



APTIO™ SKYLAKE CORE BIOS MANUAL

For Acromag® Products

using the

Skylake Processor

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1.0 GENERAL INFORMATION

1.1 Intended Audience

This users' manual was written for technically qualified personnel who will need working information for the system BIOS used with Acromag® I/O devices that are based upon the Intel® Skylake core processor. It is not intended for a general, non-technical audience that is unfamiliar with the Skylake core processor or the devices that use this core processor.

1.2 About Aptio™

Aptio™ is AMI's next-generation BIOS firmware based on the UEFI Specifications and the Intel® Platform Innovation Framework for EFI. Aptio™ is specifically designed to address firmware portability and extensibility to future platforms. Along with silicon enabling components, Aptio™ can be expanded using a variety of drivers, development tools, support utilities and pre-boot application solutions. (*Aptio™ TSE User Manual, pg. 6*).

1.3 About Aptio™ Text Setup Environment (TSE)

Aptio™ Text Setup Environment (TSE) is a text-based basic input and output system. The purpose of Aptio™ TSE is to empower the user with complete system control at boot. AMI Text Setup Environment (TSE) provides advance UEFI functionality with a familiar BIOS interface. AMI TSE is an AMI firmware user interface designed to work in conjunction with Aptio™. It is made up of a series of drivers, applications and images, which can be customized according to an OEM's requirements, or can use AMI's default interface. In Aptio™, as in any firmware project, lack of flash space is always one of the biggest obstacles. One of the goals of Aptio™ is to offer a complete solution in 512 KB of flash ROM. In order to satisfy customers

who require small ROM footprint without sacrificing the ability to use setup to configure the system, AMI offers space-optimized setup environment components called AMI Text Setup Environment (TSE). This document explains the basic navigation of Aptio™ TSE. (*Ibid*, pg. 6).

1.4 Preface

The information contained in this manual is subject to change without notice, and Acromag, Inc. (Acromag) does not guarantee its accuracy. Acromag makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Further, Acromag assumes no responsibility for any errors that may appear in this manual and makes no commitment to update, or keep current, the information contained in this manual. No part of this manual may be copied or reproduced in any form, without the prior written consent of Acromag,

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The text information used in this manual in support of the specifications, screen, implementation, and use of the Aptio BIOS has been reprinted by permission from the public document *Aptio™ Text Setup Environment (TSE) User Manual*, Document Revision 1.00, Copyright © 2010 by American Megatrends, Inc (AMI). In addition, the figures, tables and all other visuals that appear in this manual are also taken from, or are based upon, content from the *Aptio™ Text Setup Environment (TSE) User Manual*, again with the permission of AMI. Because of the extent of the use of the AMI-supplied material in this material, that use is referenced in this paragraph in lieu of using individual in-text citations.

The images (figures, tables and screen shots) shown in this manual that are not from the *TSE User Manual* were also provided by AMI for the expressed purpose of inclusion in this Acromag-provided Core BIOS user manual.

1.6 Related Material

The following manuals and part specifications provide the necessary information for in-depth understanding of the AE-2200 module.

- *Aptio™ Text Setup Environment (TSE) User Manual*, Document Revision 1.00, Copyright © 2010 by American Megatrends, Inc.
- Intel® document No. 332986, “6th Generation Intel® Processor for H-Platforms: Datasheet – Volume 1, Rev: 005; May, 2016.

<http://www.intel.com/content/www/us/en/processors/core/CoreTechnicalResources.html>

1.7 Disclaimer

Changing BIOS setup parameters carries risks. It can lead to system instability and data loss or even cause the system to no longer boot. It is recommended that only advanced users change these settings.

Please proceed at your own risk. In no event shall Acromag be held liable for any loss, expenses, or damages of any kind, whether direct, indirect, incidental, or consequential, arising from the modification of BIOS settings or any other support materials provided in our products.

2.0 Aptio™ BIOS Setup

2.1 Main Menu

2.1.1 Navigation

The Aptio™ TSE BIOS setup menu is the first screen that you can navigate. Each BIOS setup menu option is described in this user's manual.

To enter the Aptio™ TSE screens, follow the steps outlined below:

Table 2.1.1.a: Entering the Aptio™ TSE Screens

Step	Description
1	Power on the motherboard
2	Press the <Delete> key on your keyboard when you see the following text prompt: “Press DEL or F2 to enter Setup” Note: You may also continually press <Delete> during boot up.
3	After selecting <Delete> key, the Aptio™ TSE main BIOS setup menu is displayed. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

In most cases, the <Delete> key is used to invoke the Aptio™ TSE screen. There are a few cases where other keys are used, such as <F1>, <F2>, and so on. The user can press the <TAB> key during boot to switch from the boot splash screen (logo) to see the keystroke messages.

The Aptio™ TSE BIOS Main setup menu is the first screen that you can navigate. Each BIOS setup menu option is described in this user's manual. The Main Setup menu is shown in Table. 2.1.b.

Table 2.1.1.b TSE BIOS Main setup menu

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Main Advanced Chipset Security Boot Save & Exit Acromag		
BIOS Information		Choose the system default language
BIOS Vendor	American Megatrends	
Core Version	5.11	
Compliance	UEFI 2.4; PI 1.3	
Project Version	1ASOI 0.38 x64	
Build Date and Time	12/17/2016 13:00:51	
Access Level	Administrator	
Processor Information		
Name	SkyLake DT	
Brand String	Intel(R) Xeon(R) CPU E3-1505M v5 @ 2.80GHz	
Frequency	2700 MHz	
Processor ID	506E3	
Stepping	R0/S0/N0	
Number of Processors	4Core(s) / 8Thread(s)	
Microcode Revision	A6	
GT Info	GT2	
Memory RC Version	2.1.0.0	
Total Memory	32768 MB	
Memory Frequency	2133 MHz	
PCH Information		
Name	SKL_PCH-H	
PCH SKU	CM236	
Stepping	31/D1	
LAN PHY Revision	N/A	
ME FW Version	11.0.18.1002	
ME Firmware SKU	Corporate SKU	
SPI Clock Frequency		→+: Select Screen
DOFR Support	Unsupported	↑↓: Select Item
Read Status Clock Frequency	17 MHz	Enter: Select
Write Status Clock Frequency	17 MHz	+/-: Change Opt.
Fast Read Status Clock Frequency	48 MHz	F1: General Help
System Language	[English]	F2: Previous Values
System Date	[Sat 12/17/2016]	F3: Optimized Defaults
System Time	[13:21:21]	F4: Save & Exit
		ESC: Exit
Version 2.18.1263. Copyright (C) 2016 American Megatrends, Inc.		

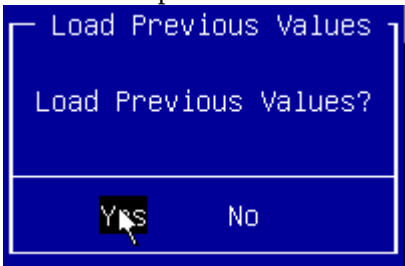
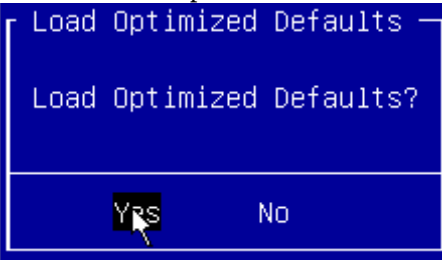
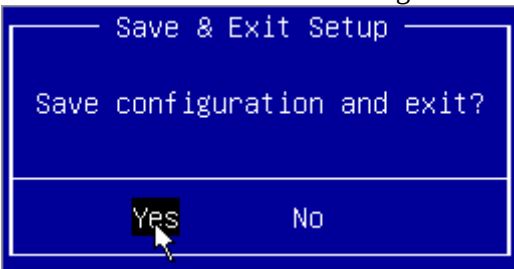
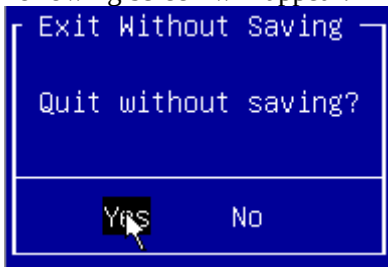
The Aptio™ TSE keyboard-based navigation can be accomplished using a combination of the keys, (<FUNCTION> keys, <ENTER>, <ESC>, <ARROW> keys, etc.).

```

→←: Select Screen
↑↓/Click: Select Item
Enter/Db1 Click: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC/Right Click: Exit

```

Key	Description
ENTER	The <i>Enter</i> key allows the user to select an option to edit its value or access a sub menu.
→← Left/Right	The <i>Left and Right</i> <Arrow> keys allow you to select an Aptio™ TSE screen. For example: Main screen, Advanced screen, Chipset screen, and so on.
↑↓ Up/Down	The <i>Up and Down</i> <Arrow> keys allow you to select an Aptio™ TSE item or sub-screen.
+ Plus/Minus	The <i>Plus and Minus</i> <Arrow> keys allow you to change the field value of a particular setup item. For example: Date and Time.
Tab	The <Tab> key allows you to select Aptio™ TSE fields in Date and Time control
F1	This key displays the general help window for the user.

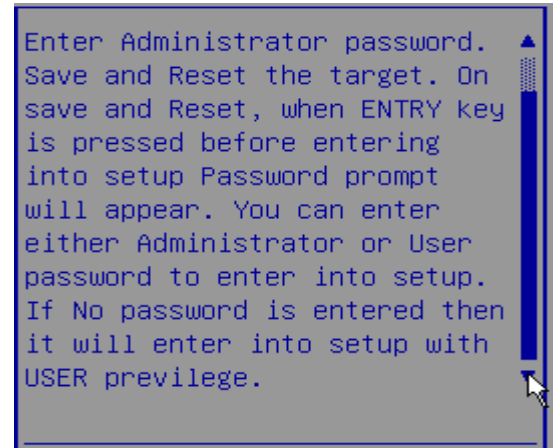
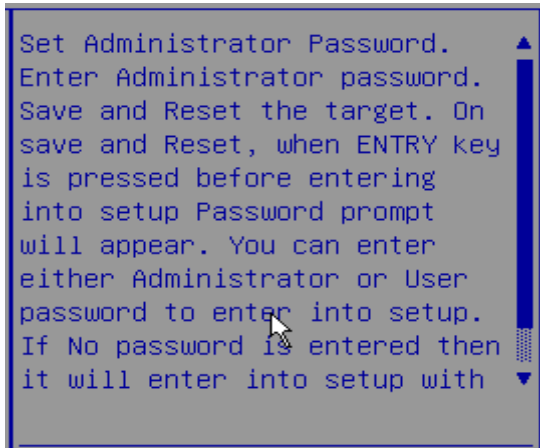
F2	This key enables users to load pervious values in TSE 
F3	This key enables users to load optimized default values in TSE 
F4	This key enables users to save the current configuration and exit TSE 
ESC	The <Esc> key allows you to discard any changes you have made and exit the Aptio™ TSE. Press the <Esc> key to exit the Aptio™ TSE without saving your changes. The following screen will appear:  Press the <Enter> key to discard changes and exit. You can also use the <Arrow> key to select <i>No</i> and then press the <Enter> key to abort this function and return to the previous screen.
Function keys	When other function keys become available, they are displayed in the help screen along with their intended function.

The Aptio™ TSE also supports Mouse control. So by using mouse we can change the screen, select the option by double click it. Instead of pressing <Esc> key in keyboard, using mouse we can select the “Esc” button in right top corner of the screen also instead of <Esc> you can right click on the screen to go back.

2.1.2 Help

Help screen allows the user to know the details of current Screen or current Selected option.

It is located at Top – Right side of the screen. If the help screen contains more information, by scrolling down user can view the entire details. In Keyboard, <M> and <K> keys are used to scroll the information present in the help screen. <K> key is used to Scroll Up and <M> key is used to scroll Down. In mouse, clicking the Up and down arrow in Scroll bar, User can able to scroll the help screen.



2.1.3 Frame Scroll

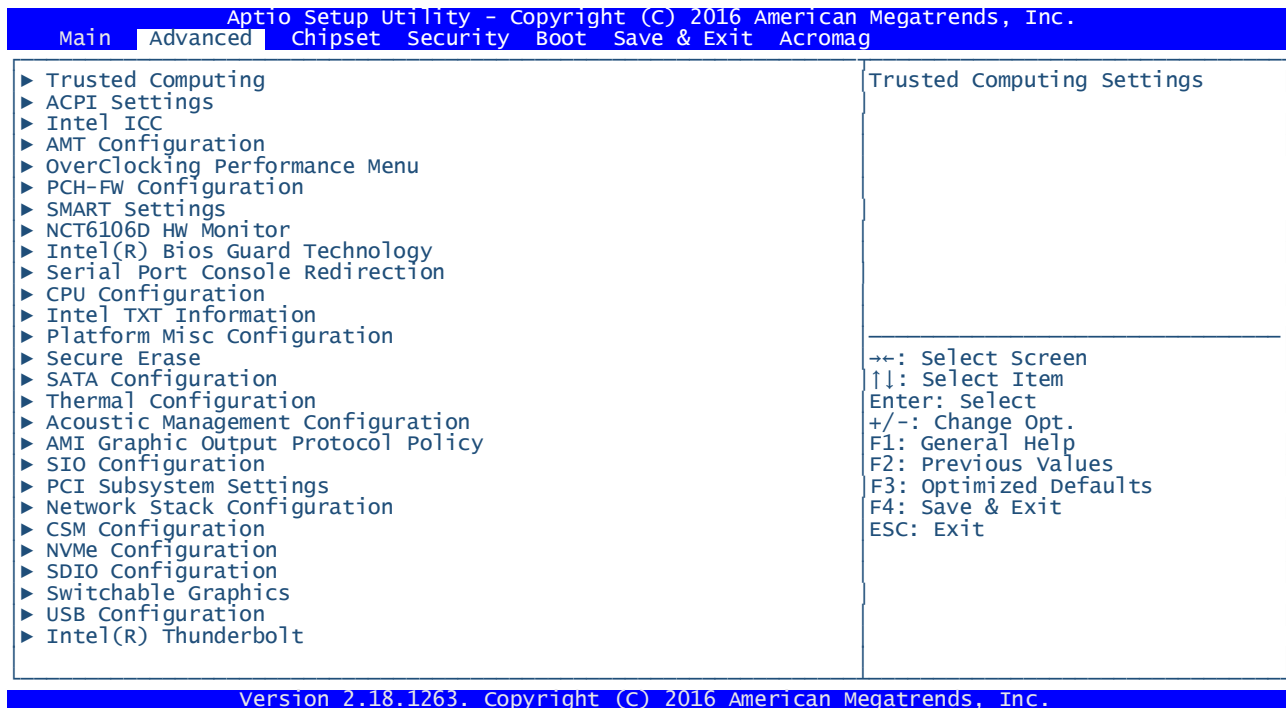
User can scroll the frame using the Keyboard. Using Keyboard, Page Up and Page Down keys are used to scroll the frames. Page Up key is used to scroll the frame upwards and Page Down key is used to scroll the frame downwards.

