

MiTAC Thin Mini-ITX Board PD10EHI

Product Guide

Thin Mini-ITX Board Features

This chapter briefly describes the features of Thin Mini-ITX Board PD10EHI.

Below to summarizes the major features of the Desktop Board.

Feature Summary

TABLE: MITAC DESKTOP BOARD PD10EHI FEATURES

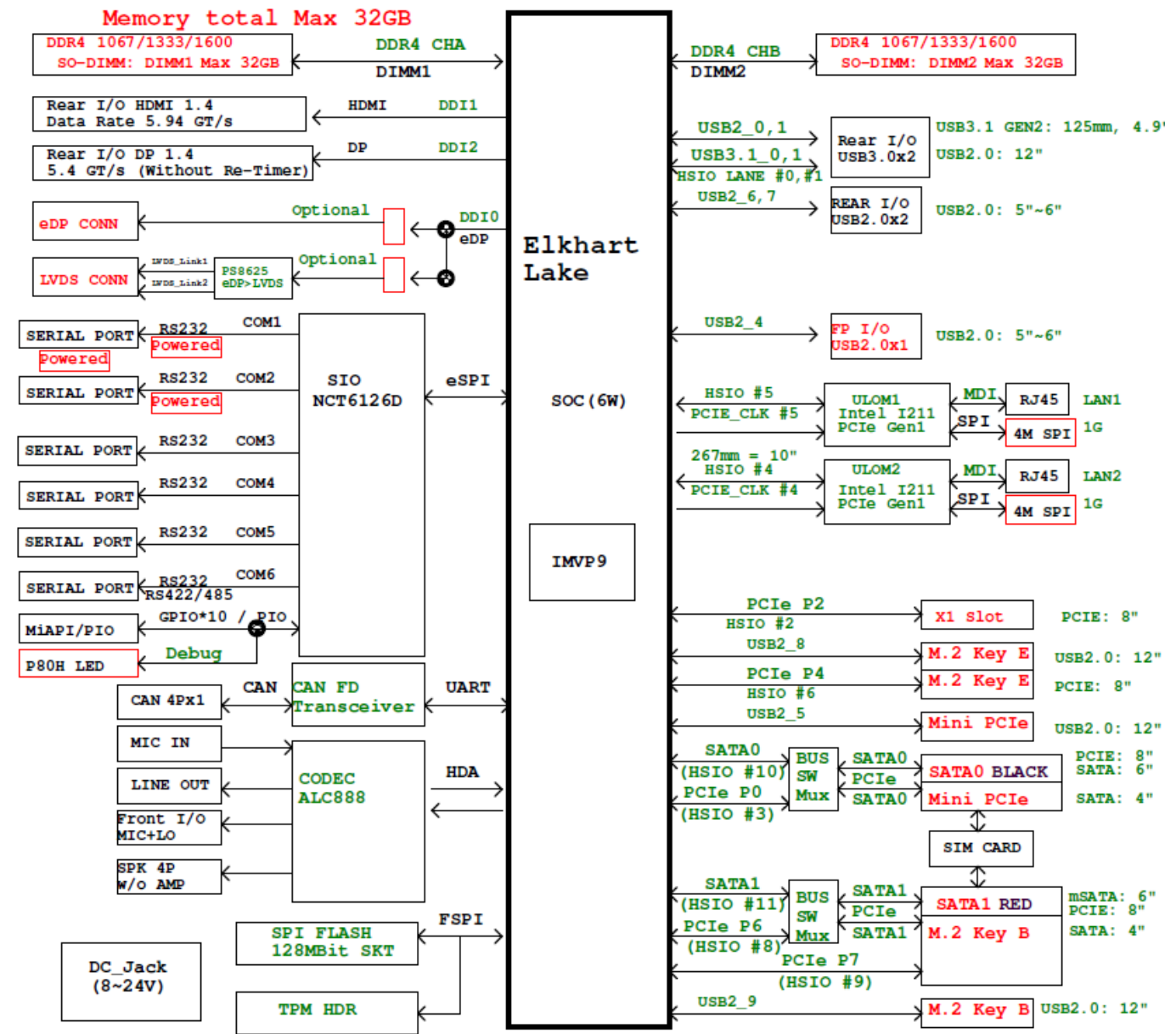
Form Factor	Low-profile Mini-ITX (20 millimeters [0.79 inches] x 170.18 millimeters [6.7 inches] x 170.18 millimeters [6.7 inches])	
Processor Chipset	Intel Elkhart Lake Processor with integrated graphics	
Main Memory	• Support for dual channel DDR4 3200 SO-DIMMs	
	• Maximum support up to 32GB	
	• 260-pin DDR4 SO-DIMM	2
Audio Controller	Realtek ALC888 audio codec	
Expansion Capability	• PCI Express 3.0 x1 connector	1
	• M.2 3042 / 3052 / 2242 / 2260 / 2280 B key (USB2.0, SATAIII, *PCIex1) *Not support M.2 M Key NVMe SSD	1
	• Mini PCIe Full size (USB2.0 / SATAIII / PCIex1)	1
	• M.2 2230 E key (PCIe, USB 2.0)	1
External I/O	• DC-in Jack	1
	• HD-out	1
	• DP-out	1
	• line-out	1
	• Mic-in	1
	• USB 3.1 Gen2 back panel connectors	2
	• USB 2.0 back panel connectors	2
	• RJ45	2
	• LVDS Connector (40Pin)	1
	• eDP Connector (40Pin) (colay with LVDS connector)	optional
	• Stereo speaker header (w/o Amplifier)	1
	• Front Audio Header with Mic-in and Line-out	1
	• USB 2.0 front panel ports	2

Internal I/O	• SATA 3.0 Gb/s port (multiplexed with an mSATA slot)	1
	• SATA 3.0 Gb/s port (multiplexed with an m.2 slot)	1
	• RS232 (Extra 1 x RS232/422/485 Header + 3 x RS232 Header for Option. Max. 6 x COM by Option)	2
	• MiAPI header (Option with Parallel port header)	1
	• 4-pin system fan header	2
	• 4-pin ATX Power Connector	1
S I/O Controller	NCT6126D	
LAN Support	Intel I211-AT (10/100/1000 Mb/s) Ethernet LAN controller *2	
BIOS	• BIOS resident in a Serial Peripheral Interface (SPI) Flash device • Support for Advanced Configuration and Power Interface (ACPI), and System Management BIOS (SMBIOS)	
Hardware Management	Nuvoton NCT6793D based subsystem, including: • Voltage sense to detect out of range power supply voltages • Thermal sense to detect out of range thermal values	
Power Requirement	DC-in 8~24V (2.5 mm / ID, 5.5 mm / OD) / ATX 4-pin	
Environment	Operating Temperature: 0°C to +60°C Storage Temperature: -40°C to +85°C Operating Humidity: 10% ~ 95% R/H (Non-condensing)	
OS SUPPORT	Windows® 10 64-bit / Linux (support by request)	
Certification	CE, FCC	

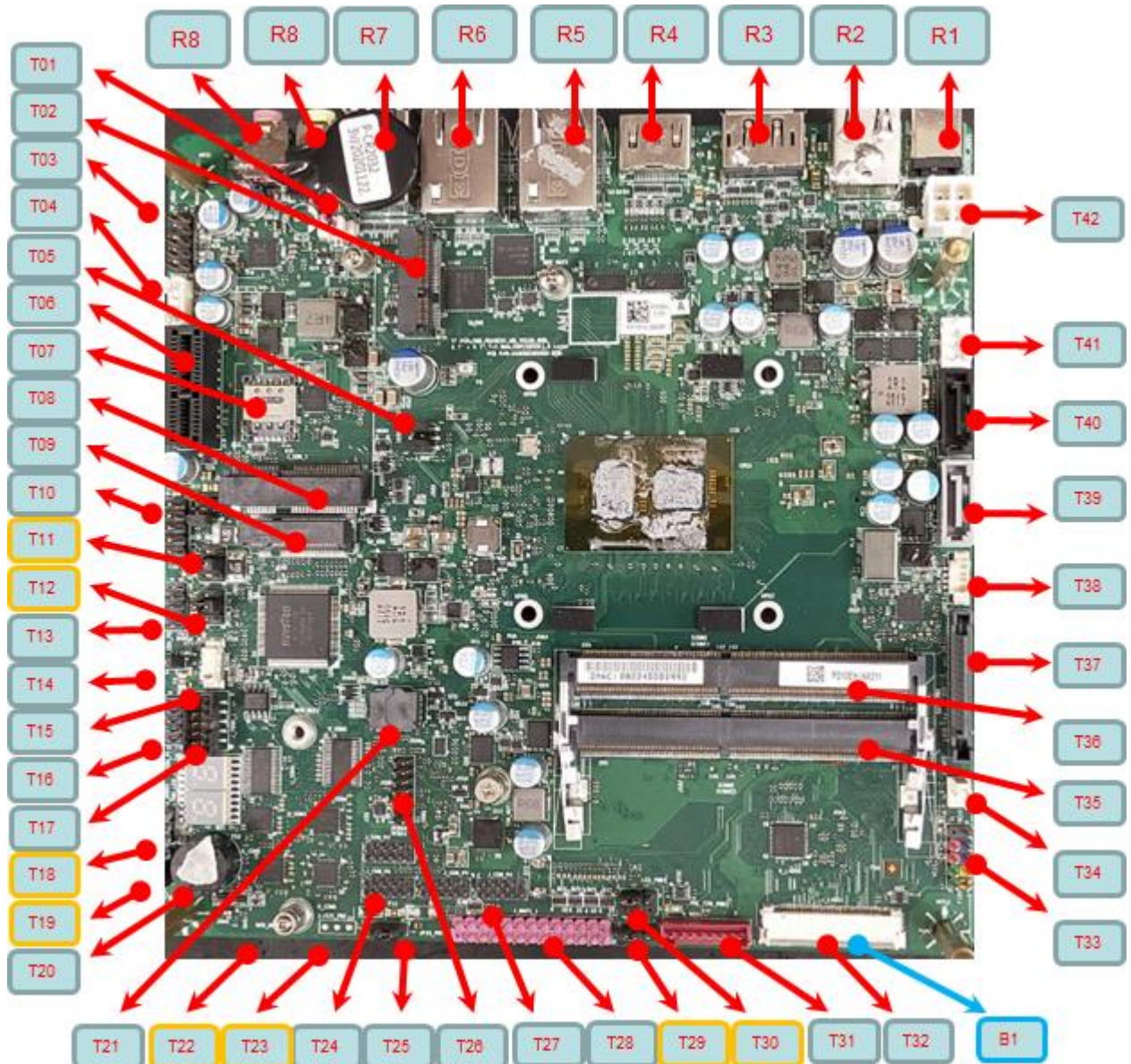
1. Hardware Specification

1.1 HW Design

1.1.1Block Diagram



1.1.2 Placement - Top



T01	Battery CONN	T15	CAN CONN	T29	INV_PWR1 (3P)
T02	M2 Key-E	T16	J_Com_P2	T30	Lcd_Pwr1
T03	Front Audio MIC + LO	T17	eSPI header	T31	PnI_Fpd_Pwr1 (8P)
T04	INT_SPK1	T18	CMOS clear	T32	LVDS CONN(40P)
T05	Board ID	T19	AT/ATX header (3P)	T33	Front I/O header
T06	PCIE X1	T20	Buzzer	T34	2nd BAT CONN
T07	SIM socket	T21	BIOS SPI Flash/Socket	T35	SODIMM 2
T08	Mini PCIe	T22	N/A	T36	SODIMM 1
T09	M2 Key-B	T23	N/A	T37	SATA_PW1 (15P)
T10	Front USB2.0x2	T24	COM6 header	T38	SATA_PW2 (4P)
T11	J_Com_P1 PWR jumper	T25	N/A	T39	SATA2
T12	J_Com_P2 PWR jumper	T26	TPM header (SPI)	T40	SATA1
T13	J_Com_P1	T27	COM3~COM5 header	T41	CPU FAN
T14	CAN 120ohm header	T28	MI-API header	T42	Mini FIT 4P PWR

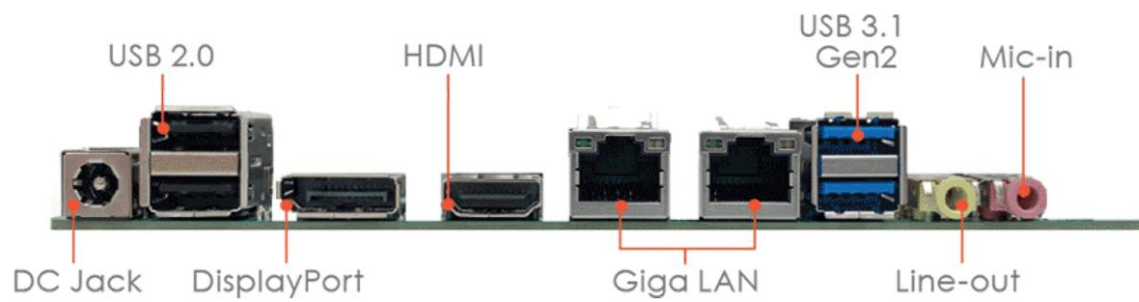
1.1.3 Placement - Bottom

Only eDP cable connector

Location: JEDP1

B1	eDP connector
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1.1.4 Placement – Rear IO



2. Product Specification

2.1 Display Features

1. HDMI 1.4: 4096 x 2160 @30 Hz; Data Rate 5.4 GT/s
2. Display port 1.4 : 4096 x 2160 @60 Hz; Data Rate 5.4 GT/s (Without Re- Timer)
3. eDP to LVDS (LVDS chipset PS8625): 1920x1200@60Hz
4. eDP 1.3: 4096 x 2160 @60 Hz

(Only Active Displays,resolution is limited to 4k when multiple displays are active)

2.2 Connector Pinout

2.2.1 LVDS Connector

40-pin LVDS connector must be right-angled, single-row shrouded colored white, as shown in Figure 1 (part number reference: ACES 88341-40xx). Connector must support four data-pairs of dual-channel LVDS traffic, clock and EDID signals, panel logic power as well as backlight power and control signals, as defined in Table 1. Connector must be located on the topside (and along the front edge) of the board.

