User's Manual

AMD Embedded R-Series APU

FS1r2 Socket M-ATX Mainboard

Manual Revision 1.0

September 25, 2013

Federal Communications Commission (FCC) Statement

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions contained in this manual, may cause harmful interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation.

If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the product into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note1: Connecting this device to peripheral devices that do not comply with Class B requirements, or using an unshielded peripheral data cable, could also result in harmful interference to radio or television reception

Note2: The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this product.

Note3: To ensure that the use of this product does not contribute to interference, it is necessary to use shielded I/O cables

CE: Radiation of EN 55022 & Immunity of EN 55024

Waste Electrical and Electronic Equipment (WEEE) Statement

To protect the global environment, this product must be sent to separate collection facilities for recovery and recycling.

DISPOSAL

Do not dispose of this product as unsorted municipal waste. Collect such waste separately for special treatment.

Table of Contents

Chapter 1 Introduction

1-1 Mainboard Specifications

APU

➤ AMD® Embedded R-Series APU in FS1r2 socket

Chipset

➤ AMD® A75 (Hudson D3) Chip

GPU

➤ AMD® Radeon E6760 / E6460 GPU (refer to below for configuration)

GPU	Supported difference
Radeon E6760	4 HDMI and 6 Mini DisplayPort supported
Radeon E6460	4 HDMI and 4 mini DisplayPort supported
GPU not included	4 HDMI and No mini DisplayPort supported

➤ Base on GPU provides ten or eight independent displays with two combination of HDMI and DisplayPort

Port	Supported resolution
HDMI 1.4a	1920x1200@60MHz
DisplayPort 1.2	2560x2048@60MHz
DisplayPort 1.1a	2560x1600@60MHz

System Memory

➤ Two 204-pin DDR3 SO-DIMM sockets
➤ Supports 1.5v DDR3-1066/1333/1600 DIMMs with daul channel architecture
➤ Supports non-ECC, unbuffered DIMMs
➤ Supports up to 16GB system memory

USB Ports

➤ Six USB 2.0 ports (two at rear panel, four onboard headers), supporting transfer speed up to 480Mbps
➤ Two USB 3.0* ports at rear panel backward compatible with USB 2.0, supporting transfer speeds up to 4.8Gbps
➤ Supports wake-up from S3 and S4 modes

➢ Support power charge function under S0 mode

- Front panel two USB 3.0 ports also support power charge function under S3, S4, S5 mode

* Noted: Driver installation required.

SATA Ports
➢ Five SATA3 ports with 6Gb/s data transfer rate with RAID 0, 1 and 10 function
➢ Supports AHCI (Advanced Host Controller Interface)

Onboard LAN
➢ Dual Gigabit Ethernet from Realtek® RTL8111F and RTL8111DP Gigabit controller

Onboard Audio
➢ Supports 6-channel High-Definition audio from Realtek ALC662 codec
➢ Supports Jack-detection, Multi-Streaming and Front Panel Jack-retasking function
➢ Onboard S/PDIF header

Expansion Slots
➢ One PCI-Express 2.0 x4 slot
➢ One Mini PCI-Express slot
➢ One Mini PCI-Express/mSATA slot

* Please refer to detail configuration at 2-6 Installing Expansion Cards

I/O
➢ Onboard Fintek F71889AD LPC bus I/O controller
➢ Supports Hardware Monitor for fan speed monitoring, CPU and system temperature

Back Panel I/O Ports
➢ 4 x HDMI ports
➢ 2 x RJ45 LAN ports
➢ 4 x USB2.0 ports
➢ 3 x Audio jacks
➢ 6/4 x Mini Displayport (Refer to GPU's description on Page 1 for detail)

Internal I/O Connectors

- 5 x SATA3 connectors
- 1 x USB2.0 header
- 2 x USB3.0 headers
- 1 x Front Panel header
- 1 x S/PDIF header
- 1 x Front Audio header
- 1 x Speaker header
- 1 x 4-pin CPU Fan header
- 3 x 3-pin Fan headers
- 2 x Serial Port headers
- 1 x RS232/485/422 Mode Select Jumper
- 1 x Case Open Jumper
- 1 x Dual BIOS Select Jumper
- 1 x Clear CMOS Jumper

BIOS

- 32Mb SPI Flash with AMI based BIOS
- S_BIOS easily update and back up at BIOS control panel
- Supports ACPI (Advanced Configuration and Power Interface)
- Dual BIOS with select jumper

Watchdog Timer

- Supports Watchdog Timer function that is used to detect and recover from computer malfunctions

System Voltage

- 24-pin ATX power connector
- 4-pin ATX 12V power connector for full system loading usage

Form Factor

- Micro ATX form factor of 240mm x 240mm

Operating systems

- Supports Windows Vista, Windows 7 and Windows 8

Environmental

➢ Max. Power Requirement: Max. 300W with full loading

➢ Operating Temperature: 0°C~60°C (32°F~140°F)

➢ Storage Temperature: -20°C~80°C (-4°F~176°F)

➢ Relative Humidity: 10%~90%

1-2 Mainboard Layout

The following figure shows the location of components on the mainboard.   See following page for description.
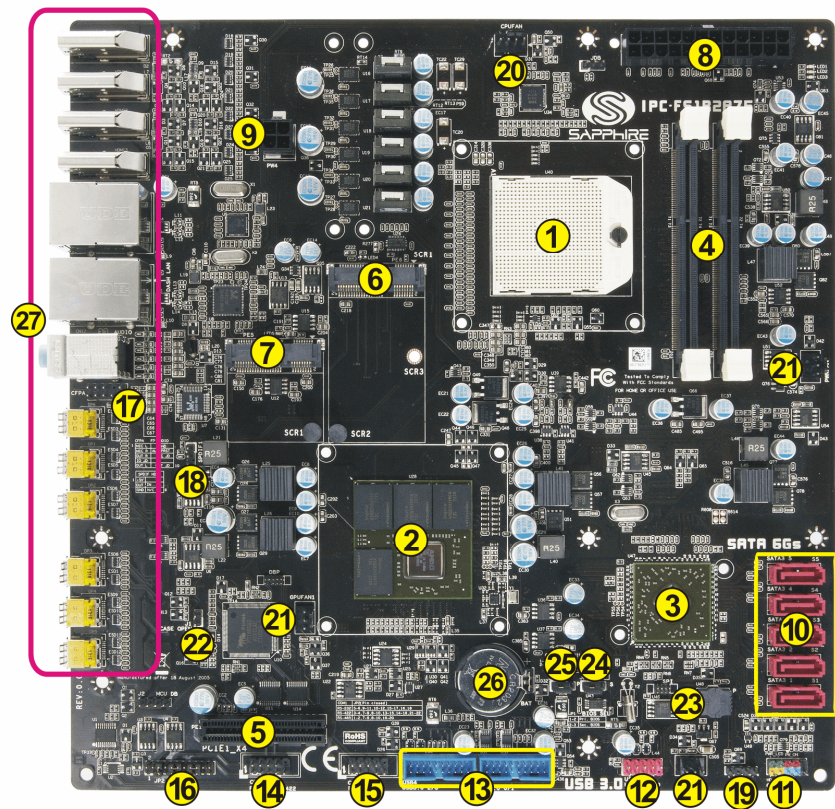
Note:
Picture is for reference only, actual board may be slightly different.

Item	Component description
1	AMD CPU Socket FS1r2
2	AMD Radeon GPU (Optional)
3	AMD A75 (Hudson D3) Chip
4	DDR3 SO-DIMM Slot *2
5	PCI-E 2.0 x4 Slot
6	Full Mini PCI-E/mSATA Slot
7	Half Mini PCI-E Slot
8	24-Pin ATX Power Connector
9	4-pin ATX_12V Power Connector
10	SATA3 Connectors *5
11	Front Panel Header
12	USB 2.0 Header
13	USB 3.0 Header *2
14	Serial Port Header (COM1) for RS232/485/422 Select
15	Serial Port Header (COM2)
16	RS232/485/422 Select Jumper
17	Front Panel Audio Header
18	S/PDIF Header
19	Speaker Header
20	CPU Fan Header
21	3-pin Fan Header *3
22	Case Open Jumper
23	Dual BIOS
24	BIOS Select Jumper
25	Clear CMOS Jumper
26	Mainboard Battery
27	Back Panel Connectors (see next page for detail)
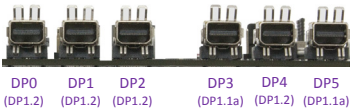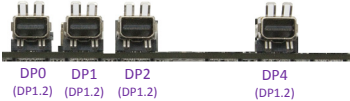
I/O Back Panel

The I/O back panel for this mainboard is shown below. When installing the mainboard into the computer case, use the I/O shield to protect this back panel.
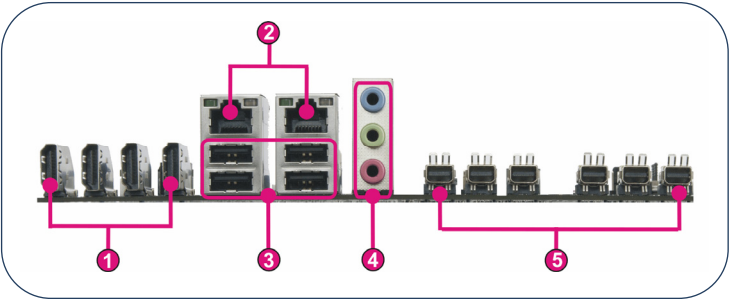
Item	Description	Item	Description
1	HDMI Port (Four)	4	Audio Port (three)
2	10/100/1000 LAN Port (Two)	5	Mini DisplayPort (refer to the following for detail)
3	USB 2.0 port (Four)		

Base on GPU spec, the Mini DisplayPort supported will be different.

