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## **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.

### **DRAM Support**

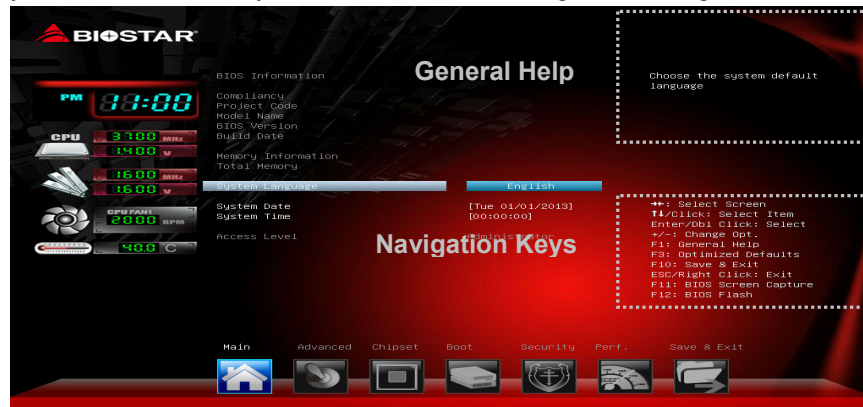
DDR3 SDRAM (Double Data Rate III Synchronous DRAM) is supported.

### **Using Setup**

When starting up the computer, press <Del> 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.

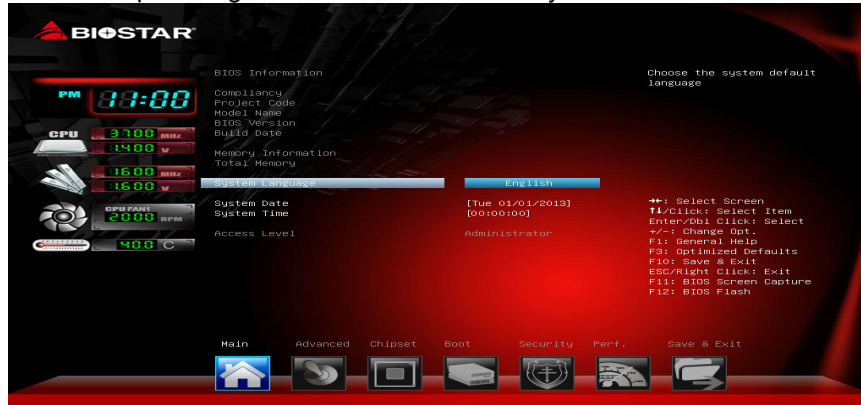


### **Notice**

- 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

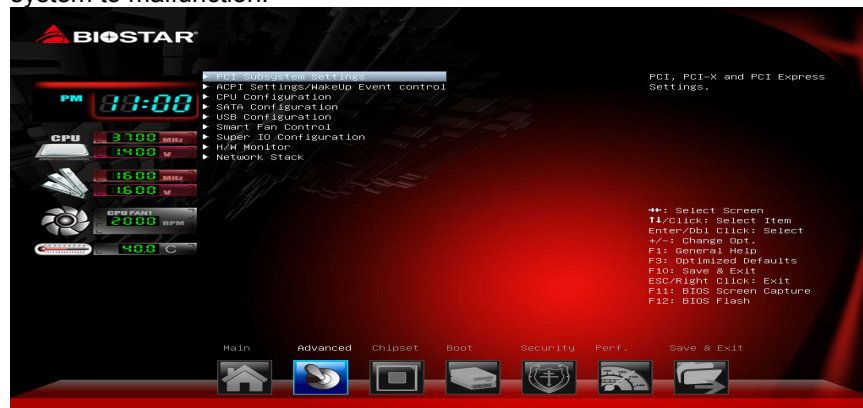
Set the system internal clock.

## 2 Advanced Menu

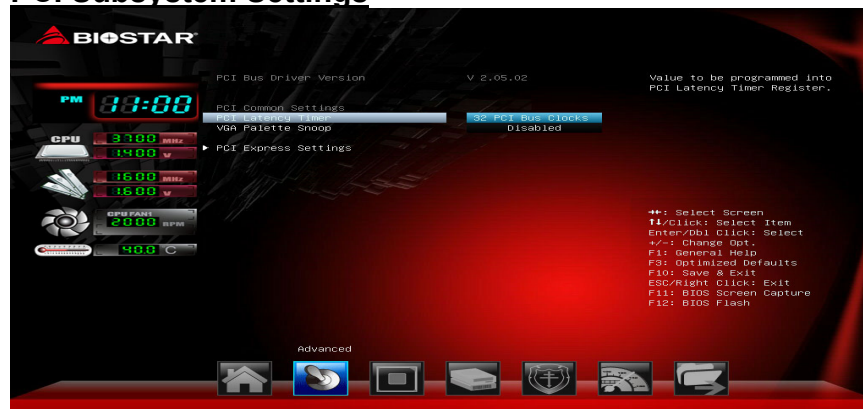
The Advanced Menu allows you to configure the settings of CPU, Super I/O, Power Management, and other system devices.

### Notice

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



### PCI Subsystem Settings



**PCI Latency Timer**

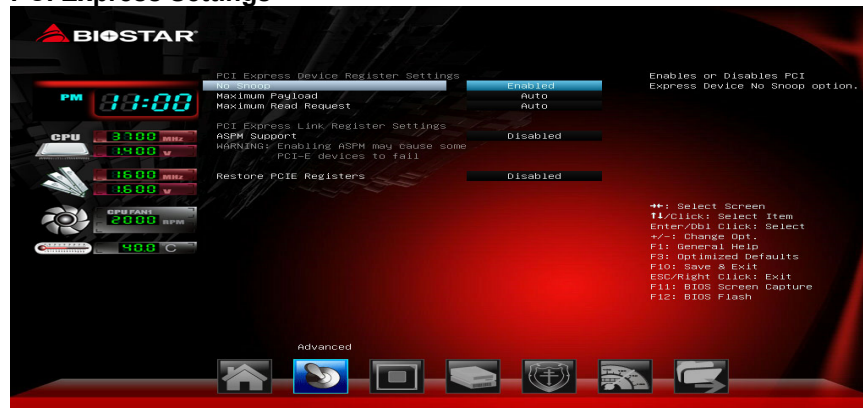
This item sets the value to be programmed into PCI Latency Timer Register.