ACES ELECTRONIC CO.,LTD

88341-4001

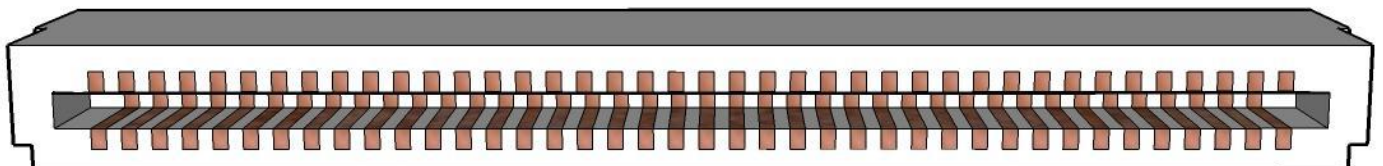


Figure 1: Panel 40-pin LVDS connector

Pin	Signal	Pin	Signal
1	ODD_Lane3_P	21	N/C
2	ODD_Lane3_N	22	EDID_3.3V
3	ODD_Lane2_P	23	LCD_GND
4	ODD_Lane2_N	24	LCD_GND
5	ODD_Lane1_P	25	LCD_GND
6	ODD_Lane1_N	26	ODD_CLK_P
7	ODD_Lane0_P	27	ODD_CLK_N
8	ODD_Lane0_N	28	BKLT_GND
9	EVEN_Lane3_P	29	BKLT_GND
10	EVEN_Lane3_N	30	BKLT_GND
11	EVEN_Lane2_P	31	EDID_CLK
12	EVEN_Lane2_N	32	BKLT_ENABLE
13	EVEN_Lane1_P	33	BKLT_PWM_DIM
14	EVEN_Lane1_N	34	EVEN_CLK_P
15	EVEN_Lane0_P	35	EVEN_CLK_N
16	EVEN_Lane0_N	36	BKLT_PWR
17	EDID_GND	37	BKLT_PWR
18	LCD_VCC	38	BKLT_PWR
19	LCD_VCC	39	N/C
20	LCD_VCC	40	EDID_DATA

2.2.2 Embedded DisplayPort (eDP) (BOM Optional) at J_EDP1 connector on bottom side

The embedded DisplayPort (eDP) is an embedded version of the DisplayPort standard oriented towards applications such as notebook and All-In-One PCs. Like DisplayPort, embedded DisplayPort also consists of a Main Link, Auxiliary channel, and an optional Hot-Plug Detect signal.

- Support Backlight PWM control signal.
- Support VESA DSC (Data Stream Compression)
- Support SSC
- Panel Self Refresh 1 & 2
- Adaptive sync

40-pin eDP connector must be right-angled, single-row shrouded colored black, as shown in Figure 2 (part number reference: ACES 50203-04001-001). Connector must support four lanes of eDP traffic, AUX channel, panel logic power as well as backlight power and control signals, compliant with the VESA Embedded DisplayPort™ (eDP™) Standard for 40-pin eDP pin assignment, Connector must be located on the backside of the board, preferably under the LVDS connector.

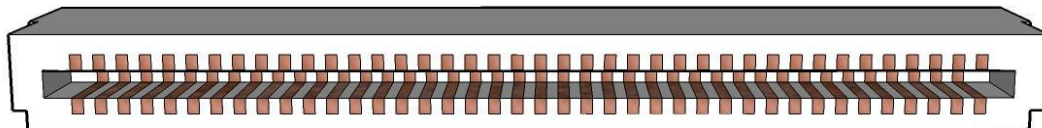


Figure 2: Panel 40-pin LVDS connector

Pin	Signal	Pin	Signal
1	NC_Reserved	21	LCD_VCC
2	High-speed_GND	22	LCD_Self_Test-or-NC
3	Lane3_N (DDPD_[3]N)	23	LCD_GND
4	Lane3_P (DDPD_[3]P)	24	LCD_GND
5	High-speed_GND	25	LCD_GND
6	Lane2_N (DDPD_[2]N)	26	LCD_GND
7	Lane2_P (DDPD_[2]P)	27	HPD (DDPD_HPDP)
8	High-speed_GND	28	BKLT_GND
9	Lane1_N (DDPD_[1]N)	29	BKLT_GND
10	Lane1_P (DDPD_[1]P)	30	BKLT_GND
11	High-speed_GND	31	BKLT_GND
12	Lane0_N (DDPD_[0]N)	32	BKLT_ENABLE
13	Lane0_P (DDPD_[0]P)	33	BKLT_PWM_DIM
14	High-speed_GND	34	NC_Reserved
15	AUX_CH_P (DDPD_AUXP)	35	NC_Reserved
16	AUX_CH_N (DDPD_AUXN)	36	BKLT_PWR
17	High-speed_GND	37	BKLT_PWR
18	LCD_VCC	38	BKLT_PWR
19	LCD_VCC	39	BKLT_PWR
20	LCD_VCC	40	NC_Reserved

Table 2: 40-pin eDP connector pin-out

2.2.3 Front Panel header

The front panel main header must be shrouded 2x5, 2.54mm pitch, multi-colored, keyed at pin 10 and with silkscreen text as defined in below list. Polarity markings on pins 1 & 2 and color-coding on all pins are required.

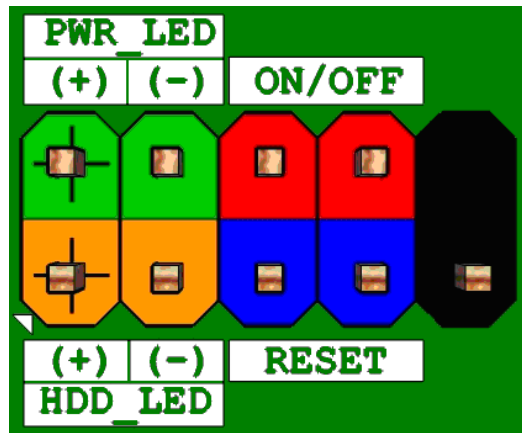


Figure 10: Front panel main header pin-out

Pin	Signal Name	Description	Pin	Signal Name	Description
1	HDD_POWER_LED	Pull-up resistor (750 Ω) to +5V	2	POWER_LED_MAIN	[Out] Front panel LED (main color)
3	HDD_LED#	[Out] Hard disk activity LED	4	POWER_LED_ALT	[Out] Front panel LED (alt color)
5	GROUND	Ground	6	POWER_SWITCH#	[In] Power switch
7	RESET_SWITCH#	[In] Reset switch	8	GROUND	Ground
9	+5V_DC	Power	10	KEY	No pin

Table 12: Front panel main header signals

2.2.4USB2.0 Interface

- 2 total USB2.0 Ports (2 internal)

Front panel USB2.0 headers must be 2x5, 2.54mm pitch, colored black and keyed at pin 9. Follow the Intel Front Panel I/O Connectivity Design Guide for front panel USB solutions.

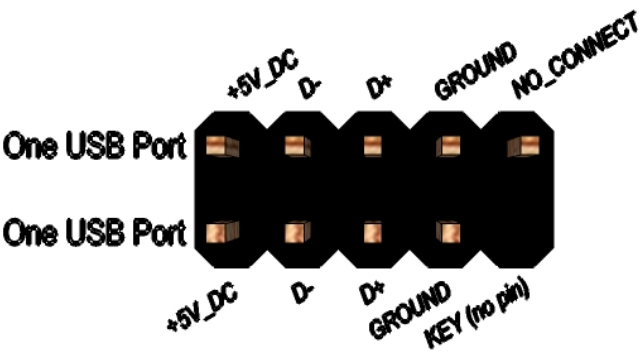


Figure 9: Front panel USB header pin-out

Pin	Signal	Pin	Signal
1	+5V DC	2	+5V DC
3	Data (negative)	4	Data (negative)
5	Data (positive)	6	Data (positive)
7	Ground	8	Ground
9	Key (no pin)	10	No Connect

Table 11: Front panel USB header signals

2.2.5 LAN Interface:

2ea I211 LOM

Board must implement Intel® I211 - Base GbE LAN, supporting 10/100/1000 Mb/s.

Board must implement a LAN solution supporting 10/100/1000 Mb/s with the following features:

Onboard RJ45 connectors must have integrated magnetics and support dual status LEDs per port, as shown in below list.

Diagram	LED	Color	State	Condition
	Link	N/A	Off	LAN link is not established
		Green	On	LAN link is established
			Blinking	LAN activity occurring
	Speed	N/A	Off	10 Mb/s data rate
		Green	On	100 Mb/s data rate
		Yellow	On	1000 Mb/s data rate

Table 10: RJ45 LED behavior

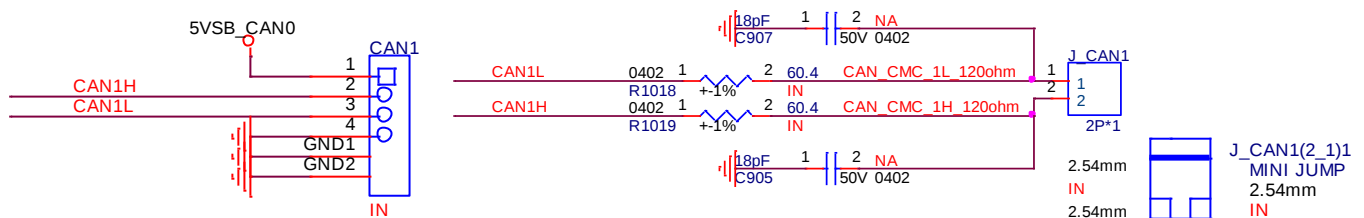
Note: LAN subsystem must be tested for IEEE802.3 conformance on each port.

2.2.6 Controller Area Network (CAN) Bus Controller at CAN1 location

The CANBUS controller performs communication according to ISO 11898-1 (identical to Bosch CAN protocol specification 2.0 part A,B) and according to ISO 11898-4 (Time triggered communication on CAN).

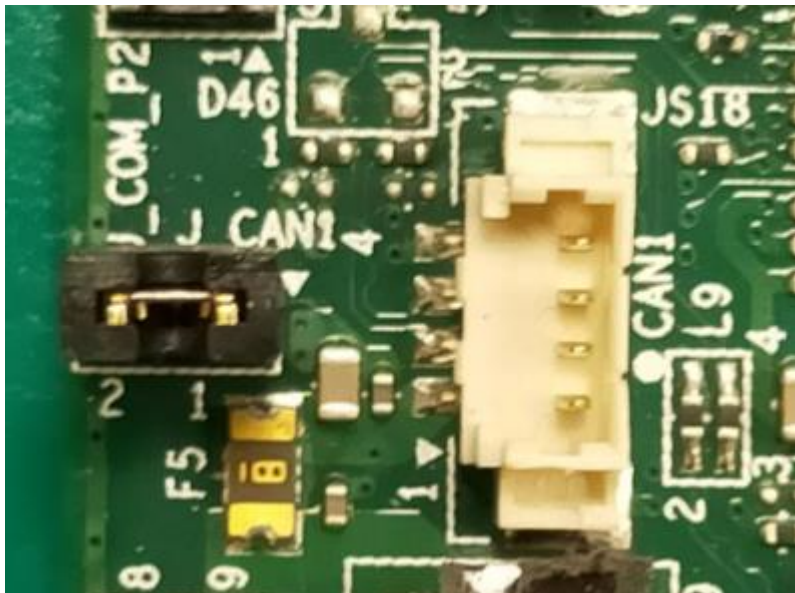
Key Features

- 1ea CAN nodes
 - CAN FD supported (up to 64B message size for FD-long)
 - Time Triggered CAN
 - CAN instances has a full sized message RAM
- Parity protection for the message RAMs, with error injection functionality
- CAN disable inputs to prevent access to all CSRs and message RAM
- Per CAN instances interrupt output
- CAN Error Logging
- AUTOSAR optimized
- SAE J1939 optimized
- Improved acceptance filtering
- Programmable loop-back test mode



POP 2P jumper header to support 120ohm by default jumper setting at J_CAN1 2pin header

J_CAN1(2_1)1



TF-CON;HDR,SBU,4Pin,3 Walls,MA,1.25mm,BEIGE,ST,Gold Flash,PA6T(Nylon 6T),SMT

ACES ELECTRONIC CO.,LTD	85205-04701
Joint Tech Electronic Industrial Co.,Ltd.	A1250WV-S-04PD20

2.2.7 MiAPI interface pinout at J_Mapi_1 location

Support 10ea GPIO (3.3V) feature

Support 1ea UART (3.3V)

Support I2C (3.3V) bus

Support power button feature

Pin	Signal Name	Pin	Signal Name
1	NC	2	VCC
3	MAPI_GPIO1	4	Power Button
5	MAPI_GPIO2	6	UART_TX (3.3V)
7	MAPI_GPIO3	8	UART_RX (3.3V)
9	MAPI_GPIO4	10	5VSB
11	MAPI_GPIO5	12	Watchdog Timer
13	MAPI_GPIO6	14	GND
15	MAPI_GPIO7	16	GP_H04_SIO_I2C2_SDA (3.3V)

17	MAPI_GPIO8	18	GP_H05_SIO_I2C2_SCL (3.3V)
19	MAPI_GPIO9	20	GP_D17_PSE_TGPIO41 (3.3V)
21	MAPI_GPIO10	22	GP_D18_PSE_TGPIO42 (3.3V)
23	SMB_MAIN_DATA	24	GND
25	SMB_MAIN_CLK	26	KEY (no pin)

2.2.8 Audio Interface

High Definition audio using (at a minimum) 2+2 channel codec, supporting:

2 ports for analog input and line-out on backpanel

front panel HD Audio header 5Px2 2.54mm header

internal speaker header without AMP feature by 4px1 2.0mm header

jack detection and manual port re-tasking

Board must support 2-channel (i.e. stereo) "Front Speakers" audio stream via a rear line-out port with jack detection as well as through an internal stereo speakers header. "Front Speakers" audio stream must be shared between the aforementioned audio outputs. Audio routing and jack detection must be implemented as indicated in Table 6.

