

BIOS User Guide

B350M

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BIOS Update

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

- **BIOSTAR BIO-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 BIO-FLASHER

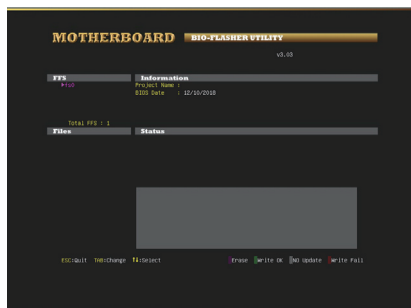
► Note

- » 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 BIO-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.

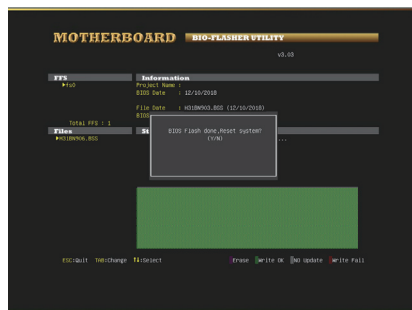
5. After entering the POST screen, the BIOS-FLASHER utility pops out. Choose <fs0> to search for the BIOS file.



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. A dialog pops out after BIOS flash is completed, asking you to restart the system. Press the <Y> key to restart system.



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.

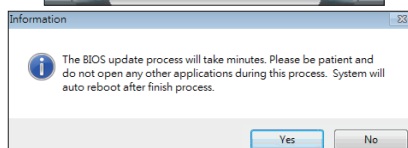
BIOS Update Utility (through the Internet)

1. Installing BIOS Update Utility from the DVD Driver.
2. Please make sure the system is connected to the internet before using this function.

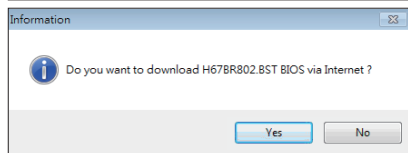
3. Launch BIOS Update Utility and click the "Online Update" button on the main screen.



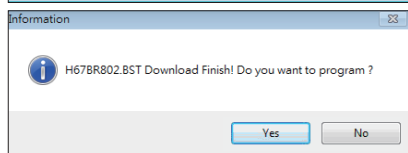
4. An open dialog will show up to request your agreement to start the BIOS update. Click "Yes" to start the online update procedure.



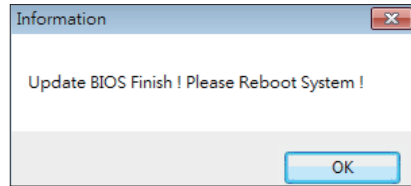
5. If there is a new BIOS version, the utility will ask you to download it. Click "Yes" to proceed.



6. After the download is completed, you will be asked to program (update) the BIOS or not. Click "Yes" to proceed.



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.

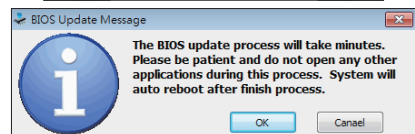
BIOS Update Utility (through a BIOS file)

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.



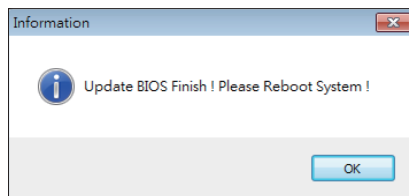
4. A warning message will show up to request your agreement to start the BIOS update. Click “OK” to start the update procedure.



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.

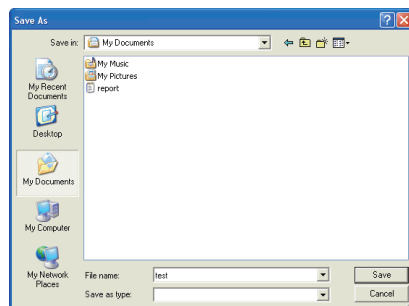


7. While the system boots up and the full screen logo shows up, press key to enter BIOS setup.

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.*

SMART FAN Control

Press <F5> to display the SMART FAN Control menu.



1. CPU1/2 RPM & SYSTEM1/2 RPM: Click button to set the status value of CPU and system fan.

2. PWM/Temperature Panel: According to the fan PWM value corresponding to CPU and system temperature to adjust the fan speed.

» Allows you to adjust according to your preferences.

3. Temperature: Shows the current CPU and system temperature.

4. Control Mode: Allows you to control mode of the fans.

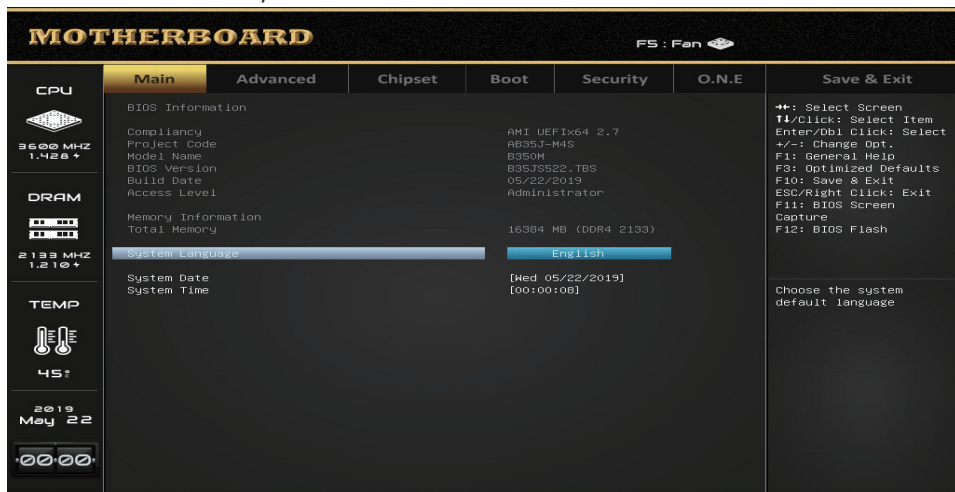
- **Quiet:** Enable Quiet mode.
- **Aggressive:** Enable Aggressive mode.
- **Manual:** Enable Manual mode.
- **Full on:** Enable Full On mode.

Note

- » Menu contents will be different slightly, depending on different motherboard of users' computers.
- » Once you are finished making your selections, choose the <Save & Exit> menu to save.
- » The items of the Smart Fan Control will vary slightly, depending on different motherboard of the user's computer.

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.

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.



Note

» The AMD CBS option appears only with Summit Ridge/ Raven Ridge/ Pinnacle Ridge.

Trusted Computing



Security Device Support

This 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

SHA-1 PCR Bank

This item enables or disables SHA-1 PCR Bank.

Options: Enabled (Default) / Disabled

SHA256 PCR Bank

This item enables or disables SHA256 PCR Bank.

Options: Enabled (Default) / Disabled

Pending operation

This item Schedule an Operation for the Security Device.

Options: None (Default) / TPM Clear

» *Your computer will reboot during restart in order to change state of Security Device.*

Platform Hierarchy

This item enables or disables Platform Hierarchy.

Options: Enabled (Default) / Disabled

Storage Hierarchy

This item enables or disables Storage Hierarchy.

