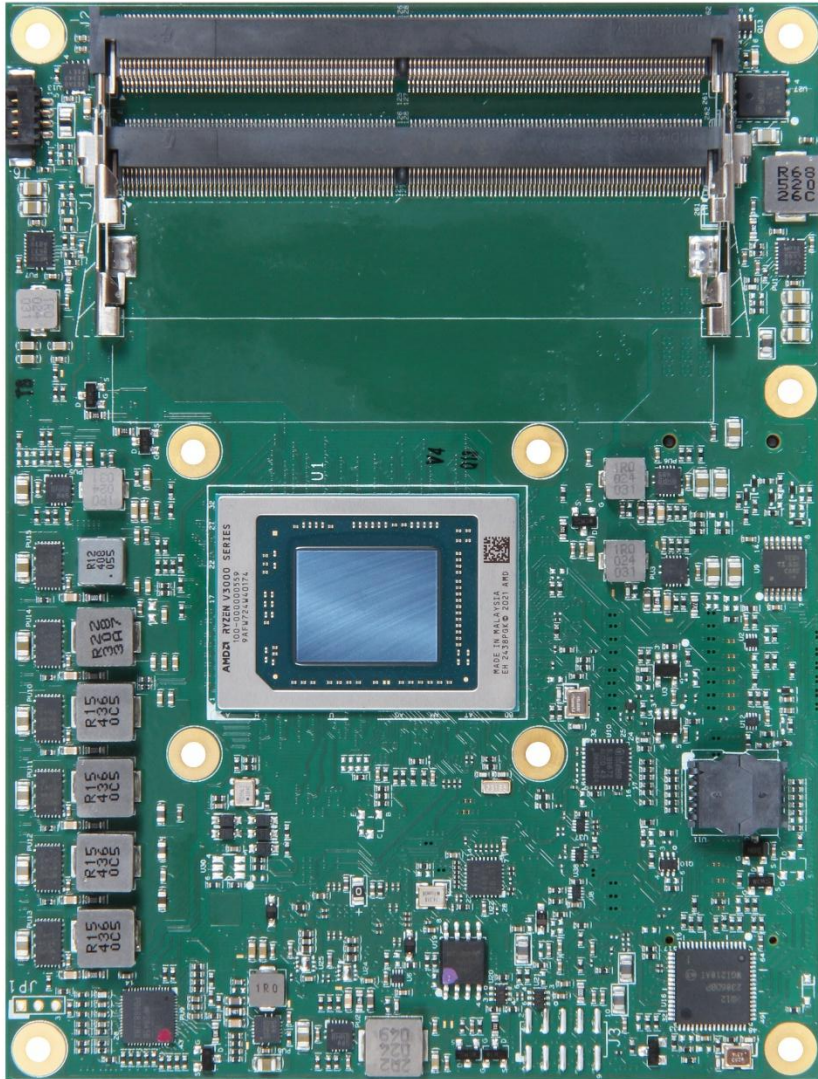




COM Express™

PCOM-B706GT

User's Guide R0.4

Revision History

Rev.	Note	Date
R0.1	Preliminary	2023/5/23
R0.2	Update BIOS Section Update Power Consumption Section	2024/1/4
R0.3	Update add function related description Update PA-C7L PHY Card related description	2024/10/18
R0.4	R1 update	2025/12/24

Contents

1	Introduction	9
1.1	PCOM-B706GT SKU List	10
2	Block Diagram	11
3	Specifications.....	12
3.1	Supported Operating Systems	14
3.2	Electrical Characteristics	15
3.3	Power Consumption	18
3.4	Mechanical Dimensions.....	19
3.5	2x SO-DIMM slot design & on-module SSD	21
3.6	Environmental Specifications.....	22
3.7	Ordering Guide.....	23
4	Thermal Solution	24
5	Pin out Tables	27
6	BIOS Setup Items	33
6.1	Entering Setup -- Launch System Setup	34
6.2	Main	35
6.3.1	CPU Configuration	38
6.3.2	LAN Configuration	42
6.3.3	PCI/PCIE Configuration	45
6.3.4	SATA Configuration	48
6.3.5	USB Configuration	50
6.3.6	TPM Configuration	52
6.3.7	Super IO Configuration.....	54
6.3.8	H/W Monitor	60
6.3.9	Serial Port Console Redirection.....	62

6.3.10 EC Firmware Update	65
6.4 Security	69
6.5 Boot.....	72
6.6 Save & Exit	74
7 System Resources	76
8 BIOS / EC Update	77
9 PORTWELL Software Tool	82
10 Packaging Information	83
11 Industry Specifications	84
12 Appendix - PA-C7L instructions	85

List of Tables

Table 1 PCOM-B706GT SKUs	10
Table 2 PCOM-B706GT SPEC	13
Table 3 OS Support list.....	14
Table 4 Electrical characteristics.....	15
Table 5 PCOM-B706GT Power Consumption.....	18
Table 6 Environmental Specifications	22
Table 7 Ordering Guide - PCOM-B706GT	23
Table 8 Ordering Guide - Accessory	23
Table 9 Pin out description	32
Table 10 System Resources	76
Table 11 Packaging information.....	83

List of Figures

Figure 1 Block Diagram	11
Figure 2 COM Express power sequencing	15
Figure 3 ATX style boot	16
Figure 4 AT style boot	17
Figure 5 Mechanical Dimension - Top.....	19
Figure 6 Mechanical Dimension - Bottom	20
Figure 7 SO-DIMM slot design, and on-module NVMe SSD	21
Figure 8 Cooler mechanical dimension.....	24
Figure 9 Heatsink mechanical dimension	25
Figure 10 Heat-spreader mechanical dimension	26

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1 Introduction

PCOM-B706GT is a Type 7 COM Express® basic size (125mm x 95mm) module based on the AMD® Embedded Ryzen™ V3000 CPU family. It provides up to 8 cores and 16 threads processors with cTDP from 10W to 54W, and 2x 10G KR/SFI ports which can support both SFP+ and RJ45 (via external PHY). The module delivers PCIe Gen4 lanes with a 16.0 GT/s transfer rate to meet the demands of throughput on different applications. The PCOM-B706GT offers 14x PCIe lanes, 4x USB 3.2 Gen2, and 2x SATA III ports, fully compliant with COM Express Type 7 specifications. Additionally, it integrates an on-module high-speed SSD storage chip for compact embedded systems with security requirements. A selected SKU (V3C18I) supports a wide temperature range while maintaining powerful computing performance with 8 cores / 16 threads, making it ideal for critical edge applications. The PCOM-B706GT provides a seamless upgrade path for compute-intensive tasks such as software-defined networking, edge computing, automation, military, and transportation systems.

1.1 PCOM-B706GT SKU List

Series	PCOM-B706GT				
Ordering P/N	AB1-3R14	AB1-3R16	AB1-3R57	AB1-3R15	AB1-3R17
CPU Specifications					
Processor	V3C14	V3C16	V3C18I	V3C44	V3C48
# of Cores	4	6	8	4	8
# of Threads	8	12	16	8	16
L2 Cache	2 MB	3 MB	4 MB	2 MB	4 MB
L3 Cache	8 MB	16 MB	16 MB	8 MB	16 MB
Base Frequency	2.3 GHz	2.1 GHz	1.9 GHz	3.5 GHz	3.3 GHz
1T Boost Frequency	3.8 GHz	3.8 GHz	3.8 GHz	3.8 GHz	3.8 GHz
cTDP	10 ~ 25W	10 ~ 25W	10 ~ 25W	35 ~ 54 W	35 ~ 54 W
Memory Specifications					
Capacity	2x DDR5 SO-DIMM	2x DDR5 SO-DIMM	2x DDR5 SO-DIMM	2x DDR5 SO-DIMM	2x DDR5 SO-DIMM
Speed	4800 MT/s	4800 MT/s	4800 MT/s	4800 MT/s	4800 MT/s
ECC	Yes	Yes	Yes	Yes	Yes
I/O Specifications					
PCIe	14x PCIe 4.0	14x PCIe 4.0	14x PCIe 4.0	14x PCIe 4.0	14x PCIe 4.0
USB 3.0/2.0	4x	4x	4x	4x	4x
SATA	2x	2x	2x	2x	2x
Ethernet	2x SFI (Default) 2x 10G KR	2x SFI (Default) 2x 10G KR	2x SFI (Default) 2x 10G KR	2x SFI (Default) 2x 10G KR	2x SFI (Default) 2x 10G KR

Table 1 PCOM-B706GT SKUs

2 Block Diagram

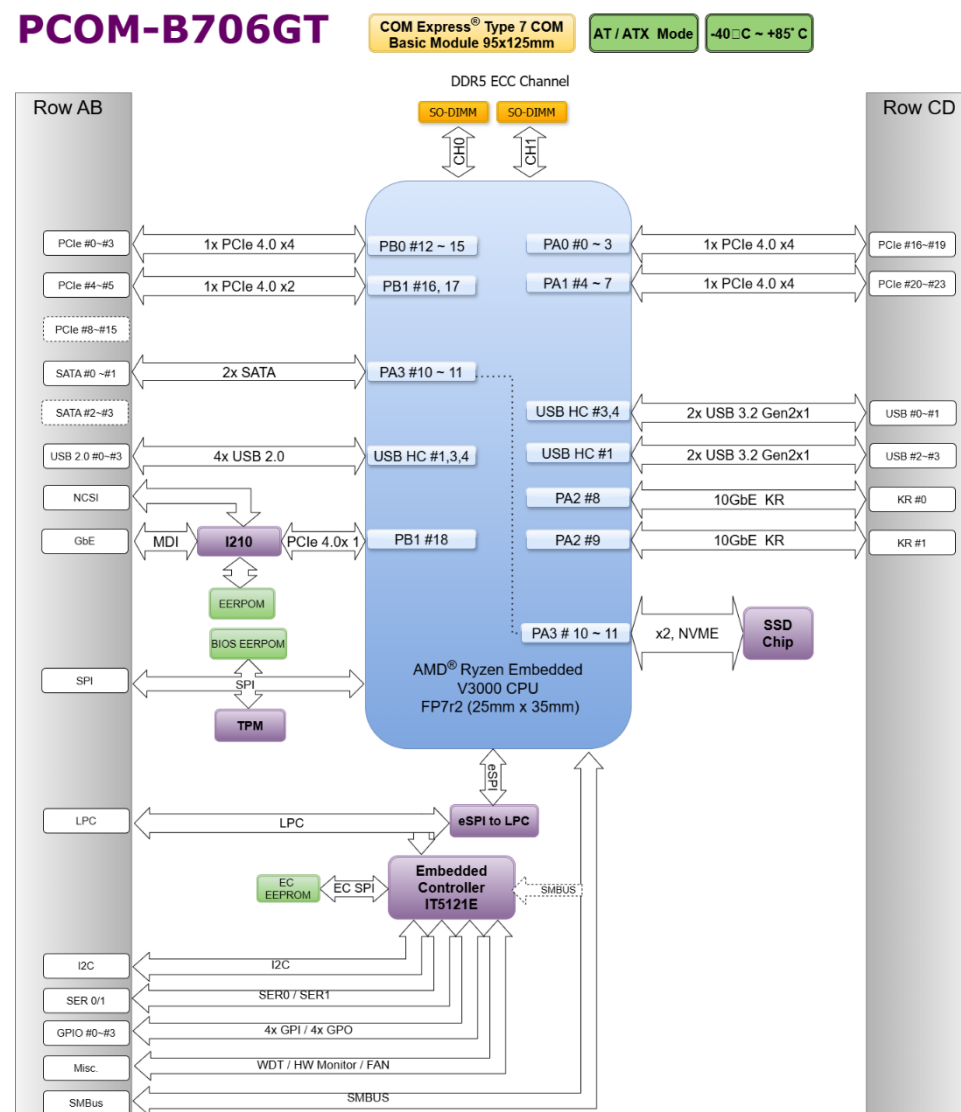


Figure 1 Block Diagram

3 Specifications

Product	➤ PCOM-B706GT
Form Factor	➤ COM Express® Type 7, Basic Size (125mm X 95mm)
Processor	➤ AMD® Ryzen™ Embedded V3C48 ➤ AMD® Ryzen™ Embedded V3C44 ➤ AMD® Ryzen™ Embedded V3C18I ➤ AMD® Ryzen™ Embedded V3C16 ➤ AMD® Ryzen™ Embedded V3C14
BIOS	➤ AMI BIOS
Memory	➤ 2x SO-DIMM DDR5 ➤ Support ECC ➤ Up to 64GB, 4800MT/s
Graphic	➤ No Support
Ethernet	➤ 1x GbE (via Intel® i210AT/IT) ➤ 2x 10G KR/SFI
Audio	➤ No Support
PCI Express	➤ Max 14x PCIe 4.0
I/O	➤ 4x USB 3.0 / 2.0 ➤ 2x SATA or 128GB NVMe (Option) ➤ 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 ~+80°C (V3C18I Only)➤ Storage Temperature -40°C ~+85°C➤ Relative Humidity 5%~95%

CPU base frequency attainment at nominal TDP is characterized within a 0°C to 100°C Tj range. Base CPU frequency attainment is not guaranteed for <0°C for model V3C18I.

Table 2 PCOM-B706GT SPEC

3.1 Supported Operating Systems

The PCOM-B706GT supports the following operating systems.

Vendor	Operating System	Support
Linux	Ubuntu 22.04.1 LTS, Kernel 6.1	
	Yocto Release 4.0, Kernel 5.15.32 (Kirkstone)	https://git.yoctoproject.org/ https://gitlab.com/windriver-amd/
	Up streamed Linux	From Kernel 5.17

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 Electrical Characteristics

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

Table 4 Electrical characteristics

Figure 7-1: Power Sequencing

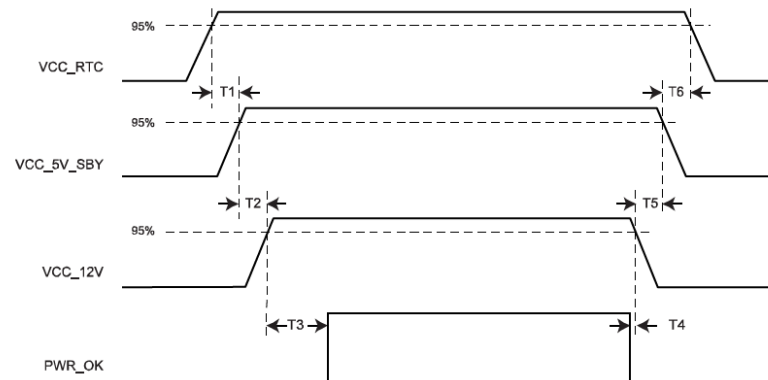


Table 7.3: Power Sequencing

T1	VCC_RTC rise to VCC_5V_SBY rise	≥ 0 ms
T2	VCC_5V_SBY rise to VCC_12V rise	≥ 0 ms
T3	VCC_12V rise to PWR_OK rise	≥ 0 ms
T4	PWR_OK fall to VCC_12V fall	≥ 0 ms
T5	VCC_12V fall to VCC_5V_SBY fall	≥ 0 ms
T6	VCC_5V_SBY fall to VCC_RTC fall	≥ 0 ms

Figure 2 COM Express power sequencing

- ATX Power Sequence

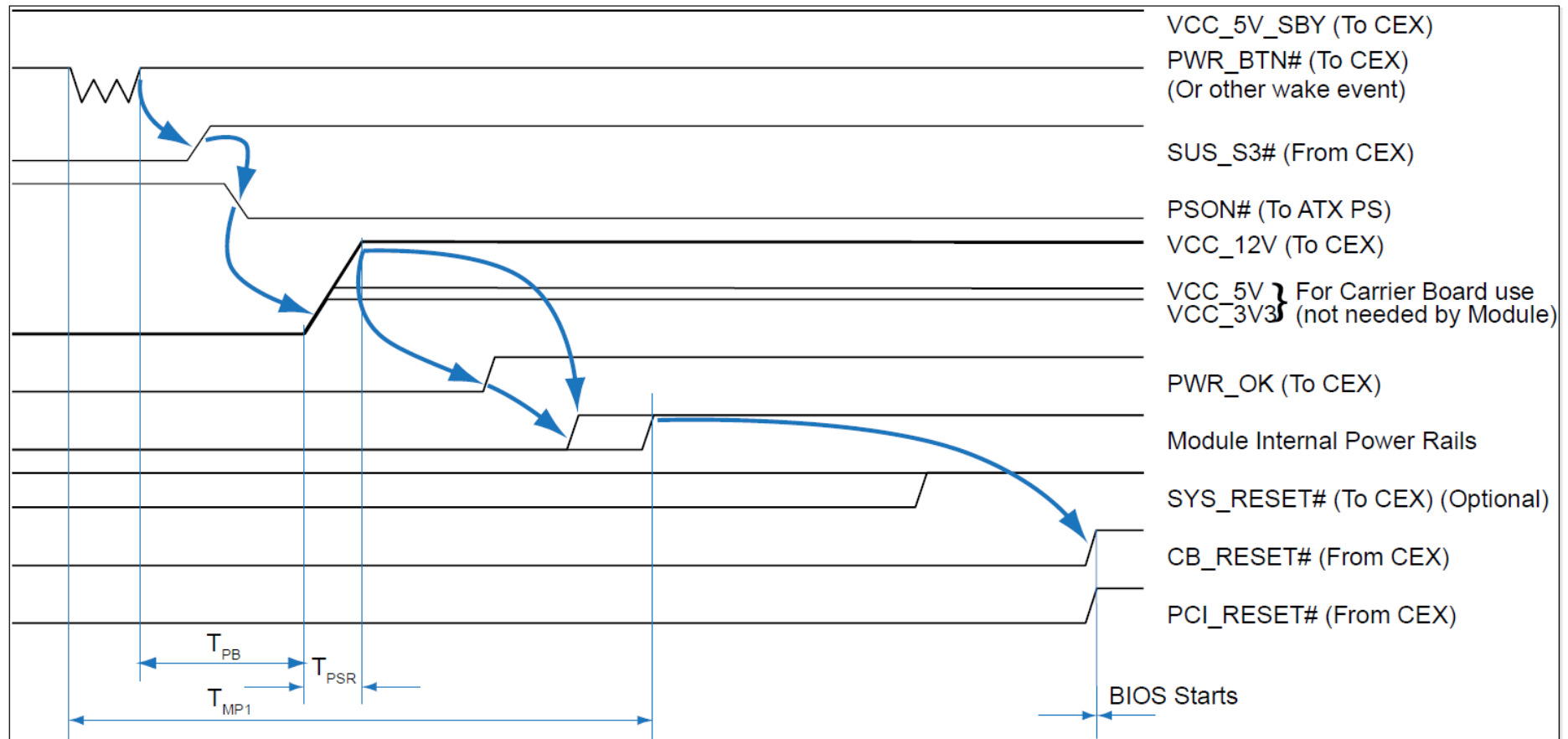


Figure 3 ATX style boot
(Reference from COM Express® Carrier Design Guide)

- AT Power Sequence

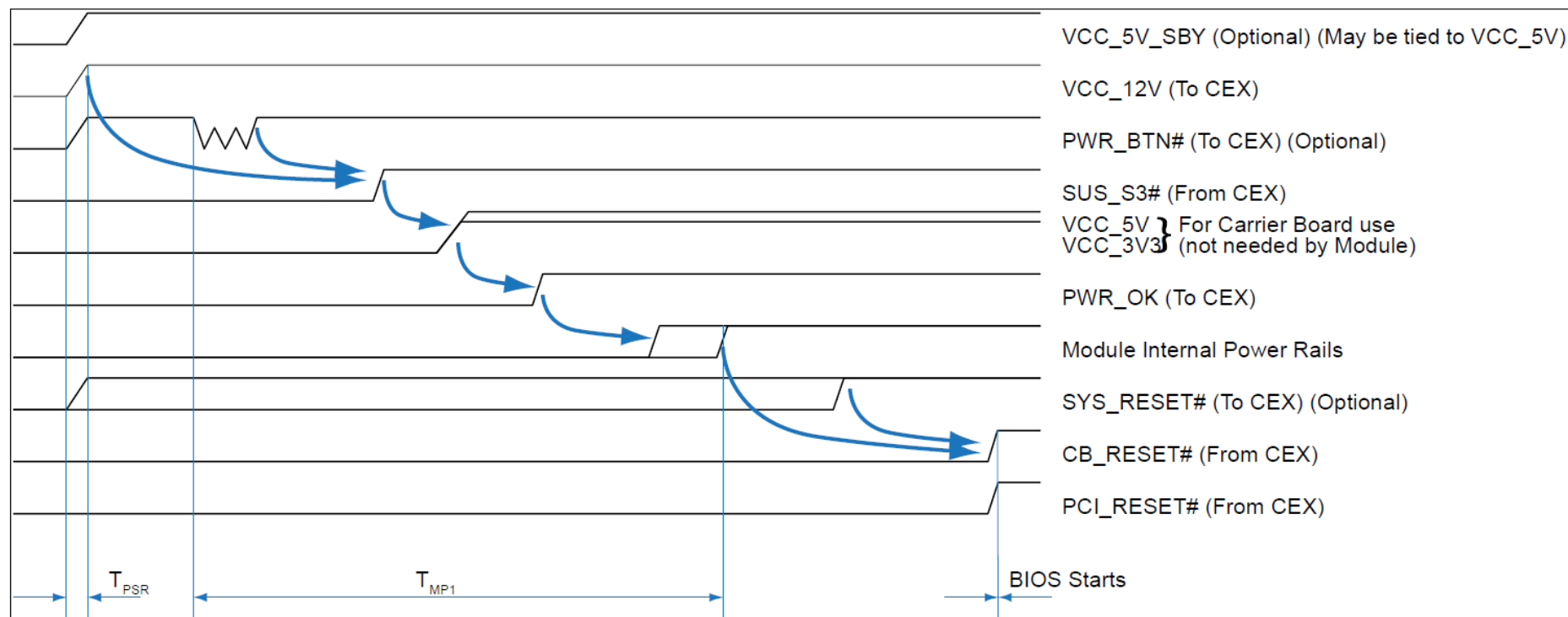


Figure 4 AT style boot
 (Reference from COM Express® Carrier Design Guide)

