TECHNICAL MANUAL

Of

AMD Hudson D3 Chipset

Based

for AMD R-Series APU Mini-ITX M/B

NO. G03-NF83-F

Revision: 1.0

Release date: March 18, 2013

Trademark:

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Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.



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Environmental Safety Instruction

- Avoid the dusty, humidity and temperature extremes. Do not place the product in any area where it may become wet.

- 0 to 60 centigrade is the suitable temperature. (The figure comes from the request of the main chipset)

- Generally speaking, dramatic changes in temperature may lead to contact malfunction and crackles due to constant thermal expansion and contraction from the welding spots' that connect components and PCB. Computer should go through an adaptive phase before it boots when it is moved from a cold environment to a warmer one to avoid condensation phenomenon. These water drops attached on PCB or the surface of the components can bring about phenomena as minor as computer instability resulted from corrosion and oxidation from components and PCB or as major as short circuit that can burn the components. Suggest starting the computer until the temperature goes up.

- The increasing temperature of the capacitor may decrease the life of computer. Using the close case may decrease the life of other device because the higher temperature in the inner of the case.

- Attention to the heat sink when you over-clocking. The higher temperature may decrease the life of the device and burned the capacitor.

USER'S NOTICE

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Manual Revision Information

Reversion	Revision History	Date
1.0	First Edition	2013-3-18

Item Checklist

- ☑ Motherboard
- ☑ DVD for motherboard utilities
- ☑ User's Manual
- ☑ Cable(s)
- ☑ I/O Back panel shield

Chapter 1
Introduction of the Motherboard

1-1 Feature of Motherboard

- AMD Hudson D3 Chipset and AMD embedded R-Series APU (FS1R2 processor), with low power consumption but high performance
- Support 2 * DDRIII SO-DIMM 800-1600MHz up to 16GB and dual channel function
- Integrated with dual Realtek RT8111F-CG Gigabit LAN chips
- Integrated ALC662 6-channel HD Audio Codec
- Support USB 2.0/ USB 3.0 data transport demands
- Support PCI Express x16 slot and Mini-PCIE slot
- Onboard 6* SATAIII ports
- Support 4* HDMI outputs
- Support TPM 1.2 function
- Support 6* COM ports
- Support CPU/SYSTEM Smart FAN
- Supports ACPI S3 Function
- Compliance with EuP Standard
- Support Watchdog Timer Technology

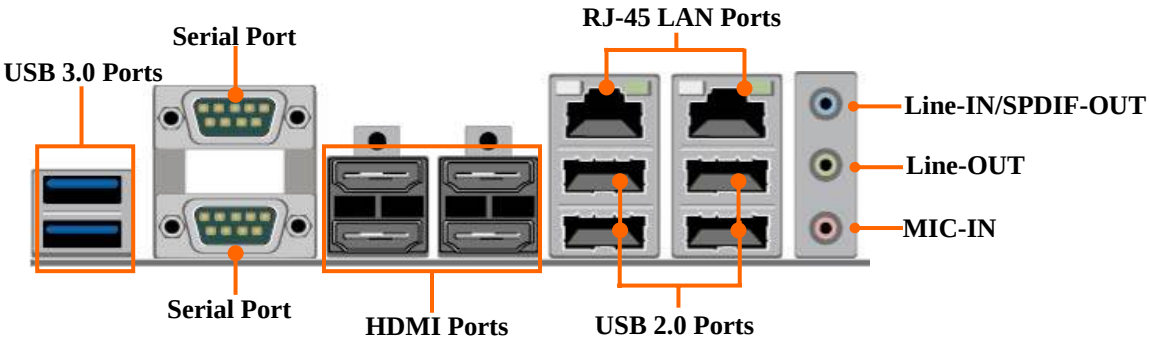
1-2 Specification

Spec	Description
Design	● Mini-ITX form factor 6 layers ; PCB size: 17.0x17.0cm
Chipset	● AMD A75 FCH Hudson D3 Chipset
CPU Socket	● AMD FS1r2 Socket ,Support AMD R-Series processor ** for detailed CPU support information please visit our website*
Memory Slot	● DDRIII SO-DIMM slot x2 ● Support DDRIII 800/1066/1333/1600MHz DDRIII SO-DIMM expandable to 16GB ● Support dual channel function
Expansion Slot	● 1 pcs of PCI Express x16 by 8 lane slot ● 1 pcs of Mini-PCIE slot
Dual LAN Chip	● Integrated with dual Realtek RTL8111F-CG PCI-E Gigabit LAN chips that support Fast Ethernet LAN function of providing 10/100/1000Mbps Ethernet data transfer rate
Audio Chip	● Integrated with Realtek ALC662 6-channel Audio Codec ● Audio driver and utility included
BIOS	● 32M DIP Flash ROM
Multi I/O	***Rear Panel I/O:*** ● Rear panel USB 3.0 port connector x2 ● COM port connector x 2 ● HDMI port connector x4 ● Rear panel USB 2.0 port connector x4 ● RJ-45 LAN connector x2 ● Audio connector x3 (Line-in/SPDFI-out; Line-out; MIC) ***Internal I/O Connectors& Headers*** ● 24-Pin ATXPWR connector x 1 ● 4-Pin ATX12V power connector x1 ● SATAIII Connector x6 ● Front panel audio header x1 ● HDMI_SPDIF header x1

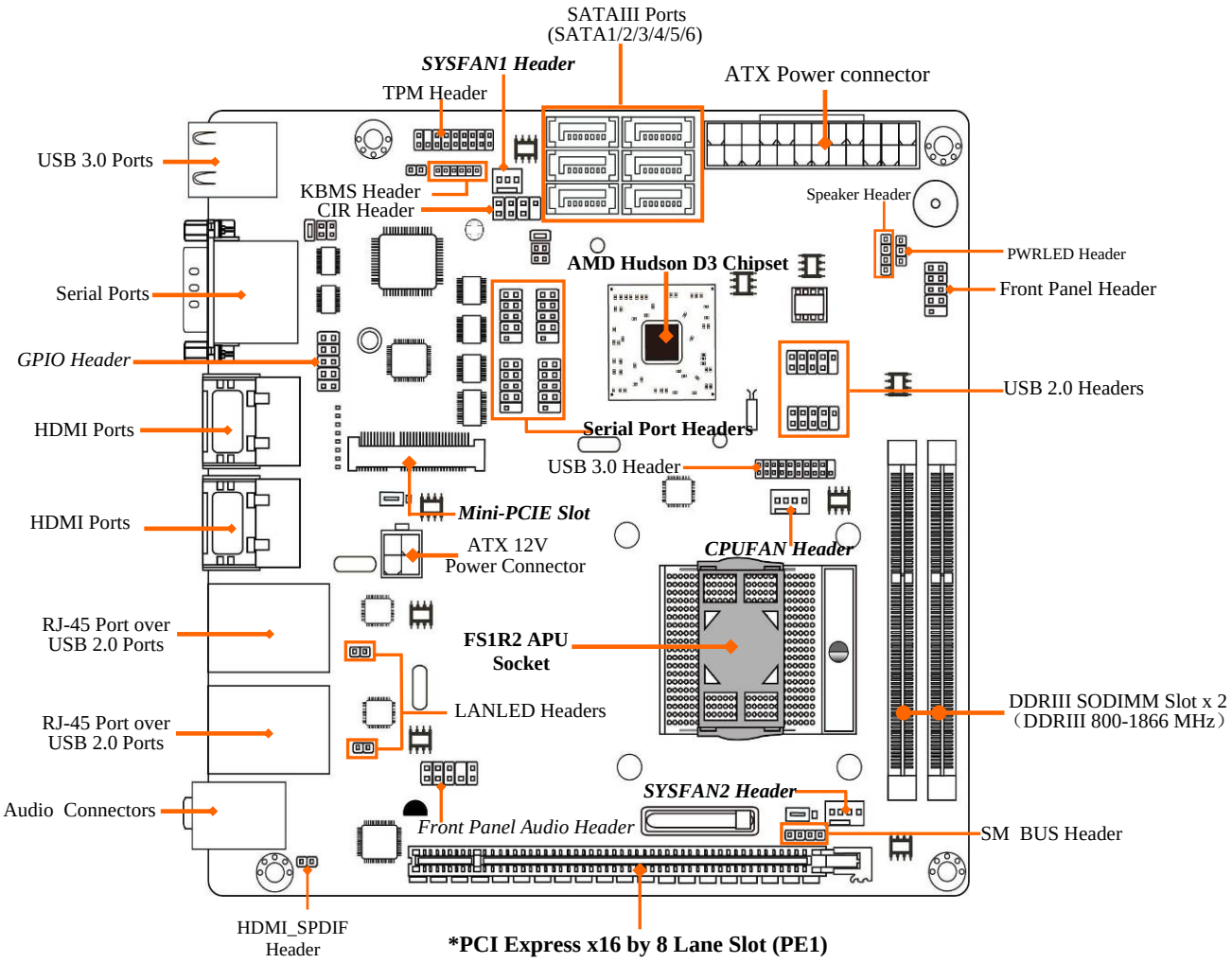
	● LANLED header x2 ● SM_BUS header x1 ● GPIO header x1 ● TPM 1.2 header x1 ● KBMS header x1 ● CIR header x1 ● Serial port header x4 ● USB 2.0 header x2 (support four expansion USB 2.0 ports) ● USB 3.0 header x1 (support two expansion USB 3.0 ports) ● Speaker header x1 ● PWRLED header x1 ● Front panel header x1

