

sMB-Q370 embedded Motherboard Product Guide



Ultimate High Performance Audio

www.sotm-audio.com

Rev 1.0b

Motherboard Spec

sMB-Q370	
Micro-ATX Form Factor	
Intel® Coffee Lake Processor with Q370 Chipset	
MECHANICAL	
FORM FACTOR	Micro-ATX: 9.6" x 9.6" (244 mm x 244 mm)
SYSTEM	
PROCESSOR	Support for 9th and 8th Generation Intel® Core™ processors, Intel® Pentium® processors, and Intel® Celeron® processors (up to 95 W TDP)
CHIPSET	Intel® Q370 (Support RAID 0 / 1 / 5 / 10) (optional external clock input)
MEMORY	DDR4 2666MHz, 4 x 288-pin DIMM, Max. 64GB (Non-ECC)
GRAPHICS	Intel® HD Graphics
ETHERNET	Realtek RTL8111HS Gigabit LAN controller (optional external clock input)
AUDIO	ALC892 (optional)
TPM	2x8 pin TPM header
EXPANSION SLOT	PCI-E 3.0 x16 slot PCI-E Gen.3 x4 slot PCI-E Gen.3 x1 slot 2x M.2 M key 2280 (PCI-E x4) 2x M.2 E key 2230 (PCI-E x2, USB)
BIOS	256 Mbit SPI, AMI BIOS
H/W MONITOR	Temperature Monitor, Voltage Monitor, Fan Monitor
WATCHDOG TIMER	1~255 Steps by Software Program
SMART FAN CONTROL	CPU Fan / System Fan
GRAPHICS	
HDMI	Up to 4K (4096 x 2160) @30 Hz
DISPLAYPORT	Up to 4K (4096 x 2304) @60 Hz
eDP	Up to 4K (4096 x 2304) @60 Hz
LVDS(Optional)	Up to 1920 x 1200 @60 Hz
DVI, VGA	—

REAR I/O	
USB	4 x USB 3.1 Gen. 2 (up to 10 Gbps), 2 x USB 2.0
DISPLAY I/O	1 x DisplayPort, 1 x HDMI
LAN I/O	1 x RJ-45
AUDIO I/O	—
INTERNAL CONNECTORS	
STORAGE	6 x SATA 6Gb/s
USB	4 x USB 2.0, 2 x USB 3.1 Gen.2
DISPLAY I/O	LVDS connector (colay eDP connector), Panel power Header (default 5V, option to 12V, 3.3V), panel backlight power setting header (default 12V), LVDS inverter power header
AUDIO I/O	1 x 10-pin box header(optional)
SERIAL PORT	2 x 10-pin UART 3.3V TTL level(optional)
FAN	1 x 4-pin CPU Fan Connector, 1 x 4-pin System Fan Connector
POWER	1 x 8-pin ATX Power Connector, 1 x 24-pin ATX Power Connector, 1 x AT / ATX Mode Select Jumper
OTHERS	U.FL external clock input connector for the system and Ethernet 1 x clear CMOS jumper
POWER REQUIREMENT	
POWER INPUT	12V CPU ATX Power Connector + ATX 24-pin
ENVIRONMENTAL	
OPERATING TEMPERATURE	0 ~ 55°C (32 ~131°F)
STORAGE TEMPERATURE	-20 ~ 70°C (-4 ~158°F)
OPERATING HUMIDITY	10% ~ 95% R / H, non-condensing
CERTIFICATION	CE & FCC Class B, KC
OS	
OS SUPPORT	Windows® 10 64-bit 1809 LTSC Linux (customer provide version and kernel version)
PACKING LIST	
PACKAGE	1 x Motherboard, 2 x SATA Cable, 1 x I/O Shield, 1 x Driver CD, 1 x Quick Guide

Item	Description	Item	Description
A	M.2 E Key	R	Backlight Voltage Header
B	M.2 M key	S	Backlight On/Off Header
C	USB3.0 Header	T	FAN Header
D	LVDS Power header	U	ATX 8pin
E	TPM Header	V	LVDS(eDP) Header
F	Backlight Voltage Header	W	PCIEx16 Slot
G	Boot Delay time Header	X	PCIEx1 Slot
H	USB2.0 Header	Y	PCIEx4 Slot
I	FIO Header	Z	M.2 M key
J	SATA connector	A A	DIMM Socket
K	LPC header	A B	LAN LED on/off Header
L	M.2 E Key		
M	CMOS Clear Header		
N	AT/ATX Mode Select Header		
O	ATX 24pin		
P	Backlight Header		
Q	Backlight PWM Header		

TABLE 2. SotM sMB-Q370 COMPONENTS (SHOWN IN FIGURE 1)

Processor

The board supports 9th & 8th generation Intel Core processors. Other processors may be supported in the future. This board supports processors with a maximum wattage of 95W (8 core 35W & 6 core 95W) Thermal Design Power (TDP).

NOTE

This board has specific requirements for providing power to the processor. Additional power required will depend on configurations chosen by the integrator.

System Memory

NOTE

To be fully compliant with all applicable DDR SDRAM memory specifications, the board should be populated with DIMMs that support the Serial Presence Detect (SPD) data structure. This allows the BIOS to read the SPD data and program the chipset to accurately configure memory settings for optimum performance. If non-SPD memory is installed, the BIOS will attempt to correctly configure the memory settings, but performance and reliability may be impacted or the DIMMs may not function under the determined frequency.

The Motherboard has two 288-pin DDR4 U-DIMM sockets with gold-plated contacts.

Connecting to the Internal Headers and Connectors

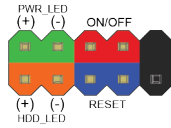


Figure : Front Panel Connector(J_FIO_1)

PIN	NAME	Description	PIN	NAME	Description
1	HDD_POWER_LED	Pull-up resistor (750Ω) to +5V	2	POWER_LED_MAIN	[Out] Front panel LED (Green)
3	HDD_LED#	[Out] Hard disk activity LED	4	POWER_LED_ALT	[Out] Front panel LED (Yellow)
5	GROUND	Ground	6	POWER_SWITCH#	Power button
7	RESET_SWITCH#	Reset switch	8	GROUND	Ground
9	+5V_DC	Power	10	KEY	No pin

Table : Front Panel Connector

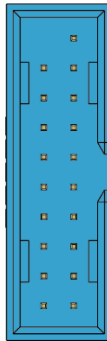


Figure : USB3.0 header(FP_USB3_1)

PIN	NAME	NAME	PIN
1	5V_USB31	NA	
2	PCH_USB31RX_5N	5V_USB32	19

3	PCH_USB31RX_5P	PCH_USB31RX_6N	18
4	GND	PCH_USB31RX_6P	17
5	PCH_USB31TX_5N	GND	16
6	PCH_USB31TX_5P	PCH_USB31TX_6N	15
7	GND	PCH_USB31TX_6P	14
8	USB_PCH_DN6	GND	13
9	USB_PCH_DP6	USB_PCH_DN2	12
10	NC	USB_PCH_DP2	11

Table : 20-pin USB3.0 header pin-out reference

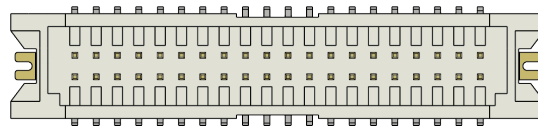


Figure : LVDS Connector(J5)

PIN	NAME	NAME	PIN
1	VCC3	BKLT_PWR	2
3	VCC3	BKLT_PWR	4
5	LVDS_DDC_SCL	LVDS_DDC_SDA	6
7	GND	LVDS_HPDET	8
9	LVDS0_LINK1_CON_DP	LVDS0_LINK0_CON_DP	10
11	LVDS0_LINK1_CON_DN	LVDS0_LINK0_CON_DN	12
13	GND	GND	14
15	LVDS0_LINK3_CON_DP	LVDS0_LINK2_CON_DP	16
17	LVDS0_LINK3_CON_DN	LVDS0_LINK2_CON_DN	18
19	GND	GND	20
21	LVDS1_LINK1_CON_DP	LVDS1_LINK0_CON_DP	22
23	LVDS1_LINK1_CON_DN	LVDS1_LINK0_CON_DN	24
25	GND	GND	26
27	LVDS1_LINK3_CON_DP	LVDS1_LINK2_CON_DP	28
29	LVDS1_LINK3_CON_DN	LVDS1_LINK2_CON_DN	30
31	GND	GND	32

33	LVDS1_CLK_CON_DP	LVDS0_CLK_CON_DP	34
35	LVDS1_CLK_CON_DN	LVDS0_CLK_CON_DN	36
37	GND	GND	38
39	BKLT_PWR	BKLT_PWR	40

Table : 40-pin LVDS data header pin-out reference

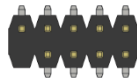


Figure: LPC header pin-out(LPC_HDR1)

PIN	NAME	NAME	PIN
1	LPC_LAD0	VCC3	2
3	LPC_LAD1	PLTRST_BUFFER_N	4
5	LPC_LAD2	L_FRAME_N	6
7	LPC_LAD3	GND	8
9	PORT80_CLK		

Table : LPC header pin-out



Figure : LVDS inverter power header pin-out(JBKL1)

PIN	NAME	Description
1	LVDS_BKTEN_R	Backlight enable
2	LVDS_PWM	Backlight PWM control
3	12V/19V	Inverter power
4	12V/19V	Inverter power
5	GND	Ground

6	GND	Ground
7	BRIGHT_UP-	BRIGHTNESS UP
8	BRIGHT_DOWN-	BRIGHTNESS DOWN

Table : 8-pin LVDS inverter power header signals



Figure : Dual USB2.0 pin-out(FP_USB2_1, FP_USB2_2)

PIN	NAME	PIN	NAME
1	5V_USB	2	5V_USB
3	Data (negative)	4	Data (negative)
5	Data (positive)	6	Data (positive)
7	Ground	8	Ground
9	Key (no pin)	10	No Connect

Table : Dual USB 2.0 Header

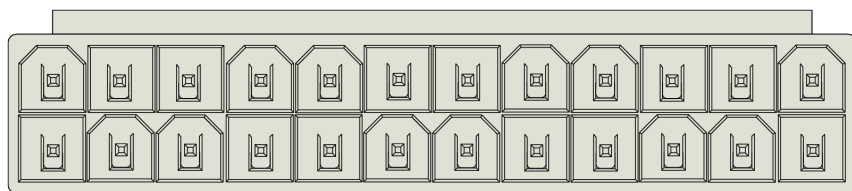


Figure : ATX 24pin pin-out(ATX24P_1)

PIN	NAME	NAME	PIN
1	3.3V	3.3V	13
2	3.3V	-12V	14
3	COM	COM	15
4	5V	PS-ON	16

5	COM	COM	17
6	5V	COM	18
7	COM	COM	19
8	PW-OK	-5V	20
9	5VSB	5V	21
10	12V	5V	22
11	12V	VCC	23
12	3.3V	COM	24

Table : ATX 24pin signals

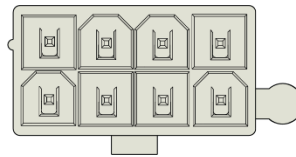


Figure: ATX 8pin pin-out(ATX8P_1)

PIN	NAME	NAME	PIN
1	GND	12V	5
2	GND	12V	6
3	GND	12V	7
4	GND	12V	8

Table: ATX 8pin signals



Figure : AT/ATX Header(JPSON1)

PIN	NAME
1	PSON_AT_N
2	SW_PWRBT_N
3	NC

Jumper (1-2) : AT mode

Jumper (2-3) : NON-AT mode

Table: AT/ATX Header



Figure : BKL PWM Header(BKLPWM1)

PIN	NAME
1	PCH_BACKLIGHT_PWM
2	BKLT_PWM
3	AD5258BRMZ10_PWM

Jumper (1-2) : BACKLIGHT PWM is from PCH (Default)

Jumper (2-3) : BACKLIGHT PWM is from AD5258BRMZ10

Table : BKL PWM Header



Figure : BKL on/off Header(BL_ON_OFF1)

PIN	NAME
1	VCC
2	BKLT_EN
3	NC

Jumper (1-2) : On for BKL (Default)

Jumper (2-3) : Off for BKL

Table : BKL on/off Header



Figure: BKL Voltage Header(BKLVOL1)

PIN	NAME
1	VCC
2	PWM
3	VCC3

Jumper (1-2): VCC (Default)

Jumper (3-3): VCC3

Table : BKL Voltage Header

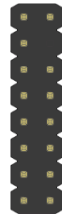


Figure : TPM Header(J46)

PIN	NAME	NAME	PIN
1	3.3V	L_FRAME_N	2
3	LPC_LAD0	NA	
5	LPC_LAD1	TPM_PLTRST_N	6
7	LPC_LAD2	GND	8
9	LPC_LAD3	TPMPCLK	10
11	TPM_SERIRQ	GND	12
13	TPM_MOD_N	3.3V	14
15	GND	RST_ESPI_RESET_N	16

Table : TPM Header



Figure: fan header pin-out(J_CPU_FAN1, J_FIO_FAN1)

PIN	NAME
1	Ground
2	+12V
3	FAN_TACH
4	FAN_CTRL

Table : Fan Header signals



Figure: CMOS Clear Header(CLCMOS1)

PIN	NAME
1-2	Clear CMOS
2-3	Normal

Table : CMOS Clear behavior

Note : *If you use an external clock like sCLK-EX, it will take around 10 mins to clear CMOS.*

So you have to wait more than 10 mins with AC power off.

And SMB-Q370 will reboot a few times automatically after CMOS clears or CMOS values changes.

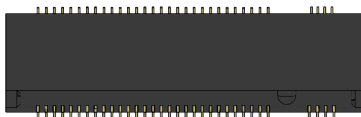


Figure : M.2 M key slot For Storage pin-out(M2M_1, M2M_2)

PIN	NAME	NAME	PIN
74	3.3Vaux	GND	75
72	3.3Vaux	GND	73
70	3.3Vaux	GND	71
68	SUSCLK(32kHz)(O)(0/3.3V)	PEDET(OC-PCIe/GND-SATA)	69
	Connector Key	N/C	67
	Connector Key	Connector Key	
	Connector Key	Connector Key	
	Connector Key	Connector Key	
58	N/C	Connector Key	
56	N/C	GND	57
54	PEWake#(IO)(0/3.3V)	REFCLKP	55
52	PERST#(O)(0/3.3V) or N/C	REFCLKN	53
50	PERST#(O)(0/3.3V) or N/C	GND	51
48	N/C	PETp0/SATA-A+	49
46	N/C	PETn0/SATA-A-	47
44	N/C	GND	45
42	N/C	PERp0/SATA-B-	43
40	N/C	PERn0/SATA-B+	41
38	DEVSLP(O){0/3.3V}	GND	39
36	N/C	PETp1	37
34	N/C	PETn1	35
32	N/C	GND	33
30	N/C	PERp1	31
28	N/C	PERn1	29
26	N/C	GND	27
24	N/C	N/C	25
22	N/C	N/C	23
20	N/C	GND	21

18	3.3Vaux	N/C	19
16	3.3Vaux	N/C	17
14	3.3Vaux	GND	15
12	3.3Vaux	N/C	13
10	DAS/DSS#(I){OD}	N/C	11
8		GND	9
6	N/C	N/C	7
4	3.3Vaux	N/C	5
2	3.3Vaux	GND	3
		GND	1

Table : M.2 M key slot For Storage signals

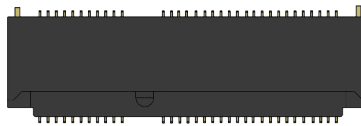


Figure : M.2 E key slot For wireless pin-out(M2E_1, M2E_2)

PIN	NAME	NAME	PIN
74	3.3V	GND	75
72	3.3V	RESERVED/REFCLKn1	73
70	UIM_POWER_SRC/GPIO1/PEWAKE1#	RESERVED/REFCLKp1	71
68	UIM_POWER_SNK/CLKREQ1#	GND	69
66	UIM_SWP/PERST1#	RESERVED/PETn1	67
64	RESERVED	RESERVED/PETp1	65
62	ALERT# (O)(0/3.3V)	GND	63
60	I2C_CLK (I)(0/3.3V)	RESERVED/PERn1	61
58	I2C_DATA (I/O)(0/3.3V)	RESERVED/PERp1	59
56	W_DISABLE1# (I)(0/3.3V)	GND	57
54	W_DISABLE2# (I)(0/3.3V)	PEWAKE0# (I/O)(0/3.3V)	55
52	PERST0# (I)(0/3.3V)	CLKREQ0# (I/O)(0/3.3V)	53
50	SUSCLK(32kHz) (I)(0/3.3V)	GND	51
48	COEX1(I/O)(0/1.8V)	REFCLKn0	49
46	COEX2(I/O)(0/1.8V)	REFCLKp0	47

44	COEX3(I/O)(0/1.8V)	GND	45
42	VENDOR DEFINED	PETn0	43
40	VENDOR DEFINED	PETp0	41
38	VENDOR DEFINED	GND	39
36	UART CTS (I)(0/1.8V)	PERn0	37
34	UART RTS (O)(0/1.8V)	PERp0	35
32	UART RXD (I)(0/1.8V)	GND	33
	Connector Key	Connector Key	
	Connector Key	Connector Key	
	Connector Key	Connector Key	
	Connector Key	Connector Key	
22	UART TXD (O)(0/1.8V)	SDIO RESET# (I)(0/1.8V)	23
20	UART WAKE# (O)(0/3.3V)	SDIO WAKE# (O)(0/1.8V)	21
18	GND	SDIO DATA3(I/O)(0/1.8V)	19
16	LED2# (O)(OD)	SDIO DATA2(I/O)(0/1.8V)	17
14	PCM_IN/I2S SD_IN (I)(0/1.8V)	SDIO DATA1(I/O)(0/1.8V)	15
12	PCM_OUT/I2S SD_OUT (O)(0/1.8V)	SDIO DATA0(I/O)(0/1.8V)	13
10	PCM_SYNC/I2S WS (I/O)(0/1.8V)	SDIO CMD(I/O)(0/1.8V)	11
8	PCM_CLK/I2S SCK (I/O)(0/1.8V)	SDIO CLK(I)(0/1.8V)	9
6	LED1# (O)(OD)	GND	7
4	3.3V	USB D-	5
2	3.3V	USB D+	3
		GND	1

