User's Manual

AMD FP5 SOC SFF Mainboard

FS-FP5V

TRADEMARK

Manual Revision 1.0

August 03, 2018

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.

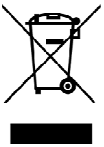
Note2: The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this product.

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.

Manufacturer

Sapphire Technology Limited

Unit 1909-1919, 19/F., Tower 2 Grand Central Plaza

138 Shatin Rural Committee Road

Shatin, Hong Kong

Table of Contents

Chapter 1 Introduction

1-1 Mainboard Specifications

APU

- AMD® V-Series V1000 family APU for FP5 package with Zen core

Graphics

- AMD® Radeon Vega 11 graphics
- Supports four independent displays with DisplayPort

Port	Supported resolution
DisplayPort	4096x2160@60Hz

System Memory

- Two 260-pin DDR4 SDRAM SO-DIMM sockets
- Supports 1.2V DDR4-2133/2400/2666/2933/3200 DIMMs with dual channel architecture

  * The memory speed will be depend on CPU specification

- Supports 4GB, 8GB and 16GB DDR4 SO-DIMMs up to maximum 32GB

Expansion Slots

- One M.2 Slot E-key for Wifi/BT card
- One M.2 Slot M-key for SSD device supporting SATA and PCIE interface

USB Ports

- Three USB 2.0 ports supporting transfer speed up to 480Mbps
- One USB 3.1 Type C port supporting transfer speed up to 10Gbps
- Supports wake-up from S3 and S4 modes

SATA Ports

- One SATA3 port with 6Gb/s data transfer rate
- Supports AHCI (Advanced Host Controller Interface)

Onboard LAN

- Two Gigabit Ethernet from Realtek® RTL8111G Gigabit controller

Onboard TPM

- Supports TPM2.0 from Infineon SLB9670

Onboard Audio

- Supports 2-channel High-Definition audio from Realtek ALC262 codec

I/O

- Onboard Fintek F81803U LPC bus I/O controller
- Supports Hardware Monitor for fan speed monitoring, CPU and system temperature

Back Panel I/O Ports

- 2 x RJ45 LAN ports
- 2 x USB2.0 ports
- 4 x DisplayPorts
- 1 x DC-in 12V~19V 90W Jack, dimension: 5.5x2.5mm

Front Panel I/O Ports

- 1 x USB2.0 port
- 1 x USB3.1 Type C port
- 1 x Line-Out port
- 1 x Mic-In port

Internal I/O Connectors

- 1 x DC-in 4-pin Power connector
- 1 x SATA3 header
- 1 x SATA Power header
- 1 x Front Panel header
- 1 x COM header
- 1 x GPIO header
- 1 x Case Open header

- 1 x SMBus header
- 1 x 4-pin CPU Fan header
- 1 x 3-pin SYSTEM Fan header
- RS232 / RS422 / RS485 mode select jumper
- Auto Power ON jumper
- Clear CMOS jumper

BIOS

- 64Mb SPI Flash with AMI based BIOS
- Supports ACPI (Advanced Configuration and Power Interface)
- Onboard jumper to clear the CMOS data

Dimensions

- Size: 147.3mm×139.7mm

Operating systems

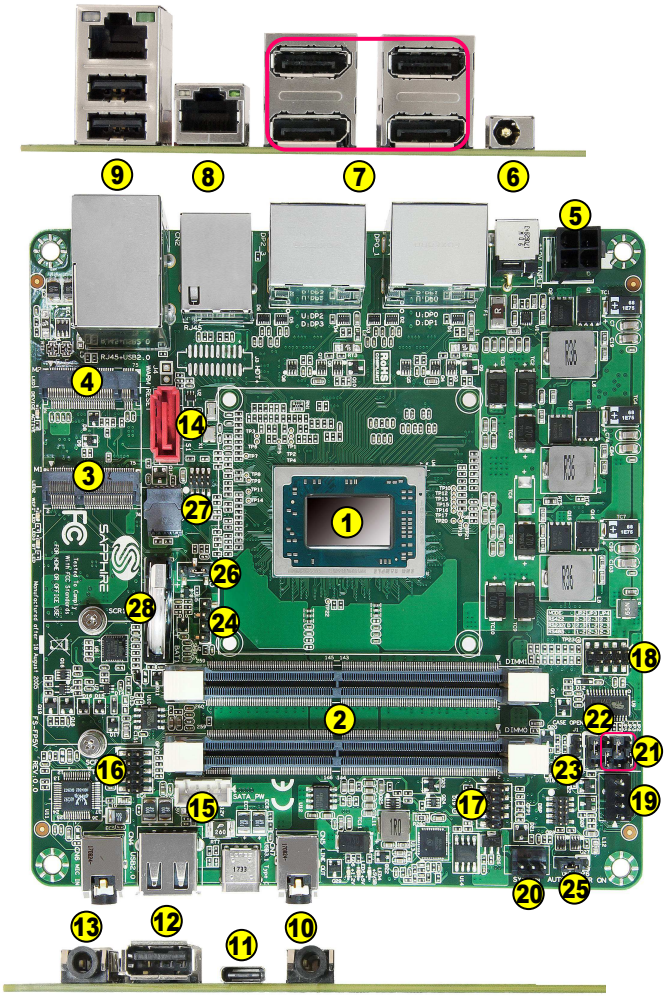
- Supports Windows 10 and Ubuntu 16.04

Environmental

- Power Requirement: Power adapter of 12V~19V DC OUT, ~90W, 5.5/2.5mm power jack
- Operating Temperature: 0°C~50°C (32°F~122°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 page 5 for component description.

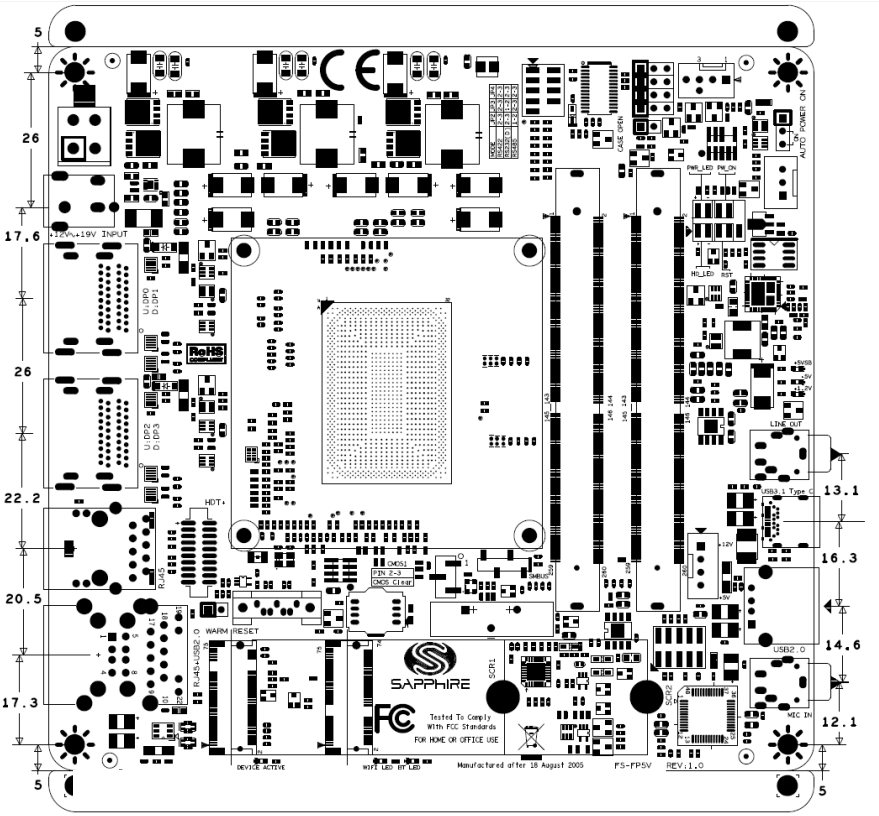


Note:
Picture is for reference only, actual board may be slightly different.

See next page for details.

