

BIOS User Guide

A68N-2100E / A68N-2100K / A68N-2100X / A68N-5600E

BIOS Update	2
UEFI BIOS Setup	6
1. Main Menu	7
2. Advanced Menu	8
3. Chipset Menu.....	18
4. Boot Menu.....	22
5. Security Menu.....	24
6. O.N.E Menu.....	26
7. Exit Menu.....	31

BIOS Update

The BIOS can be updated using either of the following utilities:

- **BIOSTAR BIOS-FLASHER:** Using this utility, the BIOS can be updated from a file on a hard disk, a USB drive (a flash drive or a USB hard drive), or a CD-ROM.
- **BIOSTAR BIOS Update Utility:** It enables automated updating while in the Windows environment. Using this utility, the BIOS can be updated from a file on a hard disk, a USB drive (a flash drive or a USB hard drive), or a CD-ROM, or from the file location on the Web.

BIOSTAR BIOS-FLASHER

Note

- » This utility only allows storage device with FAT32/16 format and single partition.
- » Shutting down or resetting the system while updating the BIOS will lead to system boot failure.

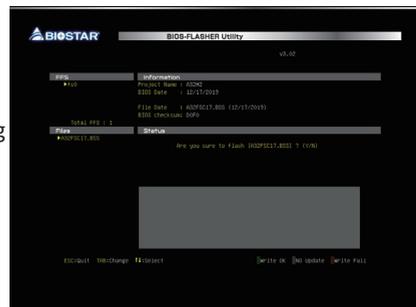
Updating BIOS with BIOSTAR BIOS-FLASHER

1. Go to the website to download the latest BIOS file for the motherboard.
2. Then, copy and save the BIOS file into a USB flash (pen) drive. (Only supported FAT/FAT32 format)
3. Insert the USB pen drive that contains the BIOS file to the USB port.
4. Power on or reset the computer and then press <F12> during the POST process.

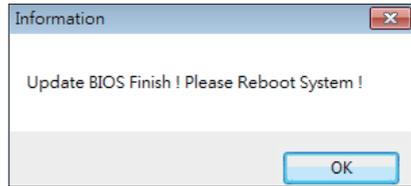
5. After entering the POST screen, the BIOS-FLASHER utility pops out. Choose <fs0> to search for the BIOS file.



6. Select the proper BIOS file, and a message asking if you are sure to flash the BIOS file. Click “Yes” to start updating BIOS.



7. After the updating process is finished, you will be asked you to reboot the system. Click “OK” to reboot.



8. While the system boots up and the full screen logo shows up, press key to enter BIOS setup.

After entering the BIOS setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes> and <Reset> to restart the computer. Then, the BIOS Update is completed.

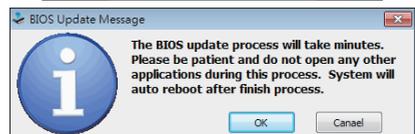
BIOS Update Utility (through a BIOS file)

1. Installing BIOS Update Utility from the DVD Driver.
2. Download the proper BIOS from <http://www.biostar.com.tw/>

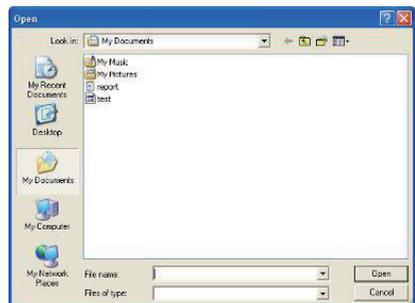
3. Launch BIOS Update Utility and click the “Update BIOS” button on the main screen.



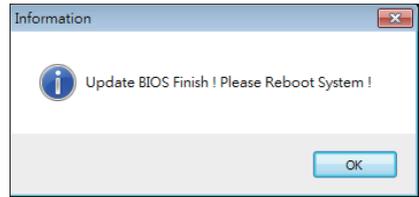
4. A warning message will show up to request your agreement to start the BIOS update. Click “OK” to start the update procedure.



5. Choose the location for your BIOS file in the system. Please select the proper BIOS file, and then click on “Open”. It will take several minutes, please be patient.



6. After the BIOS Update process is finished, click on “OK” to reboot the system.

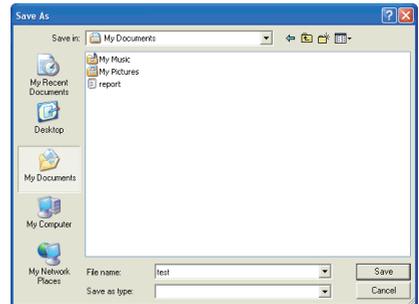


7. While the system boots up and the full screen logo shows up, press key to enter BIOS setup.

After entering the BIOS setup, please go to the <Save & Exit>, using the <Restore Defaults> function to load Optimized Defaults, and select <Save Changes and Reset> to restart the computer. Then, the BIOS Update is completed.

Backup BIOS

Click the Backup BIOS button on the main screen for the backup of BIOS, and select a proper location for your backup BIOS file in the system, and click “Save”.



UEFI BIOS Setup

Introduction

The purpose of this manual is to describe the settings in the AMI UEFI BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to NVRAM.

UEFI BIOS determines what a computer can do without accessing programs from a disk. This system controls most of the input and output devices such as keyboard, mouse, serial ports and disk drives. BIOS activates at the first stage of the booting process, loading and executing the operating system. Some additional features, such as virus and password protection or chipset fine-tuning options are also included in UEFI BIOS.

The rest of this manual will to guide you through the options and settings in UEFI BIOS Setup.

Plug and Play Support

This AMI UEFI BIOS supports the Plug and Play Version 1.0A specification.

EPA Green PC Support

This AMI UEFI BIOS supports Version 1.03 of the EPA Green PC specification.

ACPI Support

AMI ACPI UEFI BIOS support Version 1.0/2.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.

PCI Bus Support

This AMI UEFI BIOS also supports Version 2.3 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

Using Setup

When starting up the computer, press during the **Power-On Self-Test (POST)** to enter the UEFI BIOS setup utility.

In the UEFI BIOS setup utility, you will see **General Help** description at the top right corner, and this is providing a brief description of the selected item. **Navigation Keys** for that particular menu are at the bottom right corner, and you can use these keys to select item and change the settings.

Note

- » *The default UEFI BIOS settings apply for most conditions to ensure optimum performance of the motherboard. If the system becomes unstable after changing any settings, please load the default settings to ensure system's compatibility and stability. Use Load Setup Default under the Exit Menu.*
 - » *For better system performance, the UEFI BIOS firmware is being continuously updated. The UEFI BIOS information described in this manual is for your reference only. The actual UEFI BIOS information and settings on board may be slightly different from this manual.*
 - » *The content of this manual is subject to be changed without notice. We will not be responsible for any mistakes found in this user's manual and any system damage that may be caused by wrong-settings.*
-

1. Main Menu

Once you enter AMI UEFI BIOS Setup Utility, the Main Menu will appear on the screen providing an overview of the basic system information.



BIOS Information

It shows system information including UEFI BIOS version, Project Code, Model Name, Build Date and etc.

Total Memory

Shows system memory size, VGA shard memory will be excluded.

System Language

Choose the system default language.

System Date

Set the system date. Note that the 'Day' automatically changes when you set the date.