3.3 Power Consumption

Series	PCOM-B706GT (Based on 0.0.16, 12/06/2023)				
Ordering P/N	AB1-3R14	AB1-3R16	AB1-3R57	AB1-3R15	AB1-3R17
Processor	V3C14	V3C16	V3C18I	V3C44	V3C48
Power Consumption					
S0 Idle	0.55A	0.55A	0.55A	0.55A	0.56A
100% workload at cTDP = 10W	1.23A	1.30A	1.35A	Not Support	
100% workload at cTDP = 15W	1.53A	1.57A	1.61A		
100% workload at cTDP = 25W	1.91A	2.18A	2.36A		
100% workload at cTDP = 35W	Not Support			1.88A	2.73A
100% workload at cTDP = 45W				1.93A	2.78A
100% workload at cTDP = 54W				1.96A	2.79A
Peak Current (AC On)	1.08A	1.12A	1.24A	1.07A	1.46A

Table 5 PCOM-B706GT Power Consumption

3.4 Mechanical Dimensions

- Top Side Dimension

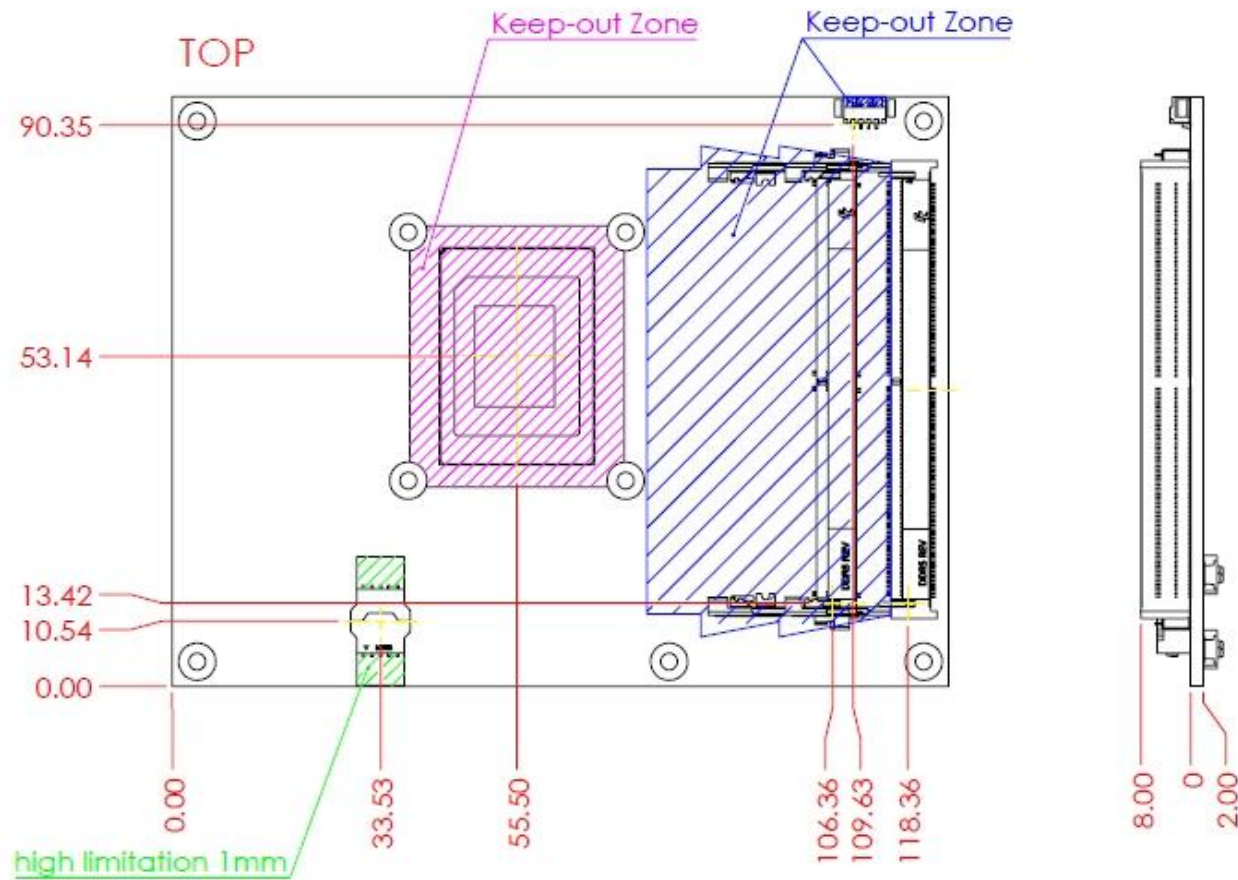


Figure 5 Mechanical Dimension - Top

- Bottom Side Dimension

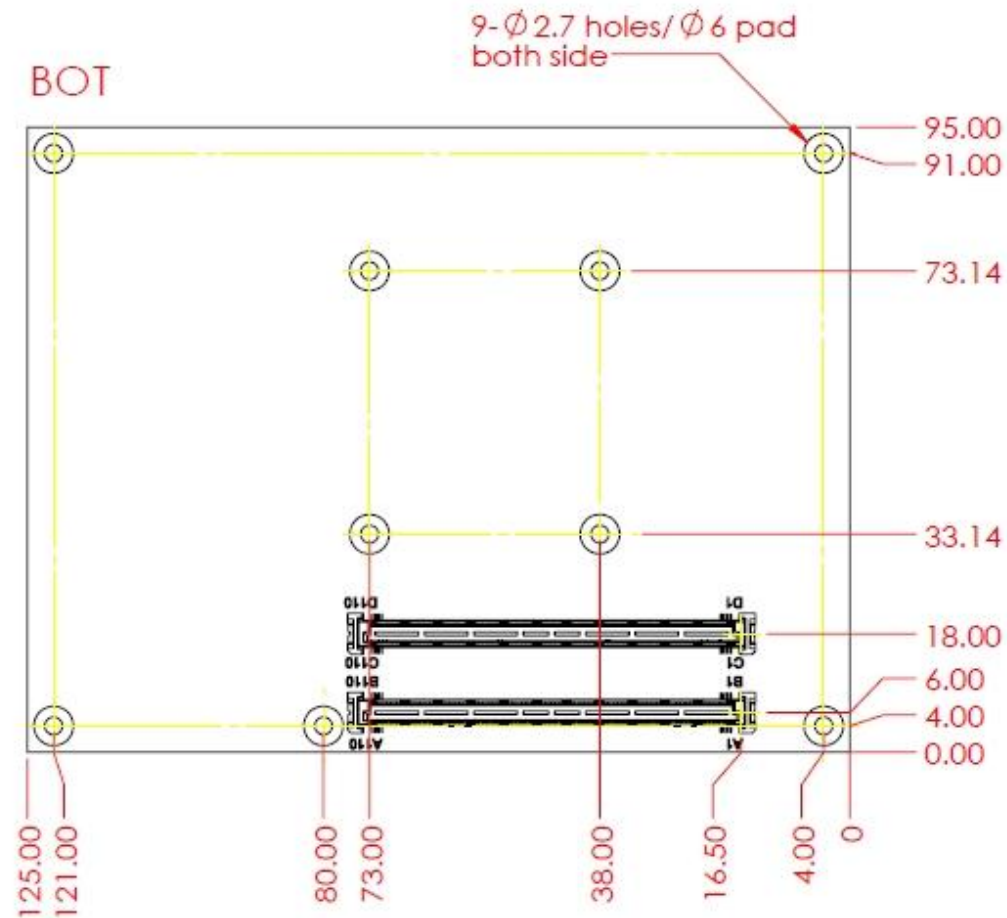


Figure 6 Mechanical Dimension - Bottom

3.5 2x SO-DIMM slot design & on-module SSD

PCOM-B706GT has designed to support two DDR5 SO-DIMM slots up to 64GB capacities. For thermal consideration, both DDR5 SO-DIMM memory slots are designed on component side. Please refer to below SO-DIMM arrangement. Also, an option SKU with on-module NVMe SSD equipped, please contact sales windows for detail.

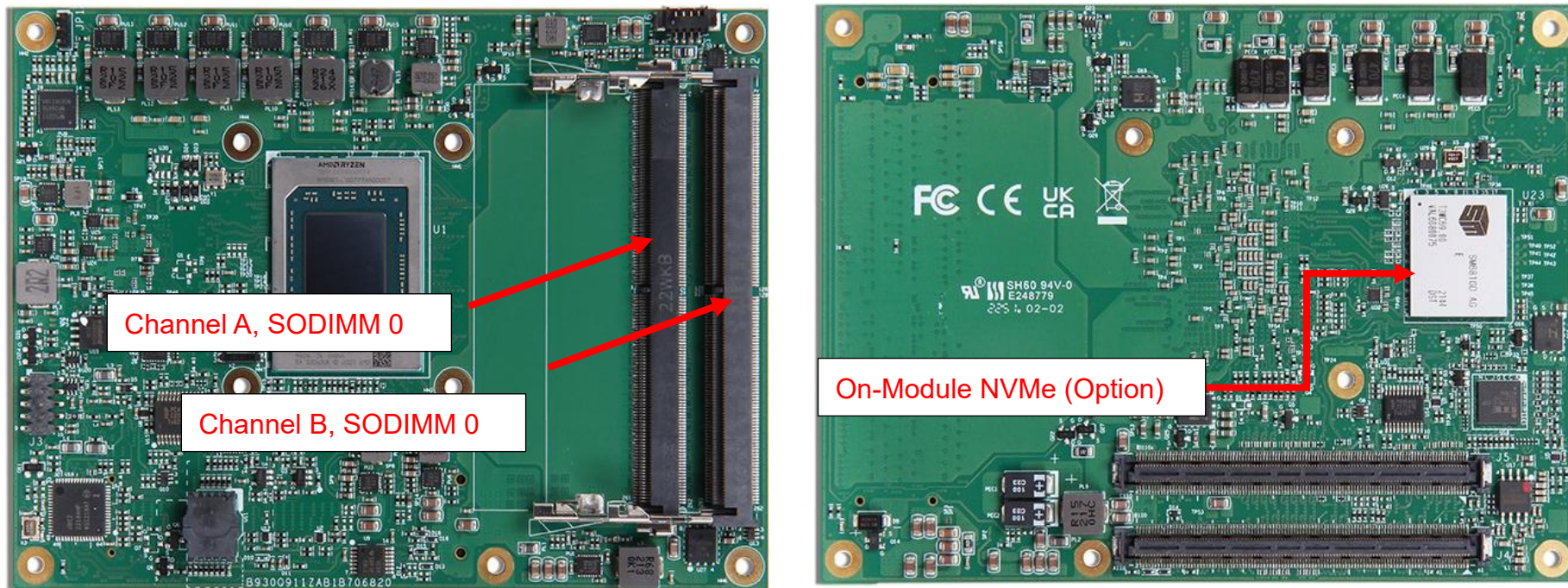


Figure 7 SO-DIMM slot design, and on-module NVMe SSD

3.6 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%

CPU base frequency attainment at nominal TDP is characterized within a 0°C to 100°C Tj range. Base CPU frequency attainment is not guaranteed for <0°C for model V3C18I.

Table 6 Environmental Specifications

3.7 Ordering Guide

♦ Module

Product	Ordering P/N
PCOM-B706GT-3C48	AB1-3R17
PCOM-B706GT-3C44	AB1-3R15
PCOM-B706GT-3C18I	AB1-3R57
PCOM-B706GT-3C16	AB1-3R16
PCOM-B706GT-3C14	AB1-3R14

Table 7 Ordering Guide - PCOM-B706GT

♦ Accessory

Accessory	Ordering P/N
Cooler – 54W	B9972190
Cooler – 25W	B9972200
Heatsink	B830C080
Heatspreader – 54W	B830C090
Heatspreader – 25W	B830C100
Evaluation Carrier: PCOM-C701-BMC	AB1-3K14Z
PHY Card: PA-C7L	AB9-3450Z