2.1.4 Main Menu Setup Options

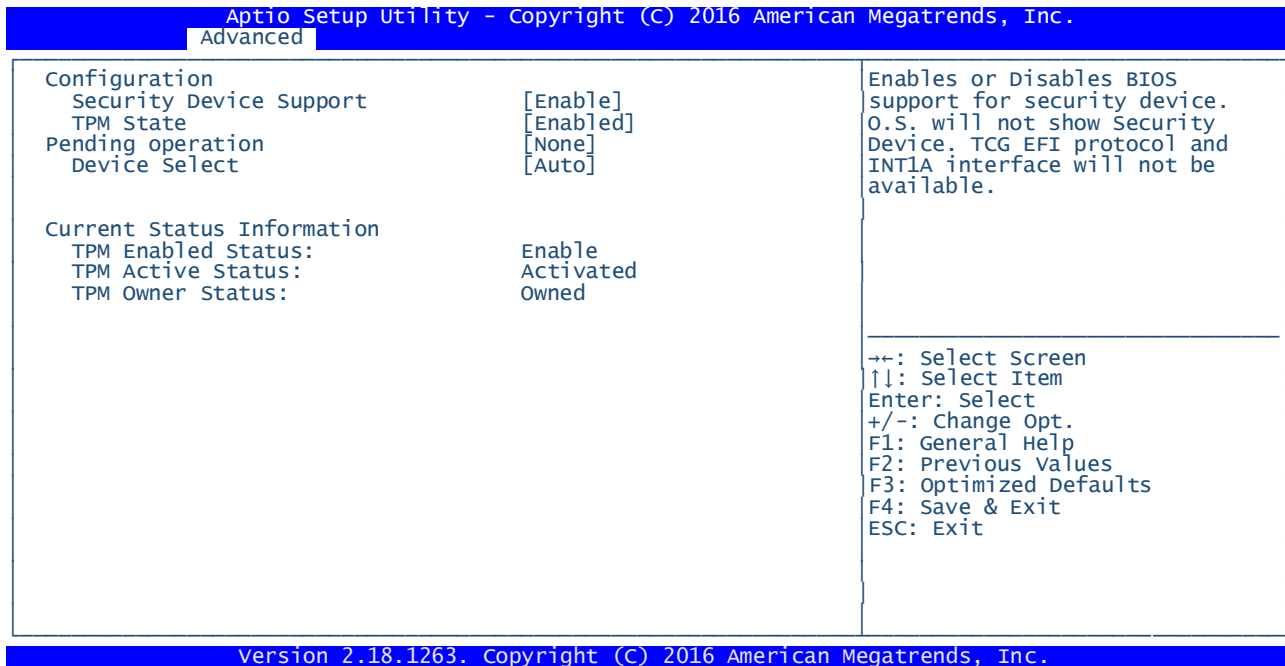
System Language	<i>Language Setup</i> allows the user to configure the language that the user wants to use in Aptio™ TSE. This option allows the user to configure the language that the user wants to use in Aptio™ TSE. The only current language supported is English.
System Date	This option allows the user to set the date on the system real-time clock RTC. Simply press ENTER key to navigate to the month, day, or year and type in the correct numeric value. Use<TAB> and <SHIFT+TAB> to navigate the fields.
System Time	This option allows the user to set the time on the RTC. Simply press ENTER key to navigate to the hour, minute, or second and type in the correct numeric value. Use<TAB> and <SHIFT+TAB> to navigate the fields.

2.2 Advanced Menu

Select the *Advanced* menu item from the Aptio™ TSE screen to enter the Advanced BIOS Setup screen. You can select any of the items in the left frame of the screen, such as CPU Configuration, SATA Configuration, SIO Configuration etc., to go to the sub menu for that item.



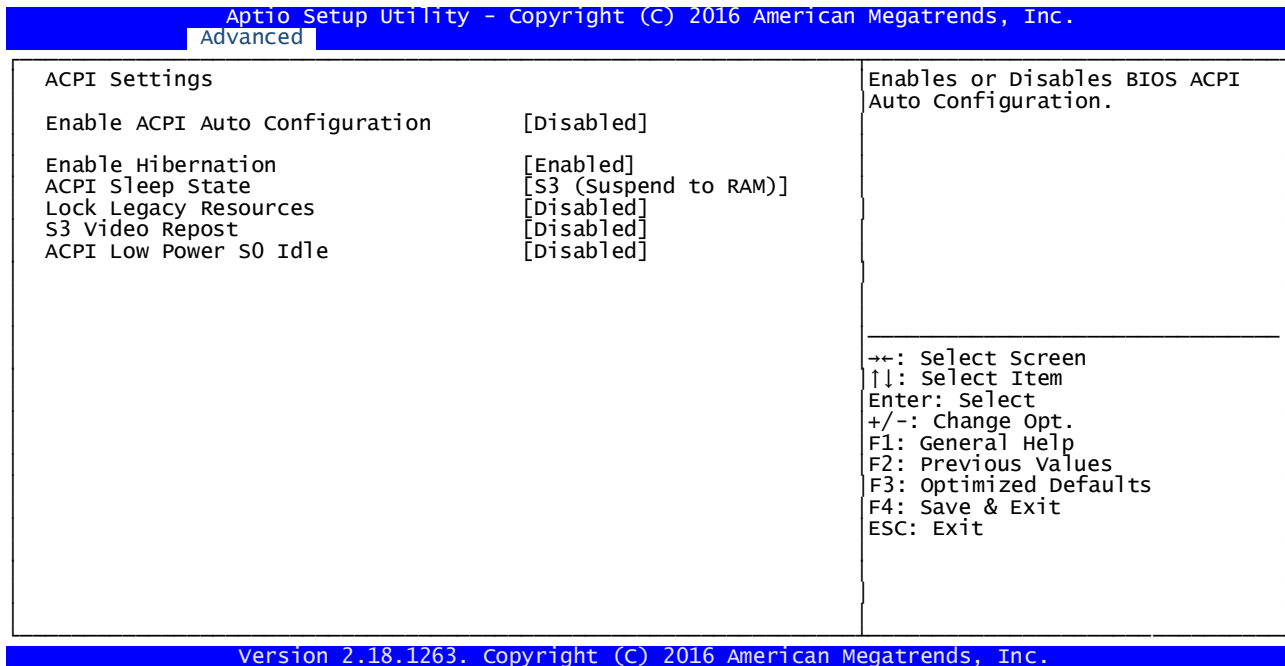
2.2.1 Trusted Computing



The “Security Device Support” option allows the user to Enable/Disable BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

The “TPM State” option allows the user to Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.

2.2.2 ACPI Settings



This option allows the user to view and configure the system ACPI parameters.

Option	Description
Enable ACPI Auto Configuration	Enable/disable BIOS ACPI Auto Configuration. Default is Disable
Enable Hibernation	Enable/disable system ability to Hibernate(OS/S4 Sleep State) Default is Enable
ACPI Sleep State	Select the highest ACPI sleep state the system will enter when the SUSPEND button is Selected. The Default value is set as S3 (Suspend to RAM).
Lock Legacy Resources	Enable/Disable locking Legacy BIOS resources. Default option is Disabled.

2.2.3 Intel ICC

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Advanced		
ICC/OC Watchdog Timer	[Disabled]	When enabled, the ICC/OC watchdog timer is exposed to OS as an ACPI device. WDT HW is always used by BIOS when clock settings are changed.
ICC Locks after EOP	[Default]	
ICC Profile	0	
DMI/BCLK/PEG/SATA/USB3/PCIE Clock Settings		
Default Clock Settings	100.00MHz 0.50% Downspread	→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Frequency Range Limits	99.50 - 100.00 MHz	
Maximum Spread %	0.50%	
Spread Mode Adjustments	None Allowed	

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Option	Description
ICC/OC Watchdog Timer	When enabled, the ICC/OC watchdog timer is exposed to OS as an ACPI device. WDT HW is always used by BIOS when clock settings are changed.
ICC Locks after EOP	Specifies the ICC registers that can be written after end-of-post. Default - Dynamic registers for runtime clock adjustments are left writeable. All Locked - No clock register adjustments allowed after EOP. All Unlocked - All ICC registers can be written after EOP.

2.2.4 AMT Configuration

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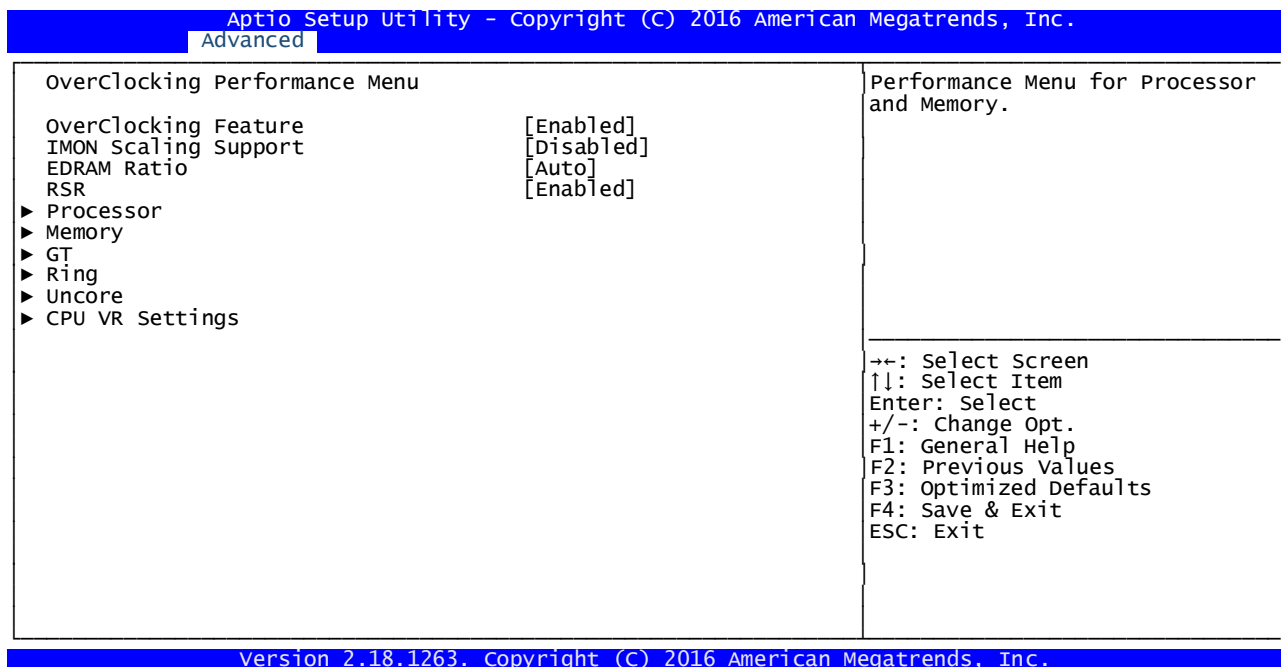
Advanced

Intel AMT	[Enabled]	Enable/Disable Intel (R) Active Management Technology BIOS Extension. Note : iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device →: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
BIOS Hotkey Pressed	[Disabled]	
MEBx Selection Screen	[Disabled]	
Hide Un-Configure ME Confirmation Prompt	[Disabled]	
MEBx Debug Message Output	[Disabled]	
Un-Configure ME	[Disabled]	
Amt Wait Timer	0	
ASF	[Enabled]	
Activate Remote Assistance Process	[Disabled]	
USB Provisioning of AMT	[Enabled]	
PET Progress	[Enabled]	
AMT CIRA Timeout	0	
WatchDog	[Disabled]	
OS Timer	0	
BIOS Timer	0	

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Option	Description
Intel AMT	Enable/Disable Intel® Active Management Technology BIOS Extension. Note: iAMT H/W is always enabled. This option just controls the BIOS extension execution. If enabled, this requires additional firmware in the SPI device.
BIOS Hotkey Pressed	OEMFlag Bit 1: Enable/Disable BIOS hotkey press.
MEBx Selection Screen	OEMFlag Bit 2: Enable/Disable MEBx selection screen
Hide Un-Configure ME Confirmation	OEMFlag Bit 6: Hide Un-Configure ME without password Confirmation Prompt
Un-Configure ME	OEMFlag Bit 15: Un-Configure ME without password.
Amt Wait Timer	Set timer to wait before sending ASF_GET_BOOT_OPTIONS.
ASF	Enable/Disable Alert Specification Format.
Activate Remote Assistance Process	Trigger CIRA boot.
USB Provisioning of AMT	Enable/Disable of AMT USB Provisioning.
PET Progress	User can Enable/Disable PET Events progress to receive PET events or not.
WatchDog	Enable/Disable WatchDog Timer.

2.2.5 Overclocking Performance Menu



Option	Description
Overclocking Feature	Performance Menu for Processor and Memory.
IMON Scaling Support	Support to Enable IMON Scaling.
EDRAM Ratio	EDRAM Ratio, range 8-21. Auto leaves the EDRAM ratio at the fused default value.
RSR	Disable or Enable RSR feature.

2.2.5.1 Processor

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Advanced

Processor

Core Max OC Ratio	0
Core Voltage Mode	[Adaptive]
Core Voltage Override	0
Core Extra Turbo Voltage	0
Core Voltage Offset	0
Offset Prefix	[+]
Core PLL Voltage Offset	0

Sets the maximum OC Ratio for the CPU Core. Uses Mailbox MSR 0x150, cmd 0x10, 0x11. Range 0-80.

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.5.2 Memory

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Advanced

Memory Profile:	Default	Custom	XMP1	Select DIMM timing profile. The below values start with the currently running values and don't auto populate.
tCK [fs]	XMP2 938000	938000	0	
tCL	15	15	0	
tRCD/tRP	15	15	0	
tRAS	36	36	0	
tCWL	14	14	0	
tFAW	23	23	0	
tREFI	8316	8316	0	
tRFC	374	374	0	
tRRD	4	4	0	
tRTP	8	8	0	
tWR	16	16	0	
tWTR	0	0	0	
NMode	2	1	0	
VDD [mV]	1200	1200	0	
DIMM profile				[Default DIMM profile]
Memory Reference Clock				[133]
Memory Ratio				[8]
QCLK Odd Ratio				[Disabled]
tCL	15			→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
tRCD/tRP	15			
tRAS	36			
tCWL	14			
tFAW	23			
tREFI	8316			
tRFC	374			
tRRD	4			
tRTP	8			
tWR	[16]			
tWTR	0			
NMode	2			
Memory Voltage	[1.20 volts]			
D11BwEn[0]	0			
D11BwEn[2]	2			
D11BwEn[3]	2			
VDD	1200			

→: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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Option	Description
DIMM profile	Select DIMM timing profile. The below values start with the currently running values and don't auto populate.

2.2.5.3 GT

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Advanced

GT Slice Domain		Overclocked RP0 Frequency (MLC
GT OverClocking Frequency	0	Clk) in multiples of 50 MHz
GT Voltage Mode	[Adaptive]	
GT Extra Turbo voltage	0	
GT Voltage Offset	0	
Offset Prefix	[+]	
GT Unslice Domain		
GT OverClocking Frequency	0	
GT Voltage Mode	[Adaptive]	
GT Extra Turbo voltage	0	
GT Voltage Offset	0	
Offset Prefix	[+]	

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.5.4 Ring

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Advanced

Ring

Ring Max OC Ratio	0
Ring Min OC Ratio	0
Ring Voltage Mode	[Adaptive]
Ring Extra Turbo Voltage	0
Ring Voltage Offset	0
Offset Prefix	[+]

This sets the maximum
overclocking ratio for the
RING Domain. Uses Mailbox MSR
0x150, cmd 0x11.

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.5.5 Uncore

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Advanced

Uncore		Specifies the Offset Voltage applied to the Uncore domain. This voltage is specified in millivolts. Uses Mailbox MSR 0x150, cmd 0x11. Range -1000 to 1000 mV
Uncore voltage Offset	0	
Offset Prefix	[+]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.5.6 CPU VR Settings

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Advanced		
CPU VR Settings		PMON Slope defined in 1/100 increments. Range is 0-200. For a 1.25 slope, enter 125. 0 = AUTO. Uses BIOS VR mailbox command 0x9."
PMON Slope	0	
PMON Offset	0	
PSYS PMax Current	0	
▶ System Agent VR Settings		
▶ Core/IA VR Settings		
▶ Ring VR Settings		
▶ GT-UnSliced VR Settings		
▶ GT-Sliced VR Settings		
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Option	Description
PMON Slope	PMON Slope defined in 1/100 increments. Range is 0-200. For a 1.25 slope, enter 125. 0 = AUTO. Uses BIOS VR mailbox command 0x9.
PMON Offset	PMON Offset. Range is 0-255. 0 = AUTO. Uses BIOS VR mailbox command 0x9.
PSYS PMax Current	PSYS PMax current, defined in 1/8A increments. Range 0-8192. For a PMax of 125A, enter 1000. 0 = AUTO. Uses BIOS VR mailbox command 0xB.