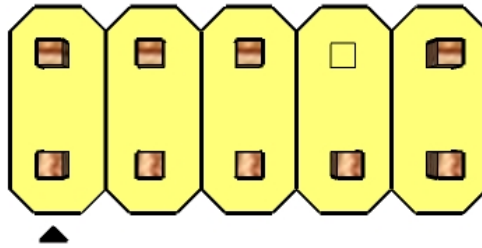
	Headphones	Microphone	Line-Out	Line-In
FP Green Jack	Default			
FP Pink Jack		Default		
Rear Green Jack	(ctrl panel)		(jack-detect)	
Rear Pink Jack				Default
Internal Stereo Spk			Default	

: headphone/mic front panel audio port assignments

Front panel audio header must be 2x5, 2.54mm pitch, colored **BLACK** and keyed at pin 8. It must be designed and validated to support HD Audio only

TF-CON;HDR,SBU,5Pin*2,-P8,MA,2.54mm,BLACK,ST,Gold Flash,PA6T(Nylon 6T)

SUPERIOR TECH CO.,LTD.	PHED-DS010G1ABONA-N020
Aquatech Corporation	YNK12030-HPH-212050-002



High Definition Audio

Pin	Pin Assignment	Pin	Pin Assignment
1	MIC2 L (Microphone 2 Left)	2	AGND (Analog Ground)
3	MIC2 R (Microphone 2 Right)	4	AVCC (Analog VCC Power)
5	FRO-R (Front Right)	6	MIC2_JD (Microphone 2 Jack Detect)
7	F_IO_SEN (Front I/O Sensor)		
9	FRO-L (Front Left)	10	LINE2_JD (Line 2 Jack Detect)

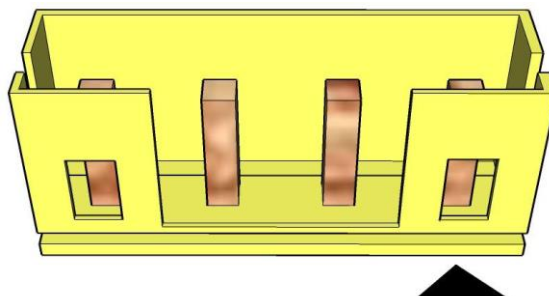
Table 6: HD headphone/mic front panel audio port pin assignments

Pin	Signal name	Description
1	PORT 1L	Analog Port 1 - Left channel (Microphone)
2	GND	Ground
3	PORT 1R	Analog Port 1 - Right channel (Microphone)
4	PRESENCE#	Active low signal that signals BIOS that an Intel® HD Audio dongle is connected to the analog header. PRESENCE# = 0 when an Intel® HD Audio dongle is connected.
5	PORT 2R	Analog Port 2 - Right channel (Headphone)
6	SENSE1 RETURN	Jack detection return for front panel (JACK1)
7	SENSE SEND	Jack detection sense line from the Intel® HD Audio CODEC jack detection resistor network
8	KEY	No pin
9	PORT 2L	Analog Port 2 - Left channel (Headphone)
10	SENSE2 RETURN	Jack detection return for front panel (JACK2)

HD Audio front panel audio header pinout - FP_HDA1

TF-CON;HDR,SBU,4Pin,4 Walls,MA,2.0mm,NATURAL,ST,TIN,PA46(Nylon 46),DIP

Joint Tech Electronic Industrial Co.,Ltd.	A2001WV-04P146
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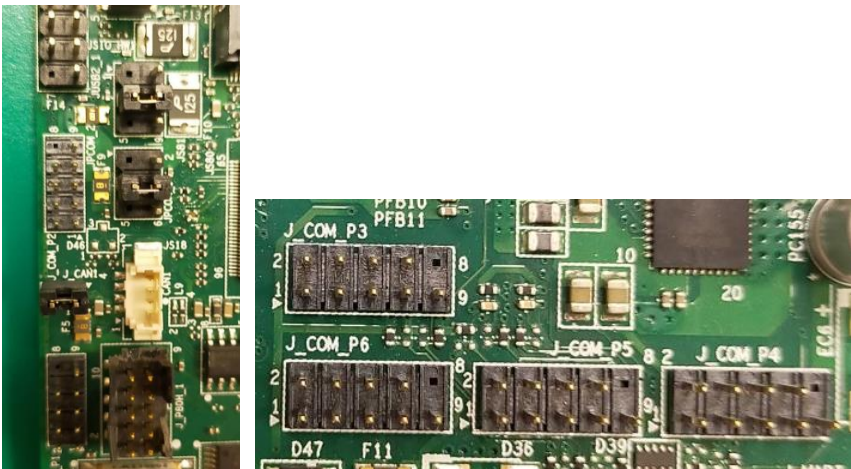


Internal 4pin speakers without AMP feature

Pin	Signal name	Description
1	A_GND_L	GND
2	Front_L+	Analog front left (differential positive)
3	Front_R+	Analog front right (differential positive)
4	A_GND_R	GND

Internal stereo speakers header pinout

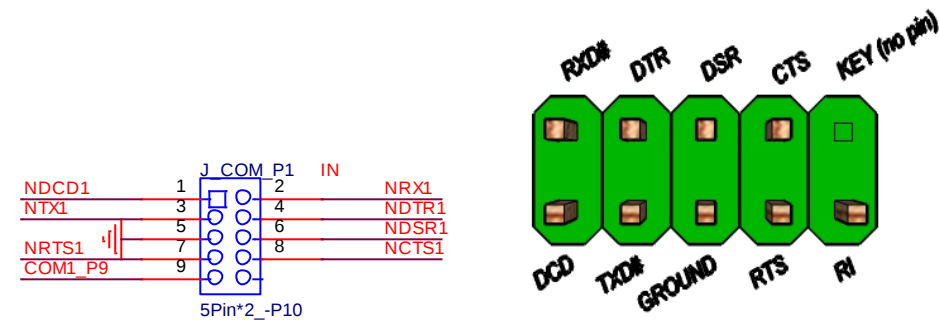
2.2.9Serial Port –RS232 Interface: 2ea COM1 and COM2 default, 3ea COM3~COM5 are BOM optional



TF-CON;HDR,SBU,5Pin*2,-P10,MA,2.0mm,BLACK,ST,Gold Flash,PA6T(Nylon 6T)

FOXCONN (HONG HAI PRECISION IN	HBF1051-L3B1D-EH
Joint Tech Electronic Industrial Co.,Ltd.	A2016WV-2X05PR6BG1N03G
SUPERIOR TECH CO.,LTD.	PHDD-DS010G1ABONA-N119

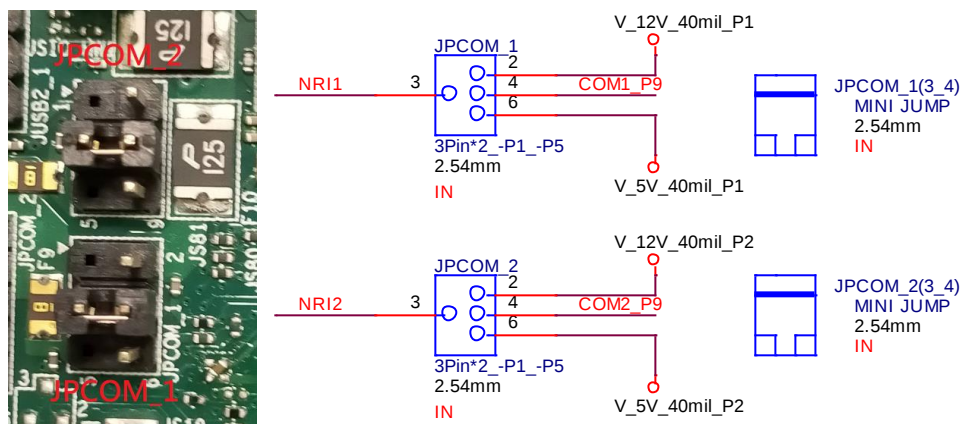
Serial Port RS232 pin defintion at COM1~COM5 port



Pin		Signal	Pin		Signal
1	COM3_P1_40mils	DCD (Data Carrier Detect)	2	NRX3	RXD# (Receive Data)
3	NTX3	TXD# (Transmit Data)	4	NDTR3	DTR (Data Terminal Ready)
5	GND	Ground	6	NDSR3	DSR (Data Set Ready)
7	NRTS3	RTS (Request To Send)	8	NCTS3	CTS (Clear To Send)
9	COM3_P9_40mils	RI (Ring Indicator)	10	Key	Key (no pin)

RS232 Serial port header signals

2.2.10 Power RS232 voltage jumper setting



JPCOM_1 / JPCOM_2 pin out			
		P2	V_12P
P3	NRI1	P4	COM1_P9
		P6	V+5P

power RS232 Serial port header signals

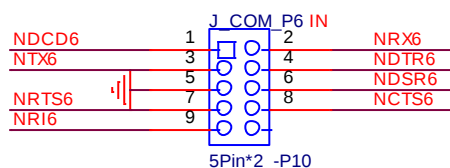
2.2.11 Serial Port –RS232/RS422/RS485 Interface –COM6 port (BOM optional)

BUS setting at BIOS setup menu to support below feature

Pin 29 MODE_0	Pin 36 MODE_1	Pin 28 MODE_2	MODE	Status
0	0	0	RS-422 Full Duplex	1T/1R RS-422
0	0	1	Pure RS-232	3T/5R RS-232
0	1	0	RS-485 Half Duplex	1T/1R RS-485 TX ENABLE Low Active
1	0	0	RS-422 Full Duplex	1T/1R RS-422 with termination resistor
1	1	0	RS-485 Half Duplex	1T/1R RS-485 with termination resistor TX ENABLE Low Active
1	1	1	Shutdown	All I/O pins are High Impedance

TF-CON;HDR,SBU,5Pin*2,-P10,MA,2.0mm,BLACK,ST,Gold Flash,PA6T(Nylon 6T)

FOXCONN (HONG HAI PRECISION IN	HBF1051-L3B1D-EH
Joint Tech Electronic Industrial Co.,Ltd.	A2016WV-2X05PR6BG1N03G
SUPERIOR TECH CO.,LTD.	PHDD-DS010G1ABONA-N119



Pin	Signal			Pin	Signal		
	RS232	RS485	RS422		RS232	RS485	RS422
1	DCD (Data Carrier Detect)	R(A) / T(A)	TX(B)	2	RXD# (Receive Data)	R(B) / T(B)	TX(A)

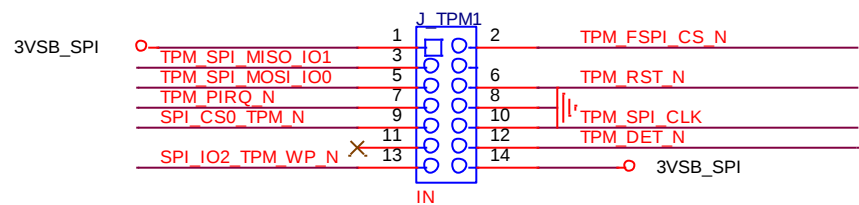
3	TXD# (Transmit Data)	NC	RX(A)	4	DTR (Data Terminal Ready)	NC	RX(B)
5	Ground	Ground	Ground	6	DSR (Data Set Ready)	NC	NC
7	RTS (Request To Send)	DE#/RE	NC	8	CTS (Clear To Send)	NC	NC
9	RI (Ring Indicator)	NC	NC	10	Key (no pin)	Key (no pin)	Key (no pin)

RS485/RS422/RS232 Serial port header signals

2.2.12 SPI TPM module daughter board Interface at J_TPM1 location (TPM module is optional)

TF-CON;HDR,SBU,7Pin*2,-P4,MA,2.0mm,BLACK,ST,Gold Flash,PA6T(Nylon 6T)

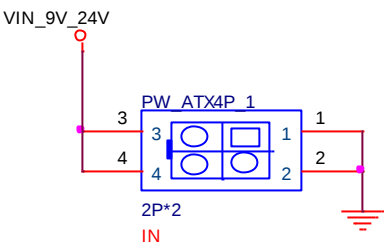
SUPERIOR TECH CO.,LTD.	PHDD-DS014G1ABONA-N058
ACES ELECTRONIC CO.,LTD	60024-01431-001



Pin	Signal Name	Pin	Signal Name
1	3VSB	2	TPM_FSPI_CS_N
3	TPM_SPI_MISO_IO1	4	key
5	TPM_SPI_MOSI_IO0	6	TPM_RST_N
7	TPM_PIRQ_N	8	GND
9	SPI_CS0_TPM_N	10	TPM_SPI_CLK
11		12	TPM_DET_N
13	SPI_IO2_TPM_WP_N	14	3VSB

2.2.13 DC input power (2X2P) connector

- Pin1 = GND
- Pin2 = GND
- Pin3 = Input power
- Pin4 = Input power
-



TF-CON;POWER,SBU,ATX,12V,DC,2P*2,FM,4.2mm,ST,PA46(Nylon 46),IVORY,TIN

PW_ATX4P_1	LOTES CHIA TSE TERMINAL INDUST	ABA-POW-003-K34
	TE Connectivity CO.LTD	1-1775099-2
	FOXCONN (HONG HAI PRECISION IN	HM3502E-P1

2.3 Other Interface

2.3.1BIOS / CMOS Clear Jumper

The BIOS security (CMOS Clear) header must be 1x3, 2.54mm pitch and colored black, with an extended grip jumper colored yellow. Board must power up to one of three states per setting of the jumper, as shown in below table.



Clear CMOS header pin-out

Pin	Signal Name
1	RTC_CLEAR
2	GND
3	CMOS_CLEAR

CMOS header signals

CMOS	Jumper Header location
Clear RTC	Pin1 and Pin2
Clear CMOS	Pin2 and Pin3

2.3.2AT/ATX Mode Jumper

The BIOS security (CMOS Clear) header must be 1x3, 2.54mm pitch and colored black, with an extended grip jumper colored yellow. Board must power up to one of three states per setting of the jumper, as shown in below table.