Table 8 Ordering Guide - Accessory

4 Thermal Solution

- Cooler Dimension

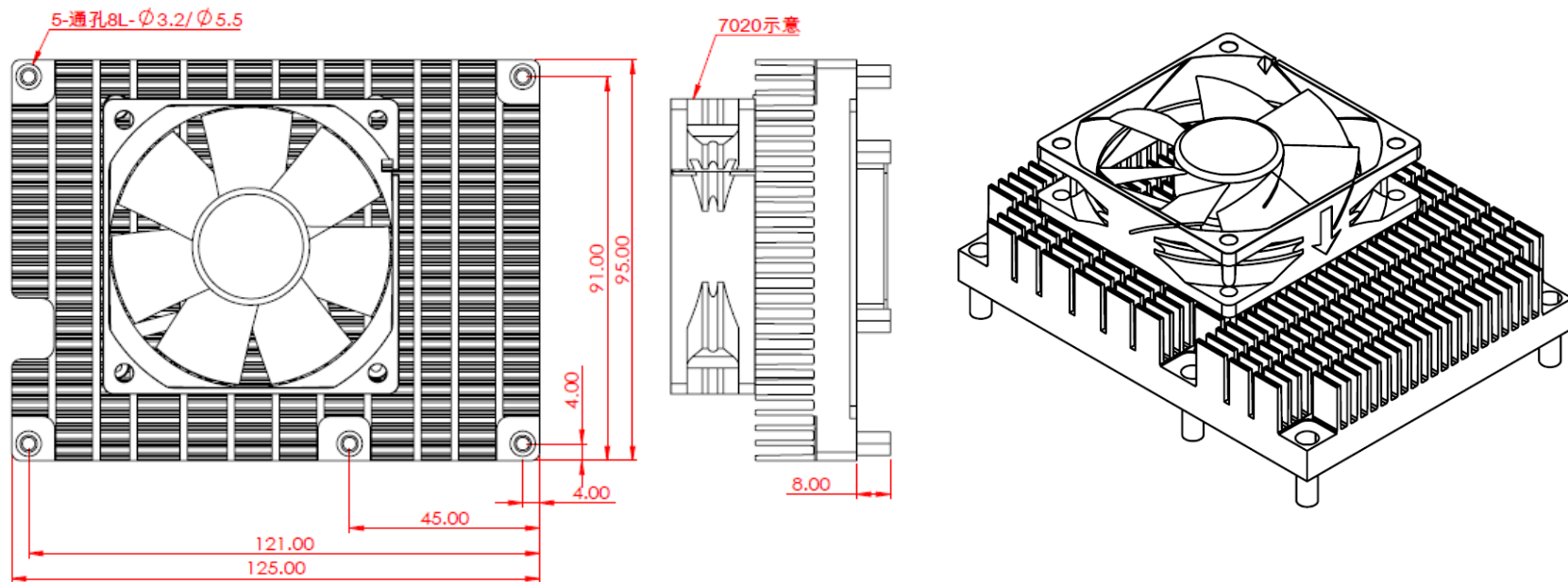


Figure 8 Cooler mechanical dimension

- Heatsink Dimension

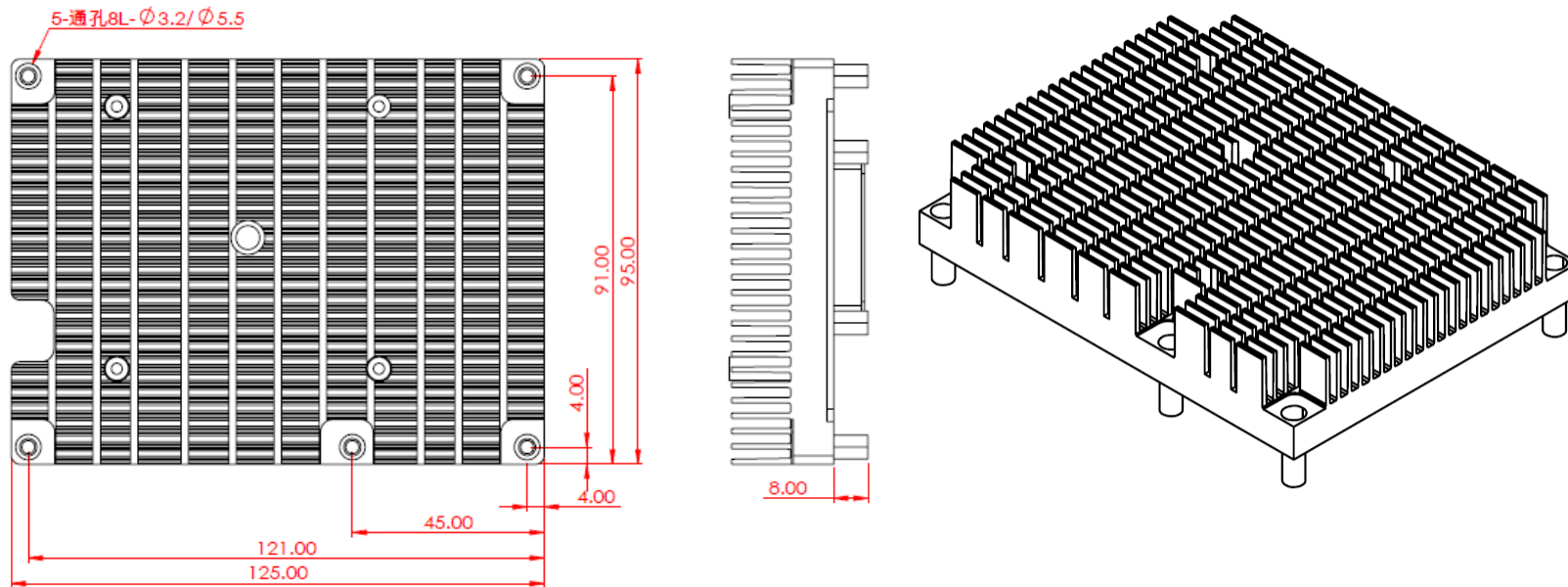


Figure 9 Heatsink mechanical dimension

- Heat-spreader Dimension

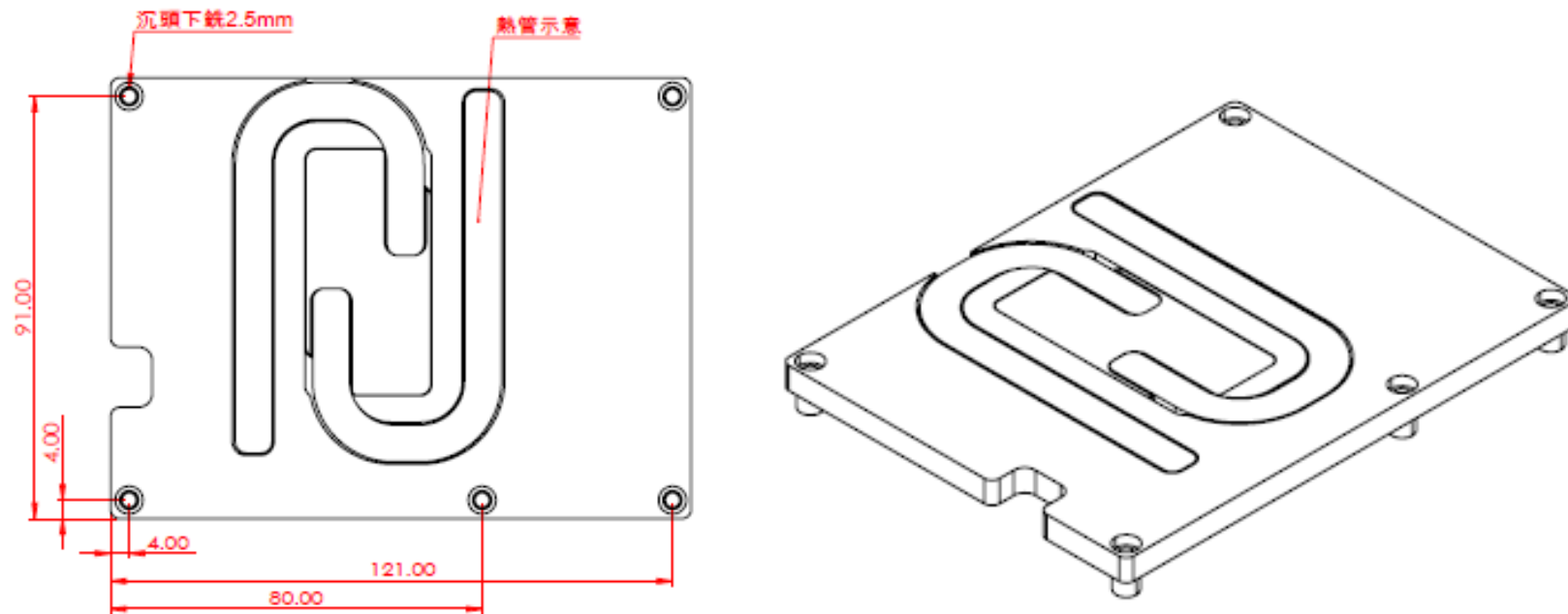


Figure 10 Heat-spreader mechanical dimension

5 Pin out Tables

PCOM-B706GT Type7 Pin-Out							
Pin	Row A	Pin	Row B	Pin	Row C	Pin	Row D
A1	GND(FIXED)	B1	GND(FIXED)	C1	GND(FIXED)	D1	GND(FIXED)
A2	GBE0_MDI3-	B2	GBE0_ACT#	C2	GND	D2	GND
A3	GBE0_MDI3+	B3	LPC_FRAME#	C3	USB_SSRX0-	D3	USB_SSTX0-
A4	GBE0_LINK100#	B4	LPC_AD0	C4	USB_SSRX0+	D4	USB_SSTX0+
A5	GBE0_LINK1000#	B5	LPC_AD1	C5	GND	D5	GND
A6	GBE0_MDI2-	B6	LPC_AD2	C6	USB_SSRX1-	D6	USB_SSTX1-
A7	GBE0_MDI2+	B7	LPC_AD3	C7	USB_SSRX1+	D7	USB_SSTX1+
A8	GBE0_LINK#	B8	NC	C8	GND	D8	GND
A9	GBE0_MDI1-	B9	NC	C9	USB_SSRX2-	D9	USB_SSTX2-
A10	GBE0_MDI1+	B10	LPC_CLK	C10	USB_SSRX2+	D10	USB_SSTX2+
A11	GND(FIXED)	B11	GND(FIXED)	C11	GND(FIXED)	D11	GND(FIXED)
A12	GBE0_MDI0-	B12	PWRBTN#	C12	USB_SSRX3-	D12	USB_SSTX3-
A13	GBE0_MDI0+	B13	SMB_CK	C13	USB_SSRX3+	D13	USB_SSTX3+
A14	NC	B14	SMB_DAT	C14	GND	D14	GND
A15	SUS_S3#	B15	SMB_ALERT#	C15	NC	D15	NC
A16	SATA0_TX+	B16	SATA1_TX+	C16	NC	D16	NC
A17	SATA0_TX-	B17	SATA1_TX-	C17	10G_SDP2 (1588_PPS_OUT_0_3V3)	D17	10G_SDP3 (1588_PPS_OUT_1_3V3)
A18	SUS_S4#	B18	SUS_STAT#	C18	GND	D18	GND
A19	SATA0_RX+	B19	SATA1_RX+	C19	PCIE_RX6+	D19	PCIE_TX6+
A20	SATA0_RX-	B20	SATA1_RX-	C20	PCIE_RX6-	D20	PCIE_TX6-

PCOM-B706GT Type7 Pin-Out							
Pin	Row A	Pin	Row B	Pin	Row C	Pin	Row D
A21	GND(FIXED)	B21	GND(FIXED)	C21	GND(FIXED)	D21	GND(FIXED)
A22	NC	B22	NC	C22	PCIE_RX7+	D22	PCIE_TX7+
A23	NC	B23	NC	C23	PCIE_RX7-	D23	PCIE_TX7-
A24	SUS_S5#	B24	PWR_OK	C24	NC	D24	NC
A25	NC	B25	NC	C25	GND	D25	GND
A26	NC	B26	NC	C26	NC	D26	NC
A27	BATLOW#	B27	WDT	C27	NC	D27	NC
A28	(S)ATA_ACT#	B28	NC	C28	GND	D28	GND
A29	NC	B29	NC	C29	NC	D29	NC
A30	NC	B30	NC	C30	NC	D30	NC
A31	GND(FIXED)	B31	GND(FIXED)	C31	GND(FIXED)	D31	GND(FIXED)
A32	NC	B32	SPKR	C32	NC	D32	NC
A33	NC	B33	I2C_CK	C33	NC	D33	NC
A34	BIOS_DIS0#	B34	I2C_DAT	C34	NC	D34	NC
A35	THRMTRIP#	B35	THRM#	C35	NC	D35	NC
A36	NC	B36	NC	C36	NC	D36	NC
A37	NC	B37	NC	C37	NC	D37	NC
A38	GND	B38	GND	C38	NC	D38	NC
A39	NC	B39	NC	C39	10G_SFP_SDA0 (RSVD,same D46 pin)	D39	10G_SFP_SCL0 (RSVD,same C46 pin)
A40	NC	B40	NC	C40	10G_SDP0 (1588_PPS_IN_0_3V3)	D40	10G_SDP1 (1588_PPS_IN_1_3V3)
A41	GND(FIXED)	B41	GND(FIXED)	C41	GND(FIXED)	D41	GND(FIXED)
A42	USB2-	B42	USB3-	C42	10G_KR_RX1+	D42	10G_KR_TX1+

PCOM-B706GT Type7 Pin-Out							
Pin	Row A	Pin	Row B	Pin	Row C	Pin	Row D
A43	USB2+	B43	USB3+	C43	10G_KR_RX1-	D43	10G_KR_TX1-
A44	USB_2_3_OC#	B44	USB_0_1_OC#	C44	GND	D44	GND
A45	USB0-	B45	USB1-	C45	NC	D45	NC
A46	USB0+	B46	USB1+	C46	10G_PHY_MDC_SCL0	D46	10G_PHY_MDIO_SDA0
A47	VCC_RTC	B47	NC	C47	10G_INT0	D47	NC
A48	NC	B48	NC	C48	GND	D48	GND
A49	GBE0_SDP	B49	SYS_RESET#	C49	10G_KR_RX0+	D49	10G_KR_TX0+
A50	LPC_SERIRQ	B50	CB_RESET#	C50	10G_KR_RX0-	D50	10G_KR_TX0-
A51	GND(FIXED)	B51	GND(FIXED)	C51	GND(FIXED)	D51	GND(FIXED)
A52	PCIE_TX5+	B52	PCIE_RX5+	C52	PCIE_RX16+	D52	PCIE_TX16+
A53	PCIE_TX5-	B53	PCIE_RX5-	C53	PCIE_RX16-	D53	PCIE_TX16-
A54	GPI0	B54	GPO1	C54	TYPE0#	D54	NC
A55	PCIE_TX4+	B55	PCIE_RX4+	C55	PCIE_RX17+	D55	PCIE_TX17+
A56	PCIE_TX4-	B56	PCIE_RX4-	C56	PCIE_RX17-	D56	PCIE_TX17-
A57	GND	B57	GPO2	C57	TYPE1#	D57	TYPE2#
A58	PCIE_TX3+	B58	PCIE_RX3+	C58	PCIE_RX18+	D58	PCIE_TX18+
A59	PCIE_TX3-	B59	PCIE_RX3-	C59	PCIE_RX18-	D59	PCIE_TX18-
A60	GND(FIXED)	B60	GND(FIXED)	C60	GND(FIXED)	D60	GND(FIXED)
A61	PCIE_TX2+	B61	PCIE_RX2+	C61	PCIE_RX19+	D61	PCIE_TX19+
A62	PCIE_TX2-	B62	PCIE_RX2-	C62	PCIE_RX19-	D62	PCIE_TX19-
A63	GPI1	B63	GPO3	C63	NC	D63	NC
A64	PCIE_TX1+	B64	PCIE_RX1+	C64	NC	D64	NC
A65	PCIE_TX1-	B65	PCIE_RX1-	C65	PCIE_RX20+	D65	PCIE_TX20+
A66	GND	B66	WAKE0#	C66	PCIE_RX20-	D66	PCIE_TX20-

PCOM-B706GT Type7 Pin-Out							
Pin	Row A	Pin	Row B	Pin	Row C	Pin	Row D
A67	GPI2	B67	WAKE1#	C67	RAPID_SHUTDOWN	D67	GND
A68	PCIE_TX0+	B68	PCIE_RX0+	C68	PCIE_RX21+	D68	PCIE_TX21+
A69	PCIE_TX0-	B69	PCIE_RX0-	C69	PCIE_RX21-	D69	PCIE_TX21-
A70	GND(FIXED)	B70	GND(FIXED)	C70	GND(FIXED)	D70	GND(FIXED)
A71	NC	B71	NC	C71	PCIE_RX22+	D71	PCIE_TX22+
A72	NC	B72	NC	C72	PCIE_RX22-	D72	PCIE_TX22-
A73	GND	B73	GND	C73	GND	D73	GND
A74	NC	B74	NC	C74	PCIE_RX23+	D74	PCIE_TX23+
A75	NC	B75	NC	C75	PCIE_RX23-	D75	PCIE_TX23-
A76	GND	B76	GND	C76	GND	D76	GND
A77	NC	B77	NC	C77	NC	D77	NC
A78	NC	B78	NC	C78	NC	D78	NC
A79	GND	B79	GND	C79	NC	D79	NC
A80	GND(FIXED)	B80	GND(FIXED)	C80	GND(FIXED)	D80	GND(FIXED)
A81	NC	B81	NC	C81	NC	D81	NC
A82	NC	B82	NC	C82	NC	D82	NC
A83	GND	B83	GND	C83	NC	D83	NC
A84	NCSI_TX_EN	B84	VCC_5V_SBY	C84	GND	D84	GND
A85	GPI3	B85	VCC_5V_SBY	C85	NC	D85	NC
A86	NC	B86	VCC_5V_SBY	C86	NC	D86	NC
A87	NC	B87	VCC_5V_SBY	C87	GND	D87	GND
A88	PCIE_CK_REF+	B88	BIOS_DIS1#	C88	NC	D88	NC
A89	PCIE_CK_REF-	B89	NC	C89	NC	D89	NC
A90	GND(FIXED)	B90	GND(FIXED)	C90	GND(FIXED)	D90	GND(FIXED)

PCOM-B706GT Type7 Pin-Out							
Pin	Row A	Pin	Row B	Pin	Row C	Pin	Row D
A91	SPI_POWER	B91	NCSI_CLK_IN	C91	NC	D91	NC
A92	SPI_MISO	B92	NCSI_RXD1	C92	NC	D92	NC
A93	GPO0	B93	NCSI_RXD0	C93	GND	D93	GND
A94	SPI_CLK	B94	NCSI CRS_DV	C94	NC	D94	NC
A95	SPI_MOSI	B95	NCSI_TXD1	C95	NC	D95	NC
A96	NC	B96	NCSI_TXD0	C96	GND	D96	GND
A97	TYPE10#	B97	SPI_CS#	C97	NC	D97	NC
A98	SER0_TX	B98	NCSI_ARB_IN	C98	NC	D98	NC
A99	SER0_RX	B99	NCSI_ARB_OUT	C99	NC	D99	NC
A100	GND(FIXED)	B100	GND(FIXED)	C100	GND(FIXED)	D100	GND(FIXED)
A101	SER1_TX	B101	FAN_PWMOUT	C101	NC	D101	NC
A102	SER1_RX	B102	FAN_TACHIN	C102	NC	D102	NC
A103	LID#	B103	SLEEP#	C103	GND	D103	GND
A104	VCC_12V	B104	VCC_12V	C104	VCC_12V	D104	VCC_12V
A105	VCC_12V	B105	VCC_12V	C105	VCC_12V	D105	VCC_12V
A106	VCC_12V	B106	VCC_12V	C106	VCC_12V	D106	VCC_12V
A107	VCC_12V	B107	VCC_12V	C107	VCC_12V	D107	VCC_12V
A108	VCC_12V	B108	VCC_12V	C108	VCC_12V	D108	VCC_12V

PCOM-B706GT Type7 Pin-Out							
Pin	Row A	Pin	Row B	Pin	Row C	Pin	Row D
A109	VCC_12V	B109	VCC_12V	C109	VCC_12V	D109	VCC_12V
A110	GND(FIXED)	B110	GND(FIXED)	C110	GND(FIXED)	D110	GND(FIXED)

Table 9 Pin out description

6 BIOS Setup Items

PCOM-B706GT 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-B706GT 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.

Note:

After clearing the CMOS or if the Carrier Board does not provide RTC battery voltage input, the first boot may take approximately 3 minutes, which is normal. If the application does not use an RTC battery and a shorter boot time is required, please contact us for further discussion.

6.1 Entering Setup -- Launch System Setup

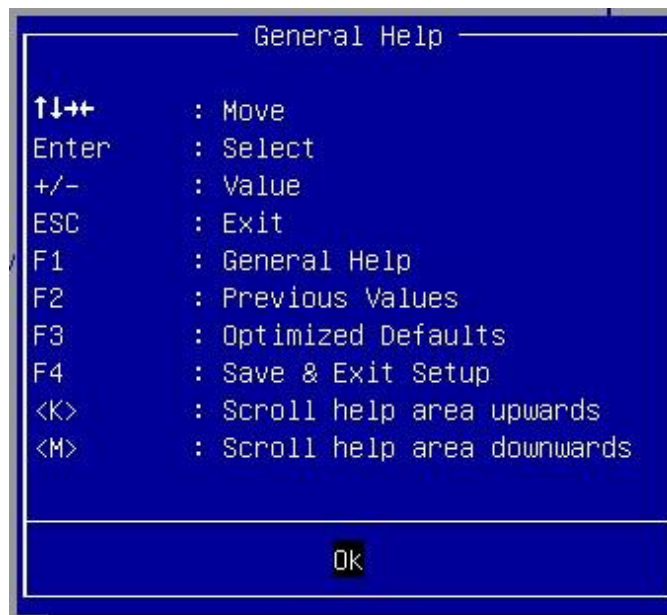
Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press key will enter BIOS setup screen.

Press to enter SETUP

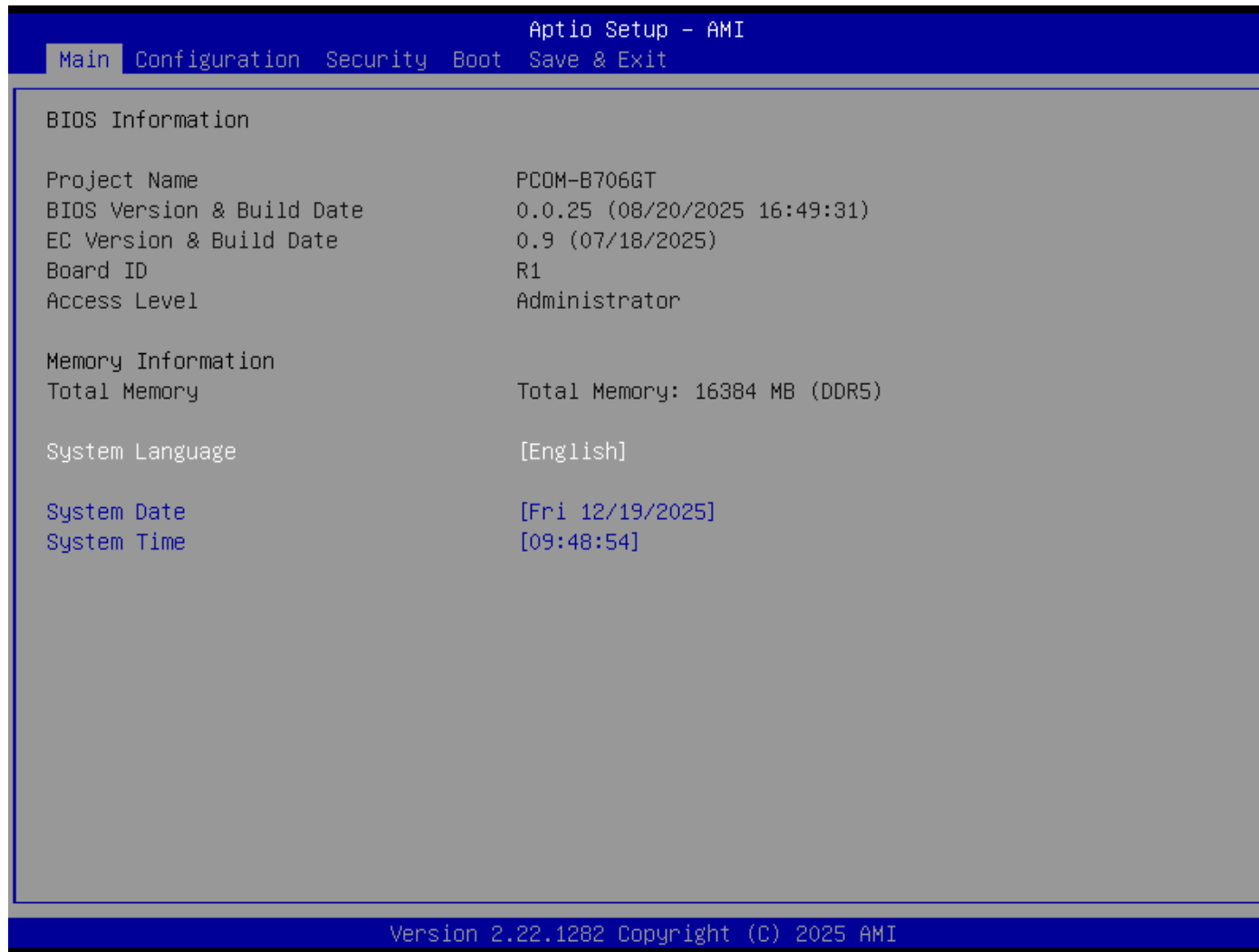
If the message disappears before responding and still wish to enter Setup, please restart the system by turning it OFF and On or pressing the RESET button. It can be also restarted by pressing <Ctrl>, <Alt>, and <Delete> keys on keyboard simultaneously.

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.

