MNIC8PI/MNIC8QI

Intel® N455/D525 Processor Motherboards

User's Manual

Rev. 1001

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Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For quick set-up of the product, read the Quick Installation Guide included with the product.
- For detailed product information, carefully read the User's Manual.

For product-related information, check on our website at:

http://www.gigabyte.com

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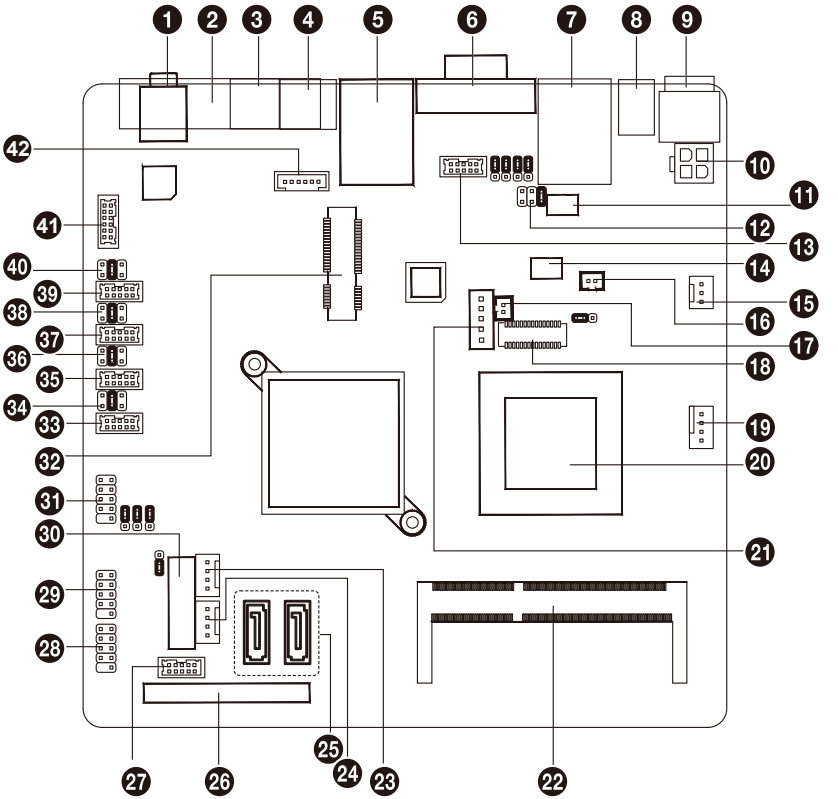
MNIC8PI/MNIC8QI Motherboard Layout



Item	Code	Description
1	AUDIO_JACK	Audio jack
2	LPT	Parallel port
3	RJ11	Cash drawer port
4	KB_MS1	PS/2 connector
5	USB_LAN1	USB ports and LAN port
6	VGA1/COM2	VGA port and Serial port
7	COM4_USB1	Serial and USB Port
8	+12V_OUT	DC jack
9	DC_IN	DC jack
10	DC_OUT	4 pin power connector
11	VFD_JR1	VFD & RS232 Mode select jumper
12	JCOM4	Serail port 5V,12V, RI select jumper
13	VGA2	VGA cable connector
14	JRS1	RS232,RS422,RS485 Select connector
15	SYS_FAN	System fan cable connector
16	LCDPWR_CON	LCD power connector
17	BKLTEN_CON	Back light inverter jumper
18	LVDS	LVDS connectors
19	CPU_FAN	CPU fan cable connector
20	CPU	Processor
21	INV_BRIG1	Inverter with box header
22	SO-DIMM	DDR3 SO-DIMM slot
23	SATAPW2	SATA power connector
24	SATAPW1	SATA power connector
25	SATA1/2	SATA cable connectors
26	SATA3	SATA 7+15 pins cable connector
27	JFRONT	Front panel connecotor
28	F_USB3	Front USB cable connector
29	F_USB2	Front USB cable connector
30	BAT1	Battery socket
31	F_USB1	Front USB cable connector
32	MINI_CARD	Mini PCI Express slot
33	COM6	Serial cable connector
34	JCOM6	Power COM select jumper
35	COM3	Serial cable connector
36	JCOM3	Power COM select jumper
37	COM5	Serial cable connector
38	JCOM5	Power COM select jumper
39	COM1	Serial cable connector
40	JCOM1	Power COM select jumper
41	F_AUDIO	Front audio cable connector
42	KB_MS2	PS/2 cable connector

Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications

CPU	◆ Supports single Intel® N455 processor (MNIC8PI) ◆ Supports single Intel® D525 processor (MNIC8QI) ◆ Supports 1.66GHz (MNIC8PI) ◆ Supports 1.8GHz (MNIC8QI)
Chipset	◆ Intel® ICH8M
Memory	◆ 1 x SO-DIMM slot support DDR3 800/1066 ◆ Support up 2GB (MNIC8PI) ◆ Support up 4GB (MNIC8QI)
Audio	◆ Realtek® ALC269 codec ◆ High Definition Audio ◆ 2 channel
LAN	◆ 1 x Realtek® RTL 8111E supports 10/100/1000 Mbps
Expansion Slots	◆ 1 x mini PCI Express x1 slot
Onboard Graphics	◆ Build in Intel® ICH8M chipset
Storage Interface	◆ 2 x SATA 3Gb/s connectors ◆ 1 x 7 pin & 15 pin SATA connector
USB	◆ Up to 10 USB 2.0/1.1 ports (4 on the back panel, 6 via the USB brackets connected to the internal USB headers)
Internal Connectors	◆ 1 x 4 pin ATX 12V power connector ◆ 2 x SATA 3Gb/s connectors ◆ 2 x SATA power connectors ◆ 1 x 7 pin & 15 pin SATA connector ◆ 1 x CPU fan header ◆ 1 x System fan header ◆ 4 x COM power select connector ◆ 1 x front panel header ◆ 1 x audio header* ◆ 3 x USB 2.0 headers ◆ 1 x VGA header ◆ 1 x LVDS connector
Back Panel Connectors	◆ 1 x DC-in (12V) connector ◆ 1 x DC-out (12V) connector ◆ 4 x USB 2.0 ports ◆ 1 x RJ-45 port ◆ 1 x VGA port ◆ 2 x COM ports ◆ 1 x Parallel port ◆ 1 x RJ-11 port ◆ 1 x Audio jack ◆ 1 x PS/2 connector

Form Factor	◆	Mini ITX Form Factor; 6.75 inch x 6.75 inch

* GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.

1-3 Installing the Memory

Read the following guidelines before you begin to install the memory:

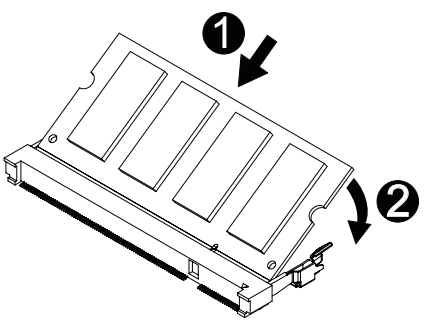
- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
  - Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

1-3-1 Installing a Memory

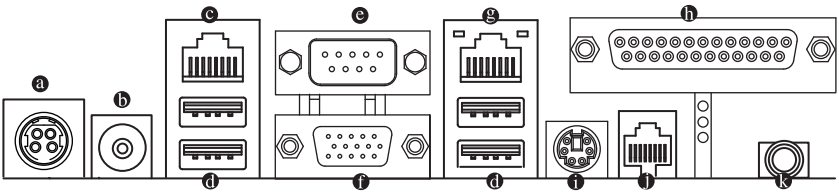
Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.
Be sure to install DDR3 DIMMs on this motherboard.

Installation Step:

Step 1. Align the memory with the DIMM module and insert the DIMM memory module into the DIMM slot. Please note that memory module has a foolproof insertion design. A memory module can be installed In only one direction.
Step 2. Push down the memory and seat it firmly.
Step 3. Reverse the installation steps when you wish to remove the DIMM module.



1-4 Back Panel Connectors



a DC In Port

Connect the DC power to this port.

b 12V DC Out Port

Connect the 12V DC power to this port.

c RS-232 Port

Connects this port to the serial-based modems, printers, mice, data storage, un-interruptible power supplies, and other peripheral devices

d USB 2.0/1.1 Port

The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

e Serial Port

Connects to serial-based mouse or data processing devices.

f Video Port

The video in port allows connect to video in, which can also apply to video loop thru function.

g RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.

h Parallel Port

The parallel port allows connection of a printer, scanner and other peripheral devices.

i PS/2 Port

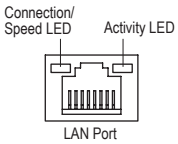
Use this port to connect a PS/2 mouse or a PS/2 keyboard.

j RJ-11 Port

The RJ-11 (Cash Drawer) port is a physical connector interface most often used for telephone wire terminals.

k Line Out Jack ((Front Speaker Out/Blue)

The default Line Out (Front Speaker Out) jack. Stereo speakers, earphone or front surroundspeakers can be connected to Line Out (Front Speaker Out) jack.



