

2.10.1 12 x SATA (front bay), and 4 x SATA (internal bay) storage device configuration and cabling



- The illustrations in this section are for reference only and may vary between models.
- The 4 x SATA (internal bay) is only for the Mid storage bays SKU.

Backplane connector	Cable	Connect to
MCIO1	MCIO to MCIO	MCIO1 on motherboard
MCIO2	MCIO to MCIO	MCIO2 on motherboard
MCIO3	MCIO to MCIO	MCIO3 on motherboard
MCIO4	MCIO to MCIO	MCIO4 on motherboard
MCIO5	MCIO to MCIO	MCIO5 on motherboard
MCIO6	MCIO to MCIO	MCIO6 on motherboard
SLIMSAS1	MCIO to 2 x SlimSAS	MCIO8 on motherboard
SLIMSAS2	MCIO to 2 x SlimSAS	MCIO8 on motherboard
SLIMSAS3	MCIO to 2 x SlimSAS	MCIO7 on motherboard

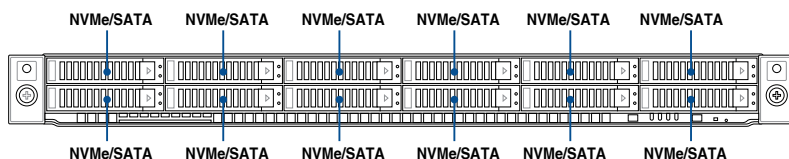
Internal storage bay backplane connector	Cable	Connect to
SLIMSAS1	SlimSAS to 2 x SlimSAS	MCIO7 on motherboard

1. Install the storage devices into the supported bays.

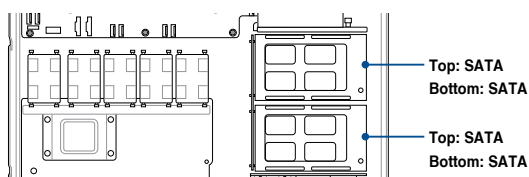


Refer to section **Storage Devices** for details on how to install storage devices.

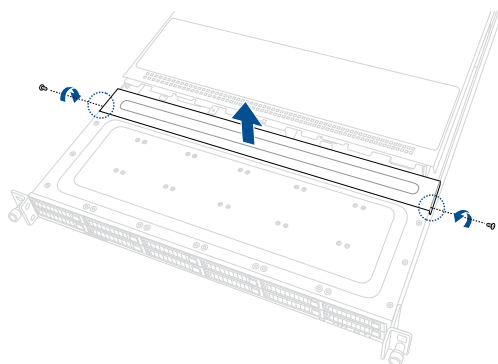
Front bay



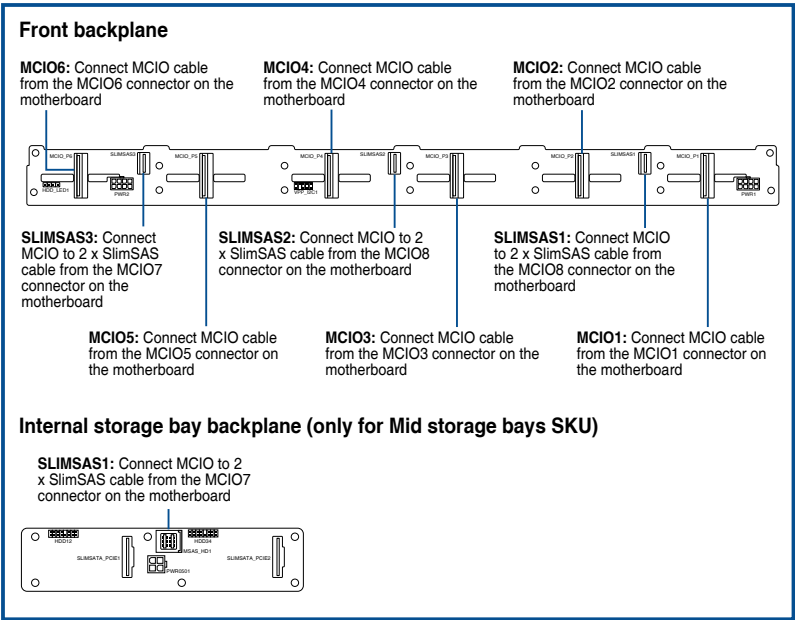
Internal bay (only for Mid storage bays SKU)



2. Remove the two (2) screws of the backplane cover on both sides of the chassis with a Phillips screwdriver (A), then remove the backplane cover.



3. Connect the MCIO cables and MCIO to 2 x SlimSAS cables to the motherboard and the front backplane.
4. Connect the MCIO to 2 x SlimSAS cable to the motherboard and the internal storage bay backplane.



2.10.2 12 x NVMe (front bay), and 4 x NVMe (internal bay) storage device configuration and cabling



- The illustrations in this section are for reference only and may vary between models.
- The 4 x NVMe (internal bay) is only for the Mid storage bays SKU.

Backplane connector	Cable	Connect to
MCIO1	MCIO to MCIO	MCIO1 on motherboard
MCIO2	MCIO to MCIO	MCIO2 on motherboard
MCIO3	MCIO to MCIO	MCIO3 on motherboard
MCIO4	MCIO to MCIO	MCIO4 on motherboard
MCIO5	MCIO to MCIO	MCIO5 on motherboard
MCIO6	MCIO to MCIO	MCIO6 on motherboard

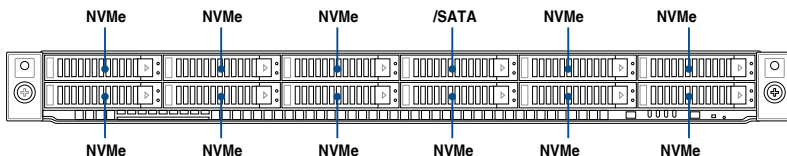
Internal storage bay backplane connector	Cable	Connect to
MCIO_P1	MCIO to MCIO	MCIO7 on motherboard
MCIO_P2	MCIO to MCIO	MCIO8 on motherboard

1. Install the storage devices into the supported bays.

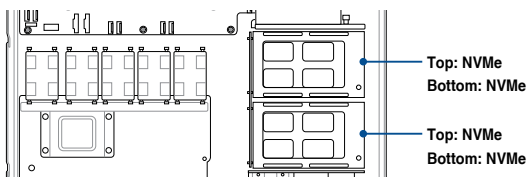


Refer to section **Storage Devices** for details on how to install storage devices.

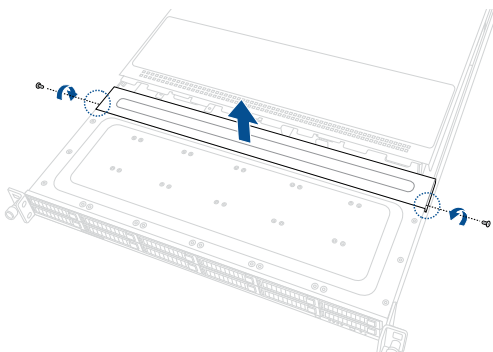
Front bay



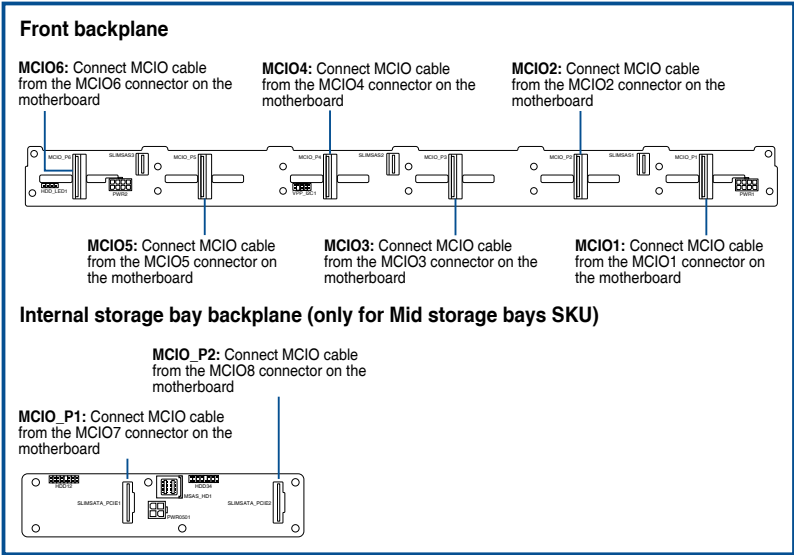
Internal bay (only for Mid storage bays SKU)



2. Remove the two (2) screws of the backplane cover on both sides of the chassis with a Phillips screwdriver (A), then remove the backplane cover.



3. Connect the MCIO cables to the motherboard and the front backplane.
4. Connect the MCIO cables to the motherboard and the internal storage bay backplane.



2.11 Motherboard

2.11.1 Removing the motherboard

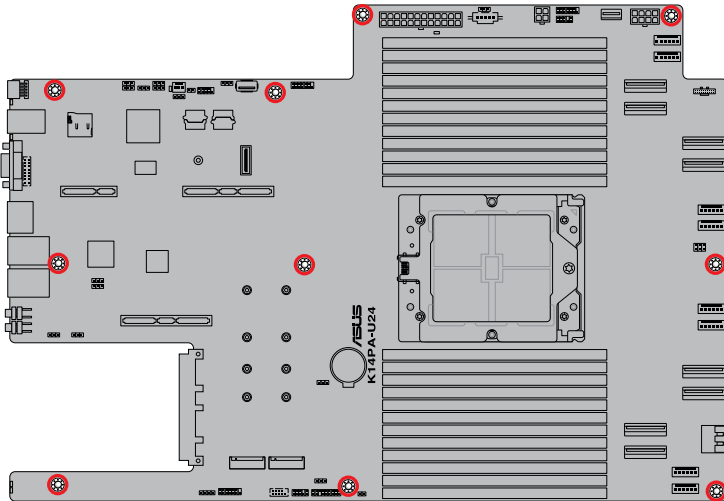
To remove the system motherboard:

1. Disconnect the cables from the motherboard and remove any installed components on the motherboard.



Take a photo or make a note of which components are removed, which cables are disconnected, and which connectors the cables were connected to.

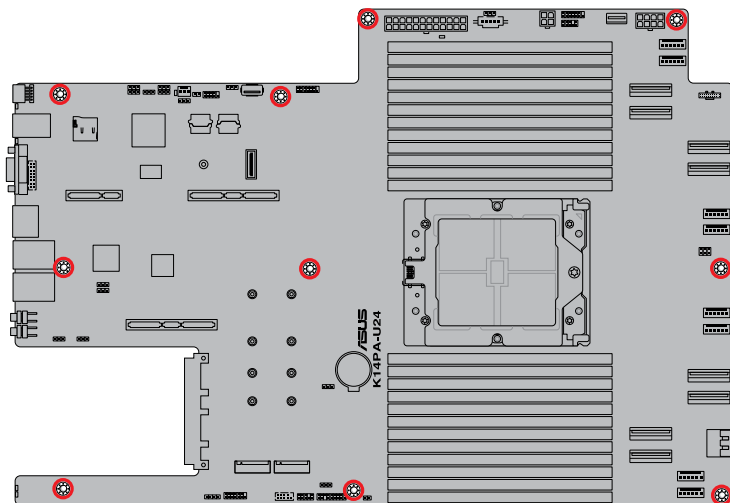
2. Remove the screws, then remove the motherboard.



2.11.2 Installing the motherboard

To install the system motherboard:

1. Place the motherboard into the chassis and ensure the screw holes on the motherboard are aligned to the screw holes in the chassis, then secure the motherboard to the chassis using the screws removed previously.



2. Reinstall removed components and reconnect the cables to the motherboard.

2.12 Removable/optional components

This section describes on how to replace previously installed system components or install optional components into the system.



Ensure that the system is turned off before removing any components.

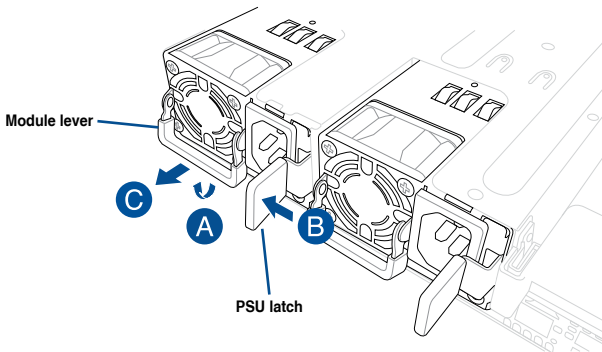


You may need to remove previously installed component or factory shipped components when installing optional components.

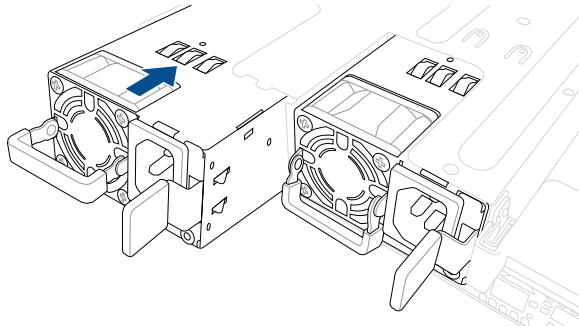
2.12.1 Redundant power supply module

To replace a failed redundant power supply module:

1. Lift up the power supply module lever (A), then hold the power supply module lever and press the PSU latch (B) to pull the power supply module out of the system chassis (C).



2. Prepare the replacement power supply module.
3. Insert the replacement power supply module into the chassis then push it inwards until the latch locks into place.





- The system automatically combines the two power supply modules as a single one. The combined output power varies with input voltages. Refer to the table below for details.

1200W

Input Voltage	Max. Output Power (Watt) per PSU
100-127 Vac, 10.0 A, 50-60 Hz	800 W
200-240 Vac, 8.0 A, 50-60 Hz	1200 W
240 Vac, 6.0 A, 50-60 Hz	1200 W

1600W

Input Voltage	Max. Output Power (Watt) per PSU
100-127 Vac, 9.4 A, 50-60 Hz	1000 W
200-240 Vac, 4.72 A, 50-60 Hz	1600 W
240 Vac, 4.6 A, 50-60 Hz	1600 W

- To enable the hot-swap feature (redundant mode), keep the total power consumption of the system under the maximum output power of an individual power supply module.

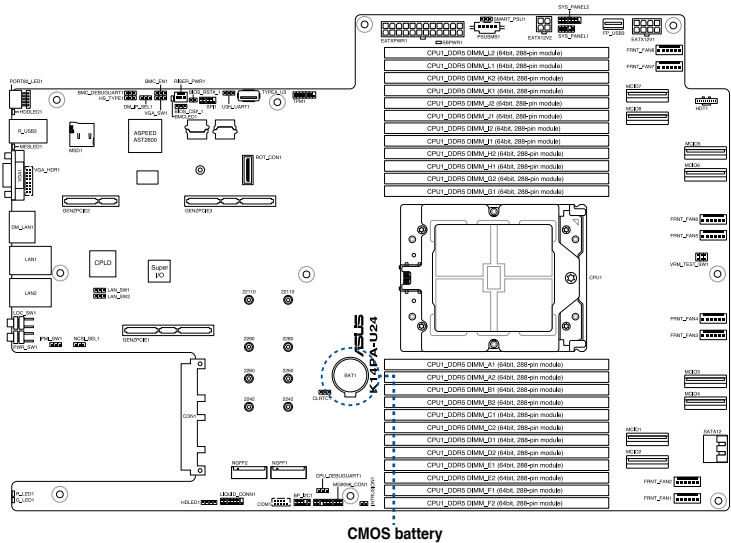


- Always use PSUs with the same watt and power rating. Combining PSUs with different wattages (e.g., 1 x 1200 W + 1 x 1600 W) may yield unstable results and potential damage to your system.
- For steady power input, use only the power cables that come with the server system package.

2.12.2 CMOS battery

To replace a CMOS battery:

1. Locate and remove the CMOS battery.



2. Place the replacement CMOS battery into the battery compartment.

2.13 Rail Kit Options

This server system supports the rail kit options listed below. For more information on rail kit installation, refer to corresponding documentation on the ASUS support site or on the official product site for this server system.