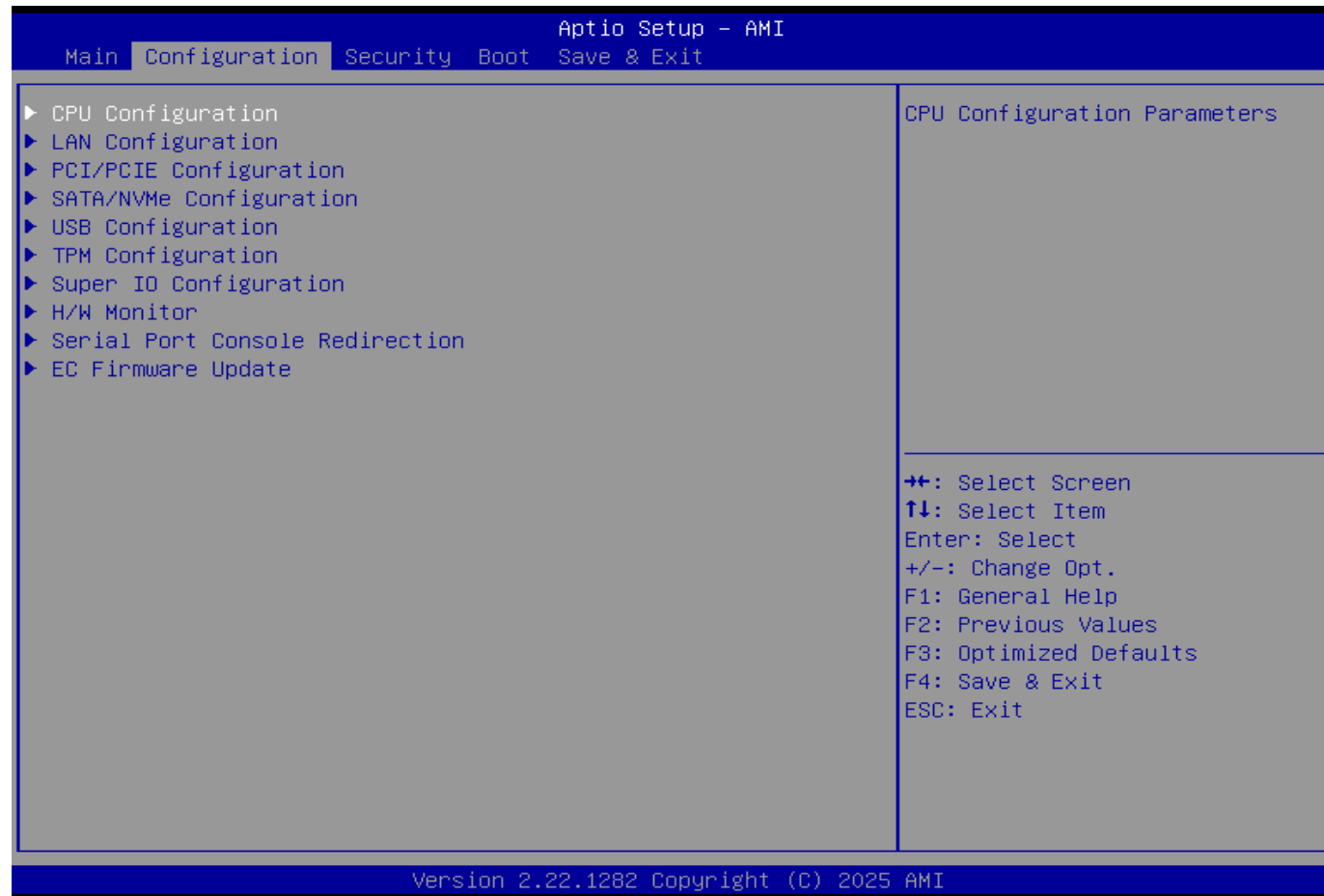


6.2 Main



Feature	Description	Options
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

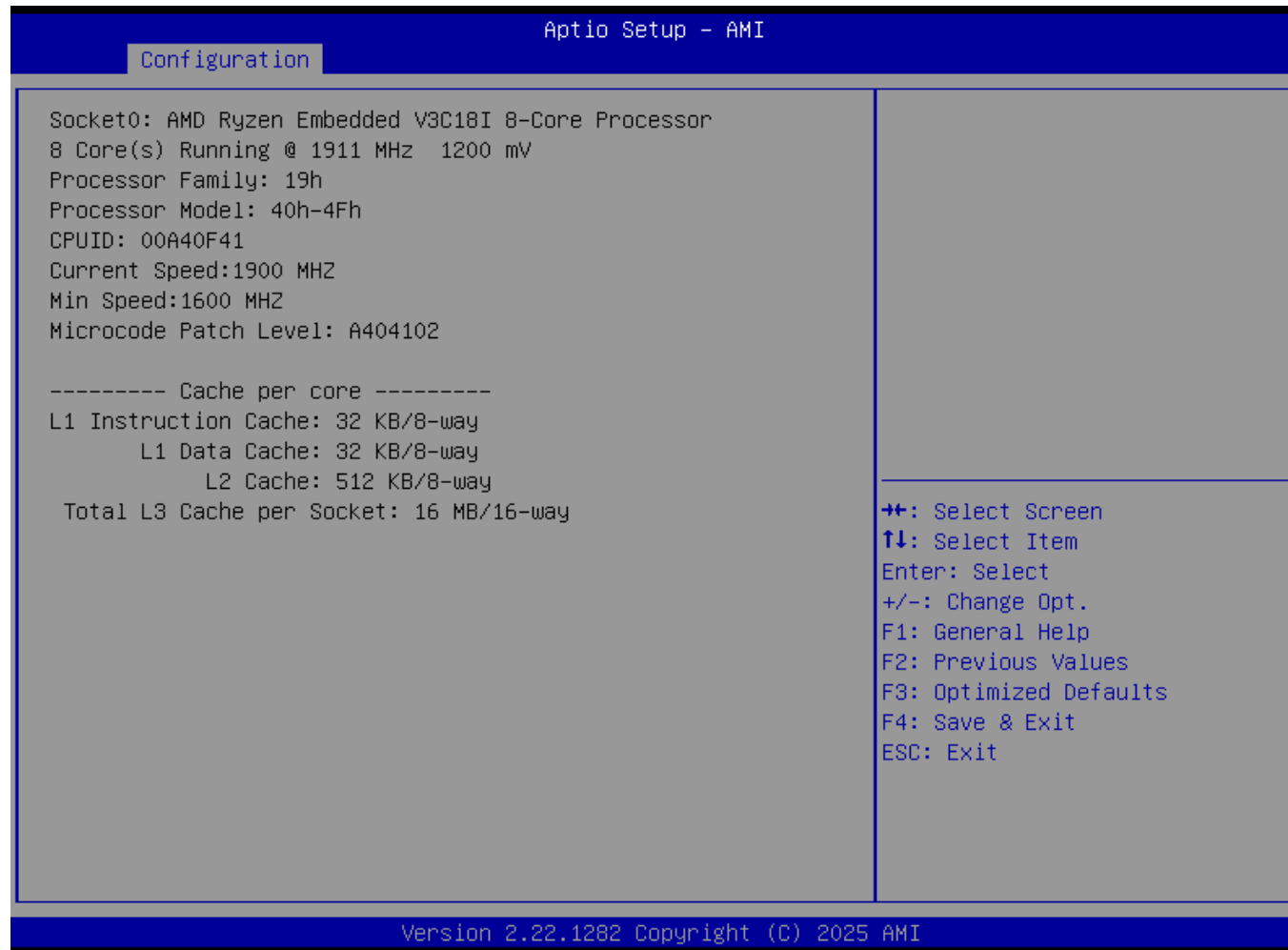


6.3.1 CPU Configuration

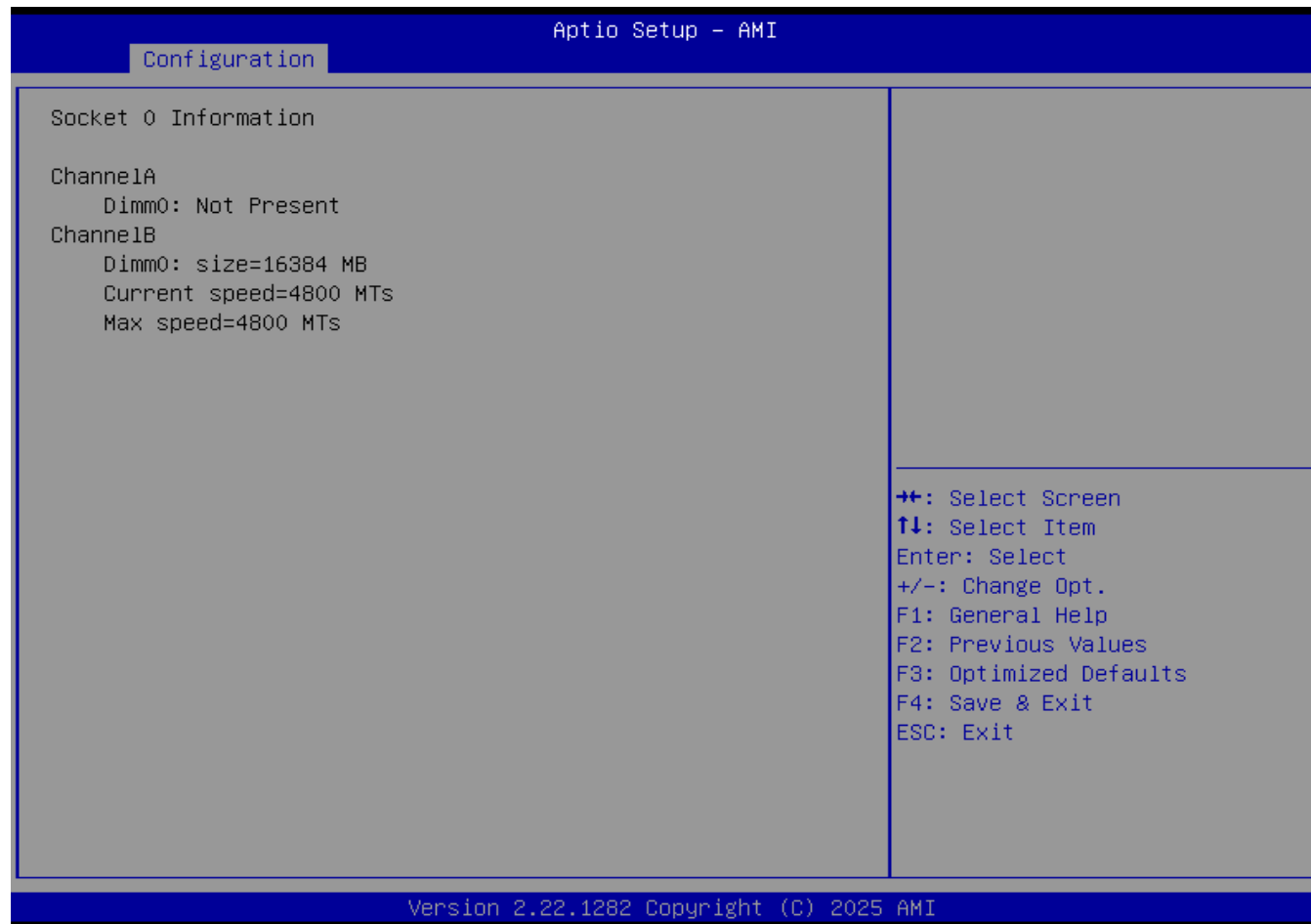


Feature	Description	Options
Node 0 Information	View Memory Information related to Node 0	
Socket 0 Information	View Information related to Socket 0	
System Configuration	Warning: Select System Configuration may cause the system to hang, as some System Configuration may not be supported by your OPN.	★ 15M, 18M, 22M, 25M, User Defined
System Configuration [User Defined]		
sPPT	Set APU power limit for system power supply thermal control. sPPT in mW.	★ 15000
fPPT	Set APU power limit for system power supply peak control. fPPT in mW.	★ 18000
sPPT Time Constant	Set residency at fPPT. sPPT Time Constant in seconds.	★ 5

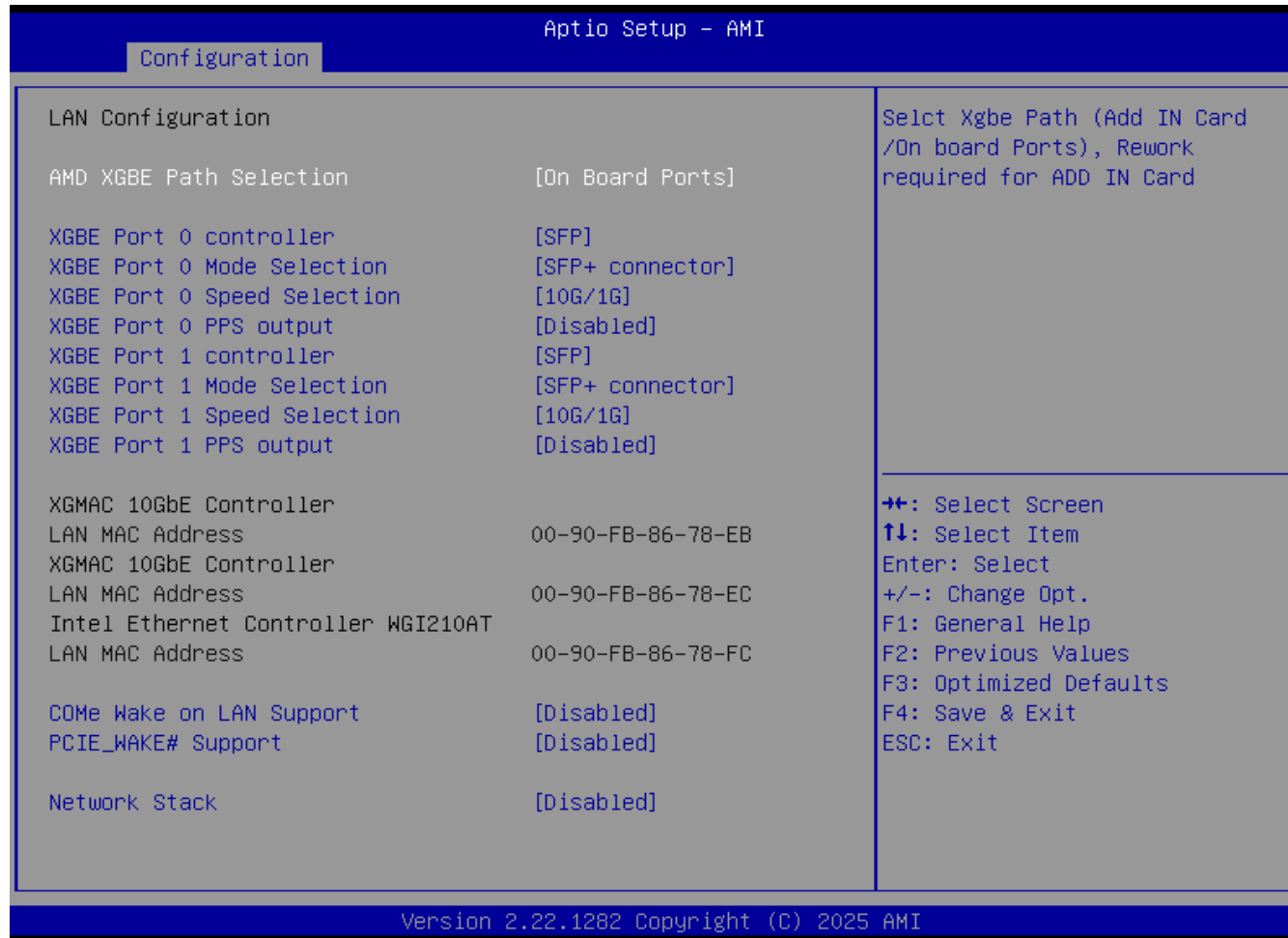
Node 0 Information



Socket 0 Information



6.3.2 LAN Configuration



Feature	Description	Options
AND XGBE Path Selection	Select Xgbe Path (Add IN Card/On board Ports), Rework required for ADD IN Card	★ On Board Ports, Add In Card, Disabled
XGBE Port 0 controller	Select XGBE Port0 controller SFP/RJ45. Supported combinations: Port0 Port1 SFP+ SFP+ SFP+ RJ45 RJ45 RJ45	RJ45, ★SFP
XGBE Port 0 Mode Selection	Option to select the Port 0 mode.	10G/1G Backplane, 2.5G Backplane, ★SFP+ connector, Backplane AN OFF
XGBE Port 0 Speed Selection	Option to select the Port0 supported Speed. Note: For Sfp+ connector The actual speed of the port is set by the driver based on auto negotiation and module is connected	1G, 10G ★10G/1G, 100Mbps, 10Mbps
XGBE Port 0 PPS output	Enable/Disable IOMUX and PADMUX registers for Port-0 PSS output	★Disabled, Enabled
XGBE Port 1 controller	Select XGBE Port0 controller SFP/RJ45. Supported combinations: Port0 Port1 SFP+ SFP+ SFP+ RJ45 RJ45 RJ45	RJ45, ★SFP
XGBE Port 1 Mode Selection	Option to select the Port 0 mode.	10G/1G Backplane, 2.5G Backplane, ★SFP+ connector, Backplane AN OFF
XGBE Port 1 Speed Selection	Option to select the Port0 supported Speed. Note: For Sfp+ connector The actual speed of the port is set by the driver based on auto negotiation and module is connected	1G, 10G ★10G/1G, 100Mbps, 10Mbps
XGBE Port 1 PPS output	Enable/Disable IOMUX and PADMUX registers for Port-0 PSS	★Disabled, Enabled

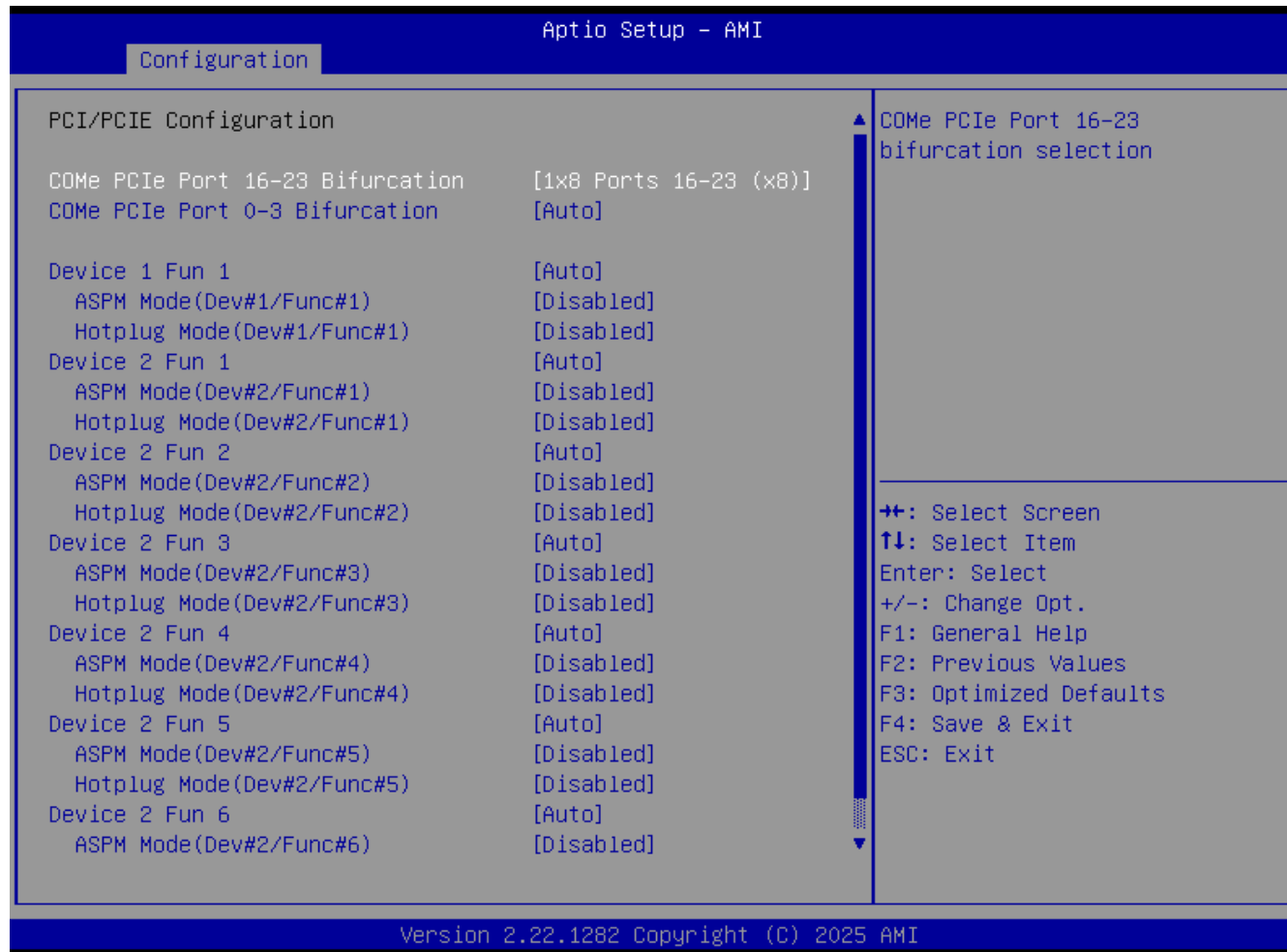
	output	
--	--------	--

Feature	Description	Options
COMe Wake on LAN Support	COMe wake on LAN support	★Disabled, Enabled
PCIE_WAKE# Support	PCIE_WAKE# support	★Disabled, Enabled
Network Stack	Enable/Disable UEFI Network Stack	★Disabled, Enabled
Network Stack [Enabled]		
IPv4 PXE Support	Enable/Disable IPv4 PXE boot support. If disabled, IPv4 PXE boot support will be available	★Disabled, Enabled
IPv4 HTTP Support	Enable/Disable IPv4 HTTP boot support. If disabled, IPv4 HTTP boot support will be available	★Disabled, Enabled
IPv6 PXE Support	Enable/Disable IPv6 PXE boot support. If disabled, IPv6 PXE boot support will be available	★Disabled, Enabled
IPv6 HTTP Support	Enable/Disable IPv6 HTTP boot support. If disabled, IPv6 HTTP boot support will be available	★Disabled, Enabled

Note: XGBE Optional Items

1. 10GbE SFP+
 - i. 10Gb SFI*2 to SFP+ connector (BIOS default, w/o PHY)
 - ii. 10GBASE-KR*2 to 10GbE SFP+*2 signal for CS4227/CS4223 PHY
2. RJ45 10Gbase-T
 - i. 10GBASE-KR*2 to 10GBASE-T*2 signal for AQR113C PHY
3. 10GbE SFP+ and RJ45 10Gbase-T
 - i. port0 10Gb SFI*1 to SFP+ connector
 - ii. port1 10GBASE-KR*1 to 10GBASE-T*1 signal for AQR113C PHY

