



COM-HPC®

PCOM-B800GT

User's Guide R0.3

Revision History

Rev.	Note	Date
R0.1	Preliminary	2024/2
R0.2	Add D-2800 Support	2024/3
R0.3	Mass production release adjust ordering information	2024/12

Contents

1	Introduction	8
1.1	PCOM-B800GT SKU List	9
2	Block Diagram	11
3	Specifications	12
3.1	Supported Operating Systems.....	14
3.2	Windows OS Driver	15
3.3	Electrical Characteristics	16
3.4	Power Consumption	19
3.5	Mechanical Dimensions.....	20
3.6	8x DIMM slot design	23
3.7	Environmental Specifications.....	24
3.8	Ordering Guide	25
4	Thermal Solution.....	26
5	Pin out Tables	27
6	BIOS Setup Items	36
6.1	Entering Setup -- Launch System Setup	37
6.2	Main.....	38
6.3	Configuration	40
6.4	Security.....	80
6.5	Boot	82
6.6	Save & Exit.....	84
7	System Resources.....	86
8	BIOS/EC Update.....	87
9	PORTWELL Software Tool.....	93
10	Packaging Information.....	94
11	Industry Specifications	95

List of Tables

Table 1 PCOM-B800GT SKU10

Table 2 PCOM-B800GT SPEC.....13

Table 3 OS Support list.....14

Table 4 Electrical characteristics16

Table 5 PCOM-B800GT Power Consumption19

Table 6 Environmental Specifications.....24

Table 7 Ordering Guide - PCOM-B800GT25

Table 8 Ordering Guide - Accessory.....25

Table 9 Pin out description35

Table 10 System Resources.....86

Table 11 Packaging information.....94

List of Figures

Figure 1 Block Diagram..... 11

Figure 2 Input Power Sequencing17

Figure 3 PWR_OK signal brief diagram18

Figure 4 Mechanical Dimension - Top20

Figure 5 Mechanical Dimension - Bottom.....21

Figure 6 8x DIMM slot design.....23

Figure 7 Cooler mechanical dimension26

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1 Introduction

The PCOM-B800GT is a COM-HPC® Server Size E (200mm x 160 mm) module based on Intel® Xeon® D-2700 and D-2800 family processors. In this architecture, it can provide up to 22 cores / 44 threads processors with a TDP ranging from 65W to 135W. Additionally, it offers up to 8x 10G KR ports and up to 100 Gbps of cryptography offload with Intel® QuickAssist Technology (Intel® QAT). It also extends 32x PCIe Gen4 and 16x PCIe Gen3 lanes, 4x USB 3.2 Gen1 ports, and 2x SATA III ports. Selected SKUs support a wide temperature range.

The PCOM-B800GT offers a next-generation high-performance computing architecture, providing an upgrade from legacy COM Express. Its more powerful computing capabilities, increased memory capacity, and enhanced high-speed I/O connectivity make it ideal for applications in edge AI computing servers, software-defined networks, and network security. These applications require lower power consumption while supporting high computing performance and communication throughput.

1.1 PCOM-B800GT SKU List

Series	PCOM-B800GT D-2700 Series				
Ordering P/N	AB1-3L51	AB1-3P11	AB1-3P12	AB1-3P13	AB1-3P14
CPU Specifications					
Processor	D-2796TE	D-2775TE	D-2752TER	D-2733NT	D-2712T
# of Cores	20	16	12	8	4
# of Threads	40	32	24	16	8
Cache	30 MB	25 MB	20 MB	15 MB	15 MB
Base Frequency	2.0 GHz	2.0 GHz	1.8 GHz	2.1 GHz	1.9 GHz
Turbo Frequency	2.4 GHz	2.4 GHz	2.1 GHz	2.6 GHz	2.4 GHz
TDP	118 W	100 W	77 W	80 W	65 W
Memory Specifications					
Capacity	Up to 1024GB with 8x LRDIMM				
Speed	2933MHz with LRDIMM				
ECC	Yes				
I/O Specifications					
PCIe	32x PCIe 4.0				
	16x PCIe 3.0				
USB 3.0/2.0	4x				
SATA	2x				
Ethernet	8x 10G KR/4x 25G KR	8x 10G KR/4x 25G KR	4x 10G KR	4x 10G KR	4x 10G KR
	1x 2.5 GbE	1x 2.5 GbE	1x 2.5 GbE	1x 2.5 GbE	1x 2.5 GbE

Series	PCOM-B800GT D-2800 Series					
Ordering P/N	AB1-3S56	AB1-3S57	AB1-3S61	AB1-3S59	AB1-3S60	AB1-3S58
CPU Specifications						
Processor	D-2899NT	D-2896TER	D-2896NT	D-2876NT	D-2843NT	D-2832NT
# of Cores	22	20	20	16	10	8
# of Threads	20	44	40	40	32	20
Cache	30 MB	30 MB	30 MB	20 MB	15 MB	15 MB
Base Frequency	2.20 GHz	2.00 GHz	2.00 GHz	2.00 GHz	2.00 GHz	2.10 GHz
Turbo Frequency	2.8 GHz	2.5 GHz	2.6 GHz	2.5 GHz	2.6 GHz	2.6 GHz
TDP	135 W	110 W	117 W	100 W	80 W	70 W
Memory Specifications						
Capacity	Up to 1024GB with 8x LRDIMM					
Speed	2933MHz with LRDIMM					
ECC	Yes					
I/O Specifications						
PCIe	32x PCIe 4.0 16x PCIe 3.0					
USB 3.0/2.0	4x					
SATA	2x					
Ethernet	8x 10G KR/4x 25G KR 1x 2.5 GbE	8x 10G KR/4x 25G KR 1x 2.5 GbE	8x 10G KR/4x 25G KR 1x 2.5 GbE	8x 10G KR/4x 25G KR 1x 2.5 GbE	4x 10G KR 1x 2.5 GbE	4x 10G KR 1x 2.5 GbE

Table 1 PCOM-B800GT SKU

2 Block Diagram

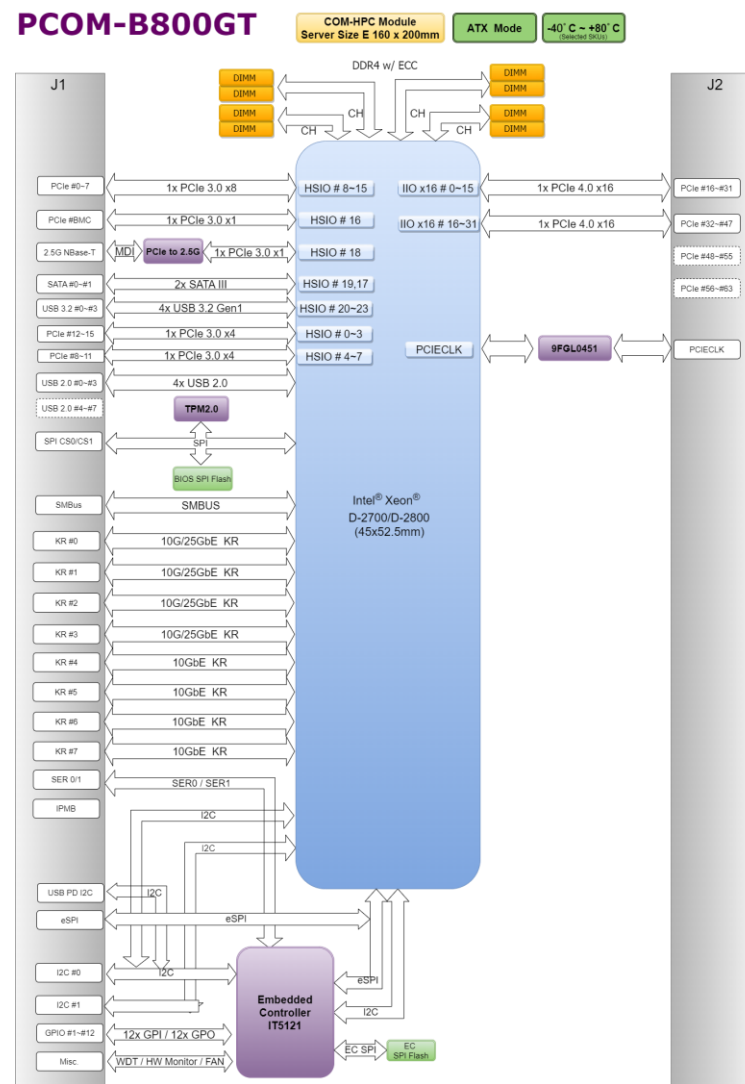


Figure 1 Block Diagram

3 Specifications

Product	➤ PCOM-B800GT
Form Factor	➤ COM-HPC® Server, Size E (200mm X 160mm)
Processor	➤ Intel® Xeon® D-2796TE (100G Ethernet Bandwidth) ➤ Intel® Xeon® D-2775TE (100G Ethernet Bandwidth) ➤ Intel® Xeon® D-2752TER (50G Ethernet Bandwidth) ➤ Intel® Xeon® D-2733NT (50G Ethernet Bandwidth, 50G QAT Bandwidth) ➤ Intel® Xeon® D-2712T (50G Ethernet Bandwidth) ➤ Intel® Xeon® D-2899NT (100G Ethernet Bandwidth, 100G QAT Bandwidth) ➤ Intel® Xeon® D-2896TER (100G Ethernet Bandwidth) ➤ Intel® Xeon® D-2896NT (100G Ethernet Bandwidth, 100G QAT Bandwidth) ➤ Intel® Xeon® D-2876NT (100G Ethernet Bandwidth, 50G QAT Bandwidth) ➤ Intel® Xeon® D-2843NT (50G Ethernet Bandwidth, 50G QAT Bandwidth) ➤ Intel® Xeon® D-2832NT (50G Ethernet Bandwidth, 50G QAT Bandwidth)
BIOS	➤ AMI BIOS
Memory	➤ 8x DIMM DDR4 ➤ Support ECC ➤ Up to 1024GB at 2933MHz with LRDIMM
Graphic	➤ No Support
Ethernet	➤ 1x 2.5 GbE (via Intel® I226LM/IT) ➤ 4x 10G KR (50G SKU) or 8x 10G KR (100G SKU)
Audio	➤ No Support
PCI Express	➤ 32x PCIe Gen 4 Lanes and 16x PCIe Gen 3 Lanes
I/O	➤ 4x USB 3.0 / 2.0

	<ul style="list-style-type: none">➤ 2x SATA➤ 8 bit GPIO (default 4 in / 4 out)➤ I2C / SMBus➤ 2x UART
Hardware Monitors	➤ ITE series Embedded Controller, Voltage, Fan and Temperature
Security	➤ TPM 2.0
Power Management	➤ ACPI 4.0
Environment	<ul style="list-style-type: none">➤ Operating Temperature 0°C ~60°C Extended : -40°C ~+85°C (selected SKU)➤ Storage Temperature -40°C ~+85°C➤ Relative Humidity 5%~95%

Table 2 PCOM-B800GT SPEC

3.1 Supported Operating Systems

The PCOM-B800GT supports the following operating systems.

Vendor	Operating System	Support
Windows	Microsoft Windows 10 IoT Enterprise LTSC	Intel, Microsoft
	Microsoft Windows Server 19H1, 19H2, 20H1	Intel, Microsoft
Linux	Red Hat Enterprise Linux 7.6 or latest	Red Hat
	SUSE Linux Enterpriser Server 12 SP4 or latest	SUSE, Open Source
	SUSE Linux Enterpriser Server 15 SP2 or latest	SUSE, Open Source
	Ubuntu 19.04 or latest	Canonical, Open Source
	Wind River Linux	Wind River
	Yocto Project BSP tool-based embedded Linux(64-bit)	Intel, Open Source
RTOS	Wind River VxWorks	Wind River
VMM	Linux KVM	Open Source
	ACRN	Open Source
	VMWare ESXi	VMware, Open Source
	Microsoft Windows Hyper-V: Windows Server 19H1	Microsoft
	Microsoft Windows Hyper-V: Windows Server 19H2	
	Microsoft Windows Hyper-V: Windows Server 20H1	
	Microsoft Azure	Microsoft

Table 3 OS Support list

Portwell does not endorse/validate/support any specific Linux distribution or entity mentioned on this list.

Portwell recommends customers to work with Linux vendors / open-source communities to find feature list and support model.

3.2 Windows OS Driver

Please download the drivers from Portwell download center website http://www.portwell.tw/support/download_center.php

3.3 Electrical Characteristics

Input voltage	+12V $\pm$ 5%
RTC Battery	From Carrier
Power on mode	ATX Mode

Table 4 Electrical characteristics

- Power Sequence

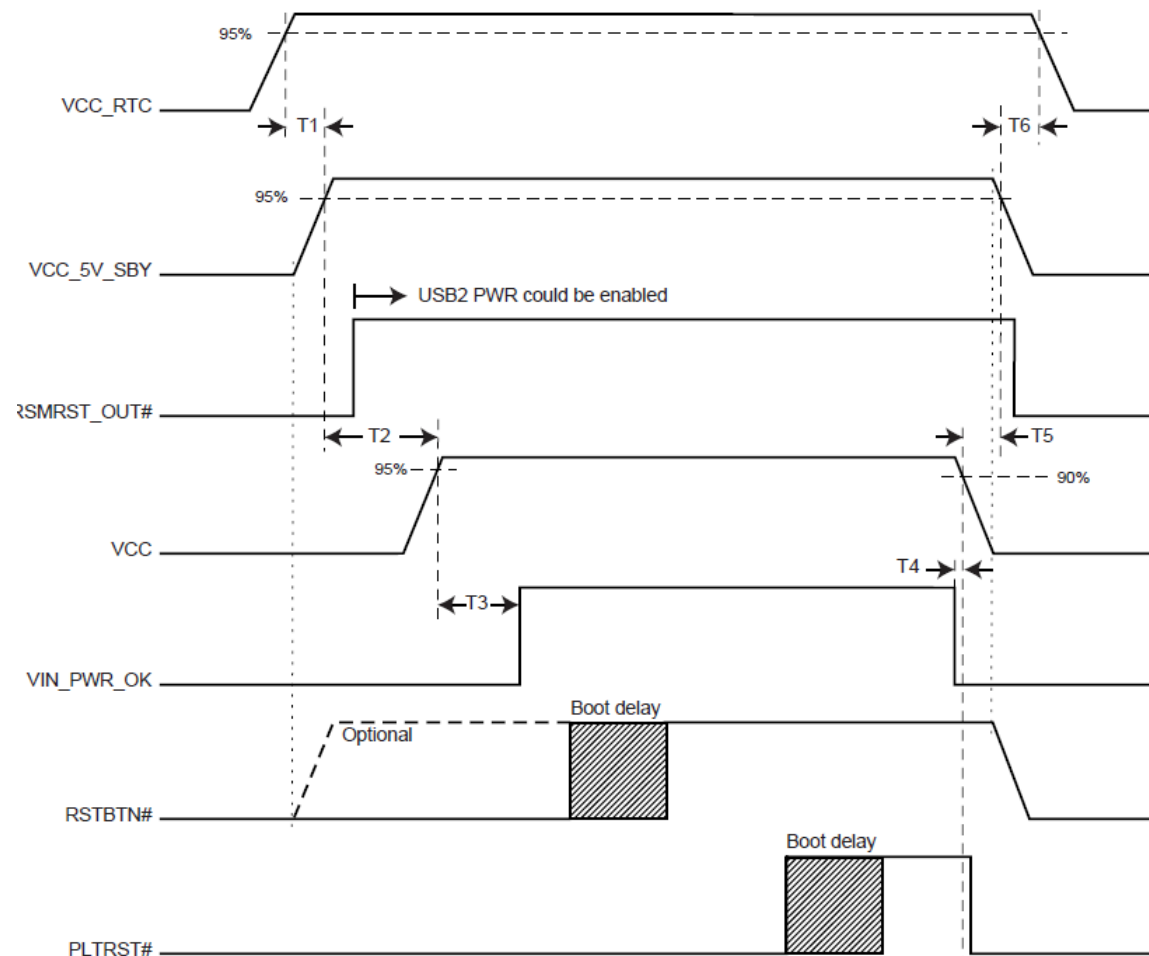


Figure 2 Input Power Sequencing
(Reference from COM-HPC® Module Base Specification)

- PWR_OK signal

Carrier board hardware must keep this signal low until all power rails and clocks are stable. Releasing PWR_OK too early or not driving it low at all may cause boot up abnormal symptom. It is a useful design implementation to delay the PWR_OK signal a little (at least 100ms) after all carrier board power rails are up, to ensure a stable system.

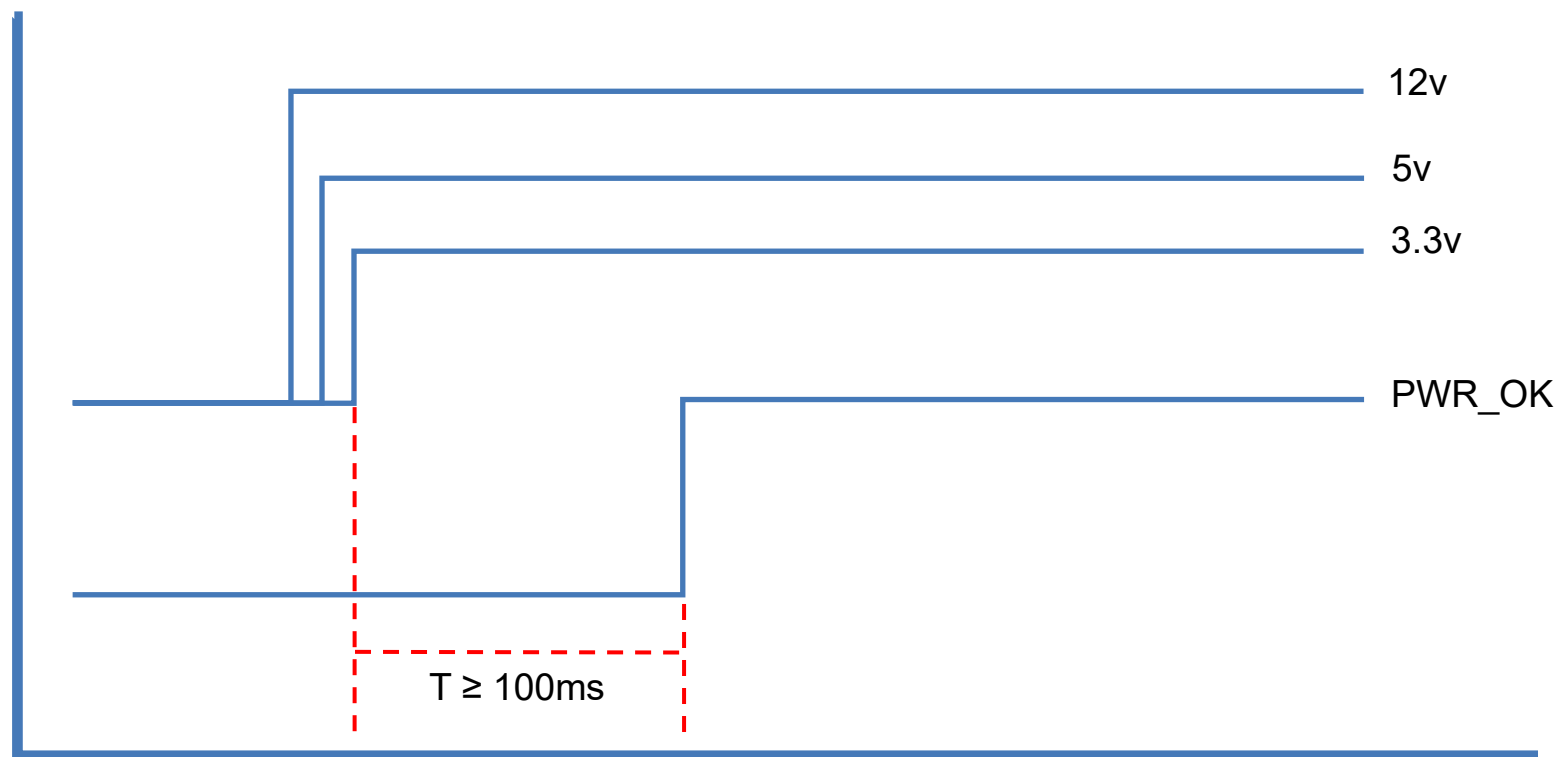


Figure 3 PWR_OK signal brief diagram

3.4 Power Consumption

PCOM-B800GT (D-2700)					
Ordering P/N	AB1-3L51Z	AB1-3P11Z	AB1-3P12Z	AB1-3P13Z	AB1-3P14Z
Processor	D-2796TE	D-2775TE	D-2752TER	D-2733NT	D-2712T
Power Consumption					
S0 Idle	3.23A	3.26A	3.20A	3.21A	3.27A
100% workload (with turbo mode)	11.96A	10.68A	8.20A	8.03 A	6.89A
100% Workload (without turbo mode)	10.25A	9.45A	7.70A	7.30A	6.49A
Peak Current	7.06A	6.75A	5.67A	5.52A	5.63A