GPU	Supported difference
Radeon E6760	6 Mini DisplayPort supported DP0 (DP1.2)　DP1 (DP1.2)　DP2 (DP1.2)　DP3 (DP1.1a)　DP4 (DP1.2)　DP5 (DP1.1a)
Radeon E6460	4 Mini DisplayPort supported DP0 (DP1.2)　DP1 (DP1.2)　DP2 (DP1.2)　DP4 (DP1.2)
GPU not included	No Mini DisplayPort supported

1. The HDMI (High-Definition Multimedia Interface) provides an all-digital audio/video interface to transmit the uncompressed audio/video signals and is HDCP compliant. Connect the HDMI audio/video device to this port.
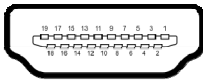
Pin	Definition	Pin	Definition
1	TMDS Data2+	2	GND
3	TMDS Data2–	4	TMDS Data1+
5	GND	6	TMDS Data1–
7	TMDS Data0+	8	GND
9	TMDS Data0–	10	TMDS Clock+
11	GND	12	TMDS Clock–
13	CEC	14	NC
15	SCL	16	SDA
17	GND	18	+5V
19	Hot Plug Detect		

2. Dual LAN Port with LEDs

The mainboard provides two standard RJ-45 jacks for connecting to Local Area Network (LAN). Two LEDs are built into the RJ-45 LAN connector. These LEDs indicate the status of the LAN.
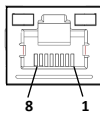
Pin	Definition	Pin	Definition
1	TX+	5	NC
2	TX-	6	RX-
3	RX+	7	NC
4	NC	8	NC

LED	LED Color	LED state	Indicates
A	Green	Off	LAN link is not established
		On	LAN link is established
		Blinking	LAN activity is occurring
B	N/A	Off	10 Mb/s data rate
	Green	On	100 Mb/s data rate
	Yellow	On	1000 Mb/s data rate

3. USB 2.0 Ports (four)

The mainboard provides an OHCI (Open Host Controller Interface) Universal Serial Bus root for attaching USB devices such as a keyboard, mouse or other USB-compatible devices. Supports data transfer rates up to 480Mb/s.

1   4
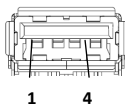
Pin	Definition
1	+5V
2	Data-
3	Data+
4	GND

4. Audio ports

This mainboard provides 2 or 6 channel audio. It is easy to differentiate between the audio functions by referring to the color of the jacks.

Blue → Line-In
Line-In/Surround-Out

Lime → Line-Out
Line-Out

Pink → Mic-In
Mic-In/Center/Subwoofer
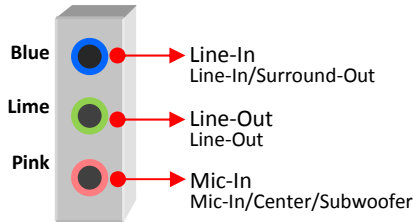
5. Mini DisplayPort

The Mini DisplayPort (abbreviated MiniDP or mDP) is a miniaturized version of the DisplayPort digital audio-visual interface. With a suitable adapter, Mini DisplayPort may be used to drive displays with a VGA, DVI or HDMI interface.

19   1
20   2
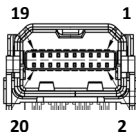
Pin	Definition	Pin	Definition
1	GND	2	Hot Plug Detect
3	ML_Lane 0 (p)	4	CONFIG1
5	ML_Lane 0 (n)	6	CONFIG2
7	GND	8	GND
9	ML_Lane 1 (p)	10	ML_Lane 3 (p)
11	ML_Lane 1 (n)	12	ML_Lane 3 (n)
13	GND	14	GND
15	ML_Lane 2 (p)	16	AUX_CH(p)
17	ML_Lane 2 (n)	18	AUX_CH(n)
19	GND	20	DP_PWR

Multi Displays:

This mainboard provides two interfaces for video output: HDMI and DisplayPort. Base on the GPU spec. provides ten or eight independent displays.

GPU	Supported difference
Radeon E6760	4 HDMI and 6 Mini DisplayPort supported
Radeon E6460	4 HDMI and 4 mini DisplayPort supported
GPU not included	4 HDMI and No mini DisplayPort supported

For additional multi displays configuration information, please visit http://www.amd.com.

1-3 Board Dimensions

Board dimension
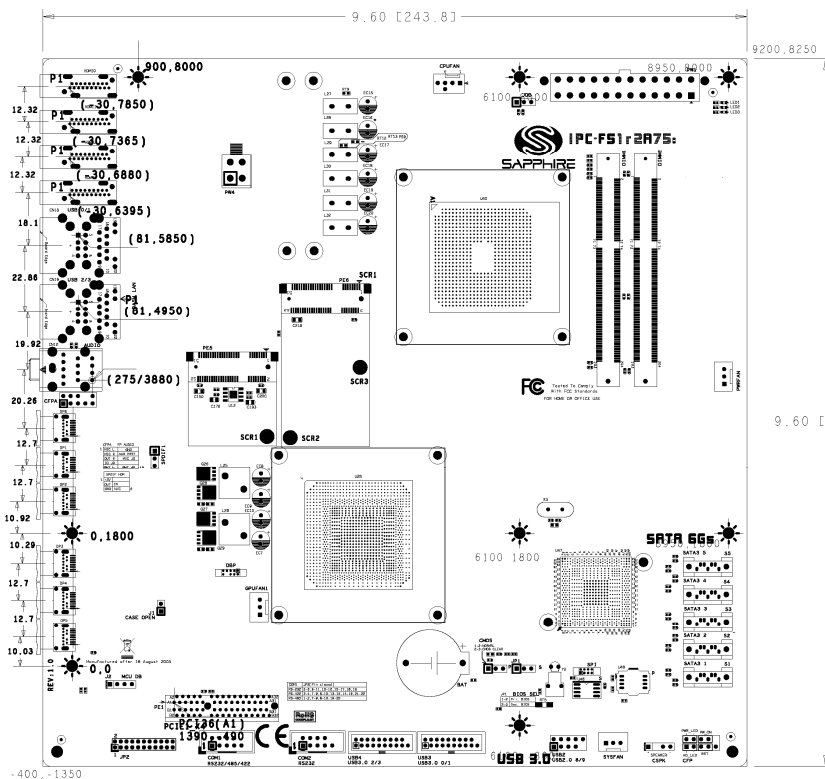
<u>Chapter 2 Installation</u>

2-1 Before You Begin

Please take note of all precautions before you install anything on to the mainboard or change any of the mainboard settings.

Turn off the power to your system and discharge your body's static electric charge by touching a grounded surface—for example, the metal surface of the power supply—before performing any hardware procedure.

The manufacturer assumes no liability for any damage, caused directly or indirectly, by improper installation of any components by unauthorized service personnel. If you do not feel comfortable performing the installation, consult a qualified computer technician.

Damage to system components, the mainboard, and injury to you may result if power is applied during installation.

2-2 Installing I/O Shield

The mainboard comes complete with an I/O shield. When installed in the chassis, the shield blocks radio frequency transmissions, protects internal components from dust and foreign objects, and promotes correct airflow within the chassis.

Install the I/O shield before installing the mainboard in the chassis. Place the shield inside the chassis. Press the shield into place so that it fits tightly and securely. If the shield does not fit, obtain a properly sized shield from the chassis supplier.

2-3 Securing to the Chassis

When installing the mainboard, you have to secure the mainboard into the chassis by fastening with screws. Please refer to your chassis manual for instructions on installing.

2-4 Installing CPU and Cooler

Follow the steps below to install the CPU & cooler correctly.

1. Locate the CPU socket on the board.

2. Align the CPU pin one (small triangle marking) and gently insert the CPU into the socket and turn the CPU lock into the correct locking orientation as shown below.

   🖈 Note:
   - The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the landing pins in the socket and damaging the CPU.
   - Apply some thermal paste on surface of CPU for better heat dispersion.

3. Place the Cooler on the CPU and match the four screws to the fixing holes on the back of board.

4. Screw tightly to fasten the CPU cooler. Refer to your CPU cooler manual for installing the cooler.

5. Connect the 4-wire fan cable to the 4-pin CPUFAN header on the mainboard.
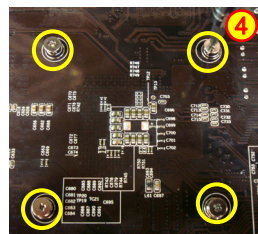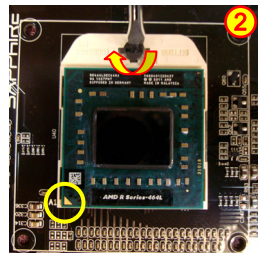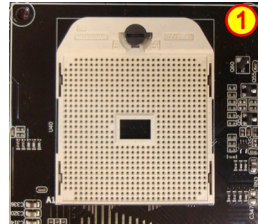
PS:
Pictures for installation reference only, the actual board may be slightly different.

2-5 Installing System Memory

This mainboard has two 204-pin SO-DIMM sockets for DDR3 memory. These slots support 1GB, 2GB, 4GB and 8GB DDR3 SO-DIMMs up to maximum 16GB.

Make sure that you install memory modules of the same type and density in different channel DIMM slots for Dual-Channel mode.

There must be at least one memory bank populated to ensure normal operation and always insert the memory module into any of the DIMM slots.