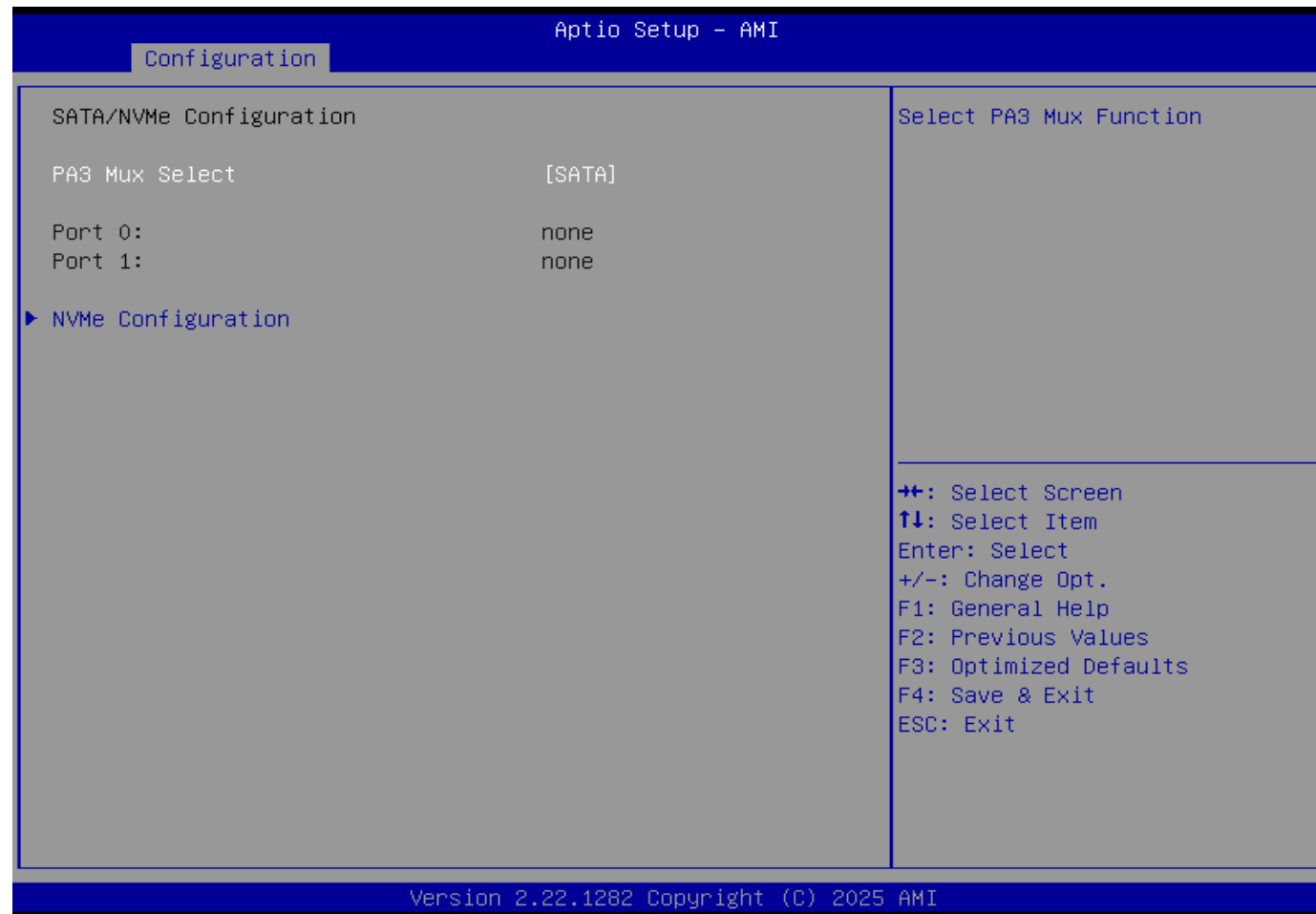
6.3.3 PCI/PCIE Configuration



Feature	Description	Options
COMe PCIe Port 16-23 Bifurcation	COMe PCIe Port 16-23 bifurcation selection	2x4 Ports 16-19 (x4), Ports 20-23 (x4) ★1x8 Ports 16-23 (x8)
COMe PCIe Port 0-3 Bifurcation	COMe PCIe Port 0-3 bifurcation selection	★Auto 4x1 Port 0(x1), Port 1(x1), Port 2(x1), Port 3(x1) 2x2 Ports 0-1 (x2), Ports 2-3 (x2) 1x4 Ports 0-3 (x4)
Device 1 Fun 1	Enable/Disable/Auto, Auto used board default setting	Disabled, Enabled, ★Auto
ASPM Mode (Dev#1/Func#1)	NB Root Port ASPM Mode Control	★Disabled, L0s Entry, L1 Entry, L0s And L1 Entry, Auto
Hotplug Mode (Dev#1/Func#1)	NB Root Port Hotplug Mode Control	★Disabled, Hotplug Enhanced
Device 2 Fun 1	Enable/Disable/Auto, Auto used board default setting	Disabled, Enabled, ★Auto
ASPM Mode (Dev#2/Func#1)	NB Root Port ASPM Mode Control	★Disabled, L0s Entry, L1 Entry, L0s And L1 Entry, Auto
Hotplug Mode (Dev#2/Func#1)	NB Root Port Hotplug Mode Control	★Disabled, Hotplug Enhanced
Device 2 Fun 2	Enable/Disable/Auto, Auto used board default setting	Disabled, Enabled, ★Auto
ASPM Mode (Dev#2/Func#2)	NB Root Port ASPM Mode Control	★Disabled, L0s Entry, L1 Entry, L0s And L1 Entry, Auto
Hotplug Mode (Dev#2/Func#2)	NB Root Port Hotplug Mode Control	★Disabled, Hotplug Enhanced

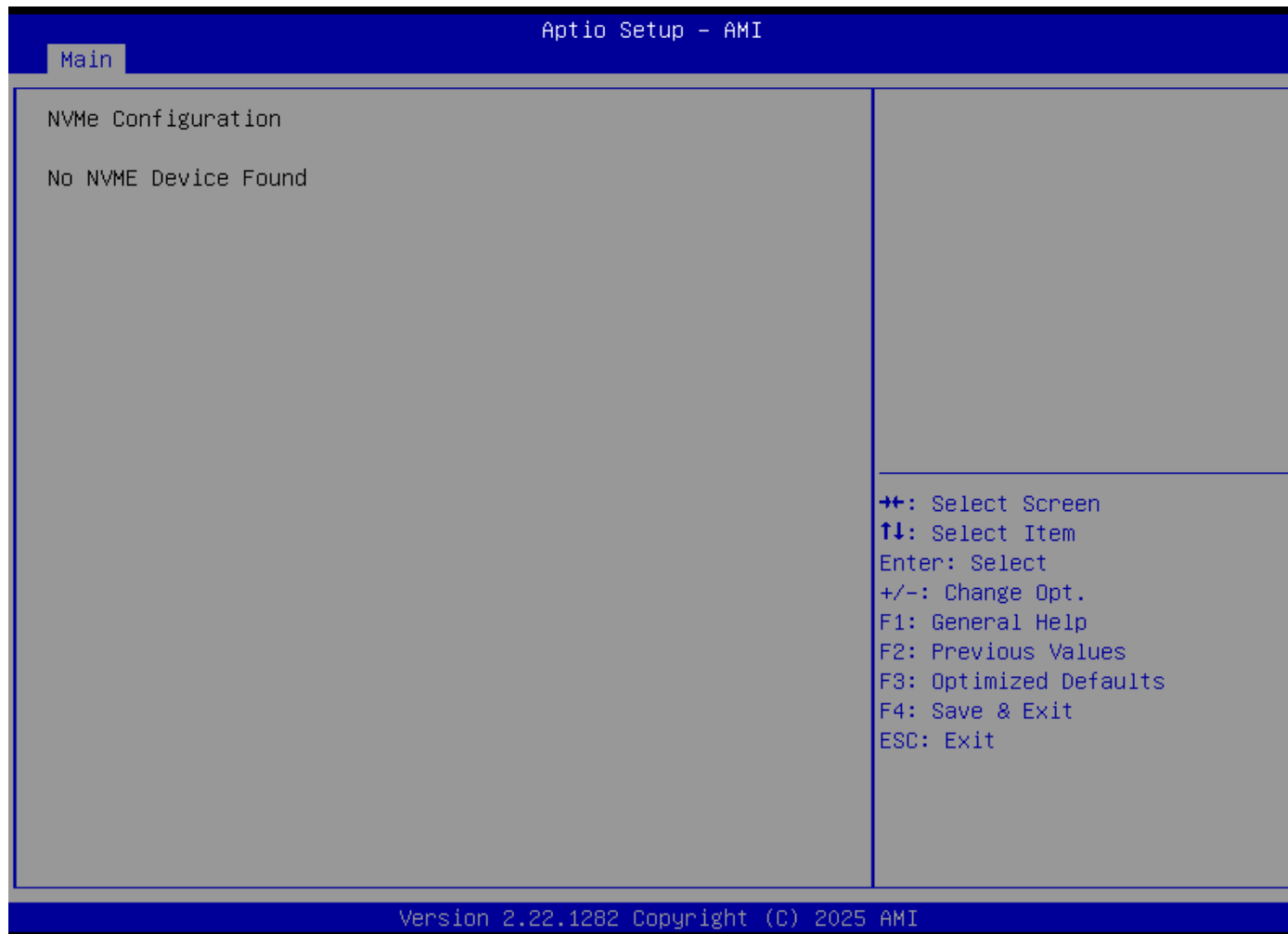
Feature	Description	Options
Device 2 Fun 3	Enable/Disable/Auto, Auto used board default setting	Disabled, Enabled, ★Auto
ASPM Mode (Dev#2/Func#3)	NB Root Port ASPM Mode Control	★Disabled, L0s Entry, L1 Entry, L0s And L1 Entry, Auto
Hotplug Mode (Dev#2/Func#3)	NB Root Port Hotplug Mode Control	★Disabled, Hotplug Enhanced
Device 2 Fun 4	Enable/Disable/Auto, Auto used board default setting	Disabled, Enabled, ★Auto
ASPM Mode (Dev#2/Func#4)	NB Root Port ASPM Mode Control	★Disabled, L0s Entry, L1 Entry, L0s And L1 Entry, Auto
Hotplug Mode (Dev#2/Func#4)	NB Root Port Hotplug Mode Control	★Disabled, Hotplug Enhanced
Device 2 Fun 5	Enable/Disable/Auto, Auto used board default setting	Disabled, Enabled, ★Auto
ASPM Mode (Dev#2/Func#5)	NB Root Port ASPM Mode Control	★Disabled, L0s Entry, L1 Entry, L0s And L1 Entry, Auto
Hotplug Mode (Dev#2/Func#5)	NB Root Port Hotplug Mode Control	★Disabled, Hotplug Enhanced
Device 2 Fun 6	Enable/Disable/Auto, Auto used board default setting	Disabled, Enabled, ★Auto
ASPM Mode (Dev#2/Func#6)	NB Root Port ASPM Mode Control	★Disabled, L0s Entry, L1 Entry, L0s And L1 Entry, Auto
Hotplug Mode (Dev#2/Func#46)	NB Root Port Hotplug Mode Control	★Disabled, Hotplug Enhanced