AT/ATX mode header pin-out

Pin	Signal Name
1	PU 1K
2	SIO_AT_L_ATX_H_SET
3	PD 1K

AT/ATX mode header signals

AT/ATX	Jumper Header location
Default – ATX mode	Pin2 and Pin3
Auto PWR ON – AT mode	Pin1 and Pin2

2.3.3eDP/LVDS Backlight Voltage Power Jumper Setting at INV_PWR1

location

eDP/LVDS panel connector must be validated to support maximum current rating for backlight inverter power at 5V and 12V.

- Output voltage for panel power jumper header 3x1 pins header between 5V and 12V (default) by a 3x1, 2.54mm pitch header capable of 3A per pin and colored red with black jumper,



Panel back Light voltage power selection header

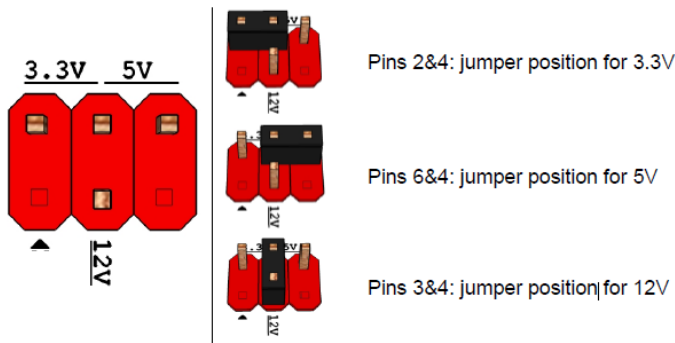
Pin	Signal	Description
1	VCC	5V
2	BKLT_PWR	5V/12V
3	12V	12V (default)

eDP/LVDS panel VDD voltage power jumper setting at LCD_PWR1 location

eDP/LVDS panel connector must be validated to support maximum current rating for LCD panel power at 3.3V, 5V and 12V

- Output voltage for LCD panel at eDP connector pins 18-21 must be selectable between 3.3V (eDP default), 5V (LVDS default) and 12V by a 3x2 NP1_NP5, 2.54mm pitch header capable of 3A per pin and colored red with black jumper

Panel LCD voltage power selection header pin-out



Panel LCD VDD voltage power selection header

Pin	Signal	Description
1	Key	No pin
2	3.3V	3.3V (eDP default)
3	12V	12V
4	LCD_VCC	Send voltage to connector (3.3V / 5V /12V)
5	Key	No pin
6	5V	5V (LVDS default)

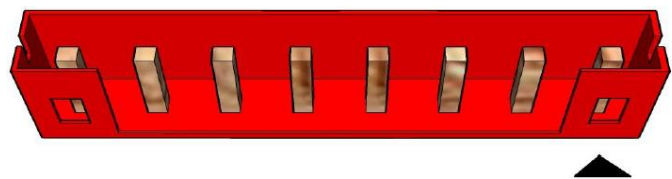
Panel LCD voltage power selection header pin-out

2.3.4eDP/LVDS FPD 8pin connector at PNL_FPD_PWR1 location

Board must provide separate backlight inverter connectivity via an “FPD Brightness” connector. 8-pin FPD brightness connector must be 1x8 shrouded, 2.00mm pitch with 2A rating per pin and colored red, as shown in Figure 5 (part number reference: Foxconn HF5508). Connector must provide backlight inverter control signals (same as routed to LVDS and eDP connectors, for customer convenience) as well as panel brightness control signals.

TF-CON;HDR,SBU,Oregon,8Pin,4 Walls,MA,2.0mm,RED,ST,TIN 100u",PA66(Nylon 66),For Marshall Town only

Aquatech Corporation	L-WA108083R74
GRAND-TEK TECHNOLOGY CO., LTD.	RWA-411087-R00
Joint Tech Electronic Industrial Co.,Ltd.	A2001WV-F-08PR6RT1NY7G



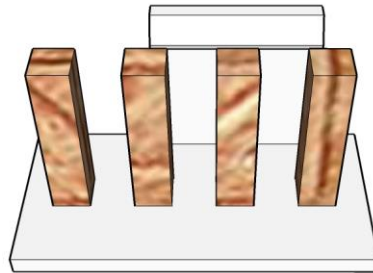
8-pin FPD power connector

Pin	Signal	Description
1	BKLT_EN	Backlight enable
2	BKLT_PWM	Backlight control
3	BKLT_PWR (5V/12V)	Backlight inverter power
4	BKLT_PWR (5V/12V)	Backlight inverter power
5	BKLT_GND	Ground (shared)
6	BKLT_GND	Ground (shared)
7	NC	
8	NC	

8-pin FPD power connector pin-out

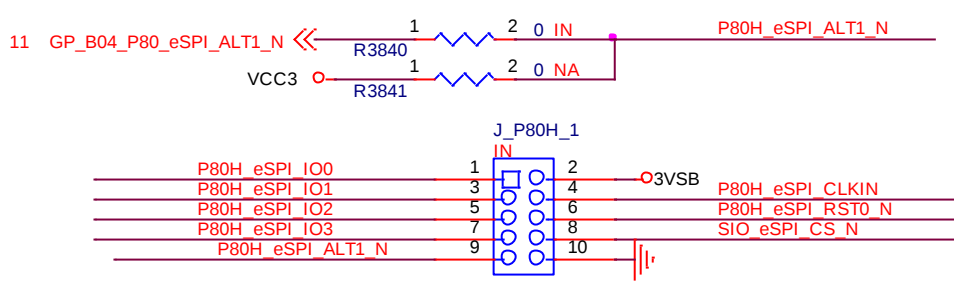
2.3.5 CPU Fan Header

Pin	Signal	Description
1	GND	GND
2	12V	FAN power
3	CPU_FAN_CTRL	Output
4	CPUFANIN	Input



-
- 4Pin FAN connector pin-out

2.3.6eSPI debug header for eSPI P80_LED function at J_P80H_1 location



Pin	Signal Name	Pin	Signal Name
1	P80H_eSPI_IO0	2	3VSB
3	P80H_eSPI_IO1	4	P80H_eSPI_CLKIN
5	P80H_eSPI_IO2	6	P80H_eSPI_RST0_N
7	P80H_eSPI_IO3	8	SIO_eSPI_CS_N
9	P80H_eSPI_ALT1_N	10	GND

TF-CON;HDR,SBU,5Pin*2,MA,2.0mm,BLACK,ST,Gold Flash,PA6T(Nylon 6T)

SUPERIOR TECH CO.,LTD.	PHDD-SS010G1BBONE-B166
---------------------------	------------------------

2.4 Power Management

2.4.1Wake Events

Board must support the wake-up events listed as below.

Wake-Up Event	From ACPI State	Comments
Power button	S3, S4, S5, Deep_S5	
RTC alarm	S3, S4, S5	monitor to remain in sleep state Notes: Can't wake at WOL disable
LAN	S3, S4, S5	"S5 WOL after G3" must be supported; monitor to remain in sleep state
USB	S3	
PCIe	S3, S4, S5	via WAKE; monitor to remain in sleep state
PCI	N/A	N/A
CIR	N/A	N/A
PS2	N/A	N/A

Wake-up events reference table

Notes: S4 implies OS support only

PD10EHI

**BIOS SETUP
SPEC**

1 Main Page

Aptio Setup - AMI

MainAdvancedEvent LogsSecurityBootSave & Exit

BIOS Information

BIOS VendorAmerican Megatrends

Core Version5.19

CompliancyUEFI 2.7; PI 1.6

BIOS VersionD8230T28

Build Date12/16/2020

Processor Information

NameElkhartLake ULX

TypeGenuine Intel(R) CPU

0000 @ 1.80GHZ

Microcode Revision8

Total Memory8192 MB

Memory Data Rate2400 MHz

ME FW Version15.40.0.2066

System Date[Wed 10/27/2021]

System Time[10:09:16]

Set the Date. Use Tab to switch between Date elements.

Default Ranges:

Year: 1998-9999

Months: 1-12

Days: Dependent on month

Range of Years may vary.

++: 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	BIOS Vender
Default Value	American Megatrends
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Core Version
Default Value	5.19
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 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.

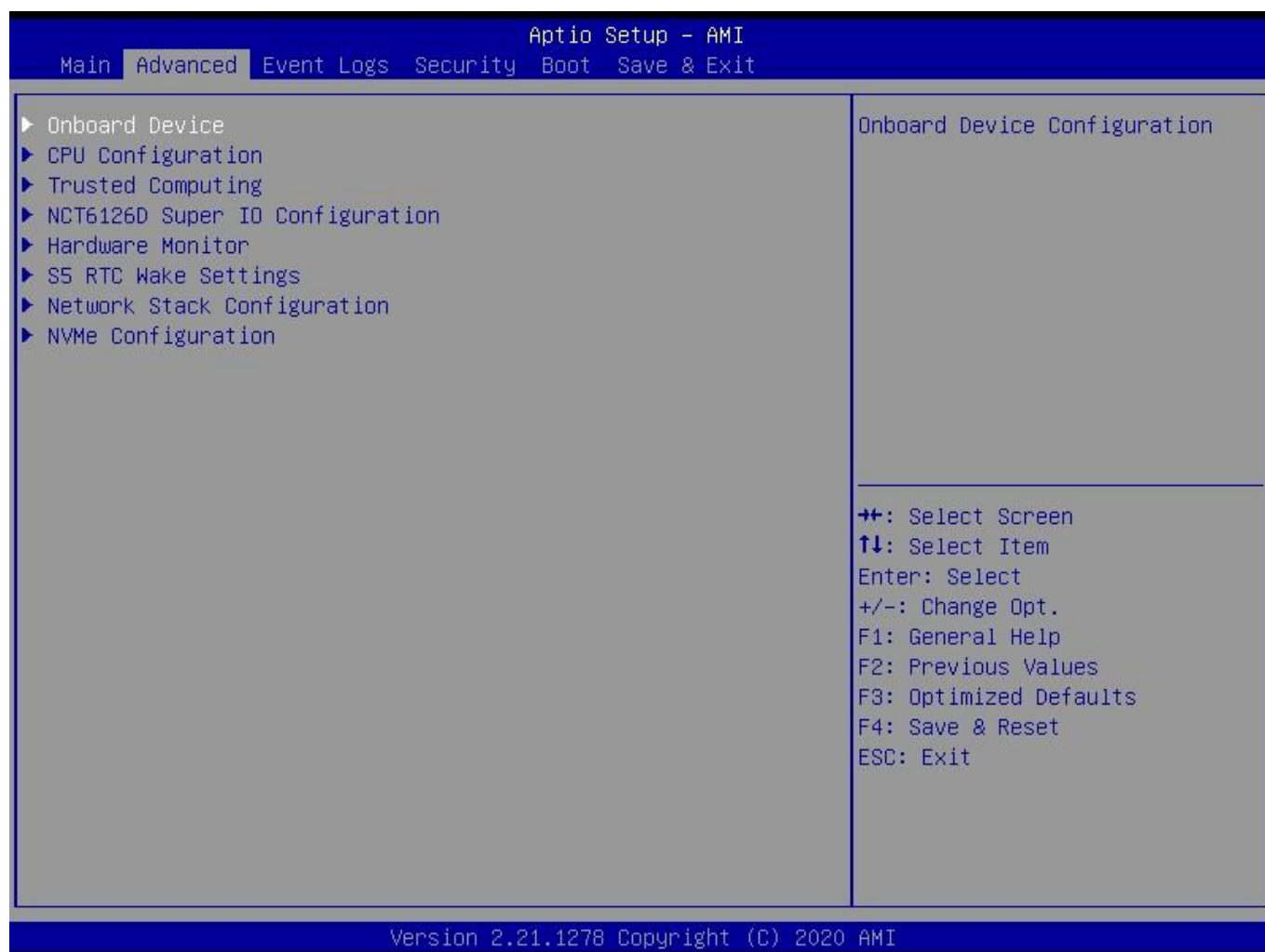
Field Name	Memory Frequency
Value	Display the installed memory frequency.
Comment	This field is not selectable. There is no help text associated with it.

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	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 : 2005-2099
Help	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 2005-2099 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	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	Hardware Monitor
Help	Monitor hardware status
Comment	Press Enter when selected to go into the associated Sub-Menu.