Connection/Speed LED:

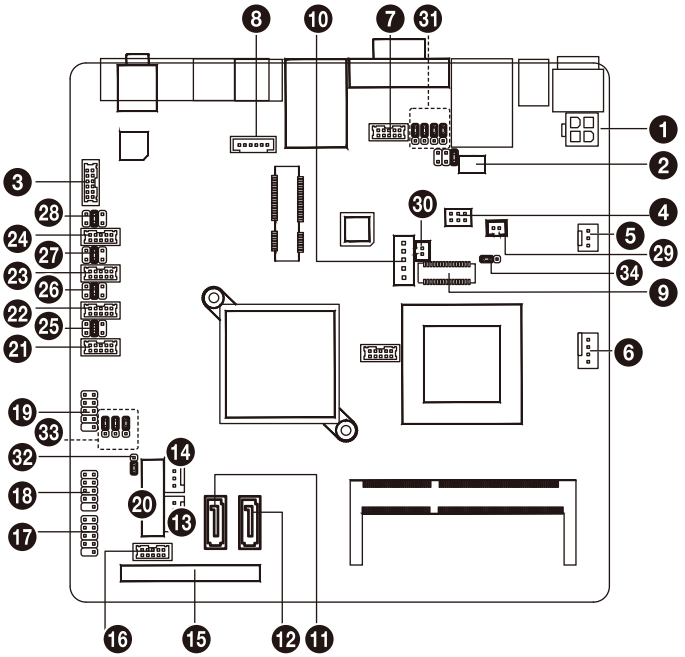
State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring

- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.

1-5 Internal Connectors



1)	DC_OUT	19)	F_USB1
2)	VFD_JR1	20)	BAT1
3)	F_AUDIO	21)	COM6
4)	JRS1	22)	COM3
5)	SYS_FAN	23)	COM5
6)	CPU_FAN	24)	COM1
7)	VGA2	25)	JCOM6
8)	KB_MS2	26)	JCOM3
9)	LVDS	27)	JCOM5
10)	INV_BRIG1	28)	JCOM1
11)	SATA2	29)	LCDPWR_CON
12)	SATA1	30)	BKLTEN_CON
13)	SATAPW_1	31)	JRS2/JRS3/JRS4/JRS5
14)	SATAPW_2	32)	CLR_CMOS1
15)	SATA3	33)	USB_PWR1/USB_PWR2/USB_PWR3
16)	JFRONT	34)	LVDS_PWR1
17)	F_USB3		
18)	F_USB2		

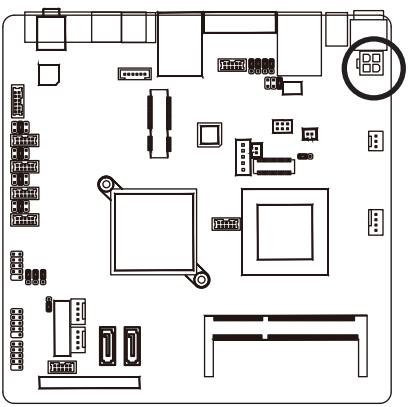
Read the following guidelines before connecting external devices:

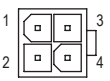
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

1) DC_OUT (2x2 12V Power Connector)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.

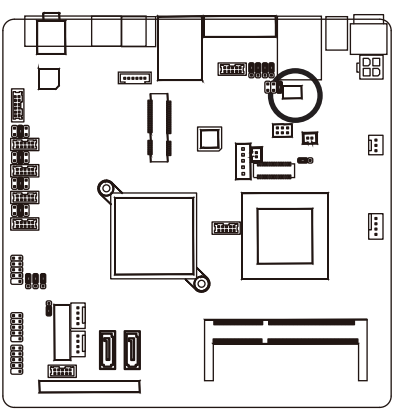
To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.





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

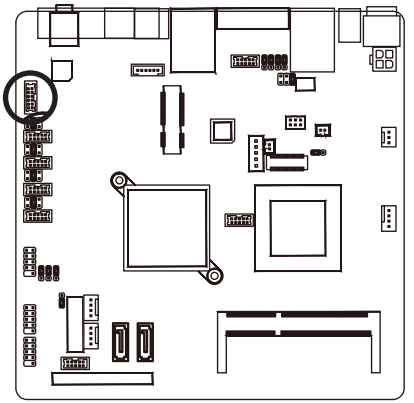
2) VFD_JR1 (VFD & RS232 Mode Select Jumper)

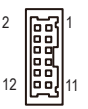


VFD Mode	VFD_JR1: 1-2, 3-5, 4-6 Close
	JCOM4: 5-6 Close
RS232 Mode	VFD_JR1: 1-3, 2-4 Close
	JCOM4: 1-2 or 3-4 Close

3) F_AUDIO (Front Panel Audio Header)

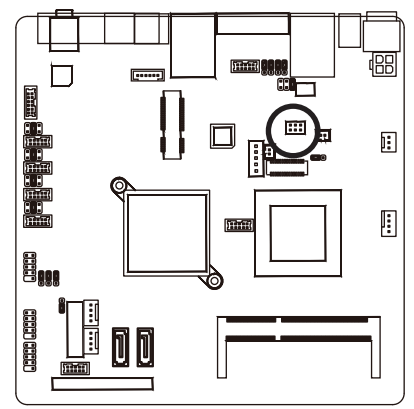
The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.





Pin No.	Definition
1	Amplifier Out_R+
2	MIC_L
3	Amplifier Out_R-
4	MIC_R
5	GND
6	Line In_R
7	Amplifier Out_L+
8	Line In_L
9	Amplifier Out_L-
10	Line In_JD
11	GND
12	External MIC JD

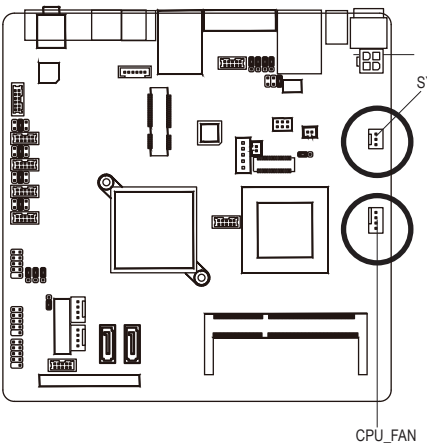
4) JRS1 (RS232/RS422/RS485 Select Header)



Pin No.	Definition
1	RS232
2	UART RXD Signal
3	RS422
4	UART RXD Signal
5	RS485
6	UART RXD Signal

5/6) SYS_FAN/CPU_FAN (System Fan/CPU Fan Headers)

The motherboard has a 4-pin CPU fan header (CPU_FAN), a 3-pin (SYS_FAN) system fan headers. Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports CPU fan speed control, which requires the use of a CPU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.



SYS_FAN (System Fan):

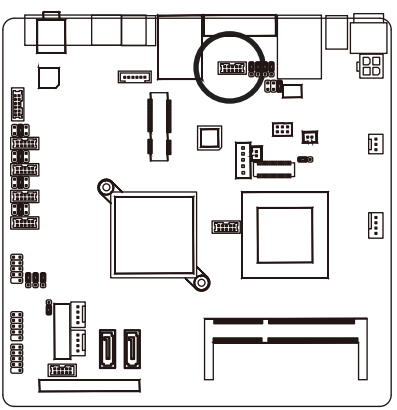
Pin No.	Definition
1	GND
2	+12V / Speed Control
3	Sense

CPU_FAN (CPU Fan):

Pin No.	Definition
1	GND
2	+12V / Speed Control
3	Sense
4	Speed Control

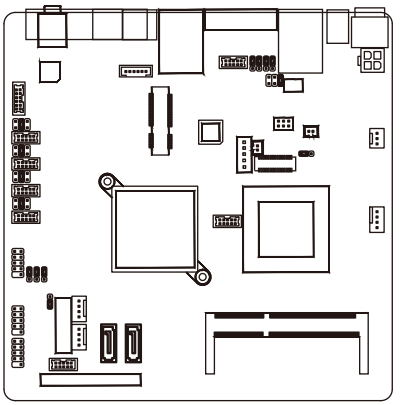
- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

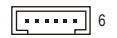
7) VGA2 (VGA Cable Header)



Pin No.	Definition
1	V-SYNC
2	H-SYNC
3	GND
4	GND
5	RED
6	GND
7	GREEN
8	DDC Clock
9	BLUE
10	DDC Data

8) KB_MS2 (PS/2 Cable Header)

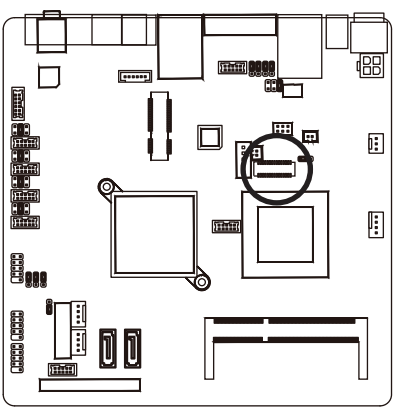


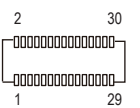


Pin No.	Definition
1	GND
2	KDAT
3	F_KDAT
4	KCLK
5	F_KCLK
6	5V

9) LVDS (LVDS Headers)

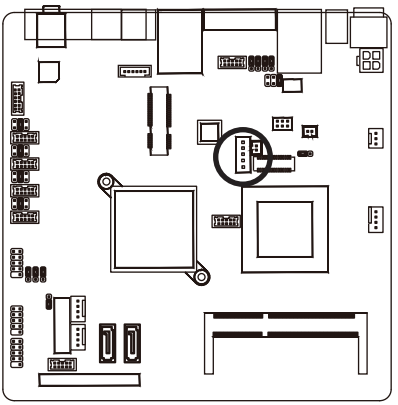
LVDS stands for Low-voltage differential signaling, which uses high-speed analog circuit techniques to provide multigigabit data transfers on copper interconnects and is a generic interface standard for high-speed data transmission.





