GA-E350N

User's Manual

Rev. 1001

12ME-E350N-1001R

Declaration of Conformity

We, Manufacturer/Importer,

G.B.T. Technology Trading GMbH

Address: Bullenkoppel 16, 22047 Hamburg, Germany

Declare that the product

Product Type: Motherboard

Product Name: GA-E350N

conforms with the essential requirements of the following directives:

☒ **2004/108/EC EMC Directive:**

☒ Conduction & Radiated Emissions:	EN55022:2006+A1:2007
☒ Immunity:	EN55024:1998+A1:2001+A2:2003
☒ Power-line harmonics:	EN61000-3-2:2006
☒ Power-line flicker:	EN61000-3-3:2008

☒ **2006/95/EC LVD Directive**

☒ Safety:	EN60950-1:2006+A11:2009

☒ **2011/65/EU RoHS Directive**

☒ Restriction of use of certain substances in electronic equipment:	This product does not contain any of the restricted substances listed in Annex II, in concentrations and applications banned by the directive.

☒ **CE marking**

CE (EC conformity marking)

Signature: Timmy Huang

(Stamp) Date: Jun. 15, 2012 Name: Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

FC

Responsible Party Name: G.B.T. INC. (U.S.A.)

Address: 17358 Railroad Street
City of Industry, CA 91748

Phone/Fax No: (626) 854-9338/ (626) 854-9326

hereby declares that the product

Product Name: Motherboard

Model Number: GA-E350N

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109 (a),Class B Digital Device

Supplementary Information:

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

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: Jun. 15, 2012

Copyright

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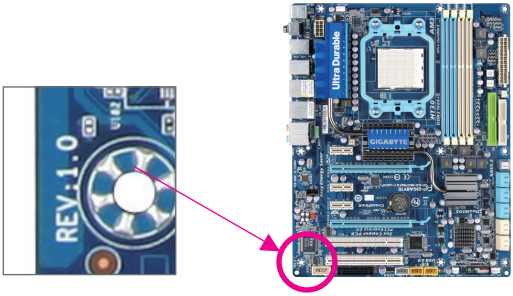
- In order to assist in the use of this product, carefully read the User's Manual.
- For product-related information, check on our website at: http://www.gigabyte.com

Identifying Your Motherboard Revision

The revision number on your motherboard looks like this: "REV: X.X." For example, "REV: 1.0" means the revision of the motherboard is 1.0. Check your motherboard revision before updating motherboard BIOS, drivers, or when looking for technical information.

Example:



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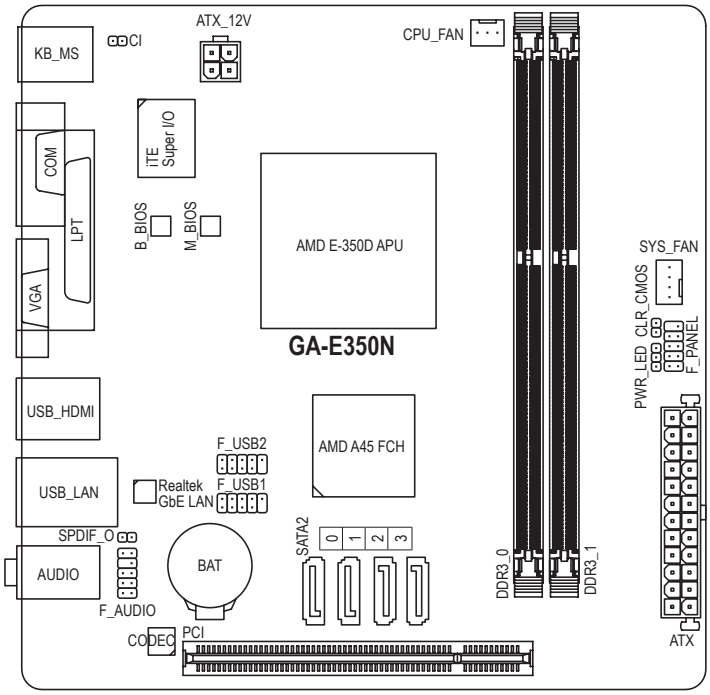
GA-E350N Motherboard Layout

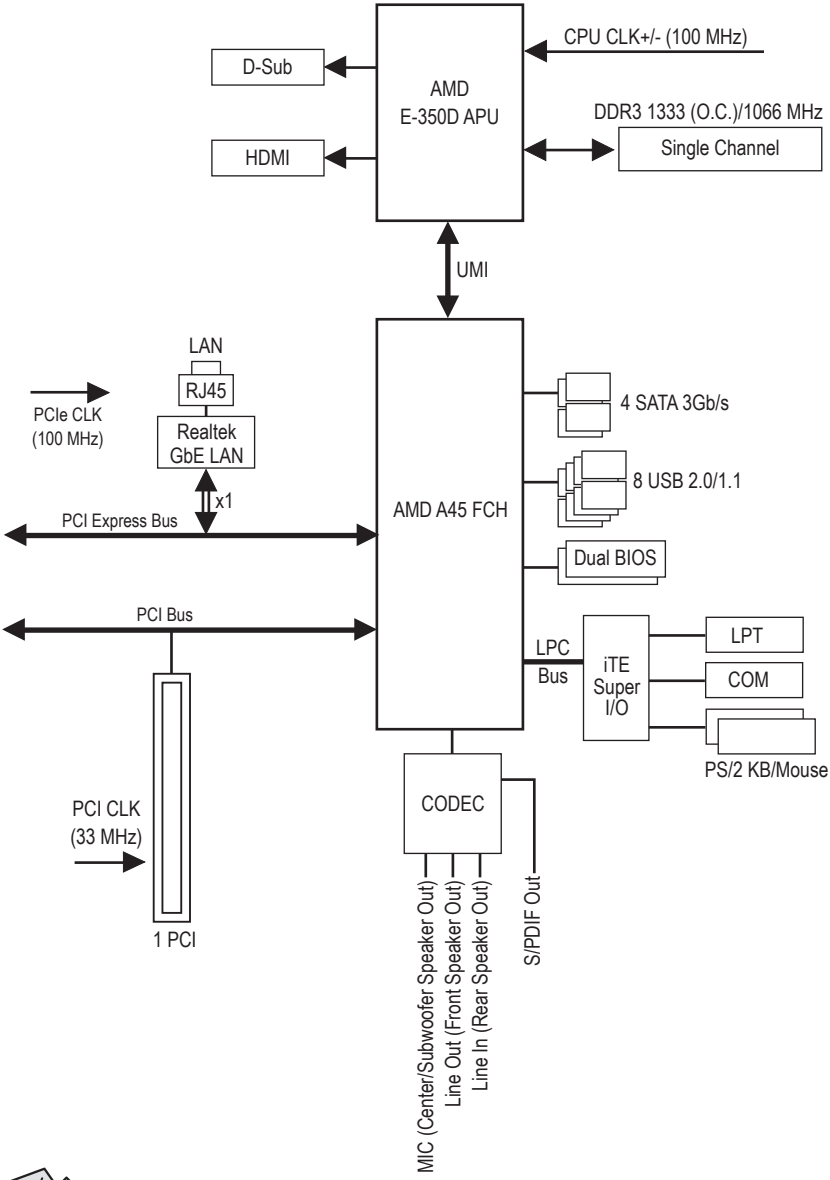


Box Contents

- ☑ GA-E350N motherboard
- ☑ Motherboard driver disk
- ☑ User's Manual
- ☑ Two SATA cables
- ☑ I/O Shield

The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.