Table : M.2 E key slot For wireless signals



Figure : SATA Header pin-out(SATA1, SATA2, SATA3, SATA4, SATA5, SATA6)

PIN	NAME
1	GND
2	SATA_TX2_C_DP
3	SATA_TX2_C_DN
4	GND
5	SATA_RX2_C_DN
6	SATA_RX2_C_DP
7	GND

Table : SATA Header signals

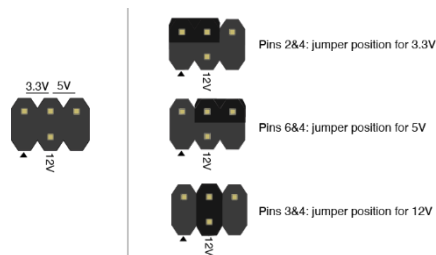


Figure : Panel power Header pin-out(J20)

PIN	NAME	Description
1	Key	No pin
2	3.3V	3.3V option (default)
3	12V	12V option
4	LCD_VCC	Send voltage to connector
5	Key	No pin
6	5V	5V option

Table : Panel power Header signal



Figure : LAN LED On/Off Header(J53, J54, J55)

PIN	J53	J54	J55
1	LINK_ACTIVITY	LAN1_SPEED_100_R	LAN1_SPEED_1000_R
2	LAN1_LINK_ACTIVITY_L	LAN1_SPEED_100	LAN1_SPEED_1000
3	NC	NC	NC

Jumper (1-2) : LED on

Jumper (2-3) : LED off

Table : LAN LED On/Off



Figure : Boot Delay Time Selection Header(PLTRST_DLY)

PIN	NAME
1	VR_READY
2	Delay capacitor
3	NC

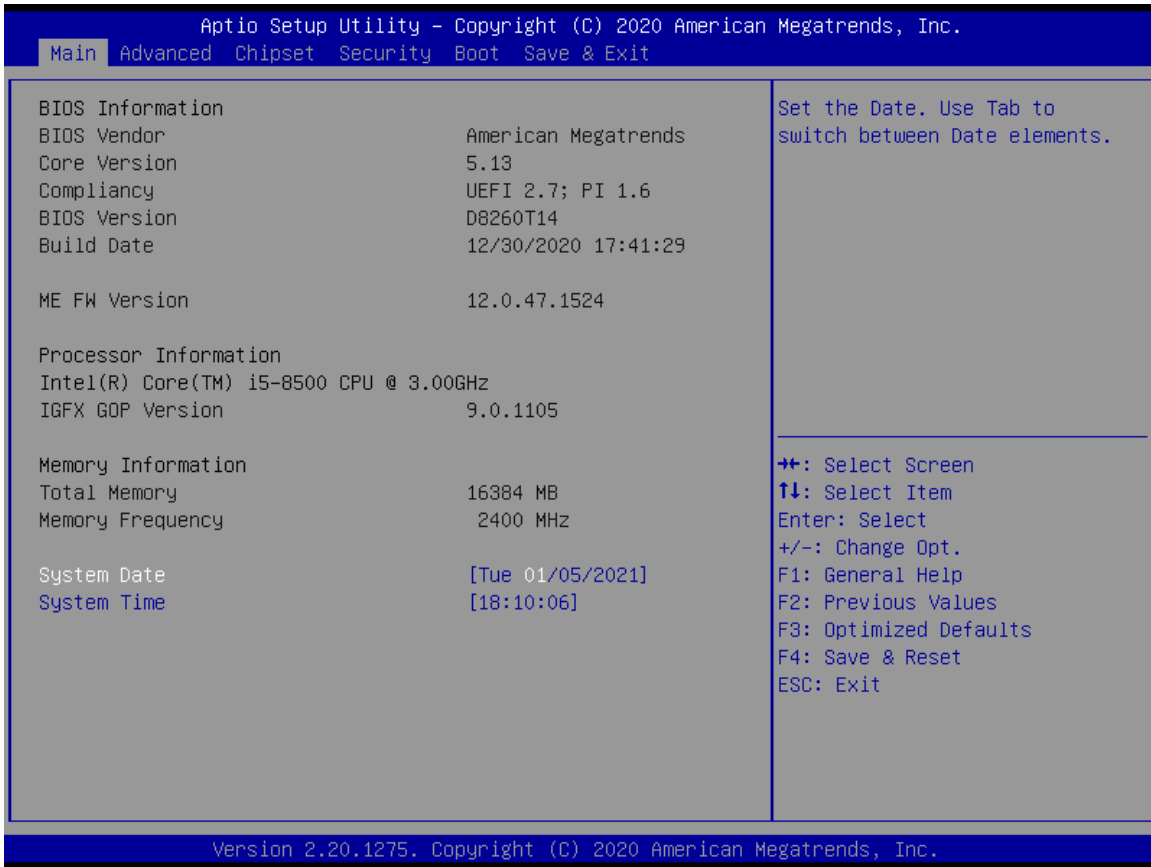
Jumper (1-2) : Add 2.5 seconds delay time.

Jumper (2-3) : No additional delay time

Table : Boot Delay Time Select

sMB-Q370 embedded Motherboard BIOS Specification

1. **MAIN PAGE**



Field Name	BIOS Vender
Default Value	AMI Megatrends
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Core Version
Default Value	5.13
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Compliancy
Default Value	UEFI 2.7 ; PI 1.6
Comment	This field is not selectable. There is no help text associated with it.

Field Name	BIOS Version
Default Value	Display the version of the BIOS
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Build Date
Default Value	Display build time of the BIOS
Comment	This field is not selectable. There is no help text associated with it.

Field Name	ME FW Version
Value	ME Firmware Version.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Processor Information
Value	Display the installed CPU brand.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	IGFX GOP Version
Value	Display the IGFX GOP Version.
Comment	This field is not selectable. There is no help text associated with it.

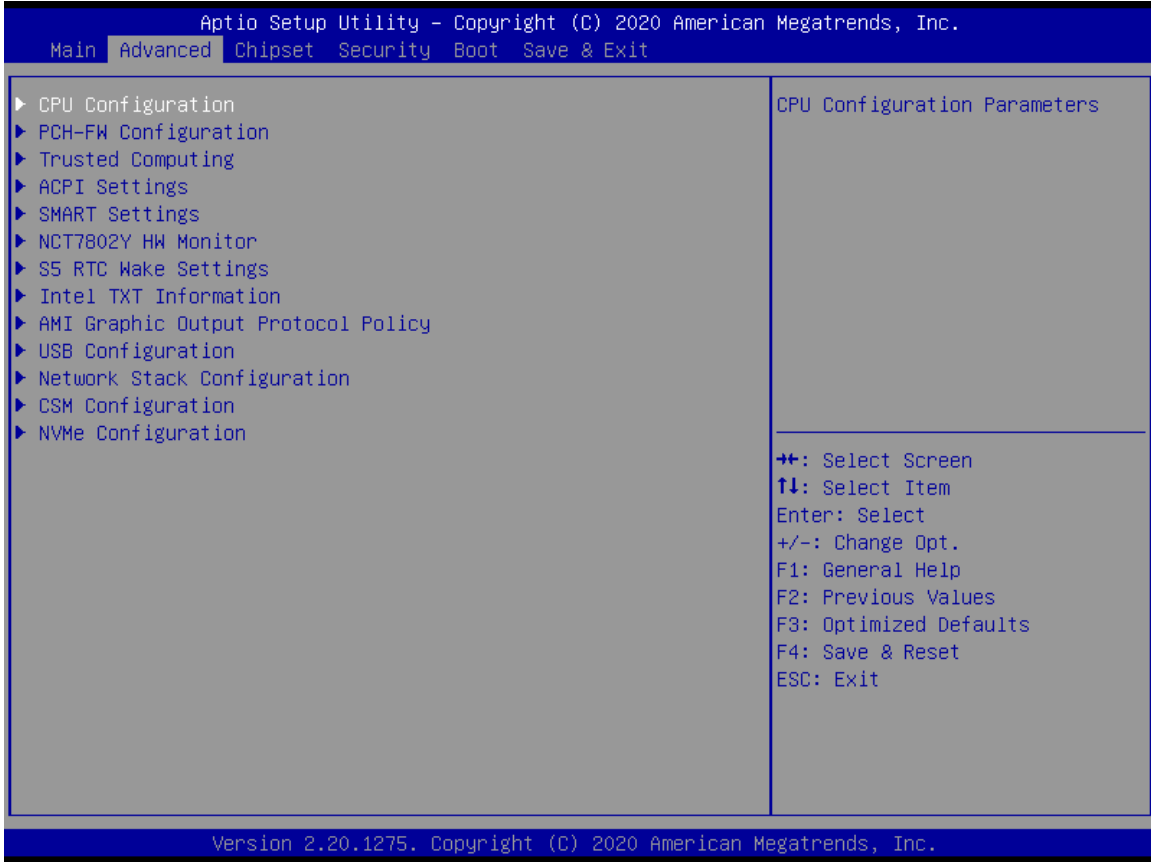
Field Name	Total Memory
Value	Display the installed memory size.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Memory Frequency
Value	Display the installed memory frequency.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	System Date
Default Value	[Www mm/dd/yyyy]
Possible Value	Www : Mon/Tue/Wed/Thu/Fri/Sat/Sun mm : 1-12 dd : 1-31 yyyy : 1998-9999
Help	Set the Date. Use Tab to switch between Date elements.

Field Name	System Time
Default Value	[hh :mm :ss]
Possible Value	hh : 0-23 mm : 0-59 ss : 0-59
Help	Set the Time. Use Tab to switch between Time elements.

2. **ADVANCED PAGE**



Field Name	CPU Configuration
Help	CPU Configuration Parameters.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PCH-FW Configuration
Help	Configure Management Engine Technology Parameters.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Trusted Computing
Help	Trusted Computing Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	ACPI Settings
Help	System ACPI Parameters.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	SMART Settings
Help	System SMART Settings.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	NCT7802Y HW Monitor
Help	Monitor hardware status
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	S5 RTC Wake Settings
Help	Enable system to wake from S5 using RTC alarm
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Intel TXT Information
Help	Display Intel TXT information
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	AMI Graphic Output Protocol Policy (Available when UEFI video)
Help	User Select Monitor Output by Graphic Output Protocol.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	USB Configuration
Help	USB Configuration Parameters
Comment	Press Enter when selected to go into the associated Sub-Menu.

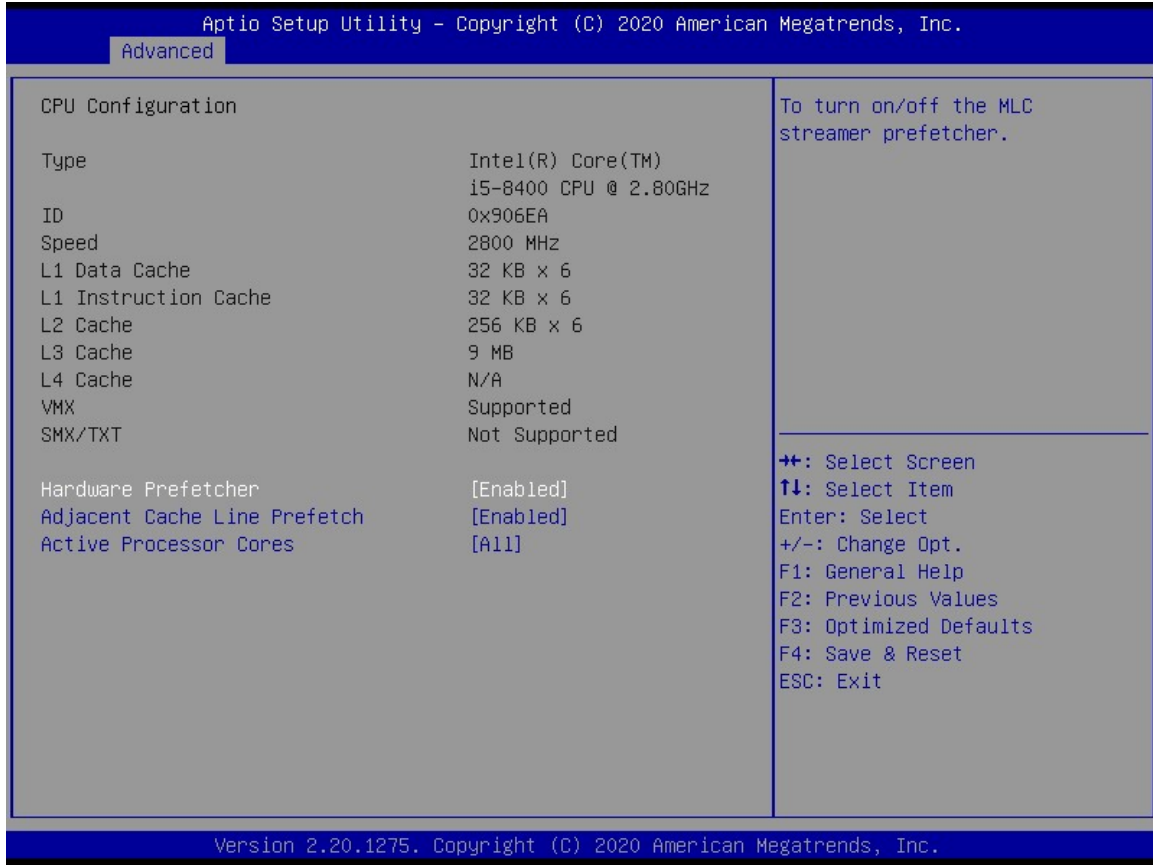
Field Name	Network Stack Configuration
Help	Network Stack Settings.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	CSM Configuration
Help	CSM configuration: Enable/Disable, Option ROM execution settings, etc
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	NVMe Configuration
Help	NVMe Device Options Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Intel (R) Rapid Storage Technology
Help	This formset allow the user to manage RAID volumes on the Intel(R) RAID Controller.
Comment	Press Enter when selected to go into the associated Sub-Menu.

2.1 CPU CONFIGURATION



Field Name	Type
Default Value	[Intel CPU Brand String]
Comment	This field is not selectable. There is no help text associated with it.

Field Name	ID
Default Value	Displays CPU Signature
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Speed
Default Value	Displays the CPU Speed
Comment	This field is not selectable. There is no help text associated with it.

Field Name	L1 Data Cache
Default Value	L1 Data Cache Size
Comment	This field is not selectable. There is no help text associated with it.

Field Name	L1 Instruction Cache
Default Value	L1 Instruction Cache Size
Comment	This field is not selectable. There is no help text associated with it.

Field Name	L2 Cache
Default Value	L2 Cache Size
Comment	This field is not selectable. There is no help text associated with it.

Field Name	L3 Cache
Default Value	L3 Cache Size
Comment	This field is not selectable. There is no help text associated with it.

Field Name	L4 Cache
Default Value	L4 Cache Size
Comment	This field is not selectable. There is no help text associated with it.

Field Name	VMX
Default Value	VMX Supported or Not
Comment	This field is not selectable. There is no help text associated with it.

Field Name	SMX/TXT
Default Value	SMX/TXT Supported or Not
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Hardware Prefetcher
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	To turn on/off the MLC streamer prefetcher.

Field Name	Adjacent Cache Line Prefetcher
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	To turn on/off the prefetching of adjacent cache lines.

Field Name	Active Processor Cores
Default Value	[All]
Possible Value	All 1-5 (by CPU Model)
Help	Number of cores to enable in each processor package.

Field Name	Hyper-Threading
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).

Field Name	Intel Trusted Execution Technology
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Enables utilization of additional hardware capabilities provided by Intel (R) Trusted Execution Technology. Changes require a full power cycle to take effect.

2.2 PCH-FW CONFIGURATION

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Advanced

ME Firmware Version	12.0.47.1524	Enable/Disable Intel(R) Manageability features. NOTE: This option disables/enables Manageability Features support in FW. To disable support platform must be in an unprovisioned state first.
ME Firmware Mode	Normal Mode	
ME Firmware SKU	Corporate SKU	
ME Firmware Status 1	0x90000255	
ME Firmware Status 2	0x39858106	
Manageability Features State	[Enabled]	
AMT BIOS Features	[Enabled]	
▶ AMT Configuration		
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

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Field Name	ME Firmware Version
Default Value	ME version value by BIOS release
Comment	This field is not selectable. There is no help text associated with it.

Field Name	ME Firmware Mode
Default Value	ME Mode
Comment	This field is not selectable. There is no help text associated with it.

Field Name	ME Firmware SKU
Default Value	ME SKU by BIOS release
Comment	This field is not selectable. There is no help text associated with it.

Field Name	ME Firmware Status 1
Default Value	0x90000255
Comment	This field is not selectable. There is no help text associated with it.

