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VANTAGEO Server

BIOS User Guide (EagleStream)

Version: R1.2

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About This Manual

Purpose

This manual describes the common operations and parameters of the BIOS of the Eagle Stream platform to provide you with guidance about server BIOS configuration and management.

Intended Audience

This manual is intended for:

- Planning engineers
- Network management and monitoring engineers
- Maintenance engineers

What Is in This Manual

This manual contains the following chapters:

Chapter 1, BIOS Overview	Describes basic BIOS concepts, the precautions for BIOS setup, and the server models that this manual applies to.
Chapter 2, Common Operations	Describes the common operations on the BIOS.
Chapter 3, Setup Parameter Descriptions	Describes parameters on the Setup screens.
Chapter 4, Reference: Control Keys for BIOS Setup	Describes common control keys used for BIOS setup.

Conventions

This manual uses the following conventions.

Notice: indicates equipment or environment safety information. Failure to comply can result in equipment damage, data loss, equipment performance degradation, environmental contamination, or other unpredictable results. Failure to comply will not result in personal injury.
Note: provides additional information about a topic.

Chapter 1 BIOS Overview

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1.1 Basic Concepts

As a server's most basic program, the BIOS is pre-loaded on a ROM chip on the motherboard. Figure 1-1 shows the BIOS in a system, which bridges server hardware and an OS. It initializes server hardware before booting an OS.

Figure 1-1 BIOS in a System



The main functions of the BIOS include:

- Performing POST.
- Initializing CPUs and memory.
- Checking I/O devices and boot devices.
- Booting an OS.

1.2 Precautions

Before modifying the BIOS setting of a server, you must record the corresponding initial settings so that the original settings can be restored if the modification results in improper operation of the server.

Notice

In general, the factory default settings are the optimal settings. Do not modify any parameter unless you are clear about it. Any improper modification may result in hardware resource conflicts or reduce the system performance.

1.3 Applicable Server Models

This document is applicable to VANTAGEO rack servers based on the **Eagle Stream** platform, includ- ing:

• 1240-RE

- 2240-RE
- 4440-RE

Chapter 2 Common Operations

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2.1 Entering the BIOS

Abstract

This procedure describes how to enter the BIOS so that you can view and set BIOS information.

Steps

- 1. Connect to a server in either of the following ways:
 - Connect a monitor, mouse, and keyboard to the server.
 - Start the KVM on the Web portal of the BMC.

For details, refer to "7.4 Starting the KVM" in the *VANTAGEO Server BMC User Guide* (*BMC V4*).

2. Power on the server. The server starts and the POST is performed. The logo of the server is displayed on the screen, see Figure 2-1.



Figure 2-1 Logo on the Screen

For a description of the hot keys for BIOS startup, refer to Table 2-1.

Table 2-1 Descriptions of Hot Keys for BIOS Startup

Hot Key	Description
F2/DEL	Press the key to enter the Aptio Setup screen.
F11	Press the key to enter the Boot Manager screen.
F12	Press the key to enter the PXE Boot environment.

3. Perform the following operations as required.

То	Do
Enter the Boot Manager screen	Press the F11 key. The Boot Manager screen is displayed, see Figure 2-2.
Enter the Aptio Setup screen	Press F2 or DEL. The Aptio Setup screen is displayed, see Figure 2-3.

Figure 2-2 Boot Manager Screen

Please select boot device	2:			
SATAO P2:RedHat Boot Manager (TS512GMTS800)				
OCP Port1:Mellanox Network Adapter - OC:42:A.	1:18:C5:AE (PXE IPv4)			
OCP Port2:Mellanox Network Adapter - OC:42:A.	1:18:C5:AF (PXE IPv4)			
OCP Port1:Mellanox Network Adapter - OC:42:A	1:18:C5:AE (PXE IPv6)			
OCP Port2:Mellanox Network Adapter - OC:42:A.	1:18:C5:AF (PXE IPv6)			
Built-in EFI Shell				
Enter Setup				
↑ and ↓ to move selection				
ENTER to select boot device				
ESC to boot using defaults				



The **Boot Manager** screen displays the currently configured boot devices of the server. You can select the desired boot device on this screen.

Main Advanced Pla	Aptio Setup – AMI atform Configuration Socket	t Configuration Server Mgmt
BIOS Information		
BIOS Version	01.22.01.03P2	
Build Date	01/09/2023	
Product Name	N/A	
Serial Number	N/A	
Asset Tag	N/A	
Access Level	Administrator	
Platform Informatior	i	
Platform	TypeArcherCityRP	↔+: Select Screen
Processor	806F6 - SPR-SP E3	1↓: Select Item
РСН	EBG A0/A1/B0/B1 SKU -	Enter: Select
	B1	+/-: Change Opt.
RC Revision	9409.P01	K/M: Scroll Help Area
BIOS ACM	1.1.1	F1: General Help
SINIT ACM	1.1.1	F2: Previous Values
		▼ F3: Optimized Defaults
		Edu Onive O Evite

Figure 2-3 Aptio Setup Screen



- For a description of the Aptio Setup screen, refer to 3 Setup Parameter Descriptions.
- For a description of the control keys on the **Aptio Setup** screen, refer to 4 Reference: Control Keys for BIOS Setup.

2.2 Setting the BIOS Language

Abstract

This procedure describes how to set the BIOS language that the BIOS information is displayed in.

Steps

- 1. On the Aptio Setup screen, select the Main menu. The Main screen is displayed.
- 2. Select **System Language**. Press **Enter**. The **System Language** dialog box is displayed, see Figure 2-4.

Figure 2-4 System Language Dialog Box

Aptio Setup – AMI Main Advanced Platform Configuration Socket Configuration Server Mgmt ▶			
Platform Information Platform Processor PCH RC Revision	TypeArcherCityRP 806F6 – SPR-SP E3 EBG A0/A1/B0/B1 SKU – B1 9409.P01	Choose the system default language	
BIOS HEM SINIT ACM Memory Information	- System Language — English 中文 (简体)	+: Select Screen	
lotal Memory System Memory Speed	1 4800 MT/s	↓: Select Item Enter: Select +/-: Change Opt.	
System Language	[English]	K/M: Scroll Help Area F1: General Help	
System Date System Time	[Sun 02/19/2023] [12:07:56]	 F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit 	
Version 2.22.1287 Copyright (C) 2023 AMI AB			

- 3. Select English.
- 4. Press F4. In the displayed dialog box, select Yes.

2.3 Querying Server Parameter Settings

Abstract

This procedure describes how to query server parameter settings, including the BIOS version number and product name.

Steps

1. On the **Aptio Setup** screen, select the **Main** menu. On the **Main** screen, the server configuration information is displayed, see Figure 2-5.

Figure 2-5 Server Configuration Information

Aptio Setup - AMI		
HOIH HEVGHOCE PIC	action Contriguiation Socket	CONTIGUIACION SERVER Agint
BIOS Information		*
BIOS Version	01.22.01.03P2	
Build Date	01/06/2023	
Product Name	N/A	
Serial Number	NZA	
Asset Tag	N/A	
Access Level	Administrator	
Platform Information	1	
Platform	TypeArcherCityRP	++: Select Screen
Processor	806F6 - SPR-SP E3	↑↓: Select Item
PCH	EBG A0/A1/B0/B1 SKU -	Enter: Select
	BO	+/-: Change Opt.
RC Revision	9409.P01	K/M: Scroll Help Area
BIOS ACM	1.1.1	F1: General Help
SINIT ACM	1.1.1	F2: Previous Values
		▼ F3: Optimized Defaults
		F4: Save & Exit
Vá	cion 2 22 1287 Conunidat (C) 2023 AMT
VEI	5100 2.22.1201 Copyright (C	/ 2020 101

2.4 Querying the CPU Information

Abstract

This procedure describes how to query the CPU information so that you can learn about the parameters of CPUs.

Steps

- 1. On the Aptio Setup screen, select the Socket Configuration menu. The Socket Configuration window is displayed.
- 2. Select **Processor Configuration** and press **Enter**. The CPU information is displayed, see Figure 2-6.

Figure 2-6 CPU Information

Aptio Setup — AMI Socket Configuration			
Processor Configuration Processor BSP Revision Processor Socket Processor ID Processor Frequency Processor Max Ratio Processor Min Ratio	806F6 - SPR Socket 0 000806F6* 2.800GHz 1CH 08H	-SP E3 Socket 1 000806F6 2.800GHz 1CH 08H	Enabled/Disabled Cores Per CPU.
Microcode Revision L1 Cache RAM(Per Core) L2 Cache RAM(Per Core) L3 Cache RAM(Per Package)	2B000161 80KB 2048KB 99840KB	2B000161 80KB 2048KB 99840KB	++: Select Screen †l: Select Item Enter: Select
CPU Voltage Channel Number Processor TDP Core Count	1.401V 8 350W 40	1.371V 8 350W 40	 +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit

2.5 Querying Memory Information

Abstract

This procedure describes how to query memory parameter settings.

Steps

- 1. On the Aptio Setup screen, select the Socket Configuration menu. The Socket Configuration window is displayed.
- Select Memory Configuration > Memory Topology and press Enter. The memory information is displayed, see Figure 2-7.

Figure 2-7 Memory Information

	Socket Configuration
otal Memory Slot : vailable Memory Slot : nused Memory Slot : emory Slot Type : PU1_EO-SocketO.ChE.DimmO: 2GB RDIMM DDR5 SDRAM Multi 3DF5E11 HMCG84AEBQA107N	<pre>////////////////////////////////////</pre>

2.6 Querying NIC Information

Abstract

This procedure describes how to query NIC information to learn about the NIC configurations, such as the MAC address, slot status, and NIC details.

Prerequisite

The boot mode is already set to UEFI in the BIOS. For details, refer to 2.10 Setting the Boot Mode.

Steps

Querying Slot Number, Port Number, and MAC Address Information

On the Aptio Setup screen, select Advanced. The Advanced screen is displayed, see Figure 2-8.

Figure 2-8 Advanced Screen



2. Select **Mainboard Information**, and then press **Enter**. The **Mainboard Information** screen is displayed, see Figure 2-9.

Figure 2-9 Mainboard Information Screen

Advanced	Aptio Setup – AMI	
Advanced->Mainboard I	nformation	LAN MAC Information
Board Name ME Version ME-BIOS Interface Ver ME SKU ME Status USB2.0 USB3.0 COM VGA • OnBoard Device Inform • LAN MAC Information • Graphics Card Informat	R5XG5_MB 18:6.0.4.16 1.1 Node Manager Operational 1 (Front) 2 (Rear) 1 (Front) 1 (Rear) 1 Connector(Front) 1 Connector(Rear) ation	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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3. Select LAN MAC Information, and then press Enter. The LAN MAC Information screen is displayed, see Figure 2-10.

Figure 2-10 LAN MAC Information Screen

Aptio Setup – AMI Advanced	
Advanced->Mainboard Information->LAN MAC Information 	
	++: Select Screen †↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version 2.22.1287 Copyright (C) 2	023 AMI AB

4. Press Esc to return to the Mainboard Information screen.

Querying Slot Status

5. Select **Slot Information**, and then press **Enter**. The **Slot Information** screen is displayed, see Figure 2-11.

Figure 2-11 Slot Information Screen

Aptio Setup – AMI Advanced	
Advanced->Mainboard Information->Slot Information Total 5 Slots Available 4 Slots Slot3 : In use PCI-E Gen5 x8 High Profile Slot4 : Available PCI-E Gen5 x8 High Profile Slot5 : Available PCI-E Gen5 x16 High Profile OCP1 (OCP NIC 3.0 Small Form Factor):Available PCI-E Gen5 x8 OCP2 (OCP NIC 3.0 Small Form Factor):Available PCI-E Gen5 x16	<pre>#*: Select Screen 14: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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The slot status is described as follows:

- In Use: indicates that a PCIe device is already installed in the slot.
- Available: indicates that the slot is available and no PCIe device is installed in it.
- 6. Press Esc twice to return to the Advanced screen.

Querying NIC Details

 Select the desired NIC, for example, Inter(R) Ethernet Network Adapter E810-C-Q2, and then press Enter. The detailed information about the NIC is displayed, see Figure 2-12.

Figure 2-12 Detailed NIC Information

Aptio Setup - AMI Advanced		
 Firmware Image Prop NIC Configuration Device Level Config 	erties uration	▲ View device firmware version information.
Blink LEDs	0	
UEFI Driver Adapter PBA Device Name Chip Type	Intel(R) 100GbE 2.5.12 K91258–009 Intel(R) Ethernet Network Adapter E810–C–Q2 Intel E810–C	-++: Select Screen ↑↓: Select Item
PCI Device ID PCI Address	1592 27:00:00	Enter: Select +/-: Change Option.
Link Status	[Disconnected]	F1: General Help
MAC Address	B4:96:91:CA:4A:D8	▼ F3: Optimized Defaults F4: Save & Exit
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2.7 Querying RAID Controller Card Information

Abstract

This procedure describes how to query RAID controller card information to learn about the RAID controller card configurations.

RAID controller cards are divided into the following types by installation position:

- Onboard RAID controller card
- Standard RAID controller card



A RAID controller card connected to a PCIe slot is called a standard RAID controller card.

The methods for querying the information about the above two types of RAID controller cards are different.

Prerequisite

The boot mode is already set to UEFI in the BIOS. For details, refer to 2.10 Setting the Boot Mode.

Steps

- Querying Onboard RAID Controller Card Information
 - On the Aptio Setup screen, select Advanced. The Advanced screen is displayed, see Figure 2-13.

Figure 2-13 Advanced Screen



2. Select **Mainboard Information**, and then press **Enter**. The **Mainboard Information** screen is displayed, see Figure 2-14.

Figure 2-14 Mainboard Information Screen

Advanced	Aptio Setup – AMI	
Advanced->Mainboard	Information	OnBoard Device Information
Board Name ME Version ME-BIOS Interface Ve ME SKU ME Status USB2.0 USB3.0 COM VGA	R5XG5_MB 18:6.0.4.16 n 1.1 Node Manager Operational 1 (Front) 2 (Rear) 1 (Front) 1 (Rear) 1 Connector(Front) 1 Connector(Rear)	++: Select Screen 11: Select Item Enter: Select +/-: Change Option.
 OnBoard Device Information LAN MAC Information Graphics Card Information Slot Information 		K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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3. Select **OnBoard Device Information**, and then press **Enter**. The **OnBoard Device Information** screen is displayed, see Figure 2-15.

Figure 2-15 OnBoard Device Information Screen

Advanced	Aptio Setup – AMI	
Advanced–>Mainb Device Informat	oard Information–>OnBoard ion	
VGA RAID Card	Present [Linked as x1] Present [Linked as x8]	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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The presence status of an onboard RAID controller card is described as follows:

- → Present: The onboard RAID controller card is present and its bandwidth information is displayed.
- → Not Present: The onboard RAID controller card is not present.
- Querying Standard RAID Controller Card Information
 - On the Aptio Setup screen, select Advanced. The Advanced screen is displayed, see Figure 2-16.

Figure 2-16 Advanced Screen

Aptio Setup Main Advanced Platform Configuration	– AMI Socket Configuration Server Mgmt ▶	
 Mainboard Information Trusted Computing ACPI Settings Redfish Host Interface Settings Serial Port Console Redirection SIO Common Setting SIO Configuration PCI Subsystem Settings USB Configuration Network Stack Configuration 	 Form for Mainboard Information. 	
 CSM Configuration NVMe Configuration Emulation Configuration PXE Configuration 	++: Select Screen †↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area	
 Tls Auth Configuration RAM Disk Configuration VLAN Configuration (MAC:BA807069CC48) 	F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit	
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2. Select **Mainboard Information**, and then press **Enter**. The **Mainboard Information** screen is displayed, see Figure 2-17.

Advanced	Aptio Setup – AMI	
Advanced->Mainboard	Information	Slot Information.
Board Name ME Version ME-BIOS Interface V ME SKU ME Status USB2.0 USB3.0 COM VGA	R5XG5_MB 18:6.0.4.16 er 1.1 Node Manager Operational 1 (Front) 2 (Rear) 1 (Front) 1 (Rear) 1 Connector(Front)	++: Select Screen 14: Select Item Enter: Select
 OnBoard Device Information LAN MAC Information Graphics Card Information Slot Information 		K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 2-17 Mainboard Information Screen

3. Select **Slot Information**, and then press **Enter**. The **Slot Information** screen is displayed, see Figure 2-18.

Figure 2-18 Slot Information Screen

Aptio Setup – AMI Advanced	
Advanced->Mainboard Information->Slot Information Total 5 Slots Available 3 Slots Slot3 : In use PCI-E Gen5 x8 High Profile Slot4 : In use PCI-E Gen5 x8 High Profile Slot5 : Available PCI-E Gen5 x16 High Profile OCP1 (OCP NIC 3.0 Small Form Factor):Available PCI-E Gen5 x8 OCP2 (OCP NIC 3.0 Small Form Factor):Available PCI-E Gen5 x16	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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The slot status is described as follows:

- $\rightarrow~$ In Use: indicates that a PCIe device is already installed in the slot.
- → Available: indicates that the slot is available and no PCIe device is installed in it.
- 4. Press **Esc** twice to return to the **Advanced** screen.
- 5. Select a standard RAID controller card (for example, **AVAGO MegaRAID**), and then press **Enter**. The detailed information about the standard RAID controller card is dis-

played, see Figure 2-19.

Figure 2-19 Detailed Standard RAID Controller Card Information

Advanced	Aptio Setup — AMI	
 Main Menu Help PROPERTIES Status Backplane BBU Enclosure Drives 	[Optimal] O [No] O	▲ Shows menu options such as Configuration Management, Controller Management, Virtual Drive Management, Drive Management and Hardware Components.
Drive Groups Virtual Drives View Server Profile ACTIONS Configure Set Factory Defaults Update Firmware Silence Alarm	0 0	 ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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2.8 Querying Hard Disk Information

Abstract

This procedure describes how to query the hard disk information so that you can learn about the parameter settings of hard disks.

Steps

- 1. On the Aptio Setup screen, select the Platform Configuration menu. The Platform Configuration window is displayed.
- Select PCH-IO Configuration > SATA And RST Configuration > Controller x SATA And RST Configuration and press Enter. The hard disk information is displayed, see Figure 2-20.



This procedure uses Controller 1 SATA And RST Configuration as an example.

Figure 2-20 Hard Disk Information

Aptio Setup – AMI Platform Configuration			
Controller 1 SATA And R	ST Configuration	SATA test settings	
SATA Configuration SATA Mode Selection SATA Test Mode SATA Port O Software Preserve SATA Port 0 SATA Port 1 Software Preserve SATA Port 1 SATA Port 2 Software Preserve SATA Port 2 SATA Port 3 Software Preserve SATA Port 3	[Enabled] [AHCI] [Disabled] [Not Installed] Unknown [Enabled] [Not Installed] Unknown [Enabled] [Not Installed] Unknown [Enabled] [Not Installed] Unknown [Enabled]	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values V F3: Optimized Defaults F4: Save & Exit</pre>	
F4: Save & Exit			

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For a description of the parameters about hard disk information, refer to Table 2-2.

Table 2-2 Hard Disk Information Parameter Descriptions

Parameter	Description	Default
SATA Configuration	 Enables or disables the SATA configuration feature. Options: Enabled: enables the SATA configuration feature. Disabled: disables the SATA configuration feature. After the feature is disabled, the parameters below are hidden. 	Enabled
SATA Mode Selection	 Select a SATA mode. Options: AHCI: AHCI mode. When AHCI mode is selected, the SATA Interrupt Selection and RAID Device ID parameters are hidden. RAID: RAID mode. 	AHCI

Parameter	Description	Default
SATA Interrupt Selection	Select the interrupt that the OS will use. This para- meter takes effect only when the SAT controller is in RAID mode. Options: • Msix • Msi • Legacy	Msix
SATA Test Mode	 Enables or disables SATA Test mode. Options: Enabled: enables SATA Test mode. Disabled: disables SATA Test mode. 	Disabled
RAID Device ID	Select the ID of the RAID device. This parameter takes effect only when the SATA controller is in RAID mode. Options: Client Alternate Server	Server
SATA Port 0	Name of the device installed in SATA port 0. If the device is present, the device information is displayed. If the device is not present, the informa- tion shows that the device is not installed.	-
Software Preserve	Software preservation.	Unknown
SATA Port 0	Enables or disables the SATA port.Options:EnabledDisabled	Enabled
Spin Up Device	If interleaving boot for any port is enabled, interleav- ing boot is performed only on the ports with the dri- ver enabled. Options: • Enabled • Disabled	Disabled

2.9 Setting the BIOS Time

Abstract

This procedure describes how to set the BIOS time to the local time.

Steps

- 1. On the Aptio Setup screen, select the Main menu. The Main screen is displayed.
- 2. Select System Date and press Enter to move the cursor to the date, see Figure 2-21.

		▲ Set the Date. Use Tab
Platform Information		to switch between Date
Platform	TypeArcherCityRP	elements.
Processor	806F6 - SPR-SP E3	Default Ranges:
PCH	EBG A0/A1/B0/B1 SKU -	Year: 1998-9999
	BO	Months: 1-12
RC Revision	9409.P01	Days: Dependent on month
BIOS ACM	1.1.1	Range of Years may vary.
SINIT ACM	1.1.1	
Memory Information		++: Select Screen
Total Memory	32768 MB	↑↓: Select Item
System Memory Speed	4000 MT/s	Enter: Select
		+/-: Change Opt.
System Language	[English]	K/M: Scroll Help Area
		F1: General Help
System Date	[Sat 01/07/2023]	F2: Previous Values
System Time	[15:31:51]	▼ F3: Optimized Defaults
System lime	[15:31:51]	F3: Uptimized Defaults

Figure 2-21 Setting the Date

3. Set the date.

The date is displayed in MM/DD/YYYY format. Press **Enter** or **Tab** to switch between the month, date, and year items and change the settings as follows:

- To increase the value by one, press +.
- To decrease the value by one, press -.
- To specify a value, press the corresponding number key.
- 4. Select System Time and press Enter to move the cursor to the time, see Figure 2-22.

Main Advanced Platf	Aptio Setup – AMI orm Configuration Socket	Configuration Server Mgmt
Platform Information Platform Processor PCH RC Revision BIOS ACM SINIT ACM	TypeArcherCityRP 806F6 - SPR-SP E3 EBG A0/A1/B0/B1 SKU - B0 9409.P01 1.1.1 1.1.1	Set the Time. Use Tab to switch between Time elements.
Memory Information Total Memory System Memory Speed System Language System Date System Time	32768 MB 4000 MT/s [English] [Sat 01/07/2023] [15:32:30]	 ★+: Select Screen ↓↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 2-22 Setting the Time

5. Set the time.

The time is displayed in HH:MM:SS format based on a 24-hour clock system.

Press **Enter** or **Tab** to switch between the hour, minute, and second items and change the settings as follows:

- To increase the value by one, press +.
- To decrease the value by one, press -.
- To specify a value, press the corresponding number key.
- 6. Press F4. In the displayed dialog box, select Yes.

2.10 Setting the Boot Mode

Abstract

The server boot modes include:

- Legacy mode: a relatively old boot mode with certain limitations.
- UEFI mode: a relatively new boot mode that supports PXE over IPv6 or IPv4 and provides the UEFI Shell environment.

AB

Note

UEFI mode is recommended.

Steps

- 1. On the Aptio Setup screen, select the Boot menu. The Boot screen is displayed.
- 2. Select **Boot option filter** and press the **Enter** key. The **Boot option filter** dialog box is displayed, see Figure 2-23.

Figure 2-23 Boot Option Filter Dialog Box

Aptio Setup – AMI ∢ Security <mark>Boot</mark> Save & Exit			
Boot Configuration Boot option filter Endless Boot Support Quick Boot Setup Prompt Timeout Bootup NumLock State Quiet Boot	[UEFI only] [Enabled] [Disabled] 3 [On] [Disabled]	▲ This option controls Legacy/UEFI ROMs priority	
Embedded Shell Boot FIXED BOOT ORDER Prior	Boot option filter — Legacy only UEFI only	: Select Screen	
Boot Option #1		: Select Item	
Boot Option #2	[Network]	Enter: Select	
Boot Option #3	[USB]	+/-: Change Opt.	
Boot Option #4	[UJ/DVD] [Other Device]	E1: Conorol Holp	
Dotimized Boot	[Disabled]	F2: Previous Values	
		▼ F3: Optimized Defaults F4: Save & Exit	
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		AB	

3. Select Legacy only or UEFI only as needed.



After the boot mode is changed, some configuration parameters of the BIOS are changed accordingly.

4. Press F4. In the displayed dialog box, select Yes.

2.11 Setting the Boot Order

Abstract

In most cases, a server is configured with multiple boot devices, for example, a hard disk, a CD

, or a DVD .

This procedure describes how to adjust the priorities of these boot devices in the BIOS to set the boot order.

Context

By default, the boot order of the server is as follows:

- 1. Hard disk
- 2. Network
- 3. USB
- 4. CD/DVD drive
- 5. Other devices

Steps

- 1. On the Aptio Setup screen, select the Boot menu. The Boot screen is displayed.
- 2. Under **FIXED BOOT ORDER Priorities**, select the option for which you want to adjust the boot order.

For example, to adjust the boot device with the first priority, select **Boot Option #1** and press the **Enter** key. The **Boot Option #1** dialog box is displayed, see Figure 2-24.

Figure 2-24 Boot Option #1 Dialog Box

Aptio Setup – AMI ◀ Security <mark>Boot</mark> Save & Exit			
Bootup NumLock State [0 Quiet Boot [1 Embedded Shell Boot [1)n])isabled])isabled]	Sets the system boot order	
FIXED BOOT ORDER Pr	— Boot Option #1 ——		
BOOT UPTION #1 Hard L Boot Option #2 Networ	JISK °K		
Boot Option #3 USB			
Boot Option #4 CD/DVI) Terrene en la seconda de la		
Boot Uption #5 Uther	Device:Built−in EFI Shej Led	elect Screen	
01300		: Select	
Optimized Boot		Change Opt.	
▶ Delete Boot Option		K/M: Scroll Help Area F1: General Help F2: Previous Values	
▶ UEFI Other Drive BBS Prior	ities 🔻	F3: Optimized Defaults	
		F4: Save & Exit	
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For a description of the boot devices, refer to Table 2-3.

Table 2-3 Boot Device Descriptions

Boot Device	Description
Hard Disk	Boots the server from a hard disk.
Network	Boots the server from a network device.
USB	Boots the server from a USB device.
CD/DVD	Boots the server from a CD/DVD-ROM drive.
Other Device:Built-in EFI Shell	Boots the server from another device.
Disabled	Disables this option.

- 3. Press the up/down key to select another device that will serve as the first boot device in the boot sequence. Press **Enter**.
- 4. (Optional) Adjust boot devices with other priorities by referring to Step 2 through Step 3.
- 5. Press F4. In the displayed dialog box, select Yes.

2.12 Setting the BIOS Password

Abstract

BIOS passwords include an administrator password and a user password. By default, neither the administrator password nor the user password is set.

To ensure server security, it is recommended that you set BIOS passwords immediately at first login and properly keep the passwords.

III Note

This procedure describes how to set the administrator password. You can set the user password by using the same method.

Context

After you log in to the BIOS by using the administrator password, you can perform operations by using the administrator permission. After you log in to the BIOS by using the user password, you can perform operations by using the user permission. For the items that cannot be set by the user, refer to Table 2-4.

Level-1 Menu	Level-2 menu	Level-3 menu
Advance	ACPI Settings	Enabled ACPI Auto Configuration
		Hibernation
	Redfish Host Interface Settings	IP address
		IP Mask address
		IP Port
	PCI Subsystem Settings	Above 4G Decoding
		SR-IOV Support
	USB Configuration	Legacy USB Support
		XHCI Hand-off
		USB Boot
Server Mgmt	POST Timer	-
	POST Timer timeout	-
	POST Timer Policy	-
	OS Watchdog Timer	-
	OS Wtd Timer Timeout	-

Table 2-4 Descriptions of the Items Not Available for the User
Level-1 Menu	Level-2 menu	Level-3 menu
	OS Wtd Timer Policy	-
	Restore on AC power loss	-
	Set BMC to default	-
	View FRU information	-
	BMC network configuration	-
	BMC User Settings	-
Security	Administrator Password	-

Steps

- 1. On the Aptio Setup screen, select the Security menu. The Security screen is displayed.
- 2. Select Administrator Password and press Enter. The Create New Password dialog box is displayed, see Figure 2-25.

Figure 2-25 Create New Password Dialog Box

Aptio Setup – AMI ◀ Security Boot Save & Exit	
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator Create New Password	▲ Set Administrator Password
The password lengt in the following r Minimum length	ect Screen
Maximum length 32	↑↓: Select Item Enter: Select
Administrator Password	+/-: Change Opt.
User Password	F1: General Help
User Password Not Installed	F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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3. Enter the password and press **Enter**. In the displayed **Confirm New Password** dialog box, enter the password again and then press **Enter**.



The password consists of 8 to 32 characters, including uppercase and lowercase letters, digits, and special characters.

4. Press F4. In the displayed dialog box, select Yes.

Related Tasks

To change the password, perform the following steps:

1. On the Security screen, select Administrator Password and press Enter. The Enter Current Password dialog box is displayed, see Figure 2-26.

Figure 2-26 Enter Current Password Dialog Box



2. Enter the current BIOS password and press the **Enter** key. In the two dialog boxes that are displayed, enter the new password and then press the **Enter** key.



The new password cannot be the same as the last three passwords used for the account.

3. Press F4. In the displayed dialog box, select Yes.

2.13 Deleting a BIOS Password

Abstract

In a special case, a **BIOS** password can be cleared.

III Note

After a BIOS password is set, you must enter the password if you want to delete it. If you do not enter it, you cannot delete it. Therefore, you must properly keep the password. This procedure describes how to delete the administrator password. You can delete the user password by using the same method.

Steps

- 1. On the Aptio Setup screen, select the Security menu. The Security screen is displayed.
- Select Administrator Password and press Enter. The Enter Current Password dialog box is displayed, see Figure 2-27.

Figure 2-27 Enter Current Password Dialog Box

Aptio Setup – AMI ◀ Security Boot Save & Exit	
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will	▲ Set Administrator Password
have AdministratorEnter Current Passwor The password lengt in the following r	d
Minimum length	ect Screen
Maximum iength 32	Enter: Select
Administrator Password	+/-: Change Opt.
Administrator Password Installed	K/M: Scroll Help Area
User Password	F1: General Help
USER FASSWORD NUT INSTALLED	 F2: Previous values F3: Optimized Defaults F4: Save & Exit
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	AB

 Enter the current BIOS password and press Enter. In the displayed dialog box, do not enter any password. Directly press Enter. The WARNING dialog box is displayed, see Figure 2-28.

Figure 2-28 WARNING Dialog Box

Aptio Setup – AMI ∢ <mark>Security</mark> Boot Save & Exit			
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. Set Administrator Password If ONLY the User's password is set, then this is a power on password is set, then this boot or enter Setup. No Nave Administrator r Clear Old Password. Continue? have Administrator r Clear Old Password. Continue? Haximum length Yes Maximum length Yes Administrator Password Select Screen Select Item Administrator Password F1: General Help User Password Not Installed F2: Previous Values Ves & Password Not Installed F3: Optimized Defaults			
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- 4. Select Yes. The Security screen is displayed.
- 5. Press F4. In the displayed dialog box, select Yes.

2.14 Setting the PCIe Function for a Port

Abstract

After the PCIe feature of a port is enabled, the port adapts to different PCIe cards to maximize port resource utilization.

Steps

- 1. On the Aptio Setup screen, select the Socket Configuration menu. The Socket Configuration window is displayed.
- Select IIO Configuration > Socketx Configuration and press Enter. The Socketx Configuration screen is displayed, see Figure 2-29.



This procedure uses Socket1 Configuration as an example.

Figure 2-29 Socket1 Configuration Screen

Aptio Setup — AMI Socket Configuration		
Port DMI Port 1A Port 1C Port 1E Port 2A Port 3A Port 3E Port 4C Port 4C Port 4E Port 4G Port 5C Port 5C Port 5E Port 5G	Settings related to PCI Express Ports (0/1A/1B/1C/1D/2A/2B/2C/ 2D/3A/3B/3C/3D/4A/4B/4C/ 4D/5A/5B/5C/5D) ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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3. Select the port that you want to configure and then press **Enter**. The screen for configuring the port is displayed, see Figure 2-30.



This procedure uses **Port 1A** as an example.

Figure 2-30 Port 1A Screen

Aptio Setup – AMI Socket Configuration		
Port 1A PCI-E Port [Auto Hot Plug Capable [Disa Surprise Hot Plug [Disa Capable PCI-E Port Link [No] Disable Link Speed [Auto PCI-E Port DeEmphasis [-6.0	In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Enable/Disable is used • ++: Select Screen	
PCI-E Port Link Status Link PCI-E Port Link Max	Did Not Train11: Select ItemWidth x16Enter: SelectDid Not Train+/-: Change Opt.mon]K/M: Scroll Help Areabled]F1: General HelpF2: Previous Valuesb]F3: Optimized DefaultsF4: Save & Exit	

4. Select **PCI-E Port** and press **Enter**. The **PCI-E Port** dialog box is displayed, see Figure 2-31.

Figure 2-31 PCI-E Port Dialog Box



- 5. Select the desired PCIe feature as needed and then press Enter.
 - Auto: automatic
 - No: disabled
 - Yes: enabled
- 6. Press F4. In the displayed dialog box, select Yes.

2.15 Setting Serial Port Console Redirection

Abstract

This procedure describes how to set serial port console redirection to redirect the console output to a serial port.

Steps

- 1. On the **Aptio Setup** screen, select the **Advanced** menu. The **Advanced** screen is displayed.
- 2. Select Serial Port Console Redirection and press Enter. The Serial Port Console Redirection screen is displayed.

 Select Console Redirection and press Enter. The Console Redirection dialog box is displayed, see Figure 2-32.

Aptio Setup — AMI Advanced		
COMO Console Redirection [Enabled] Console Redirection Settings Legacy Console Redirection Legacy Console Redirection Settings Serial Port for Out-of Windows Emergency Mana Console Redirection EMS Console Redirection Settings	Console Redirection Enable or Disable.	
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Figure 2-32 Console Redirection Dialog Box

- 4. Select Enabled and press Enter.
- 5. Press F4. In the displayed dialog box, select Yes.

2.16 Querying BMC Network Parameter Settings

Abstract

This procedure describes how to query BMC network parameter settings.

Steps

- 1. On the **Aptio Setup** screen, select the **Server Mgmt** menu. The **Server Mgmt** screen is displayed.
- Select BMC network Configuration and press Enter. The BMC network Configuration screen is displayed, see Figure 2-33.

Figure 2-33 BMC Network Configuration Screen

BMC network configura	tion	 Select to configure LAN channel parameters
Configure IPv4 support		statically or
****		BMC). Unspecified
Lan channel 1		option will not modify
Configuration Address	[Unspecified]	any BMC network
source		parameters during BIOS
Current Configuration Address source	StaticAddress	
Station IP address	192.168.5.68	++: Select Screen
Subnet mask	255.255.255.0	↑↓: Select Item
Station MAC address	66-63-94-98-95-3F	Enter: Select
Router IP address	192.168.5.1	+/-: Change Opt.
Router MAC address	00-00-00-00-00-00	K/M: Scroll Help Area
		F1: General Help
Lan channel 2		F2: Previous Values
		▼ F3: Optimized Defaults
		F4: Save & Exit

2.17 Setting BMC Network Parameters

Abstract

This procedure describes how to set the BMC network parameters so that the local PC, as a client, can connect to the BMC.

Steps

- 1. On the **Aptio Setup** screen, select the **Server Mgmt** menu. The **Server Mgmt** screen is displayed.
- 2. Select **BMC network configuration** and press **Enter**. The **BMC network configuration** screen is displayed, see Figure 2-34.

Figure 2-34 BMC Network Configuration Screen

BMC network configura	tion	Select to configure LAN channel parameters
Configure IPv4 support		statically or
***		dynamically(by BIOS or
		BMC). Unspecified
Lan channel 1		option will not modify
Configuration Address	[Unspecified]	any BMC network
sounce		parameters during BIOS
Current Configuration	StaticAddress	
Address source		
Station IP address	192.168.5.68	++: Select Screen
Subnet mask	255.255.255.0	T↓: Select Item
Station MAC address	66-63-94-98-95-3F	Enter: Select
Router IP address	192.168.5.1	+/-: Change Opt.
Router MAC address	00-00-00-00-00	K/M: Scroll Help Area
		F1: General Help
Lan channel 2		F2: Previous Values
		F3: Uptimized Defaults
		F4: Save & Exit

 Select each parameter that you need to set and press the Enter key. The screen for setting the parameter is displayed. Set the parameter. For a description of the parameters, refer to Table 2-5.

Parameter	Description
Configure IPv4 support	
Configuration Address source	 Sets the IPv4 address configuration method of Channel 1/Channel 2: Unspecified: undefined. Static: static mode, in which the IP address is manually set. DynamicBmcDhcp: The IP address is dynamically obtained through BMC DHCP. DynamicBmcNonDhcp: The IP address is dynamically obtained through the BMC.
Configure IPv6 support	
IPv6 Support	 Sets whether or not Channel 1/Channel 2 supports the IPv6 configuration. Enabled: IPv6 configuration is supported. The following IPv6 parameters can be configured only when Enabled is selected. Disabled: IPv6 configuration is not supported.

Table 2-5 BMC Network Parameter Descriptions

Parameter	Description
	If Disabled is selected, the following IPv6 parameters cannot be config-
	urea.
Configuration Address	Sets the IPv6 address configuration method of Channel 1 or Channel 2:
source	Unspecified: undefined.
	• Static: static mode, in which the IP address is manually set.
	• DynamicBmcDhcp : The IP address is dynamically obtained through
	BMC DHCP.
Configure VLAN support	
VLAN Support	Sets whether or not Channel/Channel 2 supports the VLAN configuration.
	• Enabled: VLAN configuration is supported.
	The following VLAN parameters can be configured only when Enabled
	is selected.
	• Disabled : VLAN configuration is not supported.
	If Disabled is selected, the following VLAN parameters cannot be con-
	figured.

4. Press F4. In the displayed dialog box, select Yes.

2.18 Setting the PXE Function for a NIC

Abstract

This procedure describes how to enable the PXE function for a NIC in a server to control the server over the network.

Steps

 On the Aptio Setup screen, select Advanced. The Advanced screen is displayed, see Figure 2-35.

Figure 2-35 Advanced Screen



 Select PXE Configuration, and then press Enter. The PXE Configuration screen is displayed, see Figure 2-36.

Figure 2-36 PXE Configuration Screen

Advanced	Aptio Setup — AMI	
Advanced->PXE Config Slot 2 PXE	uration [Enabled]	Enable or Disable PXE FUNCTION.
MAC Address MAC Address Slot 11 PXE MAC Address MAC Address MAC Address OCP PXE MAC Address MAC Address MAC Address	28-7B-09-CA-FB-77 28-7B-09-CA-FB-78 [Enabled] 40-A6-B7-18-38-60 40-A6-B7-18-38-61 40-A6-B7-18-38-62 40-A6-B7-18-38-63 [Enabled] 0C-42-A1-18-C5-AE 0C-42-A1-18-C5-AF	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Note

The **PXE Configuration** screen only displays the NIC information about the server, which is for reference only. The NIC information depends on the actual configuration.

- 3. Select the desired NIC, and then press **Enter**. In the displayed dialog box, select **Enabled** to enable the PXE function for the NIC.
- 4. Press F4. In the displayed dialog box, select Yes.

2.19 Setting Virtualization Parameters

Abstract

This procedure describes how to set virtualization parameters to improve server performance.

Context

For a description of common virtualization parameters, refer to Table 2-6.

Parameter	Description	Recommended
		Configuration
Intel VT for Directed I/O	Specifies whether to enable the I/O virtualization func- tion (namely, the VT-d function). After the VT-d function is enabled, the VMM manages the access of multiple VMs to the same physical I/O device through this function.	Enabled
VMX	Specifies whether to enable the CPU virtualization function. After the CPU virtualization function is enabled, the virtualization layer or operating system that supports the CPU virtualization technology can use the hard- ware capabilities of Intel's virtualization technologies.	Enabled
SR-IOV Support	Specifies whether to enable the SR-IOV function. After the SR-IOV function is enabled, a physical I/O device (typically a network adapter) can be virtual- ized into multiple independent I/O devices that can be used by multiple VMs. This reduces the CPU load of the host and network latency, improving network per- formance.	Enabled

Table 2-6 Common Virtualization Parameter Descriptions

Steps

Configuring Intel VT for Directed I/O

1. On the **Aptio Setup** screen, select **Socket Configuration**. The **Socket Configuration** screen is displayed, see Figure 2-37.

Aptio Setup — AMI		
Main Advanced Platform Configuration	Socket Configuration Server Mgmt	
 Processor Configuration Common RefCode Configuration Uncore Configuration Memory Configuration IIO Configuration Advanced Power Management Configuration 	Displays and provides option to change the IIO Settings ++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults	
	F4: Save & Exit	
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	AB	

Figure 2-37 Socket Configuration Screen

 Select IIO Configuration > Intel VT for Directed I/O (VT-d), and then press Enter. The Intel VT for Directed I/O (VT-d) screen is displayed, see Figure 2-38.

Figure 2-38 Intel VT for Directed I/O (VT-d) Screen

Aptio Setup – AMI Socket Configuration		
Intel VT for Directed 3	I/O (VT-d)	Enable/Disable Intel
Intel VT for Directed I/O	[Enabled]	I/O (VT-d) by reporting the I/O device
DMA Control Opt-In Flag	[Disabled]	assignment to VMM through DMAR ACPI
Interrupt Remapping X2APIC Opt-Out	[Auto] [Disabled]	Tables.
Source Validation	[Disabled]	++: Select Screen
Translation Blocking	[Disabled]	Enter: Select Item
Redirect	[Enabled]	K/M: Scroll Help Area
Redirect	[Enabled]	F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit
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3. Select **Intel VT for Directed I/O**, and then press **Enter**. In the displayed dialog box, select **Enabled** to enable the VT-d function.

Configuring VMX

 On the Socket Configuration screen, select Processor Configuration, and then press Enter. The Processor Configuration screen is displayed, see Figure 2-39.

Aptio Setup – AMI Socket Configuration		
Hyper Threading Technology	[Enabled]	Enables the Vanderpool Technology, takes
Check CPU BIST Result	[Enabled]	effect after reboot.
Hardware Prefetcher	[Enabled]	
L2 RFO Prefetch Disable	[Disabled]	
Adjacent Cache Prefetcher	[Enabled]	
DCU Streamer Prefetcher	[Enabled]	
DCU IP Prefetcher	[Enabled]	++: Select Screen
LLC Prefetch	[Disabled]	↑↓: Select Item
Homeless Prefetch	[Auto]	Enter: Select
Extended APIC	[Enabled]	+/-: Change Option.
Enable Intel(R) TXT	[Disabled]	K/M: Scroll Help Area
VMX	[Enabled]	F1: General Help
Enable SMX	[Disabled]	F2: Previous Values
Lock Chipset	[Enabled]	▼ F3: Optimized Defaults F4: Save & Exit
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		AB

Figure 2-39 Processor Configuration Screen

5. Select **VMX**, and then press **Enter**. In the displayed dialog box, select **Enabled** to enable the CPU virtualization function.

Configuring SR-IOV Support

On the Setup screen, select Advanced. The Advanced screen is displayed, see Figure 2-40.

Figure 2-40 Advanced Screen

Aptio Setup — AMI		
Main Advanced Platform Configuration S	ocket Configuration Server Mgmt	
▶ Mainboard Information	▲ PCI, PCI-X and PCI	
▶ Trusted Computing	Express Settings.	
▶ ACPI Settings	restation and a second second second	
Redfish Host Interface Settings		
Serial Port Console Redirection		
SIO Common Setting		
SIO Configuration		
PCI Subsystem Settings		
USB Configuration		
Network Stack Configuration		
CSM Configuration	++: Select Screen	
NVMe Configuration	T4: Select Item	
Emulation Configuration	Enter: Select	
PXE Configuration	+/-: Change Option.	
	K/M: Scroll Help Area	
Tls Auth Configuration	F1: General Help	
RAM Disk Configuration	F2: Previous Values	
VLAN Configuration (MAC:26D1E357D416)	▼ F3: Optimized Defaults	
	F4: Save & Exit	
Vension 0.00 4007 Depunisht (C) 0000 AVE		
VELSION 2.22.1207 Copyright (C) 2023 ANI		
	HD	

7. Select PCI Subsystem Settings, and then press Enter. The PCI Subsystem Settings screen is displayed, see Figure 2-41.

Aptio Setup - AMI Advanced PCI Bus Driver Version A5.01.29 If system has SR-IOV capable PCIe Devices, PCI Devices Common Settings: this option Enables or Above 4G Decoding [Enabled] Disables Single Root IO Virtualization Support. ++: Select Screen **†↓**: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Version 2.22.1287 Copyright (C) 2023 AMI AB

Figure 2-41 PCI Subsystem Settings Screen

- 8. Select **SR-IOV Support**, and then press **Enter**. In the displayed dialog box, select **Enabled** to enable the SR-IOV function.
- 9. Press F4. In the displayed dialog box, select Yes.

2.20 Setting Memory Parameters

Abstract

This procedure describes how to set memory parameters to improve server performance.

Steps

1. On the **Aptio Setup** screen, select **Socket Configuration**. The **Socket Configuration** screen is displayed, see Figure 2-42.

Aptio Setup Main Advanced Platform Configuration	– AMI Socket Configuration Server Mgmt)
 Processor Configuration Common RefCode Configuration Uncore Configuration Memory Configuration IIO Configuration Advanced Power Management Configuration 	Displays and provides option to change the Common RefCode Settings ++: Select Screen 11: Select Item
	Fiter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 2-42 Socket Configuration Screen

2. Select Common RefCode Configuration, and then press Enter. The Common RefCode Configuration screen is displayed, see Figure 2-43.

Aptio Setup – AMI Socket Configuration		
Common RefCode Configuration		Enable or Disable Non
Numa Virtual Numa UMA-Based Clustering	[Enabled] [Disabled] [Quadrant (4-clusters)]	<pre>++: Select Screen ++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults E4: Save & Exit</pre>

Figure 2-43 Common RefCode Configuration Screen

- Select Numa, and then press Enter. In the displayed dialog box, select Enabled to enable the NUMA function.
- 4. Select **Virtual Numa**, and then press **Enter**. In the displayed dialog box, select **Disabled** to disable the virtual NUMA function.
- 5. Press F4. In the displayed dialog box, select Yes.