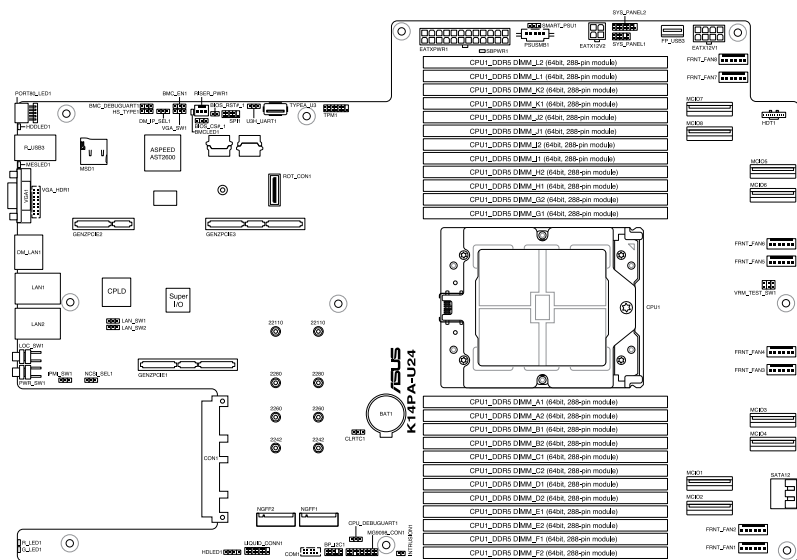
-
- We strongly recommend that at least two able-bodied persons perform the installation of the rail kit.
 - We recommend the use of an appropriate lifting tool or device, if necessary.
-
- Friction rail kit
 - 1m half extension ball bearing rail kit
 - 1.2m half extension ball bearing rail kit
 - 1U full extension ball bearing rail kit

Motherboard Information

3

This chapter includes the motherboard layout and brief descriptions of the jumpers and internal connectors.

3.1 Motherboard layout



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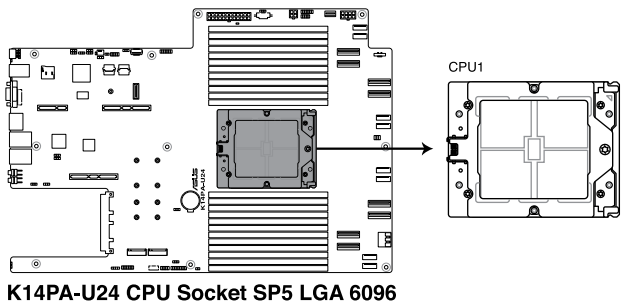
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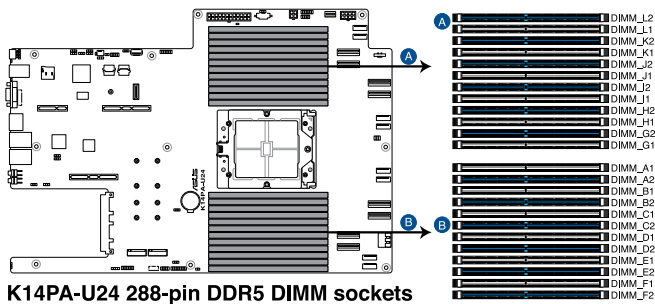
3.2 Central Processing Unit (CPU)

The motherboard comes with a surface mount SP5 socket designed for the AMD EPYC™ 7004 Series Family processors.



3.3 Dual Inline Memory Module (DIMM)

The motherboard comes with 24 Double Data Rate 5 (DDR5) Dual Inline Memory Modules (DIMM) sockets.



3.4 Jumpers

1. Clear RTC RAM (3-pin CLRTC1)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

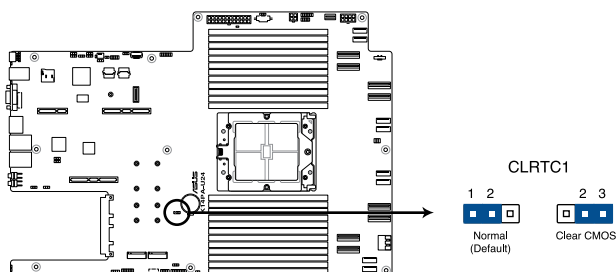
1. Turn OFF the computer and unplug the power cord.
2. Move the jumper cap from pins 1–2 (default) to pins 2–3. Keep the cap on pins 2–3 for about 5–10 seconds, then move the cap back to pins 1–2.
3. Plug the power cord and turn ON the computer.
4. Hold down the key during the boot process and enter BIOS setup to re-enter data.



Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!



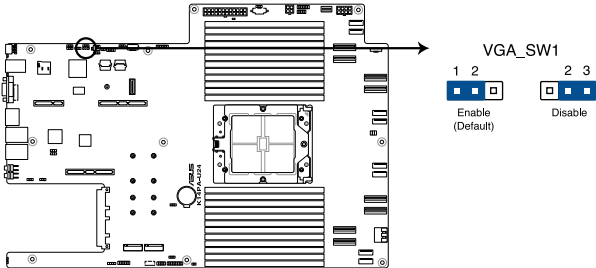
If the steps above do not help, remove the onboard battery and move the jumper again to clear the CMOS RTC RAM data. After the CMOS clearance, reinstall the battery.



K14PA-U24 Clear RTC RAM

2. VGA controller setting (3-pin VGA_SW1)

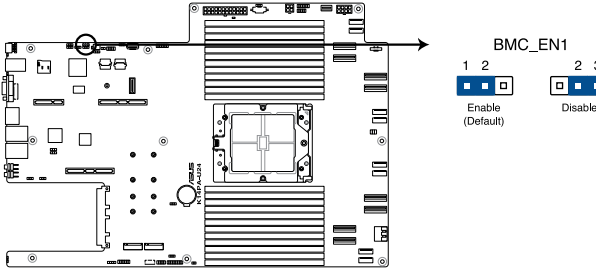
This jumper allows you to enable or disable the onboard VGA controller. Set to pins 1–2 to activate the VGA feature.



K14PA-U24 VGA setting

3. Baseboard Management Controller setting (3-pin BMC_EN1)

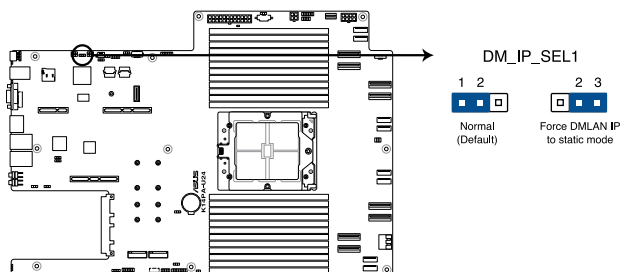
This jumper allows you to enable (default) or disable on-board BMC. Ensure to set this BMC jumper to enabled to avoid system fan control and hardware monitor error.



K14PA-U24 BMC setting

4. DMLAN setting (3-pin DM_IP_SEL1)

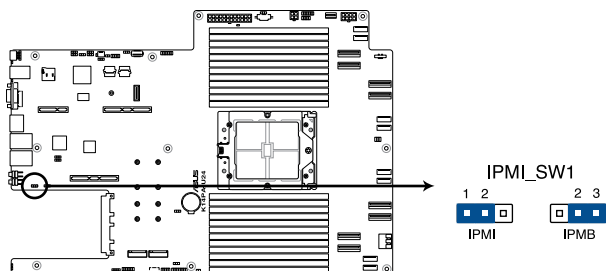
This jumper allows you to select the DMLAN setting. Set to pins 2-3 to force the DMLAN IP to static mode (IP=10.10.10.10, submask=255.255.255.0).



K14PA-U24 DM_IP_SEL1 setting

5. IPMI SW setting (3-pin IPMI_SW1)

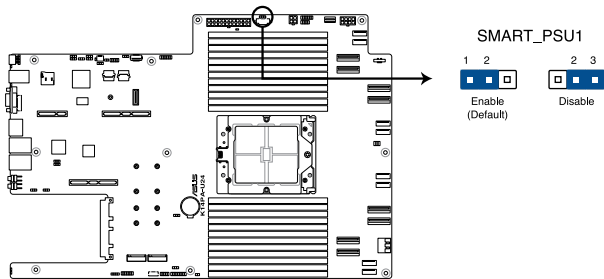
This jumper allows you to select which protocol in the GPU sensor to function.



K14PA-U24 IPMI_SW1 setting

6. Smart Ride Through (SmaRT) setting (3-pin SMART_PSU1)

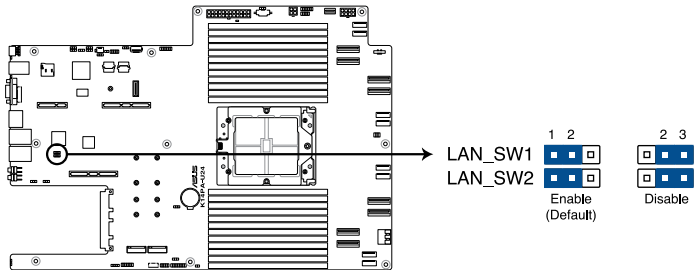
This jumper allows you to enable or disable the Smart Ride Through (SmaRT) function. This feature is enabled by default. Set to pins 2-3 to disable it. When enabled, SmaRT allows uninterrupted operation of the system during an AC loss event.



K14PA-U24 Smart Ride Through setting

7. LAN Controller settings (3-pin LAN_SW1-2)

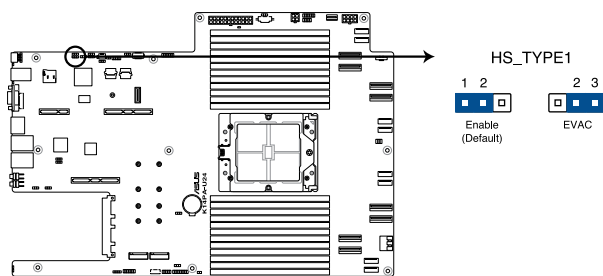
These jumpers allow you to enable or disable the onboard LAN_SW1 or LAN_SW2. Set to pins 1-2 to activate the Gigabit LAN feature.



K14PA-U24 LAN setting

8. Heatsink Type setting (3-pin HS_TYPE1)

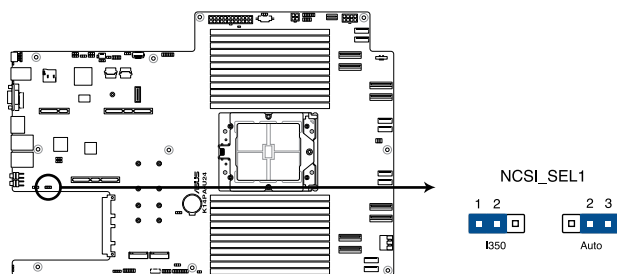
This jumper should be set according to the type of heatsink installed.



K14PA-U24 HS_TYPE1 setting

9. NCSI Device setting (3-pin NCSI_SEL1)

This jumper allows you to select the NCSI device.

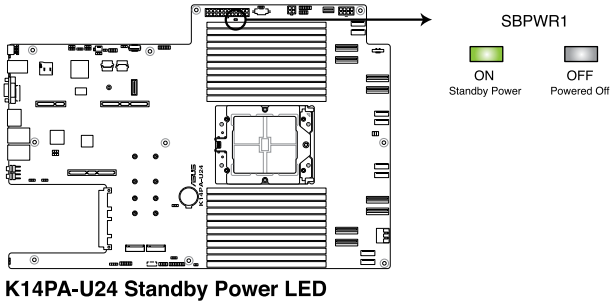


K14PA-U24 NCSI_SEL1 setting

3.5 Internal LEDs

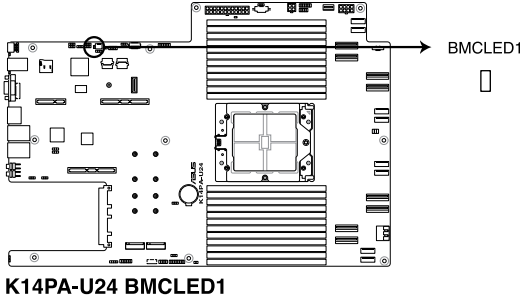
1. **Standby Power LED (SBPWR1)**

The motherboard comes with a standby power LED. The green LED lights up to indicate that the system is ON, in sleep mode, or in soft-off mode. This is a reminder that you should shut down the system and unplug the power cable before removing or plugging in any motherboard component. The illustration below shows the location of the onboard LED.



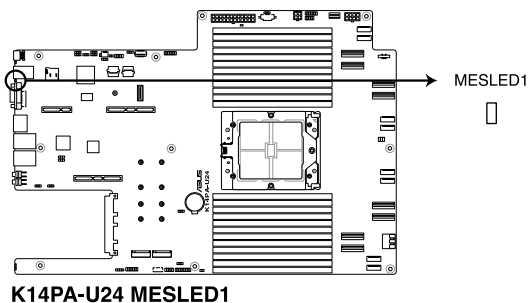
2. **Baseboard Management Controller LED (BMCLED1)**

The BMC LED lights up to indicate that the on-board BMC is functional.



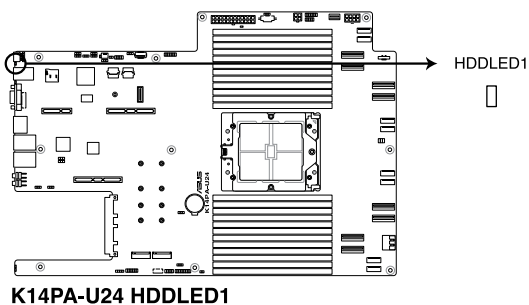
3. Message LED (MESLED1)

This onboard LED lights up to red when there is a BMC event log is generated.



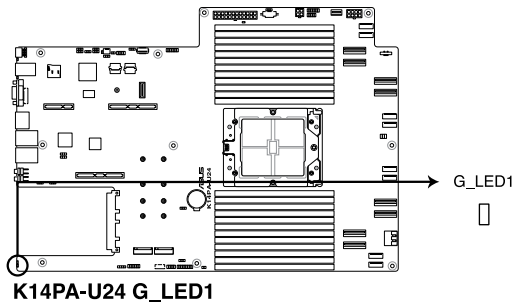
4. Storage Device Activity LED (HDDLED1)

This LED is for the storage devices connected to the onboard SATA, or SATA/SAS add-on card. The read or write activities of any device connected to the onboard SATA, or SATA/SAS add-on card causes the rear panel LED to light up.



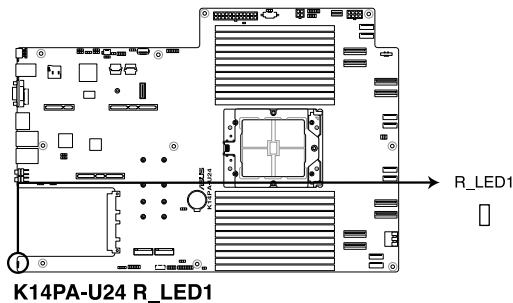
5. **OCP 3.0 Operation Normal LED (G_LED1)**

The OCP 3.0 operation normal LED lights up to indicate that OCP 3.0 is functional.



6. **OCP 3.0 Power Fail LED (R_LED1)**

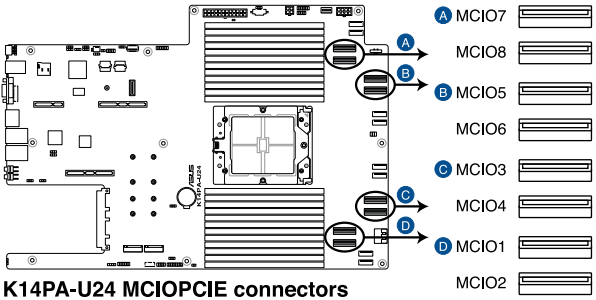
The OCP 3.0 power fail LED lights up to indicate that OCP 3.0 has encountered a power fail error.