1	GND	16	GND
2	NC	17	Data1-
3	EDID Data	18	GND
4	GND	19	GND
5	EDID Clock	20	Backlight 5V
6	NC	21	LVDS Clock-
7	GND	22	Backlight 5V
8	NC	23	LVDS Clock+
9	Data0+	24	Backlight 5V
10	NC	25	GND
11	Data0-	26	GND
12	Backlight Enable	27	Data2-
13	GND	28	LVDS Power 3.3V
14	Backlight Controller	29	Data2+
15	Data1+	30	LVDS Power 3.3V

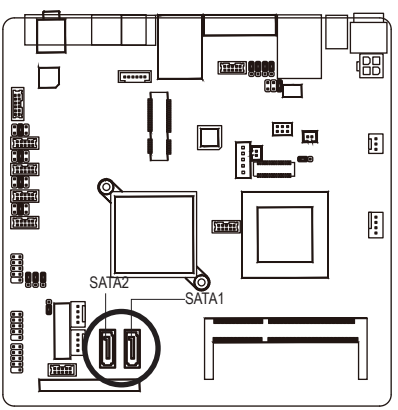
10) INV_BRIG1 (Inverter With Box Header)

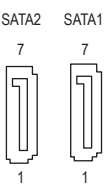


Pin No.	Definition
1	12V Power
2	12V Power
3	GND
4	Backlight Controller
5	Backlight Enable

11/12) SATA1/2 (SATA 3Gb/s Connectors)

The SATA connectors conform to SATA 3Gb/s standard and are compatible with SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device.



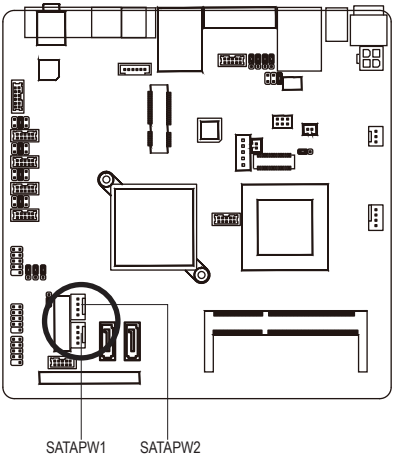


Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

- A RAID 0 or RAID 1 configuration requires at least two hard drives. If more than two hard drives are configured, the total number of hard drives must be an even number.
- A RAID 5 configuration requires at least three hard drives. (The total number of hard drives does not have to be an even number.)
- A RAID 10 configuration requires four hard drives.

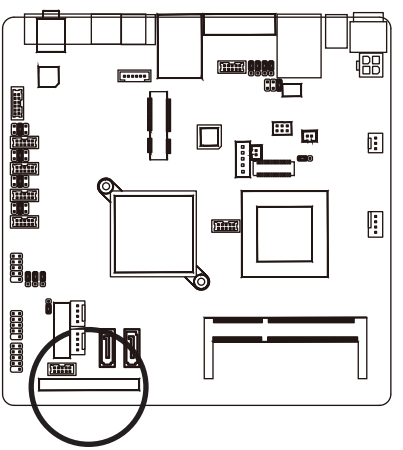
(Note) When a RAID configuration is built across the SATA 3Gb/s channels, the system performance of the RAID configuration may vary depends on the devices are connected.

13/14) SATAPW_1/SATAPW_2 (SATA HDD Power Headers)



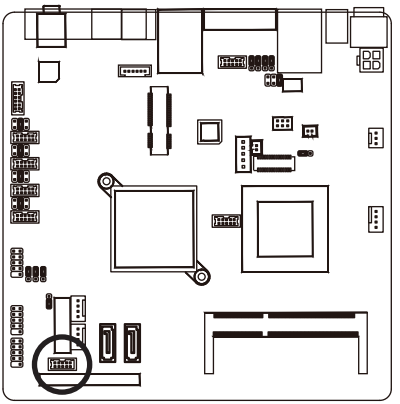
Pin No.	Definition
1	+12V
2	GND
3	GND
4	5V

15) SATA3 (SATA 7+15 Pins Header)



16) JFRONT (Front Panel Header)

Connect the power switch, reset switch, speaker, chassis intrusion switch/sensor and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

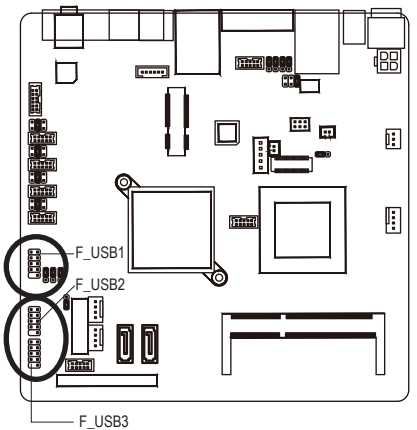


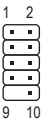
Pin No.	Pin Definition
1	Stand-by LED Signal
2	Power LED Signal
3	Power Switch
4	Ground
5	LAN Act LED Signal
6	LAN Act LED 5V
7	HDD LED
8	VCC 5V
9	Reset Button
10	Ground

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

17/18/19) F_USB3/F_USB2/F_USB1 (USB Headers)

The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.





F_USB1/F_USB2

Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	USB DY-
5	USB DX+
6	USB DY+
7	GND
8	GND
9	No Pin
10	NC

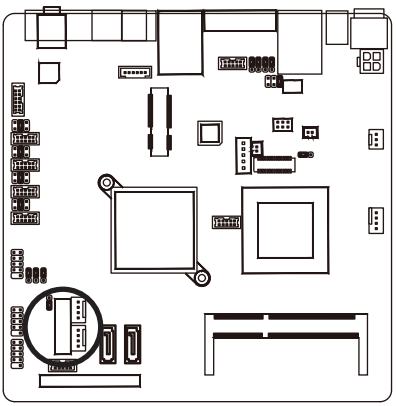
F_USB3

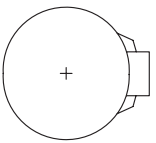
Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	NC
5	USB DX+
6	NC
7	GND
8	GND
9	No Pin
10	NC

When the system is in S4/S5 mode, only the USB ports routed to the F_USB1 header can support the ON/OFF Charge function.

20) BAT1 (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.





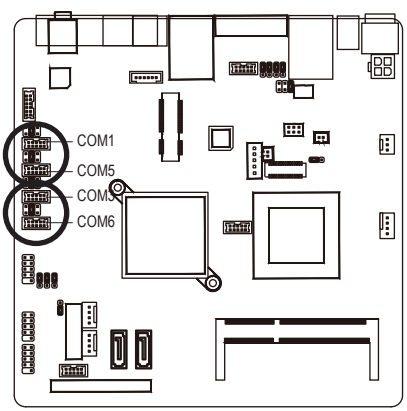
You may clear the CMOS values by removing the battery:

1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.

- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

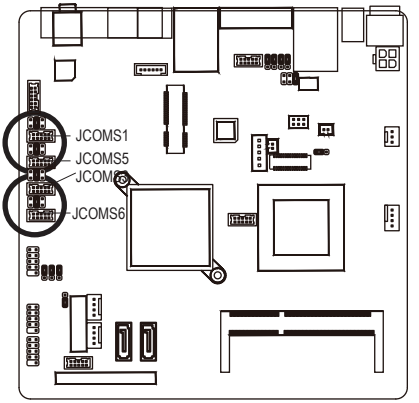
21/22/23/24) COM6/COM3/COM5/COM1 (Serial Port Header)

The COM header can provide one serial port via an optional COM port cable. For purchasing the optional COM port cable, please contact the local dealer.



Pin No.	Definition
1	DCD
2	DSR
3	RXD
4	RTS
5	TXD
6	CTS
7	DTR
8	RI/+5V/+12V
9	GND
10	RI/+5V/+12V

25/26/27/28) JCOM6/JCOM3/JCOM5/JCOM1 (5V/12V/RI for Serial Port Option Header)

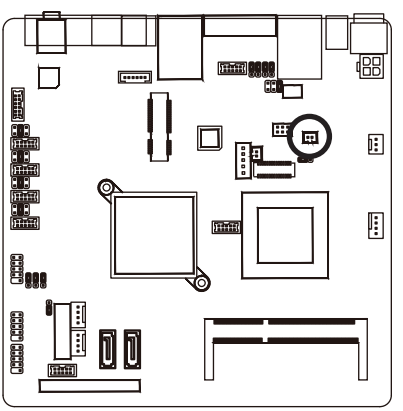


1-2 Close: 5V (Power COM)

3-4 Close: RI (STAND COM)

5-6 Close: 12V (Power COM)

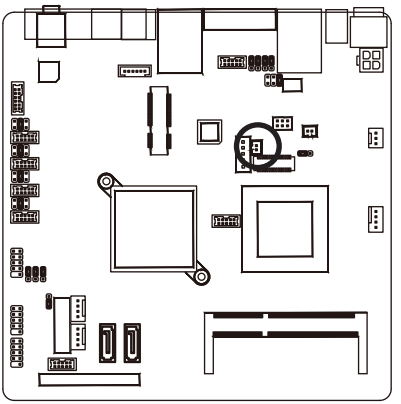
29) LCDPWR_CON (LCD Power ON/OFF Jumper)



Open: Power off.