1-3 Layout Diagram

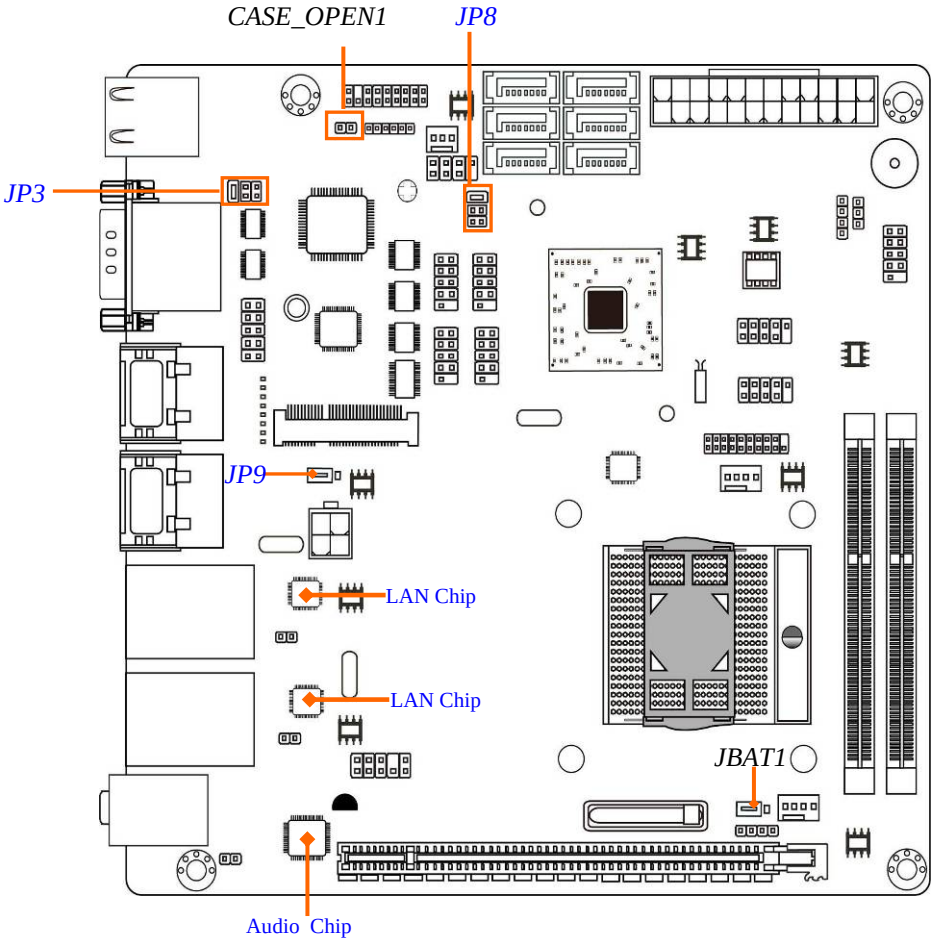
Rear IO Diagram



Motherboard Internal Diagram



Motherboard Jumper Position



Jumper

Jumper	Name	Description
JBAT1	CMOS RAM Clear Function Setting	3-pin Block
JP3	Rear Panel COM1 Top Serial Port Pin9 Function Select	6-pin Block
JP8	COM3 Header Serial Port Pin9 Function Select	6-pin Block
JP9	Mini PCI-E Power VCC3.3V /3VSB Select	3-pin Block
CASEOPEN1	Case Open Message Display Function	2-pin Block

Connectors

Connector	Name
ATXPWR1	ATX Power Connector
ATX12V1	ATX 12V Power Connector
SATA1~ SATA6	Serial ATAIII Connector x6
USB4	USB 3.0 Port Connector x 2
COM1	Serial Port Connector x2
HDMI1/ HDMI2	High-Definition Multimedia Interface x 4
UL1(Middle & Bottom) /UL2(Middle & Bottom)	USB 2.0 Port Connector x4
UL1(Top) / UL2(Top)	RJ-45 LAN Connector x2
AUDIO1	Line In/SPDIF Out; Line Out; MIC Connector

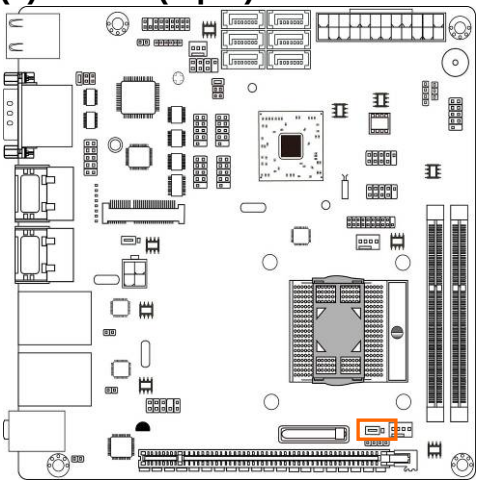
Headers

Header	Name	Description
FP_AUDIO1	Front Panel Audio Header	9-pin Block
HDMI_SPDIF1	HDMI_SPDIF Out Header	2-pin Block
LAN1LED1/LAN2LED1	LANLED Header x2	2-pin Block
SM_BUS	SM_BUS Header	4-pin Block
PWR LED1	Power LED	3-pin Block
SPEAK1	Speaker Header	4-pin Block
JW_FP1	Front Panel Header(PWR LED/ HD LED/ /Power Button /Reset)	9-pin Block
COM3/COM4/COM5/COM6	Serial Port Header x4	9-pin Block
GPIO_CON1	GPIO Header	10-pin Block
TPM1	TPM 1.2 header	19-pin Block
KB_MS1	PS/2 Keyboard & Mouse Header	6-pin Block
CIR_CON	CIR Header	7-pin Block
USB1/USB2	USB 2.0 Port Header x2	9-pin Block
USB3	USB 3.0 Port Header	19-pin Block
CPU FAN	CPU FAN Header	4-pin Block
SYSFAN1	SYSFAN1 Header	3-pin Block
SYSFAN2	SYSFAN2 Header	4-pin Block

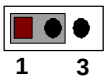
Chapter 2
Hardware Installation

2-1 Jumper Setting

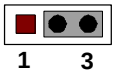
(1) JBAT1 (3-pin): Clear CMOS



JBAT1



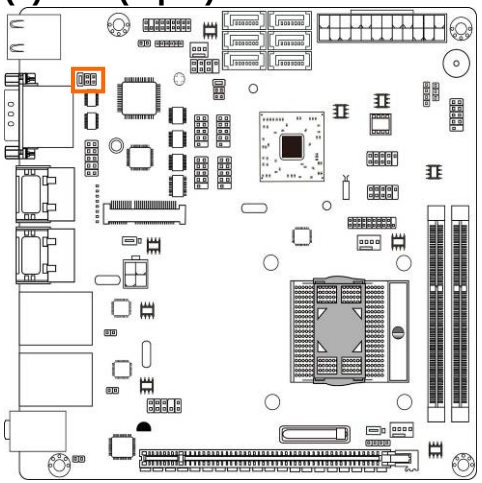
1-2 Short： Normal；



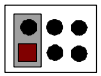
2-3 Short： Clear CMOS

CMOS Clear Setting

(2) JP3 (6-pin): Rear Panel COM1 Top Serial Port Pin9 Function Select



JP3



1-2 closed: RS232;

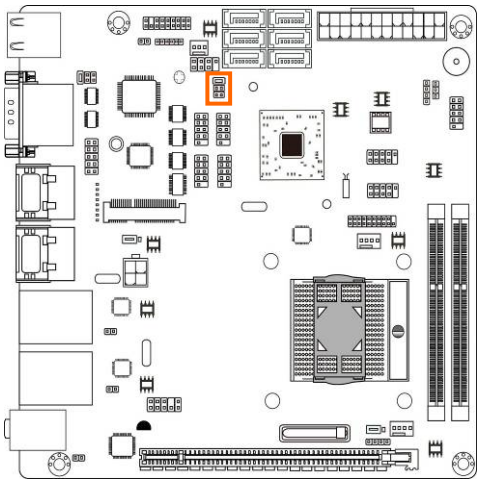


3-4 closed : +12V;