3.6 Internal connectors

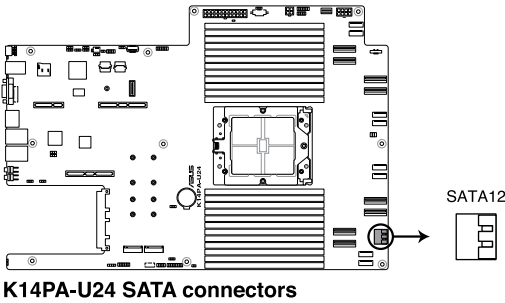
1. **MCIOPCIE connectors (MCIOPCIE1-3)**

Connects the PCIe signal to the riser card or NVMe port on the backplane.



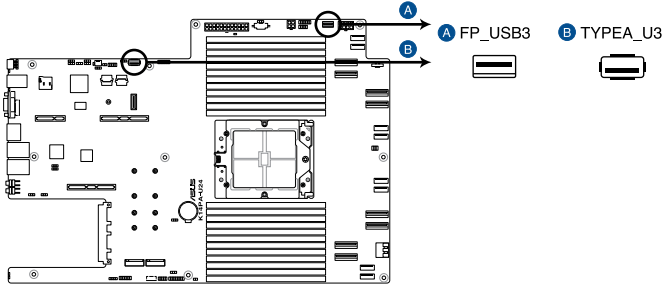
2. **SATA connector (SATA12)**

Connects SATA signal to backplane to support SATA drives.



3. USB 3.2 Gen 1 connector (FP_USB3; TYPEA_U3)

This connector allows you to connect a USB 3.2 Gen 1 module for additional USB 3.2 Gen 1 ports on the front panel. The USB 3.2 Gen 1 connector provides data transfer speeds of up to 10 Gb/s. The Type-A connector allows you to directly connect a USB flash drive.



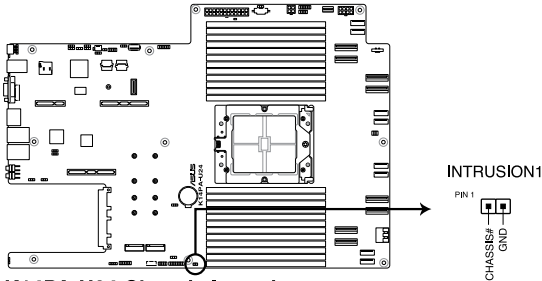
K14PA-U24 USB 3.2 Gen 1 connectors



The USB port module is purchased separately.

4. Chassis Intrusion (2-pin INTRUSION1)

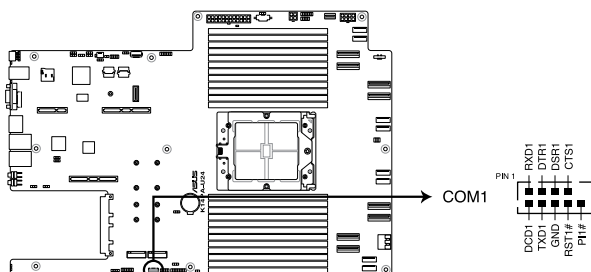
These leads are for the intrusion detection feature for chassis with intrusion sensor or microswitch. When you remove any chassis component, the sensor triggers and sends a high level signal to these leads to record a chassis intrusion event. The default setting is to short the CHASSIS# and the GND pin by a jumper cap to disable the function.



K14PA-U24 Chassis Intrusion connector

5. Serial Port connector (10-1 pin COM1)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.



K14PA-U24 Serial port connector



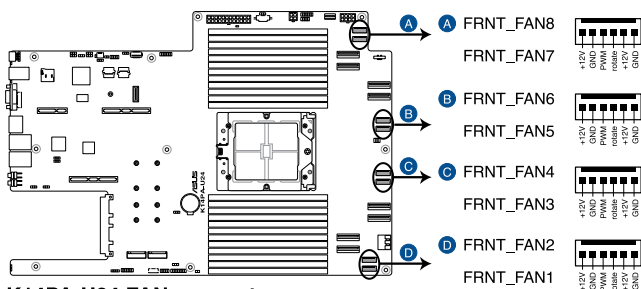
The COM module is purchased separately.

6. System Fan connectors (6-pin FRNT_FAN1-8)

The fan connectors support cooling fans of 0.8A–1.0A (12 W max.) or a total of 6.4 A–8.0 A (96 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.



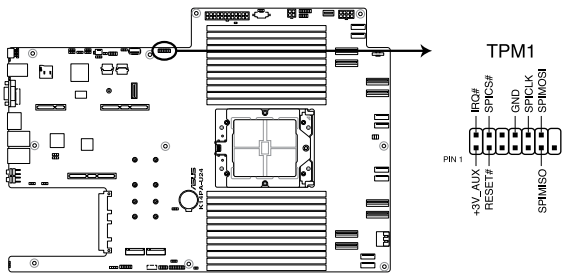
DO NOT forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! DO NOT place jumper caps on the fan connectors!



K14PA-U24 Fan connectors

7. **TPM connector (14-1 pin TPM1)**

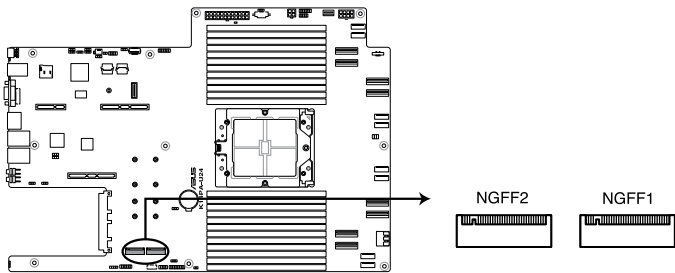
This connector supports a Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.



K14PA-U24 TPM connectors

8. **M.2 (NGFF) connector (NGFF1-2)**

These connectors allow you to install M.2 devices.



K14PA-U24 NGFF connectors



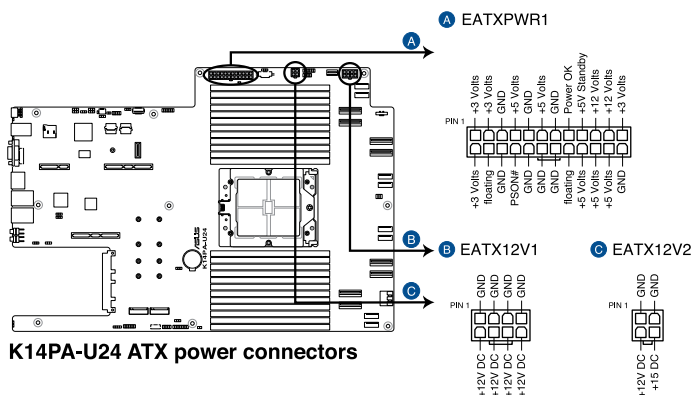
This connector supports type 2242 / 2260 / 2280 / 22110 devices on both PCIe and SATA interface.



The M.2 (NGFF) device is purchased separately

9. Power connectors (24-pin EATXPWR; 8-pin EATX12V1; 4-pin EATX12V2)

These connectors are for the power supply plugs that connects to the power board. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.



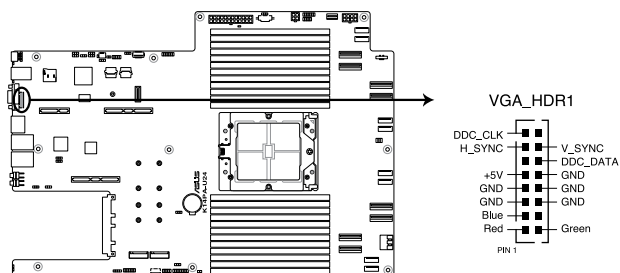
K14PA-U24 ATX power connectors



DO NOT connect VGA cards to these connectors. Doing so may cause system boot errors and permanent damage to your motherboard or device.

10. VGA connector (16-pin VGA_HDR1)

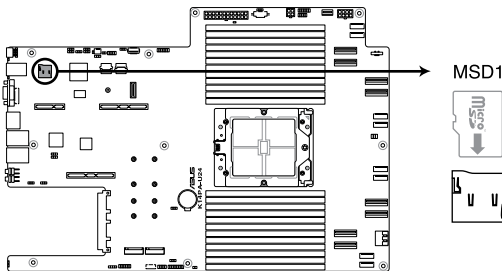
This connector outputs a VGA signal to a connected display device.



K14PA-U24 Internal VGA connector

11. **microSD Card slot (MSD1)**

Your motherboard supports SD Memory Card v2.00 (SDHC) / v3.00 (SDXC).



K14PA-U24 microSD card slot



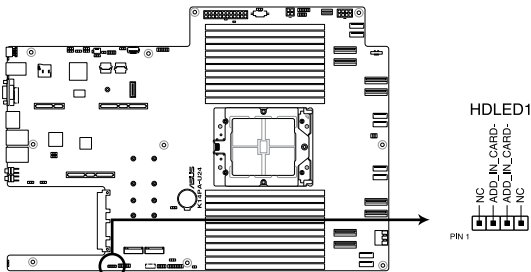
Disconnect all power (including redundant PSUs) from the existing system before you add or remove a Memory Card, then reboot the system to access the Memory Card.



Some memory cards may not be compatible with your motherboard. Ensure that you use only compatible memory cards to prevent loss of data, damage to your device, or memory card, or both.

12. **Storage Device Activity LED connector (4-pin HDLED1)**

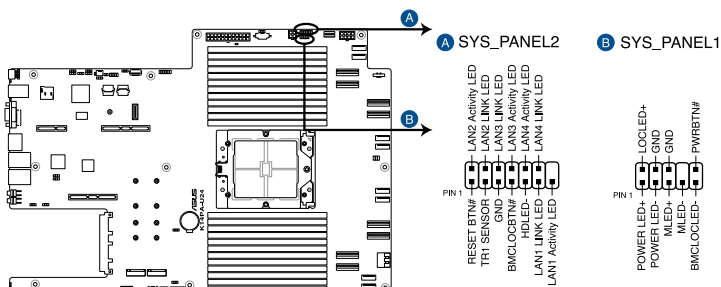
This LED connector is for the storage add-on card cable connected to the SATA or SAS add-on card. The read or write activities of any device connected to the SATA or SAS add-on card causes the front panel LED to light up.



K14PA-U24 Storage device activity LED connector

13. System Panel connector (10-1 pin SYS_PANEL1; 14-1 pin SYS_PANEL2)

This connector supports several chassis-mounted functions.



K14PA-U24 System panel connectors

- **System power LED (POWERLED)**

This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

- **Message LED (2-pin MLED)**

This 2-pin connector is for the message LED cable that connects to the front message LED. The message LED is controlled by the BMC to indicate an abnormal event occurrence.

- **Locator LED connector (BMCLOCLED, LOCLED)**

This connector allows you to connect the Locator LED. The Location LED helps visually locate and identify the server in error on a server rack.

- **Power Button/Soft-off Button connector (PWRBTN)**

The 3-1 pin connector allows you to connect the system power button. Press the power button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).

- **LAN activity LED connector (LAN1_LED, LAN2_LED, LAN3_LED, LAN4_LED)**

This 2-pin connector allows you to connect the Gigabit LAN Activity LED.

- **Reset button connector (RESET)**

This connector allows you to connect the chassis-mounted reset button. Press the reset button to reboot the system.

- **TR1 Sensor connector (TR1 SENSOR)**

This connector allows detection of the environmental temperature of the front panel.

- **Locator button connector (BMCLOCBTN#)**

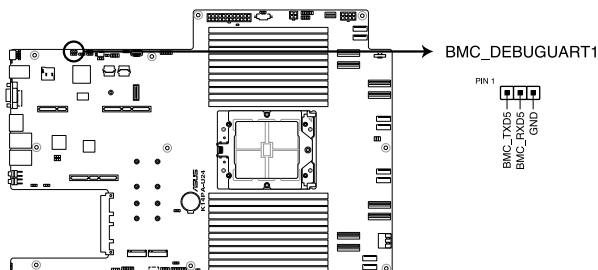
This connector allows you to connect the Locator button. Press the button to light up the Locator LED.

- **Storage Device Activity LED connector (HDLED)**

This connector allows you to connect the Storage Device Activity LED. The Storage Device Activity LED lights up or blinks when data is read from or written to the storage device or storage device add-on card.

14. BMC Debug UART connector (3-pin BMC_DEBUGUART1)

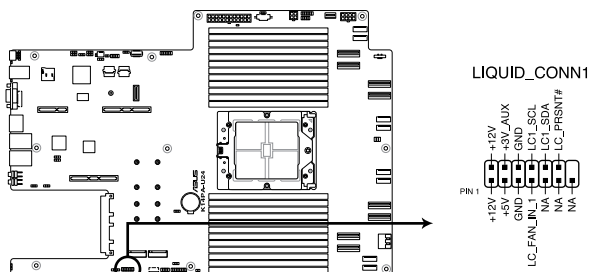
This connector is used for reading the BMC UART Debug log.



K14PA-U24 BMC_DEBUGUART1 connector

15. Liquid connector (14-1 pin LIQUID_CONN1)

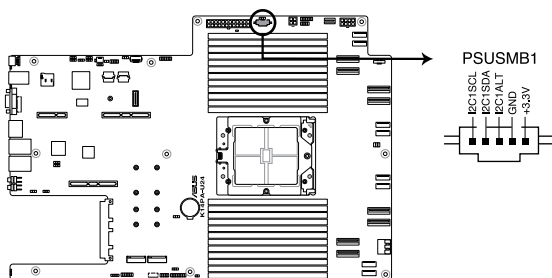
This connector is used for detecting the pump speed of the water cooling system.



K14PA-U24 LIQUID_CONN1 connector

16. Power Supply SMBus connector (5-pin PSUSMB1)

This connector allows you to connect SMBus (System Management Bus) to the PSU (power supply unit) to read PSU information. Devices communicate with an SMBus host and/or other SMBus devices using the SMBus interface.



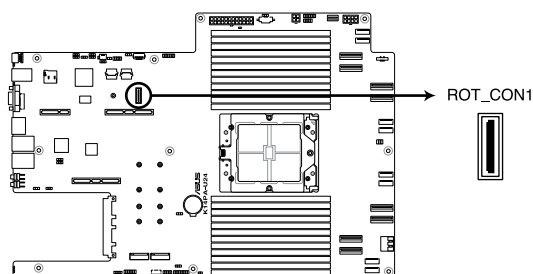
K14PA-U24 Power supply SMBus connector



This connector functions only when you enable ASUS ASMB11.

17. Platform Firmware Resilience (PFR) module connector (ROT_CON)

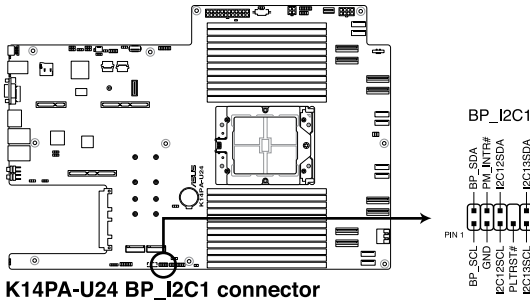
This connector allows you to connect a PFR module to enable platform firmware resilience functions.



K14PA-U24 ROT_CON1 connector

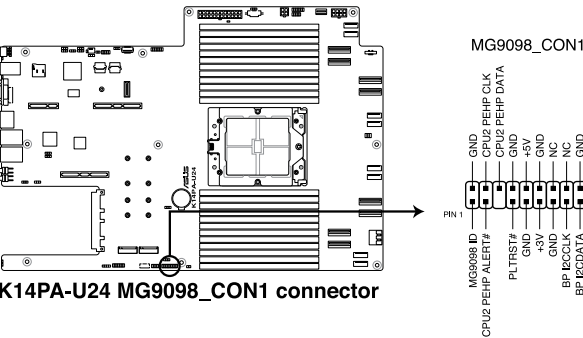
18. Front BP SMBus Protocol connector (10-1 pin BP_I2C1)

This connector is used for sensor readings.



19. Internal BP SMBus Protocol connector (18-1 MG9098_CON1)

This connector is used for sensor readings.