Short: Power On.

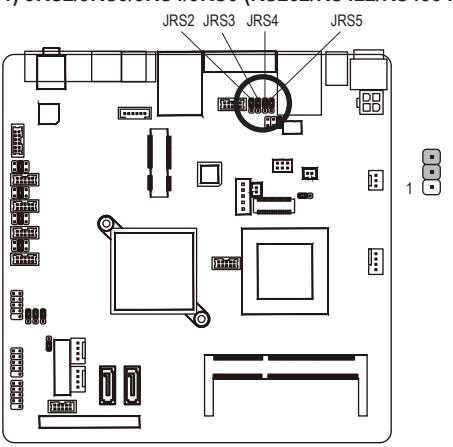
30) BKLTEN_CON (Back light Inverter Enable/Disable Jumper)



Open: Disable Back light Inverter.

Short: Enable Back light Inverter.

31) JRS2/JRS3/JRS4/JRS5 (RS232/RS422/RS485 Mode Select Jumper)



JRS2

Pin No.	Definition
1	RS485 D- Signal
2	COM2 Pin 1
3	RS232 DCD Signal

JRS3

Pin No.	Definition
1	RS485 D+ Signal
2	COM2 Pin 2
3	RS232 RXD Signal

JRS4

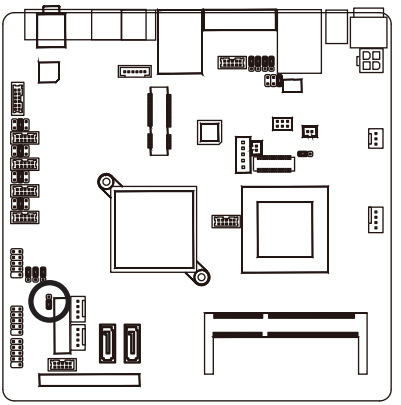
Pin No.	Definition
1	RS422 D- Signal
2	COM2 Pin 4
3	RS232 DTR Signal

JRS5

Pin No.	Definition
1	RS422 D- Signal
2	COM2 Pin 3
3	RS232 TXD Signal

32) CLR_CMOS1 (Clearing CMOS Jumper)

Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.

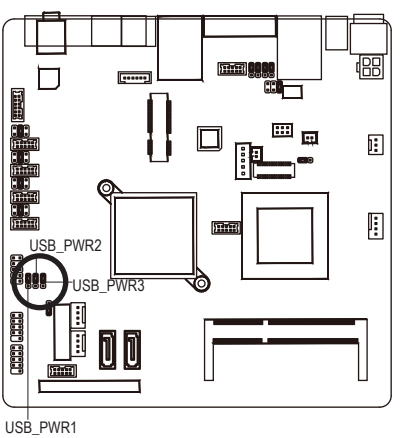


1 1-2 Close: Clear CMOS data)

1 2-3 Close: Normal operation (Default setting)

- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard.
- After system restart, go to BIOS Setup to load factory defaults (select **Load Optimized Defaults**) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).

33) USB_PWR1/USB_PWR2/USB_PWR3 (USB Stand-by 5V/VCC 5V Select Jumper)

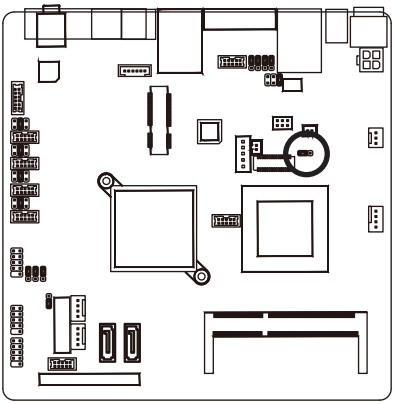


1 1-2 Close: VCC 5V. (Default setting)

1 2-3 Close: Stand-by 5V.

Pin No.	Definition
1	VCC 5V
2	USB Power input
3	Stand-by 5V

34) LVDS_PWR1 (LVDS 3V/5V Select Jumper)



1 1-2 Close: 3.3V. (Default setting)

1 2-3 Close: 5V.

Pin No.	Definition
1	3.3V
2	Power input
3	5V

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <DEL> key during the POST when the power is turned on. To see more advanced BIOS Setup menu options, you can press <Ctrl> + <F1> in the main menu of the BIOS Setup program.

- BIOS flashing is potentially risky, if you do not encounter problems of using the current BIOS version, it is recommended that you don't flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/ clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)

BIOS Setup Program Function Keys

<↑><↓><←><→>	Move the selection bar to select an item
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<Page Up>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	Show descriptions of the function keys
<F2>	Move cursor to the Item Help block on the right (submenus only)
<F5>	Restore the previous BIOS settings for the current submenus
<F6>	Load the Fail-Safe BIOS default settings for the current submenus
<F7>	Load the Optimized BIOS default settings for the current submenus
<F9>	Display system information
<F10>	Save all the changes and exit the BIOS Setup program
<F11>	Save CMOS to BIOS
<F12>	Load CMOS from BIOS

The Functions of the <F11> and <F12> keys (For the Main Menu Only)

▶ F11: Save CMOS to BIOS

This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles (Profile 1-8) and name each profile. First enter the profile name (to erase the default profile name, use the SPACE key) and then press <Enter> to complete.

▶ F12: Load CMOS from BIOS

If your system becomes unstable and you have loaded the BIOS default settings, you can use this function to load the BIOS settings from a profile created before, without the hassles of reconfiguring the BIOS settings. First select the profile you wish to load, then press <Enter> to complete.

Advanced

This setup page includes all the items of AMI BIOS special enhanced features.
(ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

Boot

This setup page provides items for configuration of boot sequence.

Security

Change, set, or disable supervisor and user password. Configuration supervisor password allows you to restrict access to the system and BIOS Setup.

A supervisor password allows you to make changes in BIOS Setup.

A user password only allows you to view the BIOS settings but not to make changes.

Chipset

Northbridge and Southbridge additional features configuration.

Exit

Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

2-1 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter other sub-menu.

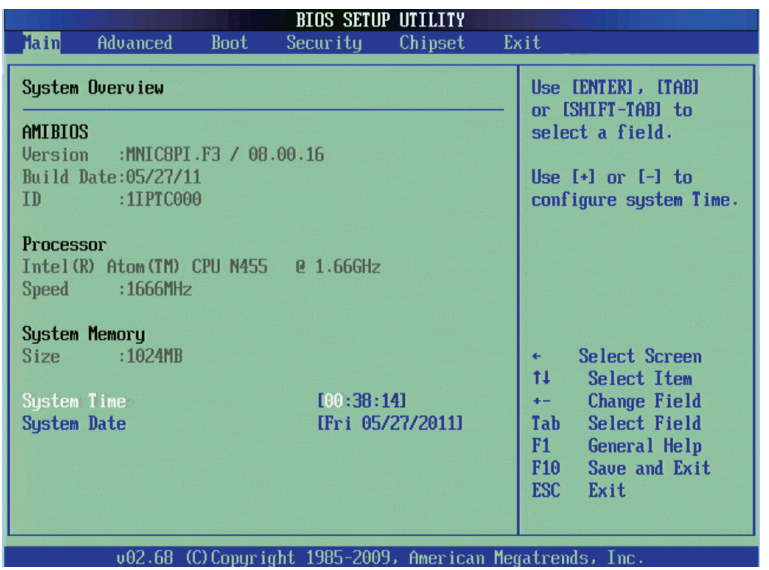
Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.

- If you do not find the settings you want in the Main Menu or a submenu, press <Ctrl>+<F1> to access more advanced options.
- When the system is not stable as usual, select the **Load Optimal Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.



☞ **BIOS Version**

Display version number of the BIOS setup utility.

☞ **BIOS Build Date**

Displays the date when the BIOS setup utility was created.

☞ **BIOS ID**

Displays the BIOS ID information.

☞ **Processor Information:**

CPU Type / CPU Speed

Displays the technical specifications for the installed processor.

☞ **System Memory**

Determines how much total memory is present during the POST.