GA-E350N Motherboard Block Diagram



For detailed product information/limitation(s), refer to "1-2 Product Specifications."

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, make sure the chassis is suitable for the motherboard.
- 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

APU	◆	Built in with an AMD E-350D Dual-Core processor
	◆	Built in with an AMD Radeon™ HD 6310 (DirectX 11) graphics core
Chipset	◆	AMD A45 FCH
Memory	◆	2 x 1.5V DDR3 DIMM sockets supporting up to 16 GB of system memory * Due to Windows 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than 4 GB.
	◆	Single channel memory architecture
	◆	Support for DDR3 1333 (O.C.)/1066 MHz memory modules (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
Onboard Graphics	◆	Integrated in the APU: - 1 x D-Sub port - 1 x HDMI port, supporting a maximum resolution of 1920x1200
Audio	◆	Realtek HD audio codec
	◆	High Definition Audio
	◆	2/4/5.1/7.1-channel * To configure 7.1-channel audio, you have to use an HD front panel audio module and enable the multi-channel audio feature through the audio driver.
	◆	Support for S/PDIF Out
LAN	◆	Realtek GbE LAN chip (10/100/1000 Mbit)
Expansion Slots	◆	1 x PCI slot
Storage Interface	◆	Chipset: - 4 x SATA 3Gb/s connectors supporting up to 4 SATA 3Gb/s devices
USB	◆	Chipset: - Up to 8 USB 2.0/1.1 ports (4 ports on the back panel, 4 ports available through the internal USB headers)
Internal Connectors	◆	1 x 24-pin ATX main power connector
	◆	1 x 4-pin ATX 12V power connector
	◆	4 x SATA 3Gb/s connectors
	◆	1 x CPU fan header
	◆	1 x system fan header
	◆	1 x front panel header
	◆	1 x front panel audio header
	◆	1 x S/PDIF Out header
	◆	2 x USB 2.0/1.1 headers
	◆	1 x chassis intrusion header
	◆	1 x power LED header
	◆	1 x Clear CMOS jumper

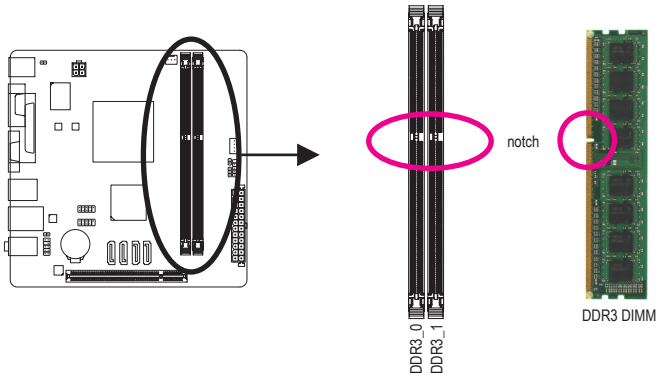
Back Panel Connectors	◆ 1 x PS/2 keyboard port ◆ 1 x PS/2 mouse port ◆ 1 x parallel port ◆ 1 x serial port ◆ 1 x D-Sub port ◆ 1 x HDMI port ◆ 4 x USB 2.0/1.1 ports ◆ 1 x RJ-45 port ◆ 3 x audio jacks (Line In/Line Out/Microphone)
I/O Controller	◆ iTE I/O Controller Chip
Hardware Monitor	◆ System voltage detection ◆ CPU/System temperature detection ◆ CPU/System fan speed detection ◆ CPU overheating warning ◆ CPU/System fan fail warning ◆ CPU/System fan speed control * Whether the CPU/system fan speed control function is supported will depend on the CPU/system cooler you install.
BIOS	◆ 2 x 32 Mbit flash ◆ Use of licensed AWARD BIOS ◆ Support for DualBIOS™ ◆ PnP 1.0a, DMI 2.0, SM BIOS 2.4, ACPI 1.0b
Unique Features	◆ Support for @BIOS ◆ Support for Q-Flash ◆ Support for Xpress Install ◆ Support for Xpress Recovery2 ◆ Support for EasyTune * Available functions in EasyTune may differ by motherboard model. ◆ Support for Smart Recovery ◆ Support for Auto Green ◆ Support for ON/OFF Charge ◆ Support for Cloud OC ◆ Support for Q-Share
Bundled Software	◆ Norton Internet Security (OEM version)
Operating System	◆ Support for Microsoft® Windows 7/Vista/XP
Form Factor	◆ Mini-ITX Form Factor; 17.0cm x 17.0cm

* GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.
* Please visit GIGABYTE's website to check the supported operating system(s) for the software listed in the "Unique Features" and "Bundled Software" columns.

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.
  (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- 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.

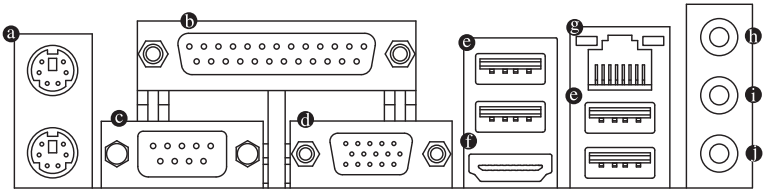


1-4 Installing an Expansion Card

Read the following guidelines before you begin to install an expansion card:

- Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card.
- Always turn off the computer and unplug the power cord from the power outlet before installing an expansion card to prevent hardware damage.

1-5 Back Panel Connectors



ⓐ PS/2 Keyboard and PS/2 Mouse Port

Use the upper port (green) to connect a PS/2 mouse and the lower port (purple) to connect a PS/2 keyboard.

ⓑ Parallel Port

Use the parallel port to connect devices such as a printer, scanner and etc. The parallel port is also called a printer port.

ⓒ Serial Port

Use the serial port to connect devices such as a mouse, modem or other peripherals.

ⓓ D-Sub Port

The D-Sub port supports a 15-pin D-Sub connector. Connect a monitor that supports D-Sub connection to this port.

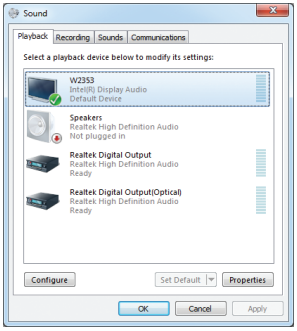
ⓔ USB 2.0/1.1 Port

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.