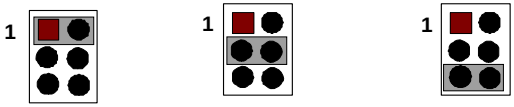


5-6 closed : +5V

(4) JP8 (6-pin): COM3 Header Pin9 Function Select

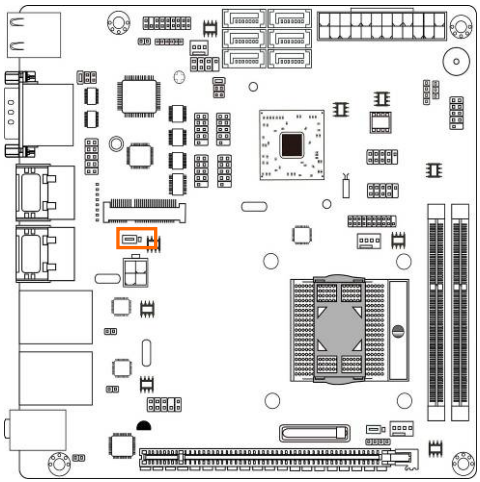


JP8

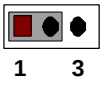


1-2 closed: RS232; 3-4 closed : +12V; 5-6 closed : +5V

(5) JP9 (3-pin): : Mini PCI-E Power VCC3.3V/ 3.3VSB Function Select

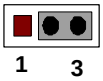


JP9



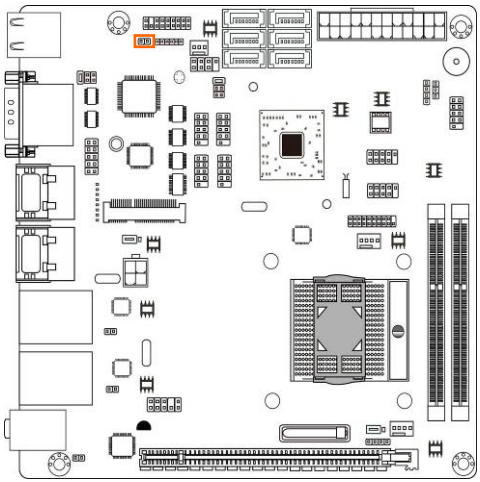
1-2 closed: MINI PCI-E VCC= VCC3.3V;

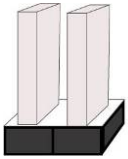
JP9



2-3 closed: MINI PCI-E VCC=3.3VSB

(6)CASE_OPEN1 (2-pin): Case Open Message Display Function Select



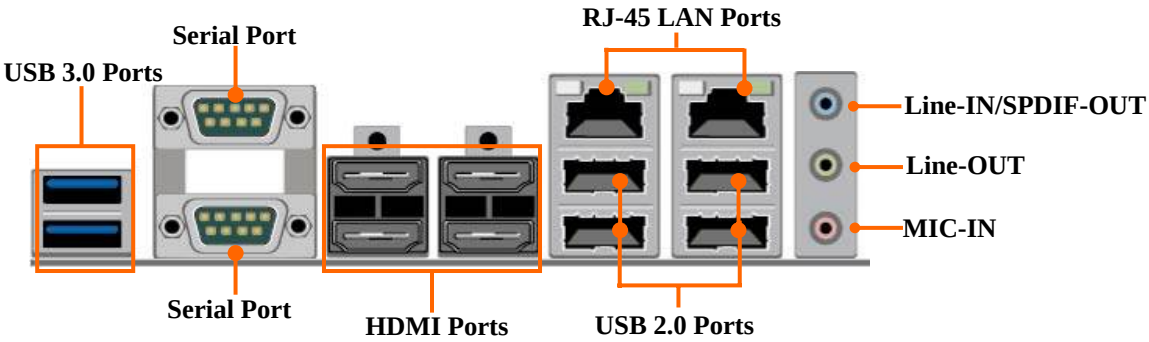


Pin 1-2 shorted: Case open display function enabled. Use needs to enter BIOS and enable 'Case Open Detect' function. In this case if you case is removed, next time when you restart your computer a message will be displayed onscreen to inform you of this.

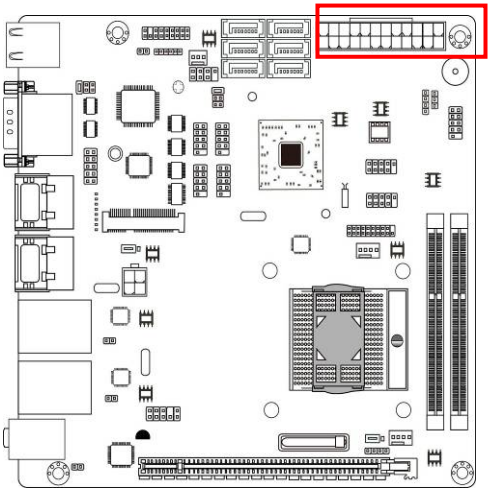
2-2 Connectors and Headers

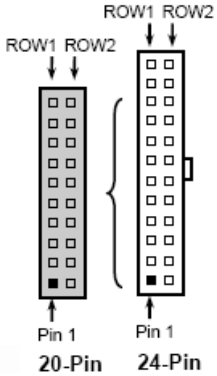
2-2-1 Connectors

(1) Rear Panel Connectors



(2) ATXPWR1 (24-pin block): Power Connector

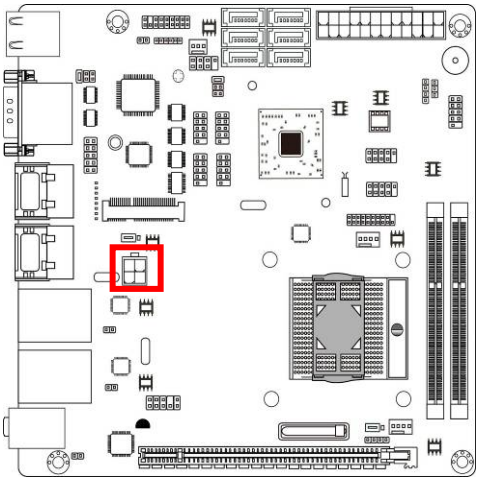


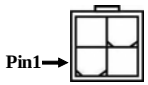


PIN	ROW1	ROW2
1	+3.3V	+3.3V
2	+3.3V	-12V
3	GND	GND
4	+5V	PS_ON
5	GND	GND
6	+5V	GND
7	GND	GND
8	Power OK	-5V
9	+5V Stand by	+5V
10	+12V	+5V
11	+12V	+5V
12	+3.3V	GND

24-pin Main Power Connector

(3) ATX12V (4-pin block): ATX12V Type Power Connector

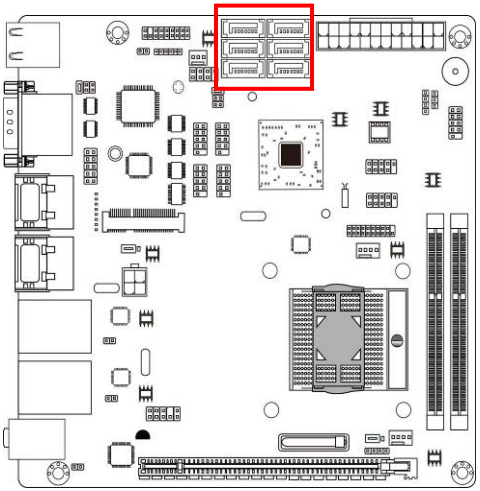




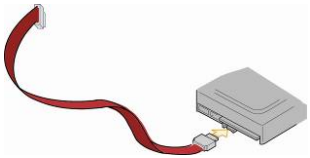
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

(4) SATA1/SATA2/SATA3/SATA4/SATA5/SATA6: SATAIII Port connector

These connectors are high-speed SATAIII ports that support 6 GB/s transfer rate.



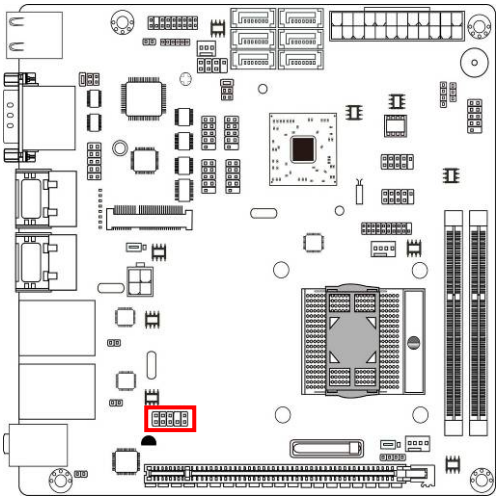
Pin No.	Defnition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

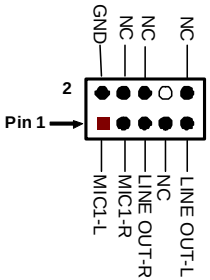


2-2-2 Headers

(1) FP_AUDIO1 (9-pin): Line-Out, MIC-In Header

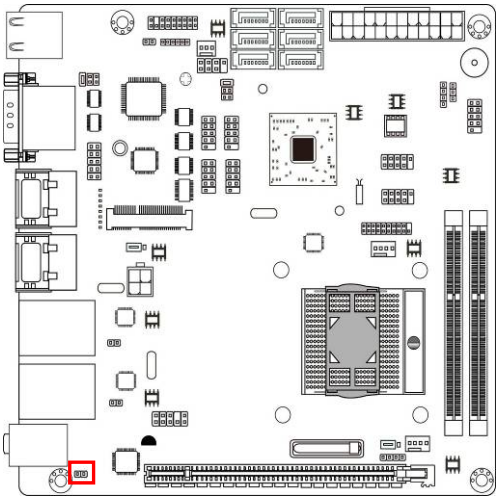
This header connects to Front Panel Line-out, MIC-In connector with cable.