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****No Snoop**

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

Options: Enabled (Default) / Disabled

**Maximum Payload**

This item sets Maximum Payload of PCI Express Device or allows 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 sets Maximum Read Request Size of PCI Express Device or allows 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 sets the ASPM Level: Force LO – Force all links to LO State;

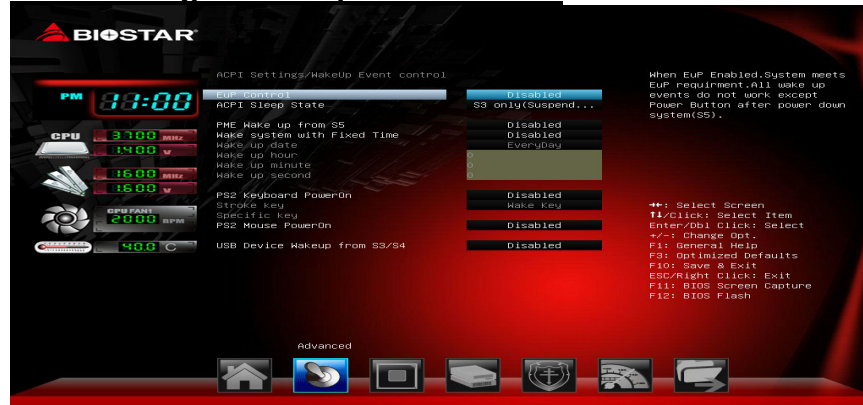
Auto – BIOS auto configures; Disabled – Disables ASPM.

Options: Disabled (Default) / Auto / Force L0s

**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 cause issues with other hardware after resume.

Options: Disabled (Default) / Enabled

**ACPI Settings/ WakeUp Event control****EuP Control**

When EuP is enabled, the system will meet EuP 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 highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

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

**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

**USB Device Wakeup from S3/S4**

This item allows you to enable or disabled the USB resume from S3/S4 function.

Options: Disabled (Default) / Enabled



## CPU Configuration

This item shows CPU Information



### Power Now

This item allows you to enable or disable the PowerNow power saving technology.

Options: Enabled (Default) / Disabled

### NX Mode

This item allows you to enable or disable No-execute page protection Function

Options: Enabled (Default) / Disabled

### SVM

This item allows you to enable AMD virtualization in CPU.

Options: Enabled (Default) / Disabled

### CPB Mode

This item allows you to enable or disable CPB.

Options: Auto (Default) / Disabled

### C6 Mode

This item allows you to enable or disable C6.

Options: Enabled (Default) / Disabled

### Core Leveling

Change the number of compute unit in the system

Options: Auto (Default) / Single Core / Dual Core

### HTC temperature limit

This item allows you to set HTC temperature limit. Range: 70°C - 85°C

Options: 70°C (Default)

**Configurable TDP** (This item will appear only when using FM2+ CPU.)

This item allows you to enable or disable cTDP by CPU.

Options: Disabled (Default) / Enabled

*Note: The following items appear only when you set the **Configurable TDP** item to [Enabled]*

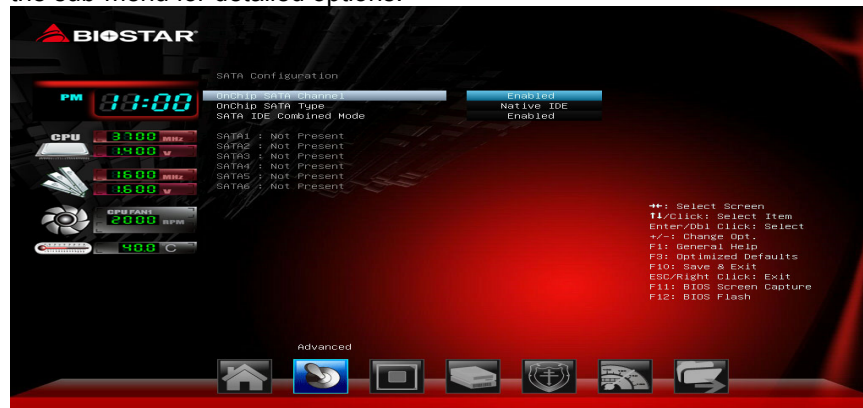
**Configurable TDP Value (W)**

This item allows you to input configurable TDP Value (45-65).

Options: 45 (Default)

### **SATA Configuration**

The BIOS will automatically detect the presence of SATA devices. There is a sub-menu for each SATA device. Select a device and press <Enter> to enter the sub-menu for detailed options.



#### **OnChip SATA Channel**

This item allows you to enable or disable OnChip SATA Channel

Options: Enabled (Default) / Disabled

#### **OnChip SATA Type**

This item allows you to set OnChip SATA type.

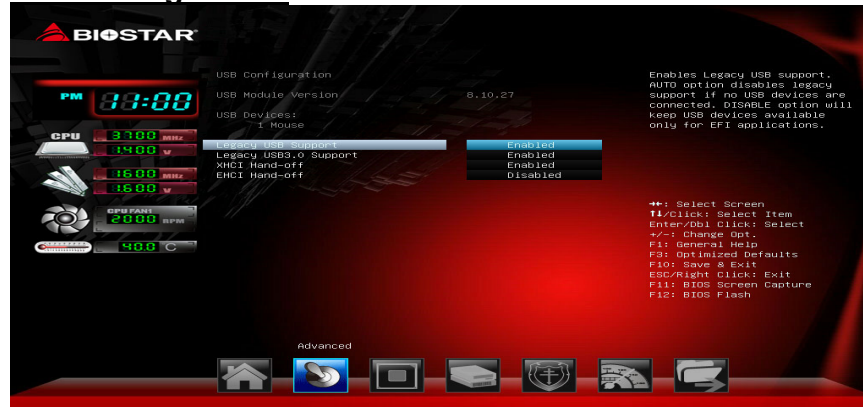
Options: Native IDE (Default) / RAID / AHCI / Legacy IDE

#### **SATA IDE Combined Mode**

This item allows you to enable or disable SATA IDE Combined Mode.

Options: Enabled (Default) / Disabled

## 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 allows you to enable or disable Legacy USB3.0 (XHCI) Controller 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.