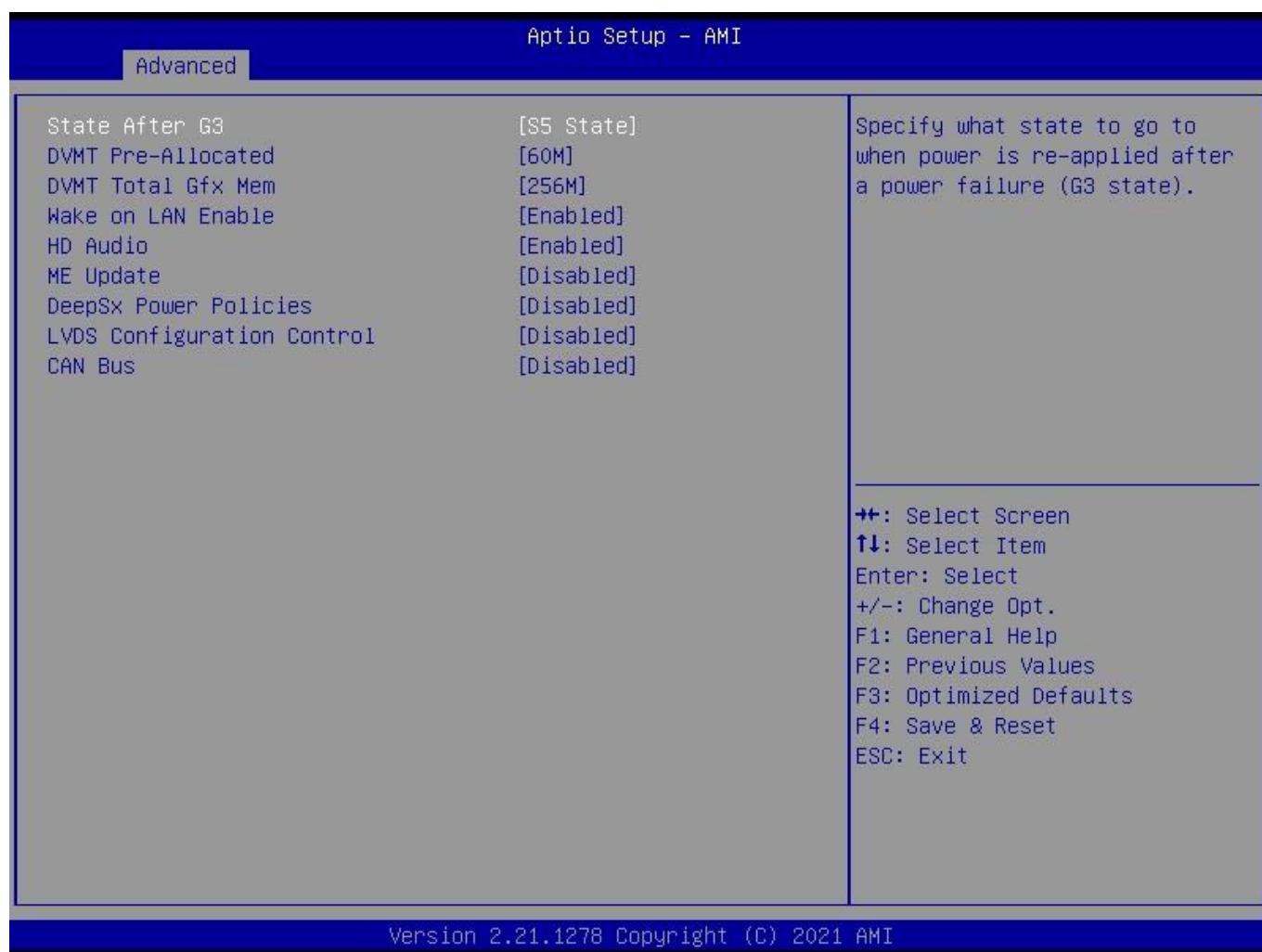
Field Name	S5 RTC Wake Settings
Help	Enable system to wake from S5 using RTC alarm
Comment	Press Enter when selected to go into the associated Sub-Menu.

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



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.

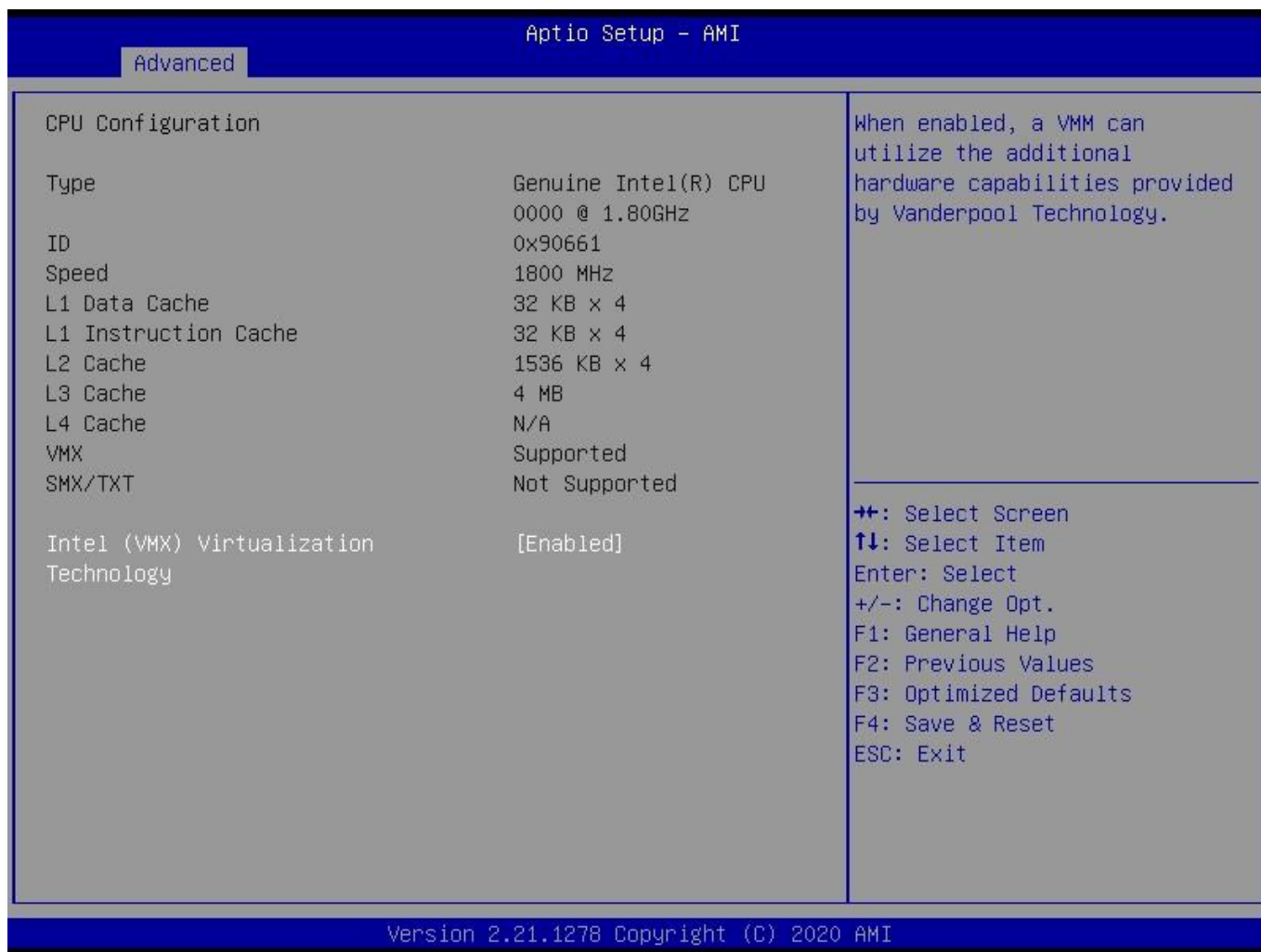
Field Name	DeepSx Power Policies
Default Value	[Disabled]
Possible Value	Enabled in S4-S5 Disabled
Help	Configure the DeepSx Mode configuration.

Field Name	LVDS Configuration Control
Default Value	[Disable]
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 Disable
Help	Sets LVDS connectivity.

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

Field Name	CAN Bus
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	Enable/Disable CAN Bus

2.2 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	Intel (VMX) Virtualization Technology
Default Value	[Disabled]
Possible Value	Enabled Disabled
Help	When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

2.3 Trusted Computing

Aptio Setup - AMI

Advanced

TPM 2.0 Device Found Firmware Version: Vendor: 600.15 INTC Security Device Support [Enable] Pending operation [None]	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.
---	---

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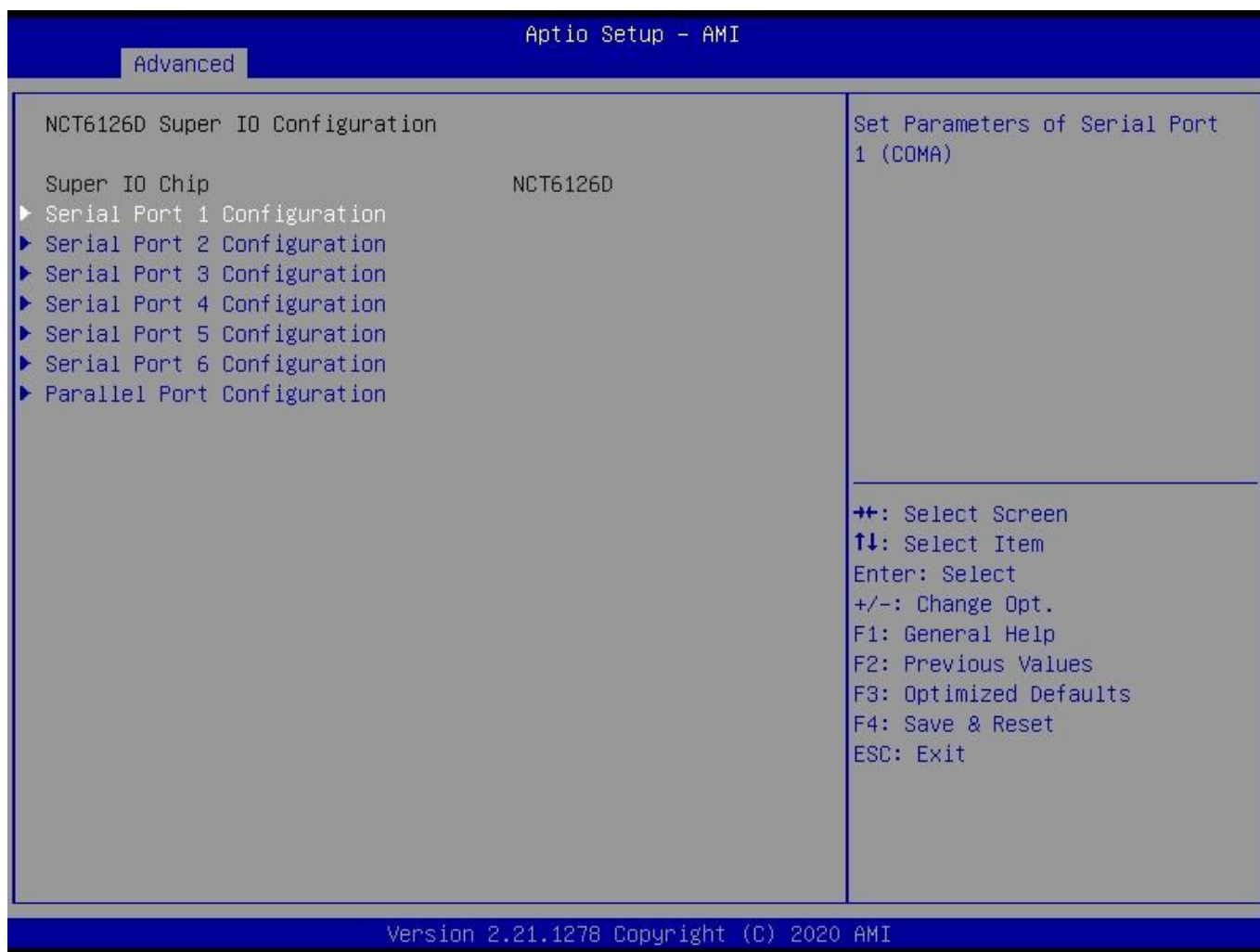
Field Name	Firmware Version
Default Value	TPM module version.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Vender
Default Value	TPM module vender 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.

2.4 NCT6126D Super IO Configuration



Field Name	Serial Port 1 Configuration
Help	Set Parameters of Serial Port 1 (COMA)
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Serial Port 2 Configuration
Help	Set Parameters of Serial Port 2 (COMB)
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Serial Port 3 Configuration
Help	Set Parameters of Serial Port 3 (COMC)
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Serial Port 4 Configuration
Help	Set Parameters of Serial Port 4 (COMD)
Comment	Press Enter when selected to go into the associated Sub-Menu.

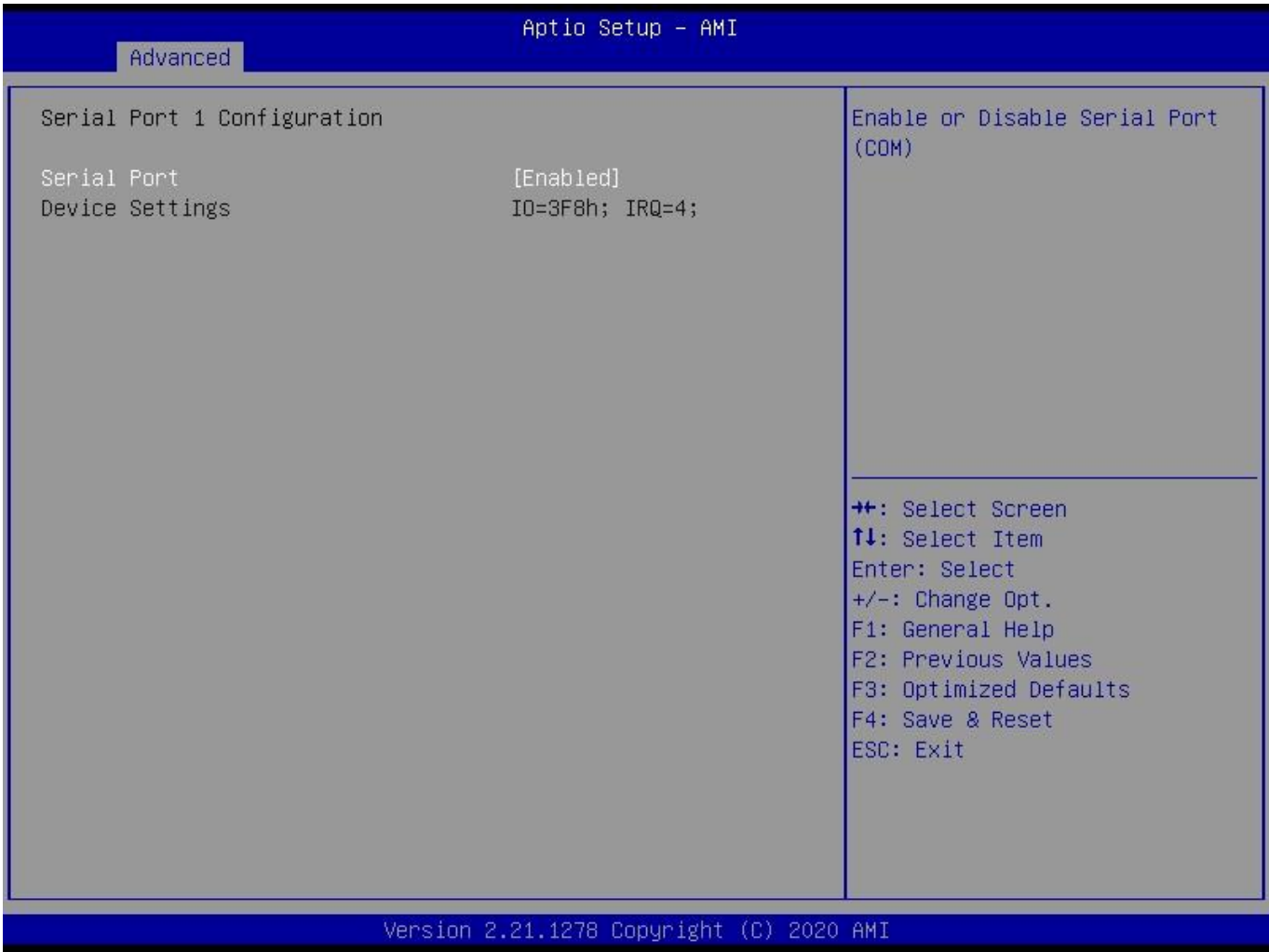
Field Name	Serial Port 5 Configuration
Help	Set Parameters of Serial Port 4 (COME)
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Serial Port 6 Configuration
------------	------------------------------------

Help	Set Parameters of Serial Port 4 (COMF)
Comment	Press Enter when selected to go into the associated Sub-Menu.