ⓕ HDMI Port

HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE The HDMI port is HDCP compliant and supports Dolby True HD and DTS HD Master Audio formats. It also supports up to 192KHz/24bit 8-channel LPCM audio output. You can use this port to connect your HDMI-supported monitor. The maximum supported resolution is 1920x1200, but the actual resolutions supported are dependent on the monitor being used.

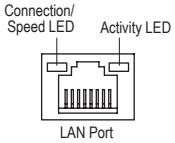
After installing the HDMI device, make sure to set the default sound playback device to HDMI. (The item name may differ depending on your operating system. The screenshot below is from Windows 7.)



In Windows 7, select Start>Control Panel>Hardware and Sound>Sound>Playback, set Intel(R) Display Audio to the default playback device.

ⓖ 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.



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

ⓗ Line In Jack (Blue)

The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

ⓘ Line Out Jack (Green)

The default line out jack. Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/5.1/7.1-channel audio configuration.

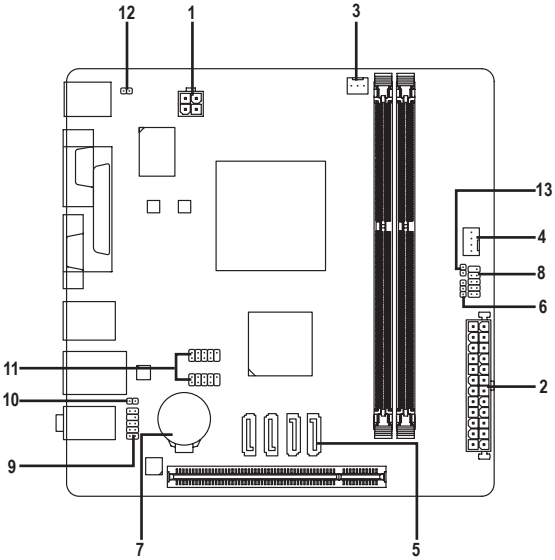
ⓙ Mic In Jack (Pink)

The default Mic in jack. Microphones must be connected to this jack.

To configure 7.1-channel audio, you have to use an HD front panel audio module and enable the multi-channel audio feature through the audio driver.

- 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.

1-6 Internal Connectors



1)	ATX_12V	8)	F_PANEL
2)	ATX	9)	F_AUDIO
3)	CPU_FAN	10)	SPDIF_O
4)	SYS_FAN	11)	F_USB1/F_USB2
5)	SATA2 0/1/2/3	12)	CI
6)	PWR_LED	13)	CLR_CMOS
7)	BAT		

Read the following guidelines before connecting external devices:

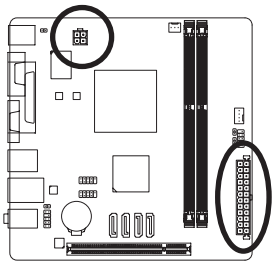
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the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

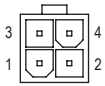
1/2) ATX_12V/ATX (2x2 12V Power Connector and 2x12 Main Power Connector)

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 (300W 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.

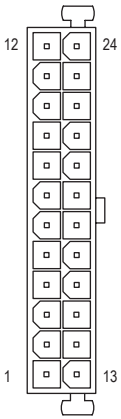




ATX_12V

ATX_12V:

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



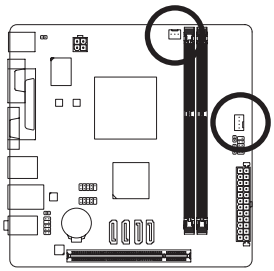
ATX

ATX:

Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON (soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5VSB (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V (Only for 2x12-pin ATX)	23	+5V (Only for 2x12-pin ATX)
12	3.3V (Only for 2x12-pin ATX)	24	GND (Only for 2x12-pin ATX)

3/4) CPU_FAN/SYS_FAN (Fan Headers)

The motherboard has a 3-pin CPU fan header (CPU_FAN) and a 4-pin system fan header (SYS_FAN). 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). For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.



CPU_FAN

SYS_FAN

CPU_FAN:

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

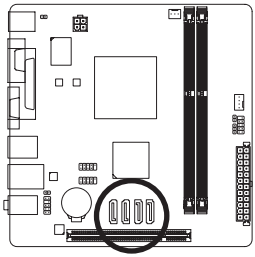
SYS_FAN:

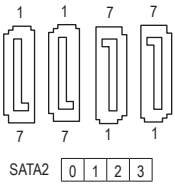
Pin No.	Definition
1	GND
2	+12V /Speed Control
3	Sense
4	VCC

- 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.

5) SATA2 0/1/2/3 (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.

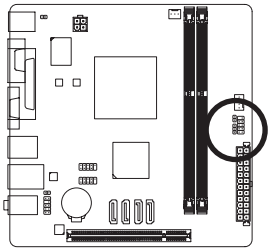




Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

6) PWR_LED (System Power LED Header)

This header can be used to connect a system power LED on the chassis to indicate system power status. The LED is on when the system is operating. The LED is off when the system is in S3/S4 sleep state or powered off (S5).

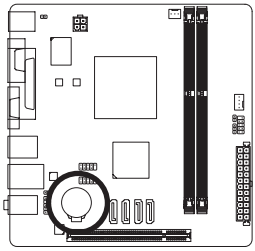


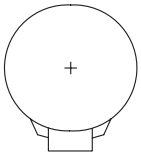
Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

System Status	LED
S0	On
S3/S4/S5	Off

7) BAT (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.





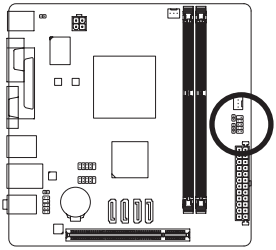
You may clear the CMOS values by removing the battery:

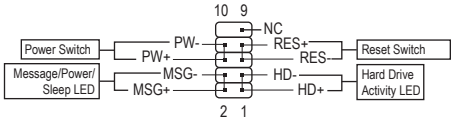
1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4.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

8) F_PANEL (Front Panel Header)

Connect the power switch, reset switch 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.





- **MSG** (Message/Power/Sleep LED, Yellow):

System Status	LED
S0	On
S3/S4/S5	Off

Connects to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED is off when the system is in S3/S4 sleep state or powered off (S5).

- **PW** (Power Switch, Red):
  Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management Setup," for more information).

- **HD** (Hard Drive Activity LED, Blue):
  Connects to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

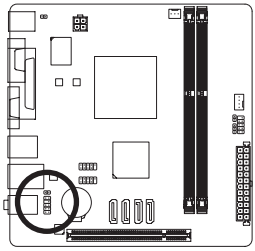
- **RES** (Reset Switch, Green):
  Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

- **NC** (Purple):
  No connection.

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 and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

9) 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.