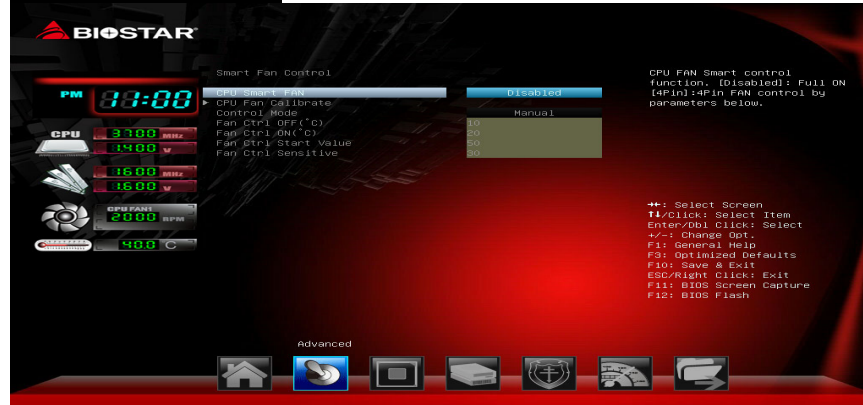
Options: Enabled (Default) / Disabled

### 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

## Smart Fan Control



### CPU Smart Fan

This item allows you to control the CPU Smart Fan function.

Options: Disabled (Default) / 4Pin

### CPU Fan Calibrate

Press [ENTER] to calibrate CPU Fan.

### Control Mode

This item provides several operation modes of the fan.

Options: Quiet / Aggressive / Manual

### 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.

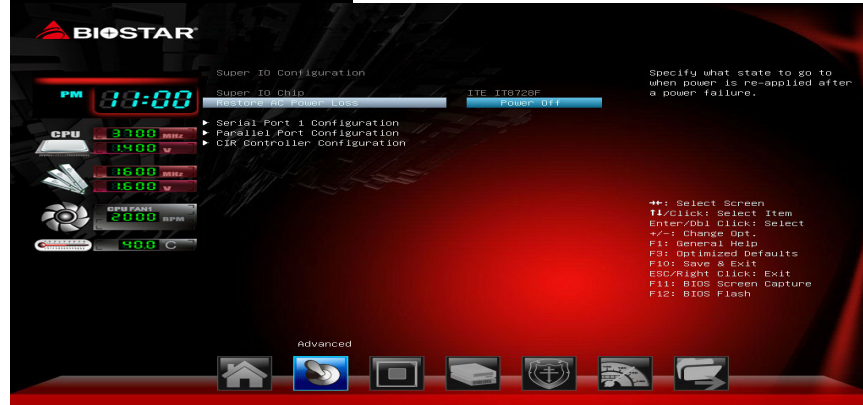
Options: 50 (Default)

### Fan Ctrl Sensitive

The bigger the numeral is, the higher the FAN speed is.

Options: 30 (Default)

## Super IO Configuration

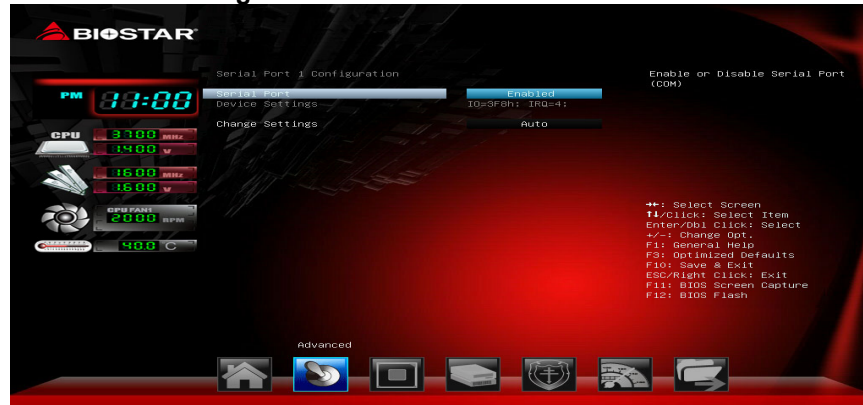


### Restore AC Power Loss

This setting specifies how your system should behave after a power fail or interrupts occurs. Power Off: Leaving the system in power-off status after power recovers. Power ON: Powering on the system immediately when power returns. Last State: 1. Leaving the system in power-off if the system shuts down at DC off status; 2. Powering on the system immediately if the system shuts down at DC on status.

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

### Serial Port 1 Configuration



### Serial Port

This item enables or disables Serial Port (COM).

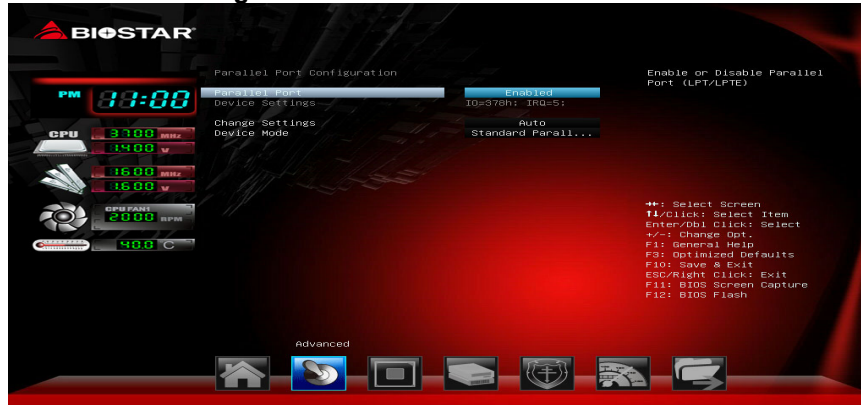
Options: Enabled (Default) / Disabled

### **Change Settings**

This item selects an optimal setting for Super IO device.

Options: Auto (Default) / IO=3F8h; IRQ=4 / IO=3F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12 / IO=2F8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12 / IO=3E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12 / IO=2E8h; IRQ=3, 4, 5, 6, 7, 10, 11, 12

### **Parallel Port Configuration**



### **Parallel Port**

This item enables or disables Parallel Port (LPT/LPTE).

Options: Enabled (Default) / Disabled

### **Change Settings**

This item allows you to select an optimal setting for Super IO device.