2.21 Setting Power Parameters

Abstract

This procedure describes how to set power parameters to improve server performance.

Context

For a description of common power parameters, refer to Table 2-7.

Table 2-7 Common Power Parameter Descriptions

Parameter	Description	Recommended Configuration
Power Policy Select	Power mode. Options:Performance: performance mode.	Performance

Parameter	Description	Recommended
		Configuration
	 This mode is applicable to high-performance scenarios characterized by high load, multiple threads and low latency. In this mode, the CPU usage and memory usage are high and energy saving is automatically disabled, and therefore the overall power consumption is increased. Efficient: energy-saving mode. This mode is applicable to most common scenarios. In this mode, the server enables energy saving with minimal impact on performance and puts some CPU cores to sleep at a low load, to increase energy savings while delivering good performance. Custom: user-defined mode. This mode is applicable to the scenarios where you need to customize the power management policy as required. Latency-Performance: low-latency mode. This mode, the server disables energy saving and other management functions that may cause latency, and keeps idle CPUs at their highest frequency for faster response. Maximum-Performance: maximum-performance mode. In this mode, the CPU remains stable at the Max Turbo frequency. 	
EIST (Pstates)	Specifies whether to enable the EIST function. EIST is used to adjust the voltage and frequency of the CPUs and reduce both the power consumption and the heat generated in accordance with different workloads.	Enabled
Turbo Mode	Specifies whether to enable the Turbo mode. The Turbo mode increases CPU frequency and thus maximizes CPU performance. This parameter is displayed when EIST (Pstates) is set to Enabled .	Enabled

Parameter	Description	Recommended
		Configuration
Monitor/MWAIT Support	 Specifies whether to enable the Monitor/Mwait instruction. Enabling the Monitor/Mwait instruction optimizes the instruction operation of a CPU. If the C-State needs to be disabled for a CPU, and this instruction needs to be disabled in some operating systems, set this parameter to Disabled. If an Enhanced VMotion Compatibility (EVC) error is reported when a VM is added to a cluster or is migrated, set this parameter to Enabled to enable this instruction. 	Disabled
CPU C6 report	Specifies whether to report the C6 state to the operat- ing system.	Disabled
Enhanced Halt State (C1E)	Specifies whether to enable the C1E function.	Disabled
Package C State	 Sets the package C-State limit. Options: C0/C1 state C2 state C6 (non-retention) state Auto C0 indicates that the CPU is actively running. Other C-States indicate the idleness of different levels. From C0 to C6, the higher the C number is, the deeper into sleep mode the CPU goes. In a deeper sleep mode, the CPU saves more power but needs more time to get active again. 	C0/C1 state

Steps

Configuring the Power Policy Select Parameter

1. On the **Aptio Setup** screen, select **Socket Configuration**. The **Socket Configuration** screen is displayed, see Figure 2-44.

Aptio Setup — AMI		
Main Advanced Platform Configuration	Socket Configuration Server Mgmt ▶	
 Processor Configuration Common RefCode Configuration Uncore Configuration Memory Configuration IIO Configuration Advanced Power Management Configuration 	Displays and provides options to change the Power Management Settings	
	F3: Optimized Defaults F4: Save & Exit	
Version 2,22,1287 Coour	ight (C) 2023 AMT	
	AB	

Figure 2-44 Socket Configuration Screen

2. Select Advanced Power Management Configuration, and then press Enter. The Advanced Power Management Configuration screen is displayed, see Figure 2-45.

Aptio Setup	– AMI Socket Configuration
Advanced Power Management Configuration Power Policy Select [Performance] CPU P State Control Hardware PM State Control Frequency Prioritization CPU C State Control Package C State Control Package C State Control CPU - Advanced PM Tuning Package Current Config SOCKET RAPL Config PMax Detector Configuration ACPI Sx State Control Memory Power & Thermal Configuration	Select the power management features. ++: Select Screen 14: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 2-45 Advanced Power Management Configuration Screen

3. Select **Power Policy Select**, and then press **Enter**. In the displayed dialog box, select **Per-formance**.

Configuring the EIST (Pstates) and Turbo Mode Parameters

4. On the Advanced Power Management Configuration screen, select CPU P State Control, and then press Enter. The CPU P State Control screen is displayed, see Figure 2-46.

Figure 2-46 CPU P State Control Screen

Aptio Setup — AMI Socket Configuration		
CPU P State Control AVX P1 EIST (Pstates) EIST PSD Function Boot performance mode Energy Efficient Turbo Turbo Mode CPU Flex Ratio	[Nominal] [Enabled] [HW_ALL] [Max Performance] [Enabled] [Enabled] [Disabled]	Enable/Disable EIST (P–States)
Override CPU Core Flex Ratio GPSS timer	23 [500 us]	++: Select Screen †4: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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- 5. Select **EIST (Pstates)**, and then press **Enter**. In the displayed dialog box, select **Enabled** to enable the EIST function.
- 6. Select **Turbo Mode**, and then press **Enter**. In the displayed dialog box, select **Enabled** to enable the Turbo mode.

Configuring the Monitor/MWAIT Support, CPU C6 report, and Enhanced Halt State (C1E) Parameters

7. On the Advanced Power Management Configuration screen, select CPU C State Control, and then press Enter. The CPU C State Control screen is displayed, see Figure 2-47.

Aptio Setup – AMI Socket Configuration		
CPU C State Control Monitor/MWAIT Support CPU C1 auto demotion CPU C1 auto undemotion CPU C6 report Enhanced Halt State (C1E) OS ACPI Cx	[Enabled] [Disabled] [Disabled] [Disabled] [Disabled] [ACPI C2]	Allows Monitor and MWAIT instructions, Auto maps to Enable.
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Figure 2-47 CPU C State Control Screen

- 8. Select **Monitor/MWAIT Support**, and then press **Enter**. In the displayed dialog box, select **Disabled** to disable the Monitor/Mwait instruction.
- 9. Select **CPU C6 report**, and then press **Enter**. In the displayed dialog box, select **Disabled** to not report the C6 state to the operating system.
- 10. Select Enhanced Halt State (C1E), and then press Enter. In the displayed dialog box, select Disabled to disable the C1E function.

Configuring the Package C State Parameter

11. On the Advanced Power Management Configuration screen, select CPU C State Control, and then press Enter. The Package C State Control screen is displayed, see Figure 2-48.

Aptio Setup - AMI Socket Configuration Package C State Control Package C State limit, the state Auto maps is program specific. [Disabled] Register Access Low Latency Mode PKG CST CONFIG [Disabled] CONTROL MSR Lock Dynamic L1 [Enabled] ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Version 2.22.1287 Copyright (C) 2023 AMI AB

Figure 2-48 Package C State Control Screen

- 12. Select **Package C State Control**, and then press **Enter**. In the displayed dialog box, select **C0/C1 state** and then press **Enter**.
- 13. Press F4. In the displayed dialog box, select Yes.

2.22 Setting the TPM Type

Abstract

The TPM installed on a server can be used properly only if the supported TPM type is correctly set. This procedure describes how to set the TPM type.

Steps

 On the Aptio Setup screen, select Advanced. The Advanced screen is displayed, see Figure 2-49.

Figure 2-49 Advanced Screen

Aptio Setup – Main Advanced Platform Configuration	AMI Socket Configuration Server Mgmt ▶
 Mainboard Information Trusted Computing ACPI Settings Redfish Host Interface Settings Serial Port Console Redirection SIO Common Setting SIO Configuration PCI Subsystem Settings USB Configuration 	▲ Trusted Computing Settings
 Network Stack Configuration CSM Configuration NVMe Configuration Emulation Configuration PXE Configuration Tls Auth Configuration RAM Disk Configuration VLAN Configuration (MAC:0600A57542DA) 	 ↔: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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2. Select **Trusted Computing**, and then press **Enter**. The **Trusted Computing** screen is displayed, see Figure 2-50.

Figure 2-50 Trusted Computing Screen

Aptio Setup - AMI		
Huvanceu		
		▲ TPM 1.2 will restrict ▲
Security Device Support	[Enabled]	support to TPM 1.2 devices, TPM 2.0 will
Active PCR banks	SHA256	restrict support to TPM
Available PCR banks	SHA256	2.0 devices, Auto will support both with the
SHA256 PCR Bank	[Enabled]	default set to TPM 2.0 devices if not found, 🔻
Pending operation	[None]	
Platform Hierarchy	[Enabled]	
Storage Hierarchy	[Enabled]	↔: Select Screen
Endorsement	[Enabled]	↑↓: Select Item
Hierarchy		Enter: Select
Physical Presence	[1.3]	+/-: Change Opt.
Spec Version		K/M: Scroll Help Area
TPM 2.0	[TIS]	F1: General Help
InterfaceType		F2: Previous Values
Device Select	[Auto]	▼ F3: Optimized Defaults F4: Save & Exit
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- Select Device Select, and then press Enter. A dialog box for selecting the TPM type is displayed.
- 4. Select the supported TPM type, and then press **Enter**.

Options:

- TPM1.2: TPM 1.2 is supported.
- TPM2.0: TPM 2.0 is supported.
- Auto: Both TPM 1.2 and TPM 2.0 are supported. By default, the system first checks whether the installed TPM uses TPM version 2.0. If not, the system check whether the installed TPM uses TPM version 1.2.
- 5. Press F4. In the displayed dialog box, select Yes.

2.23 Setting the Port Mode for a RAID Controller Card

Abstract

The ports (namely the ports connected to the disk backplane and disk cables) of a VT SmartROC 3100 RAID controller card support three modes: RAID, HBA and Mixed. Before adding the disk corresponding to a port to a logical RAID volume, you need to set the port mode. This procedure describes how to set the port mode.



This procedure uses a VT SmartROC 3100 RAID controller card as an example to describe how to set the port mode. For how to configure the port mode for other RAID controller cards, refer to the *VANTAGEO Server RAID User Guide (EagleS5ream)*.

The VT SmartROC 3100 RAID controller card supports port mode configuration in the follow- ing

two ways:

- Setting the mode of ports in batches
- Setting the mode of a single port



This procedure uses setting the mode of a single port as an example. For how to set the mode of ports in batches, refer to the VANTAGEO Server RAID User Guide (EagleS5ream).

Prerequisite

The boot mode is already set to UEFI in the BIOS. For details, refer to 2.10 Setting the Boot Mode.

Context

Port modes include RAID, HBA and Mixed, which are described as follows:

- In RAID mode, the connected disks can be used only after they are used to build a RAID volume.
- In **HBA** mode, the connected disks are pass-through disks (directly used only) and cannot be used to build a RAID volume.
- In Mixed mode, the connected disks support both RAID and HBA modes.
 - → The **RAID** mode is applicable to the disks that have been used to build a RAID volume.
 - → The HBA mode (pass-through) is applicable to the disks that are not used to build a RAID volume.

Steps

 On the Aptio Setup screen, select Advanced. The Advanced screen is displayed, see Figure 2-51.

Figure 2-51 Advanced Screen

Aptio Setup – AMI Main Advanced Platform Configuration Socket C	onfiguration Server Mgmt 🕨
 VLAN Configuration (MAC:5853C06403F5) MAC:5853C06403F5-IPv6 Network Configuration MAC:5853C06403F5-IPv4 Network Configuration Intel(R) 82599 10 Gigabit Dual Port Network Connection - 84:13:9F:32:74:0A VLAN Configuration (MAC:84139F32740A) MAC:84139F32740A-IPv6 Network Configuration MAC:84139F32740A-IPv4 Network Configuration Intel(R) 82599 10 Gigabit Dual Port Network Connection - 84:13:9F:32:74:0B VLAN Configuration (MAC:84139F32740B) MAC:84139F32740B-IPv6 Network Configuration MAC:84139F32740B-IPv6 Network Configuration MAC:84139F32740B-IPv4 Network Configuration MAC:84139F32740B-IPv4 Network Configuration VT SmartR0C3100 RM241B-18i 2G Driver Health VT SmartR0C3100 RM241B-18i 2G Driver Health 	 Configuration Utility for VT SmartROC3100 RM241B-18i 2G **: Select Screen 14: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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2. Select VT SmartROC3100 RM241B-18i 2G, and then press Enter. The controller management screen is displayed, seeFigure 2-52.

Figure 2-52 Managing a RAID Controller

Aptio Setup – AMI Advanced		
 Controller Information Configure Controller Settings Array Configuration Disk Utilities Set Bootable Device(s) for Legacy Boot Mode Administration 	Provides the information of the controller like PCI Bus:Device:Function, Firmware Revision, UEFI Driver Version, Controller Temperature etc. **: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the functions of the menus on the controller management screen, refer to Table 2-8.

Menu	Function
Controller Information	Displays the basic information, firmware, current temperature, and port configuration of the controller.
Configure Controller Settings	Provides advanced configuration options for the controller.
Array Configuration	Creates a RAID array.
Disk Utilities	Displays the list of disks controlled by the controller as well as the basic disk information, and allows you to turn on the disk positioning indicator, erase disk data, and upgrade the firmware.
Set Bootable Device(s) for Legacy Boot Mode	Configures, or clears the primary and secondary boot disks.
Administration	Allows you to perform such operations as upgrading firmware and restor- ing to factory defaults.

Table 2-8 Functions of the Menus on the Controller Management Screen

3. Select **Configure Controller Settings**, and then press **Enter**. The advanced configuration option screen is displayed, see Figure 2-53.

Figure 2-53 Setting Advanced Configuration Options for the RAID Controller

Aptio Setup – Al Advanced	MI
 Modify Controller Settings Modify Cache Settings Advanced Controller Settings Clear Configuration Backup Power Source Manage Power Settings Out of Band Messaging Settings Configure Controller Port Mode Modify Expander Minimum Scan Duration 	Configures the supported controller settings. Depending on the controller, these can include setting the cache ratio, transformation and rebuild priorities and • • • • • • • • • • • • • • • • • • •
Version 2.22.1285 Copyrigh	F3: Optimized Defaults F4: Save & Exit t (C) 2022 AMI

4. Select **Modify Controller Settings**, and then press **Enter**. The controller configuration screen is displayed, see Figure 2-54.

Figure 2-54 Configuring the RAID Controller

Aptio Setup – AMI Advanced		
Transformation	[Medium]	Transformation Priority: Pofers to the
Rebuild Priority	[High]	priority given to Array
Surface Scan Analysis Priority	3	Expansion, Logical Drive Extension.
Current Parallel	1	Logical Drive
Surface Scan Count Spare Activation Mode	[Failure Spare	Migrations and Array shrink/move operations.
Unconfigured Physical	Activation]	
Drive Write Cache	[Derdd1(]	++: Select Screen
State HBA Physical Drive	[Default]	T∔: Select Item Enter: Select
Write Cache State	10-1-141	+/-: Change Opt.
Drive Write Cache	[Default]	F1: General Help
State Port CNO Mode	[RATD]	F2: Previous Values
	[10]	F4: Save & Exit
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5. Select **Port CN0 Mode**, and then press **Enter**. The **Port CN0 Mode** dialog box is displayed, see Figure 2-55.

Figure 2-55 Port CN0 Mode Dialog Box

Advanced	Aptio Setup – AMI	
Unconfigured Physical Drive Write Cache State	[Default]	Connector Mode: For Multiple domain connections, Connector
HBA Physical Drive Write Cache State Configured Physical	[Default] [Default]	mode has to be changed to the same mode for all connectors
Drive Write Cache State Port CNO Mode	Port CNO Mode — RAID HBA	connected to the Multi domain device.
Port CN1 Mode Port CN2 Mode Port CN3 Mode	Mixed	++: Select Screen
Port CN4 Mode ▶ [Submit Changes]	[RAID]	Enter: Select +/-: Change Opt.
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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6. Select the desired port mode, and then press **Enter**, see Figure 2-56.
| Figure 2-5 | 6 Configuring | the Mode of a Port | |
|------------|---------------|--------------------|--|
|------------|---------------|--------------------|--|

Aptio Setup – AMI Advanced		
Unconfigured Physical Drive Write Cache State	[Default]	Connector Mode: For Multiple domain connections, Connector
HBA Physical Drive Write Cache State	[Default]	mode has to be changed to the same mode for
Configured Physical Drive Write Cache State	[Default]	all connectors connected to the Multi domain device.
Port CNO Mode	[Mixed]	
Port CN2 Mode	[Mixed]	++: Select Screen
Port CN3 Mode Port CN4 Mode	[Mixed] [Mixed]	Enter: Select Item
[Submit Changes]		+/-: Change Opt. K/M: Scroll Help Area F1: General Help E2: Previous Values
		F3: Optimized Defaults F4: Save & Exit
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7. Repeat Step 5 through Step 6 to set the mode of another port, see Figure 2-57.

Figure 2-57	Configuring	the Mode	of Another Port
i iguio z oi	Goungaing	the mode	

Aptio Setup – AMI Advanced		
Unconfigured Physical Drive Write Cache State	[Default]	Configuration changes will be applied immediately
HBA Physical Drive Write Cache State	[Default]	
Configured Physical Drive Write Cache State	[Default]	
Port CNO Mode	[RAID]	
Port CN1 Mode	[Mixed]	++: Select Screen
Port CN3 Mode	[HBA]	↑↓: Select Item
▶ [Submit Changes]	[INITO]	+/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Versio	n 2.22.1285 Copyrig	ht (C) 2022 AMI

8. Select **Submit Changes**, and then press **Enter**. The port mode is set successfully, see Figure 2-58.

Advanced	Aptio Setup – AMI	
Controller Settings Applied ▶ [Back to Main Menu]	Successfully	Navigate back to Main Menu ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 2-58 Port Mode Set Successfully

- 9. Select **Back to Main Menu**, and then press **Enter** to return to the controller management screen.
- 10. Press Esc to exit the controller management screen and return to the Advanced screen.
- 11. Press **F4** to save the port configuration, exit the BIOS, and continue the server startup program.

2.24 Creating a RAID Volume for SATA Drives

Abstract

This procedure describes how to create a RAID volume for multiple SATA drives to meet service requirements.

Steps

- 1. On the Aptio Setup screen, select the Platform Configuration menu. The Platform Configuration window is displayed.
- Select PCH-IO Configuration > SATA And RST Configuration. The SATA And RST Configuration screen is displayed, see Figure 2-59.

Figure 2-59 SATA And RST Configuration Screen

Aptio Setup – AMI Platform Configuration		
 Controller 1 SATA And RST Configuration Controller 2 SATA And RST Configuration Controller 3 SATA And RST Configuration Software Feature Mask Configuration for Controller 1 Software Feature Mask Configuration for Controller 2 Software Feature Mask Configuration for Controller 2 Software Feature Mask Configuration for Controller 3 	SATA Controller 1 Device Options Settings	
	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>	
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3. Select the corresponding controller and press **Enter**. The screen for the controller is displayed.

For example, select **Controller 1 SATA And RST Configuration**. The **Controller 1 SATA And RST Configuration** screen is displayed, see Figure 2-60.

Figure 2-60 Controller 1 SATA And RST Configuration Screen

Aptio Setup – AMI Platform Configuration			
Controller 1 SATA And I	RST Configuration	Determines how SATA controller(s) operate.	
SATA Configuration SATA Mode Selection Sata Interrupt Selection SATA Test Mode RAID Device ID	[Enabled] [RAID] [Msix] [Disabled] [Server]		
SATA Port O Software Preserve SATA Port O Spin Up Device SATA Port 1 Software Preserve SATA Port 1 Spin Up Device SATA Port 2	[Not Installed] Unknown [Enabled] [Disabled] [Not Installed] Unknown [Enabled] [Disabled] [Not Installed]	 **: Select Screen †1: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	

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- AB
- 4. Select **SATA Mode Selection** and press **Enter**. In the displayed dialog box, select **RAID** and press **Enter**.
- 5. Press F4. In the displayed dialog box, select Yes.
- 6. During the server restart process, the Aptio Setup screen is displayed.



For a description of the operations on the Aptio Setup screen, refer to 2.1 Entering the BIOS.

- 7. Select Advanced. The Advanced screen is displayed.
- Select Intel Virtual RAID on CPU > All Intel VMD Controllers > Create RAID Volume and press Enter. The Create RAID Volume screen is displayed, see Figure 2-61.

Figure 2-61 Create RAID Volume Screen

Aptio Setup - AMI Advanced		
Name:	Volume1	▲ Enter a unique volume
RAID Level:	[RAIDO(Stripe)]	name that does not
over VMD Controllers:	LJ	beginning or backslash and is 16 characters or
Select Disks:		less.
INTEL SSDPE2KX040T8	[]	
SN:BTLJ1243031Q4P0VGN, 3726.02GB Port 4:2		
INTEL SSDPE2KX040T8	[]	++: Select Screen
SN:BTLJ124301JV4P0VGN,		↑↓: Select Item
3726.026B Port 4:3		Enter: Select
CPU0 VMD4		+/-: Change Opt.
Otata Otaa.	[400KD]	K/M: Scroll Help Area
Strip Size:	[128KD]	F1: General Help
capacity (GD).	0.00	F3: Antimized Defaults
		F4: Save & Exit
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9. Set the parameters. For a description of the parameters, refer to Table 2-9.

Table 2-9 RAID Volume Parameter Descriptions

Parameter	Description
Name	Enter a unique RAID volume name that contains no more than 16 charac- ters. The name cannot start or end with a space.
RAID Level	Select a RAID level.
Select Disks	Select the member SATA drives of the RAID volume.
Strip Size	Select the stripe size.
Capacity (GB)	Enter the capacity of the RAID volume.

10. Press Enter. In the displayed dialog box, select Yes.

When the RAID volume is displayed below **Create RAID Volume** on the **All Intel VMD Con-trollers** screen (see Figure 2-62), it indicates that the RAID volume is created successfully.

Aptio Setup - AMI Advanced All Intel VMD Controllers This page allows you to create a RAID volume Create RAID Volume RAID Volumes: VolumeO, RAID1(Mirror), 3539.72GB, Normal ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit Version 2.22.1287 Copyright (C) 2023 AMI AB

Figure 2-62 RAID Volume Successfully Created

11. Press F4. In the displayed dialog box, select Yes.

2.25 Restoring the Default BIOS Settings

Abstract

This procedure describes how to restore the default BIOS settings when a system error occurs because of unknown changes to the BIOS.

Steps

- On the Aptio Setup screen, perform either of the following operations. The Load Optimized Defaults dialog box is displayed, see Figure 2-63.
 - Press F3.
 - Select Save & Exit. The Save & Exit screen is displayed. Select Restore Defaults.

Figure 2-63 Load Optimal Defaults Dialog Box

Aptio Setup – AMI ◀ Security Boot Save & Exit			
Save Options Save Changes and Exit Discard Changes and Exi	t		Restore/Load Default values for all the setup options.
Save Changes and Reset Discard Changes and Res	- Load Optimized	Defaults —	
Save Changes Discard Changes	Load Optimized	Defaults?	
Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override Built-in EFI Shell Launch EFI Shell from f	Yes	No	: Select Screen : Select Item ter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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- 2. Click Yes.
- 3. Press F4. In the displayed dialog box, select Yes.

Chapter 3 Setup Parameter Descriptions

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3.1 Main

The **Main** screen provides the basic BIOS information including the BIOS version, memory capacity, and system time. Figure 3-1 through Figure 3-2 show the **Main** screen.

Figure 3-1 Main Screen—1

Main Advanced	Aptio Setup – AMI Platform Configuration Socke	t Configuration Server Mgmt 🕨	
BIOS Information	Ì		
BIOS Version	01.22.01.03P2		
Build Date	01/09/2023		
Product Name	N/A		
Serial Number	N/A		
Asset Tag	N/A		
Access Level	Administrator		
Platform Informa	ition		
Platform	TypeArcherCityRP	++: Select Screen	
Processor	806F6 - SPR-SP E3	↑↓: Select Item	
PCH	EBG A0/A1/B0/B1 SKU -	Enter: Select	
	B1	+/-: Change Opt.	
RC Revision	9409.P01	K/M: Scroll Help Area	
BIOS ACM	1.1.1	F1: General Help	
SINIT ACM	1.1.1	F2: Previous Values	
		▼ F3: Optimized Defaults	
		F4: Save & Exit	
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		AB	

Document Serial Number: VT20240310 (R1.2)

Figure 3-2 Main Screen—2

Main Advanced Pla	Aptio Setup – AMI tform Configuration Socket	Configuration Server Mgmt 🕨
Platform Information	TupoAnchopOitupD	Set the Time. Use Tab to switch between Time claments
Processor	806F6 - SPR-SP E3	CICHCHUS.
PCH	EBG A0/A1/B0/B1 SKU - B1	
RC Revision	9409.P01	
BIOS ACM	1.1.1	
SINIT ACM	1.1.1	
Memory Information		++: Select Screen
Total Memory	524288 MB	↑↓: Select Item
System Memory Speed	4800 MT/s	Enter: Select
System Language	[English]	K/M: Scroll Help Area
Suctom Date	[Mon 12/05/2022]	F1. General Help
Sustem Time	[04+33+46]	F3: Ontimized Defaults
9397CH 1100	[04-00-40]	F4: Save & Exit
Una	top 2 32 1207 Copyright (C) 9090 ANT
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For a description of the parameters on the **Main** screen, refer to Table 3-1.

Table 3-1	Main	Screen	Parameter	Descri	otions
	mann	0010011	i urumeter	DCSUI	

Parameter	Description
BIOS Version	BIOS version.
Build Date	BIOS creation date (format: MM/DD/YYYY).
Product Name	Product name.
Serial Number	Serial number of the product.
Asset Tag	Asset tag.
Access Level	Access permission.
Platform	Platform name.
Processor	Processor model.
PCH	Bridge chip model.
RC Revision	RC version.
BIOS ACM	Firmware version information about the BIOS ACM.

Parameter	Description
SINIT ACM	Firmware version information about the SINIT ACM.
Total Memory	Total memory capacity.
System Memory Speed	Memory speed.
System Language	System language English Simplified Chinese
System Date	 Current system date. You can change the setting. System date format: day of week month/day of the month (in numbers)/year. Press Enter to switch between the day of the month (in numbers), month, and year items and change the settings as follows: To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key.
System Time	Current system time. You can change the setting. The system time is displayed in HH:MM:SS format based on a 24-hour clock system. You can press Enter to switch between the hour, minute, and second items and change the settings as follows: • To increase the value by one, press +. • To decrease the value by one, press • To specify a value, press the corresponding number key.

3.2 Advanced

The **Advanced** screen provides advanced BIOS settings, such as mainboard information and console redirection. Figure 3-3 through Figure 3-4 show the **Advanced** screen.

Figure 3-3 Advanced Screen—1

Aptio Setup - AMI			
Main Advanced Platform Configuration	Socket Configuration Server Mgmt 🕨		
 Mainboard Information Trusted Computing ACPI Settings Redfish Host Interface Settings Serial Port Console Redirection SIO Common Setting SIO Configuration PCI Subsystem Settings USB Configuration Network Stack Configuration CSM Configuration 	 Form for Mainboard Information. +t: Select Screen 		
 NVMe Configuration Emulation Configuration PXE Configuration 	↑↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area		
 T1s Auth Configuration RAM Disk Configuration VLAN Configuration (MAC:5E919AE5D1E2) 	F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit		
Version 2.22.1287 Copyr	ight (C) 2023 AMI AB		

Figure 3-4 Advanced Screen—2

Aptio Setup – AMI Main <mark>Advanced</mark> Platform Configuration Socket Configuration Server Mgmt ▶		
 USB Configuration Network Stack Configuration CSM Configuration NVMe Configuration Emulation Configuration PXE Configuration 	Provides Health Status for the Drivers/Controllers	
 T1s Auth Configuration RAM Disk Configuration VLAN Configuration (MAC:5E919AE5D1E2) MAC:5E919AE5D1E2-IPv6 Network Configuration MAC:5E919AE5D1E2-IPv4 Network Configuration Intel(R) VROC SATA Controller Intel(R) VROC sSATA Controller AVAGO MegaRAID <avago 9341-8i="" megaraid="" sas=""> Configuration Utility - 03.25.05.14</avago> Driver Health 	 **: Select Screen *I: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	
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For a description of the parameters on the **Advanced** screen, refer to Table 3-2.

Table 3-2	Advanced	Parameter	Descriptions

Parameter	Description
Mainboard Information	Mainboard information. For details, refer to 3.2.1 Mainboard Information.
Trusted Computing	Trusted computing. For details, refer to 3.2.2 Trusted Computing.
ACPI Settings	ACPI settings. For details, refer to 3.2.3 ACPI Settings.
Redfish Host Interface Settings	Host Redfish interface settings. For details, refer to 3.2.4 Redfish Host Interface Settings.
Serial Port Console Redirection	Console redirection. For details, refer to 3.2.5 Serial Port Console Redirection Settings.
SIO Common Setting	SIO common settings. For details, refer to 3.2.6 SIO Common Setting.
SIO Configuration	SIO settings.

Parameter	Description
	For details, refer to 3.2.7 SIO Configuration.
PCI Subsystem Settings	PCI subsystem settings.
	For details, refer to 3.2.8 PCI Subsystem Settings.
USB Configuration	USB settings.
	For details, refer to 3.2.9 USB Configuration.
Network Stack Configuration	Network protocol stack settings.
	For details, refer to 3.2.10 Network Stack Configuration.
CSM Configuration	CSM settings.
	For details, refer to 3.2.11 CSM Configuration.
NVMe Configuration	NVMe settings.
	For details, refer to 3.2.12 NVMe Configuration.
Emulation Configuration	Emulation settings.
	For details, refer to 3.2.13 Emulation Configuration.
PXE Configuration	PXE settings.
	For details, refer to 3.2.14 PXE Configuration.
TIs Auth Configuration	TIs authentication settings.
	For details, refer to 3.2.15 TIs Auth Configuration.
RAM Disk Configuration	RAM disk settings.
	For details, refer to 3.2.16 RAM Disk Configuration.
Driver Health	Health status of drivers and controllers.
	For details, refer to 3.2.17 Driver Health.



Other parameters on the **Advanced** screen are generated by related devices. For example, for **MAC:5E919AE5D1E2-IPv4 Network Configuration** in Figure 3-4, if the corresponding NIC exists, the parameter is displayed, and if the corresponding NIC does not exist, this parameter is not displayed.

3.2.1 Mainboard Information

The **Mainboard Information** screen contains board interface and device information. Figure 3-5 shows the **Mainboard Information** screen.

Figure 3-5 Mainboard Information Screen

Aptio Setup - AMI Advanced		
Advanced->Mainboard In	formation	OnBoard Device Information
ME Version ME-BIOS Interface Ver ME SKU ME Status USB2.0 USB3.0	18:6.0.4.16 1.1 Node Manager Operational 1 (Front) 2 (Rear) 1 (Front)	→+: Select Screen
COM VGA	1 (Rear) 1 Connector(Front) 1 Connector(Rear)	<pre>1↓: Select Item Enter: Select +/-: Change Opt.</pre>
 OnBoard Device Informa LAN MAC Information Graphics Card Informat Slot Information 	t ion ion	K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Versi	on 2.22.1287 Copyright (C)	2023 AMI

For a description of the parameters on the Mainboard Information screen, refer to Table 3-3.

Parameter	Description	Default
Board Name	Mainboard name.	MI05102A
ME Version	ME version.	-
ME-BIOS Interface Ver	ME-BIOS interface version.	1.1
ME SKU	ME module.	Node Manager
ME Status	ME status.	Operational
USB2.0	Number and physical locations of USB 2.0 interfaces.	1 (Front)
USB3.0	Number and physical locations of USB 3.0 interfaces.	2 (Rear)1 (Front)
СОМ	Number and physical locations of COM interfaces.	1 (Rear)
VGA	Number and physical locations of VGA interfaces.	 1 Connector (Front)

Table 3-3 Parameter Descriptions for the Mainboard Information screen

Parameter	Description	Default
		 1 Connector (Rear)
OnBoard Device Information	Onboard device information. For details, refer to 3.2.1.1 OnBoard Device Informa- tion.	-
LAN MAC Information	MAC address of the Ethernet port. For details, refer to 3.2.1.2 LAN MAC Information.	-
Graphics Card Information	Information about onboard graphics cards. For details, refer to 3.2.1.3 Graphics Card Informa- tion.	-
Slot Information	Information about PCIe card slots. For details, refer to 3.2.1.4 Slot Information.	-

3.2.1.1 OnBoard Device Information

Figure 3-6 shows the OnBoard Device Information screen.

Figure 3-6 OnBoard Device Information Screen

Advance	Aptio Setup – AMI ed	
Advanced->Main Device Informa	nboard Information–>OnBoard ation	
VGA USB Hub	Present [Linked as x1] Present [Linked as x1]	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
	Version 2.22.1287 Copyright	(C) 2023 AMI AB

For a description of the parameters on the **OnBoard Device Information** screen, refer to Table 3-4.

Parameter	Description
VGA	Displays whether the VGA card on the mainboard is present. If the VGA card is not present on the mainboard, Not Present is displayed.
USB Hub	Displays whether the USB Hub on the mainboard is present. If the USB Hub is not present on the mainboard, Not Present is displayed.

Table 3-4 Parameter	^r Descriptions	for the OnBoard	Device	Information Screen
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3.2.1.2 LAN MAC Information

The LAN MAC Information screen displays MAC addresses of NICs. Figure 3-7 shows the LAN MAC Information screen.

Figure 3-7 LAN MAC Information Screen

Aptio Setup – AMI Advanced		
Advanced->Mainboard Information->LAN MAC Information		
OCP Port1 MAC:0C-42-A1-18-C5-AE OCP Port2 MAC:0C-42-A1-18-C5-AF Slot2 Port1 MAC:28-7B-09-CA-FB-77 Slot2 Port2 MAC:28-7B-09-CA-FB-78 Slot11 Port1 MAC:40-A6-B7-18-38-60 Slot11 Port2 MAC:40-A6-B7-18-38-61 Slot11 Port3 MAC:40-A6-B7-18-38-62	 **: Select Screen *1: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	

3.2.1.3 Graphics Card Information

Figure 3-8 shows the Graphics Card Information screen.

Figure 3-8 Graphics Card Information Screen

Advanced	Aptio Setup – AMI	
Advanced->Mainbo Information	pard Information—>Graphics Card	
Chip Type DAC Type Graphics Memory Accelerate Chip	: AST2600 : 8bit : 65536KB : 32bit	<pre>**: Select Screen *1: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
	Version 2.22.1287 Copyright (C) 2023 AMI AB

For a description of the parameters on the **Graphics Card Information** screen, refer to Table 3-5.

Table 3-5 Parameter Descriptions for the Graphics Card Information Screen

Parameter	Description
Chip Type	Chip type of the graphics card.
DAC Туре	DAC type.
Graphics Memory	Graphics memory.
Accelerate Chip	Type of graphics accelerator.

3.2.1.4 Slot Information

Figure 3-9 shows the Slot Information screen.

Figure 3-9 Slot Information Screen

Aptio Setup – AMI Advanced	
Advanced->Mainboard Information->Slot Information Total 5 Slots Available 3 Slots Slot6 : In use PCI-E Gen5 x8 High Profile Slot7 : In use PCI-E Gen5 x16 High Profile Slot8 : Available PCI-E Gen5 x8 High Profile OCP1 (OCP NIC 3.0 Small Form Factor):Available PCI-E Gen5 x8 OCP2 (OCP NIC 3.0 Small Form Factor):Available PCI-E Gen5 x8	<pre>**: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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For a description of the parameters on the **Slot Information** screen, refer to Table 3-6.

Table 3-6 Parameter Descriptions for the Slot Information Screen

Parameter	Description
Total 5 Slots, Available 3 Slots	Total number of PCIe standard card slots on the mainboard and the number of available slots.

Note

Slot states are described as follows:

- In use: indicates that a device is installed in the current slot.
- Available: indicates that no device is installed in the current slot.

3.2.2 Trusted Computing

Figure 3-10 through Figure 3-11 show the **Trusted Computing** screen.

Figure 3-10 Trusted Computing Screen—1

Advanced	Aptio Setup – AMI	
TPM 2 0 Device Found		Enables on Disables
Firmware Version:	1.257	BIOS support for
Vendor:	STM	security device. O.S. will not show Security
Security Device Support	[Enabled]	Device. TCG EFI protocol and INT1A
Active PCR banks	SHA256	interface will not be
Available PCR banks	SHA256	available.
SHA256 PCR Bank	[Enabled]	++: Select Screen
Pending operation	[None]	↑↓: Select Item
Platform Hierarchy	[Enabled]	Enter: Select
Storage Hierarchy	[Enabled]	+/−: Change Opt.
Endorsement	[Enabled]	K/M: Scroll Help Area
Hierarchy		F1: General Help
Physical Presence	[1.3]	F2: Previous Values
Spec Version		F3: Optimized Defaults F4: Save & Exit
Version	1 2.22.1287 Copyright (C) 2	023 AMI

Document Serial Number: VT20240310 (R1.2)

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Figure 3-11 Trusted Computing Screen—2

Advanced	Aptio Setup – AMI	
		TPM 1.2 will restrict
Security Device Support	[Enabled]	support to TPM 1.2 devices. TPM 2.0 will
Active PCR banks	SHA256	restrict support to TPM
Available PCR banks	SHA256	2.0 devices, Auto will support both with the
SHA256 PCR Bank	[Enabled]	default set to TPM 2.0
Pending operation	[None]	
Platform Hierarchy	[Enabled]	
Storage Hierarchy	[Enabled]	++: Select Screen
Endorsement	[Enabled]	↑↓: Select Item
Hierarchy		Enter: Select
Physical Presence	[1.3]	+/-: Change Opt.
Spec Version		K/M: Scroll Help Area
TPM 2.0	[TIS]	F1: General Help
InterfaceType		F2: Previous Values
Device Select	[Auto]	 F3: Optimized Defaults F4: Save & Exit
		1

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For a description of the parameters on the **Trusted Computing** screen, refer to Table 3-7.

Table 3-7 Parameter Descriptions for the Trusted Computing Screen

Parameter	Description	Default
Firmware Version	Firmware version number.	-
Vendor	Vendor name.	-
Security Device Support	 Enables or disables BIOS support for the security device. Options: Enabled: enables BIOS support for the security device. When this parameter is set to Enabled, the OS captures and displays security device information. Disabled: disables BIOS support for the security device. When this parameter is set to Disabled, the TGG EFI protocol and the INT1A interface are unavailable. 	Enabled
Active PCR banks	PCR Banks being used.	-

Parameter	Description	Default
Available PCR banks	Available PCR Banks.	-
SHA256 PCR Bank	 Enables or disables the SHA256 PCR Bank configuration feature. Options: Enabled: enables the SHA256 PCR Bank configuration feature. Disabled: disables the SHA256 PCR Bank configuration feature. 	Enabled
Pending operation	 Schedules an operation for device security control. Options: None: no operation. TPM Clear: clears the TPM metric value. 	None
Platform Hierarchy	 Enables or disables the platform hierarchy feature. Options: Enabled: enables the platform hierarchy feature. Disabled: disables the platform hierarchy feature. 	Enabled
Storage Hierarchy	 Enables or disables the storage hierarchy feature. The storage hierarchy is controlled by the platform firmware. Options: Enabled: enables the storage hierarchy feature. Disabled: disables the storage hierarchy feature. 	Enabled
Endorsement Hierarchy	 Enables or disables the endorsement hierarchy feature. Options: Enabled: enables the endorsement hierarchy feature. Disabled: disables the endorsement hierarchy feature. 	Enabled
Physical Presence Spec Ver- sion	 Select the PPI specification version number reported to the OS. Options: 1.2: Version 1.2 is supported. 1.3: Version 1.3 is supported. 	1.3
TPM 2.0 InterfaceType	TPM 2.0 interface type. This parameter cannot be configured.	TIS
Device Select	Select a supported device type. Options: • TPM1.2: supports TPM 1.2 devices.	Auto

Parameter	Description	Default
	TPM2.0: supports TPM 2.0 devices.	
	• Auto: supports both types of devices. By default,	
	TPM 2.0 devices are searched for. If no TPM 2.0	
	device is found, TPM 1.2 devices are searched	
	for.	

3.2.3 ACPI Settings

Figure 3-12 shows the **ACPI Settings** screen.

Figure 3-12 ACPI Settings Screen

Aptio Setup – AMI Advanced		
ACPI Settings		Enables or Disables
Enable ACPI Auto Configuration	[Disabled]	Configuration.
Hibernation	[Enabled]	
		++: Select Screen
		↑↓: Select Item
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values F3: Optimized Defaults
		F4: Save & Exit
Vens	sion 2.22.1287 Copyrigh	nt (C) 2023 AMI

For a description of the parameters on the **ACPI Settings** screen, refer to Table 3-8.

Table 3-8 Parameter Descriptions for the ACPI Settings Screen

Parameter	Description	Default
Enabled ACPIAuto Configura-	Enables or disables the ACPI auto-configuration fea-	Disabled
tion	ture.	
	Options:	
	• Enabled: enables the ACPI auto-configuration fea-	
	ture.	

Parameter	Description	Default
	 this parameter is set to Enabled, hibernate configuration items are hidden. Disabled: disables the ACPI auto-configuration feature. 	
Hibernation	 Enables or disables the system hibernation feature. Options: Enabled: enables the system hibernation feature. Disabled: disables the system hibernation feature. 	Enabled

3.2.4 Redfish Host Interface Settings

Figure 3-13 shows the Redfish Host Interface Settings screen.

Figure 3-13 Redfish Host Interface Settings Screen

Advanced	Aptio Setup – AMI	
Redfish Host Interface	Settings	Select authentication mode
BMC Redfish Version BIOS Redfish Version BIOS RTP Version Authentication mode	1.15.1 1.11.0 RB_1.0.16 [Basic Authentication]	
		++: Select Screen fJ: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Redfish Host Interface Settings** screen, refer to Table 3-9.

Table 3-9 Parameter Descriptions for the Redfish Host Interface Settings Screen

Parameter	Description	Default
BMC Redfish Version	BMC Redfish version number.	-

Parameter	Description	Default
BIOS Redfish Version	BIOS Redfish version number.	-
BIOS RTP Version	BIOS RTP version number.	-
Authentication mode	Select an authentication mode.Options:Basic Authentication.Session Authentication.	Basic Authentication

3.2.5 Serial Port Console Redirection Settings

Figure 3-14 shows the Serial Port Console Redirection screen.

Figure 3-14 Serial Port Console Redirection Screen

Aptio Setup – AMI Advanced	
COMO Console Redirection [Enabled] Console Redirection Settings Legacy Console Redirection Settings Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS) Console Redirection [Enabled] EMS Console Redirection Settings	Console Redirection Enable or Disable.
Version 2.22.1287 Copyright (C)	2023 AMI

For a description of the parameters on the **Serial Port Console Redirection** screen, refer to Table 3-10.

Table 3-10 Parameter Descriptions for the Serial Port Console Redirection Screen

Parameter	Description	Default
Console Redirection	Enables or disables the serial port redirection feature.	Enabled
	Options:	

Parameter	Description	Default
	 Enabled: enables the serial port redirection feature. Disabled: disables the serial port redirection feature. When this parameter is set to Disabled, Console Redirection Settings below is not configurable. 	
Console Redirection Settings	Configures serial port redirection to specify how the host and a remote computer exchange data. The host and the remote computer should have the same or compatible settings. For details, refer to 3.2.5.1 Console Redirection Set- tings (COM0).	-
Legacy Console Redirection Settings	Configures the serial port redirection feature in Lega- cy mode. For details, refer to 3.2.5.2 Legacy Console Redirec- tion Settings.	-
Console Redirection EMS	 Enables or disables the serial port redirection feature of the EMS. Options: Enabled: enables the serial port redirection feature of the EMS. Disabled: disables the serial port redirection feature of the EMS. When this parameter is set to Disabled, Console Redirection Settings below is not configurable. 	Enabled
Console Redirection Settings	Configures the console redirection feature of the EMS. For details, refer to 3.2.5.3 Console Redirection Settings (EMS).	-

3.2.5.1 Console Redirection Settings (COM0)

Figure 3-15 shows the Console Redirection Settings screen.

Figure 3-15 Console Redirection Settings Screen

Advanced	Aptio Setup – AM	I
COMO Console Redirection S Terminal Type Bits per second Data Bits Parity Stop Bits Flow Control VT-UTF8 Combo Key Support Recorder Mode Resolution 100x31 Putty KeyPad	ettings [ANSI] [115200] [8] [None] [1] [None] [Enabled] [Disabled] [Disabled] [VT100]	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode • ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version 2.22.1287 Copyright (C) 2023 AMI AB		

For a description of the parameters on the **Console Redirection Settings** screen, refer to Table 3-11.

Parameter	Description	Default
Terminal Type	 Terminal type. Options: ANSI: extended ASCII character set. VT100: ASCII character set. VT100+: extended VT100, which is used to support color display and functional keys. VT-UTF8: UTF8 is used to map unicode characters to one or more bytes. 	ANSI
Bits per Second	Number of bits transmitted per second. The transmission speed must match the serial port, and very long lines or lines with noise may require lower speeds. Options: • 9600 • 19200	115200

Table 3-11 Parameter	Descriptions f	for the Co	onsole Redirection	Settings Screen
	Descriptions		mode neurection	Jettings Ocreen

Parameter	Description	Default
	 38400 57600 115200 	
Data Bits	Number of bits used by the actual data in a byte. Options: • 7 • 8	8
Parity	 Parity bit, which can be transmitted together with data bits to detect transmission errors. Options: None: No parity bit is transmitted. Even: If the number of 1s in the data bits is an even number, the parity bit is 0. Odd: If the number of 1s in the data bits is an odd number, the parity bit is 0. Mark: The parity bit is always a binary 1. Space: The parity bit is always a binary 0. For Mark and Space, error detection is not performed. Mark or Space can be used as an additional data bit. 	None
Stop Bits	 Stop bit, which indicates the end of a packet. The start bit indicates the start of a packet. Select the number of stop bits. The standard setting is one stop bit. More than one stop bit may be required for communication with a slow speed device. Options: 1: 1 stop bit 2: 2 stop bits 	1
Flow Control	 Flow control, which can prevent data loss caused by buffer overflow. During data transmission, if the receive buffer is full, a "stop" signal can be sent to stop the data flow. Once the buffer is empty, a "start" signal can be sent to restart the process. Select a flow control mode. Options: None: no flow control. Hardware RTS/CTS: hardware flow control. Hardware flow control uses two lines. One is used to send the "stop" signal and the other is used to send the "start" signal. 	None

Parameter	Description	Default
VT-UTF8 Combo Key Support	 Enables or disables the VT-UTF8 combination key support for ANSI/VT 100 terminals. Options: Enabled: enables the VT-UTF8 combination key support. Disabled: disables the VT-UTF8 combination key support. 	Enabled
Recorder Mode	 Enables or disables recorder mode for capturing terminal text data. Options: Enabled: enables recorder mode. Disabled: disables recorder mode. 	Disabled
Resolution 100×31	 Enables or disables the extended terminal resolution feature. Options: Enabled: enables the extended terminal resolution feature. Disabled: disables the extended terminal resolution tion feature. 	Disabled
Putty KeyPad	Sets FunctionKey and KeyPad in PuTTY. Options: • VT100 • LINUX • XTERMR6 • SCO • ESCN • VT400	VT100

3.2.5.2 Legacy Console Redirection Settings

Figure 3-16 shows the Legacy Console Redirection Settings screen.

