

MiTAC Panel PC System

P210-11TGS

Product Guide v1.0

Front View



Rear View

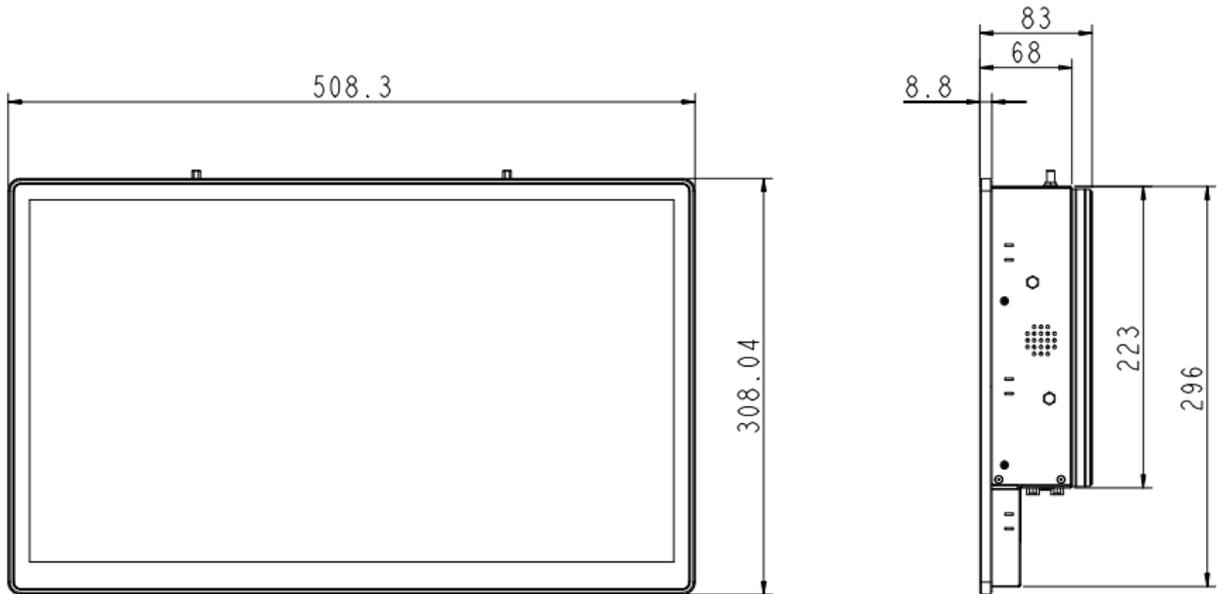


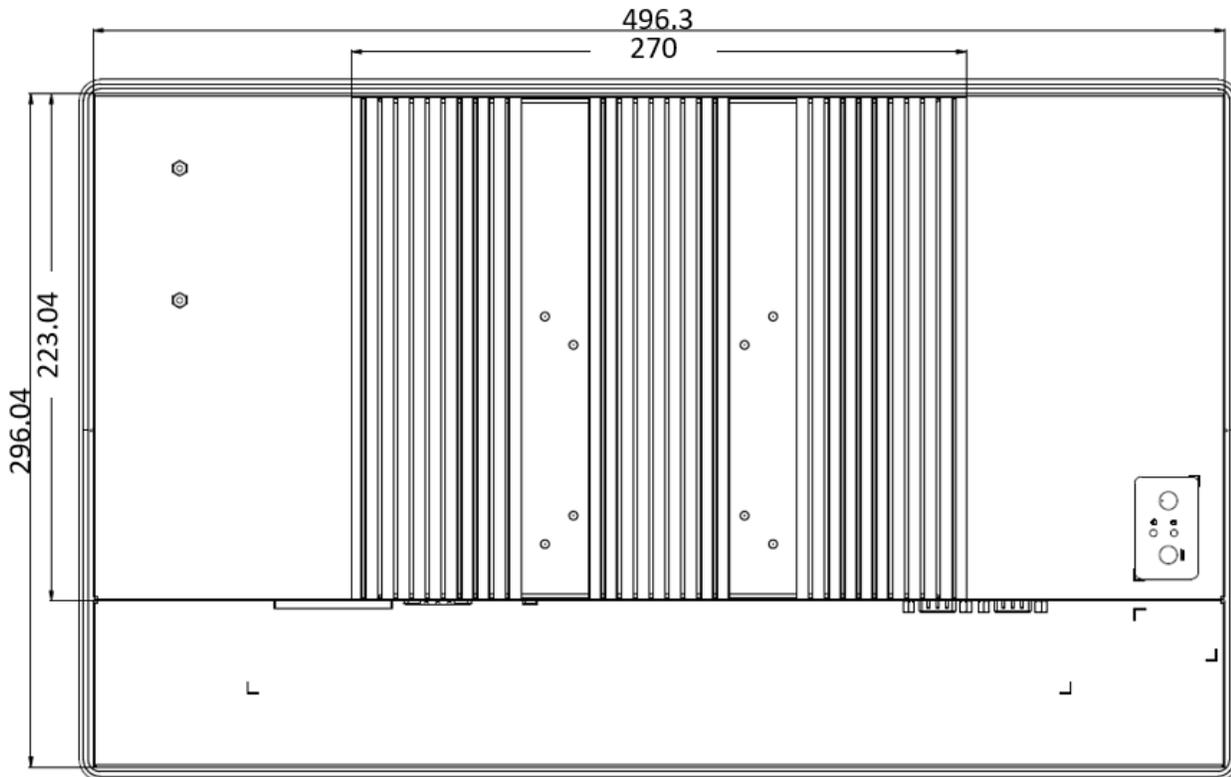
Bottom View



Mechanical Dimension

P210-11TGS dimension: 508.3 x 308 x 83 mm



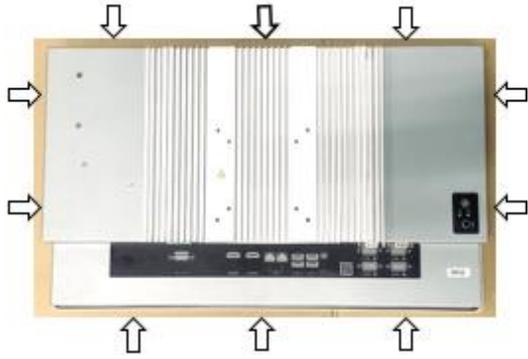


Product Specifications

LCD	DISPLAY TYPE	21.5" TFT-LCD
	MAX. RESOLUTION	1920 x 1080
	MAX. COLORS	16.7M (8 bit / color)
	LUMINANCE (cd/m ²)	250
	VIEWING ANGLE (H/V)	170° / 160°
	LED BACKLIGHT	30,000
	LIFETIME (hrs)	
HIGH BRIGHTNESS	Option	
TOUCH SCREEN	TYPE	P-CAP / 5 Wire Resistive(True-flat)
	TOUCH	True-flat 10 points / single point
	AR/AG/AF COATING	Option
SYSTEM	PROCESSOR	11th Gen Intel® Tiger Lake-UP3 i3-1115G4E (Dual Core, 6MB Cache, up to 3.90 GHz) / option: 11th Gen Tiger Lake-UP3 Celeron 6305E / i5-1145G7E / i7-1185G7E
	CHIPSET	Intel® SoC Integrated

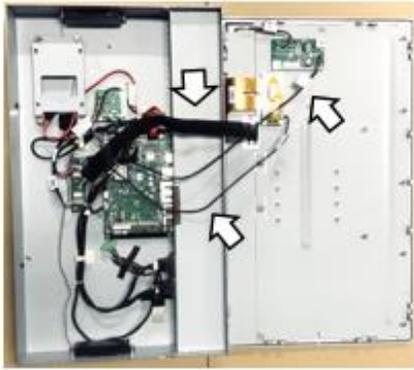
	SYSTEM MEMORY	DDR4 3200 MHz / 1 x 260-pin SO-DIMM / Max. 32GB (Non-ECC)
	ETHERNET	Intel® I219-LM Giga LAN + Intel® I225-LM 2.5GbE LAN
	I/O PORT	1 x 3-pin Phoenix type terminal block DC input / 2 x RJ45 / 3 x RS232 / 1 x RS232 / 422 / 485 / 1 x 2-pin remote power on/off / 2 x HDMI 1.4 / 4 x USB 3.1 Gen 2
	EXPANSION SLOT	Wireless: 1 x M.2 2230 E key (PCIeX1, USB2.0) / Storage/LTE/5G Slot: 1 x M.2 2280/2260/2242/3042/3052 B Key (USB2.0/*PCIeX1/SATAIII) *Not support M.2 M Key NVMe SSD / **5G card support is by BOM option. Please check with sales about the M.2 B Key 3052 5G card spec if you have any request
	STORAGE	1 x SATA 2.5" HDD / SSD bay
	STEREO SPEAKER	2 x 3W
	OS SUPPORT	Windows® 10 64bit
	WATCHDOG TIMER	1~255 steps by software program
	POWER REQUIREMENT	POWER INPUT
POWER ADAPTER		AC to DC / DC19V / 3.4A / 65W adapter
MECHANICAL	MOUNTING	VESA 75/100mm / Panel Mount
	DIMENSIONS (W X H X D)	508.3 x 308 x 83 (mm)
	WEIGHT	8kg
ENVIRONMENTAL	OPERATING TEMPERATURE	0~50°C (32 ~ 122°F)
	STORAGE TEMPERATURE	-20°C ~ 60°C(-4 ~ 140°F)
	STORAGE HUMIDITY	10% ~ 90% @40°C non-condensing
	VIBRATION RESISTANCE	Operating Random vibration Test 5-500Hz / 2Grms/3Axis @with SSD, follow IEC 60068-2-64
	SHOCK RESISTANCE	Operating 10 G peak acceleration (11 ms duration) / follow IEC 60068-2-27
	EMC	CE / FCC Class B
	FRONT PANEL PROTECTION	IP65 Compliant