2.2.5.6.1 System Agent VR Settings

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Advanced

System Agent VR Domain		VR Config Enable
VR Config Enable	[Enabled]	
AC Loadline	0	
DC Loadline	0	
PS Current Threshold1	0	
PS Current Threshold2	0	
PS Current Threshold3	0	
PS3 Enable	[Disabled]	
PS4 Enable	[Disabled]	
IMON Slope	0	
IMON Offset	0	
VR Current Limit	0	
VR Voltage Limit	0	
TDC Enable	[Disabled]	
TDC Current Limit	0	
TDC Time Window	1	
TDC Lock	[Disabled]	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.5.6.2 Core/IA VR Settings

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Advanced

Core/IA VR Domain		VR Config Enable
VR Config Enable	[Enabled]	
AC Loadline	0	
DC Loadline	0	
PS Current Threshold1	0	
PS Current Threshold2	0	
PS Current Threshold3	0	
PS3 Enable	[Disabled]	
PS4 Enable	[Disabled]	
IMON Slope	0	
IMON Offset	0	
VR Current Limit	0	
VR Voltage Limit	0	
TDC Enable	[Disabled]	
TDC Current Limit	0	
TDC Time Window	1	
TDC Lock	[Disabled]	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.5.6.3 Ring VR Settings

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Advanced

Ring VR Domain		VR Config Enable
VR Config Enable	[Enabled]	
AC Loadline	0	
DC Loadline	0	
PS Current Threshold1	0	
PS Current Threshold2	0	
PS Current Threshold3	0	
PS3 Enable	[Disabled]	
PS4 Enable	[Disabled]	
IMON Slope	0	
IMON Offset	0	
VR Current Limit	0	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
VR Voltage Limit	0	
TDC Enable	[Disabled]	
TDC Current Limit	0	
TDC Time Window	1	
TDC Lock	[Disabled]	

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2.2.5.6.4 GT-UnSliced VR Settings

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Advanced

GT-UnSliced Domain		VR Config Enable
VR Config Enable	[Enabled]	
AC Loadline	0	
DC Loadline	0	
PS Current Threshold1	0	
PS Current Threshold2	0	
PS Current Threshold3	0	
PS3 Enable	[Disabled]	
PS4 Enable	[Disabled]	
IMON Slope	0	
IMON Offset	0	
VR Current Limit	0	
VR Voltage Limit	0	
TDC Enable	[Disabled]	
TDC Current Limit	0	
TDC Time Window	1	
TDC Lock	[Disabled]	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.5.6.5 GT-Sliced VR Settings

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Advanced

GT-Sliced Domain		VR Config Enable
VR Config Enable	[Enabled]	
AC Loadline	0	
DC Loadline	0	
PS Current Threshold1	0	
PS Current Threshold2	0	
PS Current Threshold3	0	
PS3 Enable	[Disabled]	
PS4 Enable	[Disabled]	
IMON Slope	0	
IMON Offset	0	
VR Current Limit	0	
VR Voltage Limit	0	
TDC Enable	[Disabled]	
TDC Current Limit	0	
TDC Time Window	1	
TDC Lock	[Disabled]	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.6 PCH-FW Configuration

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
ME FW Version	11.0.18.1002	Disabling this option will cause ME not to unconfigure on RTC clear
ME Firmware Mode	Normal Mode	
ME Firmware Type	Full Sku Firmware	
ME Firmware SKU	Corporate SKU	
PTT Capability / State	1 / 0	
NFC Support	Disabled	
ME Unconfig on RTC Clear State	[Enabled]	
ME State	[Enabled]	
TPM Device Selection	[dTPM 1.2]	
▶ Firmware Update Configuration		
←+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit		
Version 2.18.1263. Copyright (C) 2016 American Megatrends, Inc.		

2.2.6.1 Firmware Update Configuration

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
Me FW Image Re-Flash	[Disabled]	Enable/Disable Me FW Image Re-Flash function.
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.7 Smart Settings

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.	
Advanced	
SMART Settings	
SMART Self Test	[Disabled]
Run SMART Self Test on all HDDs during POST.	
→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
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2.2.8 NCT6106D HW Monitor

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.

Advanced

Pc Health Status

System temperature1	: +34 °C
System temperature2	: N/A
System temperature3	: N/A
System temperature4	: N/A
System temperature5	: N/A
System temperature6	: N/A
Fan1 Speed	: N/A
Fan2 Speed	: N/A
Fan3 Speed	: N/A
VCORE	: +1.024 V
VIN0	: +1.200 V
VIN1	: +1.008 V
VIN2	: +0.560 V
AVCC	: +3.344 V
VSBB	: +3.344 V
VCC3V	: +3.328 V
VBAT	: +3.344 V

→: Select Screen
↑: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.9 Intel BIOS Guard Technology

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.	
Advanced	
Intel Bios Guard Support	[Disabled]
Enable/Disable Intel Bios Guard Support	
→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
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2.2.10 Serial Port Console Redirection

Advanced	
COM0 Console Redirection [Enabled] ▶ Console Redirection Settings COM1(Pci Bus0,Dev0,Func0) (Disabled) Console Redirection Port Is Disabled Legacy Console Redirection ▶ Legacy Console Redirection Settings Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS) Console Redirection [Disabled] ▶ Console Redirection Settings	Console Redirection Enable or Disable. →+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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This option allows the user to view and configure the serial port settings.

2.2.10.1 COM0 Console Redirection Settings

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
COM0 Console Redirection Settings		Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Terminal Type	[VT-UTF8]	
Bits per second	[115200]	
Data Bits	[8]	
Parity	[None]	
Stop Bits	[1]	
Flow Control	[None]	
VT-UTF8 Combo Key Support	[Enabled]	
Recorder Mode	[Disabled]	
Resolution 100x31	[Enabled]	
Legacy OS Redirection Resolution	[80x25]	
Putty KeyPad	[VT100]	
Redirection After BIOS POST	[Always Enable]	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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2.2.10.2 COM1 Console Redirection Settings

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Advanced

COM1
Console Redirection Settings

Terminal Type	[VT-UTF8]
Bits per second	[115200]
Data Bits	[8]
Parity	[None]
Stop Bits	[1]
Flow Control	[None]
VT-UTF8 Combo Key Support	[Enabled]
Recorder Mode	[Disabled]
Resolution 100x31	[Enabled]
Legacy OS Redirection Resolution	[80x25]
Putty KeyPad	[VT100]
Redirection After BIOS POST	[Always Enable]

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

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.11 CPU Configuration

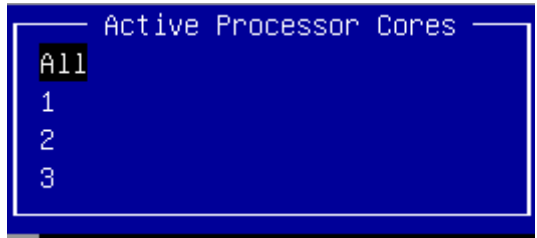
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Advanced

CPU Configuration		Enabled for windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.
Intel(R) Xeon(R) CPU E3-1505M v5 @ 2.80GHz		
CPU Signature	506E3	
Microcode Patch	A6	
Max CPU Speed	2800 MHz	
Min CPU Speed	800 MHz	
CPU Speed	2700 MHz	
Processor Cores	4	
Hyper Threading Technology	Supported	
Intel VT-x Technology	Supported	
Intel SMX Technology	Supported	
64-bit	Supported	
EIST Technology	Supported	
CPU C3 state	Supported	
CPU C6 state	Supported	
CPU C7 state	Supported	
CPU C8 state	Supported	
CPU C9 state	Supported	
CPU C10 state	Supported	
L1 Data Cache	32 kB x 4	
L1 Code Cache	32 kB x 4	
L2 Cache	256 kB x 4	
L3 Cache	8 MB	
Hyper-threading	[Enabled]	
Active Processor Cores	[All]	
OverClocking lock	[Disabled]	
Intel Virtualization Technology	[Enabled]	
Hardware Prefetcher	[Enabled]	
Adjacent Cache Line Prefetch	[Enabled]	
CPU AES	[Enabled]	
Boot performance mode	[Max Non-Turbo Performance]	
Intel(R) Speed Shift Technology	[Enabled]	
Intel(R) SpeedStep(tm)	[Enabled]	
Turbo Mode	[Enabled]	
Package Power Limit MSR Lock	[Disabled]	
1-Core Ratio Limit Override	0	
2-Core Ratio Limit Override	0	
3-Core Ratio Limit Override	0	
4-Core Ratio Limit Override	0	
Configurable TDP Boot Mode	[Nominal]	
Configurable TDP Lock	[Disabled]	
CTDP BIOS control	[Disabled]	
Platform PL1 Enable	[Disabled]	
Platform PL2 Enable	[Disabled]	
CPU C states	[Enabled]	
Enhanced C-states	[Enabled]	
C-State Auto Demotion	[C1 and C3]	
C-State Un-demotion	[C1 and C3]	
Package C state demotion	[Enabled]	
Package C state undemotion	[Enabled]	
CState Pre-wake	[Enabled]	
Package C State limit	[AUTO]	
CFG lock	[Enabled]	
► Power Limit 3 Settings		
► Power Limit 4 Settings		
► CPU Thermal Configuration		
Intel TXT(LT) Support	[Disabled]	
Debug Interface	[Disabled]	
Debug Interface Lock	[Enabled]	
SW Guard Extensions (SGX)	[Software Controlled]	
Select Owner EPOCH input type	[No Change in Owner EPOCHs]	
PRMRR Size	[AUTO]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
		Enabled for windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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This option allows the user to view and configure the settings of the CPU installed on the computer system.

Option	Description
CPU Speed	This option allows the user to view the speed of the CPU installed on the hardware platform.
64 - bit	This option shows whether this BIOS supports 64 bit or not.
Hyper-threading	Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper- Threading)
Active Processor Cores	This option allows the user to select number of cores to enable in each processor. 
Overclocking Lock	FLEX_RATIO(194) MSR
Intel Virtualization Technology	When enabled, A VMM can utilize the hardware capabilities provided by Vanderpool Technology
Hardware Prefetcher	This option allows the user to enable or disable Mid-level cache (L2) streamer prefetcher.
Adjacent Cache Line Prefetch	This option allows the user to enable or disable the mid-level cache (L2) prefetching of adjacent cache lines.

2.2.11.1 Power Limit 3 Settings

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
Power Limit 3 Settings		Enable/Disable Power Limit 3 override. If this option is disabled, BIOS will leave the default values for Power Limit 3 and Power Limit 3 Time window.
Power Limit 3 Override	[Enabled]	
Power Limit 3	0	
Power Limit 3 Time window	0	
Power Limit 3 Duty Cycle	0	
Power Limit 3 Lock	[Enabled]	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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2.2.11.2 Power Limit 4 Settings

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
Power Limit 4 Settings		Enable/Disable Power Limit 4 override. If this option is disabled, BIOS will leave the default values for Power Limit 4.
Power Limit 4 Override	[Enabled]	
Power Limit 4	0	
Power Limit 4 Lock	[Disabled]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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2.2.11.3 CPU Thermal Configuration

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.	
Advanced	
Cpu Thermal Configuration	
CPU DTS	[Disabled]
TCC Activation Offset	0
ACPI 3.0 T-States	[Disabled]
Enable/Disable ACPI 3.0 T-States.	
→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	

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2.2.12 Intel TXT Information

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Advanced

Intel TXT Information	
Chipset	Production Fused
BiosAcm	Production Fused
Chipset Txt	Supported
Cpu Txt	Supported
Error Code	None
Class Code	None
Major Code	None
Minor Code	None

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.13 Platform Misc Configuration

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
Platform Misc Configuration		PCI Express Native Support Enable/Disable. This feature is only available in Vista.
Native PCIe Enable	[Enabled]	
Native ASPM	[Auto]	
BDAT ACPI Table Support	[Disabled]	
Intel Ready Mode Technology	[Disabled]	
ACPI Debug	[Disabled]	
PTID Support	[Enabled]	
PECI Access Method	[Direct I/O]	
Firmware Configuration	[Test]	
ZpODD Support	[Disabled]	
PCI Delay Optimization	[Disabled]	
► RTD3 settings		
► DPTF Configuration		
► Platform Setting		
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.13.1 RTD3 Settings

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Advanced

RTD3 settings		RTD3 SSDT table will be loaded if enabled.
RTD3 Support	[Enabled]	
VR Staggering delay	16	
VR Ramp up delay	16	
PCIE Slot Device Power-on	100	
PCIE Slot Device Power-off	10	
ADSP Delay	200	
I2C0 Controller	0	
SensorHub	68	
I2C1 Controller	0	
TouchPad	68	
TouchPanel	68	
PEP SATA Support	[Storage Ports]	
P-state Capping	[Disabled]	→: Select Screen
USB Port 1	[Disabled]	↑↓: Select Item
USB Port 2	[Disabled]	Enter: Select
I2C0 Sensor Hub	[Enabled]	+/-: Change Opt.
ZPODD	[Disabled]	F1: General Help
WWAN	[Enabled]	F2: Previous Values
Sata Port 1	[Disabled]	F3: Optimized Defaults
Sata Port 2	[Disabled]	F4: Save & Exit
		ESC: Exit

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2.2.13.2 DPTF Configuration

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Advanced

DPTF Configuration		Enable/Disable Intel Dynamic Platform Thermal Framework
DPTF	[Enabled]	
Processor Thermal Device	[SA Thermal Device]	
Active Thermal Trip Point	86	
Passive Thermal Trip Point	89	
Critical Thermal Trip Point	98	
S3/CS Thermal Trip Point	95	
Hot Thermal Trip Point	97	
PPCC Step Size	[0.5 Watts]	
Minimum Power Limit 0	125	
Minimum Power Limit 1	125	
Minimum Power Limit 2	125	
CLPO Enable	[Enabled]	
CLPO Start PState	16	
CLPO Step size	50	
CLPO Power Control	[SMT Off lining]	
CLPO Performance Control	[Core Off lining]	
Config TDP	[Enabled]	
LPM	[Enabled]	
CLPM	[Disable LPM]	
CEUC	[Enabled]	
Graphics Freq	400	
Memory Device	[Enabled]	
Active Thermal Trip Point	63	
Passive Thermal Trip Point	71	
Critical Thermal Trip Point	103	
Hot Thermal Trip Point	100	
S3/CS Thermal Trip Point	97	
Thermal Sampling Period	10	
FAN1 Device	[Enabled]	
FAN2 Device	[Enabled]	
Display participant	[Disabled]	
Wifi participant	[Disabled]	
WWAN participant	[Disabled]	
WGig participant	[Disabled]	
Charger participant	[Disabled]	
Power participant	[Disabled]	
PerC participant	[Disabled]	
Storage participant	[Disabled]	
Sensor Device 1	[Disabled]	
Sensor Device 2	[Disabled]	
Sensor Device 3	[Disabled]	
Sensor Device 4	[Disabled]	
Sensor Device 5	[Disabled]	
Generic Device 1	[Disabled]	
Generic Device 2	[Disabled]	
Generic Device 3	[Disabled]	
Generic Device 4	[Disabled]	

→+: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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2.2.13.3 Platform Setting

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Advanced

Platform Setting		Select the Pmic Vcc IO Voltage Level
Pmic Vcc IO Level	[Disabled]	
Pmic Vddq Level	[Disabled]	
Power Sharing Manager	[Disabled]	
Select Camera	[IVCAM]	
Enable 3D Camera DFU device	[Disabled]	
Wireless device		
WRDS Package		
WiFi SAR	[Disabled]	
HID Event Filter Driver	[Disabled]	
Enable Wireless Charge Support	[Disabled]	
Enable FFU Support	[Disabled]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.14 Secure Erase

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.	
Advanced	
Secure Erase	
Secure Erase mode	[Simulated]
Force Secure Erase	[Disable]
Force Secure Erase on next boot	
→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	

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2.2.15 SATA Configuration

Advanced		
SATA Controller(s)	[Enabled]	Enable or disable SATA Device.
SATA Mode Selection	[AHCI]	
SATA Test Mode	[Disabled]	
► Software Feature Mask Configuration		
Aggressive LPM Support	[Enabled]	
SATA Controller Speed	[Default]	
Serial ATA Port 0	Empty	
Software Preserve	Unknown	
Port 0	[Enabled]	
Hot Plug	[Disabled]	
External SATA	[Disabled]	
Spin Up Device	[Disabled]	
SATA Device Type	[Solid State Drive]	
Topology	[Unknown]	
Device Sleep	[Disabled]	
SATA DEVSLEP Idle Timeout Config	[Disabled]	
Serial ATA Port 1	Empty	
Software Preserve	Unknown	
Port 1	[Enabled]	
Hot Plug	[Disabled]	
External SATA	[Disabled]	
Spin Up Device	[Disabled]	
SATA Device Type	[Solid State Drive]	
Topology	[Unknown]	
Device Sleep	[Disabled]	
SATA DEVSLEP Idle Timeout Config	[Disabled]	

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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This option allows the user to view and configure the settings of the SATA configuration settings.

SATA Mode

This setting allows you to manually configure SATA controller for a particular mode.

Option	Description
Disable	Set this value to disable the SATA mode
IDE Mode	Set this value to change the SATA to IDE mode.
AHCI Mode	Set this value to change the SATA to AHCI mode
RAID	Set this value to change the SATA to RAID mode.

