

MATMH81

Intel® Socket LGA1150 processor motherboard

User's Manual

Rev. 1002

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Documentation Classifications

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

- 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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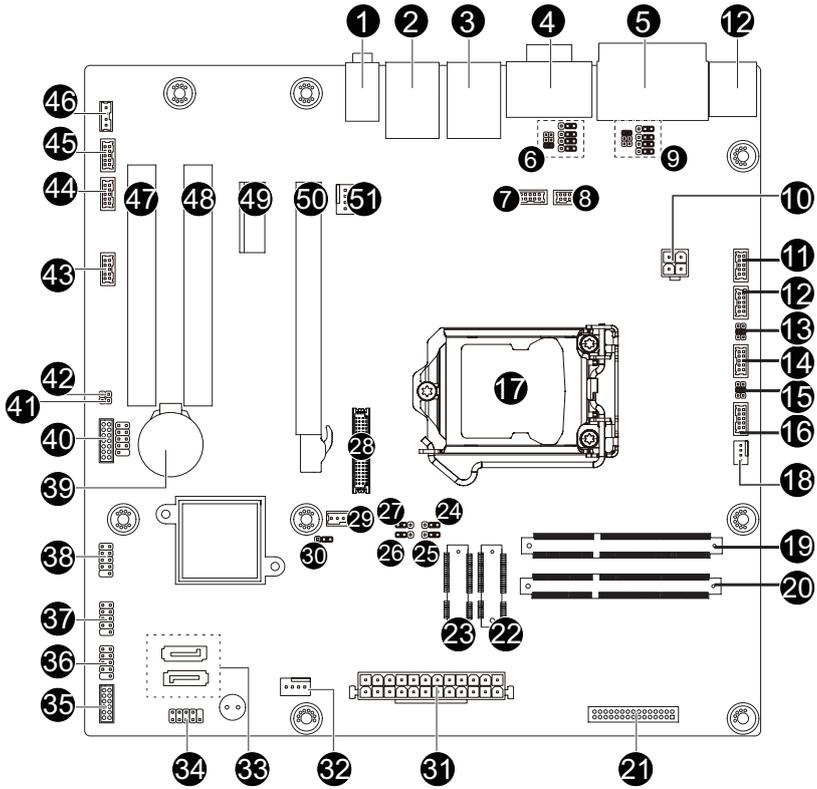
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Box Contents

- Motherboard
- Driver CD
- 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.
- The motherboard image is for reference only.

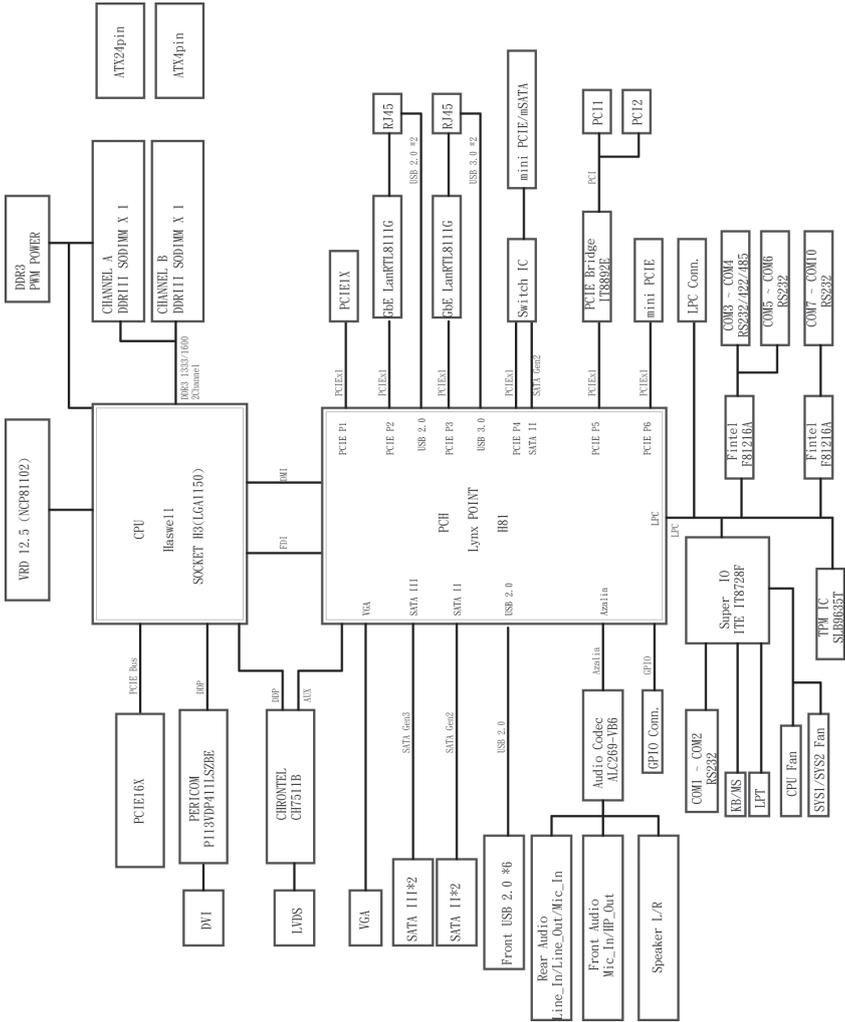
MATMH81 Motherboard Layout



Item	Code	Description
1	AUDIO	Audio connectors
2	USB_LAN2	RJ45 LAN port (top) / USB 2.0 ports (bottom)
3	USB_LAN1	RJ45 LAN port (top) / USB 2.0 ports (bottom)
4	COM34	Serial ports
5	VGA_DVI	VGA port (top)/DVI port (bottom)
6	JCOM5/JRS23/JRS22/JRS27/ JRS29	RS232/RS422/RS485 Select Jumper for COM4
7	COM5	Serial port cable connector #5
8	COM6	Serial port cable connector #6
9	JRS14/JRS15/JRS22/JRS19/ JCOM3	RS232/RS422/RS485 Select Jumper for COM3
10	ATX_12V	4 pin power connector
11	COM8	Serial port cable connector #8
12	COM7	Serial port cable connector #7
13	JCOM6	COM6 Power Select jumper
14	COM9	Serial port cable connector #9
15	JCOM8	COM10 Power Select jumper
16	COM10	Serial port cable connector #10
17	CPU	Intel LGA 1155 socket
18	CPU_FAN	CPU fan connector
19	SODIMMA	DDR3 SO-DIMM slot
20	SODIMMB	DDR3 SO-DIMM slot
21	LPT	LPT connector
22	MIN_PCIE1	Mini PCI Express connector
23	MIN_PCIE2	Mini PCI Express connector
24	JRS9	LVDS Enable Jumper
25	JRS10	LVDS Enable Jumper
26	JRS8	LVDS Enable Jumper
27	JRS7	LVDS Enable Jumper
28	LVDS	LVDS connector
29	BKL_CN	LCD Inverter Connector
30	JRS6	LVDS Enable Jumper
31	ATX	24 pin main power connector
32	SYS_FAN2	System fan connector #2
33	SATA1/SATA2	SATA 3Gb/s connectors
34	F_PANEL	Front Panel header

Item	Code	Description
35	GPIO_CNT	GPIO connector
36	F_USB3	Front USB 2.0 header #3
37	F_USB2	Front USB 2.0 header #2
38	F_USB1	Front USB 2.0 header #1
39	BATTERY	Battery socket
40	LPC	LPC connector
41	CI	Case open intrusion header
42	CLR_CMOS	Clear CMOS jumper
43	COM1	Serial port cable connector #1
44	COM2	Serial port cable connector #2
45	F_AUDIO	Front audio header
46	SPK_OUT	Audio Amplifier connector
47	PCI2	PCI 32bit/33MHz slot
48	PCI1	PCI 32bit/33MHz slot
49	PCIE1X1	PCI Express x1 slot
50	PCIE16X1	PCI Express x16 slot
51	SYS_FAN	System fan connector

Block Diagram



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	<ul style="list-style-type: none"> ◆ Supports Intel® Gen 4 Core™ processors in Socket LGA1150 ◆ Support Up to 85W ◆ L3 cache varies with CPU
 Chipset	<ul style="list-style-type: none"> ◆ Intel® H81 Express chipset
 Memory	<ul style="list-style-type: none"> ◆ 2 x SO-DIMM slots support DDR3 1600/1333MHz ◆ Support up to 16GB
 Audio	<ul style="list-style-type: none"> ◆ Realtek® ALC269 codec ◆ High Definition Audio ◆ 2 channel
 LAN	<ul style="list-style-type: none"> ◆ 2 x Realtek RTL8111G supports 10/100/1000 Mbps
 Expansion Slots	<ul style="list-style-type: none"> ◆ 1 x PCI Express x16 slot ◆ 1 x PCI Express x1 slot ◆ 2 x PCI 32/33MHz slots ◆ 1 x mini PCI Express x1 slot (x1 bus/full size) ◆ 1 x mini PCI Express x1 slot (x1 bus/half size)
 Onboard Graphics	<ul style="list-style-type: none"> ◆ Intel® Intel® HD graphics
 Storage Interface	<ul style="list-style-type: none"> ◆ 2 x SATA 6Gb/s connectors
 USB	<ul style="list-style-type: none"> ◆ 2 x USB 3.0 ports ◆ Up to 8 USB 2.0 ports (2 on the back panel, 6 via the USB brackets connected to the internal USB headers)
 Internal Connectors	<ul style="list-style-type: none"> ◆ 1 x 4 pin ATX 12V power connector ◆ 1 x 24 pin ATX main power connector ◆ 2 x SATA 6Gb/s connectors ◆ 1 x CPU fan header ◆ 2 x System fan header ◆ 8 x Serial port cable connectors ◆ 2 x COM power select connectors ◆ 1 x Front panel header ◆ 1 x Audio header ◆ 3 x USB 2.0 headers ◆ 1 x LVDS connector ◆ 1 x Brightness control connector ◆ 1 x LPT connector ◆ 1 x LPC connector ◆ 1 x GPIO connector ◆ 1 x Front audio header ◆ 1 x Speaker out header

	Back Panel Connectors	<ul style="list-style-type: none"> ◆ 2 x PS/2 connectors ◆ 1 x VGA port ◆ 1 x DVI port ◆ 2 x COM ports ◆ 2 x USB 2.0 ports ◆ 2 x USB 3.0 ports ◆ 2 x RJ-45 port ◆ 3 x Audio connectors
	I/O Controller	<ul style="list-style-type: none"> ◆ iTE IT8892E chip
	Hardware Monitor	<ul style="list-style-type: none"> ◆ System voltage detection ◆ CPU/System temperature detection ◆ CPU/System fan speed control <ul style="list-style-type: none"> * Whether the CPU/system fan speed control function is supported will depend on the CPU/system cooler you install.
	BIOS	<ul style="list-style-type: none"> ◆ AMI BIOS
	Form Factor	<ul style="list-style-type: none"> ◆ uATX Form Factor; 9.6 inch x 9.6 inch
<p>GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.</p>		

1-3 Installing the CPU and CPU Cooler

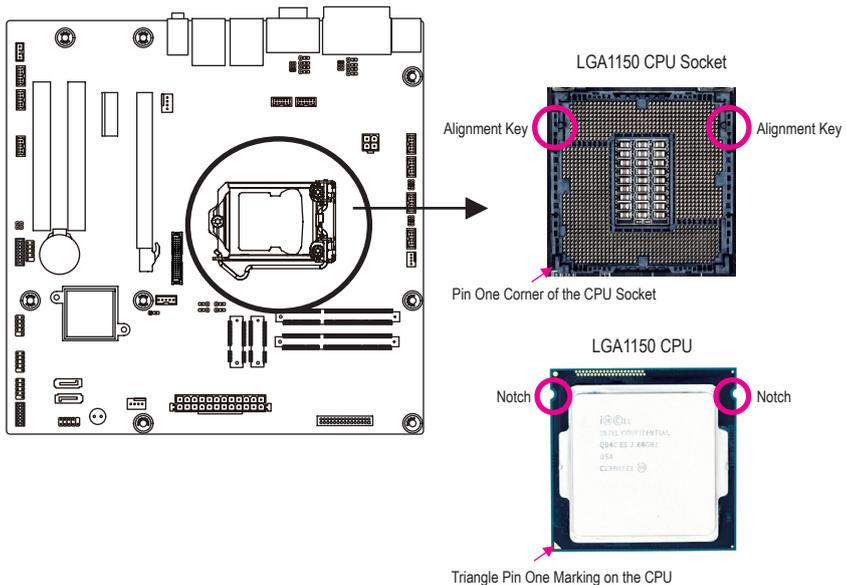


Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Locate the pin one of the CPU. The CPU cannot be inserted if oriented incorrectly. (Or you may locate the notches on both sides of the CPU and alignment keys on the CPU socket.)
- Apply an even and thin layer of thermal grease on the surface of the CPU.
- Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur.
- Set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you wish to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.