Quick Installation Guide

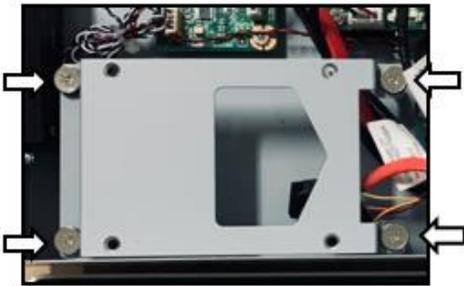


Remove 10pcs rear cover screws.

(Torque 4.5 +/-0.5 Kgf-cm)



Open rear cover and pay attention to the LVDS cable, Inverter cable and TP cable.



Disassemble the SSD bracket.

(Torque 4.5 +/-0.5 Kgf-cm)



Install SSD with the screws in AK.

(Torque 4.5 +/-0.5 Kgf-cm)



Install SSD bracket and connect the cables.

(Torque 4.5 +/-0.5 Kgf-cm)



Install SODIMMs



Remove the rubber caps and install antennas in rear cover (option).

(Torque 4.5 +/-0.5 Kgf-cm)

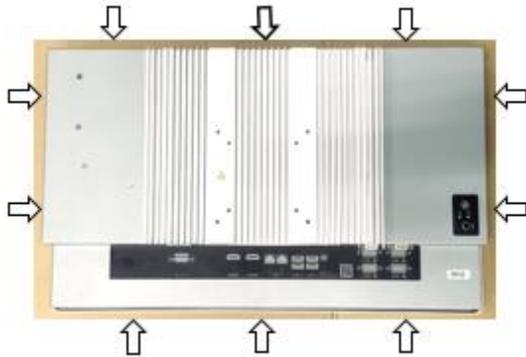


Install WIFI card and connect the antennas. (option)

(Torque 4.5 +/-0.5 Kgf-cm)



Check LVDS cable Inverter cable and TP cable connection before secure the rear cover.



Secure 10pcs rear cover screws.
(Torque 4.5 +/-0.5 Kgf-cm)



Connect the DC/Adapter cable to 3P terminal block as figure.



Install panel mounts as figure.
(Total 10pcs)

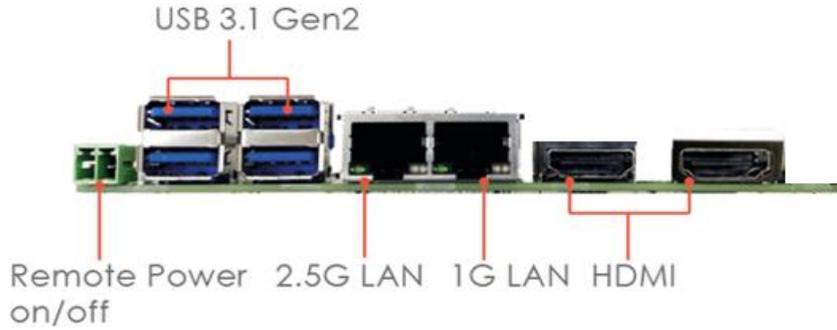
[Note] need manually install drivers

Please check the latest drivers on MiTAC official website

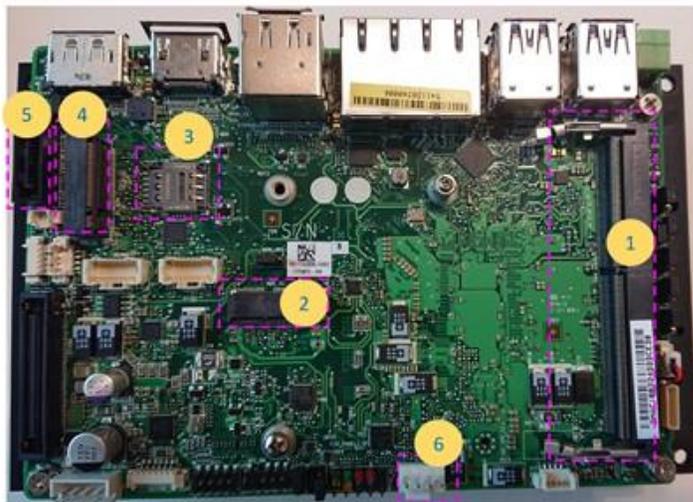
https://www.mitacmct.com/IndustrialPanelPC_P210-11TGS_P210-11TGS

3.5" SBC M/B Components

Figure 1 shows location of the major components on the top side of MITAC 3.5" SBC M/B PD11TGS.



Standard Connectors



- 1 DDR4 SO-DIMM Slot (Max Capacity & Speed: 32G-3200)
- 2 M.2 E-KEY Slot (PCIEx1, USB2.0, CNVi support)
- 3 Nano SIM Socket (Use with M.2 B-KEY for 4G module support)
- 4 M.2 B-KEY Slot (PCIEx1, USB2.0, SATA & NVMe SSD support)
- 5 SATA 7P Connector (SATA interface)
- 6 FAN Header (4pin PWM)