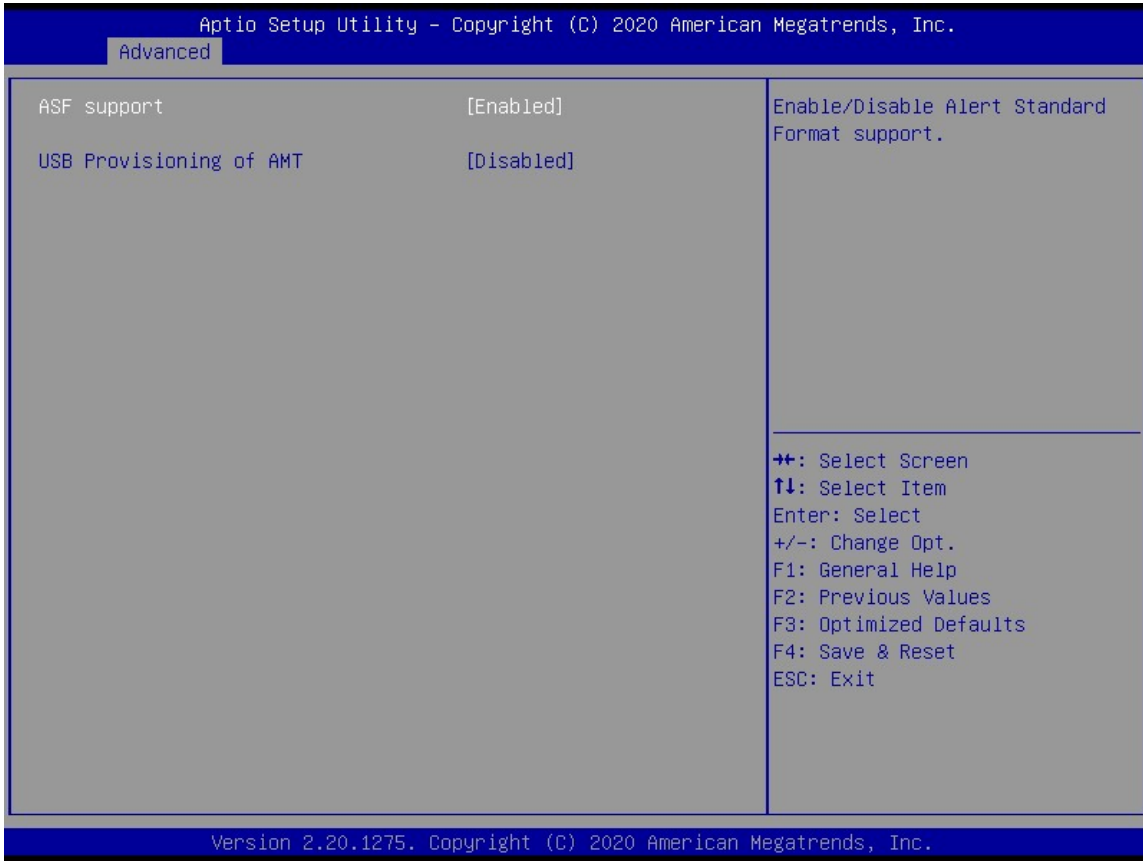
Field Name	ME Firmware Status 2
Default Value	0x80108106
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Manageability Features State
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Enable/Disable Intel(R) Manageability features. NOTE: This option disables/enables Manageability Features support in FW. To disable support platform must be in an unprovisioned state first.

Field Name	AMT BIOS Features
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	When disabled AMT BIOS Features are no longer supported and user is no longer able to access MEBx Setup.Note: This option does not disable Manageability Features in FW.

Field Name	AMT Configuration
Help	Configure Intel (R) Active Management Technology Parameters
Comment	Press Enter when selected to go into the associated Sub-Menu.

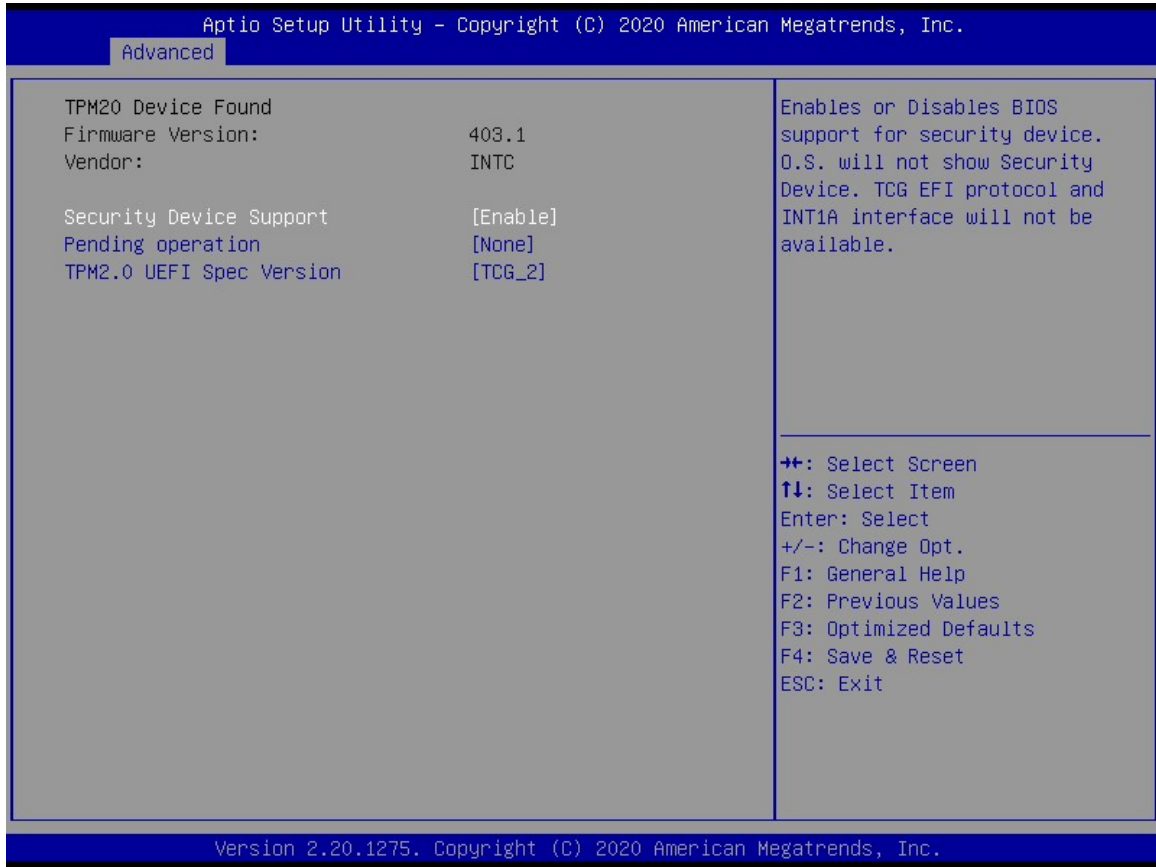
2.2.1 AMT CONFIGURATION



Field Name	ASF support
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Enable/Disable Alert Standard Format support.

Field Name	USB Provisioning of AMT
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Enable/Disable of AMT USB Provisioning.

2.3 TRUSTED COMPUTING



Field Name	Security Device Support
Default Value	[Enable]
Possible Value	Enable Disable
Help	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

Field Name	Pending operation
Default Value	[None]
Possible Value	None TPM Clear
Help	Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.

Field Name	TPM2.0 UEFI Spec Version
Default Value	[TCG_2]
Possible Value	TCG_1_2 TCG_2
Help	Select the TCG2 Spec Version Support, TCG_1_2: The Compatible mode for Win8/Win10, TCG_2: Support new TCG2 protocol and event format for Win10 or later.

2.4 ACPI SETTINGS

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Advanced

<pre> ACPI Settings ----- Enable ACPI Auto Configuration [Disabled] Enable Hibernation [Enabled] ACPI Sleep State [S3 (Suspend to RAM)] </pre>	<p>Enables or Disables BIOS ACPI Auto Configuration.</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit </p>
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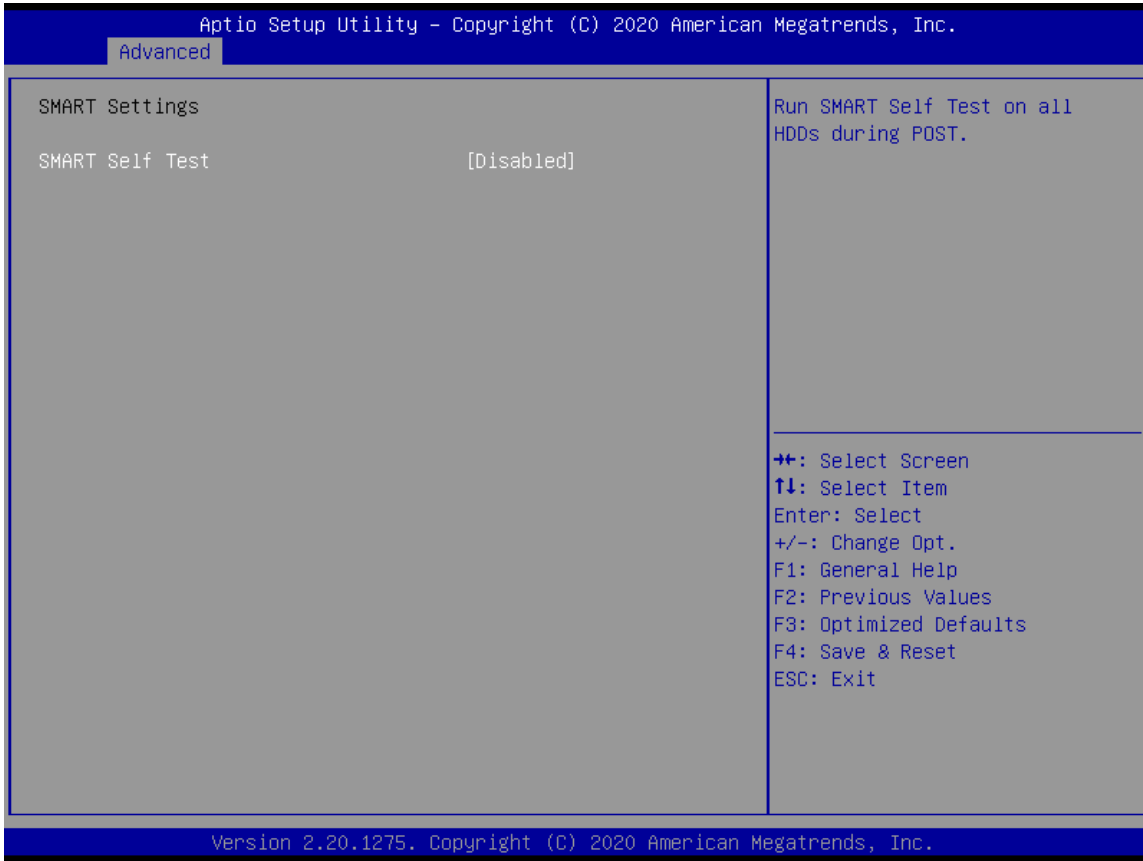
Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.

Field Name	Enable ACPI Auto Configuration
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Enables or Disables BIOS ACPI Auto Configuration.

Field Name	Enable Hibernation
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.

Field Name	ACPI Sleep State
Default Value	[S3 (Suspend to RAM)]
Possible Value	Suspend Disabled S3 (Suspend to RAM)
Help	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

2.5 SMART SETTINGS



Field Name	SMART Self Test
Default Value	[Disabled]
Possible Value	Disabled Enabled
Help	Run SMART Self Test on all HDDs during POST.

2.6 NCT7802Y HW MONITOR

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Advanced

Pc Health Status	
CPU Temperature	: +73 ℃
VR Temperature	: +42 ℃
System temperature	: +33 ℃
CPU Fan Speed	: N/A
System Fan Speed	: N/A
3VSB/VCC	: +3.356 V
CPU CORE/VCORE	: +1.006 V
12V	: +12.456 V

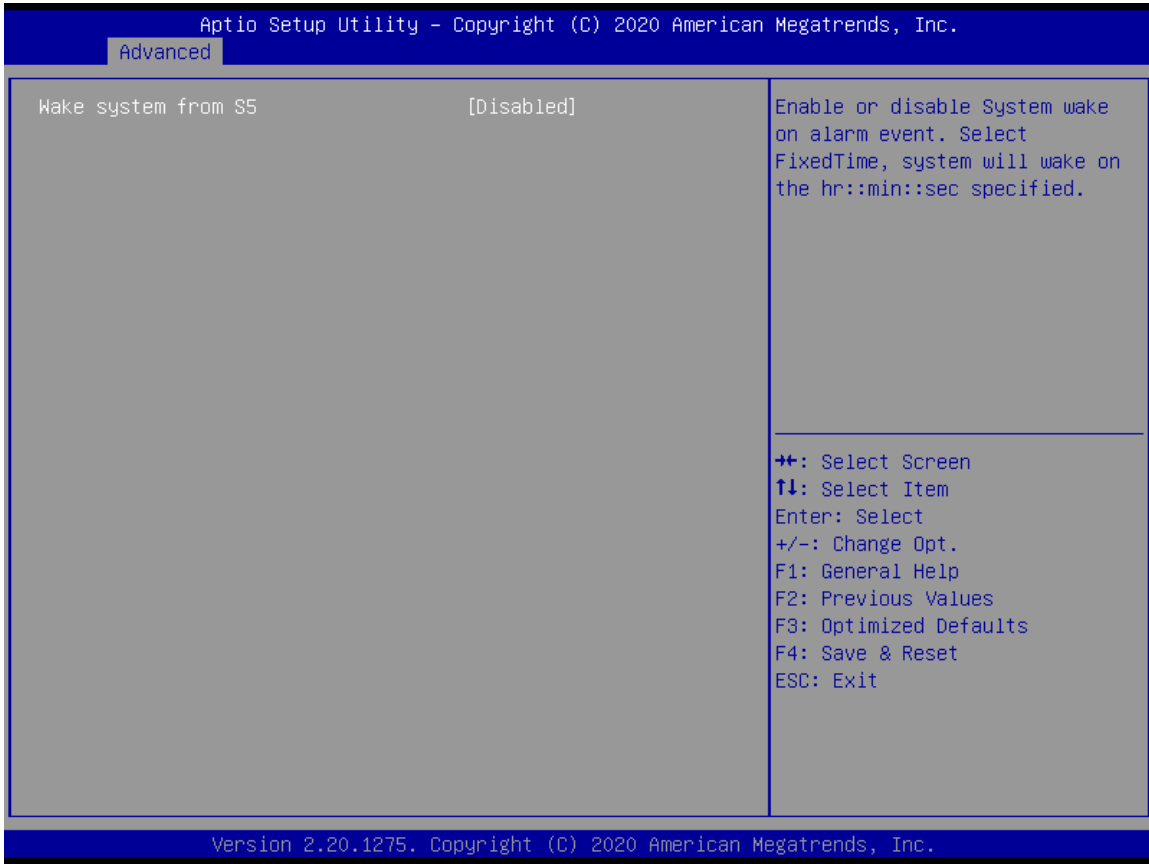
⇧⇩: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Reset
 ESC: Exit

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Type	Range
CPU Temperature	-20 ~ (By Processor Tjmax) °C
VR Temperature	-20 ~ 120 °C
System Temperature	-20 ~ 120 °C
CPU Fan Speed	There are many kinds of the fan could be installed into the system, so we could only set 0 RPM for the failed fan speed, and there is also no high RPM limitation.
System Fan Speed	
3VSB/Vcc	3.135~3.465V
CPU CORE/VCORE	0~1.52V
12V	11.4~12.6V

2.7 S5 RTC WAKE SETTING

Note: RTC wake up will not work when “**DeepSx Power Policies set to enable**”



Field Name	Wake system from S5
Default Value	[Disabled]
Possible Value	Disabled Fixed Time Dynamic Time
Help	Enable or disable System wake on alarm event, Select FixedTime, system will wake on the hr::min::sec specified.

Field Name	Wake up hour(Show when Wake system from S5 set to Fixed Time)
Default Value	0
Possible Value	0-23
Help	Select 0-23 For example enter 3 for 3am and 15 for 3pm

Field Name	Wake up minute(Show when Wake system from S5 set to Fixed Time)
Default Value	0
Possible Value	0-59
Help	Select 0 – 59 for Minute

Field Name	Wake up second(Show when Wake system from S5 set to Fixed Time)
Default Value	0
Possible Value	0 - 59
Help	Select 0 – 59 for Second

Field Name	Wakeup minute increase
Default Value	1
Possible Value	0 - 5
Help	1

2.8 INTEL TXT INFORMATION

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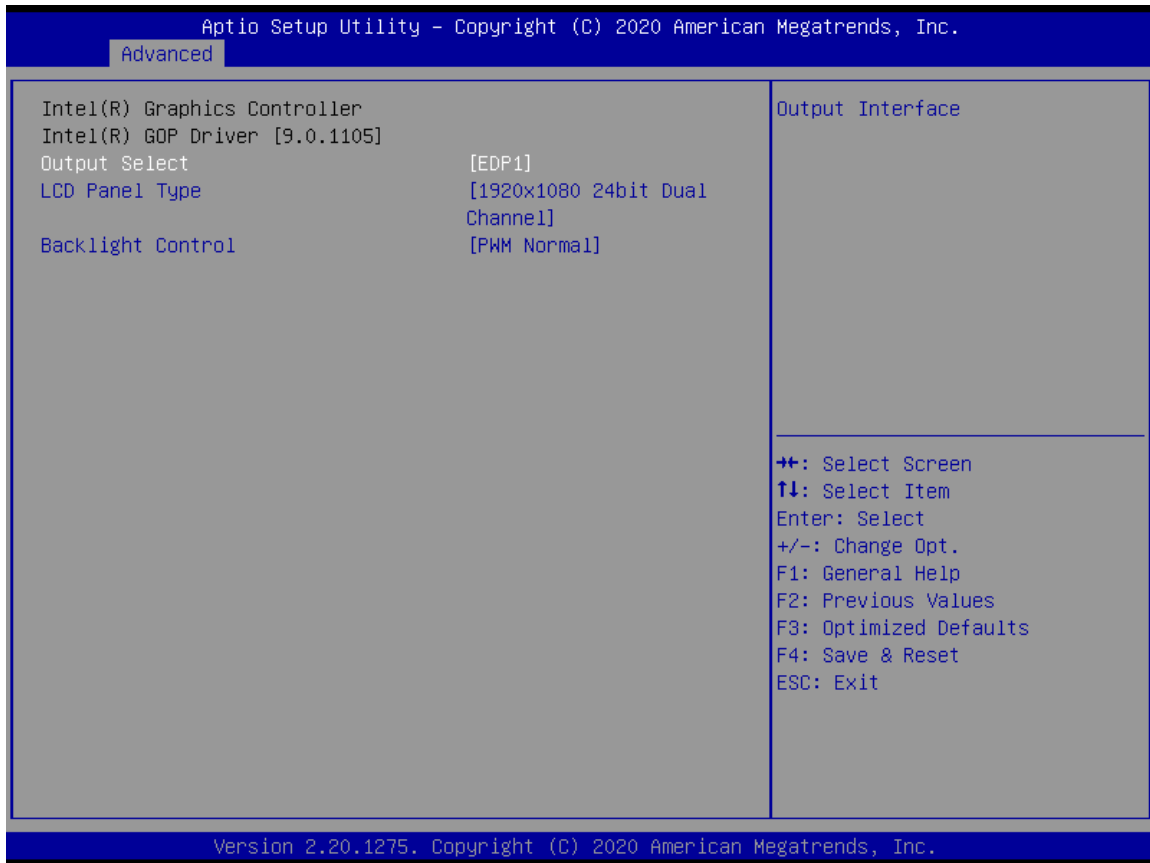
Advanced

Intel TXT Information	
Chipset	Production Fused
BiosAcm	Production Fused
Cpu Txt	Not 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 & Reset
 ESC: Exit

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2.9 AMI GRAPHIC OUTPUT PROTOCOL POLICY (AVAILABLE WHEN UEFI VIDEO)



Field Name	Output Select
Default Value	By attached device.
Possible Value	EDP1(LVDS Control enabled) / DP1 / HDMI3
Help	Output Interface

Field Name	LCD Panel Type
Default Value	[1920x1080 24bit Dual Channel]
Possible Value	800x600 18bit Single Channel 1024x768 18bit Single Channel 1024x768 24bit Single Channel 1280x768 18bit Single Channel 1280x800 24bit Single Channel 1280x960 18bit Single Channel 1280x1024 24bit Dual Channel 1366x768 18bit Single Channel 1366x768 24bit Single Channel 1440x900 24bit Dual Channel 1440x1050 24bit Dual Channel 1600x900 24bit Dual Channel

	1680x1050 24bit Dual Channel 1600x1200 24bit Dual Channel 1920x1080 24bit Dual Channel 1920x1200 24bit Dual Channel
Help	Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.