PCOM-B800GT (D-2800)						
Ordering P/N	AB1-3S56	AB1-3S57	AB1-3S61	AB1-3S59	AB1-3S60	AB1-3S58
Processor	D-2899NT	D-2896TER	D-2896NT	D-2876NT	D-2843NT	D-2832NT
Power Consumption						
S0 Idle	TBC					
100% workload (with turbo mode)						
100% Workload (without turbo mode)						
Peak Current						

Table 5 PCOM-B800GT Power Consumption

3.5 Mechanical Dimensions

- Top Side Dimension

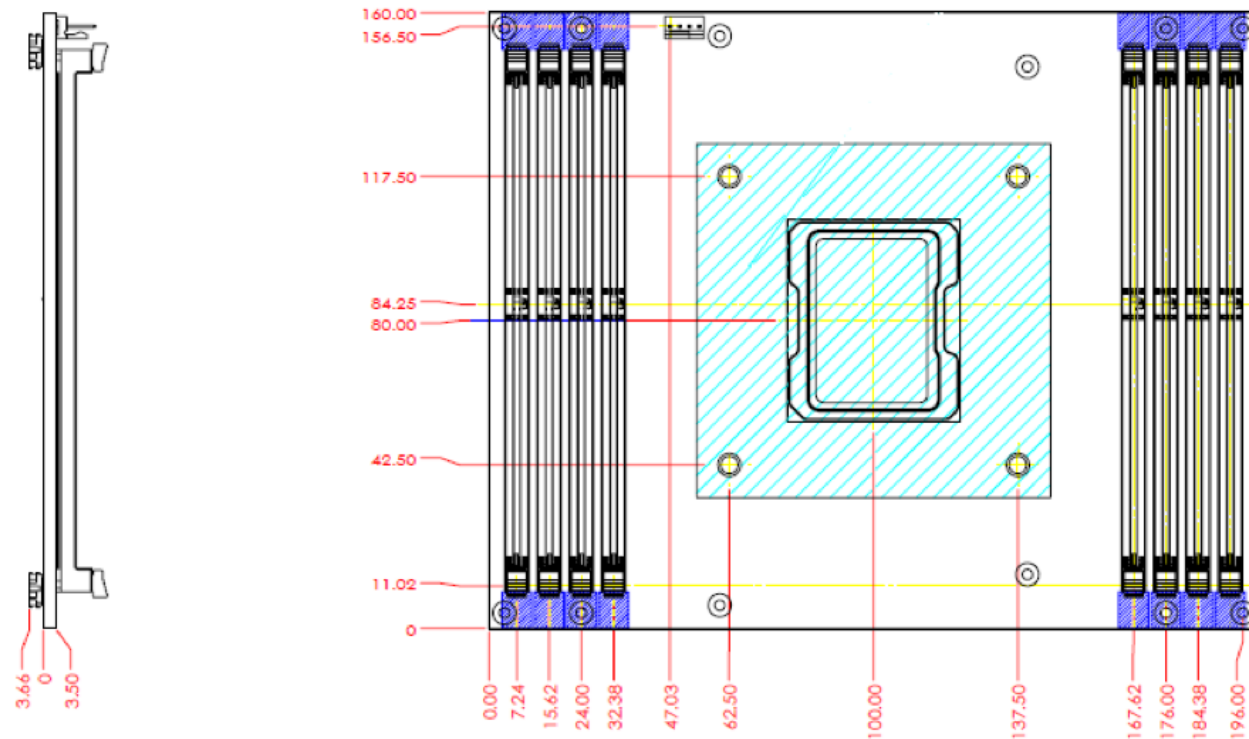


Figure 4 Mechanical Dimension - Top

- Bottom Side Dimension

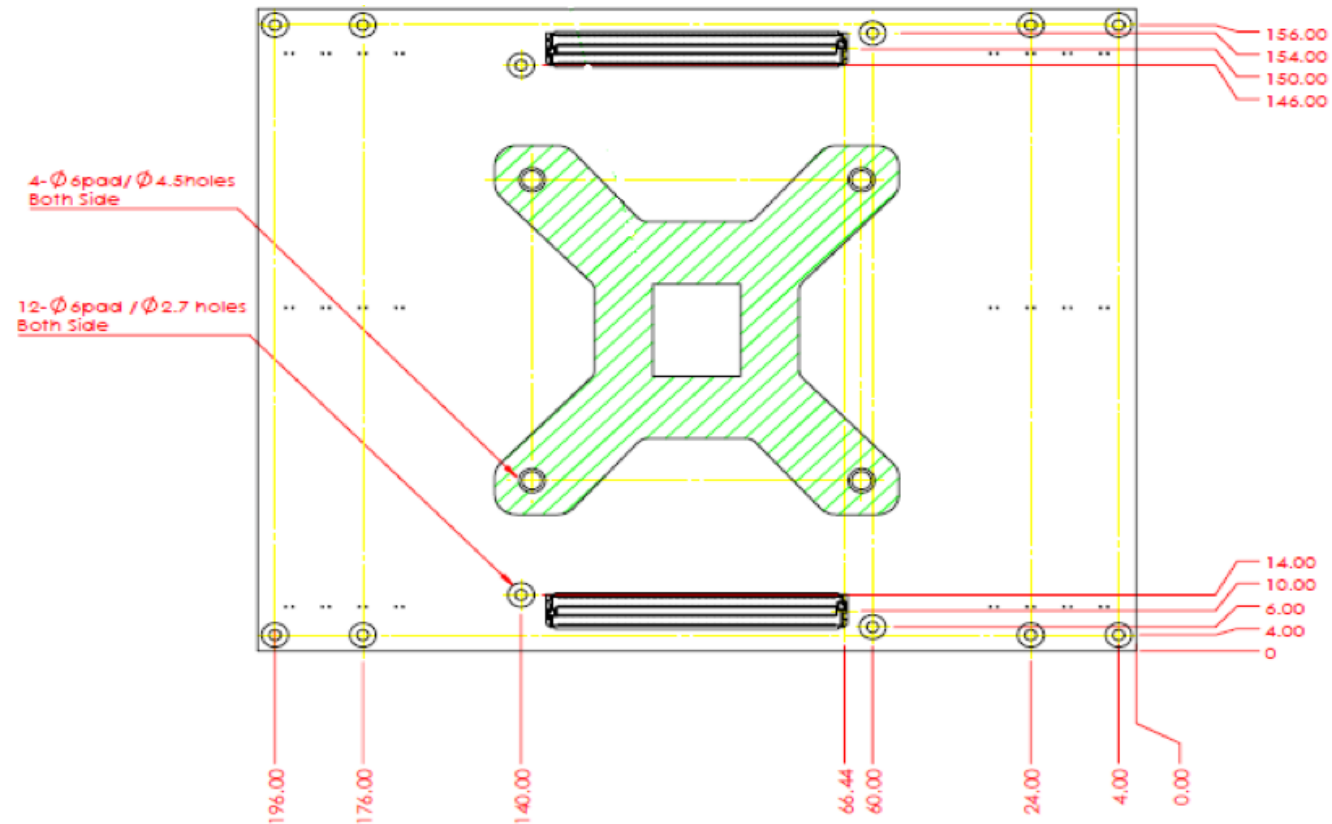
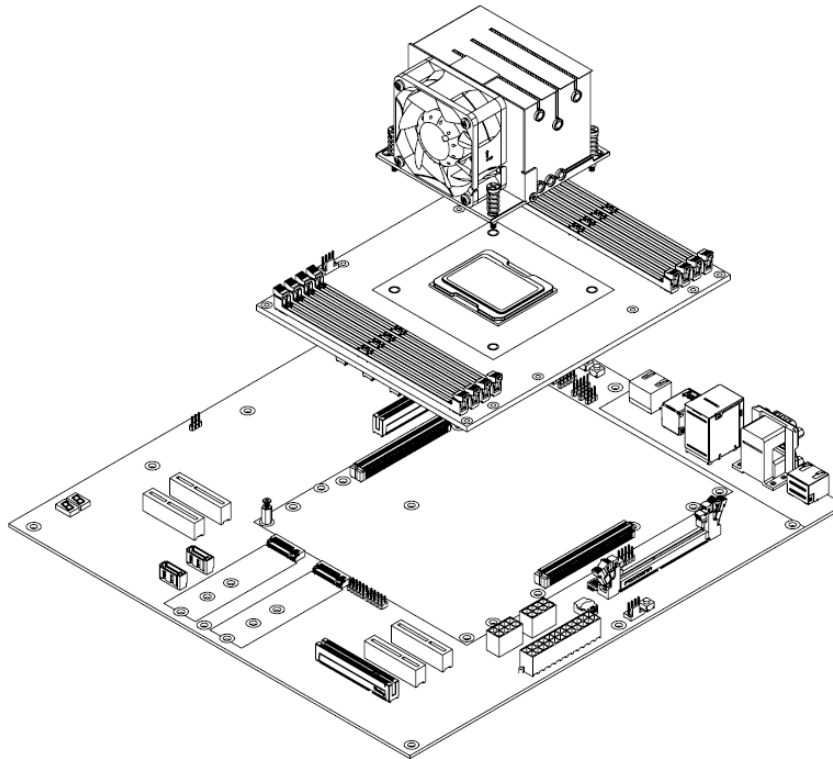
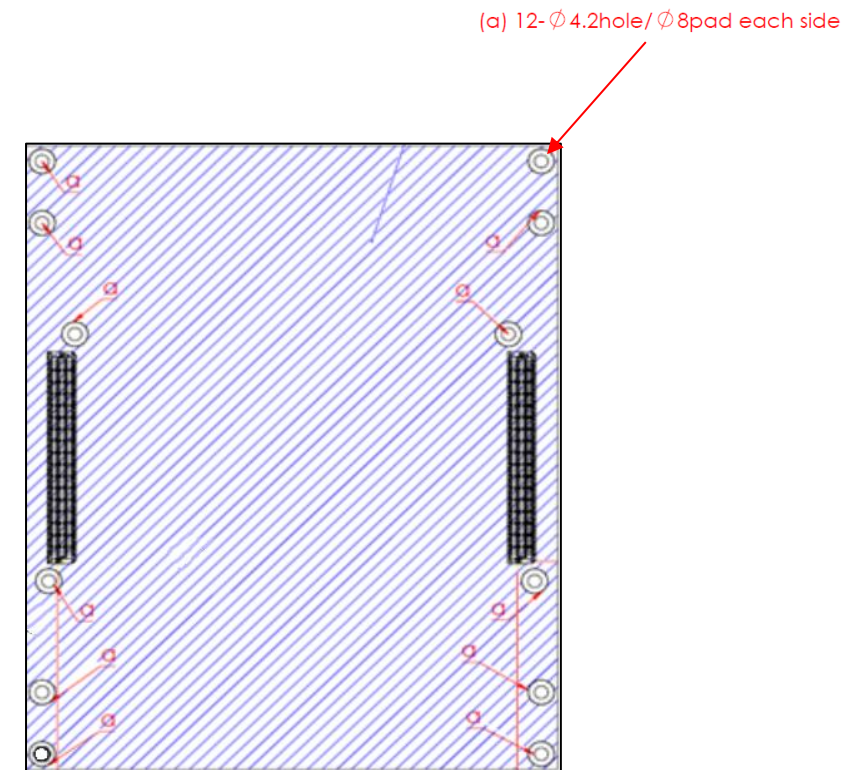


Figure 5 Mechanical Dimension – Bottom

- Carrier installation diagram



Note :

When installing the module on the carrier, please ensure that all twelve mounting holes are properly aligned before inserting the connector.

3.6 8x DIMM slot design

PCOM-B800GT features 8 x DDR4 DIMM slots supporting a maximum capacity of 1024GB with RDIMM configuration. Please refer the memory slot arrangement as below before inserting DDR4 DIMM memory.

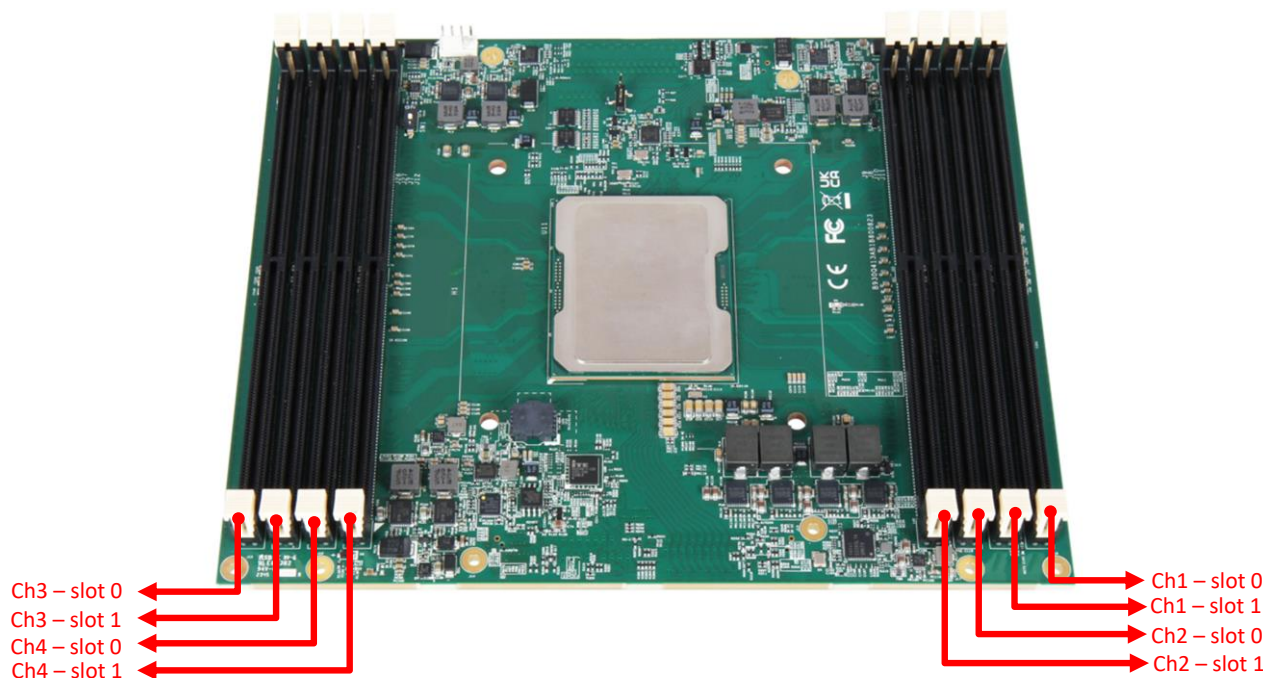


Figure 6 8x DIMM slot design

Rule of insert DDR4 DIMM memory:

1. The insertion sequence should commence from slot 0 in any channel.
2. Compatibility exists for either 1, 2, 4, or 8 DDR4 DIMM memory.
3. To maximize bandwidth when using 2 DDR4 DIMM memories, please insert into separate channels.
4. To maximize memory bandwidth, it is recommended to configure DDR4 DIMM memories in an even-numbered channel arrangement.

3.7 Environmental Specifications

Storage Temperature	-40°C ~ 85°C
Operation Temperature	0°C ~ 60°C Extended: -40°C ~ 85°C (Selected SKU)
Storage Humidity	0% ~ 95%
Operation Humidity	0% ~ 95%

Table 6 Environmental Specifications

3.8 Ordering Guide

♦ Module

Product	Ordering P/N
PCOM-B800GT-D2796TE	AB1-3L51
PCOM-B800GT-D2775TE	AB1-3P11
PCOM-B800GT-D2752TER	AB1-3P12
PCOM-B800GT-D2733NT	AB1-3P13
PCOM-B800GT-D2733NT	AB1-3P14
PCOM-B800GT-D2899NT	AB1-3S56
PCOM-B800GT-D2896TER	AB1-3S57
PCOM-B800GT-D2896NT	AB1-3S61
PCOM-B800GT-D2876NT	AB1-3S59
PCOM-B800GT-D2843NT	AB1-3S60
PCOM-B800GT-D2832NT	AB1-3S58

Table 7 Ordering Guide - PCOM-B800GT

♦ Accessory

Accessory	Ordering P/N
Cooler(2U)	B9972140
Evaluation Carrier: PCOM-C800	AB1-3L52Z
Evaluation PHY Card: PA-C3L-D27	AB9-3414Z

Table 8 Ordering Guide - Accessory

4 Thermal Solution

- Cooler(2U) Dimension

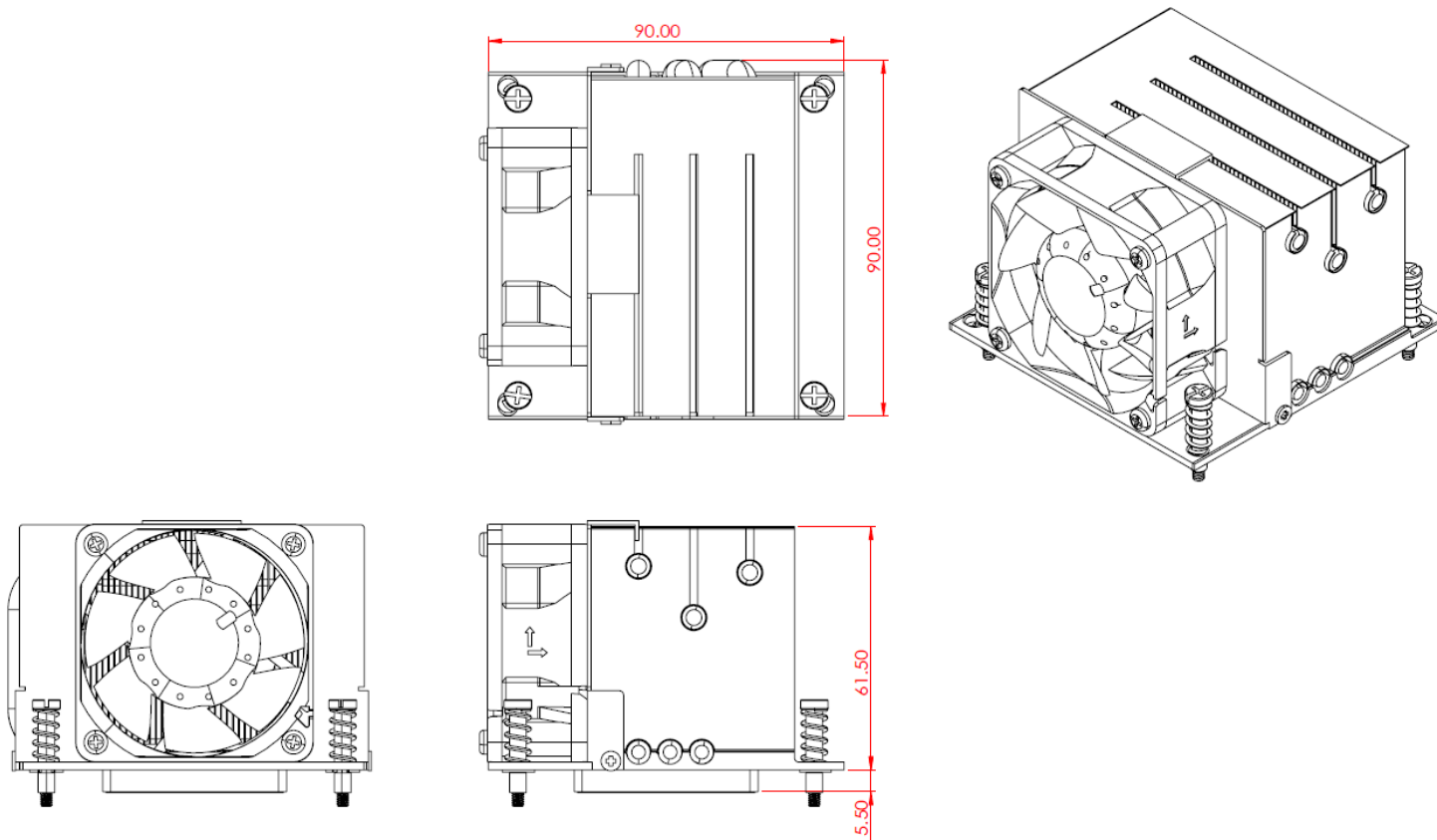


Figure 7 Cooler mechanical dimension

5 Pin out Tables

J1							
A1	+12V	B1	+12V	C1	+12V	D1	+12V
A2	+12V	B2	N82270628	C2	N82320778	D2	+12V
A3	+12V	B3	+12V	C3	+12V	D3	+12V
A4	+12V	B4	SOC_THERMTRIP#	C4	COME_CARRIER_HOT#	D4	+12V
A5	+12V	B5	+12V	C5	+12V	D5	+12V
A6	+12V	B6	COME_TAMPER#	C6	COME_PWROK	D6	+12V
A7	+12V	B7	+12V	C7	+12V	D7	+12V
A8	+12V	B8	KBC_SLPS3#	C8	KBC_SLPS45#	D8	+12V
A9	+12V	B9	+12V	C9	+12V	D9	+12V
A10	GND	B10	COME_WD_STROBE#	C10	GND	D10	WAKE0#_CN
A11	BATLOW_N	B11	WDTO#	C11	FAN_PWMOUT_CN	D11	WAKE1#_CN
A12	N21548380	B12	GND	C12	FAN_TACHIN_CN	D12	GND
A13	GND	B13	NC	C13	GND	D13	SOC_USB2_DN1
A14	NC	B14	NC	C14	SOC_USB2_DN3	D14	SOC_USB2_DP1
A15	NC	B15	GND	C15	SOC_USB2_DP3	D15	GND
A16	GND	B16	NC	C16	GND	D16	SOC_USB2_DN0
A17	NC	B17	NC	C17	SOC_USB2_DN2	D17	SOC_USB2_DP0
A18	NC	B18	GND	C18	SOC_USB2_DP2	D18	GND
A19	GND	B19	NC	C19	GND	D19	COME_ETH0_KR_RXDN0
A20	COME_ETH0_KR_RXDN4	B20	NC	C20	ETH0_COME_KR_TXDN0	D20	COME_ETH0_KR_RXDP0
A21	COME_ETH0_KR_RXDP4	B21	NC	C21	ETH0_COME_KR_TXDP0	D21	GND
A22	GND	B22	NC	C22	GND	D22	COME_ETH0_KR_RXDN1