System Time

Set the system internal clock.

Access Level

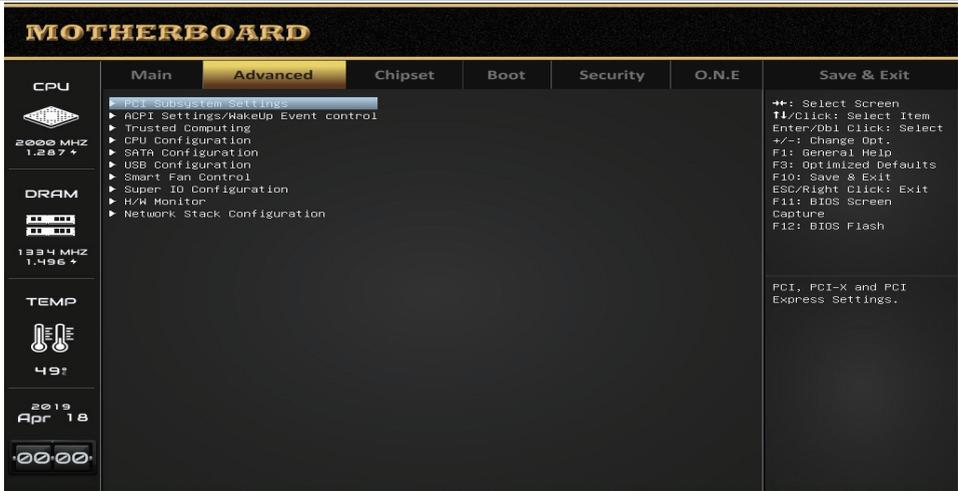
Shows the access level of current user.

2. Advanced Menu

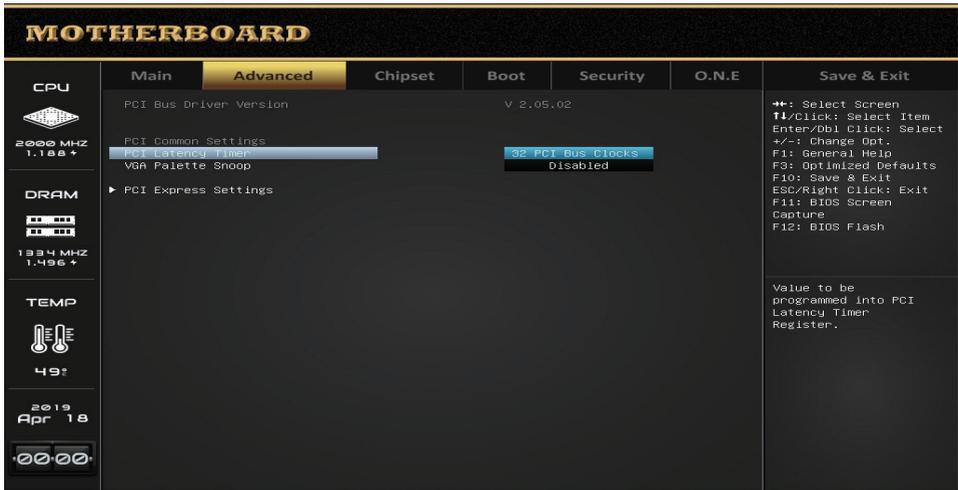
The Advanced Menu allows you to configure the settings of CPU, Super I/O, Power Management, and other system devices.

Note

» Beware of that setting inappropriate values in items of this menu may cause system to malfunction.



PCI Subsystem Settings



PCI Latency Timer

This item value to be programmed into PCI Latency Timer Register.

Options: 32 PCI Bus Clocks (Default) / 64 PCI Bus Clocks / 96 PCI Bus Clocks / 128 PCI Bus Clocks / 160 PCI Bus Clocks / 192 PCI Bus Clocks / 224 PCI Bus Clocks / 248 PCI Bus Clocks

VGA Palette Snoop

This item enables or disables VGA Palette Registers Snooping.

Options: Disabled (Default) / Enabled

PCI Express Settings

The screenshot shows the BIOS 'MOTHERBOARD' menu with the 'Advanced' tab selected. The 'PCI Express Device Register Settings' section is expanded, showing the following options:

- No Snoop:** Enabled
- Maximum Payload:** Auto
- Maximum Read Request:** Auto

The 'PCI Express Link Register Settings' section is also visible, showing:

- Restore PCIE Registers:** Disabled

On the left side of the screen, system information is displayed:

- CPU:** 2000 MHz, 1.298 °C
- DRAM:** 1334 MHz, 1.496 °C
- TEMP:** 49°
- Date/Time:** 2019 Apr 18
- System Time:** 00:00

On the right side, a 'Save & Exit' menu is visible with the following options:

- ++: Select Screen
- ↑/Click: Select Item
- Enter/Db1 Click: Select
- +/-: Change Opt.
- F1: General Help
- F3: Optimized Defaults
- F10: Save & Exit
- ESC/Right Click: Exit
- F11: BIOS Screen Capture
- F12: BIOS Flash

Below the 'Save & Exit' menu, a note states: 'Enables or Disables PCI Express Device No Snoop option.'

No Snoop

This item enables or disables PCI Express Device No Snoop option.

Options: Enabled (Default) / Disabled

Maximum Payload

This item allows you to set Maximum Payload of PCI Express device or allow system BIOS to select the value.

Options: Auto (Default) / 128 Bytes / 256 Bytes / 512 Bytes / 1024 Bytes / 2048 Bytes / 4096 Bytes

Maximum Read Request

This item allows you to set Maximum Read Request Size of PCI Express device or allow system BIOS to select the value.

Options: Auto (Default) / 128 Bytes / 256 Bytes / 512 Bytes / 1024 Bytes / 2048 Bytes / 4096 Bytes

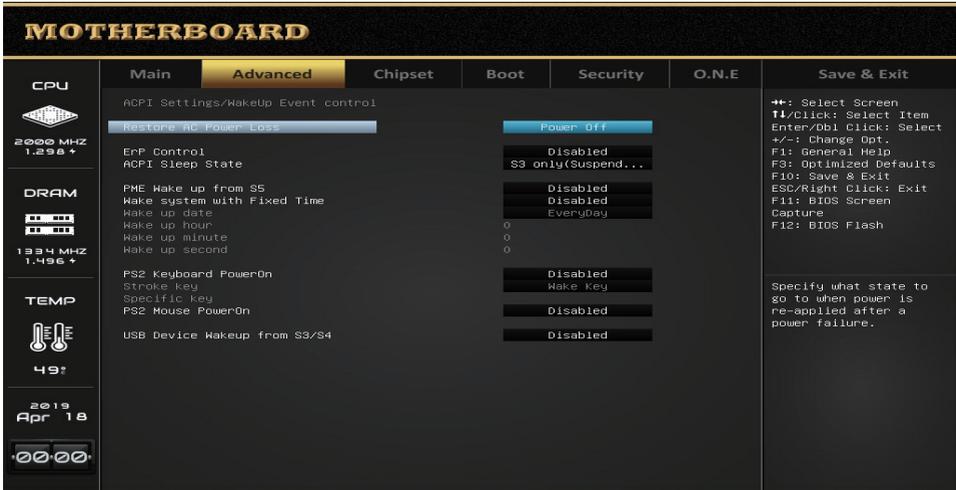
Restore PCIE Registers

On non-PCI Express aware OS's (Pre Windows Vista) some devices may not be correctly reinitialized after S3. Enabling this restores PCI Express device configurations on S3 resume.