Memory configurations

To use 1 DIMM: Install into either DIMM slot 1 or slot 2.

To use 2 DIMMs: Install into DIMM slot 1 and DIMM slot 2.
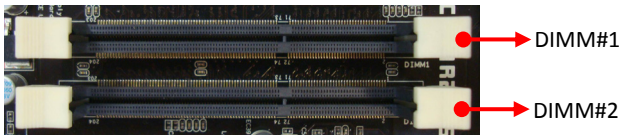
Memory Installation

DDR3 and DDR2 memory modules are physically different. Please only install DDR3 DIMMs on this mainboard.

To make sure you have the correct DIMM, check that all the notches line up with the DDR3 DIMM slot.

To install the DIMM, follow these steps:

1. Pull both clips on either side of the slot outwards. Align the DIMM module with the slot.
2. Press modules straight down until the plastic clips close and the module fits tightly into the DIMM slot. Push clips inwards to make sure they are in place.

2-6 Installing Expansion Cards

The mainboard provides one PCI Express 2.0 x4 slot, one Mini PCI-E slot and Mini PCI-E / mSATA slot.

PE1
PCI-E2.0 x4 slot
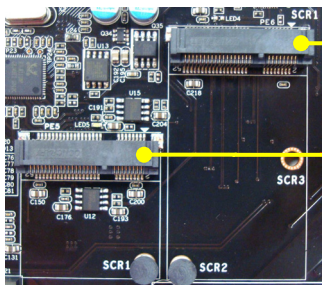
PE5
Full Mini PCI-E / mSATA slot

PE6
Half Mini PCI-E slot

PCI-E Slot

The design of this motherboard supports PCI-E interface expansion card complying with the PCI Express specification.

To install a PCI Express card:
1. Place the card in an available PCI Express slot and press down on the card until it is completely seated in the slot. If the card is not seated properly, it could cause a short across the pins.
2. Secure the card's metal bracket to the chassis back panel with a screw.

Mini PCI-E slot/mSATA slot

This slot is used to connect compliant Mini PCI-Express x1 devices such as a wireless network card, USB card or connect a mSATA device.

To install a Mini PCI-E card:
1. Remove screws and align the notch on the Mini PCI card edge connector with the tab in the slot.
2. Plug the Mini PCI card firmly into the slot at a 45-degree angle, and until it clicks into place.
3. Fasten Mini PCI-E card onto the nut with accompanied screws.

To install a mSATA device:

The installation is the same as Mini PCI-E card; please refer to the steps as above.

2-7 Connecting Cables

This section takes you through all the necessary connections on the mainboard.

Connecting Power Supply Cables

• 24-pin ATX Power

PW1 is the main power supply connector. Make sure that the power supply cable pins are properly aligned with the connector on the mainboard. Firmly plug the power supply cable into the connector and make sure it is secure.

📌 Note: If you'd like to use the 20-pin ATX power supply, please plug in your power supply cable aligned with pins 1 & 13. The 24-pin main power connector is backwardly compatible with ATX power supplies with 20-pin connectors.

• 4-pin ATX 12V Power

PW3, a 4-pin ATX 12V power connector, is used to provide power to the CPU. Align the power plug to the connector and press firmly until seated.

24-pin ATX Power connector

	13 1	
+3.3V		+3.3V
-12V		+3.3V
Ground		Ground
PSON		+5V
Ground		Ground
Ground		+5V
Ground		Ground
-5V		PWR_OK
+5V		+5VSB
+5V		+12V
+5V		+12V
Ground		+3.3V
	24 12	

4-pin ATX Power connector

	4 2	
+12V		Ground
+12V		Ground
	3 1	
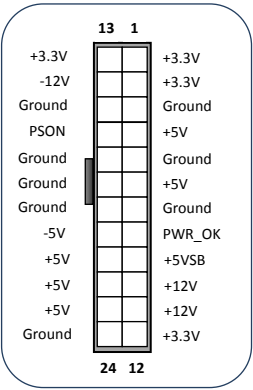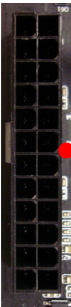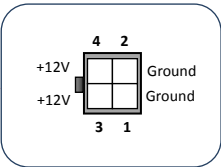
Connecting Serial ATA (SATA) Cables

SATA cables support the Serial ATA protocol. Each cable can be used to connect one SATA drive to the mainboard.

The S1 to S5 connectors (total 5 ports) are SATA3 connectors and works at speeds of up to 6G/s and support RAID 0, 1, 10 functions.

S5: SATA3 5
S4: SATA3 4
S3: SATA3 3
S2: SATA3 2
S1: SATA3 1

1
Ground
TX+
TX-
Ground
RX-
RX+
Ground
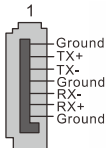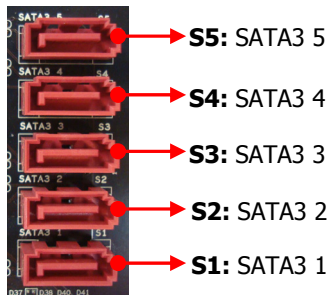
Attach one end of the SATA cable to one of the SATA connectors on the board and attach the other end of the cable to the SATA drive

Connecting to the Internal Headers and Connectors

Front Panel Header

The front panel header on this motherboard is used to connect the front panel switches and LEDs.

▶ PWR_LED

Attach the front panel power LED cable to these two pins of the connector. The Power LED indicates the system's status.

System Status	Power LED indicates
S0	The LED is on
S5	The LED is off
S3	The LED will blink
S4	The LED is off

▶ PW_ON

Attach the power button cable from the case to these two pins. Pressing the power button on the front panel turns the system on and off rather than using the onboard button.

▶ HD_LED

Attach the hard disk drive indicator LED cable to these two pins. The HDD indicator LED indicates the activity status of the hard disks.

▶ RESET

Attach the Reset switch cable from the front panel of the case to these two pins. The system restarts when the RESET switch is pressed.
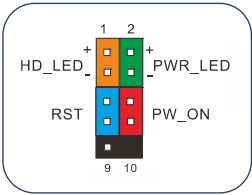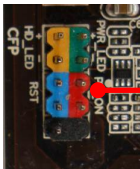
Header	Pin	Signal
HD_LED	1	HD_PWR
	3	HD Active
PWRLED	2	PWR LED+
	4	PWR LED-
RESET	5	Ground
	7	RST BTN
PWRSW	6	PWR BTN
	8	Ground
No Connect	9	+5V
Empty	10	Empty

USB2.0 Headers

This mainboard contains two (2) USB 2.0 ports that are exposed on the rear panel of the chassis. This mainboard also contains two 10-pin onboard header connectors that can be used to connect to four (4) external USB 2.0 devices.

Refer to the following steps:

1. Secure the bracket to either the front or rear panel of your chassis (not all chassis are equipped with the front panel option).
2. Connect the cable(s) to the USB 2.0 header on the mainboard.
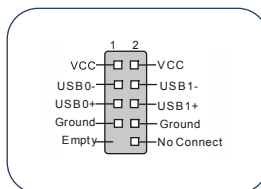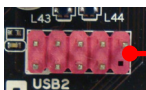
USB3.0 Headers

This mainboard contains two onboard USB3.0 headers connector that can be used to connect to four (4) external USB 3.0 devices.
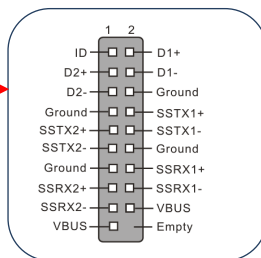
For real panel, refer to the following steps:
1. Secure the bracket to rear panel of your chassis.
2. Connect the cable(s) to the USB 3.0 header on the mainboard.

For front panel, refer to the following steps:
1. Remove the cover plate from the selected drive bay.
2. Push the USB3.0 cable into the drive bay. Align the screw holes with the appropriate holes in the drive bay and tighten the mounting screws.
3. Connect the USB3.0 connector of cable to the USB3.0 header on the mainboard.

CFPA Header

This header allows you to connect the front panel audio. The audio connector supports HD audio standard.


```
              1   2
    MIC_L ──□ □── Ground
    MIC_R ──□ □── AUD_PRST
    OUT_R ──□ □── MIC_Jack Detect
IO_Jack Detect ──□ □── Empty
    OUT_L ──□ □── OUT_Jack Detect
```
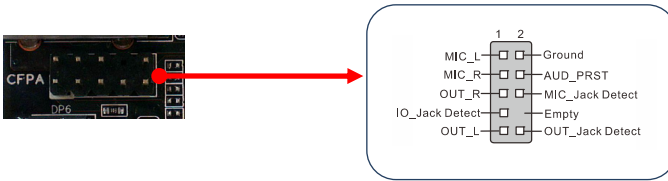
S/PDIF Header

This header is used to connect S/PDIF (Sony & Philips Digital Interconnect Format) interface for digital audio transmission.


```
             1
    +5V ──□
SPDIF_Out ──□
 Ground ──□
```
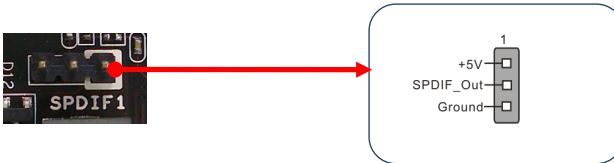
Speaker Header