J1							
A23	COME_ETH0_KR_RXDN5	B23	NC	C23	ETH0_COME_KR_TXDN1	D23	COME_ETH0_KR_RXDP1
A24	COME_ETH0_KR_RXDP5	B24	+5VSB_COME	C24	ETH0_COME_KR_TXDP1	D24	GND
A25	GND	B25	NC	C25	GND	D25	COME_ETH0_KR_RXDN2
A26	COME_ETH0_KR_RXDN6	B26	NC	C26	ETH0_COME_KR_TXDN2	D26	COME_ETH0_KR_RXDP2
A27	COME_ETH0_KR_RXDP6	B27	COME_USB_OC#	C27	ETH0_COME_KR_TXDP2	D27	GND
A28	GND	B28	COME_USB_OC#	C28	GND	D28	COME_ETH0_KR_RXDN3
A29	COME_ETH0_KR_RXDN7	B29	NC	C29	ETH0_COME_KR_TXDN3	D29	COME_ETH0_KR_RXDP3
A30	COME_ETH0_KR_RXDP7	B30	NC	C30	ETH0_COME_KR_TXDP3	D30	GND
A31	GND	B31	NC	C31	GND	D31	USB3_HSIO23_TXN3
A32	NC	B32	NC	C32	USB3_HSIO23_RXN3	D32	USB3_HSIO23_TXP3
A33	NC	B33	NC	C33	USB3_HSIO23_RXP3	D33	GND
A34	GND	B34	NC	C34	GND	D34	USB3_HSIO22_TXN2
A35	ETH0_COME_KR_TXDN4	B35	COME_USB_PD_I2C-CLK	C35	USB3_HSIO22_RXN2	D35	USB3_HSIO22_TXP2
A36	ETH0_COME_KR_TXDP4	B36	COME_USB_PD_I2C-DAT	C36	USB3_HSIO22_RXP2	D36	GND
A37	GND	B37	NC	C37	GND	D37	USB3_HSIO21_TXN1
A38	ETH0_COME_KR_TXDN5	B38	NC	C38	USB3_HSIO21_RXN1	D38	USB3_HSIO21_TXP1
A39	ETH0_COME_KR_TXDP5	B39	NC	C39	USB3_HSIO21_RXP1	D39	GND
A40	GND	B40	NC	C40	GND	D40	NC
A41	ETH0_COME_KR_TXDN6	B41	NC	C41	NC	D41	NC
A42	ETH0_COME_KR_TXDP6	B42	GND	C42	NC	D42	GND
A43	GND	B43	NC	C43	GND	D43	USB3_HSIO20_TXN0
A44	ETH0_COME_KR_TXDN7	B44	NC	C44	USB3_HSIO20_RXN0	D44	USB3_HSIO20_TXP0
A45	ETH0_COME_KR_TXDP7	B45	NC	C45	USB3_HSIO20_RXP0	D45	GND
A46	GND	B46	NC	C46	GND	D46	NC
A47	NC	B47	COME_VCC_BOOT_SPI	C47	NC	D47	NC

J1							
A48	NC	B48	COME_SPI_CS0#	C48	NC	D48	GND
A49	GND	B49	COME_BSEL0	C49	GND	D49	SATA_HSIO19_RXN
A50	ESPI_IO0_C	B50	COME_BSEL1	C50	COME_SPI_MOSI	D50	SATA_HSIO19_RXP
A51	ESPI_IO1_C	B51	COME_BSEL2	C51	COME_SPI_MISO	D51	GND
A52	ESPI_IO2_C	B52	COME_ESPI_ALERT0#	C52	N82341312	D52	SATA_HSIO19_TXN
A53	ESPI_IO3_C	B53	COME_ESPI_ALERT1#	C53	N82341311	D53	SATA_HSIO19_TXP
A54	ESPI_CLK0_C	B54	COME_ESPI_CS0#	C54	COME_SPI_CLK	D54	GND
A55	GND	B55	COME_ESPI_CS1#	C55	GND	D55	SATA_HSIO17_RXN
A56	COME_CLKREQ1#	B56	COME_ESPI_RST#	C56	COME1_PCIE_GEN3_CLKN	D56	SATA_HSIO17_RXP
A57	COME_CLKREQ2#	B57	GND	C57	COME1_PCIE_GEN3_CLKP	D57	GND
A58	GND	B58	BMC_PCIE_RXN	C58	GND	D58	SATA_HSIO17_TXN
A59	BMC_PCIE_TXN	B59	BMC_PCIE_RXP	C59	COME0_PCIE_GEN3_CLKN	D59	SATA_HSIO17_TXP
A60	BMC_PCIE_TXP	B60	GND	C60	COME0_PCIE_GEN3_CLKP	D60	GND
A61	GND	B61	PCIE_HSIO7_RXN7	C61	GND	D61	PCIE_HSIO15_TXN7
A62	PCIE_HSIO7_TXN7	B62	PCIE_HSIO7_RXP7	C62	PCIE_HSIO15_RXN7	D62	PCIE_HSIO15_TXP7
A63	PCIE_HSIO7_TXP7	B63	GND	C63	PCIE_HSIO15_RXP7	D63	GND
A64	GND	B64	PCIE_HSIO6_RXN6	C64	GND	D64	PCIE_HSIO14_TXN6
A65	PCIE_HSIO6_TXN6	B65	PCIE_HSIO6_RXP6	C65	PCIE_HSIO14_RXN6	D65	PCIE_HSIO14_TXP6
A66	PCIE_HSIO6_TXP6	B66	GND	C66	PCIE_HSIO14_RXP6	D66	GND
A67	GND	B67	PCIE_HSIO5_RXN5	C67	GND	D67	PCIE_HSIO13_TXN5
A68	PCIE_HSIO5_TXN5	B68	PCIE_HSIO5_RXP5	C68	PCIE_HSIO13_RXN5	D68	PCIE_HSIO13_TXP5
A69	PCIE_HSIO5_TXP5	B69	GND	C69	PCIE_HSIO13_RXP5	D69	GND
A70	GND	B70	PCIE_HSIO4_RXN4	C70	GND	D70	PCIE_HSIO12_TXN4
A71	PCIE_HSIO4_TXN4	B71	PCIE_HSIO4_RXP4	C71	PCIE_HSIO12_RXN4	D71	PCIE_HSIO12_TXP4
A72	PCIE_HSIO4_TXP4	B72	GND	C72	PCIE_HSIO12_RXP4	D72	GND

J1							
A73	GND	B73	PCIE_HSIO3_RXN3	C73	GND	D73	PCIE_HSIO11_TXN3
A74	PCIE_HSIO3_TXN3	B74	PCIE_HSIO3_RXP3	C74	PCIE_HSIO11_RXN3	D74	PCIE_HSIO11_TXP3
A75	PCIE_HSIO3_TXP3	B75	GND	C75	PCIE_HSIO11_RXP3	D75	GND
A76	GND	B76	PCIE_HSIO2_RXN2	C76	GND	D76	PCIE_HSIO10_TXN2
A77	PCIE_HSIO2_TXN2	B77	PCIE_HSIO2_RXP2	C77	PCIE_HSIO10_RXN2	D77	PCIE_HSIO10_TXP2
A78	PCIE_HSIO2_TXP2	B78	GND	C78	PCIE_HSIO10_RXP2	D78	GND
A79	GND	B79	PCIE_HSIO1_RXN1	C79	GND	D79	PCIE_HSIO9_TXN1
A80	PCIE_HSIO1_TXN1	B80	PCIE_HSIO1_RXP1	C80	PCIE_HSIO9_RXN1	D80	PCIE_HSIO9_TXP1
A81	PCIE_HSIO1_TXP1	B81	GND	C81	PCIE_HSIO9_RXP1	D81	GND
A82	GND	B82	PCIE_HSIO0_RXN0	C82	GND	D82	PCIE_HSIO8_TXN0
A83	PCIE_HSIO0_TXN0	B83	PCIE_HSIO0_RXP0	C83	PCIE_HSIO8_RXN0	D83	PCIE_HSIO8_TXP0
A84	PCIE_HSIO0_TXP0	B84	GND	C84	PCIE_HSIO8_RXP0	D84	GND
A85	GND	B85		C85	GND	D85	L1_MDI0_N
A86	+V3P3_RTC	B86	KBC_RSMRST_OUT#	C86	COME_SMB_CLK	D86	L1_MDI0_P
A87	COME_SUSCLK_32	B87	SER1_TX	C87	COME_SMB_DAT	D87	GND
A88	EC_GPIO0	B88	SER1_RX	C88	COME_SMB_ALERT#	D88	L1_MDI1_N
A89	EC_GPIO1	B89	SER0CTS_RTS1#	C89	SER0_TX	D89	L1_MDI1_P
A90	EC_GPIO2	B90	SER0CTS_CTS1#	C90	SER0_RX	D90	GND
A91	EC_GPIO3	B91	NC	C91	SER0CTS_RTS0#	D91	L1_MDI2_N
A92	EC_GPIO4	B92	NC	C92	SER0CTS_CTS0#	D92	L1_MDI2_P
A93	EC_GPIO5	B93	NC	C93	COME_I2C0-CLK	D93	GND
A94	EC_GPIO6	B94	NC	C94	COME_I2C0-DAT	D94	L1_MDI3_N
A95	EC_GPIO7	B95	NC	C95	N82401027	D95	L1_MDI3_P
A96	EC_GPIO8	B96	NC	C96	COME_I2C1_1V8_CLK	D96	GND
A97	EC_GPIO9	B97	NC	C97	COME_I2C1_1V8_DAT	D97	L1_LED_2500_N

J1							
A98	EC_GPIO10	B98	NC	C98	I225_SDP0	D98	L1_LED_1000_N
A99	EC_GPIO11	B99	NC	C99	GBE_CTREF_CN	D99	L1_LED_LINK#/ACT#
A100	NC	B100	NC	C100	GND	D100	NC

J2							
E1	RAPID_SUTDN	F1	NC	G1	+5VSB_COME_2	H1	NC
E2	GND	F2	NC	G2	NC	H2	NC
E3	NC	F3	NC	G3	NC	H3	NC
E4	NC	F4	NC	G4	NC	H4	NC
E5	GND	F5	NC	G5	NC	H5	NC
E6	NC	F6	NC	G6	NC	H6	NC
E7	NC	F7	COME_ETH4-7_I2C_CLK	G7	NC	H7	NC
E8	GND	F8	COME_ETH4-7_I2C_DAT	G8	NC	H8	NC
E9	NC	F9	COME_ETH4-7_INT#	G9	NC	H9	NC
E10	NC	F10	COME_ETH4-7_MDIO_CLK	G10	NC	H10	NC
E11	GND	F11	COME_ETH4-7_MDIO_DAT	G11	NC	H11	NC
E12	NC	F12	ETH4-7_PHY_INT#_CN	G12	NC	H12	NC
E13	NC	F13	ETH4-7_PHY_RST#_CN	G13	NC	H13	NC
E14	GND	F14	COME_ETH4-7_PRST#	G14	GND	H14	NC
E15	NC	F15	NC	G15	NC	H15	NC
E16	NC	F16	NC	G16	NC	H16	NC
E17	GND	F17	NC	G17	NC	H17	NC
E18	NC	F18	NC	G18	NC	H18	NC
E19	NC	F19	GND	G19	NC	H19	GND
E20	GND	F20	COME_SOC1_PCIE4_RXDN0	G20	GND	H20	SOC1_COME_PCIE4_TXDN8

J2							
E21	SOC1_COME_PCIE4_TXDN0	F21	COME_SOC1_PCIE4_RXDP0	G21	COME_SOC1_PCIE4_RXDN8	H21	SOC1_COME_PCIE4_TXDP8
E22	SOC1_COME_PCIE4_TXDP0	F22	GND	G22	COME_SOC1_PCIE4_RXDP8	H22	GND
E23	GND	F23	COME_SOC1_PCIE4_RXDN1	G23	GND	H23	SOC1_COME_PCIE4_TXDN9
E24	SOC1_COME_PCIE4_TXDN1	F24	COME_SOC1_PCIE4_RXDP1	G24	COME_SOC1_PCIE4_RXDN9	H24	SOC1_COME_PCIE4_TXDP9
E25	SOC1_COME_PCIE4_TXDP1	F25	GND	G25	COME_SOC1_PCIE4_RXDP9	H25	GND
E26	GND	F26	COME_SOC1_PCIE4_RXDN2	G26	GND	H26	SOC1_COME_PCIE4_TXDN10
E27	SOC1_COME_PCIE4_TXDN2	F27	COME_SOC1_PCIE4_RXDP2	G27	COME_SOC1_PCIE4_RXDN10	H27	SOC1_COME_PCIE4_TXDP10
E28	SOC1_COME_PCIE4_TXDP2	F28	GND	G28	COME_SOC1_PCIE4_RXDP10	H28	GND
E29	GND	F29	COME_SOC1_PCIE4_RXDN3	G29	GND	H29	SOC1_COME_PCIE4_TXDN11
E30	SOC1_COME_PCIE4_TXDN3	F30	COME_SOC1_PCIE4_RXDP3	G30	COME_SOC1_PCIE4_RXDN11	H30	SOC1_COME_PCIE4_TXDP11
E31	SOC1_COME_PCIE4_TXDP3	F31	GND	G31	COME_SOC1_PCIE4_RXDP11	H31	GND
E32	GND	F32	COME_SOC1_PCIE4_RXDN4	G32	GND	H32	SOC1_COME_PCIE4_TXDN12
E33	SOC1_COME_PCIE4_TXDN4	F33	COME_SOC1_PCIE4_RXDP4	G33	COME_SOC1_PCIE4_RXDN12	H33	SOC1_COME_PCIE4_TXDP12
E34	SOC1_COME_PCIE4_TXDP4	F34	GND	G34	COME_SOC1_PCIE4_RXDP12	H34	GND
E35	GND	F35	COME_SOC1_PCIE4_RXDN5	G35	GND	H35	SOC1_COME_PCIE4_TXDN13
E36	SOC1_COME_PCIE4_TXDN5	F36	COME_SOC1_PCIE4_RXDP5	G36	COME_SOC1_PCIE4_RXDN13	H36	SOC1_COME_PCIE4_TXDP13
E37	SOC1_COME_PCIE4_TXDP5	F37	GND	G37	COME_SOC1_PCIE4_RXDP13	H37	GND
E38	GND	F38	COME_SOC1_PCIE4_RXDN6	G38	GND	H38	SOC1_COME_PCIE4_TXDN14
E39	SOC1_COME_PCIE4_TXDN6	F39	COME_SOC1_PCIE4_RXDP6	G39	COME_SOC1_PCIE4_RXDN14	H39	SOC1_COME_PCIE4_TXDP14
E40	SOC1_COME_PCIE4_TXDP6	F40	GND	G40	COME_SOC1_PCIE4_RXDP14	H40	GND
E41	GND	F41	COME_SOC1_PCIE4_RXDN7	G41	GND	H41	SOC1_COME_PCIE4_TXDN15
E42	SOC1_COME_PCIE4_TXDN7	F42	COME_SOC1_PCIE4_RXDP7	G42	COME_SOC1_PCIE4_RXDN15	H42	SOC1_COME_PCIE4_TXDP15
E43	SOC1_COME_PCIE4_TXDP7	F43	GND	G43	COME_SOC1_PCIE4_RXDP15	H43	GND
E44	GND	F44	COME_SOC_PCIE4_RXDN0	G44	GND	H44	SOC_COME_PCIE4_TXDN8
E45	SOC_COME_PCIE4_TXDN0	F45	COME_SOC_PCIE4_RXDP0	G45	COME_SOC_PCIE4_RXDN8	H45	SOC_COME_PCIE4_TXDP8

J2							
E46	SOC_COME_PCIE4_TXDP0	F46	GND	G46	COME_SOC_PCIE4_RXDP8	H46	GND
E47	GND	F47	COME_SOC_PCIE4_RXDN1	G47	GND	H47	SOC_COME_PCIE4_TXDN9
E48	SOC_COME_PCIE4_TXDN1	F48	COME_SOC_PCIE4_RXDP1	G48	COME_SOC_PCIE4_RXDN9	H48	SOC_COME_PCIE4_TXDP9
E49	SOC_COME_PCIE4_TXDP1	F49	GND	G49	COME_SOC_PCIE4_RXDP9	H49	GND
E50	GND	F50	COME_SOC_PCIE4_RXDN2	G50	GND	H50	SOC_COME_PCIE4_TXDN10
E51	SOC_COME_PCIE4_TXDN2	F51	COME_SOC_PCIE4_RXDP2	G51	COME_SOC_PCIE4_RXDN10	H51	SOC_COME_PCIE4_TXDP10
E52	SOC_COME_PCIE4_TXDP2	F52	GND	G52	COME_SOC_PCIE4_RXDP10	H52	GND
E53	GND	F53	COME_SOC_PCIE4_RXDN3	G53	GND	H53	SOC_COME_PCIE4_TXDN11
E54	SOC_COME_PCIE4_TXDN3	F54	COME_SOC_PCIE4_RXDP3	G54	COME_SOC_PCIE4_RXDN11	H54	SOC_COME_PCIE4_TXDP11
E55	SOC_COME_PCIE4_TXDP3	F55	GND	G55	COME_SOC_PCIE4_RXDP11	H55	GND
E56	GND	F56	COME_SOC_PCIE4_RXDN4	G56	GND	H56	SOC_COME_PCIE4_TXDN12
E57	SOC_COME_PCIE4_TXDN4	F57	COME_SOC_PCIE4_RXDP4	G57	COME_SOC_PCIE4_RXDN12	H57	SOC_COME_PCIE4_TXDP12
E58	SOC_COME_PCIE4_TXDP4	F58	GND	G58	COME_SOC_PCIE4_RXDP12	H58	GND
E59	GND	F59	COME_SOC_PCIE4_RXDN5	G59	GND	H59	SOC_COME_PCIE4_TXDN13
E60	SOC_COME_PCIE4_TXDN5	F60	COME_SOC_PCIE4_RXDP5	G60	COME_SOC_PCIE4_RXDN13	H60	SOC_COME_PCIE4_TXDP13
E61	SOC_COME_PCIE4_TXDP5	F61	GND	G61	COME_SOC_PCIE4_RXDP13	H61	GND
E62	GND	F62	COME_SOC_PCIE4_RXDN6	G62	GND	H62	SOC_COME_PCIE4_TXDN14
E63	SOC_COME_PCIE4_TXDN6	F63	COME_SOC_PCIE4_RXDP6	G63	COME_SOC_PCIE4_RXDN14	H63	SOC_COME_PCIE4_TXDP14
E64	SOC_COME_PCIE4_TXDP6	F64	GND	G64	COME_SOC_PCIE4_RXDP14	H64	GND
E65	GND	F65	COME_SOC_PCIE4_RXDN7	G65	GND	H65	SOC_COME_PCIE4_TXDN15
E66	SOC_COME_PCIE4_TXDN7	F66	COME_SOC_PCIE4_RXDP7	G66	COME_SOC_PCIE4_RXDN15	H66	SOC_COME_PCIE4_TXDP15
E67	SOC_COME_PCIE4_TXDP7	F67	GND	G67	COME_SOC_PCIE4_RXDP15	H67	GND
E68	GND	F68	NC	G68	GND	H68	NC
E69	NC	F69	NC	G69	NC	H69	NC
E70	NC	F70	GND	G70	NC	H70	GND