SATA Port 0-5

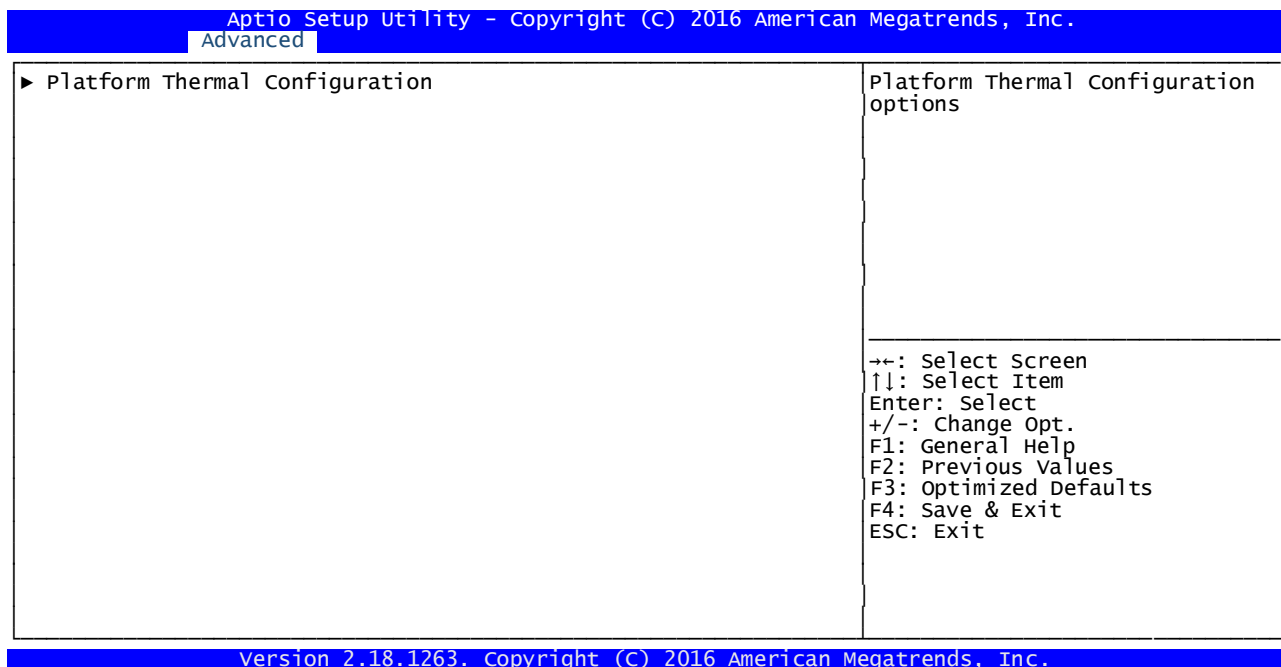
External SATA Port

This option allows the user to enable/disable external SATA support.

Hot Plug

This option allows the user to enable/disable SATA ports ht plug support.

2.2.16 Thermal Configuration



2.2.16.1 Platform Thermal Configuration

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Advanced

Automatic Thermal Reporting	[Disabled]
Critical Trip Point	[119 C (POR)]
Active Trip Point 0	[71 C]
Active Trip Point 0 Fan Speed	100
Active Trip Point 1	[55 C]
Active Trip Point 1 Fan Speed	75
Passive Trip Point	[95 C]
Passive TC1 Value	1
Passive TC2 Value	5
Passive TSP Value	10
Active Trip Points	[Enabled]
Passive Trip Points	[Disabled]
Critical Trip Points	[Enabled]
PCH Thermal Device	[Enabled in PCI mode]
PCH Temp Read	[Enabled]
CPU Energy Read	[Enabled]
CPU Temp Read	[Enabled]
Alert Enable Lock	[Disabled]
CPU Temp	72
CPU Fan Speed	65

Configure _CRT, _PSV and _AC0 automatically based on values recommended in BWG's Thermal Reporting for Thermal Management settings. Set to Disabled for manual configuration.