Field Name	Parallel Port Configuration
Help	Set Parameters of Parallel Port (LPT/LPTE)
Comment	Press Enter when selected to go into the associated Sub-Menu.

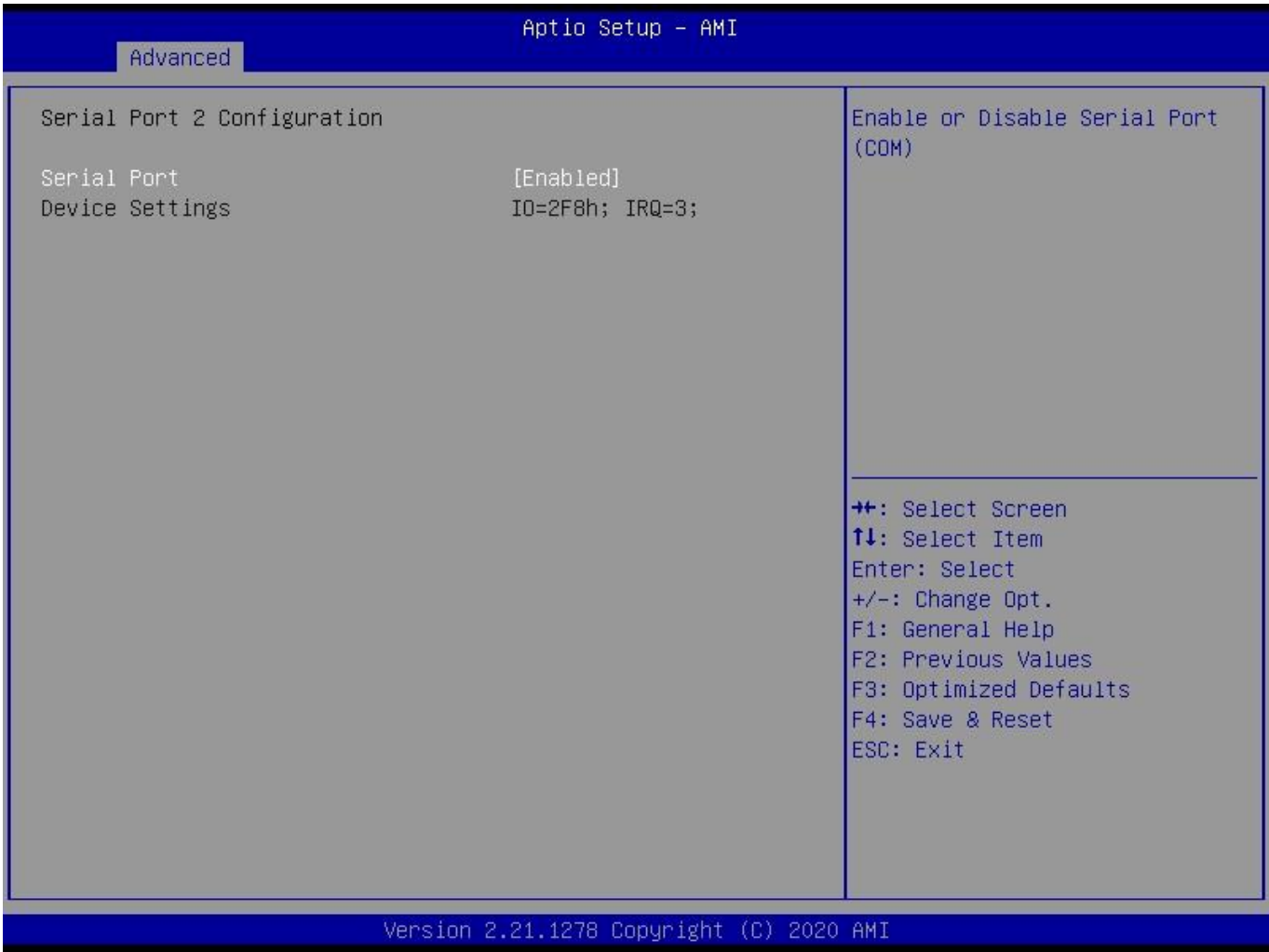
2.4.1 Serial Port 1 Configuration



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 COM1 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

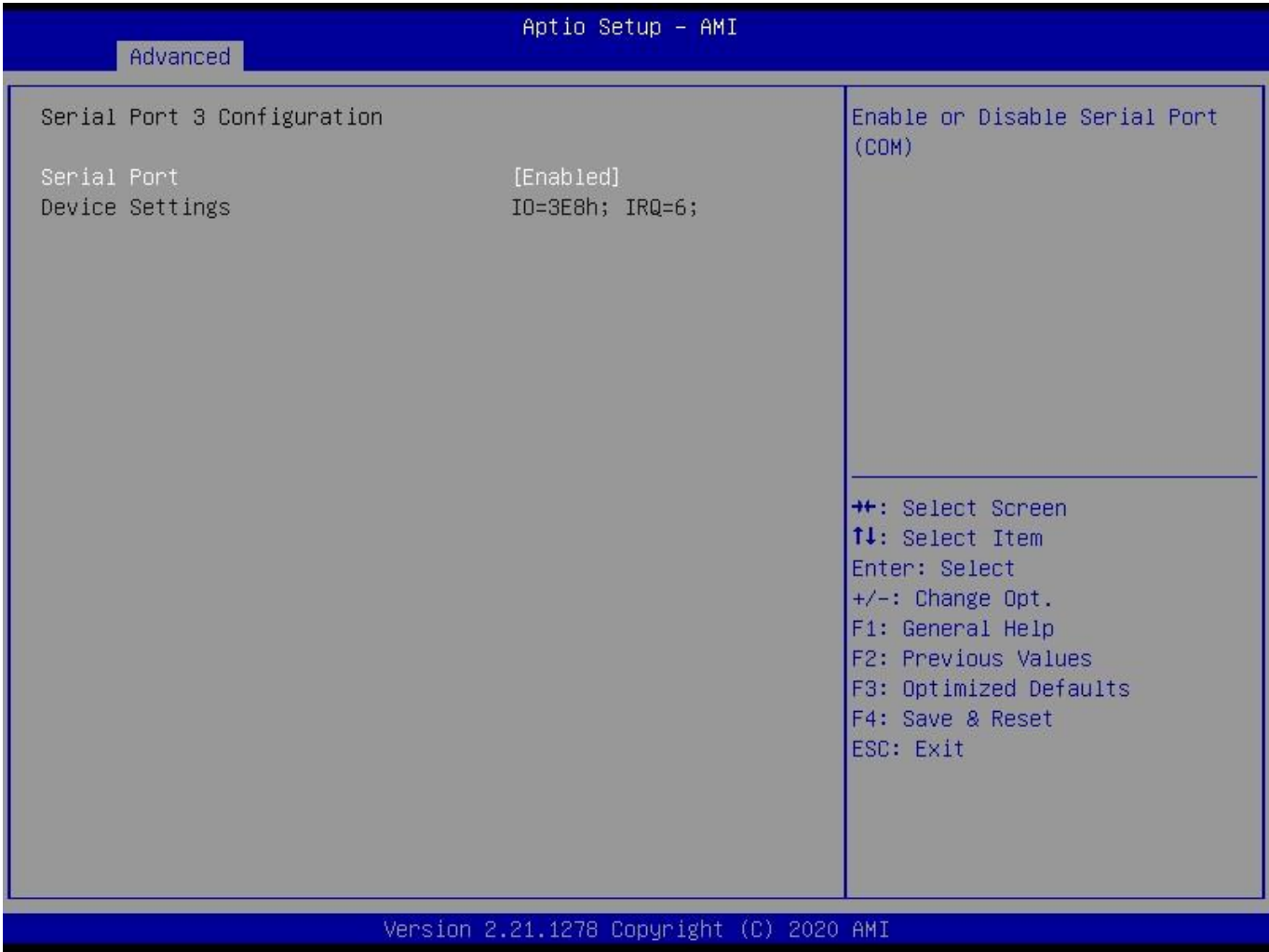
2.4.2 Serial Port 2 Configuration



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



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.

2.4.4 Serial Port 4 Configuration

Aptio Setup - AMI

Advanced

Serial Port 4 Configuration

Serial Port
Device Settings

[Enabled]
IO=2E8h; IRQ=7;

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 COM4 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Change Settings
Default Value	[Auto]
Possible Value	Auto IO=220h; IRQ=7; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=220h; IRQ=3,4,5,6,7,9,10,11,12; IO=228h; IRQ=3,4,5,6,7,9,10,11,12;
Help	Select an optimal settings for Super IO Device

2.4.5 Serial Port 5 Configuration

Aptio Setup - AMI

Advanced

Serial Port 5 Configuration

Serial Port [Enabled]

Device Settings IO=220h; IRQ=11;

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 COM4 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

2.4.6 Serial Port 6 Configuration

Aptio Setup - AMI	
Advanced	
Serial Port 6 Configuration	
Serial Port	[Enabled]
Device Settings	ID=228h; IRQ=10;
Mode Configuration	[3T/5R RS232]
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	

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 COM4 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	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	Configure serial port as RS232/RS422/RS485.

2.4.7 Parallel Port Configuration

Aptio Setup - AMI

Advanced

Parallel Port Configuration

Parallel Port

[Enabled]

Device Settings

IO=378h; IRQ=5;

Device Mode

[STD Printer Mode]

Enable or Disable Parallel Port (LPT/LPTE)

↔: Select Screen

↑↓: Select Item

Enter: Select

+/-: Change Opt.

F1: General Help

F2: Previous Values

F3: Optimized Defaults

F4: Save & Reset

ESC: Exit

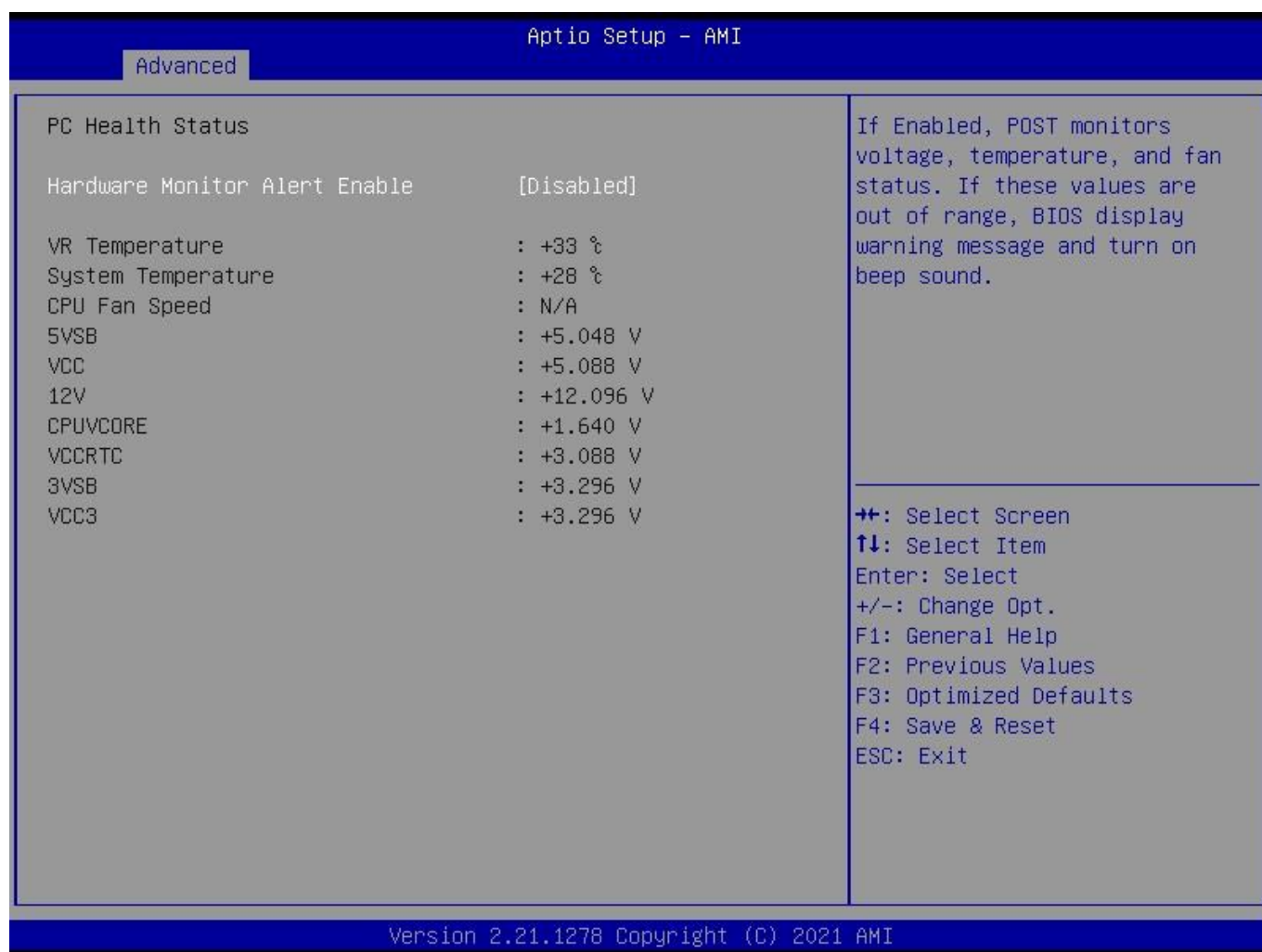
Version 2.21.1278 Copyright (C) 2020 AMI

Field Name	Parallel Port
Default Value	[Enabled]
Possible Value	Disabled Enabled
Help	Enable or Disable Parallel Port(LPT/LPTE)

Field Name	Device Settings
Default Value	Device Super IO COM4 Address and IRQ.
Comment	This field is not selectable. There is no help text associated with it.