J2							
E71	GND	F71	NC	G71	GND	H71	NC
E72	NC	F72	NC	G72	NC	H72	NC
E73	NC	F73	GND	G73	NC	H73	GND
E74	GND	F74	NC	G74	GND	H74	NC
E75	NC	F75	NC	G75	NC	H75	NC
E76	NC	F76	GND	G76	NC	H76	GND
E77	GND	F77	NC	G77	GND	H77	NC
E78	NC	F78	NC	G78	NC	H78	NC
E79	NC	F79	GND	G79	NC	H79	GND
E80	GND	F80	NC	G80	GND	H80	NC
E81	NC	F81	NC	G81	NC	H81	NC
E82	NC	F82	GND	G82	NC	H82	GND
E83	GND	F83	NC	G83	GND	H83	NC
E84	NC	F84	NC	G84	NC	H84	NC
E85	NC	F85	GND	G85	NC	H85	GND
E86	GND	F86	NC	G86	GND	H86	NC
E87	NC	F87	NC	G87	NC	H87	NC
E88	NC	F88	GND	G88	NC	H88	GND
E89	GND	F89	NC	G89	GND	H89	NC
E90	NC	F90	NC	G90	NC	H90	NC
E91	NC	F91	GND	G91	NC	H91	GND
E92	GND	F92	COME3_PCIE4_CLKN	G92	GND	H92	COME_PCIE_REFCLKIN0N
E93	COME2_PCIE4_CLKN	F93	COME3_PCIE4_CLKP	G93	NC	H93	COME_PCIE_REFCLKIN0P
E94	COME2_PCIE4_CLKP	F94	GND	G94	NC	H94	GND
E95	GND	F95	NC	G95	GND	H95	COME_PCIE_REFCLKIN1N

J2							
E96	COME_PCIE_CLKREQ1#	F96	COME_ETH0-3_PRSENT#	G96	COME_ETH0-3_I2C_CLK	H96	COME_PCIE_REFCLKIN1P
E97	COME_PCIE_CLKREQ2#	F97	ETH0-3_PHY_RST#_CN	G97	COME_ETH0-3_I2C_DAT	H97	GND
E98		F98	NC	G98	COME_ETH0-3_INT#	H98	COME_ETH0-3_MDIO_CLK
E99		F99	NC	G99	N83187770	H99	COME_ETH0-3_MDIO_DAT
F100	COME_PCIE_PERST_IN1#	F100	NC	G100	COME_PCIE_WAKEOUT0#	H100	COME_PCIE_WAKEOUT1#

Table 9 Pin out description

6 BIOS Setup Items

PCOM-B800GT is equipped with the AMI BIOS stored in Flash ROM. These BIOS has a built-in setup program that allows users to modify the basic system configuration easily. This type of information is stored in SPI ROM so that it is retained during power-off periods. When system is turned on, PCOM-B800GT communicates with peripheral devices and checks its hardware resources against the configuration information stored in the BIOS. If any error is detected, or the BIOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start up.

6.1 Entering Setup -- Launch System Setup

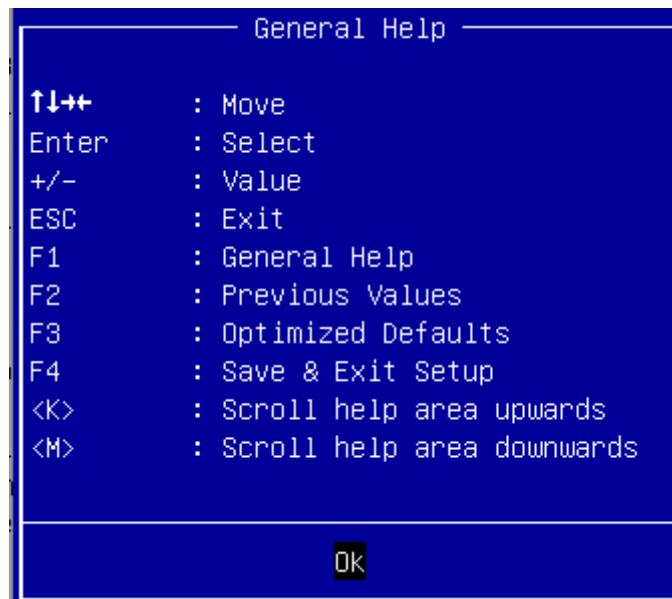
Power on the computer and the system will start POST (Power-On-Self-Test) process. When the message below appears on the screen, press key will enter BIOS setup screen.

Press to enter SETUP

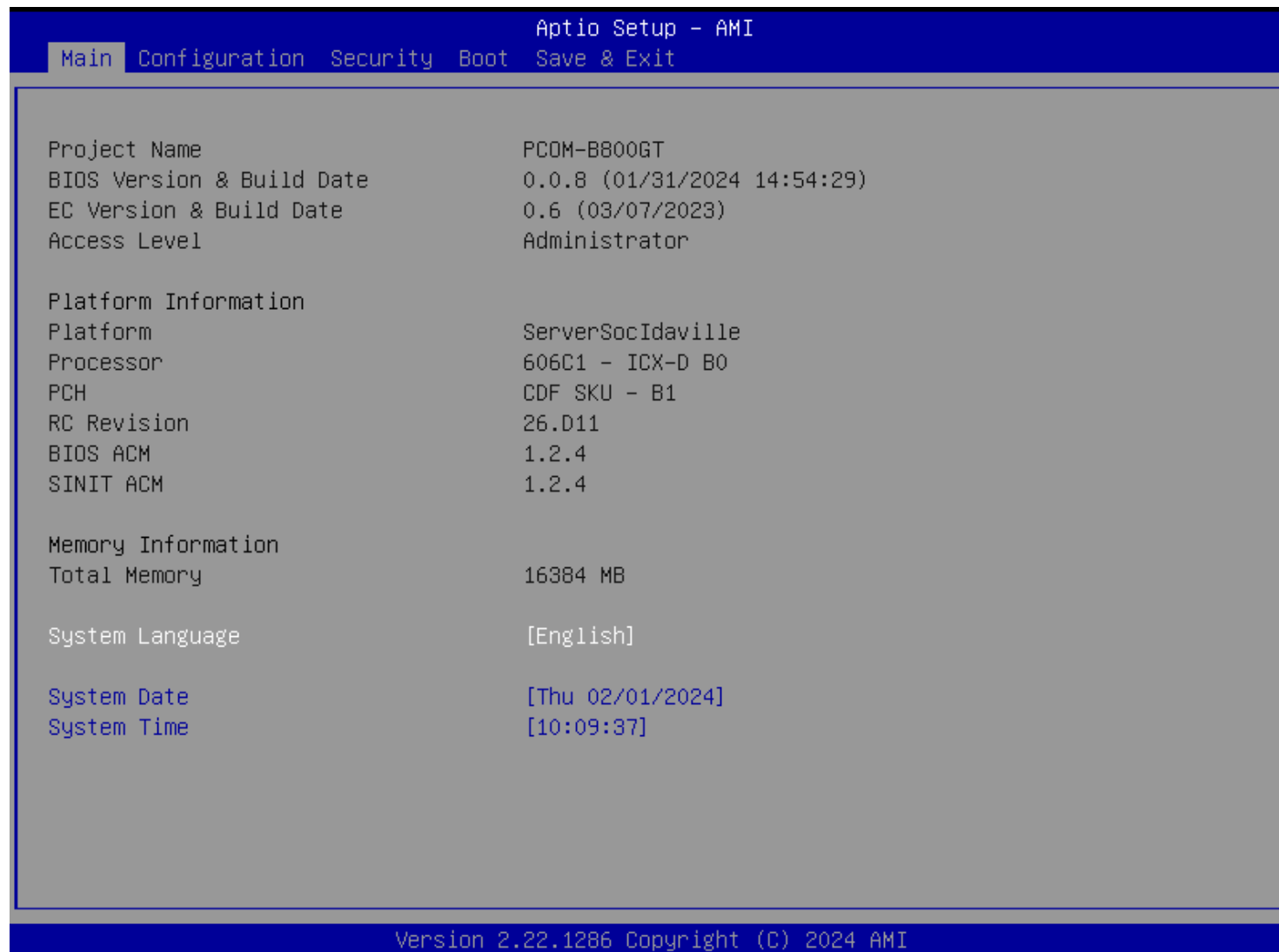
If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

Press <F1> to Run General Help or Resume

The BIOS setup program provides a General Help screen. The menu can be easily called up from any menu by pressing <F1>. The Help screen lists all the possible keys to use and the selections for the highlighted item. Press <Esc> to exit the Help screen.

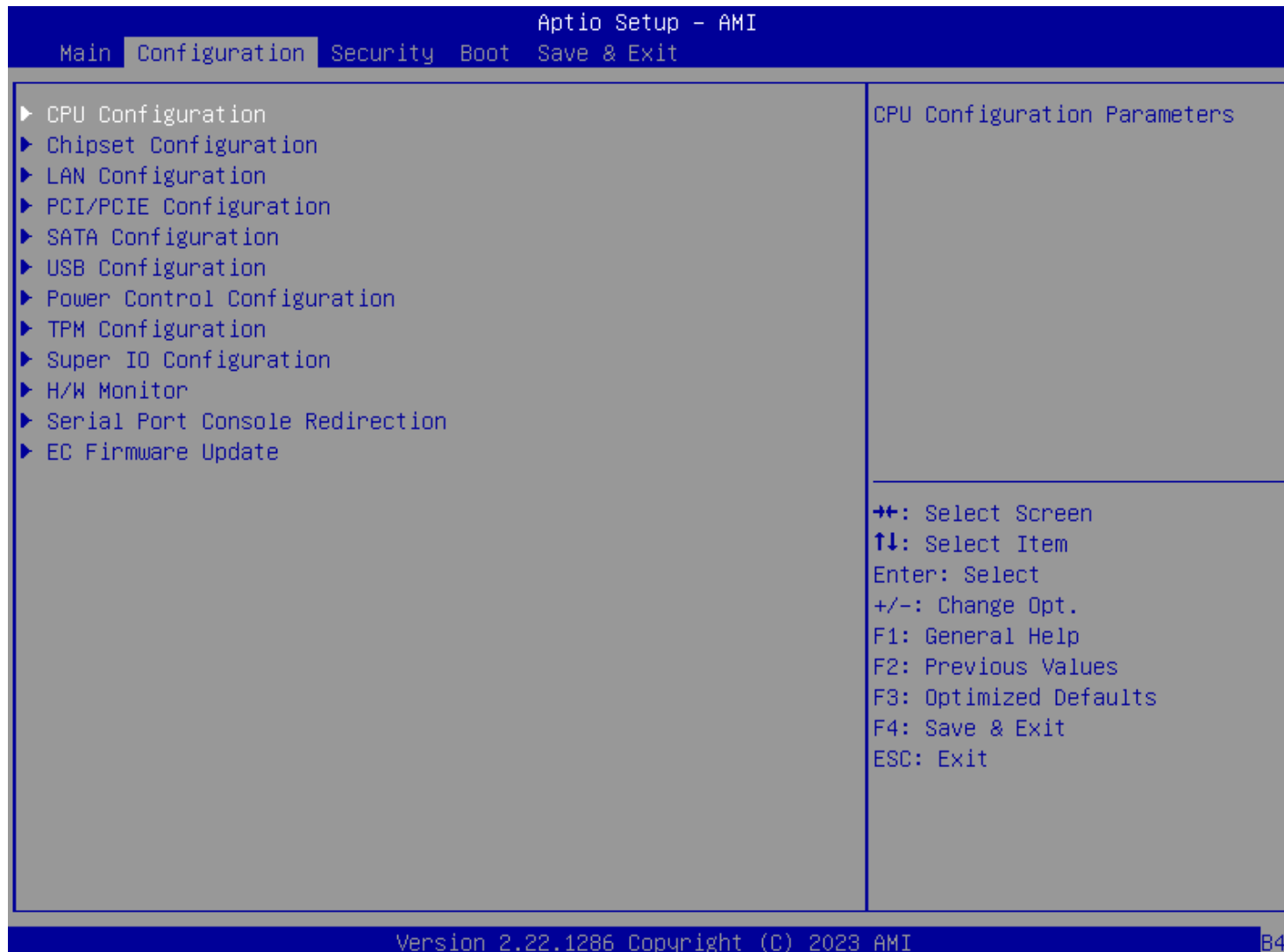


6.2 Main



Feature	Description	Options
Detail system information	Detail system information	
System Date	The date format is <Day>, <Month> <Date> <Year>. Use [+] or [–] to configure system Date.	
System Time	The time format is <Hour> <Minute> <Second>. Use [+] or [–] to configure system Time.	

6.3 Configuration



CPU Configuration



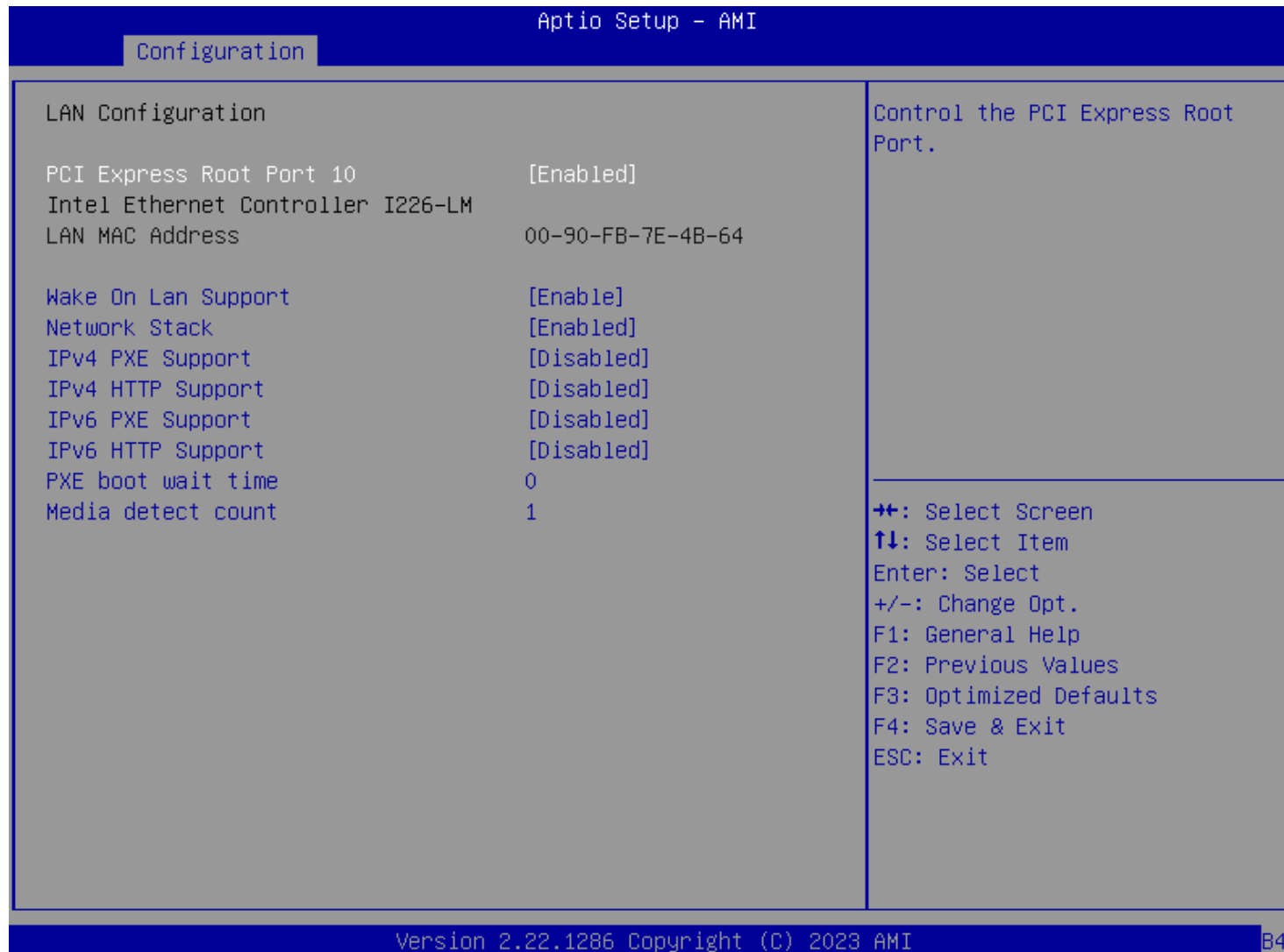
Feature	Description	Options
Hyper-Threading [ALL]	Enables Hyper Threading (Software Method to Enable / Disable Logical Processor threads.)	★Enabled, Disabled
SpeedStep (Pstates)	Enable/Disable ETST (P-States)	★Enabled, Disabled
Turbo Mode	Enable/Disable processor Turbo mode (requires EMTTM enabled too).	★Enabled, Disabled
Boot performance mode	Select the performance state that the BIOS will set before OS hand off.	★Max Performance, Max Efficient, Set by Intel Node Manager
Package C State	Package C State limit	C0/C1 state, C2 state, C6 (non-Retention) state, Auto
CPU Flex Ratio Override	Enable/Disable CPU Flex Ratio Programming	★Disabled, Enabled
CPU Flex Ratio Override [Enabled]		
CPU Core Flex Ratio	Non-Turbo Mode Processor Core Ratio Multipiler	★23

Chipset Configuration



Feature	Description	Options
Above 4GB Decoding	Enable/Disable 64bit capable Device to be decoded in above 4GB Address Space (Only if System Supports 64bit PCI Decoding.	★Enabled , Disabled

LAN Configuration



Feature	Description	Options
PCI Express Root Port 10	Control the PCI Express Root Port.	★Enabled , Disabled
Wake on LAN Support	Enable or Disable Wake on Lan Support.	★Enabled , Disabled
Network Stack	Enable or Disable UEFI Network Stack.	★Disabled , Enabled
Network Stack [Enabled]		
Ipv4 PXE Support	Enable/Disable IPv4 PXE boot support. If disable, IPv4 PXE boot support will not be available.	★Disabled , Enabled
Ipv4 HTTP Support	Enable/Disable IPv4 HTTP boot support. If disable, IPv4 HTTP boot support will not be available.	★Disabled , Enabled
Ipv6 PXE Support	Enable/Disable IPv6 PXE boot support. If disable, IPv6 PXE boot support will not be available.	★Disabled , Enabled
Ipv6 HTTP Support	Enable/Disable IPv6 HTTP boot support. If disable, IPv6 HTTP boot support will not be available.	★Disabled , Enabled
PXE boot wait time	Wait time in seconds to press ESC key to abort the PXE boot. The PXE boot. Use either +/- or numeric keys to set the value.	★ 0
Media detect count	Number of times the presence of media will be checked. Use either +/- or numeric keys to set the value.	★ 1

PCI/PCIE Configuration



Feature	Description	Options
Compliance Test Mode	Allows changing PCIE bifurcation	★Disabled , Enabled
PCle 0 Bifurcation	Allows changing PCIE bifurcation.	★Bifurcation 2x4, Bifurcation 4x2 Bifurcation 1x4 2x2 , Bifurcation 2x2 1x4 , Bifurcation 1x8
PCle 1 Bifurcation	Allows changing PCIE bifurcation.	★Bifurcation 1x8, Bifurcation 4x2 Bifurcation 1x4 2x2 , Bifurcation 2x2 1x4 , Bifurcation 2x4
IOU0 (IIO PCle Port 1)	Selects PCle port Bifurcation for selected Slot(s)	★ x16, Auto , 4x4x4x4 , 4x4x8 , 8x4x4 , 8x8
IOU1 (IIO PCle Port 2)	Selects PCle port Bifurcation for selected Slot(s)	★8x8, Auto , 4x4x4x4 , 4x4x8 , 8x4x4 , x16