Warning: Enabling this may cause issues.

Options: Disabled (Default) / Enabled

ACPI Settings/WakeUp Event control



Restore AC Power Loss

The item specifies what state to go to when power is re-applied after a power failure.

Options: Power Off (Default) / Power On / Last State

ErP Control

This item enables or disables ErP Control. When ErP Enabled, system meets ErP requirement. All wake up events do not work except Power Button after power down system(S5).

Options: Disabled (Default) / Enabled

ACPI Sleep State

This item selects the ACPI sleep state the system will enter when the SUSPEND button is pressed.

Options: S3 (Suspend to RAM) (Default) / Suspend Disabled

PME Wake up from S5

The item enables the system to wake from S5 using the PME event.

Options: Disabled (Default) / Enabled

Wake system with Fixed Time

This item enables or disables the system to wake on by alarm event. When this item is enabled, the system will wake on the hr::min::sec specified.

Options: Disabled (Default) / Enabled

Wake up date

You can choose which date the system will boot up.

Wake up hour / Wake up minute / Wake up second

You can choose the system boot up time, input hour, minute and second to specify.

PS2 Keyboard PowerOn

This item allows you to control the keyboard power on function.

Options: Disabled (Default) / Any Key / Stroke Key / Specific Key

Stroke Keys

This item will show only when Keyboard PowerOn is set "Stroke Key."

Options: Wake Key (Default) / Power Key / Ctrl+F1 / Ctrl+F2 / Ctrl+F3 / Ctrl+F4 / Ctrl+F5 / Ctrl+F6

Specific Key

This item will show only when Keyboard PowerOn is set "Specific Key." Press Enter to set Specific key.

PS2 Mouse PowerOn

This item allows you to control the mouse power on function.

Options: Disabled (Default) / Enabled

USB Device Wakeup from S3/S4

This item allows you to set USB Device Wakeup from S3/S4.

Options: Disabled (Default) / Enabled

Trusted Computing

The screenshot shows the BIOS Motherboard Advanced menu. The 'Security Device Support' option is highlighted and set to 'Enable'. The left sidebar displays system information: CPU at 2000 MHz (1.300 GHz), DRAM at 1334 MHz (1.496 GHz), and temperature at 49°C. The date is 2019 Apr 18. The right sidebar lists navigation keys: Select Screen (F10), Select Item (Enter/Db1 Click), Change Opt. (+/-), General Help (F1), Optimized Defaults (F3), Save & Exit (F10), Exit (ESC/Right Click), BIOS Screen Capture (F11), and BIOS Flash (F12). A detailed description of the 'Security Device Support' option is provided below the screenshot.

CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
2000 MHz 1.300 GHz	Configuration Security Device Support: Enable NO Security Device Found						++: Select Screen ↑/Click: Select Item Enter/Db1 Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash
DRAM 1334 MHz 1.496 GHz							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.
TEMP 49°C							
2019 Apr 18							
00:00							

Security Device Support

The item 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 (Default) / Disabled

CPU Configuration

This item shows CPU Information.



The screenshot shows the BIOS Motherboard Advanced menu. The CPU section is expanded, displaying the following information:

- CPU:** 2000 MHz, 1.363 V
- DRAM:** 1334 MHz, 1.496 V
- TEMP:** 49°C
- Date/Time:** 2019 Apr 18
- System Health:** 0000

The CPU Configuration section includes:

- Socket0: AMD PRO A4-3350B APU with Radeon R4 Graphics
- Quad Core Running @ 2000 MHz 1225 mV
- Processor Family: 16h
- Processor Model: 30h-3Fh
- Microcode Patch Level: 7030106

Cache per Compute Unit:

- L1 Instruction Cache: 128 KB/2-way
- L1 Data Cache: 128 KB/8-way
- L2 Cache: 2048 KB/16-way
- No L3 Cache Present

Configuration options shown in the screenshot:

- PSS Support:** Enabled
- PState Adjustment:** PState 0
- NX Mode:** Enabled
- SVM Mode:** Enabled
- C6 Mode:** Enabled
- CPB Mode:** Auto
- HTC Temperature Limit:** 90
- Core Leveling Mode:** Automatic mode

Navigation keys on the right side of the screen:

- ++: Select Screen
- ↑/Click: Select Item
- Enter/Dbl Click: Select
- +/-: Change Opt.
- F1: General Help
- F3: Optimized Defaults
- F10: Save & Exit
- ESC/Right Click: Exit
- F11: BIOS Screen Capture
- F12: BIOS Flash

Footer text: Enable/disable the generation of ACPI _PPC, _PSS, and _PCT objects.

PSS Support

This item enables or disables the generation of ACPI _PPC, _PSS, and _PCT objects.

Options: Enabled (Default) / Disabled

PSTATE Adjustment

This item allows you to adjust startup P-state level.

Options: PState 0 (Default)

NX Mode

This item enables or disables No-execute page protection Function.

Options: Enabled (Default) / Disabled

SVM Mode

This item enables or disables CPU Virtualization.

Options: Enabled (Default) / Disabled

C6 Mode

This item enables or disables C6.

Options: Enabled (Default) / Disabled

CPB Mode

This item enables or disables Specifies the method of core performance boost enablement.

Options: Auto (Default) / Disabled

HTC temperature limit

This item HTC temperature limit Range: 70 °C–110 °C.

Options: 90 (Default)

Core Leveling Mode

This item change the number of cores in the system.

Options: Automatic mode (Default) / Three cores per processor / Two cores per processor / One core per processor

SATA Configuration

MOTHERBOARD									
CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit		
 2000 MHZ 1.276 +	SATA Configuration OnChip SATA Channel OnChip SATA Type OnChip IDE Mode			Enabled AHCI Legacy Mode			++: Select Screen T/Click: Select Item Enter/Dbl Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash		
	DRAM  1334 MHZ 1.496 +	SATA1 : Not Present SATA2 : Not Present						Enabled / Disabled Serial ATA	
	TEMP  49° 2019 Apr 18 								

OnChip SATA Channel

This item enables or disables Serial ATA.

Options: Enabled (Default) / Disabled

OnChip SATA Type

This item select OnChip SATA Type.

Options: AHCI (Default) / Native IDE / Legacy IDE

OnChip IDE Mode

This item SATA IDE controller mode.

Options: Legacy Mode (Default) / Native Mode

USB Configuration

MOTHERBOARD									
CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit		
 2000 MHZ 1.188 +	USB Configuration USB Module Version USB Controllers: 2 EHCIS, 1 XHCI USB Devices: 1 Drive, 1 Keyboard, 1 Mouse, 2 Hubs			8.10.36			++: Select Screen T/Click: Select Item Enter/Dbl Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash		
	DRAM  1334 MHZ 1.496 +	Legacy USB Support XHCI Hand-off EHCI Hand-off			Enabled Enabled Disabled			Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.	
	TEMP  49° 2019 Apr 18 	Mass Storage Devices: USB FLASH DRIVE FMAP			Auto				

Legacy USB Support

The item enables or disables Legacy USB Support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
Options: Enabled (Default) / Disabled / Auto

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 (Default) / 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.
Options: Disabled (Default) / Enabled

USB FLASH DRIVE PMAP

This item Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM', drives with no media will be emulated according to a drive type.
Options: Auto (Default) / Floppy / Forced FDD / Hard Disk / CD-ROM

Smart Fan Control



CPU Smart Fan

This item allows you to control the CPU Fan Smart function.
Options: Disabled (Default) / Auto

Note

» The following items appear only when you set the Smart Fan function to [Auto].