Field Name	Device Mode
Default Value	[STD Printer Mode]
Possible Value	SPP Mode EPP-1.9 and SPP Mode EPP-1.7 and SPP Mode ECP Mode ECP and EPP 1.9 Mode ECP and EPP 1.7 Mode
Help	Change the Printer Port mode.

2.5 Hardware Monitor

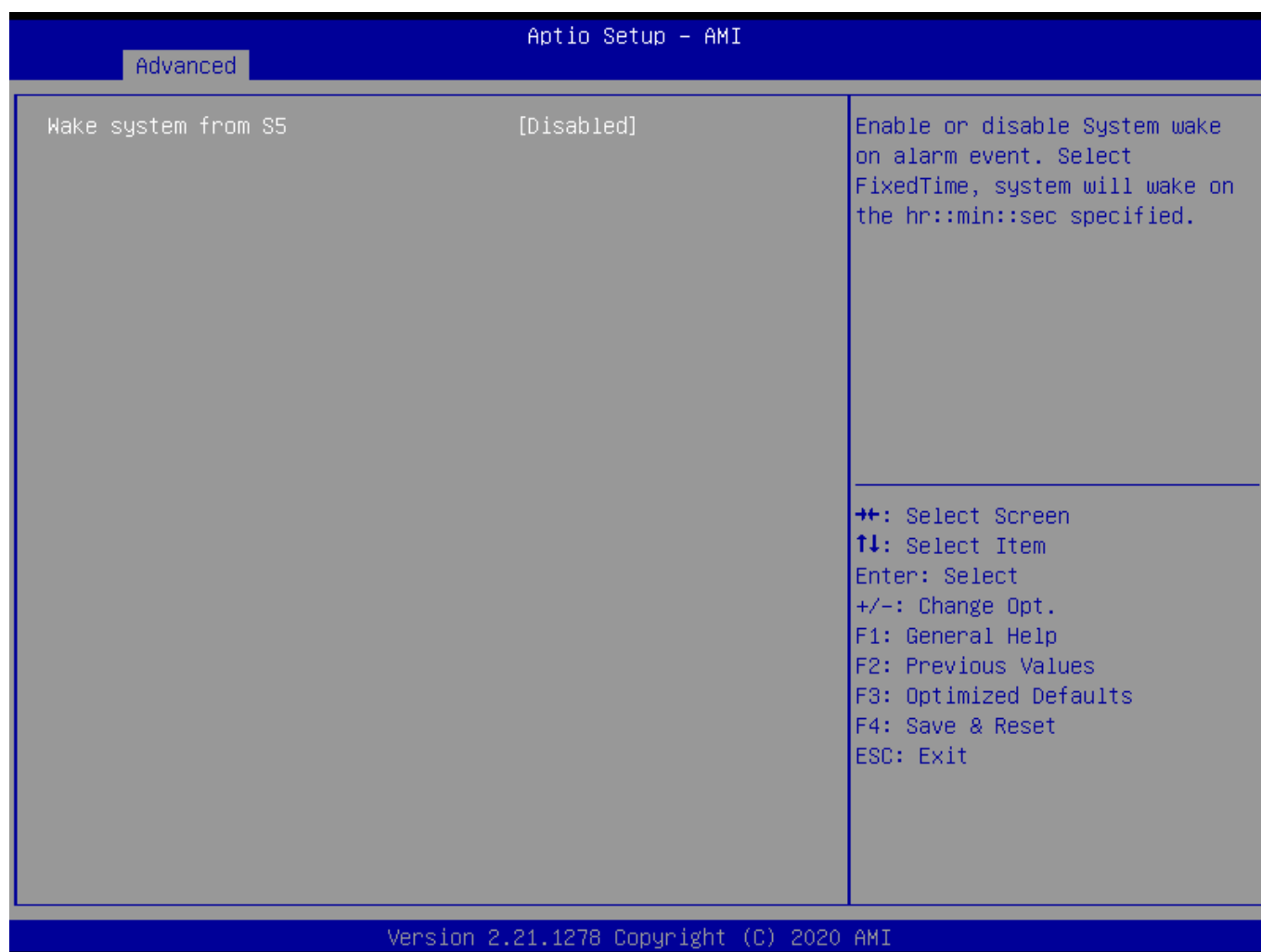


Type	Range
VR Temperature	-20 ~ 120 °C
System Temperature	-20 ~ 120 °C
CPU Fan Speed	There are many kinds of the fan could be installed into the system, so we could only set 0 RPM for the failed fan speed, and there is also no high RPM limitation.
5VSB	4.75V~5.25V (Pin 100 VIN0 => Vref = 1V)
VCC	4.75V~5.25V (Pin 99 VIN1 => Vref = 1V)
12V	11.4V~12.6V (Pin 98 VIN2 => Vref = 1V)
CPUVCORE	0V~2V (Pin 101 CPUCORE)
VCCRTC	2V~3.465V (Pin 74 VBAT)
3VSB	3.135V~3.465V (Pin 97 AVSB)
VCC3	3.135V~3.465V(Pin 12 3VCC)

Field Name	Hardware Monitor Alert Enable
Default Value	[Disabled]
Possible Value	Enabled Disabled

Help	If Enabled, POST monitors voltage, temperature, and fan status. If these values are out of range, BIOS display warning message and turn on beep sound.
------	--

2.6 S5 RTC Wake Settings



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



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	[Disabled]
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	[Disabled]
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.

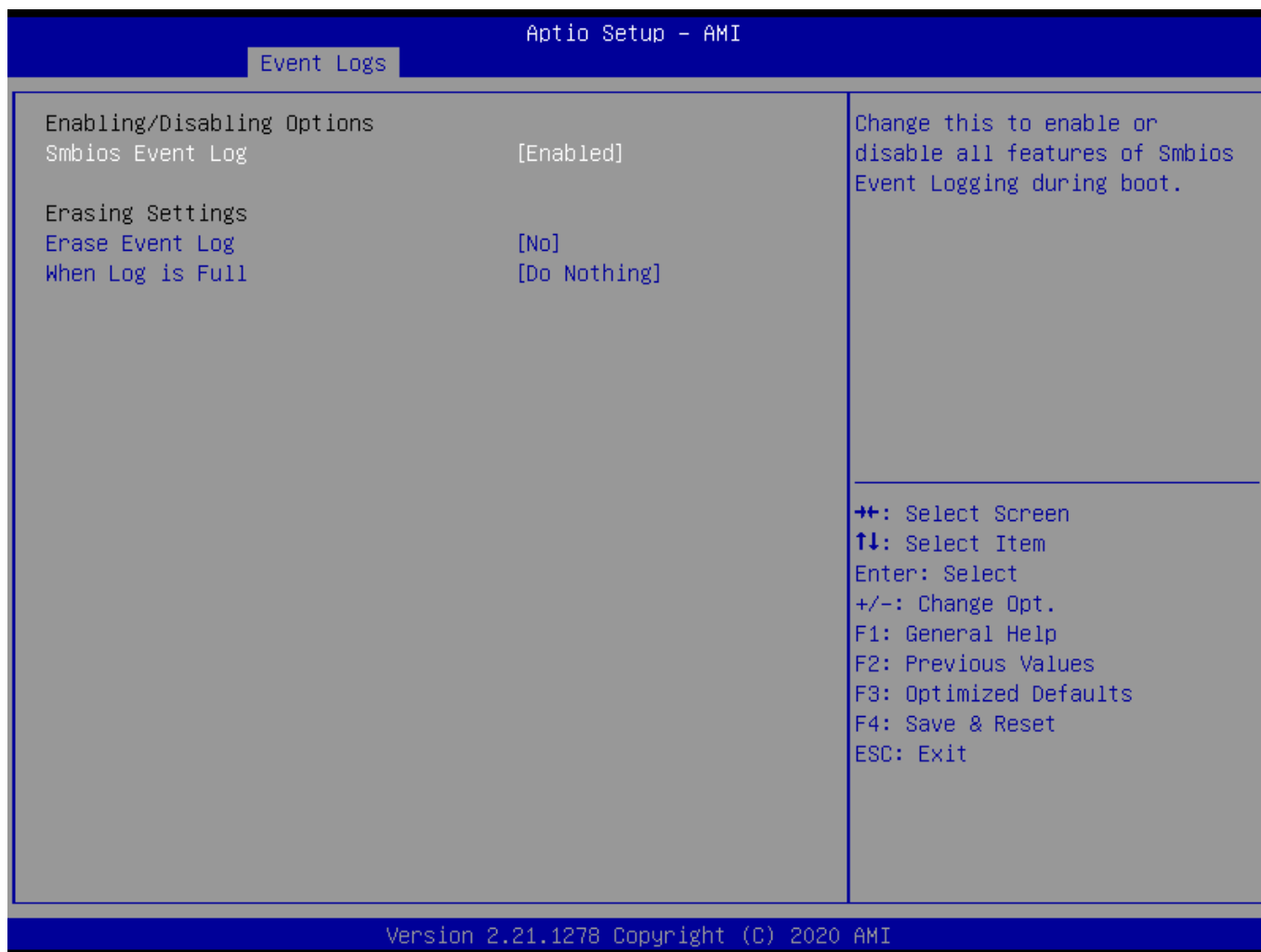
3 Event Logs



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

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

3.1 Change Smbios Event Log Settings



Field Name	Smbios Event Log
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Change this to enable or disable all feature of Smbios 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 Smbios 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 Smbios Event Log.

3.2 View Smbios Event Log

Aptio Setup - AMI					
Event Logs					
DATE	TIME	ERROR CODE	SEVERITY	COUNT	DESCRIPTION
06/04/20	06:35:10	Smbios 0x16	N/A	N/A	Log Area Reset and Count is applicable only for Multi-Events
					⚡ : Select Screen ↑↓ : Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.21.1278 Copyright (C) 2020 AMI					

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 - AMI

Main Advanced Event Logs **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:

P0:ST2000NM0008-2F3100

► 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

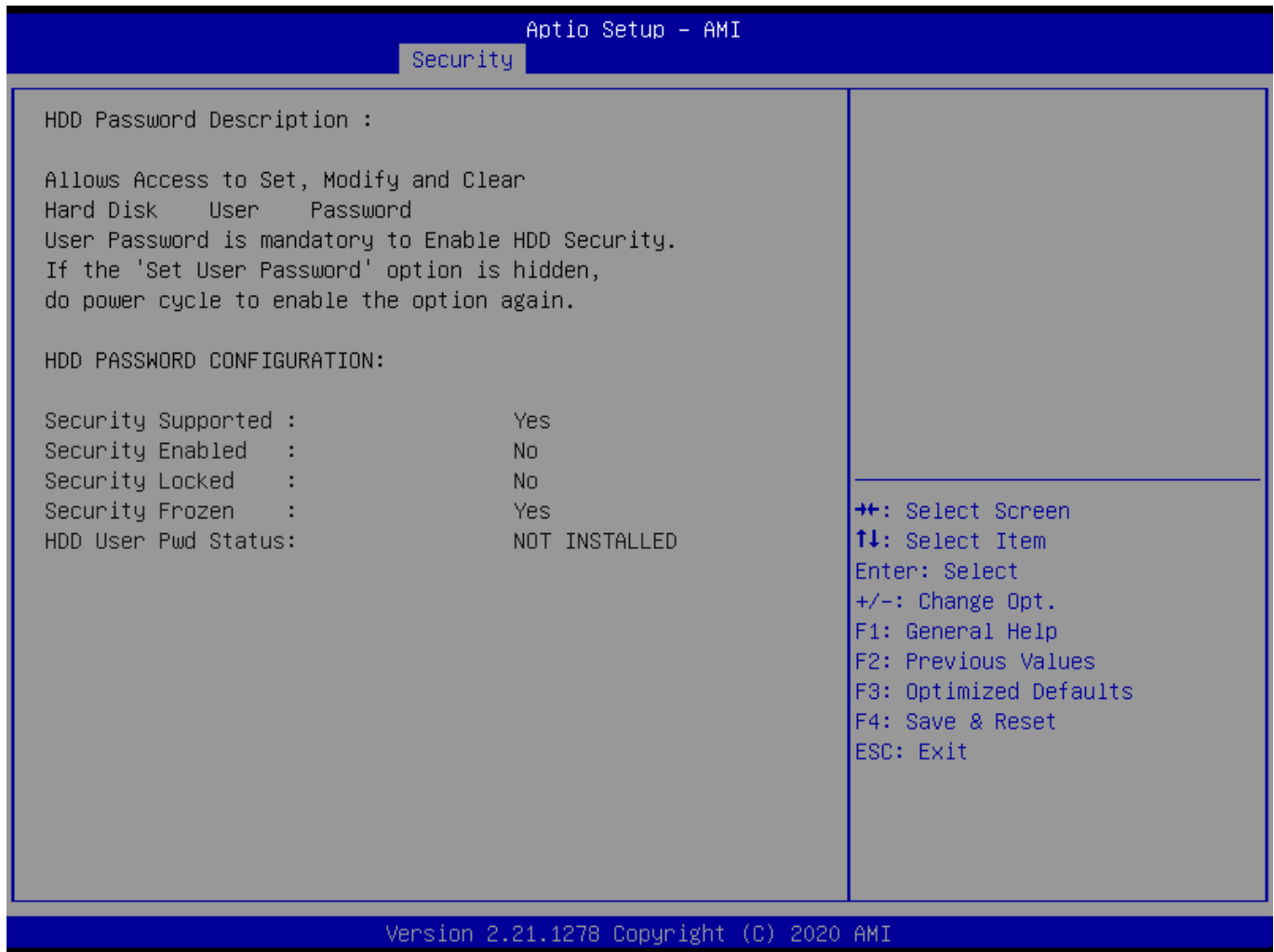
Field Name	User Password
Help	Set User Password.