Options: Enabled (Default) / Disabled

Endorsement Hierarchy

This item enables or disables Endorsement Hierarchy.

Options: Enabled (Default) / Disabled

TPM2.0 UEFI Spec Version

This item select the TCG2 Spec Version support. TCG_1_2: the Compatible mode for Win8/Win10 ; TCG_2: Support new TCG2 protocol and event format for Win10 or later.

Options: TCG_2 (Default) / TCG_1_2

Physical Presence Spec Version

This item select to tell O.S. to support PPI Spec Version 1.2 or 1.3 .

Options: 1.3 (Default) / 1.2

» *some HCK tests might not support 1.3 .*

ACPI Settings/WakeUp Event control



ErP Control

This item enables or disables ErP Control function. 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 select ACPI sleep state the system will enter when the SUSPEND button is pressed.
Options: S3 (Suspend to RAM) (Default) / Suspend Disabled

Restore AC Power Loss

The item specify what state to go to when power is re-applied after a power failure.
Options: Power Off (Default) / Power On / Last State

PME Wake up from S5

The item enables the system to wake from S5 using 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

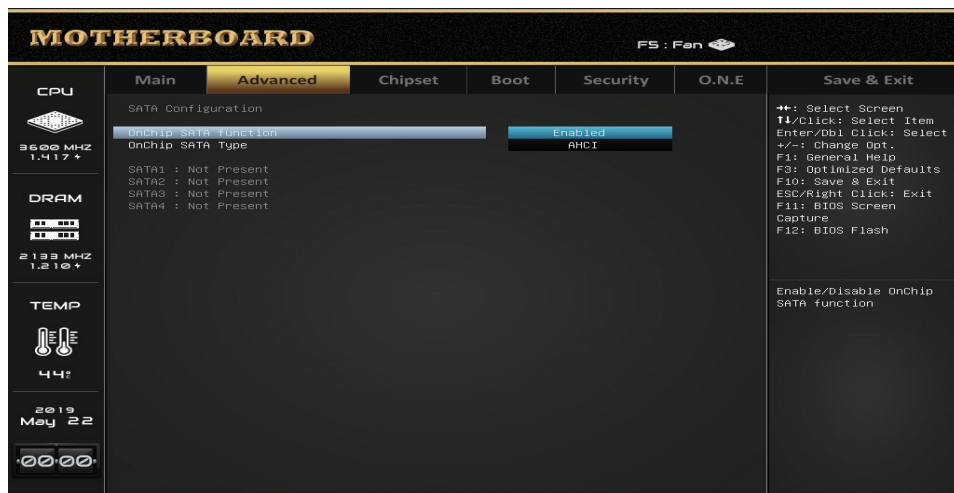
This item will show only when Keyboard PowerOn is set “Specific Key.” Press Enter to set Specific key.

PS2 Mouse PowerOn

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

Options: Disabled (Default) / Enabled

SATA Configuration



OnChip SATA function

This item enables or disables OnChip SATA function.

Options: Enabled (Default) / Disabled

OnChip SATA Type

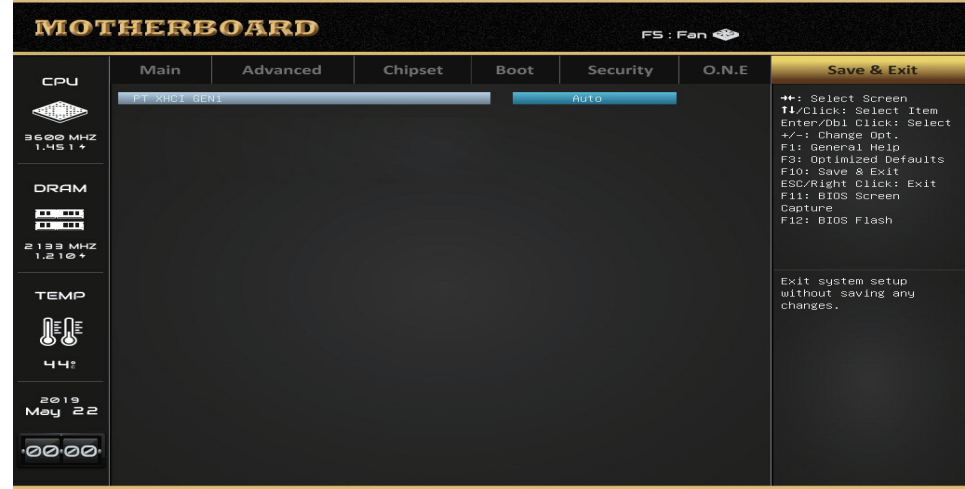
This item select OnChip SATA Type.

Options: AHCI (Default) / RAID

Promontory Common Options



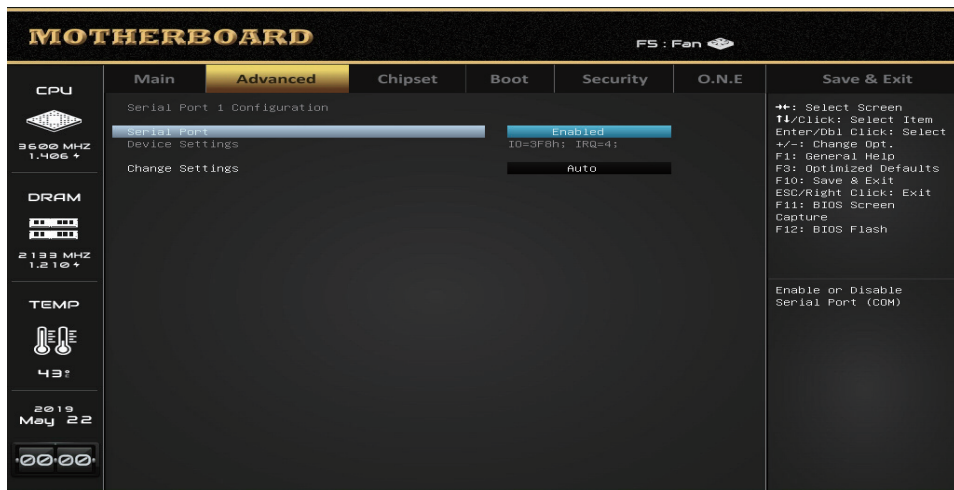
PT USB Configuration Options



PT XHCI GEN1

Options: Auto (Default) / Disabled / Enabled

IT8613 Super IO Configuration



Serial Port

This item enabled or Disabled Serial Port (COM).