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

BIOS Setup

4

This chapter tells how to change the system settings through the BIOS Setup menus. Detailed descriptions of the BIOS parameters are also provided.

4.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup:

1. **ASUS CrashFree BIOS 3**

To recover the BIOS using a bootable USB flash disk drive when the BIOS file fails or gets corrupted.

2. **ASUS EzFlash**

Updates the BIOS using a USB flash disk.

Refer to the corresponding sections for details on these utilities.

4.1.1 **ASUS CrashFree BIOS 3 utility**

The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using a USB flash drive that contains the updated BIOS file.



Prepare a USB flash drive containing the updated motherboard BIOS before using this utility.

Recovering the BIOS from a USB flash drive

To recover the BIOS from a USB flash drive:

1. Insert the USB flash drive with the original or updated BIOS file to one USB port on the system.
2. The utility will automatically recover the BIOS. It resets the system when the BIOS recovery finished.



DO NOT shut down or reset the system while recovering the BIOS! Doing so would cause system boot failure!



The recovered BIOS may not be the latest BIOS version for this motherboard. Visit the ASUS website at www.asus.com to download the latest BIOS file.

4.1.2 ASUS EZ Flash Utility

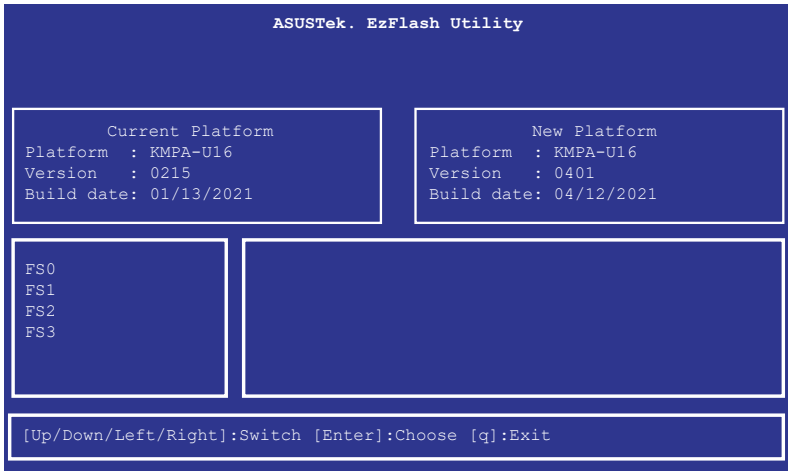
The ASUS EZ Flash Utility feature allows you to update the BIOS without having to use a DOS-based utility.



Before you start using this utility, download the latest BIOS from the ASUS website at www.asus.com.

To update the BIOS using EZ Flash Utility:

1. Insert the USB flash disk that contains the latest BIOS file into the USB port.
2. Enter the BIOS setup program. Go to the **Tool** menu then select **Start ASUS EzFlash**. Press <Enter>.



3. Press Left arrow key to switch to the **Drive** field.
4. Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, then press <Enter>.
5. Press Right arrow key to switch to the **Folder Info** field.
6. Press the Up/Down arrow keys to find the BIOS file, and then press <Enter> to perform the BIOS update process. Reboot the system when the update process is done.



- This function can support devices such as a USB flash disk with FAT 32/16 format and single partition only.
- DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure!



Ensure to load the BIOS default settings to ensure system compatibility and stability. Press <F5> and select **Yes** to load the BIOS default settings.

4.2 BIOS setup program

This motherboard supports a programmable firmware chip that you can update using the provided utility described in section **4.1 Managing and updating your BIOS**.

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup.” This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the firmware chip.

The firmware chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press during the Power-On Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

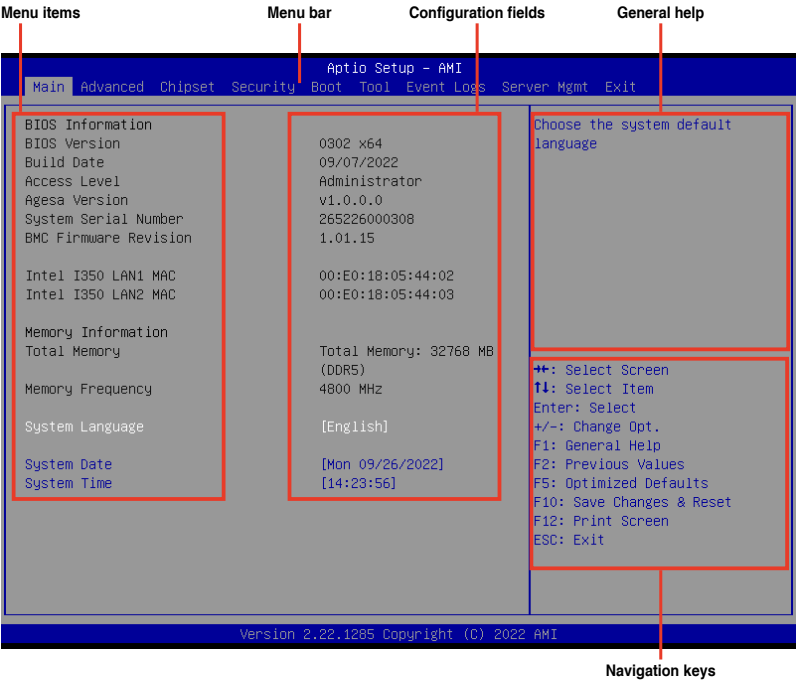
If you wish to enter Setup after POST, restart the system by pressing <Ctrl>+<Alt>+<Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.



-
- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Press <F5> and select **Yes** to load the BIOS default settings.
 - The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
 - Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard.
-

4.2.1 BIOS menu screen



4.2.2 Menu bar

The menu bar on top of the screen has the following main items:

- | | |
|--------------------|---|
| Main | For changing the basic system configuration |
| Advanced | For changing the advanced system settings |
| Chipset | For changing the chipset settings |
| Security | For changing the security settings |
| Boot | For changing the system boot configuration |
| Tool | For configuring options for special functions |
| Event Logs | For changing the event log settings |
| Server Mgmt | For changing the Server Mgmt settings |
| Exit | For selecting the exit options |

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

4.2.3 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting **Main** shows the Main menu items.

The other items (such as Advanced) on the menu bar have their respective menu items.

4.2.4 Submenu items

A solid triangle before each item on any menu screen means that the item has a submenu.

To display the submenu, select the item then press <Enter>.

4.2.5 Navigation keys

At the bottom right corner of a menu screen are the navigation keys for the BIOS setup program. Use the navigation keys to select items in the menu and change the settings.

4.2.6 General help

At the top right corner of the menu screen is a brief description of the selected item.

4.2.7 Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it and press <Enter> to display a list of options.

4.2.8 Pop-up window

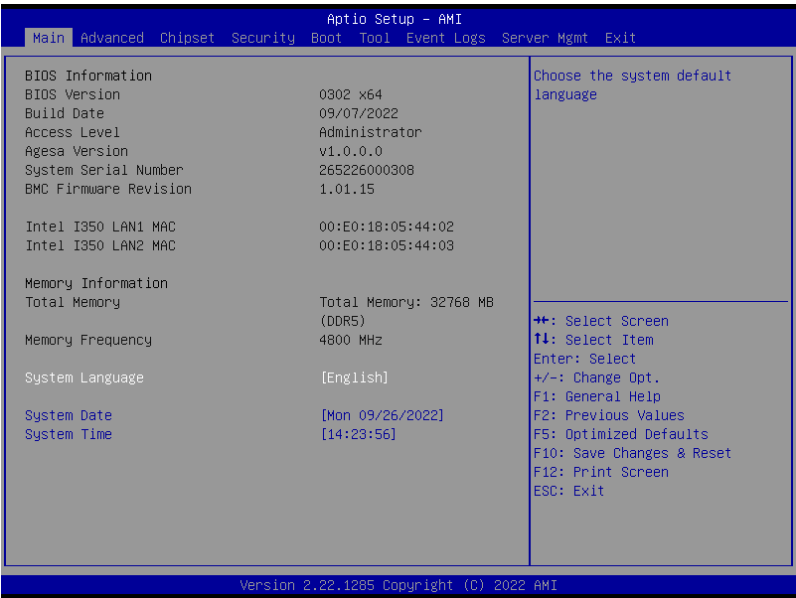
Select a menu item and press <Enter> to display a pop-up window with the configuration options for that item.

4.2.9 Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up / Down arrow keys or <Page Up> / <Page Down> keys to display the other items on the screen.

4.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears. The Main menu provides you an overview of the basic system information, and allows you to set the system date, time, and language settings.



System Language [English]

Allows you to select the system default language.

System Date [Day xx/xx/xxxx]

Allows you to set the system date.

System Time [xx:xx:xx]

Allows you to set the system time.

4.4 Performance Tuning menu

The Performance Tuning menu items allow you to change performance related settings for different scenarios.

Aptio Setup - AMI		
Main	Performance Tuning	Advanced Chipset Security Boot Tool Event Logs Server Mgmt
Optimized Performance Setting	[Default]	Dynamically adjusts the frequency of all CPU cores
Core Optimizer	[Disabled]	based on their current utilization, delivering better performance per watt for improved system energy
Engine Boost	[Disabled]	
Overclocking	[Disabled]	
Power Balancer	[Disabled]	

Optimized Performance Setting [Default]

Allows you to select performance settings for different scenarios.

- [Default] Default settings.
- [By Benchmark] Optimize for different kinds of benchmarks. Select this option, then select a benchmark type from the >> list.
- [By Workload] Optimize for different kinds of workloads. Select this option, then select a workload type from the >> list.



This function will reset some BIOS settings that you have changed back to their default values. Please check your BIOS settings again.



The following item appears only when **Power Balancer** is set to **[Disabled]**, or if Optimized Performance Setting is set to **[Default]** or **[By Benchmark]**.

Core Optimizer [Disabled]

Allows you to keep the processor operating at the turbo highest frequency for the maximum performance.

Configuration options: [Disabled] [Auto] [Manual]



The following item appears only when you set **Core Optimizer** to **[Manual]**.

CPU Max frequency [XXXX]

The default value for this option will be the maximum supported frequency of the CPU installed and may vary between different CPUs.



The following item appears only when **Optimized Performance Setting** is set to **[Default]** or **[By Benchmark]**.

Engine Boost [Disabled]

Enable this item to boost the CPU's frequency. Recommended operation at an ambient temperature of 25°C or below for optimized performance.

Configuration options: [Disabled] [Normal] [Aggressive]



Operate with an ambient temperature of 25°C or lower for optimized performance.

Overclocking [Disabled]

Enable this item to increase the CPU's clock. Please use an external PCIe storage controller for your hard drives when enabling this feature.
Configuration options: [Disabled] [Enabled]



Please note that overclocking might cause component damage or system crashes, which may reduce the lifespan of the system and the CPU. Use this tool at your own risk.



The following item appears only when **Core Optimizer** is set to **[Disabled]**, or if **Optimized Performance Setting** is set to **[Default]** or **[By Benchmark]**.

Power Balancer [Disabled]

Allows you to dynamically adjust the frequency of all CPU cores based on their current utilization, delivering better performance per watt for improved system energy efficiency.
Configuration options: [Disabled] [Enabled by ACC]



When setting **Power Balancer** to **[Enabled by ACC]**, make sure that you have the latest ASUS Control Center software installed to support Power Balancer. Please see below for recommended software versions:
- **ACC**: 1.4.3.5 version or above.



The following item appears only when **Power Balancer** is set to **[Enabled by ACC]**.

Policy [Auto]

Configuration options: [Auto] [Manual]



The following item appears only when set **Policy** is set to **[Manual]**.

CPU Max frequency [XXXX]

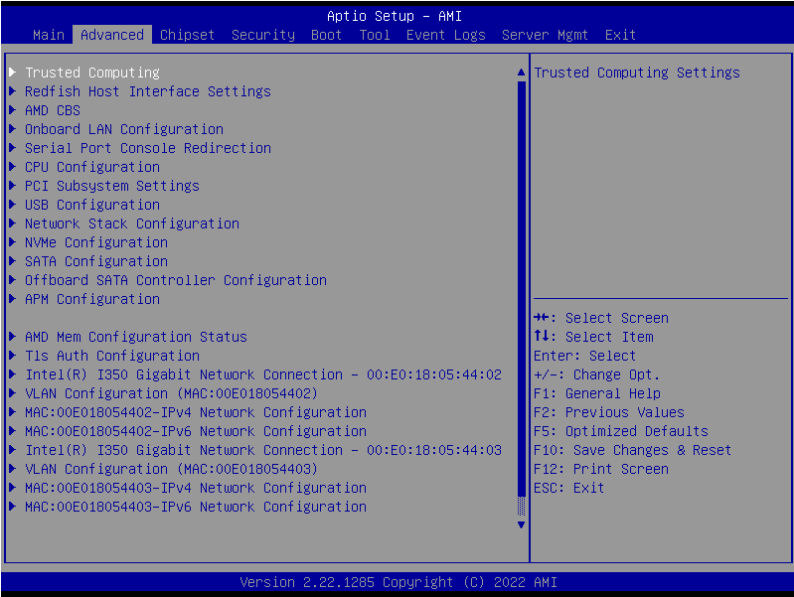
The default value for this option will be the maximum supported frequency of the CPU installed and may vary between different CPUs.

4.5 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.



Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



4.5.1 Trusted Computing

Aptio Setup - AMI		
Advanced		
Configuration		
Security Device Support	[Enable]	Enables or Disables BIOS support for security device.
NO Security Device Found		O.S. will not show Security Device, TCG EFI protocol and

Configuration

Security Device Support [Enabled]

Allows you to enable or disable the BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Configuration options: [Disabled] [Enabled]

4.5.2 Redfish Host Interface Settings

Aptio Setup - AMI	
Advanced	
Redfish Host Interface Settings	Enable/Disable AMI Redfish
Redfish	[Disabled]

Redfish [Disabled]

Allows you to enable or disable Redfish.
Configuration options: [Disabled] [Enabled]



The following items appear only when **Redfish** is set to **[Enabled]**.

Authentication mode [Basic Authentication]

Allows you to select the authentication mode.
Configuration options: [Basic Authentication] [Session Authentication]

Redfish BMC Settings

IP address

Allows you to enter the IP address.

IP Mask address

Allows you to enter the IP Mask address.

IP Port

Allows you to enter the IP Port.

4.5.3 AMD CBS

Aptio Setup - AMI	
Advanced	
AMD CBS	CPU Common Options
AMD CBS Revision Number	0x0
▶ CPU Common Options	
▶ DF Common Options	
▶ UMC Common Options	
▶ NBIO Common Options	
▶ FCH Common Options	
▶ NTB Common Options	
▶ Soc Miscellaneous Control	
▶ Workload Tuning	
▶ CXL Common Options	
⚡ Select Screen	

CPU Common Options

Performance

Allows you to configure performance options.

REP-MOV/STOS Streaming [Enabled]

Allows you to enable or disable the use of non-caching streaming stores for large sizes.

Configuration options: [Disabled] [Enabled]

Prefetcher Settings

Allows you to configure prefetcher options.

Core Watchdog

Allows you to configure core watchdog options.

RedirectForReturnDis [Auto]

Allows you to set RedirectForReturnDis to 0, 1, or Auto as a workaround for GCC/C000005 issue for XV Core on CZ A0.

Configuration options: [Auto] [1] [0]

Platform First Error Handling [Auto]

Allows you to enable or disable PFEH, cloak individual banks, and mask deferred error interrupts from each bank.

Configuration options: [Disabled] [Enabled] [Auto]

Core Performance Boost [Auto]

Configuration options: [Disabled] [Auto]

Global C-state Control [Auto]

Allows you to control IO based C-state generation and DF C-states.

Configuration options: [Disabled] [Enabled] [Auto]

Power Supply Idle Control [Auto]

Configuration options: [Low Current Idle] [Typical Current Idle] [Auto]

SEV-ES ASID Space Limit [1]

SEV-ES and SNP guests must use ASIDs in the range 1 through (this value -1). SEV guests must use ASIDs in the range of this value through 1006. To have all ASIDs support SEV-ES or SNP guests, set this value to 1007. The default is 1: all SEV guests and no SEV-ES or SNP guests.