☞ **System Time**

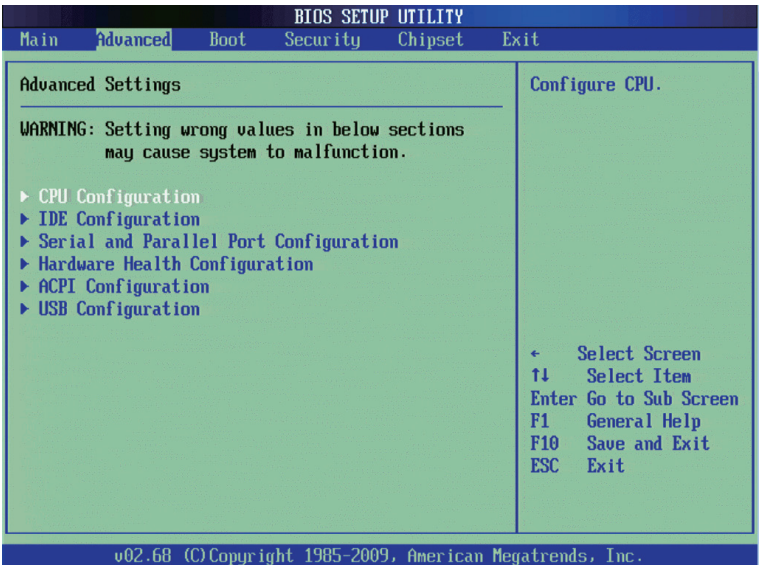
Set the system time following the hour-minute- second format.

☞ **System Date**

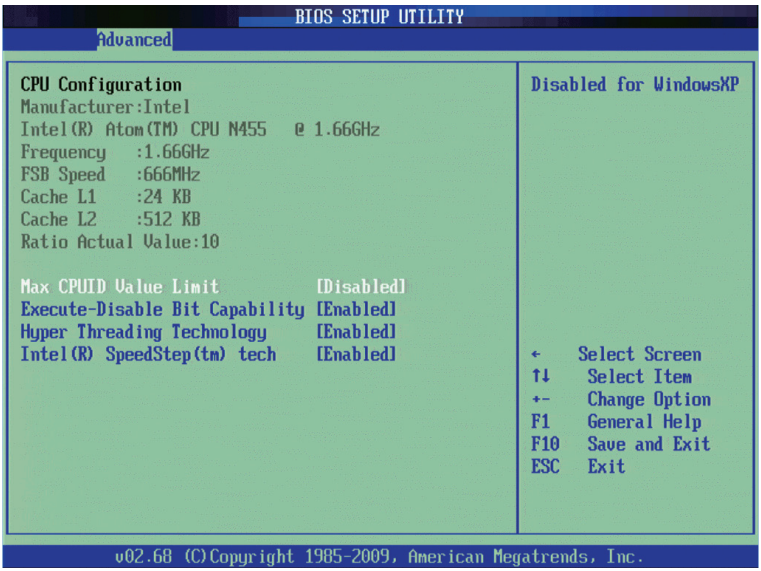
Set the date following the weekday-month-day- year format.

2-2 Advanced Menu

The Advanced menu display submenu options for configuring the function of various hardware components. Select a submenu item, then press Enter to access the related submenu screen.



2-2-1 CPU Configuration



☞ CPU Information

This category includes all the information of CPU manufacturer, type, Frequency, FSB, L1/ L2 Cache, Ratio Status, and Ratio actual value.

☞ Max CPUID Value Limit

Allows you to determine whether to enable Max CPUID Value Limit function

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Execute Disable Bit Capability

When this item enabled, the processor prevents the execution of code in data-only memory pages. This provides some protection against buffer overflow attacks.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Hyper Threading

The Intel Hyper Threading Technology allows a single processor to execute two or more separate threads concurrently. When hyper-threading is enabled, multi-threaded software applications can execute their threads, thereby improving performance.

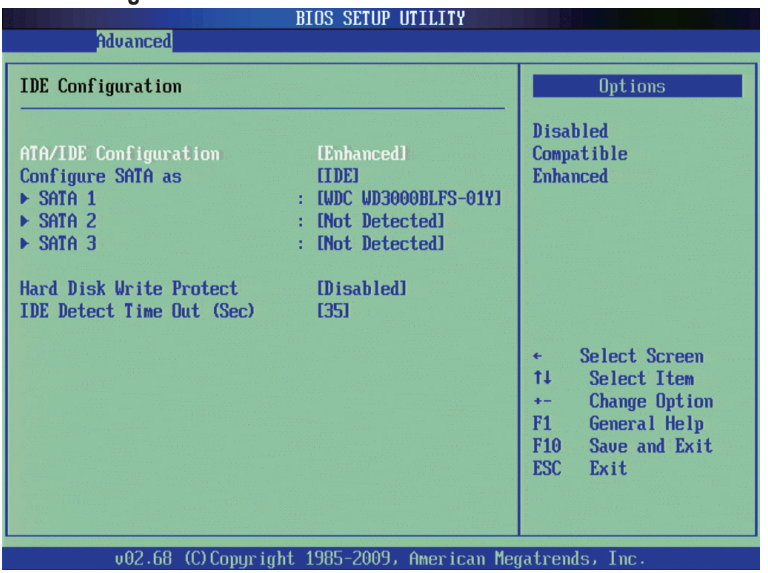
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Intel SpeedStep (tm) tech (Enhanced Intel SpeedStep Technology)

Conventional Intel SpeedStep Technology switches both voltage and frequency in tandem between high and low levels in response to processor load.

Options available: Enabled/Disabled. Default setting is **Enabled**.

2-2-2 IDE Configuration



☞ ATA/IDE Configuration

Configure HDD type.

Options available: Enabled/Disabled/Enhanced. Default setting is **Enhanced**.

☞ SATA1/2/3

The category identifies Serial ATA types of hard disk that are installed in the computer.

System 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.

Hard drive information should be labeled on the outside device casing. Enter the appropriate option based on this information.

☞ Configure SATA as

Configure the on chip SATA type.

IDE Mode: When set to IDE, the SATA controller disables its RAID and AHCI functions and runs in the IDE emulation mode. This is not allowed to access RAID setup utility.

RAID Mode: When set to RAID, the SATA controllerenables both its RAID and AHCI functions. You will be allows access the RAID setup utility at boot time.

ACHI Mode: When set to AHCI,the SATA controller enables its AHCI functionality. Then the RAID function is disabled and cannot be access the RAID setup utility at boot time.

Options available: IDE/RAID/ACHI. Default setting is **IDE Mode**.

☞ Type

Auto: Set parameters automatically. (Default setting)

CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.

ARMD: Use ARMD drive is installed here.

☞ LBA/Large Mode

Configure the device type in the specific IDE channel support LBA Mode.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ Block (Multi-Sector Transfer)

Configure the information of Multi-Sector Transfer Mode.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

Disabled: The data transfer from and to the device occurs one sector at a time.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ PIO Mode

This feature allows you to set the PIO (Programmed Input/Output) mode for the two IDE devices (Master and Slave drives) attached to that particular IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ PIO Mode

This feature allows you to set the PIO (Programmed Input/Output) mode for the two IDE devices (Master and Slave drives) attached to that particular IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ DMA Mode

Configure the DMA mode of the device in the specific IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ S.M.A.R.T Mode

This feature allows you to set the PIO (Programmed Input/Output) mode for the two IDE devices (Master and Slave drives) attached to that particular IDE channel.
Option available: Auto/Disabled. Default setting is **Auto**.

☞ 32Bit Data Transfer

Configure the 32Bit Data Transfer rate.
Option available: Auto/Disabled. Default setting is **Auto**.

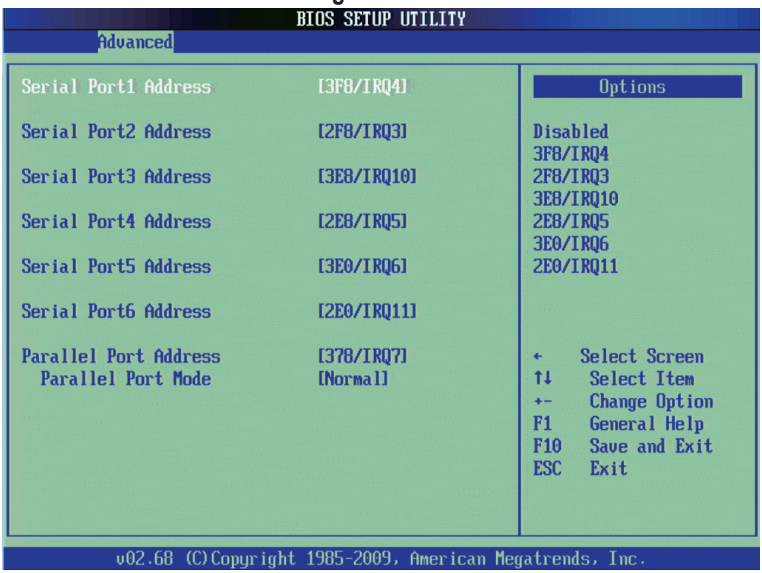
☞ Hard Disk Write Protect

Enable/Dsable Hard Disk Write Protect function.
Options available: Enabled/Disabled/Enhanced. Default setting is **Enhanced**.

☞ IDE Detect Time Out (Sec)

This item allows you to force BIOS to delay the initialization of Hard drive devices up to 35 seconds. The dalay gives your Hard drive devices more time to spin up before the BIOS initialize them.
Press [Enter] to Confiure the Hard disk device unit command timeout.

2-2-3 Serial and Parallel Port Configuration



☞ Serial Port 1/2/3/4/5/6 Address

When enabled allows you to configure the serial port settings. When set to Disabled, displays no configuration for the serial port.

Options available: 3F8/IRQ4, 3E8/IRQ4, 2E8/IRQ3, 3E8/IRQ10, 2E8/IRQ5, 3E0/IRQ6, 2E0/IRQ11,Disabled.