Options: Enabled (Default) / Disabled

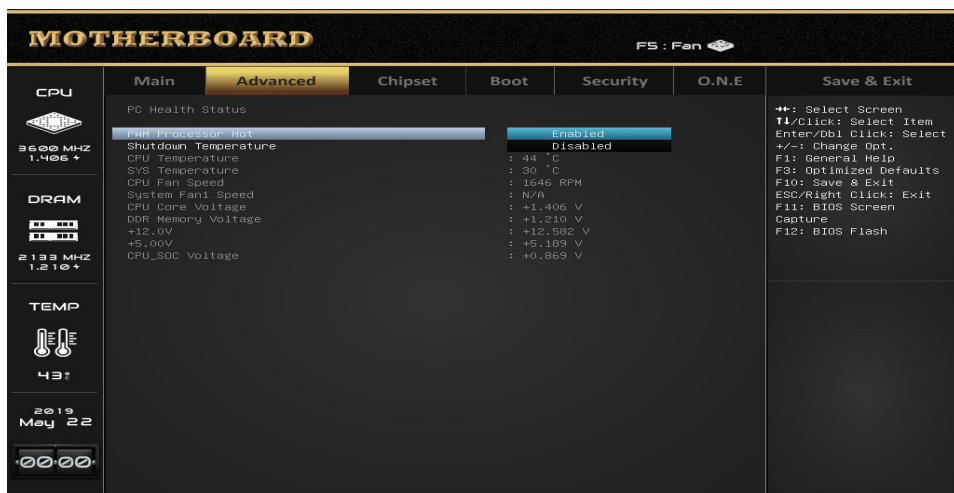
Change Settings

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



PWM Processor Hot

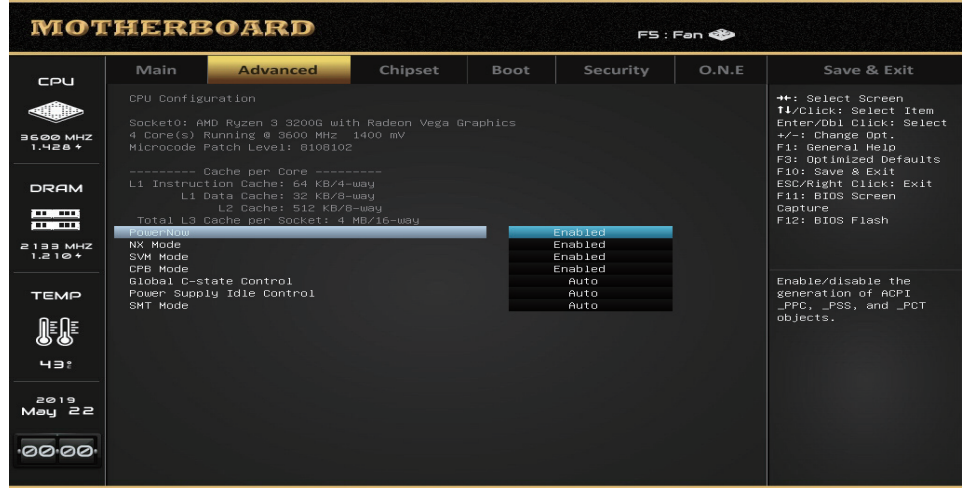
Options: Enabled (Default) / Disabled

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

CPU Configuration

This item shows CPU Information.



PowerNow

This item enables or disables the generation of ACPI _PPC, _PSS, and _PCT objects.
Options: Enabled (Default) / Disabled

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

CPB Mode

This item specifies the method of core performance boost enablement.
Options: Enabled (Default) / Disabled

Global C-state Control

This item allows you to controls IO based C-state generation and DF C-states.
Options: Auto (Default) / Disabled / Enabled

Power Supply Idle Control

This item Power Supply Idle Control.
Options: Auto (Default) / Low Current Idle / Typeical Current Idle

SMT Mode

This item enables or disables simultaneous multithreading.
Options: Auto (Default) / Disabled
» Warning - S3 is not SUPPORTED on systems where SMT is disabled.

PCI Subsystem Settings



PCI Latency Timer

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

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

PCI-X Latency Timer

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

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

VGA Palette Snoop

This item enables or disables VGA Palette Registers Snooping.

Options: Disabled (Default) / Enabled

Above 4G Decoding

This item enables or disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64bit PCI Decoding).

Options: Disabled (Default) / Enabled

SR-IOV Support

This item if system has SR-IOV capable PCIe Devices, this option enables or disables Single Root IO Virtualization Support.

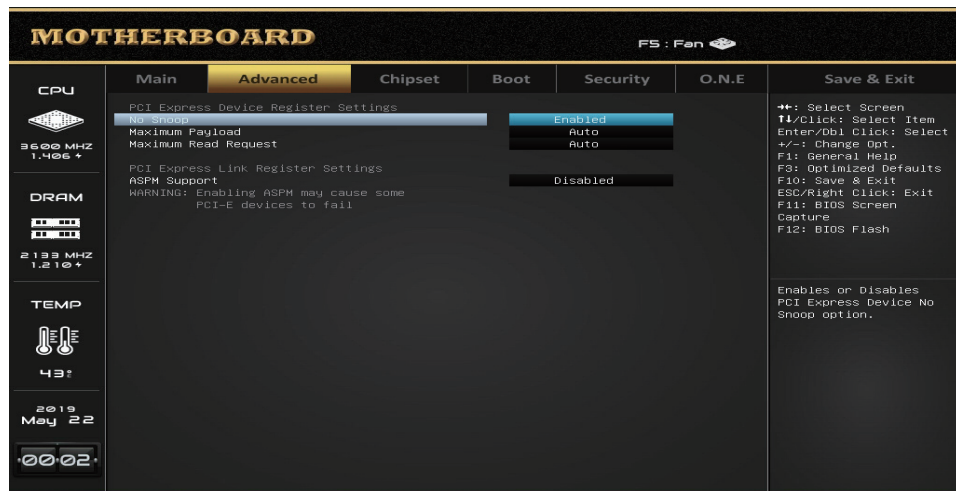
Options: Disabled (Default) / Enabled

BME DMA Mitigation

This item Re-enable Bus Master Attribute disabled during Pci enumeration for PCI Bridges after SMM Locked.

Options: Disabled (Default) / Enabled

PCI Express Settings

**No Snoop**

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

Options: Enabled (Default) / Disabled

Maximum Payload

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

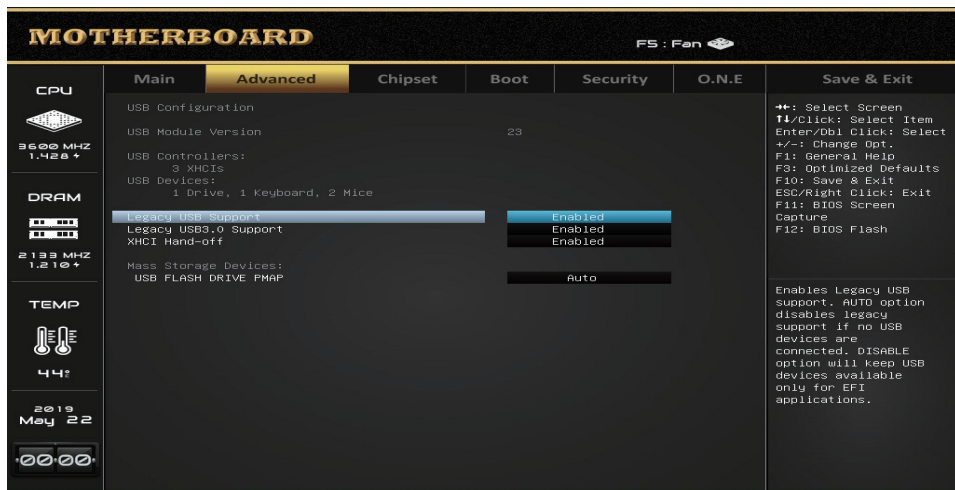
Options: Auto (Default) / 128 Bytes / 256 Bytes / 512 Bytes / 1024 Bytes / 2048 Bytes / 4096 Bytes

ASPM Support

This item set the ASPM Level: Force L0s - Force all links to L0s State ; AUTO - BIOS auto configure ; Disable - Disable ASPM.