1-3-1 Installing the CPU

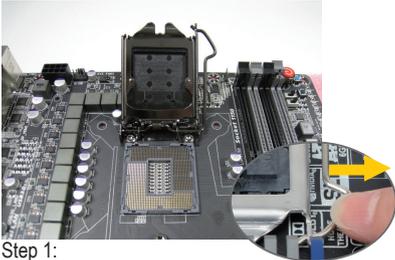
A. Locate the alignment keys on the motherboard CPU socket and the notches on the CPU.



B. Follow the steps below to correctly install the CPU into the motherboard CPU socket.

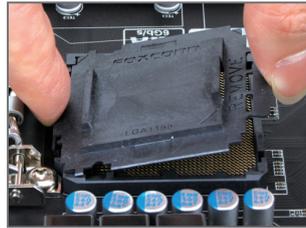


Before installing the CPU, make sure to turn off the computer and unplug the power cord from the power outlet power plug to prevent any damage to prevent damage to the CPU.



Step 1:

Gently press the CPU socket lever handle down and away from the socket with your finger. Then completely lift the CPU socket lever and the metal load plate will be lifted as well.



Step 2:

Remove the CPU socket cover as shown. Hold your index finger down on the rear grip of the socket cover and use your thumb to lift up the front edge (next to the "REMOVE" mark) and then remove the cover. (DO NOT touch socket contacts. To protect the CPU socket, always replace the protective socket cover when the CPU is not installed.)



Step 3:

Hold the CPU with your thumb and index fingers. Align the CPU pin one marking (triangle) with the pin one corner of the CPU socket (or you may align the CPU notches with the socket alignment keys) and gently insert the CPU into position.



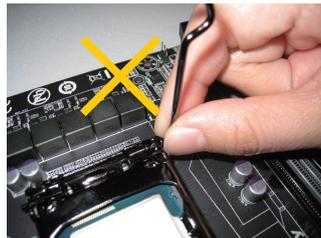
Step 4:

Once the CPU is properly inserted, use one hand to hold the socket lever and use the other to lightly replace the load plate. When replacing the load plate, make sure the front end of the load plate is under the shoulder screw.



Step 5:

Push the CPU socket lever back into its locked position.



NOTE:

Hold the CPU socket lever by the handle, not the lever base portion.

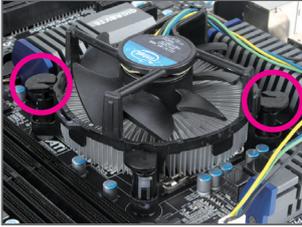
1-3-2 Installing the CPU Cooler

Follow the steps below to correctly install the CPU cooler on the motherboard. (The following procedure uses Intel® boxed cooler as the example cooler.)



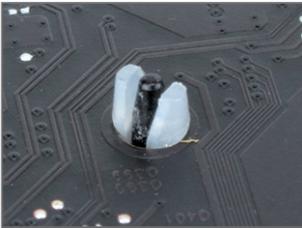
Step 1:

Apply an even and thin layer of thermal paste on the surface of the installed CPU.



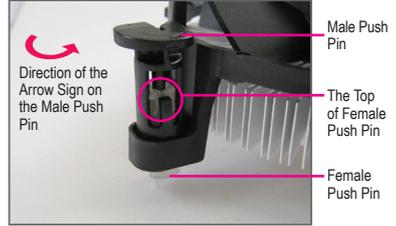
Step 3:

Place the cooler atop the CPU, aligning the four push pins through the pin holes on the motherboard. Push down on the push pins diagonally.



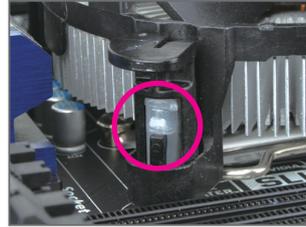
Step 5:

After the installation, check the back of the motherboard. If the push pin is inserted as the picture above shows, the installation is complete.



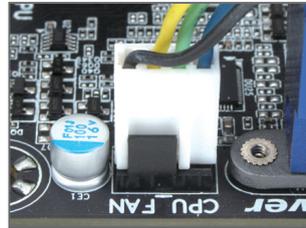
Step 2:

Before installing the cooler, note the direction of the arrow sign  on the male push pin. (Turning the push pin along the direction of the arrow is for removing the cooler, and the opposite direction is for installing it..)



Step 4:

You should hear a "click" when pushing down each push pin. Check that the Male and Female push pins are joined closely. (Refer to your CPU cooler installation manual for instructions on installing the cooler.)



Step 6:

Finally, attach the power connector of the CPU cooler to the CPU fan header (CPU_FAN) on the motherboard.



Use extreme care when removing the CPU cooler because the thermal grease/tape between the CPU cooler and CPU may adhere to the CPU. Inadequately removing the CPU cooler may damage the CPU.

1-4 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.

1-4-1 Installing a Memory

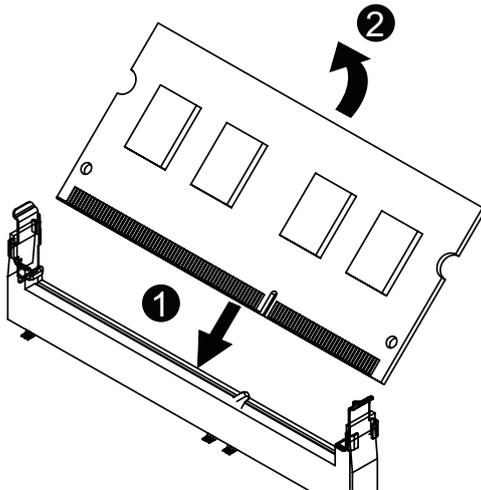
Installation Step:

Step 1. Align the memory with the SO-DIMM module and insert the SO-DIMM memory module into the SO-DIMM slot.

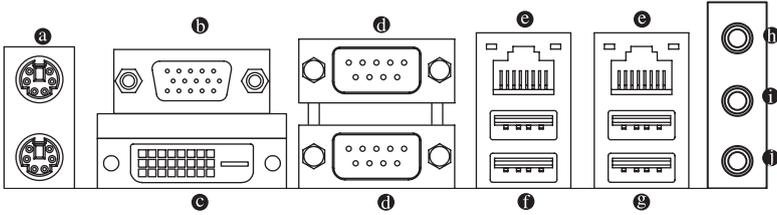
Please note that memory module has a foolproof insertion design. A memory module can be installed in only one direction.

Step 2. Push the memory and seat it firmly.

Step 3. Reverse the installation steps when you wish to remove the SO-DIMM module.



1-5 Back Panel Connectors



a PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

b Video Port

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

c DVI-D Port

The DVI-D port supports DVI-D specification. Connect a monitor that supports DVI-D connection to this port.

d Serial Port

Connects to serial-based mouse or data processing devices.

e 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.

f USB 3.0 Port

The USB port supports the USB 3.0 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

g USB 2.0 Port

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

h Line In Jack (Blue)

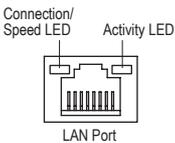
The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

i 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.

j MIC In (Pink)

The default MIC In jack. Microphone can be connected to MIC In jack.



Connection/Speed LED:

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

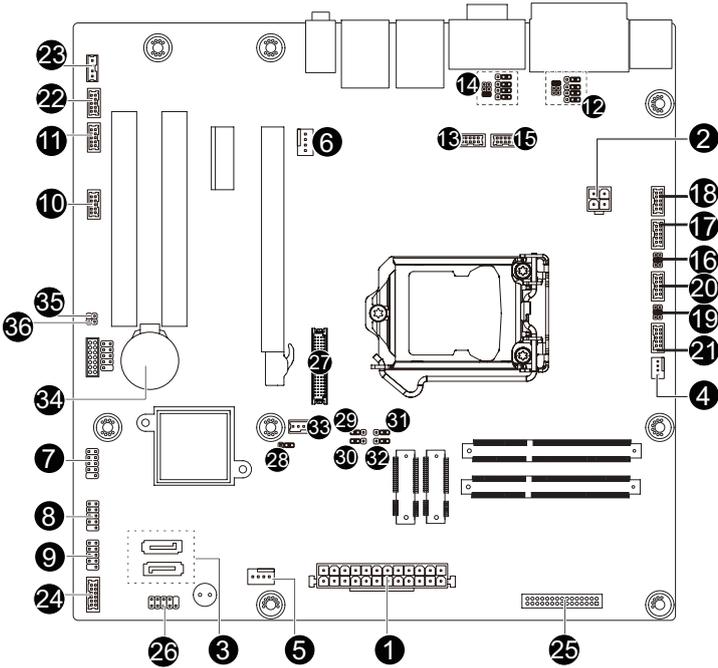
Activity LED:

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.

1-6 Internal Connectors



1) ATX	19) JCOM8
2) ATX_12V	20) COM9
3) SATA1/SATA2	21) COM10
4) CPU_FAN	22) F_AUDIO
5) SYS_FAN	23) SPK_OUT
6) SYS_FAN2	24) GPIO_CNT
7) F_USB1	25) LPT
8) F_USB2	26) F_PANEL
9) F_USB3	27) LVDS
10) COM1	28) JRS6
11) COM2	29) JRS7
12) JCOM3/JRS14/JRS15/JRS21/JRS19	30) JRS8
13) COM5	31) JRS9
14) JCOM5/JRS23/JRS22/JRS27/JRS29	32) JRS10
15) COM6	33) BKL_CN
16) JCOM6	34) BATTERY
17) COM7	35) CLR_CMOS
18) COM8	36) CI



Read the following guidelines before connecting external devices:

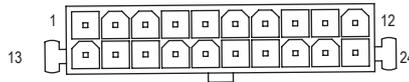
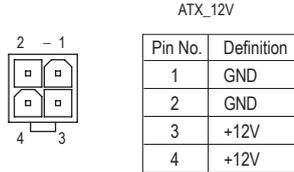
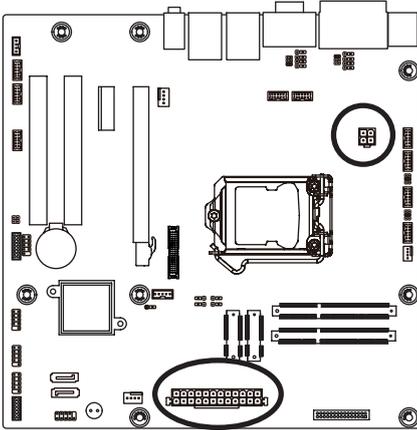
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the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

1/2) ATX/ATX_12V (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 (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.