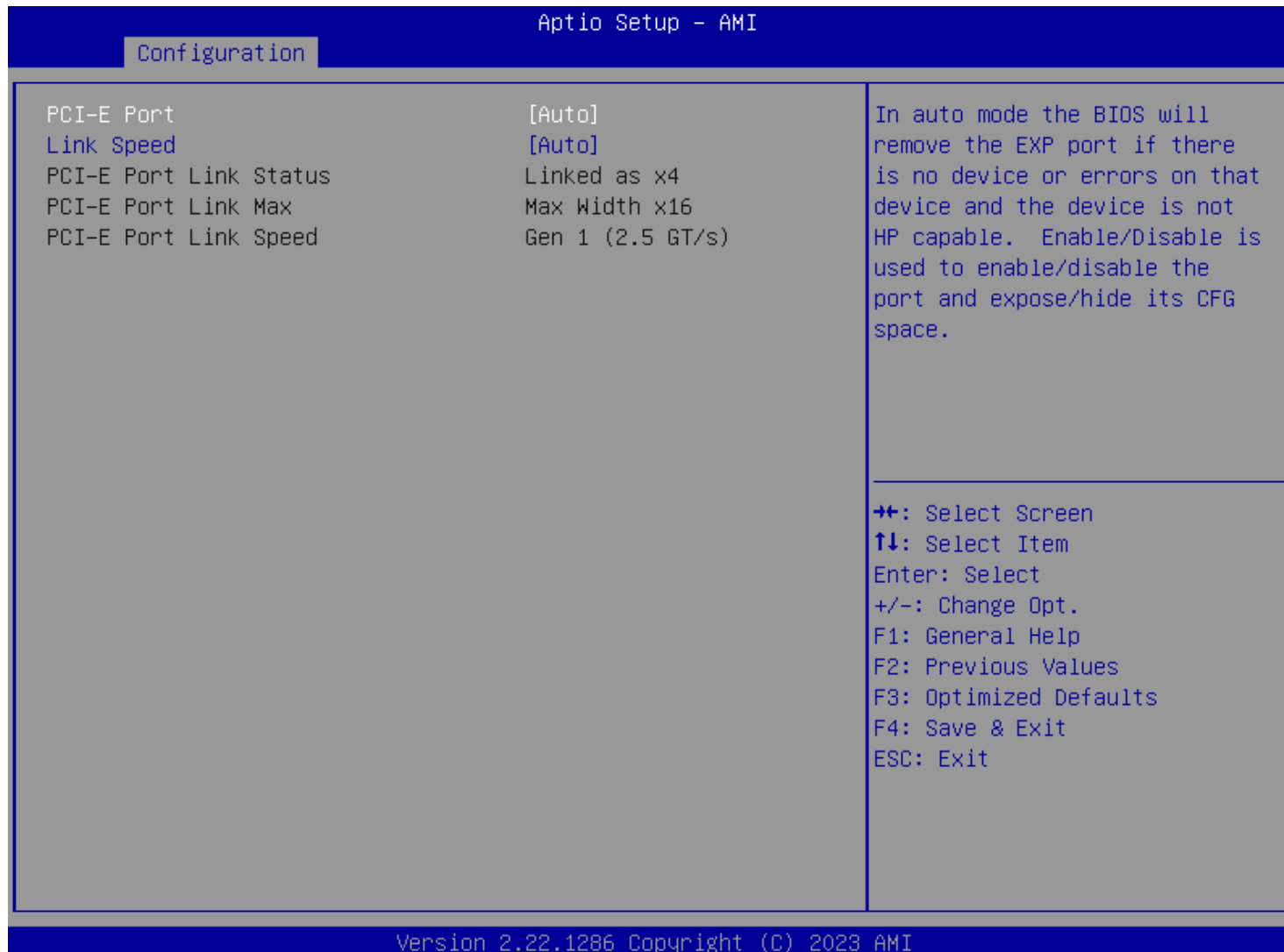
PCIe Port 0 / PCIe Port 4 / PCIe Port 8

PCI Express Root Port 1 / PCI Express Root Port 3 / PCI Express Root Port 5



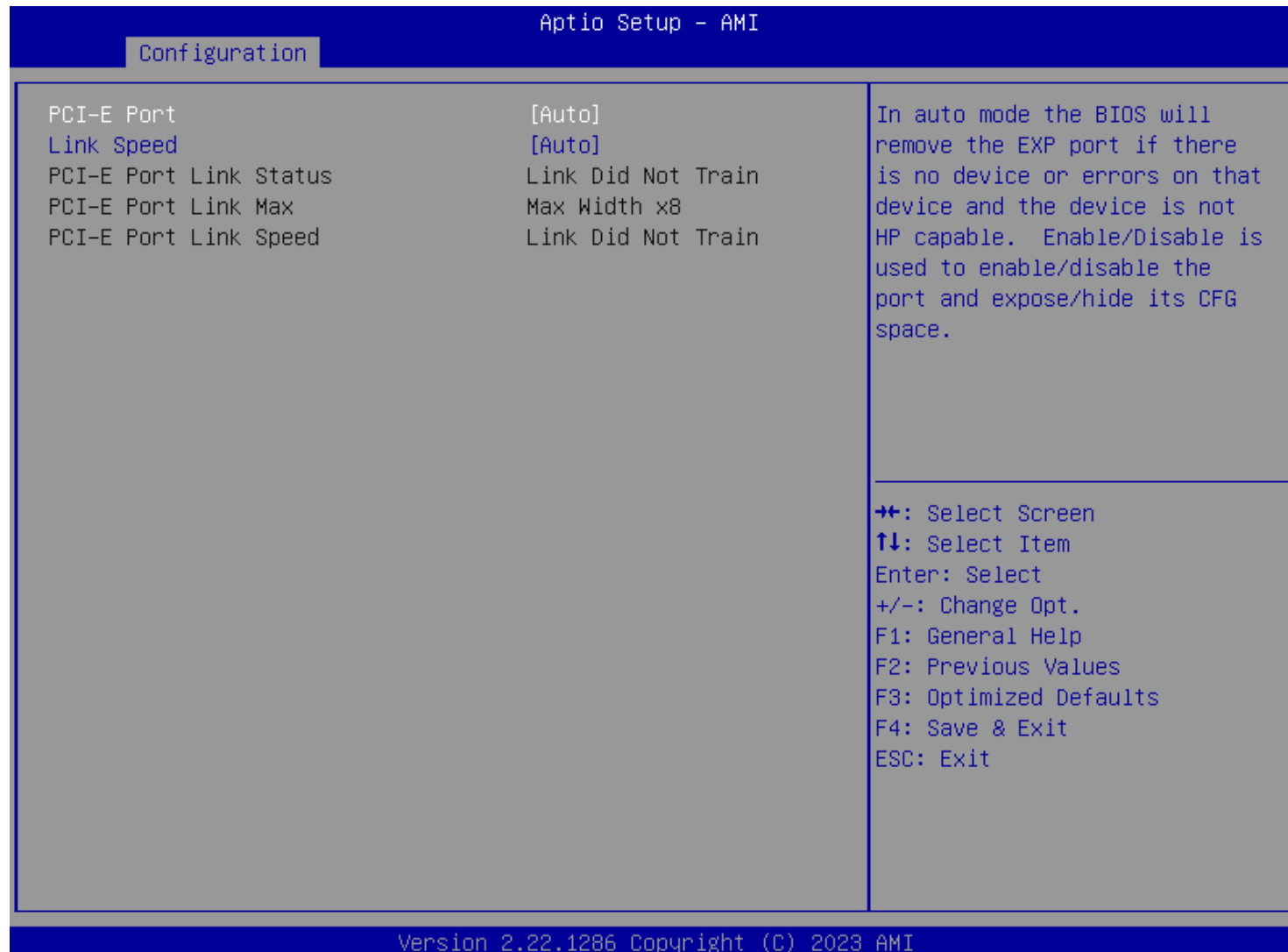
Feature	Description	Options
PCI Express Root Port 1 / Port 3 / Port 5	Control the PCI Express Root Port.	★Enable, Disable
PCIe Speed (Root Port 1 / Port 3 / Port 5)	Configuration PCIe Speed Auto is equal Gen2 or Gen3 depending on DTR soft strap.	★Gen x3, Gen x1, Gen x 2,

Port 1A



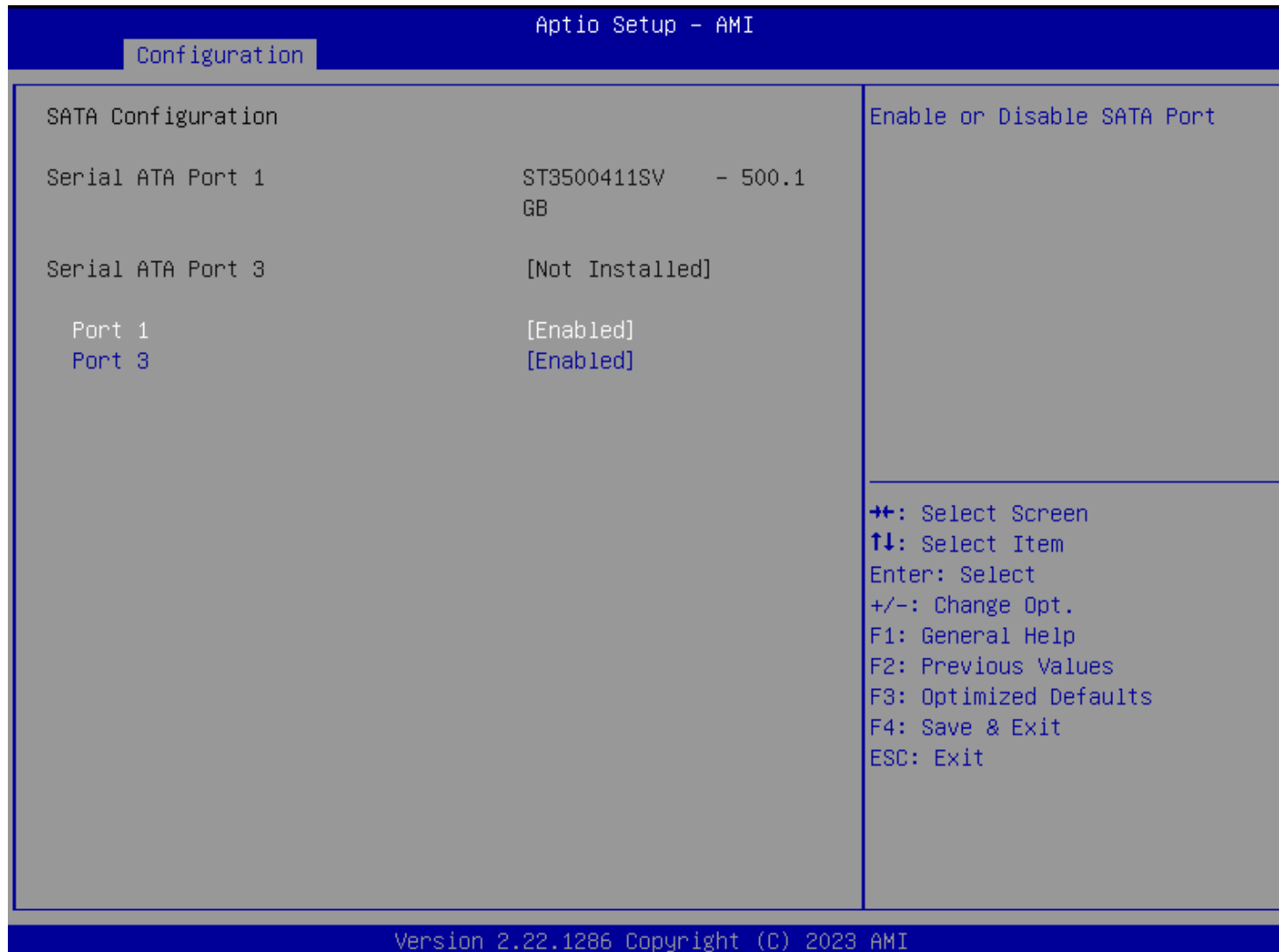
Feature	Description	Options
PCI-E Port	In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Enable/Disable is used to enable/disable the port and expose/hide its CFG space.	★Auto , Enable, Disable
Link Speed	Choose Link Speed for this PCIe port.	★Auto , Gen 1 (2.5 GT/s) , Gen 2 (5 GT/s) , Gen 3 (8 GT/s) , Gen 4 (16 GT/s)

Port 2A / Port 2C



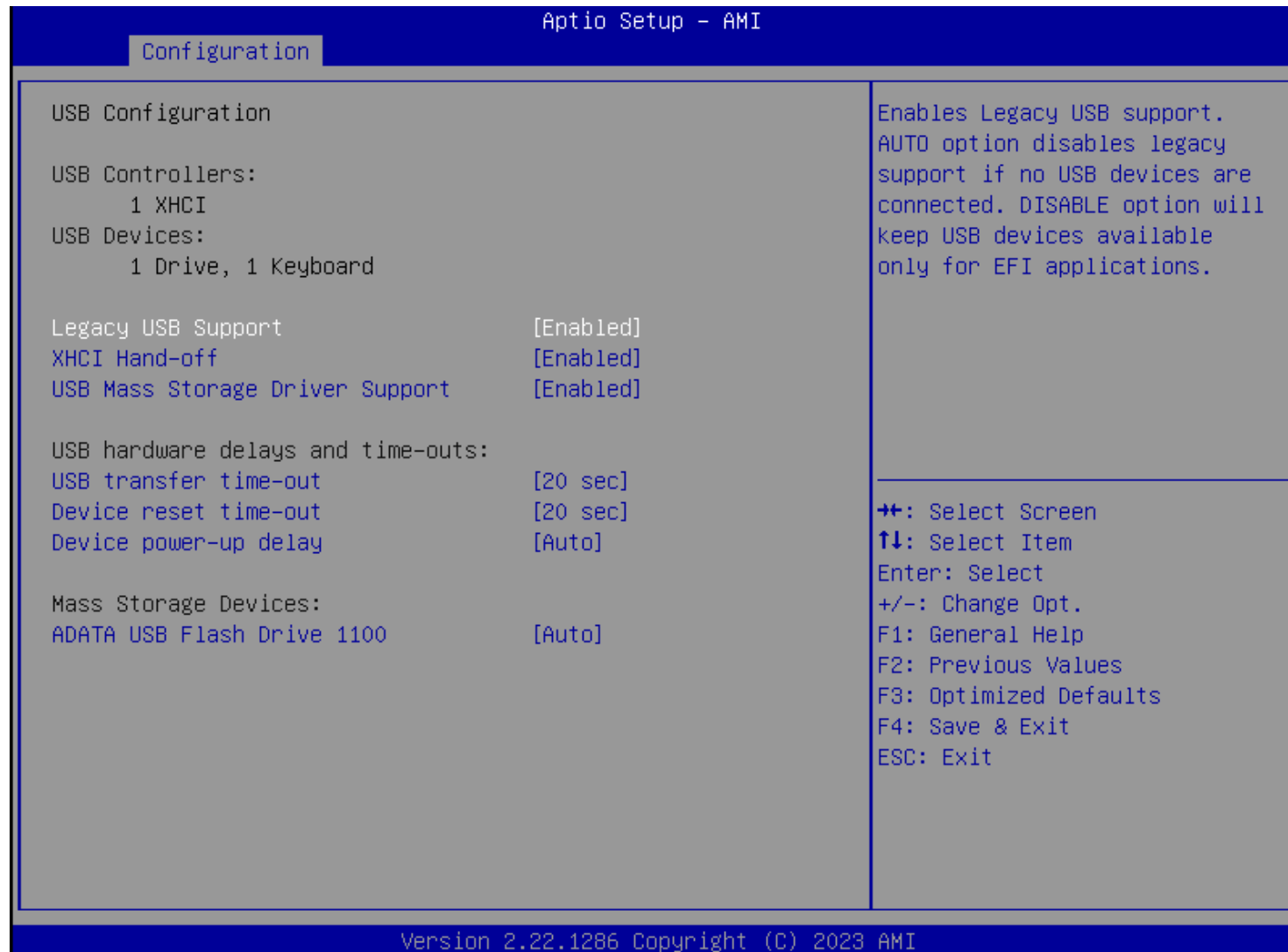
Feature	Description	Options
PCI-E Port	In auto mode the BIOS will remove the EXP port if there is no device or errors on that device and the device is not HP capable. Enable/Disable is used to enable/disable the port and expose/hide its CFG space.	★Auto , Enable, Disable
Link Speed	Choose Link Speed for this PCIe port.	★Auto , Gen 1 (2.5 GT/s) , Gen 2 (5 GT/s) , Gen 3 (8 GT/s) , Gen 4 (16 GT/s)

SATA Configuration



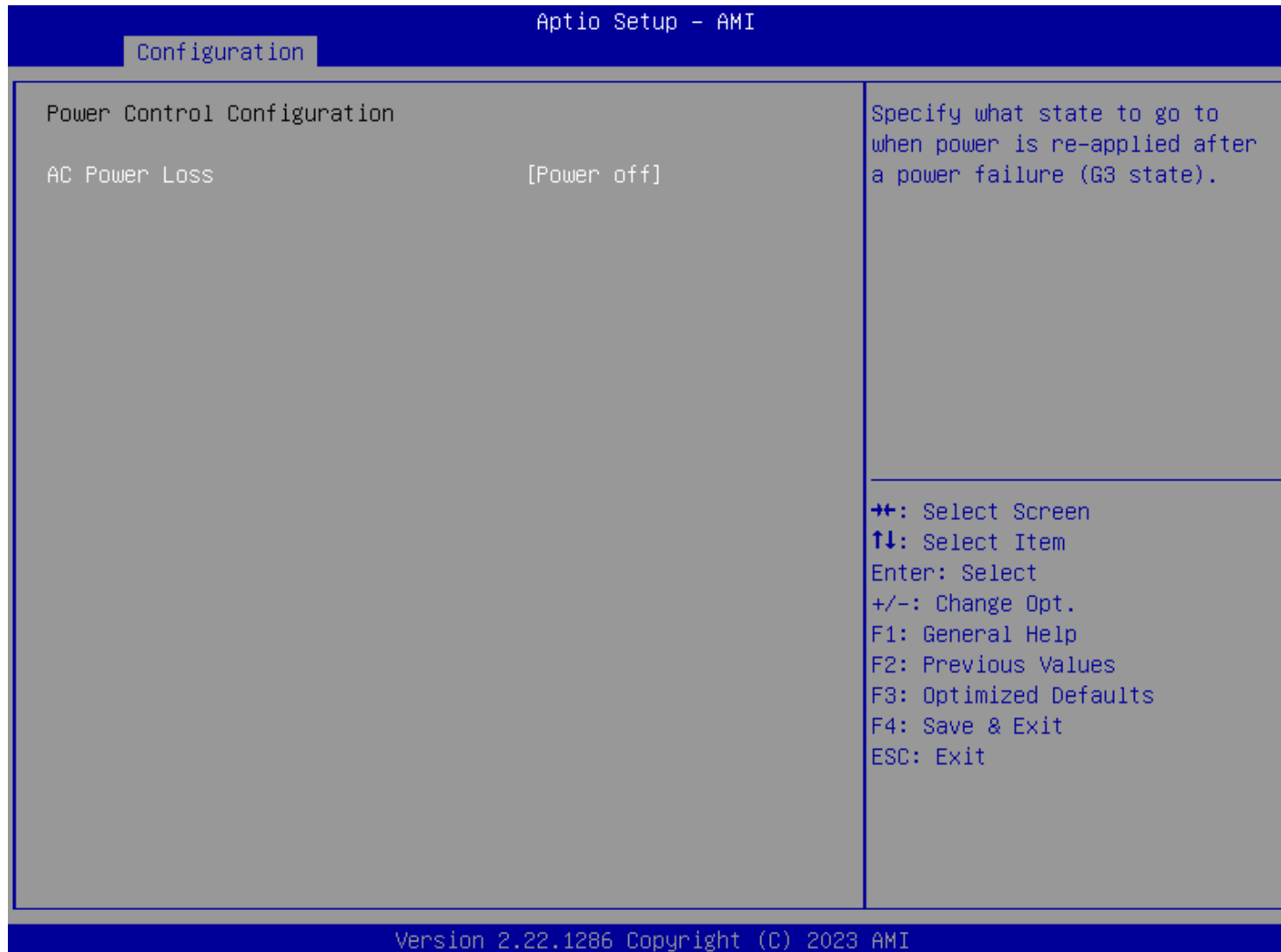
Feature	Description	Options
Port 1 / Port 3	Enabled or Disabled SATA Port	★Enabled , Disabled