Options: Disabled (Default) / Auto / Force L0s

USB Configuration



Legacy USB Support

The item allows you to enable 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

Legacy USB3.0 Support

The item enables or disables legacy USB3.0 support.

Options: Enabled (Default) / Disabled

XHCI Hand-off

This is a workaround for OSES without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

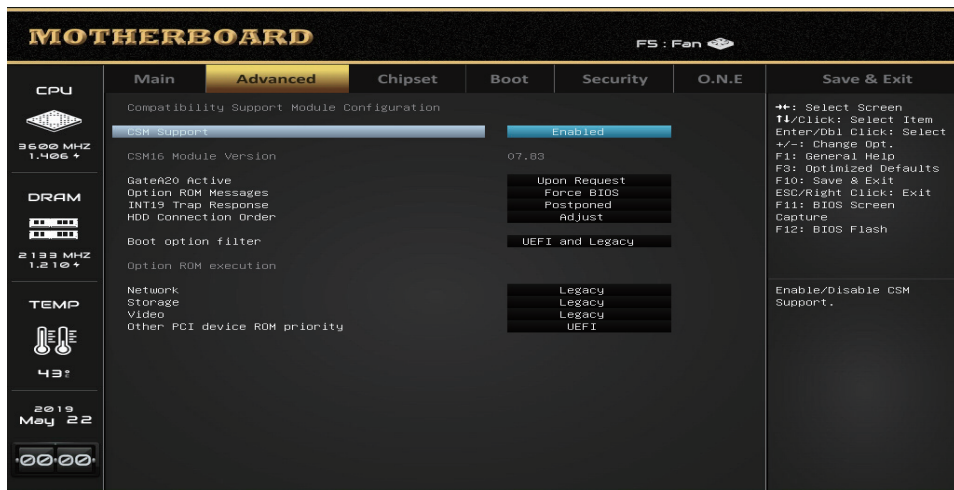
Options: Enabled (Default) / Disabled

USB FLASH DRIVE PMAF

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

CSM Configuration



CSM Support

This option enables or disables CSM support.

Options: Enabled (Default) / Disabled

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 set display mode for Option ROM.

Options: Force BIOS (Default) / Keep Current

INT19 Trap Response

This item BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE - execute the trap right away ; POSTPONED - execute the trap during legacy boot.

Options: Postponed (Default) / Immediate

HDD Connection Order

This some OS require HDD handles to be adjusted, i.e. OS is installed on drive 80h.

Options: Adjust (Default) / keep

Boot option filter

This option controls Legacy/UEFI ROMs priority.

Options: UEFI and Legacy (Default) / Legacy only / UEFI only

Network

This option controls the execution of UEFI and Legacy PXE OpROM

Options: Legacy (Default) / UEFI / Do not launch

Storage

This option controls the execution of UEFI and Legacy Storage OpROM

Options: Legacy (Default) / UEFI / Do not launch

Video

This option controls the execution of UEFI and Legacy Video OpROM

Options: Legacy (Default) / UEFI / Do not launch

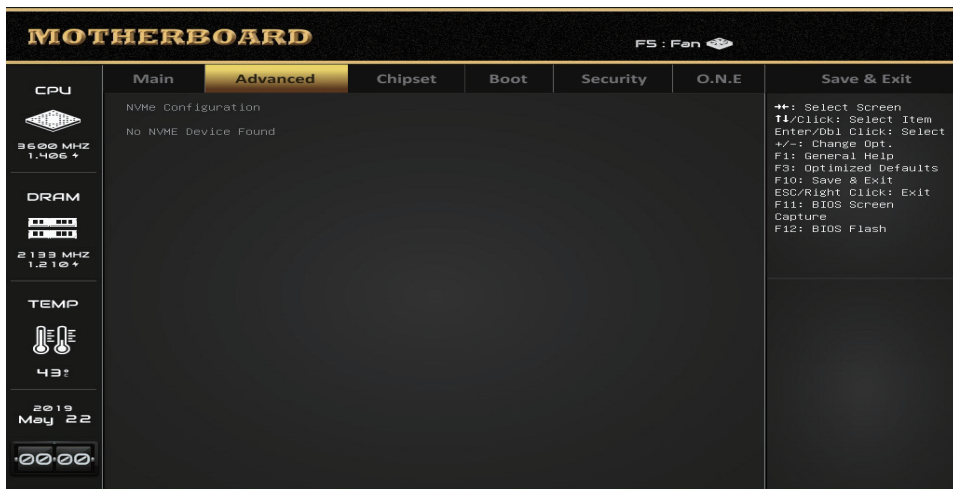
Other PCI device ROM priority

This item for PCI devices other than Network, Mass storage or Video defines which OpROM to launch.

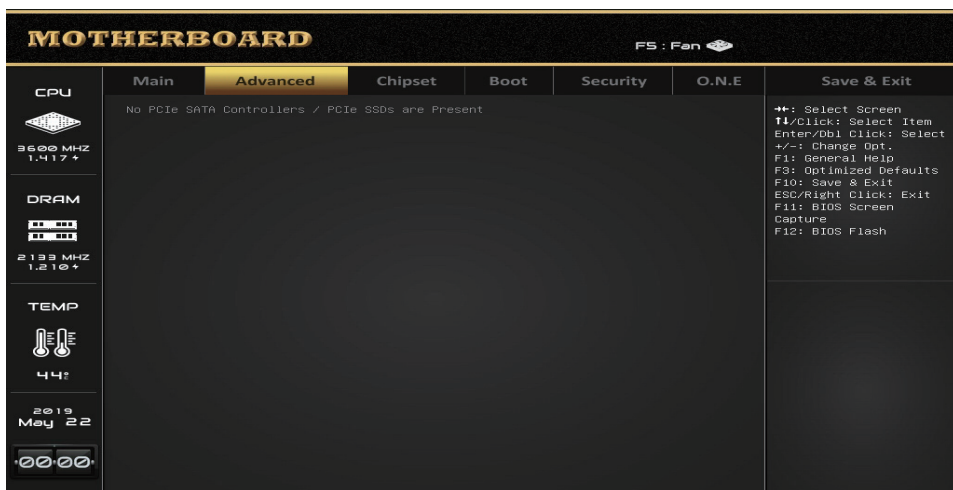
Options: UEFI (Default) / Legacy / Do not launch