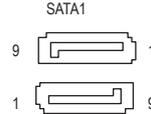
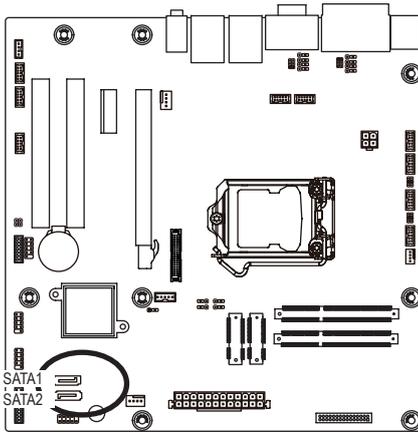


ATX

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
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power OK	20	NA
9	5VSB (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	3.3V	24	GND

3) SATA1/SATA2 (SATA 6Gb/s Connectors)

The SATA1 and SATA2 connectors conform to SATA 6Gb/s standard and are compatible with SATA 3Gb/s standard. Each SATA connector supports a single SATA device.

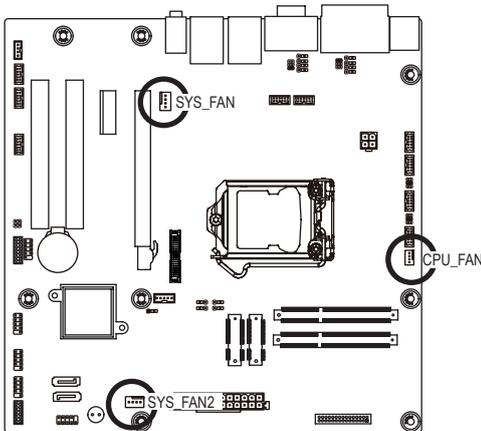


SATA2

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

4/5/6 CPU_FAN/SYS_FAN (CPU Fan/System Fan Headers)

The motherboard has one 4-pin CPU fan header (CPU_FAN), and two 4-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.



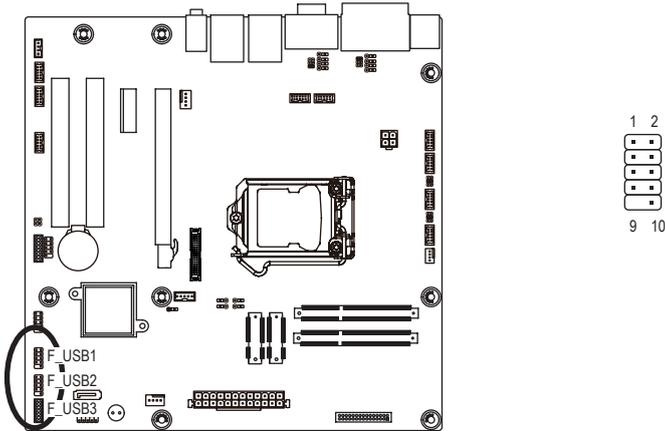
Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Speed Control



- 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.

7/8/9) F_USB1/F_USB2/F_USB3 (USB Headers)

The headers conform to USB 2.0 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

Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	-USBP9
4	-USBP8
5	+USBP9
6	+USBP8
7	GND
8	GND
9	No Pin
10	NC

F_USB2

Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	-USBP11
4	-USBP10
5	+USBP11
6	+USBP10
7	GND
8	GND
9	No Pin
10	NC

F_USB3

Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	-USBP13
4	-USBP12
5	+USBP13
6	+USBP12
7	GND
8	GND
9	No Pin
10	NC

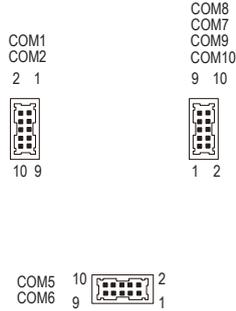
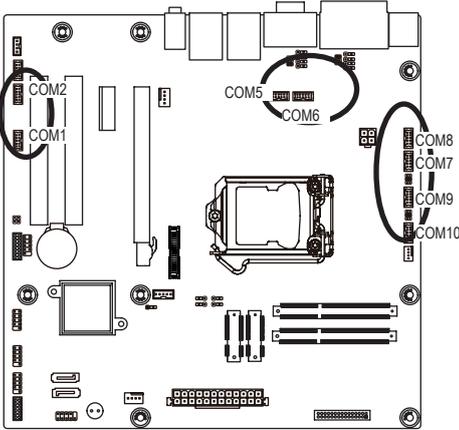


When the system is in S4/S5 mode, only the USB ports routed to the F_USB1 header can support the ON/OFF Charge function.

10/11/13/15/17/18/20/21) COM1/COM2/COM5/COM6/COM7/COM8/COM9/COM10

(Serial Port Cable Connectors)

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.



COM1

Pin No.	Definition
1	NSINA
2	NDCDA-
3	NDTRA-
4	NTXDA-
5	NDSRA-
6	GND
7	NCTSA-
8	NRTSA-
9	NC
10	NRIA-

COM2

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

COM5

Pin No.	Definition
1	NRXD5-
2	NDCD5-
3	NDTR5-
4	NTXD5-
5	NDSR5-
6	GND
7	NCTS5-
8	NRTS5-
9	NC
10	NR15-

COM6

Pin No.	Definition
1	NRXD6-
2	NDCD6-
3	NDTR6-
4	NTXD6-
5	NDSR6-
6	GND
7	NCTS6-
8	NRTS6-
9	NC
10	NR16-

COM7

Pin No.	Definition
1	NRXD7-
2	NDCD7-
3	NDTR7-
4	NTXD7-
5	NDSR7-
6	GND
7	NCTS7-
8	NRTS7-
9	NC
10	NR17-

COM8

Pin No.	Definition
1	NRXD8-
2	NDCD8-
3	NDTR8-
4	NTXD8-
5	NDSR8-
6	GND
7	NCTS8-
8	NRTS8-
9	NC
10	NR18-

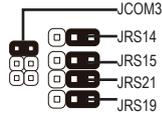
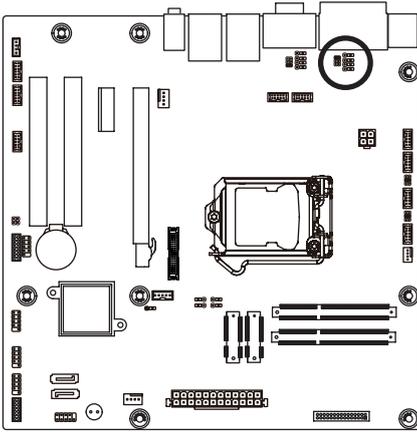
COM9

Pin No.	Definition
1	NRXD9-
2	NDCD9-
3	NDTR9-
4	NTXD9-
5	NDSR9-
6	GND
7	NCTS9-
8	NRTS9-
9	NC
10	RI9-/5V/12

COM10

Pin No.	Definition
1	NRXD10-
2	NDCD10-
3	NDTR10-
4	NTXD10-
5	NDSR10-
6	GND
7	NCTS10-
8	NRTS10-
9	NC
10	RI10-/5V/12

12) JCOM3/JRS14/JRS15/JRS21/JRS19
 (RS232/RS422/RS485 Select Header for Serial Port 3)



- 1  1-2 Close: RS422/RS485
- 1  2-3 Close: RS232 (Default setting)

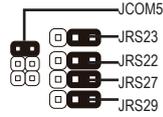
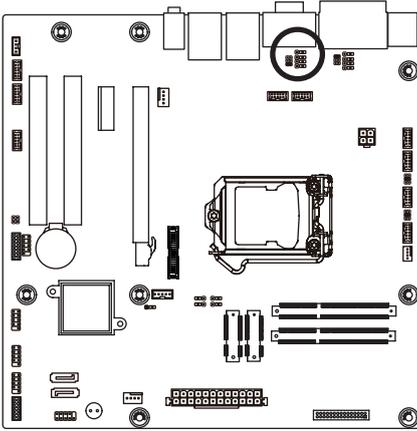
- 2 1  1-2 Close: RS232
- 6 5 

- 2 1  3-4 Close: RS422
- 6 5 

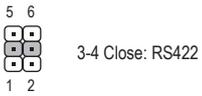
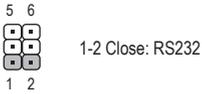
- 2 1  5-6 Close: RS485
- 6 5 

Pin No.	Definition
1	RXD232
2	RXD3
3	RXD422
4	RXD3
5	RXD485
6	RXD3

14) JCOM5/JRS23/JRS22/JRS27/JRS29
 (RS232/RS422/RS485 Select Header for Serial Port 4)

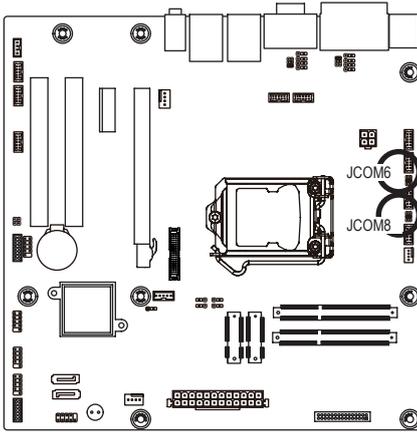


- 1 1-2 Close: RS422/RS485
- 1 2-3 Close: RS232 (Default setting)



Pin No.	Definition
1	RXD232
2	RXD4
3	RXD422
4	RXD4
5	RXD485
6	RXD4

16/19) JCOM6/JCOM8 (5V/12V/RI Signal Select Header for Serial Port 9/10)

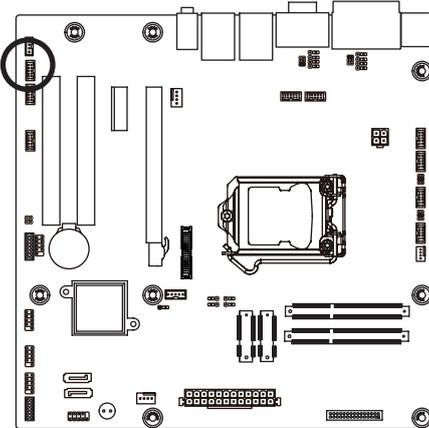


- 1 2
5 6 1-2 Close: 5V (Power COM)
- 1 2
5 6 3-4 Close: RI (STAND COM)
- 1 2
5 6 5-6 Close: 12V (Power COM)

Pin No.	Definition	Pin No.	Definition
1	VCC	1	VCC
2	RI9-/5V/12V	2	RI10-/5V/12V
3	NR19-	3	NR110-
4	RI9-/5V/12V	4	RI10-/5V/12V
5	+12V	5	+12V
6	RI9-/5V/12V	6	RI10-/5V/12V

22) F_AUDIO (Front Panel Audio Header)