Figure 3-16 Legacy Console Redirection Settings Screen

Advanced	Aptio Setup — AMI	
Legacy Console Redirection Redirection COM Port Resolution Redirect After POST	n Settings [COMO] [80x24] [Always Enable]	When Bootloader is selected, then Legacy Console Redirection is disabled before booting to legacy OS. When Always Enable is selected, then Legacy Console Redirection is ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version 2.22.1287 Copyright (C) 2023 AMI AB		

For a description of the parameters on the **Legacy Console Redirection Settings** screen, refer to Table 3-12.

Parameter	Description	Default
Redirection COM Port	COM port for redirection of OS, Option, and ROM in- formation in Legacy mode.	COM0
Resolution	 Select the number of rows and columns that can be redirected in Legacy mode. Options: 80×24 80×25 	80×24
Redirect After POST	 Select redirection after POST. Options: Always Enable: enables legacy console redirection for the legacy OS. BootLoader: disables legacy console redirection before the legacy OS is loaded. 	Always Enable

Table 3-12 Parameter	Descriptions	for the Le	aloano vosola	Redirection	Settings	Scroon
Table J-12 Falallelel	Descriptions	IOI LIE LE	yacy console	Redifection	Settings	JUIGEII

3.2.5.3 Console Redirection Settings (EMS)

Figure 3-17 shows the Console Redirection Settings screen.

Figure 3-17 Console Redirection Settings Screen

Advanced	Aptio Setup — AMI	
Out-of-Band Mgmt Port Terminal Type EMS Bits per second EMS Flow Control EMS Data Bits EMS Parity EMS Stop Bits EMS	COMO [VT-UTF8] [115200] [None] 8 None 1	VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100. See above, in Console Redirection Settings **: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Versio	on 2.22.1287 Copyright (C)	2023 AMI AB

For a description of the parameters on the **Console Redirection Settings** screen, refer to Table 3-13.

Table 3-13 Parameter Descriptions for the Console Redirection Settings Screen

Parameter	Description	Default
Out-of-Band Mgmt Port	Out-of-band management serial port.	COM0
Terminal Type EMS	 Select an EMS terminal type. Options: ANSI: extended ASCII character set. VT100: ASCII character set. VT100+: extended VT100, which is used to support color display and function keys. 	VT-UTF8

vantageo

Parameter	Description	Default
	 VT-UTF8: UTF8 is used to map unicode characters to one or more bytes. EMS terminal types are sorted as follows: VT-UTF8 VT100+ VT100 	
Bits per second EMS	Select the number of bits transmit- ted per second by the EMS. The transmission speed must match the serial port, and very long lines or lines with noise may re- quire lower speeds. Options: 9600 19200 57600 115200	115200
Flow Control EMS	 Flow control of the EMS to prevent data loss caused by buffer overflow. During data transmission, if the receive buffer is full, a "stop" signal can be sent to stop the data flow. Once the buffer is empty, a "start" signal can be sent to restart the process. Select a flow control mode. Options: None: no flow control. Hardware RTS/CTS: hardware flow control. Hardware flow control uses two lines. One is used to send the "stop" signal and the other is used to send the "stop" signal and the other is used to send the "stop" software Xon/Xoff: software flow control. 	None
Data Bits EMS	The number of bits used by the ac- tual data in the EMS.	8

Parameter	Description	Default
Parity EMS	Parity of the EMS.	None
Stop Bits EMS	Stop bit of the EMS.	1

3.2.6 SIO Common Setting

Figure 3-18 shows the SIO Common Setting screen.

Figure 3-18 SIO Common Setting Screen

Aptio Setup – Ah Advanced	MI
SIO Common Setting Lock Legacy Resources [Disabled]	Enables or Disables Lock of Legacy Resources ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the SIO Common Setting screen, refer to Table 3-14.

Fable 3-14 Parameter	Descriptions for the SIO	Common Setting Screen
----------------------	---------------------------------	-----------------------

Parameter	Description	Default
Lock Legacy Resources	Locks or unlocks legacy resources.	Disabled
	Options:	
	Enabled: locks legacy resources.	
	Disabled: unlocks legacy resources.	

3.2.7 SIO Configuration

Figure 3-19 shows the SIO Configuration screen.

Figure 3-19 SIO Configuration Screen

Aptio Setup – AMI Advanced	
AMI SIO Driver Version : A5.18.00 Super IO Chip Logical Device(s) Configuration > [*Active*] Serial Port 1 > [*Active*] Serial Port 2	View and Set Basic properties of the SIO Logical device. Like IO Base, IRQ Range, DMA Channel and Device Mode.
WARNING: Logical Devices state on the left side of the control, reflects the current Logical Device state. Changes made during Setup Session will be shown after you restart the system.	<pre>**: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Super IO Chip Logical Device(s) Configuration on the SIO Configuration screen is displayed based on the particular situation.

For example, **Serial Port 1** and **Serial Port 2** contain the basic attributes of the SIO logical device. By configuring the basic attributes, you can enable or disable the SIO devices and modify device resources.

For a description of the parameters on the SIO Configuration screen, refer to Table 3-15.

Parameter	Description
AMI SIO Driver Version	Version number of the AMI SIO driver.
[*Active*] Serial Port 1	Allows you to view and set the basic attributes of the SIO logical devices, such as IO Base , DMA Channel , and Device Mode . For details, refer to 3.2.7.1 Serial Port 1.
[*Active*] Serial Port 2	Allows you to view and set the basic attributes of the SIO logical devices, such as IO Base , DMA Channel , and Device Mode . For details, refer to 3.2.7.1 Serial Port 1.

Table 3-15 Parameter Descriptions for the SIO Configuration Screen

3.2.7.1 Serial Port 1

Figure 3-20 shows the Serial Port 1 screen.

Figure 3-20 Serial Port 1 Screen





The items on the **Serial Port 1** screen are the same as those on the **Serial Port 2** screen. This procedure uses **Serial Port 1** as an example.

For a description of the parameters on the Serial Port 1 screen, refer to Table 3-16.

Table 3-16 Parameter Descriptions for the Serial Port 1 Screen

Parameter	Description	Default
Use This Device	 Enables or disables this device. Options: Enabled: enables this device. Disabled: disables this device. When this parameter is set to Disabled, the parameters below Use This Device are hidden. 	Enabled
Current	Current configuration.	IO=3F8H; IRQ=4;
Parameter	Description	Default
-----------	---	--------------------
Possible	Allows you to change the device resource settings.	Use Automatic Set-
	After the system reboots, the new settings are dis-	tings
	played on the Serial Port 1 screen.	
	Options:	
	Use Automatic Settings	
	• IO=3F8h; IRQ=4; DMA;	
	• IO=2F8h; IRQ=4; DMA;	
	• IO=3E8h; IRQ=4; DMA;	
	• IO=2E8h; IRQ=4; DMA;	

3.2.8 PCI Subsystem Settings

Figure 3-21 shows the PCI Subsystem Settings screen.

Figure 3-21 PCI Subsystem Settings Screen

Aptio Setup — AMI Advanced			
PCI Bus Driver Version PCI Devices Common Setti Above 46 Decoding SR-IOV Support Don't Reset VC-TC Mapping	A5.01.30 ngs: [Enabled] [Disabled]	Enables or Disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64 bit PCI Decoding). ++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **PCI Subsystem Settings** screen, refer to Table 3-17.

Parameter	Description	Default
PCI Bus Driver Version	Version number of the PCI bus driver.	-
Above 4G Decoding	 Enables or disables decoding of 64-bit devices in the address space above 4G (only when the system supports 64-bit PCI decoding). Options: Enabled: enables decoding of 64-bit devices in the address space above 4G. Disabled: disables decoding of 64-bit devices in the address space above 4G. 	Enabled
SR-IOV Support	 If the system has PCIe devices that support SR-IOV, set this parameter to enable or disable SR-IOV support. Options: Enabled: enables SR-IOV support. Disabled: disables SR-IOV support. 	Enabled
Don't Reset VC-TC Mapping	 Controls whether software can reset the traffic class mapping to the default state through a virtual channel (the system needs to have a virtual channel). Options: Enabled: enables software to reset the traffic class mapping to the default state through a virtual channel. When this parameter is set to Enabled, VC resources are not modified. Disabled: disables software from resetting the traffic class mapping to the default state through a virtual channel. 	Disabled

Table 3-17 Parameter	^r Descriptions	for the PC	l Subsystem	Settings Screen
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3.2.9 USB Configuration

Figure 3-22 shows the USB Configuration screen.

Figure 3-22 USB Configuration Screen

Advanced	Aptio Setup – AM	I
USB Configuration		Enables Legacy USB support, AUTO option
USB Module Version	31	disables legacy support if no USB devices are
USB Controllers: 2 XHCIs		connected. DISABLE option will keep USB
USB Devices:		devices available only
1 Keyboard, 1 Mo	ouse, 1 Hub	for EFI applications.
Legacy USB Support	[Enabled]	
XHCI Hand-off	[Disabled]	++: Select Screen
USB Boot	[Disabled]	↑↓: Select Item
		Enter: Select
		+/-: Change Opt.
		K/M: Scroll Help Area
		F1: General Help
		F2: Previous values
		F4: Save & Exit
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		AB

For a description of the parameters on the **USB Configuration** screen, refer to Table 3-18.

Parameter	Description	Default
USB Module Version	UDB module version number.	-
USB Controllers	USB controllers.	-
USB Devices	USB devices.	-
Legacy USB Support	 Enables or disables USB support in Legacy mode. Options: Enabled: enables USB support in Legacy mode. Disabled: disables USB support in Legacy mode. When this parameter is set to Disabled, USB devices are available only for EFI applications. Auto: If there are no USB devices, USB support in Legacy mode is disabled. 	Enabled
XHCI Hand-off	Enables or disables the XHCI feature, which provides a viable solution for OSs that do not support XHCI.	Enabled

Table 3-18 Parameter Descriptions for the USB Configuration Screen

Parameter	Description	Default
	XHCI ownership changes shall be declared by the	
	XHCI driver.	
	Options:	
	Enabled: enables the XHCI feature.	
	Disabled: disables the XHCI feature.	
USB Boot	Enables or disables support for USB mass storage	Enabled
	drivers.	
	Options:	
	Enabled: enables support for USB mass storage	
	drivers.	
	• Disabled: disables support for USB mass storage	
	drivers.	

3.2.10 Network Stack Configuration

Figure 3-23 shows the Network Stack Configuration screen.

Figure 3-23 Network Stack Configuration Screen

Advanced	Aptio Setup – A	IMI
IPv4 PXE Support IPv4 HTTP Support IPv4 PXE Boot Timeout IPv6 PXE Support IPv6 HTTP Support PXE boot wait time Media detect count PXE Retry Count PXE Only	[Enabled] [Disabled] [Enabled] [Disabled] 0 3 1 [Enabled]	Enable/Disable IPv4 PXE/iPXE boot support. If disabled, IPv4 PXE/iPXE boot support will not be available. ++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Network Stack Configuration** screen, refer to Table 3-19.

Parameter	Description	Default
IPv4 PXE Support	 Enables or disables the IPv4 PXE boot feature. Options: Enabled: enables the IPv4 PXE boot feature. Disabled: disables the IPv4 PXE boot feature. 	Enabled
IPv4 HTTP Support	 Enables or disables the IPv4 HTTP boot feature. Options: Enabled: enables the IPv4 HTTP boot feature. Disabled: disables the IPv4 HTTP boot feature. 	Disabled
IPv4 PXE Boot Timeout	Sets IPv4 PXE boot timeout parameters. For details, refer to 3.2.10.1 IPv4 PXE Boot Timeout.	-
IPv6 PXE Support	 Enables or disables the IPv6 PXE boot feature. Options: Enabled: enables the IPv6 PXE boot feature. Disabled: disables the IPv6 PXE boot feature. 	Enabled
IPv6 HTTP Support	 Enables or disables the IPv6 HTTP boot feature. Options: Enabled: enables the IPv6 HTTP boot feature. Disabled: disables the IPv6 HTTP boot feature. 	Disabled
PXE boot wait time	 Sets the PXE boot wait time in seconds. When the system is booting, press Esc to terminate the PXE boot wait time. To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key. 	0
Media detect count	 Number of media device detection times, range: 1– 50. To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key. 	3
PXE Retry Count	 Number of PXE retry times. Range: 1–50. Only UEFI mode is supported. When set to 50, PXE retries are always performed. To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key. 	1

Table 3-19 Parameter Descriptions for the Network Stack Configuration Screen

Parameter	Description	Default
PXE Only	PXE only.	Enabled
	Options:	
	Enabled: attempts to boot from the PXE setting	
	only.	
	• Disabled: The PXE device has a higher boot prior-	
	ity.	

3.2.10.1 IPv4 PXE Boot Timeout

Figure 3-24 shows the IPv4 PXE Boot Timeout screen.

Figure 3-24 IPv4 PXE Boot Timeout Screen

Advanced	Aptio Setup — AMI	
PXE Boot Timeout 1 PXE Boot Timeout 2 PXE Boot Timeout 3 PXE Boot Timeout 4	4 8 16 32	DHCP Discover will be retried four times.Set the first PXE Boot Timeout,The unit is seconds.(0~60) ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the IPv4 PXE Boot Timeout screen, refer to Table 3-20.

Table 3-20 Parameter Descriptions for the IPv4 PXE Boot Timeout Screen

Parameter	Description	Default
PXE Boot Timeout 1	First PXE boot timeout time, unit: s, range: 0–60.	4
	• To increase the value by one, press +.	
	• To decrease the value by one, press	

Parameter	Description	Default
	• To specify a value, press the corresponding num- ber key.	
PXE Boot Timeout 2	 Second PXE boot timeout time, unit: s, range: 0–60. To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key. 	8
PXE Boot Timeout 3	 Third PXE boot timeout time, unit: s, range: 0–60. To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key. 	16
PXE Boot Timeout 4	 Fourth PXE boot timeout time, unit: s, range: 0–60. To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key. 	32

3.2.11 CSM Configuration

Figure 3-25 shows the CSM Configuration screen.

Figure 3-25 CSM Configuration Screen

Aptio Setup - AMI Advanced		
Compatibility Support Mo	odule Configuration	Enable/Disable CSM Support.
CSM Support	[Enabled]	
CSM16 Module Version	07.84	
INT19 Trap Response	[Immediate]	
		++: Select Screen ↑↓: Select Item
		Enter: Select +/-: Change Opt.
		K/M: Scroll Help Area F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **CSM Configuration** screen, refer to Table 3-21.

Table 3-21 Parameter Descriptions for the CSM Configuration Screen

Parameter	Description	Default
CSM Support	 Enables or disables CSM support. Options: Enabled: enables CSM support. Disabled: disables CSM support. When this parameter is set to Disabled, the parameters below are hidden. 	Enabled
CSM16 Module Version	Version number of the CSM16 module.	-
GateA20 Active	 GateA20 status. Options: Upon Request: GateA20 can be disabled using the BIOS service. Always: Disabling GateA20 is not allowed. The Always option is useful when any RT code is executed above 1 MB. 	Upon Request
INT19 Trap Response	BIOS reaction on INT19 trapping by Option ROM.	Immediate

Parameter	Description	Default
	 Options: Immediate: executes the trap immediately. Postponed: executes the trap during legacy boot. 	

3.2.12 NVMe Configuration

Figure 3-26 shows the NVMe Configuration screen.

Figure 3-26 NVMe Configuration Screen

Aptio Setup - AMI Advanced	
NVMe Configuration	
No NVME Device Found	
	↔: Select Screen
	Enter: Select
	K/M: Scroll Help Area
	F1: General help F2: Previous Values
	F4: Save & Exit
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Note

If an NVMe drive is mounted on the mainboard, the NVMe drive information is displayed.

3.2.13 Emulation Configuration

Figure 3-27 shows the Emulation Configuration screen.

Figure 3-27 Emulation Configuration Screen

Aptio Setup – AMI Advanced	
Emulation Configuration	Enable/Disable MSR
MSR Trace for PM [Auto]	Trace for Power management in uBIDS **: Select Screen *1: Select Item Enter: Select */-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version 2.22.1290 Copyright	(C) 2024 AMI AB

For a description of the parameters on the **Emulation Configuration** screen, refer to Table 3-22.

Parameter	Description	Default
MSR Trace for PM	 Enables or disables the MSR trace feature for PM in uBIOS. Enabled: enables the MSR trace feature for PM in uBIOS. When this parameter is set to Enabled, the uBIOS is allowed to record MSR changes related to power management. Disabled: disables the MSR trace feature for PM in uBIOS. When this parameter is set to Disabled, the uBIOS. When this parameter is set to Disabled, the uBIOS. When this parameter is set to Disabled to power management. Auto: disables the MSR trace feature for PM in uBIOS. 	Auto
1		

Table 3-22 Parameter Descriptions for the Emulation Configuration Screen

3.2.14 PXE Configuration

Figure 3-28 shows the **PXE Configuration** screen.

Figure 3-28 PXE Configuration Screen

Aptio Setup — AMI Advanced		
Advanced Advanced->PXE Confis Slot 2 PXE MAC Address MAC Address	(uration [Enabled] 28-78-09-CA-FB-77 28-78-09-CA-FB-78 [Enabled] 40-A6-87-18-38-60 40-A6-87-18-38-61 40-A6-87-18-38-62 40-A6-87-18-38-63 [Enabled] 0C-42-A1-18-C5-AE 0C-42-A1-18-C5-AF	Enable or Disable PXE FUNCTION. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area E1: General Help
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Ver	rsion 2.22.1287 Copyright (C) 2023 AMI



The **PXE Configuration** screen is displayed based on the connected device.

For a description of the parameters on the **PXE Configuration** screen, refer to Table 3-23.

Table 3-23 Parameter Descriptions for the PXE Configuration Screen

Parameter	Description	Default
Slot 2 PXE	 Enables or disables the PXE feature of the standard NIC in slot 2. Enabled: enables the PXE feature on all NICs. Disabled: disables the PXE feature on all NICs. 	Enabled
Slot 11 PXE	 Enables or disables the PXE feature of the standard NIC in slot 11. Enabled: enables the PXE feature on all NICs. Disabled: disables the PXE feature on all NICs. 	Enabled

Parameter	Description	Default
OCP PXE	Enables or disables the PXE feature of the OCP NIC.	Enabled
	• Enabled: enables the PXE feature on all NICs.	
	• Disabled: disables the PXE feature on all NICs.	

3.2.15 TIs Auth Configuration

Figure 3-29 shows the TIs Auth Configuration screen.

Figure 3-29 TIs Auth Configuration Screen

Aptio Setup – AMI Advanced	
 Advanced Server CA Configuration Client Cert Configuration 	Press <enter> to configure Server CA. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</enter>
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For a description of the parameters on the TIs Auth Configuration screen, refer to Table 3-24.

Table 3-24 Parameter Descriptions for the TIs Auth Configuration Screen

Parameter	Description
Server CA Configuration	Sets server CA parameters. For details, refer to 3.2.15.1 Server CA Configuration.
Client Cert Configuration	Client certificate configuration. Cannot be set.

3.2.15.1 Server CA Configuration

Figure 3-30 shows the Server CA Configuration screen.

Figure 3-30 Server CA Configuration Screen

Aptio Setup – AMI Advanced	
▶ Enroll Cert	Press <enter> to enroll cert.</enter>
► Delete Cert	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
version 2.22.128/ copyright (C) 2	2023 AMI AB

For a description of the parameters on the **Server CA Configuration** screen, refer to Table 3-25.

Table 3-25 Parameter Descriptions for the Server CA Configuration Screen

Parameter	Description
Enroll Cert	Enrolls for certificates. Press the Enter key. The Enroll Cert screen is displayed, see Fig- ure 3-31.
Delete Cert	Deletes certificates. Press the Enter key. The Delete Cert screen is displayed, see Fig- ure 3-32.

Figure 3-31 Enroll Cert Screen

Aptio Setup – AMI Advanced	
▶ Enroll Cert Using File	Enroll Cert Using File
Cert GUID	
 Commit Changes and Exit Discard Changes and Exit 	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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For a description of the parameters on the Enroll Cert screen, refer to Table 3-26.

Parameter	Description
Enroll Cert Using File	Enrolls for a certificate by using a file. Press the Enter key and then select a file.
Cert GUID	Enter alphanumeric characters as the GUID of the certificate in the following format: 11111111 - 2222-3333-4444-1234567890ab
Commit Changes and Exit	Submits the changes and exits.
Discard Changes and Exit	Discards the changes and exits.

Table 3-26 Parameter Descriptions for the Enroll Cert Screen

Figure 3-32 Delete Cert Screen

Aptio Setup — AMI Advanced		
FE9C6606-8B49-44A3-8B6 B-DEA3A0E0324D	[Disabled]	GUID for CERT ++: Select Screen +: Select Screen +: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Delete Cert** screen, refer to Table 3-27.

Table 3-27 Parameter Descriptions for the Delete Cert Screen

Parameter	Description	Default
GUID of the certificate.	Enables or disables certificate deletion.	Disabled
	Options:	
	Enabled: enables certificate deletion.	
	Disabled: disables certificate deletion.	

3.2.16 RAM Disk Configuration

Figure 3-33 shows the RAM Disk Configuration screen.

Figure 3-33 RAM Disk Configuration Screen

Aptio Setup – AMI Advanced		
Disk Memory Type: ▶ Create raw ▶ Create from file	[Boot Service Data]	Specifies type of memory to use from available memory pool in system to create a disk.
Created RAM disk list: RAM Disk 0: [0x6A2C4598, 0x6A2C4598]	[Disabled]	
Remove selected RAM dis	K(S).	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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For a description of the parameters on the **RAM Disk Configuration** screen, refer to Table 3-28.

Table 3-28 Paramete	r Descriptions for th	ne RAM Disk	Configuration Screen
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Parameter	Description	Default
Disk Memory Type	 In the system available memory pool, specify the type of memory required to create the disk. Options: Boot Service Data Reserved 	Boot Service Data
Create raw	Creates a raw RAM disk. For details, refer to 3.2.16.1 Create raw.	-
Create from file	Creates a RAM disk from a given file. Press the Enter key and then select a file.	-
RAM Disk 0	 Sets whether to delete the created RAM disk. Options: Enabled: deletes the selected RAM disk. Disabled: does not delete the selected RAM disk. 	Disabled

Parameter	Description	Default
Remove selected RAM disk(s)	Deletes the enabled disks from the list of created RAM disks.	-

3.2.16.1 Create raw

Figure 3-34 shows the Create raw screen.

Figure 3-34 Create Raw Screen

Advanced	Aptio Setup — AMI
Size (Hex): Create & Exit Discard & Exit	The valid RAM disk size should be multiples of the RAM disk block size.
	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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For a description of the parameters on the Create raw screen, refer to Table 3-29.

Table 3-29 Parameter Descriptions for the Create Raw Screen

Parameter	Description	Default
Size (Hex)	Enter the disk size.	1
Create & Exit	Creates the disk and exits.	-
Discard & Exit	Discards disk creation and exits.	-

3.2.17 Driver Health

The **Driver Health** screen contains the health status of drivers and controllers. Figure 3-35 shows the **Driver Health** screen.

Figure 3-35 Driver Health Screen

Advanced	Aptio Setup – AMI	
▶ Mellanox ConnectX D ▶ Mellanox ConnectX D	Driver Healthy Driver Healthy	Provides Health Status for the Drivers/Controllers ++: Select Screen tl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Parameters on the Driver Health screen vary with server configurations.

3.3 Platform Configuration

Figure 3-36 shows the Platform Configuration screen.

Figure 3-36 Platform Configuration Screen

Aptio Setup – AMI Main Advanced Platform Configuration Socket	Configuration Server Mgmt
 PCH-IO Configuration Miscellaneous Configuration Server ME Configuration Runtime Error Logging 	PCH Parameters
Setup Warning: Setting items on this Screen to incorrect values may cause system to malfunction!	
	Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Platform Configuration** screen, refer to Table 3-30.

Table 3-30 Parameter Descriptions for the Platform Configuration Screen

Parameter	Description
PCH-IO Configuration	Sets PCH-IO parameters. For details, refer to 3.3.1 PCH-IO Configuration.
Miscellaneous Configuration	Sets miscellaneous parameters. For details, refer to 3.3.2 Miscellaneous Configura- tion.
Server ME Configuration	Sets server ME parameters. For details, refer to 3.3.3 Server ME Configuration.
Runtime Error Logging	Checks or modifies runtime error logging parameters. For details, refer to 3.3.4 Runtime Error Logging.

3.3.1 PCH-IO Configuration

Figure 3-37 through Figure 3-38 show the **PCH-IO Configuration** screen.

Figure 3-37 PCH-IO Configuration Screen—1

Platfo	Aptio Setup – AMI rm Configuration	i.
PCH-IO Configuration PCI Express Configuration SATA And RST Configuration 	on ion	PCI Express Configuration settings
 Global Reset Mask config IEH Mode Lock PCH Sideband 	(uration [Enabled] [Enabled]	
Enable/Disable ADR Enable/Disable ADR Timer Host Partition Reset ADR Enable	[Platform-POR] [Platform-POR] [Platform-POR]	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area</pre>
ADR timer 1 expire time ADR timer 1 time unit	0 [Auto]	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 3-38 PCH-IO Configuration Screen—2

Aptio Setup – AMI Platform Configuration		
 USB Configuration Global Reset Mask confi 	guration	▲ Enable this option to support I/O Margin tool
IEH Mode Lock PCH Sideband Access Enable/Disable ADR Enable/Disable ADR Timer	[Enabled] [Enabled] [Platform-POR] [Platform-POR]	
Host Partition Reset ADR Enable ADR timer 1 expire	[Platform-POR] O	++: Select Screen ↑↓: Select Item
ADR timer 1 time unit ADR timer 2 expire time	[Auto] O	+/-: Change Opt. K/M: Scroll Help Area F1: General Help
ADR timer 2 time unit Enable I/O Margining	[Auto] [Disabled]	F2: Previous Values ▼F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **PCH-IO Configuration** screen, refer to Table 3-31.

Table 3-31 Parameter Descriptions for the PCH-IO Configuration Screen

Parameter	Description	Default
PCI Express Configuration	Sets PCIe parameters. For details, refer to 3.3.1.1 PCI Express Configura- tion.	-
SATA And RST Configuration	Sets SATA and RST parameters. For details, refer to 3.3.1.2 SATA And RST Configura- tion.	-
USB Configuration	Sets USB parameters. For details, refer to 3.3.1.3 USB Configuration.	-
Global Reset Mask configura- tion	Sets global reset mask parameters. For details, refer to 3.3.1.4 Global Reset Mask configuration.	-
IEH Mode	Enables or bypasses IEH mode. Options: • Enabled: enables IEH mode.	Enabled

Parameter	Description	Default
	 When this parameter is set to Enabled, errors from various sources are centralized to the same location and then sent to the CPU. Bypass Mode: bypasses IEH mode. 	
Lock PCH Sideband Access	 Locks or unlocks PCH sideband access, including sideband interfaces and sideband PortID masks for some endpoints such as PSFx. If POSTBOOT SAI is set, this parameter is invalid. Options: Enabled: locks PCH sideband access. Disabled: unlocks PCH sideband access. 	Enabled
Enable/Disable ADR	 Enables or disables the ADR feature. This feature is not available if eADR is enabled. Options: Platform-POR: The ADR feature is disabled. Disabled: disables the ADR feature. When this parameter is set to Disabled, some of the parameters below are hidden. Enabled: enables the ADR feature. 	Platform-POR
Enable/Disable ADR Timer	 Enables or disables the ADR timer. Options: Platform-POR: The ADR feature is disabled. Disabled: disables the ADR timer. When this parameter is set to Disabled, some of the parameters below are hidden. Enabled: enables the ADR timer. 	Platform-POR
Host Partition Reset ADR En- abled	 Enables or disables the ADR feature during host partition reset. Options: Platform-POR: disables the ADR feature. Disabled: disables the ADR feature. Enabled: enables the ADR feature. 	Platform-POR
ADR timer 1 expire time	Enter the desired expiration time for the ADR1 timer 1. Value 0 indicates the automatic mode. Valid value range: 1–256. The time unit is specified in ADR timer 1 expire time unit .	0
ADR timer 1 time unit	Select the unit for ADR timer 1. Options: • 1 us	Auto

Parameter	Description	Default
	 10 us 100 us 1 ms 10 ms 100 ms 1s 10s Automatic 	
ADR timer 2 expire time	Enter the desired expiration time for the ADR timer 2. Value 0 indicates the automatic mode. Valid value range: 1–256. The time unit is specified in ADR timer 2 expire time unit .	0
ADR timer 2 time unit	Select the unit for ADR timer 2. Options: • 1 us • 10 us • 10 us • 100 us • 1 ms • 10 ms • 100 ms • 1s • 10s • Auto	Auto
Enabled I/O Margining	 Enables the I/O Margining feature to support the I/O Margining tool. Options: Enabled: supports the I/O Margining tool. Disabled: does not support the I/O Margining tool. 	Disabled

3.3.1.1 PCI Express Configuration

Figure 3-39 shows the PCI Express Configuration screen.

Figure 3-39 PCI Express Configuration Screen

Aptio Setup – AMI Platform Configuration		
PCI Express Configuration	This option can disable ASPM support in all	
PCH PCI–E ASPM [Disabled] Support (Global)	PCIe ports.	
	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area</pre>	
	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **PCI Express Configuration** screen, refer to Table 3-32.

Table 3-32 Parameter Descriptions for the PCI Express Configuration Screen

Parameter	Description	Default
PCH PCI-E ASPM Support	Disables ASPM support on all PCIe ports.	Disabled
(Global)	Options:	
	Disabled: disables ASPM support on all PCIe	
	ports.	
	• L1 Only: supports ASPM only by L1.	

3.3.1.2 SATA And RST Configuration

Figure 3-40 shows the SATA And RST Configuration screen.

Figure 3-40 SATA And RST Configuration Screen

Aptio Setup – AMI Platform Configuration		
 Controller 1 SATA And RST Configuration Controller 2 SATA And RST Configuration Controller 3 SATA And RST Configuration Software Feature Mask Configuration for Controller 1 Software Feature Mask Configuration for Controller 2 Software Feature Mask Configuration for Controller 2 Software Feature Mask Configuration for Controller 3 	SATA Controller 1 Device Options Settings	
	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>	
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The parameters on the **SATA And RST Configuration** screen vary with the server models. For different controllers, the parameters displayed on the **Controller SATA And RST Configuration** screen are different, but their principles are the same. This procedure uses the **Controller 1 SATA And RST Configuration** screen as an example.

Figure 3-41 shows the Controller 1 SATA And RST Configuration screen.

Figure 3-41 Controller	1 SATA And RST	Configuration Screen
------------------------	-----------------------	-----------------------------

Aptio Setup – AMI Platform Configuration				
Controller 1 SATA And RS	T Configuration	SATA test settings		
SATA Configuration SATA Mode Selection SATA Test Mode SATA Port 0 Software Preserve SATA Port 0 Hot Plug Configured as eSATA Spin Up Device SATA Port 1 Software Preserve SATA Port 1 Hot Plug Configured as eSATA Spin Up Device	<pre>[Enabled] [AHCI] [Disabled] [Not Installed] Unknown [Enabled] [Enabled] Hot Plug supported [Enabled] [Not Installed] Unknown [Enabled] [Enabled] Hot Plug supported [Enabled]</pre>	<pre>→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>		

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For a description of the parameters on the **Controller 1 SATA And RST Configuration** screen, refer to Table 3-33.

Table 3-33 Controller 1	SATA And RST	Configuration	Parameter	Descriptions
		<u> </u>		

Parameter	Description	Default
SATA Configuration	 Enables or disables the SATA configuration feature. Options: Enabled: enables the SATA configuration feature. Disabled: disables the SATA configuration feature. After the feature is disabled, the parameters below are hidden. 	Enabled
SATA Mode Selection	 Select a SATA mode. Options: AHCI: AHCI mode. When AHCI mode is selected, the SATA Interrupt Selection and RAID Device ID parameters are hidden. RAID: RAID mode. 	AHCI

Parameter	Description	Default
SATA Interrupt Selection	Select the interrupt that the OS will use. This para- meter takes effect only when the SAT controller is in RAID mode. Options: • Msix • Msi • Legacy	Msix
SATA Test Mode	 Enables or disables SATA Test mode. Options: Enabled: enables SATA Test mode. Disabled: disables SATA Test mode. 	Disabled
RAID Device ID	Select the ID of the RAID device. This parameter takes effect only when the SATA controller is in RAID mode. Options: Client Alternate Server	Server
SATA Port 0	Name of the device installed in SATA port 0. If the device is present, the device information is dis- played. If the device is not present, the information shows that the device is not installed.	-
Software Preserve	Software preservation.	Unknown
SATA Port 0	Enables or disables the SATA port. Options: • Enabled • Disabled	Enabled
Hot Plug	 Whether the port is hot swappable. Options: Enabled: The port is hot swappable. Disabled: The port is not hot swappable. 	Enabled
Configured as eSATA	Configured as eSATA.	Hot Plug supported
Spin Up Device	If interleaving boot for any port is enabled, interleav- ing boot is performed only on the ports with the driver enabled. Options: • Enabled • Disabled	Disabled

Figure 3-42 shows the Software Feature Mask Configuration screen.

Figure 3-42 Software Feature Mask Configuration

Software Feature Mask (Configuration	If enabled, indicates that the HDD password
HDD Unlock	[Enabled]	unlock in the OS is
LED Locate	[Enabled]	enabled.
Use RST Legacy OROM	[Disabled]	
RAIDO	[Enabled]	
RAID1	[Enabled]	
RAID10	[Enabled]	
RAIDS	[Enabled]	
Intel Rapid Recovery	[Enabled]	-
Technology		++: Select Screen
OROM UI and BANNER	[Enabled]	t↓: Select Item
IRRT Only on eSATA	[Enabled]	Enter: Select
Smart Response	[Enabled]	+/-: Change Opt.
Technology		K/M: Scroll Help Area
OROM UI Normal Delay	[2 secs]	F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit

For a description of the parameters on the **Software Feature Mask Configuration** screen, refer to Table 3-34.

Table 3-34 Parameter Descriptions for the Software Feature Mask Configuration Screen

Parameter	Description	Default
HDD Unlock	 Enables or disables the HDD password unlocking feature in the OS. Options: Enabled: enables the HDD password unlocking feature in the OS. Disabled: disables the HDD password unlocking feature in the OS. 	Enabled
LED Locate Enables or disables the LED location feature. Options: • Enabled: enables the LED location feature. After this feature is enabled, the LED/SGPIO hard ware is connected and the ping feature is enabled in the OS.		Enabled

Parameter Description		Default
	Disabled: disables the LED location feature.	
The following parameters are on they are hidden.	displayed only when the SATA controller is in RAID1	mode. Otherwise,
Use RST Legacy OROM	 Enables or disables RST Legacy OROM when CSM is enabled. Options: Enabled: enables RST Legacy OROM. Disabled: disables RST Legacy OROM. 	Disabled
RAID0	 Enables or disables the RAID0 feature. Options: Enabled: enables the RAID0 feature. Disabled: disables the RAID0 feature. 	Enabled
RAID1	 Enables or disables the RAID1 feature. Options: Enabled: enables the RAID1 feature. Disabled: disables the RAID1 feature. 	Enabled
RAID10	 Enables or disables the RAID10 feature. Options: Enabled: enables the RAID10 feature. Disabled: disables the RAID10 feature. 	Enabled
RAID5	 Enables or disables the RAID5 feature. Options: Enabled: enables the RAID5 feature. Disabled: disables the RAID5 feature. 	Enabled
Intel Rapid Recovery Technolo- gy	 Enables or disables Intel's rapid recovery technology. Options: Enabled: enables Intel's rapid recovery technology. Disabled: disables Intel's rapid recovery technology. 	Enabled
OROM UI and BANNER	 Enables or disables the OROM UI and banner. Options: Enabled: enables the OROM UI and banner. When this parameter is set to Enabled, the OROM UI is displayed. Disabled: disables the OROM UI and banner. When this parameter is set to Disabled, no OROM banner or information is displayed if all disks and RAID volumes are normal. 	Enabled

Parameter	Description	Default
IRRT Only on eSATA	 Enables or disables the use of only the IRRT feature on the eSATA. Options: Enabled: enables the use of only the IRRT feature on the eSATA. When this parameter is set to Enabled, only IRRT volumes can span internal and eSATA drivers. Disabled: disables the use of only the IRRT feature on the eSATA. When this parameter is set to Disabled, any RAID volumes can span internal and eSATA drivers. 	Enabled
Smart Response Technology	 Enables or disables the smart response technology. Options: Enabled: enables the smart response technology. Disabled: disables the smart response technology. 	Enabled
OROM UI Normal Delay Select the delay of the OROM UI Splash screen in normal state. Options: 2 secs • 2 secs 4 secs • 6 secs 8 secs		2 secs

3.3.1.3 USB Configuration

Figure 3-43 shows the USB Configuration screen.

Figure 3-43 USB Configuration Screen

Aptio Setup – AMI Platform Configuration				
USB Configuration		▲ Select 'Enabled' if		
USB PDO Programming USB Overcurrent USB Overcurrent Lock	[Enabled] [Enabled] [Enabled]	functionality is used.		
USB Port Disable Override	[Select Per-Pin]			
USB SS Physical Connector #0	[Disabled]	++: Select Screen		
USB SS Physical Connector #1	[Disabled]	†↓: Select Item Enter: Select		
USB SS Physical Connector #2	[Disabled]	+/–: Change Opt. K/M: Scroll Help Area		
USB SS Physical Connector #3	[Disabled]	F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit		
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For a description of the parameters on the USB Configuration screen, refer to Table 3-35.

Table 3-35 Parameter Descriptions for the USB Configuration Screen

Parameter	Description	Default
USB PDO Programming	 Enables or disables USB PDO programming. Options: Enabled: enables USB PDO programming. Disabled: disables USB PDO programming. If the USB Port Disable Override feature is used, select Enabled. 	Enabled
USB Overcurrent	 Enables or disables the USB overcurrent feature. Options: Enabled: enables USB overcurrent. Disabled: disables USB overcurrent. Select Disabled in pin-based debugging state. If the pin-based debugging state is enabled but USB Overcurrent is not disabled, USB DbC does not take effect. 	Enabled
USB Overcurrent Lock	Enables or disables the USB overcurrent lock.	Enabled

Parameter	Description	Default
	 Options: Enabled: enables the USB overcurrent lock. Disabled: disables the USB overcurrent lock. If USB Overcurrent is enabled, select Enabled to allow the XHCI controller to consume overcurrent mapping data. 	
USB Port Disable Override	 Enables or disables the overriding of USB port disabling settings. Options: Disabled: disables each USB port. When this parameter is set to Disabled, the physical port parameters below are hidden. Select Per-Pin: Select each pin to display the following physical port parameters. You can enable or disable each pin (port) separately. 	Select Per-Pin
USB SS Physical Connector #0	 Enables or disables the USB physical connector (physical port). Options: Enabled: enables the USB physical port. Disabled: disables the USB physical port. When this parameter is set to Disabled, any USB device inserted into the connector is not detected by the BIOS or the OS. 	Disabled

3.3.1.4 Global Reset Mask configuration

Figure 3-44 shows the Global Reset Mask Configuration screen.

Aptio Setup — AMI Platform Configuration			
Global Reset Masks Override Global Reset Event Mask Global Reset Trigger Mask	[Enabled] 0 0	Enable this option to be able to override HW default Global Reset Event/Trigger masks values in PMC ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
Versi	on 2.22.1287 Copyrig	ht (C) 2023 AMI AB	

Figure 3-44 Global Reset Mask Configuration Screen

For a description of the parameters on the **Global Reset Mask Configuration** screen, refer to Table 3-36.

Table 3-36 Parameter Desc	riptions for the	Global Reset Mask	Configuration Screen
			Service Service

Parameter	Description	Default
Global Reset Masks Override	 Enables or disables the global reset mask overwriting feature. Options: Enabled: enables the global reset mask overwriting feature. When this parameter is set to Enabled, the default global hardware reset event and trigger mask values in the PMC are overwritten. Disabled: disables the global reset mask overwriting feature. 	Enabled
Global Reset Event Mask	Enter the global reset event mask.	0
Global Reset Tigger Mask	Enter the global reset trigger mask.	0

3.3.2 Miscellaneous Configuration

Figure 3-45 shows the Miscellaneous Configuration screen.

Figure 3-45 Miscellaneous Configuration Screen



For a description of the parameters on the **Miscellaneous Configuration** screen, refer to Table 3-37.

Table 2.27 Decemptor	Descriptions	for the Mices		onfiguration	Coroon
Table 3-37 Farameter	Descriptions		enaneous C	onnguration	Screen

Parameter	Description	Default
KCS Access Control Policy	 Sets when to send IPMI commands through the KCS interface. Options: Allow All: anytime. Restricted: until the BIOS sends the DONE signal. Deny All: never. 	Allow All
Wake On Lan Support	 Enables or disables the Wake On Lan Support feature. Options: Enabled: Enables the Wake On Lan Support feature. 	Disabled

Parameter	Description	Default
	Disabled: Disables the Wake On Lan Support fea- ture.	
Serial Debug Message Level	 Sets the level of the debugging messages output through the serial port. Options: Disabled: The serial port does not output system debugging messages. Minimum: Only critical debugging messages are output. Normal: Only critical and informational debugging messages are output. Minimum: All debugging messages are output. Auto: Minimum (default) or Medium (advanced debugging mode). Fixed PCD. 	Disabled
Video Card Selected	Sets the VGA device type. Options: • Auto • Onboard Device • PCIe Device	Onboard Device
External SSC - CK440	Sets the SSC feature, which affects only the external clock generator. Options: • SSC Off • SSC = -0.3% • SSC = -0.5% • Hardware	Hardware

3.3.3 Server ME Configuration

Figure 3-46 through Figure 3-48 show the **Server ME Configuration** screen.

Figure 3-46 Server ME Configuration Screen—1

General ME Configuration	n 18:6.0.4.33	▲ The altitude of the
Open Firmware Version	18:6.0.4.33	Distance location about
oper. I Trimoure vereiter		platform location above
Backup Firmware Version	N/A	the sea level, expressed in meters.
Recovery Firmware Version	18:6.0.4.33	The hex number is decoded as 2's
ME Firmware Status #1	0x00000355	complement signed
ME Firmware Status #2	0x88506006	integer. 🔻
Current State	Operational	
Error Code	No Error	
Recovery Cause	N/A	++: Select Screen
Intel ME Target Image	Success	11: Select Item
Boot		Enter: Select
Altitude	8000	+/-: Change Option.
MCTP Bus Owner	300	K/M: Scroll Help Area
Server ME firmware feat	ures list	F1: General Help
SiEn		F2: Previous Values
NodeManager		▼ F3: Optimized Defaults
Versio	n 2.22.1287 Copyright	r4: Save & Exit
Figure 3-47 Server ME Configuration Screen—2

NodeManager	*
PECIProxy	
ICC	
MeStorageServices	
BootGuard	
PmBusProxy	
CpuHotPlug	
MctpProxy	
HSIO	
PECIOverDMI	
PCHDebug	++: Select Screen
PowerThermalUtility	↑↓: Select Item
FiaMuxConfiguration	Enter: Select
PCHThermalSensorInit	+/-: Change Opt.
DirectMeUpdate	K/M: Scroll Help Area
MctpInfrastructure	F1: General Help
CUPS	F2: Previous Values
TurboStateLimiting	▼ F3: Optimized Defaults
	F4: Save & Exit

Figure 3-48 Server ME Configuration Screen—3

P	latform Configuration	
PCHDebug		
PowerThermalUtil	ity	
FiaMuxConfigurat	ion	
PCHThermalSensor	Init	
DirectMeUpdate		
MctpInfrastructu	re	
CUPS		
TurboStateLimiti	ng	
TelemetryHup		
WarmResetNotificat	ionS	++: Select Screen
ubFlow		↑↓: Select Item
Power Supply Units	Status	Enter: Select
PSU #1	N/A	+/-: Change Opt.
PSU #2	OK	K/M: Scroll Help Area
PSU #3	N/A	F1: General Help
PSU #4	N/A	F2: Previous Values
Power Supply Units	Configuration	▼ F3: Optimized Defaults
		F4: Save & Exit
0		

For a description of the parameters on the **Server ME Configuration** screen, refer to Table 3-38.

Table 3-38 Parameter Descriptions for the Server ME Configuration Screen

Parameter	Description	Default
Oper.Firware Version	Valid firmware version number.	-
Backup Firmware Version	Backup firmware version number.	-
Recovery Firmware Version	Firmware version number in recovery mode.	-
ME Firmware Status #1	ME firmware status #1.	-
ME Firmware Status #2	ME firmware status #2.	-
Current State	Current ME state.	-
Error Code	Error code information.	-
Recovery Cause	Recovery cause.	-
Intel ME Target Image Boot	Booted from the Intel ME target image.	-
Altitude	Enter the platform height (in meters) above the sea level.	8000

Parameter	Description	Default
	The hexadecimal number is decoded into the signed integer of the complementary code of two. If the value is 8000 , the altitude is unknown.	
MCTP Bus Owner	The position of the MCTP bus owner on the PCIe.	-
Server ME firmware features list	The server ME firmware features are listed below.	-
Power Supply Units Status	The state of each power supply is displayed below.	-
Power Supply Units Configura- tion	Adds a power supply device.	-

3.3.4 Runtime Error Logging

Figure 3-49 through Figure 3-50 show the **Runtime Error Logging** screen.