This header is used to connect the case's speaker for PC beeps


```
    1
   □── Speaker+
   □── No Connect
   □── Speaker-
   □── Speaker-
```
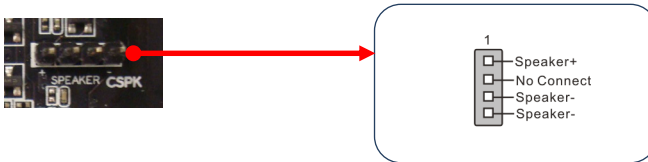
Case Open

This header is used to for a chassis open detect. When set, the warning message will appear during POST when the case is opened.


```
    1
   □── Ground
   □── Case Open
```
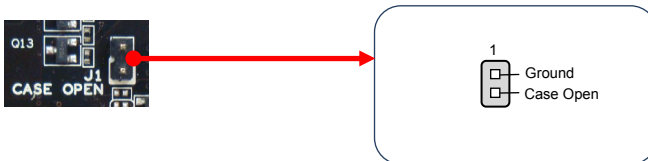
Serial Port Header

This mainboard provides two serial ports, one RS-232/485/422 (COM1) and one RS-232 (COM2). These ports can connect to serial devices, such as a mouse or a printer, or to a communications network.
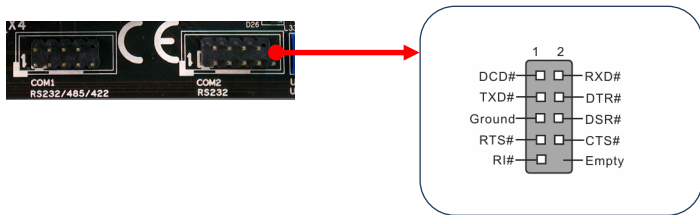
Note:
The pin definition of header and standard DB9 male pin out is different.

RS232/485/422 Select Jumper: JP2

You can use JP2 to select among RS-232/485/422 modes for COM1. The default setting is RS-232.
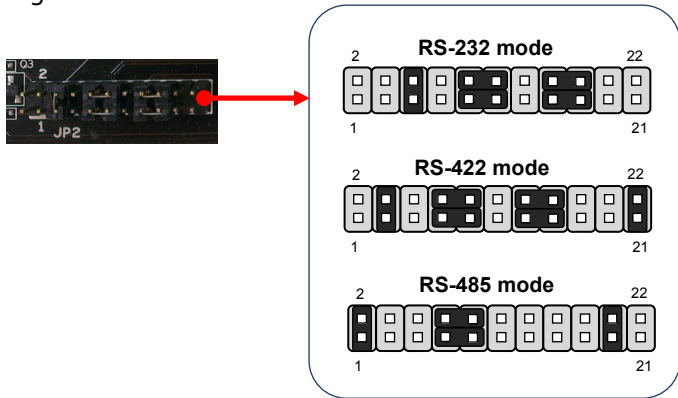
COM1 Mode Select	JP2 Pin Closed
RS-232 (Default)	5-6, 9-11, 10-12, 15-17, 16-18
RS-422	3-4, 7-9, 8-10, 13-15, 14-16, 21-22
RS-485	1-2, 7-9, 8-10, 19-20

Fan Headers

There are four fan headers (CPUFAN, PWRFAN, SYSFAN and GPUFAN) on the motherboard. These fans can be speed detected/controlled and displayed in the Hardware Health Configuration section of the CMOS Setup. The fans are automatically turned off after the system enters S3, S4 or S5 mode.

CPUFAN

CPUFAN
1
Ground
+12V
Sense
Control
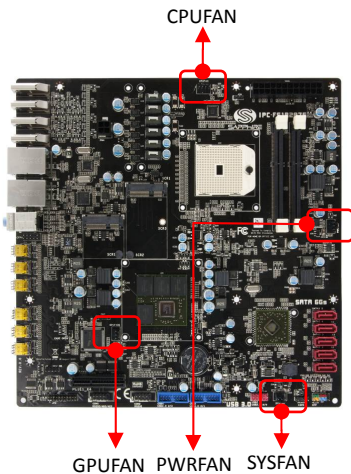
Note:
The CPU fan cable can be either a 3-pin or a 4-pin connector. Connect a 3-pin connector to pins 1, 2, and 3 on the mainboard connector.

PWRFAN, SYSFAN, GPUFAN
1
Ground
+12V
Sense

GPUFAN   PWRFAN   SYSFAN

2-8 Clear CMOS

This mainboard contains a jumper (CMOS) that can clear CMOS data. If the CMOS data becomes corrupted or you forgot the supervisor or user password, clear the CMOS data to reconfigure the system back to the default values stored in the ROM BIOS.

CMOS
1
Settings:
1-2: Normal
2-3: Clear CMOS

To clear CMOS data, please follow the steps below.

1. Turn off the system.
2. Change the jumper from "1-2" to "2-3" position for a few seconds.
3. Replace the jumper back to the "1-2" position.
4. Turn on the system and hold down the <Del> key to enter BIOS Setup.

2-9 LED Status Indicators

This mainboard provides three LEDs to indicate the system's status.

- DIMM LED (LED1, Yellow): When the Memory slot is functional, this LED is on.

- POWER LED (LED2, Green): When the System is powered on, this LED is on.

- STANDBY LED (LED3, Blue): When the System is in Standby Mode, this LED is on. This LED will remain on as long as the motherboard is receiving constant power.

DIMM LED
Power LED
Standby LED
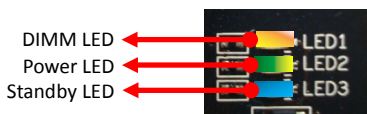
2-10 Dual BIOS Protection

- **Recover BIOS:**

This mainboard includes dual onboard BIOS, (Primary and Secondary BIOS), When the primary BIOS is corrupted or has failed, you can change the jumper to "2-3" location to use the secondary BIOS to take over on the next system boot to ensure normal system operation

Please refer to the following step to enable the secondary BIOS:

1. Turn off the system power.

2. Change the BIOS select jumper (JP1) from "1-2" to "2-3" location.

3. Turn on the system power.

Primary BIOS
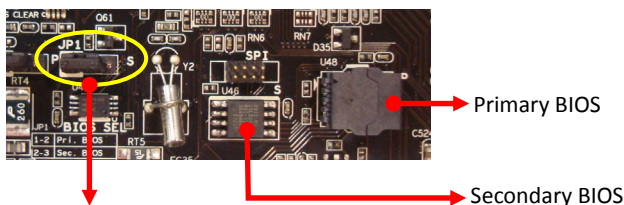
Secondary BIOS

JP1: BIOS Select Jumper

Settings:
1-2: Primary BIOS (Default)
2-3: Secondary BIOS

- **Flash BIOS:**

  If the primary (secondary) BIOS has corrupted or outdated, you can use the USB pen drive or AMI Windows flash utility to do flashing BIOS process to recover the primary (secondary) BIOS.

  Flash primary BIOS:

  Make sure the BIOS select jumper is at "1-2" position and power on. Flash the BIOS using either USB pen drive under DOS or AMI Windows flash utility under Windows.

  Flash secondary BIOS:

  Make sure the BIOS select jumper is at "2-3" position and power on. Flash the BIOS using either USB pen drive under DOS or AMI Windows flash utility under Windows.

Chapter 3 Configuring the BIOS

This chapter provides information on the BIOS Setup program and allows you to configure the system for optimum use.

3-1 Select Boot Device

Select Boot Device Menu allows you to set the first boot device without entering BIOS Setup.

During Power On Self Test (POST), you can press the <**F7**> key to enter select boot device menu. The system will directly boot from the device configured in Boot Menu.

```
Please Select boot device:

P1: DVDRW STA 24X24X12X
P0: WDC WD3200AAKS-00VV3A0
Enter Setup

↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```
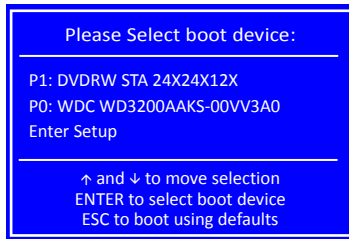
3-2 Enter BIOS Setup

The BIOS is the communication bridge between hardware and software. Correctly setting the BIOS parameters is critical to maintain optimal system performance.

Use the following procedure to change BIOS settings.

1. Power on the computer.
2. Press the <**Del>** or <**F2>** key when the following message briefly shows upon the bottom of the display during Power On Self Test (POST).

    Press F1 to continue, DEL to enter Setup.

Pressing Del takes you to the BIOS Aptio Setup Utility.

🐟 Note1: It is strongly recommended that you do not change the default BIOS settings. Changing some settings could damage your computer.

🐟 Note2: The BIOS options in this manual are for reference only. BIOS screens in manuals are usually the first BIOS version when the board is

released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version from our official website

ControlKeys

Please check the following table for the function description of each Controlkey.

Control Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
\<Enter>	To bring up the selected screen
\<F1>	To display the General Help Screen
\<F2>	To load previous values for all the settings
\<F3>	To load optimal default values for all the settings
\<F4>	To save changes and exit the SETUP UTILITY
\<ESC>	To jump to the Exit Screen or exit the current screen

3-3 Main Menu

When entering the Aptio Setup Utility, the main menu screen appears. This main menu includes the system overview and displays the basic system configuration, such as BIOS information, memory size and system date/time.