→+: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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2.2.17 Acoustic Management Configuration

```

Aprio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.
Advanced
Acoustic Management Configuration [Enabled]
▶ SATA Controller 0 - PCI Bus 00 Dev 17 Fun 00

Option to Enable or Disable Automatic Acoustic Management

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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```

2.2.17.1 SATA Controller 0

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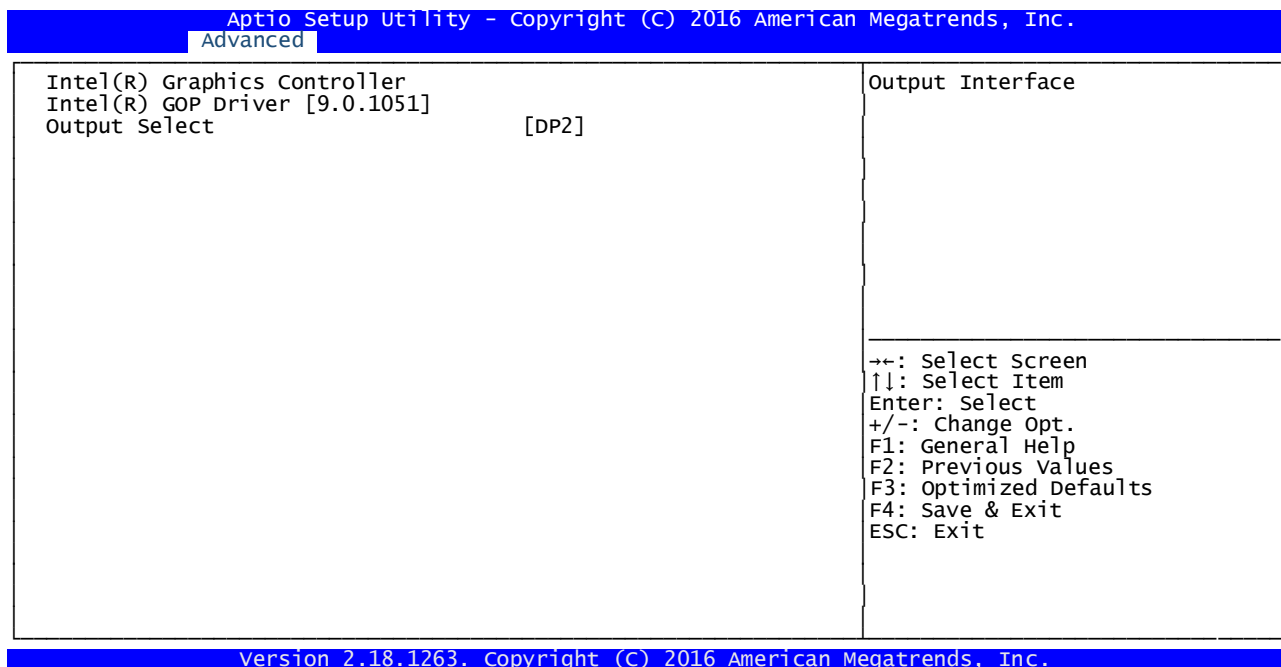
Advanced

Port 3
Samsung SSD 850 EVO 120GB
Acoustic Not Supported

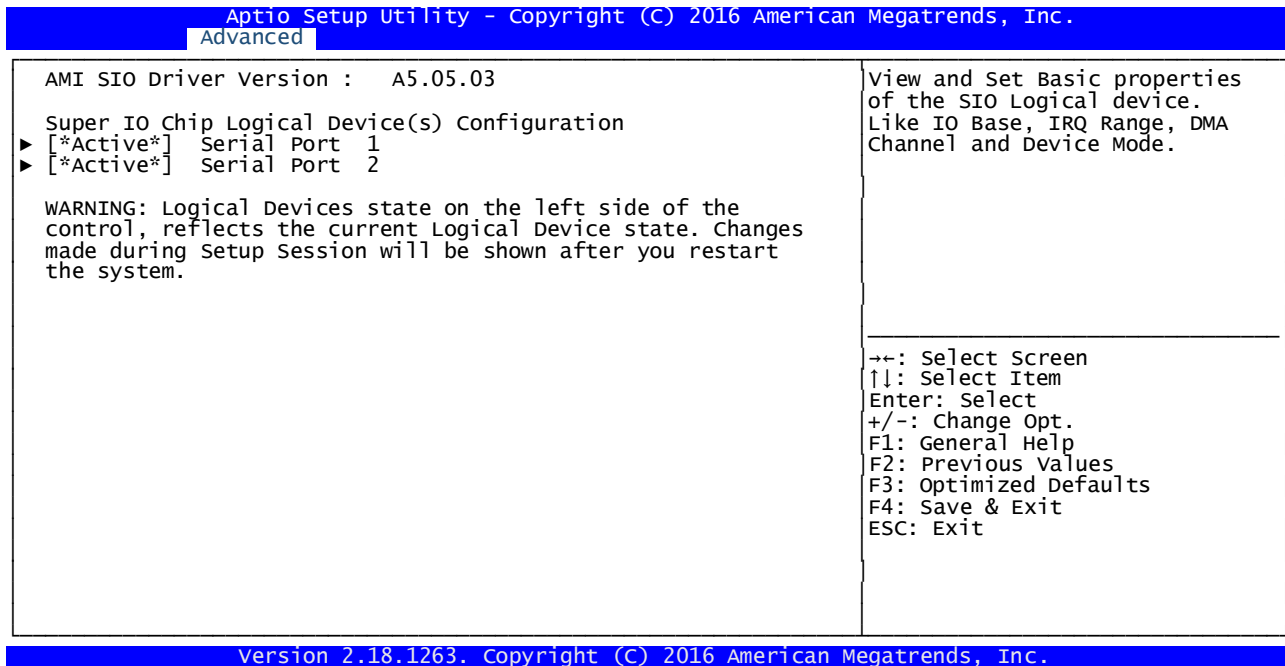
→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.18 AMI Graphic Output Protocol Policy



2.2.19 SIO Configuration



This option allows the user to view and configure the SIO configuration.

2.2.19.1 Serial Port 1

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Advanced

Serial Port 1 Configuration

Use This Device [Enabled]

Logical Device Settings:

Current : IO=3F8h; IRQ=4;

Possible: [Use Automatic Settings]

WARNING: Disabling SIO Logical Devices may have unwanted side effects.
PROCEED WITH CAUTION.

Enable or Disable this Logical Device.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.2.19.2 Serial Port 2

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Advanced

Serial Port 2 Configuration

Use This Device [Enabled]

Logical Device Settings:

Current : IO=2F8h; IRQ=3;

Possible: [Use Automatic Settings]

WARNING: Disabling SIO Logical Devices may have unwanted side effects.
PROCEED WITH CAUTION.

Enable or Disable this Logical Device.

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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~~2.2.20 PCI Subsystem Configuration~~

This option is not available.

2.2.21 Network Stack Configuration

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Advanced		
Network Stack	[Enabled]	Enable/Disable UEFI Network Stack
Ipv4 PXE Support	[Enabled]	
Ipv6 PXE Support	[Enabled]	
PXE boot wait time	0	
Media detect count	1	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Option	Description
Network Stack	Enable/Disable UEFI Network Stack.
Ipv4 PXE Support	Enable Ipv4 PXE Boot Support. If disabled IPV4 PXE boot option will not be created.
Ipv6 PXE Support	Enable Ipv6 PXE Boot Support. If disabled IPV6 PXE boot option will not be created.
PXE boot wait time	Wait time to press ESC key to abort the PXE boot.
Media detect count	Number of times presence of media will be checked.

2.2.22 CSM Configuration

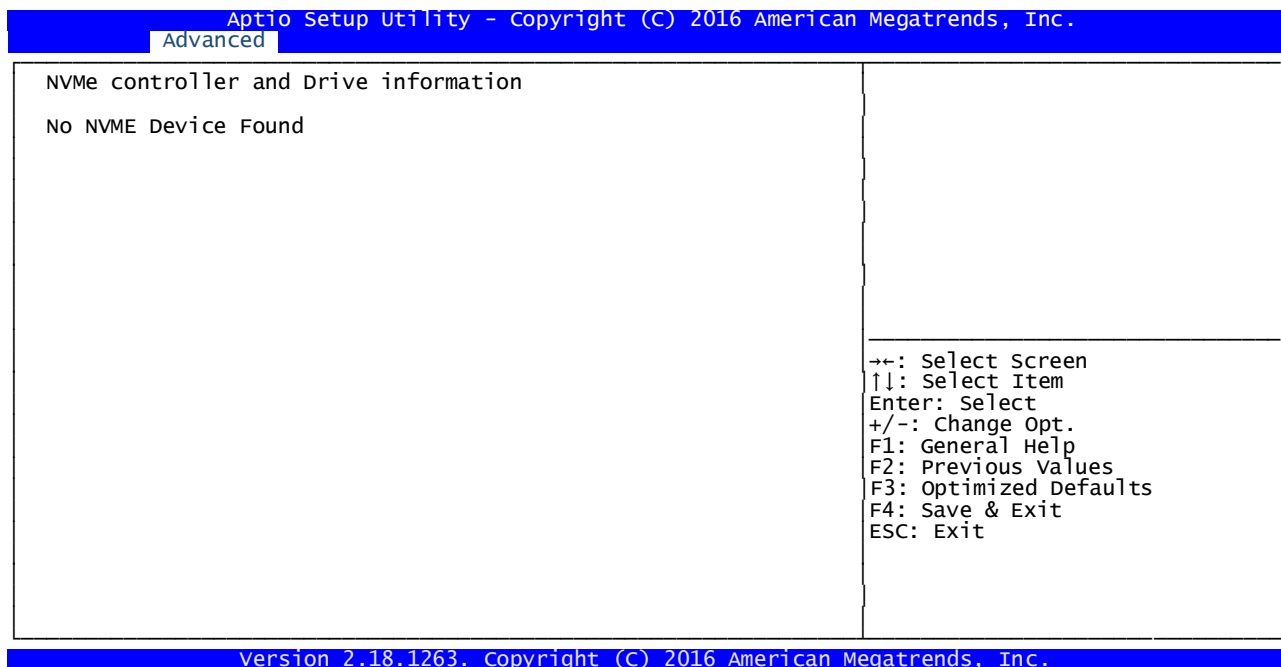
Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.	
Advanced	
Compatibility Support Module Configuration	
CSM Support	[Enabled]
CSM16 Module Version	N/A, reset required
GateA20 Active	[Upon Request]
INT19 Trap Response	[Immediate]
Boot option filter	[UEFI only]
Option ROM execution	
Network	[Do not launch]
Storage	[UEFI]
Video	[UEFI]
Other PCI devices	[UEFI]
Enable/Disable CSM Support. →: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	

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This option allows the user to view and configure the CSM settings.

Option	Description
CSM Support	Enable/Disable CSM Support.
GateA20 Active	UPON REQUEST - GA20 can be disabled using BIOS services. ALWAYS - do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.
INT19 Trap Response	BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED – execute the trap during legacy boot.
Boot option filter	This option controls Legacy/UEFI ROMs priority
Network	Controls the execution of UEFI and Legacy PXE OpROM.
Storage	Controls the execution of UEFI and Legacy Storage OpROM.
Video	Controls the execution of UEFI and Legacy Video OpROM.
Other PCI devices	Determines OpROM execution policy for devices other than Network, Storage, or

2.2.23 NVMe Configuration

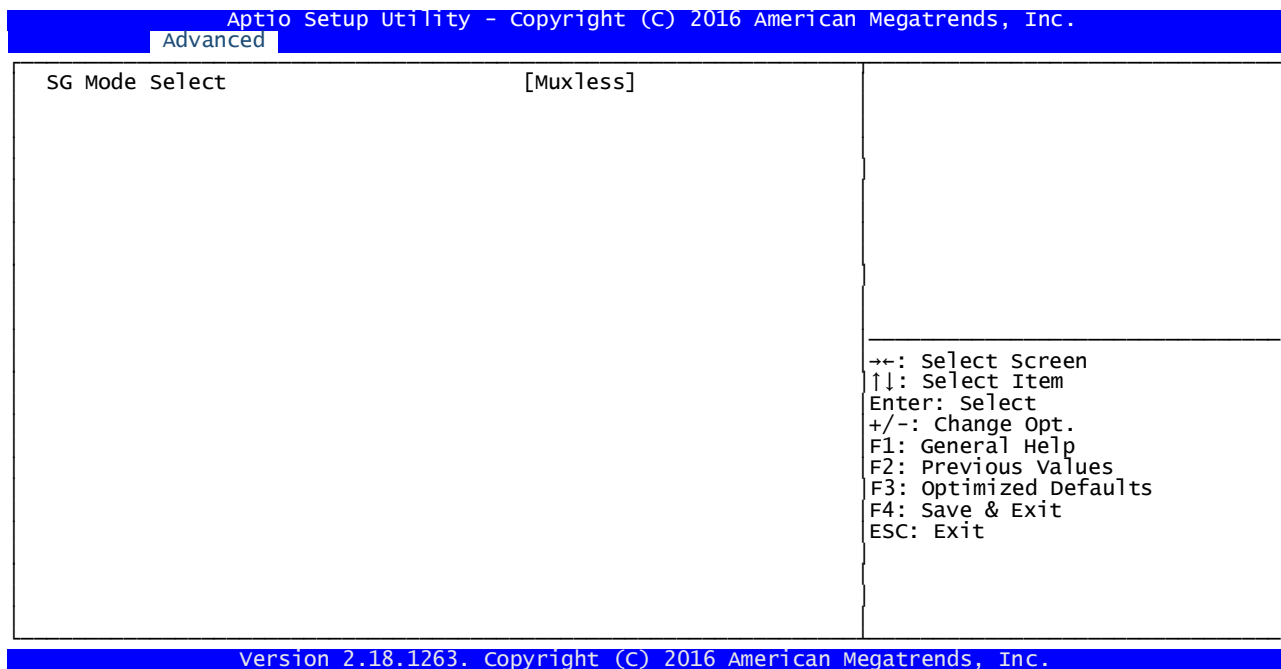


2.2.24 SDIO Configuration

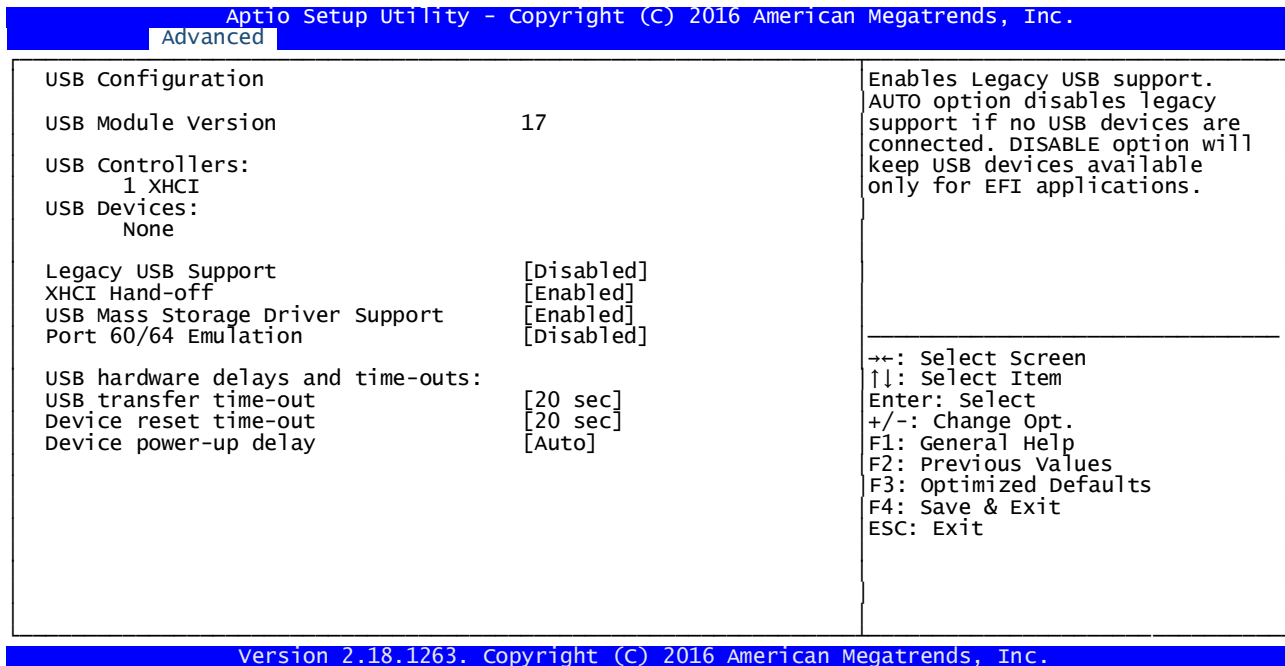
Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Advanced		
SDIO Access Mode	[Auto]	Auto Option: Access SD device in DMA mode if controller supports it,otherwise in PIO mode.DMA Option: Access SD device in DMA mode.PIO Option: Access SD device in PIO mode. →+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.2.25 Switchable Graphics



2.2.26 USB Configuration



This option allows the user to view and configure the settings of the USB configuration parameters.

Legacy USB Support

This enables Legacy USB Support, the following tables outlines the different modes of this feature,

Option	Description
Auto	This option disables legacy support if no USB devices are connected
Enable	This option will enable Legacy USB support.
Disable	This option will keep USB devices available only for EFI applications.

EHCI Hand-off:

This is a workaround feature for Operating Systems without EHCI hand-off support. The EHCI ownership must be claimed by EHCI Driver.

Option	Description
Enable	This option enables EHCI hand-off support.
Disable	This option disables EHCI hand-off support.

XHCI Hand-Off

This is a workaround feature for Operating Systems without XHCI hand-off support. The XHCI ownership must be claimed by XHCI Driver.

Option	Description
Enable	This option enables XHCI hand-off support.
Disable	This option disables XHCI hand-off support.

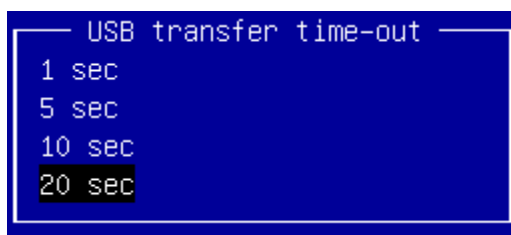
USB Mass Storage Driver Support

This allows the user to enable/disable USB mass storage driver support.

Option	Description
Enable	This option enables USB mass storage driver support.
Disable	This option disables USB mass storage driver support.

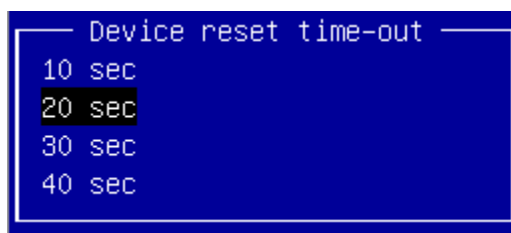
USB Transfer Time-Out

This feature enables you to set USB Timeout at various time intervals.



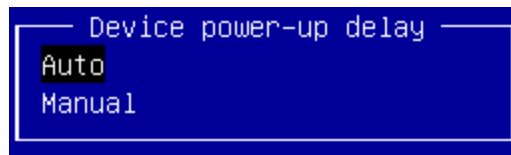
Device Reset Timeout

This feature enables you to set Device Reset Timeout at various time intervals.



Device Power-Up Delay

This feature allows the user to select the Device power-up delay as Auto/Manual.



Option	Description
Auto	This option automatically sets the Device power-up delay.
Manual	This option allows the user to set the Device power-up delay.

2.2.27 Intel Thunderbolt

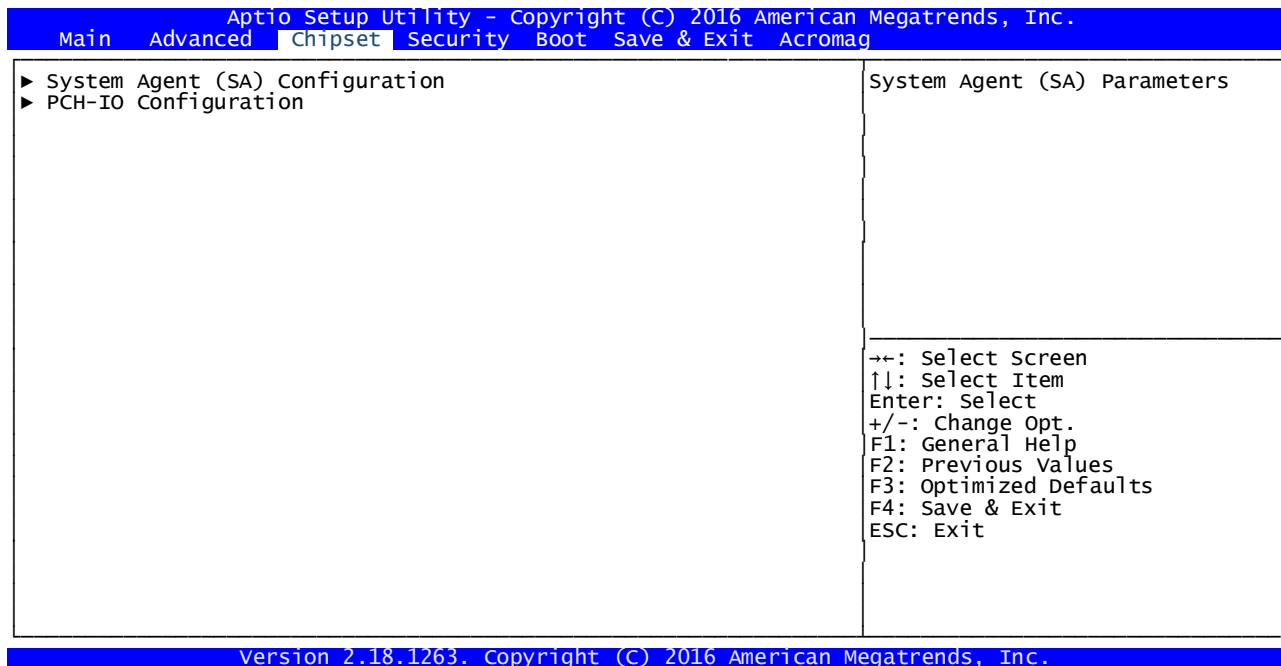
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Advanced

Intel(R) Thunderbolt Configuration		Enable or Disable Intel(R) Thunderbolt Function.
Thunderbolt Specification Version	N/A	
Intel Sample Code Version	1.12	
Thunderbolt Host chip	N/A	
Intel Thunderbolt Technology	[Enabled]	
Thunderbolt Usb Support	[Disabled]	
Thunderbolt Boot Support	[Disabled]	
Security Level	[Unique ID]	
Wake From Thunderbolt Devices	[Enabled]	
AIC Support	[Disabled]	
AR AIC Support	[Enabled]	
GPIO3 Force Pwr	[Disabled]	
wait time in ms after applying Force Pwr	200	
Thunderbolt PCIe Cache-line Size	[32]	
SMI/Notify Support	[Enabled]	
SwSMI Support	[Enabled]	
Notify Support	[Enabled]	
MSI enabled in FADT	[Enabled]	
Enable CLK REQ	[Disabled]	
Enable ASPM	[Disabled]	
Enable LTR	[Disabled]	
Native OS Hot Plug	[Disabled]	
GPIO filter	[Enabled]	
_RMV Method return value	[0]	
Ignore Thunderbolt Option Rom	[Enabled]	
Thunderbolt SwSMI Delay	0	
TBT Device IO resource Support	[Disabled]	
Reseved Mem per phy slot	32	
Reseved PMem per phy slot	32	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.3 Chipset Menu



2.3.1 System Agent (SA) Configuration

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Chipset		
System Agent Bridge Name	Skylake	VT-d capability
SA PCIe Code Version	2.1.0.0	
VT-d	Supported	
VT-d	[Enabled]	
CHAP Device (B0:D7:F0)	[Disabled]	
Thermal Device (B0:D4:F0)	[Disabled]	
GMM Device (B0:D8:F0)	[Enabled]	
CRID Support	[Disabled]	
Above 4GB MMIO BIOS assignment	[Disabled]	
SKY CAM Device (B0:D5:F0)	[Enabled]	
eDRAM Mode	[eDRAM HW Mode]	
▶ Graphics Configuration		→+: Select Screen
▶ DMI/OPI Configuration		↑↓: Select Item
▶ PEG Port Configuration		Enter: Select
▶ Memory Configuration		+/-: Change Opt.
▶ GT - Power Management Control		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit
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Option	Description
VT-d	VT-d capability
CHAP Device	Enable/Disable SA CHAP Device.
Thermal Device	Enable/Disable SA Thermal Device.
GMM Device	Enable/Disable SA GMM Device.
CRID Device	Enable/Disable CRID Control for Intel SIPP.
Above 4GB MMIO BIOS assignment	Enable/Disable above 4 GB Memory Mapped I/O BIOS assignment. This is disabled automatically when Aperture Size is set to 2048Mbytes.
SKY CAM Device	Enable/Disable SA SKY CAM Device.
eDRAM Mode	The options are : SW Mode eDRAM Off, SW Mode eDRAM On, eDRAM HW Mode

2.3.1.1 Graphic Configuration

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Chipset

Graphics Configuration		Graphics turbo IMON current values supported (14-31)
Graphics Turbo IMON Current	31	
Skip Scanning of External Gfx Card	[Disabled]	
Primary Display	[Auto]	
Internal Graphics	[Auto]	
GTT Size	[8MB]	
Aperture Size	[256MB]	
DVMT Pre-Allocated	[32M]	
DVMT Total Gfx Mem	[256M]	
Gfx Low Power Mode	[Enabled]	
VDD Enable	[Enabled]	
PM Support	[Enabled]	
PAVP Enable	[Enabled]	
Cdynmax Clamping Enable	[Enabled]	
Cd Clock Frequency	[675 Mhz]	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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2.3.1.2 DMI/OP Configuration

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Chipset

DMI/OPI Configuration		Set DMI Speed Gen1/Gen2/Gen3
DMI	X4 Gen3	
DMI Max Link Speed	[Auto]	
DMI Gen3 Eq Phase 2	[Auto]	
DMI Gen3 Eq Phase 3 Method	[Auto]	
DMI VC1 Control	[Disabled]	
DMI Vcm Control	[Enabled]	
Program Static Phase1 Eq	[Enabled]	
► Gen3 Root Port Preset value for each Lane		
► Gen3 Endpoint Preset value for each Lane		
► Gen3 Endpoint Hint value for each Lane		
► Gen3 RxCTLE Control		
DMI Link ASPM Control	[L1]	→+: Select Screen
DMI Extended Sync Control	[Disabled]	↑↓: Select Item
DMI De-emphasis Control	[-3.5 dB]	Enter: Select
DMI IOT	[Disabled]	+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

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Gen3 Root Port Preset value for each Lane

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Chipset

Gen3 Root Port Preset value for each Lane		Value for Lane 0
Lane 0	4	
Lane 1	4	
Lane 2	4	
Lane 3	4	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Gen3 Endpoint Preset value for each Lane

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Chipset

Gen3 Endpoint Preset value for each Lane		Value for Lane 0
Lane 0	7	
Lane 1	7	
Lane 2	7	
Lane 3	7	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Gen3 Endpoint Hint value for each Lane

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Chipset

Gen3 Endpoint Hint value for each Lane		Value for Lane 0
Lane 0	2	
Lane 1	2	
Lane 2	2	
Lane 3	2	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Gen3 RxCTLE Control

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Chipset

Gen3 RxCTLE Control		Gen3 RxCTLE setting for Bundle0 (Lane0, Lane1)
Bundle0	3	
Bundle1	3	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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PEG Port Configuration

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Chipset

PEG Port Configuration		Enable or Disable the Root Port
PEG 0:1:0	Not Present	
Enable Root Port	[Auto]	
Max Link Speed	[Auto]	
PEG0 Slot Power Limit Value	75	
PEG0 Slot Power Limit Scale	[1.0x]	
PEG0 Physical Slot Number	1	
PEG 0:1:1	Not Present	
Enable Root Port	[Auto]	
Max Link Speed	[Auto]	
PEG1 Slot Power Limit Value	75	
PEG1 Slot Power Limit Scale	[1.0x]	
PEG1 Physical Slot Number	2	
PEG 0:1:2	Not Present	
Enable Root Port	[Auto]	
Max Link Speed	[Auto]	