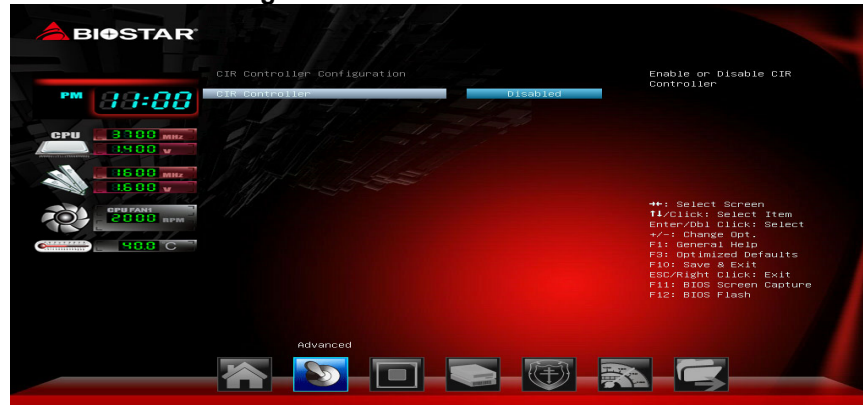
Options: Auto (Default) / IO=378h; IRQ=5 / IO=378h; IRQ=5, 6, 7, 10, 11, 12 / IO=278h; IRQ=5, 6, 7, 10, 11, 12 / IO=3BCh; IRQ=5, 6, 7, 10, 11, 12 / IO=378h; / IO=278h; / IO=3BCh;

### **Device Mode**

This item allows you to change the Printer Port mode.

Options: Standard Parallel Port Mode (Default) / EPP Mode / ECP Mode / EPP Mode and ECP Mode

### CIR Controller Configuration

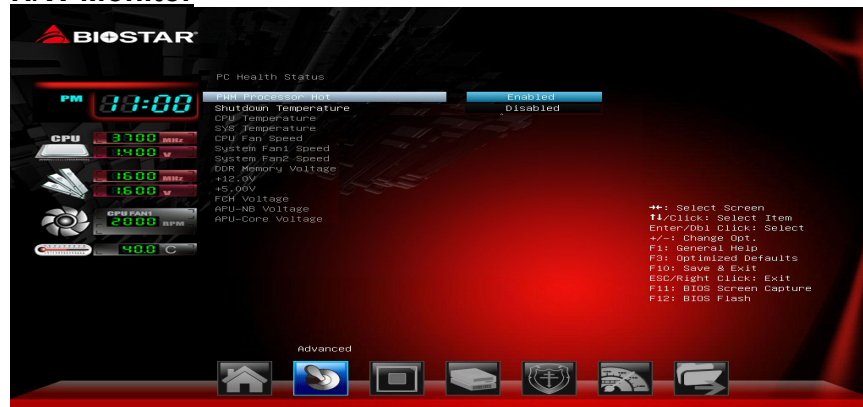


#### CIR Controller

This item enables or disables CIR Controller.

Options: Disabled (Default) / Enabled

### H/W Monitor



#### PWM Processor Hot

This item enables or disables PWM Processor Hot.

Options: Enabled (Default) / Disabled

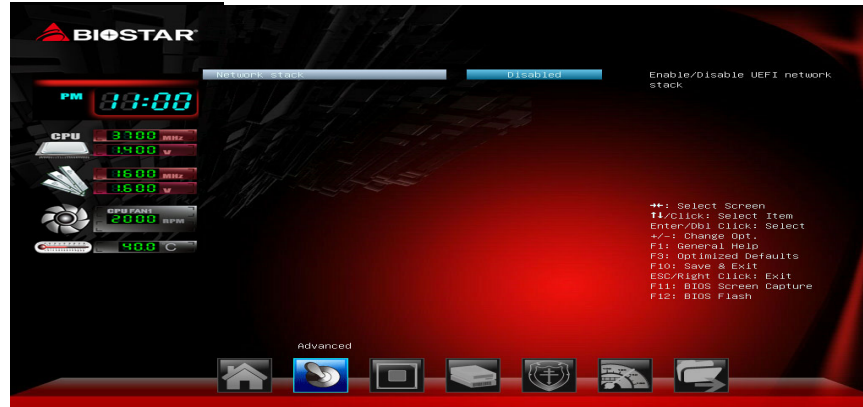
#### Shutdown Temperature

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



## Network Stack



### 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 item to [Enabled]*

### IPv4 PXE Support

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

Options: Enabled (Default) / Disabled

### IPv6 PXE Support

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

Options: Enabled (Default) / Disabled

### PXE boot wait time

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

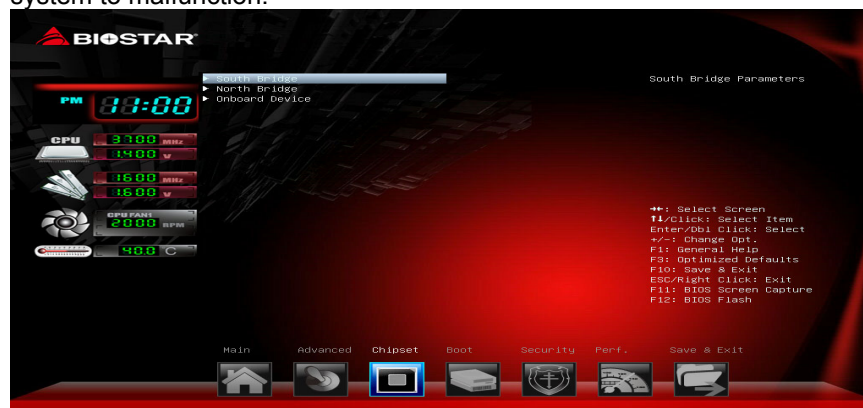


### 3 Chipset Menu

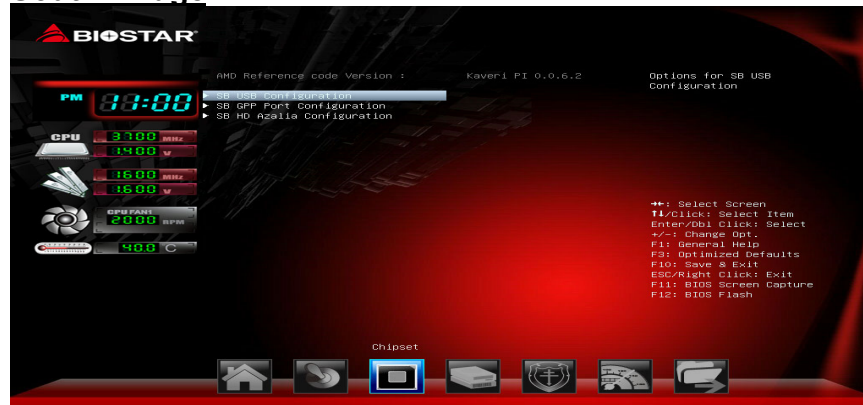
This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