For HD Front Panel Audio:

Pin No.	Definition
1	MIC2_L
2	GND
3	MIC2_R
4	-ACZ_DET
5	LINE2_R
6	GND
7	FAUDIO_JD
8	No Pin
9	LINE2_L
10	GND

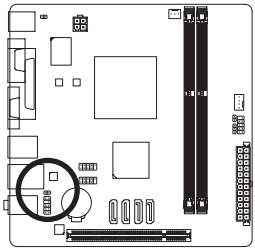
For AC'97 Front Panel Audio:

Pin No.	Definition
1	MIC
2	GND
3	MIC Power
4	NC
5	Line Out (R)
6	NC
7	NC
8	No Pin
9	Line Out (L)
10	NC

- The front panel audio header supports HD audio by default.
- Audio signals will be present on both of the front and back panel audio connections simultaneously.
- Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

10) SPDIF_O (S/PDIF Out Header)

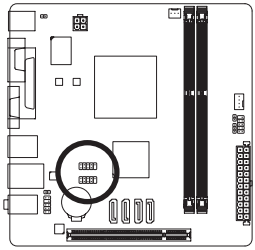
This header supports digital S/PDIF Out and connects a S/PDIF digital audio cable (provided by expansion cards) for digital audio output from your motherboard to certain expansion cards like graphics cards and sound cards. For example, some graphics cards may require you to use a S/PDIF digital audio cable for digital audio output from your motherboard to your graphics card if you wish to connect an HDMI display to the graphics card and have digital audio output from the HDMI display at the same time. For information about connecting the S/PDIF digital audio cable, carefully read the manual for your expansion card.



Pin No.	Definition
1	SPDIFO
2	GND

11) F_USB1/F_USB2 (USB 2.0/1.1 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.

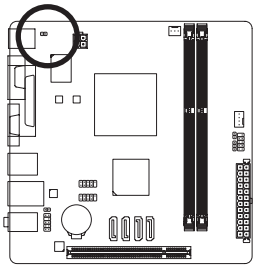


Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	USB DY-
5	USB DX+
6	USB DY+
7	GND
8	GND
9	No Pin
10	NC

- Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB 2.0/1.1 header.
- Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket.

12) CI (Chassis Intrusion Header)

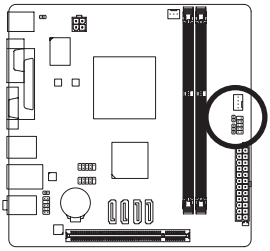
This motherboard provides a chassis detection feature that detects if the chassis cover has been removed. This function requires a chassis with chassis intrusion detection design.



Pin No.	Definition
1	Signal
2	GND

13) CLR_CMOS (Clear 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, use a metal object like a screwdriver to touch the two pins for a few seconds.



Open: Normal

Short: Clear CMOS Values

- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- 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).

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 <Delete> key during the POST when the power is turned on.

To upgrade the BIOS, use either the GIGABYTE Q-Flash or @BIOS utility.

- Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system.
- @BIOS is a Windows-based utility that searches and downloads the latest version of BIOS from the Internet and updates the BIOS.

- Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not 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/clear CMOS jumper in Chapter 1 for how to clear the CMOS values.)

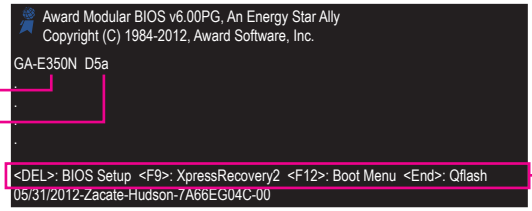
2-1 Startup Screen

The following screens may appear when the computer boots.

A. The LOGO Screen (Default)

Function Keys

B. The POST Screen



Motherboard Model

BIOS Version

Function Keys

2-2 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 a sub-menu.

(Sample BIOS Version: D5a)

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software

▶ MB Intelligent Tweaker(M.I.T.)	Load Fail-Safe Defaults
▶ Standard CMOS Features	Load Optimized Defaults
▶ Advanced BIOS Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PC Health Status	Exit Without Saving

ESC: Quit	↑↓→←: Select Item	F11: Save CMOS to BIOS
F8: Q-Flash	F10: Save & Exit Setup	F12: Load CMOS from BIOS

Change CPU's Clock & Voltage

- 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 Optimized 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.

■ 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 and then press <Enter> to complete.

2-3 MB Intelligent Tweaker(M.I.T.)

```
CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
MB Intelligent Tweaker(M.I.T.)

  ▶ IGX Configuration                    [Press Enter]        Item Help
    CPU Frequency(MHz)                   [Normal]             Menu Level ▶
    CPU Host Clock Control               [Auto]
  x CPU Host Clock                        100
    Set Memory Clock                     [Auto]
  x Memory Clock                          x5.33      1066Mhz
  ▶ DRAM Configuration                   [Press Enter]
  ******** System Voltage Optimized ********
    System Voltage Control               [Auto]
  x DIMM OverVoltage Control              Auto
    Normal CPU Vcore                     1.3500V

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
        F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

Whether the system will work stably with the overclock/overvoltage settings you made is dependent on your overall system configurations. Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Inadequately altering the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.)

☞ IGX Configuration

```
CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
IGX Configuration

    UMA Frame Buffer Size                [Auto]               Item Help
    VGA Core Clock control               [Auto]               Menu Level ▶▶
  x VGA Core Clock(MHz)                   492

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
        F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

☞ UMA Frame Buffer Size

Frame buffer size is the total amount of system memory allocated solely for the onboard graphics controller. MS-DOS, for example, will use only this memory for display. Options are: Auto (default), 256MB, 512MB, 1024MB.

☞ VGA Core Clock control

Allows you to determine whether to manually set the VGA Core clock. (Default: Auto)

☞ VGA Core Clock(MHz)

Allows you to set the onboard graphics clock. The adjustable range is from 300 MHz to 2000 MHz. This item is configurable only if the **VGA Core Clock control** option is set to **Manual**.

(Note) This item is present only when you install a CPU that supports this feature.

☞ CPU Frequency(MHz)

Allows you to manually set the CPU host frequency. Options are 1600MHz. (Default: Normal)

☞ CPU Host Clock Control

Enables or disables the control of CPU host clock. **Auto** (default) allows the BIOS to automatically adjust the CPU host frequency. **Manual** allows the **CPU Frequency (MHz)** item below to be configurable.

Note: If your system fails to boot after overclocking, please wait for 20 seconds to allow for automated system reboot, or clear the CMOS values to reset the board to default values. (Default: Auto)

☞ CPU Host Clock

Allows you to manually set the CPU host clock. The adjustable range is from 100 MHz to 120 MHz. This item is configurable only when CPU Host Clock Control is set to Manual.

☞ Set Memory Clock

Determines whether to manually set the memory clock. **Manual** allows the memory clock control item below to be configurable. **Auto** lets BIOS automatically set the memory clock as required. **Manual** allows the memory clock control item below to be configurable. (Default: Auto)

☞ Memory Clock

This option is configurable only when **Set Memory Clock** is set to **Manual**. Options are: X5.33, X6.66.