PEG2 Slot Power Limit Value	75	
PEG2 Slot Power Limit Scale	[1.0x]	
PEG2 Physical Slot Number	3	
Detect Non-Compliance Device	[Disabled]	
Program PCIe ASPM after OpROM	[Disabled]	
Program Static Phasel Eq	[Enabled]	
► Gen3 Root Port Preset value for each Lane		
► Gen3 Endpoint Preset value for each Lane		
► Gen3 Endpoint Hint value for each Lane		
► Gen3 RxCTLE Control		
Gen3 Adaptive Software Equalization		
Always Attempt SW EQ	[Disabled]	
Number of Presets to test	[Auto]	
Allow PERST# GPIO Usage	[Enabled]	
SW EQ Enable VOC	[Auto]	
Jitter Dwell Time	3000	
Jitter Error Target	2	
VOC Dwell Time	10000	
VOC Error Target	2	
Generate BDAT PEG Margin Data	[Disabled]	
PCIe Rx CEM Test Mode	[Disabled]	
PCIe Spread Spectrum Clocking	[Enabled]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/=: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Gen3 Root Port Preset value for each Lane

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Chipset

Gen3 Root Port Preset value for each Lane		Value for Lane 0
Lane 0	7	
Lane 1	7	
Lane 2	7	
Lane 3	7	
Lane 4	7	
Lane 5	7	
Lane 6	7	
Lane 7	7	
Lane 8	7	
Lane 9	7	
Lane 10	7	
Lane 11	7	
Lane 12	7	
Lane 13	7	
Lane 14	7	
Lane 15	7	

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Gen3 Endpoint Preset value for each Lane

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Chipset

Gen3 Endpoint Preset value for each Lane		Value for Lane 0
Lane 0	7	
Lane 1	7	
Lane 2	7	
Lane 3	7	
Lane 4	7	
Lane 5	7	
Lane 6	7	
Lane 7	7	
Lane 8	7	
Lane 9	7	
Lane 10	7	
Lane 11	7	
Lane 12	7	
Lane 13	7	
Lane 14	7	
Lane 15	7	
		→: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Gen3 Endpoint Hint value for each Lane

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Chipset

Gen3 Endpoint Hint value for each Lane		Value for Lane 0
Lane 0	2	
Lane 1	2	
Lane 2	2	
Lane 3	2	
Lane 4	2	
Lane 5	2	
Lane 6	2	
Lane 7	2	
Lane 8	2	
Lane 9	2	
Lane 10	2	
Lane 11	2	
Lane 12	2	
Lane 13	2	
Lane 14	2	
Lane 15	2	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Gen3 RxCTLE Control

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Chipset

Gen3 RxCTLE Control

Bundle0	0
Bundle1	0
Bundle2	0
Bundle3	0
Bundle4	0
Bundle5	0
Bundle6	0
Bundle7	0
RxCTLE Override	[Disabled]

Gen3 RxCTLE setting for
Bundle0 (Lane0, Lane1)

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Memory Configuration

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Chipset

Memory Configuration		MRC ULT Safe Config for PO
Memory RC Version	2.1.0.0	
Memory Frequency	2133 MHz	
Total Memory	32768 MB	
VDD	1200	
DIMM#0	16384 MB	
DIMM#1	Not Present	
DIMM#2	16384 MB	
DIMM#3	Not Present	
Memory Timings (tCL-tRCD-tRP-tRAS)	15-36	
MRC ULT Safe Config	[Disabled]	
Maximum Memory Frequency	[Auto]	
HOB Buffer Size	[Auto]	
ECC Support	[Enabled]	
Max TOLUD	[Dynamic]	
SA GV	[Enabled]	
SA GV Low Freq	[MRC default]	
Energy Performance Gain	[Disabled]	
EPG DIMM Idd3N	26	
EPG DIMM Idd3P	11	
Retrain on Fast Fail	[Enabled]	
Enable RH Prevention	[Enabled]	
Row Hammer Solution	[Hardware RHP]	
RH Activation Probability	[1/2^11]	
Exit On Failure (MRC)	[Enabled]	
MC Lock	[Enabled]	
Probeless Trace	[Disabled]	
Enable/Disable IED (Intel Enhanced Debug)	[Disabled]	
Ch Hash Support	[Enabled]	
Ch Hash Mask	12488	
Ch Hash Interleaved Bit	[BIT8]	
VC1 Read Metering	[Enabled]	
VC1 RdMeter Time window	800	
VC1 RdMeter Threshold	280	
Strong Weak Leaker	7	
Memory Scrambler	[Enabled]	
Channel A DIMM Control	[Enable both DIMMs]	
Channel B DIMM Control	[Enable both DIMMs]	
Force Single Rank	[Disabled]	
Memory Remap	[Enabled]	
Time Measure	[Disabled]	
Lpddr Mem WL Set	[Set B]	
EV Loader	[Disabled]	
EV Loader Delay	[Enabled]	
Fast Boot	[Enabled]	
DLL Weak Lock Support	[Enabled]	
► Memory Thermal Configuration		
► Memory Training Algorithms		

→+: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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Memory Thermal Configuration

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Memory Thermal Configuration	.
► Memory Power and Thermal Throttling Memory Thermal Management [Disabled]	
	→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Memory Power and Thermal Throttling

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Chipset

Memory Power and Thermal Throttling

DDR PowerDown and idle counter [BIOS]
 For LPDDR Only: DDR PowerDown and [BIOS]
 idle counter
 REFRESH_2X_MODE [Disabled]
 LPDDR Thermal Sensor [Enabled]
 SelfRefresh Enable [Enabled]
 SelfRefresh IdleTimer 512
 Throttler CKEMin Defeature [Disabled]
 Throttler CKEMin Timer 48
 Pwr Down Idle Timer 0

- Dram Power Meter
- Memory Thermal Reporting
- Memory RAPL

BIOS: BIOS is in control of
 DDR CKE mode and idle timer
 value. PCODE: pcode will
 manage the modes.

→←: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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DRAM Power Meter

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Chipset

Dram Power Meter		Enabled: User provided power weights, scale factor, and channel power floor values are used. Disabled: BIOS sets power weights, scale factor, and channel power floor values based on DIMMs present in system.
Use user provided power weights, scale factor, and channel power floor values	[Disabled]	
Energy Scale Factor	4	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Idle Energy Ch0Dimm0	10	
PowerDown Energy Ch0Dimm0	6	
Activate Energy Ch0Dimm0	172	
Read Energy Ch0Dimm0	212	
Write Energy Ch0Dimm0	221	
Idle Energy Ch0Dimm1	10	
PowerDown Energy Ch0Dimm1	6	
Activate Energy Ch0Dimm1	172	
Read Energy Ch0Dimm1	212	
Write Energy Ch0Dimm1	221	
Idle Energy Ch1Dimm0	10	
PowerDown Energy Ch1Dimm0	6	
Activate Energy Ch1Dimm0	172	
Read Energy Ch1Dimm0	212	
Write Energy Ch1Dimm0	221	
Idle Energy Ch0Dimm1	10	
PowerDown Energy Ch0Dimm1	6	
Activate Energy Ch0Dimm1	172	
Read Energy Ch0Dimm1	212	
Write Energy Ch0Dimm1	221	
Idle Energy Ch1Dimm0	10	
PowerDown Energy Ch1Dimm0	6	
Activate Energy Ch1Dimm0	172	
Read Energy Ch1Dimm0	212	
Write Energy Ch1Dimm0	221	
Idle Energy Ch1Dimm1	10	
PowerDown Energy Ch1Dimm1	6	
Activate Energy Ch1Dimm1	172	
Read Energy Ch1Dimm1	212	
Write Energy Ch1Dimm1	221	

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Memory Thermal Reporting

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Chipset

Lock Thermal Management Registers	[Enabled]	Enabled: lock several PCU registers related to DDR power/thermal management
Memory Thermal Reporting		
Extern Therm Status	[Disabled]	
Closed Loop Therm Manage	[Disabled]	
Open Loop Therm Manage	[Disabled]	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Thermal Threshold Settings		
Warm Threshold Ch0 Dimm0	255	
Warm Threshold Ch0 Dimm1	255	
Hot Threshold Ch0 Dimm0	255	
Hot Threshold Ch0 Dimm1	255	
Warm Threshold Ch1 Dimm0	255	
Warm Threshold Ch1 Dimm1	255	
Hot Threshold Ch1 Dimm0	255	
Hot Threshold Ch1 Dimm1	255	
Thermal Throttle Budget Settings		
Warm Budget Ch0 Dimm0	255	
Warm Budget Ch0 Dimm1	255	
Hot Budget Ch0 Dimm0	255	
Hot Budget Ch0 Dimm1	255	
Warm Threshold Ch1 Dimm0	255	
Warm Threshold Ch1 Dimm1	255	
Hot Threshold Ch1 Dimm0	255	
Hot Threshold Ch1 Dimm1	255	
Thermal Throttle Budget Settings		
Warm Budget Ch0 Dimm0	255	
Warm Budget Ch0 Dimm1	255	
Hot Budget Ch0 Dimm0	255	
Hot Budget Ch0 Dimm1	255	
Warm Budget Ch1 Dimm0	255	
Warm Budget Ch1 Dimm1	255	
Hot Budget Ch1 Dimm0	255	
Hot Budget Ch1 Dimm1	255	

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Memory RAPL

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Chipset

Memory RAPL

Rapl Power Floor Ch0	0
Rapl Power Floor Ch1	0
RAPL PL Lock	[Disabled]
RAPL PL 1 enable	[Disabled]
RAPL PL 1 Power	0
RAPL PL 1 windowX	0
RAPL PL 1 windowY	0
RAPL PL 2 enable	[Disabled]
RAPL PL 2 Power	222
RAPL PL 2 windowX	1
RAPL PL 2 windowY	10

Enable= lock Rapl Limit
register , Disable(Disable=
Def)

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Memory Training Algorithms

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Chipset

Early Command Training	[Disabled]	Early Command Training
SenseAmp Offset Training	[Enabled]	
Early ReadMPR Timing Centering 2D	[Enabled]	
Read MPR Training	[Enabled]	
Receive Enable Training	[Enabled]	
Jedec Write Leveling	[Enabled]	
Early Write Time Centering 2D	[Enabled]	
Early Read Time Centering 2D	[Enabled]	
Write Timing Centering 1D	[Enabled]	
Write Voltage Centering 1D	[Enabled]	
Read Timing Centering 1D	[Enabled]	
Dimm ODT Training*	[Enabled]	
Max RTT_WR	[ODT Off]	
DIMM RON Training*	[Enabled]	
Write Drive Strength/Equalization 2D*	[Disabled]	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Write Slew Rate Training*	[Enabled]	
Read ODT Training*	[Enabled]	
Read Equalization Training*	[Enabled]	
Read Amplifier Training*	[Enabled]	
Write Timing Centering 2D	[Enabled]	
Read Timing Centering 2D	[Enabled]	
Command Voltage Centering	[Enabled]	
Write Voltage Centering 2D	[Enabled]	
Read Voltage Centering 2D	[Enabled]	
Late Command Training	[Enabled]	
Round Trip Latency	[Enabled]	
Turn Around Timing Training	[Enabled]	
Rank Margin Tool	[Disabled]	
Memory Test	[Disabled]	
DIMM SPD Alias Test	[Enabled]	
Receive Enable Centering 1D	[Enabled]	
Retrain Margin Check	[Enabled]	
Command Power Training	[Disabled]	

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GT – Power Management Control

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Chipset

GT - Power Management Control
GT Info

GT2

RC6(Render Standby)

[Enabled]

Check to enable render standby support.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.3.2 PCH-IO Configuration

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Chipset

Intel PCH RC Version	2.1.0.0	PCI Express Configuration settings
Intel PCH SKU Name	CM236	
Intel PCH Rev ID	31/D1	
► PCI Express Configuration		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
► USB Configuration		
► BIOS Security Configuration		
► HD Audio Configuration		
► Serial IO Configuration		
► SkyCam Configuration		
► ISH Configuration		
► TraceHub Configuration Menu		
► Pch Thermal Throttling Control		
► SB Porting Configuration		
DCI enable (HDCIEN)	[Disabled]	
DCI Auto Detect Enable	[Enabled]	
Debug Port Selection	[Legacy UART]	
GNSS	[Disabled]	
PCH LAN Controller	[Enabled]	
DeepSx Power Policies	[Disabled]	
LAN Wake From DeepSx	[Enabled]	
Wake on LAN	[Enabled]	
SLP_LAN# Low on DC Power	[Enabled]	
K1 off	[Enabled]	
Wake on WLAN Enable	[Disabled]	
Disable DSX ACPRESENT PullDown	[Disabled]	
CLKRUN# Logic	[Enabled]	
Serial IRQ Mode	[Continuous]	
Port 61h Bit-4 Emulation	[Enabled]	
High Precision Timer	[Enabled]	
State After G3	[S0 State]	
Port 80h Redirection	[LPC Bus]	
Enhance Port 80h LPC Decoding	[Enabled]	
Compatible Revision ID	[Disabled]	
PCH Cross Throttling	[Enabled]	
Disable Energy Reporting	[Disabled]	
Capsule Reset Type	[Capsule S3 Resume]	
Pcie P11 SSC	[Auto]	
Unlock PCH P2SB	[Disabled]	
PMC READ DISABLE	[Enabled]	

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2.3.2.1 PCI Express Configuration

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Chipset		
PCI Express Configuration		Enable or disable PCI Express Clock Gating for each root port.
PCI Express Clock Gating	[Enabled]	
Legacy IO Low Latency	[Disabled]	
DMI Link ASPM Control	[Enabled]	
Port8xh Decode	[Disabled]	
Peer Memory Write Enable	[Disabled]	
Compliance Test Mode	[Disabled]	
PCIe-USB Glitch w/A	[Disabled]	
PCIe function swap	[Enabled]	
► PCI Express Gen3 Eq Lanes		
► PCI Express Root Port 1		
► PCI Express Root Port 2		
► PCI Express Root Port 3		
► PCI Express Root Port 4		
► PCI Express Root Port 5		
► PCI Express Root Port 6		
► PCI Express Root Port 7		
► PCI Express Root Port 8		
► PCI Express Root Port 9		
► PCI Express Root Port 10		
► PCI Express Root Port 11		
► PCI Express Root Port 12		