Field Name	Backlight Control
Default Value	[PWM Normal]
Possible Value	PWM Inverted PWM Normal
Help	Back Light Control Setting

2.10 USB CONFIGURATION

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Advanced

<pre> USB Configuration USB Module Version 23 USB Controllers: 1 XHCI USB Devices: 1 Drive, 1 Keyboard, 1 Mouse Legacy USB Support [Enabled] XHCI Hand-off [Enabled] USB Mass Storage Driver Support [Enabled] USB hardware delays and time-outs: USB transfer time-out [20 sec] Device reset time-out [20 sec] Device power-up delay [Auto] </pre>	<p>Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.</p> <hr/> <pre> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit </pre>
--	--

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Field Name	Legacy USB Support
Default Value	[Enabled]
Possible Value	Disabled Enabled Auto
Help	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

Field Name	XHCI Hand-off
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	This is a workaround for OSES without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

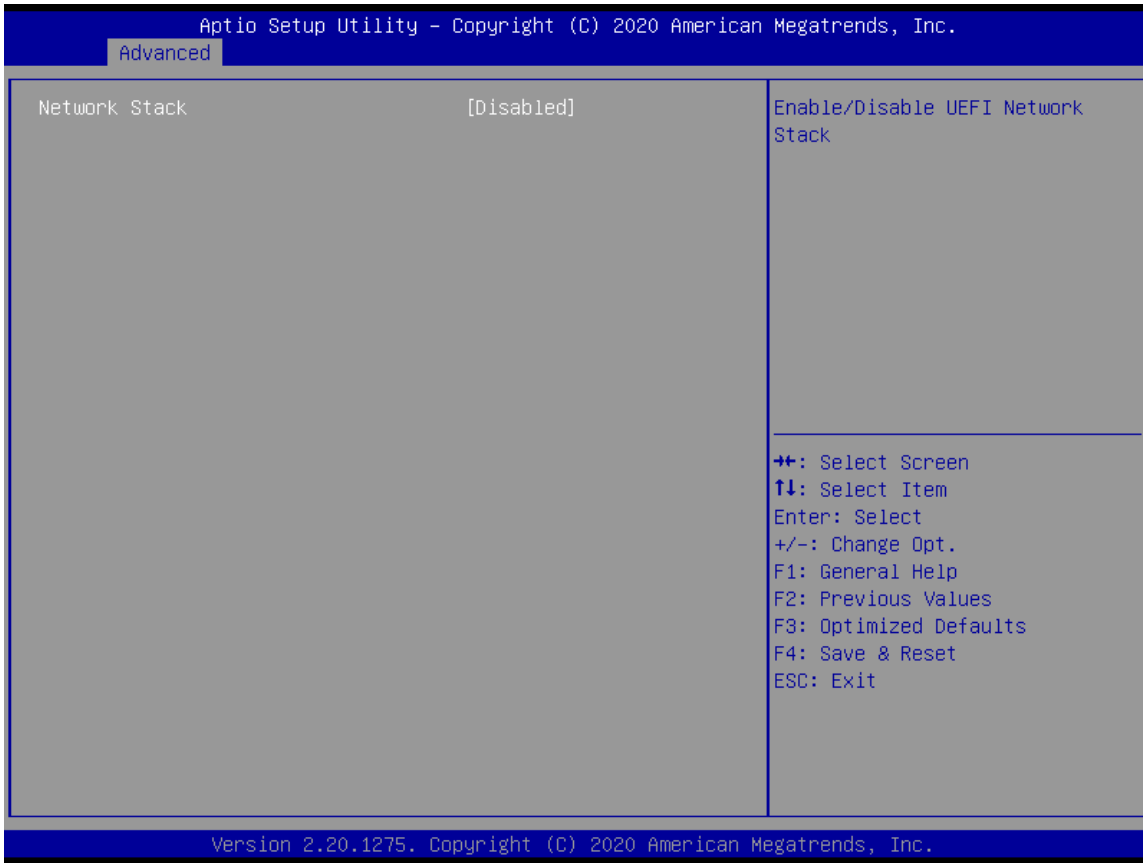
Field Name	USB Mass Storage Driver Support
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	Enable/Disable USB Mass Storage Driver Support.

Field Name	USB transfer time-out
Default Value	[20 sec]
Possible Value	1 sec 5 sec 10 sec 20 sec
Help	The time-out value for Control, Bulk, and Interrupt transfers.

Field Name	Device reset time-out
Default Value	[20 sec]
Possible Value	10 sec 20 sec 30 sec 40 sec
Help	USB mass storage device Start Unit command time-out.

Field Name	Device power-up delay
Default Value	[Auto]
Possible Value	Auto Manual
Help	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

2.11 NETWORK STACK CONFIGURATION



Field Name	Network stack
Default Value	[Disabled]
Possible Value	Disabled Enabled
Help	Enable/Disable UEFI Network stack.

Field Name	Ipv4 PXE Support (Available when Network stack Enabled)
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	Enable/Disable Ipv4 PXE Boot Support. If disabled IPV4 PXE boot support will not be available.

Field Name	Ipv6 PXE Support (Available when Network stack Enabled)
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	Enable/Disable Ipv6 PXE Boot Support. If disabled IPV6 PXE boot support will not be available.

2.12 CSM CONFIGURATION



Field Name	CSM Support
Default Value	[Disabled]
Possible Value	Disabled Enabled
Help	Enable/Disable CSM Support.

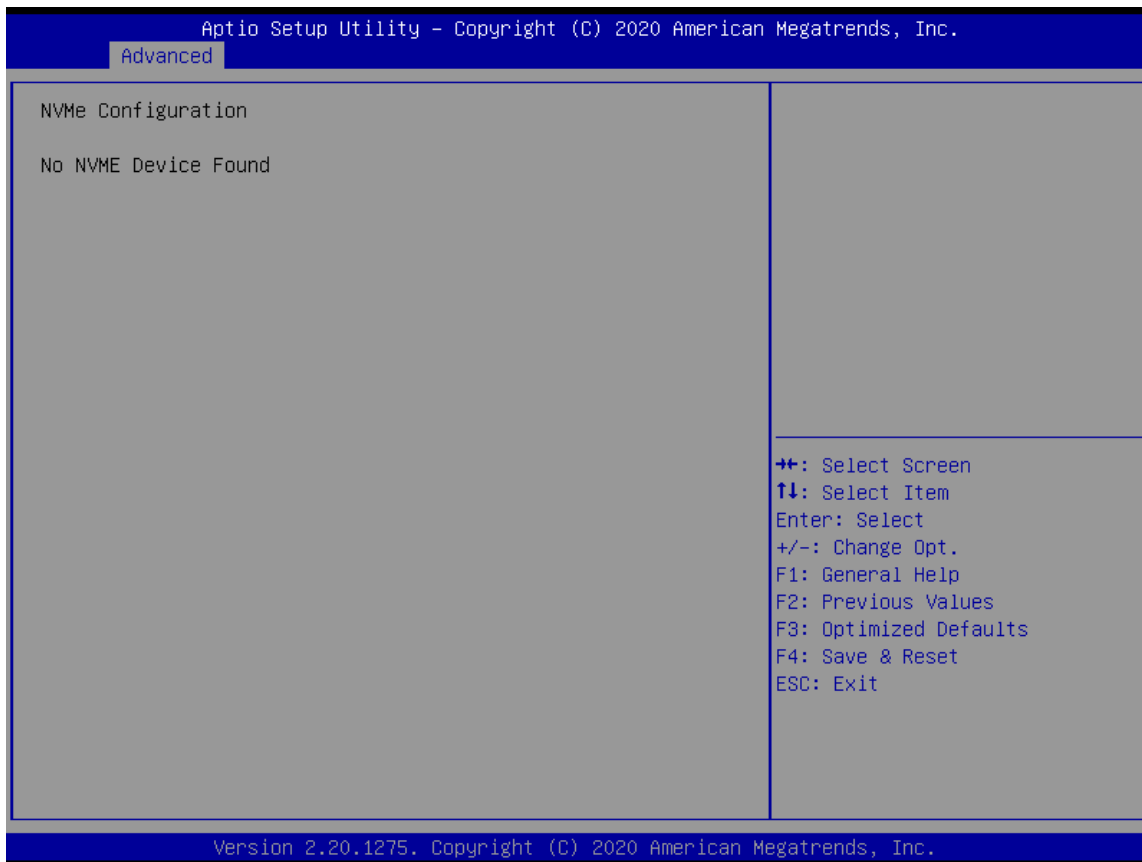
Field Name	Network (Available when CSM Support Enabled)
Default Value	[Do not launch]
Possible Value	Do not launch UEFI Legacy
Help	Controls the execution of UEFI and Legacy Network OpROM

Field Name	Storage (Available when CSM Support Enabled)
Default Value	[UEFI]
Possible Value	Do not launch UEFI Legacy
Help	Controls the execution of UEFI and Legacy Storage OpROM

Field Name	Video (Available when CSM Support Enabled)
Default Value	[UEFI]
Possible Value	Do not launch UEFI Legacy
Help	Controls the execution of UEFI and Legacy Video OpROM

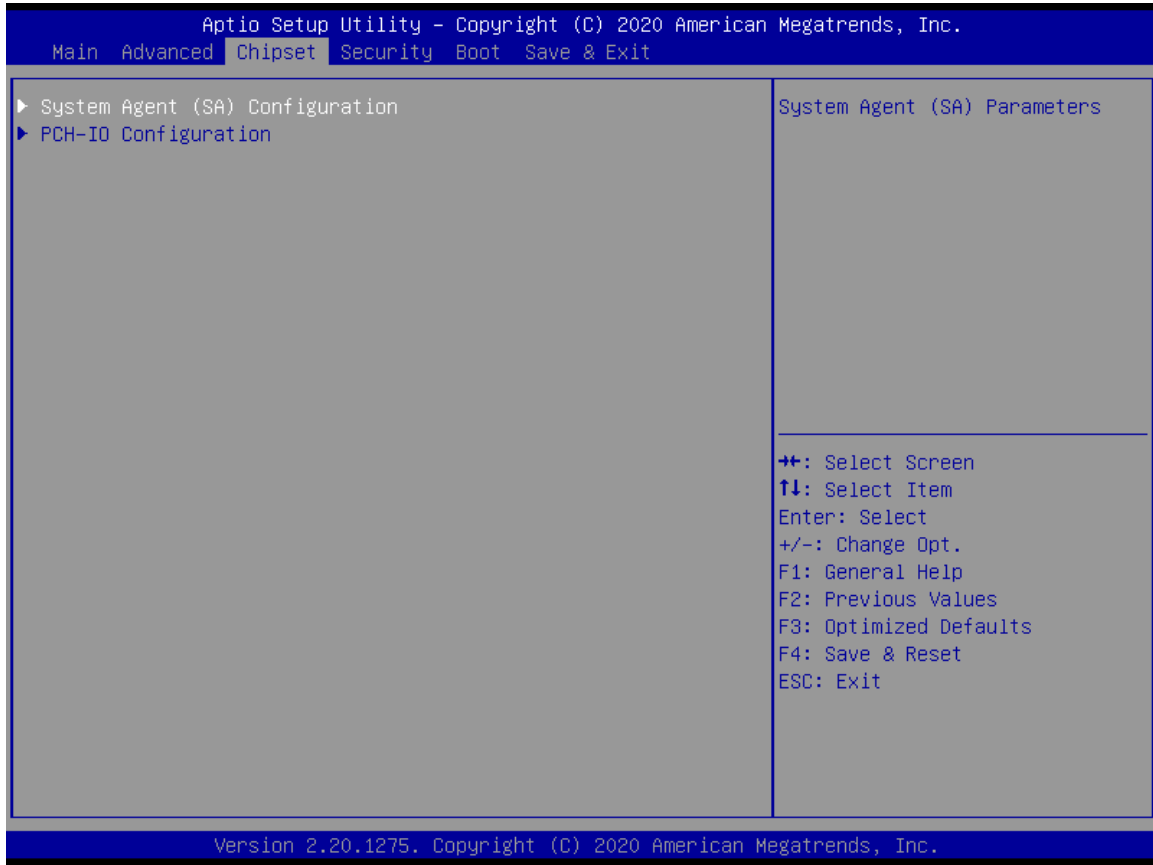
Field Name	Other PCI devices (Available when CSM Support Enabled)
Default Value	[UEFI]
Possible Value	Do not launch UEFI Legacy
Help	Determines OpROM execution policy for devices other than Network, Storage, or Video

2.13 NVME CONFIGURATION



Field Name	(Device)
Comment	Press Enter when selected to go into the associated Sub-Menu.

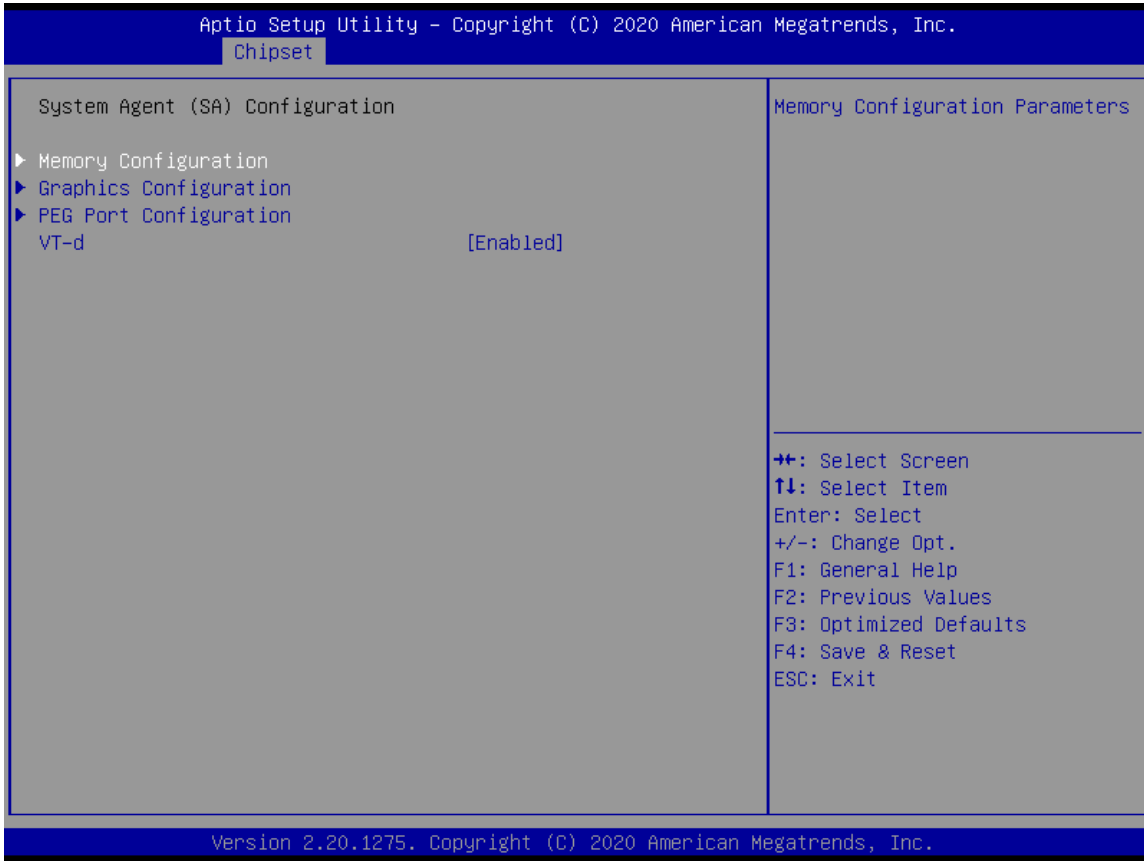
3. CHIPSET PAGE



Field Name	System Agent (SA) Configuration
Help	System Agent (SA) Parameters
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PCH-IO Configuration
Help	PCH Parameters
Comment	Press Enter when selected to go into the associated Sub-Menu.