Figure 3-49 Runtime Error Logging Screen—1

Aptio Setup – AMI Platform Configuration		
Runtime Error Logging System Errors RAS Log Level System Memory Poison Viral Status UboxToPcuMca Enabling FatalErrDebugHalt Mca Bank Warm Boot	[Enabled] [MIN (BASIC_FLOW)] [Enabled] [Disabled] [Disabled] [Disabled] [Disabled] [Disabled]	System Error Enable/Disable setup options.
 Shutdown Suppression eMCA Settings Whea Settings Error Injection Settings Memory Error Enabling IIO Error Enabling PCIe Error Enabling 	[Shutdown Suppression and Log MCA IERR]	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Figure 3-50 Runtime Error Logging Screen—2

Aptio Setup – AMI Platform Configuration		
System Errors RAS Log Level System Memory Poison Viral Status UboxToPcuMca Enabling FatalErrDebugHalt Mca Bank Warm Boot Clear Errors	[Enabled] [MIN (BASIC_FLOW)] [Enabled] [Disabled] [Enabled] [Disabled] [Enabled]	▲ Press <enter> to view or change the Error Control Setting options.</enter>
Shutdown Suppression • eMCA Settings • Whea Settings • Error Injection Settings • Memory Error Enabling • IIO Error Enabling • PCIe Error Enabling • Error Control Setting	[Shutdown Suppression and Log MCA IERR]	 **: Select Screen *1: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the Runtime Error Logging screen, refer to Table 3-39.

Table 3-39 Parameter Descriptions for the Runtime Error Logging Screen

Parameter	Description	Default
System Errors	 Enables or disables system error collection. Options: Enabled: enables system error collection. Disabled: disables system error collection. When this parameter is set to Disabled, some parameters below are hidden or grayed out. 	Enabled
RAS Log Level	 Select a RAS log level. Options: None: none. Min (BASIC_FLOW): minimum. Mid (BASIC_FLOW, FUNC_FLOW): medium Max (BASIC_FLOW, FUNC_FLOW, REG): maximum 	MIN (BASIC_FLOW)
System Memory Poison	Enables or disables system memory poison mode. Options:	Enabled

Parameter	Description	Default
	Enabled: enables system memory poison mode.Disabled: disables system memory poison mode.	
Viral Status	 This parameter is displayed when System Memory Poison is set to Enabled. Enables or disables the Viral status. Options: Enabled: enables the Viral status. Disabled: disables the Viral status. 	Disabled
Clear Viral Status	 This parameter is displayed when Viral Status is set to Enabled. Enables or disables the clearing of Viral status. Options: Enabled: enables the clearing of Viral status. Disabled: disables the clearing of Viral status. 	Disabled
UboxToPcuMca Enabling	Enables the UboxToPcuMca feature.	Enabled
FatalErrDebugHalt	 Enables or disables the fatal error debug feature. Options: Enabled: enables the fatal error debug feature. Disabled: disables the fatal error debug feature. 	Disabled
Mca Bank Warm Boot Clear Er- rors	 Enables or disables error information clearing during MCA warm boot. Options: Enabled: enables error information clearing during MCA warm boot. Disabled: disables error information clearing dur- ing MCA warm boot. 	Enabled
Shutdown Suppression	 Sets the support for shutdown suppression and MCA IERR logging. Options: Disabled: disables the support. Shutdown Suppression and Log MCA IERR: shuts down suppression and MCA IERR error logging. Shutdown Log MCA IERR: shuts down MCA IERR error logging. 	Shutdown Suppres- sion and Log MCA IERR
eMCA Settings	Sets eMCA parameters. For details, refer to 3.3.4.1 eMCA Settings.	-
Whea Settings	Sets Whea parameters. For details, refer to 3.3.4.2 Whea Settings.	-
Error Injection Settings	Sets error injection parameters.	-

Parameter	Description	Default
	For details, refer to 3.3.4.3 Error Injection Settings.	
Memory Error Enabling	Sets memory error enabling parameters. For details, refer to 3.3.4.4 Memory Error Enabling.	-
Ilo Error Enabling	Sets IIO error enabling parameters. For details, refer to 3.3.4.5 IIo Error Enabling.	-
PCIe Error Enabling	Sets PCIe error enabling parameters. For details, refer to 3.3.4.6 PCIe Error Enabling.	-
Error Control Setting	Sets error control parameters. For details, refer to 3.3.4.7 Error Control Setting.	-

3.3.4.1 eMCA Settings

Figure 3-51 shows the **eMCA Settings** screen.

Figure 3-51 EMCA Settings Screen

Aptio Setup – AMI Platform Configuration		
eMCA Settings		Enable/Disable EMCA Logging
EMCA Logging Support LMCE Support Ignore OS ELOG Opt-in EMCA CMCI-SMI Morphing EMCA CMCI-SMI Threshold CSMI Dynamic Disable CSMI Dynamic Threshold EMCA MCE-SMI Enable Corrected Error eLog Memory Error eLog Processor Error eLog Opportunistic Spare Core Ubox Error Mask	<pre>[Enabled] [Enabled] [Disabled] [EMCA gen 2 CSMI] 0 [Enabled] 14 [EMCA gen 2 - MSMI] [Enabled] [Enabled] [Disabled]</pre>	++: Select Screen †4: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults
Version	n 2.22.1287 Copyright (C	F4: Save & Exit) 2023 AMI
		AB

For a description of the parameters on the **eMCA Settings** screen, refer to Table 3-40.

Parameter	Description	Default
EMCA Logging Support	Enables or disables eMCA Logging Support. When this parameter is set to Disabled , some of the parameters below are hidden.	Enabled
LMCE Support	Enables or disables LMCE Support. When this parameter is set to Disabled , some of the parameters below are hidden.	Enabled
Ignore OS ELOG Opt-in	 Indicates whether to ignore OS ELOG Opt-in and log the behavior. Options: Enabled: ignores OS ELOG Opt-in and logs the behavior. Disabled: neither ignores OS ELOG Opt-in nor logs the behavior. 	Disabled
EMCA CMCI-SMI Morphing	 Sets the eMCA CMCI-SMI morphing feature. Options: EMCA gen 2 CSMI Disabled When this parameter is set to Disabled, some of the parameters below are hidden. 	EMCA gen 2 CSMI
EMCA CMCI-SMI Threshold	Sets the threshold for correctable errors for CM- CI-SMI.	0
CSMI Dynamic Disable	 Indicates whether to dynamically disable CSMI. Options: Enabled: disables CSMI when the error threshold is reached. Disabled: always enables CSMI. When set to Disabled, the CSMI Dynamic Threshold parameter is hidden. 	Disabled
CSMI Dynamic Threshold	Sets the threshold for dynamically disabling CSMI. When the error threshold is reached, CSMI is dis- abled.	14
EMCA MCE-SMI Enable	 Enables or disables EMCA MCE-SMI. Options: EMCA gen 2 - MSMI: enables EMCA MCE-SMI in EMCA gen 2 MSMI mode. Disabled: disables EMCA MCE-SMI. 	EMCA gen 2 - MSMI
Corrected Error eLog	Enables or disables corrected error elogs. Options:	Enabled

Table 3-40 Parameter Descriptions for the eMCA Settings Screen

Parameter	Description	Default
	Enabled: enables corrected error elogs.Disabled: disables corrected error elogs.	
Memory Error eLog	 Enables or disables memory error elogs. Options: Enabled: enables memory error elogs. Disabled: disables memory error elogs. 	Enabled
Processor Error eLog	 Enables or disables processor error elogs. Options: Enabled: enables processor error elogs. Disabled: disables processor error elogs. 	Enabled
Opportunistic Spare Core	 Enables or disables the opportunistic spare core. Options: Enabled: enables the opportunistic spare core. Disabled: disables the opportunistic spare core. 	Disabled
Ubox Error Mask	 Enables or disables the Ubox error mask. Options: Enabled: enables the Ubox error mask. Disabled: disables the Ubox error mask. 	Disabled

3.3.4.2 Whea Settings

Figure 3-52 shows the Whea Settings screen.

Figure 3-52 Whea Settings Screen

√hea Settings		Enable/Disable WHEA
WHEA Support WHEA Log Memory Error Whea Log Processor Error Whea Log PCI Error	[Enabled] [Enabled] [Enabled] [Enabled]	
		<pre>fl: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>

For a description of the parameters on the WHEA Settings screen, refer to Table 3-41.

Table 3-41 Parameter Descriptions for the Whea Settings Screen

Parameter	Description	Default
WHEA Support	 Enables or disables the support for WHEA Options: Enable: enables WHEA support. Disable: disables WHEA support. When this parameter is set to Disabled, the parameters below are hidden. 	Enabled
WHEA Log Memory Error	 Enables or disables the support for WHEA in logging memory errors. Options: Enable: enables the support for WHEA in logging memory errors. Disable: disables the support for WHEA in logging memory errors. 	Enabled
WHEA Log Processor Error	Enables or disables the support for WHEA in logging processor errors.	Enabled

Parameter	Description	Default
	 Options: Enable: enables the support for WHEA in logging processor errors. Disabled: disables the support for WHEA in logging processor errors. 	
WHEA Log PCI Error	 Enables or disables the support for WHEA in logging PCI errors. Options: Enable: enables the support for WHEA in logging PCI errors. Disable: disables the support for WHEA in logging PCI errors. 	Enabled

3.3.4.3 Error Injection Settings

Figure 3-53 shows the Error Injection Settings screen.

Figure 3-53 Error Injection Settings Screen

Aptio Setup – AMI Platform Configuration		
Error Injection Setting	S	Enable/Disable WHEA
PMem Error Injection	[Disabled]	
WHEA Error Injection Support	[Enabled]	
WHEA Error Injection 5.0 Extension	[Disabled]	
SGX Memory Error	[Disabled]	
Memory NonFatal Error Injection Support	[Disabled]	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
Versio	n 2.22.1290 Copyr	ight (C) 2024 AMI AB

For a description of the parameters on the Error Injection Settings screen, refer to Table 3-42.

Parameter	Description	Default
PMem Error Injection	 Enables or disables the PMem error injection feature. Options: Enabled: enables the PMem error injection feature. Disabled: disables the PMem error injection feature. 	Disabled
WHEA Error Injection Support	 Enables or disables WHEA error injection support. Options: Enabled: enables WHEA error injection support. Disabled: disables WHEA error injection support. When this parameter is set to Disabled, the parameters below are hidden. 	Disabled
WHEA Error Injection 5.0 Ex- tension	 Enables or disables WHEA error injection 5.0 extension. Options: Enabled: enables WHEA error injection 5.0 extension. Disabled: disables WHEA error injection 5.0 extension. 	Disabled
SGX Memory Error Injection Support	 Enables or disables SGX memory error injection support. Options: Enabled: enables SGX memory error injection support. Disabled: disables SGX memory error injection support. 	Disabled
Memory NonFatal Error Injec- tion Support	 Enables or disables memory non-fatal error injection support. Options: Enabled: enables memory non-fatal error injection support. Disabled: isables memory non-fatal error injection support. 	Disabled

Table 3-42 Parameter Descriptions for the Error Injection Settings Screen

3.3.4.4 Memory Error Enabling

Figure 3-54 through Figure 3-55 show the **Memory Error Enabling** screen.

Figure 3-54 Memory Error Enabling Screen—1

Platfo	Aptio Setup – AMI rm Configuration	
Memory Error Enabling		▲ Enable/Disable Memory
Memory Corrected Error Spare Interrupt Pfd PMem CTLR Errors PMem CTLR Low Priority Error Signaling	[Enabled] [SMI] [Auto] [Enabled] [SMI]	
PMem CTLR High Priority Error Signaling	[SMI]	
Set PMem Address	[Disabled]	Enter: Select
Set PMem Host Alert Policy for Patrol Scrub	[Enabled]	 K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 3-55 Memory Error Enabling Screen—2

Aptio Setup – AMI Platform Configuration		
Spare Interrupt Pfd PMem CTLR Errors PMem CTLR Low Priority Error Signaling	[SMI] [Auto] [Enabled] [SMI]	▲ Configures to signal Poison or Viral upon receiving DIMM Physical Address Error
PMem CTLR High Priority Error Signaling	[SMI]	
Set PMem Address Range Scrub	[Disabled]	++: Select Screen
Set PMem Host Alert Policy for Patrol Scrub	[Enabled]	↑↓: Select Item Enter: Select +/-: Change Opt.
Enable Reporting SPA to OS	[Enabled]	K/M: Scroll Help Area F1: General Help
Set PMem Host Alert Policy for DPA Error	[Poison]	F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Versid	on 2.22.1287 Copyri	ght (C) 2023 AMI AB

For a description of the parameters on the Memory Error Enabling screen, refer to Table 3-43.

Table 3-43 Parameter Descriptions for the Memory Error Enabling Screen

Parameter	Description	Default
Memory Corrected Error	 Enables or disables correctable memory error reporting. Options: Enabled: enables correctable memory error reporting. Disabled: disables correctable memory error reporting. When this parameter is set to Disabled, the Spare Interrupt parameter is hidden. 	Enabled
Spare Interrupt	Sets the spare interrupt. Options: Disabled SMI Error Pin CMCI	SMI

Parameter	Description	Default
Pfd	 The PFD is used to identify hard faults from errors. Enables or disables the PFD feature. Options: Enabled: enables the PFD feature. Disabled: disables the PFD feature. Auto: dynamically enables PFD based on the system configuration. 	Auto
PMem CTLR Errors	 Enables or disables PMem CTLR error reporting and logging. Options: Enabled: enables PMem CTLR error reporting and logging. Disabled: disables PMem CTLR error reporting and logging. 	Enabled
PMem CTLR Low Priority Error Signaling	Sets PMem CTLR low priority error signaling. Options: Disabled SMI Erro# Pin	SMI
PMem CTLR High Priority Error Signaling	Sets PMem CTLR high priority error signaling. Options: Disabled SMI Erro# Pin	SMI
Set PMem Address Range Scrub	 Enables or disables PMem DIMM physical address range scrubbing. Options: Enabled: enables PMem DIMM physical address range scrubbing. Disabled: disables PMem DIMM physical address range scrubbing. 	Disabled
Set PMem Host Alert Policy for Patrol Scrub	 Enables or disables the triggering of PMem interrupts based on uncorrectable errors detected by NGN patrol scrubbing. Options: Enabled: enables the triggering of PMem interrupts. Disabled: disables the triggering of PMem interrupts. 	Enabled
Enable Reporting SPA to OS	Enables or disables SPA reporting to the OS.	Enabled

Parameter	Description	Default
	 Options: Enabled: enables SPA reporting to the OS. Disabled: disables SPA reporting to the OS. 	
Set PMem Host Alert Policy for DPA Error	 Sends signals to Poison or Viral when a DIMM physical address error is received. Options: Poison: sends signals to Poison. Viral: sends signals to Viral. 	Poison

3.3.4.5 Ilo Error Enabling

Figure 3-56 through Figure 3-58 show the **IIo Error Enabling** screen.

Figure 3-56 Ilo Error Enabling Screen—1

Aptio Setup – AMI Platform Configuration			
IIO Error Enabling		. E	Enable/Disable IIO/PCH Error Support.
IIO/PCH Global Error Support Os Native AER Support IIO MCA Support IIO Error Pin0 Enable IIO Error Pin1 Enable IIO Error Pin2 Enable IIO 00B Mode IIO Error Registers Clear IIO eDPC Support IIO Coherent Interface Error IIO IRPO protocol parity error	[Enabled] [Disabled] [Disabled] [Disabled] [Disabled] [Enabled] [Enabled] [Enabled] [Enabled]		<pre>++: Select Screen t1: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Figure 3-57 Ilo Error Enabling Screen—2

Aptio Setup – AMI Platform Configuration			
IIO IRPO protocol paritu error	[Enabled]	▲ Enable or disable	
IIO IRPO protocol qt overflow underflow error	[Enabled]	protocol IIO parity error reporting	
IIO IRPO protocol rcvd unexprsp	[Enabled]		
IIO IRPO csr acc 32b unaligned	[Enabled]		
IIO IRPO wrcache uncecccsO error	[Enabled]	++: Select Screen	
IIO IRPO wrcache uncecccs1 error	[Enabled]	↑↓: Select Item Enter: Select	
IIO IRPO protocol rcvd poison error	[Enabled]	+/-: Change Option. K/M: Scroll Help Area	
IIO IRPO wrcache correcccsO error	[Enabled]	F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit	
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Figure 3-58 IIo Error Enabling Screen—3

Aptio Setup — AMI Platform Configuration			
IIO IRPO wrcache correcccs1 error IIO Misc. Error IIO Vtd Error IIO Dma Error IIO Dmi Error PCIE Error IIO PCIE Additional	[Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled]	▲ Enable/Disable PMSB Router Parity Error	
Corrected Error IIO PCIE Additional Uncorrected Error IIO PCIE Additional Received Completion With UR	[Enabled] [Disabled]	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Option.	
ITC/OTC CA/MA Errors PSF UR Error PMSB Router Parity Error	[Disabled] [Enabled] [Enabled]	K/M: Scroll Help Area F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **IIo Error Enabling** screen, refer to Table 3-44.

Parameter	Description	Default
IIO/PCH Global Error Support	 Enables or disables IIO/PCH global error support. Options: Enabled: enables IIO/PCH global error support. Disabled: disables IIO/PCH global error support. When this parameter is set to Disabled, the parameters below are hidden. 	Enabled
OS Native AER Support	 Enables or disables OS native AER support. Options: Enabled: enables OS native AER support. Disabled: disables OS native AER support. 	Disabled
IIO MCA Support	 Enables or disables the IIO MCA feature. Options: Enabled: enables the IIO MCA feature. Disabled: disables the IIO MCA feature. 	Disabled

Table 3-44 Parameter Descriptions for the IIo Error Enabling Screen

Parameter	Description	Default
	When this parameter is set to Disabled , the Clear PCC for IIO Non-Fatal Error parameter is hidden and the IIO Error Pin1 Enable and IIO Error Pin2 Enable parameters are activated.	
Clear PCC for IIO Non-Fatal Error	 Enables or disables the clearing of the PCC register if an IIO non-fatal error occurs, that is, setting it to 0. Options: Enabled: PCC is cleared. Disabled: PCC is not cleared. 	Disabled
IIO Error Pin0 Enable	 Enables or disables IIO error pin0. Options: Enabled: enables IIO error Pin0. Disabled: disables IIO error Pin0. 	Disabled
IIO Error Pin1 Enable	 Enables or disables IIO error pin1. Options: Enabled: enables IIO error Pin1. Disabled: disables IIO error Pin1. 	Disabled
IIO Error Pin2 Enable	 Enables or disables IIO error pin2. Options: Enabled: enables IIO error Pin2. Disabled: disables IIO error Pin2. 	Disabled
IIO OOB Mode	 Enables or disables IIO OOB mode. Options: Enabled: enables IIO OOB mode. Disabled: disables IIO OOB mode. 	Enabled
IIO Error Registers Clear	 Enables or disables the clearing of IIO error registers. Options: Enabled: enables the clearing of IIO error registers. Disabled: disables the clearing of IIO error registers. 	Enabled
IIO eDPC Support	 Sets the IIO eDPC feature. Options: Disabled: disables the IO eDPC feature. After this feature is disabled, some of the parameters below are hidden. On Fatal Error On Fatal and Non-Fatal Errors 	On Fatal and Non- Fatal Errors
IIO eDPC Interrupt	Enables or disables the IIO eDPC interrupt.	Enabled

Parameter	Description	Default
	 Options: Enabled: enables the IIO eDPC interrupt. Disabled: disables the IIO eDPC interrupt. 	
IIO eDPC ERR_COR Message	 Enables or disables the IIO eDPC ERR_COR information. Options: Enabled: enables the IIO eDPC ERR_COR information. Disabled: disables the IIO eDPC ERR_COR information. 	Enabled
PCIe Poison TLP Egress Blocking	 Enables or disables PCIe Poison TLP egress block- ing. Options: Enabled: enables PCIe Poison TLP egress block- ing. Disabled: disables PCIe Poison TLP egress block- ing. 	Enabled
IIO Coherent Interface Error	 Enables or disables the detection of IIO coherent interface errors. Options: Enabled: enables the detection of IIO coherent interface errors. Disabled: disables the detection of IIO coherent interface errors. 	Enabled
IIO IRP0 protocol parity error	 Enables or disables the parity error detection for the IIO coherent interface protocol. Options: Enabled: enables the parity error detection for the IIO coherent interface protocol. Disabled: disables the parity error detection for the IIO coherent interface protocol. 	Enabled
IIO IRP0 protocol qt overflow underflow error	 Enables or disables the reporting of overflow or underflow errors of protocol layer queue tables of the IIO coherent interface. Options: Enabled: enables the reporting of overflow or underflow errors of protocol layer queue tables of the IIO coherent interface. 	Enabled

Parameter	Description	Default
	• Disabled: disables the reporting of overflow or un- derflow errors of protocol layer queue tables of the IIO coherent interface.	
IIO IRP0 protocol rcvd unex- prsp	 Enables or disables the receiving of unexpected responses by the Coherent interface protocol layer and the reporting of errors. Options: Enabled: enables the receiving of unexpected responses by the Coherent interface protocol layer and the reporting of errors. Disabled: disables the receiving of unexpected responses by the Coherent interface protocol layer and the reporting of errors. Disabled: disables the receiving of unexpected responses by the Coherent interface protocol layer and the reporting of errors. 	Enabled
IIO IRP0 csr acc 32b unaligned	 Enables or disables the reporting of 32-bit boundary crossing errors for IIO coherent interface CSR access. Options: Enabled: enables the reporting of 32-bit boundary crossing errors for IIO coherent interface CSR access. Disabled: disables the reporting of 32-bit boundary crossing errors for IIO coherent interface CSR access. 	Enabled
IIO IRP0 wrcache uncecccs0 error	 Enables or disables the reporting of uncorrectable cache write ECC errors of the Coherent interface. Options: Enabled: enables the reporting of uncorrectable cache write ECC errors of the Coherent interface. Disabled: disables the reporting of uncorrectable cache write ECC errors of the Coherent interface. 	Enabled
IIO IRP0 wrcache uncecccs1 error	 Enables or disables the reporting of uncorrectable cache write ECC errors of the Coherent interface. Options: Enabled: enables the reporting of uncorrectable cache write ECC errors of the Coherent interface. Disabled: disables the reporting of uncorrectable cache write ECC errors of the Coherent interface. 	Enabled
IIO IRP0 protocol rcvd poison error	Enables or disables the reporting of poisoned packet errors received at the protocol layer of the IIO coher- ent interface. Options:	Enabled

Parameter	Description	Default
	 Enabled: enables the reporting of poisoned packet errors received at the protocol layer of the IIO co- herent interface. Disabled: disables the reporting of poisoned pack- et errors received at the protocol layer of the IIO coherent interface. 	
IIO IRP0 wrcache correcccs0 error	 Enables or disables the reporting of correctable cache write ECC errors of the Coherent interface. Options: Enabled: enables the reporting of correctable cache write ECC errors of the Coherent interface. Disabled: disables the reporting of correctable cache write ECC errors of the Coherent interface. 	Enabled
IIO IRP0 wrcache correcccs1 error	 Enables or disables the reporting of correctable cache write ECC errors of the Coherent interface. Options: Enabled: enables the reporting of correctable cache write ECC errors of the Coherent interface. Disabled: disables the reporting of correctable cache write ECC errors of the Coherent interface. 	Enabled
IIO Misc. Error	 Enables or disables the reporting of IIO Misc. errors. Options: Enabled: enables the reporting of IIO Misc. errors. Disabled: disables the reporting of IIO Misc. errors. 	Enabled
IIO Vtd Error	 Enables or disables the reporting of IIO Vtd errors. Options: Enabled: enables the reporting of IIO Vtd errors. Disabled: disables the reporting of IIO Vtd errors. 	Enabled
IIO Dma Error	 Enables or disables the reporting of IIO Dma errors. Options: Enabled: enables the reporting of IIO Dma errors. Disabled: disables the reporting of IIO Dma errors. 	Enabled
IIO Dmi Error	 Enables or disables the reporting of IIO Dmi errors. Options: Enabled: enables the reporting of IIO Dmi errors. Disabled: disables the reporting of IIO Dmi errors. 	Enabled
PCIE Error	 Enables or disables the reporting of PCIe errors. Options: Enabled: enables the reporting of PCIe errors. 	Enabled

Parameter	Description	Default
	Disabled: disables the reporting of PCIe errors.	
IIO PCIE Additional Corrected Error	 Enables or disables the reporting of IIO PCIe additional correctable errors. Options: Enabled: enables the reporting of IIO PCIe additional correctable errors. Disabled: disables the reporting of IIO PCIe additional correctable errors. 	Enabled
IIO PCIE Additional Uncorrect- ed Error	 Enables or disables the reporting of IIO PCIe additional uncorrectable errors. Options: Enabled: enables the reporting of IIO PCIe additional uncorrectable errors. Disabled: disables the reporting of IIO PCIe additional uncorrectable errors. 	Enabled
IIO PCIE Additional Received Completion With UR	 Enables or disables IIO PCIe's additional receiving feature when URs are used. Options: Enabled: enables IIO PCIe's additional receiving feature when URs are used. Disabled: disables IIO PCIe's additional receiving feature when URs are used. 	Disabled
ITC/OTC CA/MA Errors	 Enables or disables the reporting of complete abort and master abort errors on ITC and OTC. Options: Enabled: enables the reporting of complete abort and master abort errors on ITC and OTC. Disabled: disables the reporting of complete abort and master abort errors on ITC and OTC. 	Disabled
PSF UR Error	 Enables or disables the reporting of UR errors on the PSF. Options: Enabled: enables the reporting of UR errors on the PSF. Disabled: disables the reporting of UR errors on the PSF. 	Enabled
PMSB Router Parity Error	Enables or disables the reporting of PMSB Router parity errors. Options:	Enabled

Parameter	Description	Default
	 Enabled: enables the reporting of PMSB Router parity errors. Disabled: disables the reporting of PMSB Router parity errors. 	

3.3.4.6 PCIe Error Enabling

Figure 3-59 through Figure 3-61 show the PCIe Error Enabling screen.

Figure 3-59 PCIe Error Enabling Screen—1

Aptio Setup – AMI Platform Configuration			
PCIe Error Enabling		← Enable & esca Correctable E	ilate Frrors to
Corrected Error Uncorrected Error Fatal Error Enable PCIE Corrected Error Threshold	[Enabled] [Enabled] [Enabled] [2000]		
Limit Check PCIe Corrected Error	[Enabled]	++: Select Sc tl: Select It	reen
PCIE AER Corrected	[Enabled]	Enter: Select It	ntion.
PCIE AER NonFatal Error	[Enabled]	K/M: Scroll H F1: General H	lelp Area lelp
PCIE AER Fatal Error	[Enabled]	F2: Previous ▼F3: Optimized F4: Save & E≻	Values Defaults kit
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Figure 3-60 PCIe Error Enabling Screen—2

Aptio Setup – AMI Platform Configuration			
PCIE AER Fatal Error PCIE AER Advisory	[Enabled] [Disabled]	▲ Set the error threshold for Gen1 and Gen2	
PCIE ECRC Error PCIE Surprise Link	[Disabled] [Disabled]	triggered when the error count exceeds the	
Down Error PCIE Unsupported Request Error	[Disabled]	threshold.	
Assert NMI on SERR Assert NMI on PERR	[Enabled] [Enabled]		
Leaky Bucket Feature Expected BER Time Window (Sep1/2)	34359738367 65535	↑↓: Select Item Enter: Select +/-: Change Opt	
Time Window (Gen3/4/5) Error Threshold (Gen1/2)	2	 K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults 	
F4: Save & Exit Version 2.22.1287 Copyright (C) 2023 AMI AB			

Figure 3-61 PCIe Error Enabling Screen—3

Aptio Setup – AMI Platform Configuration			
Assert NMI on SERR Assert NMI on PERR	[Enabled] [Enabled]	▲ Enable or disable Gen5 link degradation. Applies only when	
Eeaky Bucket Feature Expected BER Time Window (Gen1/2) Time Window (Gen3/4/5) Error Threshold (Gen1/2)	34359738367 65535 2 0	operating at Gen5 speeds. When an event is triggered, 32GT/s and higher modes are disabled.	
Error Threshold (Gen3/4/5) Gen3/4/5 Re-Equalization	16 [Enabled]	++: Select Screen 14: Select Item Enter: Select	
Gen3 Link Degradation Gen3 Link Degradation Gen4 Link Degradation Gen5 Link Degradation	[Enabled] [Enabled] [Enabled]	 +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit 	
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For a description of the parameters on the PCIe Error Enabling screen, refer to Table 3-45.

Table 3-45 Parameter Descriptions for the PCIe Error Enabling Screen

Parameter	Description	Default
Corrected Error	 Enables or disables PCIe correctable error logging. Options: Enabled: enables PCIe correctable error logging. Disabled: disables PCIe correctable error logging. After this feature is disabled, some of the parameters below are hidden. 	Enabled
Uncorrected Error	 Enables or disables PCIe uncorrectable error logging. Enabled: enables PCIe uncorrectable error logging. Disabled: disables PCIe uncorrectable error logging. 	Enabled
Fatal Error Enable	Enables or disables fatal error logging.Options:Enabled: enables fatal error logging.	Enabled

Parameter	Description	Default	
	Disabled: disables fatal error logging.		
PCIE Corrected Error Thresh- old	Select the threshold for logging PCIe correctable er- rors. Options: • Disable • 2000 • 4000 • 8000	2000	
PCIE Corrected Error Limit Check	 Enables or disables the limit check on PCIe correctable errors. Options: Enabled: enables the limit check on PCIe correctable errors. After this feature is enabled, the logging of PCIe correctable errors is disabled if the limit is exceeded. Disabled: disables the limit check on PCIe correctable errors. 	Disabled	
PCIE Corrected Error Limit	Enter the maximum number of PCIe correctable er- rors.	100	
PCIE AER Corrected Errors	 Enables or disables PCIe AER correctable error log- ging. Options: Enabled: enables PCIe AER correctable error log- ging. Disabled: disables PCIe AER correctable error logging. 	Enabled	
PCIE AER NonFatal Error	 Enables or disables PCIe AER non-fatal error logging. Options: Enabled: enables PCIe AER non-fatal error logging. Disabled: disables PCIe AER non-fatal error logging. 	Enabled	
PCIE AER Fatal Error	 Enables or disables PCIe AER fatal error logging. Options: Enabled: enables PCIe AER fatal error logging. Disabled: disables PCIe AER fatal error logging. 	Enabled	
PCIE AER Advisory Nonfatal Error	Enables or disables PCIe AER Advisory non-fatal er- ror logging. Options:	Disabled	

Parameter	Description	Default
	 Enabled: enables PCIe AER Advisory non-fatal error logging. Disabled: disables PCIe AER Advisory non-fatal error logging. 	
PCIE ECRC Error	 Enables or disables PCIe ECRC error logging. Options: Enabled: enables PCIe ECRC error logging. Disabled: disables PCIe ECRC error logging. 	Disabled
PCIE Surprise Link Down Error	 Enables or disables the PCIe Surprise Link Down error detection. Options: Enabled: enables the PCIe Surprise Link Down error detection. Disabled: disables the sPCIe Surprise Link Down error detection. 	Disabled
PCIE Unsupported Request Er- ror	 Enables or disables the PCIe Unsupported Request Error detection. Options: Enabled: enables the PCIe Unsupported Request Error detection. Disabled: disables the PCIe Unsupported Request Error detection. 	Disabled
Assert NMI on SERR	 Enables or disables the generation of an NMI and log- ging of an error upon an SERR. Options: Enabled: enables the generation of an NMI and logging of an error upon an SERR. Disabled: disables the generation of an NMI and logging of an error upon an SERR. After this feature is disabled, Assert NMI on PERR is not configurable. 	Enabled
Assert NMI on PERR	 Enables or disables the generation of an NMI and log- ging of an error upon a PERR. Options: Enabled: enables the generation of an NMI and logging of an error upon a PERR. Disabled: disables the generation of an NMI and logging of an error upon a PERR. 	Enabled
Expected BER	Enter the expected bit error rate for all speeds.	34359738367

Parameter	Description	Default
Time Window (Gen1/2)	Enter the error string protection time window for Gen1 and Gen2. The error string count in the window is 1.	65535
Time Window (Gen3/4/5)	Enter the error string protection time window for Gen3, Gen4, and Gen5. The error string count in the window is 1.	2
Error Threshold (Gen1/2)	Enter the error threshold for Gen1 and Gen2. An event is triggered when the number of errors exceeds the threshold.	0
Error Threshold (Gen3/4/5)	Enter the error threshold for Gen3, Gen4, and Gen5. An event is triggered when the number of errors ex- ceeds the threshold.	16
Gen3/4/5 Re- Equalization	 Enables or disables the re-equalization feature for Gen3, Gen4, or Gen5. Only available at Gen3, Gen4, or Gen5. Re-equaliza- tion occurs when an event is triggered. Options: Enabled: enables the re-equalization feature for Gen3, Gen4, or Gen5. Disabled: disables the re-equalization feature for Gen3, Gen4, or Gen5. 	Enabled
Gen2 Link Degradation	 Enables or disables Gen2 link degradation. Only available at Gen2. When an event is triggered, 5 GT/s and higher mode are disabled. Options: Enabled: enables Gen2 link degradation. Disabled: disables Gen2 link degradation. 	Enabled
Gen3 Link Degradation	 Enables or disables Gen3 link degradation. Only available at Gen3. When an event is triggered, 8 GT/s and higher mode are disabled. Options: Enabled: enables Gen3 link degradation. Disabled: disables Gen3 link degradation. 	Enabled
Gen4 Link Degradation	 Enables or disables Gen4 link degradation. Only available at Gen4. When an event is triggered, 16 GT/s and higher mode are disabled. Options: Enabled: enables Gen4 link degradation. Disabled: disables Gen4 link degradation. 	Enabled
Gen5 Link Degradation	Enables or disables Gen5 link degradation.	Enabled

Parameter	Description	Default
	Only available at Gen5. When an event is triggered,	
	32 GT/s and higher mode are disabled.	
	Options:	
	• Enabled: enables Gen5 link degradation.	
	Disabled: disables Gen5 link degradation.	

3.3.4.7 Error Control Setting

Figure 3-62 shows the Error Control Setting screen.

Figure 3-62 Error Control Setting Screen

Platfo	Aptio Setup – AMI rm Configuration	
Error Control Setting 2LM Correctable Error Logging in m2mem Latch First Corrected Error in KTI Patrol Scrub Error Reporting	[Enabled] [Disabled] [UCNA]	Enable or disable 2LM correctable error logging in m2mem.
LLC EWB Error Control	[UCNA]	<pre>→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>

For a description of the parameters on the Error Control Setting screen, refer to Table 3-46.

• Enabled: enables the logging of the 2LM cor-

Parameter	Description	Default	
2LM Correctable Error Logging	Enables or disables the 2LM correctable error logging	Enabled	
in m2mem	in m2mem.		
	Options:		

rectable errors in m2mem.

Table 3-46 Parameter Descriptions for the Error Control Setting Screen

AB

Parameter	Description	Default
	• Disabled: disables the logging of the 2LM correctable errors in m2mem.	
Latch First Corrected Error in KTI	 Enables or disables the locking of the first corrected error in KTI. Options: Enabled: enables the locking of the first corrected error in KTI. Disabled: disables the locking of the first corrected error in KTI. 	Disabled
Patrol Scrub Error Reporting	Select the type of error reported during preventive maintenance. Options: UCNA: uncorrectable but recoverable errors.	UCNA
LLC EWB Error Control	Select the type of EWB error notification. Options: • UCNA • SRAO	UCNA

3.4 Socket Configuration

Figure 3-63 shows the Socket Configuration screen.

Figure 3-63 Socket Configuration Screen

Ma	ain	Advanced	Platform	Aptio Setup Configuration	- AMI Socket	Con	nfiguration	Server Mgr	nt 🕨
 Pro Cor Uno Mer III Adv 	oces: mmon core mory O Cor vance	or Config RefCode C Configura Configura ifiguratio d Power M	uration onfigurati tion n anagement	on Configuration			Displays and options to o Processor Se ++: Select S tl: Select D Enter: Selec +/-: Change K/M: Scroll F1: General F2: Previous F3: Optimize F4: Save & E	d provides change the sttings sttings Screen (tem ct Opt. Help Area Help s Values ed Defaults Exit	5
			Version 2	2.22.1287 Copy	∿ight (C) 20	D23 AMI		AB

For a description of the parameters on the **Socket Configuration** screen, refer to Table 3-47.

Table 3-47 Parameter Descriptions for the Socket Configuration Screen

Parameter	Description
Processor Configuration	Sets processor parameters. For details, refer to 3.4.1 Processor Configuration.
Common RefCode Configuration	Sets general RefCode parameters. For details, refer to 3.4.2 Common RefCode Configuration.
Uncore Configuration	Sets UPI parameters. For details, refer to 3.4.3 Uncore Configuration.
Memory Configuration	Sets memory parameters. For details, refer to 3.4.4 Memory Configuration.
IIO Configuration	Sets IIO parameters. For details, refer to 3.4.5 IIO Configuration.
Advanced Power Management Configu- ration	Sets advanced power management parameters. For details, refer to 3.4.6 Advanced Power Management Configura- tion.

3.4.1 Processor Configuration

Figure 3-64 through Figure 3-68 show the **Processor Configuration** screen.

Figure 3-64 Processor Configuration Screen—1

	Aptio Se	tup – AMI Socket	Configuration
Processor Configuration			Enabled/Disabled Cores Per CPU
Processor BSP Revision Processor Socket Processor ID Processor Frequency Processor Max Ratio Processor Min Ratio Microcode Revision L1 Cache RAM(Per Core) L2 Cache RAM(Per Core) L3 Cache RAM(Per Package) CPU Voltage Channel Number Processor TDP Core Count	806F6 - SPF Socket 0 000806F6* 2.800GHz 1CH 08H 2B000161 80KB 2048KB 99840KB 1.656V 8 350W 40	8-SP E3 Socket 1 000806F6 2.800GHz 1CH 08H 28000161 80KB 2048KB 99840KB 1.681V 8 350W 40	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values • F3: Optimized Defaults F4: Save & Exit</pre>
Versior	1 2.22.1287 0	Copyright (C)	2023 AMI

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Figure 3-65 Processor Configuration Screen—2

	Aptio Setup – AMI Socket Co	nfiguration
Processor O Version	Intel(R) Xeon(R) Platin ▲ um 8432C	DCU IP prefetcher is an L1 data cache
Processor 1 Version	Intel(R) Xeon(R) Platin um 8432C	prefetcher (MSR 1A4h [3]).
Disable Cores Per CPU	[Disabled]	
Core Disable Number	0	
Hyper Threading Technology	[Enabled]	
Check CPU BIST Result	[Enabled]	
Hardware Prefetcher	[Enabled]	++: Select Screen
L2 RFO Prefetch	[Disabled]	↑↓: Select Item
Disable		Enter: Select
Adjacent Cache	[Enabled]	+/-: Change Opt.
Prefetch		K/M: Scroll Help Area
DCU Streamer	[Enabled]	F1: General Help
Prefetcher		F2: Previous Values
DCU IP Prefetcher	[Enabled]	F3: Optimized Defaults F4: Save & Exit
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Figure 3-66 Processor Configuration Screen—3

	Aptio Setup –	AMI Socket Configuration
LLC Prefetch Homeless Prefetch Extended APIC Enable Intel(R) TXT VMX Enable SMX Lock Chipset MSR Lock Control PPIN Control AES-NI	[Disabled] [Auto] [Enabled] [Disabled] [Enabled] [Enabled] [Enabled] [Unlock/Enable] [Enabled]	Enable/Disable LLC Prefetch on all threads
тме, тме-мт, тох		14: Select Item
Memory Encryption (TME) Trust Domain Extension (TDX)	[Disabled] [Disabled]	 +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 3-67 Processor Configuration Screen—4

Aptio Setup — AMI Socket Configuration				
TDX Secure Arbitration Mode Loader (SEAM Loader) Common PRM size for all	[Disabled] features (SGX, S@F,			
PRM Size Software Guard Extensio	[No valid PRMRR size] 			
SGX setup configuration enabling were NOT met. MirrorMode or Extended SGX Factory Reset SW Guard Extensions (SGX)	preconditions for Please check TME, APIC settings. [Disabled] [Disabled]	 ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 		
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Figure 3-68 Processor Configuration Screen—5

Aptio Setup – AMI Socket Configuration		
PRM Size	[No valid PRMRR size]	▲ PSMI Configuration
Software Guard Extens:	ion (SGX)	
SGX setup configuration enabling were NOT met. MirrorMode or Extended SGX Factory Reset SW Guard Extensions (SGX)	on preconditions for Please check TME, APIC settings. [Disabled] [Disabled]	
SGX Package Info In-Band Access	[Disabled]	++: Select Screen ↑↓: Select Item
SGX PRM Size In Field Scan (IFS)	[256M]	Enter: Select +/-: Change Opt. K/M: Scroll Help Area
▶ PSMI Configuration		 F1: General Help F2: Previous Values ▼ F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Processor Configuration** screen, refer to Table 3-48.

Parameter	Description	Default
Processor BSP Revision	Revision number of the processor BSP.	806F6-SPR-SP E3
Processor Socket	Processor socket number.	Socket 0 Socket 1
Processor ID	Processor ID.	000806F6*
Processor Frequency	Nominal frequency of the processor.	2.800GHz
Processor Max Ratio	Maximum multiplier of the processor.	1CH
Processor Min Ratio	Minimum multiplier of the processor.	08H
Microcode Revision	Microcode version number of the processor.	2B000161
L1 Cache RAM(Per Core)	L1 cache capacity.	80KB
L2 Cache RAM(Per Core)	L2 cache capacity.	2048KB
L3 Cache RAM(Per Package)	L3 cache capacity.	99840KB

Table 3-48 Parameter Descriptions for the Processor Configuration Screen
Parameter	Description	Default
CPU Voltage	CPU voltage.	1.656V
Channel Number	Number of channels.	8
Processor TDP	Processor TDP.	350W
Core Count	Number of cores.	40
Processor 0 Version	Version of processor 0.	Intel(R) Xeon(R) Platinum 8432C
Processor 1 Version	Version of processor 1.	Intel(R) Xeon(R) Platinum 8432C
Disable Cores Per CPU	 Enables or disables cores per CPU. Options: Enabled: disables cores per CPU. Disabled: enables cores per CPU. 	Disabled
Socket0 Core Disable Number	This parameter is displayed when Disable Cores Per CPU is set to Enabled . Enter the number of disabled cores. Value 0 indicates that no cores are disabled.	0
Socket1 Core Disable Number	This parameter is displayed when Disable Cores Per CPU is set to Enabled . Enter the number of disabled cores. Value 0 indicates that no cores are disabled.	0
Hyper Threading Technology	 Enables or disables the Hyper-Threading feature. Options: Enabled: enables the Hyper-Threading feature. Disabled: disables the Hyper-Threading feature. 	Enabled
Check CPU BIST Result	 Sets whether to use the CPU BIST check result. Options: Enabled: disables the CPU cores with BIST failures. Disabled: ignores the BIST result. 	Enabled
Hardware Prefetcher	 Before a CPU processes data or instructions, the hardware prefetcher prefetches the data and instructions from the memory to the L2 cache to reduce time required by the CPU for reading data from the memory, thus improving CPU performance. Enables or disables the hardware prefetch feature. Options: Enabled: enables the hardware prefetch feature. 	Enabled

Parameter	Description	Default
	• Disabled: disables the hardware prefetch feature.	
L2 RFO Prefetch Disable	 Sets whether to disable the L2 RFO prefetch feature. Options: Enabled: disables the L2 RFO prefetch feature. Disabled: enables the L2 RFO prefetch feature. 	Disabled
Adjacent Cache Prefetcher	 Before processing an instruction or data, the CPU reads the data from the adjacent memory in advance to accelerate the reading speed. Enables or disables the adjacent cache prefetch feature. Options: Enabled: enables the adjacent cache prefetch feature. Disabled: disables the adjacent cache prefetch feature. 	Enabled
DCU Streamer Prefetcher	 Enables or disables the DCU stream prefetch feature. Options: Enabled: enables the DCU stream prefetch feature. Disabled: disables the DCU stream prefetch feature. 	Enabled
DCU IP Prefetcher	 Enables or disables the DCU IP prefetch feature. Options: Enabled: enables the DCU IP prefetch feature. Disabled: disables the DCU IP prefetch feature. 	Enabled
LLC Prefetch	 Enables or disables the LLC prefetch feature. Options: Enabled: enables the LLC prefetch feature. Disabled: disables the LLC prefetch feature. 	Enabled
Homeless Prefetch	 Enable or disable the Homeless prefetch feature on all threads. Options: Enabled: enables the Homeless prefetch feature. Disabled: disables the Homeless prefetch feature. Auto: automatic mode. 	Auto
FB Thread Slicing	 Enables or disables FB thread slicing per thread. Options: Enabled: enables FB thread slicing per thread. Disabled: disables FB thread slicing per thread. 	Disabled

Parameter	Description	Default
AMP Prefetch	 Enables or disables the AMP prefetch feature. Options: Enabled: enables the AMP prefetch feature. Disabled: disables the AMP prefetch feature. Auto: automatically sets this parameter based on the CPU configuration: EMR XCC and MCC CPU: enables the AMP prefetch feature. Other CPUs: disables the AMP prefetch feature. 	Auto
Extended APIC	 Enables or disables the extended APIC. Options: Enabled: enables the extended APIC. Disabled: disables the extended APIC. 	Enabled
Enable Intel (R) TXT	 Enables or disables the Intel TXT security feature. Options: Enabled: enables the Intel TXT security feature. If this feature is enabled, VMX, Enabled SMX, and Lock Chipset are greyed out. Disabled: disables the Intel TXT security feature. 	Disabled
VMX	 Enables or disables the Vanderpool technology. Options: Enabled: enables the Vanderpool technology. Disabled: disables the Vanderpool technology. 	Enabled
Enable SMX	Enables or disables SMX.Options:Enabled: enables SMX.Disabled: disables SMX.	Disabled
Lock Chipset	 Sets whether to lock the chipset. Options: Enabled: locks the chipset. Disabled: Unlocks the chipset. 	Enabled
MSR Lock Control	 Sets whether to enable MSR Lock control. Options: Enabled: enables MSR Lock control. When this parameter is set to Enabled, MSR 3Ah and CSR 80 h are locked. Disabled: disables MSR Lock control. 	Enabled
PPIN Control	Sets whether to lock PPIN control.	Unlock/Enable

Parameter	Description	Default
	 Options: Unlock/Enable: unlocks PPIN control. Lock/Disable: locks PPIN control. 	
AES-NI	 Enables or disables the AES-NI feature. Options: Enabled: enables the AES-NI feature. Disabled: disables the AES-NI feature. 	Enabled
Memory Encryption (TME)	 Enables or disables full memory encryption. Options: Enabled: enables full memory encryption. Disabled: disables full memory encryption. 	Disabled
Total Memory Encryption (TME) Bypass	 This parameter is displayed when Memory Encryption (TME) is set to Enabled. Enables or disables the TME feature. Options: Enabled: enables the TME feature. Disabled: disables the TME feature. Auto: automatic mode. 	Auto
Total Memory Encryption Multi- Tenant (TME-MT)	 This parameter is displayed when Memory Encryption (TME) is set to Enabled. Enables or disables the TME-MT feature. Options: Enabled: enables the TME-MT feature. Disabled: disables the TME-MT feature. 	Disabled
Memory integrity	 This parameter is displayed when Memory Encryption (TME) is set to Enabled. Enables or disables memory consistency check. Options: Enabled: enables memory consistency check. Disabled: disables memory consistency check. 	Disabled
Trust Domain Extension (TDX)	 Enables or disables the TDX feature. Options: Enabled: enables the TDX feature. Disabled: disables the TDX feature. 	Disabled
TDX Secure Arbitration Mode Loader (SEAM Loader)	 Enables or disables the SEAM Loader. Options: Enabled: enables the SEAM Loader. Disabled: disables the SEAM Loader. 	Disabled

Parameter	Description	Default
SGX Factory Reset	 Sets whether to restore SGX to the factory default settings. Options: Enabled: restores SGX to the factory default settings. Disabled: disables the restoration of SGX to the factory default settings. 	Disabled
SGX	 Enables or disables the SGX feature. Options: Enabled: enables the SGX feature. Disabled: disables the SGX feature. 	Disabled
SGX Package Info In-Band Ac- cess	 Enables or disables the in-band control feature for SGX package information. Options: Enabled: enables the in-band control feature for SGX package information. Disabled: disables the in-band control feature for SGX package information. 	Disabled
SGX PRM Size	This parameter is displayed when SW Guard Exten- sions(SGX) is set to Enabled. Sets the size of the SGX PRM. Options: 256M 512M 1G 2G 4G 8G 16G 32G 64G 128G	256M
SGX QoS	 This parameter is displayed when SW Guard Extensions(SGX) is set to Enabled. Enables or disables the SGX QoS feature. Options: Enabled: enables the SGX QoS feature. Disable: disables the SGX QoS feature. 	Enabled

Parameter	Description	Default
Select Owner EPOCH input type	 This parameter is displayed when SW Guard Extensions (SGX) is set to Enabled. Select the owner's EPOCH input type. Options: Manual User Defined Owner EPOCHs: allows the user to manually define the owner's EPOCHs. Change to New Random Owner EPOCHs: changes the value of EPOCH to a system-generated random number. 	Manual User Defined Owner EPOCHs
Software Guard Extensions Epoch 0	This parameter is displayed when SW Guard Exten- sions (SGX) is set to Enabled . Enter the SGE Epoch value when the SGX period is set to zero. If Select Owner EPOCH input type is set to Change to New Random Owner EPOCHs , the generated random number is displayed.	0
Software Guard Extensions Epoch 1	This parameter is displayed when SW Guard Exten- sions (SGX) is set to Enabled . Enter the SGE Epoch value when the SGX period is set to one. If Select Owner EPOCH input type is set to Change to New Random Owner EPOCHs , the generated random number is displayed.	0
SGXLEPUBKEYHASHx Write Enable	 This parameter is displayed when SW Guard Extensions (SGX) is set to Enabled. Enables or disables the SGXLEPUBKEYHASHx write feature. Options: Enabled: enables the SGXLEPUBKEYHASHx write feature. Disabled: disables the SGXLEPUBKEYHASHx write feature. 	Enabled
SGXLEPUBKEYHASH0	This parameter is displayed when SGXLEPUBKEY- HASHx Write Enable is set to Enabled . Sets bytes 0–7 for SGX to boot the SGX Launch En- clave Public Key Hash.	0
SGXLEPUBKEYHASH1	This parameter is displayed when SGXLEPUBKEY- HASHx Write Enable is set to Enabled . Sets bytes 8–15 for SGX to boot the SGX Launch En- clave Public Key Hash.	0

Parameter	Description	Default
SGXLEPUBKEYHASH2	This parameter is displayed when SGXLEPUBKEY- HASHx Write Enable is set to Enabled . Sets bytes 16–23 for SGX to boot the SGX Launch Enclave Public Key Hash.	0
SGXLEPUBKEYHASH3	This parameter is displayed when SGXLEPUBKEY- HASHx Write Enable is set to Enabled . Sets bytes 24–31 for SGX to boot the SGX Launch Enclave Public Key Hash.	0
SGX Auto MP Registration	 This parameter is displayed when SW Guard Extensions (SGX) is set to Enabled. Enables or disables the SGX auto-MP registration agent, which is used by the SGX to register at the platform. Options: Enabled: enables the SGX auto-MP registration agent. Disabled: disables the SGX auto-MP registration agent. 	Disabled
PSMI Configuration	Sets PSMI parameters. For details, refer to 3.4.1.1 PSMI Configuration.	-

3.4.1.1 PSMI Configuration

Figure 3-69 shows the **PSMI Configuration** screen.