Configuration options: [1] - [1007]

SEV Control [Enabled]

Can be used to disable SEV. To re-enable SEV, a power cycle is needed after selecting the [Enabled] option.

Configuration options: [Disabled] [Enabled]

Streaming Stores Control [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Local APIC Mode [Auto]

Configuration options: [Compatibility] [xAPIC] [x2APIC] [Auto]

ACPI _CST C1 Declaration [Auto]

Determines whether or not to declare the C1 state to the OS.

Configuration options: [Disabled] [Enabled] [Auto]

MCA error threshold enable [Auto]

Configuration options: [False] [True] [Auto]

MCA FruText [Auto]

Configuration options: [False] [True]

SMU and PSP Debug Mode [Auto]

If this option is enabled, uncorrected errors detected by the PSP FW or SMU FW will hang and not reset the system instead of causing a cold reset.

Configuration options: [Disabled] [Enabled] [Auto]

PPIN Opt-in [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

SNP Memory (RMP Table) Coverage [Auto]

When [Enabled] is selected, the entire system memory is covered.

Configuration options: [Disabled] [Enabled] [Custom] [Auto]



The following item appears only when **SNP Memory (RMP Table) Coverage** is set to **[Custom]**.

Amount of Memory to Cover [0]

Allows you to set the amount of system memory (MB) to be covered in hex.

SMEE [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Action on BIST Failure [Auto]

Allows you to configure what action is taken when a CCD BIST failure is detected.

Configuration options: [Do nothing] [Down-CCD] [Auto]

Enhanced REP MOVSB/STOSB (ESRM) [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Log Transparent Errors [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

AVX512 [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

MONITOR and MWAIT Disable [Auto]

When this option is enabled, MONITOR, MWAIT, MONITORX, and MWAITX opcodes become invalid.

Configuration options: [Disabled] [Enabled] [Auto]

Small Hammer Configuration [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Corrector Branch Predictor [Disabled]

Enabling for branch heavy codes may reduce conditional branch mispredicts.

Configuration options: [Disabled] [Enabled]

PAUSE Delay [Auto]

Number of cycles thread will be idle after a PAUSE instruction.

Configuration options: [Auto] [Disabled] [16 cycles] [32 cycles] [64 cycles] [128 cycles]

CPU Speculative Store Modes [Auto]

[Balanced]	Store instructions may delay sending out their invalidations to remote cacheline copies when the cacheline is present but not in a writable state in the local cache.
[More Speculative]	Store instructions will send out invalidations to remote cacheline copies as soon as possible.
[Less Speculative]	Store instructions may delay sending out their invalidations to remote cacheline copies when the cacheline is not present in the local cache or not in a writable state in the local cache.
[Auto]	Default setting is applied.

DF Common Options

Memory Addressing

Allows you to configure memory addressing options.

ACPI

Allows you to configure ACPI options.

Link

Allows you to configure Link settings.

SDCI

Allows you to configure SDCI settings.

DF Watchdog Timer Interval [Auto]

Allows you to set the Data Fabric watchdog timer interval.

Configuration options: [Auto] [41ms] [166ms] [334ms] [669ms] [1.34 seconds] [2.68 seconds] [5.36 seconds]

Disable DF to external IP SyncFloodPropagation [Auto]

Allows you to enable or disable SyncFlood to UMC and downstream slaves.

Configuration options: [Sync flood disabled] [Sync flood enabled] [Auto]

Sync Flood Propagation to DF Components [Auto]

Configuration options: [Sync flood disabled] [Sync flood enabled] [Auto]

Freeze DF module queues on error [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

CC6 Memory Region Encryption [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

CCD B/W Balance Throttle Level [Auto]

Configuration options: [Auto] [Level 0] [Level 1] [Level 2] [Level 3] [Level 4]

UMC Common Options

DDR Addressing Options

Allows you to configure DDR addressing options.

DDR Controller Configuration

Allows you to configure DDR controller options.

DDR MBIST Options

Allows you to configure DDR MBIST options.

DDR RAS

Allows you to configure DDR RAS options.

DDR Bus Configuration

Allows you to configure DDR Bus options.

DDR Timing Configuration

Allows you to configure DDR Timing options.

DDR Training Options

Allows you to configure DDR Training options.

DDR Security

Allows you to configure DDR Security options.

DDR PMIC Configuration

Allows you to configure DDR PMIC options.

DDR Miscellaneous

Allows you to configure DDR Miscellaneous options.

NBIO Common Options

IOMMU [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

DMAR Support [Auto]

Allows you to enable or disable DMAR system protection during POST.

Configuration options: [Disabled] [Enabled] [Auto]

DMA Protection [Auto]

Allows you to enable or disable DMA remap support in IVRS IVinfo Field.

Configuration options: [Auto] [Enabled] [Disabled]

DRTM Virtual Device Support [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

DRTM Memory Reservation [Auto]

Allows you to enable or disable reservation of 128MB memory below Bottom IO for DRTM. This option is required for Secured-Core Server functionality.

Configuration options: [Disabled] [Enabled] [Auto]



The following item appears only when **Enable AER Cap** is set to **[Enabled]** or **[Auto]**.

ACS Enable [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

PCIe ARI Support [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

PCIe ARI Enumeration [Auto]

ARI Forwarding enabled for each downstream port.

Configuration options: [Disabled] [Enabled] [Auto]

PCIe Ten Bit Tag Support [Auto]

Allows you to enable PCIe ten bit tags for supported devices. Support is disabled if this option is set to **[Auto]**.

Configuration options: [Disabled] [Enabled] [Auto]

SMU Common Options

Allows you to configure SMU Common options.

NBIO RAS Common Options

Allows you to configure NBIO RAS Common options.

Enable AER Cap [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Early Link Speed [Auto]

Configuration options: [Auto] [Gen1] [Gen2]

Hot Plug Handling Mode [Auto]

Configuration options: [OS First] [Firmware First/EDR if OS supports]

[Firmware First but allow OS first] [System Firmware Intermediary] [Auto]

Hot Plug Allow FF in Synchronous [Disabled]

Allows firmware first hot plug handling mode to operate in mode A and mode B synchronous mappings.

Configuration options: [Disabled] [Enabled]

Presence Detect Select Mode [Auto]

Configuration options: [OR] [AND] [Auto]

Data Link Feature Cap [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

CV Test [Auto]

Allows you to enable or disable support for PCIECV tool. Hardware defaults are preserved if this option is set to Auto.

Configuration options: [Disabled] [Enabled] [Auto]

SEV-SNP Support [Disabled]

Configuration options: [Disabled] [Enabled] [Auto]

Allow Compliance [Auto]

Allows you to enable or disable PCIe RP entering the polling compliance state.
Configuration options: [Disabled] [Enabled] [Auto]

SRIS [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Multi Upstream Auto Speed Change [Auto]

Defines the setting of this feature for all PCIe devices. When this option is set to [Auto], the DXIO default setting of 0 for Gen1 and 1 for Gen2/3 is applied.
Configuration options: [Disabled] [Enabled] [Auto]

Multi Auto Speed Change on Last Rate [Auto]

Force PCIe link training speed to last advertised for all ports.

[Disabled]	Use highest data rate ever advertised.
[Enabled]	Use last data rate advertised.
[Auto]	Use default settings.

PCIe Link Speed Capability [GEN5]

Configuration options: [Maximum speed] [Gen1] [Gen2] [GEN3] [GEN4] [GEN5] [Auto]

RTM Margining Support [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

EQ Bypass to Highest Rate [Auto]

Controls the ability to advertise Equalization Bypass to Highest Rate Support in TSxs sent prior to LinkUp=1.
Configuration options: [Disabled] [Enabled] [Auto]

nBif Common Options

Allows you to configure nBif Common options.

FCH Common Options**I3C/I2C Configuration Options**

Allows you to configure I3C/I2C options.

SATA Configuration Options

Allows you to configure SATA options.

USB Configuration Options

Allows you to configure USB options.

Ac Power Loss Options

Allows you to configure AC power loss options.

UART Configuration Options

Allows you to configure UART options.

ESPI Configuration Options

Allows you to configure ESPI options.

FCH RAS Options

Allows you to configure FCH RAS options.

Miscellaneous Options

Allows you to configure miscellaneous FCH options.

NTB Common Options

Socket-0 P0 NTB Enable [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Socket-0 P2 NTB Enable [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Socket-0 G0 NTB Enable [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Socket-0 G2 NTB Enable [Auto]

Configuration options: [Disabled] [Enabled] [Auto]

Soc Miscellaneous Control

ABL Console Out Control [Auto]

[Disabled] Disable ConsoleOut Function for ABL.

[Enabled] Enable ConsoleOut Function for ABL.

[Auto] Keep default behavior.



The following items appear only when **ABL Console Out Control** is set to **[Enabled]**.

ABL Console Out Serial Port

[eSPI UART] Enable serial port through eSPI UART.

[SOC UART0] Enable serial port through SOC UART0.

[SOC UART1] Enable serial port through SOC UART1.

[Auto] Keep default behavior.



The following item appears only when **ABL Console Out Serial Port** is set to **[eSPI UART]**.

ABL Console Out Serial Port IO

Select Legacy Uart (SIO or eSPI) IO base.

Configuration options: [0x3F8] [0x2F8] [0x3E8] [0x2E8] [Auto]

ABL Basic Console Out Control

[Disabled] Disable Basic ConsoleOut Function for ABL.

[Enabled] Enable Basic ConsoleOut Function for ABL.

[Auto] Keep default behavior.

ABL PMU message Control

Allows you to control the total number of PMU debug messages.

Configuration options: [Detailed debug message] [Coarse debug message]
[Stage completion] [Assertion messages] [Firmware completion message only] [Auto]

ABL Memory Population message Control

Non-recommended configurations may be functional but may not be validated by AMD.

[Warning message]	Show warning messages if Memory channel configuration does NOT follow SP5 Memory Population Guidelines.
[Fatal error]	Show warning messages and halt system.

PSP error injection support

Configuration options: [False] [True]

Firmware Anti-rollback (FAR)

Allows you to configure Firmware Anti-rollback (FAR) options.

Workload Tuning

Workload Profile

[Disabled]	Don't use any workload profiles.
[CPU Intensive]	Tuned for CPU intensive workloads, providing optimal integer and floating point performance.
[Java Throughput]	Tuned for the highest level of throughput with Java workloads.
[Java Latency]	Tuned for the latency sensitive Java workloads, to meet critical SLA's.
[Power Efficiency]	Tuned for optimal power efficiency.
[Memory Throughput Intensive]	Tuned for the highest memory throughput available.
[Storage IO Intensive]	Tuned for the highest storage IO bandwidth.
[NIC Throughput Intensive]	Tuned for maximum TCP/IP and RDMA network throughput.
[NIC Latency Sensitive]	Tuned for network performance where the kernel performs L3 packet forwarding.
[Accelerator Throughput]	Tuned to maximum peer-to-peer PCIe throughput with accelerators such as GPUs.
[VMware vSphere Optimized]	Tuned for general virt+P3+Q4.
[Linux KVM Optimized]	Tuned for general virtualization performance when using Linux KVM.
[Container Optimized]	Optimized for container performance.
[RDBMS Optimized]	Tuned for relational databases.
[Big Data Analytics Optimized]	Tuned for big data analytics.
[IOT Gateway]	Tuned for throughput analytics as observed by IOT gateways.
[HPC Optimized]	Tuned for general HPC performance.
[OpenStack NFV]	Tuned for Openstack based NFV workloads.
[OpenStack for RealTime Kernel]	Tuned for OpenStack with RealTime kernel enabled.
[Auto]	Uses BIOS default workload profile.

Performance Tracing

Configuration options: [Disabled] [Enabled] [Auto]

CXL Common Options



For an AVL of components that support CXL, please contact your sales representative.

CXL Control

Configuration options: [Disabled] [Enabled] [Auto]

CXL SPM

Set CXL memory as Special Purpose Memory.

Configuration options: [Disabled] [Enabled] [Auto]

CXL ASPM

Configuration options: [Disabled] [Enabled] [Auto]

CXL vLSM Power Management

Allows you to configure CXL vLSM Power Management options.

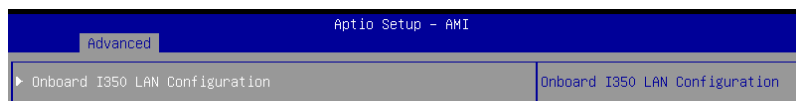
CXL Encryption

Configuration options: [Disabled] [Enabled]

Temp Gen5 Advertisement

Configuration options: [Disabled] [Enabled] [Auto]

4.5.4 Onboard LAN Configuration



Onboard I350 LAN Configuration

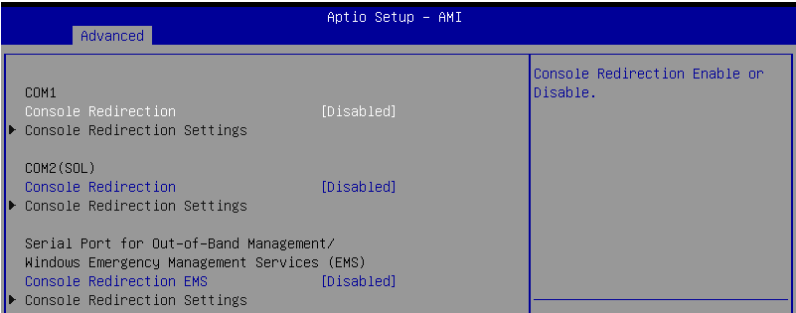
Intel I350 LAN1-2

LAN Enable [JumperState]

Allows you to enable or disable the Intel LAN.

Configuration options: [Disabled] [JumperState]

4.5.5 Serial Port Console Redirection



COM1/COM2(SOL)

Console Redirection [Disabled]

Allows you to enable or disable the console redirection feature.

Configuration options: [Disabled] [Enabled]



The following item appears only when **Console Redirection** is set to **[Enabled]**.

Console Redirection Settings

These items become configurable only when you enable the **Console Redirection** item. The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

Terminal Type [ANSI]

Allows you to set the terminal type.

- [VT100] ASCII char set.
- [VT100PLUS] Extends VT100 to support color, function keys, etc.
- [VT-UTF8] Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
- [ANSI] Extended ASCII char set.

Bits per second [115200]

Selects serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

Configuration options: [9600] [19200] [38400] [57600] [115200]

Data Bits [8]

Configuration options: [7] [8]

Parity [None]

A parity bit can be sent with the data bits to detect some transmission errors. [Mark] and [Space] parity do not allow for error detection.

[None]	None
[Even]	parity bit is 0 if the num of 1's in the data bits is even
[Odd]	parity bit is 0 if num of 1's in the data bits is odd
[Mark]	parity bit is always 1
[Space]	parity bit is always 0

Stop Bits [1]

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning.) The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

Configuration options: [1] [2]

Flow Control [None]

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a "stop" signal can be sent to stop the data flow. Once the buffers are empty, a "start" signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

Configuration options: [None] [Hardware RTS/CTS]

VT -UTF8 Combo Key Support [Enabled]

This allows you to enable the VT -UTF8 Combination Key Support for ANSI/VT100 terminals.

Configuration options: [Disabled] [Enabled]

Recorder Mode [Disabled]

With this mode enabled only text will be sent. This is to capture Terminal data.

Configuration options: [Disabled] [Enabled]

Resolution 100x31 [Enabled]

This allows you enable or disable extended terminal resolution.

Configuration options: [Disabled] [Enabled]

Putty Keypad [VT100]

This allows you to select the FunctionKey and Keypad on Putty.

Configuration options: [VT100] [LINUX] [XTERMR6] [SCO] [ESCN] [VT400]

Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS)

Console Redirection [Disabled]

Allows you to enable or disable the console redirection feature.

Configuration options: [Disabled] [Enabled]



The following item appears only when **Console Redirection** is set to **[Enabled]**.

Out-of-Band Mgmt Port [COM1]

Microsoft Windows Emergency Management Services (EMS) allow for remote management of a Windows Server OS through a serial port.