3.1 SYSTEM AGENT (SA) CONFIGURATION



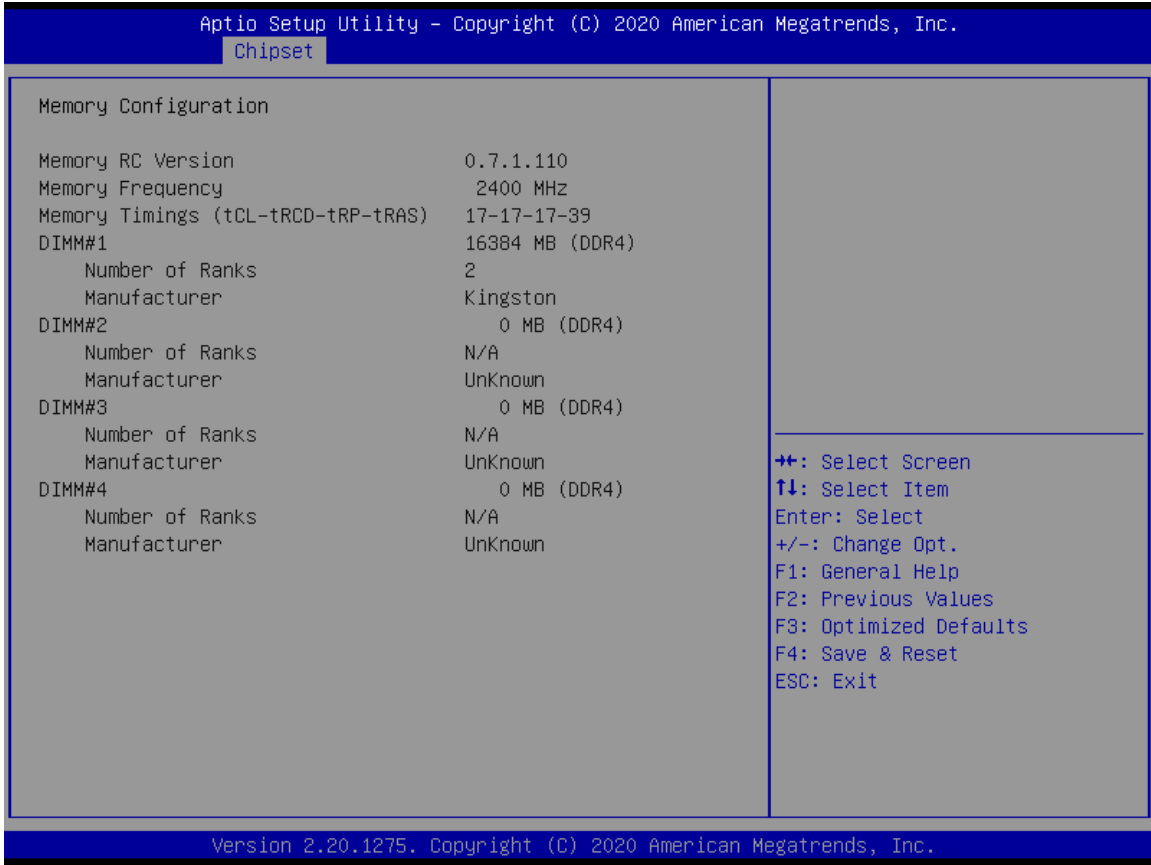
Field Name	Memory Configuration
Help	Memory Configuration Parameters
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Graphics Configuration
Help	Graphics Configuration
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PEG Port Configuration
Help	PEG Port Options
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	VT-d
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	VT-d capability

3.1.1 MEMORY CONFIGURATION



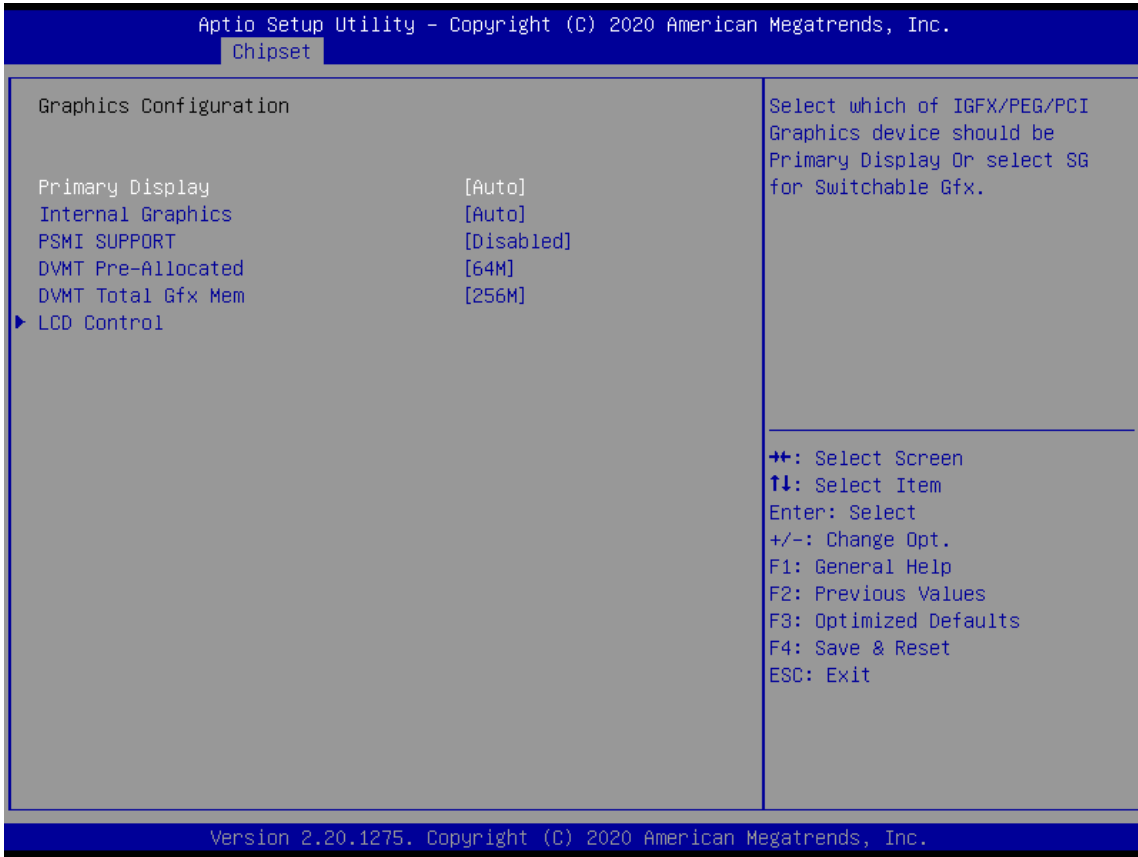
Field Name	Memory RC Version
Help	Memory Reference Code version
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Memory Frequency
Help	Memory speed
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Memory Timings (tCL-tRCD-tRP-tRAS)
Help	Memory detail timings
Comment	This field is not selectable. There is no help text associated with it.

Field Name	DIMM#[1:4]
Help	Memory size/ranks/manufacturer in the DIMM.
Comment	This field is not selectable. There is no help text associated with it.

3.1.2 GRAPHICS CONFIGURATION



Field Name	Primary Display
Default Value	[Auto]
Possible Value	Auto / IGFX / PEG
Help	Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.

Field Name	Internal Graphics
Default Value	[Auto]
Possible Value	Auto / Disabled / Enabled
Help	Keep IGFX enabled based on the setup options.

Field Name	PSMI SUPPORT
Default Value	[Disabled]
Possible Value	Disabled / Enabled
Help	PSMI Enable/Disable

Field Name	DVMT Pre-Allocated
Default Value	[64M]
Possible Value	64M / (32M/F7)/ 36M/ 40M/ 44M/ 48M/ 52M/ 56M/ 60M
Help	Select DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.

Field Name	DVMT Total Gfx Mem
Default Value	[256M]
Possible Value	128MB / 256MB / MAX
Help	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.

3.1.2.1 LCD CONTROL

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Chipset

<p>LCD Control</p> <p>Primary IGFX Boot Display [VBIOS Default]</p> <p>LCD Panel Type [1920x1080 24bit Dual Channel]</p> <p>Backlight Control [PWM Normal]</p> <p>Backlight Brightness [100%]</p>	<p>Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display</p> <hr/> <p> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit </p>
---	---

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Field Name	Primary IGFX Boot Display
Default Value	[VBIOS Default]
Possible Value	VBIOS Default / LVDS(LVDS Control enabled) / DP1 / HDMI
Help	Select the Video Device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display

Field Name	Secondary IGFX Boot Display (Available when Primary IGFX Boot Display not VBIOS Default)
Default Value	[Disabled]
Possible Value	Disabled / DP1 / DP2 / HDMI
Help	Select Secondary Display Device

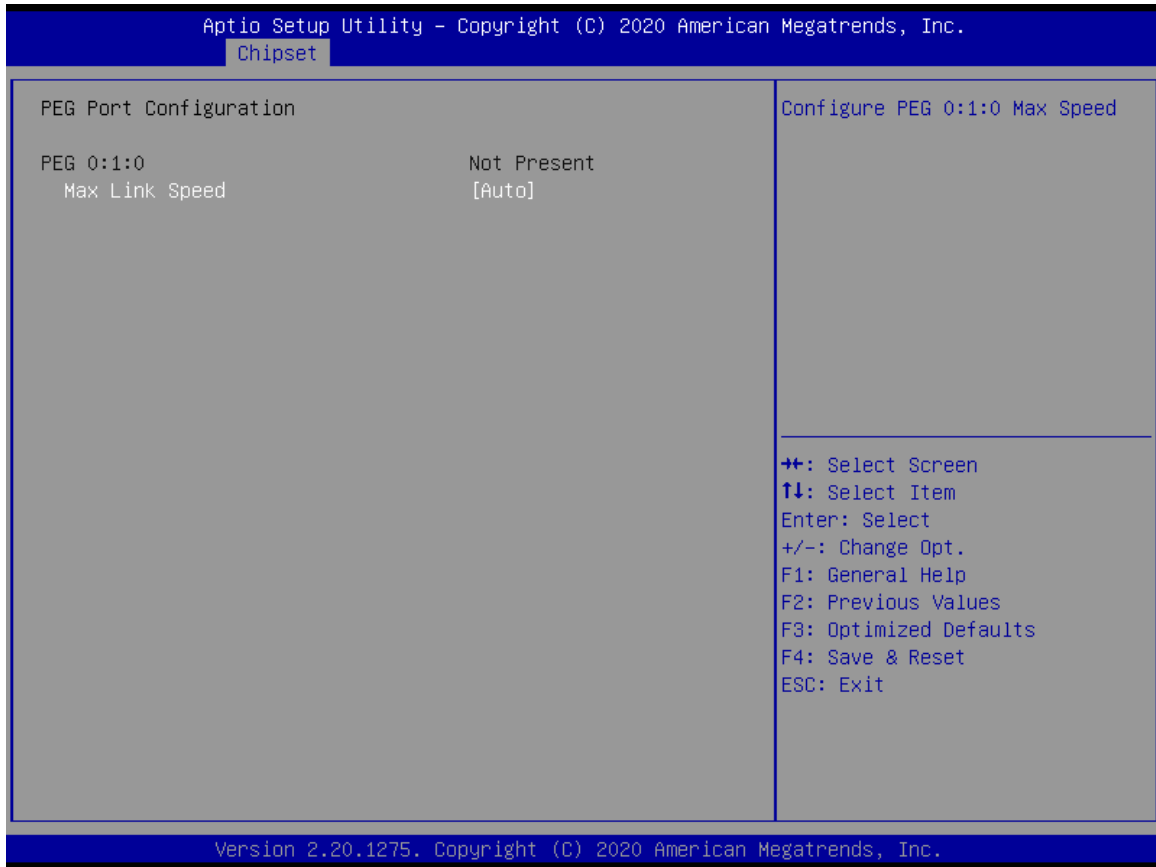
Field Name	LCD Panel Type
Default Value	[1920x1080 24bit Dual Channel]
Possible Value	800x600 18bit Single Channel 1024x768 18bit Single Channel 1024x768 24bit Single Channel 1280x768 18bit Single Channel 1280x800 24bit Single Channel 1280x960 18bit Single Channel 1280x1024 24bit Dual Channel 1366x768 18bit Single Channel 1366x768 24bit Single Channel 1440x900 24bit Dual Channel 1440x1050 24bit Dual Channel 1600x900 24bit Dual Channel 1680x1050 24bit Dual Channel 1600x1200 24bit Dual Channel 1920x1080 24bit Dual Channel 1920x1200 24bit Dual Channel
Help	Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.

Field Name	Backlight Control
Default Value	[PWM Normal]
Possible Value	PWM Inverted PWM Normal
Help	Back Light Control Setting

Field Name	LVDS Control
Default Value	[Disabled]
Possible Value	Disabled Enabled
Help	Enabled/Disabled the LVDS.

Field Name	Backlight Brightness
Default Value	[100%]
Possible Value	10% / 20% / 30% / 40% / 50% / 60% / 70% / 80% / 90% / 100%
Help	Set VBIOS Brightness.

3.1.3 PEG PORT CONFIGURATION



Field Name	PEG 0:1:0
Default Value	By detect.
Possible Value	Not Present / Gen1 / Gen2 / Gen3
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Max Link Speed
Default Value	[Auto]
Possible Value	Auto / Gen1 / Gen2 / Gen3
Help	Configure PEG 0:1:0 Max Speed

Field Name	Max Link Width (Suppress if no card detected)
Default Value	[Auto]
Possible Value	Auto / Force X1 / Force X2 / Force X4 / Force X8
Help	Force PEG link to retrain to X1/2/4/8

Field Name	ASPM (Suppress if no card detected)
Default Value	[Auto]
Possible Value	Disabled / Auto / ASPM L0s / ASPM L1 / ASPM L0sL1
Help	Control ASPM support for the PEG 0. This has no effect if PEG is not the currently active device.

3.2 PCH-IO CONFIGURATION



Field Name	PCIE Express Configuration
Help	PCIE Express Configuration settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	SATA And RST Configuration
Help	SATA Device Options Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	USB Configuration
Help	USB Configuration settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	HD Audio Configuration
Help	HD Audio Subsystem Configuration Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	LAN Controller
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Enable/Disable onboard RTL8111HS

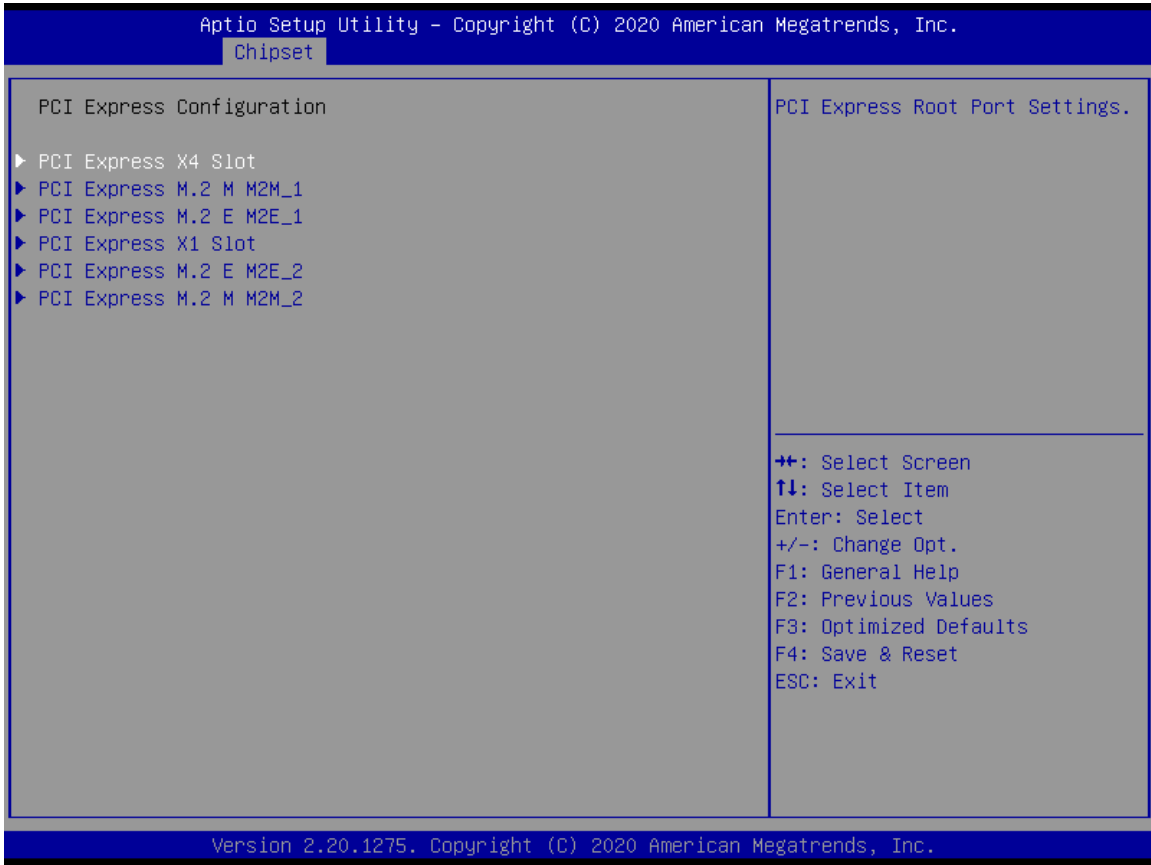
Field Name	Wake On Lan
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Enable/Disable integrated LAN to wake the system.

Field Name	DeepSx Power Policies
Default Value	[Disabled]
Possible Value	Enabled in S4-S5 Disabled
Help	configure the DeepSx Mode configuration.

Field Name	Restore AC Power Loss
Default Value	[Power Off]
Possible Value	Power On Power Off
Help	Specify what state to go to when power is re-applied after a power failure (G3 state).