Item	Component description	Item	Component description
1	AMD FP5 APU	15	SATA Power Header
2	DDR4 SO-DIMM *2	16	GPIO Header
3	M.2 E-Key slot for Wifi/BT card	17	Front Panel Header
4	M.2 M-key for SSD device	18	COM Header
5	4-pin 12V ~ 19V ATX Power Connector	19	CPU Fan Header
6	DC-in 12V ~ 19V Jack	20	SYSTEM Fan Header
7	Display Port *4	21	RS232/422/485 Mode Select Jumper for COM1
8	RJ45 LAN Port	22	Slew Speed Select Jumper
9	RJ45 LAN + USB2.0 Port	23	Case Open Header
10	Line-Out Port	24	SMBus Header
11	USB3.1 Type C Port	25	Auto Power ON Jumper
12	USB2.0 Port	26	Clear CMOS Jumper
13	Mic-In Port	27	BIOS
14	SATA3 Connector	28	Mainboard Battery

1-3 Mainboard Dimension



Chapter 2 Installation

2-1 Installing System Memory

This mainboard has two 260-pin SO-DIMM sockets for DDR4 memory.

- Supports 4GB, 8GB and 16GB DDR4 SO-DIMMs up to maximum 32GB.
- Supports 1.2v DDR4-2133/2400/2666/2933/3200* DIMMs with dual channel architecture.

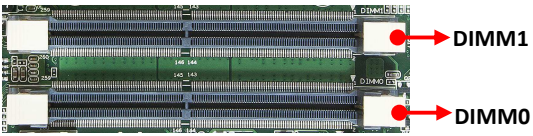
  * The memory speed will be depend on CPU specification.

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

Memory Configuration

To use 1 DIMM: Install into either DIMM slot 0 or slot 1.

To use 2 DIMMs: Install into DIMM slot 0 and DIMM slot 1.



Memory Installation

DDR4 and DDR3 memory modules are physically different. Please only install DDR4 DIMMs on this mainboard. To make sure you have the correct DIMM, check that all the notches line up with the DDR4 DIMM slot.

To install the DIMM, follow these steps:

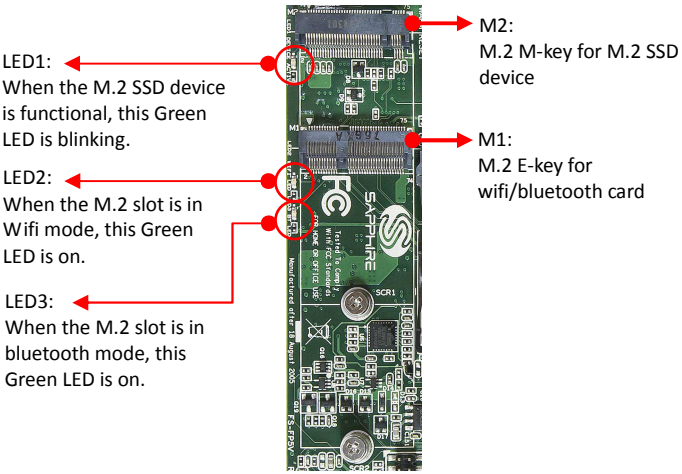
1. Pull both clips on either side of the slot outwards. Align the DIMM module with the slot.
2. Press modules straight down until the plastic clips close and the module fits tightly into the DIMM slot. Push clips inwards to make sure they are in place.

To remove DIMM from a socket, gently spread the socket's retention arms to disengage them from the DIMM.

Note: To avoid damaging the DIMM, do not touch its contact edge.

2-2 Installing Expansion Cards

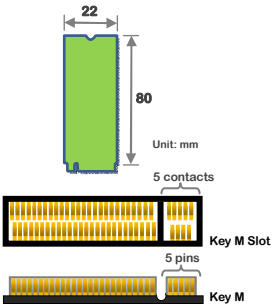
The mainboard provides one M.2 E-Key slot for Wifi/Bluetooth card and one M.2 M-key for SSD device supporting SATA and PCIE interface.



M.2 E-Key Slot

To install the M.2 wifi/bluetooth card:

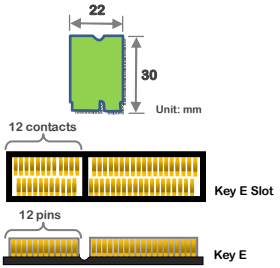
1. Remove screws and align the notch on the M.2 wifi/bluetooth card edge connector with the tab in the slot.
2. Plug the M.2 wifi/bluetooth card firmly into the slot at a 45-degree angle, and until it clicks into place.
3. Fasten M.2 wifi/bluetooth card onto the nut with accompanied screws.



M.2 M-Key Slot

To install the M.2 SSD device:

The M.2 SSD installation is the same as above

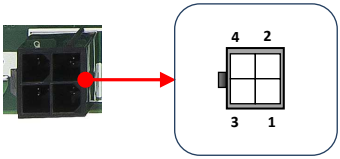


2-3 Connecting Cables and Jumper Settings

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

4-pin 12V~19V ATX Power Connector

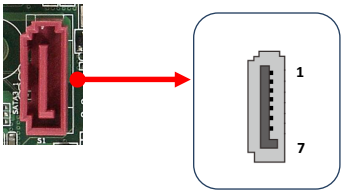
PW1, This power connector is used to provide power to the system. Align the power plug to the connector and press firmly until seated.



Pin	Definition
1	GND
2	GND
3	12V~19V
4	12V~19V

SATA3 Connector

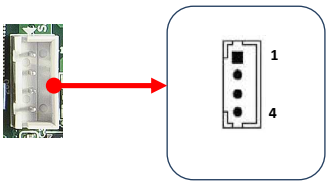
The S1 is SATA3 c and works at speeds of up to 6G/s. Each cable can be used to connect one SATA drive to the mainboard.



Pin	Definition
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

SATA Power Header

The SATA Power header is used to provide 5V power to SATA3 connector.



Pin	Definition
1	+12V
2	GND
3	GND
4	+5V

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

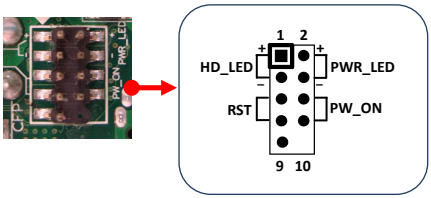
Attach the power button cable from the case to these two pins. Pressing the power button on the front panel turns the system on and off rather than using the onboard button.

▶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

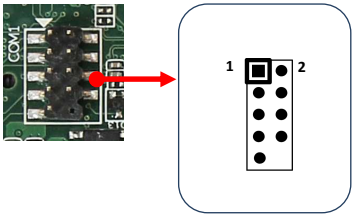
Attach the Reset switch cable from the front panel of the case to these two pins. The system restarts when the RESET switch is pressed.



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

COM Header

The Serial port header (COM1) can provide one serial port via an optional COM port cable.

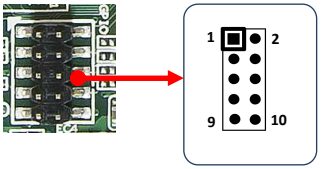


Pin	Definition
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI#
10	Empty

Note:
The pin definition of header and standard DB9 male pin out is different.

GPIO Header

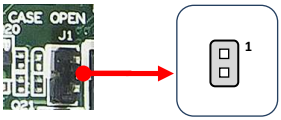
There is a GPIO (General-purpose input/output) header on the motherboard. It can connect a variety of simple one- or two-wire devices.



Pin	Definition	Pin	Definition
1	SIO_GPIO0	2	SIO_GPIO4
3	SIO_GPIO1	4	SIO_GPIO5
5	SIO_GPIO2	6	SIO_GPIO6
7	SIO_GPIO3	8	SIO_GPIO7
9	VCC_GPIO(+3.3V_ALW)	10	GND

Case Open Header

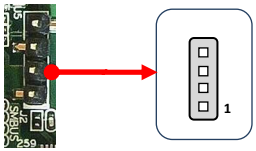
This header is used to for a chassis open detect. When set, the warning message will appear during POST when the case is opened.



Pin	Definition
1	Case Open
2	GND

SMBus Header

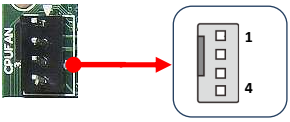
This is a SMBus interface header.