Figure 3-69 PSMI Configuration Screen

Aptio Setup — AMI Socket Configuration		
Global PSMI Enable Socket 0 Configuration Socket 1 Configuration	[Enabled]	Global PSMI Enable ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **PSMI Configuration** screen, refer to Table 3-49.

Table 3-49 Parameter Descriptions for the PSMI Configuration Screen

Parameter	Description	Default
Global PSMI Enable	 Enables or disables global PSMI. Options: Enabled: enables global PSMI. After this parameter is set to Enabled, the following parameters are displayed. Disabled: disables global PSMI. Force setup: forced setting. 	Enabled
Socket 0 Configuration	Sets the PSMI parameters of Socket 0, see Figure 3-70.	-
Socket 1 Configuration	Sets the PSMI parameters of Socket 1, see Figure 3-70.	-

Note

The items on the **Socket 0 Configuration** screen are the same as those on the **Socket 1 Configuration** screen. This manual uses the **Socket 0 Configuration** screen as an example.

Figure 3-70 Socket 0 Configuration Screen

Aptio Setup – AMI Socket Configuration		
Socket O Configuration PSMI Enable PSMI Handler Size PSMI Trace Region O Buffer Size Cache Type PSMI Trace Region 1 PSMI Trace Region 2 PSMI Trace Region 3	[Enabled] [256K] [Enabled] [1M] [Any] [Disabled] [Disabled] [Disabled]	PSMI Trace Region O ++: Select Screen
PSMI Trace Region 4	[Disabled]	<pre>t4: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
VCI 5101	TERESTEDI CODALIBUE (C) E	AB

For a description of the parameters on the Socket 0 Configuration screen, refer to Table 3-50.

Parameter	Description	Default
PSMI Enable	 Enables or disables PSMI. Options: Enabled: enables PSMI. After this parameter is set to Enabled, the following parameters are displayed. Disabled: disables PSMI. 	Enabled
PSMI Handler Size	Sets the size of the PSMI handler. Options: • 256K • 512K • 1M	256K

Parameter	Description	Default
PSMI Trace Region 0	 Enables or disables PSMI trace region 0. Options: Enabled: enables PSMI trace region 0. After this parameter is set to Enabled, the following parameters are displayed. Disabled: disables PSMI trace region 0. 	Disabled
Buffer Size	Sets the buffer size. Options: 1M–16G.	1M
Cache Type	Sets the cache type. Options: • Any • Uncached • Write Combine	Any



The configuration method for **PSMI Trace Region 0** is the same as that for other regions. In this guide, **PSMI Trace Region 0** is used as an example.

3.4.2 Common RefCode Configuration

Figure 3-71 shows the Common RefCode Configuration screen.

Aptio Setup – AMI Socket Configuration			
Common RefCode Configuration			Enable or Disable Non
Numa Virtual Numa UMA-Based Clustering	[Enabled] [Disabled] [Quadrant (4-clusters)]		<pre>whiterm Memory Access (NUMA). ++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Figure 3-71 Common RefCode Configuration Screen

For a description of the parameters on the **Common RefCode Configuration** screen, refer to Table 3-51.

Parameter	Description	Default
Numa	Enables or disables Numa.Options:Enabled: enables Numa.Disabled: disables Numa.	Enabled
Virtual Numa	 Enables or disables virtual Numa. Options: Enabled: enables virtual Numa. Disabled: disables virtual Numa. 	Disabled
UMA-Based Clustering	UBC mode is a UMA-based cluster configuration. Select the UBC mode. Options: • Hemisphere(2-clusters) • Quadrant(4-clusters)	Quadrant(4-clus- ters)

Table 3-51 Parameter	Descriptions	for the Common	RefCode C	onfiguration Screen
Table 3-31 Falameter	Descriptions	IOI THE COMMON	Reicoue C	onnyuration Screen

3.4.3 Uncore Configuration

Figure 3-72 shows the Uncore Configuration screen.

Figure 3-72 Uncore Configuration Screen

Aptio Setup – AMI Socket Configuration			
Uncore Configuration • Uncore General Configuration • Uncore Dfx Configuration	Displays and provides option to change the Uncore General Settings ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit		
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For a description of the parameters on the Uncore Configuration screen, refer to Table 3-52.

Table 3-52 Parameter Descriptions for the Uncore Configuration Screen

Parameter	Description
Uncore General Configuration	Sets Uncore general parameters. For details, refer to 3.4.3.1 Uncore General Configuration.
Uncore Dfx Configuration	Sets Uncore Dfx parameters. For details, refer to 3.4.3.2 Uncore Dfx Configuration.

3.4.3.1 Uncore General Configuration

Figure 3-73 through Figure 3-74 show the Uncore General Configuration screen.

Figure 3-73 Uncore General Configuration Screen—1

Aptio Setup – AMI Socket Configuration			
 Uncore Status Degrade Precedence Degraded 4S Topology Preference Link Speed Mode Link Frequency Select Link LOp Enable Link L1 Enable UPI Dynamic Link Width Reduction 	[Topology Precedence] [4S Fully Connect (Single Link)] [Fast] [Auto] [Disabled] [Disabled] [Auto]	▲ TOR Thresholds - Loctorem Thresholds Normal Setting, Auto - Auto decides based on Si Compatibility.	
Support Directory Mode Enable KTI Prefetch RdCur for XPT Prefetch CPU SKU Type Mismatch check Loctorem Thresholds Normal	[Auto] [Auto] [Auto] [Yes] [Auto]	 ++: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	

Figure 3-74 Uncore General Configuration Screen—2

Aptio Setup — AMI Socket Configuration			
IO Directory Cache[Auto](IODC)Legacy VGA Socket0SplitLock[Disabled]SNC(Sub NUMA)[Auto]Legacy VGA Stack0PCIe Remote P2P[Disabled]Relaxed OrderingStale AtoS[Auto]LLC dead line alloc[Enabled]MMCFG Base[Auto]MMIO High Base[32T]MMIO High Granularity[64G]SizeLimit CPU PA to 46Limit CPU PA to 46[Enabled]F1: General HelpbitsF2: Previous ValuesF3: Optimized DefaultsF4: Save & Exit			
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For a description of the parameters on the **Uncore General Configuration** screen, refer to Table 3-53.

Parameter	Description	Default
Uncore Status	Press the Enter key to expand the Uncore Status area, see Figure 3-75.	-
Degrade Precedence	 Select a priority decrease method. Options: Topology Precedence: decreases the topology priority when system options conflict. Feature Precedence: decreases the feature priority when system options conflict. 	Topology Prece- dence
Degrade 4S Topology Prefer- ence	 When the system can be degraded, select 4S topology preference. Options: 4S Fully Connect (Single Link) 4S Ring (Dual Link) 	4S Fully Connect (Single Link)
Link Speed Mode	Select the link speed mode.	Fast

Parameter	Description	Default
	Options: • Fast • Slow	
Link Frequency Select	Select the link speed. Options: • 12.8 GT/s • 14.4 GT/s • 16.0 GT/s • Auto: uses the maximum UPI rate that is support- ed.	Auto
Link L0p Enable	 Enables or disables L0p. Options: Enabled: enables L0p. Disabled: disables L0p. Auto: enables L0p. 	Disabled
Link L1 Enable	 Enables or disables L1. Options: Enabled: enables L1. Disabled: disables L1. Auto: enables L1. 	Disabled
UPI Dynamic Link Width Re- duction Support	 Enables or disables the support for UPI dynamic link width reduction. Options: Enabled: enables the support for UPI dynamic link width reduction. After this feature is enabled, when a hard fault of one or more UPI data channels is removed, the link size is dynamically adjusted to half the width. Disabled: disables the support for UPI dynamic link width reduction. Auto: enables the support for UPI dynamic link width reduction. 	Auto
Directory Mode Enable	 Enables or disables directory mode. Options: enabled: enables directory mode. Disabled: disables directory mode. Auto: enables directory mode. 	Auto
KTI Prefetch	Enables or disables the KTI prefetch feature.Options:Enabled: enables the KTI prefetch feature.	Auto

Parameter	Description	Default
	Disabled: disables the KTI prefetch feature.Auto: enables the KTI prefetch feature.	
RdCur for XPT Prefetch	 Enables or disables RdCur for XPT preprocessing. Options: Enabled: enables RdCur. Disabled: disables RdCur. Auto: same as the previous setting. 	Auto
CPU SKU Type Mismatch check	 Indicates whether to check CPU SKU type mismatches. Options: Yes: performs the check. No: performs no check. 	Yes
Loctorem Thresholds Normal	Sets the normal setting of the Loctorem threshold in TDR thresholds. Options: • Disabled • Auto • Low • Medium • High	Auto
Loctorem Thresholds Empty	Sets the empty setting of the Loctorem threshold in TDR thresholds. Options: • Disable • Auto • Low • Medium • High	Auto
IO Directory Cache (IODC)	Monitor generation for remote InvItoM (IIO), WCiLF (cores), not memory lookup. Options: Disabled Auto Enable for Remote InvItoM Hybrid Push InvItoM AllocFlow Enable for Remote InvItoM Hybrid AllocNonAlloc Enable for Remote InvItoM and Remote WCILF	Auto
Legacy VGA Socket	Enter the slot number of the Legacy VGA. Range: 0– N. N=MAX_SOCKET-1	0

Parameter	Description	Default
SplitLock	 Enables or disables SplitLock. Options: Enabled: enables SplitLock. Disabled: disables SplitLock. Auto: disables SplitLock. 	Disabled
SNC (Sub NUMA)	 Options: Disabled: supports 1-cluster and 4-IMC interleaving. Enabled SNC2 (2-clusters): supports 2-clusters SNC and 2-IMC way interleaving. Enabled SNC4 (4-clusters): supports 4-clusters SNC and 1-IMC way interleaving. Auto: automatically sets this parameter based on the CPU configuration: → HBM CPU: sets this parameter to Enabled SNC4 (4-clusters). → EMR CPU: sets this parameter to Enabled SNC2 (2-clusters). → SPR CPU: sets this parameter to Disabled. 	Auto
Legacy VGA Stack	Enter the Legacy VGA IIO device. Range: 0–7.	0
PCIe Remote P2P Relaxed Or- dering	 Options: Enabled: enables P2P relaxed ordering. Disabled: forcibly implements P2P writes. 	Disabled
Stale AtoS	 Sets whether to enable transition between the following memory states: Snoop All Status Shared (S) Status Options: Enabled: enables transition. Disabled: disables transition. Auto: sets this parameter to Enabled when Optane memory is installed, and to Disabled when Optane memory is not installed. 	Auto
LLC dead line alloc	 Enables or disables LLC dead line allocation. Options: Enabled: enables LLC dead line allocation. Disabled: disables LLC dead line allocation. Auto: enables LLC dead line allocation. 	Enabled
MMCFG Base	Select the MMCFG base. Options:	Auto

Parameter	Description	Default
	 1G 1.5G 1.75G 2G 2.25G 3G Auto: sets this parameter in accordance with the number and type of identified CPUs. 	
MMCFG Size	 Select the MMCFG size. Options: 128M 256M 512M 1G 2G Auto: sets this parameter in accordance with the number and type of identified CPUs. 	Auto
MMIO High Base	Select the high base of the MMIO. Options: • 56T • 40T • 32T • 24T • 16T • 4T • 2T • 1T • 512G • 3584T	32T
MMIO High Granularity Size	Select the MMIO high granularity size. The MMIO High space has a maximum of thirty-two granularities. The MMIO High resources of each stack are allocated as a multiple of the granularity. By de- fault, one granularity is allocated to each stack. Options: 1G 4G 16G 64G 256G 1024G	64G

Parameter	Description	Default
Limit CPU PA to 46 bits	 Enables or disables the restriction on the CPU PA to 46 bits to support the legacy Hyper-v feature. Options: Enabled: enables the restriction and automatically disables TME-MT. Disabled: disables the restriction. 	Disabled

Figure 3-75 Uncore Status Screen

Aptio Setup – AMI Socket Configuration		
Uncore Status Number of CPU Current UPI Link Speed Current UPI Link Frequency Global MMIO Low Base / Limit Global MMIO High Base / Limit Pci-e Configuration Base / Size	2 Fast 16.0 GT/s 90000000 / FBFFFFF 0000200000000000 / 0000213FFFFFFF 80000000 / 10000000	Configuration ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults
Versio	n 2.22.1287 Copyright (C	F4: Save & Exit

3.4.3.2 Uncore Dfx Configuration

Figure 3-76 shows the Uncore Dfx Configuration screen.

Figure 3-76 Uncore Dfx Configuration Screen

Aptio Setup – AMI Socket Configuration			
Uncore Dfx Configuration			Fully Trusted: CXL
CXL Security Level XPT Prefetch	[Auto] [Auto]		Device can get access on CXL.\$ for host-attached and device attached memory ranges in the WB address space; Partially Trusted: CXL • ++: Select Screen tl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version	2.22.1290 Copyri	ght (C) 2(D24 AMI AB

For a description of the parameters on the **Uncore Dfx Configuration** screen, refer to Table 3-54.

Parameter	Description	Default
CXL Security Level	 Specifies the CXL security level. Options: Fully Trusted: allows CXL devices to access CXL. \$ for both host-attached and device-attached memory ranges in the write-back (WB) address space. Partially Trusted: allows CXL devices to access CXL.\$ for device-attached memory ranges only. Untrusted: The host stops all requests on CXL.\$. Auto: determined automatically in accordance with SI compatibility. 	Auto
XPT Prefetch	 Enables or disables the XPT prefetch feature. Enabled: enables the XPT prefetch feature. Disabled: disables the XPT prefetch feature. 	Auto

Table 3-54 Parameter Descriptions for the Uncore Dfx Configuration Screen

Parameter	Description	Default
	• Auto: automatic mode.	

3.4.4 Memory Configuration

Figure 3-77 through Figure 3-81 show the Memory Configuration screen.

Figure 3-77 Memory Configuration Screen—1

Aptio Setup – AMI Socket Configuration		
Integrated Memory Contro	oller (iMC)	Enforces Plan Of Record restrictions for DDR frequency programming.
Enforce DDR Memory Frequency POR Enforce Population POR MemTest86 DDR PPR Type Force PPR On All Dram For UCE PTRR DDR Enable Memory Frequency Halt on Memory Fault Sockets in parallel MemTest MemTest Loops	[POR] [Disabled] [Soft PPR] [Enabled] [Auto] [Disabled] [1] [Enabled] 1	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
Versior	n 2.22.1290 Copyright	(C) 2024 AMI AB

Figure 3-78 Memory Configuration Screen—2

Aptio Setup – AMI Socket Configuration		
Adv MemTest Options Adv MemTest Rank Selecti Adv MemTest Rery Adv MemTest Retry After Repair Adv MemTest Reset Failure Tracking List Adv MemTest Conditions Training Result Offset Memory Type Attempt Fast Boot Attempt Fast Cold Boot MemTest On Cold Fast Boot Data Scrambling for PMem Data Scrambling for DDR4/5	0 on [Enabled] [Disabled] [Disabled] [Disabled] [UDIMMs and RDIMMs] [Enabled] [Disabled] [Disabled] [Auto] [Auto]	Enable - Enables data scrambling for DDR4 and DDR5. Disable - Disables this feature; current default is Enable. ++: Select Screen tl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 3-79 Memory Configuration Screen—3

Aptio Setup – AMI Socket Configuration		
Allow Memory Test Correctable Error Scrambling Seed Low Scrambling Seed High Enable fADR Enable ADR Legacy ADR Mode Minimum System Memory Size	[Enabled] 41003 54165 [Disabled] [Enabled] [Auto] [2GB]	Set normal operation duration interval (0 - 65535)
NVDIMM Energy Policy ADR Data Save Mode Custom Refresh Enable DDR 2x Refresh Enable Adaptive Refresh Management Level Opp read during WMM Normal Operation Duration	[Device-Managed] [NVDIMMS] [Disabled] [Auto] [Default] [Enabled] 400	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Figure 3-80 Memory Configuration Screen—4

Aptio Setup – AMI Socket Configuration		
I2C Clock Frequency I3C Clock Frequency SPD Print SPD Print Length DDR Cycling BLOCK GNT2CMD1CYC Disable DDRT DIMM OPPRD Cmd Setup % Offset Periodic Rcomp Periodic Rcomp Interval Training Compensation Options Values Outlier Check Mapout Outlier Threshold Modifier	<pre>[Auto] [Auto] [Disabled] [Auto] [Disabled] [POR] [PO Safe Value] 50 [Auto] [671.08864 ms] [One RCOMP cycle only on PHY Init (MMRC Init)] [Enabled] 0</pre>	 How much to modify the base outlier threshold (i.e17), to modify -1, enter 101 (threshold will be -18), to modify +1, enter 1 (threshold will be -18) ++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Versio	n 2.22.1290 Copyright (C) :	2024 AMI AB

Figure 3-81 Memory Configuration Screen—5

Aptio Setup — AMI Socket Configuration		
Cmd Setup % Offset Periodic Rcomp Periodic Rcomp Interval Training Compensation Options Values Outlier Check Mapout Outlier Threshold Modifier	50 [Auto] [671.08864 ms] [One RCOMP cycle only on PHY Init (MMRC Init)] [Enabled] 2	Configuration options for RMT
 Memory Topology Page Policy Memory Training Memory I/O Health Check Memory Map Memory RAS Configuration Memory Dfx Configuration RMT Configuration Menu 		 **: Select Screen *1: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version	2.22.1290 Copyright (C) 2	024 AMI AB

For a description of the parameters on the Memory Configuration screen, refer to Table 3-55.

Parameter	Description	Default
Enforce DDR Memory Fre- quency POR	 Sets whether to apply POR rules for the DDR memory. Options: POR: enables POR rules. Disabled: disables POR rules. 	POR
Enforce Population POR	 Enables or disables POR rules. Options: Enabled: enables POR rules. When this parameter is set to Enabled, memory must be installed based on POR rules. Disabled: disable POR rules. 	Disabled
MemTest86	After the MemTest86 (v9.4) is started, the Aptio Set- up screen cannot be returned.	-
DDR PPR Type	Select a PPR type. Options:	Soft PPR

Table 3-55 Parameter Descriptions for the Memory Configuration Screen

Parameter	Description	Default
	 Hard PPR Soft PPR PPR Disabled: disables PPR. 	
Force PPR On All Dram For UCE	Sets whether to force all PPRs on the DRAM to be used for the UCE. Options: • Enabled: yes. • Disabled: no.	Disabled
PTRR DDR Enable	 Enables or disables the PTRR DDR. Enabled: enables the PTRR DDR. The default value is Enabled, which is used only when the RDIMM configuration is independent of the VolMemMode configuration and mixed with the DDRT configuration, and the VolMeModee=1LM is used for the mixed configuration. Disabled: disables PTRR DDR. When VolMemMode is equal to 2LM, the BIOS forcibly disables the PTRR DDR. 	Enabled
Memory Frequency	 Select the memory frequency. Options: Auto: automatically sets this parameter in accordance with the memory and CPU capability, and actual training status. 3200 3600 4000 4400 4800 5200 5600 	Auto
Halt on Memory Fault	 Enables or disables a halt when a memory fault occurs. Options: Enabled: enables the halt. Disabled: disables the halt. 	Disabled
Sockets in parallel	 Configures parallel CPU operation mode. ALL: All CPUs operate in parallel. 1: Only one CPU operates at a time. 2: Only two CPUs operate in parallel at a time. 4: Only four CPUs operate in parallel at a time. 	ALL

Parameter	Description	Default
MemTest	 Enables or disables the memory test during normal boot. Options: Enabled: enables the memory test. Disabled: disables the memory test. 	Enabled
MemTest Loops	Enter the number of memory test cycles during nor- mal boot. 0: unlimited number of times.	1
Adv MemTest Options	Provides advanced memory test options.	0
Adv MemTest Rank Selection	Sets the level of the advanced memory test. For details, refer to 3.4.4.1 Adv MemTest Rank Selec- tion.	-
Adv MemTest PPR	 Enables or disables advanced memory test PPR. Options: Enabled: enables advanced memory test PPR. Disabled: disables advanced memory test PPR. 	Enabled
Adv MemTest Retry After Re- pair	 Sets whether to perform a memory test again after repair. Options: Enabled: yes. Disabled: no. 	Enabled
Adv MemTest Reset Failure Tracking List	 Enables or disables failure tracking list reset after each memory test for multi-option performance tests. Options: Enabled: enables failure tracking list reset. Disabled: disables failure tracking list reset. 	Disabled
Adv MemTest Conditions	 Select a method for setting memory test conditions. Options: Disabled: No test conditions are set. Auto: sets the test conditions by test type. Manual: sets global test conditions. 	Auto
Adv MemTest PMIC VDD Level	This parameter is displayed when Adv MemTest Conditions is set to Manual . Specifies the PMIC VDD and VDDQ levels in milli- volts.	1100
Adv MemTest tWR	This parameter is displayed when Adv MemTest Conditions is set to Manual .	48

Parameter	Description	Default
	Specifies the tWR time between 48 tCKs and 96 tCKs.	
Adv MemTest tREFI	This parameter is displayed when Adv MemTest Conditions is set to Manual . Specifies the tREFI (refresh rate) time between 1850 ns and 7800 ns.	3900
Adv MemTest Pause	This parameter is displayed when Adv MemTest Conditions is set to Manual . Specifies a pause delay between 0 us and 256000 us. This is the time period during which refresh is dis- abled between the write sequence and the read se- quence.	64000
Training Result Offset	 Enables or disables training result offset. Options: Enabled: enables training result offset. Disabled: disables training result offset. 	Disabled
Offset RecEnDelay	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the final RecEnDelay memory training result.	100
Offset TxDq	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset for the final TxDq memory training re- sult.	100
Offset RxDq	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the final RxDq memory training re- sult.	100
Offset TxVref	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the final TxVref memory training re- sult.	100
Offset RxVref	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the final RxVref memory training result.	100
Offset RxSampler	This parameter is displayed when Training Result Offset is set to Enabled .	100

Parameter	Description	Default
	Enter the offset of the final RxSampler memory train- ing result.	
Offset CmdAll	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the CmdAll final memory training result.	100
Offset CmdRxVref	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the final CmdRxVref memory train- ing result.	100
Offset CmdRxSampler	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the CmdRxSampler final memory training result.	100
Offset CtIAll	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the final Ctlall memory training re- sult.	100
Offset CtIVref	This parameter is displayed when Training Result Offset is set to Enabled . Enter the offset of the final CtIVref memory training result.	100
Memory Type	 Select the supported DIMM type. Options: RDIMMs only: supports only RDIMMs. UDIMMs only: supports only UDIMMs. UDIMMs and RDIMMs: supports UDIMMs and RDIMMs. 	UDIMMs and RDIMMs
Attempt Fast Boot	 Enables or disables the attempt to use fast boot. Options: Enabled: enables the attempt to use fast boot. Disabled: disables the attempt to use fast boot. 	Enabled
Attempt Fast Cold Boot	 Enables or disables the attempt to use fast cold boot. Options: Enabled: enables the attempt to use fast cold boot. Disabled: disables the attempt to use fast cold boot. 	Enabled
MemTest On Cold Fast Boot	Enables or disables the memory test during fast boot.	Disabled

Parameter	Description	Default
	Options:Enabled: enables the memory test.Disabled: disables the memory test.	
Data Scrambling for PMem	 Enables or disables data scrambling for the PMem. Options: Enabled: enables data scrambling for the PMem. Disabled: disables data scrambling for the PMem. Auto: sets this parameter based on the stepping configuration. 	Auto
Data Scrambling for DDR4/5	 Enables or disables data scrambling for DDR4/5. Options: Enabled: enables data scrambling for DDR4/5. Disabled: disables data scrambling for DDR4/5. 	Enabled
Allow Memory Test Correctable Error	 Enables or disables the correctable error feature during a memory test. Options: Enabled: logs errors and enables the correctable error feature (DIMM level is not removed). Disabled: logs errors and disables the correctable error feature (DIMM level is removed). 	Enabled
Scrambling Seed Low	Lower 32 bits of the scrambling seed.	41003
Scrambling Seed High	Upper 32 bits of the scrambling seed.	54165
Enable fADR	 Enables or disables the fADR feature. Options: Enabled: enables the fADR feature. Disabled: disables the fADR feature. 	Disabled
Enable ADR	 This parameter is displayed when Enable fADR is set to Disabled. Enables or disables the storage of memory information upon a power failure. Options: Enabled: enables the storage of memory information upon a power failure. Disabled: disables the storage of memory information upon a power failure. 	Enabled
Legacy ADR Mode	This parameter is displayed when Enable fADR is set to Disabled . Enables or disables the storage of memory informa- tion upon a power failure in legacy mode.	Auto

vantageo

Parameter	Description	Default
	 Options: Enabled: enables the storage of memory information upon a power failure in legacy mode. Disabled: disables the storage of memory information upon a power failure in legacy mode. Auto: dynamically checks whether the conditions for enabling the storage of memory information upon a power failure in legacy mode are met, based on the environment. If yes, the system enables the function. If no, the system disables the function. 	
Minimum System Memory Size	This parameter is displayed when Enable fADR is set to Disabled . Minimum memory size allocated to system memory when only JEDEC NVDIMM is present. Options: 2GB 4GB 6GB 8GB	2GB
fADR Configuration	This parameter is displayed when EnabledfADR is set to Enabled . For details, refer to 3.4.4.2 fADR Configuration.	-
NVDIMM Energy Policy	Sets the NVDIMM energy policy. Options: • Device-Managed • Host-Managed	Device-Managed
ADR Data Save Mode	 Sets ADR data storage mode. Options: Disabled: disables ADR data storage mode. Batterybacked DIMMS NVDIMMs Copy to Flash: copies data to the flash. 	NVDIMMs
Check PCH_PM_STS	 This parameter is hidden when ADR Data Save Mode is set to NVDIMMs. This parameter is displayed in other modes. Sets whether to use the PCH_PM_STS register as a recovery metric. Options: Enabled: uses the PCH_PM_STS register as a recovery metric. 	Disabled

Parameter	Description	Default
	• Disabled: disables the use of the PCH_PM_STS register as a recovery metric.	
Check PlatformDetectADR	 This parameter is hidden when ADR Data Save Mode is set to NVDIMMs. This parameter is displayed in other modes. Sets whether to use the PlatformDetectADR feature as a recovery metric. Options: Enabled: uses the PlatformDetectADR feature as a recovery metric. Disabled: disables the use of the PlatformDetectADR feature as a recovery metric. 	Disabled
Custom Refresh Enable	 Enables or disables the custom memory refresh rate. Options: Enabled: enables the custom memory refresh rate. Disabled: disables the custom memory refresh rate. 	Disabled
Custom Refresh Rate	This parameter is displayed when Custom Refresh Enable is set to Enabled . Enter the custom memory refresh rate.	20
DDR 2x Refresh Enable	 Enables or disables the DDR 2x refresh feature. Options: Enabled: enables the DDR 2x refresh feature. Disabled: disables the DDR 2x refresh feature. Auto: automatic mode. 	Auto
Adaptive Refresh Management Level	Sets the adaptive refresh management level when re- fresh management is required. Options: • Default: default. • Level A • Level B • Level C	Default
Opp read during WMM	 Enables or disables issuing read commands opportunistically during WMM. Options: Enabled: enables issuing read commands opportunistically during WMM. Disabled: disables issuing read commands opportunistically during WMM. 	Enabled

Peremeter	Description	Default
Parameter	Description	Default
Normal Operation Duration	Enter the normal operation duration, range: 0–65535, unit: seconds.	400
I2C Clock Frequency	Select the DDR5 I2C clock frequency for SPD-based access. Options: • Auto • 400 kHz in I2C mode • 700 kHz in I2C mode • 1 MHz in I2C mode	Auto
I3C Clock Frequency	 Select the DDR5 I3C clock frequency for SPD-based access. Options: Auto: dynamically adjusts the frequency based on the CPU status. 4 MHz in I3C mode 6 MHz in I3C mode 8 MHz in I3C mode 10 MHz in I3C mode 	Auto
SPD Print	 Enables or disables SPD-based printing. Options: Enabled: enables SPD-based printing. Disabled: disables SPD-based printing. 	Disabled
SPD Print Length	 This parameter is displayed when SPD Print is set to Enabled. Select the length for SPD-based printing. Options: Auto: prints all SPD bytes. 256 Bytes 512 Bytes 	Auto
DDR Cycling	 Enables or disables the DDR cycling feature. Options: Enabled: enables the DDR cycling feature. When this parameter is set to Enabled, the MRC will bear pressure. Disabled: disables the DDR cycling feature. 	Disabled
BLOCK GNT2CMD1CYC	 Enables or disables the BLOCK GNT2CMD1CYC feature. Options: POR: enables the BLOCK GNT2CMD1CYC feature. 	POR

Parameter	Description	Default
	 PO Safe Value: disables the BLOCK GN- T2CMD1CYC feature. 	
Disabled DDRT DIMM OPPRD	 Enables or disables the DDRT DIMM OPPRD feature. Options: POR: enables the DDRT DIMM OPPRDC feature. PO Safe Value: disables the DDRT DIMM OPPRD feature. 	PO Safe Value
Cmd Setup % Offset	The ratio of "Cmd Setup" to "hold" in percentage is used as the offset of the latest command training re- sult. Range: 0–100.	50
Periodic Rcomp	 Enables or disables the periodic memory Rcomp. Options: Enabled: enables the periodic memory Rcomp. Disabled: disables the periodic memory Rcomp. Auto: keeps the current setting. 	Auto
Periodic Rcomp Interval	This parameter is hidden when Periodic Rcomp is set to Disabled . Select the interval for the periodic Rcomp.	671.08864 ms
Training Compensation Op- tions Values	 This parameter is displayed when Periodic Rcomp is set to Enabled. Select a training compensation option. Options: One RCOMP cycle only on PHY Init (MMRC Init) One RCOMP cycle after every JEDEC Init One RCOMP cycle right before every training step 	One RCOMP cy- cle only on PHY Init (MMRC Init)
Outlier Check Mapout	 Enables or disables vendor-specific external detection and mapping of DIMMs. Options: Enabled: enables vendor-specific external detec- tion and mapping of DIMMs. Disabled: disables vendor-specific external detec- tion and mapping of DIMMs. 	Enabled
Outlier Threshold Modifier	Modifies the basic threshold.	0
Memory Topology	Displays the memory information. For details, refer to 3.4.4.3 Memory Topology.	-
Page Policy	Sets page policies for memory. For details, refer to 3.4.4.4 Page Policy.	-
Memory Training	Sets memory training parameters.	-

Parameter	Description	Default
	For details, refer to 3.4.4.5 Memory Training.	
Memory I/O Health Check	Sets memory I/O status check parameters. For details, refer to 3.4.4.6 Memory I/O Health Check.	-
Memory Map	Sets memory mapping parameters. For details, refer to 3.4.4.7 Memory Map.	-
Memory RAS Configuration	Sets memory RAS parameters. For details, refer to 3.4.4.8 Memory RAS Configura- tion.	-
Memory Dfx Configuration	Sets memory Dfx parameters. For details, refer to 3.4.4.9 Memory Dfx Configuration.	-
RMT Configuration Menu	Sets RMT parameters. For details, refer to 3.4.4.10 RMT Configuration Menu	-

3.4.4.1 Adv MemTest Rank Selection

Figure 3-82 shows the Adv MemTest Rank Selection screen.

Figure 3-82 Adv MemTest Rank Selection Screen

Aptio Setup — AMI Socket Configuration		
Number of Ranks to Test	Select how many Ranks will be tested by AdvMemTest. Maximum of 8 Ranks are allowed. Default value of 0 will test all present Ranks in the system. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **Adv MemTest Rank Selection** screen, refer to Table 3-56.

Parameter	Description	Default
Number of Ranks to Test	Select the number of ranks to be tested by Ad-	0
	vMemTest.	
	A maximum of eight ranks are allowed.	
	The default value, which is 0, indicates that all	
	present ranks in the test system will be tested.	

Table 3-56 Parameter Descriptions for the Adv MemTest Rank Selection Screen

3.4.4.2 fADR Configuration

Figure 3-83 shows the **fADR Configuration** screen.

Figure 3-83 FADR Configuration Screen

Aptio Setup – AMI Socket Configuration				
Number of Cores Core Ratio Core Ratio Value Mesh Ratio Mesh Ratio Value Flush Timeout Flush Timeout Value	[All Cores] [Manual] FF [Manual] FF [Manual] FFF	Number of cores to be used to flush CPU Cache ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit		
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For a description of the parameters on the fADR Configuration screen, refer to Table 3-57.

Table 3-57 Parameter Descriptions for the fADR Configuration Screen

Parameter	Description	Default
Number of Cores	Select the number of cores to refresh the CPU cache.	All Cores
Parameter	Description	Default
---------------------	---	---------
	Options: 1 Core: one core. 4 Cores: four cores. All Cores: all cores. 	
Core Ratio	 Select the core ratio used during ADR. Options: Auto: The core ratio is set to Core/IA P1 Ratio. Manual: The core ratio is set to the value requested by the user. 	Auto
Core Ratio Value	This parameter is displayed when Core Ratio is set to Manual . Enter the core ratio used during ADR.	FF
Mesh Ratio	 Select the mesh ratio used during ADR. Options: Auto: The mesh ratio is set to Mesh/CLM P1 Ratio. Manual: The mesh ratio is set to the value requested by the user. 	Auto
Mesh Ratio Value	This parameter is displayed when Mesh Ratio is set to Manual . Enter the mesh ratio used during ADR.	FF
Flush Timeout	 Select the refresh timeout used during ADR. Options: Auto: The fresh timeout grows linearly with each enabled socket. Manual: The fresh timeout is set to the value requested by the user. 	Auto
Flush Timeout Value	This parameter is displayed when Flush Timeout is set to Manual . Enter the refresh timeout used during ADR.	FFF

3.4.4.3 Memory Topology

Figure 3-84 shows the Memory Topology screen.

Figure 3-84 Memory Topology Screen

Total Memory Slot : 32 Available Memory Slot : 31 Inused Memory Slot : 1	
Memory Slot Type : DIMM CPU1_EO-SocketO.ChE.DimmO: 4000MT/s Hynix SRx4 32GB RDIMM DDR5 SDRAM Multi-bit ECC 1.1V 13DF5E11 HMCG84AEBQA107N	++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

For a description of the parameters on the **Memory Topology** screen, refer to Table 3-58.

Table 3-58 Parameter Descriptions for the Memory Topology Screen

Parameter	Description
Total Memory Slot	Total number of memory slots.
Available Memory Slot	Number of available memory slots.
Inused Memory Slot	Number of memory slots being used.
Memory Slot Type	Type of memory slot.

3.4.4.4 Page Policy

Figure 3-85 shows the Page Policy screen.

Figure 3-85 Page Policy Screen

Aptio Setup – AMI Socket Configuration			
Page Policy	[Closed]	Select DRAM Page Policy ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **Page Policy** screen, refer to Table 3-59.

Table 3-59	Parameter	Descriptions	for the	Page	Policy	Screen

Parameter	Description	Default
Page Policy	 Enables or disables the memory page management policy. Options: Closed: disables the memory page management policy. Adaptive: adaptive. 	Closed

3.4.4.5 Memory Training

Figure 3-86 shows the Memory Training screen.

Figure 3-86 Memory Training Screen

Aptio Setup – AMI Socket Configuration			
LRDIMM Backside Vref TX Rise Fall Slew Rate Training Tco Comp Training Duty Cycle Training Eye Diagrams Turnaround Time Optimization PMem One Rank Timing Mode	[Enabled] [Auto] [Enabled] [Enabled] [Disabled] [Enabled] [Enabled]	Enable\Disable LRDIMM Backside Vref Training	
		 ↔: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	
Versio	n 2.22.1287 Copyris	(ht (C) 2023 AMI	

For a description of the parameters on the Memory Training screen, refer to Table 3-60.

Table 3-60 Parameter Descriptions for the Memory Training Screen

Parameter	Description	Default
LRDIMM Backside Vref	 Enables or disables LRDIMM Backside Vref training. Options: Enabled: enables LRDIMM Backside Vref training. Disabled: disables LRDIMM Backside Vref training. 	Enabled
TX Rise Fall Slew Rate Train- ing	 Enables or disables TX Rise Fall Slew Rate training. Options: Enabled: enables TX Rise Fall Slew Rate training. Disabled: disables TX Rise Fall Slew Rate training. Auto: enables TX Rise Fall Slew Rate training when DDR Freq is equal to or greater than 2933. 	Auto
Tco Comp Training	Enables or disables Tco Comp training.Options:Enabled: enables Tco Comp training.	Enabled

Parameter	Description	Default
	Disabled: disables Tco Comp training.	
Duty Cycle Training	Enables or disables Duty Cycle training.Options:Enabled: enables Duty Cycle training.Disabled: disable Duty Cycle training.	Enabled
Eye Diagrams	 Enables or disables Eye Diagrams for each level of Rx and TxDq. Options: Enabled: enables Eye Diagrams for each level of Rx and TxDq. Disabled: disables Eye Diagrams for each level of Rx and TxDq. 	Disabled
Turnaround Time Optimization PMem	 Enables or disables Turnaround Time optimization for PMem. Options: Enabled: enables Turnaround Time optimization for PMem. Disabled: disables Turnaround Time optimization for PMem. 	Enabled
One Rank Timing Mode	 Enables or disables One Rank Timing mode. Options: Enabled: enables One Rank Timing mode. Disabled: disables One Rank Timing mode. 	Enabled

3.4.4.6 Memory I/O Health Check

Figure 3-87 through Figure 3-88 show the Memory I/O Health Check screen.

Figure 3-87 Memory I/O Health Check Screen—1

Aptio Setup – AMI Socket Configuration			
Memory I/O Health Check Reboot On Critical	[Manual]	 Select option Auto for default values. Manual for new values. Disable 	
Failure Memory I/O Health Check Critical Retries	1	for disabling feature	
Memory I/O Health Check Loop Count	[Auto]		
Telemetry Offsets		++: Select Screen	
TxDqDelay Left Edge	6	↑↓: Select Item	
TxDqDelay Right Edge	6	Enter: Select	
TxVref Left Edge	6	+/-: Change Opt.	
TxVref Right Edge	6	K/M: Scroll Help Area	
RxDqsDelay Left Edge	7	F1: General Help	
RxDqsDelay Right Edge	7	F2: Previous Values	
RxVref Left Edge	6	▼ F3: Optimized Defaults F4: Save & Exit	
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	Aptio Setup – AMI Socket C	onfiguration
TxDqDelay Right Edge TxVref Left Edge TxVref Right Edge RxDqsDelay Left Edge RxDqsDelay Right Edge RxVref Left Edge RxVref Right Edge Critical Offsets	6 6 7 7 6 6	Offset for RxVref Right Edge
TxDqDelay Left Edge TxDqDelay Right Edge TxVref Left Edge TxVref Right Edge RxDqsDelay Left Edge RxDqsDelay Right Edge RxVref Left Edge RxVref Right Edge	2 2 2 2 2 2	 ++: Select Screen †1: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 3-88 Memory I/O Health Check Screen—2

For a description of the parameters on the **Memory I/O Health Check** screen, refer to Table 3-61.

Parameter	Description	Default
Memory I/O Health Check	 Enables or disables memory I/O health check. Options: Auto: enables the default check. Manual: enables the self-defined check. Disabled: disables memory I/O health check. 	Auto
Reboot On Critical Failure	 This parameter is displayed when Memory I/O Health Check is set to Manual. This feature determines whether to restart the system when a serious I/O error occurs. Options: Enabled: restarts the system. Disabled: does not restart the system. 	Enabled

Table 3-61 Parameter Descr	ptions for the Memory	y I/O Health	Check Screen
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Parameter	Description	Default
Memory I/O Health Check Criti- cal Retries	This parameter is displayed when Memory I/O Health Check is set to Manual and Reboot On Criti- cal Failure is set to Enabled . Enter the number of system restart times, range: 0–7.	1
Memory I/O Health Check Loop Count	Sets the statistical method for collecting the number of CPGC test cycles for checking I/O status.	Auto
Telemetry Offsets		•
TxDqDelay Left Edge	Enter the offset of the left edge of the TxDqDelay.	6
TxDqDelay Right Edge	Enter the offset of the right edge of the TxDqDelay.	6
TxVref Left Edge	Enter the offset of the left edge of the TxVref.	6
TxVref Right Edge	Enter an offset for the right edge of TxVref.	6
RxDqsDelay Left Edge	Enter the offset of the left edge of the RxDqsDelay.	7
RxDqsDelay Right Edge	Enter the offset of the right edge of the RxDqsDelay.	7
RxVref Left Edge	Enter the offset of the left edge of the RxVref.	6
RxVref Right Edge	Enter the offset of the right edge of the RxVref.	6
Critical Offsets		
TxDqDelay Left Edge	Enter the offset of the left edge of the TxDqDelay.	2
TxDqDelay Right Edge	Enter the offset of the right edge of the TxDqDelay.	2
TxVref Left Edge	Enter the offset of the left edge of the TxVref.	2
TxVref Right Edge	Enter an offset for the right edge of the TxVref.	2
RxDqsDelay Left Edge	Enter the offset of the left edge of the RxDqsDelay.	2
RxDqsDelay Right Edge	Enter the offset of the right edge of the RxDqsDelay.	2
RxVref Left Edge	Enter the offset of the left edge of the RxVref.	2
RxVref Right Edge	Enter the offset of the right edge of the RxVref.	2

3.4.4.7 Memory Map

Figure 3-89 shows the Memory Map screen.

Figure 3-89 Memory Map Screen

Aptio Setup — AMI Socket Configuration		
Volatile Memory Mode	[1LM]	Selects 1LM or 2LM mode for volatile memory. For 2LM memory mode, BIOS will try to configure 2LM but if BIOS is unable to configure 2LM, volatile memory mode will fall * *+: Select Screen 11: Select Item Enter: Select +/-: Change Opt.
		K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the Memory Map screen, refer to Table 3-62.