NVMe Configuration

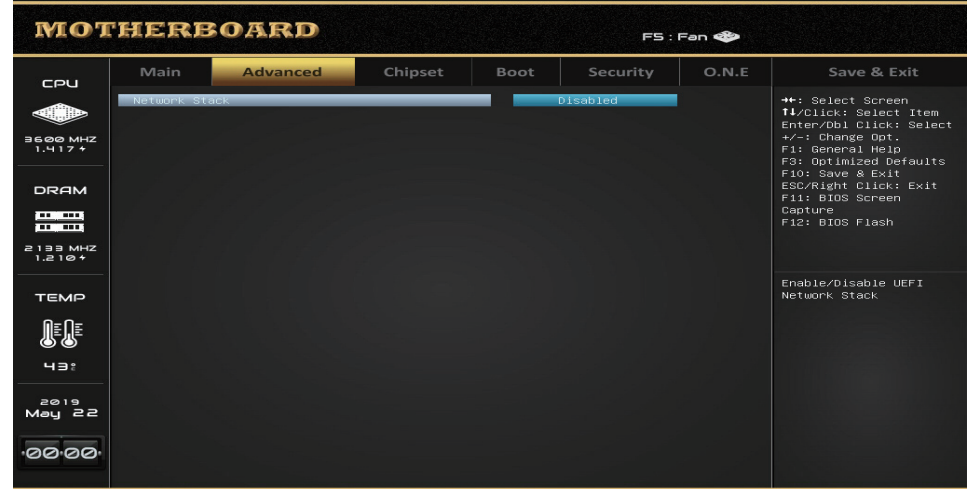
The item shows NVMe controller and driver information.



Offboard PCIe SATA Controller



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: Disabled (Default) / Enabled

IPv4 HTTP Support

This item enables or disables IPv4 HTTP Boot Support. If disabled IPV4 HTTP boot option will not be created.
Options: Disabled (Default) / Enabled

IPv6 PXE Support

This item enables or disables IPv6 PXE Boot Support. If disabled IPv6 PXE boot option will not be created.
Options: Disabled (Default) / Enabled

IPv6 HTTP Support

This item enables or disables IPv6 HTTP Boot Support. If disabled IPv6 HTTP boot option will not be created.
Options: Disabled (Default) / Enabled

IPSEC Certificate

This item IPSEC certificate for Ikev.
Options: Enabled (Default) / Disabled

PXE boot wait time

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

Media detect count

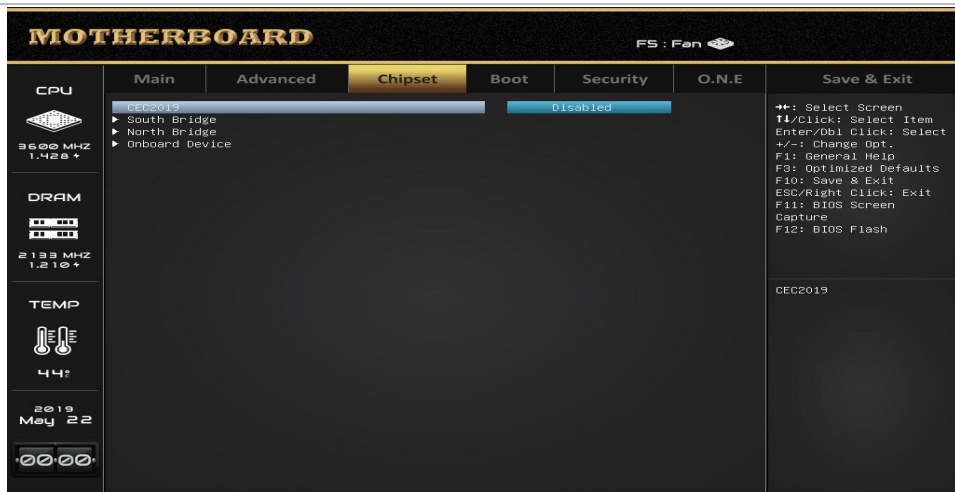
Number of times presence of media will be checked.

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.

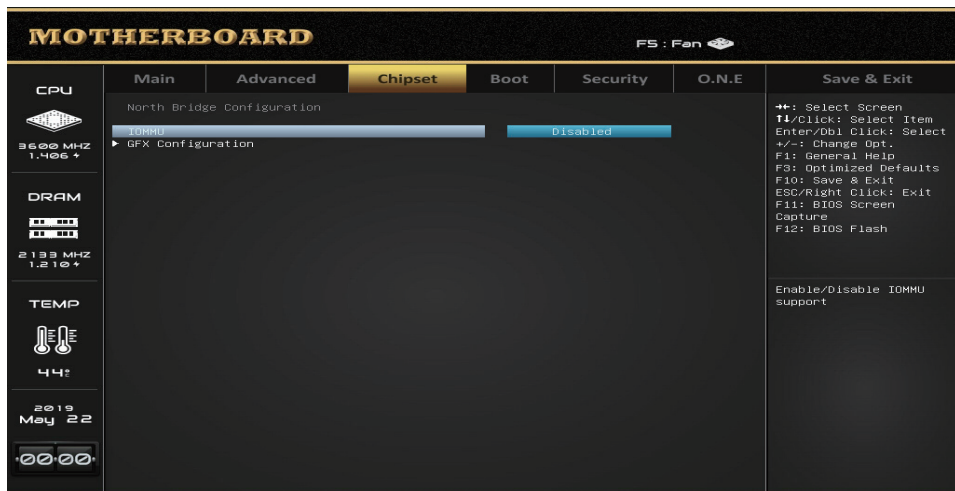


CEC2019

This item enables or disables CEC2019.

Options: Disabled (Default) / Enabled

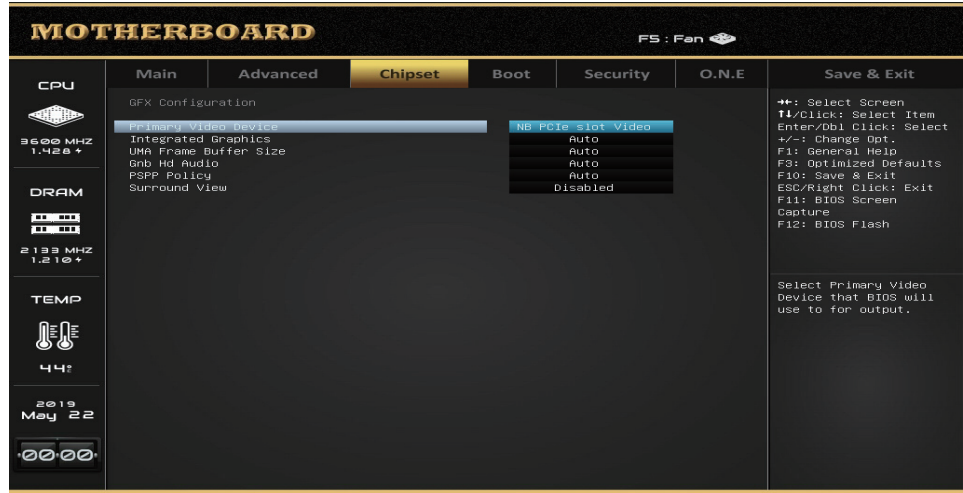
North Bridge



IOMMU

This item enables or disables IOMMU support.
Options: Disabled (Default) / Enabled

GFX Configuration



- **Note**
- » The menu contents of the GFX Configuration will be slightly different depending on the CPU of the motherboard configuration.