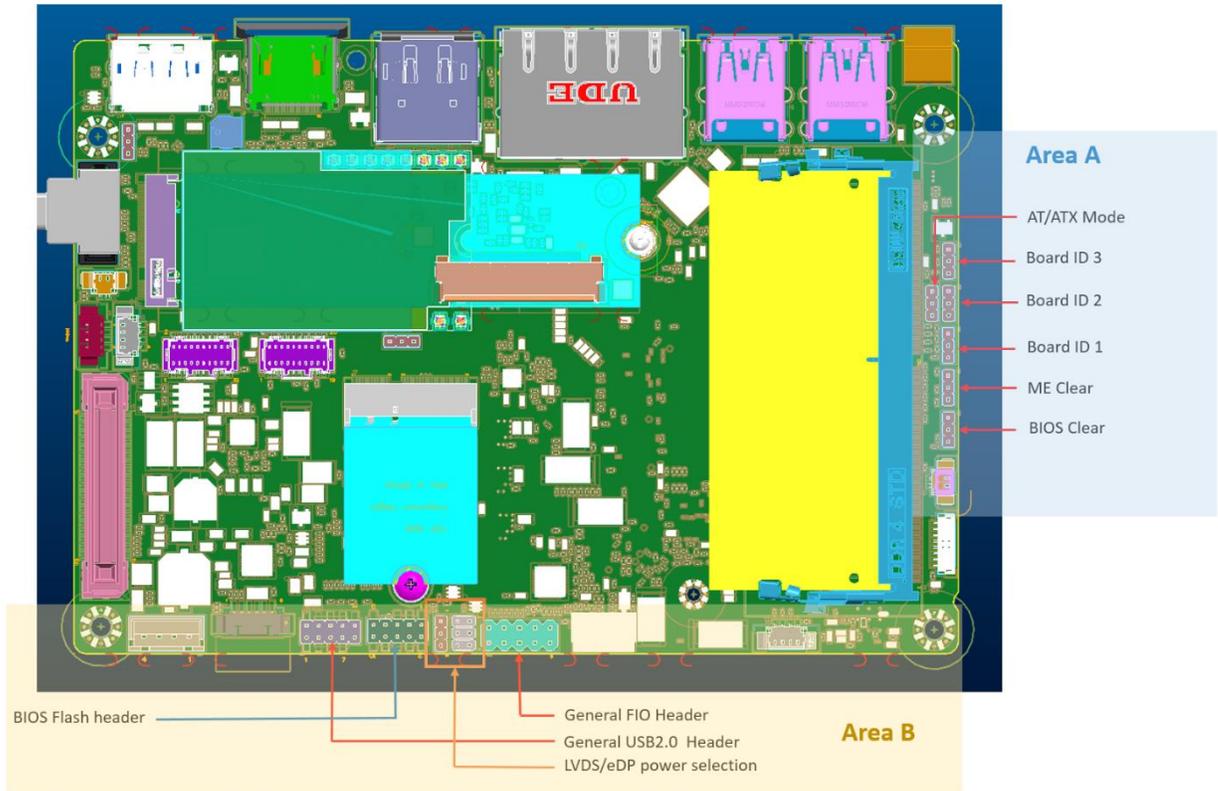
Special Connectors



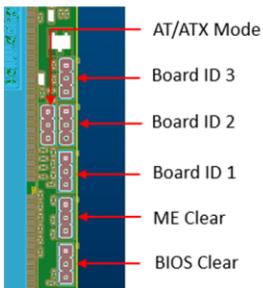
- 1 RTC Battery Socket (CR2025 cable type)
- 2 Audio socket (Connect to MH-02FIO-U10)
- 3 Speaker socket (Connect to 4 ohm speaker)
- 4 Front I/O Header (General type or connect to MH-02FIO-U10)
- 5 Panel Backlight Power socket (Support 5V or 12V)
- 6 DC Input socket (DC source input 9~36V support)
- 8 Output Power connector (DC 5V/1A & 12V/A output support)
- 9 SATA HDD Detection connector (Support SATA HDD Hot Plug Detect)
- A SATA HDD Power connector (SATA Power 3.3V/ 5V/ 12V)
- B Dual COM Port connector (COM3 & COM4 RS232)
- C Dual COM Port connector (COM1 & COM2 RS232/422/485)

FIGURE 1. MITAC 3.5" SBC M/B COMPONENTS

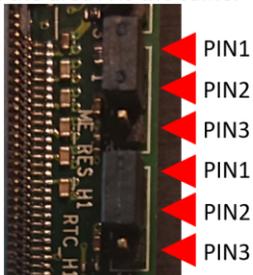
Jumper setting



Area A



The definition of each pin position of headers in the area A is the same.



● AT/ATX Mode

Jumper is set to Pin2-Pin3 [ATX mode/default]
 System power on by power switch or wake up event
 Jumper is set to Pin2-Pin1
 System power on when DC power source is plug in

● Board ID 1 ~3

These headers are used as MCT production identification.
 Any changes may make the system unable to boot.

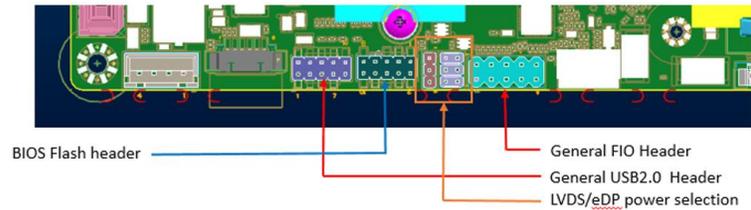
● ME Clear

Jumper is set to Pin1-Pin2 [default]
 Keep current ME setting.
 Jumper is set to Pin2-Pin3
 Intel ME will be cleared to the default setting.

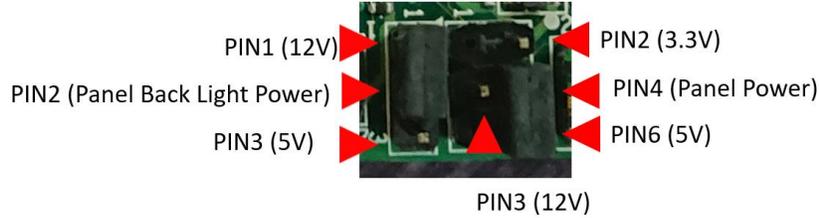
● BIOS Clear

Jumper is set to Pin1-Pin2 [default]
 Keep current BIOS setting.
 Jumper is set to Pin2-Pin3
 BIOS will be cleared to the default setting.

Area B



● LVDS/eDP Power selection Header



● LVDS/eDP Backlight Power selection Header

Jumper is set to Pin1-Pin2 [default]
Backlight power 12V support.
Jumper is set to Pin2-Pin3
Backlight power 5V support.

● LVDS/eDP Panel Power selection Header

Jumper is set to Pin6-Pin4 [default]
Panel power 5V support.
Jumper is set to Pin2-Pin4
Panel power 3.3V support.
Jumper is set to Pin3-Pin4
Panel power 12V support.

● BIOS Flash Header

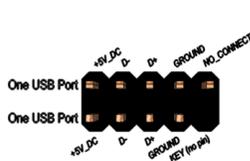
This header is used for debugging or updating the BIOS.



PIN	Name
1	ROM_CS0
2	3VSB (3.3V)
3	ROM_MISO
4	ROM_IO3
5	ROM_IO2
6	ROM_CLK
7	X
8	ROM_MOSI
9	GND
10	NC

● USB2.0 Header

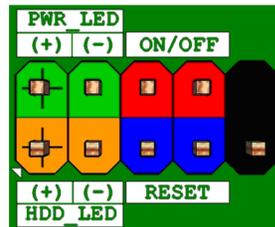
General 2.0 pitch dual USB2.0 header.
Can also be connected to MH-02FIO-U10 for expansion.



PIN	Name
1	VBUS 5V
2	VBUS 5V
3	USBP1 D-
4	USBP2 D-
5	USBP1 D+
6	USBP2 D+
7	GND
8	GND
9	KEY(no pin)
10	KEY(NC)

● FIO Header

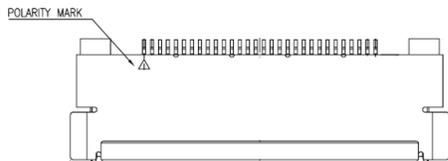
General 2.0 pitch FIO header
Can also be connected to MH-02FIO-U10 for expansion.



PIN	Name
1	HDD LED+
2	Power LED+ (S0)
3	HDD LED-
4	Power LED- (S3)
5	GND
6	PWRBT_N
7	RESET_N
8	GND
9	VCC(5V)

Internal Connector Pin Definition

- eDP or LVDS



PIN	LVDS Define	eDP Define
1	LVDS0 LINK3_CON_DP	NC
2	LVDS0 LINK3_CON_DN	GND
3	LVDS0 LINK2_CON_DP	eDP_TX3_DN
4	LVDS0 LINK2_CON_DN	eDP_TX3_DP
5	LVDS0 LINK1_CON_DP	GND
6	LVDS0 LINK1_CON_DN	eDP_TX2_DN
7	LVDS0 LINK0_CON_DP	eDP_TX2_DP
8	LVDS0 LINK0_CON_DN	GND
9	LVDS1 LINK3_CON_DP	eDP_TX1_DN
10	LVDS1 LINK3_CON_DN	eDP_TX1_DP
11	LVDS1 LINK2_CON_DP	GND
12	LVDS1 LINK2_CON_DN	eDP_TX0_DN
13	LVDS1 LINK1_CON_DP	eDP_TX0_DP
14	LVDS1 LINK1_CON_DN	GND
15	LVDS1 LINK0_CON_DP	eDP_AUX_DN
16	LVDS1 LINK0_CON_DN	eDP_AUX_DP
17	GND	GND
18		Panel VDD
19		Panel VDD
20		Panel VDD
21		Panel VDD
22		Panel VDD
23		GND
24		GND
25		GND
26	LVDS0_CLK_CON_DP	GND
27	LVDS0_CLK_CON_DN	Hot Plug Detect
28		GND
29		GND
30		GND
31	DDC_SCL	GND
32		Backlight Enable
33		Backlight Control
34	LVDS1_CLK_CON_DP	NC
35	LVDS1_CLK_CON_DN	NC
36		Backlight VCC
37		Backlight VCC
38		Backlight VCC
39		Backlight VCC
40	DDC_SDA	NC

- M.2 B-KEY Slot

(PCIEx1,USB2.0, SATA & NVMe SSD support)

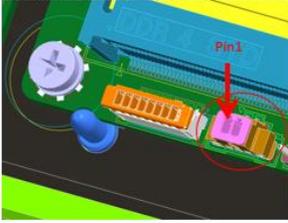
74	3.3V	CONFIG_2	75
72	3.3V	GND	73
70	3.3V	GND	71
68	NC	NC	69
66	SIM_DET	GPIO(O)(1.8V)(WAN_RSET#)	67
64	NC	NC	65
62	NC	NC	63
60	NC	NC	61
58	NC	NC	59
56	NC	GND	57
54	PEWAKE#	CLOCK+	55
52	CLKREQ#	CLOCK-	53
50	PERST#	GND	51
48	NC	SATA_TXP / PCIEx1_TXP	49
46	NC	SATA_TXN / PCIEx1_TXN	47
44	NC	GND	45
42	NC	SATA_RXN / PCIEx1_RXP	43
40	NC	SATA_RXP / PCIEx1_RXN	41
38	DEVSLP	GND	39
36	UIM_PWR	NC	37
34	UIM_DAT	NC	35
32	UIM_CLK	GND	33
30	UIM_RESET#	NC	31
28	NC	NC	29
26	NC	GND	27
24	NC	GPIO (I) (O) (1.8V) (M2B_DPR_SEL)	25
22	GND	GPIO (I) (3.3V) (M2B_WAN_WAKE#)	23
20	NC	CONFIG_0	21
18	Module Key	Module Key	19
16	Module Key	Module Key	17
14	Module Key	Module Key	15
12	Module Key	Module Key	13
10		GND	11
8		USB2.0 D-	9
6		USB2.0 D+	7
4		GND	5
2		GND	3
		CONFIG_3	1

- Without USB3.0 inter face.