Field Name	CPU Fan Default State in MB
Default Value	[CPU no any FAN]
Possible Value	CPU no any FAN CPU Plugged FAN
Help	Check CPU FAN had plugged on the MB , if plugged once there is no fan , During POST there will invoke no FAN message.

3.2.1 PCI EXPRESS CONFIGURATION



Field Name	PCI Express X4 Slot
Help	PCI Express Root Port Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PCI Express M.2 M M2M_1
Help	PCI Express Root Port Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PCI Express M.2 E M2E_1
Help	PCI Express Root Port Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PCI Express X1 Slot
Help	PCI Express Root Port Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PCI Express M.2 E M2E_2
Help	PCI Express Root Port Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	PCI Express M.2 M M2M_2
Help	PCI Express Root Port Settings
Comment	Press Enter when selected to go into the associated Sub-Menu.

3.2.1.1 PCI EXPRESS X4 SLOT

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Chipset

ASPM [Auto] L1 Substates [L1.1 & L1.2] PCIe Speed [Auto]	Set the ASPM Level: Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM
	⇧⇩: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

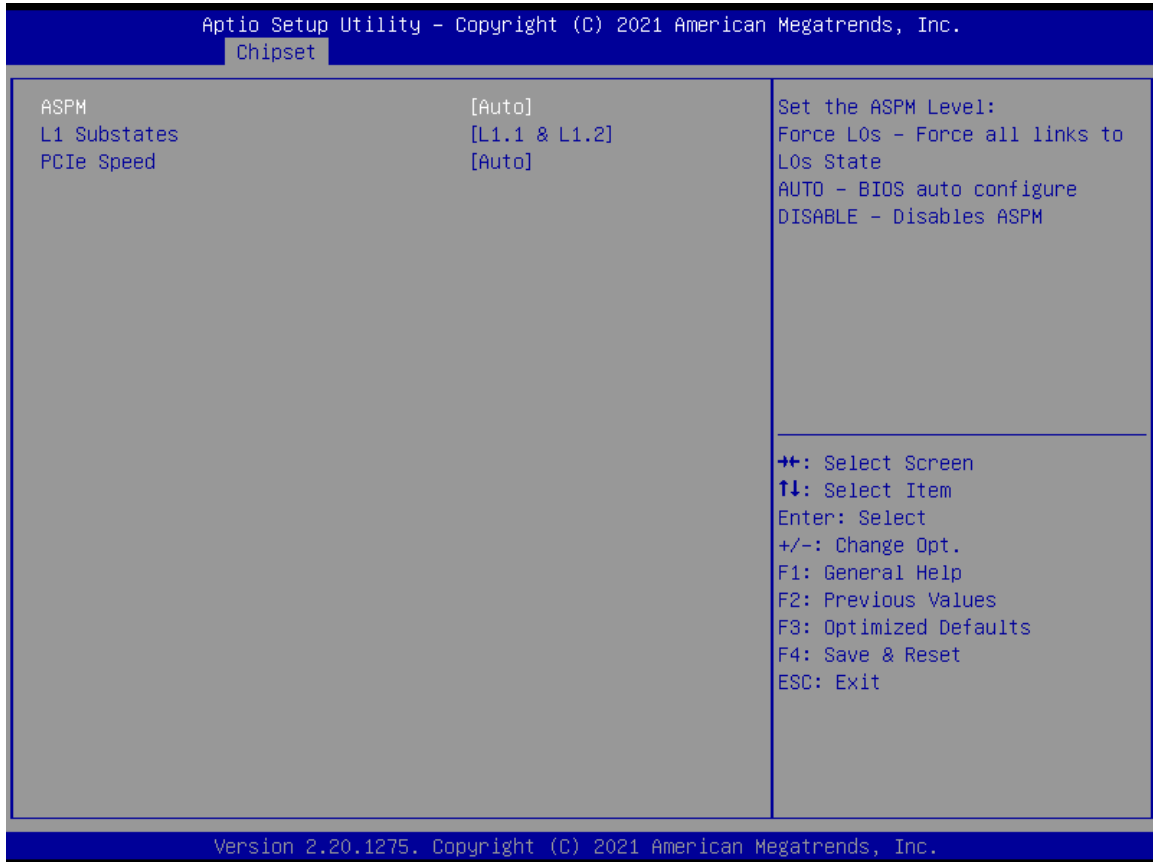
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Field Name	ASPM
Default Value	[Auto]
Possible Value	Disabled / L0s / L1 / L0sL1 / Auto
Help	Set the ASPM Level:Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM

Field Name	L1 Substates
Default Value	[L1.1 & L1.2]
Possible Value	Disabled / L1.1 / L1.1 & L1.2
Help	PCI Express L1 Substates settings.

Field Name	PCIe Speed
Default Value	[Auto]
Possible Value	Auto / Gen1 / Gen2 / Gen3
Help	Configure PCIe Speed

3.2.1.2 PCI EXPRESS M.2 M M2M_1



Field Name	ASPM
Default Value	[Auto]
Possible Value	Disabled / L0s / L1 / L0sL1 / Auto
Help	Set the ASPM Level:Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM

Field Name	L1 Substates
Default Value	[L1.1 & L1.2]
Possible Value	Disabled / L1.1 / L1.1 & L1.2
Help	PCI Express L1 Substates settings.

Field Name	PCIe Speed
Default Value	[Auto]
Possible Value	Auto / Gen1 / Gen2 / Gen3
Help	Configure PCIe Speed

3.2.1.3 PCI EXPRESS M.2 E M2E_1

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Chipset

ASPM [Auto] L1 Substates [L1.1 & L1.2] PCIe Speed [Auto]	Set the ASPM Level: Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM
	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

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Field Name	ASPM
Default Value	[Auto]
Possible Value	Disabled / L0s / L1 / L0sL1 / Auto
Help	Set the ASPM Level:Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM

Field Name	L1 Substates
Default Value	[L1.1 & L1.2]
Possible Value	Disabled / L1.1 / L1.1 & L1.2
Help	PCI Express L1 Substates settings.

Field Name	PCIe Speed
Default Value	[Auto]
Possible Value	Auto / Gen1 / Gen2 / Gen3
Help	Configure PCIe Speed

3.2.1.4 PCI EXPRESS X1 Slot

Aptio Setup Utility - Copyright (C) 2021 American Megatrends, Inc.

Chipset

ASPM [Auto] L1 Substates [L1.1 & L1.2] PCIe Speed [Auto]	Set the ASPM Level: Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM
++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit	

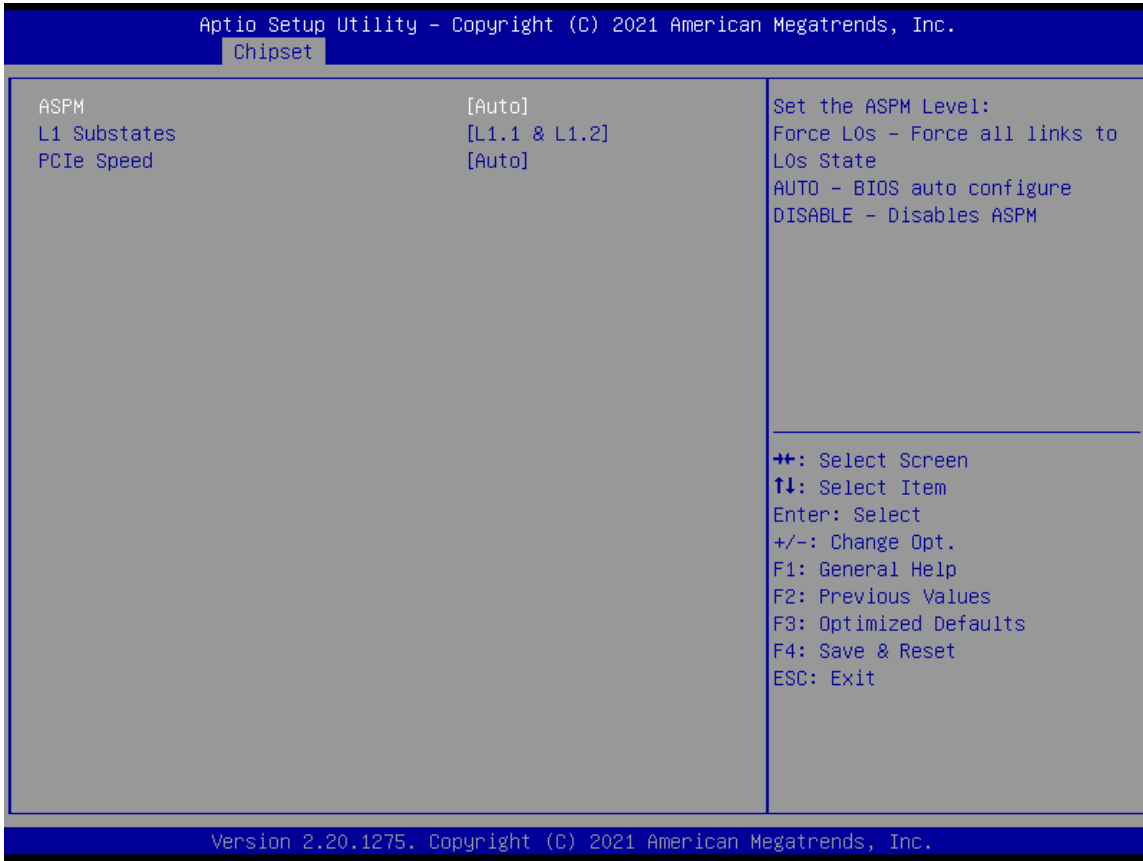
Version 2.20.1275. Copyright (C) 2021 American Megatrends, Inc.

Field Name	ASPM
Default Value	[Auto]
Possible Value	Disabled / L0s / L1 / L0sL1 / Auto
Help	Set the ASPM Level:Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM

Field Name	L1 Substates
Default Value	[L1.1 & L1.2]
Possible Value	Disabled / L1.1 / L1.1 & L1.2
Help	PCI Express L1 Substates settings.

Field Name	PCIe Speed
Default Value	[Auto]
Possible Value	Auto / Gen1 / Gen2 / Gen3
Help	Configure PCIe Speed

3.2.1.5 PCI EXPRESS M.2 E M2E2

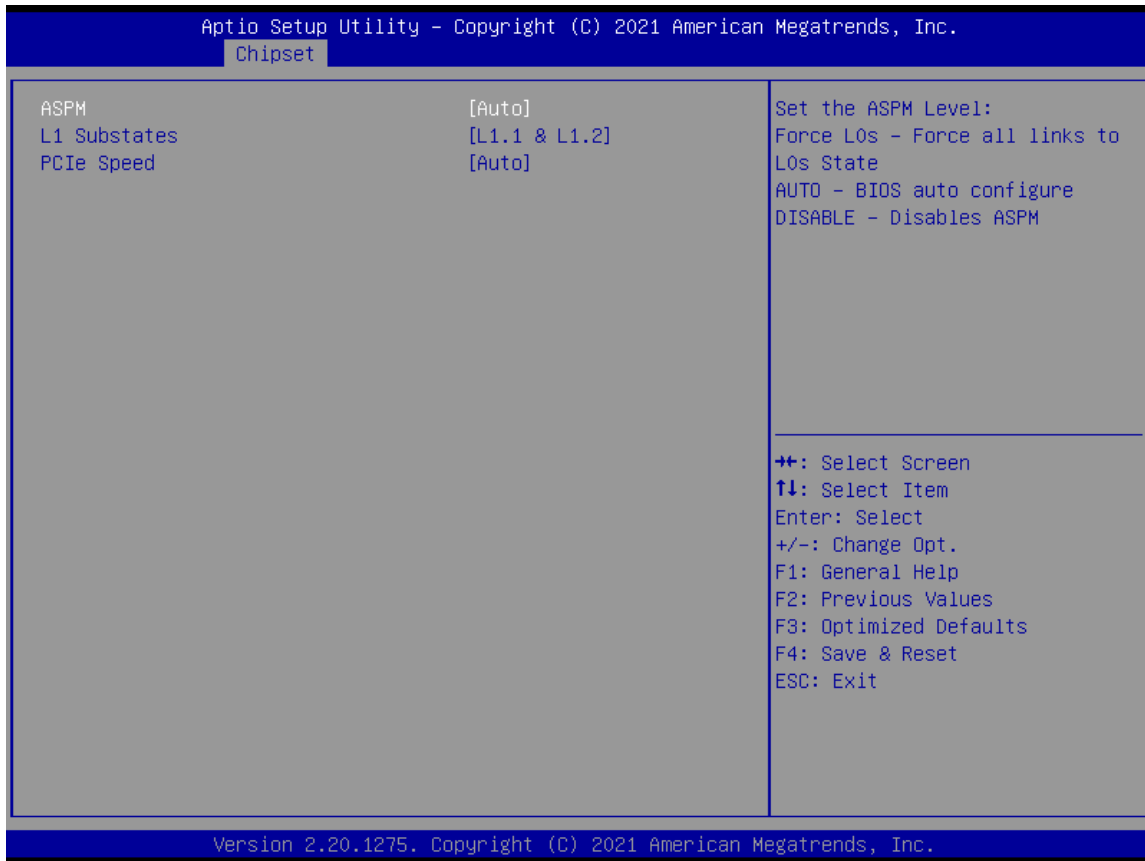


Field Name	ASPM
Default Value	[Auto]
Possible Value	Disabled / L0s / L1 / L0sL1 / Auto
Help	Set the ASPM Level:Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM

Field Name	L1 Substates
Default Value	[L1.1 & L1.2]
Possible Value	Disabled / L1.1 / L1.1 & L1.2
Help	PCI Express L1 Substates settings.

Field Name	PCIe Speed
Default Value	[Auto]
Possible Value	Auto / Gen1 / Gen2 / Gen3
Help	Configure PCIe Speed

3.2.1.6 PCI EXPRESS M.2 M M2M_2

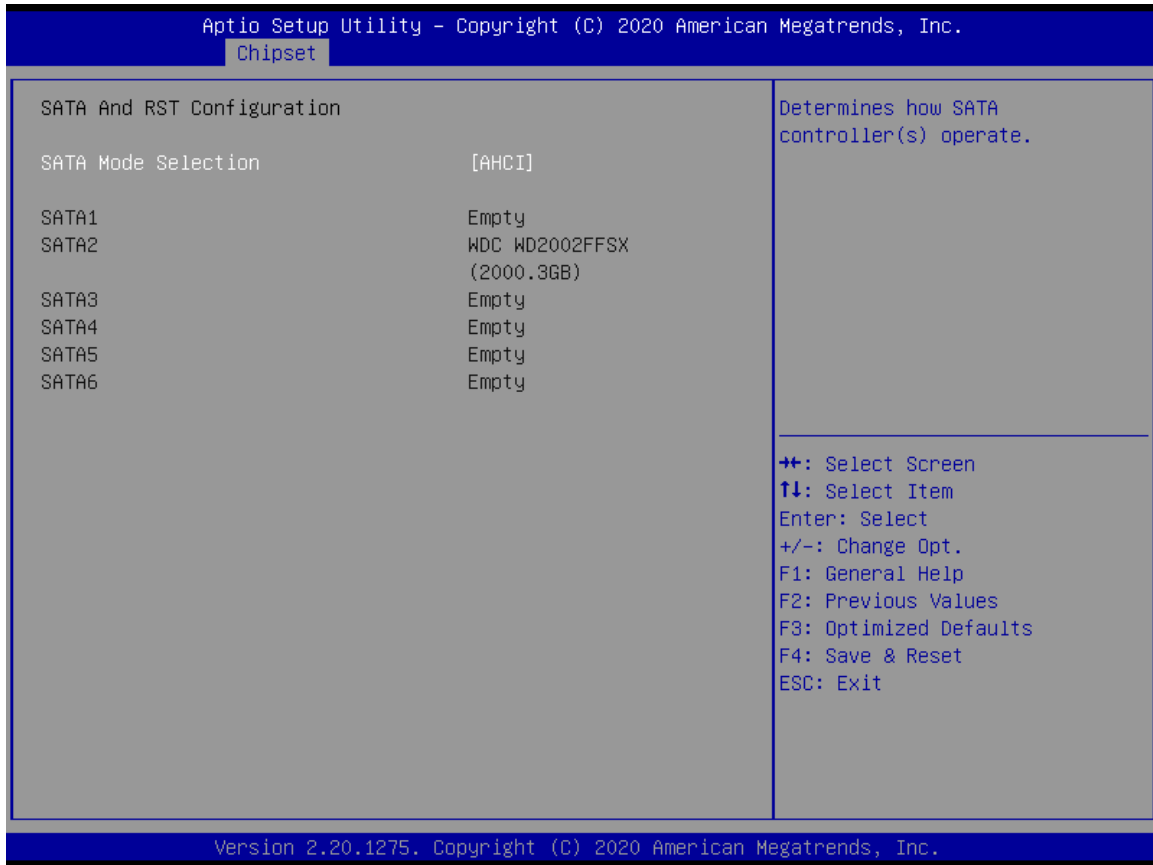


Field Name	ASPM
Default Value	[Auto]
Possible Value	Disabled / L0s / L1 / L0sL1 / Auto
Help	Set the ASPM Level:Force L0s - Force all links to L0s State AUTO - BIOS auto configure DISABLE - Disables ASPM

Field Name	L1 Substates
Default Value	[L1.1 & L1.2]
Possible Value	Disabled / L1.1 / L1.1 & L1.2
Help	PCI Express L1 Substates settings.

Field Name	PCIe Speed
Default Value	[Auto]
Possible Value	Auto / Gen1 / Gen2 / Gen3
Help	Configure PCIe Speed

3.2.2 SATA AND RST CONFIGURATION



Field Name	SATA Mode Selection
Value	[AHCI]
Possible Value	AHCI / Intel RST Premium With Intel Optane System Acceleration
Help	Determines how SATA controller(s) operate.