```
Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
  Main    Advanced    Chipset    Boot    Security    Save & Exit

  BIOS Information                                    Choose the system default
  BIOS Vendor             American Megatrends         language.
  Core Version            4.6.5.4
  Compliancy              UEFI 2.3.1;   PI 1.2
  Project Version         I993F013 x64
  Build Date and Time     08/07/2013 10:17:53

  Memory Information                                  →←:   Select Screen
  Total Memory            8192 MB (DDR3-1600)         ↑↓:   Select Item
                                                      Enter: Select
  System Language         [English]                   +/-:  Change Opt.
  System Date             [Wed 08/07/2013]            F1:   General Help
  System Time             [14:49:37]                  F2:   Previous Values
                                                      F3:   Optimized Defaults
  Access Level            Administrator               F4:   Save and Exit
                                                      ESC:  Exit

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```

BIOS Information

This field displays the current BIOS version, build date and ID information etc..

Memory Information

Displays current system memory size.

System Language

Allows you to choose the system default language.

System Date

Allows you to set the system date.The format is <Day><Month><Date><Year>.

  [Day]   Weekday from Sun. to Sat., this is automatically displayed by BIOS.

  [Month] The month from 1 to 12.

  [Date]   The date from 1 to 31 can be keyed by numeric function keys.

  [Year]   The year can be adjusted by users.

System Time

Allows you to set the system time. The time format is <hour>:<minute>:<second>.

Access Level

This item is used to limit the user access level.

3-4 Advanced Menu

The Advanced menu items allow you to change the settings for the CPU, USB and other system devices. Press <Enter> to display the configuration options.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.					
Main	Advanced	Chipset	Boot	Security	Save & Exit

```
► RTC Wake Settings              Enable system to wake from S5
► ACPI Settings                  using RTC alarm
► CPU Configuration
► SATA Configuration
► ASF Configuration
► MCTP Configuration
► USB Configuration
► Super IO Configuration         →←:  Select Screen
► H/W Monitor                    ↑↓:  Select Item
► Serial Port Console Redirection Enter: Select
► Onboard Device                 +/-:  Change Opt.
► Network Stack                  F1:   General Help
                                 F2:   Previous Values
► Realtek PCIe GBE Family Controller (MAC:DC:9C:52:00:01:45)  F3: Optimized Defaults
► Realtek PCIe GBE Family Controller (MAC:00:E0:4C:68:00:05)  F4: Save and Exit
                                 ESC:  Exit
```

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▶ **S5 RTC Wake Settings**

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Advanced

```
Wake systems with Fixed Time      [Disabled]      Enable or Disable System wake
                                                  on alarm event. When enabled,
Make system with Dynamic Time     [Disabled]      System will wake on the
                                                  hr::min::sec specified.


                                                  →←:  Select Screen
                                                  ↑↓:  Select Item
                                                  Enter: Select
                                                  +/-:  Change Opt.
                                                  F1:   General Help
                                                  F2:   Previous Values
                                                  F3:   Optimized Defaults
                                                  F4:   Save and Exit
                                                  ESC:  Exit
```

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Wake system with Fixed Time

Enable or disable system wake on alarm event. When enabled, system will wake

on the hr:min:sec specified.
Options: Enabled, Disabled.

Wake system with Dynamic Time

Enable or disable system wake on alarm event. When enabled, system will wake on the current time + Increase minutes(s).
Options: Enabled, Disabled.

▶ **ACPI Settings**

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

ACPI Settings		Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.
Enable Hibernation	[Enabled]	
ACPI Sleep State	[S3 only (Suspend to …]	
Lock Legacy Resources	[Disabled]	
EuP Function	[Disabled]	
Restore AC Power Loss	[Power off]	
		→←: Select Screen
		↑↓: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults

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Enable Hibernation

Enables system ability to Hibernate (OS/S4 Sleep Sate). This option may be not effective with some OS.
Options: Enabled, Disabled.

ACPI Sleep State

Selects the power saving modes for ACPI function.
Options: Suspend Disabled, S3 only(Suspend to RAM).

Lock Legacy Resources

When enabled (locked), this option prevents the operating system from modifying assignments for legacy resources.
Options: Enabled, Disabled.

EuP Function

Enables the EuP (Energy Using Products) function, allows BIOS to switch off

some power at S5 state to get system ready for the EuP requirement to reduce power consumption.
Options: Enabled, Disabled.

Restore AC Power Loss
Enables your computer to automatically restart or return to its last operating status after power returns from a power failure.
Options: Power off, Power on, Last State.

▶ **CPU Configuration**

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.	
Advanced	
CPU Configuration	Enable/disable the generation of ACPI_PCC,_PSS and _PCT objects.
Module Version: RichlandPI 010	
AGESA Version: 1.1.0.2	
PSS Support [Enabled]	
PSTATE Adjustment [PState 0]	
PPC Adjustment [PState 0]	
NX Mode [Enabled]	→←: Select Screen
SVM Mode [Enabled]	↑↓: Select Item
CPB Mode [Auto]	Enter: Select
C6 Mode [Enabled]	+/-: Change Opt.
▶CPU Information	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
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PSS Support
Enable or disable the generation of ACPI_PCC,_PSS and _PCT objects.
Options: Enabled, Disabled.

PSTATE Adjustment
Allows you to adjust startup P-state level.
Options: PState 0, PState 1, PState 2, PState 3, PState 4, PState 5, PState 6, PState 7.

PPC Adjustment
Allows you to adjust PPC objest.
Options: PState 0, PState 1, PState 2, PState 3, PState 4, PState 5.

NX Mode

Enable or disable No-execute page protection function.
Options: Enabled, Disabled.

SVM Mode

Enables the CPU SVM(Secure Virtual Machine) function.
Options: Enabled, Disabled.

CPB Mode

Allows you to disable CPB mode.
Options: Auto, Disabled.

C6 Mode

Allows you to select C6 State for processor.
Options: Enabled, Disabled.

▶ **CPU Information**

Displays current processor information.

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

  Socket0: AMD R-464L APU with Radeon(tm) HD Graphics
  Quad Core Running   @   2332 MHz   1025 mV
  Max Speed:2300 MHZ         Intended Speed:2300 MHz
  Min Speed:900MHZ
  Microcode Patch Level: 6001119

  ------------- Cache Per Core -------------------
  L1 Instruction Cache:   32 KB/2-way
       L1 Data Cache:     16 KB/4-way
           L2 Cache:      1024 KB/16-way
  No L3 Cache Present


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```

▶ **SATA Configuration**

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

  SATA Configuration                                        Native IDE
                                                            RAID
  OnChip SATA Channel           [AHCI]                      AHCI
  OnChip IDE Mode               [Legacy mode]
  SATA IDE Combined Mode        [Enabled]

  SATA Port1                    WDC WD5000AAKX      →←:  Select Screen
  SATA Port2                    Not Present         ↑↓:  Select Item
  SATA Port3                    DVRM SATA 2 ATAPI   Enter: Select
  SATA Port4                    Not Present         +/-:  Change Opt.
  SATA Port5                    Not Present         F1:   General Help
  mSATA Port                    Not Present         F2:   Previous Values
                                                    F3:   Optimized Defaults
                                                    F4:   Save and Exit
                                                    ESC:  Exit

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```

OnChip SATA type
Allows you to set the onboard Serial SATA type.

- Native IDE: Use the SATA hard disk drivers as Parallel ATA storage devices.

- RAID: Create a RAID 0, 1, 10, 5 configuration

- AHCI: Use the AHCI (Advanced Host Controller Interface) to enable advanced SATA features for improved performance with NCQ and Hot-plug features

OnChip IDE Mode
Allows you to set the onboard IDE mode.
Options: Legacy Mode, Native Mode.

SATA IDE Combined Mode
Allows you to select the SATA and IDE Combined Mode.
Options: Enabled, Disabled.