Special Connectors

1

RTC Battery Socket
(CR2025 cable type)

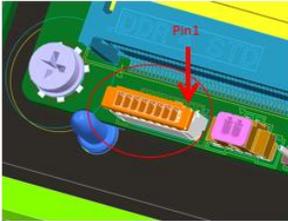


PIN	Name
1	VBAT
2	GND



2

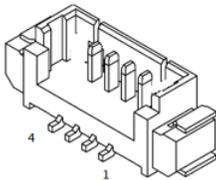
Audio socket
(Connect to MH-02FIO-U10)



PIN	Name
1	HPOUT_JD
2	HP_LOUT_R
3	HP_LOUT_L
4	RING2
5	
6	SLEEVE
7	AGND
8	AGND

3

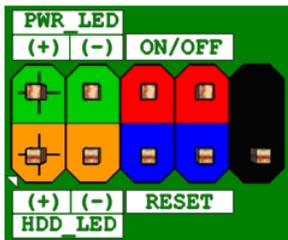
Speaker socket
(Connect to 4 ohm speaker)



PIN	Name
1	LINE OUT L-
2	LINE OUT L+
3	LINE OUT R-
4	LINE OUT R+

4

Front I/O Header
(General type or connect to MH-02FIO-U10)



PIN	Name
1	HDD_LED+
2	Power_LED+ (S0)
3	HDD_LED-
4	Power_LED- (S3)
5	GND
6	PWRBT_N
7	RESET_N
8	GND
9	VCC(5V)

5

Panel Backlight Power socket

(Support 5V or 12V)



PIN	Name
1	LVDS_BKTEN
2	BKLT_CTRL
3	BKLT_PWR (5V or 12V)
4	BKLT_PWR (5V or 12V)
5	GND
6	GND

**12V maximum current 1.2A (other 12V power without loading)*

Assumed LVDS Panel power usage 60% = 0.72A

5V maximum current 2A

Assumed LVDS Panel power usage 60% = 1.2A

6

DC Input socket

(DC source input 9~36V support)

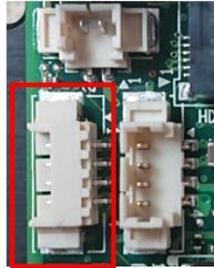


PIN	Name
1	GND
2	DC_IN(8-24V)
3	DC_IN(8-24V)
4	GND

8

Output Power connector

(DC 5V/1A & 12V/A output support)



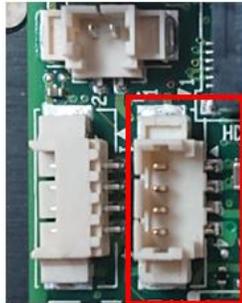
PIN	Name
1	NA
2	GND
3	5V / 1A
4	12V / 1A

A

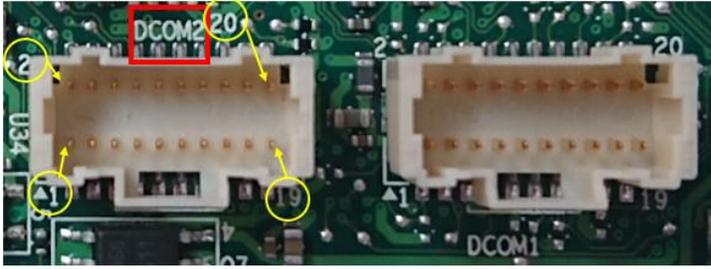
SATA HDD Power connector

(SATA Power 3.3V/ 5V/ 12V)

PIN	NAME
1	V_3P3_SATA
2	GND
3	V_5P0_SATA
4	V_12P0_SATA

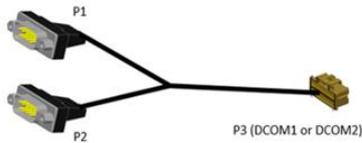
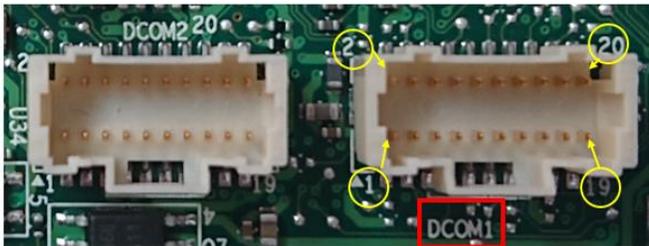


B Dual COM Port connector DCOM2 (RS232)



PIN	RS232
1	NDCD3
2	NRX3
3	NTX3
4	NDTR3
5	GND
6	NDSR3
7	NRTS3
8	NCTS3
9	NRI3
10	X
11	NDCD4
12	NRX4
13	NTX4
14	NDTR4
15	GND
16	NDSR4
17	NRTS4
18	NCTS4
19	NRI4
20	X

C Dual COM Port connector DCOM1 (RS232/422/485) (RS232)

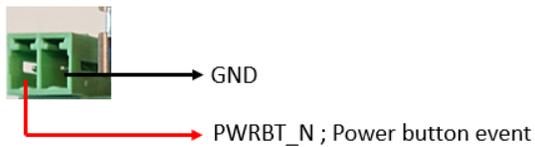


Reference cable concept drawing

PIN	RS232	RS422	RS485
1	NDCD1	TX-	D-
2	NRX1	TX+	D+
3	NTX1	RX+	X
4	NDTR1	RX-	X
5	GND	GND	GND
6	NDSR1	X	X
7	NRTS1	X	X
8	NCTS1	X	X
9	NRI1	X	X
10	X	X	X
11	NDCD2	X	X
12	NRX2	X	X
13	NTX2	X	X
14	NDTR2	X	X
15	GND	X	X
16	NDSR2	X	X
17	NRTS2	X	X
18	NCTS2	X	X
19	NRI2	X	X
20	X	X	X

External Connector Pin Definition

● 2 PIN terminal block for Power Button



● RJ45 Connector



Port A
2.5G

Port B
1.0G



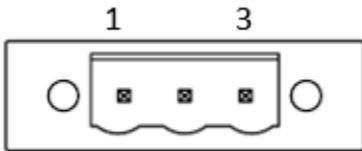
Port B 1.0G

States	Left LED for link [Green LED]	Right LED for Speed [Orange + Green LED]
LAN link is not established	OFF	OFF
10Mb/s data rate	ON/Blinking	OFF
100Mb/s data rate	ON/Blinking	Green ON
1000Mb/s data rate	ON/Blinking	Orange ON

Port A 2.5G

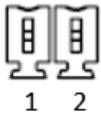
States	Left LED for link [Green LED]	Right LED for Speed [Orange + Green LED]
LAN link is not established	OFF	OFF
10/100Mb/s data rate	ON/Blinking	OFF
1000Mb/s data rate	ON/Blinking	Orange ON
2500Mb/s data rate	ON/Blinking	Green ON

(3-pin Phoenix type terminal block DC input)



PIN	Signal Name
1	+
2	-
3	GND

(2pin terminal block)



PIN	Signal name
1	ground
2	Power switch

MITAC Panel PC System

P210-11TGS

BIOS Specification

1. MAIN PAGE

Aptio Setup - AMI

Main | **Advanced** | Event Logs | Security | Boot | Save & Exit

<p>BIOS Information</p> <p>BIOS Vendor American Megatrends BIOS Version D8340X04 Build Date and Time 11/23/2020 16:33:10</p> <p>Processor Information</p> <p>Name TigerLake ULT Type Genuine Intel(R) CPU 0000 @ 2.30GHz Microcode Revision 68</p> <p>Total Memory 4096 MB Memory Speed 2133 MT/s</p> <p>PCH Information</p> <p>Name TGL PCH-LP ME FW Version 15.0.0.1240</p> <p>Serial ATA Port 1 Empty Serial ATA Port 2 Empty</p> <p>System Date [Wed 01/01/2020] System Time [02:33:13]</p>	<p>Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998-2099 Months: 1-12 Days: Dependent on month Range of Years may vary.</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	BIOS Vendr
Default Value	American Megatrends
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 and Time
Default Value	Display build date of the BIOS
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	Microcode Version
Value	Display the CPU microcode revision.
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 Speed
Value	Display the installed memory Frequency
Comment	This field is not selectable. There is no help text associated with it.