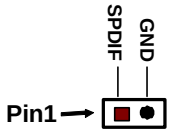




Line-Out, MIC Header

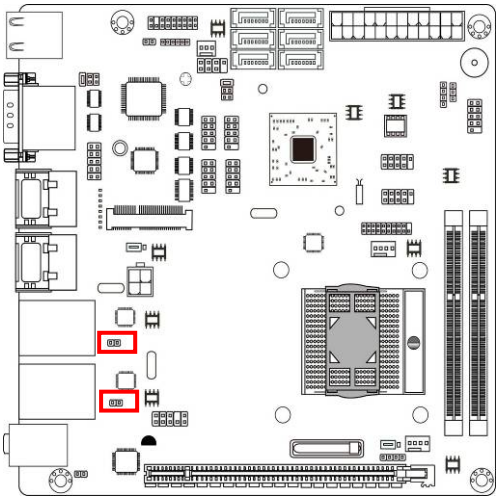
(2) HDMI_SPDIF1 (2-pin): HDMI-SPDIF Out header

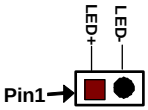




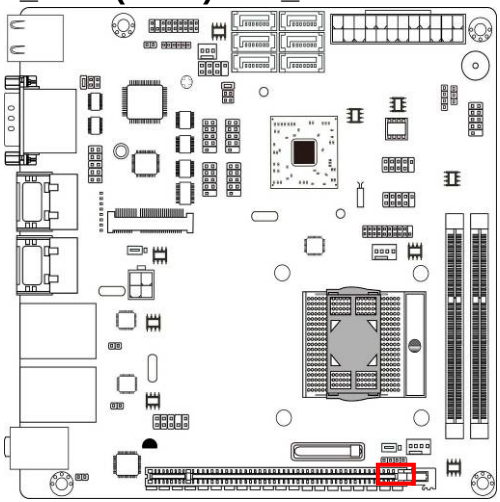
HDMI_SPDIF Header

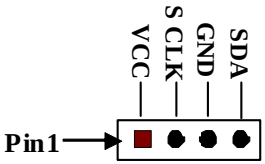
(3) LAN1LED1/LAN2LED (2-pin): LANLED Headers





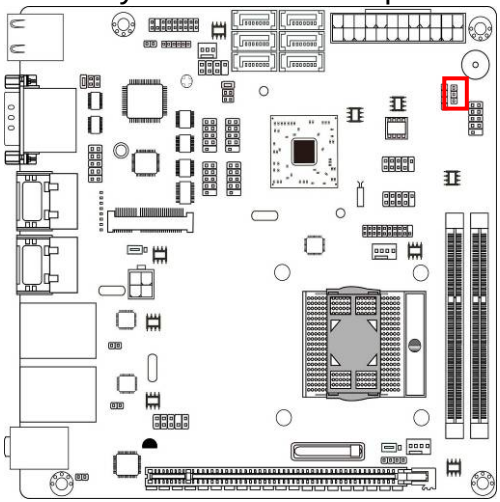
(4) SM_BUS (4-Pin): SM_BUS Header

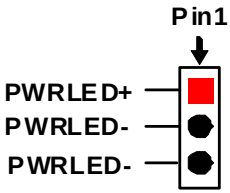




(5) PWR LED1(3-pin): PWR LED Header

The Power LED is light on while the system power is on. Connect the Power LED from the system case to this pin header.

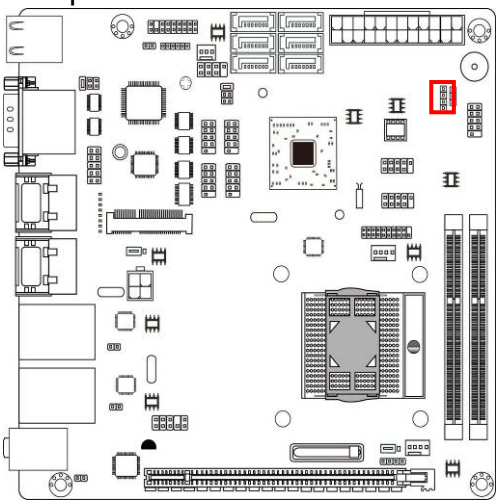


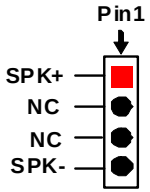


PWRLED1

(6) SPEAK1 (4-pin): Speaker Header

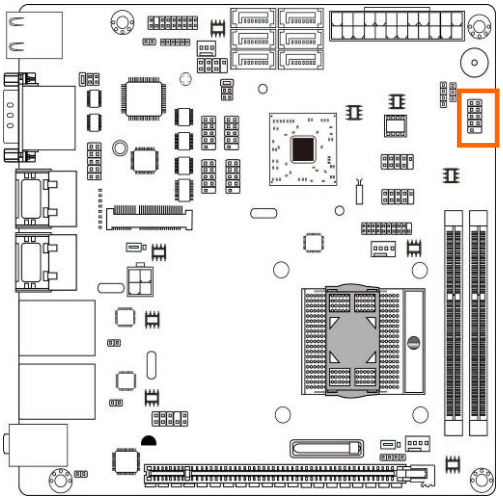
This 2-pin header connects to the case-mounted speaker. See the figure below.

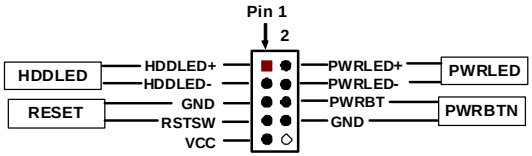




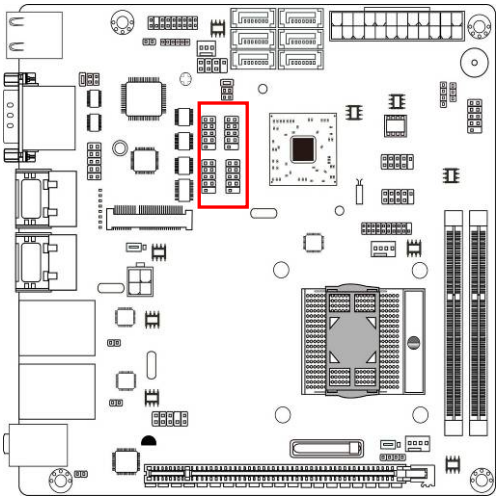
SPEAK1

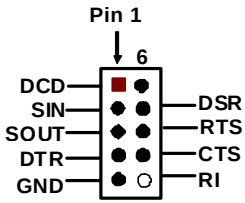
(7) JW-FP1(9-pin): Front Panel Header



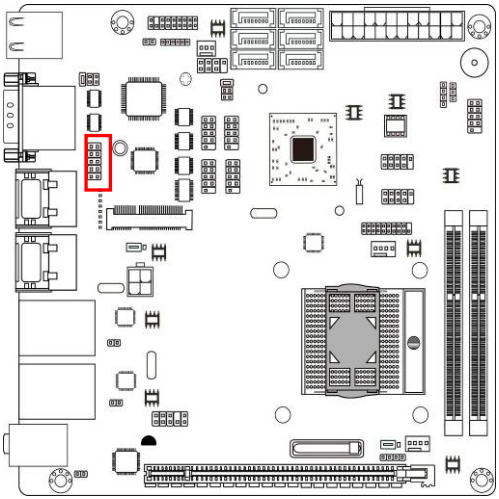


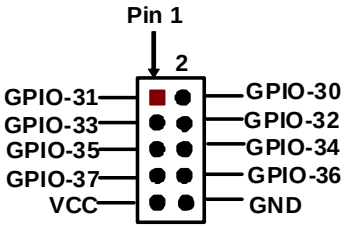
(8) COM3/COM4/COM5/COM6 (9-Pin): Serial Port Header