#### Notice

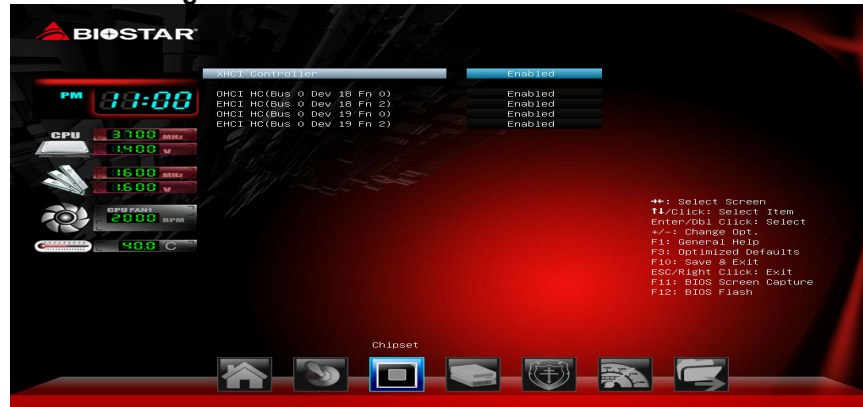
Beware of that setting inappropriate values in items of this menu may cause system to malfunction.



#### South Bridge



## SB USB Configuration



### XHCI Controller

This item allows you to switch XHCI.

Options: Enabled (Default) / Disabled

### OHCI HC (Bus 0 Dev 18/19/22 Fn 0)

This item allows you to control OHCI host controller. (USB 1.1 Device)

Options: Enabled (Default) / Disabled

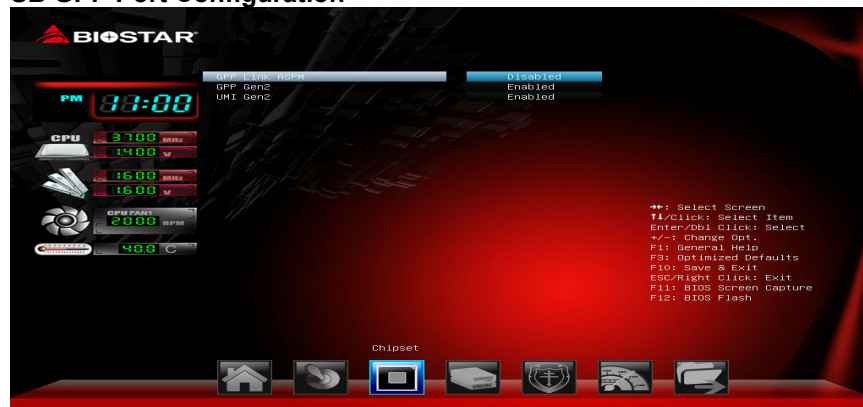
### EHCI HC (Bus 0 Dev 18/19/22 Fn 2)

This item allows you to control EHCI host controller. (USB 2.0 Device)

Options: Enabled (Default) / Disable

*Note: OHCI HC (Bus 0 Dev 22 Fn 0) and EHCI HC (Bus 0 Dev 22 Fn 2) items will appear, when you set the **XHCI Controller** item to disabled.*

## SB GPP Port Configuration



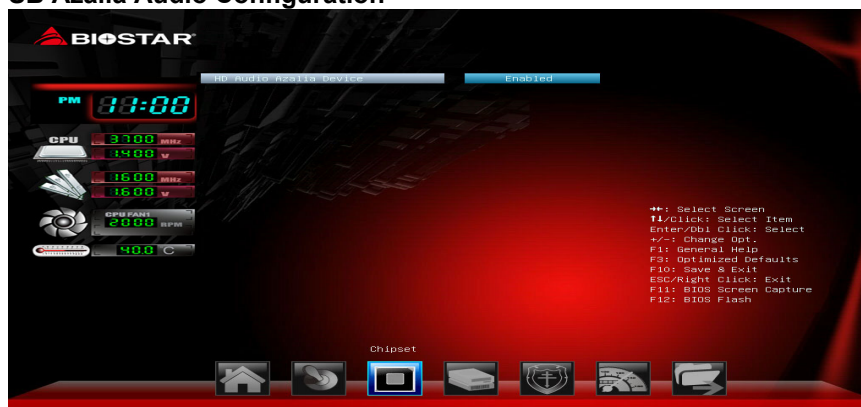
### **GPP Link ASPM**

Options: Disabled (Default) / L0s / L1 / L0s + L1

### **GPP Gen2/ UMI Gen2**

Options: Enabled (Default) / Disabled

### **SB Azalia Audio Configuration**

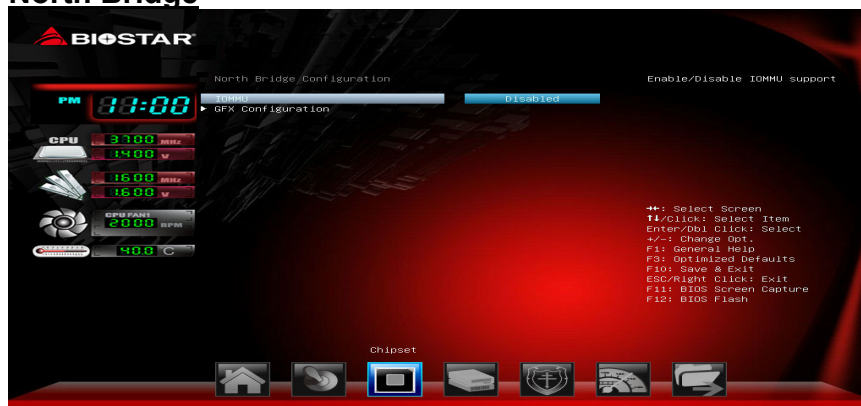


### **HD Audio Azalia Device**

This item allows you to control the HD audio device.