Field Name	PCH Information
Value	Display PCH family
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.

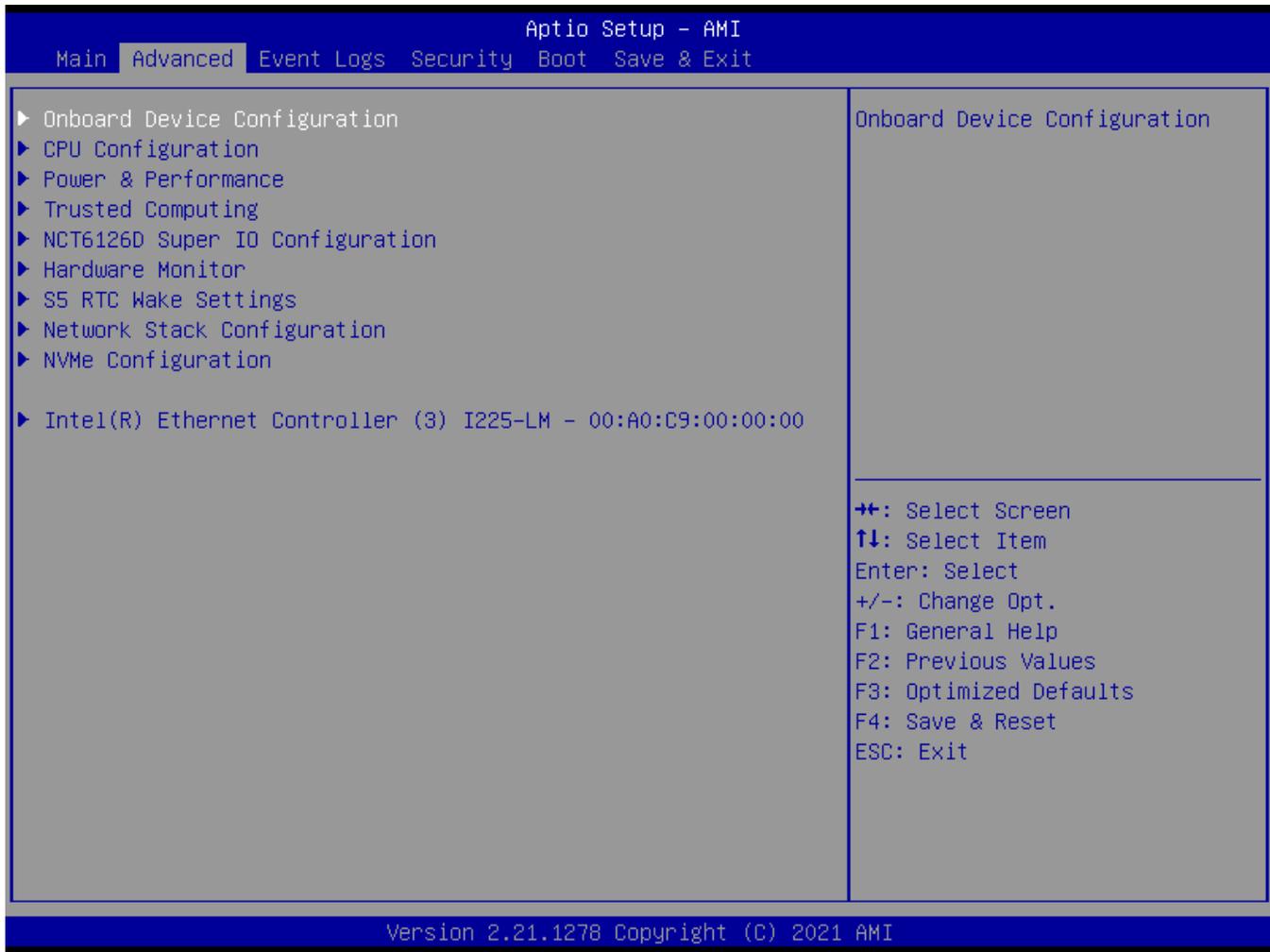
Field Name	Serial ATA Port 1
Value	Display the installed SATA device model/size of port 1.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Serial ATA Port 2
Value	Display the installed SATA device model/size of port 2.
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 : 1998-2099
Help	Set the Date. Use Tab to switch between Date elements. Default Rangers: Year : 1998-2099 Months : 1-12 Days : Dependent on month Range of Years may vary.

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	Onboard Device
Help	Onboard Device Configuration.
Comment	Press Enter when selected to go into the associated Sub-Menu.

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

Field Name	Power & Performance
Help	Power & Performance Options.
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	NCT6126D Super IO Configuration
Help	System Super IO Chip Parameters.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	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	Network Stack Configuration
Help	Network Stack Settings.
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.

2.1 Onboard Device

Aptio Setup - AMI

Advanced

<p>Onboard Device</p> <p>Turbo Mode [Enabled]</p> <p>State After G3 [S5 State]</p> <p>DVMT Pre-Allocated [64M]</p> <p>DVMT Total Gfx Mem [256M]</p> <p>Wake on LAN Enable [Enabled]</p> <p>HD Audio [Enabled]</p> <p>ME Update [Disabled]</p> <p>LVDS Interface Type [Disabled]</p> <p>TPM Device Selection [dTPM]</p>	<p>Enable/Disable processor Turbo Mode (requires EMTTM enabled too).</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	Turbo Mode
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Enable/Disable processor Turbo Mode (requires EMTTM enabled too)

Field Name	State After G3
Default Value	[S5 State]
Possible Value	S0 State S5 State
Help	Specify what state to go to when power is re-applied after a power failure (G3 state).

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	128M 256M MAX
Help	Select DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.

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

Field Name	HD Audio
Default Value	[Enabled]
Possible Value	Enabled Disabled

Help	Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled.
------	--

Field Name	ME Update
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Temporary disable Intel CSME for ME FW Update. Enabled = Intel CSME disabled after first time reboot only.

Note: Visible in LVDS SKU.

Field Name	LVDS Interface Type
Default Value	[Disabled]
Possible Value	8 bit-VESA Single Channel 8 bit-VESA Dual Channel 6 bit-VESA Single Channel 6 bit-VESA Dual Channel 8 bit-JEIDA Single Channel 8 bit-JEIDA Dual Channel
Help	Sets LVDS connectivity.

Note: Visible when LVDS Interface Type not set to disable

Field Name	LVDS Panel Type
Default Value	[1920x1080 LVDS]
Possible Value	1024x768 LVDS 1366x768 LVDS 1920x1080 LVDS
Help	Select LVDS panel used by Internal Graphics Device by selecting the appropriate setup item.

Field Name	TPM Device Selection
Default Value	[dTPM]
Possible Value	PTT dTPM
Help	Selects TPM device: PTT or dTPM. PTT - Enables PTT in SkuMgr dTPM 1.2 - Disables PTT in SkuMgr Warning ! PTT/dTPM will be disabled and all data saved on it will be lost

2.2 CPU Configuration

Aptio Setup - AMI

Advanced

CPU Configuration

Type	11th Gen Intel(R) Core(TM) i7-1185G7E @ 2.80GHz
ID	0x806C1
Speed	2800 MHz
L1 Data Cache	48 KB x 4
L1 Instruction Cache	32 KB x 4
L2 Cache	1280 KB x 4
L3 Cache	12 MB
L4 Cache	N/A
VMX	Supported
SMX/TXT	Supported

++: 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	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.

2.3 Trusted Computing

Aptio Setup - AMI
Advanced

<pre> TPM 2.0 Device Found Firmware Version: 7.2 Vendor: NTC Security Device Support [Enable] Pending operation [None] </pre>	<p>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.</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	Firmware Version
Default Value	TPM module version.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Vendor
Default Value	TPM module vendor name.
Comment	This field is not selectable. There is no help text associated with it.