► PCI Express Root Port 13		
► PCI Express Root Port 14		
► PCI Express Root Port 15		
► PCI Express Root Port 16		
► PCI Express Root Port 17		
► PCI Express Root Port 18		
► PCI Express Root Port 19		
► PCI Express Root Port 20		
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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PCI Express Gen 3 Eq Lanes

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Chipset

Override SW EQ settings	[Enabled]
Coeff0 Cm	6
Coeff0 Cp	2
Coeff1 Cm	4
Coeff1 Cp	2
Coeff2 Cm	8
Coeff2 Cp	2
Coeff3 Cm	2
Coeff3 Cp	2
Coeff4 Cm	10
Coeff4 Cp	2

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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PCI Express Root Port

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Chipset

PCI Express Root Port 1	[Enabled]	Control the PCI Express Root Port.
Topology	[Unknown]	
ASPM Support	[Auto]	
L1 Substates	[L1.1 & L1.2]	
Gen3 Eq Phase3 Method	[Software Search]	
UPTP	5	
DPTP	7	
ACS	[Enabled]	
URR	[Disabled]	
FER	[Disabled]	
NFER	[Disabled]	
CER	[Disabled]	
CTO	[Disabled]	
SEFE	[Disabled]	
SENEFE	[Disabled]	
SECE	[Disabled]	
PME SCI	[Enabled]	
Hot Plug	[Disabled]	
Advanced Error Reporting	[Enabled]	
PCIe Speed	[Auto]	
Transmitter Half Swing	[Disabled]	
Detect Non-Compliance Device	[Disabled]	
Extra Bus Reserved	0	
Reseved Memory	10	
Prefetchable Memory	10	
Reserved I/O	4	
PCIe Cp	2	
PCIe Cm	6	
PCIe LTR	[Enabled]	
PCIe LTR Lock	[Disabled]	
PCH PCIe CLKREQ# Configuration	[Default]	
PCIe1 CLKREQ Mapping Override	[Auto]	
Snoop Latency Ocerride	[Auto]	
Non Snoop Latency Ocerride	[Auto]	

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Option	Description
PCI Express Root Port	Control the PCI Express Root Port.
Topology	Identify the SATA Topology if it is Default or ISATA or Flex or DirectConnect or M2.
ASPM Support	Set the ASPM Level: Force L0s – Force all links to L0s State AUTO – BIOS auto configure DISABLE – Disables ASPM
L1 Substates	PCI Express L1 Substates settings.
PCIe Speed	Select PCI Express port speed.
Detect Non-Compliance Device	Detect Non-Compliance PCI Express Device. If enable, it will take more time at POST time.

USB Configuration

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Chipset

USB Configuration			Selectively Enable/Disable the corresponding USB port from reporting a Device Connection to the controller.
USB Precondition		[Disabled]	
XHCI Disable Compliance Mode		[FALSE]	
xHCI Support		[Disabled]	
USB Port Disable Override		[Select Per-Pin]	
USB SS Physical Connector #0		[Enabled]	
USB SS Physical Connector #1		[Enabled]	
USB SS Physical Connector #2		[Enabled]	
USB SS Physical Connector #3		[Enabled]	
USB SS Physical Connector #4		[Enabled]	
USB SS Physical Connector #5		[Enabled]	→+: Select Screen ↑↓: Select Item Enter: Select +/=: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults
USB SS Physical Connector #6		[Enabled]	
USB SS Physical Connector #7		[Enabled]	
USB SS Physical Connector #8		[Enabled]	
USB SS Physical Connector #9		[Enabled]	
USB HS Physical Connector #0		[Enabled]	→+: Select Screen ↑↓: Select Item Enter: Select +/=: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
USB HS Physical Connector #1		[Enabled]	
USB HS Physical Connector #2		[Enabled]	
USB HS Physical Connector #3		[Enabled]	
USB HS Physical Connector #4		[Enabled]	
USB HS Physical Connector #5		[Enabled]	
USB HS Physical Connector #6		[Enabled]	
USB HS Physical Connector #7		[Enabled]	
USB HS Physical Connector #8		[Enabled]	
USB HS Physical Connector #9		[Enabled]	
USB HS Physical Connector #10		[Enabled]	
USB HS Physical Connector #11		[Enabled]	
USB HS Physical Connector #12		[Enabled]	
USB HS Physical Connector #13		[Enabled]	

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BIOS Security Configuration

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Chipset

BIOS Security Configuration

RTC Lock [Enabled]
BIOS Lock [Enabled]Enable/Disable the PCH BIOS
Lock Enable(BLE bit) feature.

→+: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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HD Audio Configuration

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Chipset

HD Audio Configuration HD Audio [Auto] Audio DSP [Enabled] Audio DSP Compliance Mode [Non-UAA (Intel SST)] HDA-Link Codec Select [Platform Onboard] iDisplay Audio Disconnect [Disabled] PME Enable [Disabled] ► HD Audio Advanced Configuration ► HD Audio DSP Features Configuration	Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled Auto = HDA will be enabled if present, disabled otherwise. →←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
---	--

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HD Audio Advanced Configuration

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Chipset

HD Audio Subsystem Advanced Configuration Settings

I/O Buffer Control:
I/O Buffer Ownership [HD-Audio Link]
I/O Buffer Voltage Select [3.3V]
Statically Switchable BCLK Clock
Frequency Configuration:
HD Audio Link Frequency [24 MHz]
iDisplay Link Frequency [96 MHz]

Selects the ownership of the I/O buffer between Intel HD Audio link vs I2S port (for bilingual codecs).

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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HD Audio DSP Features Configuration

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Chipset

HD Audio Subsystem Features Configuration (ACPI)		Selects DMIC to expose in NHLT ACPI table
Audio DSP NHLT Endpoints Configuration:		
DMIC	[4 Mic Array]	
Bluetooth	[Disabled]	
I2S	[Disabled]	
Audio DSP Feature Support:		
WoV (Wake on Voice)	[Disabled]	
Bluetooth Sideband	[Disabled]	
BT Intel HFP	[Disabled]	
BT Intel A2DP	[Disabled]	
Codec based VAD	[Disabled]	
DSP based Speech. Pre-Processing	[Disabled]	
Disabled		→←: Select Screen
Voice Activity Detection	[Intel Wake on Voice]	↑↓: Select Item
Audio DSP Pre/Post-Processing Module Support:		Enter: Select
Waves	[Disabled]	+/-: Change Opt.
DTS	[Disabled]	F1: General Help
IntelSst Speech	[Disabled]	F2: Previous Values
Dolby	[Disabled]	F3: Optimized Defaults
ForteMedia SAMSoft	[Disabled]	F4: Save & Exit
Intel WoV	[Disabled]	ESC: Exit
Sound Research IP	[Disabled]	
Conexant Pre-Process	[Disabled]	
Conexant Smart Amp	[Disabled]	
Custom Module 'Alpha'	[Disabled]	
Custom Module 'Beta'	[Disabled]	
Custom Module 'Gamma'	[Disabled]	

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Serial IO Configuration

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Chipset

Serial IO Configuration		Configure GPIO to select between Integrated (SPI) Touch or I2C Touch
Touch Panel	[SPI Touch]	
BT/UART Mux Select	[UART Signal]	
I2C0 Controller	[Enabled]	
I2C1 Controller	[Enabled]	
I2C2 Controller	[Disabled]	
I2C3 Controller	[Disabled]	
SPI0 Controller	[Disabled]	
SPI1 Controller	[Disabled]	
UART0 Controller	[Enabled]	
UART1 Controller	[Disabled]	
UART2 Controller	[Disabled]	
GPIO Controller	[Enabled]	
► Serial IO I2C0 Settings		→: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
► Serial IO I2C1 Settings		
► Serial IO UART0 Settings		
► Serial IO GPIO Settings		
WITT/MITT Test Device	[Disabled]	
UART Test Device	[Disabled]	
Additional Serial IO devices	[Disabled]	
► SerialIO timing parameters		

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Serial IO I2C0 Settings

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Chipset

Serial IO I2C0 Settings

I2C IO voltage select [3.3V]
Connected device [Disabled]

Indicates what type of device
is connected to this SerialIo
controller

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Serial IO I2C1 Settings

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Chipset

Serial IO I2C1 Settings

I2C IO Voltage Select [3.3V]

Connected device [Disabled]

Selects 1.8v or 3.3v for the controller.

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Serial IO UART0 Settings

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Chipset

Serial IO UART0 Settings		Enables/Disables the Vendor Sensor
Bluetooth Device	[Disabled]	
Hardware Flow Control	[Enabled]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Serial IO GPIO Settings

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Chipset

Serial IO GPIO Settings

GPIO IRQ Route [IRQ14]

Route all GPIOs to one of the IRQ.

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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SerialIO timing parameters

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Chipset

SerialIO timing parameters	[Enabled]	SerialIO timing parameters (test only)
StandardSpeed SCL High for I2C1	528	
StandardSpeed SCL Low for I2C1	640	
StandardSpeed SDA Hold for I2C1	30	
FastSpeed SCL High for I2C1	128	
FastSpeed SCL Low for I2C1	160	
FastSpeed SDA Hold for I2C1	30	
FastSpeedPlus SCL High for I2C1	48	
FastSpeedPlus SCL Low for I2C1	64	
FastSpeedPlus SDA Hold for I2C1	30	
D0->D3 idle timeout for I2C1 (screen off)	200	
D0->D3 idle timeout for I2C1 (screen on)	2000	
D0->D3 idle timeout for SPI1 (screen off)	200	→←: Select Screen
D0->D3 idle timeout for SPI1 (screen on)	2000	↑↓: Select Item
D0->D3 idle timeout for UART1 (screen off)	200	Enter: Select
D0->D3 idle timeout for UART1 (screen on)	200	+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit
		ESC: Exit

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SkyCam Configuration

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Chipset

SkyCam Configuration		This option configures CIO2 Device as either Disabled or Enabled
SkyCam CIO2 Device	[Enabled]	
Control Logic 0	[Disabled]	
Control Logic 1	[Disabled]	
Control Logic 2	[Disabled]	
Control Logic 3	[Disabled]	
Link0	[Disabled]	
Link1	[Disabled]	
Link2	[Disabled]	
Link3	[Disabled]	
PORT-A HS-RXEN / TEM-EN Override	[Disabled]	→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
PORT-B HS-RXEN / TEM-EN Override	[Disabled]	
PORT-C HS-RXEN / TEM-EN Override	[Disabled]	
PORT-D HS-RXEN / TEM-EN Override	[Disabled]	
PORT-A CTLE	[Enabled]	
PORT-B CTLE	[Enabled]	
PORT-C/D CTLE	[Enabled]	
PORT-A CTLE CAP Value	e	
PORT-A CTLE RES Value	d	
PORT-B CTLE CAP Value	e	
PORT-B CTLE RES Value	d	
PORT-C/D CTLE CAP Value	e	
PORT-C/D CTLE RES Value	d	
PORT-A TRIM	[Enabled]	
PORT-B TRIM	[Enabled]	
PORT-C TRIM	[Enabled]	
PORT-D TRIM	[Enabled]	
PORT-A Data Trim Value	bbbb	
PORT-B Data Trim Value	bbbb	
PORT-C/D Data Trim Value	cccc	
PORT-A Clk Trim Value	a	
PORT-B Clk Trim Value	a	
PORT-C Clk Trim Value	9	
PORT-D Clk Trim Value	a	

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ISH Configuration

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Chipset

ISH Configuration		Enables/Disables Integrated Sensor Hub (ISH) Device
ISH Controller	[Enabled]	
PDT Unlock Message	[Disabled]	
ISH GPIO Assignment Configuration		
SPI	[Disabled]	
UART0	[Disabled]	
UART1	[Disabled]	
I2C0	[Disabled]	
I2C1	[Disabled]	
I2C2	[Disabled]	
GP_0	[Disabled]	
GP_1	[Disabled]	
GP_2	[Disabled]	
GP_3	[Disabled]	
GP_4	[Disabled]	
GP_5	[Disabled]	
GP_6	[Disabled]	
GP_7	[Disabled]	

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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TraceHub Configuration Menu

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Chipset		
TraceHub Configuration Menu		Select Enable, Disable or Debugger
TraceHub Enable Mode	[Disabled]	
MemRegion 0 Buffer Size	[1MB]	
MemRegion 1 Buffer Size	[1MB]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Pch Thermal Throttling Control

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Chipset

Thermal Throttling Level	[Manual]	Determine if use Intel suggested setting
Thermal Throttling	[Disabled]	
TT State 13	[Disabled]	
Thermal Throttling Lock	[Disabled]	
T0 Level	0	
T1 Level	0	
T2 Level	0	
DMI Thermal Setting	[Manual]	