Default setting for Serial Port1 is **3F8/IRQ4**.

Default setting for Serial Port2 is **2E8/IRQ3**.

Default setting for Serial Port3 is **3E8/IRQ10**.

Default setting for Serial Port4 is **2E8/IRQ5**.

Default setting for Serial Port5 is **3E0/IRQ6**.

Default setting for Serial Port6 is **2E0/IRQ11**.

☞ Parallel Port Address

When enabled allows you to configure the parallel port settings.

Options available: 378/IRQ7/278/IRQ5/3BC/IRQ7/Disabled. Default setting is **378/IRQ7**.

☞ Parallel Port Mode

Configure parallel port mode.

Normal Mode: Normal Mode is the same as SPP Mode. SPP stands for Standard Parallel Port. Set this item to Normal Mode, system will transfer protocol for the parallel port. It works all parallel devices.

EPP Mode: The Extended Capabilities Port transfer mode uses DMA protocol to achieve data transfer rates of up tp 2MB/s and provides symmetric bidirectional communication.

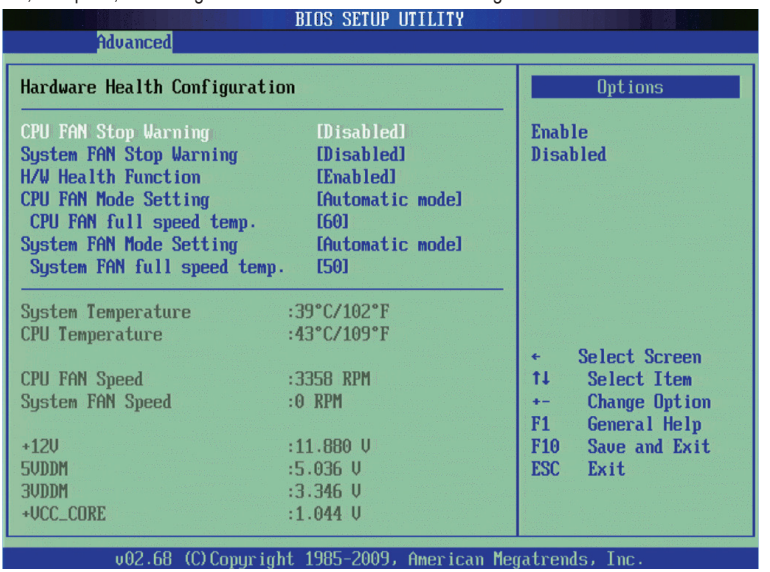
ECP Mode: Enhanced Parallel Port using existing parallel port signals to provide a asymmetric bidirectional communication. It's offering transfer rates of up tp 2MB/s.

ECP+EPP Mode: Enable EPP and ECP Mode.

Options available: Normal/EPP Mode/ECP Mode/EPP+ECP Mode. Default setting is **Normal**.

2-2-4 Hardware Health Configuration

Press Enter to view the Hardware Monitor screen which displays a real-time record of the CPU/system temperature, fan speed, and voltage. Items on this window are non-configurable.



☞ CPU/SystemFan Stop Warning

Enable CPU/System Fan Stop Warning function.

Option available: Enabled/Disabled. Default setting is **Disabled**.

☞ H/W Health Function

Enable Hardware health monitoring function.

Option available: Enabled/Disabled. Default setting is **Enabled**.

☞ H/W Health Function

Enable Hardware health monitoring function.

Option available: Enabled/Disabled. Default setting is **Enabled**.

☞ CPU/System FAN Mode Setting

CPU/System fan configuration mode setting.

Option available: Full On mode/Automatic mode. Default setting is **Automatic mode.**

Displays current CPU and System temperature.

☞ CPU/System full speed temp.

Configure CPU/System fan speed temperature.

Press [Enter] to Confiure the CPU/System fan speed temperature.

☞ System Temperature/CPU Temperature

Displays current CPU and System temperature.

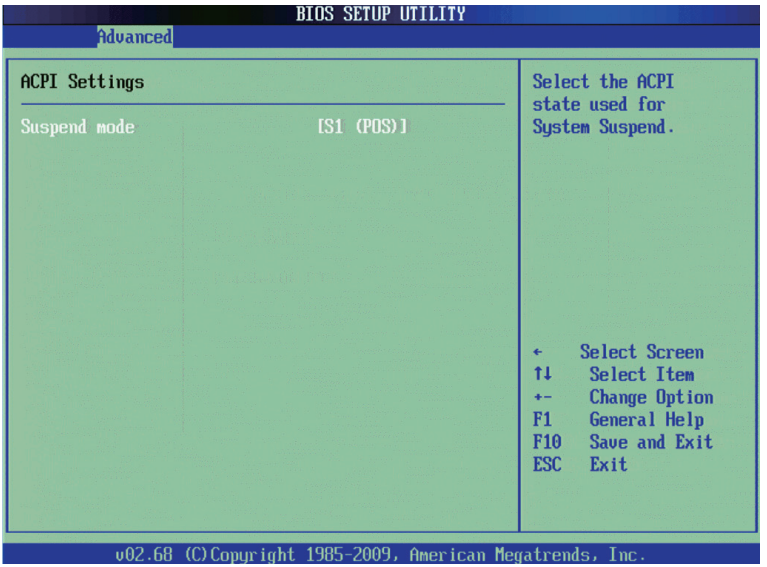
☞ CPU/System FAN Speed (RPM)

Displays current CPU fan speed.

☞ **Current Voltage: 12V/5VDDM/3VDDM/+VCC_CORE**

Displays the current CPU and system voltages.

2-2-5 ACPI Configuration



☞ **Suspend Mode**

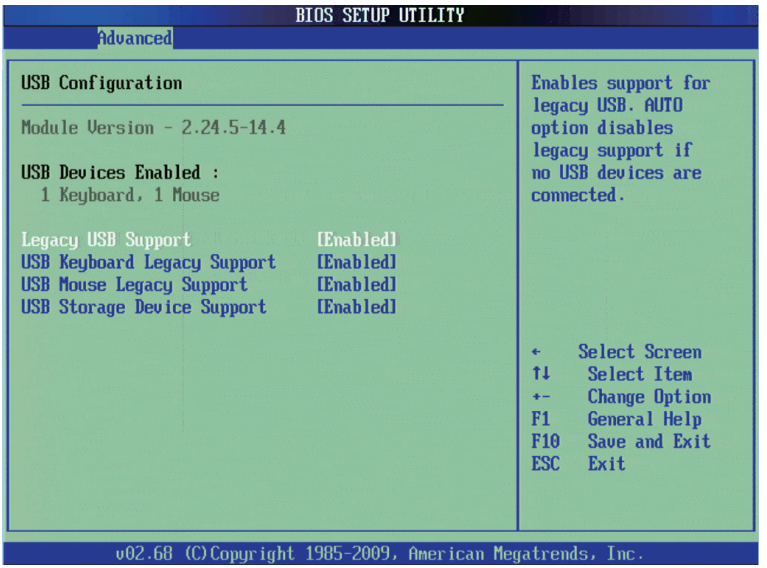
S1 (POS): Enables the system to enter the ACPI S1 (Power on Suspend) sleep state. In S1 sleep state, the system appears suspended and stays in a low power mode. The system can be resumed at any time.

S3 (STR): Enables the system to enter the ACPI S3 (Suspend to RAM) sleep state In S3 sleep state, the system appears to be off and consumes less power than in the S1 state. When signaled by a wake-up device or event, the system resumes to its working state exactly where it was left off.

Auto : Auto configuration.

Options available:S1 (POS)/S3 (STR)/Auto. Default setting is **S1 (POS)**.

2-2-6 USB Configuration



Detected USB Devices

Displays the information of installed USB devices in the system.

Legacy USB Support

Enables or disables support for legacy USB devices.

Options available: Auto/Enabled/Disabled. Default setting is **Enabled**.