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	Serial Port 4 Configuration(Depend on system chassis)
Help	Set Parameters of Serial Port 4 (COMA)
Comment	Press Enter when selected to go into the associated Sub-Menu.

2.4.1 Serial Port 1 Configuration

Aptio Setup - AMI

Advanced

Serial Port 1 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	⇄: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Device Settings	IO=2E8h; IRQ=7;	
Serial Port Mode	[3T/5R RS-232]	

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Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	Enable or Disable Serial Port(COM)

Field Name	Device Settings
Default Value	Device Super IO COM1 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Serial Mode Configuration
Default Value	[3T/5R RS232]

Possible Value	1T/1R RS422 3T/5R RS232 1T/1R RS485 TX ENABLE Low Active 1T/1R RS422 with termination resistor 1T/1R RS485 with termination resistor TX ENABLE Low Active Disabled
Help	Select Serial Port Mode

2.4.2 Serial Port 2 Configuration



Field Name	Serial Port
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	Enable or Disable Serial Port(COM)

Field Name	Device Settings
Default Value	Device Super IO COM2 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

2.4.3 Serial Port 3 Configuration

Aptio Setup - AMI

Advanced

Serial Port 3 Configuration

Serial Port [Enabled]

Device Settings ID=2E0h; IRQ=5;

Enable or Disable Serial Port (COM)

++: 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	Serial Port
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	Enable or Disable Serial Port(COM)

Field Name	Device Settings
Default Value	Device Super IO COM3 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