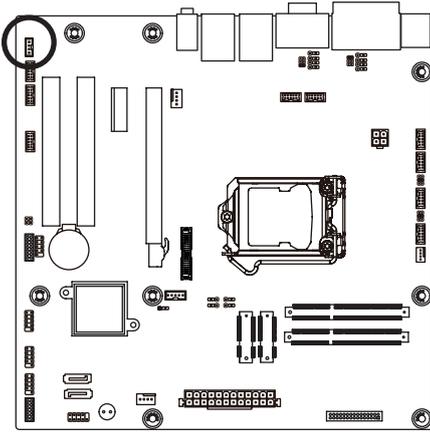
The front panel audio header supports Intel High Definition audio (HD) and AC'97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module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



2 1
10 9

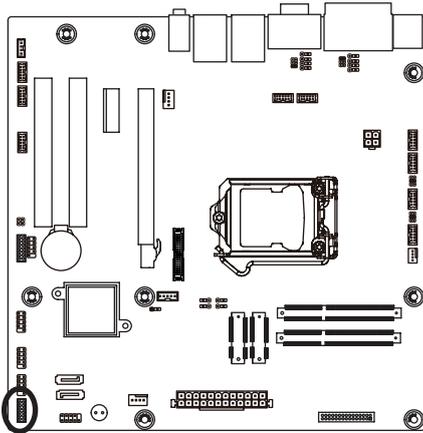
Pin No.	Definition
1	MIC_L
2	-AGND
3	MIC_R
4	-ACZ_DET
5	HPOUT_R
6	SRTN1
7	FAUDIO_JD
8	NC
9	HPOUT_L
10	SRTN2

23) SPK_OUT (Audio Amplifier Connector)



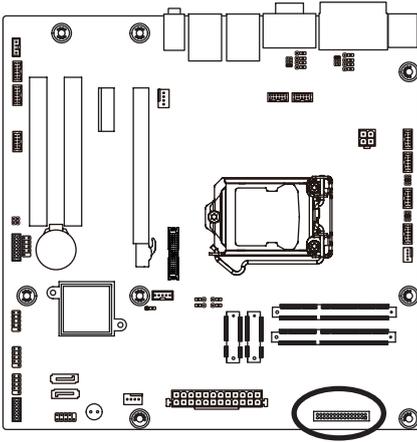
Pin No.	Definition
1	OUT_R+
2	OUT_R-
3	OUT_L-
4	OUT_L+

24) GPIO_CNT (GPIO Connector)



Pin No.	Definition
1	GPIO1
2	GPIO68
3	GPIO6
4	GPIO69
5	GPIO7
6	GPIO70
7	GPIO17
8	GPIO71
9	SMBCLK
10	SMBDATA
11	VCC
12	GND

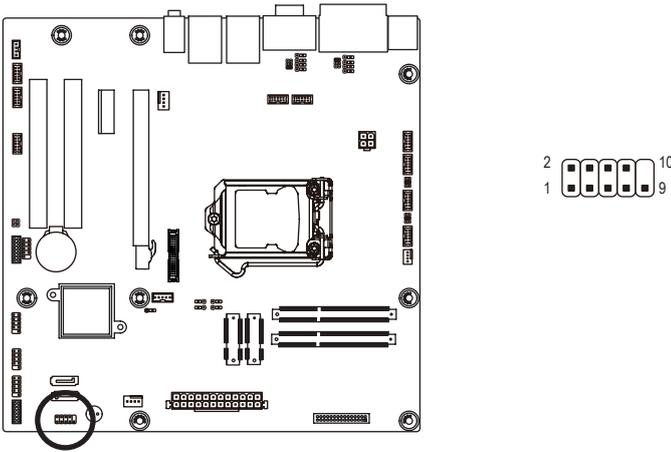
25) LPT (LPT Connector)



Pin No.	Definition	Pin No.	Definition
1	STB-	16	GND
2	PD3	17	PD1
3	GND	18	PD7
4	GND	19	GND
5	AFD-	20	GND
6	PD4	21	INIT-
7	GND	22	ACK-
8	GND	23	GND
9	PD0	24	GND
10	PD5	25	PD2
11	GND	26	BUSY
12	GND	27	GND
13	ERR-	28	PE
14	PD6	29	SLIN-
15	GND	30	SLCT

26) F_PANEL (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.



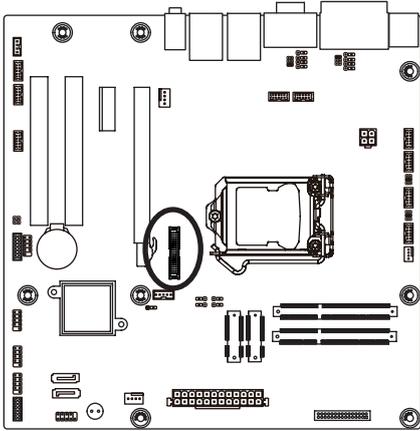
Pin No.	Signal Name	Definition
1	HD+	Hard Disk LED Signal anode (+)
2	MPD+	Power LED Signal anode (+)
3	HD-	Hard Disk LED Signal cathode(-)
4	GND	Ground
5	GND	Ground
6	-PWRBT_F	Power Button cathode(-)
7	-SYS_RST	Reset Button
8	GND	Ground
9	NC	No connect
10	NC	No Pin



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.

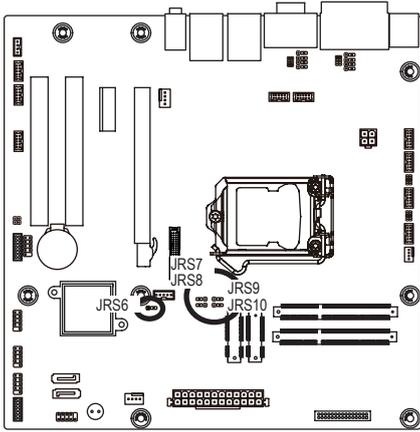
27) LVDS (LVDS Headers)

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.



Pin No.	Definition	Pin No.	Definition
1	VCC3	21	A5P_C
2	VCC	22	A4P_C
3	VCC3	23	A5M_C
4	VCC	24	A4M_C
5	SPC0	25	GND
6	SPD0	26	GND
7	GND	27	A7P_C
8	GND	28	A6P_C
9	A1P_C	29	A7M_C
10	A0P_C	30	A6M_C
11	A1M_C	31	GND
12	A0M_C	32	GND
13	GND	33	CLK2P_C
14	GND	34	CLK1P_C
15	A3P_C	35	CLK2M_C
16	A2P_C	36	CLK1M_C
17	A3M_C	37	GND
18	A2M_C	38	GND
19	GND	39	+12V
20	GND	40	+12V

28/29/30/31/32) JRS9/JRS10/JRS8/JRS7/JRS6 (LVDS Enable Jumpers)



JRS6



Pin No.	Definition
1	EDP_DDC_DATA_C
2	EDP_DDC_DATA
3	GND

Jumper Setting for JRS6:

1 1-2 Close: Enable LVDS

1 2-3 Close: Disable LVDS

JRS8



Pin No.	Definition
1	VCC3
2	CGPIO 1
3	GND

JRS9



Pin No.	Definition
1	VCC3
2	CGPIO 2
3	GND

JRS7



Pin No.	Definition
1	VCC3
2	CGPIO 0
3	GND

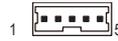
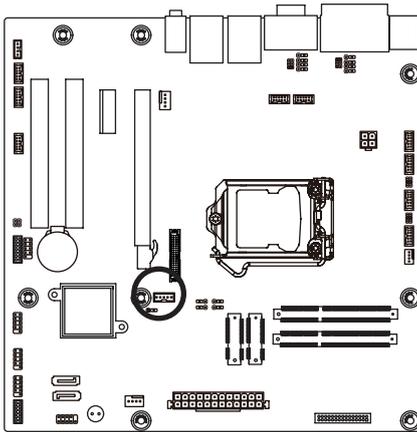
JRS10



Pin No.	Definition
1	VCC3
2	CGPIO 3
3	GND

	For 1024*600 (Default Setting)	For 1024*768
JRS7	1	1
JRS8	1	1
JRS9	1	1
JRS10	1	1

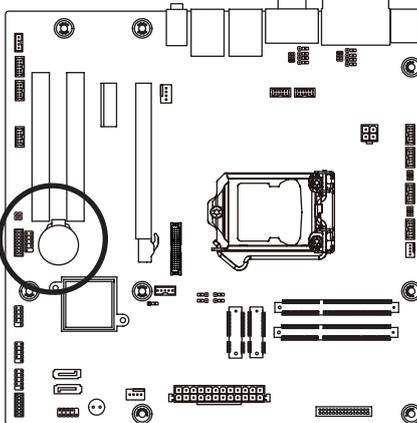
33) BLK_CN (LCD Inverter Connector)



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

34) BATTERY (Battery Socket)

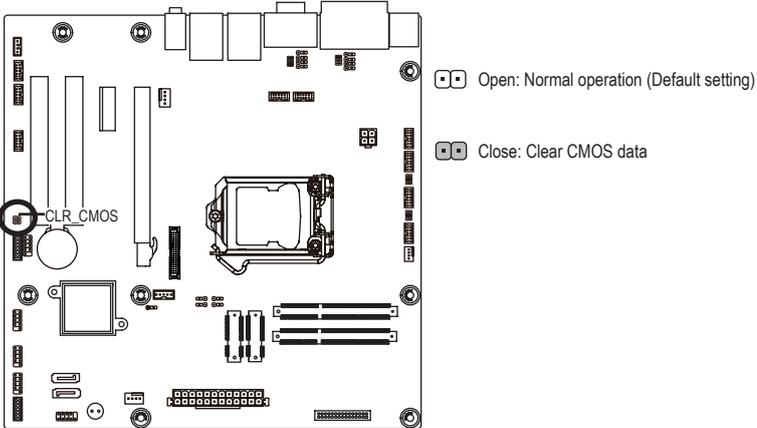
The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.



- 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.
- Used batteries must be handled in accordance with local environmental regulations.

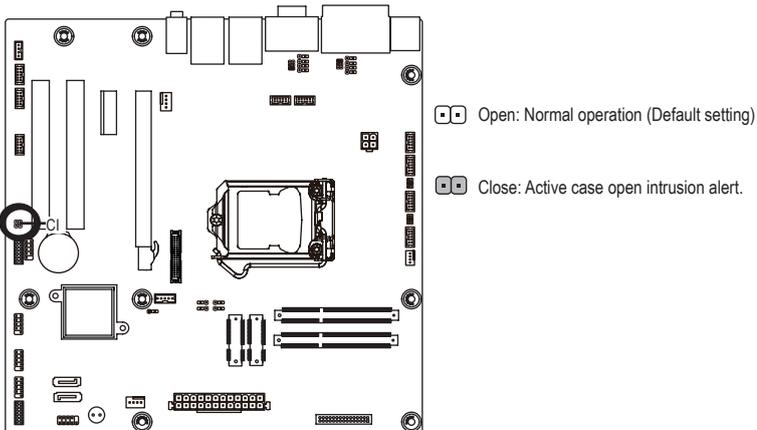
35) CLR_CMOS (Clearing CMOS Jumper)

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 or temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.



36) CI (Case Open Intrusion Header)

This motherboard provides a chassis intrusion alert function if the chassis cover is removed.



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 key during the POST when the power is turned on.