USB Keyboard Legacy Support

Enable USB Keyboard Legacy Support function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

USB Mouse Legacy Support

Enable USB Mouse Legacy Support function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

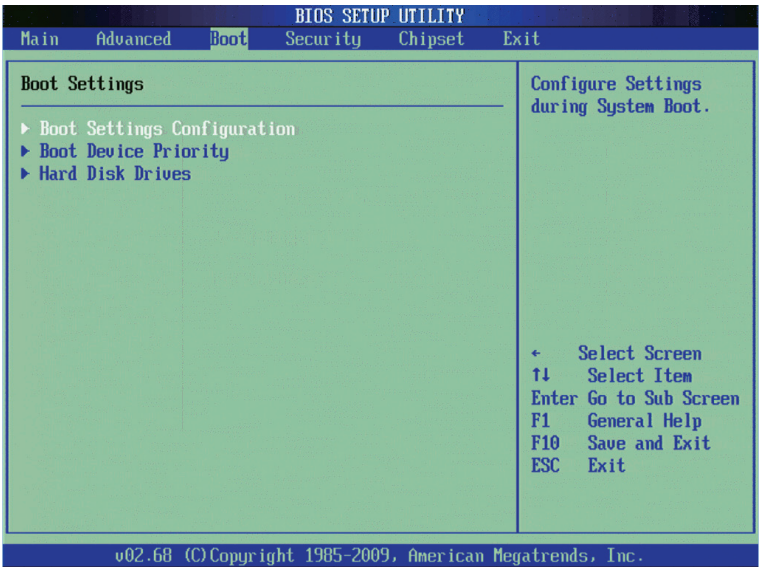
USB Storage Device Support

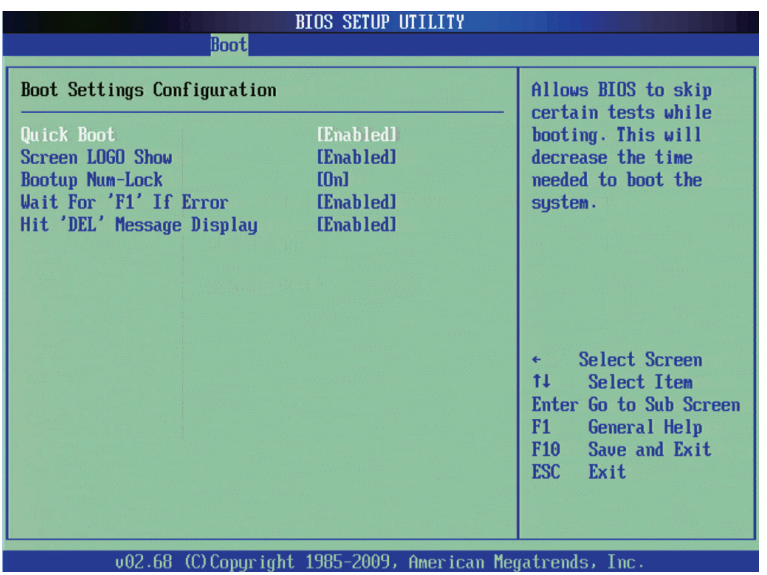
Enable USB Storage Device Support function.

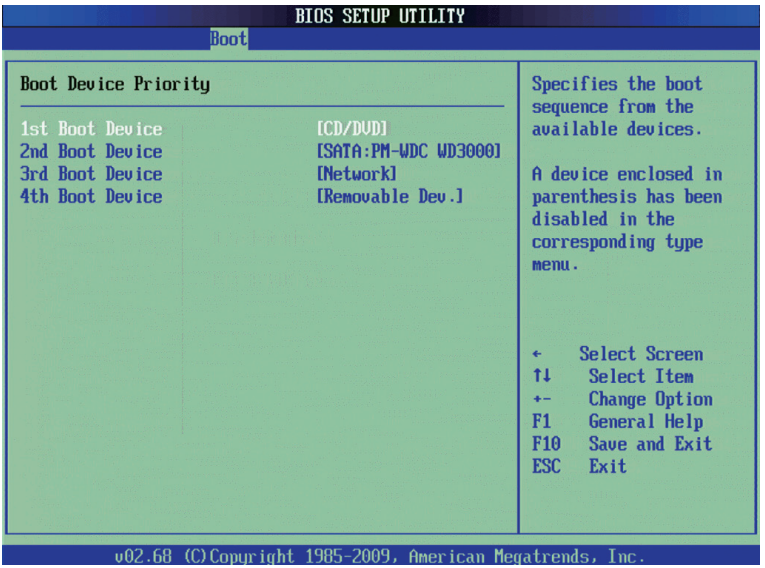
Options available: Enabled/Disabled. Default setting is **Enabled**.

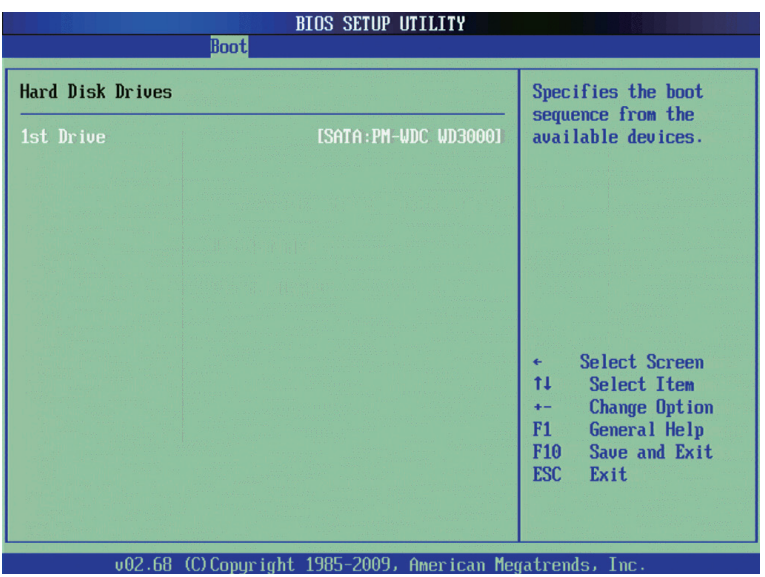
2-3 Boot Menu

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error message if the drive(s) specified is not bootable.






BIOS SETUP UTILITY
Boot
Boot Device Priority
1st Boot Device [CD/DVD]
2nd Boot Device [SATA:PM-WDC WD3000]
3rd Boot Device [Network]
4th Boot Device [Removable Dev.]
Specifies the boot sequence from the available devices.
A device enclosed in parenthesis has been disabled in the corresponding type menu.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.68 (C)Copyright 1985-2009, American Megatrends, Inc.


BIOS SETUP UTILITY
Boot
Hard Disk Drives
1st Drive [SATA:PM-WDC WD3000]
Specifies the boot sequence from the available devices.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.68 (C)Copyright 1985-2009, American Megatrends, Inc.

☞ Quick Boot

Allow BIOS to skip certain tests while booting.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Bootup NumLock

Allows you to select power-on state for NumLock function.

Options available: On/Off. Default setting is **On**.

☞ Wait for 'F1' If Error

The BIOS feature controls the system's response when an error is detected during the boot sequence. When enabled, the BIOS will halt the oot sequence when an error is detected. You will need to press the F1 button at this point. It brings you to the BIOS setup menu where you can adjust the settings to fix the problem.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Hit 'DEL' Message Display

This feature allows you to control the display of the Hit 'DEL' to enter Setup message during memory initialization.

When enabled, the Hit 'DEL' to enter Setup message will appear during memory initialization.

However, if you enable the **QuietBoot** feature, the message will not be displayed. So, if you want the message to appear, you will have to disable Quiet Boot as well.

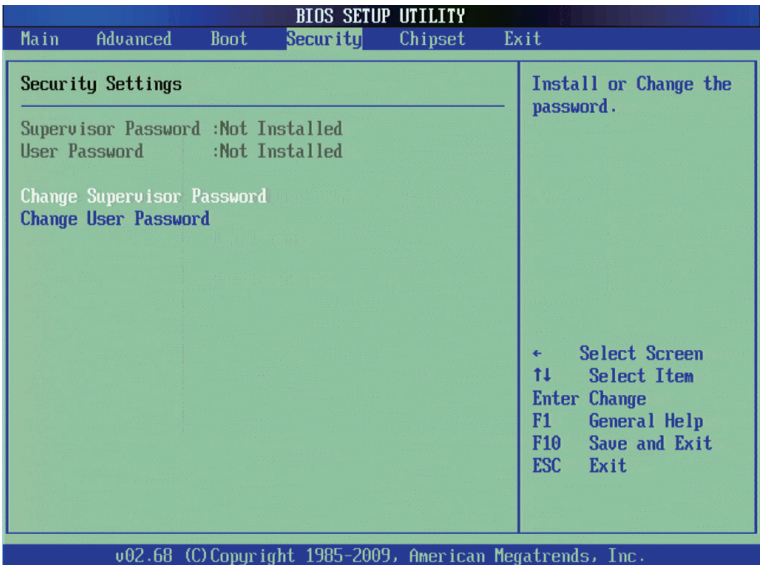
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Boot Device Priority

This field determines which type of device the system attempt to boot from after **BIOS Post** completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

2-4 Security Menu

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.



There are two types of passwords that you can set:

- Supervisor Password
  Entering this password will allow the user to access and change all settings in the Setup Utility.
- User Password
  Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.

☞ **Supervisor Password Status**

This parameter indicates whether a Supervisor Password has been assigned.

☞ **User Password Status**

This parameter indicates whether a user pass- word has been assigned.
To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message "Not Installed" will appear, indicating the password has been cancelled.

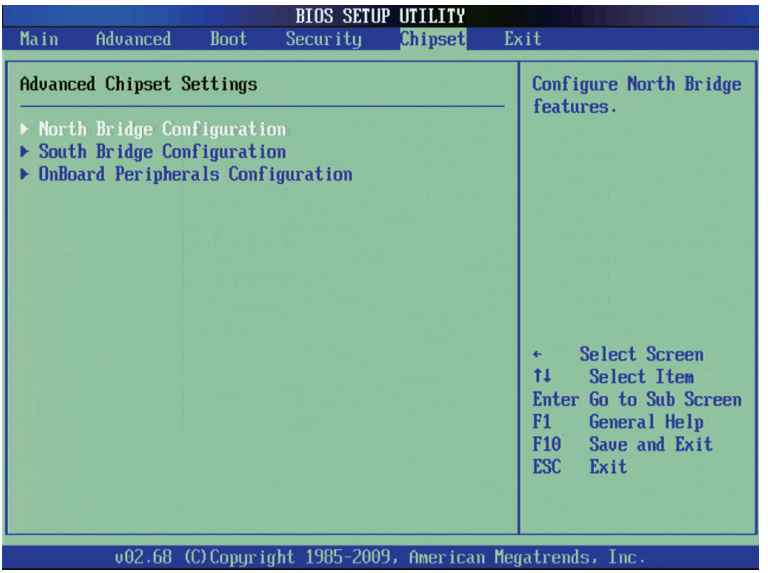
☞ **Change Supervisor Password**

Press Enter to configure the Supervisor password.