6.3.4 SATA Configuration

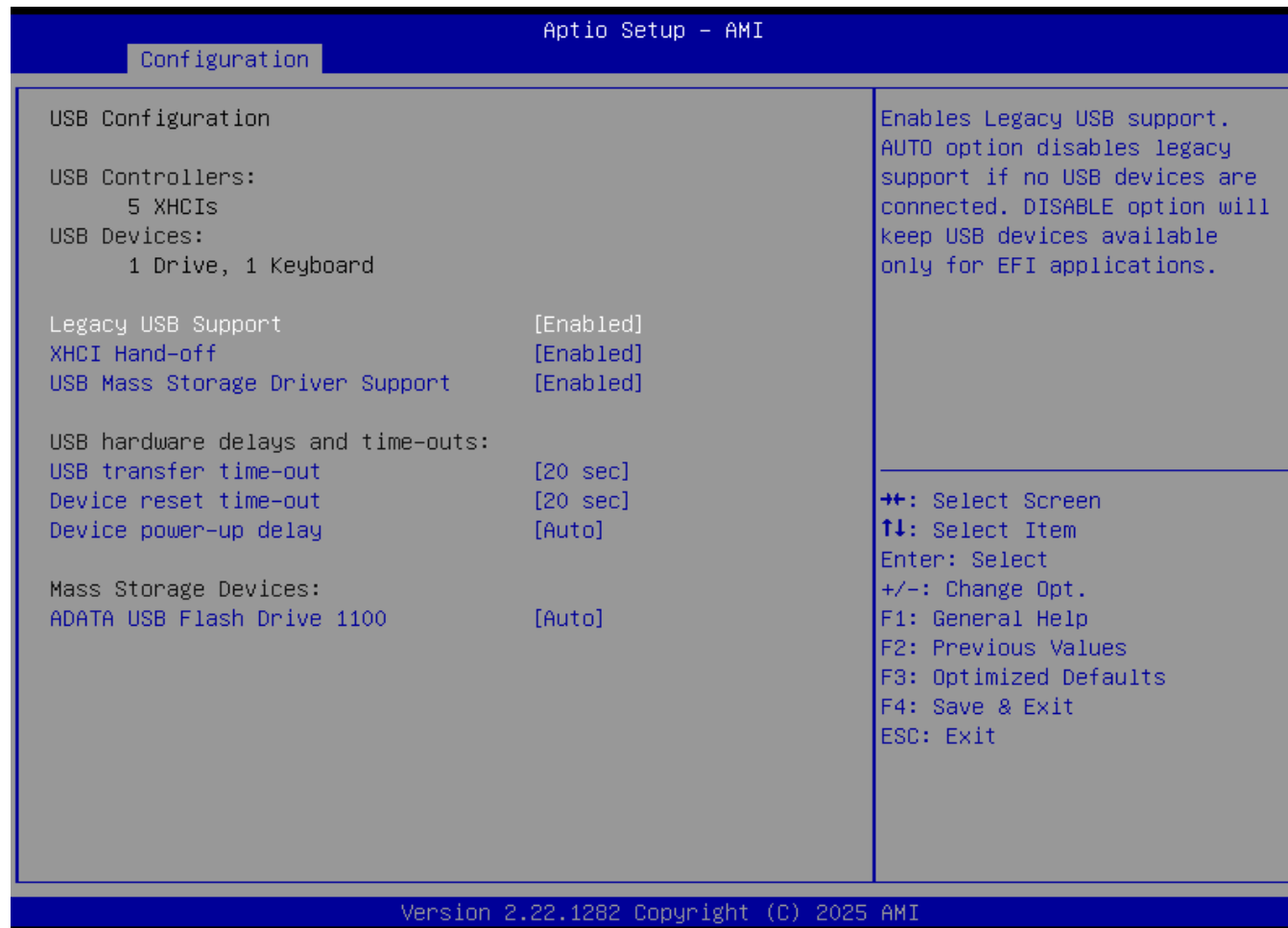


Feature	Description	Options
PA3 Mux Select	Select PA3 Mux Function	NVME , ★SATA

NVMe Configuration

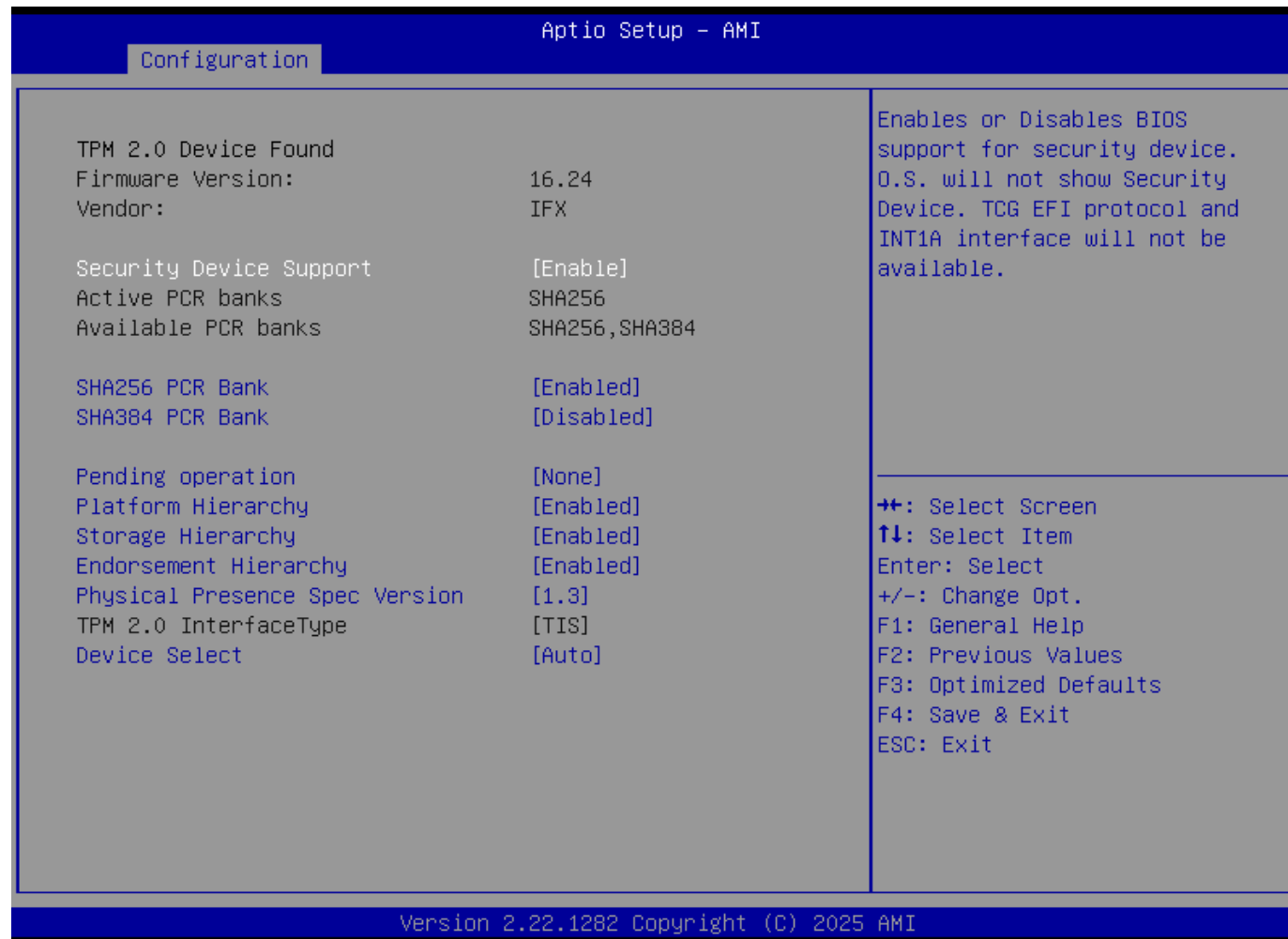


6.3.5 USB Configuration



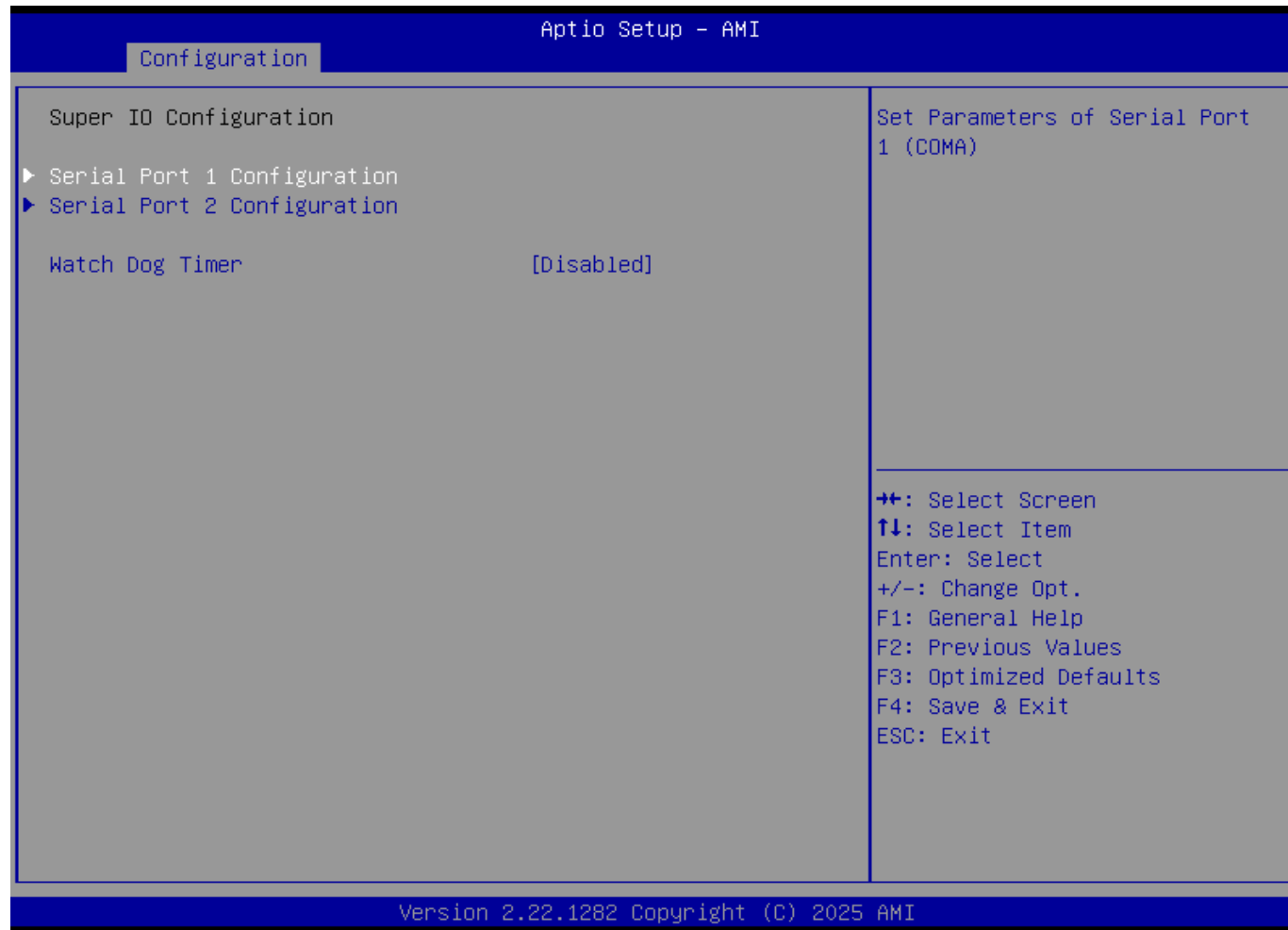
Feature	Description	Options
Legacy USB Support	Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications	★Enabled , Disabled, Auto
XHCI Hand-off	This is a workaround for OSeS without XHCI hand-off 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.	1, 5, 10, ★20 sec
Device reset time-out	USB mass storage device Start Unit command time-out.	10, ★20, 30, 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 from Hub descriptor	★Auto, Manual
Device power-up delay [Manual]		
Device power-up delay in seconds	Delay range is 1..40 seconds, in one seconds increments.	★5
Mass Storage Devices		
ADATA USB Flash Drive 1100	Mass storage device emulation type. 'AUTO' enumerates devices according to their media format. Optical drives are emulated as 'CDROM'; drives with no media will be emulated according to a drive type.	★Auto, Floppy, Forced FDD, Hard Disk, CD-ROM

6.3.6 TPM Configuration



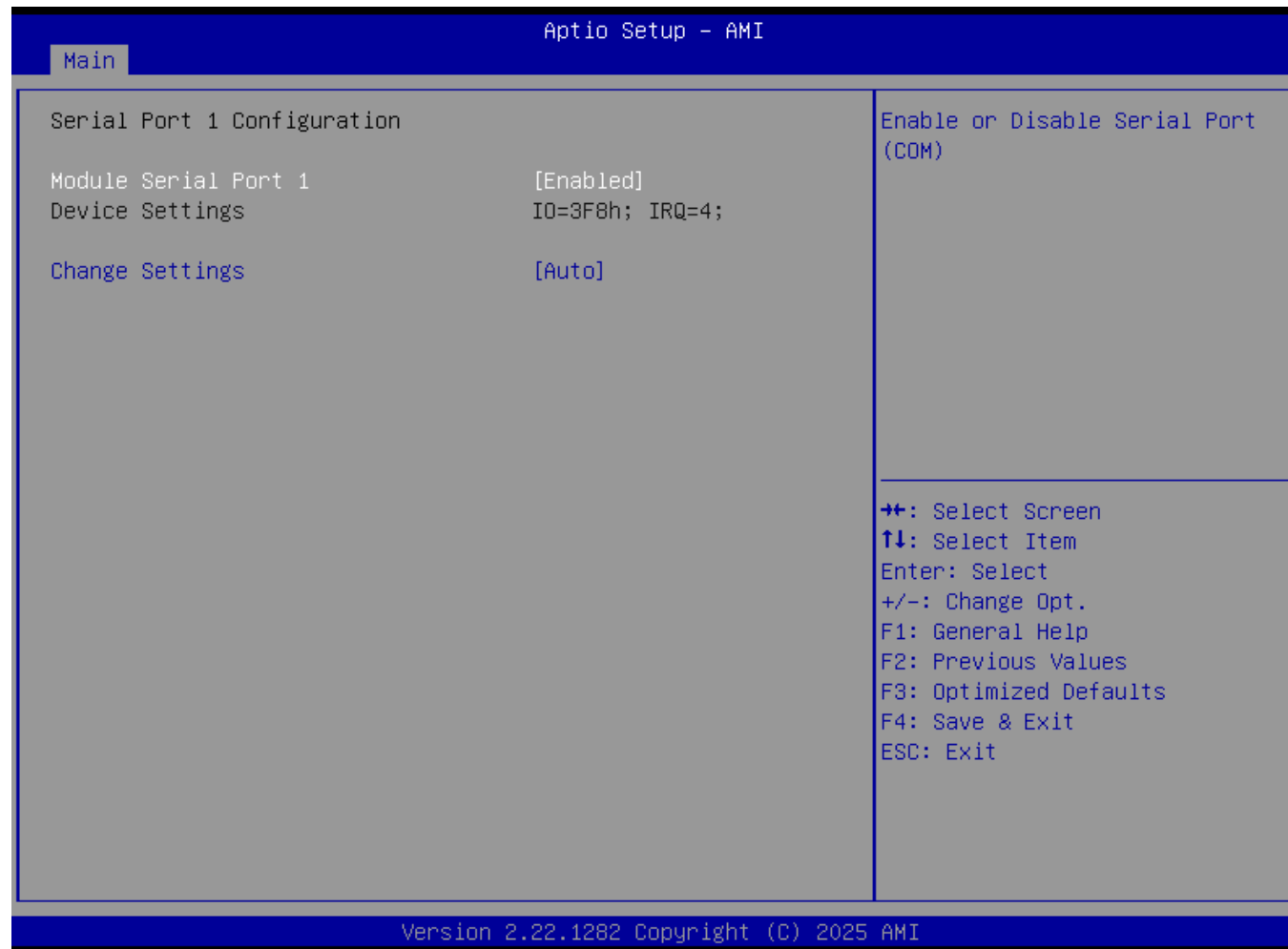
Feature	Description	Options
Security Device Support	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A Interface will not be available.	★Enabled, Disabled
SHA256 PCR Bank	Enable or Disable SHA256 PCR Bank	Disabled, ★Enabled
SHA384 PCR Bank	Enable or Disable SHA384 PCR Bank	★Disabled, Enabled
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	Enable or Disable Platform Hierarchy	Disabled, ★Enabled
Storage Hierarchy	Enable or Disable Storage Hierarchy	Disabled, ★Enabled
Endorsement Hierarchy	Enable or Disable Endorsement Hierarchy	Disabled, ★Enabled
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	TPM 1.2, TPM 2.0 ★Auto

6.3.7 Super IO Configuration



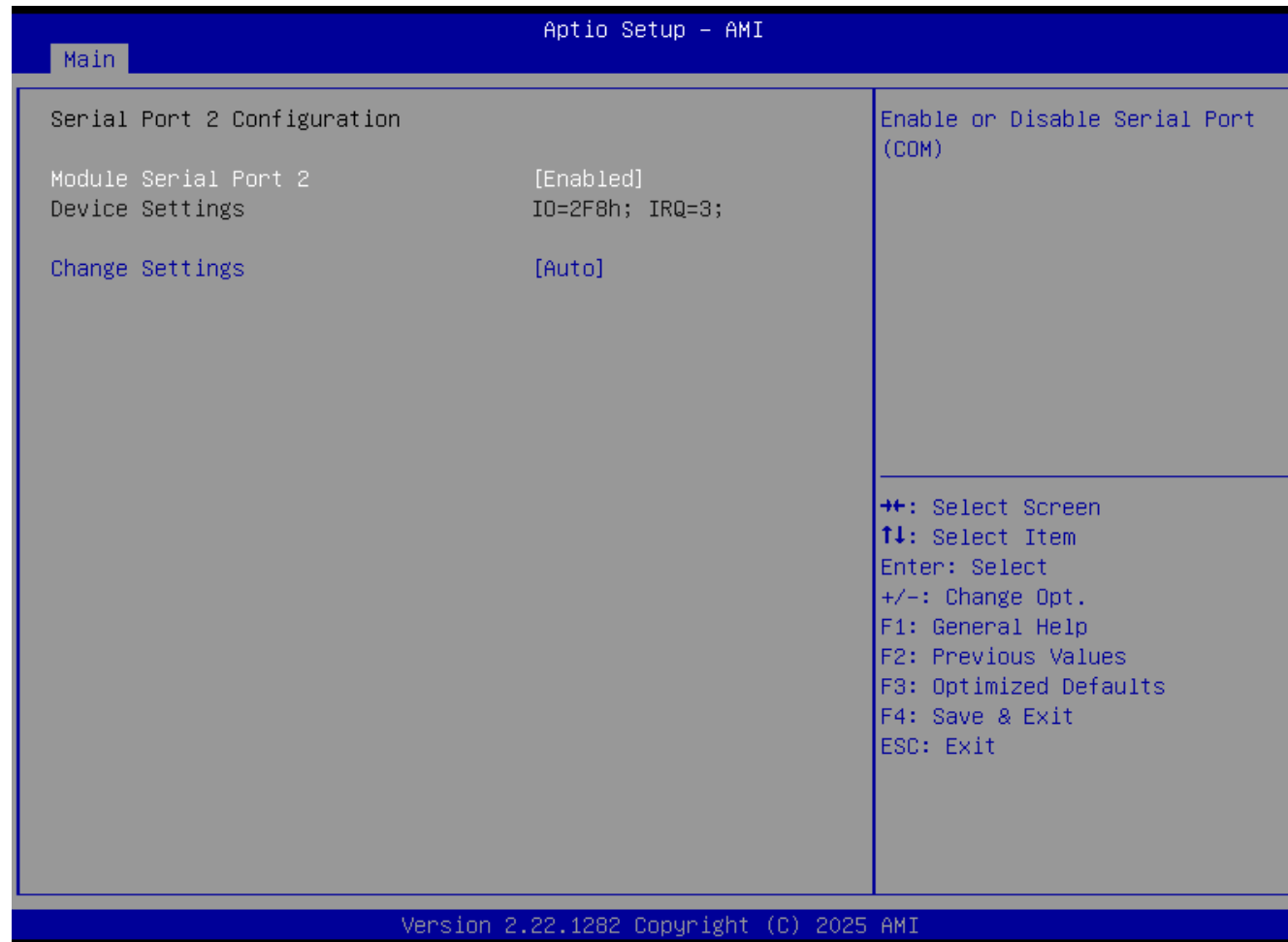
Feature	Description	Options
Serial Port 1 Configuration	Set Parameters of Serial Port 1(COMA)	
Serial Port 2 Configuration	Set Parameters of Serial Port 2(COMB)	
Watch Dog Timer	Enable/Disable Watch Dog Timer	★Disabled, Enabled
Watch Dog Timer [Enabled]		
Timer Unit	Select Timer count unit of WDT [Watch Dog Timer [Enabled]]	★Second, Minute
Timer value	Set WDT Timer value seconds / minutes [Watch Dog Timer [Enabled]]	★20

Serial Port 1 Configuration



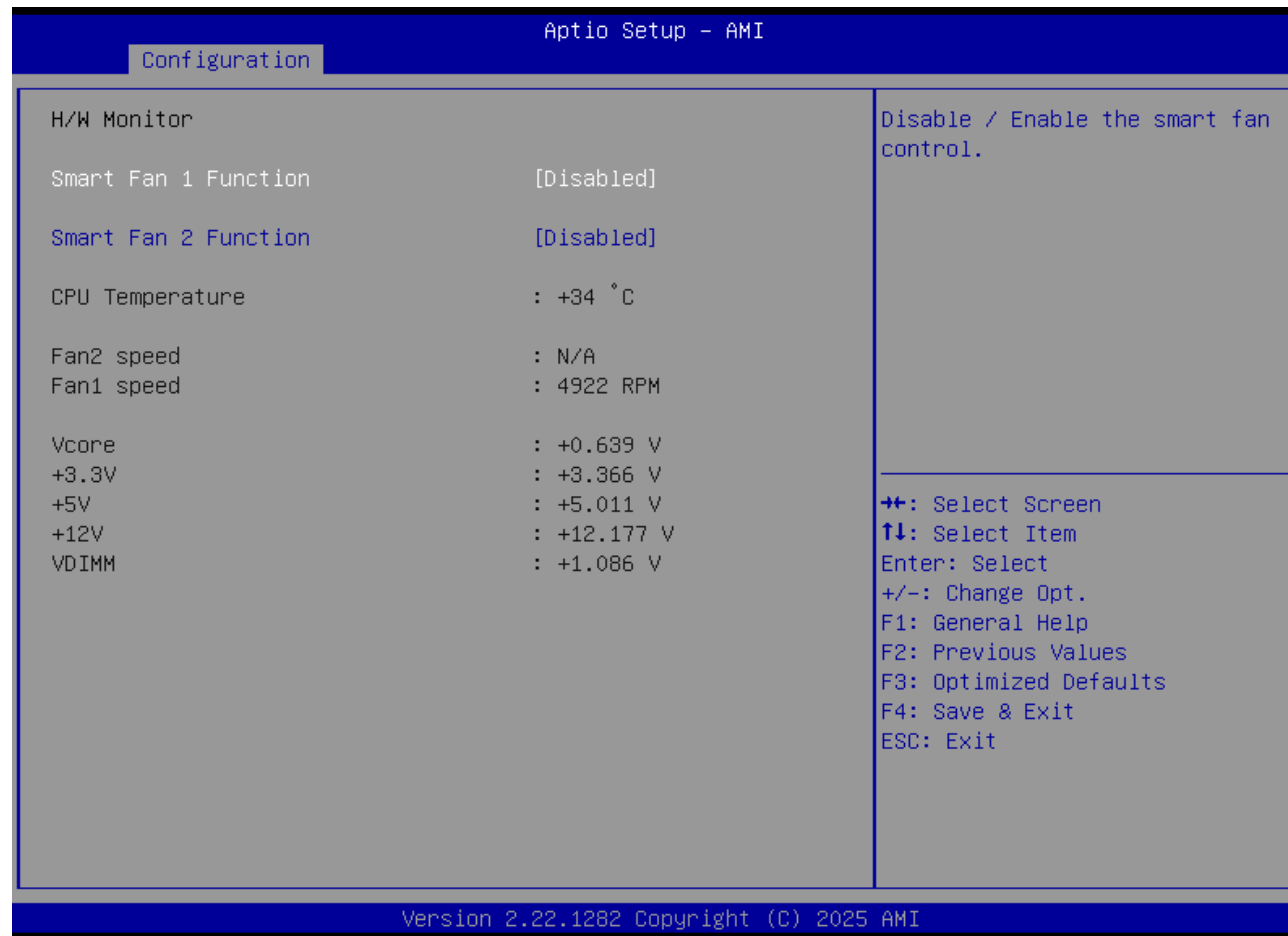
Feature	Description	Options
Module Serial Port 1	Enable or Disable Serial Port (COM)	★Enabled, Disabled
Change Settings	Select an optimal settings for Super IO Device	★Auto ,IO=3F8h; IRQ=4; IO=3F8h; IRQ=3,4,10,11; IO=2F8h; IRQ=3,4,10,11; IO=3E8h; IRQ=3,4,10,11; IO=2E8h; IRQ=3,4,10,11;

Serial Port 2 Configuration



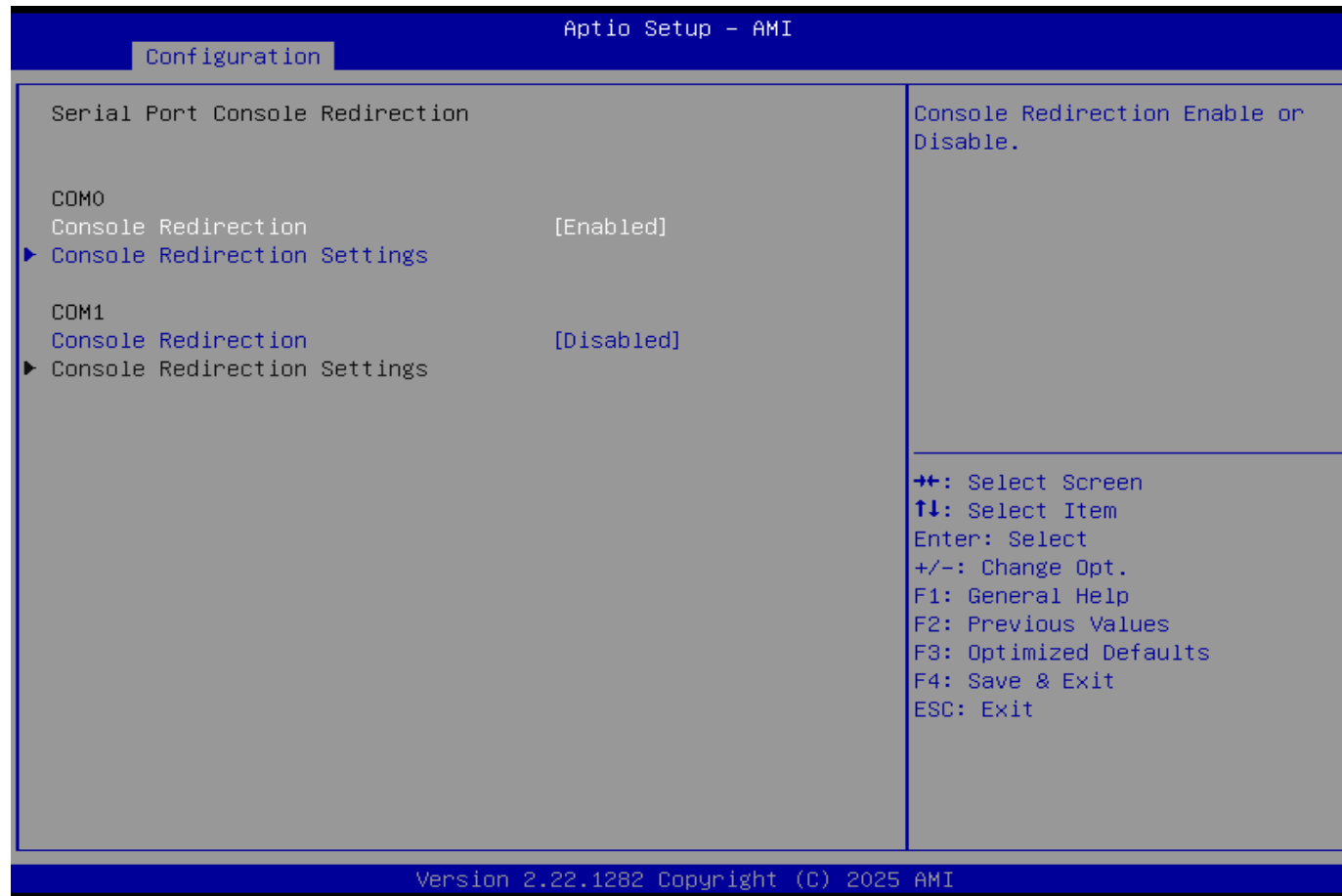
Feature	Description	Options
Module Serial Port 2	Enable or Disable Serial Port (COM)	★Enabled, Disabled
Change Settings	Select an optimal settings for Super IO Device	★Auto ,IO=2F8h; IRQ=3; IO=3F8h; IRQ=3,4,10,11; IO=2F8h; IRQ=3,4,10,11; IO=3E8h; IRQ=3,4,10,11; IO=2E8h; IRQ=3,4,10,11;