- 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 "Restore 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
<←><→>	Move the selection bar to select the screen
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<+>	Increase the numeric value or make changes
<->	Decrease the numeric value or make changes
<F1>	General Help
<F2>	Restore the previous BIOS settings for the current submenus
<F9>	Load the Optimized BIOS default settings for the current submenus
<F10>	Save all the changes and exit the BIOS Setup program

- **Main**

This setup page includes all the items in standard compatible BIOS

- **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.)

- **Chipset**

Northbridge and Southbridge additional features configuration.

- **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.

- **Save & 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.



- When the system is not stable as usual, select the **Restore User 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.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Main Advanced Chipset Boot Security Save & Exit

BIOS Information		Set the Date. Use Tab to switch between Date elements.
BIOS Vendor	American Megatrends	
Core Version	4.6.5.4	
Compliance	UEFI 2.3.1; PI 1.2	
Project Version	MATMH81.05b x64	
Build Date and Time	03/06/2014 15:42:08	
IGFX VBIOS Version	2178	
Memory Information		
Total Memory	4096 MB (DDR3)	
Memory Frequency	1600 Mhz	
System Date	[Thu 03/06/2014]	
System Time	[15:53:53]	
Access Level	Administrator	

++: Select Screen
F1: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

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☞ **BIOS Information**

☞ **BIOS Version**

Display version number of the BIOS setup utility.

☞ **BIOS Vendor**

Display BIOS vendor information.

☞ **Core Version**

Display version of the processor.

☞ **Compiency**

Display compliency information.

☞ **Project Version**

Display version number of the project.

☞ **BIOS Build Date and Time**

Displays the date and time when the BIOS setup utility was created.

☞ **IGFX VBIOS Version**

Display the IGFX VBIOS version information.

☞ **Memory Information**

☞ **Total Memory / Memory Frequency**

Displays the technical specifications for the installed memory.

☞ **System Date**

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

☞ **System Time**

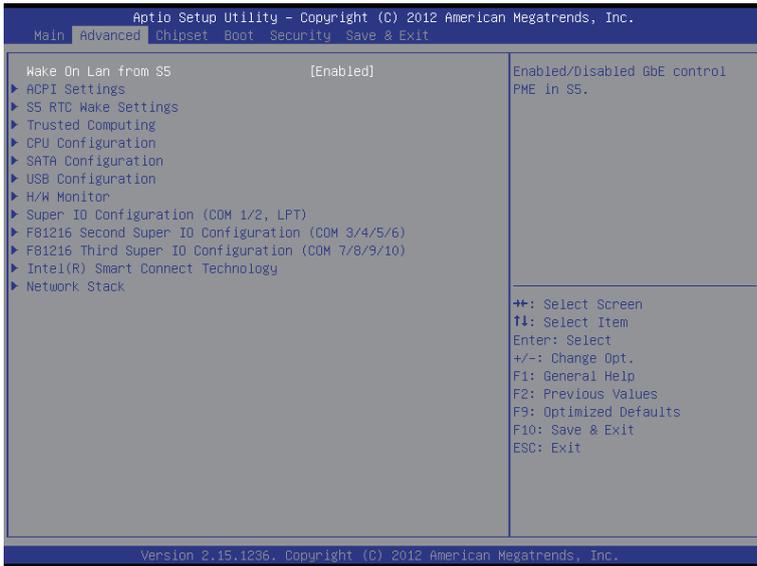
Set the system time following the hour-minute- second format.

☞ **Access Level**

Display the current accessing level information.

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.

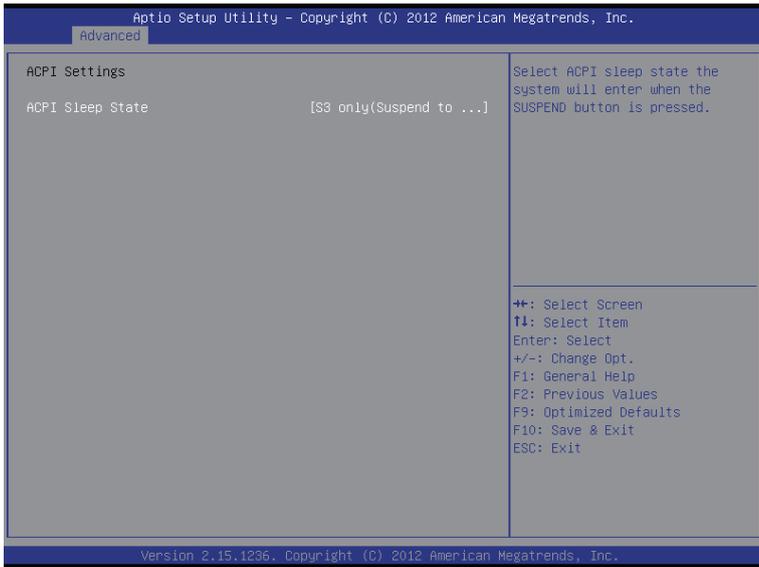


☞ Wake On Lan from S5

Enable/Disable LAN wake on in S5

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

2-2-1 ACPI Settings



⤵ ACPI Settings

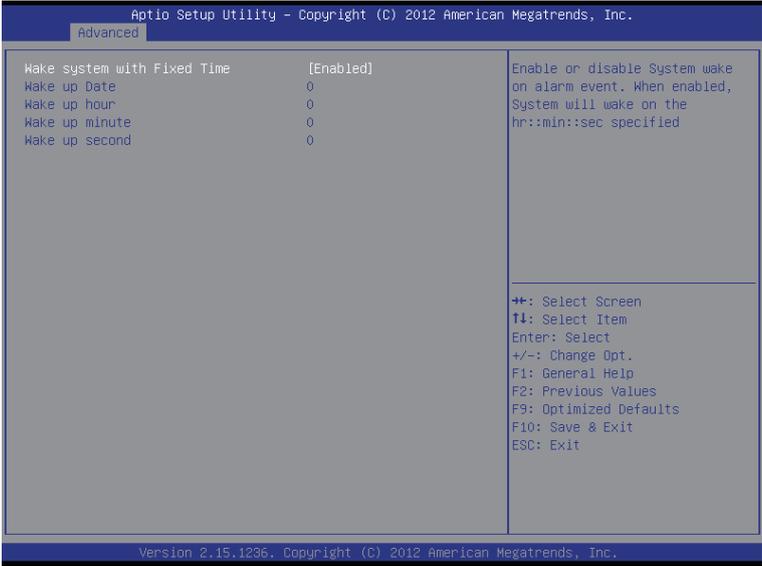
⤵ ACPI Sleep State

Select the highest ACPI sleep state the system will enter, when the suspend button is pressed.

Suspend Disabled/S1 only (CPU Stop Clock)/S3 only (Suspend to RAM).

Default setting is **S3 only (Suspend to RAM)**.

2-2-2 S5 RTC Wake Settings



☞ **Wake system with Fixed Time**

Enable/Disable system wake on alarm event. When this item is enabled, system will wake on the Date:Hour:Minutes:Seconds when specified time is defined.

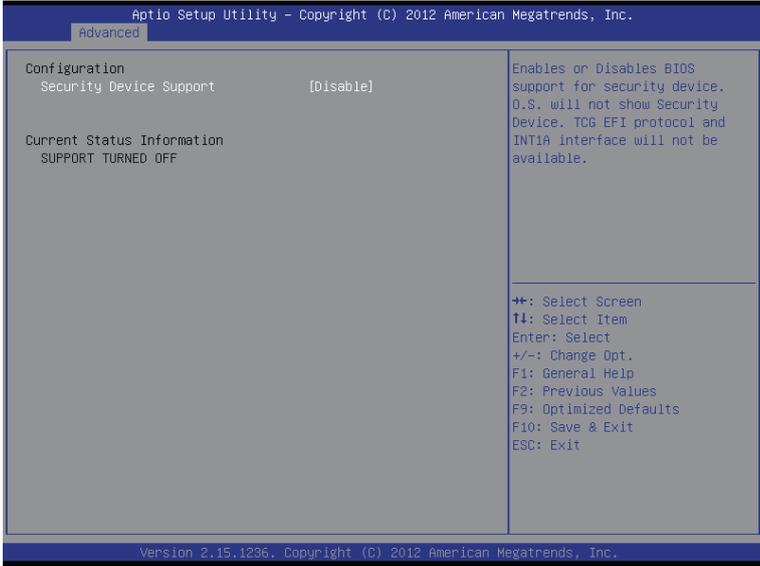
Option available: Enabled/Disabled. Default setting is **Disabled**.

☞ **Wake up Date/hour/minute/second^(Note)**

Press [Enter] to configure the system wake up time.

(Note) Advanced items prompt when this item is defined.

2-2-3 Trusted Computing (Optional)



Configuration

Security Device Support

Enable/Disable BIOS support for security device. O.S will not show security device. TCG EFI protocol and INT1A interface will not be available.

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

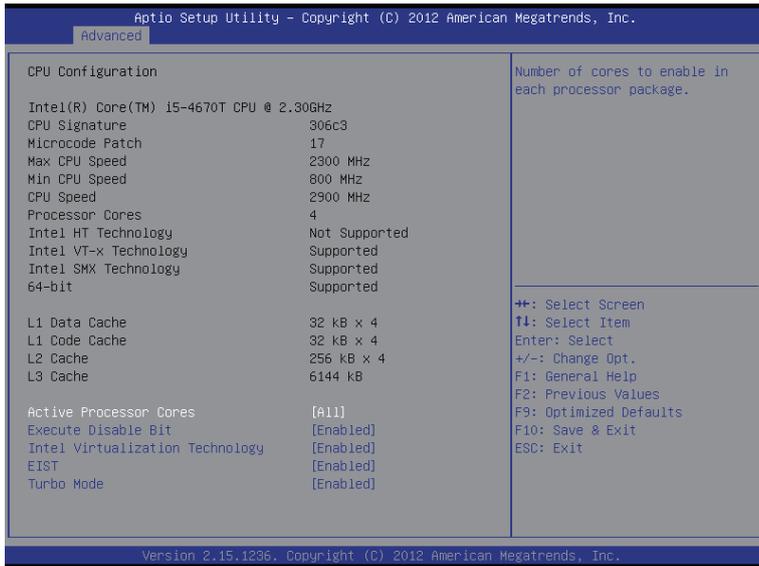
Current Status Information

Display current TPM status information.



- The function items in this page are only applicable when the extension card is attached.

2-2-4 CPU Configuration



☞ CPU Configuration

☞ CPU Type/Signature/Microcode Patch/Max CPU Speed/Min CPU Speed/CPU Speed/ Processor Cores/Intel HT Technology/Intel VT-x Technology/Intel SMX Technology/ 64-bit

Displays the technical specifications for the installed processor.

☞ Cache Information

☞ L1 Data Cache / L1 Code Cache / L2 Cache / L3 Cache

Displays the technical specifications for the installed processor.

☞ Active Processor Cores ^(Note)

Allows you to determine whether to enable all CPU cores.

Options available: All/1/2/3. Default setting is All.

☞ Execute Disable Bit

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

When disabled, the processor will not restrict code execution in any memory area. This makes the processor more vulnerable to buffer overflow attacks.

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

(Note) This item is present only if you install a CPU that supports this feature. For more information about Intel CPUs' unique features, please visit Intel's website.

☞ **Intel Virtualization Technology**

Select whether to enable the Intel Virtualization Technology function. VT allows a single platform to run multiple operating systems in independent partitions.

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

☞ **EIST (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**.