Configuration options: [COM1] [COM2]

Terminal Type [VT-UTF8]

Microsoft Windows Emergency Management Services (EMS) allow for remote management of a Windows Server OS through a serial port.

Configuration options: [VT100] [VT100PLUS] [VT-UTF8] [ANSI]

Bits per second [115200]

Microsoft Windows Emergency Management Services (EMS) allow for remote management of a Windows Server OS through a serial port.

Configuration options: [9600] [19200] [57600] [115200]

Flow Control [None]

Microsoft Windows Emergency Management Services (EMS) allow for remote management of a Windows Server OS through a serial port.

Configuration options: [None] [Hardware RTS/CTS] [Software Xon/Xoff]

4.5.6 CPU Configuration

This page displays the CPU node information.



SVM Mode [Enabled]

This item allows you enable or disable CPU Virtualization.

Configuration options: [Disabled] [Enabled]

Node 0 Information

This item allows you to view memory information related to Node 0.

4.5.7 PCI Subsystem Settings

Allows you to configure PCI, PCI-X, and PCI Express Settings.

Aptio Setup - AMI		
Advanced		
PCI Bus Driver Version	A5.01.28	Value to be programmed into PCI Latency Timer Register.
PCI Devices Common Settings:		
PCI Latency Timer	[32 PCI Bus Clocks]	
PCI-X Latency Timer	[64 PCI Bus Clocks]	
VGA Palette Snoop	[Disabled]	
PERR# Generation	[Disabled]	
SERR# Generation	[Disabled]	
Above 4G Decoding	[Enabled]	
Re-Size BAR Support	[Disabled]	
SR-IOV Support	[Enabled]	
BME DMA Mitigation	[Disabled]	
▶ PCI Express Settings		←+: Select Screen
▶ PCI Express GEN 2 Settings		Tl: Select Item
▶ PCI Hot-Plug Settings		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values

PCI Latency Timer [32 PCI Bus Clocks]

Configuration options: [32 PCI Bus Clocks] [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]

PCI-X Latency Timer [64 PCI Bus Clocks]

Configuration options: [32 PCI Bus Clocks] [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 [Disabled]

Configuration options: [Disabled] [Enabled]

PERR# Generation [Disabled]

Configuration options: [Disabled] [Enabled]

SERR# Generation [Disabled]

Configuration options: [Disabled] [Enabled]

Above 4G Decoding [Enabled]

Allows you to enable or disable 64-bit capable devices to be decoded in above 4G address space. It only works if the system supports 64-bit PCI decoding.

Configuration options: [Disabled] [Enabled]

Re-Size BAR Support [Disabled]

Configuration options: [Disabled] [Auto]



This option only comes into effect if the system has Resizable BAR capable PCIe devices.

SR-IOV Support [Enabled]

This option enables or disables Single Root IO Virtualization Support if the system has SR-IOV capable PCIe devices.

Configuration options: [Disabled] [Enabled]

BME DMA Mitigation [Disabled]

This allows you to enable or disable re-enabling Bus Master Attribute disabled during Pci enumeration for PCI Bridges after SMM locked.

Configuration options: [Disabled] [Enabled]

PCI Express Settings

PCI Express Device Register Settings

Relaxed Ordering [Enabled]

Configuration options: [Disabled] [Enabled]

Extended Tag [Disabled]

If this item is enabled, it will allow Device to use 8-bit Tag field as a requester.

Configuration options: [Disabled] [Enabled]

No Snoop [Enabled]

Configuration options: [Disabled] [Enabled]

Maximum Payload [Auto]

Allows you to set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

Configuration options: [Auto] [128 Bytes] [256 Bytes] [512 Bytes] [1024 Bytes] [2048 Bytes] [4096 Bytes]

Maximum Read Request [Auto]

Allows you to set Maximum Read Request Size of PCI Express Device or allow System BIOS to select the value.

Configuration options: [Auto] [128 Bytes] [256 Bytes] [512 Bytes] [1024 Bytes] [2048 Bytes] [4096 Bytes]

PCI Express Link Register Settings

ASPM Support [Disabled]

Allows you to set the ASPM level.

[Disabled] Disables ASPM.

[Auto] BIOS auto configure.

[Force L0s] Force all links to L0 State.



Enabling ASPM may cause some PCI-E devices to fail.

Extended Synch [Disabled]

If this item is enabled, it will allow generation of Extended Synchronization patterns.

Configuration options: [Disabled] [Enabled]

Link Training Retry [5]

Allows you to define the number of Retry Attempts software will take to retrain the link if previous training attempt was unsuccessful.

Configuration options: [Disabled] [2] [3] [5]

Link Training Timeout (uS) [1000]

Allows you to define the number of Microseconds software will wait before polling 'link Training' bit in Link Status register.

Configuration options: [10] - [10000]

Unpopulated Links [Keep Link ON]

If this option is set to **[Disable]**, in order to save power, software will disable unpopulated PCI Express Links.

Configuration options: [Keep Link ON] [Disable]

PCI Express GEN 2 Settings

The items in this submenu allow you change PCI Express GEN Devices Settings.

PCI Express GEN2 Device Register Settings

Completion Timeout [Default]

In device Functions that support Completion Timeout programmability, allows system software to modify the Completion Timeout value.

[Default] 50us to 50ms.

[Shorter] Software will use shorter timeout ranges supported by hardware.

[Longer] Software will use longer timeout ranges.

[Disabled] Disable completion timeout.

ARI Forwarding [Disabled]

If supported by hardware and set to **[Enabled]**, the Downstream Port disables its traditional Device Number field being 0 enforcement when turning a Type1 Configuration Request into a Type0 Configuration Request, permitting access to Extended Functions in an ARI Device immediately below the Port.

Configuration options: [Disabled] [Enabled]

AtomicOp Requester Enable [Disabled]

If supported by hardware and set to **[Enabled]**, this function initiates AtomicOp Requests only if Bus Master Enable bit is in the Command Register Set.

Configuration options: [Disabled] [Enabled]

AtomicOp Egress Blocking [Disabled]

If supported by hardware and set to **[Enabled]**, outbound AtomicOp Requests via Egress Ports will be blocked.

Configuration options: [Disabled] [Enabled]

IDO Request Enable [Disabled]

If supported by hardware and set to **[Enabled]**, this permits setting the number of ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated.

Configuration options: [Disabled] [Enabled]

IDO Completion Enable [Disabled]

If supported by hardware and set to **[Enabled]**, this permits setting the number of ID-Based Ordering (IDO) bit (Attribute[2]) requests to be initiated.

Configuration options: [Disabled] [Enabled]

LTR Mechanism Enable [Disabled]

If supported by hardware and set to **[Enabled]**, this enables the Latency Tolerance Reporting (LTR) Mechanism.

Configuration options: [Disabled] [Enabled]

End-End TLP Prefix Blocking [Disabled]

If supported by hardware and set to **[Enabled]**, this function will block forwarding of TLPs containing End-End TLP Prefixes.

Configuration options: [Disabled] [Enabled]

PCI Express GEN2 Link Register Settings

Target Link Speed [Auto]

If supported by hardware and set to **[Force to X.X GT/s]**, for Downstream Ports, this sets an upper limit on Link operational speed by restricting the values advertised by the Upstream component in its training sequences. When **[Auto]** is selected HW initialized data will be used.

Configuration options: [Disabled] [Force to 2.5 GT/s] [Force to 5.0 GT/s] [Force to 8.0 GT/s] [Force to 16.0 GT/s] [Force to 32.0 GT/s]

Clock Power Management [Disabled]

If supported by hardware and set to **[Enabled]**, the device is permitted to use CLKREQ# signal for power management of Link clock in accordance to protocol defined in appropriate form factor specification.

Configuration options: [Disabled] [Enabled]

Compliance SOS [Disabled]

If supported by hardware and set to **[Enabled]**, this will force LTSSM to send SKP Ordered Sets between sequences when sending Compliance Pattern or Modified Compliance Pattern.

Configuration options: [Disabled] [Enabled]

Hardware Autonomous Width [Enabled]

If supported by hardware and set to **[Disabled]**, this will disable the hardware's ability to change link width except width size reduction for the purpose of correcting unstable link operation.

Configuration options: [Disabled] [Enabled]

Hardware Autonomous Speed [Enabled]

If supported by hardware and set to **[Disabled]**, this will disable the hardware's ability to change link speed except speed rate reduction for the purpose of correcting unstable link operation.

Configuration options: [Disabled] [Enabled]

PCI Hot-Plug Settings

The items in this submenu allow you change PCI Express Hot-Plug and Standard HP Controller Settings.

BIOS Hot-Plug Support [Enabled]

If this item is enabled, it allows the BIOS built-in Hot-Plug support to be used.. Use this feature if OS does not support PCI Express and SHPC hot-plug natively.

Configuration options: [Disabled] [Enabled]



The following items appear only when **BIOS Hot-Plug Support** is set to **[Enabled]**.

PCI Buses Padding [1]

Configuration options: [Disabled] [1] - [5]

I/O Resources Padding [Disabled]

Configuration options: [Disabled] [4 K] [8 K] [16 K] [32 K]

MMIO 32 bit Resources Padding [Disabled]

Configuration options: [Disabled] [1 M] [2 M] [4 M] [8 M] [16 M] [32 M] [64 M] [128 M]

PFMMIO 32 bit Resources Padding [Disabled]

Configuration options: [Disabled] [1 M] [2 M] [4 M] [8 M] [16 M] [32 M] [64 M] [128 M]

PFMMIO 64 bit Resources Padding [64 M]

Configuration options: [Disabled] [1 M] [2 M] [4 M] [8 M] [16 M] [32 M] [64 M] [128 M] [256 M] [512 M] [1 G] [2 G] [4 G] [8 G]



Due to the Bridge Architecture Specification Software, selected padding for 64 and 32 bit PFMMIO window cannot be applied at the same time. User must pick choose which PFMMIO they want to pad by setting the other resource to the disabled state. If both PFMMIO is set, the 32 bit resource will be used.

4.5.8 USB Configuration

Aptio Setup - AMI		
Advanced		
USB Configuration		[Enabled]: Enables the Legacy USB support.
USB Module Version	29	[Auto]: Automatically disables the Legacy USB support if USB devices are not connected.
USB Controllers:		[Disabled]: USB devices are available only for EFI applications.
2 XHCIs		
USB Devices:		
3 Drives, 3 Keyboards, 2 Mice, 3 Hubs		
Legacy USB Support	[Enabled]	
XHCI Hand-off	[Enabled]	
USB Mass Storage Driver Support	[Enabled]	
USB Keyboard and Mouse Simulator	[Enabled]	
USB hardware delays and time-outs:		
USB transfer time-out	[20 sec]	
Device reset time-out	[20 sec]	
Device power-up delay	[Auto]	
Mass Storage Devices:		
AMI Virtual CDROM 1.00	[Auto]	
AMI Virtual HDisk0 1.00	[Auto]	
JetFlashTranscend 4GB 8.07	[Auto]	

Legacy USB Support [Enabled]

- [Disabled] USB devices are available only for EFI applications.
- [Enabled] Enables the support for USB devices on legacy operating systems (OS).
- [Auto] Automatically disables the Legacy USB support if USB devices are not connected.

XHCI Hand-off [Enabled]

Allows you to enable or disable workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

Configuration options: [Enabled] [Disabled]

USB Mass Storage Driver Support [Enabled]

Configuration options: [Disabled] [Enabled]

USB Keyboard and Mouse Simulator [Enabled]

Enable this item to simulate USB keyboard and mouse to PS/2 module in Windows 7. Ensure to install the USB drivers to your system before disabling this item.

Configuration options: [Disabled] [Enabled]

USB hardware delays and time-outs

USB transfer time-out [20 sec]

Allows you to select time-out value for Control, Bulk, and Interrupt transfers.

Configuration options: [1 sec] [5 sec] [10 sec] [20 sec]

Device reset time-out [20 sec]

Configuration options: [10 sec] [20 sec] [30 sec] [40 sec]

Device power-up delay [Auto]

Maximum time the device will take before it properly reports itself to the Host Controller.

[Auto] Uses default value; for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

[Manual] Manually set the device power-up delay.



The following item appears only when **Device power-up delay** is set to [Manual].

Device power-up delay in seconds [5]

Allows you to set the device power-up delay in seconds. Use the <+> or <-> to adjust the value. The values range from 1 to 40.

Mass Storage Devices

Allows you to select the mass storage device emulation type for devices connected.

Configuration options: [Auto] [Floppy] [Forced FDD] [Hard Disk] [CD-ROM]

4.5.9 Network Stack Configuration

Aptio Setup - AMI		
Advanced		
Network Stack	[Enabled]	Enable/Disable UEFI Network Stack
IPv4 PXE Support	[Disabled]	
IPv4 HTTP Support	[Disabled]	
IPv6 PXE Support	[Disabled]	
IPv6 HTTP Support	[Disabled]	
PXE boot wait time	0	
Media detect count	1	

Network stack [Enabled]

Enables or disables the network stack feature.

Configuration options: [Disabled] [Enabled]



The following item appears only when **Network stack** is set to [Enabled].

IPv4 PXE Support [Disabled]

Enables or disables the IPv4 PXE Boot Support. If disabled, IPv4 PXE boot option will not be created.

Configuration options: [Disabled] [Enabled]

IPv4 HTTP Support [Disabled]

Enables or disables the IPv4 HTTP Boot Support. If disabled, IPv4 HTTP boot option will not be created.

Configuration options: [Disabled] [Enabled]

IPv6 PXE Support [Disabled]

Enables or disables the IPv6 PXE Boot Support. If disabled, IPv6 PXE boot option will not be created.

Configuration options: [Disabled] [Enabled]

Ipv6 HTTP Support [Disabled]

Enables or disables the Ipv6 HTTP Boot Support. If disabled, Ipv6 HTTP boot option will not be created.

Configuration options: [Disabled] [Enabled]

PXE boot wait time [0]

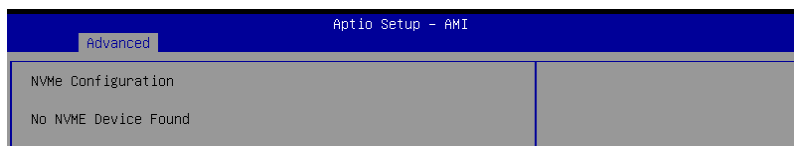
Set the wait time to press ESC key to abort the PXE boot. Use the <+> or <-> to adjust the value. The values range from 0 to 5.

Media detect count [1]

Set the number of times presence of media will be checked. Use the <+> or <-> to adjust the value. The values range from 1 to 50.

4.5.10 NVMe Configuration

This page will display the NVMe controller and drive information. You may press <Enter> on a connected NVMe device which appears in this menu to view more information on the NVMe device.



Device



The devices and names shown in the NVMe configuration list depends on the connected devices. If no devices are connected, **No NVMe Device Found** will be displayed.

Self Test Option [Short]

This option allows you to select either Short or Extended Self Test. Short option will take couple of minutes, and the extended option will take several minutes to complete. Configuration options: [Short] [Extended]

Self Test Action [Controller Only Test]

This item allows you to select either to test Controller alone or Controller and NameSpace. Selecting Controller and NameSpace option will take a lot longer to complete the test.

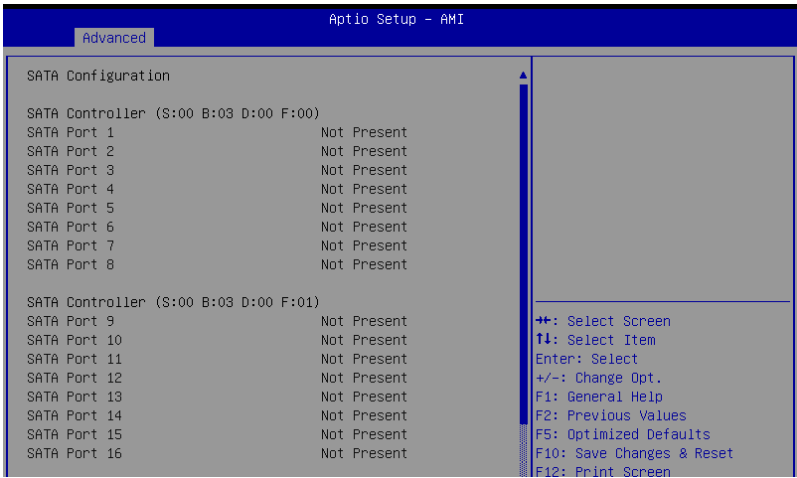
Configuration options: [Controller Only Test] [Controller and NameSpace Test]

Run Device Self Test

Press <Enter> to perform device self test for the corresponding Option and Action selected by the user. Pressing the <ESC> key will abort the test. The results shown below is the most recent result logged in the device.