USB Configuration



Feature	Description	Options
Legacy USB Support	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. Disable option will keep USB devices available only for EFI applications.	★Enabled , Disabled, Auto
XHCI Hand-off	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver	★Enabled , Disabled
USB Mass Storage Driver Support	Enable/Disable USB Mass Storage Driver Support	★Enabled , Disabled
USB transfer time-out	The time-out value for Control, Bulk, and Interrupt transfers.	★20 sec , 1 sec, 5 sec, 10 sec
Device reset time-out	USB mass storage device Start Unit command time-out.	★20 sec, 10 sec, 30 sec, 40 sec
Device power-up delay	Maximum time the device will take before it properly reports itself to the Host Controller. 'Auto' uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken.	★Auto, Manual
Mass Storage Devices	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drivers are emulated as 'CDROM', devices with no media will be emulated according to a drive type.	★Auto, Floppy , Forced FDD , Hard Disk , CD-ROM

Power Control Configuration



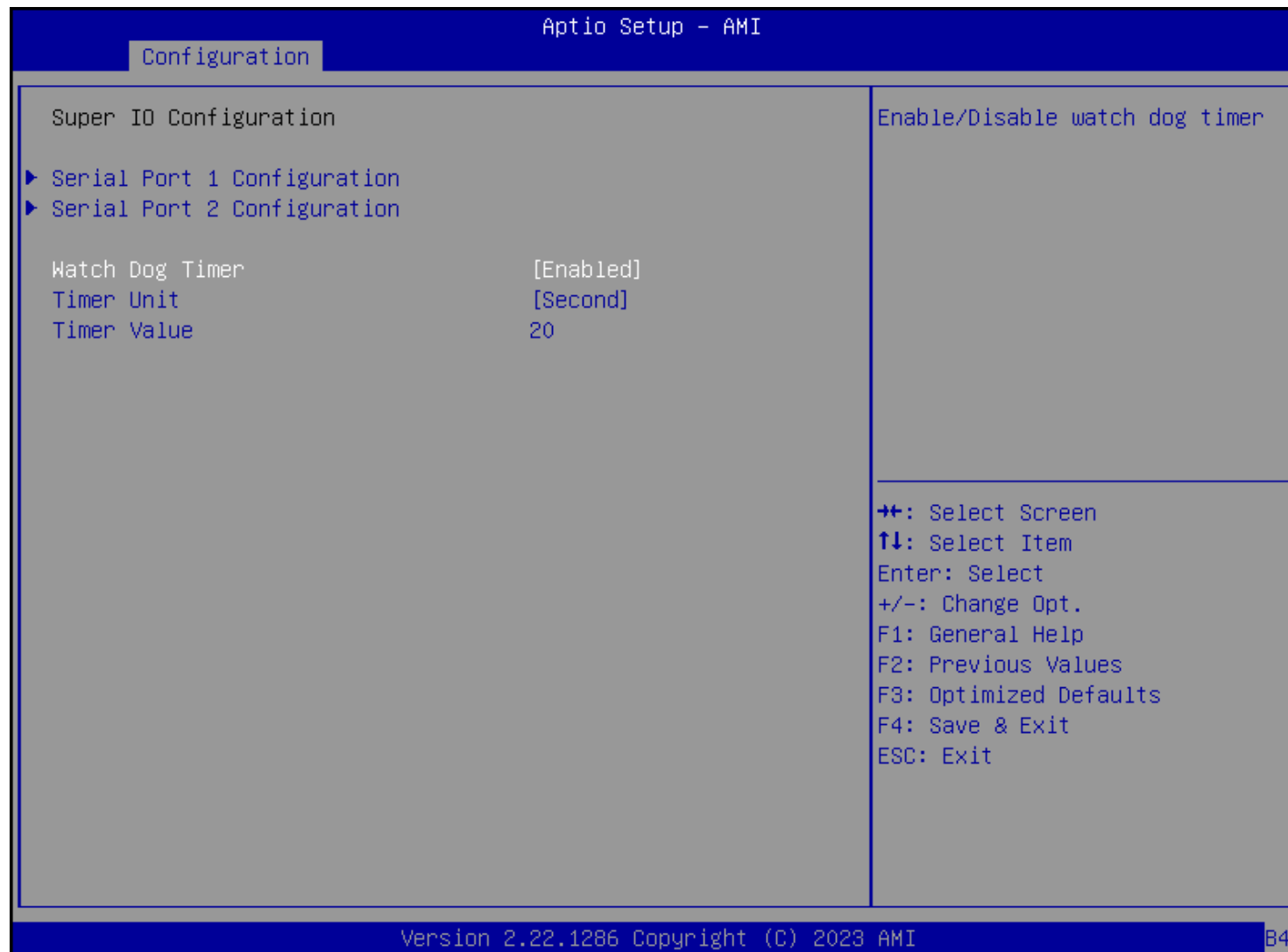
Feature	Description	Options
AC Power Loss	Specify what state to go to when power is re-applied after a power failure (G3 state)	★Power Off, Power On

Trusted Computing



Feature	Description	Options
TPM v1.2 Support	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.	★Enabled , Disabled
SHA256 PCR Bank	Enables or Disables SHA256 PCR Bank	★Enabled , Disabled
Pending operation	Schedule an Operation for the Security Device. Note: Your Computer will reboot during restart in order to change State of Security Device	★None, TPM Clear
Platform Hierarchy	Enables or Disables Platform Hierarchy	★Enabled , Disabled
Storage Hierarchy	Enables or Disables Storage Hierarchy	★Enabled , Disabled
Endorsement Hierarchy	Enables or Disables Endorsement Hierarchy	★Enabled , Disabled
TPM2.0 UEFI Spec Version	,Select the TCG2 Spec Version Support ,TCG_1_2: the Compatible mode for Win8/Win10 ,TCG_2: Support new TCG2 protocol and event format for Win10 or later	★TCG_2 , TCG_1_2
Physical Presence Spec Version	Select to Tell O.S. to Support PPI Spec Version 1.2 or 1.3. Note some .HCK tests might not support 1.3	★1.2 , 1.3
Device Select	TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to .TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated	★ ,Auto, TPM 1.2 TPM 2.0

Super IO Configuration



Feature	Description	Options
Watch Dog Timer	Enable/Disable Watch Dog Timer	★Disabled, Enabled
Watch Dog Timer [Enable]		
Timer Unit	Select Timer count unit of WDT [Watch Dog Timer [Enabled]]	★Second, Minute
Timer value	Set WDT Timer value seconds / minutes [Watch Dog Timer [Enabled]]	★20

Serial Port 1 Configuration



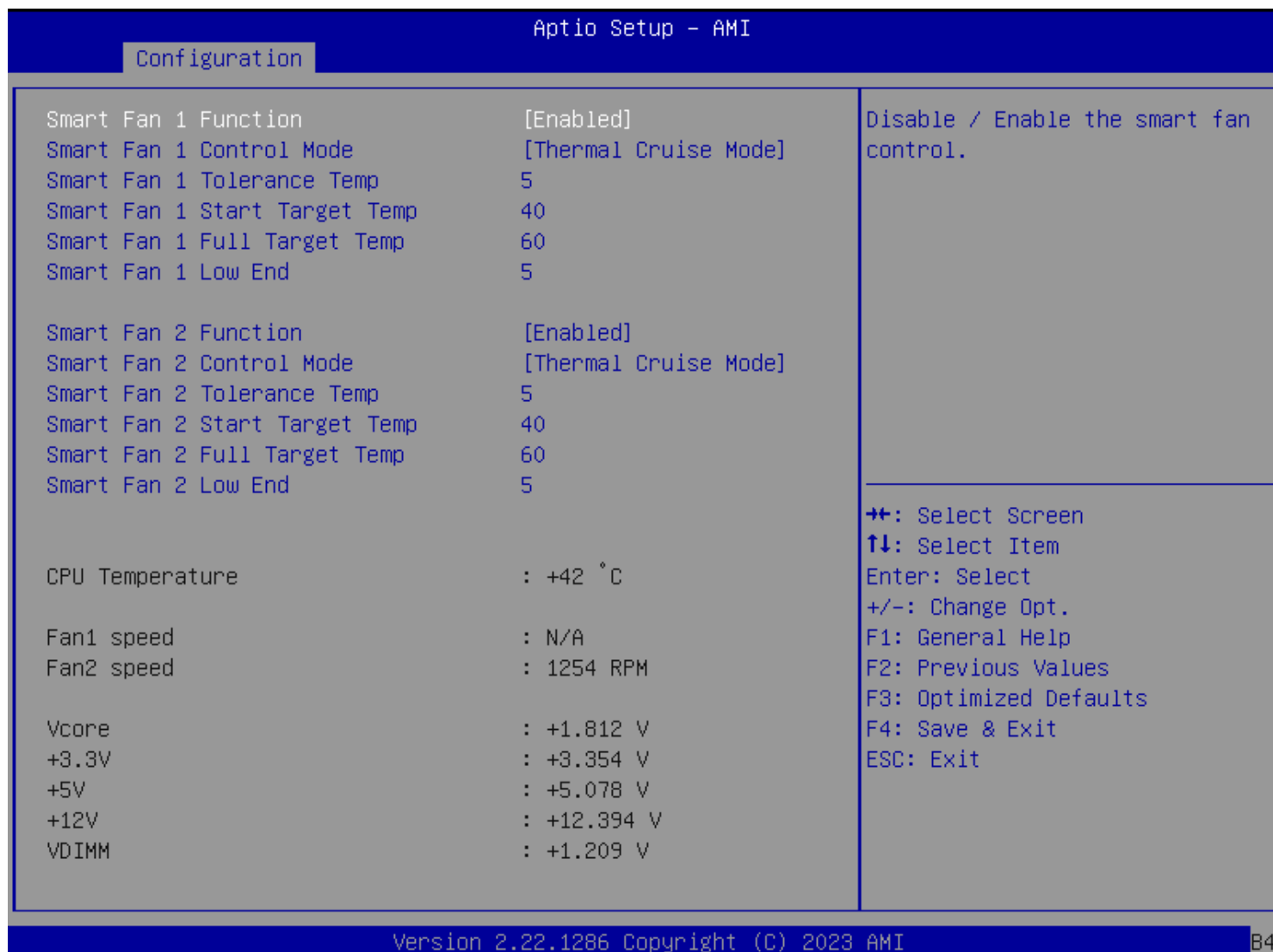
Feature	Description	Options
Module Serial Port 1	Enable or Disable Serial Port (COM)	★Enabled, Disabled
Change Settings	Select an optimal settings for Super IO Device	★Auto ,IO=3F8h; IRQ=4; IO=3F8h; IRQ=3,4,10,11; IO=2F8h; IRQ=3,4,10,11; IO=3E8h; IRQ=3,4,10,11; IO=2E8h; IRQ=3,4,10,11;

Serial Port 2 Configuration



Feature	Description	Options
Module Serial Port 2	Enable or Disable Serial Port (COM)	★Enabled, Disabled
Change Settings	Select an optimal settings for Super IO Device	★Auto ,IO=3E8h; IRQ=3; IO=3F8h; IRQ=3,4,10,11; IO=2F8h; IRQ=3,4,10,11; IO=3E8h; IRQ=3,4,10,11; IO=2E8h; IRQ=3,4,10,11;

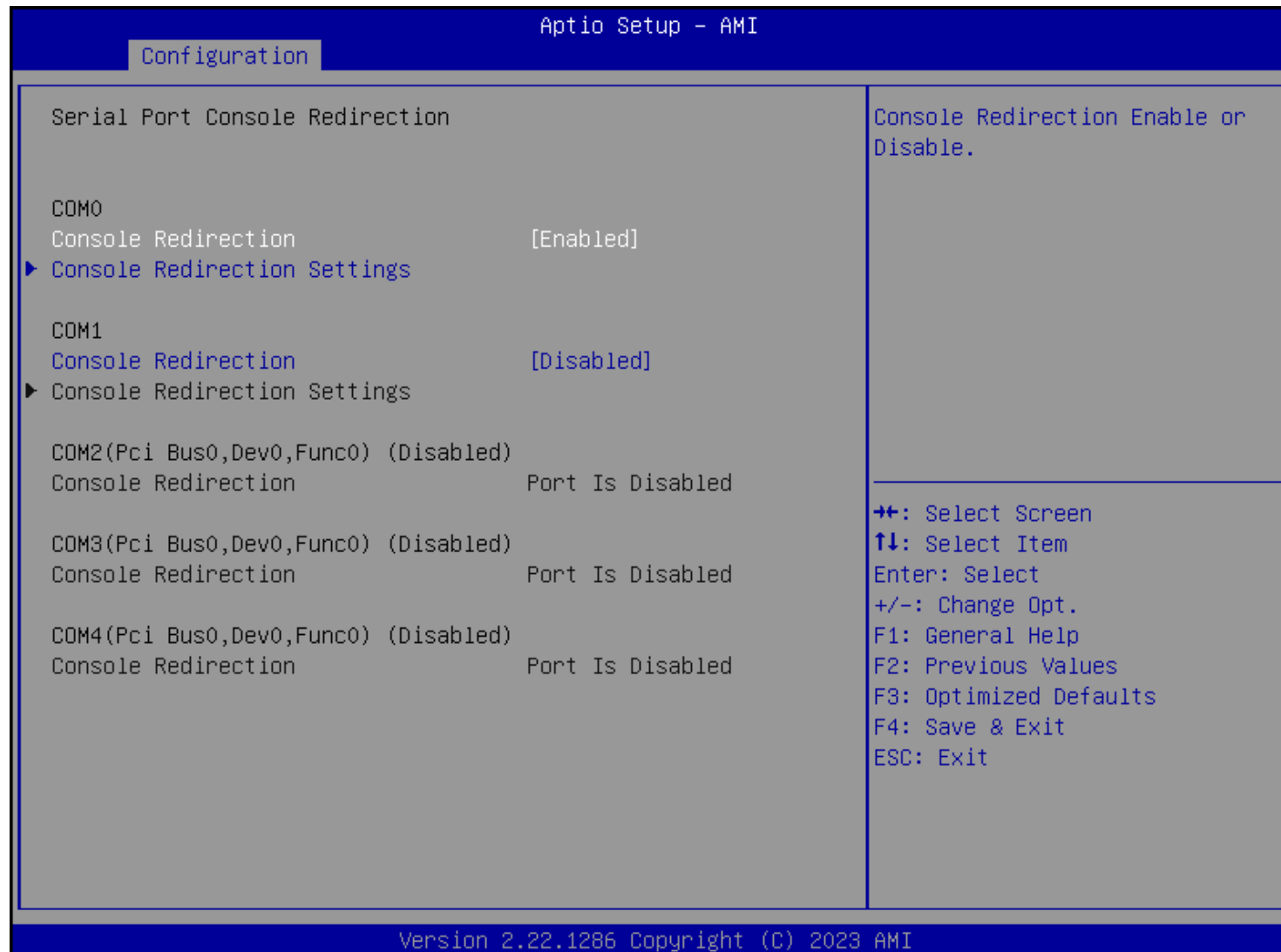
H/W Monitor



B4

Feature	Description	Options
Smart Fan 1 Function	Disable / Enable the Smart Fan Control.	★Disabled, Enabled
Smart Fan 1 Function [Enable]		
Smart Fan 1 Control Mode	Select smart fan control mode.	★Thermal Cruise Mode, Fan Control Mode
Smart Fan 1 Tolerance Temp	In Thermal Cruise Mode: tolerance of target temperature.	★5
Smart Fan 1 Start Target Temp	In Thermal Cruise Mode: start temperature.	★40
Smart Fan 1 Full Target Temp	In Thermal Cruise Mode: full speed temperature.	★60
Smart Fan 1 Low End	In Thermal Cruise Mode: low end of fan speed (0-100%)	★5
Smart Fan 2 Function	Disable / Enable the Smart Fan Control.	★Disabled, Enabled
Smart Fan 2 Function [Enable]		
Smart Fan 2 Control Mode	Select smart fan control mode.	★Thermal Cruise Mode, Fan Control Mode
Smart Fan 2 Tolerance Temp	In Thermal Cruise Mode: tolerance of target temperature.	★5
Smart Fan 2 Start Target Temp	In Thermal Cruise Mode: start temperature.	★40
Smart Fan 2 Full Target Temp	In Thermal Cruise Mode: full speed temperature.	★60
Smart Fan 2 Low End	In Thermal Cruise Mode: low end of fan speed (0-100%)	★5

Serial Port Console Redirection



Feature	Description	Options
COM0 Console Redirection	Console Redirection Enable or Disable	★Enabled, Disabled
COM1 Console Redirection	Console Redirection Enable or Disable	★Disabled, Enabled

Com 0 / 1 Console Redirection Settings

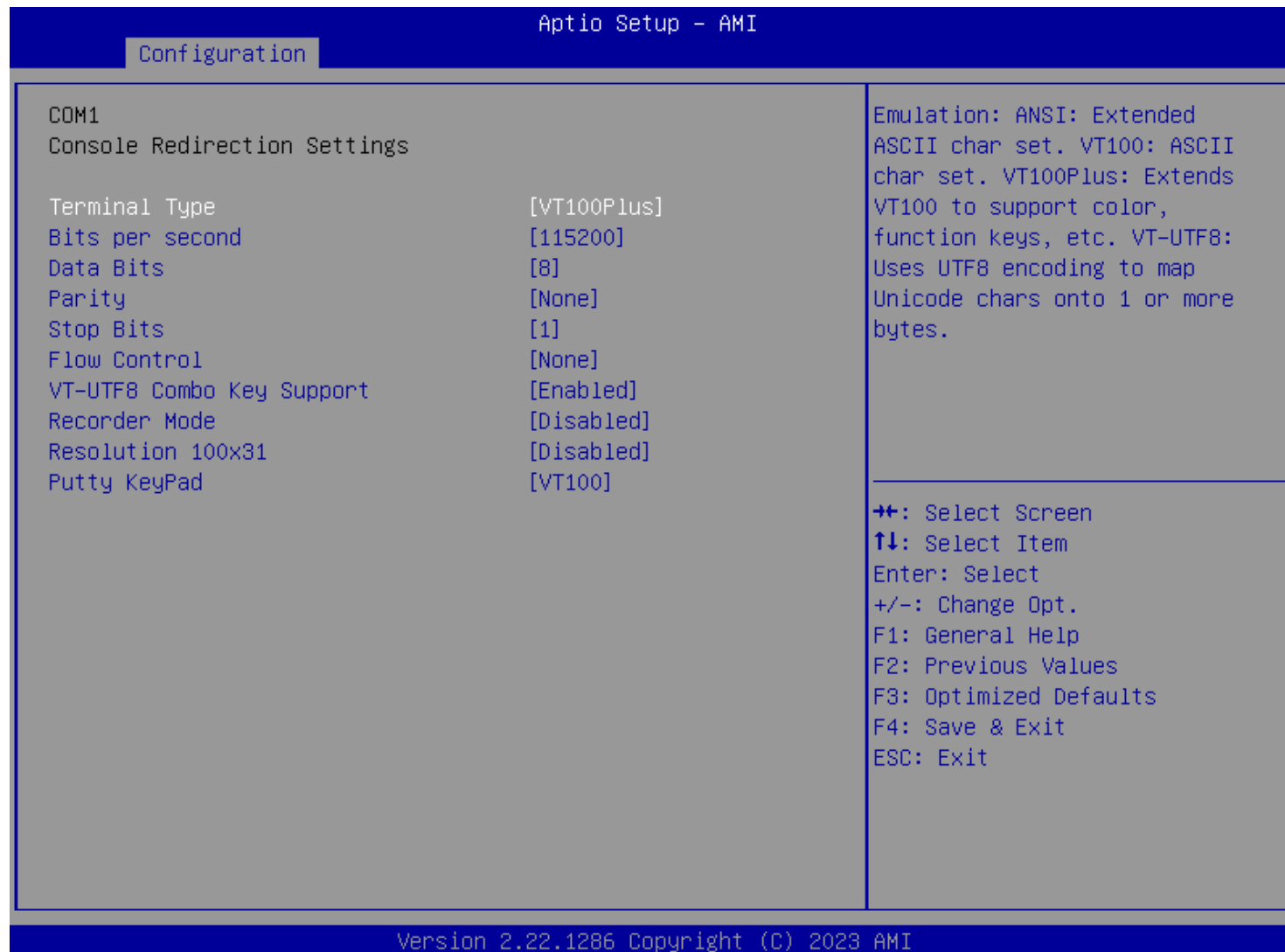
Aptio Setup - AMI

Configuration

COM0 Console Redirection Settings		Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Terminal Type	[VT100Plus]	
Bits per second	[115200]	
Data Bits	[8]	
Parity	[None]	
Stop Bits	[1]	
Flow Control	[None]	
VT-UTF8 Combo Key Support	[Enabled]	
Recorder Mode	[Disabled]	
Resolution 100x31	[Enabled]	
Putty KeyPad	[VT100]	