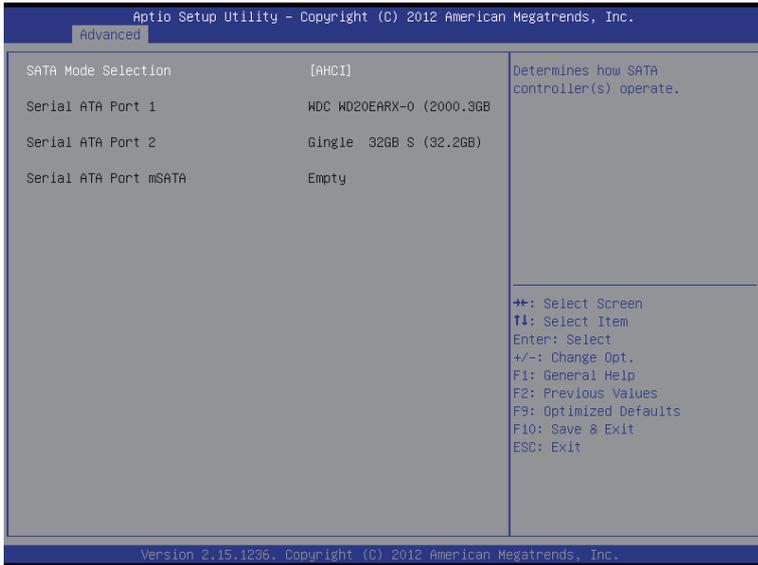
☞ **Turbo Mode**

When this item is enabled, the processor will automatically ramp up the clock speed of 1-2 of its processing cores to improve its performance.

When this item is disabled, the processor will not overclock any of its core.

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

2-2-5 SATA Configuration



☞ SATA Mode Selection

Select the on chip SATA type.

IDE Mode: When set to IDE, the SATA controller disables its AHCI functions and runs in the IDE emulation mode.

AHCI Mode: When set to AHCI, the SATA controller enables its AHCI functionality.

Options available: IDE/AHCI. Default setting is AHCI.

☞ Serial ATA Port 1/Serial ATA Port 2/Serial ATA Port mSATA

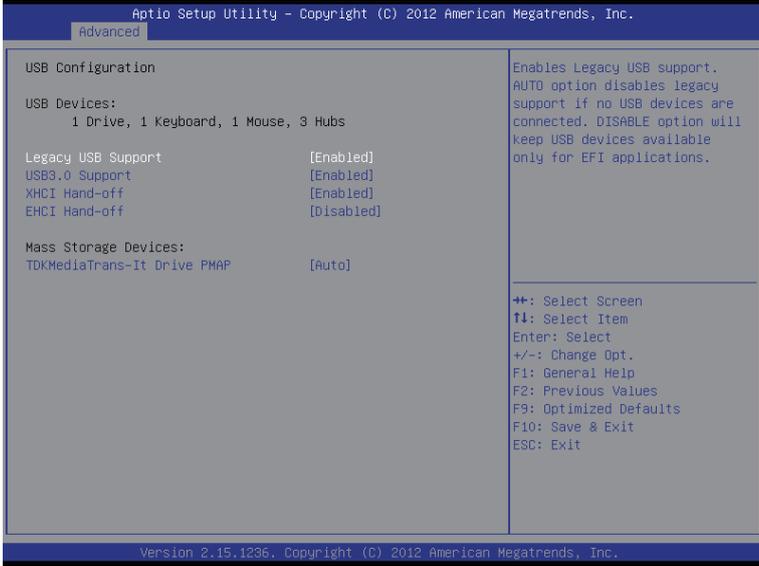
The category identifies Serial ATA and mSATA types of hard disk that are installed in the computer.

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.

2-2-6 USB Configuration



☞ USB Configuration

☞ Legacy USB Support

Enables or disables support for legacy USB devices.

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

☞ USB3.0 Support

Enables/Disables USB3.0 (XHCI) controller support.

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

☞ XHCI Hand-off

Enable/Disables XHCI (USB 3.0) Hand-off support.

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

☞ EHCI Hand-off

Enable/Disables EHCI (USB 2.0) Hand-off function.

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

☞ Mass Storage Device^(Note)

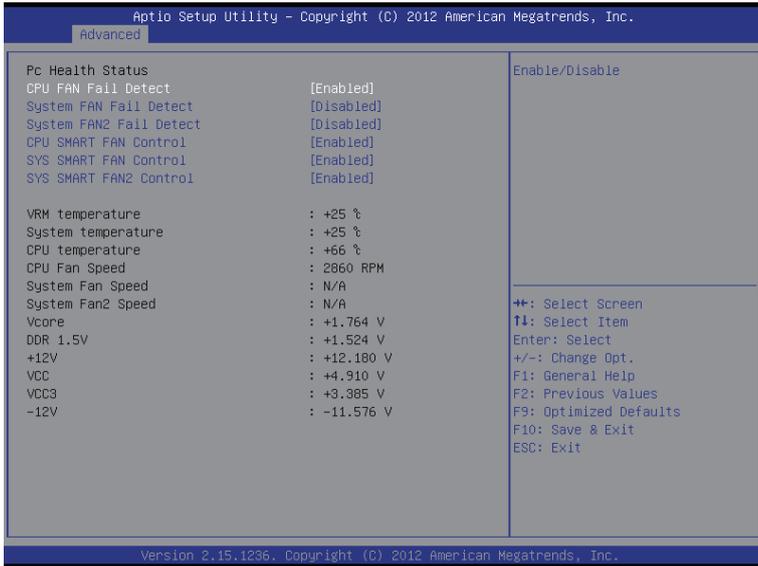
This BIOS feature determines if the USB flash drive be treated as a floppy disk drive or a hard drive.

Options available: Auto.

(Note) This item is present only if you connect USB types of device.

2-2-7 H/W Monitor

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



☞ CPU/System FAN/System FAN 2 Fail Detect

Enable CPU/System Fan Fail detection.

Option available: Enabled/Disabled.

Default setting for CPU FAN is **Enabled**.

Default setting for System FAN and System FAN2 are **Enabled**.

☞ CPU/System/System 2 SMART FAN Control

Enable CPU/System Smart Fan function.

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

☞ VRM/System/CPU Temperature

Displays current CPU and System temperature.

☞ CPU/System/System 2 Fan Speed (RPM)

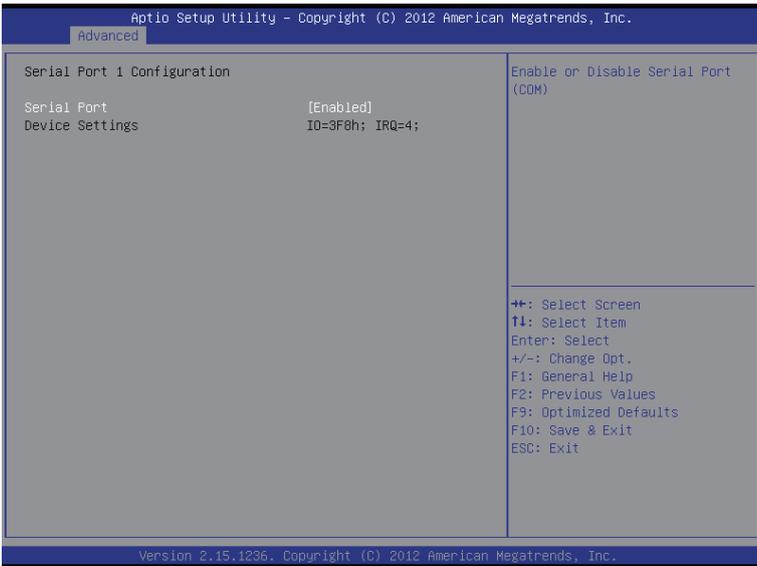
Displays current CPU and system fan speed.

☞ System Related Voltage Information:

Vcore/DDR 1.5V/+12V/VCC/VCC3/-12V

Displays current CPU and system voltage information.

2-2-8 Super I/O Configuration (COM 1/2, LPT)



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Advanced

Serial Port 2 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2F8h; IRQ=4;	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

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Advanced

Parallel Port Configuration		Enable or Disable Parallel Port (LPT/LPTE)
Parallel Port	[Enabled]	
Device Settings	IO=378h; IRQ=6;	
Change Settings	[Auto]	
Device Mode	[Standard Parallel P...]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

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☞ **Super I/O Configuration (COM 1/2, LPT)**

☞ **Super I/O Chip**

Display the model name of Super IO chip.

☞ **Serial Port 1/2/Parallel Port Configuration**

☞ **Serial Port 1/Serial Port 2**

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

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

☞ **Device Settings**

Display the Serial Port 1/2 base I/O address and IRQ.

☞ **Parallel Port**

When enabled allows you to configure the parallel port setting.

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

☞ **Device Settings**

Display the Parallel Port base I/O address and IRQ.

☞ **Change Settings**

Change Parallel port device settings. When set to Auto allows the server's BIOS or OS to select a configuration.

Options available: Auto/I/O=378h;IRQ=5/I/O=378h;IRQ=5,6,7,9,110,11,12/

IO=278h;IRQ=5,6,7,9,110,11,12/ IO=3BCh;IRQ=5,6,7,9,110,11,12

Default setting is **Auto**.

☞ **Device Mode**

Configure the device mode for parallel port.

Options available: Standard Parallel Port Mode/EPP Mode/ECP Mode/EPP Mode & ECP Mode.

Default setting is **Standard Parallel Port Mode**.

2-2-9 F81216 Second Super I/O Configuration (COM 3/4/5/6)

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advanced

F81216 Second Super I/O Configuration (COM 3/4/5/6)		Set Parameters of Serial Port 3 (COMA)
F81216 Second Super I/O Chip	F81216 SecondIO	
▶ Serial Port 3 Configuration		
▶ Serial Port 4 Configuration		
▶ Serial Port 5 Configuration		
▶ Serial Port 6 Configuration		

++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

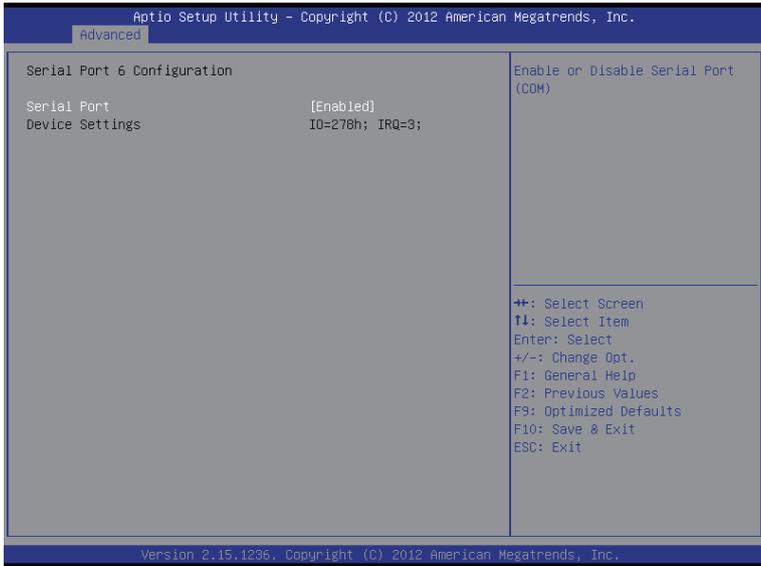
Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

advanced

Serial Port 3 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	ID=260h; IRQ=11;	

++: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save & Exit
ESC: Exit

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☞ **Super I/O Configuration (COM 3/4/5/6)**

☞ **F81216 Second Super I/O Chip**

Display the model name of Super IO chip.