Table 3-62 Parameter Descriptions for the Memory Map Screen

Parameter	Description	Default
Volatile Memory Mode	Sets the volatile memory mode. Options: 1LM	1LM

3.4.4.8 Memory RAS Configuration

Figure 3-90 through Figure 3-91 show the Memory RAS Configuration screen.

Figure 3-90 Memory RAS Configuration Screen—1

Aptio Setup – AMI Socket Configuration			
Dynamic ECC Mode Selection	[Enabled]	▲ Enable/Disable Dynamic ECC Mode Selection	
Enable Pcode WA for SAI PG	[Disabled]		
Mirror Mode	[Disabled]		
Mirror TADO	[Disabled]		
UEFI ARM Mirror	[Disabled]		
Memory Correctable Error Flood Policy	[Frequency]		
Correctable Error Threshold	32767	++: Select Screen	
Trigger SW Error Threshold	[Disabled]	t↓: Select Item Enter: Select	
Memory CE Accumulation Threshold	[Disabled]	+/-: Change Opt. K/M: Scroll Help Area	
Memory CE Storm Threshold	[Disabled]	F1: General Help F2: Previous Values ▼ F3: Optimized Defaults	
F4: Save & Exit Version 2.22.1287 Copyright (C) 2023 AMI			

Figure 3-91 Memory RAS Configuration Screen—2

Aptio Setup – AMI Socket Configuration		
Trigger SW Error	[Disabled]	▲ Disable: Disable
Memory CE Accumulation Threshold	[Disabled]	Enable: Enable ECS
Memory CE Storm Threshold	[Disabled]	Collection. Enable ECS with Result Collection:
Leaky bucket time window based interface	[Disabled]	Enable ECS/Result Collection.
Leaky bucket low bit Leaky bucket high bit	20 23	
Partial Cache Line Sparing PCLS	[Enabled]	++: Select Screen ↑↓: Select Item
ADDDC Sparing Patrol Scrub	[Disabled] [Enable at End of	Enter: Select +/-: Change Opt.
Patrol Scrub Interval DDR5 ECS	24 [Enabled]	F1: General Help F2: Previous Values
		▼ F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Memory RAS Configuration** screen, refer to Table 3-63.

Parameter	Description	Default
Dynamic ECC Mode Selection	 Enables or disables dynamic ECC mode selection. Options: Enabled: enables dynamic ECC mode selection. Disabled: disables dynamic ECC mode selection. Enabled + Allow Partial Poison Mode: enables dynamic ECC mode selection and allows Partial Poison mode. 	Enabled
Enable Pcode WA for SAI PG	 Enables or disables the Pcode WA feature of the SAI PG. Options: Enabled: enables the Pcode WA feature of the SAI PG. Disabled: disables the Pcode WA feature of the SAI PG. 	Disabled

Table 3-63 Parameter Descriptions for the Memory RAS Configuration Screen

Parameter	Description	Default
Mirror Mode	 Sets the memory mirroring mode. Options: Full Mirror Mode: full mirroring mode. Partial Mirror Mode: partial mirroring mode. Disabled: disables mirroring mode. 	Disabled
Mirror TAD0	 Enables or disables mirroring on the entire memory for TAD0. Options: Enabled: enables mirroring on the entire memory for TAD0. After this feature is enabled, mirroring is enabled on the entire memory for TAD0. Disabled: disables mirroring for TAD0. 	Disabled
UEFI ARM Mirror	 Enables or disables UEFI ARM mirroring. Options: Enabled: enables UEFI ARM mirroring. Disabled: disables UEFI ARM mirroring. 	Disabled
Memory Correctable Error Flood Policy	Select a memory correctable error flood policy. Options: Disabled: disables the support. Once Frequency	Frequency
Trigger SW Error Threshold	 Enables or disables the sparing trigger SW error match threshold. Options: Enabled: enables the sparing trigger SW error match threshold. Disabled: disables the sparing trigger SW error match threshold. 	Disabled
SW Per Bank Threshold	This parameter is displayed when Trigger SW Error Threshold is set to Enabled . Enter the sparing trigger SW error match threshold, range:1–0x7fff.	3
SW Correctable Error Time Window	This parameter is displayed when Trigger SW Error Threshold is set to Enabled . Enter the time window for correctable memory errors, range: 1–24.	24
Memory CE Accumulation Threshold	Select a memory correctable error accumulation threshold.	1200

Parameter	Description	Default
	Options: Disabled 960 1200 2400 4800 9600 12000 15000 18000 24000 30000	
Memory CE Accumulation Time Window	This parameter is hidden when Memory CE Accu- mulation Threshold is set to Disabled . Enter the time window for memory correctable error accumulation, range: 1–24.	24
Memory CE Strom Threshold	Select the memory correctable error storm threshold. Options: Disabled 60 120 240 480 960 1200	120
Memory CE Strom Time Win- dow	This parameter is hidden when Memory CE Strom Threshold is set to Disabled . Enter the time window for correctable memory error storms. Range: 1–60.	1
Leaky bucket time window based interface	 Enables or disables the interface based on the leaky bucket time window. Options: Enabled: enables the interface based on the leaky bucket time window. Disabled: disables the interface based on the leaky bucket time window. 	Disabled
Leaky bucket time window based interface Hour	This parameter is displayed when Leaky bucket time window based interface is set to Enabled . Enter the number of hours as the size of the leaky bucket time window. Range: 0–3744.	24

Parameter	Description	Default
Leaky bucket time window based interface Minute	This parameter is displayed when Leaky bucket time window based interface is set to Enabled . Enter the number of minutes as the size of the leaky bucket time window. Range: 0–60.	0
Leaky bucket low bit	This parameter is displayed when Leaky bucket time window based interface is set to Disabled . Enter the leaky bucket low bit, range: 1–41.	20
Leaky bucket high bit	This parameter is displayed when Leaky bucket time window based interface is set to Disabled . Enter the leaky bucket high bit, range: 1–41.	23
Partial Cache Line Sparing PCLS	 Enables or disables the PCLS feature. Options: Enabled: enables the PCLS feature. Disabled: disables the PCLS feature. 	Enabled
ADDDC Sparing	 Enables or disables the sparing ADDDC feature. Options: Enabled: enables the sparing ADDDC feature. Disabled: disables the sparing ADDDC feature. 	Disabled
Enable ADDDC Error Injection	 This parameter is displayed when ADDDC Sparing is set to Enabled. Enables or disables ADDDC error injection. Options: Enabled: enables sparing ADDDC error injection. Disabled: disables sparing ADDDC error injection. 	Enabled
Patrol Scrub	 Enables or disables regular memory preventive maintenance. Options: Disabled: disables regular memory preventive maintenance. Enable at End of POST: enables regular memory preventive maintenance after POST. 	Enable at End of POST
Patrol Scrub Interval	This parameter is displayed when Patrol Scrub is set to Enable at End of POST . Enter the time interval for regular memory preventive maintenance. Range: 1–24.	24
DDR5 ECS	 Enables or disables ECS and result collection. Options: Enabled: enables ECS and disables result collection. 	Enabled

Parameter	Description	Default
	• Disabled: disables ECS and result collection.	
	Enable ECS with Result Collection: enables ECS	
	and result collection.	

3.4.4.9 Memory Dfx Configuration

Figure 3-92 shows the Memory Dfx Configuration screen.

Figure 3-92 Memory Dfx Configuration Screen

Aptio Setup – AMI Socket Configuration			
Bank Group Interleaving Mode DIMM Interleaving 3-Way Channel Interleaving Max Rank Interleaving in IMC PMem ECC Correctable	[Fine Grained Mode] [Enabled] [Enabled] [8–way Interleave] [Enabled]	Configures the DDR bank group interleaving mode to fine or coarse grained	
error PMem ECC Write Check C/A Parity Enable DDR5 Override Refresh Mode DDR5 SSA RxSampler Margin Parameter Selection CXL Type 3 Legacy	[Auto] [Enabled] [Auto] [Auto] [Disabled]	 ++: Select Screen †1: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	

For a description of the parameters on the **Memory Dfx Configuration** screen, refer to Table 3-64.

Table 3-64 Parameter Descriptions for the Memory Dfx Configuration Screen

Parameter	Description	Default
Bank Group Interleaving Mode	Sets DDR Bank Group interleaving mode.	Fine Grained Mode
	Options:	
	Goaese Grained Mode	
	Fine Grained Mode	
	• Fine Grained Mode (Fine Grained bank group in-	
	terleave on two bank bits)	

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Parameter	Description	Default
DIMM Interleaving	 Enables or disables DIMM interleaving. Options: Enabled: allows interleaving at the highest level. Disabled: restricts interleaving to only 1-way interleaving. 	Enabled
3-Way Channel Interleaving	 Enables or disables 3-way channel interleaving. Options: Enabled: enables 3-way channel interleaving. Disabled: restores the number of available channels to the default value when DIMM Interleaving is set to Enabled. 	Enabled
Max Rank Interleaving in IMC	 Select interleaving mode. Options: 1-way Interleave: 1-way interleaving. 2-way Interleave: 2-way interleaving. 4-way Interleave: 4-way interleaving. 8-way Interleave: 8-way interleaving. 	8-way Interleave
PMem ECC Correctable error	 Enables or disables correctable PMem ECC. Options: Enabled: enables correctable PMem ECC. Disabled: disables correctable PMem ECC. Auto: dynamic selection. 	Enabled
PMem ECC Write Check	 Enables or disables PMem write ECC. Options: Enabled: enables PMem write ECC. Disabled: disables PMem write ECC. Auto: dynamic selection. 	Auto
C/A Parity Enable	 Enables or disables DDR4 command address parity. Options: Enabled: enables DDR4 command address parity. Disabled: disables DDR4 command address parity. 	Enabled
DDR5 Override Refresh Mode	Select DDR5 overwriting refresh mode. Options: • Auto • All Bank Normal • All Bank Fine • Same Bank Fine	Auto

Parameter	Description	Default
DDR5 SSA RxSampler Margin Parameter Selection	 Configures DDR5 SSA margin training parameters for the RxSampler. Options: Auto: automatic mode. RxSampler Even and Odd Offset: even and odd offsets for the RxSampler. RxSampler Even Offset: even offset for the RxSampler. RxSampler. RxSampler Odd Offset: odd offset for the RxSampler. RxSampler Odd Offset: odd offset for the RxSampler. RxVref. 	Auto
CXL Type 3 Legacy	 Whether to enable CXL type 3 devices to use the procedure for CXL type 2 devices. Options: Enabled: allows CXL type 3 devices to use the procedure for CXL type 2 devices. Disabled: prevents CXL type 3 devices from using the procedure for CXL type 2 devices. 	Disabled

3.4.4.10 RMT Configuration Menu

Figure 3-93 shows the RMT Configuration Menu screen.

Figure 3-93 RMT Configuration Menu Screen

Aptio Setup – AMI Socket Configuration		
Rank Margin Tool RMT on Fast Cold Boot Execute Jedecinit before RMT Test Signal Bit Mask Per Bit Margining Per CA Lane Margining Display Tables Display Tables Display Plots Loop Count Backside Margining Scrambler Step Size Override RMT Debug Messages RMT Supress Serial Message Log	[Enabled] [Disabled] [Disabled] [Disabled] [Enabled] [Enabled] [Enabled] [Disabled] [Disabled] [Disabled] [Enabled] [Enabled]	Enables the Rank Margin Tool
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For a description of the parameters on the **RMT Configuration Menu** screen, refer to Table 3-65.

Table 3-65 Param	notor Descriptions	for the RMT (Configuration	Monu Scroon
	leter Descriptions		configuration	Menu Scieen

Parameter	Description	Default
Rank Margin Tool	 Enables or disables the Rank Margin tool. Options: Enabled: enables the Rank Margin tool. When this parameter is set to Enabled, parameters starting with Per Bit Margining are displayed. Disabled: disables the Rank Margin tool. 	Disabled
RMT on Fast Cold Boot	 Enables or disables the Rank Margin tool upon fast cold boot. Options: Enabled: enables the Rank Margin tool upon fast cold boot. Disabled: disables the Rank Margin tool upon fast cold boot. 	Disabled

Parameter	Description	Default
Execute Jedecinit before RMT	 Enables or disables Jedecinit execution before the Rank Margin tool runs. Options: Enabled: enables Jedecinit execution. Disabled: disables Jedecinit execution. 	Disabled
Test Signal Bit Mask	Test signal bit mask.	0
Per Bit Margining	 This parameter is displayed when Rank Margin Tool is set to Enabled. Enables or disables Per Bit Margining. Options: Enabled: enables Per Bit Margining. Disabled: disables Per Bit Margining. 	Enabled
Per CA Lane Margining	 This parameter is displayed when Rank Margin Tool is set to Enabled. Enables or disables Per CA Lane Margining. Options: Enabled: enables Per CA Lane Margining. Disabled: disables Per CA Lane Margining. 	Enabled
Display Tables	 This parameter is displayed when Rank Margin Tool is set to Enabled. Select whether to display results in tables. Options: Enabled: displays results in tables. Disabled: indicates that results are not displayed in tables. 	Enabled
Display Plots	 This parameter is displayed when Rank Margin Tool is set to Enabled. Select whether to display results with plots. Options: Enabled: displays results with plots. Disabled: indicates that results are not displayed with plots. 	Enabled
Loop Count	This parameter is displayed when Rank Margin Tool is set to Enabled . Enter the number of counts in a statistical period.	16
Backside Margining	This parameter is displayed when Rank Margin Tool is set to Enabled . Enables or disables the margin test at the backup register or buffer.	Disabled

Parameter	Description	Default
	Options:Enabled: enables the margin test.Disabled: disables the margin test.	
Scrambler	 This parameter is displayed when Rank Margin Tool is set to Enabled. Enables or disables the test scrambler of the RMT. Options: Enabled: enables the test scrambler of the RMT. Disabled: disables the test scrambler of the RMT. 	Enabled
Step Size Override	 This parameter is displayed when Rank Margin Tool is set to Enabled. Enables or disables step size rewriting. Options: Enabled: enables step size rewriting. Disabled: disables step size rewriting. 	Disabled
RMT Debug Messages	 This parameter is displayed when Rank Margin Tool is set to Enabled. Enables or disables RMT debugging. Options: Enabled: enables RMT debugging. Disabled: disables RMT debugging. 	Disabled
RMT Supress Serial Message Log	 This parameter is displayed when Rank Margin Tool is set to Enabled. Sets whether to suppress serial-port-based messages and output only error messages when running the RMT. Options: Enabled: suppresses serial-port-based messages and outputs only error messages when running the RMT. Disabled: disables the suppression of serial-port-based messages. 	Enabled

3.4.5 IIO Configuration

Figure 3-94 through Figure 3-95 show the **IIO Configuration** screen.

Figure 3-94 IIO Configuration Screen—1

Aptio Setup – AMI Socket Configuration		
IIO Configuration Socket0 Configuration Socket1 Configuration IOAT Configuration Intel VT for Directed I. EV DFX Features Disable BIOS Done PCI-E Port MPSS (Global) Hot Plug Capable(Nvme) Surprise Hot Plug Capable(NVMe) Link Speed(Global) Intel VMD technology IIO DFX Configuration	/O (VT-d) [Disabled] [Disabled] [Auto] [Enabled] [Enabled] [Per Port]	 ++: Select Screen tl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 3-95 IIO Configuration Screen—2

Aptio Setup — AMI Socket Configuration			
IIO-PCIE Express Global	Options	This option can disable	
NTB Link Train by BIOS Delay before link training PCIe Hot Plug IIO Port Bifurcation Policy NVME LED Support	[Yes] [No delay] [Enabled] [Auto] [Enabled]	Requester support in all PCIe root ports. 'Auto' keeps hardware default.	
CbDma MultiCast Enable PCI-E Completion Timeout PCI-E Completion	[Yes] [Global]	++: Select Screen fl: Select Item Enter: Select	
Timeout Value	[Disabled]	+/-: Change Option.	
(Global) PCIe 10-bit Tag	[Auto]	F1: General Help F2: Previous Values	
Support		▼ F3: Optimized Defaults F4: Save & Exit	

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For a description of the parameters on the **IIO Configuration** screen, refer to Table 3-66.

Parameter	Description	Default
Socket0 Configuration	Sets socket 0 parameters. For details, refer to 3.4.5.1 Socket0 Configuration.	-
Socket1 Configuration	Sets socket 1 parameters. Socket1 parameters are the same as Socket0 para- meters. For details, refer to 3.4.5.1 Socket0 Configu- ration.	-
IOAT Configuration	Sets IOAT parameters. For details, refer to 3.4.5.2 IOAT Configuration.	-
Intel VT for Directed I/O (VT-d)	Sets VT-d parameters. For details, refer to 3.4.5.3 Intel VT for Directed I/O (VT-d).	-
EV DFX Features	Enables or disables IIO DFX and other CPU devices (such as PMON). Options:	Disabled

Table 3-66 Parameter Descriptions for the IIO Configuration Screen

Parameter	Description	Default
	 Enabled: enables IIO DFX and other CPU devices. Disabled: disables IIO DFX and other CPUs. 	
Disable BIOS Done	 Enables or disables the boot initialization completion notification sent to processors through MSR 151H. This parameter does not need to be set. Options: Enabled: enables the boot initialization completion notification sent to processors through MSR 151H. Disabled: disables the boot initialization comple- tion notification sent to processors through MSR 151H. 	Disabled
PCI-E Port MPSS (Global)	Configure the maximum load size supported in all NVMe PCIe device function registers. The "Auto" op- tion retains the default hardware configuration. Options: • 128B • 256B • 512B • Auto	Auto
Hot Plug Capable(Nvme)	 Configures the hot swapping capability of the slots where all NVMe devices are located. Options: Auto: automatic mode. Enabled: enables the hot swapping capability of the slots where all NVMe devices are located. Disabled: disables the hot swapping capability of the slots where all NVMe devices are located. Disabled: disables the hot swapping capability of the slots where all NVMe devices are located. Per Port: The configuration of each NVMe port takes effect separately. If this parameter is set to Auto, Enabled, or Disabled, the NVMe port settings are overwritten. 	Enabled
Surprise Hot Plug Capable(N- VMe)	 Configures the hot swapping capability of the slots where all NVMe devices are located, without any notification. Options: Enabled: enables the hot swapping capability of the slots where all NVME devices are located, without any notification. 	Enabled

Parameter	Description	Default
	 Disabled: disables the hot swapping capability of the slots where all NVME devices are located, without any notification. Per Port: The configuration of each NVMe port takes effect separately. If this parameter is set to Enabled or Disabled, the NVME port settings are overwritten. 	
Link Speed(Global)	 Configures the link rate of all PCIe device ports (except the DMI port). Options: Auto: automatic mode. Gen 1 (2.5 GT/s) Gen 2 (5 GT/s) Gen 3 (8 GT/s) Gen 4 (16 GT/s) Gen 5 (32 GT/s) Per Port: The configuration of each NVMe port takes effect separately. If this parameter is not set to Per Port, the PCIe port settings are overwritten. 	Per Port
Intel VMD technology	Sets VMD parameters. For details, refer to 3.4.5.4 Intel VMD technology.	-
IIO DFX Configuration	Configures IIO DFX parameters. For details, refer to 3.4.5.5 IIO DFX Configuration.	-
NTB Link Train by BIOS	 Sets whether to enable NTB link training. Options: Yes: enables NTB link training. No: disables NTB link training. Auto: automatic mode. 	Yes
Delay before link training	Sets the delay before IIO-port PCIe link training.	No delay
PCIe Hot Plug	 Enables or disables PCIe hot swapping. Options: Enabled: enables PCIe hot swapping. Disabled: disables PCIe hot swapping. 	Enabled
IIO Port Bifurcation Policy	Sets IIO port bifurcation policy. Options: • Auto: automatic mode. • Manual: manual mode.	Auto

Parameter	Description	Default
NVME LED Support	 Enables or disables the NVME LED support when the VMD function is disabled. Options: Enabled: enables the NVME LED support when the VMD function is disabled. Disabled: disables the NVME LED support when the VMD function is disabled. 	Enabled
CbDma MultiCast Enable	 Enables or disables the CbDma MultiCast feature. Options: Yes: enables the CbDma MultiCast feature. No: disables the CbDma MultiCast feature. 	Yes
PCI-E Completion Timeout	Select the PCIe timeout setting method.Options:Per-Port: Each port is set independently.Global: All ports are set globally.	Global
PCI-E Completion Timeout Val- ue	This parameter cannot be set if PCI-E Completion Timeout is set to Per-Port . Select the PCIe timeout period.	260ms to 900ms
PCI-E ASPM Support (Global)	 Select the PCIe dynamic power management mode. Options: Disabled: disables PCIe Dynamic Power Management. L1 Only: enters L1 mode only. 	Disabled
PCIe 10-bit Tag Support	 Enables or disables the PCIe 10-bit tag. Options: Disabled: disables the PCIe 10-bit tag in all PCIe root ports. Auto: uses the default hardware setting. 	Auto
PCIe Max Read Request Size	In the PCI hierarchy, select the maximum read re- quest size and distinguish locations.	4096B
PCle PTM Support	 Enables or disables the PCIe PTM. Options: Disabled: disables the PTM feature in the PCI hierarchy. Auto: uses the default hardware setting. 	Auto
PCIe ENQCMD/ENQCMDS	 Enables or disables PCIe enqueue requests. Options: No: rejects PCIe enqueue requests. Yes: accepts PCIe enqueue requests. 	NO

3.4.5.1 Socket0 Configuration

Figure 3-96 shows the Socket0 Configuration screen.

Figure 3-96 Socket0 Configuration Screen

	Aptio Setup –	AMI Socket Con	figuration
Port 1 Subsystem Mode Port 2 Subsystem Mode Port 3 Subsystem Mode Port 4 Subsystem Mode Port 5 Subsystem Mode Port 0 Subsystem Mode Port 7 Subsystem Mode Port 7 Subsystem Mode Port DMI Port DMI Port 1A Port 1C	[Protocol Auto Negotiation] [Protocol Auto Negotiation] [Protocol Auto Negotiation] [Protocol Auto Negotiation] [Protocol Auto Negotiation] [Protocol Auto Negotiation] [Protocol Auto Negotiation] [Protocol Auto Negotiation] [Protocol Auto		Selects PCIe Subsystem Mode for selected slot(s) Gen4: Gen4 controller only Gen5: Gen5 with or without mix mode Auto: Auto select *+: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the Socket0 Configuration screen, refer to Table 3-67.

Parameter	Description	
Port 1 Subsystem Mode	 Configures the PCIe subsystem mode for port 1. Options: Gen5: 5th generation controller with or without mix mode. Protocol Auto Negotiation: proto- 	Protocol Auto Negotiation
	 col auto-negotiation. Gen4 Only: 4th generation controller only. Force CXL: forcibly uses CXL mode. There is no training discovery. The attached device must also support this mode. 	

Table 3-67 Parameter Descriptions for the Socket0 Configuration Screen

Parameter	Description	
Port 2 Subsystem Mode	 Configures the PCIe subsystem mode for port 2. Options: Gen5: 5th generation controller with or without mix mode. Protocol Auto Negotiation: proto- col auto-negotiation. Gen4 Only: 4th generation con- troller only. Force CXL: forcibly uses CXL mode. There is no training dis- covery. The attached device must also support this mode. 	Protocol Auto Negotiation
Port 3 Subsystem Mode	 Configures the PCIe subsystem mode for port 3. Options: Gen5: 5th generation controller with or without mix mode. Protocol Auto Negotiation: proto- col auto-negotiation. Gen4 Only: 4th generation con- troller only. Force CXL: forcibly uses CXL mode. There is no training dis- covery. The attached device must also support this mode. 	Protocol Auto Negotiation
Port 4 Subsystem Mode	 Configures the PCIe subsystem mode for port 4. Options: Gen5: 5th generation controller with or without mix mode. Protocol Auto Negotiation: protocol auto-negotiation. Gen4 Only: 4th generation controller only. Force CXL: forcibly uses CXL mode. There is no training discovery. The attached device must also support this mode. 	Protocol Auto Negotiation
Port 5 Subsystem Mode	Configures the PCIe subsystem mode for port 5.	Protocol Auto Negotiation

Parameter	Description	
	 Options: Gen5: 5th generation controller with or without mix mode. Protocol Auto Negotiation: protocol auto-negotiation. Gen4 Only: 4th generation controller only. Force CXL: forcibly uses CXL mode. There is no training discovery. The attached device must also support this mode. 	
Port 0 Subsystem Mode	 Configures the PCIe subsystem mode for port 0. Options: Gen5: 5th generation controller with or without mix mode. Protocol Auto Negotiation: proto- col auto-negotiation. Gen4 Only: 4th generation con- troller only. Force CXL: forcibly uses CXL mode. There is no training dis- covery. The attached device must also support this mode. 	Protocol Auto Negotiation
Port 7 Subsystem Mode	 Configures the PCIe subsystem mode for port 7. Options: Gen5: 5th generation controller with or without mix mode. Protocol Auto Negotiation: proto- col auto-negotiation. Gen4 Only: 4th generation con- troller only. Force CXL: forcibly uses CXL mode. There is no training dis- covery. The attached device must also support this mode. 	Protocol Auto Negotiation
TraceHub Configuration Menu	Sets TraceHub parameters.	-
Port DMI	Provides access to detailed port DMI configurations, see Figure 3-97.	-

Parameter	Description	
Port 1A	Provides access to detailed port 1A configurations, as shown in Figure 3-98 through Figure 3-99.	-
Port 2A	Provides access to detailed port 2A configurations, which are similar to detailed port 1A configurations.	-
Port 2E	Provides access to detailed port 2E configurations, which are similar to detailed port 1A configurations.	-
Port 3A	Provides access to detailed port 3A configurations, which are similar to detailed port 1A configurations.	-
Port 3E	Provides access to detailed port 3E configurations, which are similar to detailed port 1A configurations.	-
Port 4A	Provides access to detailed port 4A configurations, which are similar to detailed port 1A configurations.	-
Port 4C	Provides access to detailed port 4C configurations, which are similar to detailed port 1A configurations.	-
Port 4E	Provides access to detailed port 4E configurations, which are similar to detailed port 1A configurations.	-
Port 4G	Provides access to detailed port 4G configurations, which are similar to detailed port 1A configurations.	-
Port 5A	Provides access to detailed port 5A configurations, which are similar to detailed port 1A configurations.	-
Port 5C	Provides access to detailed port 5C configurations, which are similar to detailed port 1A configurations.	-
Port 5E	Provides access to detailed port 5E configurations, which are similar to detailed port 1A configurations.	-

Parameter	Description	
Port 5G	Provides access to detailed port 5G configurations, which are similar to detailed port 1A configurations.	-

Figure 3-97 Port DMI Screen

Aptio Setup — AMI Socket Configuration		
Port DMI		- Choose Link Speed for this PCIe port
Link Speed PCI-E Port DeEmphasis PCI-E Port Link Status PCI-E Port Link Max PCI-E Port Link Speed PCI-E Port Clocking Data Link Feature Exchange DMI Port MPSS PCI-E Completion Timeout Value PCI-E ASPM Support	[Auto] [-6.0 dB] Linked as x4 Max Width x8 Gen 3 (8.0 GT/s) [Common] [Enabled] [Auto] [260ms to 900ms] [Auto]	<pre> ++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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For a description of the parameters on the **Port DMI** screen, refer to Table 3-68.

Parameter	Description	Default
Link Speed	Select a link speed.	Auto
	Options:	
	Auto	
	• Gen 1 (2.5 GT/s)	
	• Gen 2 (5 GT/s)	
	• Gen 3 (8 GT/s)	
	• Gen 4 (16 GT/s)	
PCI-E Port DeEmphasis	Sets the PCIe port de-emphasis level.	-6.0 dB
	Options:	
	• -6.0 dB	

Table 3-68 Parameter Descriptions for the Port DMI Screen

Parameter	Description	Default
	• -3.5 dB	
PCI-E Port Link Status	Displays the current PCIe port link status.	-
PCI-E Port Link Max	Displays the maximum bandwidth of the PCIe port link.	-
PCI-E Port Link Speed	Displays the PCIe port link speed.	-
PCI-E Port Clocking	Sets the port clock through LNKCON[6]. Options: • Distinct • Common	Common
Data Link Feature Exchange	 Enables or disables the data link feature at the DLF- CAP register. Options: Enabled: enables the data link feature. Disabled: disables the data link feature. 	Enabled
DMI Port MPSS	Select the DMI Port MPSS. Options: • 128B • 256B • Auto: uses the default hardware setting.	Auto
PCI-E Completion Timeout Val- ue	Select the PCIe timeout period. Options: 50us to 50ms 16ms to 55ms 65ms to 210ms 260ms to 900ms 1s to 3.5s Disabled	260ms to 900ms
PCI-E ASPM Support	 Disabled: disables PCIe ASPM support. Options: Disabled: disables PCIe ASPM support. Auto: uses the default hardware setting. 	Auto

Figure 3-98 Port 1A Screen—1

Aptio Setup – AMI Socket Configuration		
Port 1A PCI-E Port Hot Plug Capable Surprise Hot Plug Capable PCI-E Port Link Disable Link Speed PCI-E Port DeEmphasis PCI-E Port DeEmphasis PCI-E Port Link Status PCI-E Port Link Max PCI-E Port Link Speed PCI-E Port Clocking Data Link Feature Exchange PCI-E Port MPSS	[Auto] [Disabled] [Disabled] [No] [Auto] [-6.0 dB] Link Did Not Train Max Width x4 Link Did Not Train [Common] [Enabled] [Auto]	In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Enable/Disable is used • ++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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Figure 3-99 Port 1A Screen—2

Aptio Setup – AMI Socket Configuration		
Surprise Hot Plug Capable PCI-E Port Link Disable Link Speed PCI-E Port DeEmphasis PCI-E Port Link Status PCI-E Port Link Max PCI-E Port Link Speed PCI-E Port Clocking Data Link Feature Exchange PCI-E Port MPSS PCI-E Completion Timeout Value PCI-E ASPM Support PCI= 10-bit Tag Support	[Disabled] [No] [Auto] [-6.0 dB] Link Did Not Train Max Width x4 Link Did Not Train [Common] [Enabled] [Auto] [260ms to 900ms] [Disabled] [Auto]	 'Disable' option can disable PCIe 10-bit Tag Requester support in a PCIe root port hierarchy. 'Auto' keeps hardware default. Advanced user may use 'Force Enable' option **: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
CONVERSION OF A DESIGN OF A	to the states store as a second state of a state of the second state of the second state of the second state of	

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For a description of the parameters on the **Port 1A** screen, refer to Table 3-69.

Parameter	Description	Default
PCI-E Port	 Sets whether to enable the PCIe port. Options: Auto: deletes the EXP port. Yes: enables the PCIe port. No: disables PCIe ports. 	Auto
Hot Plug Capable	 Enables or disables hot swapping. Options: Enabled: enables hot swapping. Disabled: disables hot swapping. Auto: enables hot swapping. 	Disabled
Surprise Hot Plug capable	 Enables or disables hot swapping without any notification when the device is being used. Options: Enabled: enables hot swapping without any notification when the device is being used. 	Disabled

Table 3-69 Parameter Descriptions for the Port 1A Screen

Parameter	Description	Default
	• Disabled: disables hot swapping without any notification when the device is being used.	
PCI-E Port Link Disable	 Sets whether to enable the shutdown of the PCIe port link. Options: Yes: enables the shutdown of the PCIe port link. No: disables the shutdown of the PCIe port link. 	No
Link Speed	Sets the link speed. Options: • Auto • Gen 1 (2.5 GT/s) • Gen 2 (5 GT/s) • Gen 3 (8 GT/s) • Gen 4 (16 GT/s) • Gen 5 (32 GT/s)	Auto
PCI-E Port DeEmphasis	Sets the PCIe port de-emphasis level. Options: • -6.0 dB • -3.5 dB	-6.0 dB
PCI-E Port Link Status	Displays the current PCIe port link status.	-
PCI-E Port Link Max	Displays the maximum bandwidth of the PCIe port link.	-
PCI-E Port Link Speed	Displays the PCIe port link speed.	-
PCI-E Port Clocking	Sets the port clock through LNKCON[6]. Options: • Distinct • Common	Common
Data Link Feature Exchange	 Enables or disables data link feature exchange at the DLFCAP register. Options: Enabled: enables data link feature exchange. Disabled: disables the data link feature. 	Enabled
PCI-E Port MPSS	Sets the PCIe Port MPSS. Options: • 128B • 256B • 512B • Auto: uses the default hardware setting.	Auto

Parameter	Description	Default
PCI-E Completion Timeout Val- ue	Sets the PCIe timeout period.	260ms to 900ms
PCI-E ASPM Support	Configures PCIe ASPM support. Options: • Disabled: disables PCIe ASPM support. • Auto: uses the default hardware setting.	Auto
PCIe 10-bit Tag Support	 Configures the PCIe 10-bit tag on PCIe root ports. Options: Disabled: disables the PCIe 10-bit tag on PCIe root ports. Auto: uses the default hardware setting. Force Enable: forcibly enables the PCIe 10-bit tag on PCIe root ports. 	Auto

3.4.5.2 IOAT Configuration

Figure 3-100 shows the **IOAT Configuration** screen.

Figure 3-100 IOAT Configuration Screen

Aptio Setup – AMI Socket Configuration		
Relaxed Ordering	[No]	Relaxed Ordering Enable/Disable ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **IOAT Configuration** screen, refer to Table 3-70.

Parameter	Description	Default
Relaxed Ordering	Enables or disables the Relaxed Ordering feature. Options: • Yes: enables the Relaxed Ordering feature.	No
	• No: disables the Relaxed Ordering feature.	

Table 3-70 Parameter Descriptions for the IOAT Configuration Screen

3.4.5.3 Intel VT for Directed I/O (VT-d)

Figure 3-101through Figure 3-102 show the Intel VT for Directed I/O (VT-d) screen.

Figure 3-101 Intel VT for Directed I/O (VT-d) Screen-1

Aptio Setup – AMI Socket Configuration		
Intel VT for Directed I	:/O (VT-d)	 Enable/Disable Intel Virtualization Technology for Directed
Intel VT for Directed I∕O	[Enabled]	I/O (VT-d) by reporting the I/O device
PRS Capability for PCIe	[Auto]	assignment to VMM through DMAR ACPI
Opt-Out Illegal MSI Mitigation	[Disabled]	Tables.Disable VT-d, 🔻
DMA Control Opt-In Flag	[Disabled]	++: Select Screen
Interrupt Remapping	[Auto]	↑↓: Select Item
X2APIC Opt-Out	[Disabled]	Enter: Select
PUIE AUSUIL	[Disabled]	+/-: Change Uption.
Source Validation	[DIS90160]	E1: General Help
Translation	[Disabled]	F2: Previous Values
Blocking		♥ F3: Optimized Defaults F4: Save & Exit
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Figure 3-102 Intel VT for Directed I/O (VT-d) Screen-2

Aptio Setup – AMI Socket Configuration			
Opt-Out Illegal MSI	[Disabled]	Enable/Disable overwrite of PCL Access	
DMA Control Opt-In Flag	[Disabled]	Control Services Control register in PCI	
Interrupt Remapping	[Auto]	root ports.	
X2APIC Opt-Out	[Disabled]		
PCIe ACSCTL	[Disabled]		
Source	[Disabled]		
Validation			
Translation	[Disabled]		
Blocking		++: Select Screen	
P2P Request	[Enabled]	↑↓: Select Item	
Redirect		Enter: Select	
P2P Completion	[Enabled]	+/-: Change Option.	
Redirect		K/M: Scroll Help Area	
Upstream Forwarding	[Enabled]	F1: General Help	
Enable		F2: Previous Values	
		▼ F3: Optimized Defaults	
		F4: Save & Exit	
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For a description of the parameters on the **Intel VT for Directed I/O (VT-d)** screen, refer to Table 3-71.

Parameter	Description	Default
Intel VT for Directed I/O	Enables or disables the Intel virtualization technology	Enabled
	for directed I/O.	
	Options:	
	• Enabled: enables the Intel virtualization technolo-	
	gy for directed I/O.	
	• Disabled: disables the Intel virtualization technolo-	
	gy for directed I/O.	
	When this parameter is set to Disabled , the fol-	
	lowing parameters are not configurable:	
	→ DMA Control Opt-In Flag	
	→ Interrupt Remapping	
	→ X2APIC Opt Out	

Enables or disables support for the page request ser-

vice on discrete PCIe devices. This function is only

Table 3-71 Parameter Des	scriptions for t	the Intel VT for	Directed I/O	(VT-d) Screen
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PRS Capability for PCIe

Auto

Parameter	Description	Default
	 recommended to test whether the PCIe cards of the device supports the PRS. Options: Enabled: enables support for the page request service on discrete PCIe devices. When this parameter is set to Enabled, the platform may be suspended. Disabled: disables the page request service function on discrete PCIe devices. Auto: automatic mode. 	
Opt-Out Illegal MSI Mitigation	 Enables or disables the optional exit of the illegal 0x FEE platform mitigation policy. Enabled: enables the optional exit of the illegal 0x FEE platform mitigation policy. Disabled: disables the optional exit of the illegal 0x FEE platform mitigation policy. 	Disabled
DMA Control Opt-In Flag	 Enables or disables the DMA control Opt-In flag. Options: Enabled: enables the DMA control Opt-In flag. Disabled: disables the DMA control Opt-In flag. 	Disabled
Interrupt Remapping	 Enables or disables interrupt remapping. Options: Enabled: enables interrupt remapping. After this feature is enabled, the management programs and OSs can use the Intel virtualization technology to provide interrupt remapping for the directed I/O device. Disabled: disables interrupt remapping. Auto: Set this parameter to Auto if Intel VT for Directed I/O is set to Auto. 	Auto
X2APIC Opt Out	 Enables or disables the X2APIC Opt Out feature. Options: Enabled: enables the X2APIC Opt Out feature. Disabled: disables the X2APIC Opt Out feature. 	Disabled
PCIe ACSCTL	 Enables or disables the overriding of the ACS control register on PCIe root ports. Options: Enabled: enables the overriding of the ACS control register on PCIe root ports. 	Disabled

Parameter	Description	Default
	• Disabled: disables the overriding of the ACS con- trol register on PCIe root ports.	
Source Validation	 Enables or disables resource validation. Options: Enabled: enables resource validation. When this parameter is set to Enabled, the component validates the bus number in the requester ID of an upstream request. Disabled: disables resource validation. 	Disabled
Translation Blocking	 Enables or disables translation blocking. Options: Enabled: enables translation blocking. After this feature is enabled, the component blocks all upstream memory requests whose AT field is not set to the default value. Disabled: disables translation blocking. 	Disabled
P2P Request Redirect	 Enables or disables P2P request redirection. Options: Enabled: enables P2P request redirection. After this feature is enabled, the system determines when the component redirects P2P requests to the upstream. Disabled: disables P2P request redirection. 	Enabled
P2P Completion Redirect	 Enables or disables P2P completion redirection. Options: Enabled: enables P2P completion redirection. After this feature is enabled, the system determines when the component redirects P2P completion to the upstream. Disabled: disables P2P completion redirection. 	Enabled
Upstream Forwarding Enable	 Enables or disables upstream forwarding. Options: Enabled: enables upstream forwarding. After this feature is enabled, the component forwards to the upstream any requests it receives or completion TLPs, which are redirected to the upstream by lower-level components in the hierarchy. Disabled: disables upstream forwarding. 	Enabled

3.4.5.4 Intel VMD technology

Figure 3-103 shows the Intel VMD technology screen.

Figure 3-103 Intel VMD Technology Screen

	Aptio Setup — AMI Socket Configuration			
I -	ntel VMD technology	Enable/Disable Intel® Volume Management Device Technology.		
I I S I S	ntel® VMD Support [Disabled] ntel VMD for Volume Management Device o ocket O ntel VMD for Volume Management Device o ocket 1	on Jn		
		<pre>→+: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>		
	Version 2.22.1287 Copyr	ight (C) 2023 AMI		

For a description of the parameters on the Intel VMD technology screen, refer to Table 3-72.

Parameter	Description	Default
Intel VMD Support	 Enables or disables the VMD technology. Enabled: enables the VMD technology. Disabled: disables the VMD technology. 	Disabled
Intel VMD for Volume Manage- ment Device on Socket 0	VMD configurations of socket 0, see Figure 3-104.	-
Intel VMD for Volume Manage- ment Device on Socket 1	VMD configurations of socket 1, which is similar to those of socket 0.	-

Table 3-72 Parameter	Descriptions	for the Intel VMD	Technology Screen
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Figure 3-104 Intel VMD Configurations on Socket 0

Aptio Setup – AMI Socket Configuration			
	[Disabled]	▲ Enable/Disable VMD in this Stack.	
VMD Config for IOU 1 Enable/Disable VMD for Socket0 Stack2	[Disabled]		
VMD Config for IOU 2 Enable/Disable VMD for Socket0 Stack3	[Disabled]	++: Select Screen 11: Select Item Enter: Select	
VMD Config for IOU 3 Enable/Disable VMD for SocketO Stack4	[Disabled]	+/-: Change Opt. K/M: Scroll Help Area F1: General Help	
VMD Config for IOU 4		▼ F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **Socket 0 VMD** screen, refer to Table 3-73.

	Table 3-73	Parameter	Descriptions	s for the S	Socket 0 VM	D Screen
--	------------	-----------	--------------	-------------	-------------	----------

Parameter	Description	Default
Enable/Disable VMD for Sock- et0 Stack1	 Enables or disables the VMD technology for Socket0 Stack1. Enabled: enables the VMD technology. For Disabled: disables the VMD technology. 	Disabled
Enable/Disable VMD for Sock- et0 Stack2	 Enables or disables the VMD technology for Socket0 Stack2. Enabled: enables the VMD technology. Disabled: disables the VMD technology. 	Disabled
Enable/Disable VMD for Sock- et0 Stack3	 Enables or disables the VMD technology for Socket0 Stack3. Enabled: enables the VMD technology. Disabled: disables the VMD technology. 	Disabled
Enable/Disable VMD for Sock- et0 Stack4	Enables or disables the VMD technology for Socket0Stack4.Enabled: enables the VMD technology.	Disabled

Parameter	Description	Default
	Disabled: disables the VMD technology.	
Enable/Disable VMD for Sock- et0 Stack5	 Enables or disables the VMD technology for Socket0 Stack5. Enabled: enables the VMD technology. Disabled: disables the VMD technology. 	Disabled
Enable/Disable VMD for Sock- et0 Stack6	 Enables or disables the VMD technology for Socket0 Stack6. Enabled: enables the VMD technology. Disabled: disables the VMD technology. 	Disabled

3.4.5.5 IIO DFX Configuration

Figure 3-105 shows the **IIO DFX Configuration** screen.

Figure 3-105 IIO DFX Configuration Screen

		Aptio Setup	– AMI Socket Con	figuration
Γ	IIO DFX Configuration			
14 AC	Socket0 Configuration Socket1 Configuration EV DFX Features Disable BIOS Done LTSSM Logger Jitter Logger IIO RC flow IIO PCIE link training Skip Port Personality Lock CXL Header Bypass DINO Native PCIe Trace Hub Allocation Flow Socket 0, Device Hide Me Socket 1, Device Hide Me	[Disabled] [Disabled] [No] [No] [Auto] [Auto] [Disabled] [Disabled] [Enabled] [Enabled] nu		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
	Version	2.22.1290 Copyr	ight (C) 20	24 AMI AB

For a description of the parameters on the IIO DFX Configuration screen, refer to Table 3-74.

Table 3-74 Parameter Descriptions for the IIO DFX Configuration Screen

Parameter	Description	Default
Socket0 Configuration	Socket0 configuration.	-

Parameter	Description	Default
	Press the Enter key. The Socket0 Configuration screen is displayed, as shown in Figure 3-106.	
Socket1 Configuration	Socket1 configuration, which is similar to the Socket0 configu- ration.	-
EV DFX Features	 Enables or disables exposure of IIO DFX and other CPU devices (such as PMON). Options: Enabled: enables exposure of IIO DFX and other CPU devices (such as PMON). Disabled: disables exposure of IIO DFX and other CPU devices (such as PMON). 	Disabled
Disable BIOS Done	 Enables or disables the boot initialization completion notification sent to processors through MSR 151H. This parameter does not need to be set. Options: Enabled: enables the boot initialization completion notification sent to processors through MSR 151H. Disabled: disables the boot initialization completion notification sent to processors through MSR 151H. 	Disabled
LTSSM Logger	 Enables or disables the LTSSM logger for the PCIe feature. Options: Yes: enables the LTSSM logger for the PCIe feature. No: disables the LTSSM logger for the PCIe feature. 	No
Stop	Stop value of the LTSSM logger.	99
Speed	Speed value of the LTSSM logger. Options: • Gen 1 (2.5 GT/s) • Gen 2 (5 GT/s) • Gen 3 (8 GT/s)	Gen 1 (2.5GT/s)
Mask	Mask value of the LTSSM logger.	FF
Jitter Logger	 Enables or disables the Jitter logger for the PCle feature. Options: Yes: enables the Jitter logger for the PCle feature. No: disables the Jitter logger for the PCle feature. 	No
IIO RC flow	 Enables or disables the IIO RC flow. Options: Enabled: enables the IIO RC flow. Disabled: disables the IIO RC flow. Auto:enables the IIO RC flow. 	Auto

Parameter	Description	Default
IIO PCIE link training	 Enables or disables PCIe link training. Options: Enabled: enables PCIe link training. Disabled: disables PCIe link training. Auto. 	Auto
Skip Port Personality Lock	 Enables or disables the skipping of the port personality lock. Options: Enabled: enables the skipping of the port personality lock. When this parameter is set to Enabled, capability registers of PCI and DMI ports are not locked. Disabled: disables the skipping of the port personality lock. 	Disabled
CXL Header Bypass	 Enables or disables the CXL header bypass feature. Options: Enabled: enables the CXL header bypass feature. Disabled: disables the CXL header bypass feature. 	Disabled
DINO Native PCIe	 Enables or disables the native PCIe for the DINO device. Options: Enabled: enables the native PCIe for the DINO device. Disabled: disables the native PCIe for the DINO device. 	Enabled
Trace Hub Allocation Flow	 Enables or disables the flow for resource allocation for the Trace Hub. Options: Enabled: enables the flow for resource allocation for the Trace Hub. Disabled: disables the flow for resource allocation for the Trace Hub. 	Enabled
Socket 0, Device Hide Menu	Hidden menu for devices connected to Socket0. Press the Enter key. The Socket 0, Device Hide Menu screen is displayed, as shown in Figure 3-112.	-
Socket 1, Device Hide Menu	Hidden menu for devices connected to Socket1. This is similar to the hidden menu for devices connected to Socket0.	-

Figure 3-106 Socket0 Configuration Screen

	Aptio Setup – AMI Socket Configuration	
 MMID Poison control Intel VT-d Disable 0 Mask Port DMI Port 1A Port 1C Port 1E Port 2A Port 3A Port 3E Port 4C Port 4C Port 4G Port 5A Port 5C Port 5G 	++: Select Screen 1: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **Socket0 Configuration** screen, refer to Table 3-75.