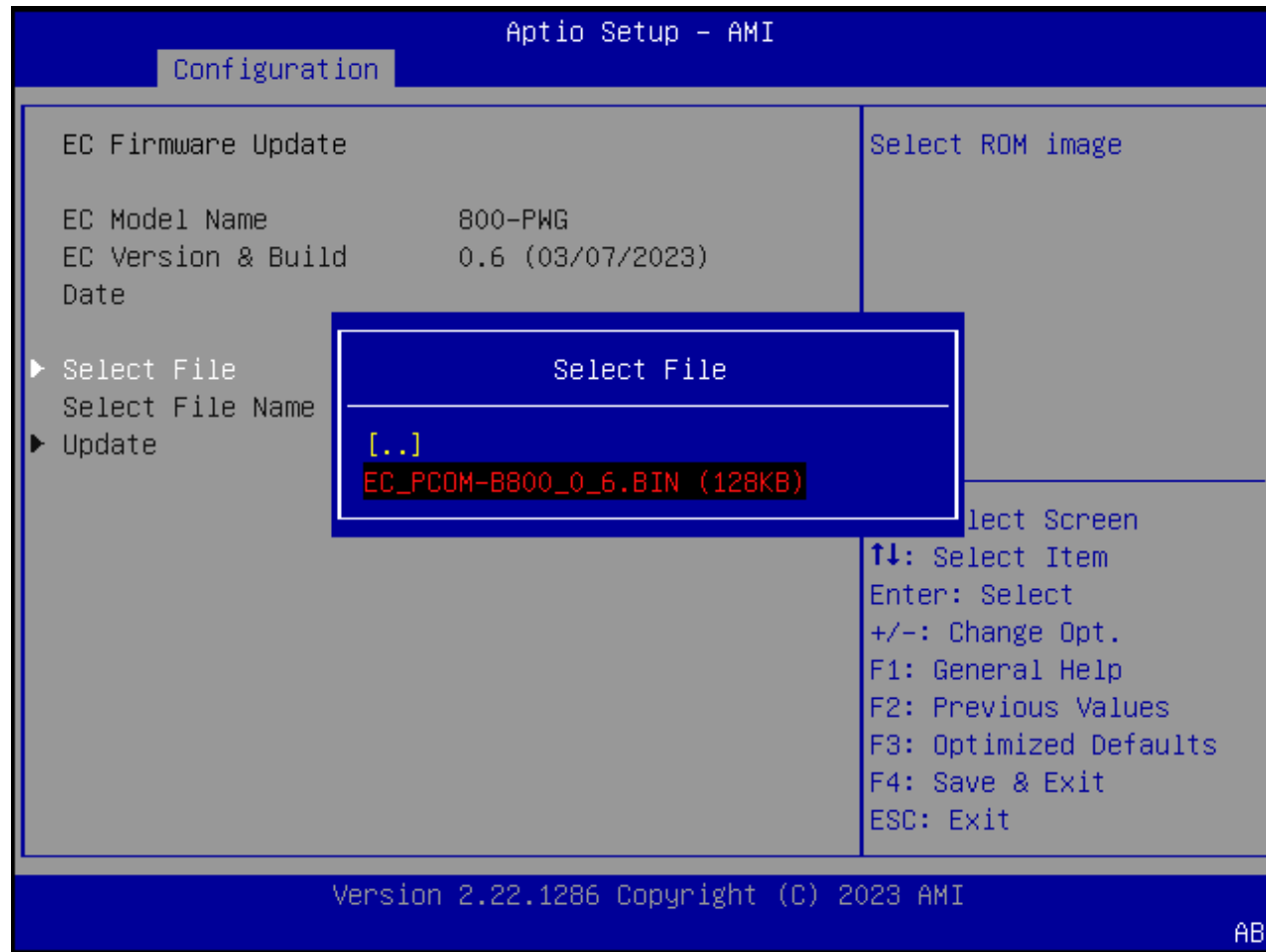
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

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Feature	Description	Options
Terminal Type	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100 Plus: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.	★VT100Plus, VT100, ANSI, VT-UTF8
Bits per second	Select Serial port transmission speed. The speed must be matched on other side. Long or noisy lines may require lower speeds.	★115200, 9600, 19200, 38400, 57600
Data bits	Data bits	★8, 7
Parity	A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bit is 0 if the num of 1's in the data bits is even. Odd: parity bit is 0 if num of 1's in the data bits is odd. Mark: parity bit is always 1. Space parity bit is always 0. Mark and Space Parity do not allow for error detection. They can be used as an additional data bit.	★None, Even, Odd, Mark, Space
Stop Bits	Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.	★1,2
Flow Control	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signal.	★None, Hardware RTS/CTS
VT-UTF8 Combo Key Support	Enable VT-UTF8 Combination Key Support for ANSI / VT100 terminals	★Enabled, Disabled
Recorder Mode	With this mode enabled only text will be sent. This is to capture Terminal data.	★Disabled, Enabled
Resolution 100x31	Enables or disables extended terminal resolution	★Disabled, Enabled
Putty KeyPad	Select Function Key and KeyPad on Putty.	★VT100, LINUX, XTERMR6, SCO, ESCN, VT400

EC Firmware Update



Feature	Description	Options
Select File	Select ROM image	Bin file to the USB DOK

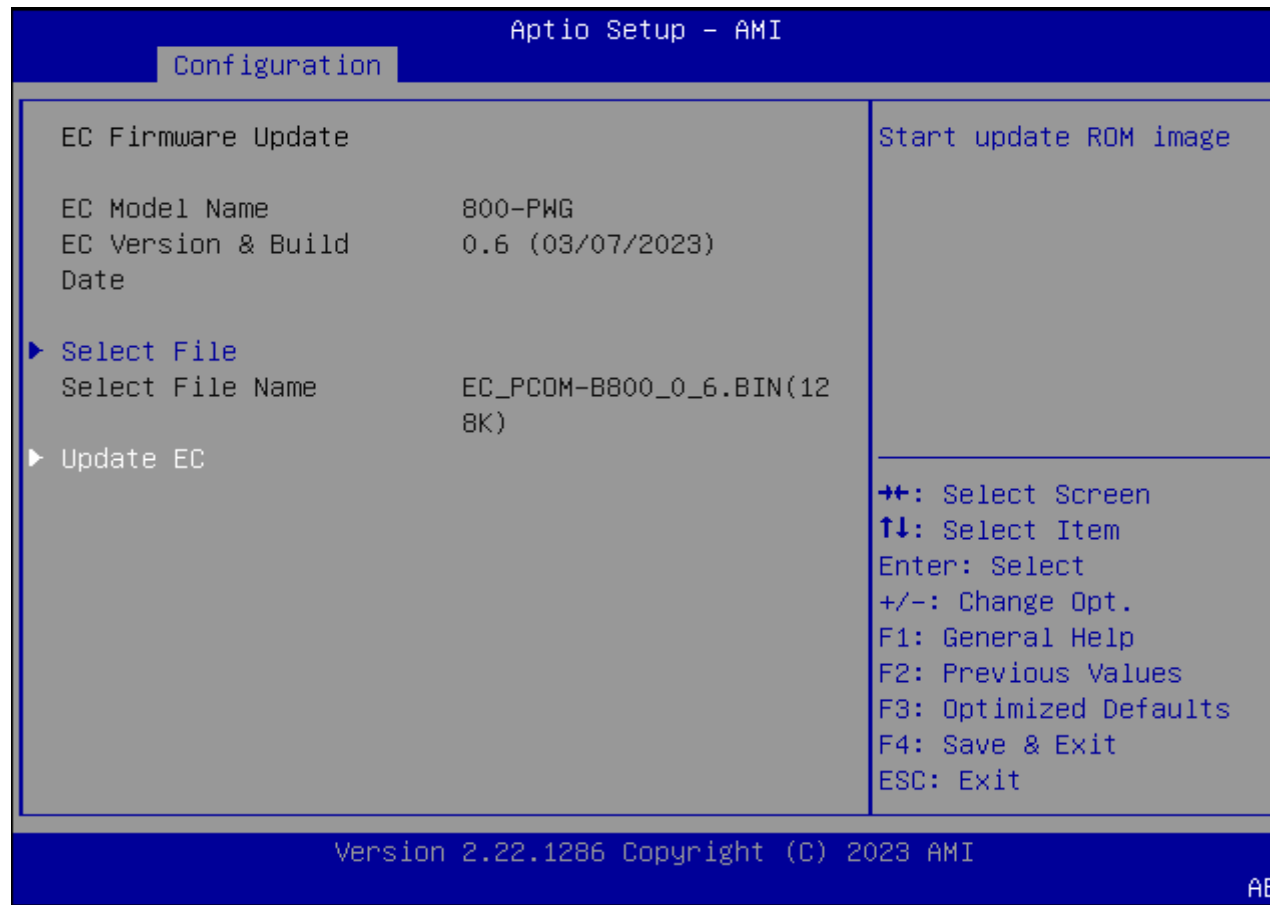
Update EC

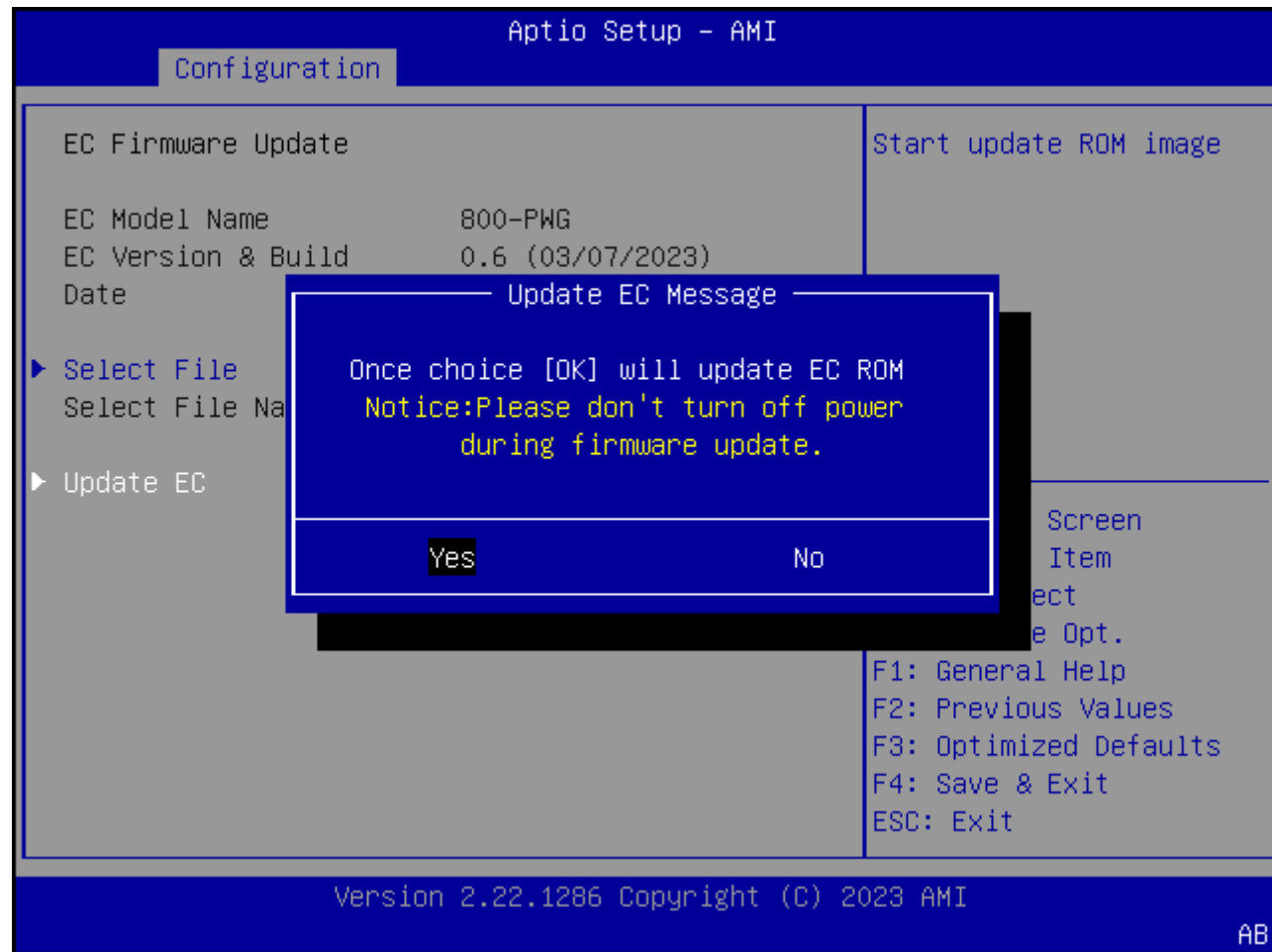
Step 1. Prepare a USB DOK.

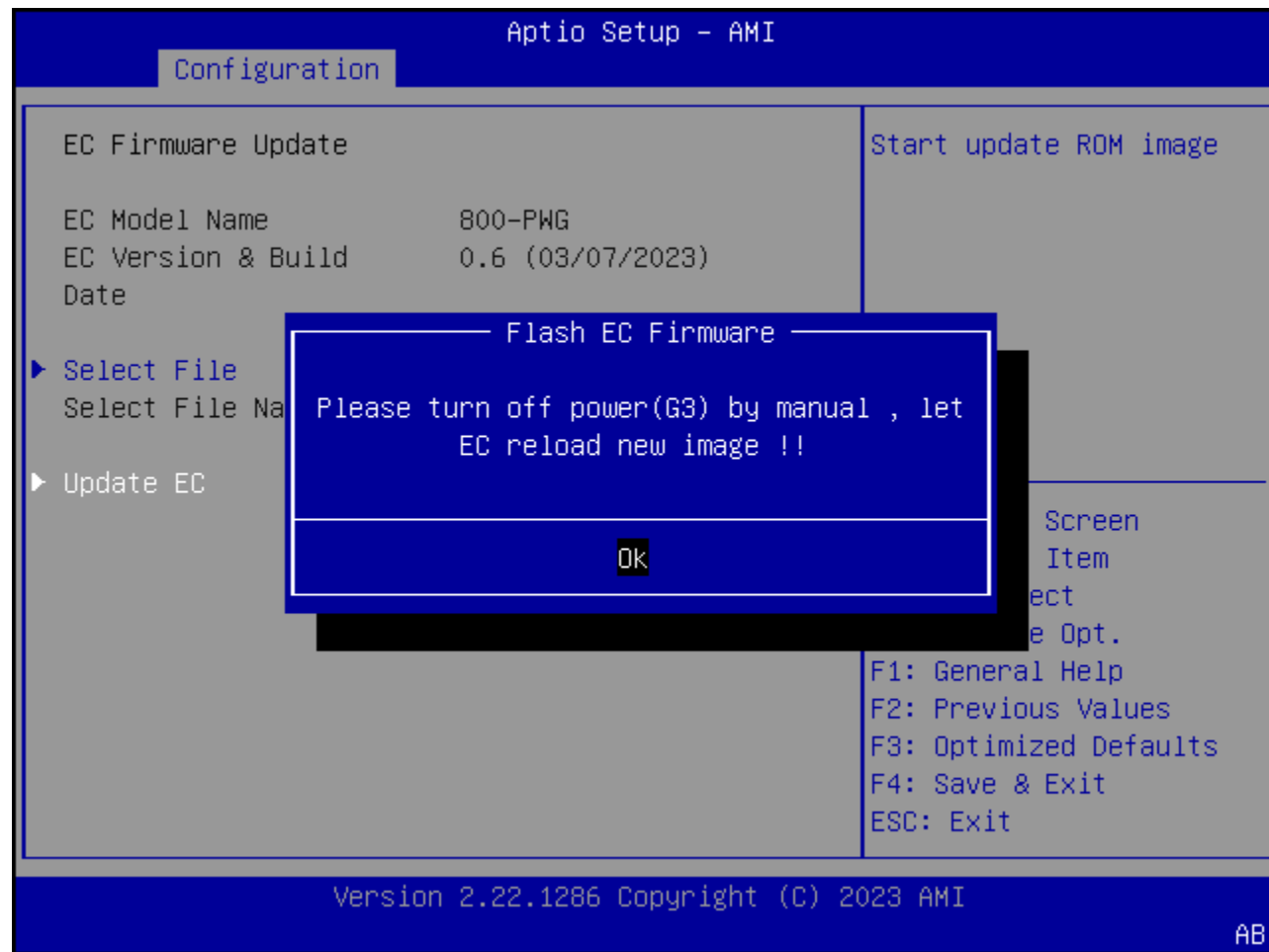
Step 2. Unzip update file to the USB DOK.