☞ **Serial Port 3/4/5/6 Configuration**

☞ **Serial Port 3/Serial Port 4/Serial Port 5/Serial Port 6**

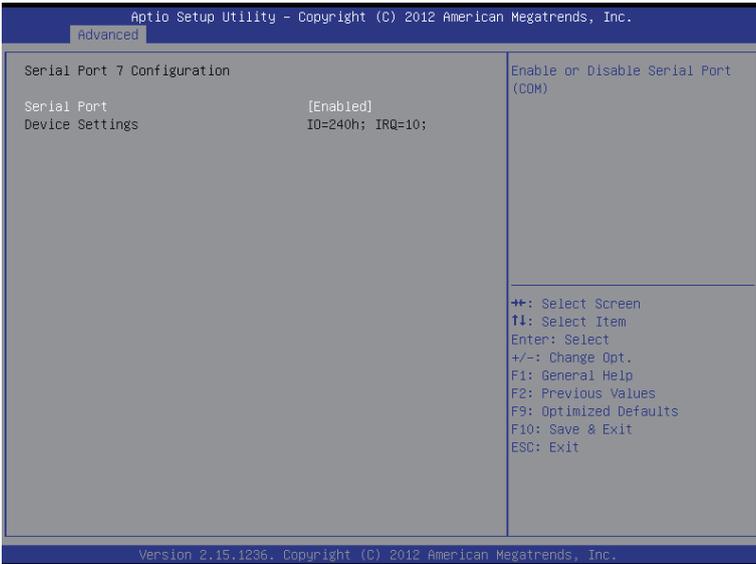
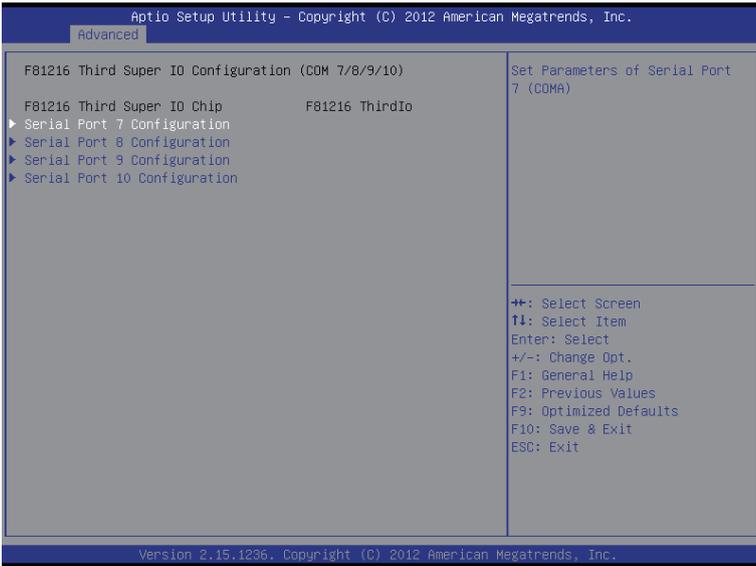
When enabled allows you to configure the serial port settings. When set to Disabled, displays no configuration for the serial port.

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

☞ **Device Settings**

Display the Serial Port 3/4/5/6 base I/O address and IRQ.

2-2-10 F81216 Third Super I/O Configuration (COM 7/8/9/10)



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Advanced

Serial Port 8 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=248h; IRQ=10;	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

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Advanced

Serial Port 9 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=250h; IRQ=7;	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit ESC: Exit

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☞ **Super I/O Configuration (COM 7/8/9/10)**

☞ **F81216 Third Super I/O Chip**

Display the model name of Super IO chip.

☞ **Serial Port 7/8/9/10 Configuration**

☞ **Serial Port 7/Serial Port 8/Serial Port 9/Serial Port 10**

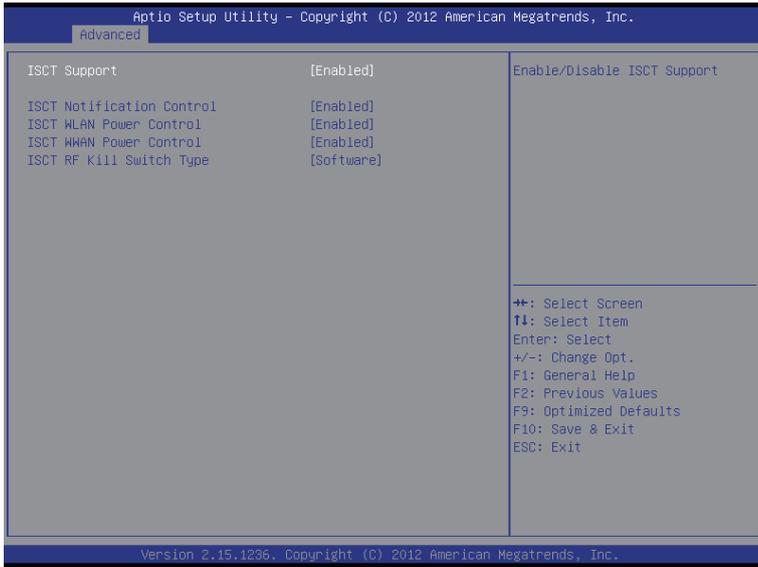
When enabled allows you to configure the serial port settings. When set to Disabled, displays no configuration for the serial port.

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

☞ **Device Settings**

Display the Serial Port 7/8/9/10 base I/O address and IRQ.

2-2-11 Intel(R) Smart Connect Technology



☞ ISCT Support

Enable/Disable Intel Smart Connect Technology (ISCT) function.
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ ISCT Notification Control

Enable/Disable ISCT Notification Control function.
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ ISCT WLAN Power Control

Enable/Disable ISCT WLAN Power Control function.
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ ISCT WWAN Power Control

Enable/Disable ISCT WWAN Power Control function.
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ ISCT RF Kill Switch Type

Software/Hardware ISCT RF Kill Switch Type.
Options available: Software/Hardware. Default setting is **Software**.

2-2-12 Network Stack



🔗 Network stack

Enable/Disable UEFI network stack.

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

🔗 Ipv4 PXE Support

Enable/Disable Ipv4 PXE Support.

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

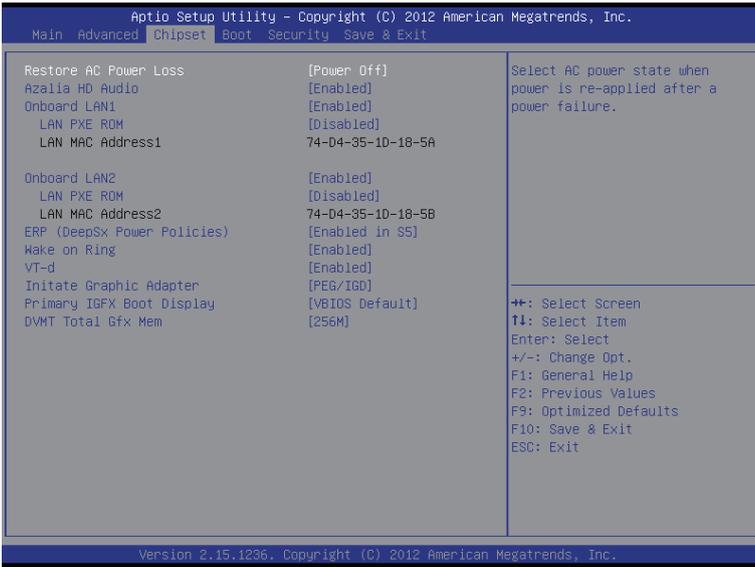
🔗 Ipv6 PXE Support

Enable/Disable Ipv6 PXE Support.

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

(Note) This item appears when **Network Stack** is set to **Enabled**.

2-3 Chipset Menu



Restore 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 state when AC power is removed.

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

Azalia HD Audio

Enable/Disable onboard audio controller.

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

Onboard LAN1/2

Enable/Disable onboard LAN 1/2 controller.

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

LAN1/2 PXE ROM

Enable/Disable LAN1/2 PXE ROM.

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

LAN1/2 MAC Address

Display the LAN1/2 MAC address information.

ERP (DeepSx Power Policies)

Enable/Disable ERP function.

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

☞ **Wake On Ring**

Enable/Disable Wake On Ring function.

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

☞ **VT-d**

Enable/Disable Intel Virtualization Technology for Directed I/O (VT-d) feature.

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

☞ **Initiate Graphic Adapter**

Configure the primary display device.

Options available: IGD/PEG/IGD. Default setting is **PEG/IGD**.

☞ **Primary IGFX Boot Display**

Select the Video device which will be activated during POST.

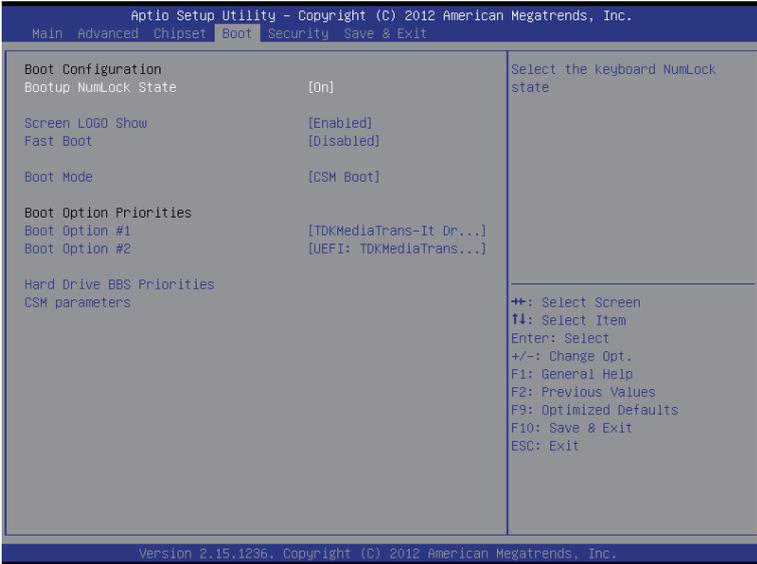
Options available: VBIOS Default/CRT/DVI/LVDS. Default setting is **VBIOS Default**.

☞ **DVMT Total Gfx Mem**

Options available: 128MB/256MB/MAX. Default setting is **256MB**.

2-4 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.



☞ Boot Configuration

☞ Bootup NumLock State

Enable or Disable Bootup NumLock function.
Options available: On/Off. Default setting is **On**.

☞ Screen Logo Show

Enable/Disable showing Screen Logo during system boot.
Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Fast Boot

This BIOS feature allows you to decrease the time it takes to boot up the system by skipping certain booting procedures.
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Boot Mode

Configure the boot mode.
UEFI Boot: Support to boot any UEFI-capable OS.
CSM Boot: Support to boot non UEFI-capable OS that expects a legacy BIOS interface.
Options available: CSM Support/UEFI Boot. Default setting is **CSM Boot**.