CPU Fan Calibrate

Press [ENTER] to calibrate CPU Fan speed.

Control Mode

This item provides several operation modes of the fan.

Options: Manual / Quiet / Aggressive

Fan Ctrl OFF(°C)

When CPU temperature is lower than this value, the CPU fan will keep lowest RPM.

Options: 10 (°C) (default)

Fan Ctrl On(°C)

When CPU temperature is higher than this value, the CPU fan controller will turn on.

Options: 20 (°C) (Default)

Fan Ctrl Start Value

This item sets CPU FAN Start Speed Value.

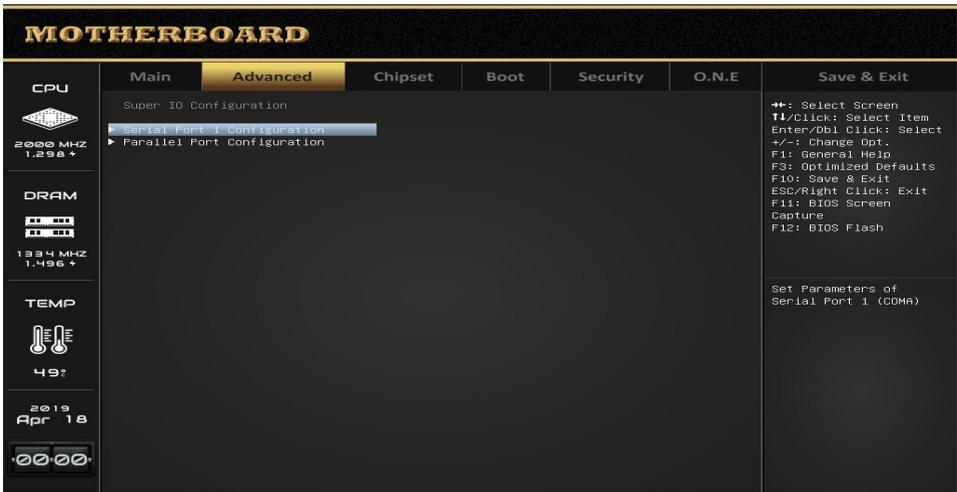
Options: 50 (Default)

Fan Ctrl Sensitive

The number is bigger, the Fan speed is higher.

Options: 30 (Default)

Super IO Configuration



Serial Port 1 Configuration

CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
CPU 2000 MHz 1.395 +	Serial Port 1 Configuration						++: Select Screen ↑/Click: Select Item Enter/Obl Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash
	Serial Port 1: Enabled						
	IO=3F8h; IRQ=4; Auto						
DRAM 1334 MHz 1.496 +	Change Settings						Enable or Disable Serial Port (COM)
	TEMP 49° 2019 Apr 18 						

Serial Port

This item enabled or Disabled Serial Port (COM).

Options: Enabled (Default) / Disabled

Change Settings

This item select an optimal settings for Super IO Device.

Options: Auto (Default) / 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

H/W Monitor

CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
CPU 2000 MHz 1.395 +	PC Health Status						++: Select Screen ↑/Click: Select Item Enter/Obl Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash
	PWM Processor Hot: Enabled						
	Shutdown Temperature: Disabled						
DRAM 1334 MHz 1.496 +	CPU temperature: 52 °C						Enable or Disable Serial Port (COM)
	System temperature: 49 °C						
TEMP 49° 2019 Apr 18 	CPU Fan Speed: 6428 RPM						
	System Fan1 Speed: N/A						
	CPU Vcore: +1.298 V						
DDR Voltage: +1.495 V							
+12.0V: +12.075 V							
+5.00V: +5.090 V							
Chip Voltage: +1.804 V							

PWM Processor Hot

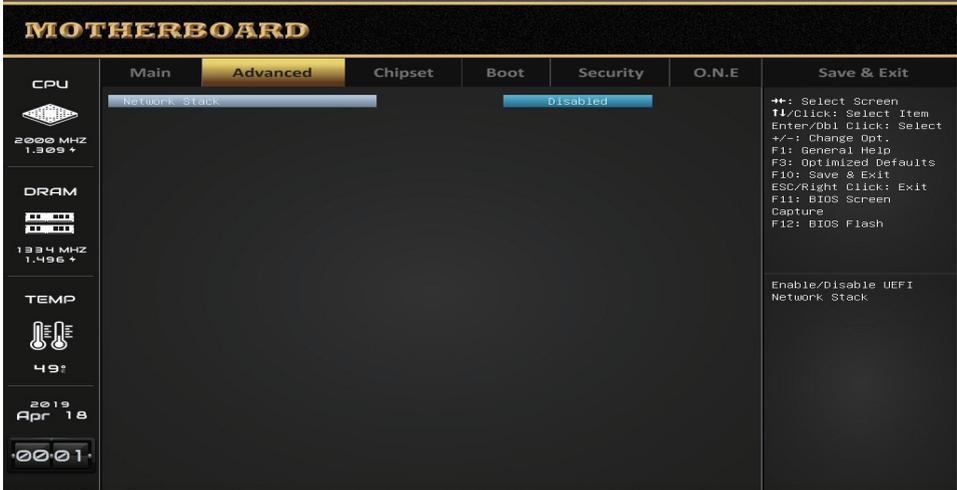
Options: Enabled (Default) / Disabled

Shutdown Temperature

This item allows you to set up the CPU shutdown Temperature.

Options: Disabled (Default) / 70°C/158°F / 75°C/167°F / 80°C/176°F / 85°C/185°F / 90°C/194°F

Network Stack Configuration



Network Stack

This item enables or disables UEFI network stack.

Options: Disabled (Default) / Enabled

Note

» *The following items appear only when you set the Network Stack function to [Enabled]*

IPv4 PXE Support

This item enables or disables IPv4 PXE Boot Support. If disabled IPv4 PXE boot option will not be created.

Options: Enabled (Default) / Disabled

IPv6 PXE Support

This item enables or disables IPv6 PXE Boot Support. If disabled IPv6 PXE boot option will not be created.

Options: Enabled (Default) / Disabled

PXE boot wait time

Wait time to press ESC key to abort the PXE boot.