Field Name	SATA1
Value	Display the installed SATA port device.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	SATA2
Value	Display the installed SATA port device.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	SATA3
Value	Display the installed SATA port device.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	SATA4
Value	Display the installed SATA port device.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	SATA5
Value	Display the installed SATA port device.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	SATA6
Value	Display the installed SATA port device.
Comment	This field is not selectable. There is no help text associated with it.

3.2.3 USB CONFIGURATION

The screenshot shows the 'Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.' interface with the 'Chipset' menu selected. The 'USB Configuration' section is expanded, showing the following settings:

- XHCI Compliance Mode [Disabled]
- xDCI Support [Disabled]
- Rear IO LAN USB3 Gen2 Power [Enabled]
- Rear IO USB3 Gen2 Power [Enabled]
- Front IO USB2 Header 1 Power [Enabled]
- Front IO USB2 Header 2 Power [Enabled]
- Rear IO USB2 Power [Enabled]
- Front IO USB3 Gen2 Header Power [Enabled]

On the right side of the screen, there is a help text for the XHCI Compliance Mode setting: "Option to enable Compliance Mode. Default is to disable Compliance Mode. Change to enabled for Compliance Mode testing." Below this, a list of navigation keys is provided: "+/: Select Screen", "↑↓: Select Item", "Enter: Select", "+/-: Change Opt.", "F1: General Help", "F2: Previous Values", "F3: Optimized Defaults", "F4: Save & Reset", and "ESC: Exit".

At the bottom of the screen, the version information is displayed: "Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc."

Field Name	XHCI Compliance Mode
Value	[Disabled]
Possible Value	Disabled / Enabled
Help	Option to enable Compliance Mode. Default is to disable Compliance Mode. Change to enabled for Compliance Mode testing.

Field Name	xDCI Support
Value	[Disabled]
Possible Value	Disabled / Enabled
Help	Enable/Disable xDCI (USB OTG Device).

Field Name	Rear IO LAN USB3 Gen2 Power
Value	[Enabled]
Possible Value	Disabled / Enabled
Help	Enable/Disable Type C port.

Field Name	Rear IO USB3 Gen2 Power
Value	[Enabled]
Possible Value	Disabled / Enabled
Help	Enable/Disable Upper/Lower USB ports of HDMI Rack.

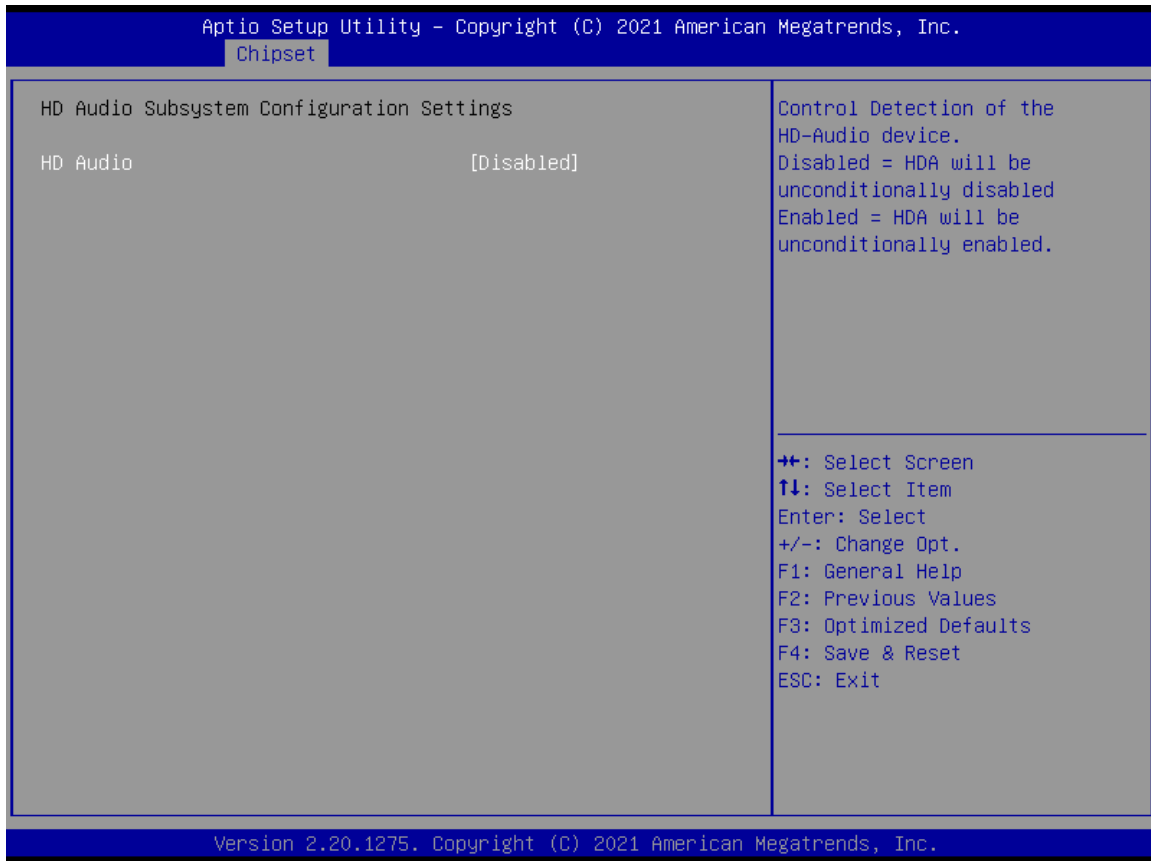
Field Name	Front IO USB2 Header 1 Power
Value	[Enabled]
Possible Value	Disabled / Enabled
Help	Enable/Disable Upper/Lower USB ports of i211 RJ45 Rack.

Field Name	Front IO USB2 Header 2 Power
Value	[Enabled]
Possible Value	Disabled / Enabled
Help	Enable/Disable Upper/Lower USB ports of i219 RJ45 Rack.

Field Name	Rear IO USB2 Power
Value	[Enabled]
Possible Value	Disabled / Enabled
Help	Enable/Disable USB ports of USB2 Header 1.

Field Name	Front IO USB3 Gen2 Header Power
Value	[Enabled]
Possible Value	Disabled / Enabled
Help	Enable/Disable USB ports of USB2 Header 2.

3.2.4 HD AUDIO CONFIGURATION



Field Name	HD Audio
Value	[Disabled]
Possible Value	Enabled / Disabled
Help	Control Detection of HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled

4. SECURITY

Aptio Setup Utility - Copyright (C) 2020 American Megatrends, Inc.

Main Advanced Chipset **Security** Boot Save & Exit

<p>Password Description</p> <p>If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.</p> <p>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.</p> <p>The password length must be in the following range:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">Minimum length</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Maximum length</td> <td style="text-align: right;">20</td> </tr> </table> <p>Administrator Password User Password</p> <p>HDD Security Configuration: P3:WDC WD2002FFSX-68PF8NO</p> <p>ME Update [Disabled]</p> <ul style="list-style-type: none"> ▶ Secure Boot ▶ Secure Flash Update 	Minimum length	3	Maximum length	20	<p>Set Administrator Password</p> <hr/> <p> ⇧⇧: Select Screen ⇩⇩: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit </p>
Minimum length	3				
Maximum length	20				

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Field Name	Administrator Password
Help	Set Administrator Password

Field Name	User Password
Help	Set User Password.

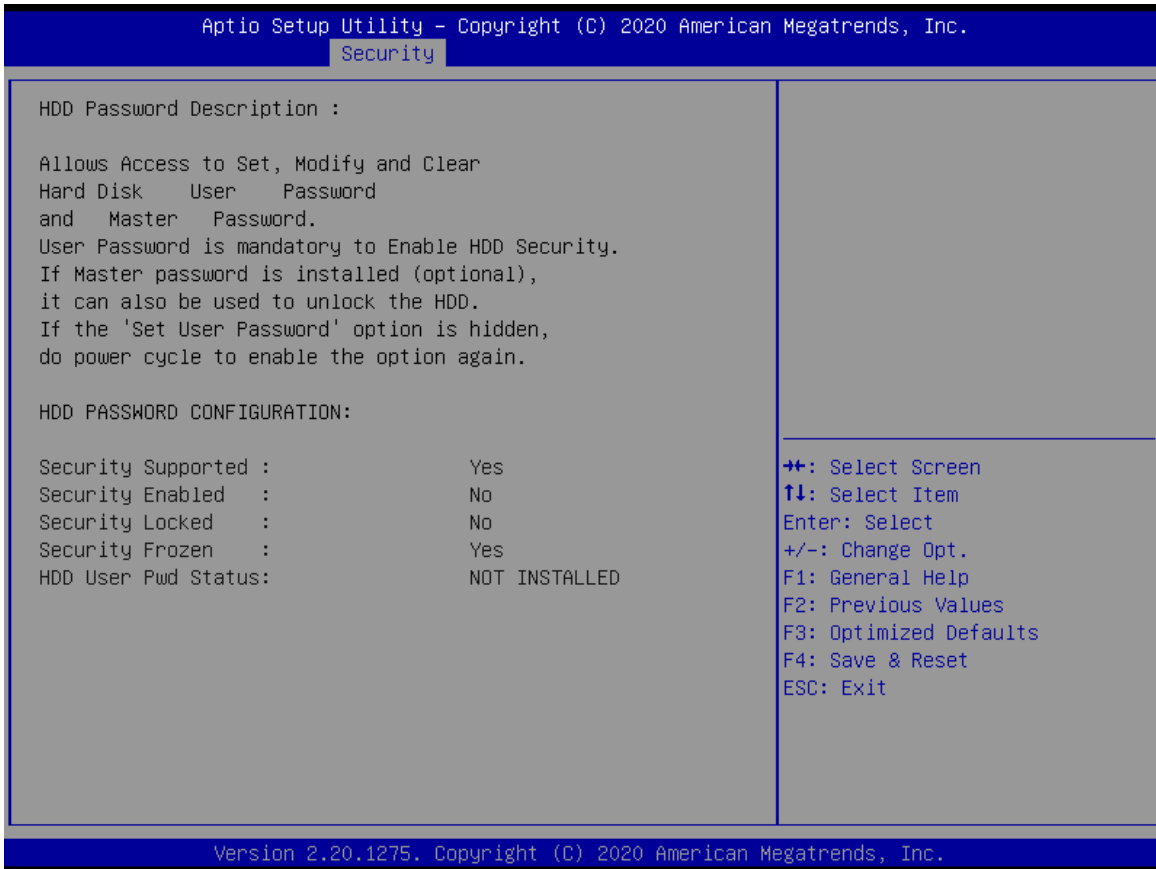
Field Name	HDD Security drive
Help	HDD Security Configuration for selected drive
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	ME Update
Value	[Disabled]
Possible Value	Disabled / Enabled
Help	Flash Security Override.

Field Name	Secure Boot
Help	Secure Boot Configuration
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Secure Flash Update
Help	Secure Flash Update support
Comment	Press Enter when selected to go into the associated Sub-Menu.

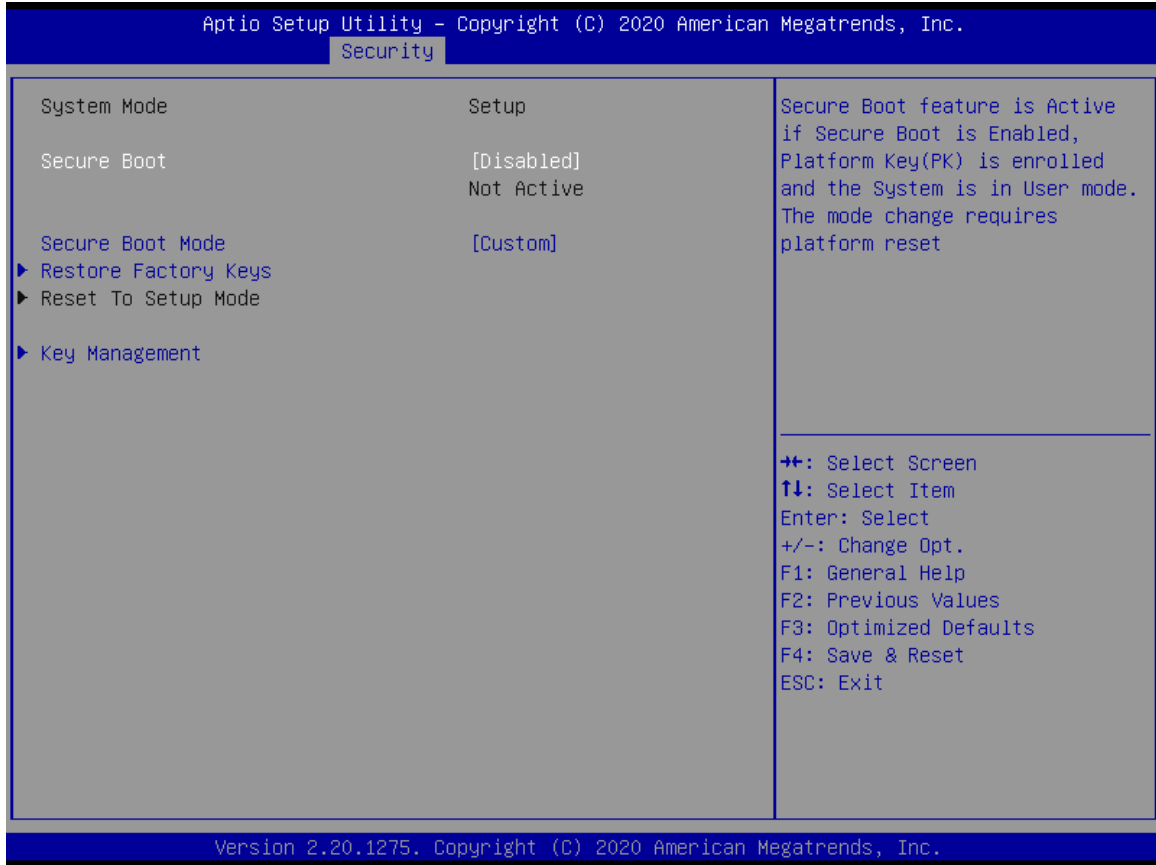
4.1 HDD SECURITY



Field Name	Set User Password
Help	Set HDD User Password. *** Advisable to Power Cycle System after Setting Hard Disk Passwords ***. Discard or Save changes option in setup does not have any impact on HDD when password is set or removed. If the 'Set HDD User Password' option is hidden, do power cycle to enable the option again

4.2 SECURE BOOT

Note: This page will not be affected by load default.



Field Name	Secure Boot
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Secure Boot feature is Active if Secure Boot is Enabled,Platform Key(PK) is enrolled and the System is in User mode.The mode change requires platform reset

Field Name	Secure Boot Mode
Default Value	[Custom]
Possible Value	Standard Custom
Help	Secure Boot mode options:Standard or Custom.In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication

Field Name	Restore Factory Keys
Help	Force System to User Mode. Install factory default Secure Boot key databases

Field Name	Reset to Setup Mode
Help	Delete all Secure Boot key databases from NVRAM

Field Name	Key Management
Help	Enables expert users to modify Secure Boot Policy variables without full authentication
Comment	Enables expert users to modify Secure Boot Policy variables without full authentication

4.2.1 KEY MANAGEMENT

Note: This page will not be affected by load default.

Field Name	Factory Key Provision
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode

Field Name	Restore Factory Keys
Help	Force System to User Mode. Install factory default Secure Boot key databases

Field Name	Reset to Setup Mode
Help	Delete all Secure Boot key databases from NVRAM

Field Name	Export Secure Boot variables
Help	Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device

Field Name	Enroll Efi Image
Help	Allow the image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db)

Field Name	Remove 'UEFI CA' from DB
Help	Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in Authorized Signature database (db)

Field Name	Restore DB defaults
Help	Restore DB variable to factory defaults

Field Name	Platform Key (PK)
Default Value	Size:0, Keys:0, Key source: No Keys
Help	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_RSA2048 (bin) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI PE/COFF Image(SHA256) Key Source: Factory,External,Mixed
Comment	Press Enter when selected to go into the associated Sub-Menu "Key Management".

Field Name	Key Exchange Keys
Default Value	Size:0, Keys:0, Key source: No Keys
Help	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_RSA2048 (bin) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI PE/COFF Image(SHA256) Key Source: Factory,External,Mixed
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Authorized Signatures
Default Value	Size:0, Keys:0, Key source: No Keys
Help	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_RSA2048 (bin) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI PE/COFF Image(SHA256) Key Source: Factory,External,Mixed
Comment	Press Enter when selected to go into the associated Sub-Menu.