Pin	Definition
1	+3.3V Standby
2	SMBus CLOCK
3	SMBUS DATA
4	GND

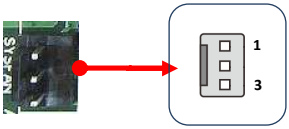
Fan Headers

There are two headers (CPUFAN and SYSFAN) 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.



Pin	Definition
1	GND
2	+12V
3	Sense
4	Control

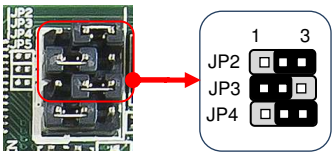
Note:
The CPU fan cable can be either a 3-pin or a 4-pin connector. Connect a 3-pin connector to pins 1, 2, and 3 on the mainboard connector.



Pin	Definition
1	GND
2	+12V
3	Sense

RS422/RS232/RS485 Mode Select Jumper

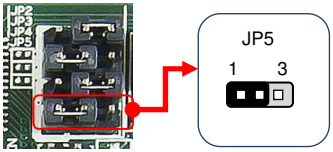
You can use JP2/JP3/JP4 to select among RS-232/485/422 modes for COM1 port. The default setting is RS-232



JP2	JP3	JP4	Mode
2-3	2-3	2-3	RS422
2-3	1-2	2-3	RS232 (Default)
1-2	2-3	2-3	RS485

Slew Speed Select Jumper

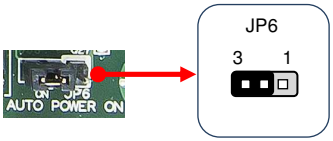
Adjustable Slew Rate for Minimize EMI Error. A slew rate control pin configures driver outputs for either high data rate or slew-controlled data rates.
Slew-controlled outputs minimize the problems that caused by the reflections and ringing on long or un-terminated cables. Logical Low input will limit driver slew from either RS-232 to 1Mbps or RS-485 to 10Mbps.
You can use JP5 to select High Speed or Low Speed mode.



Pin	Settings
1-2	High Speed (Default)
2-3	Low Speed

Auto Power ON Jumper

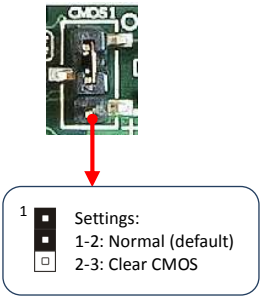
You can use JP6 to select to enable or disable the auto power on function.



Pin	Settings
1-2	Disabled
2-3	Enabled (Default)

Clear CMOS Jumper

This mainboard contains a jumper (CMOS1) 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.



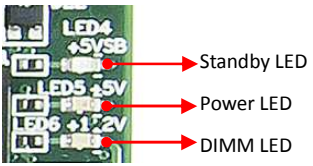
To clear CMOS data, please follow the steps below.

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.

2-4 LED Status Indicators

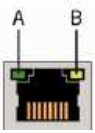
This mainboard provides three LEDs to indicate the system's status.

- STANDBY LED (LED4, 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.
- POWER LED (LED5, Green): When the System is powered on, this LED is on.
- DIMM LED (LED6, Yellow): When the Memory slot is functional, this LED is on.



Note for LAN Port

Two LEDs are built into the RJ-45 LAN connector. These LEDs indicate the status of the LAN.



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

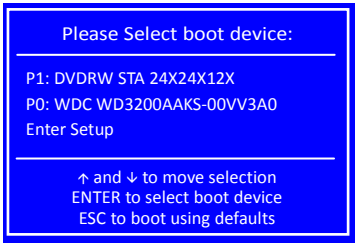
Chapter 3 Configuring the BIOS

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.



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 to enter BIOS Setup during BIOS Power On Self Test (POST).

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.

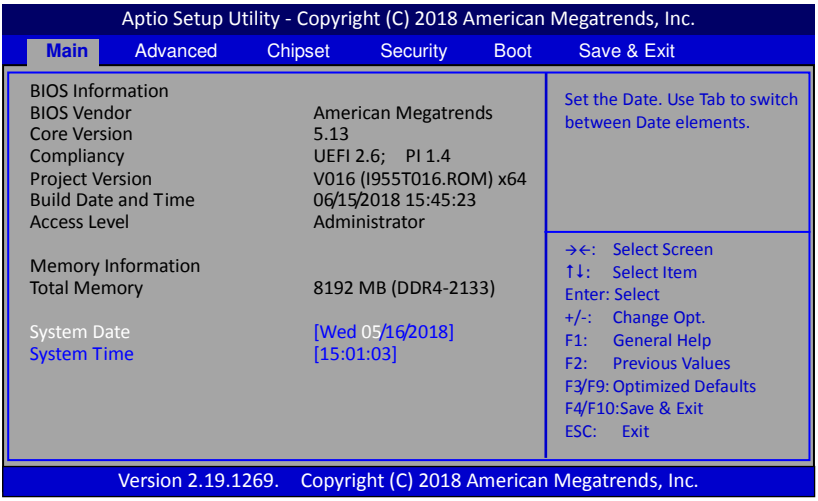
Control Keys

Please check the following table for the function description of each Control key.

Control Key(s)	Function Description
← / →	Moves cursor left or right to select screens
↑ / ↓	Moves cursor up or down to select items
<Enter>	To bring up the selected item
+ / -	To change option for the selected items
<F1>	To display the General Help Screen
<F2>	To load previous values for all the settings
<F3>/<F9>	To load optimized default values for all the settings
<F4>/<F10>	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.



BIOS Information

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

Memory Information

Displays current system memory size.

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.

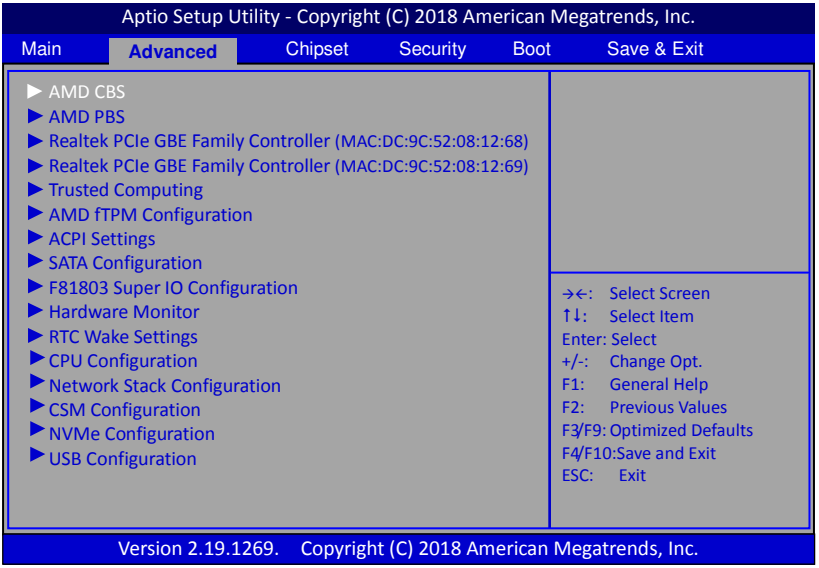
[Year] The year can be adjusted by users.

System Time

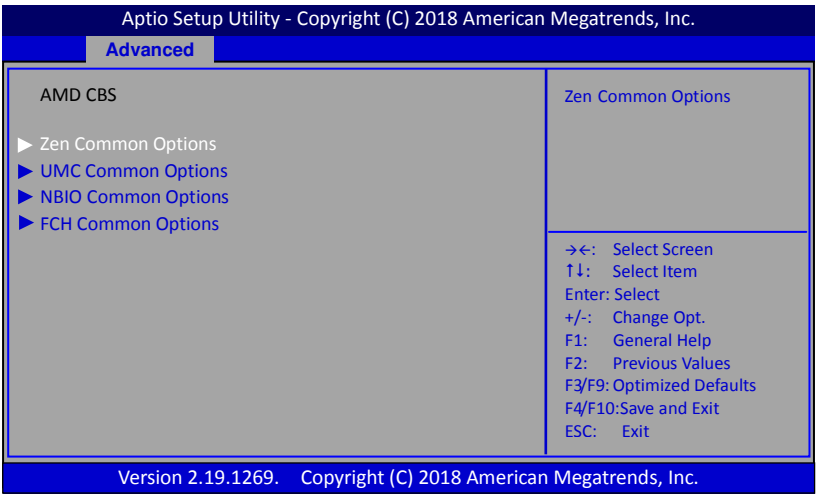
Allows you to set the system time. The time format is <hour>:<minute>:<second>.