6.3.8 H/W Monitor



Feature	Description	Options
Smart Fan 1 Function	Disable / Enable the smart fan control	★Disabled, Enabled,
Smart Fan 1 Control Mode	Select smart fan control mode	★Thermal Cruise Mode, Fan Control Mode
Smart Fan 1 Control Mode [Thermal Cruise 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 1 Control Mode [Fan Control Mode]		
Smart Fan 1 Low Speed (%)	Set smart speed (0-100%)	★100
Smart Fan 2 Function	Disable / Enable the smart fan control	★Disabled, Enabled,
Smart Fan 2 Control Mode	Select smart fan control mode	★Thermal Cruise Mode, Fan Control Mode
Smart Fan 2 Control Mode [Thermal Cruise 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
Smart Fan 2 Control Mode [Fan Control Mode]		
Smart Fan 2 Low Speed (%)	Set smart speed (0-100%)	★100

6.3.9 Serial Port Console Redirection



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

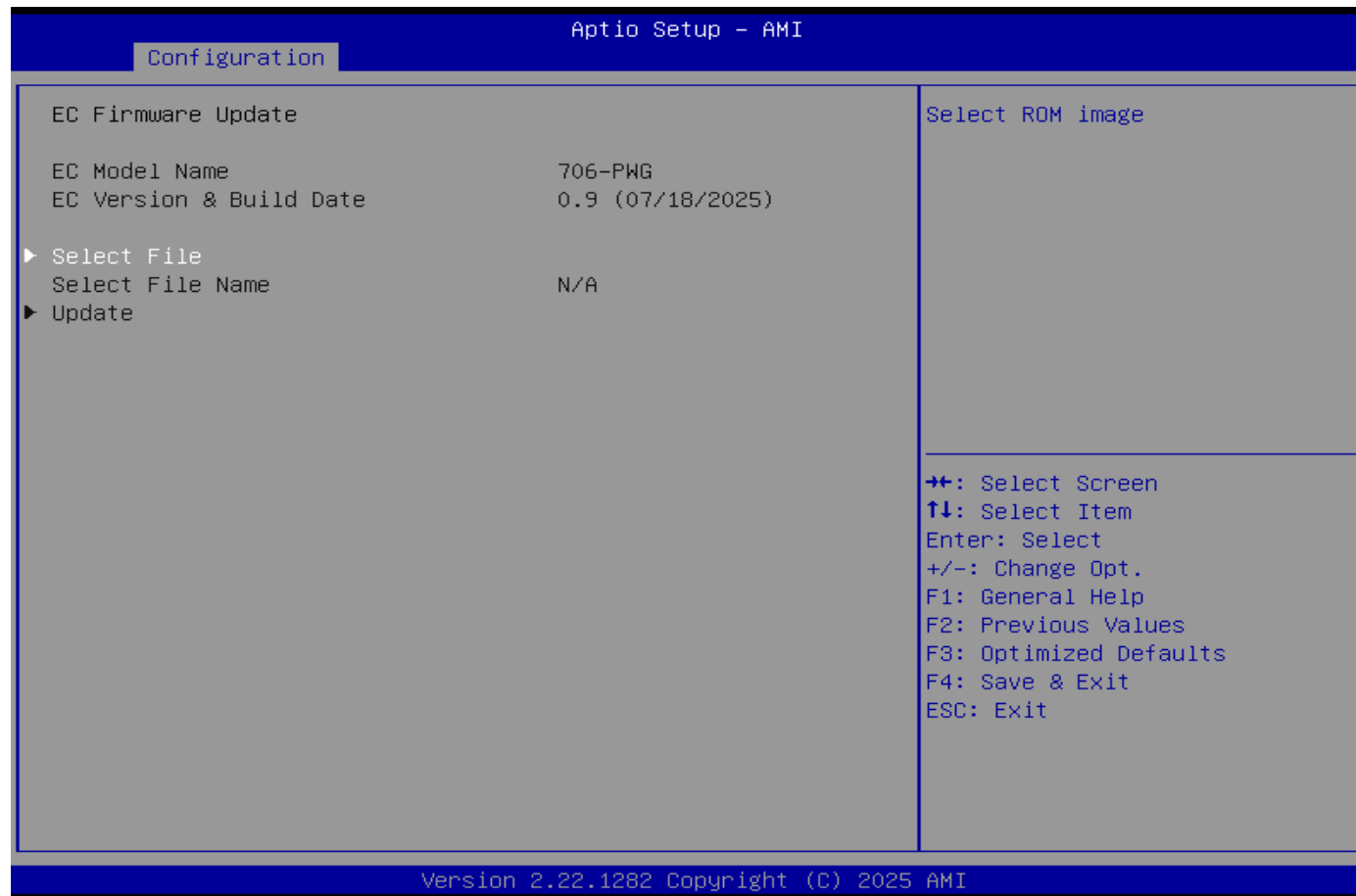
COM0 ~ COM1 Console Redirection Settings

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.



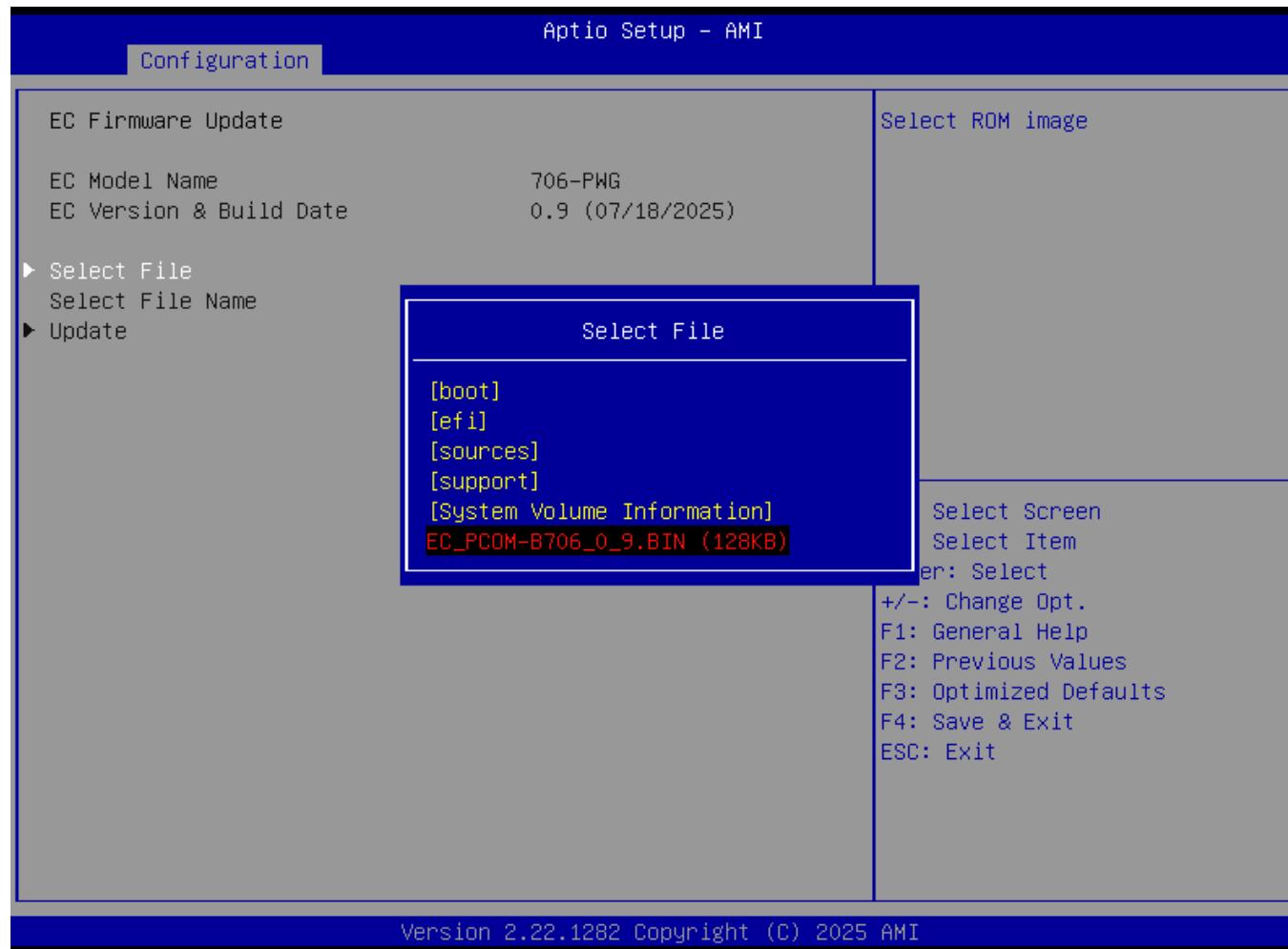
Feature	Description	Options
Terminal Type	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color , function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.	VT100, ★VT100Plus, VT-UTF8, ANSI
Bits per second	Select Serial port transmission speed. The speed must be matched on other side. Long or noisy lines may require lower speeds.	9600, 19200, 38400, 57600, ★115200
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
wRecorder 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

6.3.10 EC Firmware Update

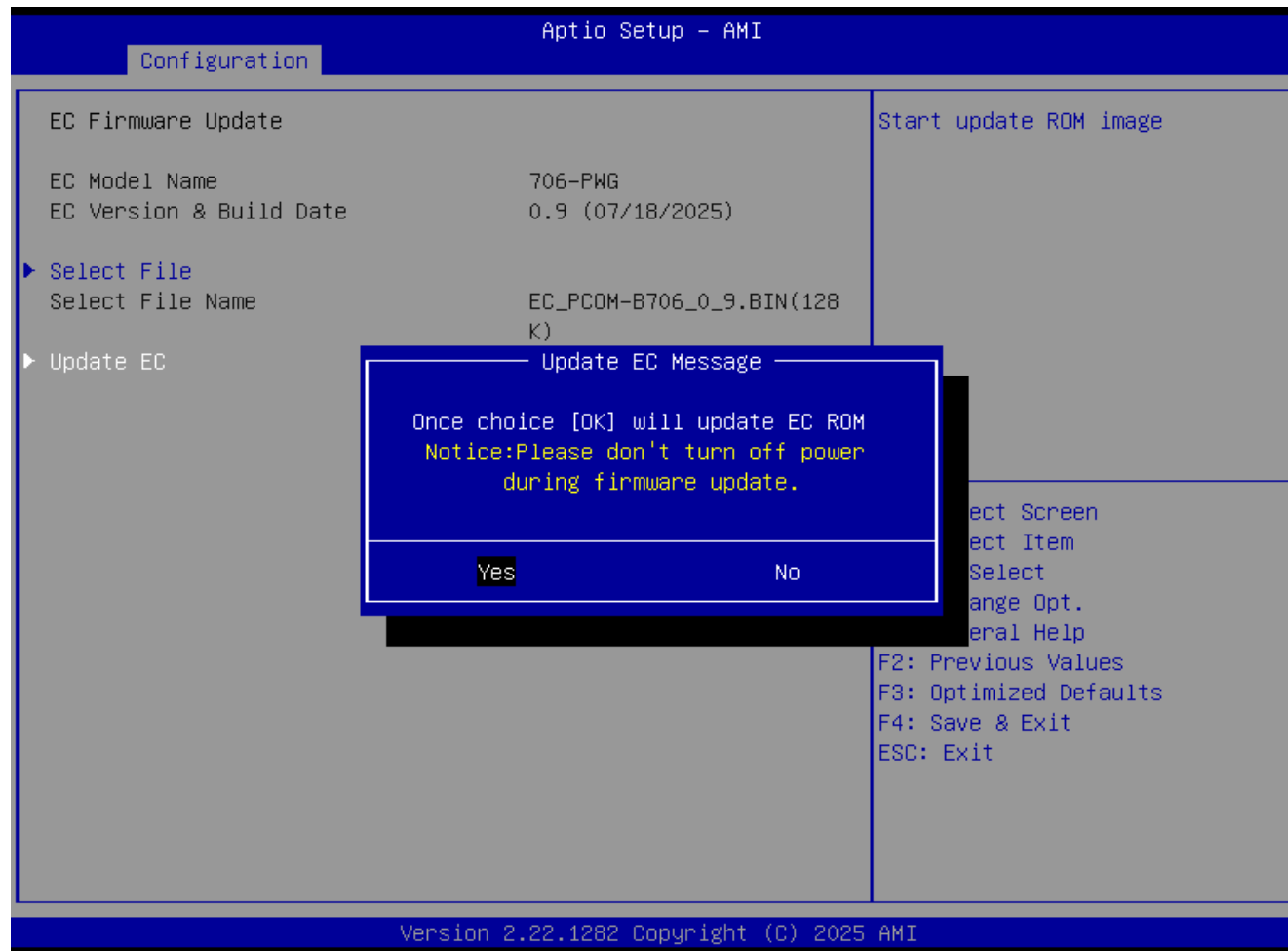


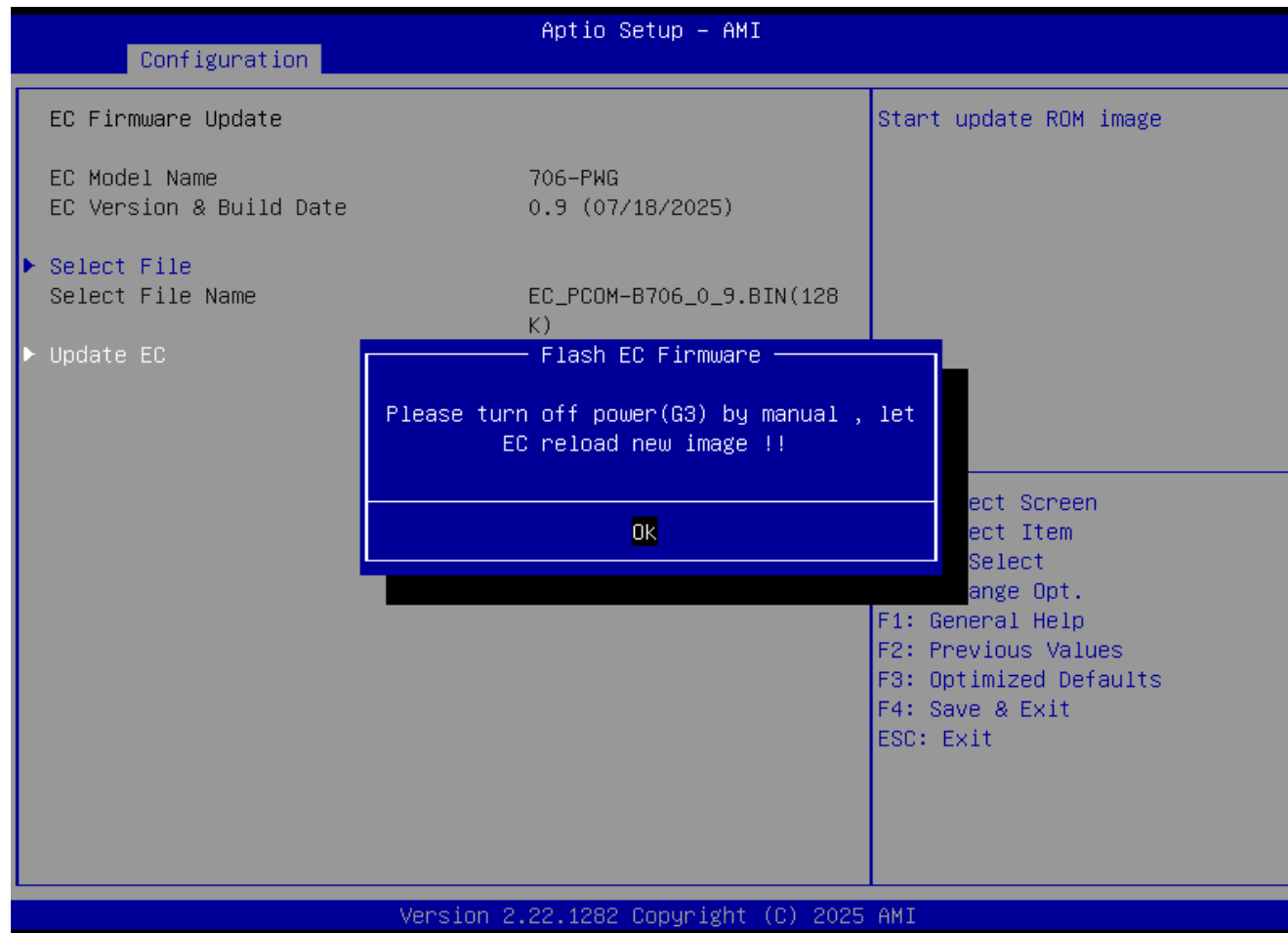
Feature	Description	Options
Select File	Select BIOS BIN file in (USB) drive to update	
Update	Start update ROM image	