Options: Enabled (Default) / Auto / Disabled

### **North Bridge**

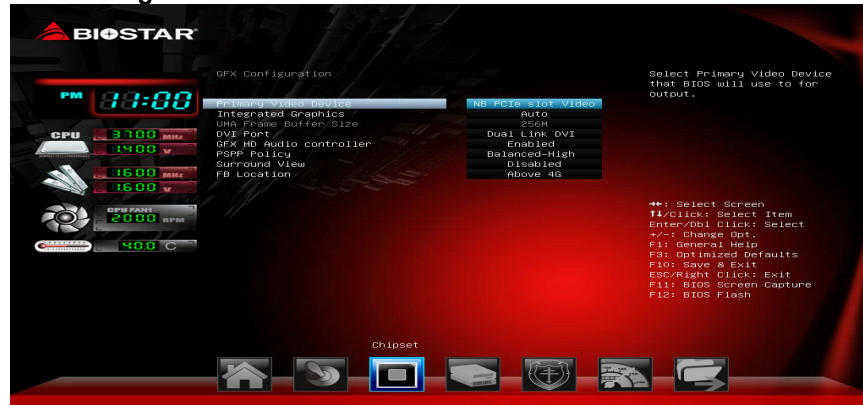


### **IOMMU**

It enables or disables IOMMU support.

Options: Disabled (Default) / Enabled

## GFX Configuration



### Primary Video Device

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

This item set integrated graphics controller.

Options: Auto (Default) / Disabled / Force

*Note: The following items appear only when you set the Integrated Graphics item to [Force]*

**UMA Frame Buffer Size:** 32M / 64M / 128 M / 256 M / 512M / 1G / 2G

### DVI Port

This item sets DVI port mode.

Options: Dual Link DVI (Default) / HDMI

### GFX HD Audio Controller

This item allows you to set GFX HD Audio controller.

Options: Enabled (Default) / Disabled

### PSP Policy

This item allows you to set PCIe speed power policy.

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

### Surround View

This item supports multi-display function.

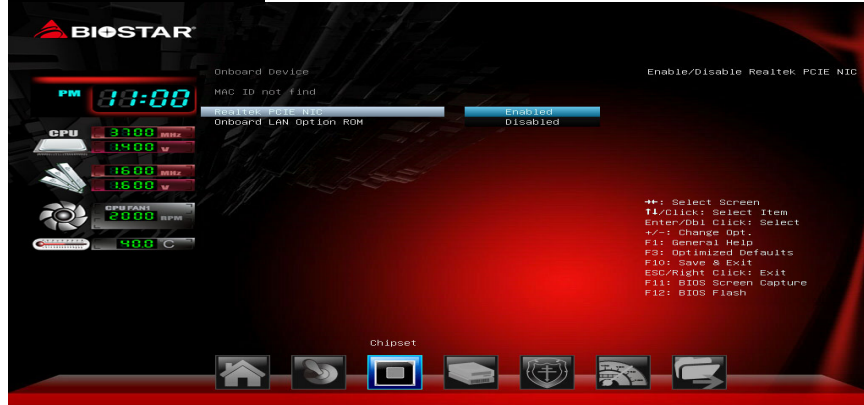
Options: Disabled (Default) / Enabled

### **FB Location**

This item allows you to set FB Location

Options: Above 4G (Default) / Below 4G

### **Onboard Devices**



### **Realtek PCIe NIC**

This item enables/disables Realtek PCIe NIC

Options: Enabled (Default) / Disabled

### **Onboard LAN Option ROM**

This item enables/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.

Options: EFI Driver (Default) / Auto

**USB Support**

If Disabled, all USB devices will NOT be available until after OS boot. If Partial Initial, 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) / Partial Initial / Disabled

**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

**BIOS Flash protection**

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

Options: Enabled (Default) / Disabled

**Boot Success Beep**

When this item is set to Enabled, BIOS will let user know boot success with beep.

Options: Enabled (Default) / Disabled

**Boot Option #1/#2/#3**

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

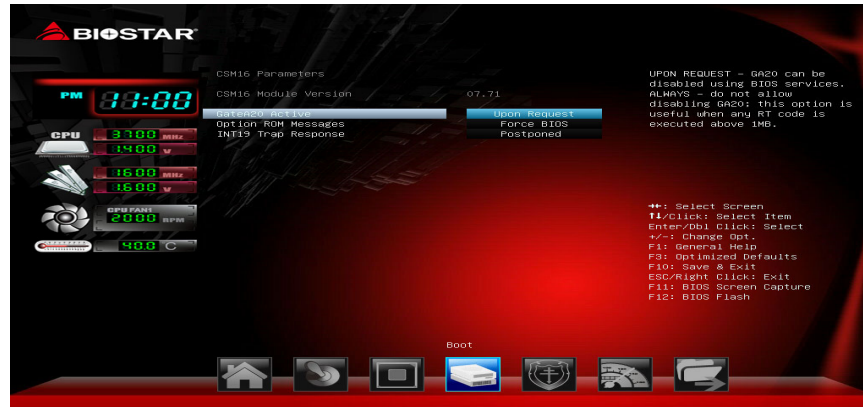
**CD/DVD ROM Drive BBS Priorities**

This item sets the order of the legacy devices in this group.

**Hard Drive BBS Priorities**

This item sets the order of the legacy devices in this group.

## CSM16 parameters



### GateA20 Active

Upon Request – FA20 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 sets the display mode for option ROM.

Options: Force BIOS (Default) / Keep Current

### INT19 Trap Response

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



## CSM parameters



### Launch CSM

This option controls if CSM will be launched.

Options: Enabled (Default) / Disabled

### Boot option filter

This option controls what devices system can boot to.