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.



▶ AMD CBS



▶Zen Common Options

Core Performance Boost
Allows you set the Core Performance Boost.
Options: Disabled, Auto.

Global C-state Control
Allows you to control the IO based C-state generation and DF C-states
Options: Disabled, Enabled, Auto.

▶UMC Common Options

DDR4 Common Options

DRAM Timing Configuration
WARNING - DAMAGE CAUSED BY USE OF YOUR AMD PROCESSOR OUTSIDE OF SPECIFICATION OR IN EXCESS OF FACTORY SETTINGS ARE NOT COVERED UNDER YOUR AMD PRODUCT WARRANTY AND MAY NOT BE CONVERED BY YOUR SYSTEM MANUFACTURE'S WARRANTY.

▶NBIO Common Options

GFX Configuration

Integrated Graphics Controller
Enables the Integrated Graphics controller.
Options: Auto, Disabled, Forces.

UMA Mode
Allows you to select the UMA mode.
Options: Auto, UMA_SPECIFIED, UMA_AUTO.

UMA Version
Allows you to select the UMA version.
Options: Legacy, Non-Legacy, Hybrid Secure, Auto.

UMA Frame buffer Size
This item will only appear when "Integrated Graphics Controller" item is set to "Forces" option and "UMA Mode" item is set to "UMA_SPECIFIED" option. It controls the amount of system memory that is allocated to the integrated graphics processor.
Options: Auto, 64M, 80M, 96M, 128M, 256M, 384M, 512M, 768M, 1G, 2G.

NB Azalia

Allows you to enable or disable the Integrated HD Audio Controller.
Options: Disabled, Enabled, Auto

NB Configuration

IOMMU

This item allows you to enable or disable the IOMMU (Input/Output Memory Management Unit).
Options: Disabled, Enabled, Auto.

PCIe Configuration

PSPP Policy

This item allows you to select PCIe speed power policy.
Options: Disabled, Performance, Balanced-High, Balanced-Low, Power Saving, Auto.

System Configuration

This item allows you to select the System Configuration.
Options: 12W POR Configuration, 15W POR Configuration, 25W POR Configuration, 35W POR Configuration, 45W POR Configuration, 54W POR Configuration, Auto.

Warning: Select System Configuration may cause the system to hang, as some System Configuration may not be supported by your OPN.

▶FCH Common Options

SATA Configuration Options

SATA Controller

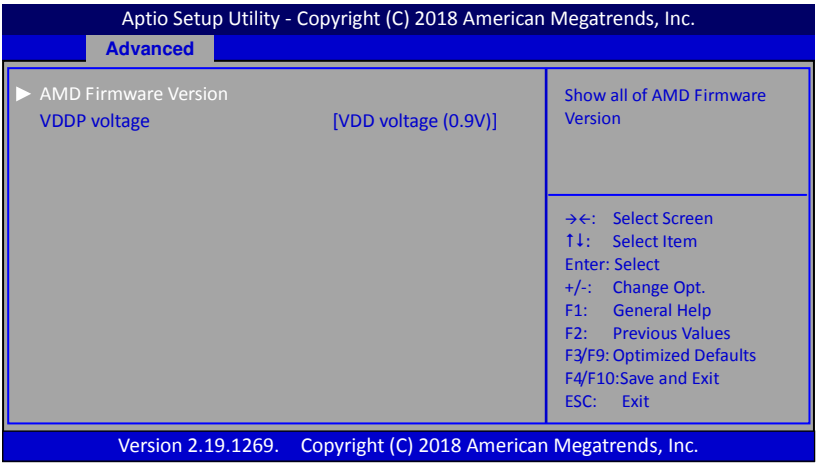
Enables the SATA controller.
Options: Disabled, Enabled, Auto.

AC Power Loss Options

Ac Loss Control

Enables your computer to automatically restart or return to its last operating status after power returns from a power failure.
Options: Always Off, Always On, Previous.

▶ AMD PBS



AMD Firmware Version

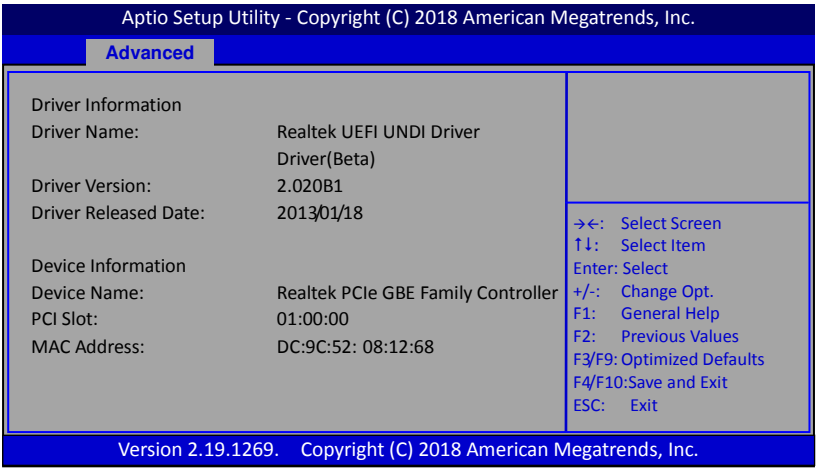
Show all of AMD Firmware Version

VDDP voltage

Select the VDDP voltage settings.

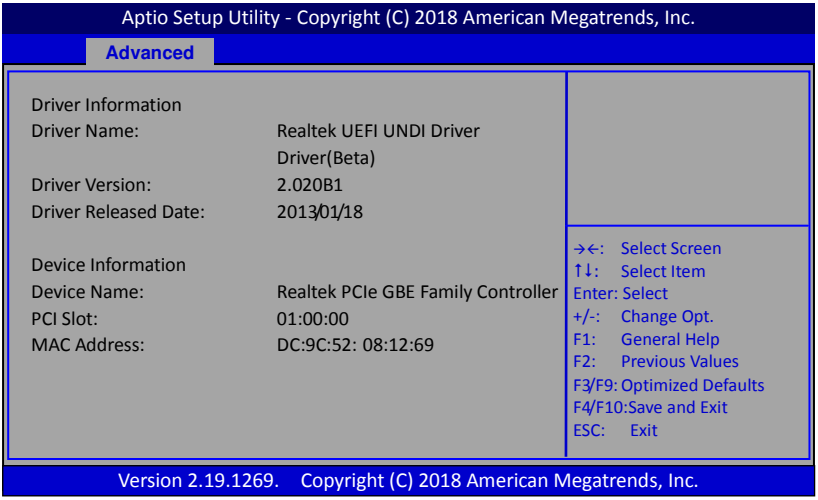
Options: VDDP voltage (0.9V), VDDP voltage (0.8V)

▶ Realtek PCIe GBE Family Controller (MAC:DC:9C:52:08:12:68)



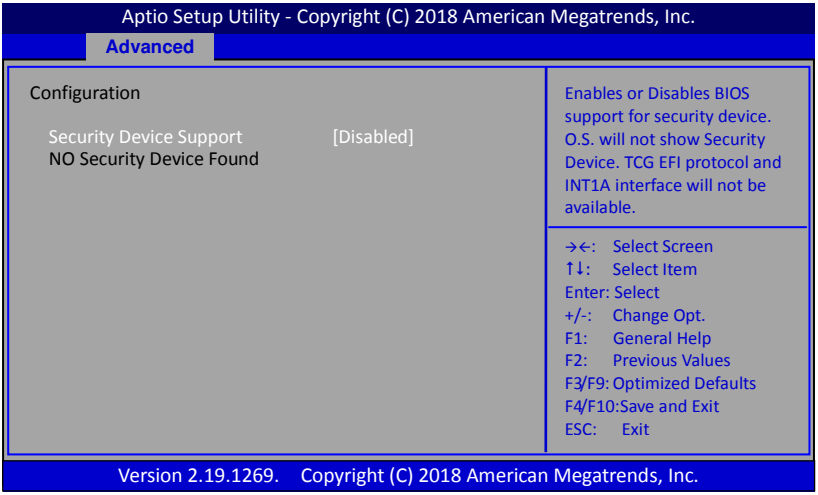
This field is displayed the driver and device information of LAN. The MAC address may be slightly different.