☞ DRAM Configuration

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
DRAM Configuration

DDR3 Timing Items	[Auto]	SPD	Auto
x 1T/2T Command Timing	Auto	--	--
x CAS# latency	Auto	9T	8T
x RAS to CAS R/W Delay	Auto	9T	8T
x Row Precharge Time	Auto	9T	8T
x Minimum RAS Active Time	Auto	24T	20T
x TwTr Command Delay	Auto	5T	4T
x Trfc0 for DIMM1	Auto	110ns	110ns
x Trfc1 for DIMM2	Auto	--	--
x Write Recovery Time	Auto	10T	8T
x Precharge Time	Auto	5T	4T
x Row Cycle Time	Auto	33T	27T
x RAS to RAS Delay	Auto	4T	4T
x Four Bank Activate Window	Auto	--	--
Bank Interleaving	[Enabled]		

Item Help
Menu Level ▶

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ DDR3 Timing Items

Manual allows all DRAM timing control items below to be configurable.

Options are: Auto (default), Manual.

☞ 1T/2T Command Timing

Options are: Auto (default), 1T, 2T.

☞ CAS# latency

Options are: Auto (default), 5T~14T.

☞ RAS to CAS R/W Delay

Options are: Auto (default), 5T~14T.

☞ **Row Precharge Time**
Options are: Auto (default), 5T~14T.

☞ **Minimum RAS Active Time**
Options are: Auto (default), 15T~36T.

☞ **TwTr Command Delay**
Options are: Auto (default), 4T~8T.

☞ **Trfc0 for DIMM1**
Options are: Auto (default), 90ns, 110ns, 160ns, 300ns, 350ns.

☞ **Trfc1 for DIMM2**
Options are: Auto (default), 90ns, 110ns, 160ns, 300ns, 350ns.

☞ **Write Recovery Time**
Options are: Auto (default), 5T~8T, 10T, 12T, 14T, 16T.

☞ **Precharge Time**
Options are: Auto (default), 4T~8T.

☞ **Row Cycle Time**
Options are: Auto (default), 20T~54T.

☞ **RAS to RAS Delay**
Options are: Auto (default), 4T~8T.

☞ **Four Bank Activate Window**
Options are: Auto (default), 16T~40T.

☞ **Rank Interleaving**
Enables or disables memory rank interleaving. Enabled allows the system to simultaneously access different ranks of the memory to increase memory performance and stability. (Default: Enabled)

********** System Voltage Optimized **********

☞ **System Voltage Control**
Determines whether to manually set the system voltages. **Manual** allows all voltage control items below to be configurable. Auto lets the BIOS automatically set the system voltages as required. (Default)

☞ **DIMM Voltage**
Allows you to set memory voltage.

▸▸ Normal	Supplies the memory voltage as required. (Default)
▸▸ +0.100V ~ +0.300V	The adjustable range is from +0.100V to +0.300V.

Note: Increasing memory voltage may result in damage to the memory or reduce the useful life of the memory.

☞ **Normal CPU Vcore**
Displays the normal operating voltage of your CPU.

2-4 Standard CMOS Features

```
CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
Standard CMOS Features

Date (mm:dd:yy)                Tue, May  22  2012        Item Help
Time (hh:mm:ss)                22:31:24                  Menu Level ▶

▶ IDE Channel 0 Master         [None]
▶ IDE Channel 0 Slave          [None]
▶ IDE Channel 1 Master         [None]
▶ IDE Channel 1 Slave          [None]

  Halt On                      [All, But Keyboard]

  Base Memory                  640K
  Extended Memory              766M

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
      F5: Previous Values    F6: Fail-Safe Defaults          F7: Optimized Defaults
```

☞ Date (mm:dd:yy)

Sets the system date.

☞ Time (hh:mm:ss)

Sets the system time.

☞ IDE Channel 0, 1 Master/Slave

▸▸ IDE HDD Auto-Detection

Press <Enter> to autodetect the parameters of the SATA device on this channel.

▸▸ IDE Channel 0, 1 Master/Slave

Configure your STA devices by using one of the two methods below:

- Auto — Lets the BIOS automatically detect SATA devices during the POST. (Default)
- None — If no SATA devices are used, set this item to **None** so the system will skip the detection of the device during the POST for faster system startup.

▸▸ Access Mode — Sets the hard drive access mode. Options are: Auto (default), CHS, LBA, Large.

The following fields display your hard drive specifications. If you wish to enter the parameters manually, refer to the information on the hard drive.

▸▸ Capacity — Approximate capacity of the currently installed hard drive.

☞ Halt On

Allows you to determine whether the system will stop for an error during the POST.

Options are: "All Errors," "No Errors," "All, But Keyboard". (Default)

☞ Memory

These fields are read-only and are determined by the BIOS POST.

2-5 Advanced BIOS Features

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
Advanced BIOS Features

		Item Help
▶ IGX Configuration	[Press Enter]	Menu Level ▶
AMD C6 Support	[Disabled]	
Virtualization	[Disabled]	
AMD K8 Cool&Quiet control	[Auto]	
C-state Pmin	[Auto]	
▶ Hard Disk Boot Priority	[Press Enter]	
EFI CD/DVD Boot Option	[Auto]	
First Boot Device	[Hard Disk]	
Second Boot Device	[CDROM]	
Third Boot Device	[USB-HDD]	
Password Check	[Setup]	
HDD S.M.A.R.T. Capability	[Disabled]	
Away Mode	[Disabled]	
Full Screen LOGO Show	[Enabled]	
Backup BIOS Image to HDD	[Disabled]	
Init Display First	[PCI Slot]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ IGX Configuration

The settings in this submenu are synchronous to those under the same items on the **MB Intelligent Tweaker(M.I.T.)** main menu.

☞ AMD C6 Support

Allows you to determine whether to let the CPU enter C6 mode in system halt state. When enabled, the CPU core frequency will be reduced during system halt state to decrease power consumption. The C6 state is a more enhanced power-saving state than C1. (Default: Disabled)

☞ Virtualization

Virtualization enhanced by Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. (Default: Disabled)

☞ AMD K8 Cool&Quiet control

- ▸▸ Auto — Lets the AMD Cool'n'Quiet driver dynamically adjust the CPU clock and VID to reduce heat output from your computer and its power consumption. (Default)
- ▸▸ Disabled — Disables this function.

☞ C-state Pmin

Allows you to determine whether to let the CPU enter C1 mode in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

☞ Hard Disk Boot Priority

Specifies the sequence of loading the operating system from the installed hard drives.

Use the up or down arrow key to select a hard drive, then press the plus key <+> (or <PageUp>) or the minus key <-> (or <PageDown>) to move it up or down on the list. Press <Esc> to exit this menu when finished.

☞ EFI CD/DVD Boot Option

Set this item to **EFI** if you want to install the operating system to a hard drive larger than 2.2 TB. Make sure the operating system to be installed supports booting from a GPT partition, such as Windows 7 64-bit and Windows Server 2003 64-bit. **Auto** lets the BIOS automatically configure this setting depending on the hard drive you install. (Default: Auto)

First/Second/Third Boot Device

Specifies the boot order from the available devices. Use the up or down arrow key to select a device and press <Enter> to accept. Options are: LS120, Hard Disk, CDROM, ZIP, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, Legacy LAN, Disabled.