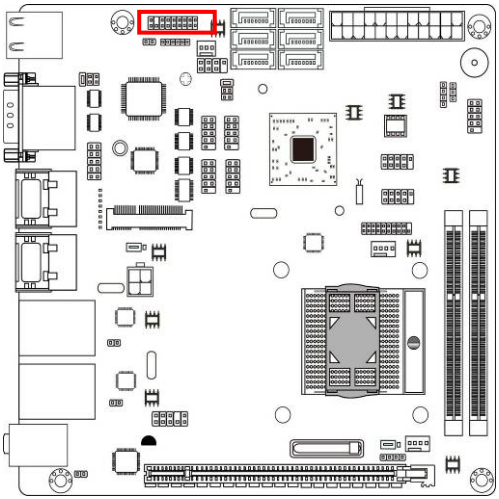


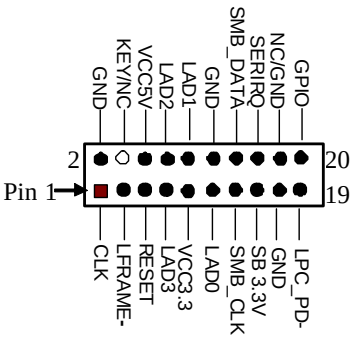
(9) GPIO_CON1 (10-pin): GPIO Header



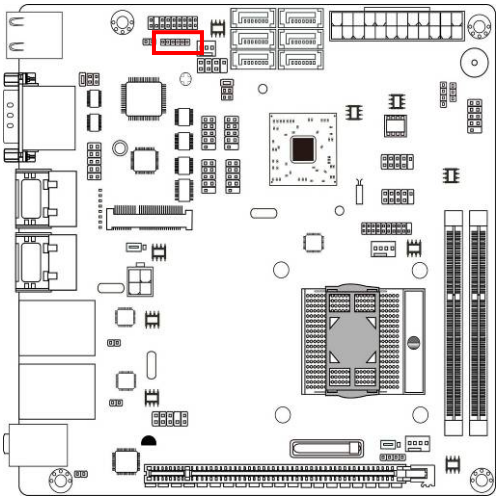


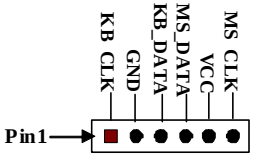
(10) TPM1 (19-pin): TPM 1.2 Header



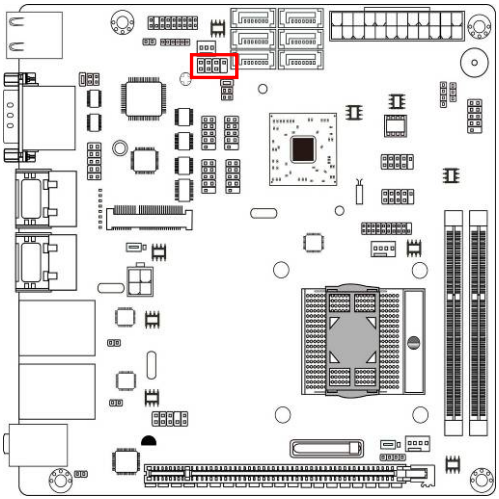


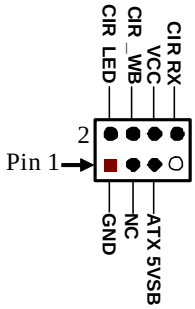
(11) KB_MS1 (6-pin): PS/2 Keyboard & Mouse Header



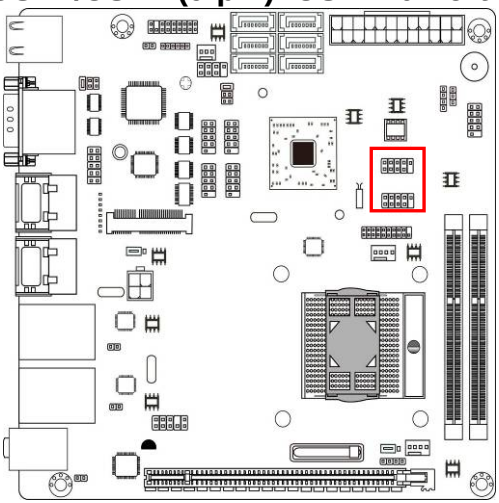


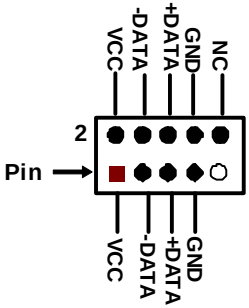
(12) CIR_CON (7-Pin): CIR Header



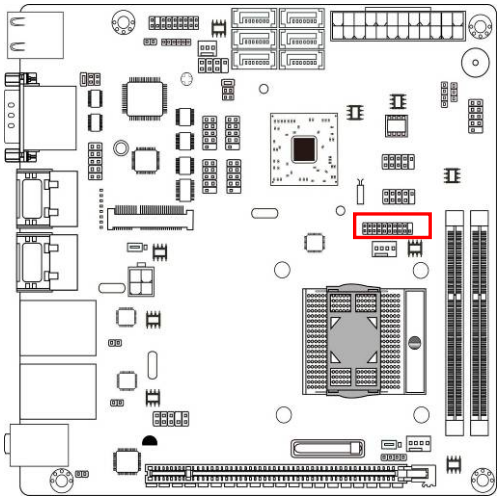


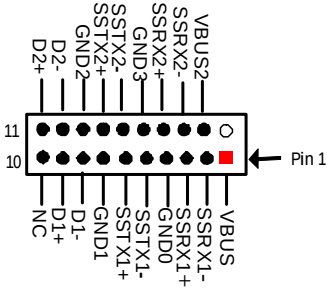
(13) USB1/USB2 (9-pin): USB 2.0 Port Header



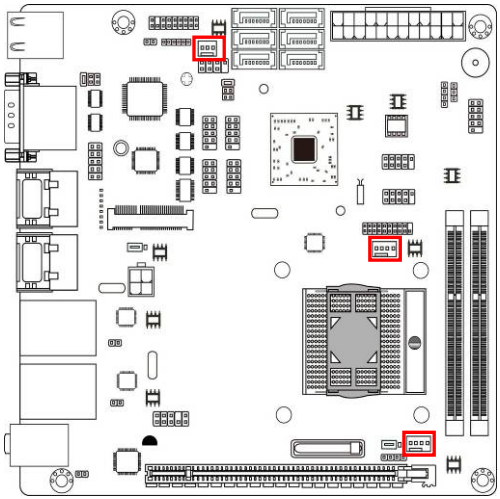


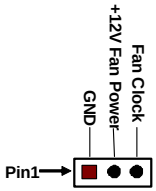
(14) USB3 (19-pin): USB 3.0 Port Header



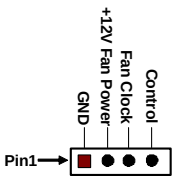


(15) CPUFAN (4-pin)/SYSFAN1 (3-pin)/SYSFAN2 (4-pin): FAN Speed Headers





SYSFAN1



SYSFAN2/CPUFAN

Chapter 3
Introducing BIOS

Notice!	The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and 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 form our official website.

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

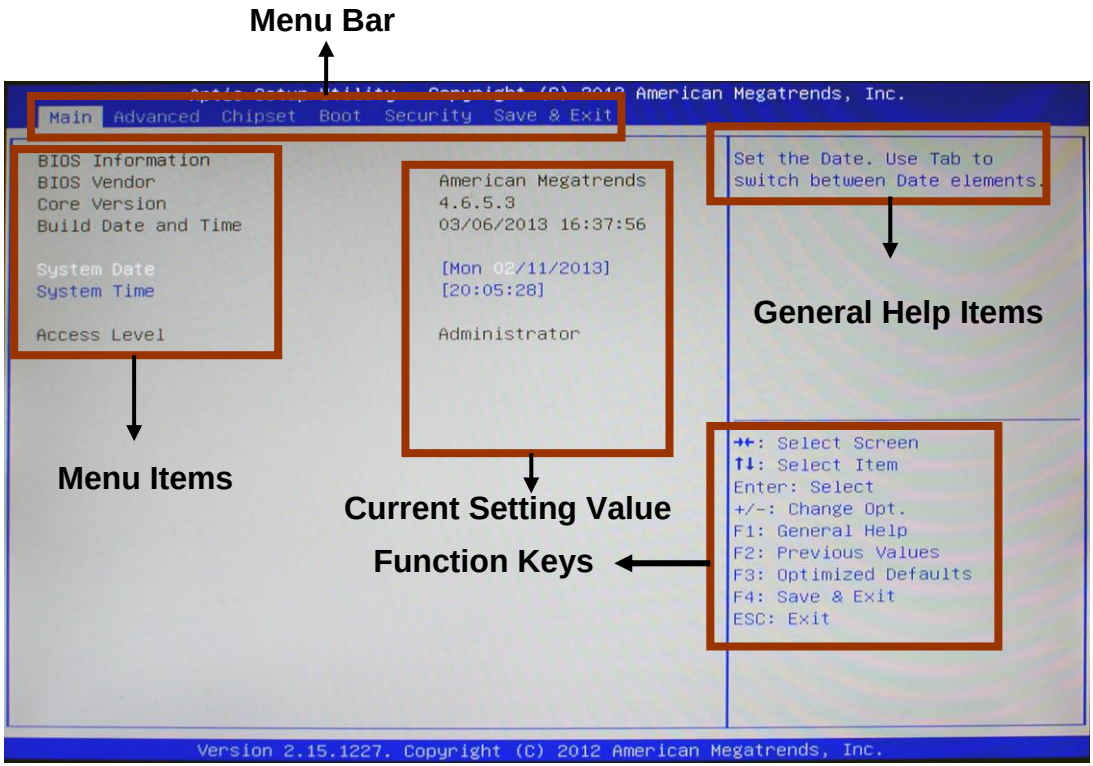
3-1 Entering Setup

Power on the computer and by pressing <Del> immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to

Press **<Del>** to enter Setup

3-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:



BIOS Menu Screen

3-3 Function Keys

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press←→ (left, right) to select screen;
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.

- Press <Enter> to select.
- Press <+>/<–> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous values.
- [F3]: Optimized defaults.
- [F4]: Save & Reset.
- Press <Esc> to quit the BIOS Setup.

3-4 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

Status Page Setup Menu/Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <**Esc**>.