Primary Video Device (Bristol Ridge/ Raven Ridge Only)

This item allows you to select Primary Video Device that BIOS will use to for output.
Options: NB PCIe slot Video (Default) / IGD Video

Integrated Graphics (Bristol Ridge/ Raven Ridge Only)

This item allows you to controller the Integrated Graphics function.
Options: Auto (Default) / Disabled

UMA Frame Buffer Size (Bristol Ridge/ Raven Ridge Only)

This item allows you to set UMA FB Size.
Options: Auto (Default) / 64M / 80M / 96M / 128M / 256M / 384M / 512M / 768M / 1G / 2G / 3G / 4G / 8G / 16G

Gnb Hd Audio

This item enables or disables Gnb Hd Audio.
Options: Auto (Default) / Disabled / Enabled

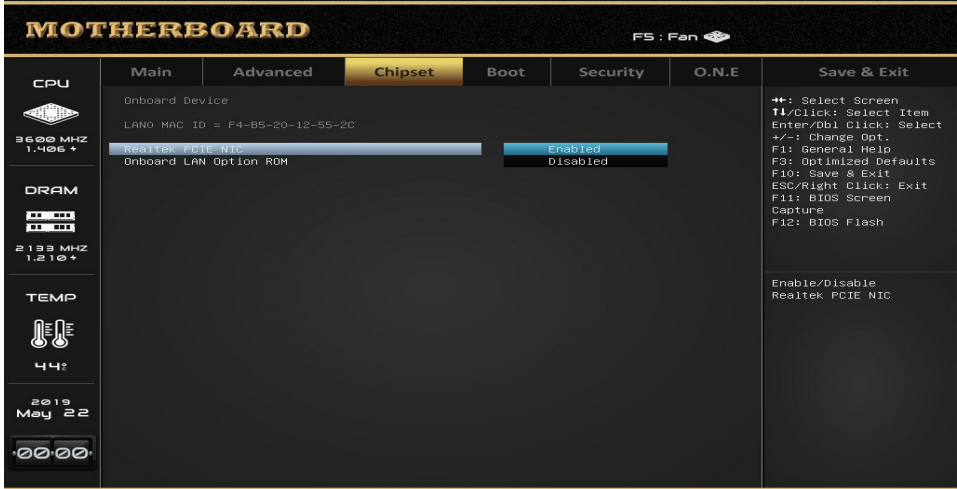
PSPP Policy

This item allows you to set PCIe speed power policy.
Options: Auto (Default) / Disabled / Performance / Balanced-High / Balanced-Low / Power Saving

Surround View (Bristol Ridge/ Raven Ridge Only)

This item support multi-display function.
Options: Disabled (Default) / Auto

Onboard Device



Realtek PCIE NIC

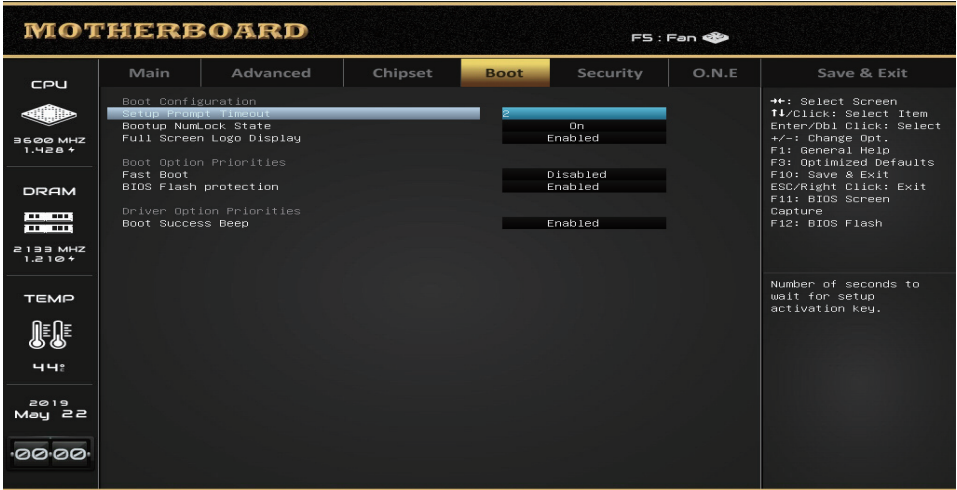
This item enables or disables Realtek PCIE NIC.
Options: Enabled (Default) / Disabled

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 allows you to enable/disable Full Screen Logo Show function.

Options: Enabled (Default) / Disabled

Fast Boot

This item allows you to enable/disable 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

Redirection Support

If Disabled, Redirection function will be disabled.

Options: Disabled (Default) / Enabled

BIOS Flash protection

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

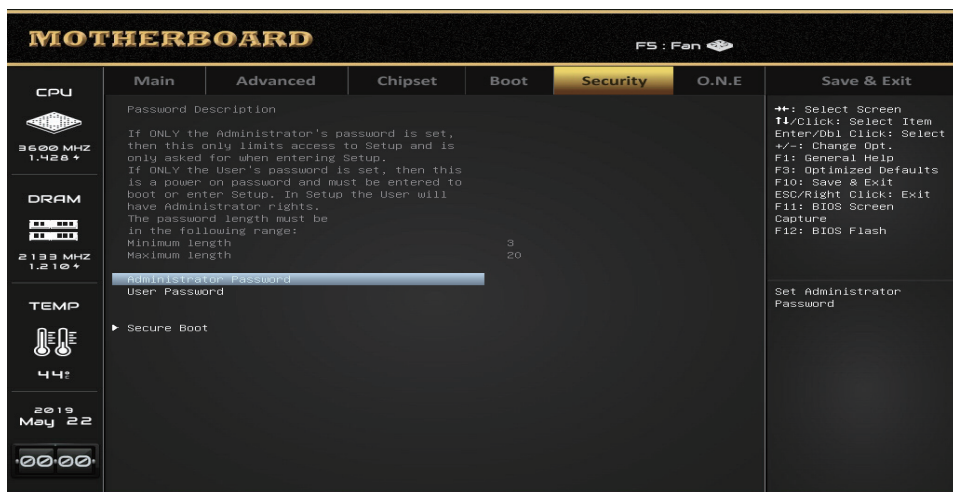
Options: Enabled (Default) / Disabled

Boot Success Beep

This item BIOS boot post beep message.