Realtek PCIe GBE Family Controller (MAC:DC:9C:52:08:12:69)



This field is displayed the driver and device information of LAN. The MAC address may be slightly different.

Trusted Computing

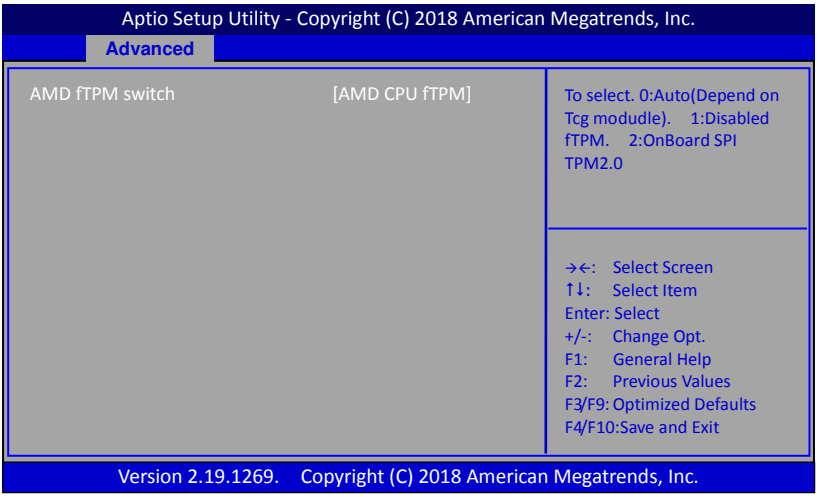


Security Device Support

Enables or disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

Options: Enabled, Disabled.

AMD fTPM Configuration

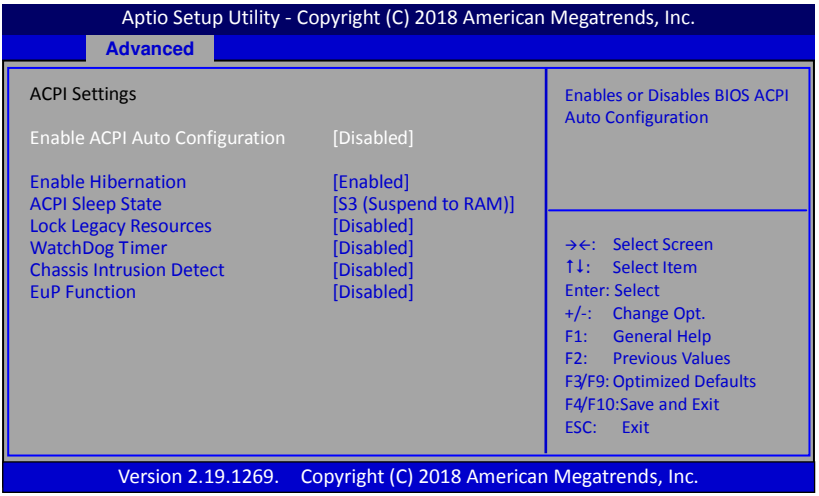


AMD fTPM switch

To select. 0:Auto(Depend on Tcg modudle). 1:Disabled fTPM. 2:OnBoard SPI TPM2.0

Options: AMD CPU fTPM, Route to LPC TPM, Route to SPI TPM.

ACPI Settings



Enable ACPI Auto Configuration
This item allows you to enable ACPI Auto Configuration.
Options: Enabled, Disabled.

Enable Hibernation
This item allows you to enable system ability to Hibernate (OS/S4 Sleep Sate). This option may be not effective with some OS.
Options: Enabled, Disabled.

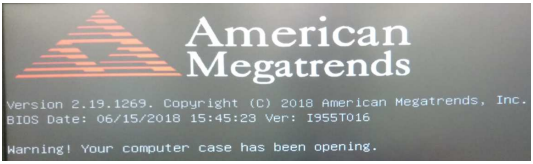
ACPI Sleep State
Allow you to select the power saving modes for ACPI function.
Options: Suspend Disabled, S3 (Suspend to RAM).

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

WatchDog Timer
Allow you to enable WatchDog timer expires during OS boot. When set to "Enabled" option. The following items will appear.

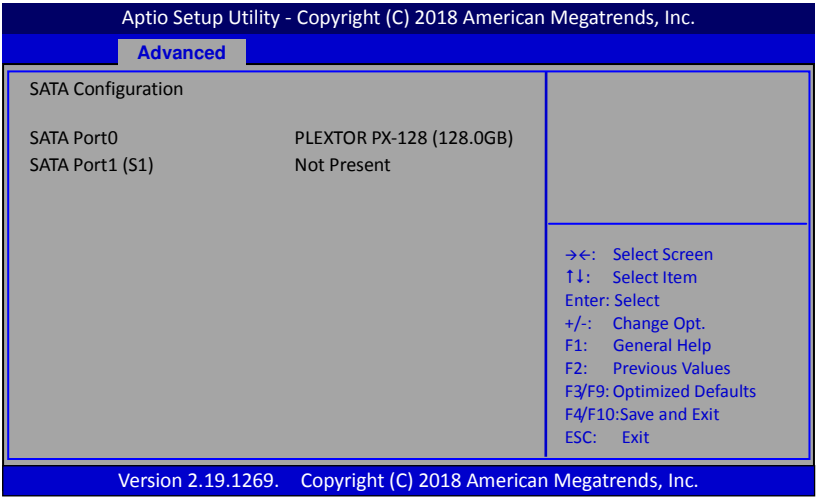
Time of watchdog timer (second)
Allows you set a period of seconds for watchdog timer.
Options: 5 ~ 255 second.

Chassis Intrusion Detect
The chassis intrusion detection alerts you whenever your computer chassis was opened. If the case cover is opened, the system will automatically restart and appear prompt message (Shown below) during POST.
You can press **<F6>** key to pass this warning then enter the system.



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.

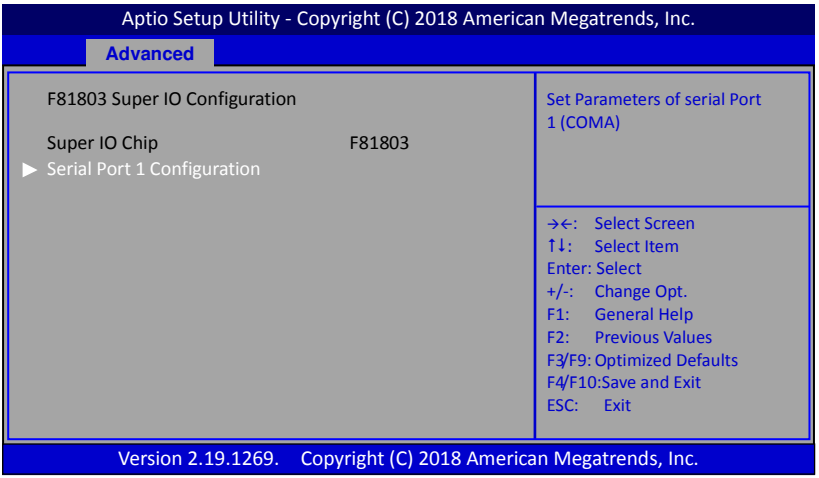
▶ SATA Configuration



SATA Port0 / SATA Port1 (S1)

This field shows SATA ports connection state.

▶ F81803 Super IO Configuration



Serial Port 1 Configuration

Serial Port

Enables the Serial Port 1 support.