Step 3. Select File System (USB DOK)

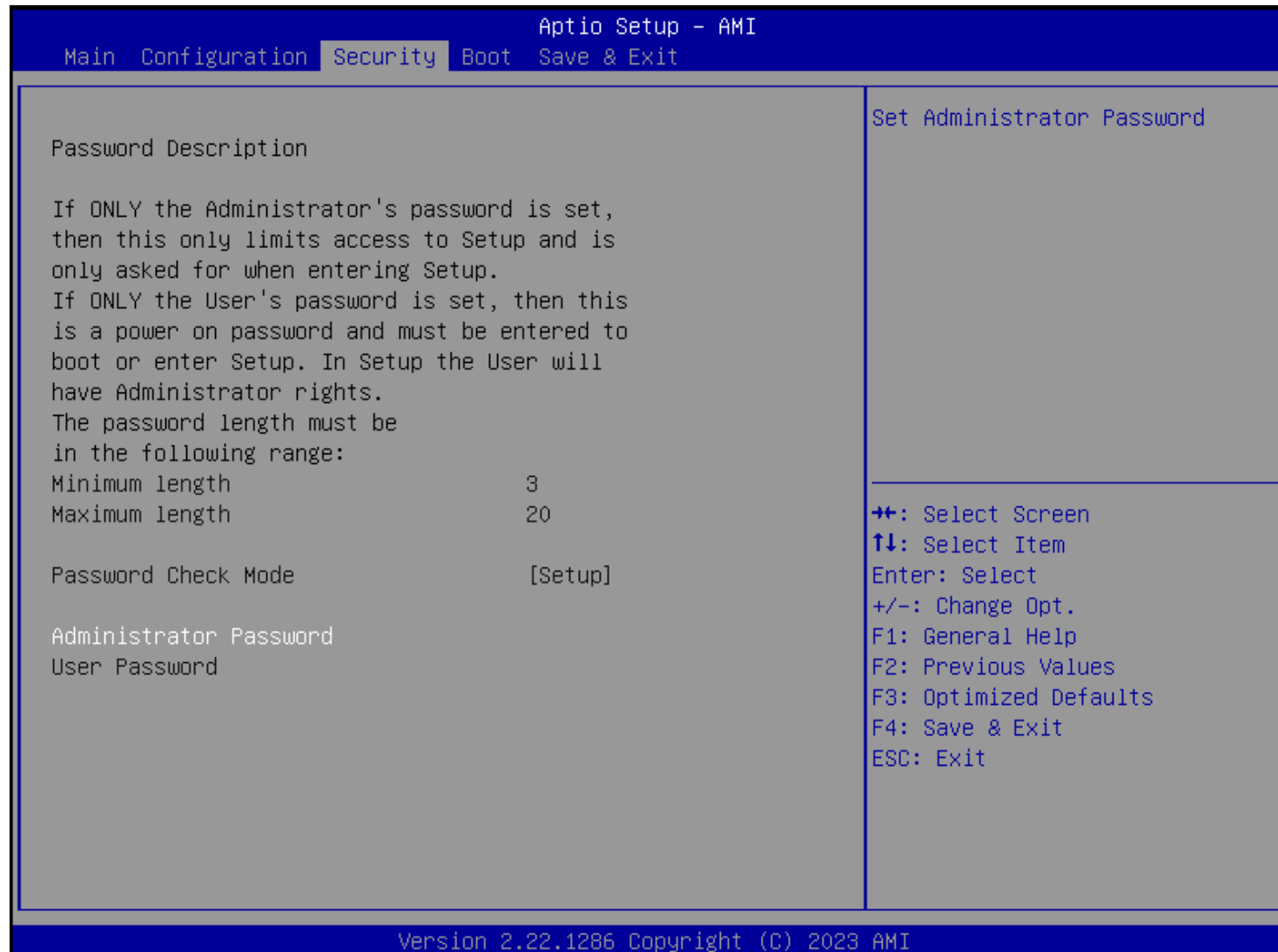
Step 4. Select Update EC





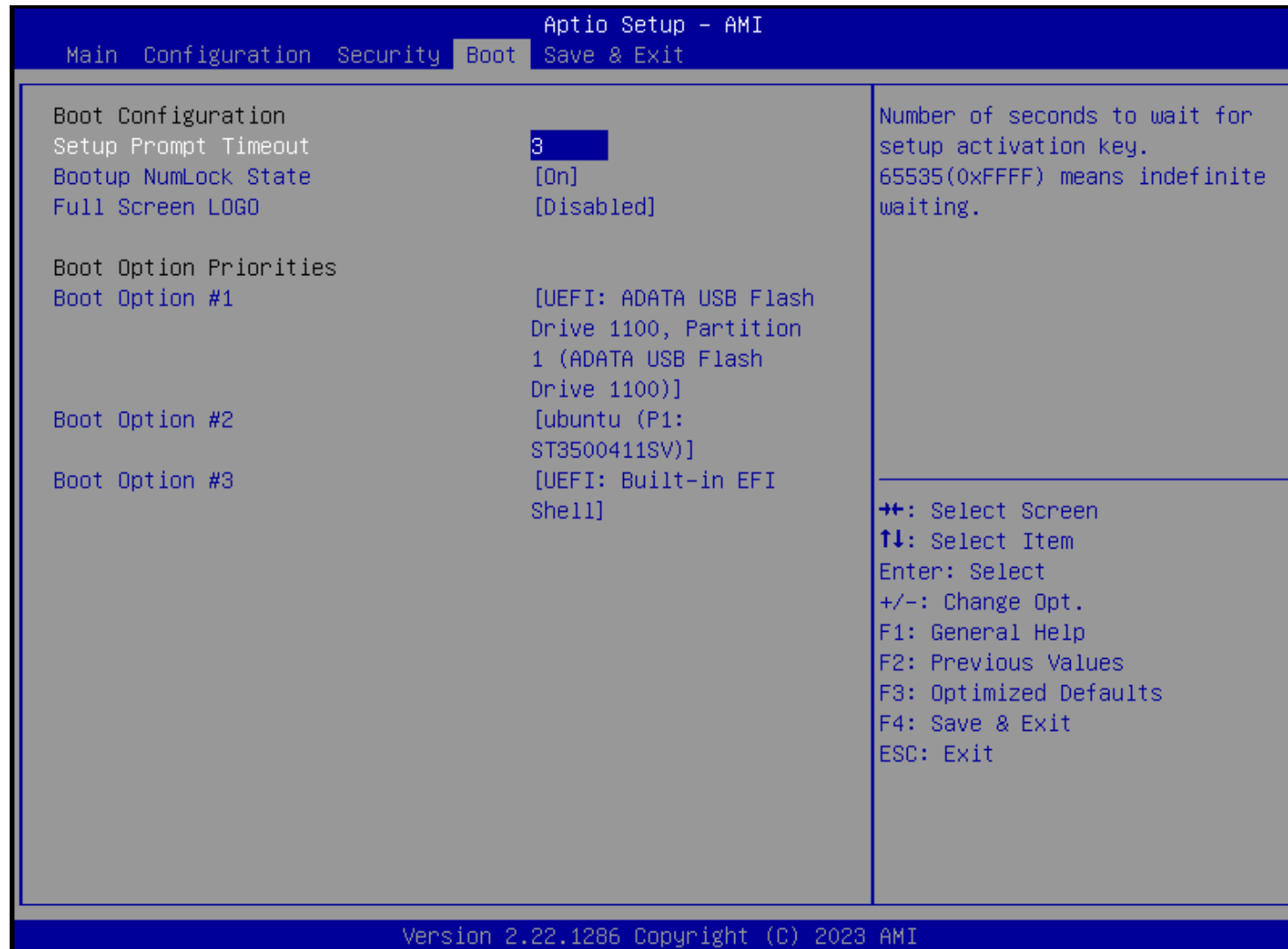


6.4 Security



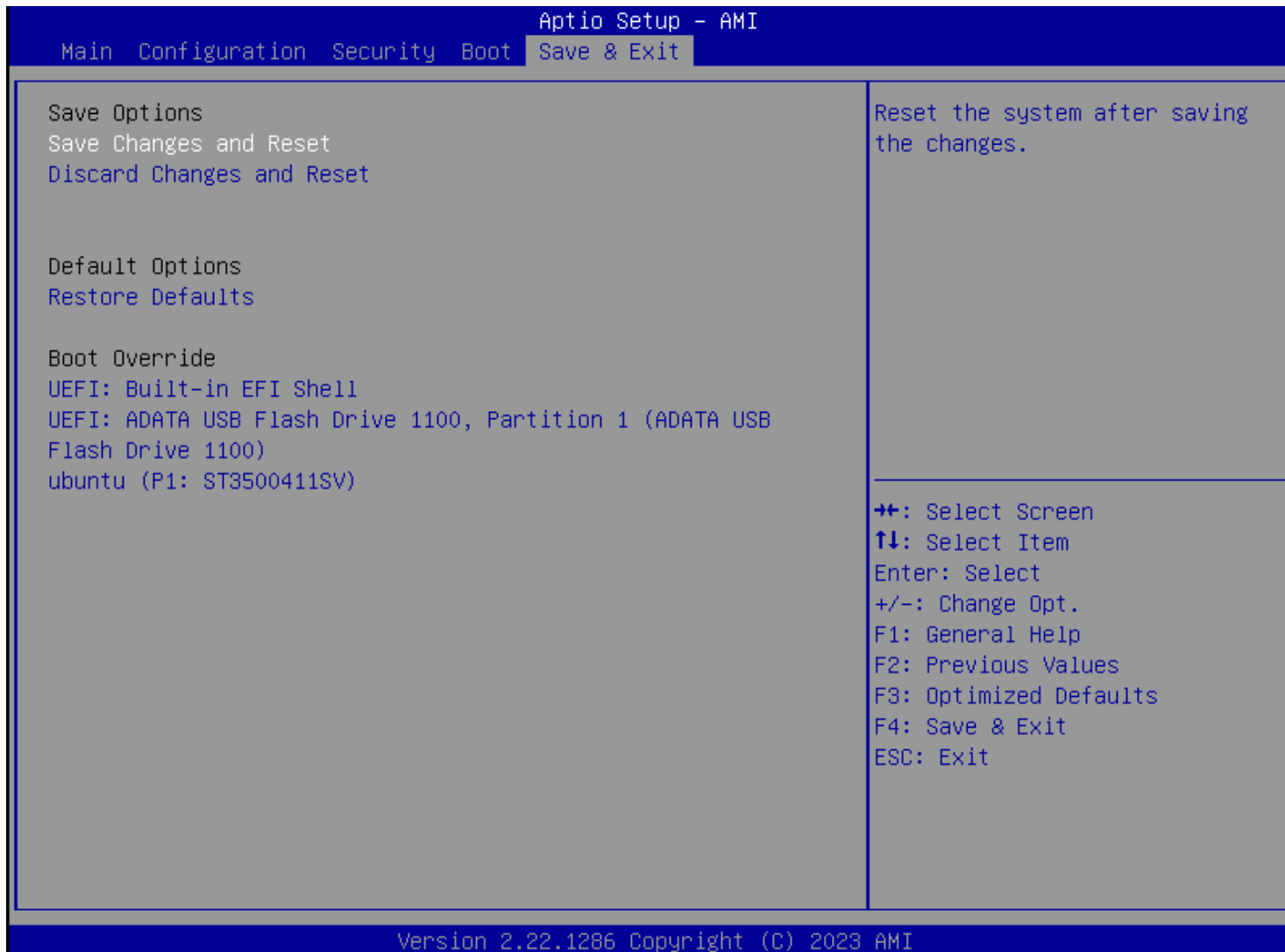
Feature	Description	Options
Administrator Password	Set Administrator Password	
Administrator Password [Set Administrator Password]		
Password Check Mode	[Setup] check password when enter setup screen. [Power on] check password on every time system power on.	★Setup, Power On
User Password	Set User Password	

6.5 Boot



Feature	Description	Options
Setup Prompt Timeout	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.	★ 3
Bootup NumLock State	Select the keyboard NumLock state.	★On, Off
Full Screen LOGO	Enables or disables Quiet Boot option and Full screen Logo.	★Disabled, Enabled
Boot Option # 1 / # 2 / # 3	Sets the system boot order	UEFI: Built-in EFI Shell Link Device list Disabled

6.6 Save & Exit



Feature	Description	Options
Save Changes and Reset	Reset the system after saving the changes.	
Discard Changes and Reset	Reset system setup without saving any changes.	
Restore Defaults Values	Restore/Load Default values for all the setup options.	
UEFI: Built-in EFI Shell	Reset the system after saving the changes. (Boot option filter: UEFI only)	

7 System Resources

LPC

Device	I/O Address	Note
Embedded Controller	0x6E / 0x6F	EC Address
	0x62 / 0x66	EC ACPI CMD Port
	0x200 / 0x201	EC BRAM Port for I2C function
	0x300~0x3FF	EC LPC IO Space
	0x3F8~0x3FF	EC UART1
	0x3E8~0x3EF	EC UART2
Carrier SIO	N/A	

SMBUS

SMBUS Address	Information
0x44	SMBus ARP
0x6C	PCIe Clock Buffer
0x10 / 0x12 / 0x16 / 0x48	Reserved

Table 10 System Resources

8 BIOS/EC Update

PCOM-B800GT only supports BIOS/EC update under UEFI shell environment; refer the following step, please.

Notes on updating BIOS:

It is necessary to adjust the module board SW1 jumper to ON, then power on and execute update. efi

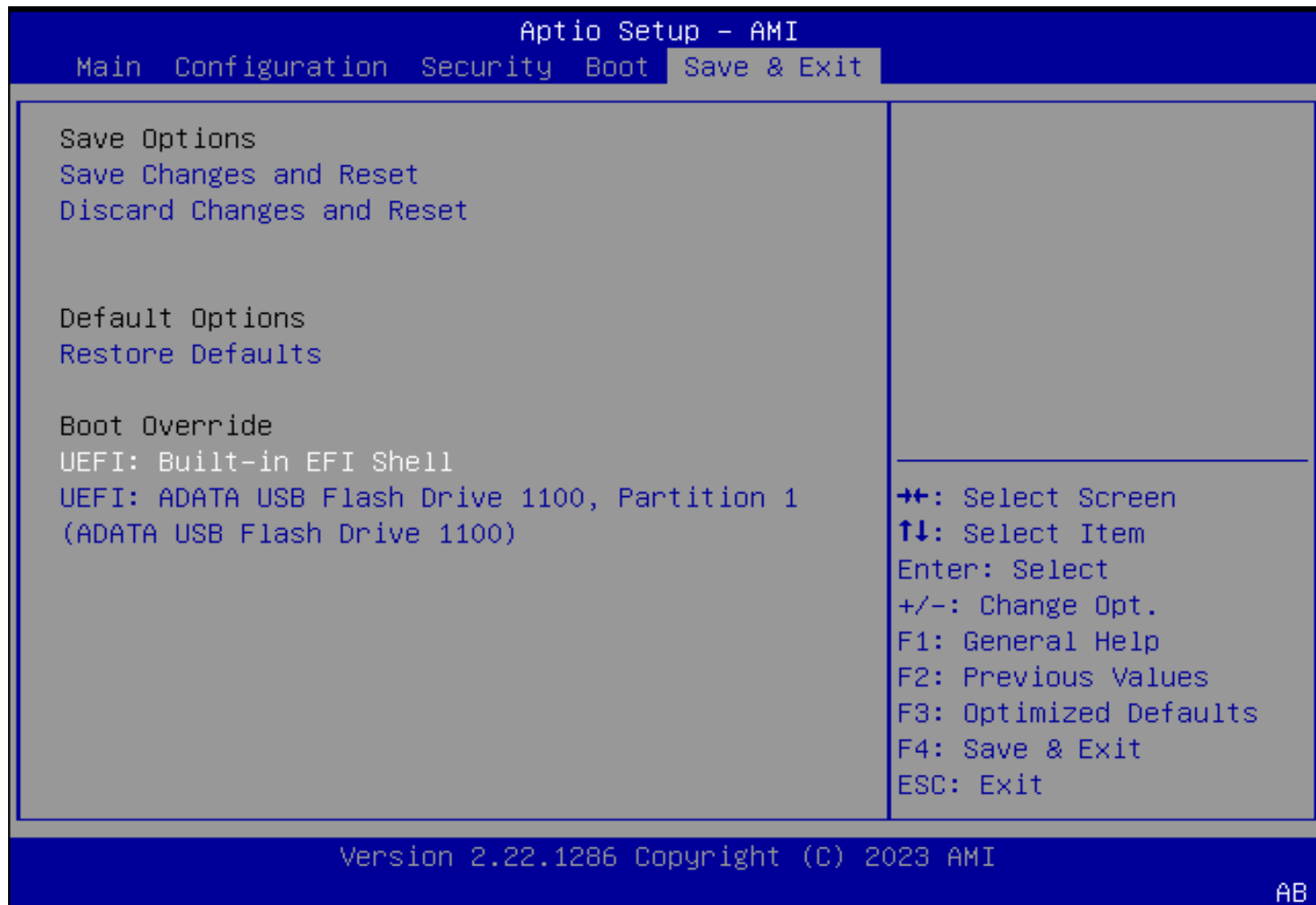
After the update is completed, you need to power off G3, switch the module board SW1 jumper back to its original position, and then turn it on again.

SW1 : Flash Security Override

On	Override the security measures defined in the Flash Descriptor (unlocked). (Intel® ME will run in recovery mode.)
*1	The security measures defined in the Flash Descriptor will be in effect (locked).

Step 1. Unzip update file to the USB DOK (USB DOK must be FAT or FAT32 format)

Step 2. Plug the USB DOK on the target system and boot from UEFI shell



Step 3 Under the UEFI shell, change prompt to your USB DOK, the below example is “**fs0:**”

Step 4 Then change the folder with updated file and use command: “**update**” and press enter

```
UEFI Interactive Shell v2.2
EDK II
UEFI v2.80 (American Megatrends, 0x0005001C)
Mapping table
  FS0: Alias(s):HD010b::BLK1:
        PciRoot(0x0)/Pci(0x1E,0x0)/USB(0x8,0x0)/HD(1,GPT,66761656-B243-474A-93
69-330601F972F2,0x800,0x1CE77DF)
  BLK0: Alias(s):
        PciRoot(0x0)/Pci(0x1E,0x0)/USB(0x8,0x0)
Press ESC in 4 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:\> cd Update_PCOM-B800GT-50G4P_0_0_8
FS0:\Update_PCOM-B800GT-50G4P_0_0_8> ls
Directory of: FS0:\Update_PCOM-B800GT-50G4P_0_0_8\
02/01/2024  09:42 <DIR>          8,192  .
02/01/2024  09:42 <DIR>           0  ..
01/31/2024  15:54                383  ReadMe.txt
01/31/2024  15:54          8,782,304  Update.efi
        2 File(s)  8,782,687 bytes
        2 Dir(s)
FS0:\Update_PCOM-B800GT-50G4P_0_0_8> Update.efi_
```

(BIOS file update sample)

```
UEFI Interactive Shell v2.2
EDK II
UEFI v2.80 (American Megatrends, 0x0005001C)
Mapping table
  FS0: Alias(s):HD010b::BLK1:
        PciRoot(0x0)/Pci(0x1E,0x0)/USB(0x8,0x0)/HD(1,GPT,66761656-B243-474A-93
69-330601F972F2,0x800,0x1CE77DF)
  BLK0: Alias(s):
        PciRoot(0x0)/Pci(0x1E,0x0)/USB(0x8,0x0)
Press ESC in 4 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:\> cd Update_EC_PCOM-B800_0_6
FS0:\Update_EC_PCOM-B800_0_6> ls
Directory of: FS0:\Update_EC_PCOM-B800_0_6\
01/29/2024  11:36 <DIR>          8,192  .
01/29/2024  11:36 <DIR>           0  ..
03/07/2023  17:18             384  ReadMe.txt
03/07/2023  17:18          70,598  Update.efi
           2 File(s)        70,982 bytes
           2 Dir(s)
FS0:\Update_EC_PCOM-B800_0_6>
FS0:\Update_EC_PCOM-B800_0_6> Update.efi_
```

(EC file update sample)

Step 5 The updating process will start and show the updating progress

Step 6 Please power off and restart the system once updating finished

```
- Check RomLayout ..... ok.  
Erasing Boot Block ..... done  
Updating Boot Block ..... done  
Verifying Boot Block ..... done  
Erasing Main Block ..... done  
Updating Main Block ..... done  
Verifying Main Block ..... done  
Erasing NVRAM Block ..... done  
Updating NVRAM Block ..... done  
Verifying NVRAM Block ..... done  
Erasing NCB Block ..... done  
Updating NCB Block ..... done  
Verifying NCB Block ..... done  
- Update success for FDR  
- Update success for PDR  
- Update success for iRC  
- Successful Update Recovery Loader to OPRx!!  
- Successful Update MFSB  
- Successful update factory data  
- ME Entire Image update success !!  
- Update success for PTT  
WARNING : System must power-off to have the changes take effect!  
  
Process completed.  
FS0:\Update_PCOM-B800GT-50G4P_0_0_8\> _
```

(BIOS updating progress)

```
UEFI v2.80 (American Megatrends, 0x0005001C)
Mapping table
  FS0: Alias(s):HD0i0b:;BLK1:
        PciRoot(0x0)/Pci(0x1E,0x0)/USB(0x8,0x0)/HD(1,GPT,66761656-B243-474A-93
69-330601F972F2,0x800,0x1CE77DF)
  BLK0: Alias(s):
        PciRoot(0x0)/Pci(0x1E,0x0)/USB(0x8,0x0)
Current shell version is v2.x
ITE EC Flash Utility for UEFI Shell, Version : 1.4.0 (64)
<Re-Write by FoxYang .. 2021/12/22 >

[/NOKBC] support
!!Please don't use KB/MS during updating ...!!
Device ID       : EF 40 14 0
SPI Vendor      : Winbond
Eraseing...     :  -- Erase OK.

Erase Verify... :  -- Erase Verify OK.

Programing...   :  -- Programing OK.

Verify...       :  -- Verify OK.

Please turn off power(G3) by manual , let EC reload new image !!
FS0:\Update_EC_PCOM-B800_0_6\>
```

(EC updating progress)

9 PORTWELL Software Tool

PORTWELL Evaluation Tool (PET)

The PORTWELL Evaluation Tool (PET) is an API which PORTWELL's customers can access the GPIO, I2C, SMBus, etc under Windows and Linux OS. For further information please contact PORTWELL.

10 Packaging Information

PCOM-B800GT's packaging specification will follow the Portwell standard style.

Package	Appearance	Size
Anti-Static bubble bag		180x 240 mm
Brown Paper Box		310x265x60mm
Back bracket		90*90*2.5 mm
Shipping Box (10 pcs White paper box)		535x310x320mm

Table 11 Packaging information

11 Industry Specifications

The list below provides links to industry specifications that apply to PORTWELL modules.

Low Pin Count Interface Specification, Revision 1.0 (LPC) <http://www.intel.com/design/chipsets/industry/lpc.htm>

Universal Serial Bus (USB) Specification, Revision 2.0 <http://www.usb.org/home>

PCI Specification, Revision 2.3 <https://www.pcisig.com/specifications>

Serial ATA Specification, Revision 3.0 <http://www.serialata.org/>

PICMG® COM Express Module™ Base Specification <http://www.picmg.org/>

PCI Express Base Specification, Revision 2.0 <https://www.pcisig.com/specifications>