DMI Thermal Sensor Autonomous width	[Disabled]	
Thermal Sensor 0 width	[x 4]	
Thermal Sensor 1 width	[x 4]	
Thermal Sensor 2 width	[x 4]	
Thermal Sensor 3 width	[x 4]	
SATA Thermal Setting	[Manual]	
Port 0		
T1 Multiplier	[x 1]	
T2 Multiplier	[x 2]	
T3 Multiplier	[x 4]	
Alternate Fast Init Tdispatch	[Disabled]	
Tdispatch	[~32us]	
Tinactive	[~32us]	
Port 1		
T1 Multiplier	[x 1]	
T2 Multiplier	[x 2]	
T3 Multiplier	[x 4]	
Alternate Fast Init Tdispatch	[Disabled]	
Tdispatch	[~32us]	
Tinactive	[~32us]	

→+: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

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SB Porting Configuration

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Chipset

SB Porting Configuration

→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.4 Security Menu

Password Support

Two Levels of Password Protection

Security Setup provides both Administrator and User password.

The system can be configured so that all users must enter a password every time the system boots or when Setup is executed, using either the Administrator password or User password.

The Administrator and User passwords activate two different levels of password security.

If you select password support, you are prompted for a three to twenty character password. Type the password on the keyboard. The password does not appear on the screen when typed. Make sure you write it down.

Security Setup

The *Security* setup menu allows the user to do the following

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.					
Main	Advanced Chipset Security Boot Save & Exit Acromag				
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: <table> <tr> <td>Minimum length</td> <td>3</td> </tr> <tr> <td>Maximum length</td> <td>20</td> </tr> </table> Administrator Password User Password HDD Security Configuration: P3:Samsung SSD 850 EVO 120GB ► Secure Boot menu	Minimum length	3	Maximum length	20	Set Administrator Password ←+: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Minimum length	3				
Maximum length	20				

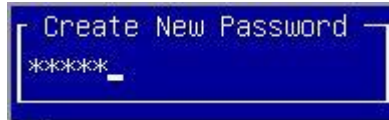
Option	Description
User Password	This option allows the user to set a user level password for the BIOS.
Administrator Password	This option allows the user to set an administrative level password for the BIOS.

Password Support

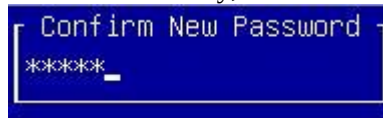
For BIOS Setup

Create New Password

- Create a new password for admin or user by selecting corresponding option. A new window will pop up like the below mentioned image.



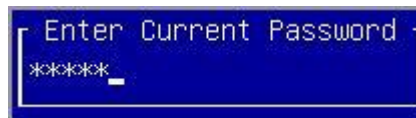
- After typing the password and pressed ENTER key, it will ask the user to retype the password for conformation.



- After pressed ENTER key, new password will set for the BIOS setup.

Change /Clear Password

- Select the corresponding access level to which the password has to change.
- A new window asks the user to type the Current Password.



- Then second window asks the user to type New Password and Confirm Password, same like Creating New Password. After entering new and confirmed password, new password will set as current password.
- For clearing the Current Password, in New Password window , if we press Enter key without typing anything, Warning window asks the user whether to clear old password or not.



- Select “Yes” to clear the old password or “No” to retype New Password.

Post Screen Validation

- While entering into the BIOS setup, a small window asks the user to enter the password for authentication.



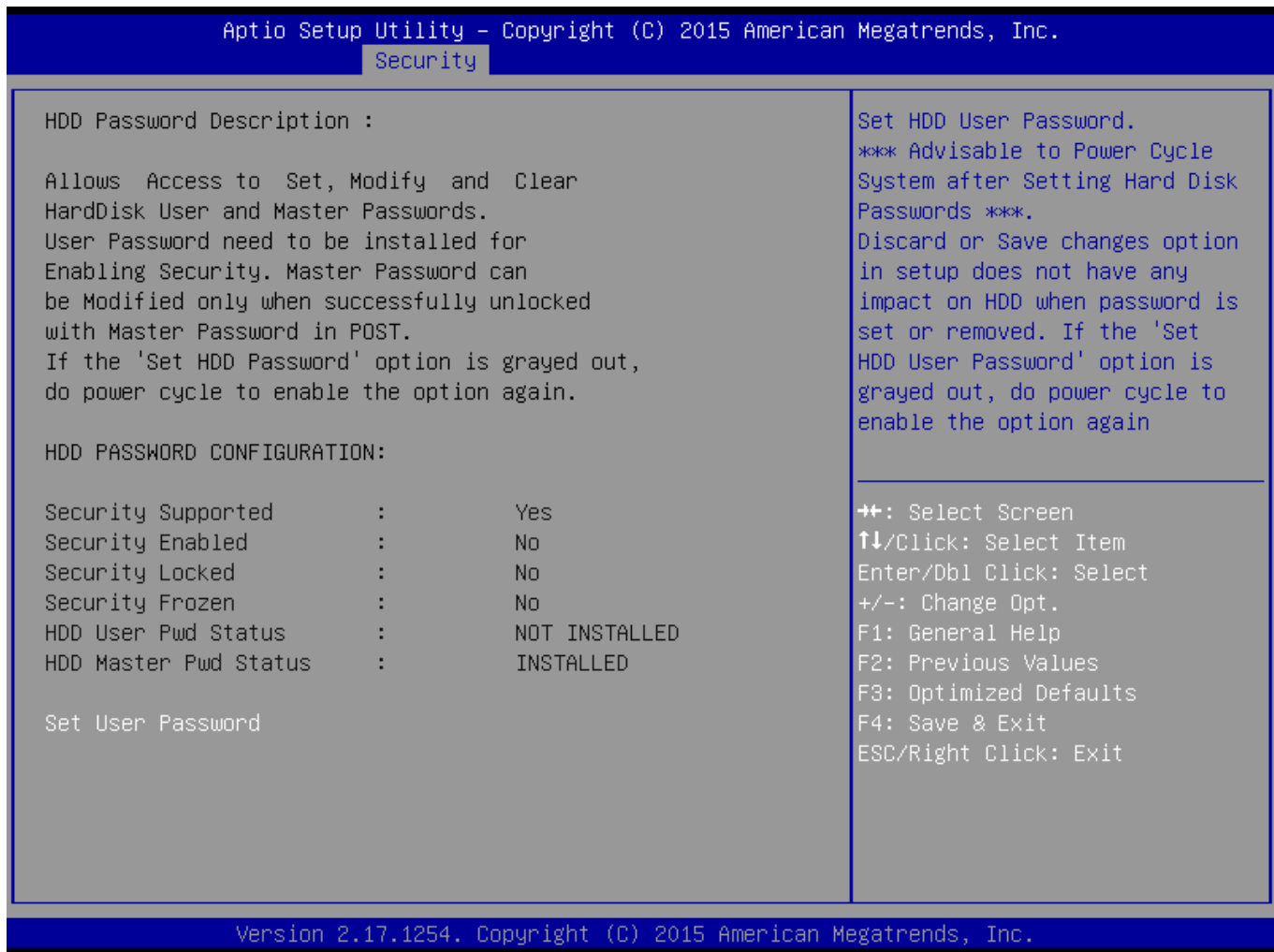
- If user typed the correct password and press ENTER key, it allows the user to enter into BIOS setup.
- If user typed the wrong password, this window shows the message as “Invalid Password”. Again Enter Password window will appear. On continuous 3 times wrong password result in system hang.



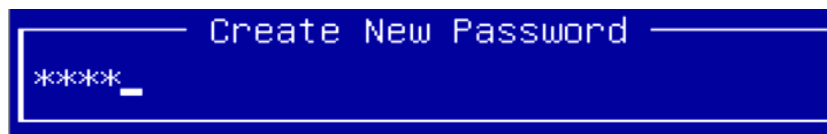
For HDD

Create New Password

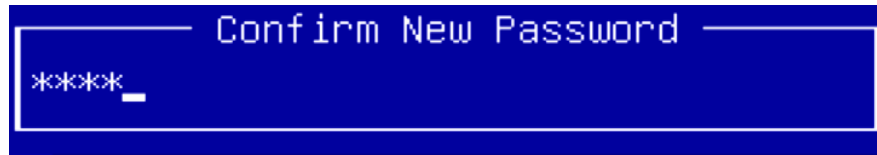
- For creating new password for HDD, go to Security screen.
- Select the HDD, below screen will appear.



- Click Set User Password option.
- Create New Password window will appear.

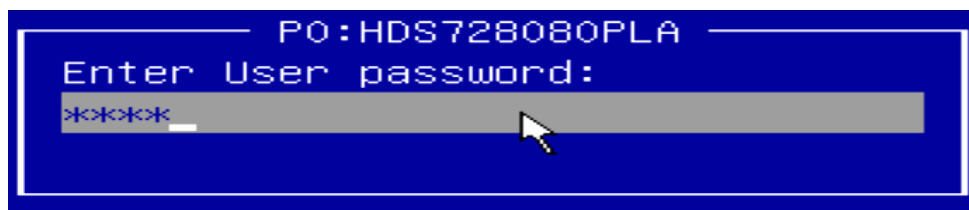


- After typing password and pressing ENTER key, password conformation window will appear. After typing password for second time and pressing ENTER key, new password will set for HDD. Do Save and Exit for save the changes.

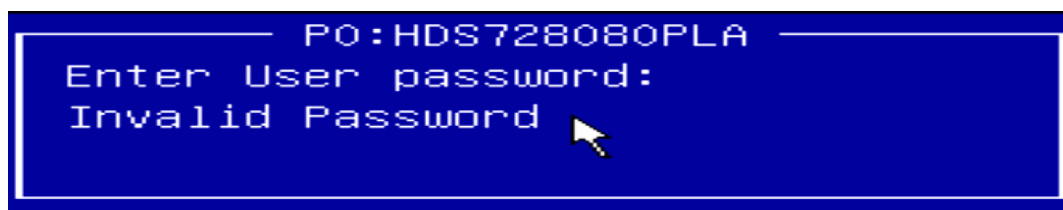


HDD Post Screen Validation

- While starting, before entering into Setup, password authentication window for HDD will appear.



- By typing the correct password and pressing ENTER key, it will enter into Setup screen/boot successfully.
- If the user enters the wrong password, it will show the Invalid password message. User need to retype the correct password else HDD will be locked.



Remember the Password

Keep a record of the new password when the password is changed.

2.4.1 Secure Boot Menu

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.		
Security		
System Mode	Setup	Secure Boot can be enabled if 1.System running in User mode with enrolled Platform Key(PK) 2.CSM function is disabled
Secure Boot	Not Active	
Vendor Keys	Not Active	
Secure Boot	[Disabled]	
Secure Boot Mode	[Custom]	
► Key Management		
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Secure Boot is used to check whether the boot option is secured or not by checking the digital signature of the boot device before booting.

Key Management

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.

Security

Provision Factory Default keys [Disabled]

- ▶ Enroll all Factory Default keys
- ▶ Save all Secure Boot variables

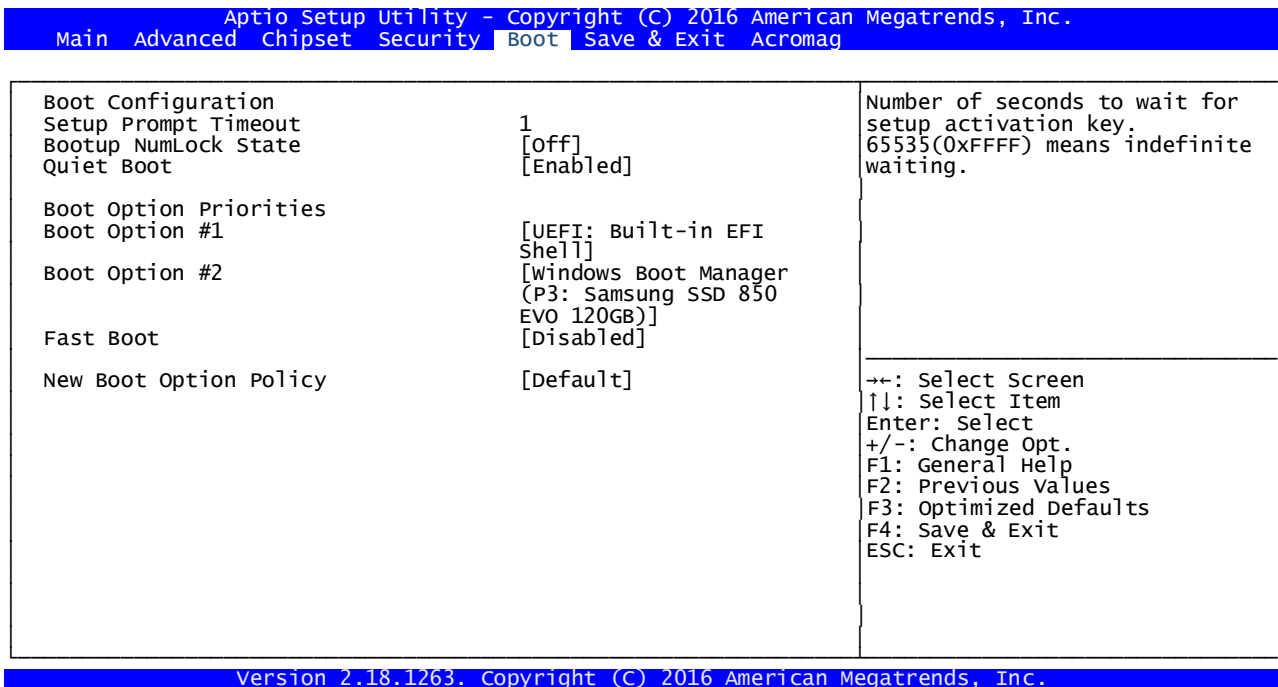
Secure Boot variable	Size	Key#	Key source
▶ Platform Key(PK)	0	0	
▶ Key Exchange Keys	0	0	
▶ Authorized Signatures	0	0	
▶ Forbidden Signatures	0	0	
▶ Authorized TimeStamps	0	0	

Install factory default Secure Boot keys when System is in Setup Mode

→: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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2.5 Boot Menu



Use this menu option to configure your boot settings.

Setup Prompt Timeout:

Set number of seconds to wait for setup activation key 65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Set this value to allow the Number Lock setting to be modified during boot up. The Optimal default setting is *ON*.

Option	Description
Off	This option does not enable the keyboard Number Lock automatically. To use the 10-keys on the keyboard, press the Number Lock key located on the upper left-hand corner of the 10-key pad. The Number Lock LED on the keyboard will light up when the Number Lock is engaged.
On	Set this value to allow the Number Lock on the keyboard to be enabled automatically when the computer system is boot up. This allows the immediate use of 10-keys numeric keypad located on the right side of the keyboard. To confirm this, the Number Lock LED light on the keyboard will be lit. This is the default setting.

Quiet Boot

Set this value to allow the boot up screen options to be modified between POST messages or quiet boot logo. The Optimal and Fail-Safe default setting is *Enabled*.

Option	Description
Disabled	Set this value to allow the computer system to display the POST messages.
Enabled	Set this value to allow the computer system to display the OEM logo. This is the default setting.

Fast Boot

Set this value to enable to allow the system to boot in fast boot mode.

Boot Option Priorities

This option shows the priorities of the boot options.

User can change the priorities by selecting the particular boot option. By pressing Up or Down arrow or with the help of mouse pointer(if setup supports mouse control) user can select different option and by pressing ENTER key the current option will swapped by the previous boot option.

The boot option selected in Boot option #1 will be the first priority, followed by second, third and so on.

Hard Drive BBS Priorities

It will list all the Boot options that are configured as Hard Drive. User can change the priority as similar to the main boot option priorities. The first boot option will be having top boot priority and will appear at the boot option priorities and boot order.

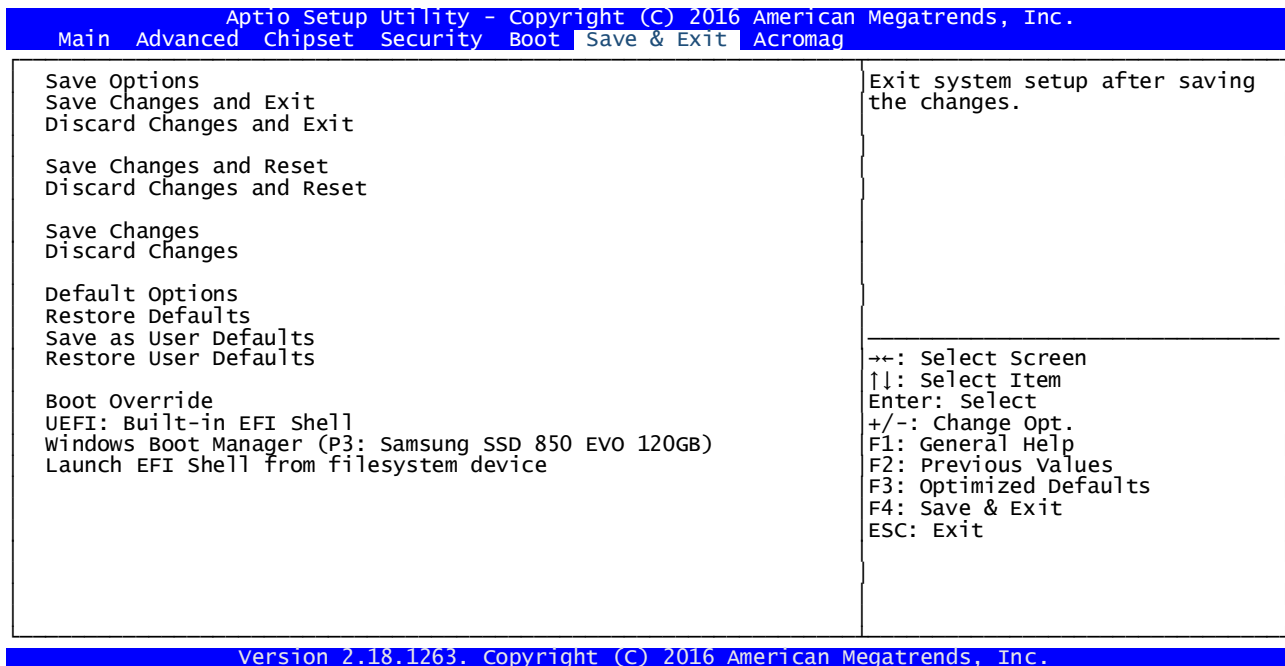
Floppy Drive BBS Priorities

Set the system boot order in this and the first boot option will have the top boot priority and it will be appeared at the boot option priorities and boot order.

CD/DVD ROM Drive BBS Priorities

Set the system boot order in this and the first boot option will have the top boot priority of CD/DVD ROM drive and it will appear at the boot option priorities and boot order.

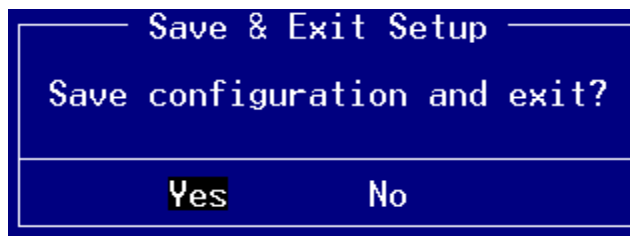
2.6 Save & Exit Menu



The Save and Exit menu enables the user to perform the following actions,

Save Changes and Exit

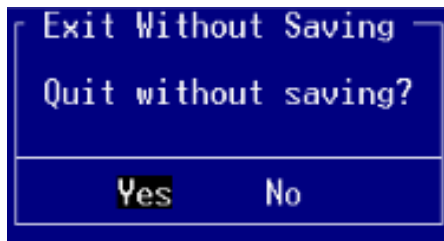
When you have completed the system configuration changes, select this option to save the changes and Exit from Aptio™ TSE, so the new system configuration parameters can take effect. The following window will appear after selecting the ‘Save Changes and Exit’ option selected.



Select **YES** to Save Changes and Exit Aptio™ TSE. Select **NO** to discard the action.

Discard Changes and Exit

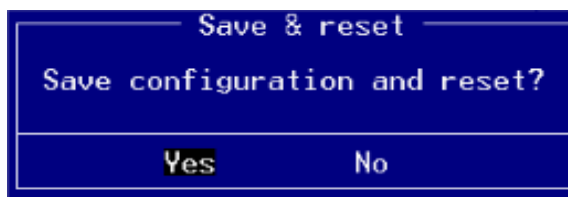
Select this option to quit Aptio™ TSE without making any modifications to the system configuration. The following window will appear after selecting the ‘Discard Changes and Exit’ option selected.



Select *YES* to Discard changes and Exit Aptio™ TSE.

Save Changes and Reset

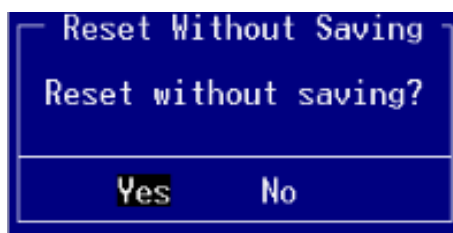
When you have completed the system configuration changes, select this option to save the changes and reboot the system, so the new system configuration parameters can take effect. The following window will appear after selecting the ‘Save Changes and Reset’ option selected.



Select *YES* to Save Changes and Reset.

Discard Changes and Reset

Select this option to reboot the system without saving the changes done in the setup configuration. The following window will appear after selecting the ‘Discard Changes and Reset’ option selected.



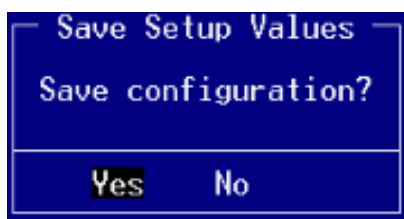
Select *YES* to Reset without saving.

Save Options

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

Save Changes

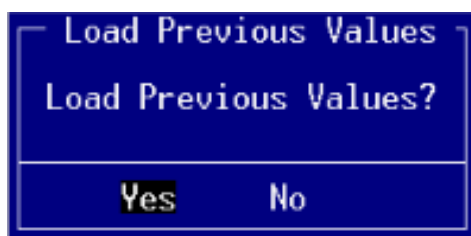
When you have completed the system configuration changes, select this option to save your system configuration and continue. For some of the options it required to reset the system to take effect.



Select *YES* to Save Changes and retain in setup.

Discard Changes

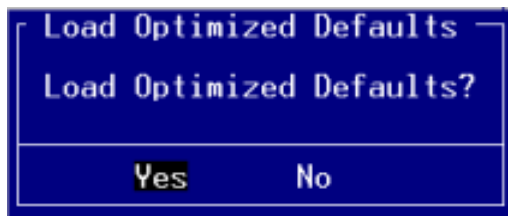
When you have completed the system configuration changes, select this option to undo the previous changes



Select *YES* to load previous value and continue

Restore Defaults

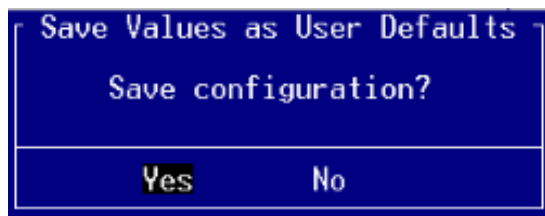
Restore default values for all setup options.



Select *YES* to load Optimized defaults.

Save as User Defaults

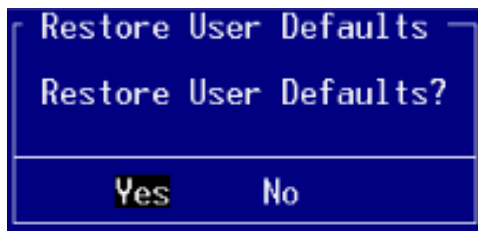
Save changes done so far as User defaults.



Select *YES* to save changes and continue.

Restore User Defaults

Restore the User defaults to all the setup options



Select *YES* to restore changes to user defaults and continue.

Boot Over ride

It will display all the available boot options from the Boot Option List. User can select any of the options to boot to the particular device.

3.0 Revision History

The following table shows the revision history for this document:

Release Date	Version	EGR/DOC	Description of Revision
18 DEC 2016	A	BLD/ARP	Preliminary Release.
27 JAN 2017	A	BLD/ARP	Initial Release. No changes.