Password Check

Specifies whether a password is required every time the system boots, or only when you enter BIOS Setup. After configuring this item, set the password(s) under the **Set Supervisor/User Password** item in the BIOS Main Menu.

- Setup — A password is only required for entering the BIOS Setup program. (Default)
- System — A password is required for booting the system and for entering the BIOS Setup program.

HDD S.M.A.R.T. Capability

Enables or disables the S.M.A.R.T. (Self Monitoring and Reporting Technology) capability of your hard drive. This feature allows your system to report read/write errors of the hard drive and to issue warnings when a third party hardware monitor utility is installed. (Default: Disabled)

Away Mode

Enables or disables Away Mode in Windows XP Media Center operating system.

Away Mode allows the system to silently perform unattended tasks while in a low-power mode that appears off. (Default: Disabled)

Full Screen LOGO Show

Allows you to determine whether to display the GIGABYTE Logo at system startup. **Disabled** displays normal POST message. (Default: Enabled)

Backup BIOS Image to HDD

Allows the system to copy the BIOS image file to the hard drive. If the system BIOS is corrupted, it will be recovered from this image file. (Default: Disabled)

Init Display First

Specifies the first initiation of the monitor display from the installed PCI graphics card or the onboard graphics.

- PCI Slot — Sets the graphics card on the PCI Slot as the first display. (Default)
- Onboard — Sets the onboard graphics as the first display.

2-6 Integrated Peripherals

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
Integrated Peripherals

			Item Help
	OnChip SATA Controller	[Enabled]	Menu Level ▶
	OnChip SATA Type	[Native IDE]	
x	OnChip SATA Port as ESP	Press Enter	
	Onboard LAN Function	[Enabled]	
	Onboard LAN Boot ROM	[Disabled]	
▶	SMART LAN	[Press Enter]	
	Onboard Audio Function	[Enabled]	
	USB Controllers	[Enabled]	
	USB Legacy Function	[Enabled]	
	USB Storage Function	[Enabled]	
	Onboard Serial Port 1	[3F8/IRQ4]	
	Onboard Parallel Port	[378/IRQ7]	
	Parallel Port Mode	[SPP]	
x	ECP Mode Use DMA	3	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ OnChip SATA Controller

Enables or disables the integrated SATA controllers. (Default: Enabled)

☞ OnChip SATA Type

Configures the operating mode of the integrated SATA controller.

- ▸▸ Native IDE — Allows the SATA controllers to operate in Native IDE mode. **Enabled** Native IDE mode if you wish to install operating systems that support Native mode. (Default)
- ▸▸ AHCI — Configures the SATA controller to AHCI mode. Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug.

☞ OnChip SATA Port as ESP

```
CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
OnChip SATA Port as ESP

Port0 as ESP        [Disabled]        Item Help
Port1 as ESP        [Disabled]        Menu Level ▸▸
Port2 as ESP        [Disabled]
Port3 as ESP        [Disabled]

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

☞ Port0 as ESP/Port1 as ESP/Port2 as ESP/Port3 as ESP

This option is configurable only when **OnChip SATA Type** is set to **AHCI**. **Enabled** will speed up the hot plug detection of the connected SATA device. (Default: Disabled)

☞ Onboard LAN Function

Enables or disables the onboard LAN function. (Default: Enabled)

If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to **Disabled**.

☞ Onboard LAN Boot ROM

Allows you to decide whether to activate the boot ROM integrated with the onboard LAN chip. (Default: Disabled)

☞ SMART LAN (LAN Cable Diagnostic Function)

```
CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
SMART LAN

Start detecting at Port.....        Item Help
Part1-2  Status = Open  / Length =  0m   Menu Level ▸▸
Part3-6  Status = Open  / Length =  0m
Part4-5  Status = Open  / Length =  0m
Part7-8  Status = Open  / Length =  0m