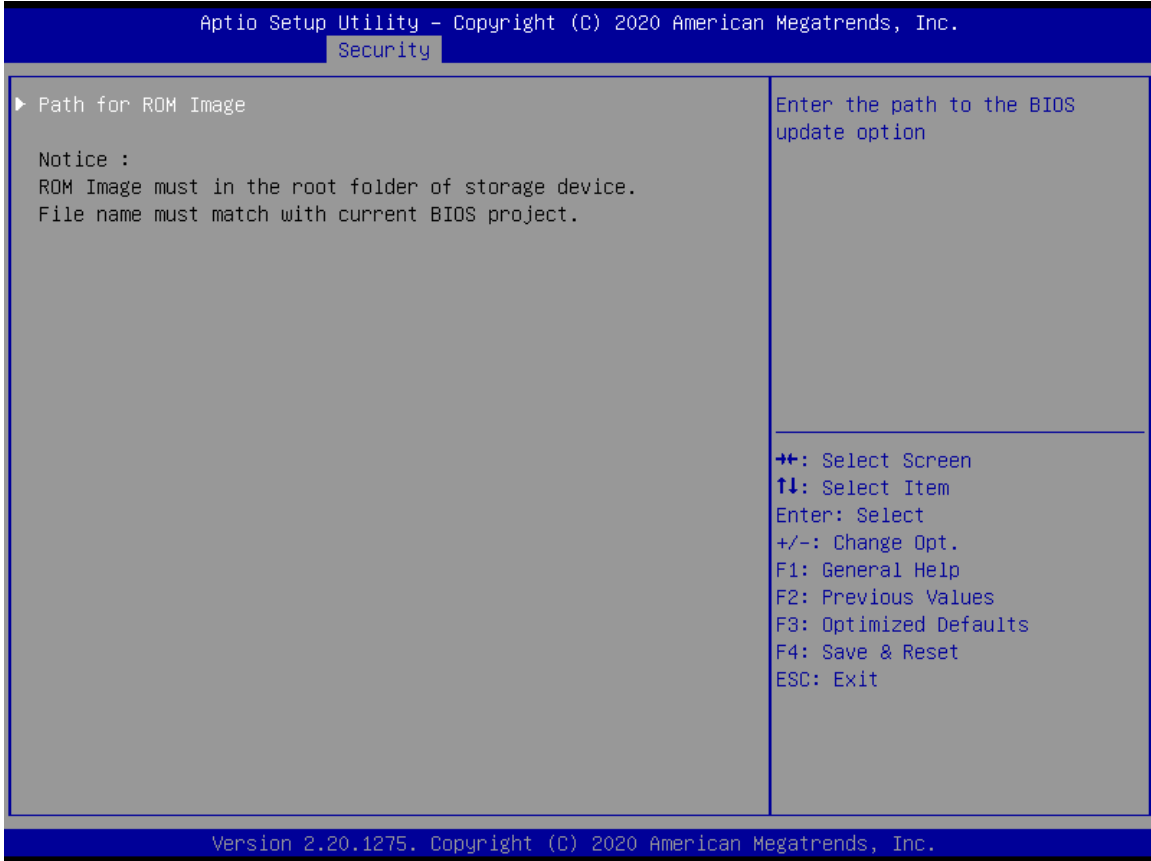
Field Name	Forbidden Signatures
Default Value	Size:0, Keys:0, Key source: No Keys
Help	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_RSA2048 (bin) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI PE/COFF Image(SHA256) Key Source: Factory,External,Mixed
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Authorized TimeStamps
Default Value	Size:0, Keys:0, Key source: No Keys
Help	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_RSA2048 (bin) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI PE/COFF Image(SHA256) Key Source: Factory,External,Mixed
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	OsRecovery Signatures
Default Value	Size:0, Keys:0, Key source: No Keys
Help	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_RSA2048 (bin) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable

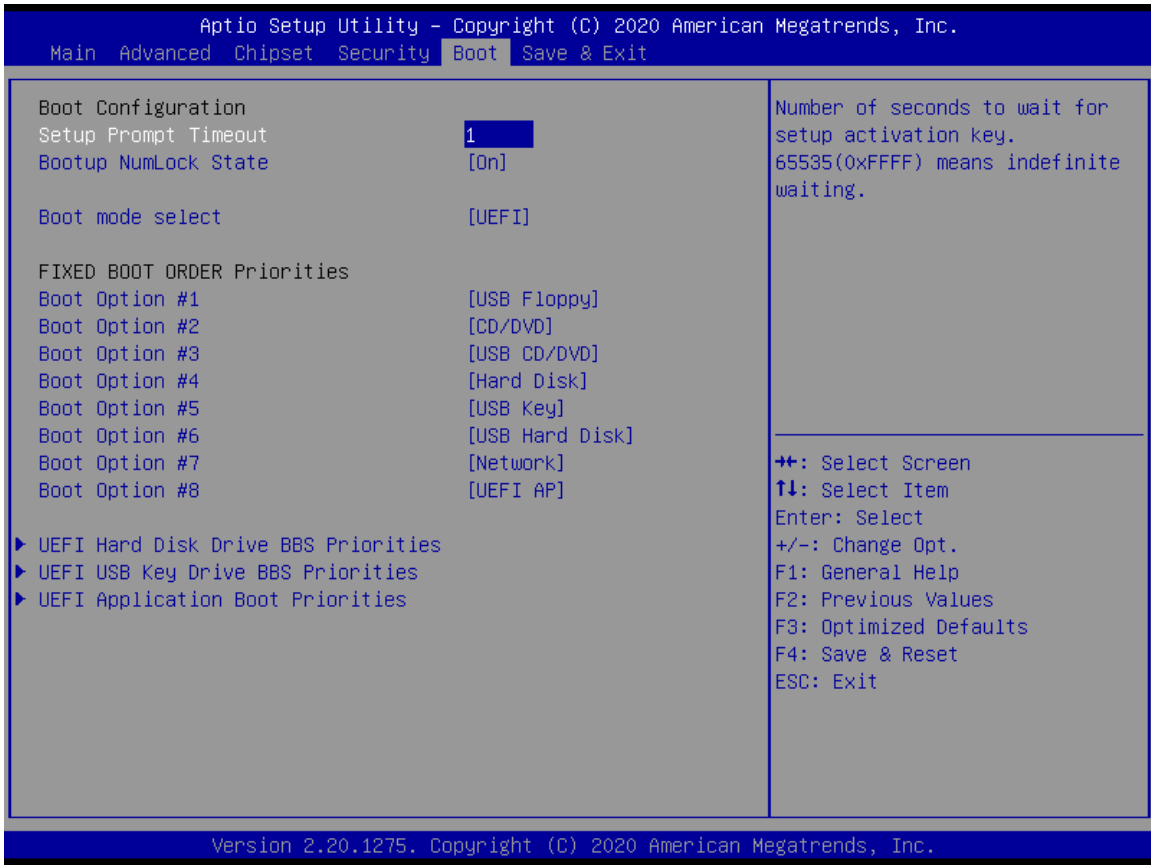
	3.EFI PE/COFF Image(SHA256) Key Source: Factory,External,Mixed
Comment	Press Enter when selected to go into the associated Sub-Menu.

4.3 SECURE FLASH UPDATE



Field Name	Path for ROM Image
Help	Enter the path to the BIOS update option
Notice :	ROM Image must in the root folder of storage device. File name must match with current BIOS project.

5. BOOT



Field Name	Setup Prompt Timeout
Default Value	1
Possible Value	1~65535
Help	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

Field Name	Bootup NumLock State
Default Value	[On]
Possible Value	On Off
Help	Select the keyboard NumLock state

Field Name	Boot mode select
Default Value	[UEFI]
Possible Value	LEGACY UEFI
Help	BIOS boot mode. Windows 10 select [UEFI] DOS select [Legacy]

Field Name	Boot Option #1
Default Value	[USB Floppy]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	Boot Option #2
Default Value	[CD/DVD]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	Boot Option #3
Default Value	[USB CD/DVD]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	Boot Option #4
Default Value	[Hard Disk]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	Boot Option #5
Default Value	[USB Key]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	Boot Option #6
Default Value	[USB Hard Disk]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	Boot Option #7
Default Value	[Network]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	Boot Option #8 (UEFI Only)
Default Value	[UEFI AP:EFI:Built-in EFI Shell]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , Network, Disabled, (UEFI Only) UEFI AP:UEFI: Build in EFI Shell
Help	Sets the system boot order

Field Name	(UEFI) USB Floppy Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available USB Floppy Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	(UEFI) CDROM/DVD ROM Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available CDROM/DVD Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	(UEFI) USB CDROM/DVD ROM Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available USB CDROM/DVD Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	(UEFI) Hard Disk Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available Hard Disk Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

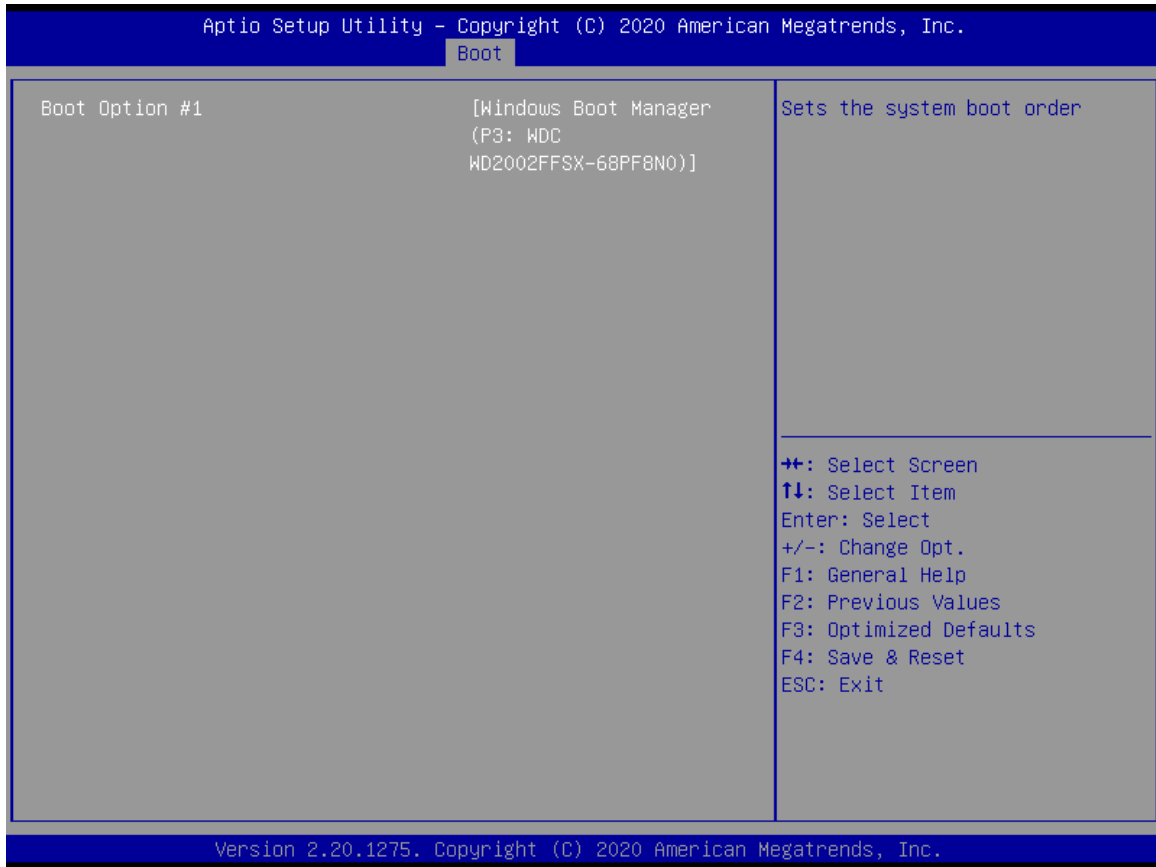
Field Name	(UEFI) USB KEY Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available USB Key Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	(UEFI) USB Hard Disk Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available USB Hard Disk Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	(UEFI) NETWORK Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available NETWORK Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	UEFI Application Boot Priorities (UEFI Only)
Help	Specifies the Boot Device Priority sequence from available UEFI Application.
Comment	Press Enter when selected to go into the associated Sub-Menu.

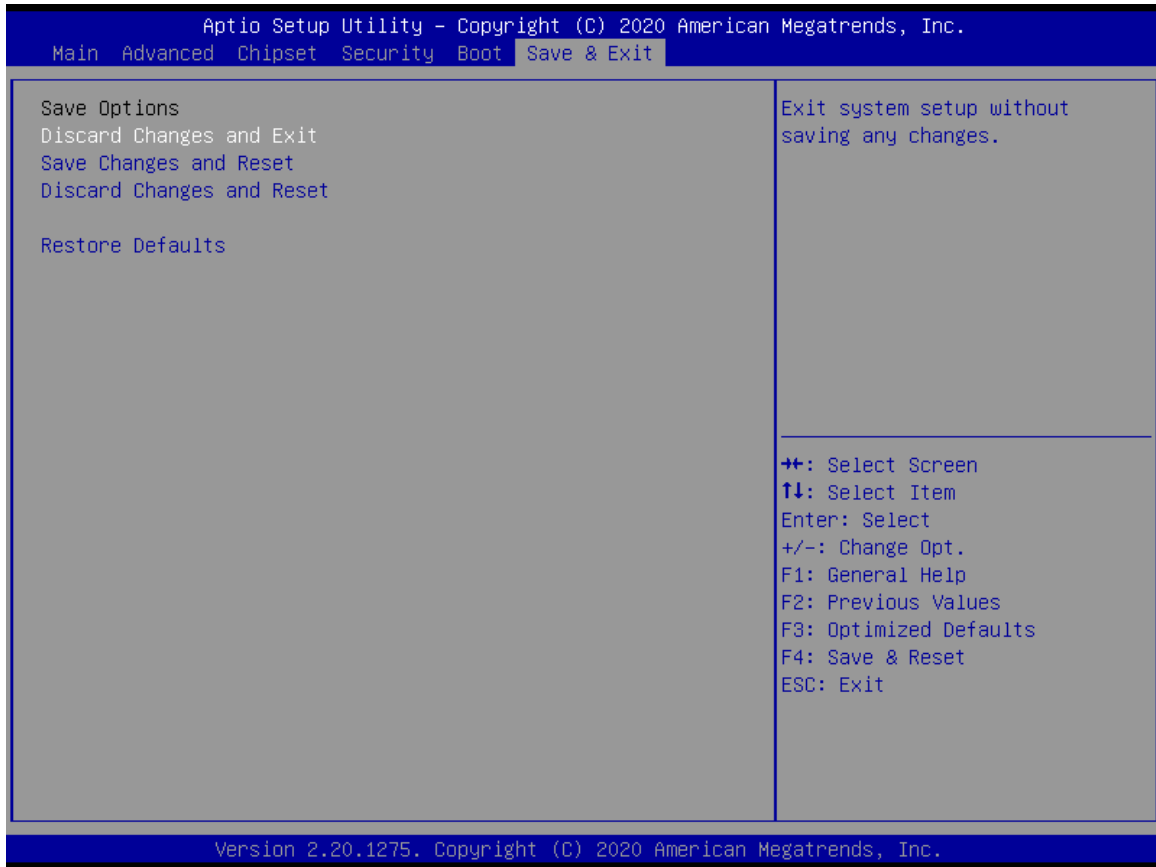
5.1 (LIST BOOT DEVICE TYPE) DRIVE BBS PRIORITIES



Field Name	Boot Option #1
Default Value	
Possible Value	Boot Device Name 1 of this type, Disable
Help	Sets the system boot order

Field Name	Boot Option #2
Default Value	
Possible Value	Boot Device Name 2 of this type, Disable
Help	Sets the system boot order

6. SAVE & EXIT



Field Name	Discard Changes and Exit
Help	Exit system setup with without saving any changes.

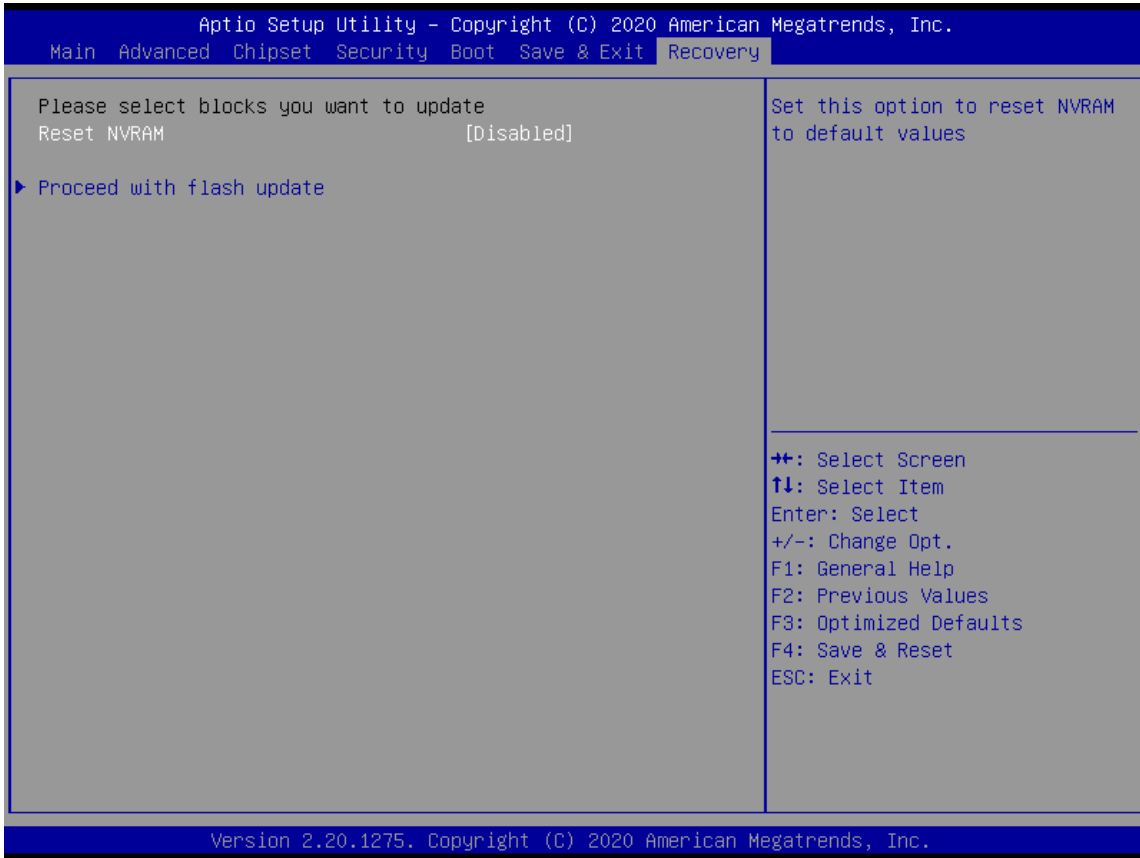
Field Name	Save Changes and Reset
Help	Reset the system after saving the changes.

Field Name	Discard Changes and Rest
Help	Reset system setup without saving any changes.

Field Name	Restore Defaults
Help	Restore/Load Default values for all the setup options.

Note : sMB-Q370 will reboot a few times automatically after CMOS clears or CMOS values changes.

7. **RECOVERY PAGE** (ACTIVE FOR 4.3 SECURE FLASH UPDATE ONLY)



Field Name	Reset NVRAM
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Set this option to reset NVRAM to default values

Field Name	Process with flash update
Help	Select this to start flash update