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



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

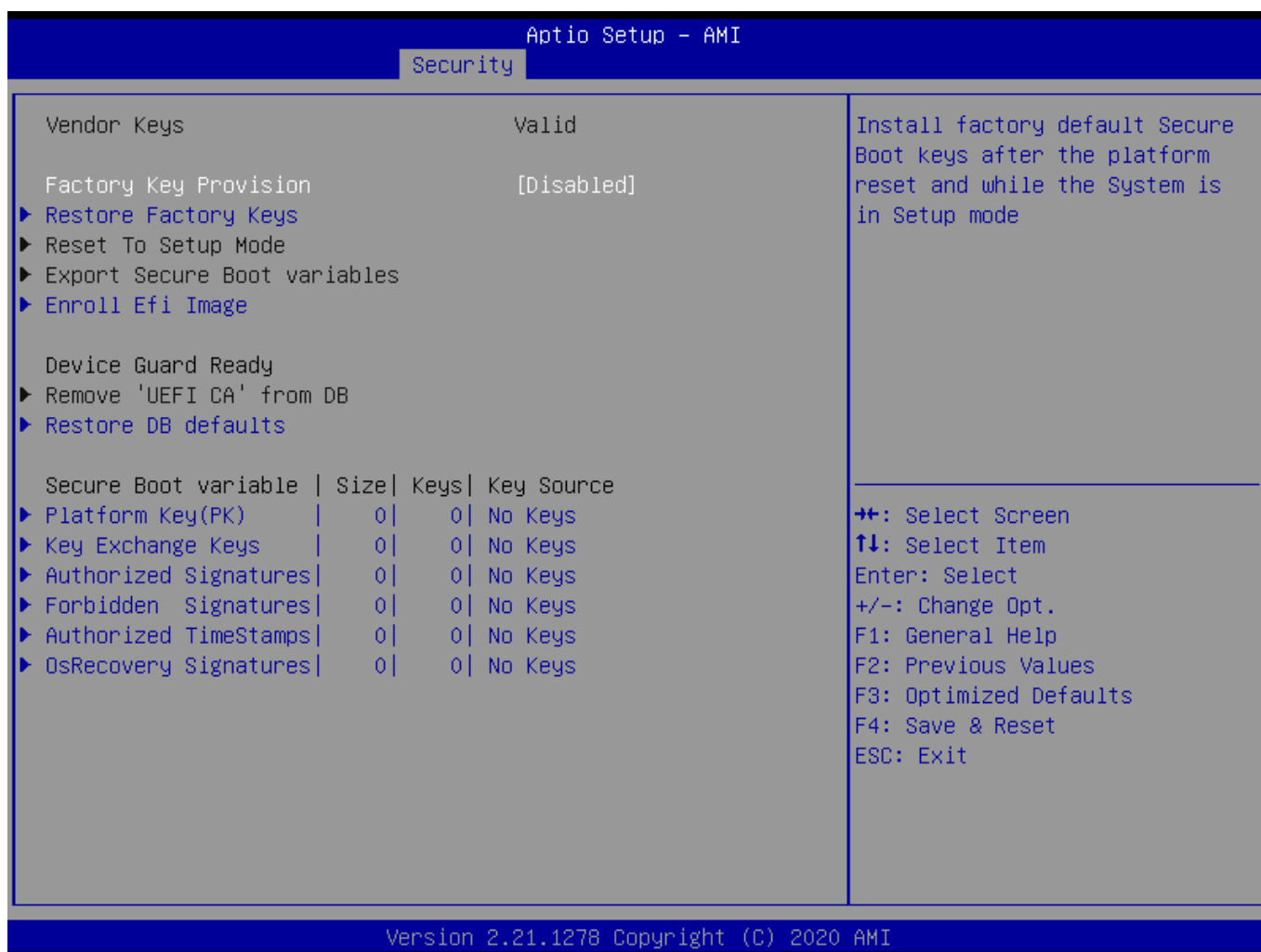


Field Name	Secure Boot
Default Value	[Enabled]
Possible Value	Enabled Disabled
Help	Secure Boot feature is Active if Secure Boot is Enabled, Platform Key(PK) is enrolled and the System is in User mode. The mode change requires platform reset

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
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



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
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Help	Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in Authorized Signature database (db)
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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.

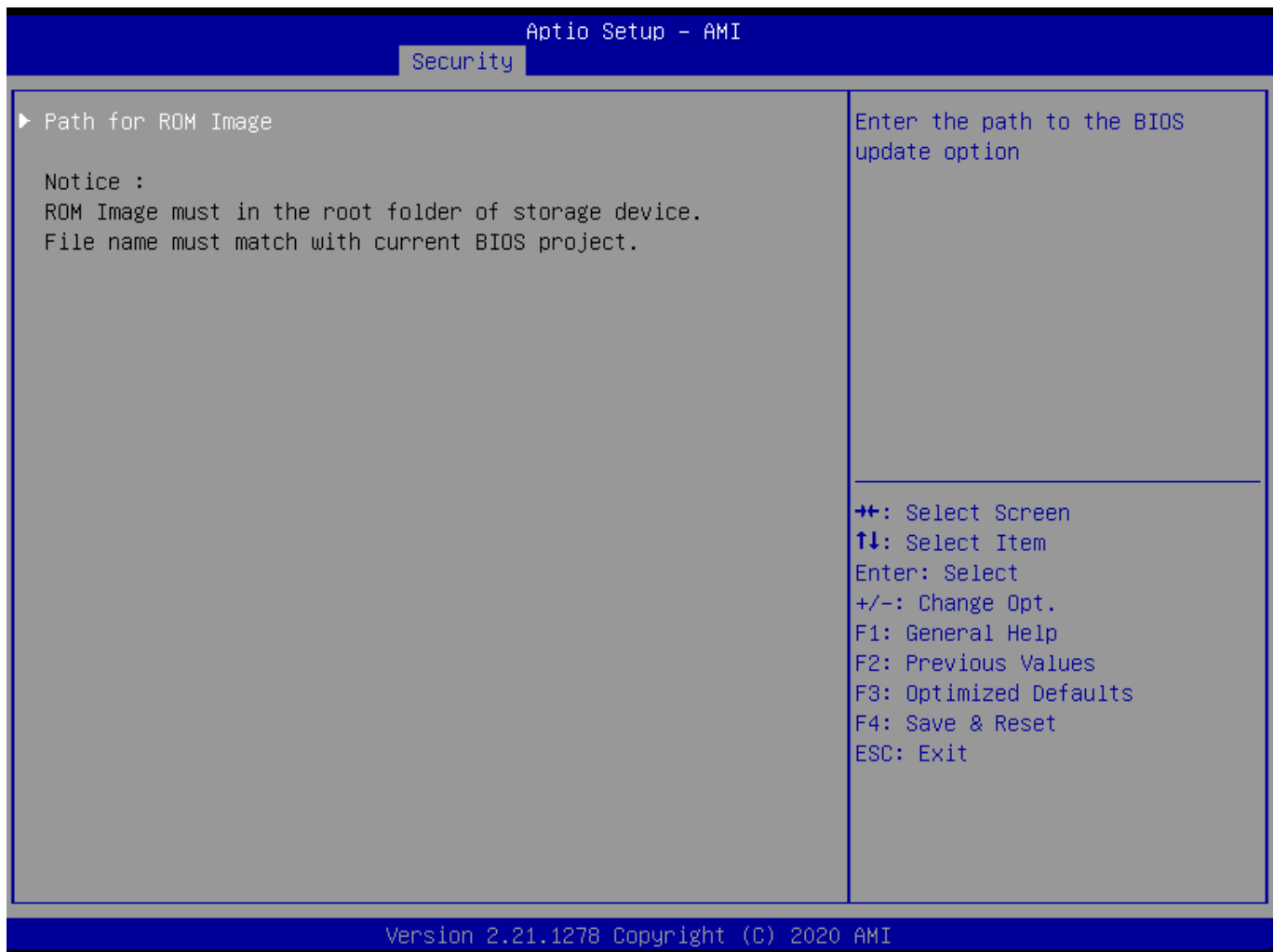
Field Name	Forbidden Signatures
Default Value	Size:0, Keys:0, Key source: No Keys
Help	Enroll Factory Defaults or load certificates from a file: 1.Public Key Certificate: a)EFI_SIGNATURE_LIST b)EFI_CERT_X509 (DER) c)EFI_CERT_RSA2048 (bin) d)EFI_CERT_SHAXXX 2.Authenticated UEFI Variable 3.EFI PE/COFF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

comment	Press Enter when selected to go into the associated Sub-Menu.
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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 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	Event Logs
Security	Boot	Save & Exit
Boot Configuration Setup Prompt Timeout 1 Bootup NumLock State [On]		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 [CD/DVD] Boot Option #3 [USB CD/DVD] Boot Option #4 [Hard Disk] Boot Option #5 [USB Key] Boot Option #6 [USB Hard Disk] Boot Option #7 [NVME] Boot Option #8 [Network]		
▶ UEFI Hard Disk Drive BBS Priorities ▶ 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	[On]
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	[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	[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 #4
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 #5
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 #6
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 #7
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 #8
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 UEFI 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 UEFI 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 UEFI 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 UEFI 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 UEFI 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 UEFI 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 UEFI NVME Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

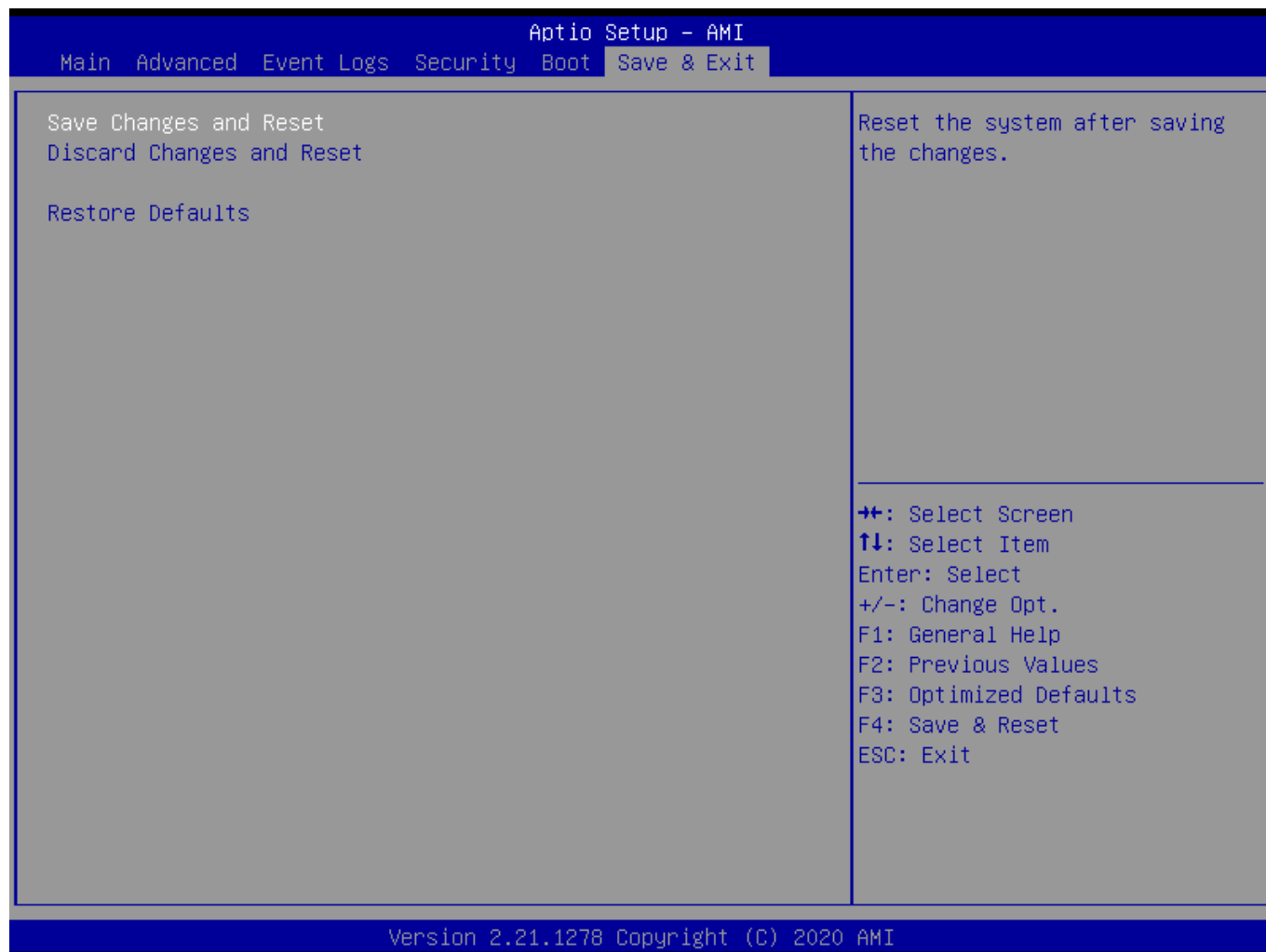
Field Name	UEFI NETWORK Drive BBS Priorities
Help	Specifies the Boot Device Priority sequence from available UEFI NETWORK Drives.
Comment	Press Enter when selected to go into the associated Sub-Menu.

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

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.