↑↓→←: Move   Enter: Select   +/-/PU/PD: Value   F10: Save   ESC: Exit   F1: General Help
F5: Previous Values   F6: Fail-Safe Defaults   F7: Optimized Defaults
```

This motherboard incorporates cable diagnostic feature designed to detect the status of the attached LAN cable. This feature will detect cabling issue and report the approximate distance to the fault or short.

☞ **Onboard Audio Function**

Enables or disables the onboard audio function. (Default: Enabled)

If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to Disabled.

☞ **USB Controllers**

Enables or disables the integrated USB controller. (Default: Enabled)

Disabled will turn off all of the USB functionalities below.

☞ **USB Legacy Function**

Allows USB keyboard to be used in MS-DOS. (Default: Enabled)

☞ **USB Storage Function**

Determines whether to detect USB storage devices, including USB flash drives and USB hard drives during the POST. (Default: Enabled)

☞ **Onboard Serial Port 1**

Enables or disables the first serial port and specifies its base I/O address and corresponding interrupt. Options are: Auto, 3F8/IRQ4 (default), 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled.

☞ **Onboard Parallel Port**

Enables or disables the onboard parallel port (LPT) and specifies its base I/O address and corresponding interrupt. Options are: 378/IRQ7 (default), 278/IRQ5, 3BC/IRQ7, Disabled.

☞ **Parallel Port Mode**

Selects an operating mode for the onboard parallel (LPT) port. Options are: SPP (Standard Parallel Port) (Default), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port), ECP+EPP.

☞ **ECP Mode Use DMA**

Selects DMA channel for the LPT port in ECP mode. This item is configurable only if **Parallel Port Mode** is set to **ECP** or **ECP+EPP** mode. Options are: 3 (default), 1.

2-7 Power Management Setup

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
Power Management Setup

			Item Help
	ACPI Suspend Type	[S3(STR)]	Menu Level ▶
	Soft-Off by Power button	[Instant-off]	
	USB Wake Up from S3	[Enabled]	
	Modem Ring Resume	[Disabled]	
	PME Event Wake Up	[Enabled]	
	HPET Support (Note)	[Enabled]	
	Power On By Mouse	[Disabled]	
	Power On By Keyboard	[Disabled]	
x	KB Power ON Password	Enter	
	AC Back Function	[Soft-Off]	
	Power-On by Alarm	[Disabled]	
x	Date (of Month)	Everyday	
x	Resume Time (hh:mm:ss)	0 : 0 : 0	
	ErP Support	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

(Note) Supported on Windows 7/Vista operating system only.

☞ ACPI Suspend Type

Specifies the ACPI sleep state when the system enters suspend.

- ▸▸ S3(STR) Enables the system to enter the ACPI S3 (Suspend to RAM) sleep state (default). 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.

☞ Soft-Off by Power button

Configures the way to turn off the computer in MS-DOS mode using the power button.

- ▸▸ Instant-Off Press the power button and then the system will be turned off instantly. (Default)
- ▸▸ Delay 4 Sec Press and hold the power button for 4 seconds to turn off the system. If the power button is pressed for less than 4 seconds, the system will enter suspend mode.

☞ USB Wake Up from S3

Allows the system to be awakened from ACPI S3 sleep state by a wake-up signal from the installed USB device. (Default: Enabled)

☞ Modem Ring Resume

Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a modem that supports wake-up function. (Default: Disabled)

☞ PME Event Wake Up

Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a PCI or PCIe device. Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead. (Default: Enabled)

☞ HPET Support (Note)

Enables or disables High Precision Event Timer (HPET) for Windows 7/Vista operating system. (Default: Enabled)

☞ Power On By Mouse

Allows the system to be turned on by a PS/2 mouse wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

- ▸▸ Disabled Disables this function. (Default)
- ▸▸ Double Click Double click on left button on the PS/2 mouse to turn on the system.

☞ Power On By Keyboard

Allows the system to be turned on by a PS/2 keyboard wake-up event.

Note: To use this function, you need an ATX power supply providing at least 1A on the +5VSB lead.

- ▸▸ Disabled Disables this function. (Default)
- ▸▸ Password Set a password with 1~5 characters to turn on the system.
- ▸▸ Any KEY Press any key on the keyboard to turn on the system.
- ▸▸ Keyboard 98 Press POWER button on the Windows 98 keyboard to turn on the system.

☞ KB Power ON Password

Set the password when **Power On by Keyboard** is set to **Password**.

Press <Enter> on this item and set a password with up to 5 characters and then press <Enter> to accept. To turn on the system, enter the password and press <Enter>.

Note: To cancel the password, press <Enter> on this item. When prompted for the password, press <Enter> again without entering the password to clear the password settings.

(Note) Supported on Windows 7/Vista operating system only.

☞ AC Back Function

Determines the state of the system after the return of power from an AC power loss.

- ▸▸ Soft-Off — The system stays off upon the return of the AC power. (Default)
- ▸▸ Full-On — The system is turned on upon the return of the AC power.
- ▸▸ Memory — The system returns to its last known awake state upon the return of the AC power.

☞ Power-On by Alarm

Determines whether to power on the system at a desired time. (Default: Disabled)

If enabled, set the date and time as following:

- ▸▸ Date (of Month) Alarm: Turn on the system at a specifictime on each day or on a specificday in a month.
- ▸▸ Resume Time (hh: mm: ss): Set the time at which the system will be powered on automatically.

Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective.

☞ ErP Support

Determines whether to let the system consume less than 1W power in S5 (shutdown) state. (Default: Disabled)

Note: When this item is set to **Enabled**, the following four functions will become unavailable: PME event wake up, power on by mouse, power on by keyboard, and wake on LAN.

2-8 PC Health Status

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software
PC Health Status

		Item Help
Hardware Thermal Control	[Enabled]	Menu Level ▸
Reset Case Open Status	[Disabled]	
Case Opened	No	
Vcore	1.392V	
DDR15V	1.488V	
+12V	12.168V	
VCC3	3.400V	
Current System Temperature	37°C	
Current CPU Temperature	37°C	
Current CPU FAN Speed	1264 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Warning Temperature	[Disabled]	
System Smart FAN Control	[Enabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☞ Hardware Thermal Control

Enables or disables the CPU overheating protection function. When enabled, the CPU core voltage and ratio will be reduced when the CPU is overheated. (Default: Enabled)

☞ Reset Case Open Status

- ▸▸ Disabled — Keeps or clears the record of previous chassis intrusion status. (Default)