Options: Enabled (Default) / Disabled

5. Security Menu



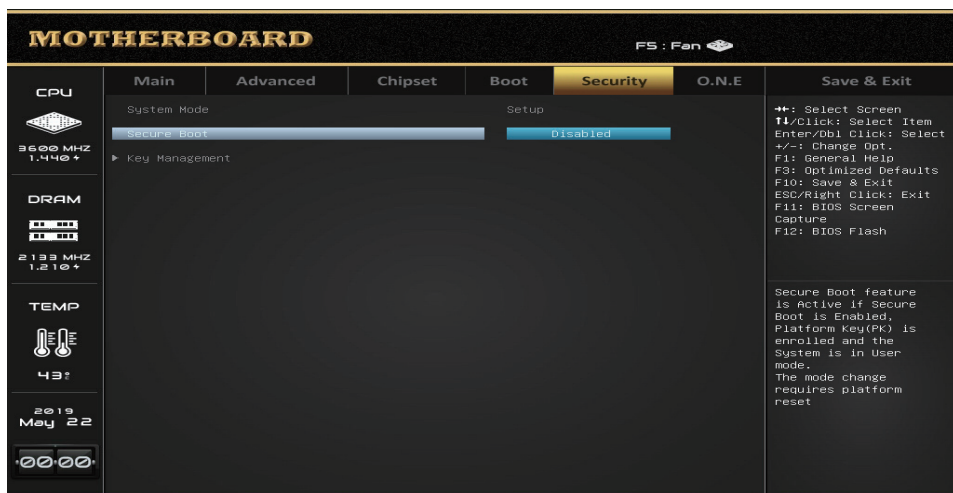
Administrator Password

This item sets Administrator Password.

User Password

This item sets User Password.

Secure Boot Menu

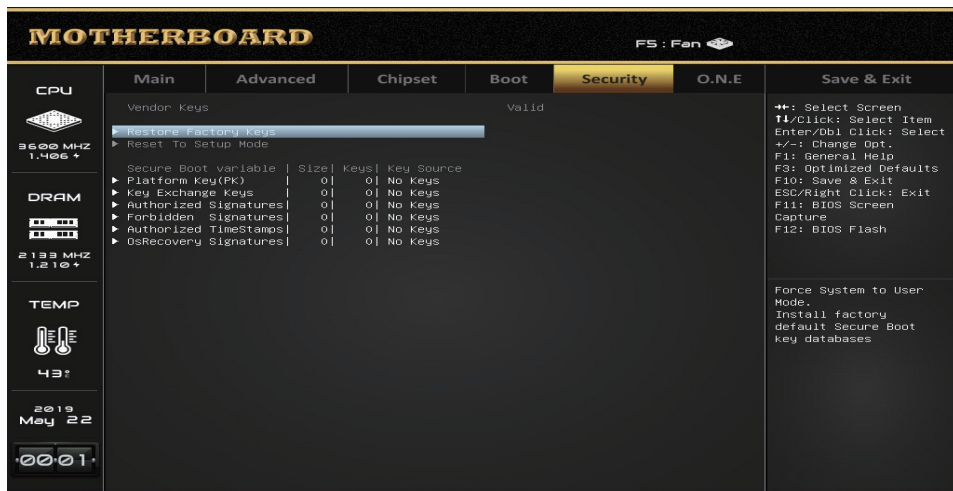


Secure Boot

Secure Boot activated when Platform Key(PK) is enrolled, System mode is User/Deployed, and CSM function is disabled.

Options: Disabled (Default) / Enabled

Key Management



Restore Factory Keys

Force System to User Mode - Configure NVRAM to contain OEM-defined factory default secure boot keys.

Reset To Setup Mode

Delete NVRAM content of all UEFI Secure Boot key databases.

Platform Key (PK)

Options: Details / Export / Update / Delete

Key Exchange Keys

Options: Details / Export / Update / Append / Delete

Authorized Signatures

Options: Details / Export / Update / Append / Delete

Forbidden Signatures

Options: Details / Export / Update / Append / Delete

Authorized TimeStamps

Options: Update / Append

OsRecovery Signatures

Options: Update / Append

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



Note

- » The menu contents of the O.N.E will be slightly different depending on the CPU of the motherboard configuration.

CPU Clock

This item allows you to set the CPU Clock.

Options: Auto (Default)

CPU Ratio

This item allows you to set the CPU Ratio.

Options: Auto (Default)

GFX Frequency (MHz)

This item allows you to set the GFX Frequency in MHz.

Options: Auto (Default)

GFX Voltage (V)

This item allows you to set the GFX Voltage in V.

Options: 120000 (Default)

Memory Clock Mode

This item select the DRAM Frequency programming method. If Auto, the DRAM speed will be based on SPDs. If Manual, the DRAM speed specified will be programmed regardless of SPD.
Options: Auto (Default) / Manual

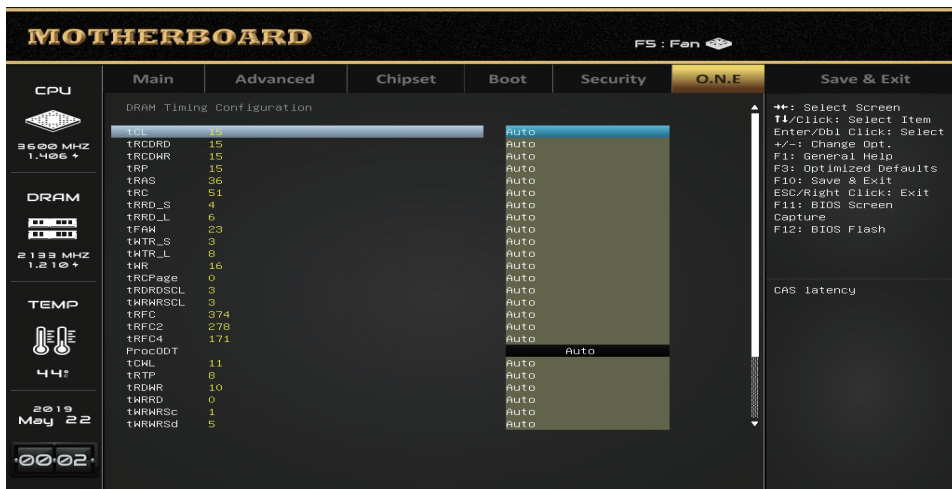
Note

- » The menu contents of the Memory clock mode will be slightly different depending on the memory card used by the user.
- » The following items appear only when you set the Memory Clock Mode function to [Manual].

Memory Frequency

This item select the memory clock value in MHz.
Options: Auto (Default)

DRAM Timing Configuration



tCL

This item allows you to select CAS Latency, 0: AUTO, max: 31
Options: Auto (Default)

tRCDRD

This item allows you to select RAS to CAS delay time and Row Prechrg delay time, 0: AUTO, max: 63
Options: Auto (Default)

tRCDWR

This item allows you to select RAS to CAS R/W delay.
Options: Auto (Default)

tRP

This item allows you to select Row precharge time.
Options: Auto (Default)

tRAS

This item allows you to select Row cycle time.

Options: Auto (Default)

tRC

This item allows you to select Row Active Time.

Options: Auto (Default)

tRRD_S

This item allows you to select Activate to Activate Delay Time, different bank group.

Options: Auto (Default)

tRRD_L

This item allows you to select Activate to Activate Delay Time for Same Bank Group.

Options: Auto (Default)

tFAW

This item allows you to select Four Activate Window Delay Time.

Options: Auto (Default)

tWTR_S

This item allows you to select Minimum Write to Read Command Delay Time for Different Bank Group.

Options: Auto (Default)

tWTR_L

This item allows you to select Minimum Internal Write to Read Command Delay Time for Same Bank Group.

Options: Auto (Default)

tWR

This item allows you to select Min Write Recovery Time.