☞ Boot Option Priorities

☞ Boot Option #1/#2

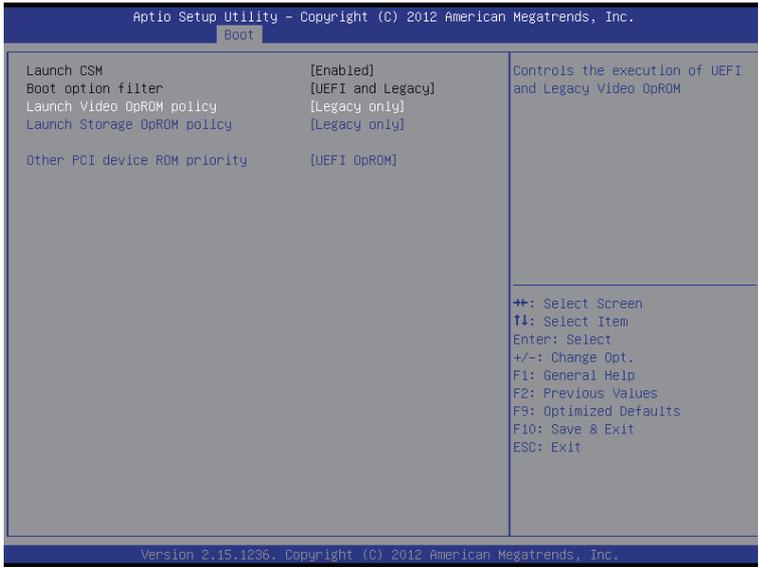
Press Enter to configure the boot priority.
By default, the server searches for boot devices in the following sequence:

1. UEFI device.
2. Hard drive.

 **CSM parameters**

Press Enter to configure the advanced items.

2-4-1 CSM Parameters



☞ Launch CSM (Compatibility Support Module)

Enable/Disable Compatibility Support Module (CSM) launch.

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



- The following five items appear and are configurable when the **Launch CSM** is set to **Enabled**.
- If the **Launch CSM** is set to **Disabled**, the following five items will not be able to support Legacy mode.

☞ Boot option filter

Determines which devices the system will boot to.

Options available: UEFI and Legacy/Legacy only/UEFI only. Default setting is **UEFI and Legacy**.

☞ Launch Storage OpROM policy

Determines which devices the system will boot to.

Options available: Do not launch/UEFI only/Legacy only/Legacy first/UEFI first.

Default setting is **Legacy only**.

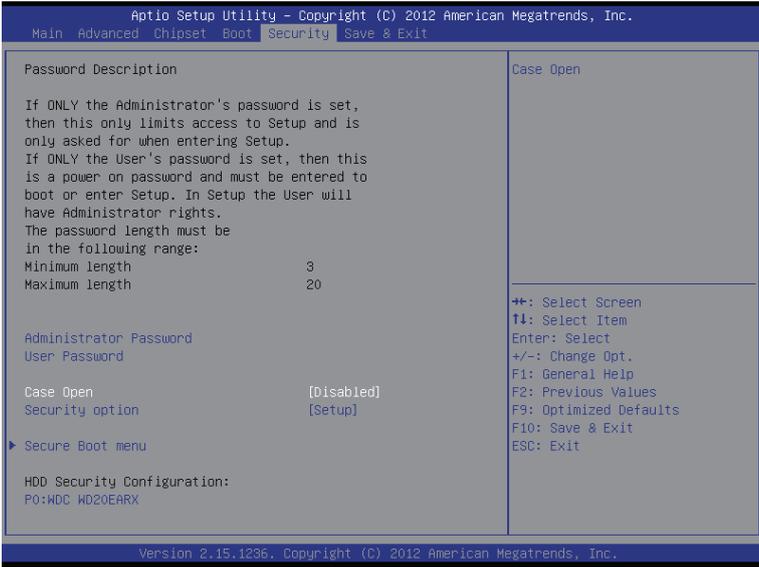
☞ Other PCI device ROM priority

For PCI devices other than Network, Mass storage or Video device, defines which OpROM to launch.

Options available: UEFI OpROM/Legacy OpROM. Default setting is **UEFI OpROM**.

2-5 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:

- **Administrator 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.

⚙ **Administrator Password**

Press Enter to configure the Administrator password.

⚙ **User Password**

Press Enter to configure the user password.

⚙ **Case Open**

Configure case open intrusion alert.

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

⚙ **Security option**

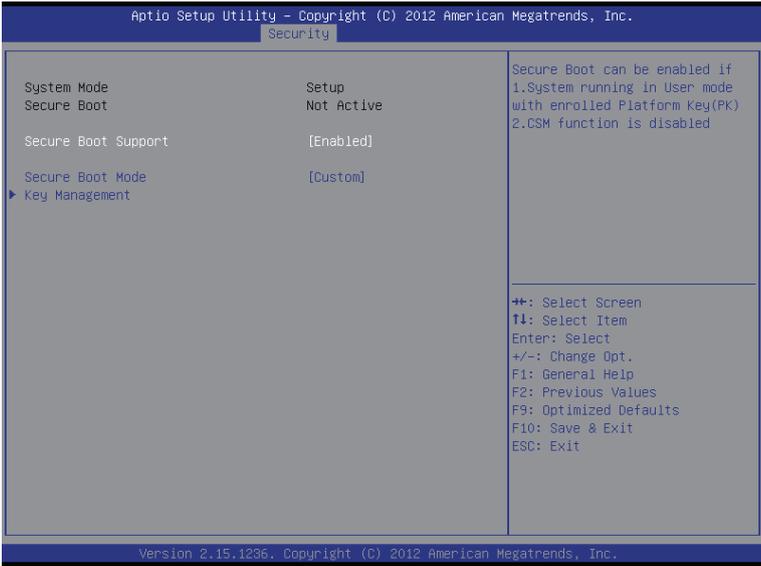
This feature lets you password-protect the BIOS to prevent unauthorized users from making changes. It can also be set to require a password for the PC to boot up.

Options available: Setup/System. Default setting is **Setup**.

⚙ **Secure Boot menu**

Press Enter to configure the advanced items.

2-5-1 Secure Boot menu



☞ System Mode

Display the System Mode state.

☞ Secure Boot

Display the System Mode State.

☞ Secure Boot Support

Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates. This way, the system knows all the files being loaded before Windows 8 loads and gets to the login screen have not been tampered with.

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

☞ Secure Boot Mode

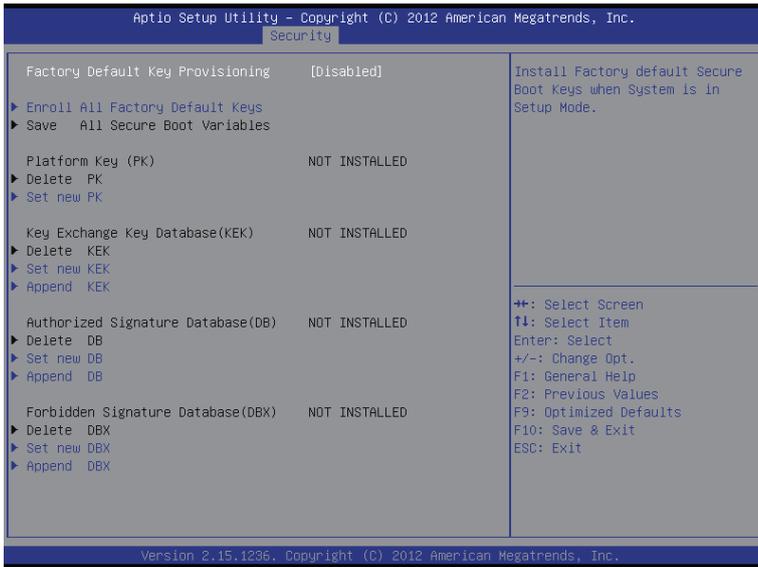
Define the Secure Boot Mode. Set this item to **Custom** to advanced items configuration.

Option available: Standard/Custom. Default setting is **Standard**.

☞ Key Management

Press Enter to configure the advanced items.

2-5-1-1 Key Management



Key Management

This item appears only when the **Secure Boot Mode** is set to **Custom**.

Factory Default Key Provisioning

Force the system to Setup Mode. This will clear all Secure Boot Variables such as Platform Key (PK), Key-exchange Key (KEK), Authorized Signature Database (db), and Forbidden Signatures Database (dbx).

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

Enroll All Factory Default Keys

Press [Enter] to enroll all factory default keys.

Save All Secure Boot Variables

Press [Enter] to save all Secure Boot Variables.

Platform Key (PK)

Display the status of Platform Key.

Delete the PK

Press [Enter] to delete the existed PK. Once the PK is deleted, all the system's Secure Boot keys will not be activated.

Set new PK File

Press [Enter] to configure a new PK.

Key Exchange Key Database (KEK)

Display the status of Platform Key.

Delete KEK

Press [Enter] to delete the KEK from your system.

☞ **Set new KEK**

Press [Enter] to configure a new KEK.

☞ **Append Var to KEK**

Press [Enter] to load additional KEK from a storage devices for an additional db and dbx management.

☞ **Authorized Signature Database (DB)**

Display the status of Authorized Signature Database.

☞ **Delete DB**

Press [Enter] to delete the db from your system.

☞ **Set new DB**

Press [Enter] to configure a new db.

☞ **Append DB**

Press [Enter] to load additional db from a storage devices.

☞ **Forbidden Signature Database (DBX)**

Display the status of Forbidden Signature Database.

☞ **Delete DBX**

Press [Enter] to delete the dbx from your system.

☞ **Set new DBX**

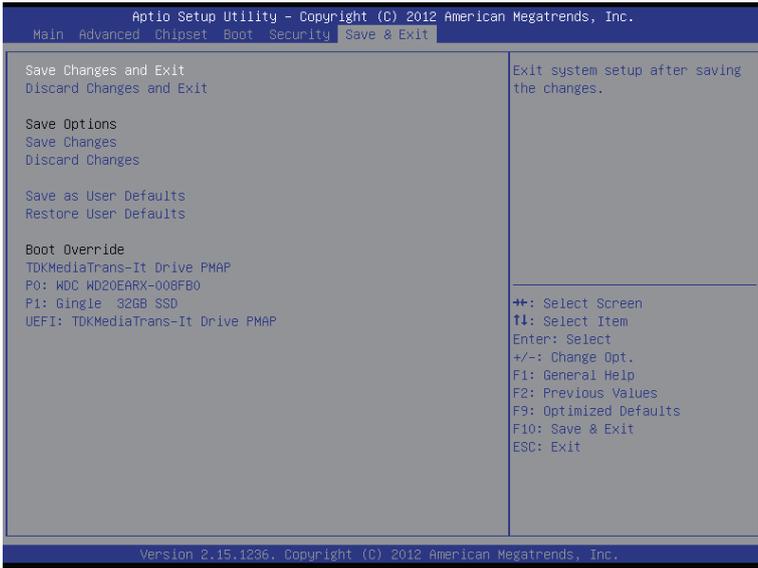
Press [Enter] to configure a new dbx.

☞ **Append DBX**

Press [Enter] to load additional db from a storage devices.

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: Yes/No.
- ☞ **Discard Changes and Exit**
Discards changes made and close the BIOS setup.
Options available: Yes/No.
- ☞ **Save Options**
- ☞ **Save Changes**
Saves changes made in the BIOS setup.
Options available: Yes/No.
- ☞ **Discard Changes**
Discards changes made and close the BIOS setup.
- ☞ **Save as User Defaults**
Press <Enter> on this item and then press the <Y> key to save as user default settings.
Options available: Yes/No.
- ☞ **Restore User Defaults**
Press <Enter> on this item and then press the <Y> key to restore user default settings.
- ☞ **Boot Override**
Press Enter to configure the device as the boot-up drive.