabled Disable CPU Host Clock Control function. (Default value)
- » Enabled Enable CPU Host Clock Control function.

☞ CPU Clock

- » 100 Set CPU Clock to 100MHz~132MHz.
- » 133 Set CPU Clock to 133MHz~165MHz.
- » 166 Set CPU Clock to 166MHz~199MHz.
- » 200 Set CPU Clock to 200MHz~255MHz.

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

DRAM Clock (MHz)

 Wrong frequency may make system can't boot. Clear CMOS to overcome wrong frequency issue.

- » Please set DRAM Clock according to your requirement.

If you use DDR266 DRAM module, please set "DRAM Clock(MHz)" to "133-DDR266". If you use DDR333 DRAM module, please set "DRAM Clock(MHz)" to "166-DDR333". If you use Incorrect using it may cause your system broken. For power End-User use only!

- » By SPD Auto setting Memory frequency. (Default value)

AGP OverVoltage Control

- » Normal Set AGP OverVoltage Control to Normal. (Default value)
- » +0.1V Set AGP OverVoltage Control to +0.1V.
- » +0.2V Set AGP OverVoltage Control to +0.2V.
- » +0.3V Set AGP OverVoltage Control to +0.3V.

DIMM OverVoltage Control

- » Auto Supply voltage as DRAM module required. (Default value)
- » +0.1V Set DIMM OverVoltage Control to +0.1V.
- » +0.2V Set DIMM OverVoltage Control to +0.2V.
- » +0.3V Set DIMM OverVoltage Control to +0.3V.

<ul style="list-style-type: none"> ▶ Standard CMOS Features ▶ Advanced BIOS Features ▶ Integrated Peripherals ▶ Power Management Setup ▶ PnP/PCI ▶ PC Health ▶ Frequency/Voltage Control 	<ul style="list-style-type: none"> Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set User Password
<div>Load Fail-Safe Defaults? (Y/N)?N</div>	
ESC:Quit	↑↓→←: Select Item
F8:Q-Flash	F10:Save & Exit Setup
Load Fail-Safe Defaults	

Figure 9: Load Fail-Safe Defaults

Load Fail-Safe Defaults

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

Load Optimized Defaults

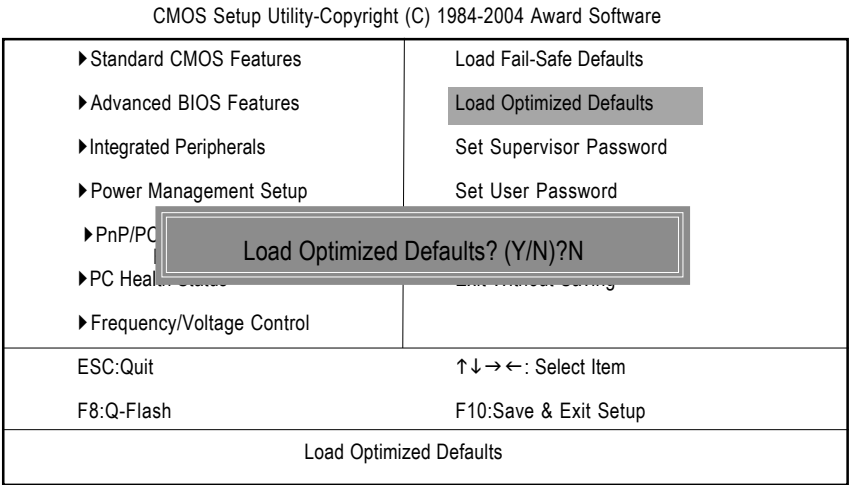


Figure 10: Load Optimized Defaults

⚙️ Load Optimized Defaults

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

Set Supervisor/User Password

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▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI	Enter Password:
▶ PC Health	
▶ Frequency/Voltage Control	
ESC:Quit	↑ ↓ → ← : Select Item
F8:Q-Flash	F10:Save & Exit Setup
Change/Set/Disable Password	

Figure 11: Password Setting

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: a 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 "Security Option" 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 "Security Option" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

[illegible]