2.5 Hardware Monitor

Aptio Setup - AMI

Advanced

Pc Health Status

```

DIMM Temperature      : +7.3 °C
CPU VR Temperature    : +25.4 °C
Fan Speed              : 3358 RPM
VBat                   : +2.976 V
VMem_Mon               : +1.202 V
VCORE                  : +1.744 V
VCC3V                  : +3.328 V
VSB3V                  : +3.312 V
VCCRTC                 : +3.088 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
DIMM Temperature	70~-40°C
CPU VR Temperature	70~-40°C
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.
VBat	2.0~ 3.65V
VMem_Mon	1.15 ! 1.25V
VCORE	0 ~2V
VCC3V	3.13 ~ 3.65V
VSB3V	3.13 ~ 3.65V
VCCRTC	2.0 ~ 3.2V

2.6 RTC Wake Settings

Aptio Setup – American Megatrends International, LLC.

Advanced

Wake system from S5	[Disabled]	<p>Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified.</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	Wake system from S5
Default Value	[Disabled]
Possible Value	Disabled Fixed 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

2.7 Network Stack Configuration

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Advanced

Network Stack [Disabled]	Enable/Disable UEFI Network Stack
<pre> ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit </pre>	

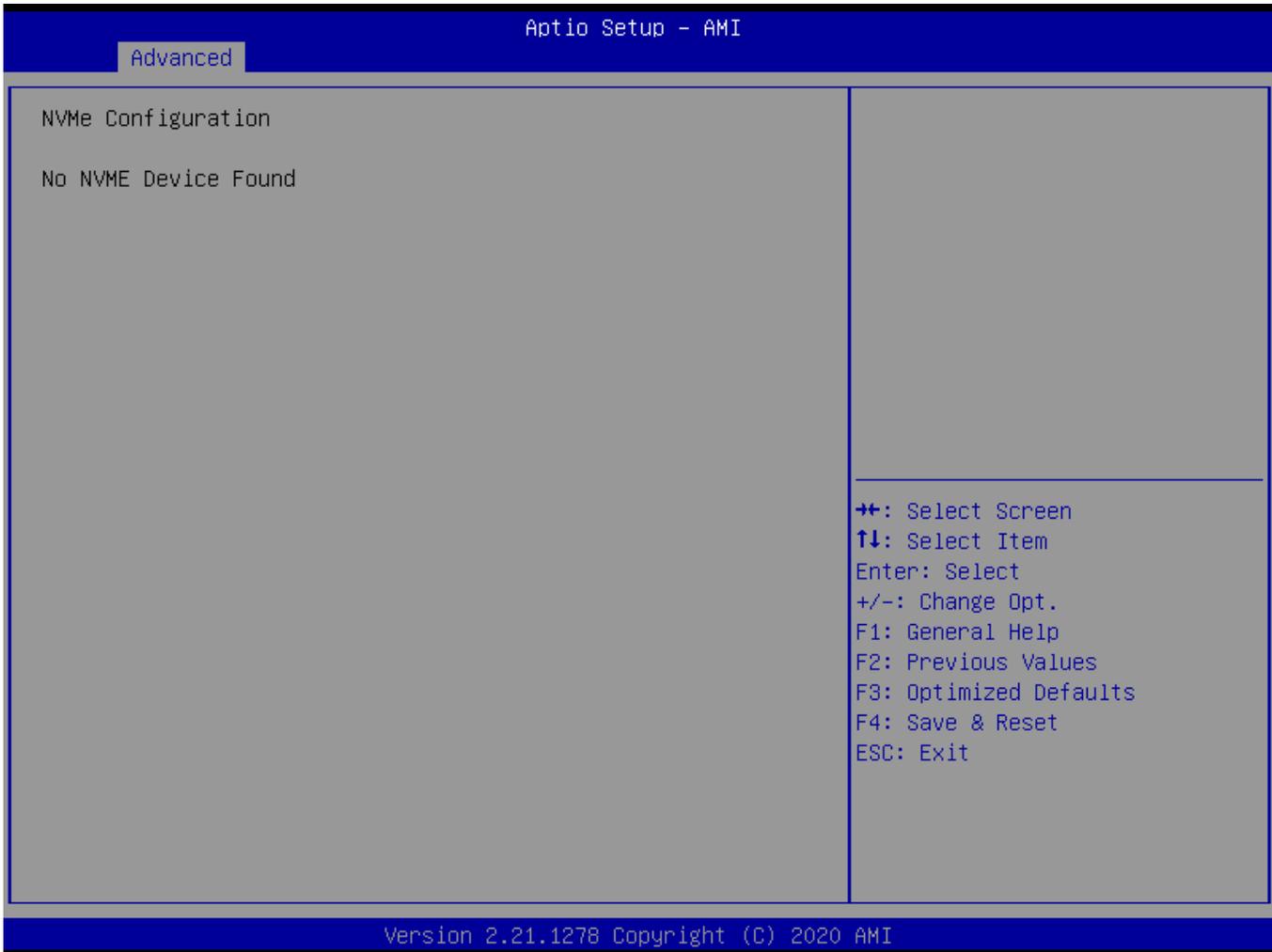
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Field Name	Network stack
Default Value	[Disabled]
Possible Value	Disabled Enabled
Help	Enable/Disable UEFI Network stack.

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.

2.8 NVMe Configuration



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

3. EVENT LOGS



Field Name	Change <u>Smbios</u> Event Log Settings
Help	Press <Enter> to change the <u>Smbios</u> Event Log configuration.
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	View <u>Smbios</u> Event Log
Help	Press <Enter> to view the <u>Smbios</u> Event Log records.
Comment	Press Enter when selected to go into the associated Sub-Menu.

3.1 Enabling/Disabling Options



Field Name	<u>Smbios</u> Event Log
Default Value	[Enable]
Possible Value	Disabled Enabled
Help	Change this to enable or disable all features of <u>Smbios</u> Event Logging during boot.

Field Name	Erase Event Log
Default Value	[No]
Possible Value	No Yes, Next reset Yes, Every reset

Help	Choose options for erasing <u>Smbios</u> Event Log. Erasing is done prior to any logging activation during reset.
------	---

Field Name	When Log is Full
Default Value	[Do Nothing]
Possible Value	Do Nothing Erase Immediately
Help	Choose options for reactions to a full <u>Smbios</u> Event Log.

3.2 View Smbios Event log

Aptio Setup - AMI

Event Logs

DATE	TIME	ERROR CODE	SEVERITY	COUNT	DESCRIPTION
09/09/20	17:22:06	Smbios 0x16	N/A	N/A	Log Area Reset and Count is applicable only for Multi-Events
09/09/20	17:22:50	EFI 03008205	Unrecognized	02	
09/09/20	17:22:50	EFI 03008105	Unrecognized	02	
09/09/20	17:54:26	EFI 03008303	Unrecognized	01	
09/09/20	17:54:26	EFI 03008103	Unrecognized	01	

++: 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	DATE / TIME / ERROR CODE / SEVERITY / COUNT
Default Value	MM/DD/YY HH:MM:SS Smbios 0x16 N/A N/A
Possible Value	By Events.
Help	By Events.

4. SECURITY PAGE

Aptio Setup - American Megatrends International, LLC.

Main Advanced **Security** Boot Save & Exit

Password Description

If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.

If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.

The password length must be in the following range:

Minimum length	3
Maximum length	20

Administrator Password
User Password

HDD Security Configuration:
P1:128GB SATA Flash Drive

▶ Secure Boot
▶ BIOS Update

Set Administrator Password

↔: 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	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	Secure Boot
------------	--------------------

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

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

4.1 HDD Security

Aptio Setup - American Megatrends International, LLC.

Security

HDD Password Description :

Allows Access to Set, Modify and Clear
 Hard Disk User Password
 User Password is mandatory to Enable HDD Security.
 If the 'Set User Password' option is hidden,
 do power cycle to enable the option again.

HDD PASSWORD CONFIGURATION:

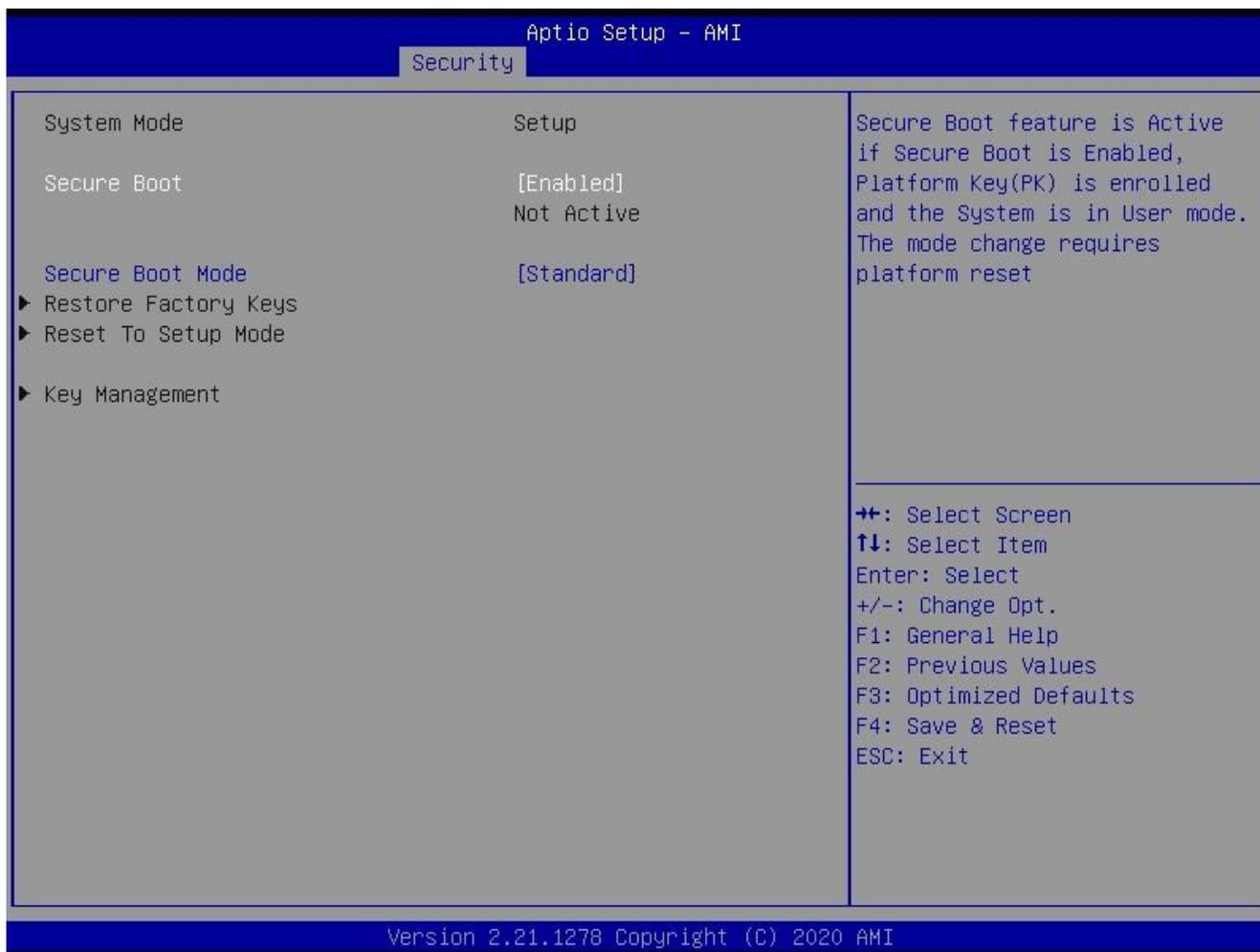
Security Supported :	Yes
Security Enabled :	No
Security Locked :	No
Security Frozen :	Yes
HDD User Pwd Status:	NOT INSTALLED

++: 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	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



Field Name	Secure Boot
Default Value	[Enabled]
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	[Standard]
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 (Secure Boot Mode set to Custom)
Help	Force System to User Mode. Install factory default Secure Boot key databases