Options: Auto (Default)

tRCPage

This item allows you to select Specify tRCPage.

Options: Auto (Default)

tRDRDCL

This item allows you to select CAS to CAS Delay Time, same bank group.

Options: Auto (Default)

tWRWRCL

This item allows you to select CAS to CAS Delay Time, same bank group.

Options: Auto (Default)

tRFC

This item allows you to select Auto refresh row cycle time.

Options: Auto (Default)

tRFC2

This item allows you to select Auto refresh row cycle time.

Options: Auto (Default)

tRFC4

This item allows you to select Auto refresh row cycle time.

Options: Auto (Default)

ProckODT

This item allows you to select Specifies the ProCESSOR ODT.

Options: Auto (Default)

tCWL

This item allows you to select Minimum CAS Write Latency Delay, 0: AUTO, max: 20

Options: Auto (Default)

tRTP

This item allows you to select Read CAS to precharge time.

Options: Auto (Default)

tRDWR

This item allows you to sets the tWRTTO time.

Options: Auto (Default)

tWRRD

This item allows you to select Specify the write to read delay when different DIMMs.

Options: Auto (Default)

tWRWRSc

This item allows you to select write to write timing same DIMM same chip select.

Options: Auto (Default)

tWRWRSd

This item allows you to select write to write timing same DIMM same chip select.

Options: Auto (Default)

tWRWRDd

This item allows you to select write to write timing same DIMM same chip select.

Options: Auto (Default)

tRDRDSc

This item allows you to select write to write timing same DIMM same chip select.

Options: Auto (Default)

tRDRDSd

This item allows you to select write to write timing same DIMM same chip select.

Options: Auto (Default)

tRDRDDd

This item allows you to select write to write timing same DIMM same chip select.

Options: Auto (Default)

tCKE

This item allows you to select CKE min high and low pulse width in memory clock cycles.

Options: Auto (Default)

Cmd2T

This item allows you to select between 1T and 2T mode on ADDR/Cmd.

Options: Auto (Default) / 1T / 2T

Power Down

This item enables or disables DDR power down mode.
Options: Auto (Default) / Disabled / Enabled

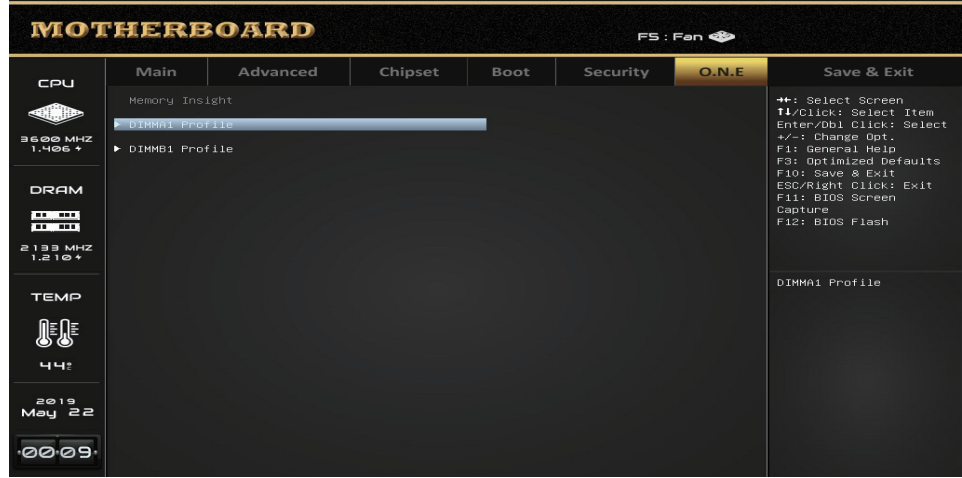
Gear Down

This item allows you to select Specifies DDR4 GearDown Mode.
Options: Auto (Default)

DDR Memory Voltage

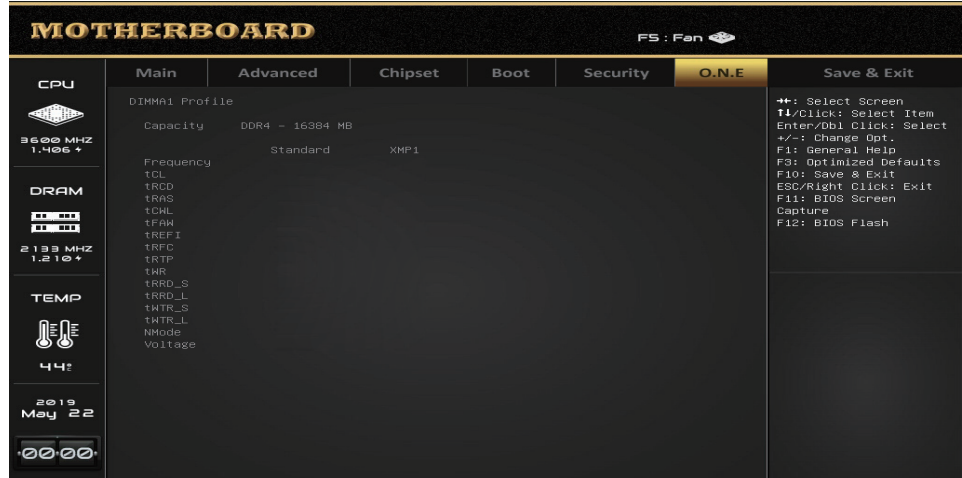
This item allows you to control DDR Memory Voltage.
Options: Auto (Default)

Memory Insight



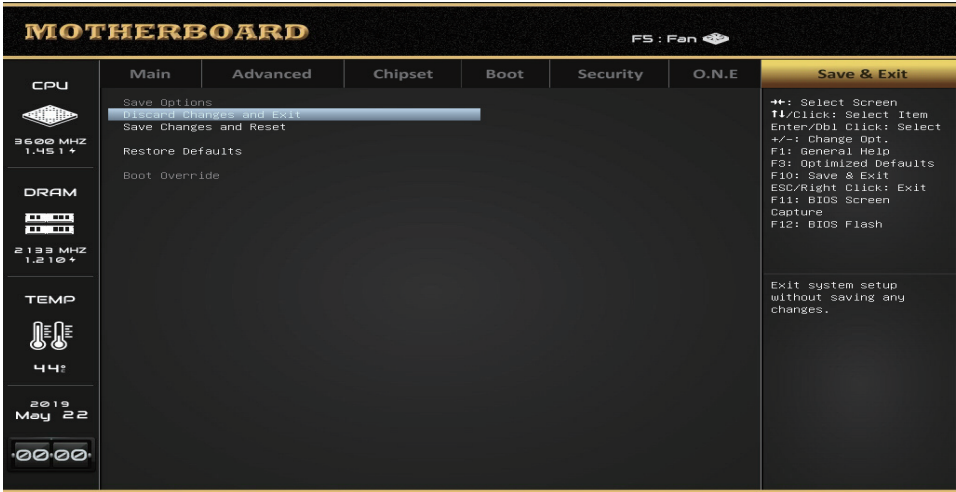
DIMM Profile

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

This item attempts to EFI Shell application (Shell.efi) from one of the available filesystem devices.