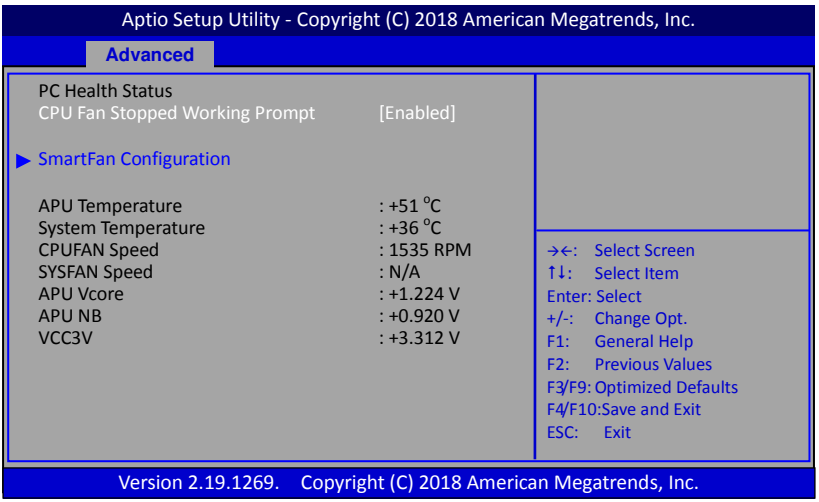
Options: Enabled, Disabled.

Change Settings

Select an optimal setting for super I/O device.

Options: Auto, IO=3F8H; IRQ=4; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12.

▶ Hardware Monitor



CPU Fan Stopped Working Prompt

When the cooler is damaged or the CPU fan connector is not connected even other factors affecting fan operation, the CPU Fan will be stopped working. Meanwhile the system will automatically restart and appear prompt message (Shown below) during POST.

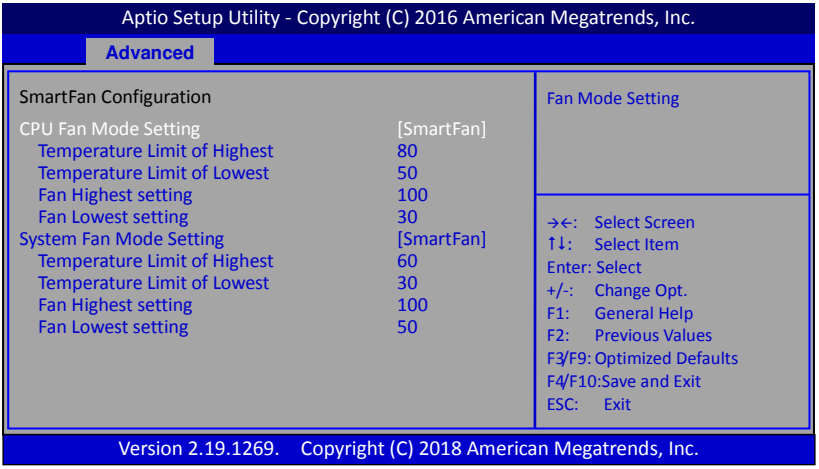
You can make a selection to enter the system.

APU / System Temperature
Displays the current CPU / System Temperature.

CPUFAN / SYSFAN Speed
Displays the current CPU Fan / System Fan Speeds.

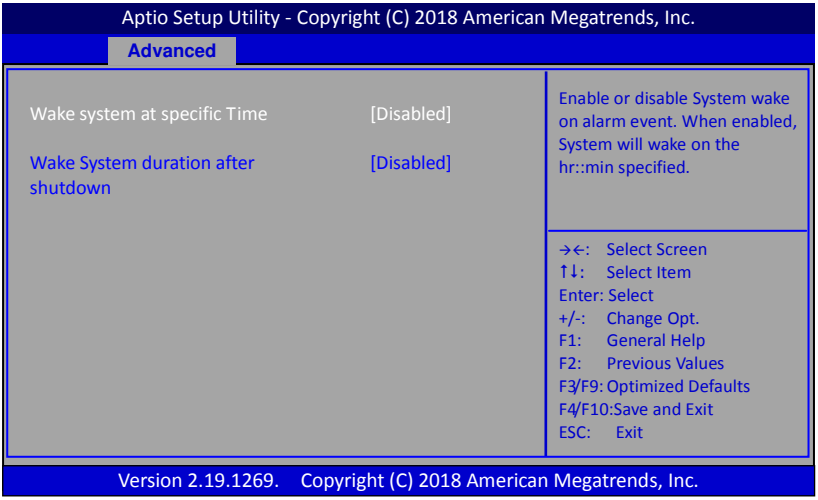
APU Vcore / APU NB / VCC3V
The current voltages are automatically detected and displayed by the system.

▶ Smart Fan Configuration



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.

RTC Wake Settings



Wake system at specific Time

Enable or disable system wakeup on alarm event. When enabled, the related items will appear.

Options: Enabled, Disabled.

Wake up days of the week

This item allows you to select days of the week to wake up the system.

Options: Every day, Selective.

Wake up hour / Wake up minute

This item allows you to set the system to wake up at the hr:min specified.

Wake System duration after shutdown

When enabled, system will wake up at current time + Increment in minutes(s) after shutdown. When enabled, the related items will appear.

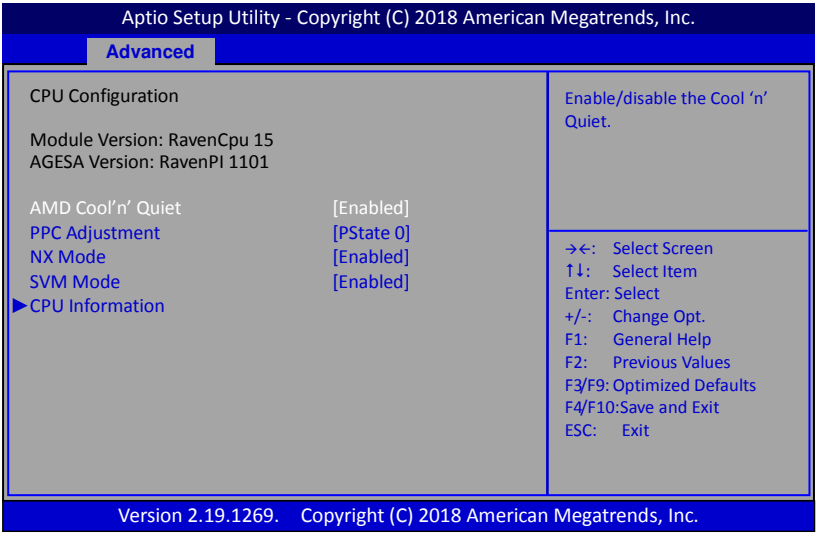
Options: Enabled, Disabled.

Duration (minute)

This item allows you to set duration time to wake system.

Options: 1 ~ 30.

CPU Configuration



AMD Cool'n' Quiet

Cool'n' Quiet is a CPU speed throttling and power saving technology by AMD.
Options: Enabled, Disabled.

PPC Adjustment

Allows you to adjust PPC objest.
Options: PState 0, PState 1, PState 2.

NX Mode

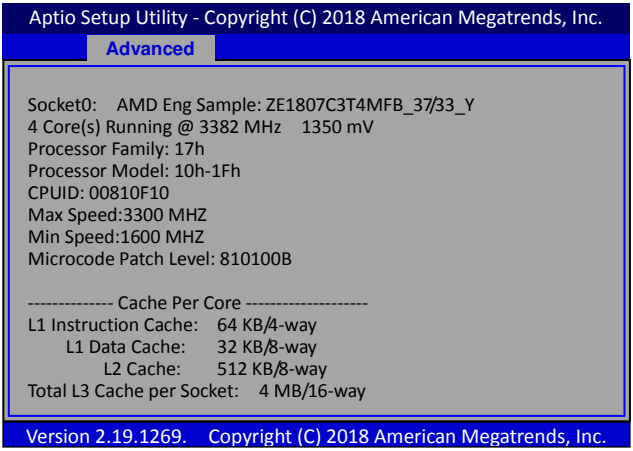
Enable or disable No-execute page protection function.
Options: Enabled, Disabled.