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

### Launch PXE OpROM policy

This item controls the execution of UEFI and Legacy PXE OpROM

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

### Launch Storage OpROM policy

This item controls the execution of UEFI and Legacy Storage OpROM

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

### Launch Video OpROM policy

This item controls the execution of UEFI and Legacy Video OpROM

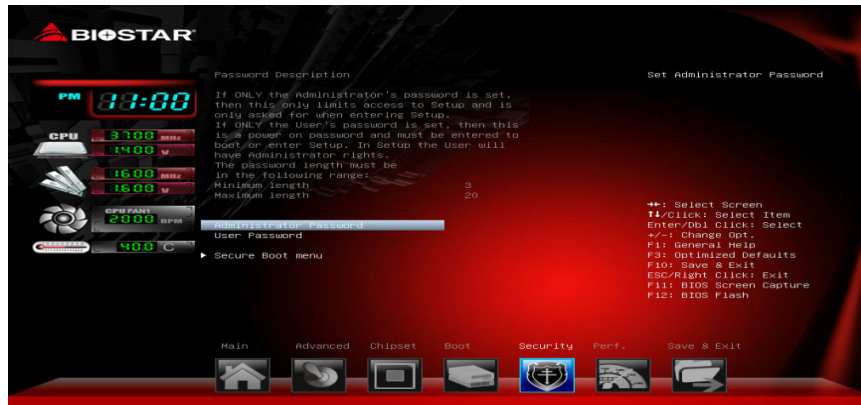
Options: Legacy only (Default) / UEFI only / Do not launch

### Other PCI device ROM priority

For PCI devices other than Network, Mass storage or Video defines which OpROM to launch

Options: Legacy OpROM (Default) / UEFI OpROM

## 5 Security Menu



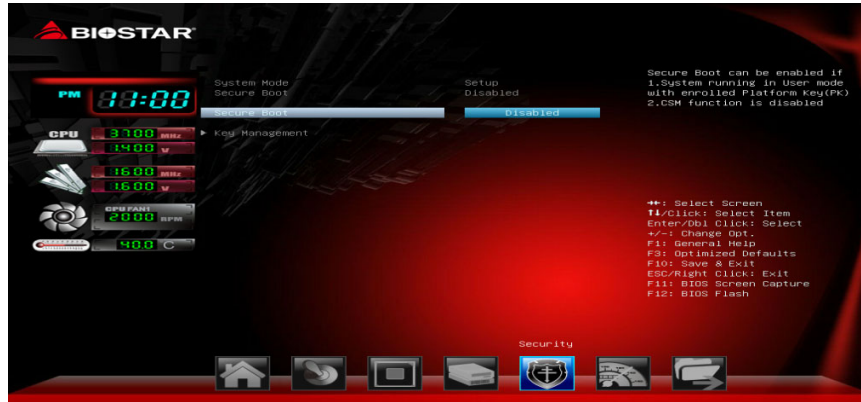
### Administrator Password

This item sets Administrator Password.

### User Password

This item sets User Password.

### Secure Boot Menu

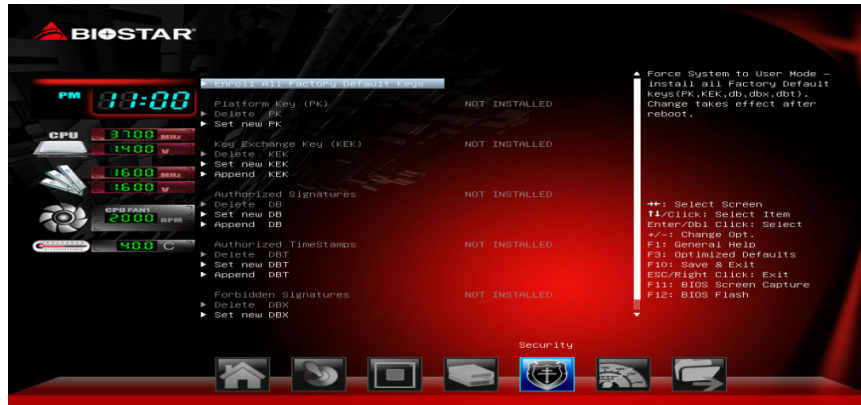


### Secure Boot

Secure Boot flow control. Secure Boot can be enabled only when 1. Platform Key (PK) is enrolled and Platform is operating in user mode and 2. CSM function is disabled in Setup. Options: Disabled (Default) / Enabled

*Note: The following items appear only when you set the Secure Boot function to [Enabled]*

## Key Management



### **Enroll All Factory Default Keys**

It allows you to immediately load/clear the default Security Boot keys, Platform key (PK), Key-exchange Key (KEK), Signature database (db), and Revoked Signatures (dbx). The Platform Key (PK) state will change from Unloaded mode to Loaded mode. The settings are applied after reboot or at the next reboot.

### **Platform Key (PK)**

Delete PK – Allows you to delete the PK file from your system.

Set new PK – Allows you set new PK file.

### **Key Exchange Key Database (KEK)**

Delete KEK – Allows you to delete the KEK file from your system.

Set new KEK – Allows you set new KEK file.

Append Var to KEK – Allows you append Var to KEK.

### **Authorized Signature Database (DB)**

Delete DB – Allows you to delete the DB file from your system.

Set new DB – Allows you set new DB file.

Append Var to DB – Allows you append Var to DB.

### **Authorized Timestamps Database (DBT)**

Delete DBT – Allows you to delete the DBT file from your system.

Set new DBT – Allows you set new DBT file.

Append Var to DBT – Allows you append Var to DBT.

### **Forbidden Signature Database (DBX)**

Delete DBX – Allows you to delete the DBX file from your system.

Set new DBX – Allows you set new DBK file.

Append Var to DBX – Allows you append Var to DBX.

## 6 Performance Menu

This submenu allows you to change voltage and clock of various devices. (However, we suggest you use the default setting. Changing the voltage and clock improperly may damage the device.)