Field Name	Reset to Setup Mode(After Restore Factory keys Provision)
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

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	<p>Enroll Factory Defaults or load certificates from a file:</p> <ol style="list-style-type: none"> 1.Public Key Certificate: <ol style="list-style-type: none"> 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) <p>Key Source: Factory,External,Mixed</p>
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	<p>Enroll Factory Defaults or load certificates from a file:</p> <p>1.Public Key Certificate:</p> <p>a)EFI_SIGNATURE_LIST</p> <p>b)EFI_CERT_X509 (DER)</p> <p>c)EFI_CERT_RSA2048 (bin)</p> <p>d)EFI_CERT_SHAXXX</p> <p>2.Authenticated UEFI Variable</p> <p>3.EFI PE/COFF Image(SHA256)</p> <p>Key Source:</p> <p>Factory,External,Mixed</p>
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	<p>Enroll Factory Defaults or load certificates from a file:</p> <p>1.Public Key Certificate:</p> <p>a)EFI_SIGNATURE_LIST</p> <p>b)EFI_CERT_X509 (DER)</p> <p>c)EFI_CERT_RSA2048 (bin)</p> <p>d)EFI_CERT_SHAXXX</p> <p>2.Authenticated UEFI Variable</p> <p>3.EFI PE/COFF Image(SHA256)</p> <p>Key Source:</p> <p>Factory,External,Mixed</p>
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:

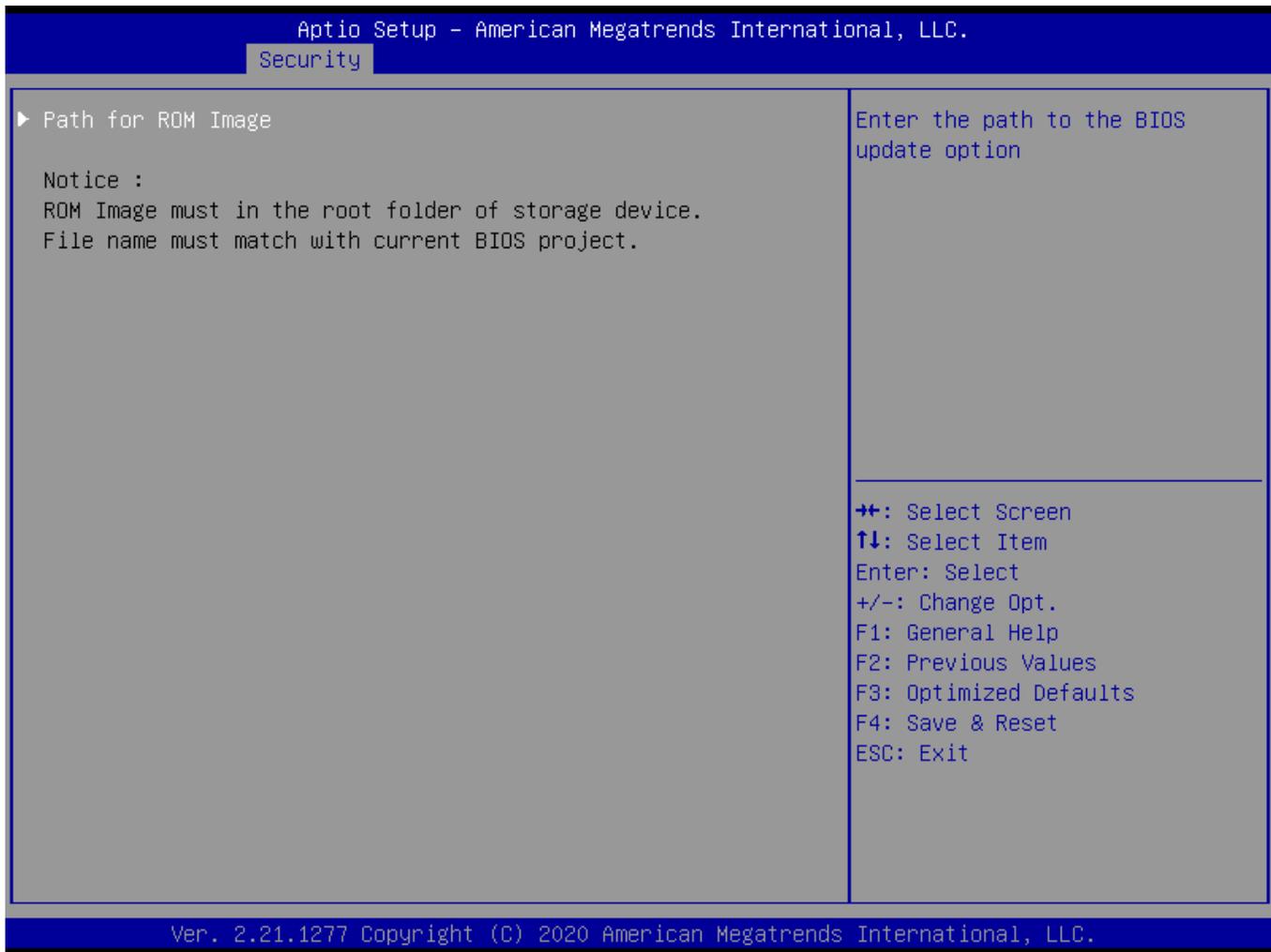
	<p>1.Public Key Certificate:</p> <p>a)EFI_SIGNATURE_LIST</p> <p>b)EFI_CERT_X509 (DER)</p> <p>c)EFI_CERT_RSA2048 (bin)</p> <p>d)EFI_CERT_SHAXXX</p> <p>2.Authenticated UEFI Variable</p> <p>3.EFI PE/COFF Image(SHA256)</p> <p>Key Source:</p> <p>Factory,External,Mixed</p>
comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Authorized TimeStamps
Default Value	Size:0, Keys:0, Key source: No Keys
Help	<p>Enroll Factory Defaults or load certificates from a file:</p> <p>1.Public Key Certificate:</p> <p>a)EFI_SIGNATURE_LIST</p> <p>b)EFI_CERT_X509 (DER)</p> <p>c)EFI_CERT_RSA2048 (bin)</p> <p>d)EFI_CERT_SHAXXX</p> <p>2.Authenticated UEFI Variable</p> <p>3.EFI PE/COFF Image(SHA256)</p> <p>Key Source:</p> <p>Factory,External,Mixed</p>
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	<p>Enroll Factory Defaults or load certificates from a file:</p> <p>1.Public Key Certificate:</p> <p>a)EFI_SIGNATURE_LIST</p> <p>b)EFI_CERT_X509 (DER)</p>

	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 BIOS Update



Field Name	Path for ROM Image
Help	Enter the path to the BIOS update option

5. BOOT PAGE

Aptio Setup - AMI

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

Boot Configuration

Setup Prompt Timeout **1**

Bootup NumLock State [Off]

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

FIXED BOOT ORDER Priorities

Boot Option #1 [USB Floppy]

Boot Option #2 [USB CD/DVD]

Boot Option #3 [Hard Disk]

Boot Option #4 [USB Key:UEFI: USB FLASH DRIVE PMAP, Partition 1]

Boot Option #5 [USB Hard Disk]

Boot Option #6 [NVME]

Boot Option #7 [Network]

▶ UEFI USB Key Drive BBS Priorities

⇧⇧: 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	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	[Off]
Possible Value	On Off
Help	Select the keyboard NumLock state

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 , NVME, Network, Disabled
Help	Sets the system boot order

Field Name	Boot Option #2
Default Value	[USB CD/DVD]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled
Help	Sets the system boot order

Field Name	Boot Option #3
Default Value	[Hard Disk]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled
Help	Sets the system boot order

Field Name	Boot Option #4
Default Value	[USB Key]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled
Help	Sets the system boot order

Field Name	Boot Option #5
Default Value	[USB Hard Disk]
Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled
Help	Sets the system boot order

Field Name	Boot Option #6
Default Value	[NVME]

Possible Value	USB Floppy, CD/DVD, USB CD/DVD, Hard Disk , USB Key, USB Hard Disk , NVME, Network, Disabled
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 , NVME, Network, Disabled
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) 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) NVME Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available NVME 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.

5.1 (List Boot Device Type) Drive BBS Priorities

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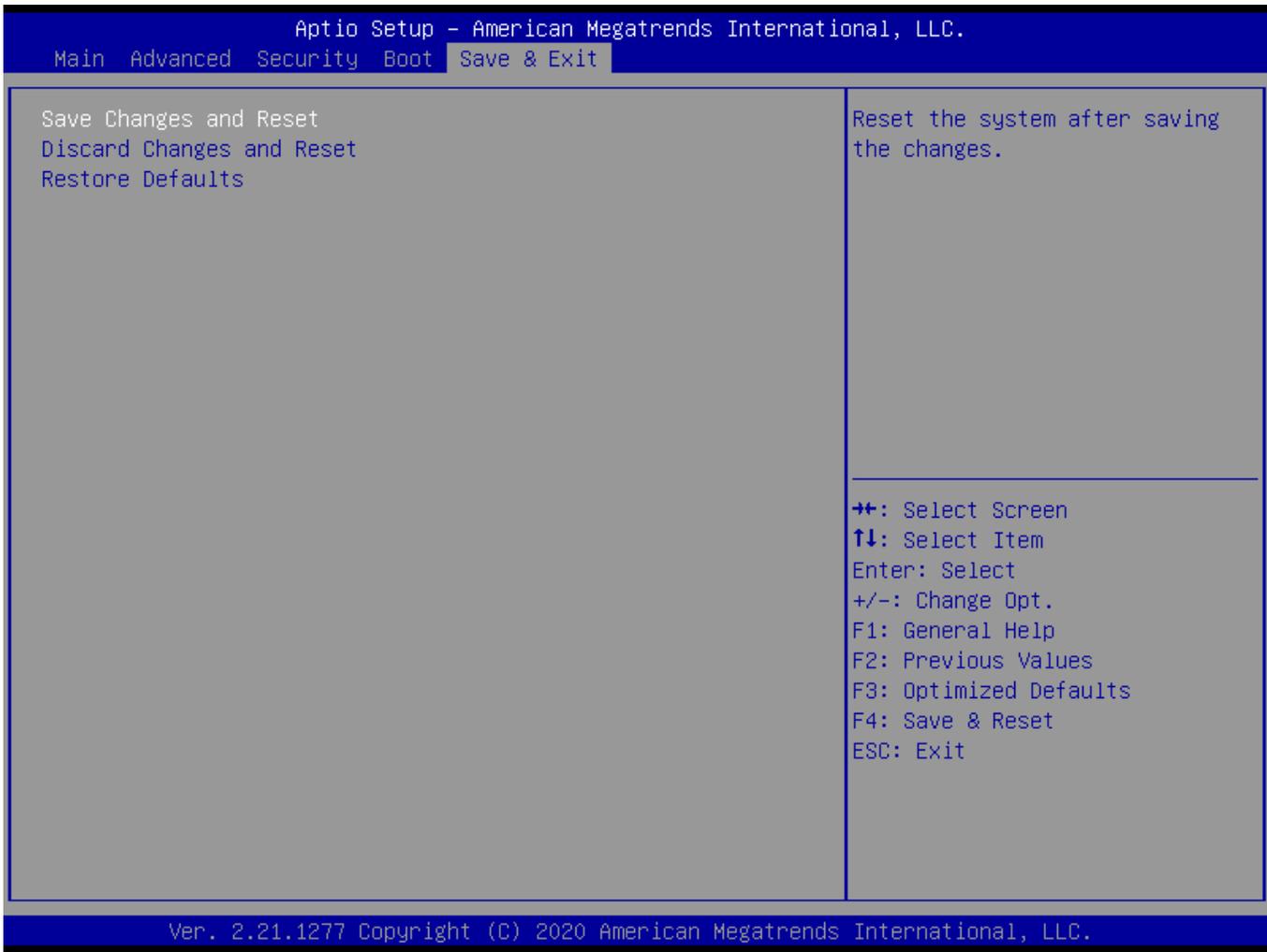
Boot

<p>Boot Option #1</p>	<p>[Windows Boot Manager (128GB SATA Flash Drive)]</p>	<p>Sets the system boot order</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	Boot Option #1
Default Value	
Possible Value	Boot Device Name 1 of this type, Disable
Help	Sets the system boot order

6. SAVE & EXIT PAGE



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.