Media detect count

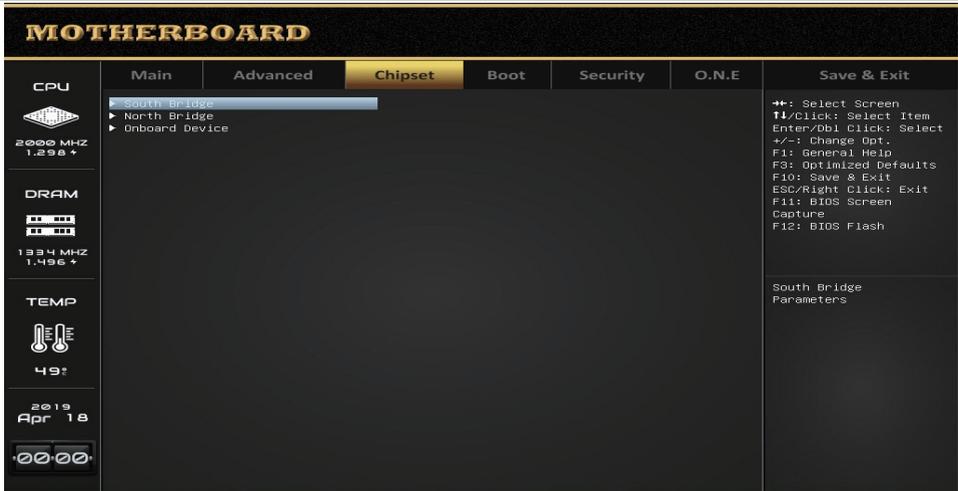
Number of times presence of media will be checked.

3. Chipset Menu

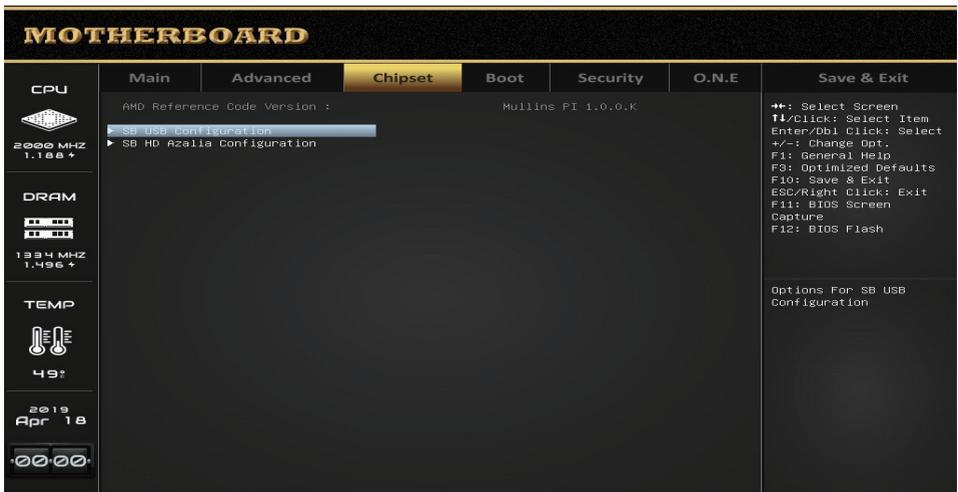
This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

Note

» Beware of that setting inappropriate values in items of this menu may cause system to malfunction.



South Bridge



SB USB Configuration

MOTHERBOARD							
CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
 2000 MHz 1.188 ↑	Enabled All Of USB Devices		Enabled				↑↓: Select Screen ↑/Click: Select Item Enter/Dbl Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash
DRAM  1334 MHz 1.496 ↑	Enabled/Disabled All Of USB Devices						
TEMP  49°							
2019 Apr 18 							

Enabled All Of USB Devices

This item enables or disables All Of USB Devices.

Options: Enabled (Default) / Disabled

SB HD Azalia Configuration

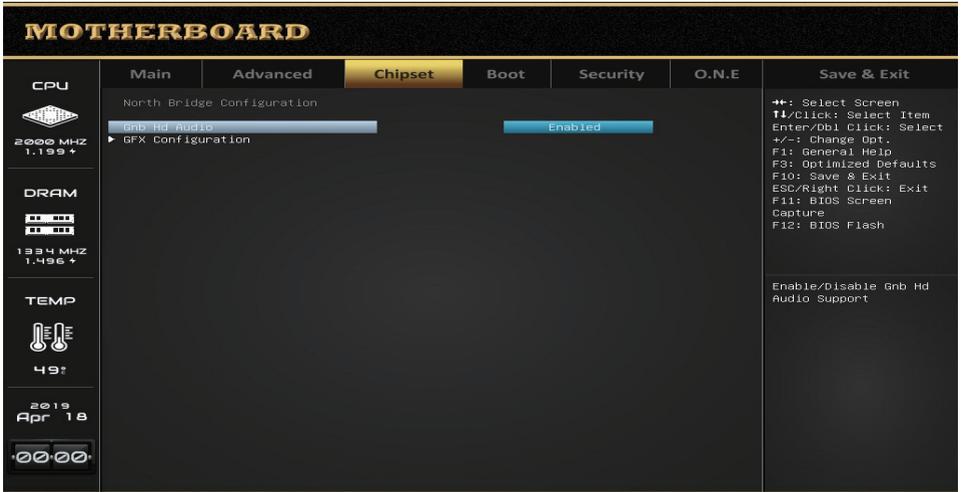
MOTHERBOARD							
CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
 2000 MHz 1.188 ↑	No audio Azalia Device		Enabled				↑↓: Select Screen ↑/Click: Select Item Enter/Dbl Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash
DRAM  1334 MHz 1.496 ↑	Azalia HD Audio Controller						
TEMP  49°							
2019 Apr 18 							

HD Audio Azalia Device

This item enables or disables Azalia HD Audio Controller.

Options: Enabled (Default) / Auto / Disabled

North Bridge



MOTHERBOARD

CPU: 2000 MHz, 1.199 °C

DRAM: 1334 MHz, 1.496 °C

TEMP: 49 °C

2019 Apr 18

Main | Advanced | **Chipset** | Boot | Security | O.N.E. | Save & Exit

North Bridge Configuration

- Gnb Hd Audio: Enabled

Save & Exit options:

- ←: Select Screen
- ↑/Click: Select Item
- Enter/Db1 Click: Select
- +/-: Change Opt.
- F1: General Help
- F3: Optimized Defaults
- F10: Save & Exit
- ESC/Right Click: Exit
- F11: BIOS Screen Capture
- F12: BIOS Flash

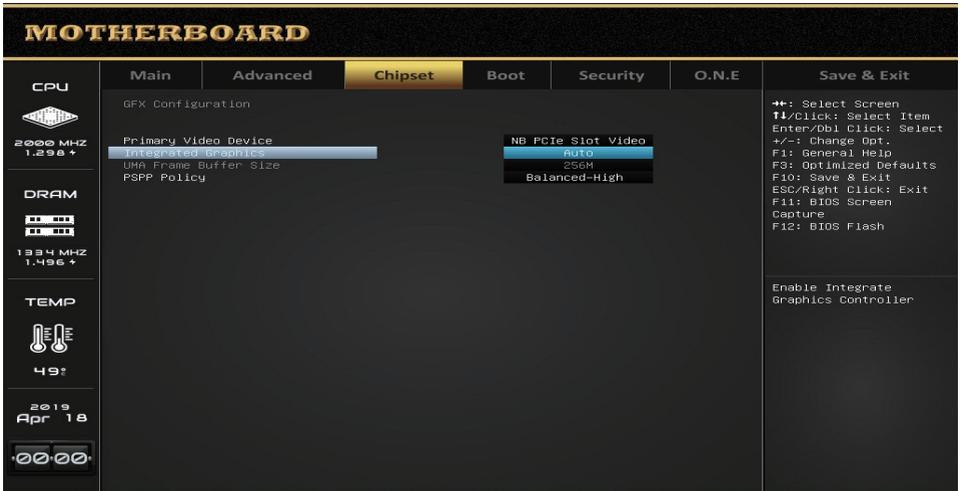
Enable/Disable Gnb Hd Audio Support

Gnb Hd Audio

This item enables or disables Gnb Hd Audio.