Table 3-75	Socket0	Configuration	Parameter	Descriptions

Parameter	Description	Default
MMIO Poison control	MMIO poison control menu. Press the Enter key. The MMIO Poison control screen is displayed, as shown in Figure 3-107.	-
Intel VT-d Disable Mask	Disables the bitmap of VT-d engines for debugging or diagnostic purposes.	0
Port DMI	Detailed port DMI configurations, as shown in Figure 3-108 through Figure 3-109.	-
Port 1A	Detailed port 1A configurations, as shown in Figure 3-110 through Figure 3-111.	-
Port 2A	Detailed port 2A configurations, which are similar to detailed port 1A configurations.	-
Port 2E	Detailed port 2E configurations, which are similar to detailed port 1A configurations.	-

Parameter	Description	Default
Port 3A	Detailed port 3A configurations, which are similar to detailed port 1A configurations.	-
Port 3E	Detailed port 3E configurations, which are similar to detailed port 1A configurations.	-
Port 4A	Detailed port 4A configurations, which are similar to detailed port 1A configurations.	-
Port 4C	Detailed port 4C configurations, which are similar to detailed port 1A configurations.	-
Port 4E	Detailed port 4E configurations, which are similar to detailed port 1A configurations.	-
Port 4G	Detailed port 4G configurations, which are similar to detailed port 1A configurations.	-
Port 5A	Detailed port 5A configurations, which are similar to detailed port 1A configurations.	-
Port 5C	Detailed port 5C configurations, which are similar to detailed port 1A configurations.	-
Port 5E	Detailed port 5E configurations, which are similar to detailed port 1A configurations.	-
Port 5G	Detailed port 5G configurations, which are similar to detailed port 1A configurations.	-

Figure 3-107 MMIO Poison Control Screen

	Aptio Setup — A So	AMI ocket Configuration
Enable MMIO read cmpl poison for STACK_O Enable MMIO read cmpl poison for STACK_1 Enable MMIO read cmpl poison for STACK_2 Enable MMIO read cmpl poison for STACK_3 Enable MMIO read cmpl	[Disabled] [Disabled] [Disabled] [Disabled] [Disabled]	Enable/Disable MMIO read cmpl poison for STACK_O
Enable MMIO read cmpl poison for STACK_5	[Disabled]	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>

For a description of the parameters on MMIO Poison control screen, refer to Table 3-76.

Parameter	Description	Default
Enable MMIO read cmpl poison for STACK_0	 Enables or disables the poison feature for STACK_0 upon MMIO read completion. Options: Enabled: enables the poison feature for STACK_0 upon MMIO read completion. Disabled: disables the poison feature for STACK_0 upon MMIO read completion. 	Disabled
Enable MMIO read cmpl poison for STACK_1	 Enables or disables the poison feature for STACK_1 upon MMIO read completion. Options: Enabled: enables the poison feature for STACK_1 upon MMIO read completion. Enabled: disables the poison feature for STACK_1 upon MMIO read completion. 	Disabled

Table 3-76 Parameter Descriptions for the MMIO Poison Control Screen

Parameter	Description	Default
Enable MMIO read cmpl poison for STACK_2	 Enables or disables the poison feature for STACK_2 upon MMIO read completion. Options: Enabled: enables the poison feature for STACK_2 upon MMIO read completion. Enabled: disables the poison feature for STACK_2 upon MMIO read completion. 	Disabled
Enable MMIO read cmpl poison for STACK_3	 Enables or disables the poison feature for STACK_3 upon MMIO read completion. Options: Enabled: enables the poison feature for STACK_3 upon MMIO read completion. Enabled: disables the poison feature for STACK_3 upon MMIO read completion. 	Disabled
Enable MMIO read cmpl poison for STACK_4	 Enables or disables the poison feature for STACK_4 upon MMIO read completion. Options: Enabled: enables the poison feature for STACK_4 upon MMIO read completion. Enabled: disables the poison feature for STACK_4 upon MMIO read completion. 	Disabled
Enable MMIO read cmpl poison for STACK_5	 Enables or disables the poison feature for STACK_5 upon MMIO read completion. Options: Enabled: enables the poison feature for STACK_5 upon MMIO read completion. Enabled: disables the poison feature for STACK_5 upon MMIO read completion. 	Disabled

Figure 3-108 Port DMI Screen—1

Port DMI Gen4 Override mode [MgPhy] Ph2 TxEq Precursor 0 Ph2 TxEq Cursor 24 Ph2 TxEq Postcursor 0 Ph3 TxEq Precursor 11 Ph3 TxEq Postcursor 11 Gen3 Override mode [MgPhy] Ph2 TxEq Precursor 5 Ph2 TxEq Cursor 34 Ph2 TxEq Postcursor 9 Ph3 TxEq Precursor 11 Ph3 TxEq Postcursor 11 Ph3 TxEq Postcursor 11 Ph3 TxEq Postcursor 11	 Set specific TxEq overrides in PCIe features **: Select Screen *1: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

Figure 3-109 Port DMI Screen—2

Aptio Setup – AMI Socket Configuration			
Ph3 TxEq Postcursor Gen3 Override mode Ph2 TxEq Precursor Ph2 TxEq Cursor Ph2 TxEq Postcursor Ph3 TxEq Precursor Ph3 TxEq Postcursor Ph3 TxEq Postcursor	11 [MgPhy] 5 34 9 11 11	Enable Link Re-Train if connected at degraded speed or width	
DN Tx Preset Gen3 DN Tx Preset Gen4 DN Tx Preset Gen5 UP Tx Preset Gen4 Miscellaneous Configura	[Auto] [Auto] [Auto] [Auto] tion	<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help E2: Recuises Values</pre>	
Link Re-Train	[Disabled]	▼ F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **Port DMI** screen, refer to Table 3-77.

Table 3-77 Parameter Descriptions for the Port DMI Screen

Parameter	Description	Default
Gen4 Override mode	Configures specific TxEq override mode in PCIe features. Options: MgPhy Manual Manual Ph2 Test Card	MgPhy
Ph2 TxEq Precursor	Overrides the Ph2 TXEQ pre-cursor.	0
Ph2 TxEq Cursor	Overwrites the Ph2 TXEQ cursor.	24
Ph2 TxEq Postcursor	Overrides the Ph2 TXEQ post-cursor.	0
Ph3 TxEq Precursor	Overrides the Ph3 TXEQ pre-cursor.	11
Ph3 TxEq Postcursor	Overrides the Ph3 TXEQ post-cursor.	11
Gen3 Override mode	Gen3 Override mode.	MgPhy

Parameter	Description	Default
Ph2 TxEq Cursor	Overwrites the Ph2 TxEq cursor.	5
Ph2 TxEq Postcursor	Overrides the Ph2 TXEQ post-cursor.	34
Ph3 TxEq Precursor	Overrides the Ph3 TXEQ pre-cursor.	9
Ph3 TxEq Postcursor	Overrides the Ph3 TXEQ post-cursor.	11
DN TX Preset Gen3	Presets PCIe downstream Tx for Gen3. Options: Auto P0(-6.0)/0.0dB) P1(-3.5)/0.0 dB) P2(-4.5)/0.0 dB) P3(-2.5)/0.0 dB) P4(0.0)/0.0dB) P5(0.0)/2.0 dB) P5(0.0)/2.5 dB) P7(-6.0)/3.5 dB) P8(-3.5)/3.5dB) P9(0.0)/3.5 dB)	11
DN TX Preset Gen4	Presets PCIe downstream Tx for Gen4. Options: Auto P0(-6.0)/0.0dB) P1(-3.5)/0.0 dB) P2(-4.5)/0.0 dB) P3(-2.5)/0.0 dB) P4(0.0)/0.0dB) P5(0.0)/2.0 dB) P6(0.0)/2.5 dB) P7(-6.0)/3.5 dB) P8(-3.5)/3.5dB) P9(0.0)/3.5 dB)	Auto
DN TX Preset Gen5	Presets PCIe downstream Tx for Gen5. Options: Auto P0(-6.0)/0.0dB) P1(-3.5)/0.0 dB) P2(-4.5)/0.0 dB) P3(-2.5)/0.0 dB) P4(0.0)/0.0dB) P5(0.0)/2.0 dB) P6(0.0)/2.5 dB)	Auto

Parameter	Description	Default
	 P7(-6.0)/3.5 dB) P8(-3.5)/3.5dB) P9(0.0)/3.5 dB) 	
UP TX Preset Gen4	Presets PCIe upstream Tx for Gen4. Options: Auto P0(-6.0)/0.0dB) P1(-3.5)/0.0 dB) P2(-4.5)/0.0 dB) P3(-2.5)/0.0 dB) P4(0.0)/0.0dB) P5(0.0)/2.0 dB) P5(0.0)/2.5 dB) P7(-6.0)/3.5 dB) P8(-3.5)/3.5dB) P9(0.0)/3.5 dB)	Auto
Link Re-Train	 Enables or disables link retraining. Link retraining need to be enabled if the speed or bandwidth for connection is reduced. Options: Enabled: enables link retraining. Disabled: disables link retraining. 	Disabled

Figure 3-110 Port 1A Screen—1

Aptio Setup – AMI Socket Configuration			
Port 1A		▲ Dfx CXL Debug mode Enable or Disable	
CXL Debug mode Gen5 Override mode Ph2 TxEq Precursor Ph2 TxEq Cursor Ph2 TxEq Postcursor Ph3 TxEq Precursor Ph3 TxEq Postcursor Gen4 Override mode	[Disabled] [MgPhy] 0 52 0 11 11 [MgPhy]	++: Select Screen	
Ph2 TxEq Precursor Ph2 TxEq Cursor Ph2 TxEq Postcursor Ph3 TxEq Precursor Ph3 TxEq Postcursor Gen3 Override mode Ph2 TxEq Precursor	0 24 0 11 11 [MgPhy] 5	<pre>\$\$\$ \$</pre>	
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Figure 3-111 Port 1A Screen—2

Aptio Setup – AMI Socket Configuration			
Ph3 TxEq Postcursor Gen3 Override mode Ph2 TxEq Precursor Ph2 TxEq Cursor Ph2 TxEq Postcursor Ph3 TxEq Precursor Ph3 TxEq Postcursor Ph3 TxEq Postcursor	11 [MgPhy] 5 34 9 11 11	Enable Link Re-Train if connected at degraded speed or width	
DN Tx Preset Gen3 DN Tx Preset Gen4 DN Tx Preset Gen5 UP Tx Preset Gen4 Miscellaneous Configura	[Auto] [Auto] [Auto] [Auto] tion	++: Select Screen †↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help	
Link Re-Train	[Disabled]	F3: Optimized Defaults F4: Save & Exit	

For a description of the parameters on the **Port 1A** screen, refer to Table 3-78.

Table 3-78 Port 1A Parameter Descriptions

Parameter	Description	Default
CXL Debug mode	 Enables or disables CXL debugging mode. Options: Enabled: enables CXL debugging mode. Disabled: disables CXL debugging mode. 	Disabled
Gen5 Override mode	Configures specific TXEQ override mode in PCIe features. Options: • MgPhy • Manual • Manual Ph2 • Manual Ph3 • Test Card	MgPhy
Ph2 TxEq Precursor	Overrides the Ph2 TXEQ pre-cursor.	0
Ph2 TxEq Cursor	Overrides the Ph2 TXEQ cursor.	52

Parameter	Description	Default
Ph2 TxEq Postcursor	Overrides the Ph2 TXEQ post-cursor.	0
Ph3 TxEq Precursor	Overrides the Ph3 TXEQ pre-cursor.	11
Ph3 TxEq Postcursor	Overrides the Ph3 TXEQ post-cursor.	11
Gen4 Override mode	Configures specific TXEQ override mode in PCIe features. Options: MgPhy Manual Manual Ph2 Manual Ph3 Test Card	MgPhy
Ph2 TxEq Precursor	Overrides the Ph2 TXEQ pre-cursor.	0
Ph2 TxEq Cursor	Overrides the Ph2 TXEQ cursor.	24
Ph2 TxEq Postcursor	Overrides the Ph2 TXEQ post-cursor.	0
Ph3 TxEq Precursor	Overrides the Ph3 TXEQ pre-cursor.	11
Ph3 TxEq Postcursor	Overrides the Ph3 TXEQ post-cursor.	11
Gen3 Override mode	Configures specific TXEQ override mode in PCIe features. Options: • MgPhy • Manual • Manual Ph2 • Manual Ph3 • Test Card	MgPhy
Ph2 TxEq Precursor	Overrides the Ph2 TXEQ pre-cursor.	5
Ph2 TxEq Cursor	Overrides the Ph2 TXEQ cursor.	34
Ph2 TxEq Postcursor	Overrides the Ph2 TXEQ post-cursor.	9
Ph3 TxEq Precursor	Overrides the Ph3 TXEQ pre-cursor.	11
Ph3 TxEq Postcursor	Overrides the Ph3 TXEQ post-cursor.	11
DN TX Preset Gen3	Presets PCIe downstream Tx for Gen3. Options: • Auto • P0(-6.0)/0.0dB) • P1(-3.5)/0.0 dB) • P2(-4.5)/0.0 dB) • P3(-2.5)/0.0 dB)	Auto

Parameter	Description	Default
	 P4(0.0)/0.0dB) P5(0.0)/2.0 dB) P6(0.0)/2.5 dB) P7(-6.0)/3.5 dB) P8(-3.5)/3.5dB) P9(0.0)/3.5 dB) 	
DN TX Preset Gen4	Presets PCIe downstream Tx for Gen4. Options: • Auto • P0(-6.0)/0.0dB) • P1(-3.5)/0.0 dB) • P2(-4.5)/0.0 dB) • P3(-2.5)/0.0 dB) • P4(0.0)/0.0dB) • P5(0.0)/2.0 dB) • P5(0.0)/2.5 dB) • P7(-6.0)/3.5 dB) • P8(-3.5)/3.5dB) • P9(0.0)/3.5 dB)	Auto
DN TX Preset Gen5	Presets PCIe downstream Tx for Gen5. Options: • Auto • P0(-6.0)/0.0dB) • P1(-3.5)/0.0 dB) • P2(-4.5)/0.0 dB) • P3(-2.5)/0.0 dB) • P4(0.0)/0.0dB) • P5(0.0)/2.0 dB) • P6(0.0)/2.5 dB) • P7(-6.0)/3.5 dB) • P8(-3.5)/3.5dB) • P9(0.0)/3.5 dB)	Auto
UP TX Preset Gen4	Presets PCIe upstream Tx for Gen4. Options: • Auto • P0(-6.0)/0.0dB) • P1(-3.5)/0.0 dB) • P2(-4.5)/0.0 dB) • P3(-2.5)/0.0 dB) • P4(0.0)/0.0dB) • P5(0.0)/2.0 dB) • P6(0.0)/2.5 dB)	Auto

Parameter	Description	Default
	• P7(-6.0)/3.5 dB)	
	• P8(-3.5)/3.5dB)	
	• P9(0.0)/3.5 dB)	
Link Re-Train	Enables or disables link retraining. Link retrain-	Disabled
	ing need to be enabled if the speed or band-	
	width for connection is reduced.	
	Options:	
	 Enabled: enables link retraining. 	
	Disabled: disables link retraining.	

Figure 3-112 Socket 0, Device Hide Menu Screen

Aptio Setup — AMI Socket Configuration			
Uncore StackO DevhideO Uncore StackO Devhide1 Uncore StackO Devhide2 Uncore StackO Devhide3 Uncore StackO Devhide4 Uncore StackO Devhide5 Uncore StackO Devhide6 Uncore StackO Devhide7 Uncore Stack1 Devhide0 Uncore Stack1 Devhide1 Uncore Stack1 Devhide2 Uncore Stack1 Devhide3 Uncore Stack1 Devhide3 Uncore Stack1 Devhide3 Uncore Stack1 Devhide4 Uncore Stack1 Devhide5 Uncore Stack1 Devhide5 Uncore Stack1 Devhide5		If entire DEVHIDEx is 0, then register will not be modified. If any byte is non-zero, then the entire DEVHIDE register will be overridden with these values (thus overriding • ++: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **Socket 0**, **Device Hide Menu** screen, refer to Table 3-79.

Table 3-79 Parameter	Descriptions for the	Socket 0, Device	Hide Menu Screen
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Parameter	Description	Default
Uncore Stack0 De-	If the entire DEVHIDEx is 0, it is not modified. If	0
vhide0	any byte is non-zero, the entire DEVHIDE reg-	
	ister is overridden with these values (thus over-	

Parameter	Description	Default
	riding any other HIDE option in setup such as PCIe port hide questions).	
Uncore Stack0 De- vhide1	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack0 De- vhide2	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack0 De- vhide3	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack0 De- vhide4	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack0 De- vhide5	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack0 De- vhide6	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack0 De- vhide7	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack1 De- vhide0	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg-	0

Parameter	Description	Default
	ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	
Uncore Stack1 De- vhide1	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack1 De- vhide2	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack1 De- vhide3	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack1 De- vhide4	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack1 De- vhide5	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack1 De- vhide6	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0
Uncore Stack1 De- vhide7	If the entire DEVHIDEx is 0, it is not modified. If any byte is non-zero, the entire DEVHIDE reg- ister is overridden with these values (thus over- riding any other HIDE option in setup such as PCIe port hide questions).	0

3.4.6 Advanced Power Management Configuration

Figure 3-113 shows the Advanced Power Management Configuration screen.

Figure 3-113 Advanced Power Management Configuration Screen

Aptio Setup – AMI Socket Configuration				
Advanced Power Management Configuration Advanced Power [Custom] Management CPU P State Control Hardware PM State Control CPU C State Control Package C State Control CPU Thermal Management CPU - Advanced PM Tuning Package Current Config SOCKET RAPL Config PMax Detector Configuration ACPI Sx State Control Memory Power & Thermal Configuration	Select the power management features. ++: Select Screen 14: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit			
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For a description of the parameters on the **Advanced Power Management Configuration** screen, refer to Table 3-80.

Table 3-80 Parameter Descriptions for the Advanced Power Management Configuration

Screen

Parameter	Description	Default
Advanced Power	Sets the power policy.	Custom
Management	Options:	
	Performance: performance mode.	
	Efficient: energy-saving mode.	
	Custom: user-defined mode.	
	Latency-Performance: low latency mode.	
	Maximum-Performance: maximum performance mode.	
	Low Latency: low latency mode.	
	• Virtualization-Performance: virtualization performance mode.	
	Transactional Application Processing: transactional applica-	
	tion processing mode.	

Parameter	Description	Default
	 General Throughput Compute: general throughput computation mode. Advanced Reliability Mode: advanced reliability mode. Graphic Processing: graphic processing mode. Al Optimized: Al optimization mode. 	
CPU P State Con- trol	Sets CPU P-state control parameters. Enables or disables Turbo mode and EIST. For details, refer to 3.4.6.1 CPU P State Control.	-
Hardware PM State Control	Sets hardware PM state control parameters. For details, refer to 3.4.6.2 Hardware PM State Control.	-
CPU C State Con- trol	Sets CPU C-state control parameters. The purpose is to control the CPU power consumption in idle state. For details, refer to 3.4.6.3 CPU C State Control.	-
Package C State Control	Sets the Package C-state control parameters. For details, refer to 3.4.6.4 Package C State Control.	-
CPU Thermal Man- agement	Sets the CPU thermal management parameters. For details, refer to 3.4.6.5 CPU Thermal Management.	-
CPU-Advanced PM Tuning	Sets CPU advanced PM adjustment parameters. For details, refer to 3.4.6.6 CPU-Advanced PM Tuning.	-
Package Current Config	Sets the current Package parameters. For details, refer to 3.4.6.7 Package Current Config.	-
SOCKET RAPL Config	Sets SOCKET RAPL parameters. For details, refer to 3.4.6.8 SOCKET RAPL Config.	-
PMax Detector Con figuration	Sets PMax probe parameters. For details, refer to 3.4.6.9 PMAX Detector Configuration.	-
ACPI Sx State Con- trol	Sets ACPI Sx state control parameters. For details, refer to 3.4.6.10 ACPI Sx State Control.	-
Memory Power & Thermal Configura- tion	Sets memory power and thermal parameters. For details, refer to 3.4.6.11 Memory Power & Thermal Configu- ration.	-

3.4.6.1 CPU P State Control

Figure 3-114 through Figure 3-115 show the CPU P State Control screen.

Figure 3-114 CPU P State Control Screen—1

2				Ap1	tio Setup	- AMI Socket C	Configuration	
C	PU P	State Con	trol				AVX P1 level selection	
P I D	VX P1 ntel)ynami	SST-PP c SST-PP		[Nomir [Auto] [Disab	nal] 			
S L D	ST-PP evel)TS_Ma	Capable x	Core Count	P1 Ratio	Package TDP (W)			
-	0 3 4	Yes Yes No	052 032 000	25 31 00	350 350 000	086 092 000	<pre>++: Select Screen f↓: Select Item Enter: Select</pre>	
E	IST (IST P loot p inergy	Pstates) SD Functi erformanc Efficien	on e mode t Turbo	[Enab] [HW_AL [Max f [Enab]	Led] .L] Performanco Led]	2]	 +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values ▼F3: Optimized Defaults F4: Save & Exit 	
			Versio	n 2.22.(1290 Copyr	ight (C)	2024 AMI	AB

Figure 3-115 CPU P State Control Screen—2

		Ap	tio Setup	- AMI Socket	Configuration
SST-PP Level Capa DTS_Max	Core ble Count	P1 Ratio	Package TDP (W)		P-state change hysteresis time window
0 Ye 3 Ye 4 N	s 052 s 032 o 000	25 31 00	350 350 000	086 092 000	
EIST (Pstat EIST PSD Fu Boot perfor Energy Effi Turbo Mode CPU Flex Ra Override CPU Core F1 GPSS timer	es) nction mance mode cient Turbo tio ex Ratio	(Enab (HW_A) (Max (Enab (Enab (Disa 23 (500	led] LL] Performanc led] led] bled] us]	e]	 ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

AB

For a description of the parameters on the CPU P State Control screen, refer to Table 3-81.

Table 3-81 Parameter Descriptions for the CPU P State Control Screen

Parameter	Description	Default
AVX P1	 This parameter is displayed when EIST (Pstates) is set to Enabled. Sets the AVX P1 level. Options: Nominal Level 1 Level 2 	Nominal
Intel SST-PP	 This parameter is displayed when EIST (Pstates) is set to Enabled. Select the level that Intel SST-PP allows the user to select. Options: Auto Level 0 Level 3 Level 4 	Auto

Parameter	Description	Default
EIST (Pstates)	 Enables or disables the EIST feature. Options: Enabled: enables the EIST feature. Disabled: disables the EIST feature. 	Enabled
EIST PSD Function	 This parameter can be configured when EIST (Pstates) is set to Enabled. Sets the EIST PSD feature. Options: HW_ALL SW_ALL 	HW_ALL
Boot Performance Mode	 This parameter can be configured when EIST (Pstates) is set to Enabled. Select the boot performance mode. Options: Max Performance: maximum performance mode. Max Efficient: maximum efficient mode. Set by Intel Node Manager: The boot performance mode is controlled by the ME. 	Max Performance
Energy Efficient Turbo	 Enables or disables the energy efficient Turbo mode. Options: Enabled: enables energy efficient Turbo mode. Disabled: disables energy efficient Turbo mode. 	Enabled
Turbo Mode	 This parameter is displayed when EIST (Pstates) is set to Enabled. Enables or disables Turbo mode. Options: Enabled: enables Turbo mode. Disabled: disables Turbo mode. 	Enabled
CPU Flex Ratio Override	 Enables or disables the setting of the processor flex ratio. Options: Enabled: enables the setting of the processor flex ratio. Disabled: disables the setting of the processor flex ratio. 	Disabled
CPU Core Flex Ratio	Enter the processor flex ratio.	23
GPSS timer	Select the time window for P-state handover delay. Options: • 0 us	500 us



Parameter	Description	Default
	• 50 us	
	• 500 us	

3.4.6.2 Hardware PM State Control

Figure 3-116 shows the Hardware PM State Control screen.

Figure 3-116 Hardware PM State Control Screen

Aptio Setup – AMI Socket Configuration				
Hardware PM State Con Hardware P-States EPP Enable EPP profile Native ASPM	trol [Native Mode] [Enabled] [Balanced Performance] [Auto]	Disable: Hardware chooses a P-state based on OS Request (Legacy P-States) Native Mode:Hardware chooses a P-state based on OS guidance Out of Band **: Select Screen fl: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit		
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For a description of the parameters on the **Hardware PM State Control** screen, refer to Table 3-82.

Table 3-82 Parameter Descriptions for the Hardware PM State Control Screen

Parameter	Description	Default
Hardware P-States	Sets hardware P-states.	Disabled
	Options:	
	Native Mode: Hardware autonomously chooses a	
	P-state based on OS guidance.	
	Out of Band Mode: Hardware autonomously	
	chooses a P-state (no OS guidance).	

Parameter	Description	Default
	 Native Mode with No Legacy Support: Hardware autonomously chooses a P-state based on OS guidance (without Legacy support). Disabled: disables the hardware P-state feature. Hardware chooses a Legacy P-state based on an OS request. 	
EPP Enable	 This parameter cannot be set when Hardware P- States is set to Disabled. Enables or disables the EPP feature. Options: Enabled: enables the EPP feature. Disabled: disables the EPP feature. 	Enabled
EPP profile	 This parameter is displayed when Hardware P- States is set to Out of Band Mode. This parameter cannot be set when EPP Enable is set to Disabled. Sets the EPP mode. Options: Performance: performance mode. Balanced Performance: balanced performance mode. Balanced Power: balanced energy-saving mode. Power: power saving mode. 	Balanced Perfor- mance
Native ASPM	 Enables or disables the ASPM feature. Options: Enabled: enables the ASPM feature, which is controlled by the OS. Disabled: disables the ASPM feature. Auto: enables the ASPM feature, which is controlled by the BIOS. 	Auto

3.4.6.3 CPU C State Control

Figure 3-117 shows the CPU C State Control screen.

Figure 3-117 CPU C State Control Screen

Aptio Setup — AMI Socket Configuration			
CPU C State Control Monitor/MWAIT Support CPU C1 auto demotion CPU C1 auto undemotion CPU C6 report Enhanced Halt State (C1E) OS ACPI Cx	[Enabled] [Disabled] [Disabled] [Disabled] [Disabled] [ACPI C2]	Allows Monitor and MWAIT instructions, Auto maps to Enable.	
		<pre> ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>	
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For a description of the parameters on the CPU C State Control screen, refer to Table 3-83.

Table 3-83 Parameter Descriptions for the CPU C State Control Screen

Parameter	Description	Default
Monitor/MWAIT Support	Enables or disables Monitor/Mwait instructions.	Enabled
	Options:	
	Enabled: enables Monitor/Mwait instructions.	
	Disabled: disables Monitor/Mwait instructions.	
	Auto.	
	For some OSs, you must disable both Monitor/Mwait	
	and C State to completely disable C State.	
CPU C1 auto demotion	Sets whether to allow the CPUs to automatically de-	Disabled
	mote themselves to C1. The modification takes effect	
	after the system is restarted.	
	Options:	
	• Enabled: enables automatic CPU demotion to C1.	
	Disabled: disables automatic CPU demotion to	
	C1.	

Parameter	Description	Default
CPU C1 auto undemotion	 Sets whether to allow the CPUs to automatically undemote from C1. The modification takes effect after the system is restarted. Options: Enabled: enables the CPUs to automatically undemote from C1. Disabled: disables the automatic CPU undemotion from C1. 	Disabled
CPU C6 report	 Sets whether to report the C6 state to the OS. Options: Enabled: enables C6 state reporting to the OS. Disabled: disables C6 state reporting to the OS Auto: enables C6 state reporting to the OS. 	Disabled
Enhanced Halt State(C1E)	 Enables or disables the Enhanced Halt State feature. Options: Enabled: enables the Enhanced Halt State feature. When this parameter is set to Enabled, the OS can adjust the C state. Disabled: disables the Enhanced Halt State feature. 	Disabled
OS ACPI Cx	 Sets the mapping relationship between CPU C-states and ACPI C-states. Options: ACPI C2: ACPI C2 mode. ACPI C3: ACPI C3 mode. 	ACPI C2

3.4.6.4 Package C State Control

Figure 3-118 shows the Package C State Control screen.

Figure 3-118 Package C State Control Screen

Aptio Setup – AMI Socket Configuration			
Package C State Control Package C State Register Access Low Latency Mode PKG CST CONFIG CONTROL MSR Lock Dynamic L1	[CO/C1 state] [Disabled] [Disabled] [Enabled]	Package C State limit, the state Auto maps is program specific.	
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>	
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For a description of the parameters on the **Package C State Control** screen, refer to Table 3-84.

Table 3-84 Parameter	Descriptions	for the Package	C State	Control Screen
	Descriptions	for the ruonage	O Olulo	

Description	Default
Sets the Package C State limit.	C0/C1 state
Options:	
C2 state	
C6 (non Retention) state	
C6(Retention) state	
No Limit	
• Auto: automatically sets this parameter based on	
the CPU configuration:	
\rightarrow If SPR D0 CPUs are configured and no more	
than four CPUs are present, this parameter is	
set to C6(Retention) state.	
\rightarrow If EMR CPUs are configured and no more than	
two CPUs are present, this parameter is set to	
to C6(Retention) state.	
	 Description Sets the Package C State limit. Options: C2 state C6 (non Retention) state C6(Retention) state No Limit Auto: automatically sets this parameter based on the CPU configuration: → If SPR D0 CPUs are configured and no more than four CPUs are present, this parameter is set to C6(Retention) state. → If EMR CPUs are configured and no more than two CPUs are present, this parameter is set to to C6(Retention) state.

Parameter	Description	Default
	→ In other cases, this parameter is set to C0/C1 state.	
Register Access Low Latency Mode	 Enables or disables low latency mode for register access. Options: Enabled: enables low latency mode for register access. Disabled: disables low latency mode for register access. 	Disabled
PKG CST CONFIG CONTROL MSR Lock	 Enables or disables the MSR E2h lock. Options: Enabled: enables the MSR E2h lock. Disabled: disables the MSR E2h lock. 	Disabled
Dynamic L1	 Enables or disables the dynamic L1 feature. Options: Enabled: enables the dynamic L1 feature. Disabled: disables the dynamic L1 feature. 	Enabled

3.4.6.5 CPU Thermal Management

Figure 3-119 shows the CPU Thermal Management screen.

Figure 3-119 CPU Thermal Management Screen

Aptio Setup — AMI Socket Configuration			
CPU Thermal Management PROCHOT Modes Thermal Monitor Therm-Monitor-Status Filter Therm-Monitor-Status Filter Time Window	[Input-only] [Enabled] [Enabled] [1.1]	When a processor thermal sensor trips (either core), the PROCHOT# will be driven.	
		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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For a description of the parameters on the **CPU Thermal Management** screen, refer to Table 3-85.

Table 3-85 Parameter	Descriptions	for the CP	U Thermal	Management Screen	
	Booonpaono		o momuna	managomont ooroor	۰.

Parameter	Description	Default
PROCHOT Modes	 Enables or disables PROCHOT. Options: Input-only: enables PROCHOT when the processor thermal sensor trips (any core). Disabled: disables PROCHOT. 	Input-only
Thermal Monitor	 Enables or disables thermal sensor. Options: Enabled: enables thermal sensor. Disabled: disables thermal sensor. When this parameter is set to Disabled, the parameters below are hidden. 	Enabled
Therm-Monitor-Status Filter	Enables or disables the filter based on thermal sen- sor. Options:	Disabled

Parameter	Description	Default
	 Enabled: enables the filter. Disabled: disables the filter. When this parameter is set to Disabled, the parameters below are hidden. 	
Therm-Monitor-Status Filter Time Window	This parameter is displayed when Therm-Moni- tor-Status Filter is set to Enabled . Select the time window for the filter.	1.1

3.4.6.6 CPU-Advanced PM Tuning

Figure 3-120 shows the CPU-Advanced PM Tuning screen.

Figure 3-120 CPU-Advanced PM Tuning Screen

Aptio Setup – AMI Socket Configuration				
CPU – Advanced PM Tuning Uncore Freq Scaling Current Uncore Ratio	[Disabled] Range: 25 – 08	If disable, user can input Uncore Frequency.		
Uncore Min CLR Freq Uncore Max CLR Freq Uncore Freq RAPL	12 26 [Enabled]			
Energy Performance BIAS EET Mode Optimized Power Mode	[Coarse Grained Mode] [Disabled]	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>		
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For a description of the parameters on the **CPU-Advanced PM Tuning** screen, refer to Table 3-86.

Table 3-86 Parameter Descriptions for the CPU-Advanced PM Tuning Screen

Parameter	Description	Default
Uncore Freq Scaling	Enables or disables the frequency scaling of the non-	Enabled
	core parts of the CPU.	
Parameter	Description	Default
-------------------------	--	------------------------
	 Options: Enabled: enables the frequency scaling of the non-core parts of the CPU. Disabled: disables the frequency scaling of the non-core parts of the CPU. 	
Uncore Min CLR Freq	This parameter is displayed when Uncore Freq Scal- ing is set to Disabled . Enter the minimum CLR frequency of the non-core parts of the CPU.	12
Uncore Max CLR Freq	This parameter is displayed when Uncore Freq Scal- ing is set to Disabled . Enter the maximum CLR frequency of the non-core parts of the CPU.	26
Uncore Freq RAPL	 Enables or disables the non-core frequency RAPL. Options: Enabled: enables the non-core frequency RAPL. Disabled: disables the non-core frequency RAPL. 	Enabled
Energy Performance BIAS	Sets the energy performance BIAS parameters, see Figure 3-121.	-
EET Mode	Select EET mode. Options: • Coarse Grained Mode • Fine Grained Mode	Coarse Grained Mode
Optimized Power Mode	 Enables or disables optimized power mode. Options: Enabled: enables optimized power mode. Disabled: disables optimized power mode. 	Disabled

Figure 3-121 Energy Performance BIAS Screen

Aptio Setup – AMI Socket Configuration			
Energy Performance BIAS Power Performance Tuning ENERGY_PERF_BIAS_CFG mode Dynamic Loadline Switch Workload Configuration Averaging Time Window P0 TotalTimeThreshold Low P0 TotalTimeThreshold High	[BIOS Controls EF [Performance] [Enabled] [Balanced] 1A 28 3F	PB) Options decides who Controls EPB. In OS mode: IA32_ENERGY_PERF_BIAS is used In BIOS mode: ENERGY_PERF_BIAS_CONFIG is used **: Select Screen 11: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
Version	2.22.1290 Copyrig	(ht (C) 2024 AMI	

For a description of the parameters on the **Energy Performance BIAS** screen, refer to Table 3-87.

Table 3-87	Parameter	Descriptions	for the	Energy	Performance	BIAS Screen
	r ai ailielei	Descriptions	IUI LIIE	LIICIYY	F EITUITIAILLE	DIAS SCIECII

Parameter	Description	Default
Power Performance Tuning	 Select a power performance tuning policy. Options: OS Controls EPB BIOS Controls EPB PECI Controls EPB 	BIOS Controls EPB
ENERGY_PERF_BIAS_CFG mode	 This parameter can be configured only when Power Performance Tuning is set to BIOS Controls EPB. Select an energy-saving performance management mode. Options: Balanced Performance: balanced performance mode. Balanced Power: balanced energy-saving mode. Performance: performance mode. Power: power saving mode. 	Performance

Parameter	Description	Default
	Selecting any option will override the CPU ener- gy-saving performance tuning configuration of the OS.	
Dynamic Loadine Switch	 Enables or disables dynamic loading. Options: Enabled: enables dynamic loading. Disabled: disables dynamic loading. 	Enabled
Workload Configuration	Select a workload mode. Options: • Balanced: balanced mode. • I/O sensitive: I/O-sensitive mode.	Balanced
Averaging Time Window	Controls the average time of C0 and P0.	1A
P0 TotalTimeThreshold Low	Enter the low threshold for the total P0 time. When the total P0 time drops below this threshold, the HW switching mechanism disables the perfor- mance setting.	28
P0 TotalTimeThreshold High	Enter the high threshold for the total P0 time. When the total P0 time exceeds this threshold, the HW switching mechanism enables the performance setting.	3F

3.4.6.7 Package Current Config

Figure 3-122 shows the Package Current Config screen.

Figure 3-122 Package Current Config Screen

	Aptio Setup — AMI Socket	Configuration
Package Current Config Current Limit Override Current Limitation Lock Indication	[Enabled] 438 [Enabled]	Disable - Default, do nothing; Enable, override Current limitation in 1/8 A increments. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the Package Current Config screen, refer to Table 3-88

Parameter	Description	Default
Current Limit Override	 Enables or disables the current limit overriding feature. Options: Enabled: enables the current limit overriding feature. Disabled: disables the current limit overriding feature. 	Disabled
Current Limitation	This parameter is displayed when Current Limit Override is set to Enabled . Enter the current limit value. Unit: 1/8A.	438
Lock Indication	Sets whether to lock the current limit value.Options:Enabled: locks the current limit value.	Enabled

Table 3-88 Parameter Descriptions for the Package Current ConfigScreen

Parameter	Description	Default
	• Disabled: indicates that the current limit value is not locked.	

3.4.6.8 SOCKET RAPL Config

Figure 3-123 shows the SOCKET RAPL Config screen.

Figure 3-123 SOCKET RAPL Config Screen

Aptio Setup – AMI Socket Configuration		
SOCKET RAPL Config Package RAPL Limit MSR Lock PL1 Power Limit PL1 Time Window PL2 Power Limit PL2 Time Window	[Disabled] 0 [1] 0 [0.012]	Enable/Disable locking of Package RAPL Limit MSR and a reset will be required to unlock the register. ++: Select Screen t1: Select Item
		Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the SOCKET RAPL Config screen, refer to Table 3-89.

Parameter	Description	Default
Package RAPL Limit MSR Lock	 Enables or disables the Package RAPL Limit MSR Lock feature. Options: Enabled: enables or disables the Package RAPL Limit MSR Lock feature. Disabled: disables the Package RAPL Limit MSR Lock feature. 	Disabled

Table 3-89 Parameter Description for the Socket RAPL Config Screen

Parameter	Description	Default
PL1 Power Limit	Enter the PL1 power limit in watts, ranging from zero to the fused value. Value 0 indicates that the fused value is used.	0
PL1 Time Window	Select the PL1 time window.	1
PL2 Power Limit	Enter the PL2 power limit in watts, ranging from zero to the fused value. If the PL2 power limit is set to 0, it indicates that the fused value is used.	0
PL1 Time Window	Select the PL2 time window.	0.012

3.4.6.9 PMAX Detector Configuration

Figure 3-124 shows the PMAX Detector Configuration screen.

Figure 3-124 PMAX Detector Configuration Screen

Aptio Setup - AMI Socket Configuration			
PMax Detector Configura PMAX Config Sign PMAX Config Positive Offset	tion [Positive] O	Negative: Detector will trip on higher power consumption. Positive: Detector will trip on lower power consumption.	
		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
Versio	n 2.22.1287 Copyrig	ht (C) 2023 AMI AB	

For a description of the parameters on the **PMAX Detector Configuration** screen, refer to Table 3-90.

Parameter	Description	Default
PMAX Config Sign	 Sets how the PMax detector is triggered. Options: Negative: The detector is triggered at higher power. Positive: The detector is triggered at lower power. 	Positive
PMAX Config Positive Offset	This parameter is displayed when PMAX Config Sign is set to Positive . Enter a decimal offset factor, range: 0–31.	0
PMAX Config Negative Offset	This parameter is displayed when PMAX Config Sign is set to Negative . Enter a decimal offset factor, range: 0–6.	0

Table 3-90 Parameter Descriptions for the PMAX Detector Configuration Screen

3.4.6.10 ACPI Sx State Control

Figure 3-125 shows the ACPI Sx State Control screen.

Figure 3-125 ACPI Sx State Control Screen

Aptio Setup – AMI Socket Configuration					
ACPI Sx State Control		Control ACPI S4 State			
ACPI S4	[Enabled]	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area</pre>			
Versin	1 2 22 1287 Conveight (K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit			
VC/ 310	reterizor oopgright (AB			

For a description of the parameters on the ACPI Sx State Control screen, refer to Table 3-91.

Parameter	Description	Default		
ACPI S4	Enables or disables the ACPI S4 status.	Enabled		
	Options:			
	• Enabled: enables the ACPI S4 status.			
	Disabled: disables the ACPI S4 status.			

Table 3-91 Parameter Descriptions for the ACPI Sx State Control Screen

3.4.6.11 Memory Power & Thermal Configuration

Figure 3-126 shows the Memory Power & Thermal Configuration screen.

Figure 3-126 Memory Power & Thermal Configuration Screen

Aptio Setup – AMI Socket Configuration						
Memory Power & Thermal Memory Thermal Select Temperature Refresh Value Set Halfx Temperature Refresh	Configuration [Manual] O	Option to manually enter Temperature refresh value. Select Manual to enter value, Auto for default				
Set TWOx Temperature Refresh Set FOURx Temperature Refresh Dimm Temperature Offset Cooling Type MEMHOT INPUT MEMHOT OUTPUT MEMOTY Power Savings Ad	83 95 [Air cooling] [Disabled] [Enable only temphi] vanced Options	<pre> ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>				
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For a description of the parameters on the **Memory Power & Thermal Configuration** screen, refer to Table 3-92.

Table 3-92 Parameter Descriptions for the Memory Power & Thermal Configuration Screen

Parameter	Description	Default
Memory Thermal	Sets memory thermal parameters, see Figure 3-127.	-
Select Temperature Refresh Value	Sets the temperature refresh mode. Options: • Auto: automatic mode.	Auto

Parameter	Description		
	Manual: manual mode.		
Set Halfx Temperature Refresh	This parameter is displayed when Select Tempera- ture Refresh Value is set to Enabled . Enter the Halfx temperature refresh value.	0	
Set TWOx Temperature Re- fresh	This parameter is displayed when Select Tempera- ture Refresh Value is set to Enabled . Enter the TWOx temperature refresh value.	83	
Set FOURx Temperature Re- fresh	This parameter is displayed when Select Tempera- ture Refresh Value is set to Enabled . Enter the FOURx temperature refresh value.	95	
Dimm Temperature Offset Cooling Type	Select the type of DIMM temperature offset cooling system. Options: • Air cooling • Liquid cooling (tube) • Immersion cooling	Air cooling	
MEMHOT INPUT	 Enables or disables the MEMHOT input feature. Options: Enabled: enables the MEMHOT input feature. Disabled: disables the MEMHOT input feature. 	Disabled	
MEMHOT OUTPUT	 Enables or disables the MEMHOT output feature. Menu options: I Disabled I Enable only temphi I Enable only temphi & mid I Enable only temphi, mid and low Options: Disabled: disables the MEMHOT output feature. Enable only temphi: enables the MEMHOT output feature. Enable only temphi: enables the MEMHOT output feature and outputs only temphi. Enable only temphi∣: enables the MEMHOT output feature and outputs only temphi and mid. Enable only temphi, mid and low: enables the MEMHOT output feature and outputs only temphi and mid. 	Enable only temphi	
Memory Power Savings Ad- vanced Options	Sets the advanced memory power efficiency parame- ters, see Figure 3-128.	-	

Figure 3-127 Memory Thermal Screen

Aptio Setup — AMI Socket Configuration					
Throttling Mode MEMTRIP REPORTING	[CLTT] [Enabled]	Configure Thermal Throttling Mode. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit			
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For a description of the parameters on the Memory Thermal screen, refer to Table 3-93.

Tabla	2-02	Daramotor	Doscriu	ations	for the	Momory	Thormal	Scroon
I able	3-93	rarameter	Descrip	JUOIIS	ior une	wentory	' i nermai	Screen

Parameter	Description	Default
Throttling Mode	 Select thermal throttling mode. Options: CLTT: CLTT mode. CLTT with PECI: CLTT mode with PECI. Disabled: disables thermal throttling mode. 	CLTT
MEMTRIP REPORTING	 This parameter is hidden when Throttling Mode is set to Disabled. Enables or disables the MEMTRIP reporting feature. Options: Enabled: The processor contains all MEMTRIPs. Disabled: The processor ignores all MEMTRIPs. 	Enabled

Figure	3-128	Memory	Power	Savings	Advanced	Options	Screen
Iguie	3-120	WICHIOT Y	FOWEI	Javinys	Auvanceu	Options	SCIECII

Aptio Setup – AMI Socket Configuration					
CKE Throttling CKE Feature SREF Feature Self Refresh Feature PKGC SREF EN Data DLL Off EN	[Manual] [Manual] [Enabled] [Enabled]	Configures CKE Throttling			
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>			
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For a description of the parameters on the **Memory Power Savings Advanced Options** screen, refer to Table 3-94.

Parameter	Description	Default
CKE Throttling	Select the CKE Throttling mode.Options:Auto: automatic mode.Manual: manual mode.	Auto
CKE Feature	This parameter is displayed when CKE Throttling is set to Manual . Sets CKE parameters, see Figure 3-129.	-
SREF Feature	Select the self-refresh mode.Options:Auto: automatic mode.Manual: manual mode.	Auto
Self Refresh Feature	This parameter is displayed when SREF Feature is set to Manual . Sets self-refresh parameters, see Figure 3-130.	-

Parameter	Description	Default
PKGC SREF EN	 Enables or disables the PKGC self-refresh feature. Options: Enabled: enables the PKGC self-refresh feature. Disabled: disables the PKGC self-refresh feature. 	Enabled
Data DLL Off EN	 Enables or disables the data DLL feature in low power mode. Options: Enabled: enables the data DLL feature. Disabled: disables the data DLL feature. 	Enabled

Figure 3-129 CKE Feature Screen

Aptio Setup – AMI Socket Configuration		
CKE Idle Timer PPD	20 [Enabled]	PPD On/Off ++: Select Screen ++: Select Screen ++: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **CKE Feature** screen, refer to Table 3-95.