► **ASF Configuration**

```
           Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
    ┌──────────────┐
    │   Advanced   │
    └──────────────┘

    Alert Standard Format (ASF) Configuration          ASF Support Enable/Disable

    ASF Support                 [Enabled]
    ASF BIOS Mode               [ON]
    ASF WatchDog Timer          [Disabled]
       WatchDog Timer : BIOS    0
       WarchDog Timer : OS      0
                                                   →←:   Select Screen
                                                   ↑↓:   Select Item
                                                   Enter: Select
                                                   +/-:   Change Opt.
                                                   F1:    General Help
                                                   F2:    Previous Values
                                                   F3:    Optimized Defaults
                                                   F4:    Save and Exit
                                                   ESC:   Exit

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

ASF Support

Allows you enable Alert Standard Format (ASF) function.

Options: Enabled, Disabled.

ASF BIOS Mode

Allows you select the ASF BIOS Mode.

Options: OFF (No Messages), ON (All Messages), Alert Only (Error Messages only).

ASF WatchDog Timer

Allows you enable ASF WatchDog Timer.

Options: Enabled, Disabled.

► **MCTP Configuration**

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.	
Advanced	
Management Component Transport Protocol (MCTP) Configuration	MCTP Support Enable/Disable
MCTP Support [Enabled] PLDM for SMBIOS [Enabled] PLDM for BIOS Control and Configure [Enabled] PLDM for Platform Monitoring [Enabled]	
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save and Exit ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.	

MCTP Support

Allows you enable Management Component Transport Protocol (MCTP) function.

Options: Enabled, Disabled.

PLDM for SMBIOS

Platform Level Data Model (PLDM) support for SMBIOS enable or disable.

Options: Enabled, Disabled.

PLDM for BIOS Control and Configure

Platform Level Data Model (PLDM) support for BIOS Control and Configure enable or disable.

Options: Enabled, Disabled.

PLDM for Platform Monitoring

Platform Level Data Model (PLDM) support for PLDM for Platform Monitoring enable or disable.

Options: Enabled, Disabled.

► **USB Configuration**

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

 USB Configuration                                  Enables Legacy USB support;
 USB Module Version          8.10.27                AUTO option disables legacy
                                                    support if no USB devices are
 USB Devices:                                       connected, DISABLED option
     1 Keyboard                                     will keep USB devices available
 Legacy USB Support          [Enabled]              only for EFI application.
 USB3.0 Support              [Enabled]
 XHCI Hand-off               [Enabled]             →←:   Select Screen
 EHCI Hand-off               [Disabled]            ↑↓:   Select Item
 USB Mass Storage Driver Support [Enabled]         Enter: Select
 Port 60/64 Emulation        [Enabled]             +/-:   Change Opt.
 USB Hardware delays and time-outs:                F1:    General Help
 USB transfer time-out       [1 sec]               F2:    Previous Values
 Device reset time-out       [10 sec]              F3:    Optimized Defaults
 Device power-up delay       [Auto]                F4:    Save and Exit
                                                   ESC:   Exit

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```

Legacy USB Support
Allows you select legacy support for USB devices.
Enabled: Enables Legacy USB support.
Disabled: Keep USB devices available only for EFI application.
Auto: Disables legacy support if no USB devices are connected.

USB3.0 Support
Enables USB3.0 (XHCI) controller support.
Options: Enabled, Disabled.

XHCI Hand-off
This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
Options: Enabled, Disabled.

EHCI Hand-off
This is a workaround for OSes without EHCI hand-off support. The XHCI ownership change should be claimed by EHCI driver.
Options: Enabled, Disabled.

USB Mass Storage Driver Support
Allows you to enable or disable mass storage driver support.
Options: Enabled, Disabled.

Port 60/64 Emulation
Enable the I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OS.
Options: Enabled, Disabled.

USB transfer time-out
The time-out value for control, bulk, and interrupt transfers.
Options: 1 sec, 5 sec, 10 sec, 20 sec.

Device reset time-out
Sets USB mass storage devices start unit command time-out.
Options: 10 sec, 20 sec, 30 sec, 40 sec.

Device power-up delay
Maximum time the device will take before it properly reports itself to the Host controller. 'Auto' uses default values; for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.
Options: Auto, Manual.

▶ **Super IO Configuration**

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.		
Advanced		
Super IO Configuration		Set Parameters of Serial Port 1 (COMA)
Super IO Chip	Fintek F71889	
▶ Serial Port 1 Configuration		
▶ Serial Port 2 Configuration		
		→←: Select Screen
Case Open Warning	[Disabled]	↑↓: Select Item
Chassis Opened	Yes	Enter: Select
▶ Clear Case Open Status		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save and Exit
		ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.		

Serial Port 1 Configuration

   Serial Port
   Enables the Serial Port 1 support.
   Options: Enabled, Disabled.

Change Settings

Select an optimal setting for super I/O device.

Options: Auto, IO=3F8H; IRQ=4; IO=3F8h; IRQ=3,4,5,6,7,10,11,12;
IO=2F8h; IRQ=3,4,5,6,7,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,10,11,12;
IO=2E8h; IRQ=3,4,5,6,7,10,11,12

Serial Port 2 Configuration

Serial Port

Enables the Serial Port 2 support.

Options: Enabled, Disabled.

Change Settings

Select an optimal setting for super I/O device.

Options: Auto, IO=2F8H; IRQ=3; IO=3F8h; IRQ=3,4,5,6,7,10,11,12;
IO=2F8h; IRQ=3,4,5,6,7,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,10,11,12;
IO=2E8h; IRQ=3,4,5,6,7,10,11,12

Case Open Warning

This item allows you to enable or disable the case open warning function.
If the case cover is opened, the system will automatically restart and appear
prompt message (Shown below) during POST.
You can make a selection to enter the system.

▶ **H/W Monitor**

GPU ACPI Shutdown Temperature
If the GPU temperature is higher than ACPI shutdown temperature, the system will shut down.
Options: Disabled, 90 C, 95C, 100C, 105C.

CPU / CPU Environment / VREG / System / GPU Temperature
Displays the current CPU / CPU Environment / VREG / System / GPU temperature.

CPU /Power /System Fan Speed
Displays the current CPU, Power and Chassis Fan Speed

CPU / CPU VDDNB / SB / DIMM / CDP VDDR Voltage
The current voltages are automatically detected and displayed by the system.

▶ **Smart Fan Configuration**

Advanced		
SmartFan Configuration		Fan Mode Setting
CPU Fan Mode Setting	[SmartFan]	
Temperature Limit of Highest	60	
Temperature Limit of Lowest	30	
Fan Highest setting	100	
Fan Lowest setting	50	
Power Fan Mode Setting	[SmartFan]	
Temperature Limit of Highest	60	
Temperature Limit of Lowest	30	
Fan Highest setting	100	→←: Select Screen
Fan Lowest setting	50	↑↓: Select Item
System Fan Mode Setting	[SmartFan]	Enter: Select
Temperature Limit of Highest	60	+/-: Change Opt.
Temperature Limit of Lowest	30	F1: General Help
Fan Highest setting	100	F2: Previous Values
Fan Lowest setting	50	F3: Optimized Defaults
GPU Fan Mode Setting	[SmartFan]	F4: Save and Exit
Temperature Limit of Highest	60	ESC: Exit
Temperature Limit of Lowest	30	
Fan Highest setting	100	
Fan Lowest setting	50	

CPU Fan Mode Setting

This item controls the speed of the various fans on the motherboard.

SmartFan: When you want the speed of the fans automatically controlled based on temperature.

Manual By DutyCycle: To set the fan speed to a constant rate, the speed from 0% to 100%.

Manual By RPM: This item sets the fan speed at a fixed.

► **Serial Port Console Redirection**
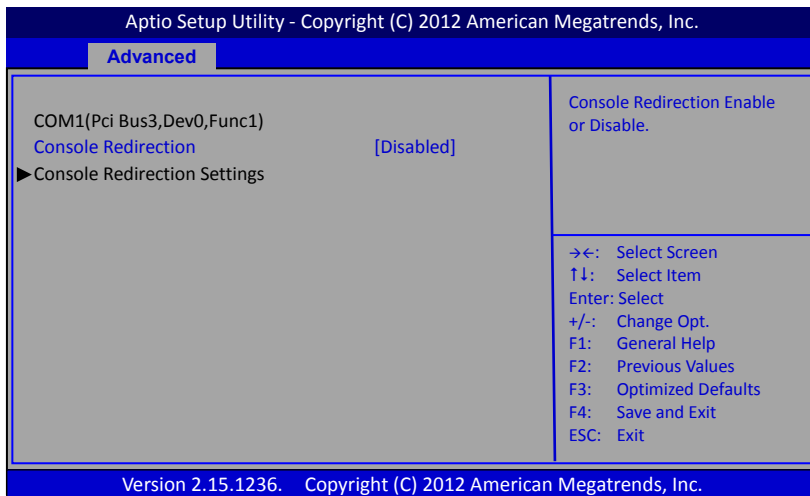
Console Redirection

This item allows you enable Console Redirection.

Options: Enabled, Disabled.

Console Redirection Settings

The field allows the redirection of console I/O to a serial port. With this configured, you can remotely access the entire boot sequence via a serial console. The submenu allows you to turn the feature on or off, select the remote terminal type, and enable or disable redirection after booting etc.

Terminal Type

This item allows you to select the terminal type.

Options: ANSI (Extended ASCII char set),

VT100 (ASCII char set.),

VT100+ (Extends VT100 to support color, function keys, etc.),

VT-UTF8 (Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.)

Bits per second

This item selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

Options: 9600, 19200, 38400, 57600, 115200.

Data Bits

This item selects the data bits.

Options: 7, 8.

Parity

A parity bit can be sent with the data bits to detect some transmission errors.
Options: None, Even, Odd, Mark, Space.

Stop Bits

The stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.
Options: 1, 2.

Flow Control

The flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.
Options: None, Hardware RTS/CTS.

VT-UTF8 Combo Key Support

This item allows you to enable VT-UTF8 combination key support for ANSI/VT100 terminals.
Option: Enabled, Disabled.

Recorder Mode

On this mode enabled only text will be send. This is to capture terminal data.
Option: Enabled, Disabled.

Resolution 100x31

This item allows you to enable extended terminal resolution.
Option: Enabled, Disabled.

Legacy OS Redirection Resolution

On Legacy OS, the number of rows and columns supported redirection.
Option: 80x24, 80x25.

Putty KeyPad

This item allows you to select function key and keypad on putty.
Option: VT100, LINUX, XTERMR6, SCO, ECSN, VT400.

Redirection after BIOS POST

The settings specify if boot loader is selected than legacy console redirection is disabled before booting to legacy OS. Default value is always Enable which means legacy console redirection is enabled for Legacy OS.
Option: Always Enable, Boot Loader.

▶ **Onboard Device**

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

 HD Audio Azalia Device            [Enabled]          HD Audio Azalia Device
 E6760 Onboard Graphics            [Enabled]
 Onboard LAN                       [Enabled]


                                                      →←:  Select Screen
                                                      ↑↓:  Select Item
                                                      Enter: Select
                                                      +/-:  Change Opt.
                                                      F1:   General Help
                                                      F2:   Previous Values
                                                      F3:   Optimized Defaults
                                                      F4:   Save and Exit
                                                      ESC:  Exit

         Version 2.15.1236.    Copyright (C) 2012 American Megatrends, Inc.
```
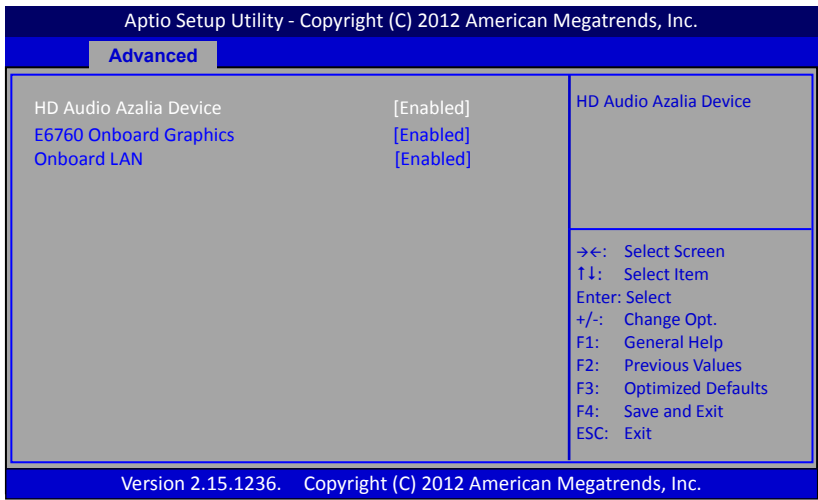
HD Audio Azalia Device

Enables the onboard High Definition Audio controller.