Options: Enabled (Default) / Disabled

GFX Configuration



MOTHERBOARD

CPU: 2000 MHz, 1.298 °C

DRAM: 1334 MHz, 1.496 °C

TEMP: 49 °C

2019 Apr 18

Main | Advanced | **Chipset** | Boot | Security | O.N.E. | Save & Exit

GFX Configuration

- Primary Video Device: NB PCIe Slot Video
- Integrated Graphics: Auto
- UMA Frame Buffer Size: 256M
- PSPP Policy: Balanced-High

Save & Exit options:

- ←: Select Screen
- ↑/Click: Select Item
- Enter/Db1 Click: Select
- +/-: Change Opt.
- F1: General Help
- F3: Optimized Defaults
- F10: Save & Exit
- ESC/Right Click: Exit
- F11: BIOS Screen Capture
- F12: BIOS Flash

Enable Integrate Graphics Controller

Primary Video Device

This item allows you to select Primary Video Device.

Options: NB PCIe Slot Video (Default) / IGD Video

Integrated Graphics

This item allows you to controller the Integrated Graphics function.

Options: Force (Default) / Auto / Disabled

UMA Frame Buffer Size

This item allows you to set UMA FB Size.

Options: 256M (Default) / 32M / 64M / 128M / 512M / 1G / 2G

PSPP Policy

This item allows you to set PCIe speed power policy.

Options: Performance (Default) / Disabled / Balanced-High / Balanced-Low / Power Saving

Onboard Device

The screenshot shows the BIOS 'MOTHERBOARD' menu with the 'Chipset' tab selected. Under the 'Onboard Device' section, the 'Realtek PCIe NIC' is set to 'Enabled' and the 'Onboard LAN Option ROM' is set to 'Disabled'. The right side of the screen displays a list of BIOS navigation keys and their functions.

Category	Item	Value
CPU	2000 MHz	1.188 ↑
	DRAM	1334 MHz
TEMP	49°	
	2019 Apr 18	
	0000	
Navigation	↑/↓	Select Screen
Navigation	Enter/Db1 Click	Select Item
Navigation	+/-	Change Opt.
Navigation	F1	General Help
Navigation	F3	Optimized Defaults
Navigation	F10	Save & Exit
Navigation	ESC/Right Click	Exit
Navigation	F11	BIOS Screen Capture
Navigation	F12	BIOS Flash
Function	Enable/Disable	Realtek PCIe NIC

Realtek PCIe NIC

This item enables or disables Realtek PCIe NIC.

Options: Enabled (Default) / Disabled

Onboard LAN Option ROM

This item enables or disables Onboard LAN Option ROM.

Options: Disabled (Default) / Enabled

4. Boot Menu

This menu allows you to setup the system boot options.



Setup Prompt Timeout

This item sets number of seconds to wait for setup activation key.

Options: 2 (Default)

Bootup NumLock State

This item selects the keyboard NumLock state.

Options: On (Default) / Off

Full Screen Logo Display

This item enables or disables Full Screen Logo Show function.

Options: Enabled (Default) / Disabled

Fast Boot

This item enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

Options: Disabled (Default) / Enabled

Note

» The following items appear only when you set the Fast Boot function to [Enabled]

SATA Support

Options: Last Boot HDD Only (Default) / All Sata Devices

VGA Support

If Auto, only install Legacy OpRom with Legacy OS and logo would NOT be shown during post. EFI driver will still installed with EFI OS.

Options: EFI Driver (Default) / Auto

USB Support

If Disabled, all USB devices will NOT be available until after OS boot. If Partial Initial, USB Mass Storage and specific USB port/device will NOT be available before OS boot. If Enabled, all USB devices will be available in OS and Post.

Options: Full Initial (Default) / Disabled / Partial Initial

PS2 Devices Support

If Disabled, PS2 devices will be skipped.

Options: Enabled (Default) / Disabled

Network Stack Driver Support

If Disabled, Network Stack Drivers will be skipped.

Options: Disabled (Default) / Enabled

Boot Flash protection

While enabled, it can't flash write and flash erase by SMI.

Options: Disabled (Default) / Enabled

Boot Success Beep

This item BIOS boot post beep message.

Options: Enabled (Default) / Disabled

CSM16 Parameters

The screenshot shows the BIOS Motherboard menu with the following details:

- Header:** MOTHERBOARD
- Navigation Tabs:** Main, Advanced, Chipset, **Boot**, Security, O.N.E, Save & Exit
- Left Panel (System Information):**
 - CPU:** 2000 MHz, 1.309
 - DRAM:** 1334 MHz, 1.496
 - TEMP:** 49°
 - Date/Time:** 2019 Apr 18
 - Time:** 00:00
- CSM16 Parameters Section:**
 - CSM16 Parameters (07.76)
 - CSM16 Module Version
 - GateA20 Active: **Upon Request** (highlighted)
 - Option ROM Messages: Force BIOS
- Right Panel (Help/Instructions):**
 - ++: Select Screen
 - ↑/Click: Select Item
 - Enter/Dbl Click: Select
 - ←/: Change Opt.
 - F1: General Help
 - F8: Optimized Defaults
 - F10: Save & Exit
 - ESC/Right Click: Exit
 - F11: BIOS Screen Capture
 - F12: BIOS Flash
- Bottom Right Panel (GateA20 Note):**

UPON REQUEST - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

GateA20 Active

UPON REQUEST - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Options: Upon Request (Default) / Always

Option ROM Messages

This item allows you to set display mode for Option ROM.

Options: Disabled (Default) / Enabled

5. Security Menu

MOTHERBOARD							
CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
 2000 MHz 1.265 ↑	Password Description 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 length must be in the following range: Minimum length: 3 Maximum length: 20					++: Select Screen ↑/↓/Click: Select Item Enter/Del Click: Select +/-: Change Opt. F1: General Help F9: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash	
	DRAM 1334 MHz 1.496 ↑	Administrator Password User Password ▶ Secure Boot menu					Set Administrator Password
TEMP 49° 2019 Apr 18 							

Administrator Password

This item sets Administrator Password.

User Password

This item sets User Password.

Note

» CPU Configuration function will display different function items according to different CPU platforms.