3-5 Menu Bars

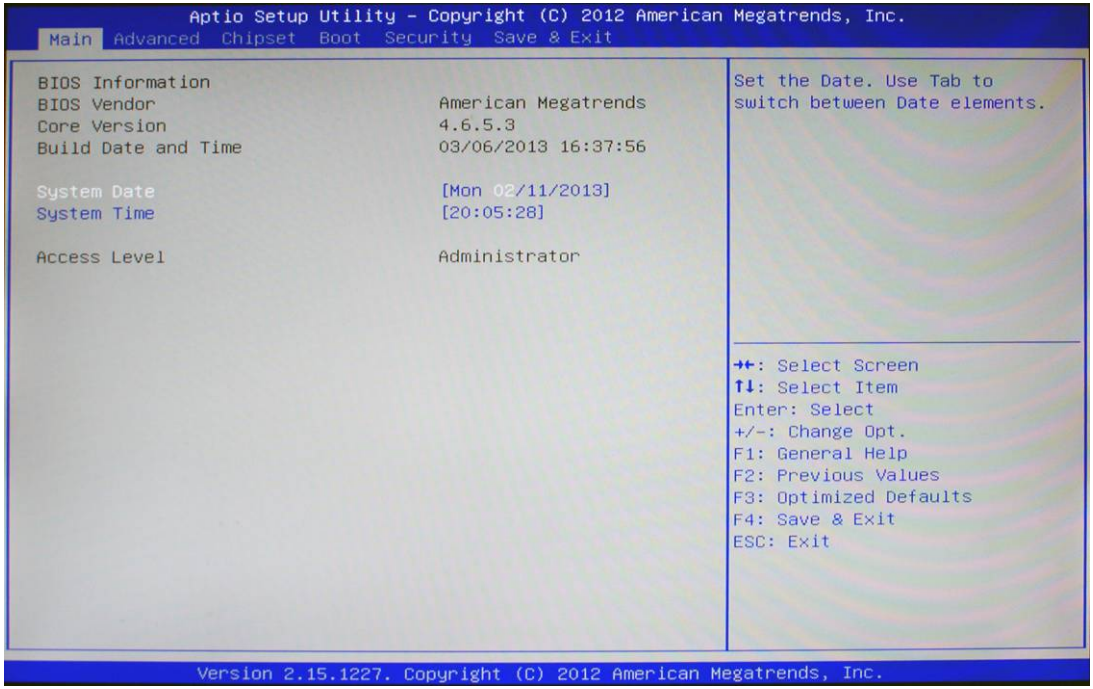
There are six menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Boot	To change boot settings
Security	Password settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

3-6 Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.



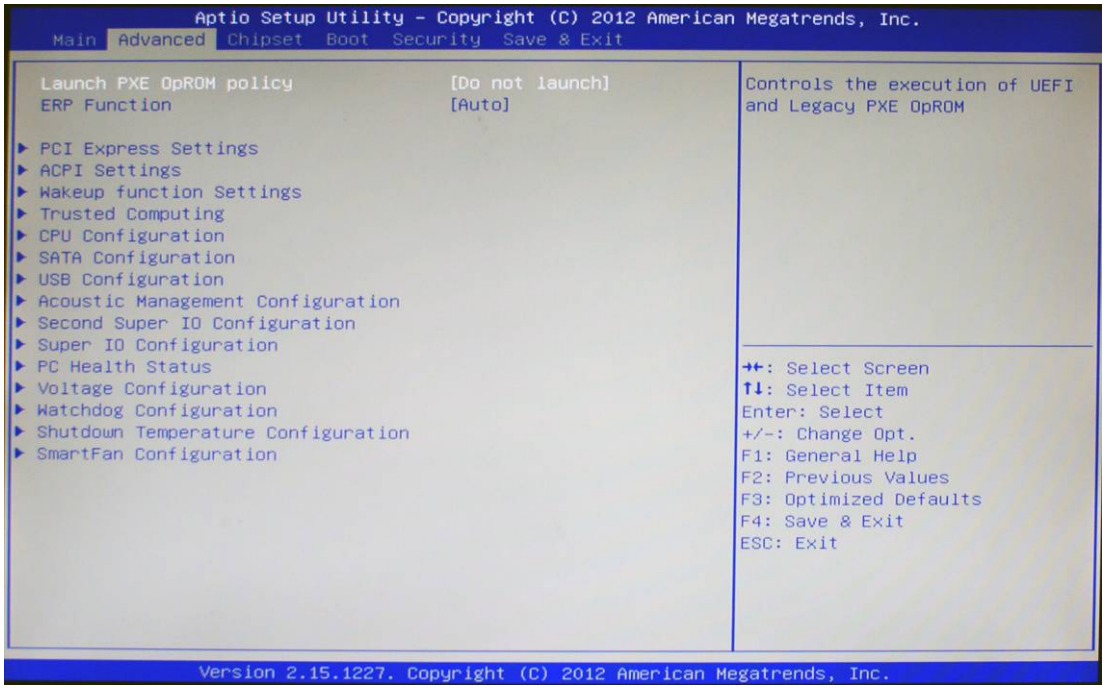
System Date

Set the date. Please use [Tab] to switch between data elements.

System Time

Set the time. Please use [Tab] to switch between time elements.

3-7 Advanced Menu



Launch PXE OpROM Policy

Use this item to control the execution of UEFI and legacy PXE OpROM.

The optional settings are: [Do not launch]; [UEFI only]; [Legacy only]; [Legacy first];[UEFI first].

ERP Function

Use this item to enable or disable ERP function for this board. This item should be set as [Disabled] if you wish to have Active All Wakeup Function.

The optional settings: [Auto]; [Disabled].

PCI Express Settings

Press [Enter] to make settings for the following sub-items:

PCI Express Device Register Settings:

Relaxed Ordering

Use this item to enable or disable PCI express device relaxed ordering.

The optional settings: [Disabled]; [Enabled].

Extended Tag

If set as [Enabled] it will allow device to use 8-bit tag field as a requester.

The optional settings: [Disabled]; [Enabled].

No Snoop

Use this item to enable or disable PCI Express device No Snoop option.

The optional settings: [Disabled]; [Enabled].

Maximum Payload

Use this item to set maximum payload of PCI Express device or allow system BIOS to select the value.

The optional settings are: [Auto]; [128 Bytes]; [256 Bytes]; [512 Bytes]; [1024 Bytes]; [2048 Bytes]; [4096 Bytes].

Maximum Read Request

Use this item to set maximum read request size of PCI Express device or allow system BIOS to select the value.

The optional settings are: [Auto]; [128 Bytes]; [256 Bytes]; [512 Bytes]; [1024 Bytes]; [2048 Bytes]; [4096 Bytes].

PCI Express Link Register Settings:

ASPM Support

Use this item to set ASPM level.

The optional settings: [Disabled]; [Auto]; [Force L0s].

[Force L0s]: Force all links to L0s state.

[Auto]: BIOS auto configure.

[Disabled]: Disable ASPM.

Extended Synch

The optional settings: [Disabled]; [Enabled].

If set as [Enabled] it will allow generation of extended synchronization patterns.

Link Training Retry

Use this item to define number of retry attempts software will take to retrain the link if previous training attempt was unsuccessful.

The optional settings are: [Disable]; [2]; [3]; [5].

Link Training Timeout(uS)

Use this item to define number of microseconds software will wait before polling 'Link Training' bit in link status register. Value range from 10 to 1000 uS.

Unpopulated Links

The optional settings are: [Keep Link On]; [Disable Link].

In order to save power, software will disable unpopulated PCI Express links if this option is set as 'Disable Link'.

ACPI Settings

Press [Enter] to make settings for the following sub-items:

ACPI Settings:

ACPI Sleep State

Use this item to select the highest ACPI sleep state the system will enter when the suspend button is pressed.

The optional settings are: [Suspend Disabled]; [S3 only(Suspend to RAM)].

Lock Legacy Resources

The optional settings: [Disabled]; [Enabled].

Use this item to enable or disable lock of legacy resources.

Wakeup Function Settings

Press [Enter] to make settings for the following sub-items:

Wake System with Fixed Time

Use this item to enable or disable system wake on alarm event. When set as [Enabled], system will wake on the hour/min/sec specified.

The optional settings: [Disabled]; [Enabled].

CIR Wakeup

Use this item to enable or disable CIR wakeup. This function is only supported when ERP function is disabled.

The optional settings: [Disabled]; [Enabled].

PS2 KB/MS Wakeup

Use this item to enable or disable PS2 KB/MS wakeup function. This function is only supported when ERP function is disabled.

The optional settings: [Disabled]; [Enabled].

USB S3/S4 Wakeup

Use this item to enable or disable USB S3/S4 wakeup. This function is only

supported when ERP function is disabled.
The optional settings: [Disabled]; [Enabled].

Trusted Computing
Press [Enter] to enable or disable TPM support.
Configuration:
TPM Support
Use this item to enable or disable BIOS support for security device. O.S. will not show security device. TCG EFI protocol and INT1A interface will not be available.
The optional settings: [Disabled]; [Enabled].