Table 3-95 Parameter Descriptions for the CKE Feature Screen

Parameter	Description	Default
CKE Idle Timer	Enter the time, in nanoseconds, for the CKE idle timer.	20
PPD	Enables or disables PPD mode.	Enabled

Parameter	Description	Default
	This mode is entered if all Banks in the DDR are pre-	
	charged when the CKE is not set. The power saving	
	effect of this mode is medium.	
	Options:	
	Enabled: enables PPD mode.	
	Disabled: Disable PPD mode.	

Figure 3-130 Self Refresh Feature Screen

Aptio Setup – AMI Socket Configuration		
CK in SR	[Pulled Low]	Configures CK behavior during self-refresh **: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
	Version 2.22.1287 Copyright	(C) 2023 AMI AB

For a description of the parameters on the Self Refresh Feature screen, refer to Table 3-96.

Parameter	Description	Default
CK in SR	Select a CK behavior during self-refresh.	Pulled Low
	Options:	
	• Driven	
	Pulled Low	

3.5 Server Mgmt

Figure 3-131 through Figure 3-132 show the Server Mgmt screen.

			and the second
BMC Self Test Status	PASSED	_	Enable or Disable FRB-2
BMC Device ID	32		timer(PUS) timer)
BMC Device Revision	81		
BMC Firmware Revision	04.22.02.01		
IPMI Version	2.0		
IPMI BMC Interface	KUS		
POST Timer	[Enabled]		
POST Timer timeout	15		
POST Timer Policy	[Power Cycle]		
OS Watchdog Timer	[Disabled]		++: Select Screen
OS Wtd Timer Timeout	20		↑↓: Select Item
OS Wtd Timer Policy	[Power Cycle]		Enter: Select
SOL	[Disabled]		+/−: Change Opt.
			K/M: Scroll Help Area
			F1: General Help
Restore on AC Power	[Last State]		F2: Previous Values
Loss			F3: Optimized Defaults
			F4: Save & Exit

Figure 3-131 Server Mgmt Screen—1

Figure 3-132 Server Mgmt Screen—2

Aptio Setup – AMI Main Advanced Platform Configuration Socket Configuration Server Mgmt ▶				
OS Watchdog Timer OS Wtd Timer Timeout OS Wtd Timer Policy SOL	[Disabled] 20 [Power Cycle] [Enabled]	▲ Press <enter> to Add, Delete and Set Privilege level for users.</enter>		
Restore on AC power loss Power Control Policy	[Power Off]			
Status		++: Select Screen		
Set BMC to default	[Enabled]	t↓: Select Item Enter: Select +/-: Change Option.		
 System Event Log View FRU information 		K/M: Scroll Help Area F1: General Help		
 BMC network configurati BMC User Settings 	on	F2: Previous Values F3: Optimized Defaults F4: Save & Exit		
Version 2.22.1287 Copyright (C) 2023 AMI				

For a description of the parameters on the Server Mgmt screen, refer to Table 3-97.

Table 3-97 Parameter Descriptions for the Server Mgmt Screen

Parameter	Description	Default
BMC Self Test Status	BMC self-test status.	PASSED
BMC Device ID	ID of the BMC device.	32
BMC Device Revision	Version number of the BMC device.	81
BMC Firmware Revision	Version number of the BMC firmware.	04.22.01.02
IPMI Version	Version number of the IPMI.	2.0
IPMI BMC Interface	IPMI BMC interface.	KCS
POST Timer	 Enables or disables the FRB-2 timer, that is, the POST timer. Options: Enabled: enables the POST timer. Disabled: disables the POST timer. 	Enabled
POST Timer timeout	Enter the timeout time of the POST timer. Range: 3– 30, unit: minutes.	15

Parameter	Description	Default
POST Timer Policy	 Sets how the system responds when the POST timer expires. Options: Do Nothing: No operation is performed. Reset: resets the timer. Power Down: powers off the server. Power Cycle: powers off the server and then powers it on again. 	Reset
OS Watchdog Timer	 Enables or disables the OS watchdog timer. Options: Enabled: enables the OS watchdog timer. After the parameter is set to Enabled, a BIOS timer is started. This timer can only be disabled by the management software after the OS is loaded. Disabled: disables the OS watchdog timer. 	Disabled
OS Wtd Timer Timeout	Enter the timeout time of the OS watchdog timer. Range: 3–30, unit: minutes.	20
OS Wtd Timer Policy	 Sets how the system responds when the OS watch-dog timer expires. Options: Do Nothing: No operation is performed. Reset: resets the timer. Power Down: powers off the server. Power Cycle: powers off the server and then powers it on again. 	Power Cycle
SOL	 Enables or disables the BMC SOL control feature. Options: Enabled: enables the BMC SOL control feature. Disabled: disables the BMC SOL control feature. 	Enabled
Restore on AC power loss	 Sets the system action to take upon AC power loss recovery. Options: Power Off: powers off the server. Last State: keeps the last state. Power On: powers on the server. 	Power On
Set BMC to default	 Enables or disables BMC default settings. Options: Enabled: enables BMC default settings. Disabled: disables BMC default settings. 	Disabled

Parameter	Description	Default
System Event Log	Sets system event log parameters. For details, refer to 3.5.1 System Event Log.	-
View FRU information	Views FRU information. For details, refer to 3.5.2 View FRU information.	-
BMC network configuration	Sets BMC network parameters. For details, refer to 3.5.3 BMC network configuration.	-
BMC User Settings	Sets BMC user parameters. For details, refer to 3.5.4 BMC User Settings.	-

3.5.1 System Event Log

Figure 3-133 shows System Event Log Screen.

Figure 3-133 System Event Log Screen

	Aptio Setup – AMI	Server Mgmt
Enabling/Disabling Option SEL Components	ns [Enabled]	Change this to enable or disable event logging for
Erasing Settings Erase SEL When SEL is Full	[No] [Do Nothing]	error/progress codes during boot.
Custom EFI Logging Option Log EFI Status Codes	ns [Error code]	
NOTE: All values changed here do not take effect until computer is restarted.		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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For a description of the parameters on the **System Event Log** screen, refer to Table 3-98.

Parameter	Description	Default
SEL Components	 Enables or disables event logging for error/progress codes during boot. Options: Enabled: enables event logging for error/progress codes. Disabled: disables event logging for error/progress codes. 	Enabled
Erase SEL	Select the option to erase the SEL. Options: No Yes, On next reset Yes, On every reset	No
When SEL is Full	Select the option to react when the SEL is full. Options: • Do Nothing • Erase Immediately • Delete Oldest Record	Do Nothing
Log EFI Status Codes	Select the option to record EFI status codes. Options: • Disabled • Both • Error code • Progress code	Error code

Table 3-98 Parameter Descriptions for the System Event Log Screen

3.5.2 View FRU information

Figure 3-134 shows the View FRU information screen.

Figure 3-134 View FRU Information Screen

	Aptio Setup – AMI	Server Mgm
FRU Information		
System Manufacturer System Product Name System Version System Serial Number Board Manufacturer Board Product Name Board Part Number Board Serial Number Chassis Manufacturer Chassis Part Number Chassis Serial Number SDR Version System UUID	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area</pre>
	-000063B4DDDC	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit

3.5.3 BMC network configuration

Figure 3-135 through Figure 3-140 show the BMC network configuration screen.

Figure 3-135 BMC Network Configuration Screen—1

	Aptio Setup – AMI	Server Mømt
BMC network configura	ion	▲ Select Sharelink Network Mode,When Fixed Mode,BIOS can not
Sharelink Network ************************************	[Enabled]	change ShareLink Mode
Dedicate Configuration Address source	[Unspecified]	++: Select Screen
Current Configuration Address source	StaticAddress	↑↓: Select Item Enter: Select
Station IP address	192.168.5.86	+/-: Change Opt.
Subnet mask	255.255.255.0	K/M: Scroll Help Area
Station MAC address	E6-F6-31-55-FB-51	F1: General Help
Router IP address	0.0.0.0	F2: Previous Values
Router MAC address	00-00-00-00-00	▼ F3: Optimized Defaults F4: Save & Exit
Version	2 22 1287 Conuright (C)	2023 AMT

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Figure 3-136 BMC Network Configuration Screen—2

	Aptio Setup – AMI	Server Mgmt	
ShareLink Configuration Address source Current Configuration Address source Station IP address Subnet mask Station MAC address Router IP address	[Unspecified] Unspecified 0.0.0.0 0.0.0.0 00-00-00-00-00 0.0.0.0 00-00-00-00-00	Enable or Disable Dedicate IPv6 Support	
Kouter MHC address ***********************************	(Enabled)	 ★+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	
Version 2.22.1287 Copyright (C) 2023 AMI AB			

Figure 3-137 BMC Network Configuration Screen—3

	Aptio Setup — AMI	Server Mant	
		Sei Vei Fignit	
Configuration Address source	[Unspecified]	▲ Select to configure LAN ▲ channel parameters	
Current Configuration Address source	DynamicAddressBmcDhcp	statically or dynamically(by BIOS or	
Station IPv6 address ::		BMC). Unspecified option will not modify any BMC network	
		parameters during BIOS 🔻	
Prefix Length O			
IPv6 address status	Disabled	++: Select Screen	
IPV6 DHCP HIgorithm	DHCFV6	Enter: Select	
Configuration Router	[Unspecified]	+/-: Change Opt.	
Current Router	DynamicAddressBmcDhcp	F1: General Help	
Configuration Address		F2: Previous Values	
source		▼ F3: Optimized Defaults F4: Save & Exit	
Version 2.22.1287 Copyright (C) 2023 AMI			
		AB	

Figure 3-138 BMC Network Configuration Screen—4

	Aptio Setup – AMI	
	40 80 	Server Mgmt
IPv6 Router IP Address ::		Enable or Disable ShareLink IPv6 Support
IPv6 Router Prefix Lengt 255	h	
IPv6 Router Prefix Value ::		
ShareLink		++: Select Screen ↑↓: Select Item
IPv6 Support	[Enabled]	Enter: Select
Configuration Address	[Unspecified]	K/M: Scroll Help Area
Current Configuration Address source	5	 F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version	2.22.1287 Copyright (C)	2023 AMI AB

Figure 3-139 BMC Network Configuration Screen—5

	Aptio Setup – AMI	Server Mgmt
Station IPv6 address - Prefix Length - IPv6 address status IPv6 DHCP Algorithm Configuration Router	- - [Unspecified]	▲ Select to configure LAN ▲ channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS ▼
Lan2 Address source Current Router Configuration Address source TPv6 Router TP Address	-	++: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area
- IPv6 Router Prefix Leng	th	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Versio	n 2.22.1287 Copyright (C) 2023 AMI

Figure 3-140 BMC Network Configuration Screen—6

	Aptio Setup – AMI	
	(c) (c)	Server Mgmt
IPv6 Router Prefix Leng -	th	Enable VLAN Support to specify the 802.1q VLAN TD
IPv6 Router Prefix Value –	3	10

ShareLink		<pre>++: Select Screen f↓: Select Item Enter: Select</pre>
VLAN Support	[Unspecified]	+/-: Change Opt.
Current Configuration Address source	-	K/M: Scroll Help Area F1: General Help
VLAN ID	H	F2: Previous Values
VLAN Priority		▼ F3: Optimized Defaults F4: Save & Exit
Versio	1 2.22.1287 Copyright	(C) 2023 AMI AB

For a description of the parameters on the **BMC network configuration** screen, refer to Table 3-99.

	Design to the second	C. U. DIAO N		• • • • • • •
Table 3-99 Parameter	Descriptions	tor the BMC Ne	etwork Configurati	on Screen

Parameter	Description	Default
Sharelink Network	 Enables or disables the shared network port. In fixed mode, the BIOS cannot enable or disable the shared network port. Options: Auto: automatic mode. Enabled: enables the shared network port. Disabled: disables the shared network port. 	Enabled
Configure IPv4 support		
Delicate		

Parameter	Description	Default
Configuration Address source	 Sets the configuration mode of the IPv4 address of the dedicated network interface: Options: Unspecified: undefined. In the BIOS phase, the setting is not changed based on the network parameter setting in the BMC. Static: static mode. You need to manually set the IP address. DynamicBmcDhcp: obtained dynamically through BMC DHCP. DynamicBmcNonDhcp: obtained dynamically through the BMC. 	Unspecified
Current Configuration Address source	Displays the currently configured address source.	StaticAddress
Station IP address	Enter the IP address of the dedicated net- work interface.	0.0.0.0
Subnet mask	Enter the subnet mask.	0.0.0.0
Station MAC address	Enter the MAC address of the dedicated network interface.	DE-AD-CC-F5-12-59
Router IP address	Enter the IP address of the gateway.	0.0.0.0
Router MAC address	Enter the MAC address of the gateway.	00-00-00-00-00
ShareLink		
Configuration Address source	 Sets the configuration mode of the IPv4 address of the shared network interface: Options: Unspecified: undefined. In the BIOS phase, the setting is not changed based on the network parameter set- ting in the BMC. Static: static mode. You need to manu- ally set the IP address. DynamicBmcDhcp: Obtained dynami- cally through BMC DHCP. DynamicBmcNonDhcp: obtained dy- namically through the BMC. 	Unspecified

Parameter	Description	Default
Current Configuration Address source	Displays the currently configured address source.	Unspecified
Station IP address	Enter the IP address of the shared net- work interface.	0.0.0.0
Subnet mask	Enter the subnet mask.	0.0.0.0
Station MAC address	Enter the MAC address of the shared net- work interface.	00-00-00-00-00
Router IP address	Enter the IP address of the gateway.	0.0.0.0
Router MAC address	Enter the MAC address of the gateway.	00-00-00-00-00
Configure IPv6 support		
Delicate		
IPv6 Support	 Enables or disables the IPv6 support for the dedicated network interface. Options: Enabled: enables the IPv6 support for the dedicated network interface. Disabled: disables the IPv6 support for the dedicated network interface. 	Enabled
Configuration Address source	 Sets the configuration mode of the IPv6 address of the dedicated network interface. Options: Unspecified: undefined. In the BIOS phase, the setting is not changed based on the network parameter setting in the BMC. Static: static mode. You need to manually set the IP address. DynamicBmcDhcp: obtained dynamically through BMC DHCP. 	Unspecified
Current Configuration Address source	Displays the currently configured address source.	DynamicAddressBmcDhcp
Station IPv6 Address	Enter the IPv6 address of the dedicated network interface.	::
Prefix Length	Enter the prefix length of the IPv6 address.	0
IPv6 address status	Displays the Pv6 address status.	Disabled

Parameter	Description	Default
IPv6 DHCP Algorithm	Displays the IPv6 DHCP algorithm.	DHCPv6
Configuration Router Lan1 Ad- dress source	 Sets the configuration mode of the IPv6 address of the gateway LAN1. Options: Unspecified: undefined. In the BIOS phase, the setting is not changed based on the network parameter set- ting in the BMC. Static: static mode. You need to manu- ally set the IP address. DynamicBmcDhcp: obtained dynami- cally through BMC DHCP. 	Unspecified
Current Router Configuration Address source	Displays the address source configured for the current gateway.	DynamicAddressBmcDhcp
IPv6 Router IP Address	Enter the IPv6 address of the gateway.	::
IPv6 Router Prefix Length	Enter the prefix length of the IPv6 address.	255
IPv6 Router Prefix Value	Enter the prefix value for the gateway IPv6 address.	
ShareLink	•	
IPv6 Support	 Enables or disables the IPv6 support for the shared network interface. Options: Enabled: enables the IPv6 support for the shared network interface. Disabled: disables the IPv6 support for the shared network interface. 	Enabled
Configuration Address source	 Sets the configuration mode of the IPv6 address of the shared network interface: Options: Unspecified: undefined. In the BIOS phase, the setting is not changed based on the network parameter set- ting in the BMC. Static: static mode. You need to manu- ally set the IP address. DynamicBmcDhcp: obtained dynami- cally through BMC DHCP. 	Unspecified

Parameter	Description	Default
Current Configuration Address source	Displays the currently configured address source.	-
Station IPv6 Address	Enter the IPv6 address of the shared net- work interface.	-
Prefix Length	Enter the prefix length of the IPv6 address.	-
IPv6 address status	Displays the IPv6 address status.	-
IPv6 DHCP Algorithm	Displays the IPv6 DHCP algorithm.	-
Configuration Router Lan1 Ad- dress source	 Sets the configuration mode of the IPv6 address of the gateway LAN2. Options: Unspecified: undefined. In the BIOS phase, the setting is not changed based on the network parameter setting in the BMC. Static: static mode. You need to manually set the IP address. DynamicBmcDhcp: obtained dynamically through BMC DHCP. 	Unspecified
Current Router Configuration Address source	Displays the address source configured for the current gateway.	-
IPv6 Router IP Address	Enter the IPv6 address of the gateway.	-
IPv6 Router Prefix Length	Enter the prefix length for the gateway IPv6 address.	-
IPv6 Router Prefix Value	Enter the prefix value for the gateway IPv6 address.	-
Configure VLAN support		
VLAN Support	 Sets whether to enable the VLAN support for the network interface. Options: Unspecified: unspecified. Enabled: The network interface supports VLAN configuration. Disabled: The network interface does not support VLAN configuration. 	Unspecified
Current Configuration Address source	Displays the currently configured address source.	-

Parameter	Description	Default
VLAN ID	Enter the VLAN ID, range: 0–4094. Value 0 indicates that VLAN is disabled.	-
VLAN Priority	Enter the VLAN priority.	-

3.5.4 BMC User Settings

Figure 3-141 shows the BMC User Settings screen.

Figure 3-141 BMC User Settings Screen

	Aptio Setup – AMI	Server Mgmt
BMC User Settings iSAC (Dedicated) User Name User Password Length User Password Add User Delete User Change User Settings	Administrator [20 Bytes]	Display and Reset iSAC (Dedicated) User Name.Note:The User Name is a string of 4 to 16 numbers and letters.Must start with a letter as the starting character.Case • ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Versio	n 2.22.1287 Copyright (C)	2023 AMI

For a description of the parameters on the **BMC User Settings** screen, refer to Table 3-100.

Table 3-100 Parameter Descriptions for the BMC User Settings Screen

Parameter	Description	Default
User Name	Displays and resets the username of the iSAC man- agement interface.	Administrator
	The username is a case-sensitive character string of	
	4 to 16 characters including digits and letters. It must	
	start with a letter.	
	Allowed special characters are hyphens (-), under-	
	scores (_), and at symbols (@).	

Parameter	Description	Default
	The following usernames are not allowed: anonymous root admin users nobody username sysadmin 	
User Password Length	 Select the maximum length of the user password for the iSAC management interface. The modification of this parameter takes effect only after the User Password is modified. For IPMI v1.5-compliant BMC, the maximum password length is sixteen bytes. For an IPMI v2.0-compliant BMC, the maximum password length is 20 bytes. 	20 Bytes
User Password	 Resets the user password of the iSAC management interface. The minimum password length is 8 bytes. Strong passwords must contain four character types: Uppercase letters Lowercase letters Numbers Special characters 	-
Add User	Adds a user. For details, refer to 3.5.4.1 Add User.	-
Delete User	Deletes a user. For details, refer to 3.5.4.2 Delete User.	-
Change User Settings	Modifies user settings. For details, refer to 3.5.4.3 Change User Settings.	-

3.5.4.1 Add User

Figure 3-142 shows the Add User screen.

Figure 3-142 Add User Dialog Box

	Aptio Setup — AMI	
		Server Mgmt
BMC Add User Details User Name User Password User Access Channel No User Privilege Limit	[Disabled] O [No Access]	Enter BMC User Name
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
Versio	n 2.22.1287 Copyright (C)	2023 AMI 38

For a description of the parameters on the **Add User** screen, refer to Table 3-101.

Table 3-101 Parameter Descriptions for the Add User Screen

Parameter	Description	Default
User name	Enter the BMC username.	-
User Password	Enter the password of the BMC user. The following parameters can be set only after you enter the username and password.	-
User Access	Enables or disables user access.Options:Enabled: enables user access.Disabled: disables user access.	Disabled
Channel No	Enter the Channel number.	0
User Privilege Limit	Sets the user privilege restrictions.	No Access

3.5.4.2 Delete User

Figure 3-143 shows the **Delete User** screen.

Figure 3-143 Delete User Screen

Aptio Setup — AM	MI
	Server Mgmt
BMC Delete User Details User Name User Password	Enter BMC User Name
	++: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Version 2.22.1287 Copyright	t (C) 2023 AMI 98

For a description of the parameters on the **Delete User** screen, refer to Table 3-102.

Table 3-102 Parameter Descriptions for the Delete User Screen

Parameter	Description
User Name	Enter the username of the BMC user to be deleted.
User Password	Enter the password of the BMC user to be deleted.

3.5.4.3 Change User Settings

Figure 3-144 shows the Change User Settings screen.

Figure 3-144 Change User Settings Screen

Aptio Setup – AMI		
- 42 - 40 	Server Mgmt	
BMC Change User Settings User Name User Password Change User Password User Access [Disabled] Channel No O User Privilege Limit [No Access]	Enter BMC User Name ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
Version 2.22.1287 Copyright (C) 2023 AMI		
	98.	

For a description of the parameters on the **Change User Settings** screen, refer to Table 3-103.

Table 3-103 Parameter Descriptions for the Change User Settings Screen

Parameter	Description	Default
User Name	Enter the BMC username to be modified.	-
User Password	Enter the current BMC user password to be modified.	-
Change User Password	Enter the new password of the BMC user.	-
User Access	Enables or disables user access.Options:Enabled: enables user access.Disabled: disables user access.	Disabled
Channel No	Enter the channel number.	0
User Privilege Limit	Sets the user privilege restrictions.	No Access

3.6 Security

The **Security** screen contains the administrator and user password settings, see Figure 3-145 and Figure 3-146.

Figure 3-145 Security Screen—1

Aptio Setup – AMI ◀ Security Boot Save & Exit				
Password Description If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup. If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights. The password length must be in the following range:	Set Administrator Password ++: Select Screen †↓: Select Item			
Minimum length 8 Maximum length 32 Administrator Password Administrator Password Not Installed User Password	Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults			
F4: Save & Exit Version 2.22.1287 Copyright (C) 2023 AMI 98				

Figure 3-146 Security Screen—2

Aptio Setup – AMI <mark>⊲ Security</mark> Boot Save & Exit		
The password length must be in the following range: Minimum length 8 Maximum length 32 Administrator Password Administrator Password Not Installed User Password User Password Not Installed	▲ Secure Flash Update support	
HDD Security Configuration: ▶ P7:Micron_5300_MTFDDAK3T8TDS ▶ Secure Boot ▶ Secure Flash Update	 →+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit 	
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For a description of the parameters on the **Security** screen, refer to Table 3-104.

Parameter	Description	Default
Administrator Password	Enter the administrator password.	-
User Password	Enter the password.	-
HDD Security Configuration	Sets the HDD security parameters. For details, refer to 3.6.1 HDD Security Configuration.	-
Secure Boot	Sets secure boot parameters. For details, refer to 3.6.2 Secure Boot.	-
Secure Flash Update	Sets secure flash update parameters. For details, refer to 3.6.3 Secure Flash Update.	-
Security Freeze Lock	 Enables or disables the security freeze lock. Options: Enabled: enables the security freeze lock. Disabled: disables the security freeze lock. 	Disabled
3.6.1 HDD Security Configuration

Figure 3-147 shows the HDD Security Configuration screen.

Figure 3-147 HDD Security Configuration Screen

Aptio Setup – AMI Security	
Allows Access to Set, Modify and Clear HardDisk User Password User Password is mandatory to Enable HDD Security. If the 'Set User Password' option is hidden, do power cycle to enable the option again. HDD PASSWORD CONFIGURATION: Security Supported : Yes Security Enabled : No Security Enabled : No Security Locked : No	Set HDD User Password. **** Advisable to Power Cycle System after Setting Hard Disk Passwords ****. Discard or Save changes option in setup does not have any impact on *+: Select Screen fl: Select Item Enter: Select
HDD USER PWO Status: NOT INSTALLED HDD Master Pwd Status INSTALLED : Set User Password	 F7-: Change opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **HDD Security Configuration** screen, refer to Table 3-105.

Table 3-105 Parameter Descriptions for the HDD Security Configuration Screen

Parameter	Description
Set User Password	Sets the password of the HDD user.
	The HDD user password is the basis for the HDD security. It is recommend-
	ed that you restart the system after entering the password.

3.6.2 Secure Boot

Figure 3-148 shows the Secure Boot screen.

Figure 3-148 Secure Boot Screen

Aptio Setup – AMI Security		
System Mode	User	Secure Boot mode
Secure Boot	[Enabled] Not Active	Standard or Custom. In Custom mode, Secure Boot Policy variables
Secure Boot Mode ▶ Restore Factory Keys ▶ Reset To Setup Mode	[Standard]	can be configured by a physically present user without full
▶ Key Management		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Secure Boot** screen, refer to Table 3-106.

Parameter	Description	Default
System Mode	Current system mode.	User
Secure Boot	 Enables or disables the secure boot feature. Options: Enabled: enables the secure boot feature. After the feature is enabled, the PK is registered, and the system enters user mode. You need to restart the system to apply the changes to this mode. Disabled: disables the secure boot feature. 	Enabled
Secure Boot Mode	Sets the secure boot mode.Options:Standard: standard mode.Custom: user-defined mode.	Standard

Table 3-106 Parameter Descriptions for the Secure Boot Screen

Parameter	Description	Default
	In self-defined mode, the variables of the secure boot policy can be set by the current user without the need of complete authentication.	
Restore Factory Keys	Sets whether to forcibly change the system mode to user mode and install the default secure boot key database.	-
Reset To Setup Mode	Sets whether to delete all secure boot key databases from the NVRAM.	-
Key Management	Enables professional users to modify the variables of the secure boot policy without variable authentication. For details, refer to 3.6.2.1 Key Management.	-

3.6.2.1 Key Management

Figure 3-149 shows the Key Management screen.

Figure 3-149 Key Management Screen

Security	Apti	o Setup – AMI	
Vendor Keys Factory Key Provisi Prestore Factory Key Reset To Setup Mode Enroll Efi Image Export Secure Boot	Valid on [Disablu S variables	ed]	Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode
Secure Boot variable Source Platform Key Key Exchange Keys Authorized Signatur Forbidden Signatur Authorized TimeStam OsRecovery Signatur	e Size (PK) 0 (KEK) 0 es (db) 0 es(dbx) 0 ps(dbt) 0 es(dbr) 0	Keys Key 0 No Keys 0 No Keys	++: Select Screen f1: Select Item Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
Ve	rsion 2.22.12	87 Copyright (C)	2023 AMI 98

For a description of the parameters on the Key Management screen, refer to Table 3-107.

Parameter	Description	Default
Vendor Keys	Displays the vendor key.	-
Factory Key Provision	 Sets whether to install the factory default secure boot key after the system is restarted or in setup mode. Options: Enabled: yes. Disabled: no. 	Disabled
Restore Factory Keys	Sets whether to forcibly change system mode to user mode and install the default secure boot key data- base.	-
Reset To Setup Mode	Sets whether to delete all secure boot key databases from the NVRAM.	-
Enroll Efi Image	Allows the EFI image to run in secure boot to enroll a SHA256 hash of the PE image in the Authorized Signature Database.	-
Export Secure Boot variables	Saves the secure boot variable contents in the NVRAM to a file.	-
Platform Key	Displays the platform keys.	-
Key Exchange Keys	Displays the exchange keys.	-
Authorized Signatures	Displays the authorized signatures.	-
Forbidden Signatures	Displays banned signatures.	-
Authorized TimeStamps	Displays the authorized timestamps.	-
OsRecovery Signatures	Displays the signatures restored in the OS.	-

Table 3-107 Parameter Descriptions for the Key Management Screen

3.6.3 Secure Flash Update

Figure 3-150 shows the Secure Flash Update screen.

Figure 3-150 Secure Flash Update Screen

Security	Aptio Setup — AMI	
Signed BIOS Update FW Key Type FW Key Name FW Update Method FW Rollback Protection Flash Write Protection	Enabled SHA256 OEM Runtime,Capsule,Recover y Enabled Enabled	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
Version	n 2.22.1287 Copyright (C) 2	2023 AMI AB

For a description of the parameters on the Secure Flash Update screen, refer to Table 3-108.

Table 3-108 Parameter Descriptions for the Secure Flash Update Screen

Parameter	Description	Default
Signed BIOS Update	 Enables or disables the signed BMC update feature. Options: Enabled: enables the signed BMC update feature. Disabled: disables the signed BMC update feature. 	Enabled
FW Кеу Туре	Sets the key type of the firmware.	SHA256
FW Key Name	Sets the key name of the firmware.	OEM
FW Update Method	Sets the firmware update mode.	Runtime, Capsule, Recovery
FW Rollback Protection	 Enables or disables the firmware rollback protection feature. Options: Enabled: enables the firmware rollback protection feature. 	Enabled

Parameter	Description	Default
	• Disabled: disables the FW rollback protection fea- ture.	
Flash Write Protection	 Enables or disables flash drive write protection. Options: Enabled: enables flash drive write protection. Disabled: disables flash drive write protection. 	Enabled

3.7 Boot

Figure 3-151 through Figure 3-152 show the **Boot** screen.

```
Figure 3-151 Boot Screen—1
```

Aptio Setup – AMI ◀ Security <mark>Boot</mark> Save & Exit			
Boot Configuration Boot option filter Endless Boot Support Quick Boot Setup Prompt Timeout Bootup NumLock State Quiet Boot iSDT Boot Support Add EFI Shell To Boot	[UEFI only] [Enabled] [Disabled] 3 [On] [Disabled] [Enabled] [Disabled]	This option controls Legacy/UEFI ROMs priority	
Driver Option Prioritie	S	<pre>++: Select Screen 1↓: Select Item Enter: Select</pre>	
FIXED BOOT ORDER Priorities		+/-: Change Option.	
Boot Option #1	[Hard Disk:SATA1 P1:Centos (SAMSUNG MZ7L31T9HBLT-00B7C)]	K/M: Scroll Help Area F1: General Help F2: Previous Values	
Boot Option #2	[Network]	▼ F3: Optimized Defaults F4: Save & Exit	
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Figure 3-152 Boot Screen—2

Aptio Setup – AMI ◀ Security <mark>Boot</mark> Save & Exit		
Boot Option #2 Boot Option #3 Boot Option #4 Boot Option #5 Optimized Boot Add New Boot Option Delete Boot Option	[Network] [USB] [CD/DVD] [Other Device] [Disabled]	 Determines OpROM execution policy for devices other than Network, Storage, or Video
 Hard Disk Boot Seque UEFI Other Drive BBS Option ROM execution Network Storage Video Other PCI devices 	nce Priorities [UEFI] [UEFI] [UEFI] [UEFI]	 ++: Select Screen t1: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the **Boot** screen, refer to Table 3-109.

Table 3-109 Parameter Descriptions for the Boot Screen	
--	--

Parameter	Description	Default
Boot option filter	 Select a boot option filter to control the priority levels of Legacy and UEFI ROM. Options: UEFI only Legacy only 	UEFI Only
Endless Boot Support	 Sets whether the system automatically reboots all bootable devices. Options: Enabled: enables boot retry. Disabled: disables boot retry. 	Enabled
Quick Boot	Enables or disables the quick boot feature.Options:Enabled: enables the quick boot feature.	Disabled

Parameter	Description	Default
	 After the feature is enabled, the boot time is shortened by skipping the memory test during board boot. Disabled: disables the quick boot feature. After the feature is disabled, a complete memory test is performed, and the boot time is long. 	
Boot Logo	 Enables or disables the display of the logo during the boot process. Enabled: The logo is displayed during the boot process. Disabled: The logo is not displayed during the boot process. 	Enabled
Wait Time For BF2 Card	Sets wait time of the BlueField-2 card, range: 0~5, unit: Minutes.	3
Setup Prompt Timeout	 Enter the number of seconds to wait for the setup activation key. Value 65535 indicates indefinite waiting. To increase the value by one, press +. To decrease the value by one, press To specify a value, press the corresponding number key. 	3
Bootup NumLock State	Select the state of the NumLock key after startup. Options: • On • Off	On
Quiet Boot	 Enables or disables the quiet boot feature. Options: Enabled: enables the quiet boot feature. After the feature is enabled, the hot key information is not displayed on the logo screen during startup. Disabled: disables the quiet boot feature. After the feature is disabled, the hot key information is displayed on the logo screen during startup. 	Enabled
Skip Mix Load Default	 Enables or disables the feature of skipping Mix and restoring to defaults. Options: Enabled: enables the feature of skipping Mix and restoring to defaults. Disabled: disables the feature of skipping Mix and restoring to defaults. 	Enabled

Parameter	Description	Default
Add EFI Shell To Boot Option	 Enables or disables the built-in shell. Options: Enabled: enables the built-in shell. Disabled: disables the built-in shell. 	Disabled
Boot Option #1	Press the up/down key to select another device that will serve as the first boot device in the boot se- quence. Options: • Hard Disk • Network • USB • CD/DVD • Other Device • Disabled The displayed boot items vary with boards.	Hard Disk: SA- TA0 P0:Redhat Boot Manager(G- G7ZT240S3CN6)
Boot Option #2	Press the up/down key to select another device that will serve as the second boot device in the boot se- quence. Options: • Hard Disk • Network • USB • CD/DVD • Other Device • Disabled The displayed boot items vary with boards.	Network
Boot Option #3	Press the up/down key to select another device that will serve as the third boot device in the boot se- quence. Options: • Hard Disk • Network • USB • CD/DVD • Other Device • Disabled The displayed boot items vary with boards.	USB
Boot Option #4	Press the up/down key to select another device that will serve as the fourth boot device in the boot se- quence. Options:	CD/DVD

Parameter	Description	Default
	 Hard Disk Network USB CD/DVD Other Device Disabled The displayed boot items vary with boards. 	
Boot Option #5	Press the up/down key to select another device that will serve as the fifth boot device in the boot se- quence. Options: • Hard Disk • Network • USB • CD/DVD • Other Device • Disabled The displayed boot items vary with boards.	Other Device
Optimized Boot	 Enables or disables the optimized boot feature. Options: Enabled: enables the optimized boot feature. After this feature is enabled, CSM support is disabled and connections to network devices are disabled to reduce the boot time. Disabled: disables the optimized boot feature. 	Disabled
Add New Boot Option	Adds a new EFI boot option to the boot order list. For details, refer to 3.7.1 Add New Boot Option.	-
Delete Boot Option	Removes an EFI boot option from the boot order list. For details, refer to 3.7.2 Delete Boot Option.	-
Hard Disk Boot Sequence	Specifies the boot priorities of available UEFI hard disk drivers. For details, refer to 3.7.3 Hard Disk Boot Sequence.	-
UEFI Other Drive BBS Priori- ties	Specifies the boot priorities of other available UEFI drivers. For details, refer to 3.7.5 UEFI Other Drive BBS Prior- ities.	-
Network	Controls the execution of the network device Option ROMs in UEFI mode and Legacy mode. Options: • Do not launch: disables the network devices.	UEFI

Parameter	Description	Default
	 UEFI: launches the network devices in UEFI mode only. UEFI: launches the network devices in Legacy mode only. 	
Storage	 Controls the execution of the storage device Option ROMs in UEFI mode and Legacy mode. Options: Do not launch: disables the storage devices. UEFI: launches the storage devices in UEFI mode only. Legacy: launches the storage devices in Legacy mode only. 	UEFI
Video	 Controls the execution of the video device Option ROMs in UEFI mode and Legacy mode. Options: Do not launch: disables the video card devices. UEFI: launches the video card devices in UEFI mode only. Legacy: launches the video card devices in Lega- cy mode only. 	UEFI
Other PCI devices	 Controls the execution of Option ROMs of other PCI device in UEFI mode and Legacy mode. Options: Do not launch: disables other PCI devices. UEFI: launches other PCI devices in UEFI mode only. Legacy: launches other PCI devices in Legacy mode only. 	UEFI

3.7.1 Add New Boot Option

Figure 3-153 shows the Add New Boot Option screen.

Figure 3-153 Add New Boot Option Screen

Aptio Se Boot	tup — AMI
Add New Boot Option Add boot option Path for boot option Boot option File Path Create	Specify name for new boot option
	++: Select Screen †↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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For a description of the parameters on the Add New Boot Option screen, refer to Table 3-110.

Table 3-110 Parameter Descriptions for the Add New Boot Option Screen

Parameter	Description
Add boot option	Enter a name for the new boot option.
Path for boot option	 Enter or select the boot path for the new boot option. Format: fsx:\pa5h\filename.efi. You can use the arrow keys and the Enter key to select the path of the boot option. The selected path is then displayed in Boot option File Path.
Boot option File Path	Displays the path of the boot option file.
Create	Creates a boot option.

Note

The added boot option is displayed on the Hard Disk Boot Sequence screen and can be deleted on the **Delete Boot Option** screen.

3.7.2 Delete Boot Option

Figure 3-154 shows the **Delete Boot Option** screen.

Aptio Setup — AMI Boot			
Delete Boot Option		Remove an EFI boot	
Delete Boot Option	[Select one to Delete]	order	
		++: Select Screen fl: Select Item	
		Enter: Select +/-: Change Opt. K/M: Scroll Help Area	
		F1: General Help F2: Previous Values F3: Optimized Defaults	
		F4: Save & Exit	
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Figure 3-154 Delete Boot Option Screen

On the **Delete Boot Option** screen, you can delete an EFI option in the boot priority.

3.7.3 Hard Disk Boot Sequence

Figure 3-155 shows the Hard Disk Boot Sequence screen.

Aptio Setup – AMI BOOT			
Boot Option #1	[SATAO PO:RedHat Boot Manager (GG7ZT240S3CN6)]	Sets the system boot order	
		++: Select Screen	
		Enter: Select +/-: Change Opt. K/M: Scroll Help Area	
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit	
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Figure 3-155 Hard Disk Boot Sequence Screen

On the Hard Disk Boot Sequence screen, you can set the hard disk boot sequence.

3.7.4 UEFI NETWORK Drive BBS Priorities

Figure 3-156 shows the UEFI NETWORK Drive BBS Priorities screen.

Figure 3-156 UEFI NETWORK Drive BBS Priorities Screen

Boot	Aptio Setup – AMI	
Boot Option #1	[OCP1 Port1:Mellanox Network Adapter – 08:C0:EB:84:C8:90 (PXE IPv4)]	▲ Sets the system boot order
Boot Option #2	[OCP1 Port2:Mellanox Network Adapter - 08:C0:EB:84:C8:91 (PXE IPv4)]	
Boot Option #3	[OCP2 Port1:Mellanox Network Adapter – 10:70:FD:9F:FD:8C (PXE IPv4)]	++: Select Screen 14: Select Item
Boot Option #4	[OCP2 Port2:Mellanox Network Adapter – 10:70:FD:9F:FD:8D (PXE IPv4)]	Enter: Select +/-: Change Option. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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On the **UEFI NETWORK Drive BBS Priorities** screen, you can set the boot sequence of NET-WORK bootable Drives.

3.7.5 UEFI Other Drive BBS Priorities

Figure 3-157 shows the UEFI Other Drive BBS Priorities screen.

Figure 3-157	UEFI Other	Drive BBS	Priorities	Screen
---------------------	-------------------	-----------	-------------------	--------

Boot	Aptio Setup — A	MI
Boot Option #1	[Disabled]	Sets the system boot order
		++: Select Screen
		Enter: Select +/–: Change Opt. K/M: Scroll Help Area
		F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
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On the **UEFI Other Drive BBS Priorities** screen, you can set the boot sequence of other bootable Drives.

3.8 Save & Exit

Figure 3-158 through Figure 3-159 show the Save & Exit screen.

Figure 3-158 Save&Exit Screen—1

Aptio Setup – AMI ◀ Security Boot Save & Exit		
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes		Exit system setup after saving the changes.
Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override SATAO P7:RedHat Boot Manager (Micron_5300_MTFDDAK3T8TDS)		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. K/M: Scroll Help Area F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit</pre>
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Figure 3-159 Save&Exit Screen—2

Aptio Setup – AMI ◀ Security Boot <mark>Save & Exit</mark>	
Discard Changes and Exit	Attempts to Launch FEI
	Shell application
Save Changes and Reset	(Shell.efi) from one of
Discard Changes and Reset	the available
	filesystem devices
Save Changes	
Discard Changes	
Particular Cartilana	
Default Options	
Restore Defaults	the Coloct Concon
Save as user befaults	tl. Select Item
Nestore user berduitts	Fnter: Select
Boot Override	+/-: Change Ont
SATAO P7:RedHat Boot Manager	K/M: Scroll Heln Area
(Micron 5300 MTEDDAK3T8TDS)	F1: General Help
Built-in EFI Shell	F2: Previous Values
Launch EFIShell from filesystem device 🔻 🔻	F3: Optimized Defaults
	F4: Save & Exit
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	AB

For a description of the parameters on the **Save & Exit** screen, refer to Table 3-111.

Table 3-111 Parameter Descriptions for the Save & Exit Screen

Parameter	Description
Saving Changes and Exit	Saves the changes and exits the BIOS.
Discard Changes and Exit	Exits the BIOS without saving any changes.
Saving Changes and Reset	Saves the changes and restarts the system.
Discard Changes and Reset	Restarts the system without saving any changes.
Save Changes	Saves all parameter changes.
Discard Changes	Discards any parameter changes.
Restore Defaults	Restores the default settings of all parameters.
Save as User Defaults	Saves any parameter changes as the user default settings.
Restore User Defaults	Restores all parameters to user default settings.
Launch EFI Shell from filesys- tem device	Tries launching the EFI Shell application (Shell.efi) from one of the available file system devices.

Chapter 4 Reference: Control Keys for BIOS Setup

For a description of the available control keys in the BIOS of the **Eagle Stream** platform, refer to Table 4-1.

Control Key	Description
$\leftarrow \!\!\!/ \!$	Moves the cursor left or right.
<u></u> ↑/↓	Moves the cursor up or down.
Enter	Selects an item or enters a submenu.
+/-	Changes the value of an item.
Esc	Exits the screen.
F1	Opens the help screen, where the descriptions of the available keys are displayed.
F2	Loads the last settings.
F3	Loads the default settings.
F4	Saves the settings and exits the BIOS.

Table 4-1 Descriptions of Control Keys

vantageo

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Glossary

AC

- Alternating Current

ACPI

- Advanced Configuration and Power Interface

ADDDC

- Adaptive Double Device Data Correction

ADR

- Automatic DIMM Refresh

AER

- Advanced Error Reporting

AHCI

- Advanced Host Controller Interface

ANSI

- American National Standards Institute

APIC

- Advanced Programmable Interrupt Controller

ASCII

- American Standard Code for Information Interchange

ASPM

- Active State Power Management

AVX

- Advanced Vector Extensions

BIOS

- Basic Input/Output System
BIST

- Built-In Self-Test

BMC

- Baseboard Management Controller

BSP

- Board Support Package

CD

- Compact Disk

CLR

- Cell Loss Ratio

CLTT

- Close Loop Thermal Throttling

CMCI

- Corrected Machine Check Interrupt

COM

- Component Object Model

CPU

- Central Processing Unit

DAC

- Digital Analog Converter

DCU

- Data Collection Unit

DDR

- Double Data Rate

DFX

- Design for X

DHCP

- Dynamic Host Configuration Protocol

DIMM

- Dual Inline Memory Module

DMA

- Direct Memory Access

DMI

- Direct Media Interface

DRAM

- Dynamic Random Access Memory

DVD

- Digital Versatile Disc

ECC

- Error Check and Correction

EET

- Energy Efficient Turbo

EFI

- Extensible Firmware Interface

EIST

- Enhanced Intel Speed Step Technology

EPP

- Energy Performance Preference

FRU

- Field Replaceable Unit

HBA

- Host Bus Adapter

HDD

- Hard Disk Drive

HTTP

- Hypertext Transfer Protocol

I/O

- Input/Output

ID

- Identification

llO

- Integrated I/O Module

IP

- Internet Protocol

IPMI

- Intelligent Platform Management Interface

IPv4

- Internet Protocol Version 4

IPv6

- Internet Protocol Version 6

KCS

- Keyboard Controller Style

LAN

- Local Area Network

LED

- Light Emitting Diode

LLC

- Logic Link Control

LMCE

- Local Machine Check Exception

LRDIMM

- Load Reduced Dual Inline Memory Module

MAC

- Media Access Control

MCA

- Machine Check Architecture

МСТР

- Management Component Transport Protocol

ME

- Management Engine

NIC

- Network Interface Card

NMI

- Non-Maskable Interrupt

NTB

- Non-Transparent Bridge

NUMA

- Non-Uniform Memory Access Architecture

NVDIMM

- Non-Volatile Dual In-Line Memory Module

NVMe

- Non-Volatile Memory Express

NVRAM

- Non-Volatile Random Access Memory

OCP

- Open Computer Project

OOB

- Out of Band

os

- Operating System

PC

- Personal Computer

PCC

- Protection Communication Channel

PCH

- Platform Controller Hub

PCI

- Peripheral Component Interconnect

PCle

- Peripheral Component Interconnect Express

PCLS

- Partial Cache Line Sparing

PECI

- Platform Environment Control Interface

PFD

- Packet Flow Description

PM

- Power Module

PM

- Power Management

PMC

- Power Management Controller

POST

- Power-On Self-Test

PPIN

- Protected Processor Identification Number

PXE

- Preboot eXecution Environment

RAID

- Redundant Array of Independent Disks

RAM

- Random Access Memory

RAPL

- Running Average Power Limit

RAS

- Reliability, Availability and Serviceability

RFO

- Read-For-Ownership

ROM

- Read-Only Memory

RTP

- Real-time Transport Protocol

SATA

- Serial ATA

SEL

- System Event Log

SGPIO

- Serial GPIO

SMI

- System Management Interruption

SOL

- Serial Over LAN

SPD

- Serial Presence Detect

SR-IOV

- Single-Root I/O Virtualization

SV

- Security Vulnerability

TDP

- Thermal Design Power

TDR

- Transaction Detail Record

TLP

- Transaction Layer Packet

TPM

- Trusted Platform Module

TDT

- Trusted Execution Technology

UCE

- UMA Creation Environment

UEFI

- Unified Extensible Firmware Interface

UMA

- Uniform Memory Access

UPI

- Ultra Path Interconnect

USB

- Universal Serial Bus

VGA

- Video Graphic Adapter

VLAN

- Virtual Local Area Network

VM

- Virtual Machine

VMD

- Volume Management Device

VMM

- Virtual Machine Monitor

VMX

- Virtual Machine Extension

VROC

- Virtual RAID on CPU

WHEA

- Windows Hardware Error Architecture

XPT

- Xtended Prediciton Table

eDPC

- Enhanced Downstream Port Containment

eMCA

- Enhanced Machine Check Architecture

iSAC

- Integrated Server Administrator Controller