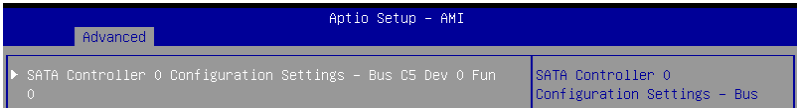
4.5.11 SATA Configuration

This page will display the SATA controller and drive information.



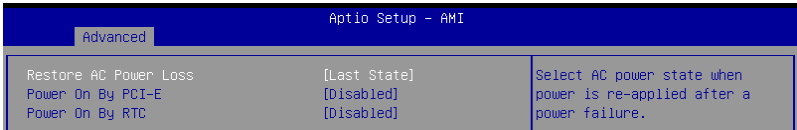
4.5.12 Offboard SATA Controller Configuration

Allows you to configure the Offboard SATA Controller.



4.5.13 APM Configuration

Allows you to configure the Advance Power Management (APM) settings.



Restore AC Power Loss [Last State]

When set to [Power Off], the system goes into off state after an AC power loss. When set to [Power On], the system will reboot after an AC power loss. When set to [Last State], the system goes into either off or on state, whatever the system state was before the AC power loss.

Configuration options: [Power On] [Power Off] [Last State]

Power On By PCI-E [Disabled]

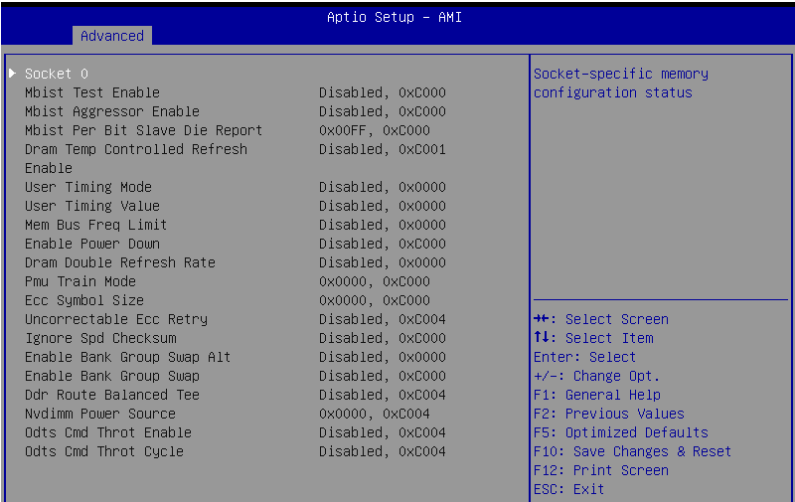
- [Disabled] Disables the PCIE devices to generate a wake event.
- [Enabled] Enables the PCIE devices to generate a wake event.

Power On By RTC [Disabled]

- [Disabled] Disables RTC to generate a wake event.
- [Enabled] When set to [Enabled], the items **RTC Alarm Date (Days)** and **Hour/Minute/Second** will become user-configurable with set values.

4.5.14 AMD Mem Configuration Status

The items in this menu display the memory configuration (initialized by ABL) status.

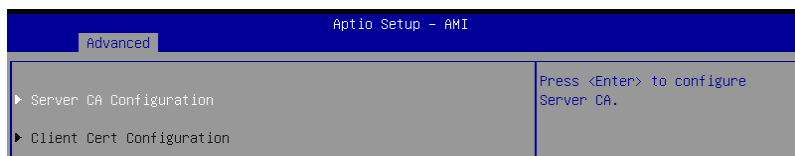


Socket 0

Allows you to view and configure Socket-specific memory configuration status options.

4.5.15 T1s Auth

Allows you to configure the Server Certificate Authority (CA).



Server CA Configuration / Client Cert Configuration

Enroll Cert

Allows you to enroll a certificate using a certificate file or manually input a certificate GUID.

Enroll Cert Using File

Allows you to enroll a certificate using a certificate file. You will be prompted to select a storage device and navigate to the location of the certificate file.

Cert GUID

Allows you to enroll a certificate by manually inputting the certificate GUID.

Commit Changes and Exit

Exit Server CA configuration after saving the changes.

Discard Changes and Exit

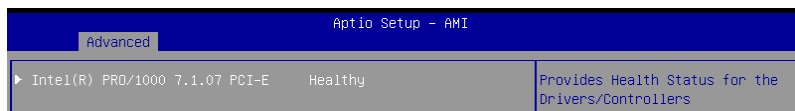
Exit Server CA configuration without saving any changes.

Delete Cert

Allows you to delete the certificate.

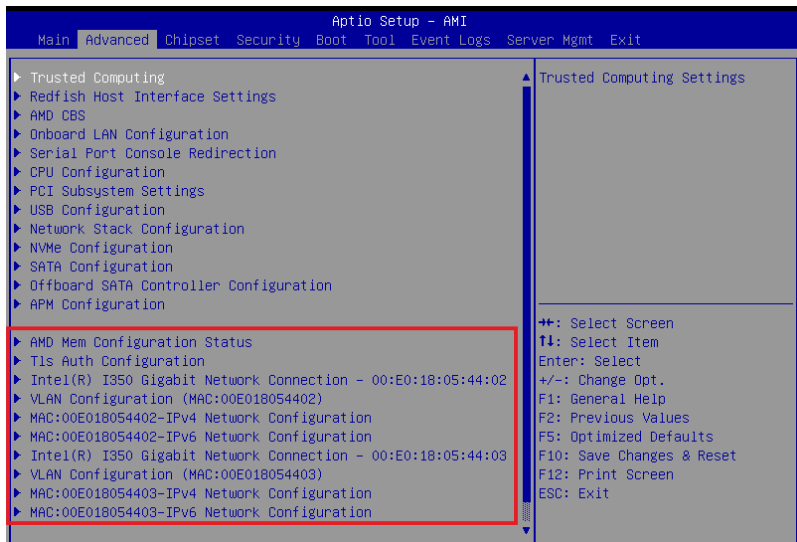
4.5.16 Driver Health

Provides Health Status for the Drivers/Controllers.



4.5.17 Third-party UEFI driver configurations

Additional configuration options for third-party UEFI drivers installed to the system will appear in the bottom of the Advanced menu, in the section marked red in the screenshot below.



4.6 Chipset menu

The Chipset menu items allow you to change the Chipset settings.



PCIe Link Training Type [1 Step]

This item allows you to select PCIe Link Training in 1 or 2 steps.

Configuration options: [1 Step] [2 Step]

PCIe Compliance Mode [Off]

Configuration options: [Off] [On]

PCH Configuration

SB Debug Configuration

This item displays options for SB Debug Features.

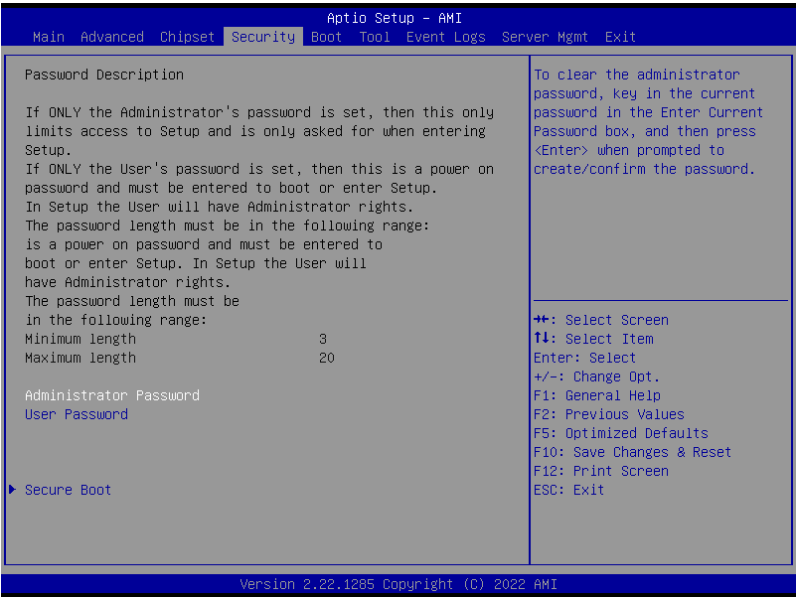
System Agent (SA) Configuration

Socket 1 Information

This item displays the memory information on Socket 1.

4.7 Security menu

This menu allows a new password to be created or a current password to be changed. The menu also enables or disables the Secure Boot state and lets the user configure the System Mode state.



Administrator Password

To set an administrator password:

1. Select the Administrator Password item and press <Enter>.
2. From the Create New Password box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change an administrator password:

1. Select the Administrator Password item and press <Enter>.
2. From the Enter Current Password box, key in the current password, then press <Enter>.
3. From the Create New Password box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.



To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password.

User Password

To set a user password:

1. Select the User Password item and press <Enter>.
2. From the Create New Password box, key in a password, then press <Enter>.
3. Confirm the password when prompted.

To change a user password:

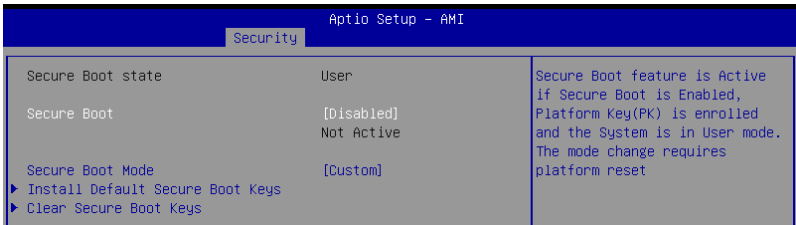
1. Select the User Password item and press <Enter>.
2. From the Enter Current Password box, key in the current password, then press <Enter>.
3. From the Create New Password box, key in a new password, then press <Enter>.
4. Confirm the password when prompted.

To clear a user password:

1. Select the Clear User Password item and press <Enter>.
2. Select **Yes** from the Warning message window then press <Enter>.

Secure Boot

This item allows you to customize the Secure Boot settings.



Secure Boot [Disabled]

Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled, and the System is in User mode. A mode change requires a platform reset.

Configuration options: [Disabled] [Enabled]

Secure Boot Mode [Custom]

Allows you to set the Secure Boot selector. In Custom mode, Secure Boot Policy variables can be configured physically by the present user without full authentication.

Configuration options: [Custom] [Standard]



The following items are only available when **Secure Boot Mode** is set to **[Custom]**.

Install Default Secure Boot Keys

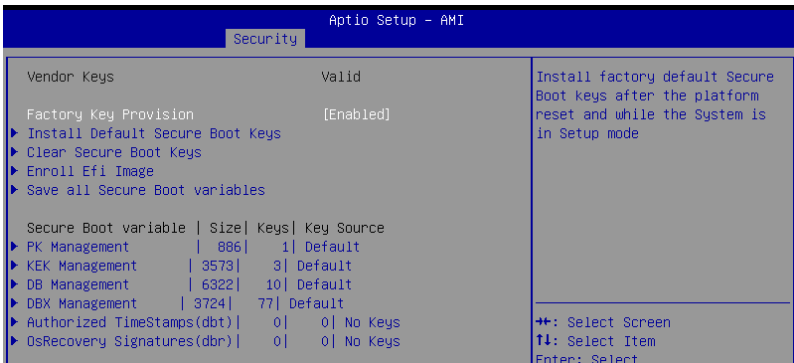
This option will load the default secure boot keys, including the PK (Platform key), KEK (key-exchange key), db (signature database), and dbx (revoked signature database). All the secure boot keys states will change from unloaded to loaded. Save changes and reset the system for the changes to take effect.

Clear Secure Boot Keys

This option will delete all previously applied secure boot keys, including the PK (Platform key), KEK (key-exchange key), db (signature database), and dbx (revoked signature database). All the secure boot keys states will change from unloaded to loaded. Save changes and reset the system for the changes to take effect.

Key Management

The Key Management item allows you to modify Secure Boot variables and set Key Management page.



Factory Key Provision [Enabled]

Allows you to provision factory default Secure Boot keys after the platform resets and while the system is in Setup Mode.

Configuration options: [Disabled] [Enabled]

Install Default Secure Boot Keys

This option will load the default secure boot keys, including the PK (Platform key), KEK (key-exchange key), db (signature database), and dbx (revoked signature database). All the secure boot keys states will change from unloaded to loaded. Save changes and reset the system for the changes to take effect.

Clear Secure Boot Keys

This option will delete all previously applied secure boot keys, including the PK (Platform key), KEK (key-exchange key), db (signature database), and dbx (revoked signature database). All the secure boot keys states will change from unloaded to loaded. Save changes and reset the system for the changes to take effect.

Enroll Efi Image

This item will allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db).

Save all Secure Boot Variables

This option will save NVRAM content of Secure Boot policy variables to the file (EFI_SIGNATURE_LIST data format) in root folder on a target file system device.

PK Management

Configuration options: [Details] [Save To File] [Set New Key] [Delete key]

KEK Management / DB Management / DBX Management

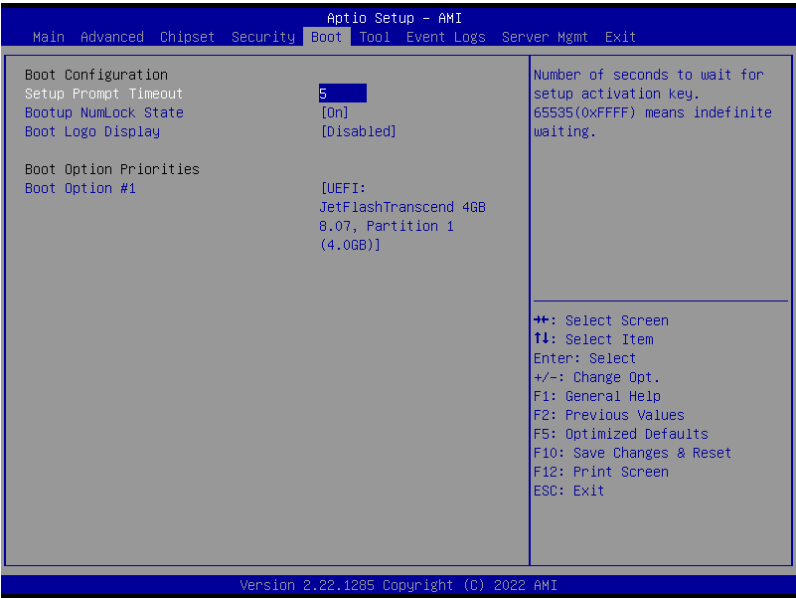
Configuration options: [Details] [Save To File] [Set New Key] [Append Key] [Delete key]

Authorized TimeStamps (dbt) / OsRecovery Signatures (dbr)

Configuration options: [Set New Key] [Append Key]

4.8 Boot menu

The Boot menu items allow you to change the system boot options.



Setup Prompt Timeout [5]

Allows you to set the number of seconds that the firmware waits before initiating the original default boot selection. 65535(0xFFFF) means indefinite waiting. Use the <+> or <-> to adjust the value.

Bootup NumLock State [On]

Configuration options: [Off] [On]

Boot Logo Display [Disabled]

- [Disabled] Hide the logo during POST.
- [Enabled] Display the boot logo during POST.

Boot Option Priorities

These 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.



- To select the boot device during system startup, press <F8> when ASUS Logo appears.
- To access Windows OS in Safe Mode, please press <F8> after POST.