CPU Configuration
Press [Enter] to make settings for the following sub-items:
PSS Support
Use this item to enable or disable the generation of ACPI_PPC, _PSS, and _PCT objects.
The optional settings: [Disabled]; [Enabled].
PSTATE Adjustment
Use this item to adjust startup P-state level.
The setting level ranges from [PState0] ~ [PState7].
PPC Adjustment
Use this item to adjust _PPC object.
The current available setting option: [PState0].
NX Mode
Use this item to enable or disable No-execution page protection function.
The optional settings: [Disabled]; [Enabled].
SVM Mode
Use this item to enable or disable CPU Virtualization.
The optional settings: [Disabled]; [Enabled].
CPB Mode
Use this function to set CPB mode function.
The optional settings are: [Auto]; [Disabled].
C6 Mode
Use this function to set C6 mode function.
The optional settings: [Disabled]; [Enabled].

SATA Configuration

Press [Enter] to make settings for the following sub-items:

OnChip SATA Controller

The optional settings are: [Disabled]; [Enabled].

OnChip SATA Mode

The optional settings are: [Native IDE]; [RAID]; [Legacy IDE]; [AHCI].

USB Configuration

Press [Enter] to make settings for the following sub-items:

Legacy USB Support

Use this function to select legacy USB support.
The optional settings are: [Enabled]; [Disabled]; [Auto].
[Enabled]: enable legacy USB support.
[Auto]: disable legacy USB support when no USB devices are connected.
[Disabled]: keep USB devices available only for EFI applications.

USB 3.0 Support

Use this item to enable or disable USB3.0 (XHCI) controller support.
The optional settings are: [Disabled]; [Enabled].

XHCI Hand-off

This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
The optional settings are: Enabled]; [Disabled].

EHCI Hand-off

This is a workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
The optional settings are: [Disabled]; [Enabled].

USB hardware delay and time-out:

USB Transfer time-out

Use this item to set the time-out value for control, bulk, and interrupt transfers.
The optional settings are: [1 sec]; [5 sec]; [10 sec]; [20 sec].

Device reset time-out

Use this item to set USB mass storage device start unit command time-out.
The optional settings are: [10 sec]; [20 sec]; [30 sec]; [40 sec].

Device power-up delay

Use this item to set maximum time the device will take before it properly reports itself to the host controller. 'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor.

The optional settings: [Auto]; [Manual].

Select [Manual] you can set value for the following sub-item: **Device Power-up delay in seconds,** the delay range in from 1 to 40 seconds, in one second increments.

Acoustic Management Configuration

Menu for configuring Automatic Acoustic Management. Press [Enter] to enable or disable Automatic Acoustic Management.

Automatic Acoustic Management

The optional settings are: [Enabled]; [Disabled].

Second Super IO Configuration

Press [Enter] to make settings for the following sub-items:

COM3 Port Configuration /COM4 Port Configuration / COM5 Port Configuration /COM6 Port Configuration

Serial Port

Use this item to enable or Disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

Select RS232/RS422/RS485

Use this item to select serial port RS232/RS422/RS485 mode.

The optional settings are: [RS422]; [RS232];[RS485].

Mode Speed Select

Use this item to select serial port RS232/RS422/RS485 speed.

The optional settings are: [RS232/RS422/RS485=250Kbsp]; [RS232=1Mbsp, RS422/RS485=10Mbsp].

Note:* **Select RS232/RS422/RS485 and **Mode Speed Select options** are *only optional for COM6 port.*

Super I/O Configuration

Press [Enter] to make settings for the following sub-items:

Super IO Configuration

COM1 Port Configuration/ COM2 Port Configuration

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port.

Change Settings

Use this item to select an optimal setting for super IO device.

CIR Controller

Use this item to enable or disable CIR controller.

The optional settings are: [Enabled]; [Disabled].

Case Open Detect

Use this item to detect case has already open or not, show message in POST.

The optional settings are: [Enabled]; [Disabled].

PC Health Status

Press [Enter] to view hardware health status.

Voltage Configuration

Use this item to choose the Voltage Parameters.

DRAM Voltage

The optional settings are: [1.50V]; [1.55V]; [1.60 V]; [1.65 V].

WatchDog Configuration

Press [Enter] to make settings for Watchdog Configuration:

Watchdog Configuration:

WatchDog Timer Control

Use this item to enable or disable WatchDog Timer Control. When set as [Enabled], the following sub-items shall appear:

WatchDog Timer Val

User can set a value in the range of 4 to 255.

WatchDog Timer Unit

The optional settings are: [Second];[Minute].

Shutdown Temperature Configuration

Use this item to select system shutdown temperature.

The optional settings are:[Disabled]; [60C/140F]; [65C/149F]; [70C/158F]; [75C/167F].

SmartFan Configuration

Press [Enter] to make settings for SmartFan Configuration:

CPU 3/4 Pin Fan Select / SYSFAN2 3/4 Pin Fan Select

The optional settings are: [3 Pin]; [4 Pin].

CPUFAN / SYSFAN1/ SYSFAN2 Smart Mode

When set as [Enabled], the following sub-items shall appear:

CPUFAN / SYSFAN1/ SYSFAN2 Full Speed Temp

Use this item to set CPUFAN/SYSFAN1/SYSFAN2 full speed temp. Fan will run at full speed when above this temperature.

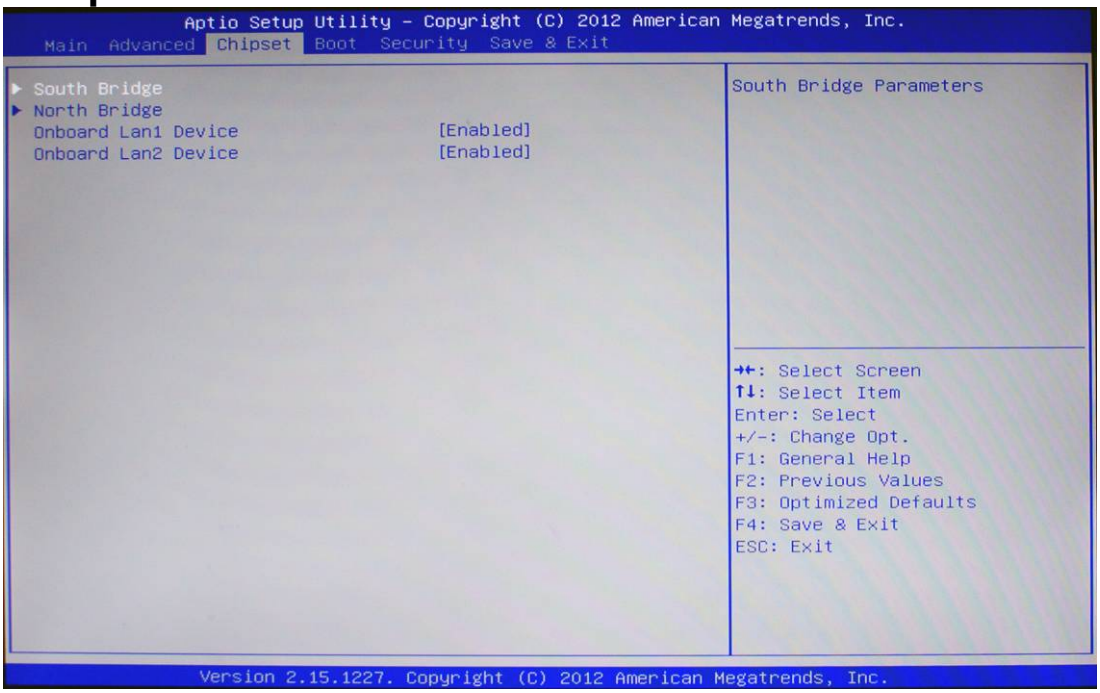
CPUFAN / SYSFAN1/ SYSFAN2 Idle Temp

Use this item to set CPUFAN/SYSFAN1/SYSFAN2 idle speed temperature. Fan will run at idle speed when below this temperature.

SYSFAN1/ SYSFAN2 Stop Temp

Use this item to set SYSFAN1/SYSFAN2 stop temp. Fan will stop when below this temperature.

3-8 Chipset Menu



South Bridge

Press [Enter] to make settings for the following sub-items:

HD Audio Device

The optional settings are: [Auto]; [Disabled]; [Enabled].

USB Controller

The optional settings are: [Enabled]; [Disabled].

Restore AC Power Loss

Use this item to select AC power state when power is re-applied after a power failure. The optional settings are: [Disabled]; [Power On]; [Last State].

North Bridge

Press [Enter] to make settings for the following sub-items:

Graphics Configuration

Primary Video Device

Use this item to select primary video device that BIOS will use to for output.
The optional settings are: [Internal VGA]; [External VGA].

Integrated Graphics

Use this item to select integrated graphics controller.
The optional settings are: [Auto]; [Disabled]; [Force].

PSPP Policy

Use this item to select PCIE speed power policy.
The optional settings are: [Disabled]; [Performance]; [Balanced-High]; [Balanced-Low]; [Power-Saving].

Memory Clock

Use this item to select memory clock.
The optional settings are: [Auto]; [800MHz]; [1066MHz]; [1333MHz]].

Memory Hole Remapping

The optional settings are: [Enabled]; [Disabled].

Bank Interleaving

The optional settings are: [Enabled]; [Disabled].

Channel Interleaving

The optional settings are: [Enabled]; [Disabled].

Memory Clear

The optional settings are: [Enabled]; [Disabled].