Secure Boot Menu

MOTHERBOARD							
CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
 2000 MHz 1.298 ↑	System Mode Secure Boot ▶ Secure Boot ▶ Key Management			Setup Not Active	<input checked="" type="checkbox"/> Enabled	++: Select Screen ↑/↓/Click: Select Item Enter/Del Click: Select +/-: Change Opt. F1: General Help F9: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash	
	DRAM 1334 MHz 1.496 ↑						Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2.CSM function is disabled
TEMP 49° 2019 Apr 18 							

Secure Boot

Secure Boot can be enabled if 1.System running in User mode with enrolled Platform key(PK)
2.CSM function is disabled
Options: Enabled (Default) / Disabled

Key Management

MOTHERBOARD		Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
CPU  2000 MHz 1.365 V DRAM  1334 MHz 1.496 V TEMP  49° 2019 Apr 18 	Enroll All Factory Default Keys							++: Select Screen ↑/Click: Select Item Enter/Db1 Click: Select +/-: Change Opt. F1: General Help F3: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash Force System to User Mode - install all Factory Default keys(PK,KEK,db,dbx,dbt). Change takes effect after reboot.
	Platform Key (PK)					NOT INSTALLED		
	▶ Delete PK							
	▶ Set new PK							
	Key Exchange Key (KEK)					NOT INSTALLED		
	▶ Delete KEK							
	▶ Set new KEK							
	▶ Append KEK							
	Authorized Signatures					NOT INSTALLED		
	▶ Delete DB							
▶ Set new DB								
▶ Append DB								
Forbidden Signatures					INSTALLED			
▶ Delete DBX								
▶ Set new DBX								
▶ Append DBX								
Authorized TimeStamps					NOT INSTALLED			
▶ Delete DBT								
▶ Set new DBT								
▶ Append DBT								

Delete All Secure Boot Variables

Force System to setup Mode - clear all Secure Boot Variables (PK, KEK, db, dbx and dbt). Change takes effect after reboot.

Platform Key (PK)

Options: Delete PK / Set new PK

Key Exchange Keys (KEK)

Options: Delete KEK / Set new KEK / Append KEK

Authorized Signatures

Options: Delete DB / Set new DB / Append DB

Forbidden Signatures

Options: Delete DBX / Set new DBX / Append DBX

Authorized Timestamps

Options: Set new DBT / Append DBT

6. O.N.E Menu

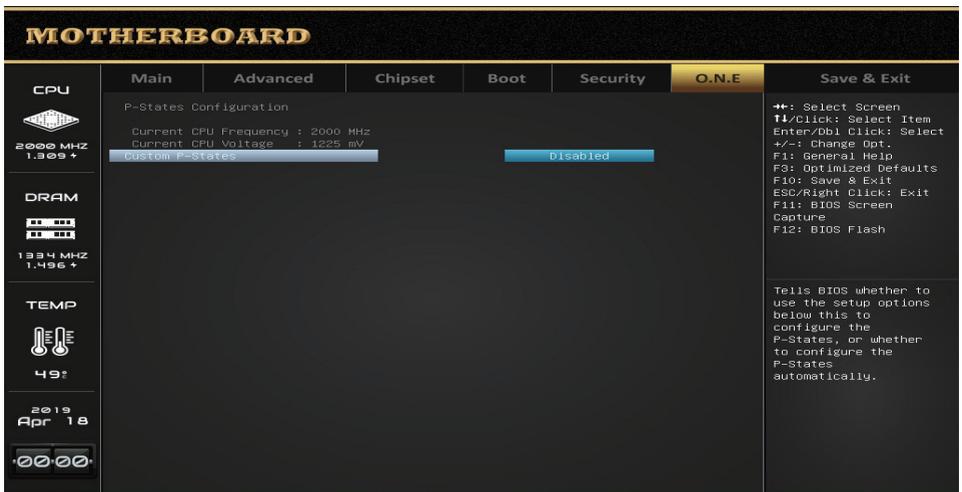
This submenu allows you to change voltage and clock of various devices.

Note

- » We suggest you use the default setting. Changing the voltage and clock improperly may damage the device.
- » The options and default settings might be different by RAM or CPU models.
- » Beware of that setting inappropriate values in items of this menu may cause system to malfunction.
 - Values in Red: Danger
 - Values in Yellow: Warning
 - Values in White: Normal



P-States Configuration



Custom P-States

Tells BIOS whether to use the setup options below this to configure the P-States, or whether to configure the P-States automatically.

Options: Disabled (Default) / Enabled

Over Voltage Configuration

The screenshot shows the BIOS Motherboard menu with the 'O.N.E' tab selected. The 'Over Voltage Configuration' section is active, showing 'DDR Memory Voltage' set to 'AUTO'. The left sidebar displays system information: CPU at 2000 MHz (1.298 V), DRAM at 1334 MHz (1.496 V), and temperature at 49°C. The date is 2019 Apr 18 and the time is 00:01.

CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
2000 MHz 1.298 V	Over Voltage Configuration						++: Select Screen T/Click: Select Item Enter/Del Click: Select +/-: Change Opt. F1: General Help F8: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash
DRAM 1334 MHz 1.496 V	DDR Memory Voltage					AUTO	DDR Memory Voltage Control
TEMP 49°C							
2019 Apr 18							
00:01							

DDR Memory Voltage

This item allows you to set DDR Memory Voltage Control.

Options: Auto (Default) / 1.350V / 1.425V / 1.525V / 1.575V / 1.625V / 1.675V

DRAM TIMING Configuration

The screenshot shows the BIOS Motherboard menu with the 'O.N.E' tab selected. The 'DRAM TIMING Configuration' section is active, showing 'Current Memory CLK.' at 1333 MHz, 'DRAM Timing Mode' set to 'Auto', and 'DRAM Timing Mode' also set to 'Auto'. The left sidebar displays system information: CPU at 2000 MHz (1.298 V), DRAM at 1334 MHz (1.496 V), and temperature at 49°C. The date is 2019 Apr 18 and the time is 00:00.

CPU	Main	Advanced	Chipset	Boot	Security	O.N.E	Save & Exit
2000 MHz 1.298 V	DRAM TIMING Configuration						++: Select Screen T/Click: Select Item Enter/Del Click: Select +/-: Change Opt. F1: General Help F8: Optimized Defaults F10: Save & Exit ESC/Right Click: Exit F11: BIOS Screen Capture F12: BIOS Flash
DRAM 1334 MHz 1.496 V	Current Memory CLK.					DDR3-1333	Select the DRAM Frequency programming method. If Auto, the DRAM speed will be based on SPDs. If Limit, the DRAM speed will not exceed the specified value. If Manual, the the DRAM speed specified will be programmed regardless of SPD.
TEMP 49°C	DRAM Timing Mode					Auto	
2019 Apr 18							
00:00							

MCT Timing Mode

This item allows you to select the DRAM Frequency programming method. If Auto, the DRAM speed will be based on SPDs. If Limit, the DRAM speed will not exceed the specified value. If Manual, the DRAM speed specified will be programmed regardless of SPD.

Options: Auto (Default) / Limit / Manual

Note

» *The following items appear only when you set the MCT Timing Mode function to [Limit]*

Memclock Value

This item allows you to select the memory clock value in MHZ.

Options: DDR3-800 (Default)

DRAM Timing Mode

This item allows you to select DRAM Timing Mode.

Options: Auto (Default) / Manual

Note

» *The following items appear only when you set the DRAM Timing Mode function to [Manual]*

CL

This item CAS Latency (CL).

Options: Auto (Default)

2TCMD

Options: Auto (Default)

TRCD

This item RAS to CAS delay.

Options: Auto (Default)

TRP

This item row precharge time.

Options: Auto (Default)

TRTP

This item Read CAS# to precharge time.