- ▸▸ Enabled — Clears the record of previous chassis intrusion status and the **Case Opened** field will show "No" at next boot.

☞ Case Opened

Displays the detection status of the chassis intrusion detection device attached to the motherboard CI header. If the system chassis cover is removed, this field will show "Yes", otherwise it will show "No". To clear the chassis intrusion status record, set **Reset Case Open Status** to **Enabled**, save the settings to the CMOS, and then restart your system.

☞ **Current Voltage(V) Vcore/DDR15V/+12V/VCC3**

Displays the current system voltages.

☞ **Current System/CPU Temperature**

Displays current System/CPU temperature.

☞ **Current CPU/SYSTEM FAN Speed (RPM)**

Displays current CPU/system fan speed.

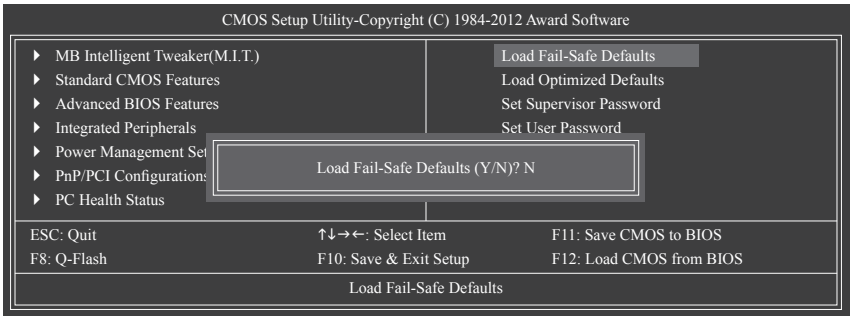
☞ **CPU Warning Temperature**

Sets the warning threshold for CPU temperature. When CPU temperature exceeds the threshold, BIOS will emit warning sound. Options are: Disabled (default), 60°C/140°F, 70°C/158°F, 80°C/176°F, 90°C/194°F.

☞ **System Smart FAN Control**

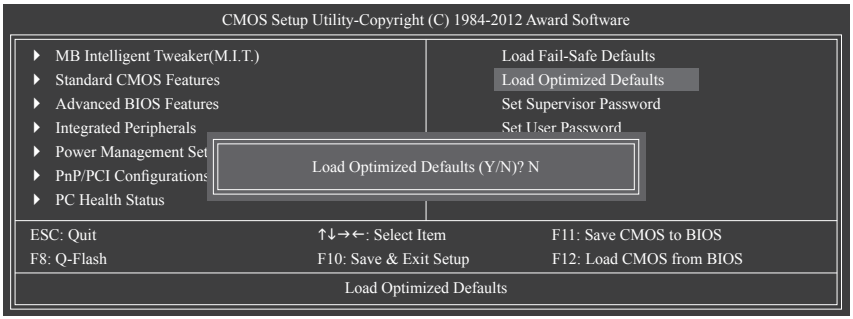
Enables or disables the system fan speed control function. **Enabled** allows the system fan to run at different speed according to the system temperature. If disabled, system fan runs at full speed.

2-9 Load Fail-Safe Defaults



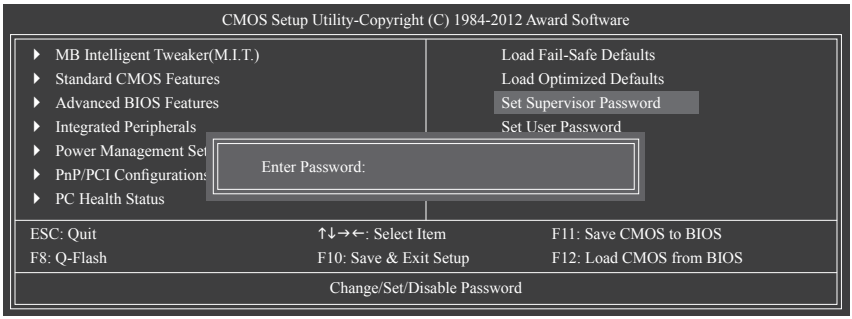
Press <Enter> on this item and then press the <Y> key to load the safest BIOS default settings. In case system instability occurs, you may try to load Fail-Safe defaults, which are the safest and most stable BIOS settings for the motherboard.

2-10 Load Optimized 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 Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

2-11 Set Supervisor/User Password



Press <Enter> on this item and type the password with up to 8 characters and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>.The BIOS Setup program allows you to specify two separate passwords:

☞ **Supervisor Password**

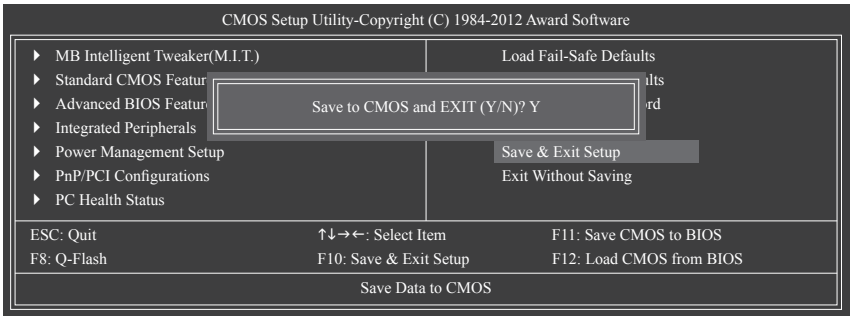
When a system password is set and the **Password Check** item in **Advanced BIOS Features** is set to **Setup**, you must enter the supervisor password for entering BIOS Setup and making BIOS changes. When the Password Check item is set to **System**, you must enter the supervisor password (or user password) at system startup and when entering BIOS Setup.

☞ **User Password**

When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup to continue system boot. In BIOS Setup, you must enter the supervisor password if you wish to make changes to BIOS settings. The user password only allows you to view the BIOS settings but not to make changes.

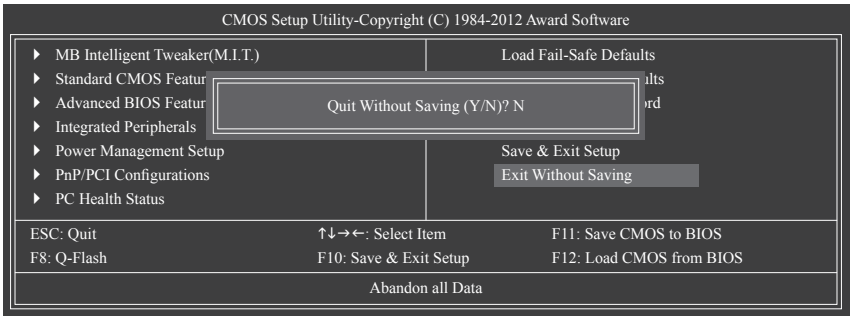
To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message "PASSWORD DISABLED" will appear, indicating the password has been cancelled.

2-12 Save & Exit Setup



Press <Enter> on this item and press the <Y> key. This saves the changes to the CMOS and exits the BIOS Setup program. Press <N> or <Esc> to return to the BIOS Setup Main Menu.

2-13 Exit Without Saving



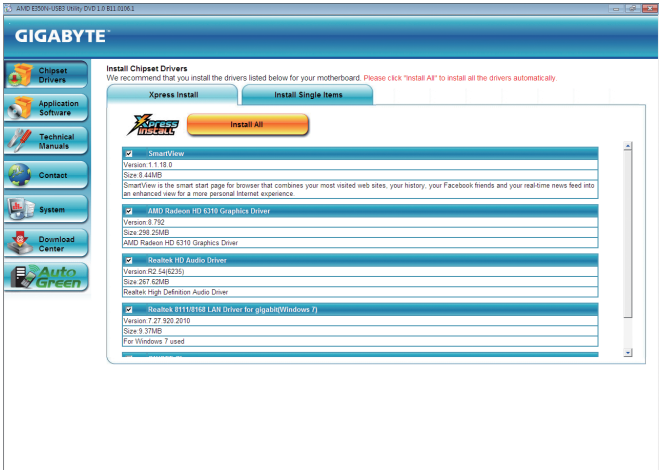
Press <Enter> on this item and press the <Y> key. This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS. Press <N> or <Esc> to return to the BIOS Setup Main Menu.

Chapter 3 Drivers Installation

- Before installing the drivers, first install the operating system.
- After installing the operating system, insert the motherboard driver disk into your optical drive. The driver Autorun screen is automatically displayed which looks like that shown in the screen shot below. (If the driver Autorun screen does not appear automatically, go to My Computer, double-click the optical drive and execute the Run.exe program.)

3-1 Installing Chipset Drivers

After inserting the driver disk, "Xpress Install" will automatically scan your system and then list all the drivers that are recommended to install. You can click the Install All button and **"Xpress Install"** will install all the recommended drivers. Or click **Install Single** Items to manually select the drivers you wish to install.



3-2 Regulatory Statements

Regulatory Notices

This document must not be copied without our written permission, and the contents there of must not be imparted to a third party nor be used for any unauthorized purpose.

Contravention will be prosecuted. We believe that the information contained herein was accurate in all respects at the time of printing. GIGABYTE cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by GIGABYTE.

Our Commitment to Preserving the Environment

In addition to high-efficiency performance, all GIGABYTE motherboards fulfill European Union regulations for RoHS (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) and WEEE (Waste Electrical and Electronic Equipment) environmental directives, as well as most major worldwide safety requirements. To prevent releases of harmful substances into the environment and to maximize the use of our natural resources, GIGABYTE provides the following information on how you can responsibly recycle or reuse most of the materials in your "end of life" product.

Restriction of Hazardous Substances (RoHS) Directive Statement

GIGABYTE products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr+6, PBDE and PBB). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at GIGABYTE are continuing our efforts to develop products that do not use internationally banned toxic chemicals.

Waste Electrical & Electronic Equipment (WEEE) Directive Statement

GIGABYTE will fulfill the national laws as interpreted from the 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) directive. The WEEE Directive specifies the treatment, collection, recycling and disposal of electric and electronic devices and their components. Under the Directive, used equipment must be marked, collected separately, and disposed of properly.

WEEE Symbol Statement

The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

- When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling.
- If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the Customer Care number listed in your product's user's manual and we will be glad to help you with your effort.

Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly. With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly.

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You may go to the GIGABYTE website, select your language in the language list on the top right corner of the website.

- **GIGABYTE Global Service System**

To submit a technical or non-technical (Sales/Marketing) question, please link to:
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Then select your language to enter the system.