Options: Enabled, Disabled.

E6760 Onboard Graphics

Enables the onboard E6760 Graphics.

Options: Enabled, Disabled.

Onboard LAN

Enables the onboard LAN controller.

Options: Enabled, Disabled.

▶ **Network Stack**

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.		
Advanced		
Network Stack	[Enabled]	Enable/Disable UEFI network stack
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save and Exit ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.		
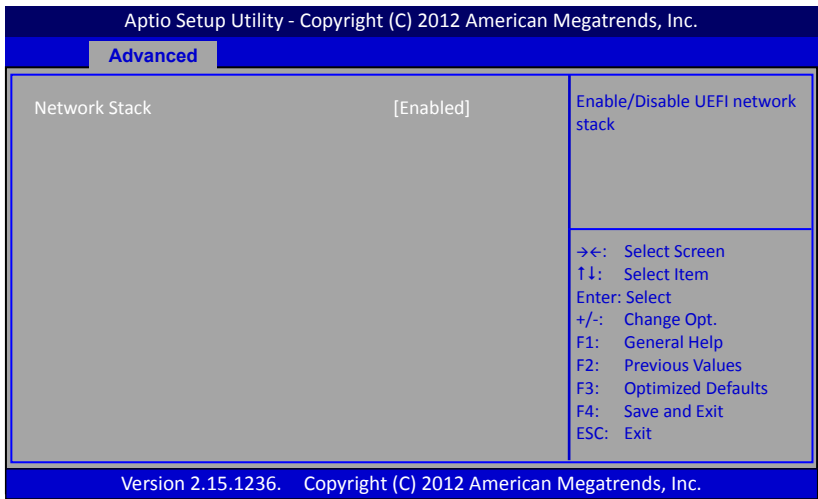
Network stack

This item is used for network boot in UEFI mode.

Options: Enabled, Disabled.

▶ **Realtek PCIe GBE Family Controller (MAC:DC:9C:52:00:01:45)**

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.		
Advanced		
Driver Information Driver Name: Driver Version: Driver Released Date:	 Realtek UEFI UNDI Driver 2.022 2013/03/26	
Device Information Device Name: PCI Slot: MAC Address:	 Realtek PCIe GBE Family 02:00:00 DC:9C:52:00:01:45	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save and Exit ESC: Exit
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.		

This field is displayed the driver and device information of LAN.

▶ **Realtek PCIe GBE Family Controller (MAC:00:E0:4C:68:00:05)**

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

   Driver Information
   Driver Name:                    Realtek UEFI UNDI Driver
   Driver Version:                 2.022
   Driver Released Date:           2013/03/26


   Device Information
   Device Name:                    Realtek PCIe GBE Family          →←:   Select Screen
   PCI Slot:                       02:00:00                         ↑↓:   Select Item
   MAC Address:                    00:E0:4C:68:00:05                Enter: Select
                                                                    +/-:  Change Opt.
                                                                    F1:   General Help
                                                                    F2:   Previous Values
                                                                    F3:   Optimized Defaults
                                                                    F4:   Save and Exit
                                                                    ESC:  Exit

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

This field is displayed the driver and device information of LAN.

3-5 Chipset Menu

The chipset menu items allow you to change the advanced chipset settings.
Press <Enter> to display the sub-menu.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.					
Main	Advanced	**Chipset**	Boot	Security	Save & Exit

```
▶ GFX Configuration              GFX Configuration
▶ North Bridge


                                 →←:   Select Screen
                                 ↑↓:   Select Item
                                 Enter: Select
                                 +/-:   Change Opt.
                                 F1:    General Help
                                 F2:    Previous Values
                                 F3:    Optimized Defaults
                                 F4:    Save and Exit
                                 ESC:   Exit
```

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

▶ **GFX Configuration**

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

```
GFX Configuration                               Select Primary Video Device
                                                that BIOS will use to for
IGD VBios Version: ATOMBIOSBK-AMD VER015.024.000.000.000000  output.

Primary Video Device          [IGD Video]
Integrated Graphics           [Auto]
                                                →←:   Select Screen
                                                ↑↓:   Select Item
                                                Enter: Select
                                                +/-:   Change Opt.
                                                F1:    General Help
                                                F2:    Previous Values
                                                F3:    Optimized Defaults
                                                F4:    Save and Exit
                                                ESC:   Exit
```

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Primary Video Device
Select Primary Video Device that BIOS will use to for output.
Options: IGD Video, Onboard GPU (Radeon E6460/E6760).

Integrated Graphics

Enables the Integrated Graphics controller.

Options: Auto, Disabled, Force.

> **UMA Frame buffer Size**
>
> This item will only appear when "Integrated Graphics" item is set to "Force" option. It controls the amount of system memory that is allocated to the integrated graphics processor.
>
> Options: 32M, 64M, 128M, 256M, 512M, 1G, 2G.

▶ **North Bridge**

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

    North Bridge Configuration                    Memory Voltage

    Total Memory:   8192 MB (DDR3-1600)

    Dimm0:   Size=4096 MB,    speed=1600 MHz
    Dimm1:   Size=4096 MB,    speed=1600 MHz
                                                  →←:  Select Screen
    Memory Voltage               [Auto]           ↑↓:  Select Item
    Memory Clock                 [Auto]           Enter: Select
                                                  +/-:  Change Opt.
                                                  F1:   General Help
                                                  F2:   Previous Values
                                                  F3:   Optimized Defaults
                                                  F4:   Save and Exit
                                                  ESC:  Exit

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

Memory Voltage

Allows you to select memory voltage.

Options: Auto, 1.25V, 1.35V, 1.50V, 1.65V.

Memory Clock

Allows you to select different memory clock.

Options: Auto, 800MHz, 1066MHz, 1333MHz, 1600MHz.

3-6 Boot Menu

The Boot menu is used to configure the boot settings and the boot priority.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.					
Main	Advanced	Chipset	**Boot**	Security	Save & Exit

```
Boot Configuration                              Number of seconds to wait for
Setup Prompt Timeout           1                setup activation key. 65535(0xFFFF)
Bootup NumLock State           [On]             means indefinite waiting.
Quiet Boot                     [Disabled]

Boot Option Priorities
Boot Option #1                 [MBA v14.2.1 Slot]
                                                →←:  Select Screen
Hard Drive BBS Priorities                       ↑↓:  Select Item
Network Drive BBS Priorities                    Enter: Select
► CSM16 Parameters                              +/-:  Change Opt.
► CSM Parameters                                F1:   General Help
                                                F2:   Previous Values
                                                F3:   Optimized Defaults
                                                F4:   Save and Exit
```
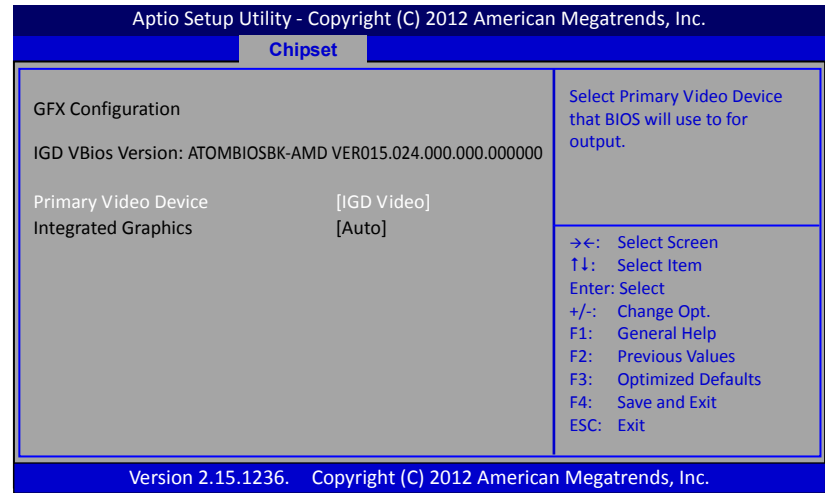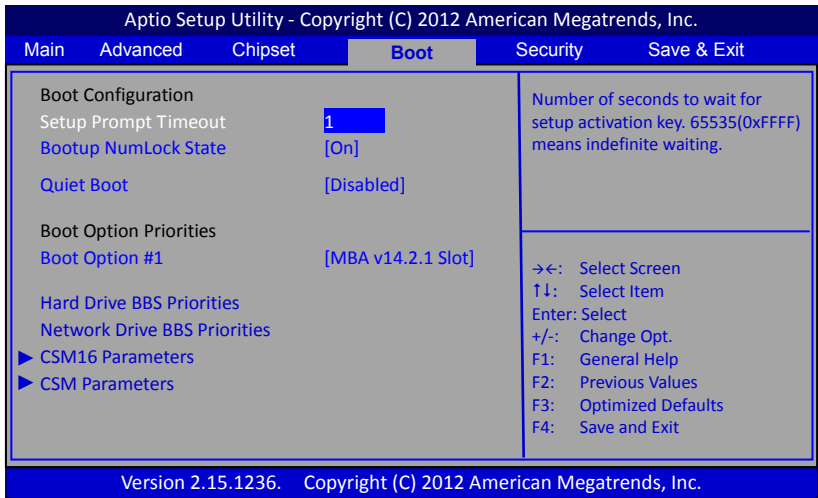
Version 2.15.1236.   Copyright (C) 2012 American Megatrends, Inc.