4.9 Tool menu

The Tool menu items allow you to configure options for special functions. Select an item then press <Enter> to display the submenu.



Start ASUS EzFlash

Allows you to run ASUS EzFlash BIOS ROM Utility when you press <Enter>. Refer to the **ASUS EzFlash Utility** section for details.

IPMI Hardware Monitor

Allows you to run the IPMI hardware monitor.

ASUS SMBIOS Viewer

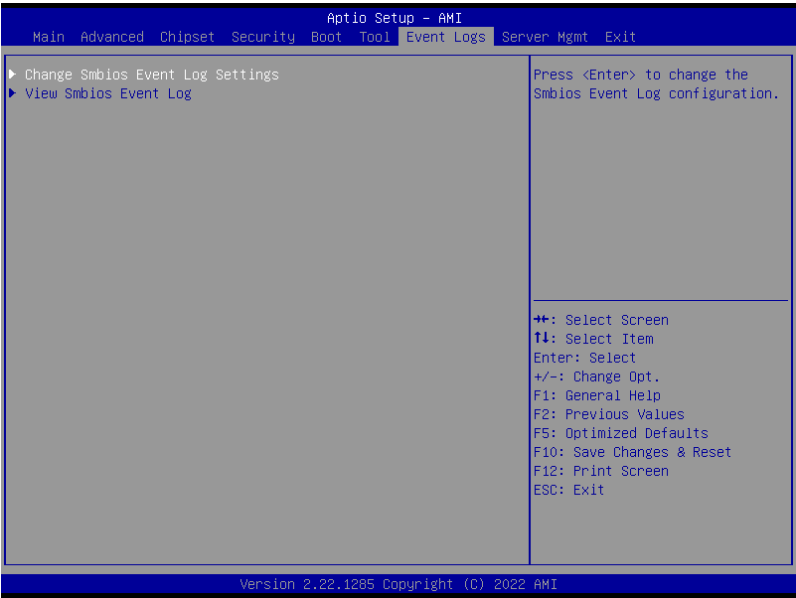
Allows you to run ASUS SMBIOS Viewer.

ASUS Storage Viewer

Allows you to run ASUS Storage Viewer.

4.10 Event Logs menu

The Event Logs menu items allow you to change the event log settings and view the system event logs.

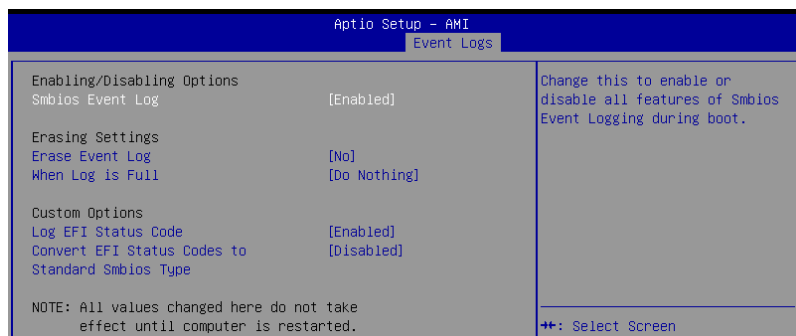


4.10.1 Change Smbios Event Log Settings

Press <Enter> to change the Smbios Event Log configuration.



All values changed here do not take effect until computer is restarted.



Enabling/Disabling Options

Smbios Event Log [Enabled]

Change this to enable or disable all features of Smbios Event Logging during boot.

Configuration options: [Disabled] [Enabled]



The following item appears only when **Smbios Event Log** is set to **[Enabled]**.

Erasing Settings

Erase Event Log [No]

Choose options for erasing Smbios Event Log. Erasing is done prior to any logging activation during reset.

Configuration options: [No] [Yes, Next reset] [Yes, Every reset]

When Log is Full [Do Nothing]

Choose options for reactions to a full Smbios Event Log.

Configuration options: [Do Nothing] [Erase Immediately]

Custom Options

Log EFI Status Code [Enabled]

Configuration options: [Disabled] [Enabled]



The following item appears only when **Log EFI Status Code** is set to **[Enabled]**.

Convert EFI Status Codes to Standard Smbios Type [Disabled]

Configuration options: [Disabled] [Enabled]

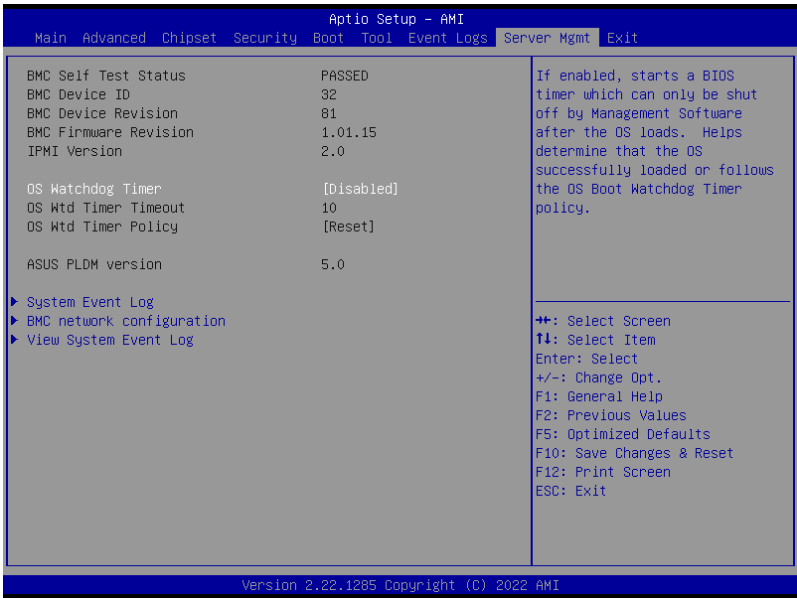
4.10.2 View Smbios Event Log

Press <Enter> to view all smbios event logs.

Aptio Setup - AMI					
Event Logs					
DATE	TIME	ERROR CODE	SEVERITY	COUNT	DESCRIPTION
01/01/11	00:00:01	Smbios 0x16	N/A	N/A	Log Area Reset

4.11 Server Mgmt menu

The Server Management menu displays the server management status and allows you to change the settings.



OS Watchdog Timer [Disabled]

Allows you to start a BIOS timer which can only be shut off by Management Software after the OS loads. Helps determine if the OS successfully loaded or follows the OS Boot Watchdog Timer policy.

Configuration options: [Disabled] [Enabled]



The following items appear only when the **OS Watchdog Timer** is set to **[Enabled]**.

OS Wtd Timer Timeout [10]

Allows you to enter a value between 1 to 30 minutes for OS Boot Watchdog Timer Expiration.

Configuration options: [1] - [30]

OS Wtd Timer Policy [Reset]

This item allows you to configure the how the system should respond if the OS Boot Watch Timer expires.

Configuration options: [Do Nothing] [Reset] [Power Down]

4.11.1 System Event Log

Allows you to change the SEL event log configuration.



All values changed here do not take effect until computer is restarted.

Aptio Setup - AMI	
Server Mgmt	
Erasing Settings Erase SEL [No] NOTE: All values changed here do not take effect until computer is restarted.	Choose options for erasing SEL.

Erase SEL [No]

Allows you to choose options for erasing SEL.

Configuration options: [No] [Yes, On next reset] [Yes, On every reset]

4.11.2 BMC network configuration

The sub-items in this configuration allow you to configure the BMC network parameters.

The screenshot shows the 'Aptio Setup - AMI' interface with the 'Server Mgmt' tab selected. The main menu on the left includes options for '--BMC network configuration--', 'Configure IPv4 support', and 'Configure IPv6 support'. The 'DM_LAN' section is expanded, showing settings for 'Configuration Address source' (set to '[Previous State]'), 'Current Config Address source' (set to 'DHCP Mode'), 'Station IP address' (0.0.0.0), 'Subnet mask' (0.0.0.0), 'MAC Address in BMC' (58-11-33-11-E8-03), 'Router IP address' (0.0.0.0), and 'Router MAC address' (00-00-00-00-00-00). A 'Shared LAN' section is also visible below. On the right, a help box explains the LAN configuration options and lists navigation keys: F1 for General Help, F2 for Previous Values, F5 for Optimized Defaults, F10 for Save Changes & Reset, F12 for Print Screen, and ESC for Exit.

Configure IPV4 support

DM_LAN/Shared LAN

Configuration Address source [Previous State]

This item allows you to configure LAN channel parameters statistically or dynamically (by BIOS or BMC). [Previous State] option will not modify any BMC network parameters during BIOS phase.

Configuration options: [Previous State] [Static] [DynamicBmcDhcp] [DynamicBmcNonDhcp]



The following items are available only when **Configuration Address source** is set to **[Static]**.

Station IP address

Allows you to set the station IP address.

Subnet mask

Allows you to set the subnet mask. We recommend that you use the same Subnet Mask you have specified on the operating system network for the used network card.

Router IP Address

Allows you to set the router IP address.

Router MAC Address

Allows you to set the router MAC address.

Configure IPv6 support

DM_LAN/Shared LAN

IPv6 support [Enabled]

Allows you to enable or disable IPv6 support.

Configuration options: [Enabled] [Disabled]



The following items appear only when **IPv6 support** is set to **[Enabled]**.

Configuration Address source [Previous State]

Allows you to set the LAN channel parameters statically or dynamically (by BIOS or by BMC). **[Previous State]** option will not modify any BMC network parameters during BIOS phase.

Configuration options: [Previous State] [Static] [DynamicBmcDhcp]



The following items are available only when **Configuration Address source** is set to **[Static]**.

Station IPv6 address

Allows you to set the station IPv6 address.

Prefix Length

Allows you to set the prefix length (maximum of Prefix Length is 128).

Configuration Router Lan1-2 Address source [Previous State]

Allows you to set the LAN channel parameters statically or dynamically (by BIOS or by BMC). **[Previous State]** option will not modify any BMC network parameters during BIOS phase.

Configuration options: [Previous State] [Static] [DynamicBmcDhcp]



The following items are available only when **Configuration Router Lan1-2 Address source** is set to **[Static]**.

IPv6 Router1 IP address

Allows you to set the IPv6 Router1 IP address.

IPv6 Router1 Prefix Length Lan1-2

Allows you to set the IPv6 Router1 prefix length (maximum of Prefix Length is 128).

IPv6 Router1 Prefix Value Lan1-2

Allows you to set the IPv6 Router1 prefix value.

Configure VLAN support

DM_LAN/Shared LAN

VLAN support [Previous State]

Allows you to enable or disable IPV6 support.

Configuration options: [Enabled] [Disabled] [Previous State]



The following items appear only when **VLAN support** is set to **[Enabled]**.

VLAN ID [0]

VLAN ID Range is from 1-4094. VLAN ID 0 and 4095 are reserved VLAN ID's.

Configuration options: [1] - [4094]

VLAN Priority [0]

Value ranges from 0 to 7. 7 is the highest priority for VLAN.

Configuration options: [0] - [7]

4.11.3 View System Event Log

This item allows you to view the system event log records.

Aptio Setup - AMI				Server Mgmt
No. of log entries in SEL : 6				HEX:
DATE	TIME	SENSOR	TYPE	01 00 02 83 6E 1E
				4D 20 00 04 09 F5
				6F 00 00 00
01/01/11	00:00:03	Power Unit		Generator ID: BMC - LUN #0
01/01/11	00:00:08	Power Unit		(Channel #0)
01/01/11	00:01:39	Power Unit		Sensor Number: 0xF5 PowerUnit
01/01/11	00:03:26	Power Unit		Event Description: Power
01/01/11	00:09:11	Power Unit		Off/Power Down, Record
01/01/11	02:29:16	Power Unit		Type-0x02, Assertion Event.

4.12 Exit menu

The Exit menu items allow you to save or discard your changes to the BIOS items.



Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Save Options

Discard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save changes done so far to any of the setup options.

Discard Changes

Discard changes done so far to any of the setup options.

Default Options

Load Optimized Defaults

Restore/Load Default values for all the setup options.

Boot Override

These items displays the available devices. The device items that appears on the screen depends on the number of devices installed in the system. Click an item to start booting from the selected device.

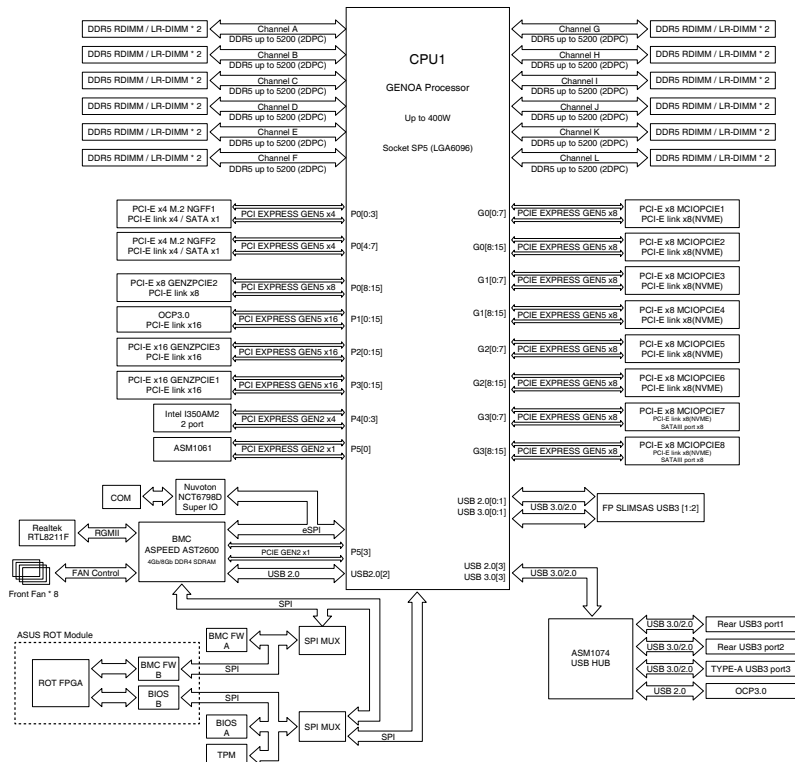
Launch EFI Shell from USB drives

Attempt to Launch EFI Shell application (Shell.efi) from one of the available filesystem devices.

Appendix

This appendix includes additional information that you may refer to when configuring the motherboard.

K14PA-U24 block diagram



Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



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This device complies with Innovation, Science and Economic Development Canada licence exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAN ICES-003(A)/NMB-003(A)

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CAN ICES-003(A)/NMB-003(A)

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AEEE Yönetmeliğine Uygundur

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Slovensky Spoločnosť ASUSTeK Computer Inc. týmto vyhlasuje, že toto zariadenie vyhovuje základným požiadavkám a ostatým príslušným ustanoveniam príslušných smerníc. Celý text vyhlásenia o zhode pre štáty EÚ je dostupný na adrese: www.asus.com/support

Slovenščina ASUSTeK Computer Inc. izjavlja, da je ta naprava skladna z bistvenimi zahtevami in drugimi ustreznimi določbami povezanih direktiv. Celotno besedilo EU-izjave o skladnosti je na voljo na spletnem mestu: www.asus.com/support

Español Por la presente, ASUSTeK Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de las directivas relacionadas. El texto completo de la declaración de la UE de conformidad está disponible en: www.asus.com/support

Svenska ASUSTeK Computer Inc. förklarar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta föreskrifter i relaterade direktiv. Fulltext av EU-försäkran om överensstämmelse finns på: www.asus.com/support

Українська ASUSTeK Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним положенням відповідних Директив. Повний текст декларації відповідності стандартам ЄС доступний на: www.asus.com/support

Türkçe AsusTek Computer Inc., bu aygıtın temel gereksinimlerle ve ilişkili Yönergelerin diğer ilgili koşullarıyla uyumlu olduğunu beyan eder. AB uygunluk bildiriminin tam metni şu adreste bulunabilir: www.asus.com/support

Bosanski ASUSTeK Computer Inc. ovim izjavljuje da je ovaj uređaj usklađen sa bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o usklađenosti dostupan je na: www.asus.com/support

Service and Support

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