SVM Mode

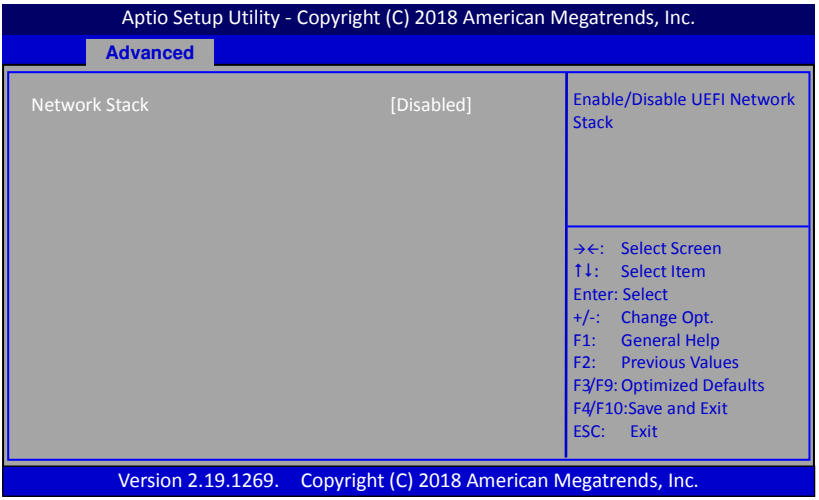
Enables the CPU SVM(Secure Virtual Machine) function.
Options: Enabled, Disabled.

▶ CPU Information

Displays current processor information.



▶ Network Stack Configuration



Network Stack

This item is used for network boot in UEFI mode.

Options: Enabled, Disabled.

When “Network Stack” item is set to “Enabled” option, the related items will appear.

Ipv4 PXE Support
This item is used to enable or disable the Ipv4 PXE boot support. If disabled, Ipv4 PXE boot option will not be available.
Options: Enabled, Disabled.

Ipv4 HTTP Support
This item is used to enable or disable the Ipv4 HTTP boot support. If disabled, Ipv4 HTTP boot option will not be available.
Options: Enabled, Disabled.

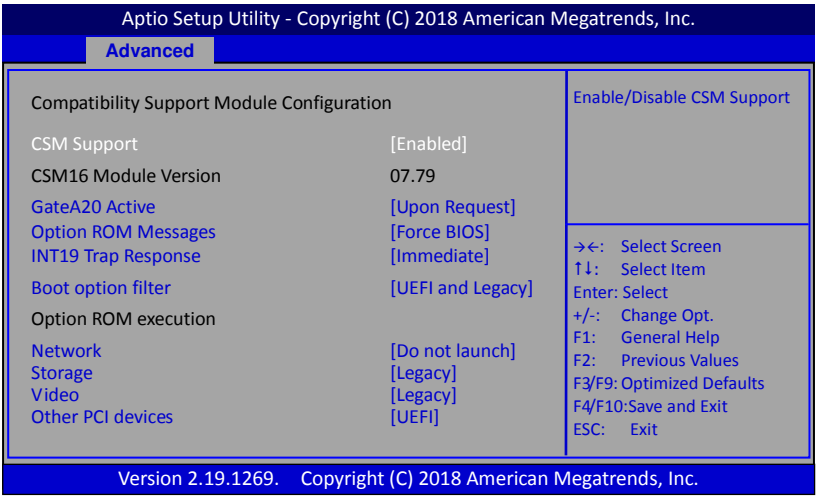
Ipv6 PXE Support
This item is used to enable or disable the Ipv6 PXE boot support. If disabled Ipv6 PXE boot option will not be available.
Options: Enabled, Disabled.

Ipv6 HTTP Support
This item is used to enable or disable the Ipv6 HTTP boot support. If disabled, Ipv6 HTTP boot option will not be available.
Options: Enabled, Disabled.

PXE boot wait time
This item is used to set a wait time in sec for PXE boot. Press ESC key to abort the PXE boot.
Options: 0~5 sec.

Media detect count
Number of times presence of Media will be checked.

CSM Configuration



CSM Support

This item allows enable or disable the CSM (Compatibility Support Module) configuration.

Options: Enabled, Disabled.

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

This item allows BIOS reaction on INT19 trapping by option ROM.

Immediate: Execute the trap right away.

Postponed: Execute the trap during legacy boot

Boot option filter

This option controls what devices system can boot to UEFI or Legacy.

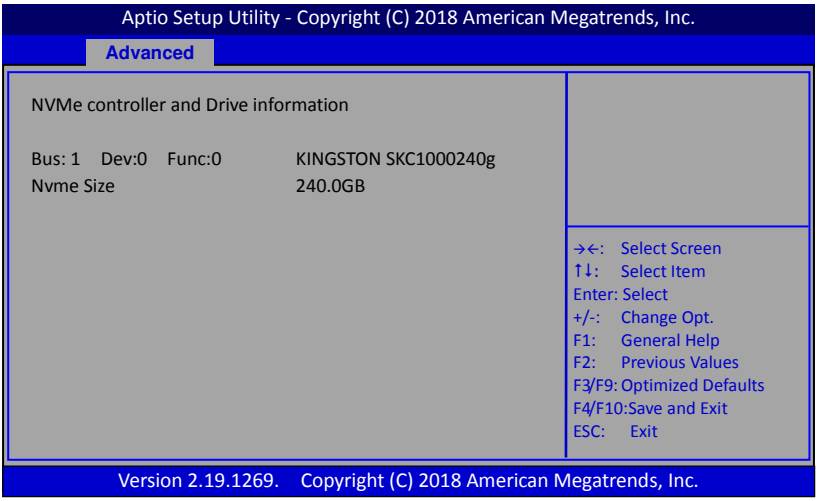
Options: UEFI and Legacy, Legacy only, UEFI only.

Option ROM execution

This field controls the execution policy for devices other than Network, Storage or Video.

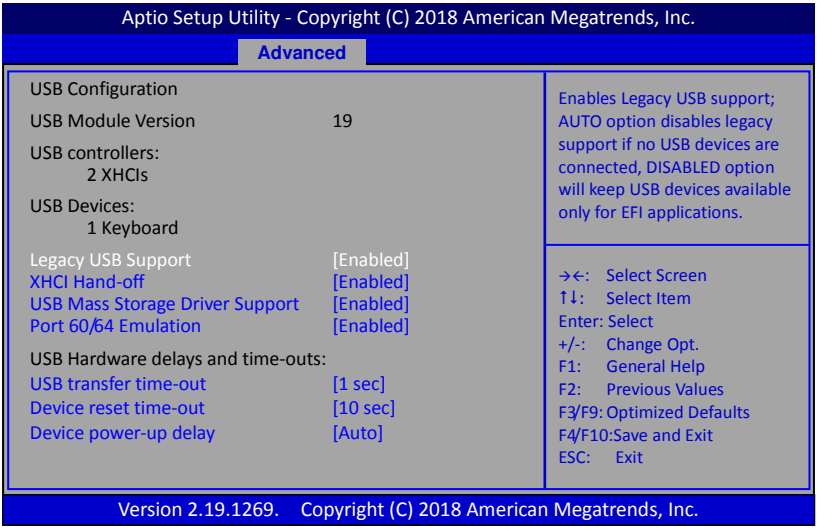
Options: Do not launch, Legacy, UEFI.

▶ MVMe Configuration



This field is displayed the NVMe controller and Drive information.

USB Configuration



Legacy USB Support

Allows you to 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.

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.

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 OSes.
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

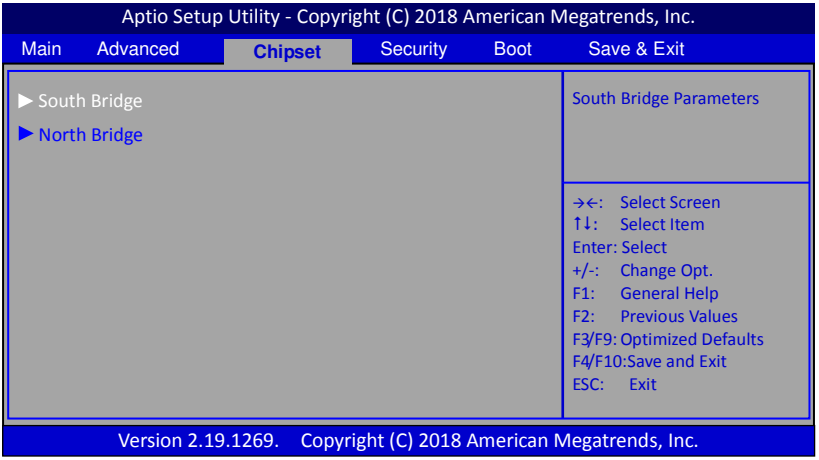
Maximum time the device will take before it properly reports itself to the Host controller. 'Auto' uses default values; for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.
Options: Auto, Manual.