Setup Prompt Timeout
This is used to set an additional time the POST should wait for the operator to press the key to enter setup. The time is entered in seconds.

Bootup NumLock State
Selects the state of the keyboard's numlock function after POST.
Options: On, Off.

Quiet Boot
Displays normal POST message. Select disable to display Logo instead of POST message.
Options: Enabled, Disabled.

Boot Option #1
These options are used to form the boot order and are dynamically generated.

Hard Drive BBS Priorities
Allows configure the boot order for a specific Hard Drive device class.

Network Drive BBS Priorities
Allows configure the boot order for a specific Network ROM class.

▶ **CSM16 Parameters**

This menu provides access to CSM16 (16-bit Compatibility Support Module) configuration options.

GateA20 Active
This feature determines how Gate A20 is used to address memory above 1MB.
Upon Request: GA20 can be disabled using BIOS services.
Always: Do not allow disabling GA20.

Option ROM Message
Sets display mode for Option ROM.
Force BIOS: To force to a BIOS-compatible output. This will show the option ROM messages.
Keep Current: To keep the current video mode. This will suppress option ROM messages. Option ROMs requiring interactive inputs may not work properly in this mode.

INT19 Trap Response
BIOS reaction on INT19 trapping by option ROM.
Options: Immediate – execute the trap right away,
Postponed – execute the trap during legacy boot.

▶ **CSM Parameters**

Boot option filter
This option controls what devices system can boot to UEFI or Legacy.
Options: UEFI and Legacy, Legacy only, UEFI only.

Launch PXE OpROM policy
This option controls the ececutio of UEFI and Legacy PXE OpROM.
Options: Do not launch, Legacy only, UEFI only.

Launch Storage OpROM policy
This option controls the ececutio of UEFI and Legacy Storage OpROM.
Options: Do not launch, Legacy only, UEFI only.

Launch video OpROM policy
This option controls the ececutio of UEFI and Legacy video OpROM.
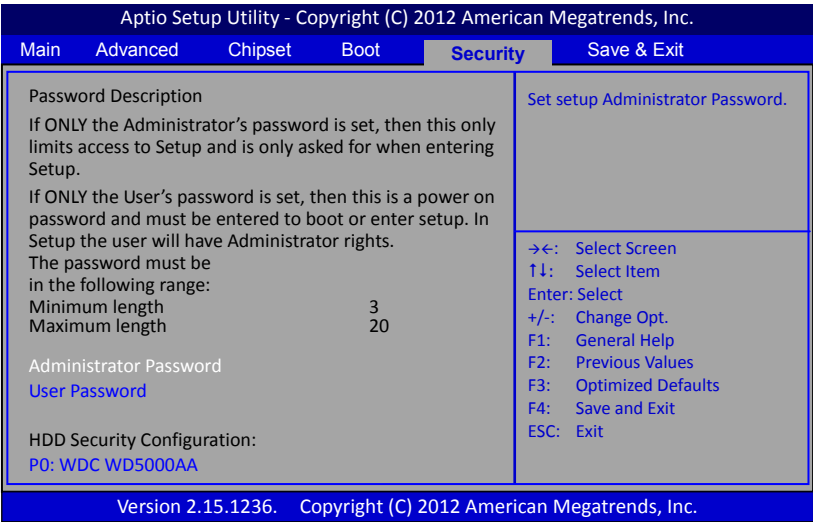Options: Do not launch, Legacy only, UEFI only.

Other PCI device ROM priority
Options: For PCI devices other than Network, mass storage or video defines which OpROM to launch.
Options: UEFI OpROM, Legacy OpROM.

3-7 Security Menu

The Security menu allows you to change the system security settings.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.					
Main	Advanced	Chipset	Boot	**Security**	Save & Exit

```
Password Description                              Set setup Administrator Password.

If ONLY the Administrator's password is set, then this only
limits access to Setup and is only asked for when entering
Setup.
If ONLY the User's password is set, then this is a power on
password and must be entered to boot or enter setup. In
Setup the user will have Administrator rights.
The password must be                              →←:  Select Screen
in the following range:                           ↑↓:  Select Item
Minimum length                      3             Enter: Select
Maximum length                      20            +/-:  Change Opt.
                                                  F1:   General Help
Administrator Password                            F2:   Previous Values
User Password                                     F3:   Optimized Defaults
                                                  F4:   Save and Exit
HDD Security Configuration:                       ESC:  Exit
P0: WDC WD5000AA
```

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Administrator Password

This function is used to set, change or delete the Administrator password. If there is already a password installed, the system asks for this first. To clear a password, simply enter nothing and acknowledge by pressing Return. To set a password, enter it twice and acknowledge by pressing Return. The password must be 3 to 20 characters long.
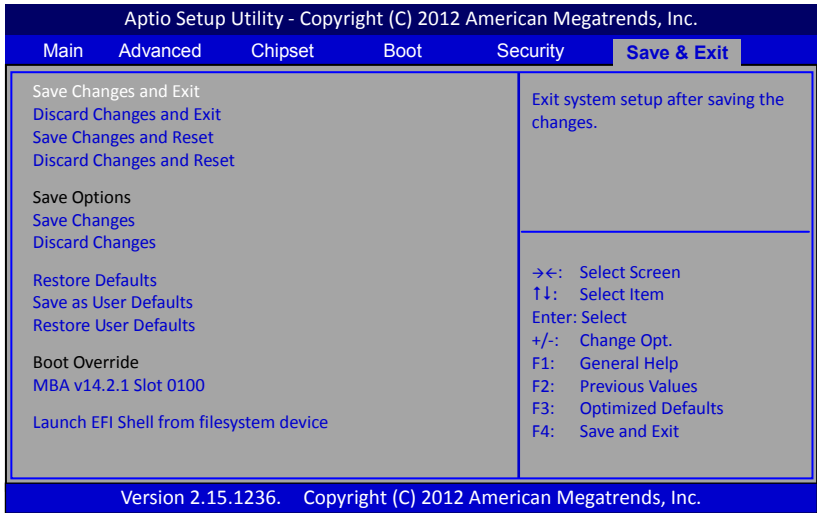
User Password

This function is used to set, change or delete the User password. If there is already a password installed, the system asks for this first. To clear a password, simply enter nothing and acknowledge by pressing Return. To set a password, enter it twice and acknowledge by pressing Return. The password must be 3 to 20 characters long.

HDD Security Configuration

This function is used to set, change or delete the Hard Disk password.

3-8 Save & Exit Menu

The Save & Exit menu allows you to load the optimal default values for BIOS, and save or discard your changes to the BIOS items.

```
Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
  Main     Advanced     Chipset        Boot       Security      Save & Exit

  Save Changes and Exit                          Exit system setup after saving the
  Discard Changes and Exit                       changes.
  Save Changes and Reset
  Discard Changes and Reset

  Save Options
  Save Changes
  Discard Changes
                                                 →←:   Select Screen
  Restore Defaults                               ↑↓:   Select Item
  Save as User Defaults                          Enter: Select
  Restore User Defaults                          +/-:  Change Opt.
                                                 F1:   General Help
  Boot Override                                  F2:   Previous Values
  MBA v14.2.1 Slot 0100                          F3:   Optimized Defaults
                                                 F4:   Save and Exit
  Launch EFI Shell from filesystem device

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

Save Changes and Exit
This saves the changes to the CMOS RAM and exits the BIOS Setup program.

Discard Changes and Exit
This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS.

Save Changes and Reset
This resets system after saving the changes.

Discard Changes and Reset
This resets system without saving the changes.

Save Option
Allows you to save the options you made to the CMOS RAM.

Save Change
Allows you to save the changes you made to the CMOS RAM.

Discard Changes
Allows you to discard the selections you made.

Restore Defaults
The restore defaults are the factory settings of this motherboard.

Save as User Defaults

This is used to save all current settings as user default. The current setup state can later be restored using Restore User Defaults.

Restore User Defaults

This is used to restore all tokens to settings previously stored by Save as User Defaults.

Boot Override

This group of functions includes a list, each of them corresponding to one device within the boot order. Select a drive to immediately boot that device regardless of the current boot order.

Launch EFI Shell from filesystem device

Attempts to launch EFI Shell application (Shellx64.efi) form one of the available filesystem devices.

Chapter 4   Driver Installation

After the operating system has been installed, you need to install drivers for this mainboard.

The support DVD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features.

4-1 Driver Install

Insert the bundled driver DVD into your optical drive and the main menu will be displayed on your PC screen. Click each item button and select the item you want to install.

<Main Page>

📌 Note: If Autorun function is not enabled in your computer, browse the contents of the support DVD to locate the file autorun.exe, and click this file to run the DVD.