Options: Auto (Default)

TRAS

This item row active strobe.

Options: Auto (Default)

TRC

This item row cycle time.

Options: Auto (Default)

TWR

This item write recovery.

Options: Auto (Default)

TRRD

This item RAS to RAS delay.

Options: Auto (Default)

TRWTT0

This item read to write turnaround.

Options: Auto (Default)

TWRRD

This item write to Read DIMM Termination Turn-around.

Options: Auto (Default)

TWTR

This item internal write to read command delay time.

Options: Auto (Default)

TRFC0

This item auto refresh row cycle time for CS 0 and 1.

Options: Auto (Default)

TRFC1

This item auto refresh row cycle time for CS 2 and 3.

Options: Auto (Default)

MCT Configuration

MOTHERBOARD

Main Advanced Chipset Boot Security **O.N.E** Save & Exit

CPU
2000 MHz
1.2 10 ↑

DRAM
1334 MHz
1.496 ↑

TEMP
49°C

2019
Apr 18

00 08

DRAM TIMING Configuration

Current Memory CLK : DDR3-1333

MemClk Value : DDR3-800

DRAM Timing Mode : Auto

Limit

++: Select Screen
 ↑/Click: Select Item
 Enter/Del Click: Select
 +/-: Change Opt.
 F1: General Help
 F3: Optimized Defaults
 F10: Save & Exit
 ESC/Right Click: Exit
 F11: BIOS Screen
 CapsLock
 F12: BIOS Flash

Select the DRAM Frequency programming method. If Auto, the DRAM speed will be based on SPDs. If Limit, the DRAM speed will not exceed the specified value. If Manual, the the DRAM speed specified will be programmed regardless of SPD.

Bank Interleaving

This item allows you to set Memory Bank interleaving.

Options: Auto (Default) / Disabled

Memory Hole Remapping

This item allows you to set Memory Remapping Around Memory Hole.

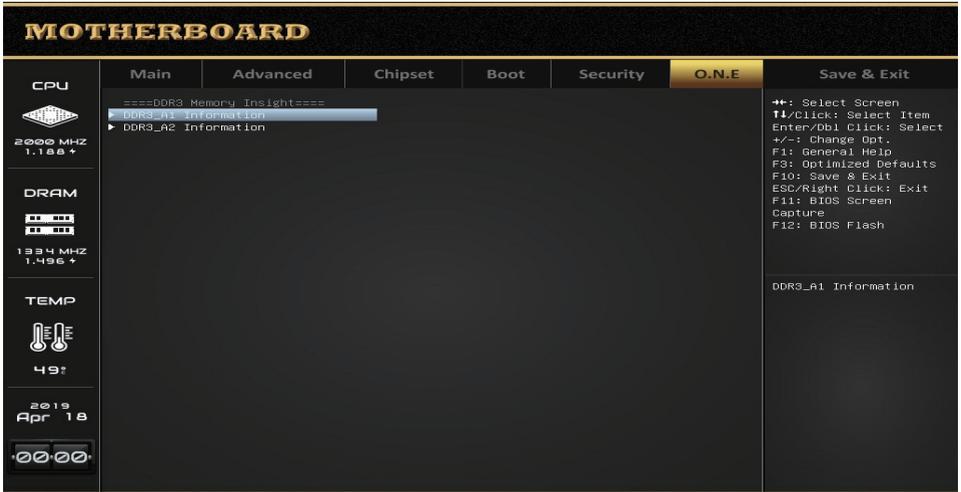
Options: Enabled (Default) / Disabled

Power Down Enable

This item enables or disables DDR power down mode.

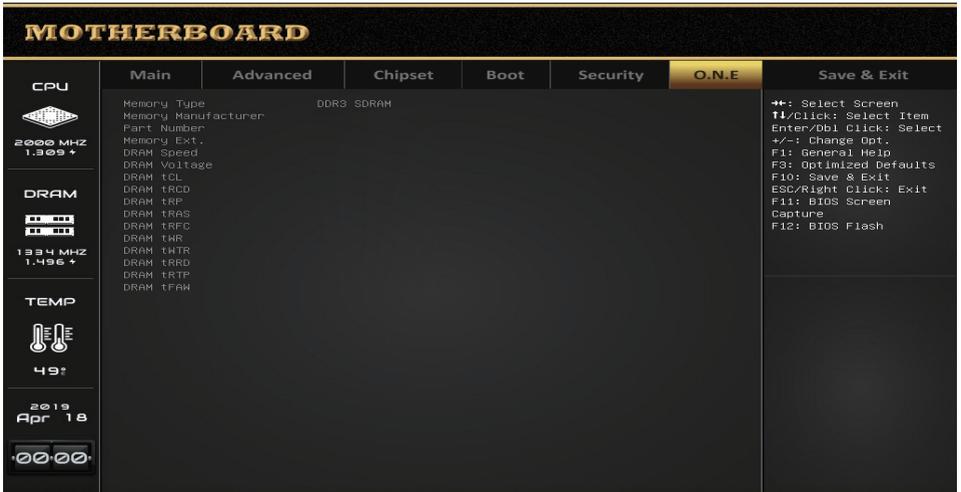
Options: Disabled (Default) / Enabled

BIOSTAR Memory Insight



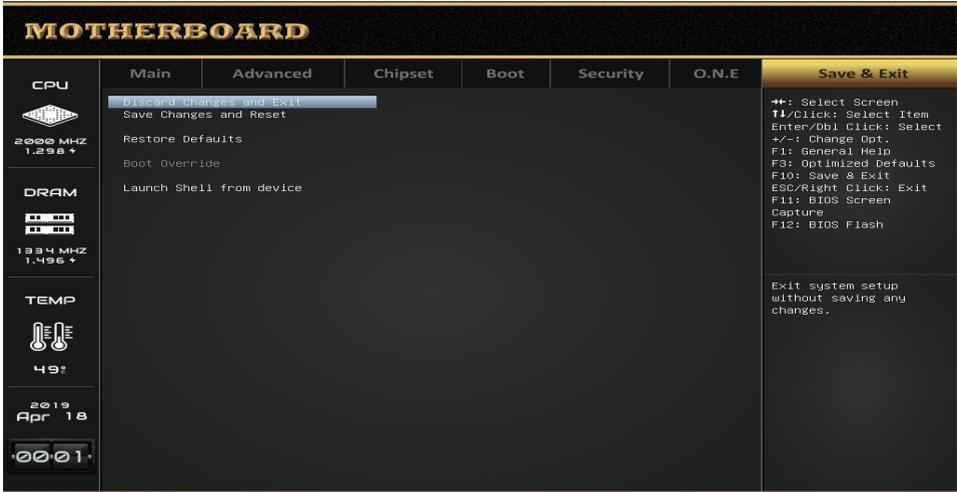
DDR3_A1/A2 Information

These items display memory information.



7. Exit Menu

This menu allows you to load the optimal default settings, and save or discard the changes to the BIOS items.



Discard Changes and Exit

Abandon all changes made during the current session and exit setup.

Save Changes and Reset

Reset the system after saving the changes.

Restore Defaults

Restore/Load Default values for all the setup options.

Launch Shell from device

Attempts to EFI Shell application (Shell.efi) from one of the available devices.