Device power-up delay in seconds

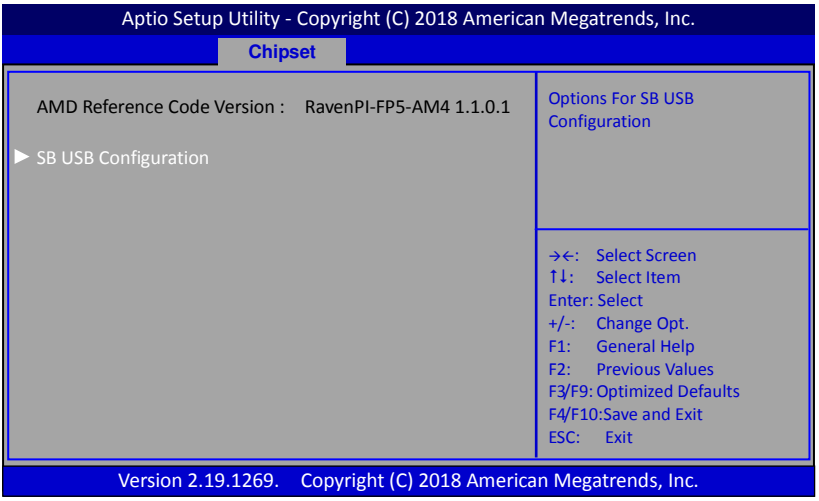
This item is used to set a wait time in sec for device power-up delay.
Options: 1 ~ 40.

3-5 Chipset Menu

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



▶ South Bridge

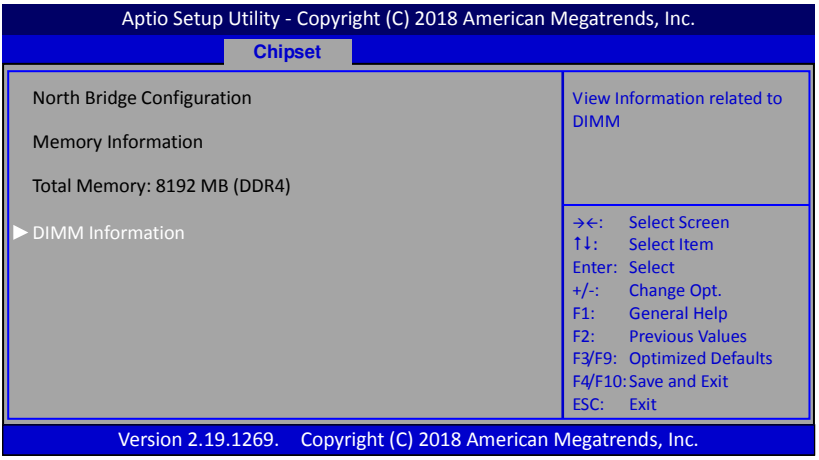


▶ SB USB Configuration

USB Port (CN4 USB2.0) / USB Port (M1 – M.2 E Key)
USB Port (CN3 USB2.0 – Up) / USB Port (CN3 USB2.0 – Down)

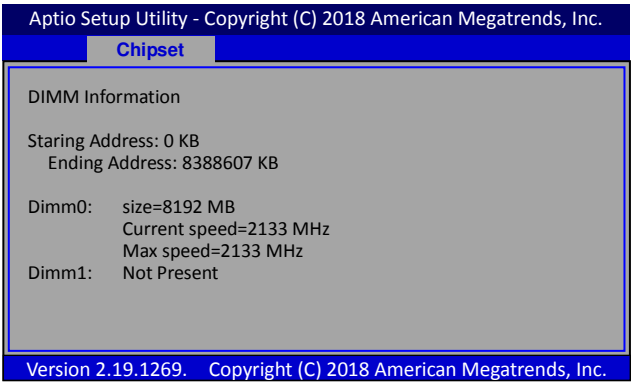
USB Port (CN7 USB3.1 Type C) / USB Port (CN7 USB3.1 Type C - Reverse)
Allows you to enable or disable USB port.
Options: Enabled, Disabled.

▶ North Bridge



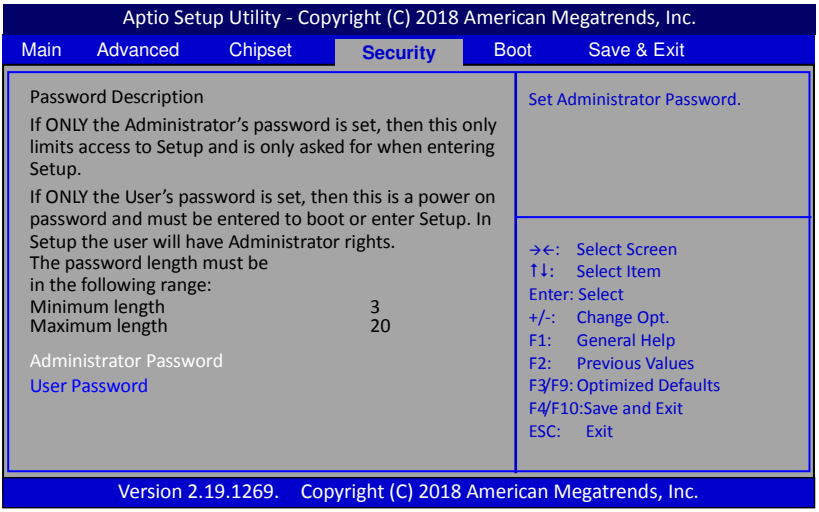
▶DIMM Information

Displays the memory related information.



3-6 Security Menu

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



Administrator Password

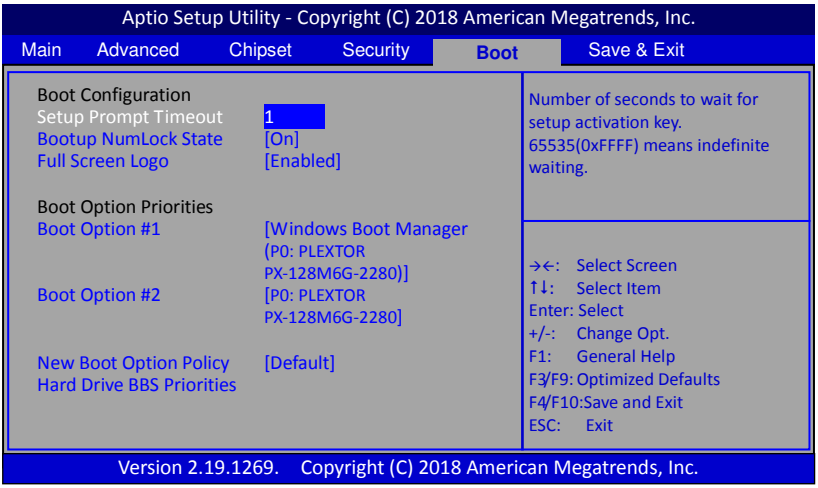
This function is used to set, change or delete the Administrator password. If there is already a password installed, the system asks for this first. To clear a password, simply enter nothing and acknowledge by pressing Return. To set a password, enter it twice and acknowledge by pressing Return. The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

3-7 Boot Menu

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



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.

Full Screen Logo

This item allows you to enable or disable the full screen logo display feature.
Options: Enabled, Disabled.

Boot Option Priorities

These items specify the boot device priority sequence of the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

New Boot Option Policy

This item allows you to control the placement of newly detected UEFI boot options.
Options: Default, Place First, Place Last.

Hard Drive BBS Priorities

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