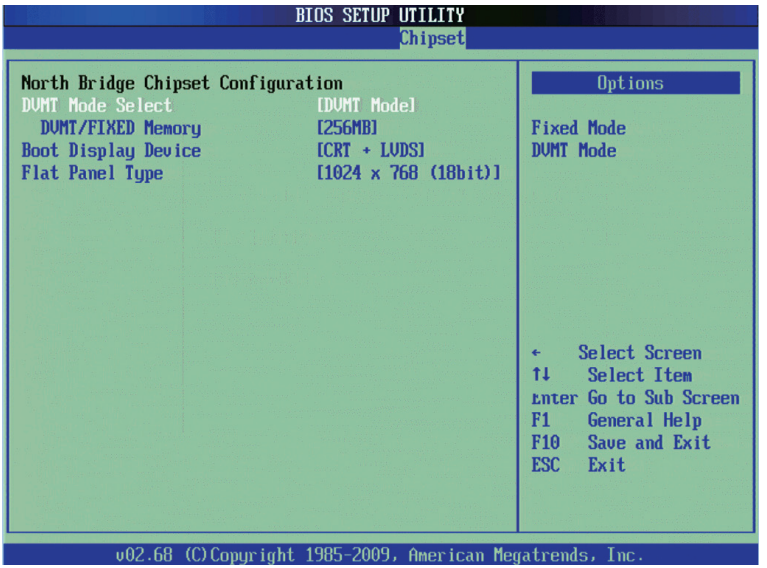
☞ **Change User Password**

Press Enter to configure the user password.

2-5 Chipset Menu



2-5-1 North Bridge Configuration



☞ DVMT Mode Select

Confiigure the DVMT Mode.

Options available: DVMT Mode/Fixed Mode.

Default setting is **DVMT Mode.**

☞ DVMT/Fixed Memory

Select DVMT Pre-Allocated (Fixed) Graphics Memory size used by the Internal graphicsdevice.

Options available: 128MB/256MB/Maximum.

Default setting is **256MB.**

☞ Boot Display Device

Select the Video Device that will be activated during POST.

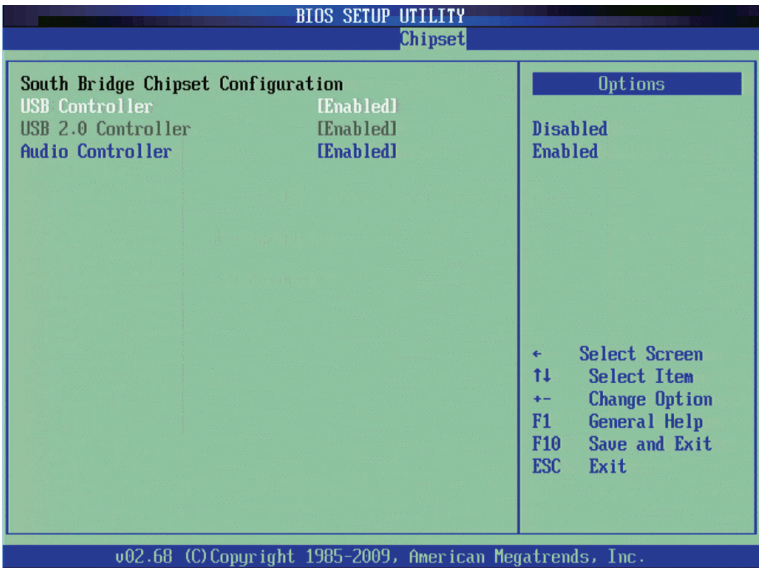
Options available: CRT/LVDS/CRT+LVDS.

☞ Flat Panel Type

Selecting by Internal Graphics Device by selecting appropriate setup item.

Options available: 800x600 (18 bit)/1024x768 (18 bit).

2-5-2 South Bridge Configuration



☞ **USB Controller**

Enable/Disable onboard USB controller.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **USB 2.0 Controller**

Enable/Disable onboard USB 2.0 controller.

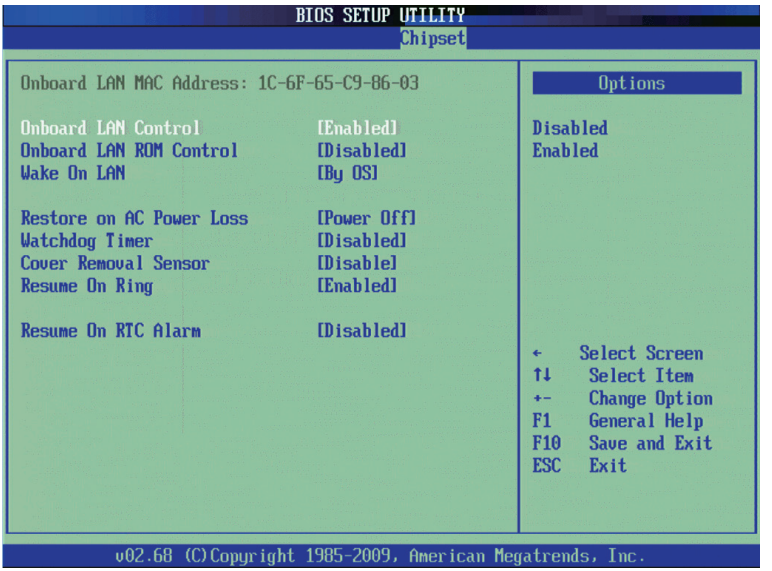
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Audio Controller**

Enable/Disable onboard Audio controller.

Options available: Enabled/Disabled. Default setting is **Enabled**.

2-5-3 Onboard Peripherials Configuration



☞ Onboard LAN Control

Enable/Disable onboard LAN controller.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Onboard LAN ROM Control

Select whether to enable the selected onboard LAN device. When enabled, device expansion ROM will be initialized.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Wake On LAN

Configure Wake On LAN setting.

Options available: By OS/Disabled. Default setting is **By OS**.

☞ Restore on AC Power Loss

This option provides user to set the mode of operation if an AC / power loss occurs.

Power On: System power state when AC cord is re-plugged.

Power Off: Do not power on system when AC power is back.

Last State: Set system to the last sate when AC power is removed.

Options available: Power On/Power Off/Last State. Default setting is **Power Off**.

☞ Watchdog Timer

Enable/Disable Watchdog TImer function.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Cover Removal Sensor

Enable/Disable chassis intrusion alter function.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **Resume On Ring**

Enable/Disable Resume On Ring function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

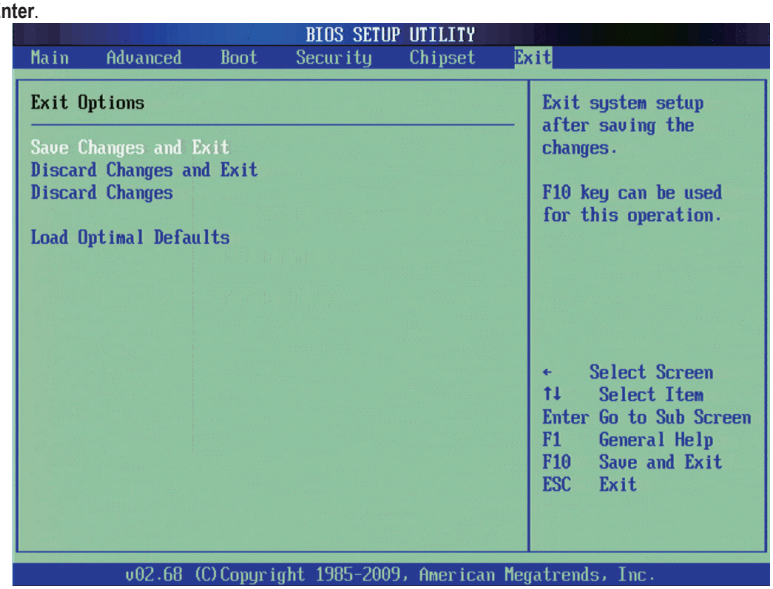
☞ **Resume On RTC Alarm**

Enable/Disable RTC Alarm to power on system function.

Options available: Enabled/Disabled. Default setting is **Disabled**.

2-6 Exit Menu

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press **Enter**.



☞ **Save Changes and Exit**

Saves changes made and close the BIOS setup.

Options available: OK/Cancel.

☞ **Discard Changes and Exit**

Discards changes made and close the BIOS setup.

Options available: OK/Cancel.

☞ **Discard Changes**

Discards all changes made in the BIOS setup.

Options available: OK/Cancel.

☞ **Load Optimal Defaults**

Press <Enter> on this item and then press the <Y> key to load the optimal BIOS default settings.

The BIOS defaults settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

Options available: OK/Cancel.