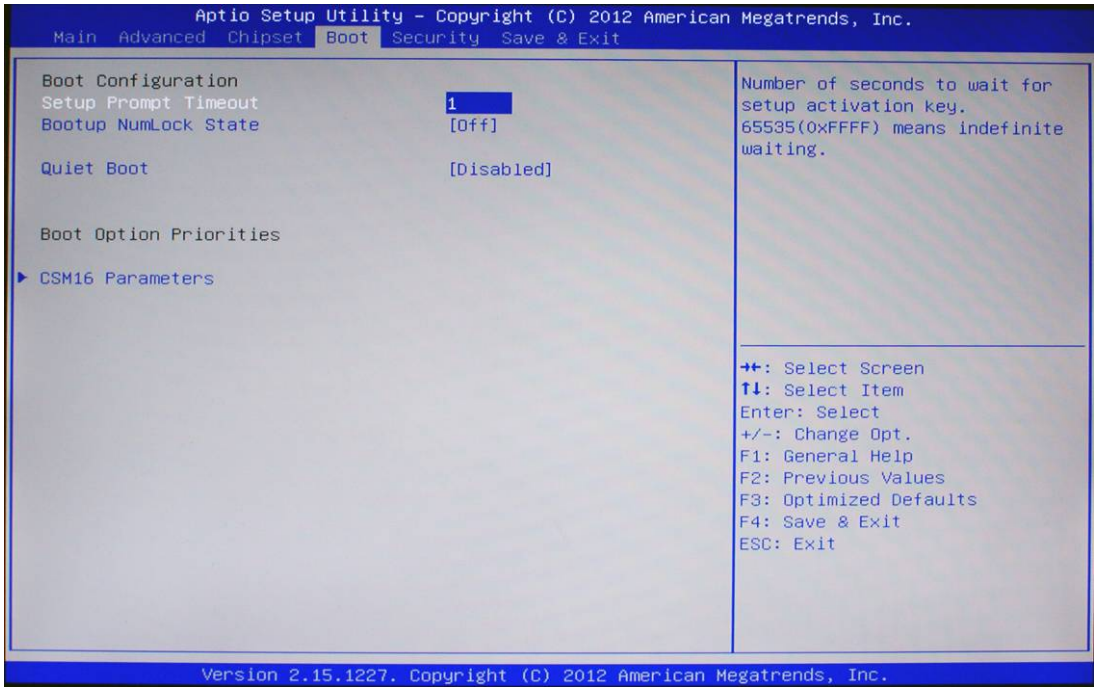
Onboard Lan1 Device

Use this item to enable or disable onboard LAN1 device.
The optional settings are: [Enabled]; [Disabled].

Onboard Lan2 Device

Use this item to enable or disable onboard LAN2 device.
The optional settings are: [Enabled]; [Disabled].

3-9 Boot Menu



Boot Configuration

Setup Prompt Timeout

Use this item to set number of seconds to wait for setup activation key.

Bootup Numlock State

Use this item to select keyboard numlock state.

The optional settings are: [On]; [Off].

Quiet Boot

The optional settings are: [Enabled]; [Disabled].

Boot Option Priorities:

Boot Option #1/ Boot Option #2…

Use this item to decide system boot order from available options.

CSM16 Configuration

Press [Enter] to make settings for CSM16 configuration:

Gate A20 Active

The optional settings are: [Upon Request]; [Always].

[Upon Request]: GA20 can be disabled during using BIOS services.

[Always]: do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Message

Use this item to set display mode for option ROM.

The optional settings are: [Force BIOS]; [Keep Current].

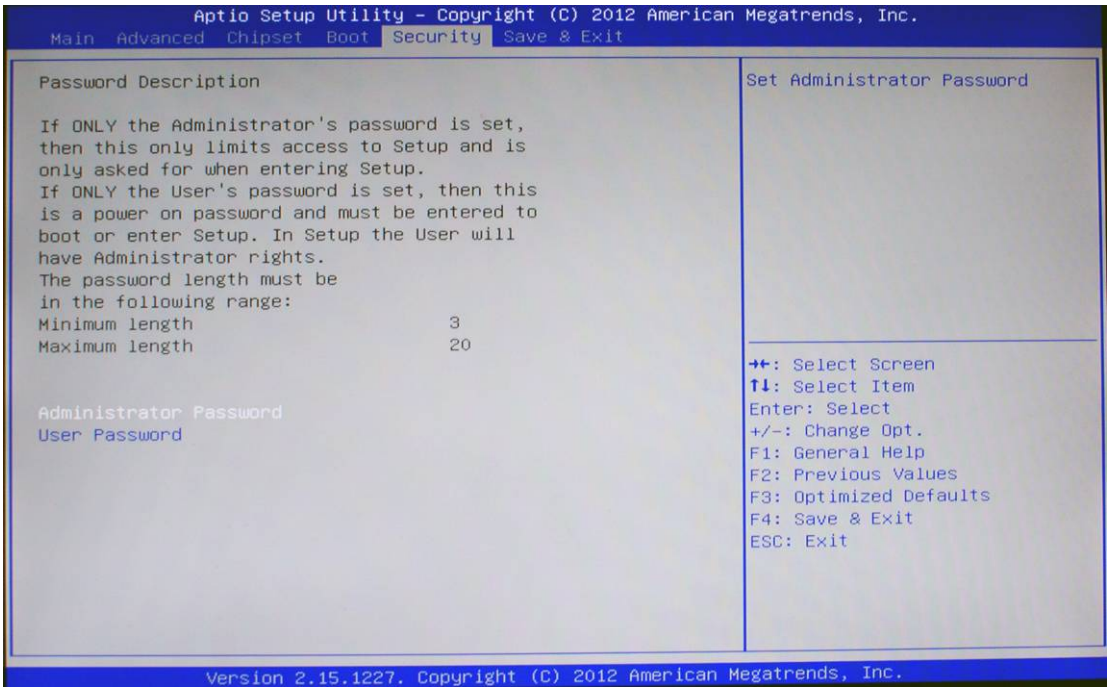
INT19 Trap Response

The optional settings are: [Immediate]; [Postponed].

[Immediate]: to execute the trap right away;

[Postponed]: to execute the trap during legacy boot.

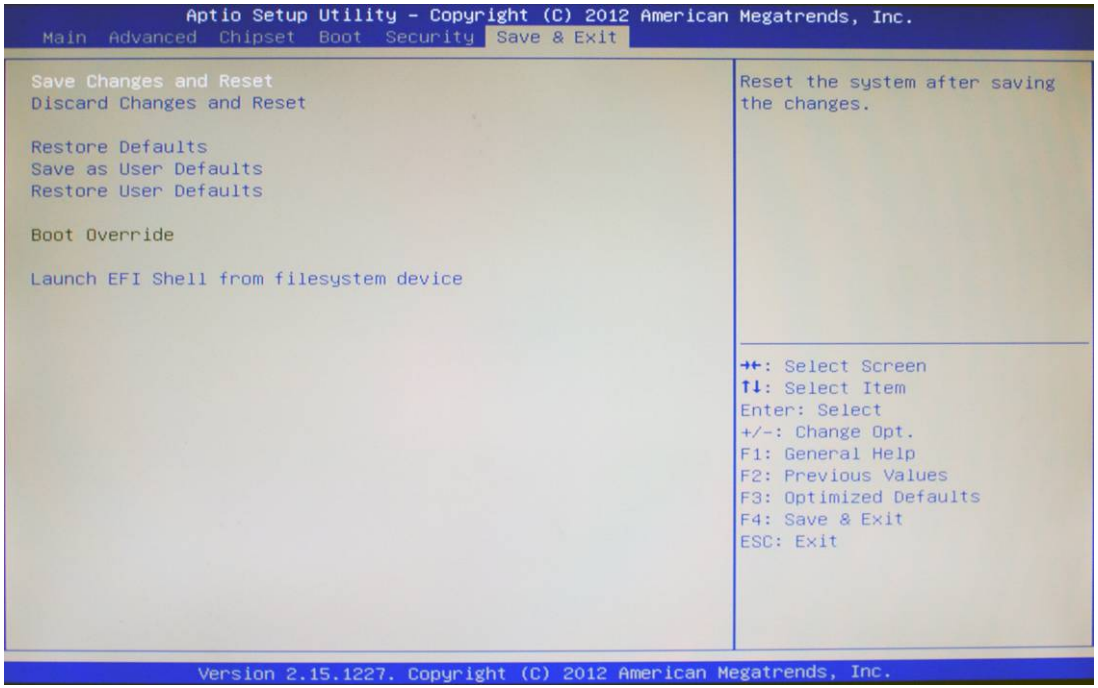
3-10 Security Menu



Security menu allow users to change administrator password and user password

settings.

3-11 Save & Exit Menu



Save Changes and Reset

This item allows user to reset the system after saving the changes.

Discard Changes and Reset

This item allows user to reset the system without saving any changes.

Restore Defaults

Use this item to restore /load default values for all the setup options.

Save as User Defaults

Use this item to save the changes done so far as user defaults.

Restore User Defaults

Use this item to restore defaults to all the setup options.

Launch EFI Shell from file system device

This item is for attempts to launch EFI shell application (Shell x64.efi) from one of the available filesystem devices.