### Notice

- 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



### CPU Clock

This item allows user to adjust CPU clock

Range: 100MHz-128Mhz

### IGD Clock Control

This item allows user to adjust IGD clock

Options: Auto (Default) / Enabled

*Note: The following items appear only when you set the IGD Clock Control item to [Enabled]*

### IGD Clock

Allow BIOS to Select IGD clock, Range 300MHz-2000MHz

### Memory Clock Mode

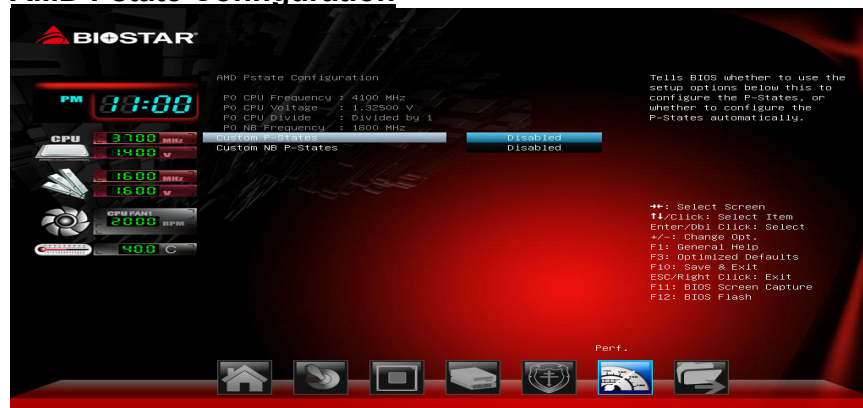
This item allows user to select the DRAM Frequency programming method. If Auto, the DRAM speed will be based on SPDs. If Manual, the DRAM speed specified will be programmed regardless of SPD. If AMP/XMP/XMP2, the DRAM speed specified will be refer memory profile.

Options: Auto (Default) / Manual / AMP / XMP1 / XMP2

*Note: The following items appear only when you set the **Memory Clock Mode** item to [Manual]*

**Memory Frequency:** DDR 800 / DDR3 1066 / DDR3 1333 / DDR3 1600 / DDR3 1866 / DDR3 2133 / DDR3 2400

### AMD Pstate Configuration



#### Custom P-States

This item will tell BIOS whether to use the step option below this configure the P-State, or whether to configure the P-States automatically.

Options: Disabled (Default) / Enabled

*Note: The following items appear only when you set the Custom P-State item to [Enabled]*

#### Core FID

This item sets the frequency to use for Core P-State selected. Value is saved in the \_PSS object.

Options: x16 1600MHz ~ x63 6300MHz

#### Core VID

This function allows you to adjust the voltage of Core.

### Core DID

This is the Core Divider.

Options: Divided by 1 (Default) / Divided by 2 / Divided by 4 / Divided by 8 / Divided by 16

### Custom NB P-States

The item tells BIOS whether to use the setup options below this to configure the NB P-States, or whether to configure the NB P-states automatically.

Options: Disabled (Default) / Enabled

*Note: The following items appear only when you set the Custom NB P-State item to [Enabled]*

### NB FID

This item sets the frequency to use for Core P-State selected. Value is saved in the \_PSS object.

Options: 400MHz ~ 3400MHz

## DRAM Timing Configuration



### 2TCMD

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

### CL

Options: Auto (Default) / 5~16 CLK

### TRCD

Options: Auto (Default) / 2~19 CLK

### TRP

Options: Auto (Default) / 5~19 CLK

**TRAS**

Options: Auto (Default) / 8~42 CLK

**TRC**

Options: Auto (Default) / 10~58 CLK

**TRFC**

Options: Auto (Default) / 90ns / 110ns / 160ns / 300ns / 350ns

**TWR**

Options: Auto (Default) / 5~8 / 10 / 12 / 14 / 16 CLK

**TWTR**

Options: Auto (Default) / 4~11 CLK

**TRRD**

Options: Auto (Default) / 1~9 CLK

**TRTP**

Options: Auto (Default) / 4~11 CLK

**APU-Core Voltage**

This item allows you to select APU-Core Voltage Control.

**APU-NB Voltage**

This item allows you to select APU-NB Voltage Control.

**DDR Memory Voltage**

This item allows you to select DDR Memory Voltage Control.

**PWM Core Load Line Control**

This item allows you to set PWM Core Load Line Control

Options: 0% (Default) / Disabled / -40% / -20% / +20% / +40% / +60% / +80%

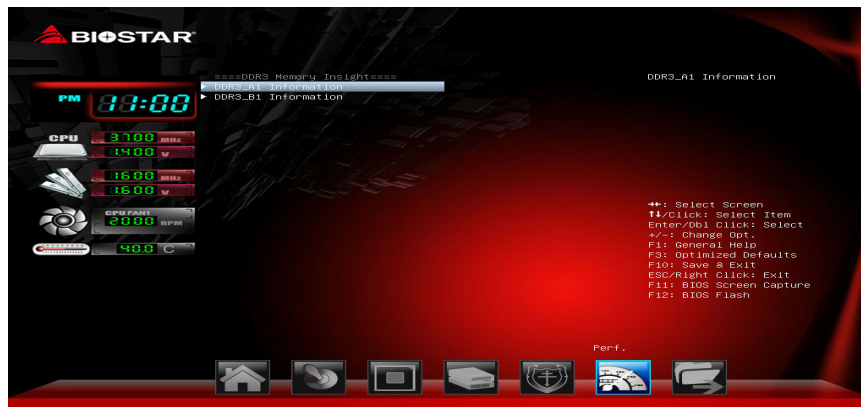
**PWM NB Load Line Control**

This item allows you to set PWM NB Load Line Control

Options: 0% (Default) / Disabled / -40% / -20% / +20% / +40% / +60% / +80%



## BIOSTAR Memory Insight



### DDR3\_A1/B1

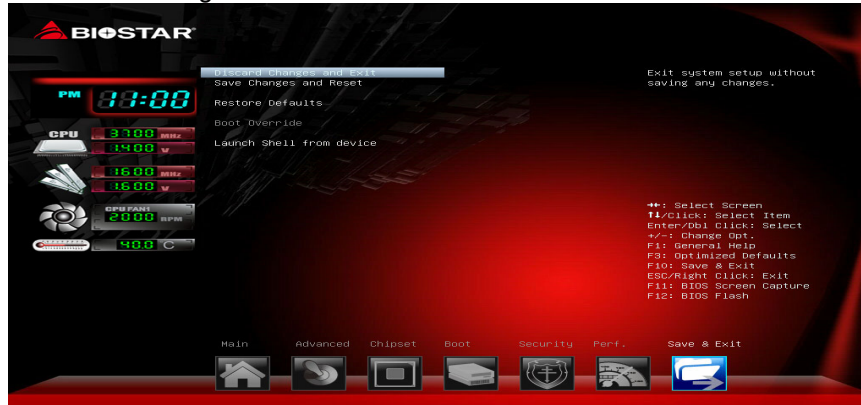
These items display SPD information of DDR3 memory.





## 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**

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

### **Launch Shell from device**

This item attempts to EFI Shell application (Shellx64.efi) from one of the available devices.