Select file



Update EC



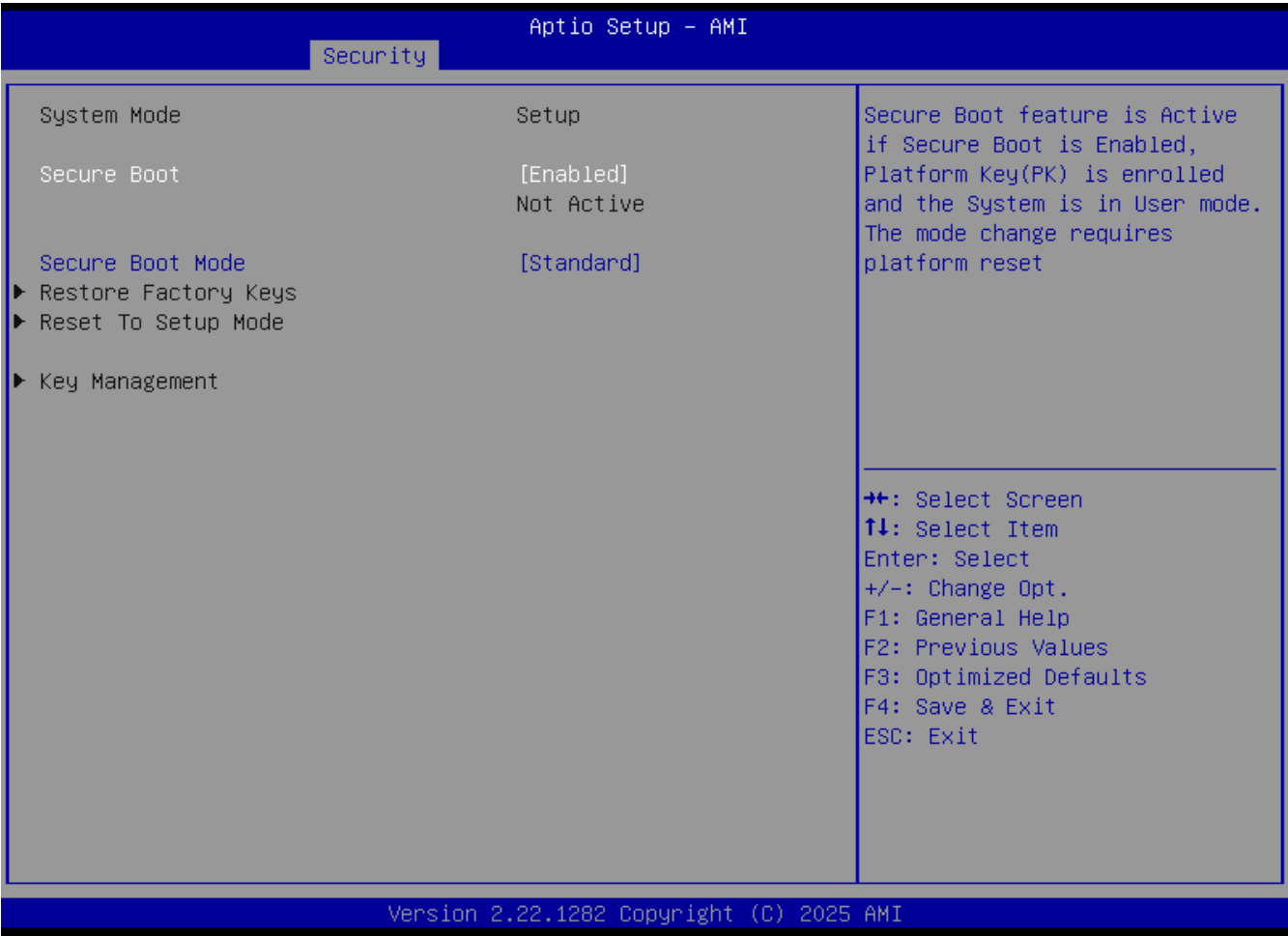


6.4 Security



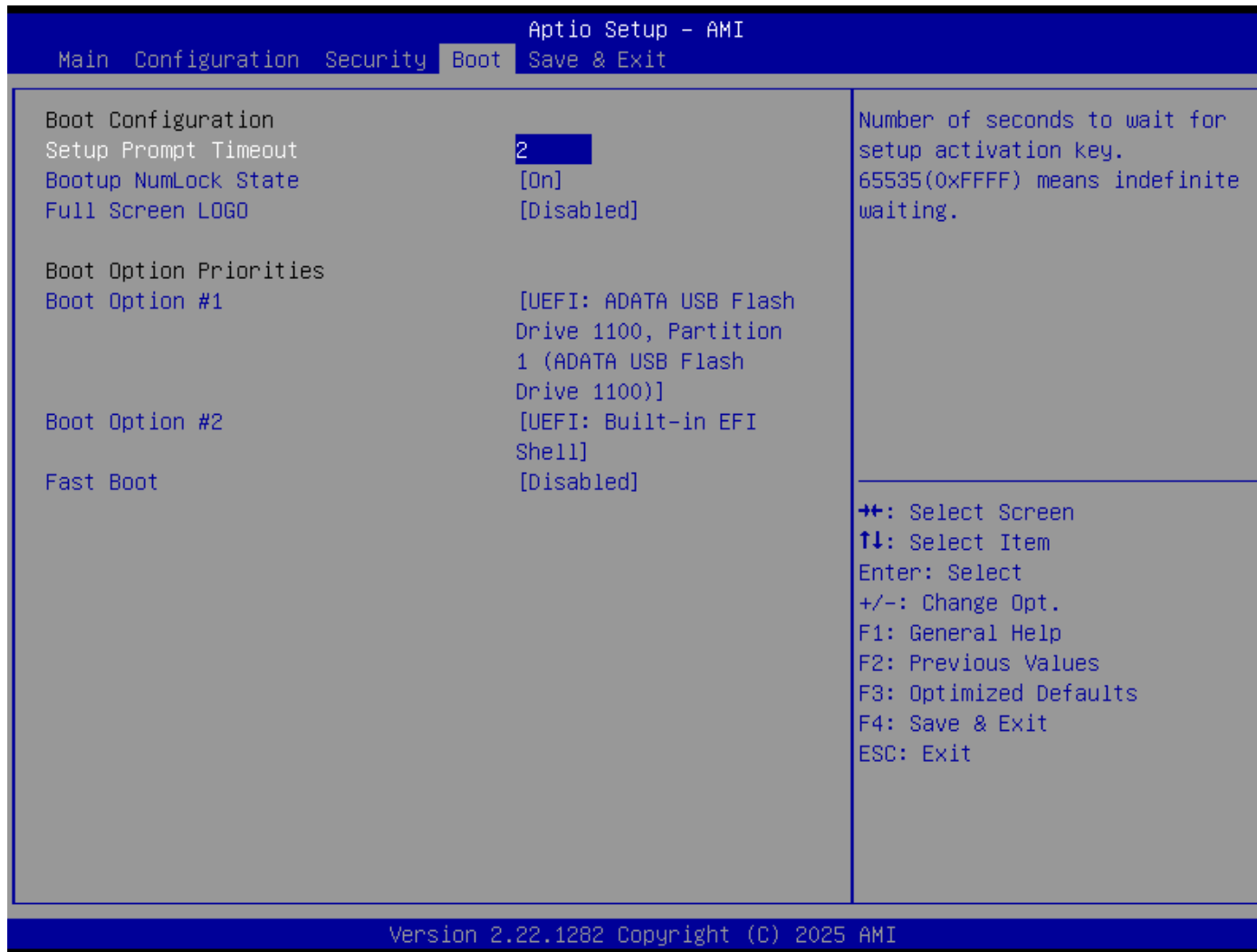
Feature	Description	Options
Password Check Mode	[Setup] check password when enter setup screen. [Power on] check password on every time system power on.	★Setup, Power On
Administrator Password	Set Administrator Password	

Secure Boot



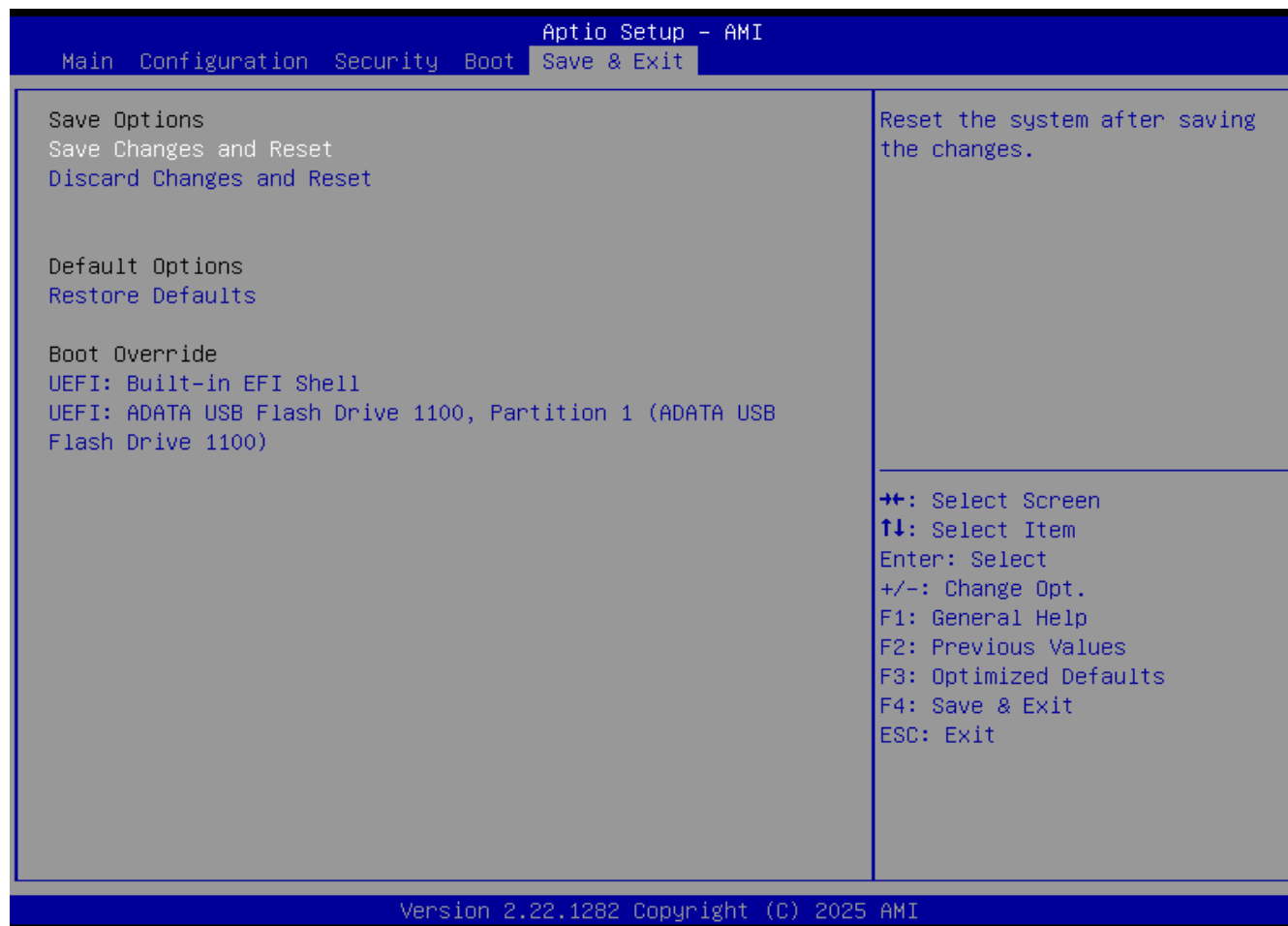
Feature	Description	Options
Secure Boot	Secure Boot feature is Active if Secure Boot is Enable, Platform Key(PK) is enrolled and the System is in User mode. The mode change requires platform reset	Disabled, ★Enable
Secure Boot Mode	Secure Boot mode options: Standard pr Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication	★Standard, Custom

6.5 Boot



Feature	Description	Options
Setup Prompt Timeout	Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.	★2
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	Sets the system boot order	UEFI: Built-in EFI Shell UEFI: USB Flash Drive Disabled
Fast Boot	Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options	★Disabled, Enabled

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
	0xE300~0xE3FF	EC LPC IO Space
	0x3F8~0x3FF	EC UART1
	0x2F8~0x2FF	EC UART2
Carrier SIO	N/A	

SMBUS

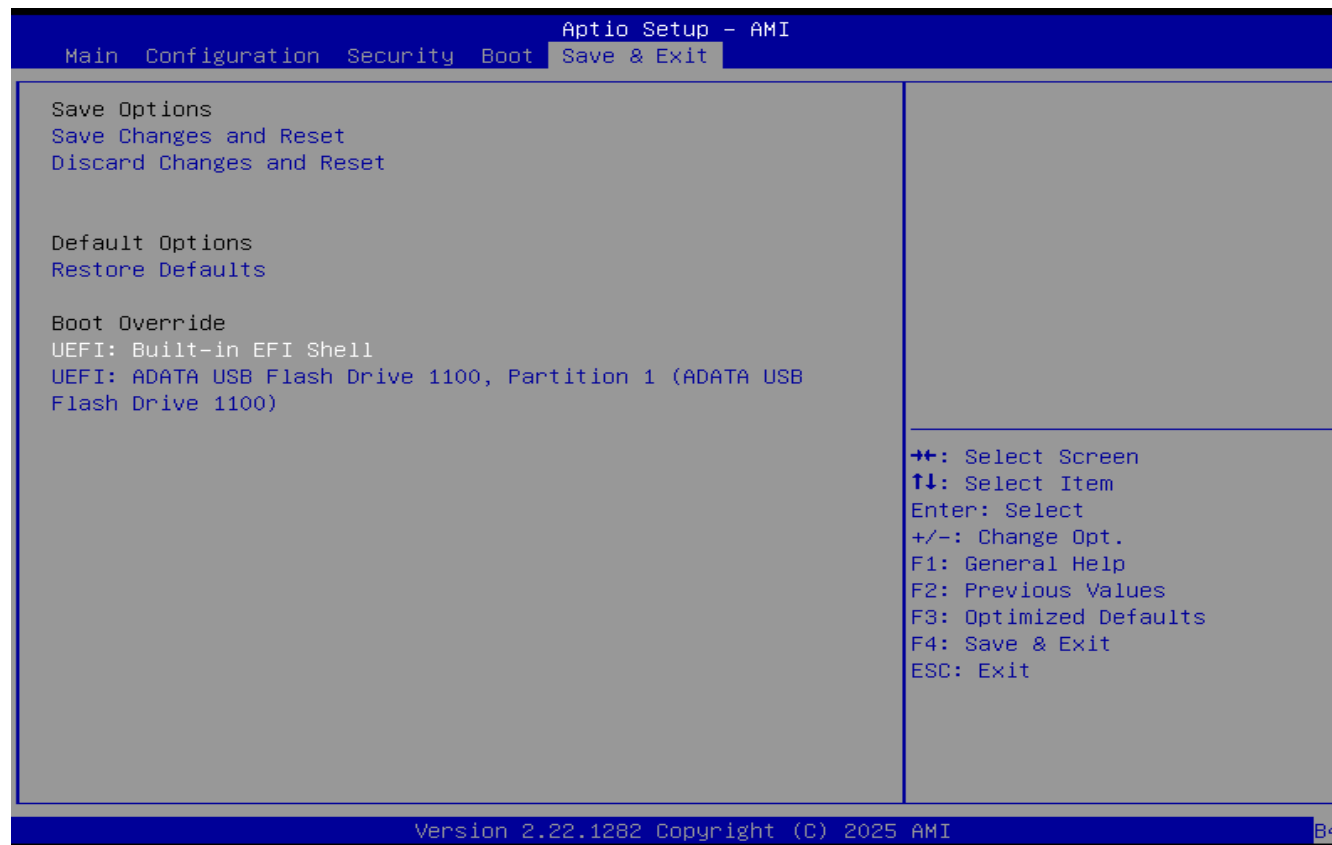
SMBUS Address	Information
0x44	SMBus ARP
0x6C	PCIe Clock Buffer
0x10 / 0x12 / 0x16 / 0x48	Reserved

Table 10 System Resources

8 BIOS / EC Update

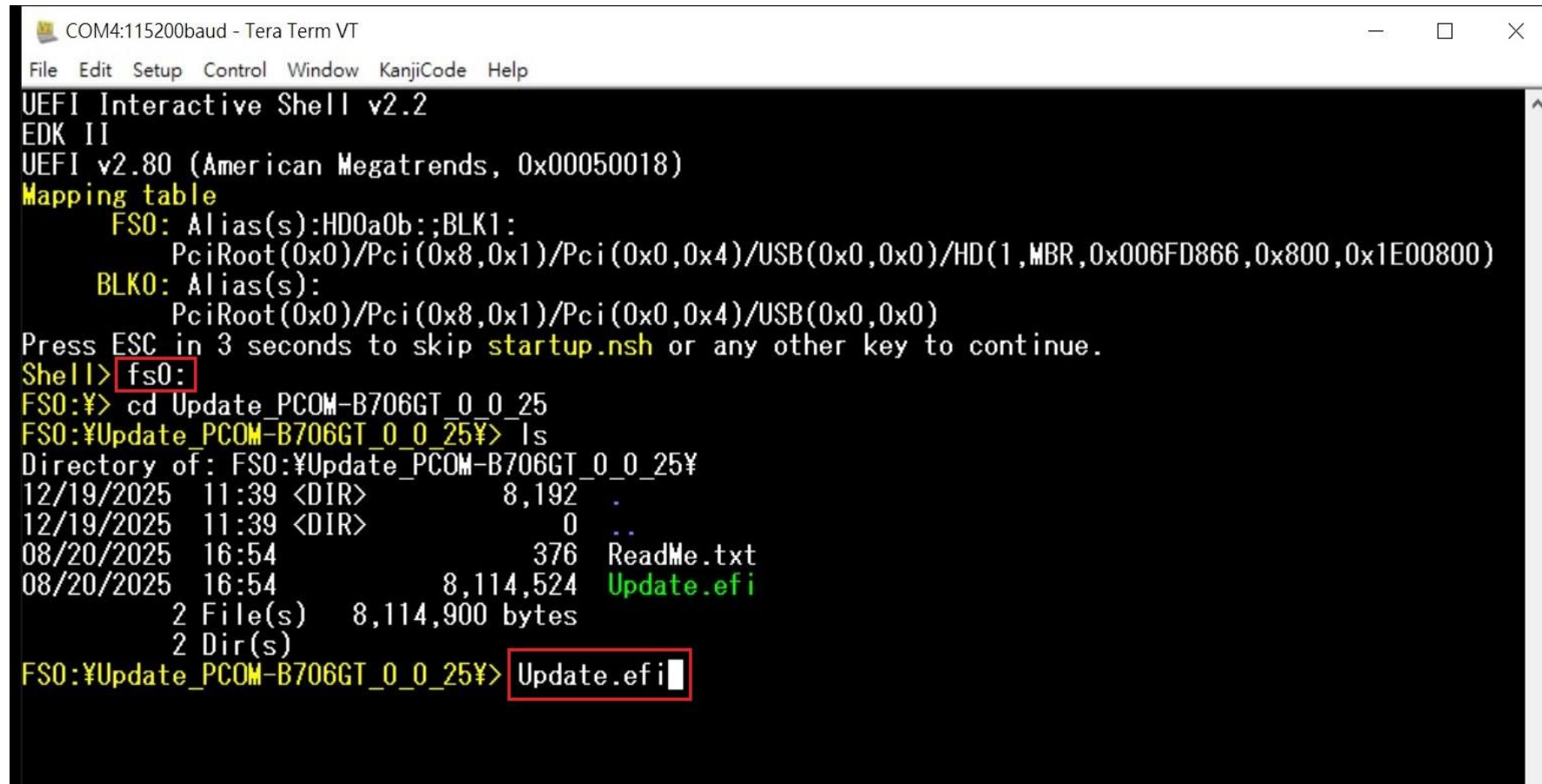
PCOM-B706GT only support BIOS / EC update under UEFI shell environment, refer the following step, please.

Step 1. Plug the USB DOK on the target system and boot from UEFI shell



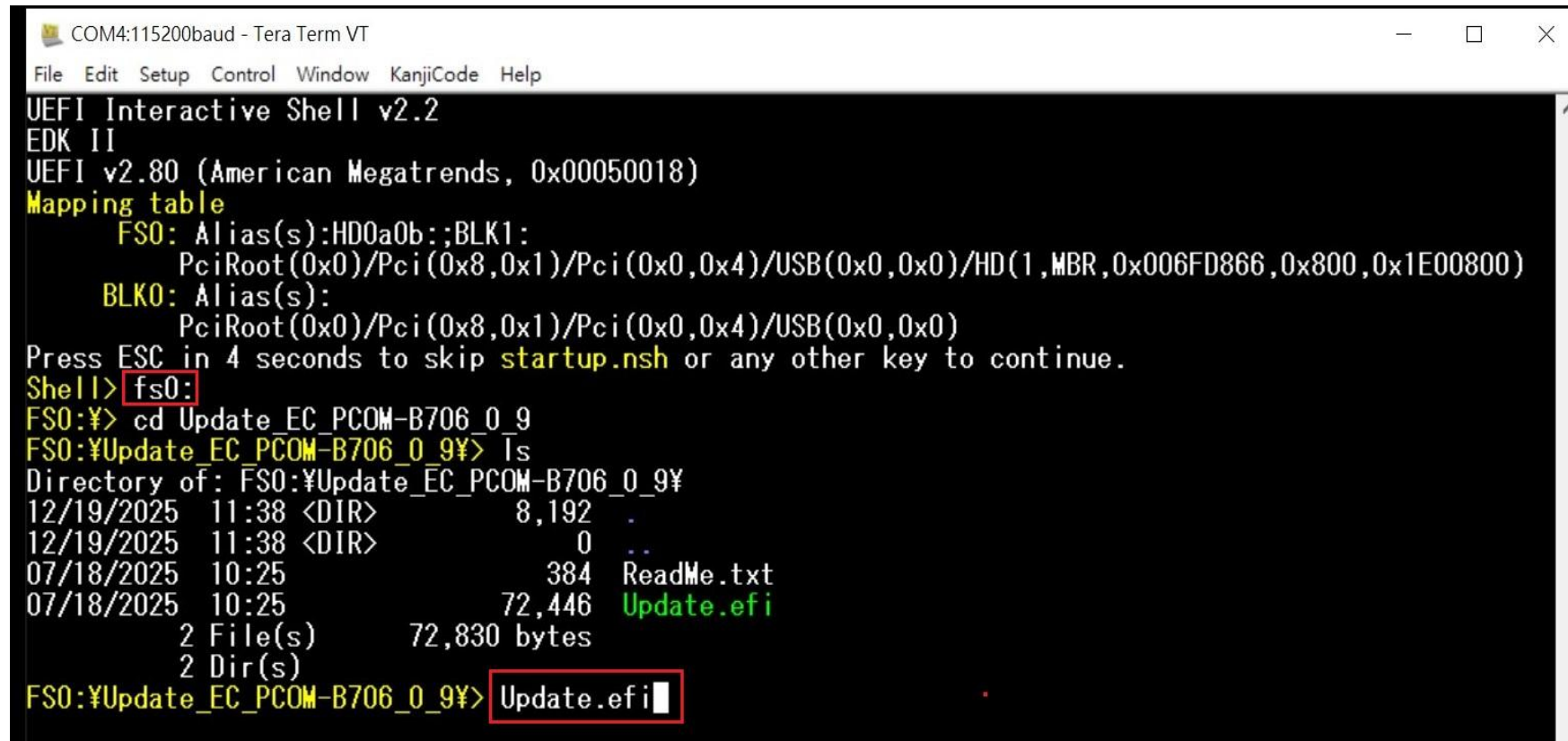
Step 4. Under the UEFI shell, change prompt to your USB DOK, the below example is “**fs0:**”

Step 5. Then change the folder with updated file and use command: “**update**” and press enter



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window KanjiCode Help
UEFI Interactive Shell v2.2
EDK II
UEFI v2.80 (American Megatrends, 0x00050018)
Mapping table
  FS0: Alias(s):HD0a0b::BLK1:
      PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x0,0x0)/HD(1,MBR,0x006FD866,0x800,0x1E00800)
  BLK0: Alias(s):
      PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x0,0x0)
Press ESC in 3 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:¥> cd Update_PCOM-B706GT_0_0_25
FS0:¥Update_PCOM-B706GT_0_0_25¥> ls
Directory of: FS0:¥Update_PCOM-B706GT_0_0_25¥
12/19/2025  11:39 <DIR>          8,192  .
12/19/2025  11:39 <DIR>           0  ..
08/20/2025  16:54                376  ReadMe.txt
08/20/2025  16:54          8,114,524  Update.efi
      2 File(s)    8,114,900 bytes
      2 Dir(s)
FS0:¥Update_PCOM-B706GT_0_0_25¥> Update.efi
```

(BIOS file update sample)

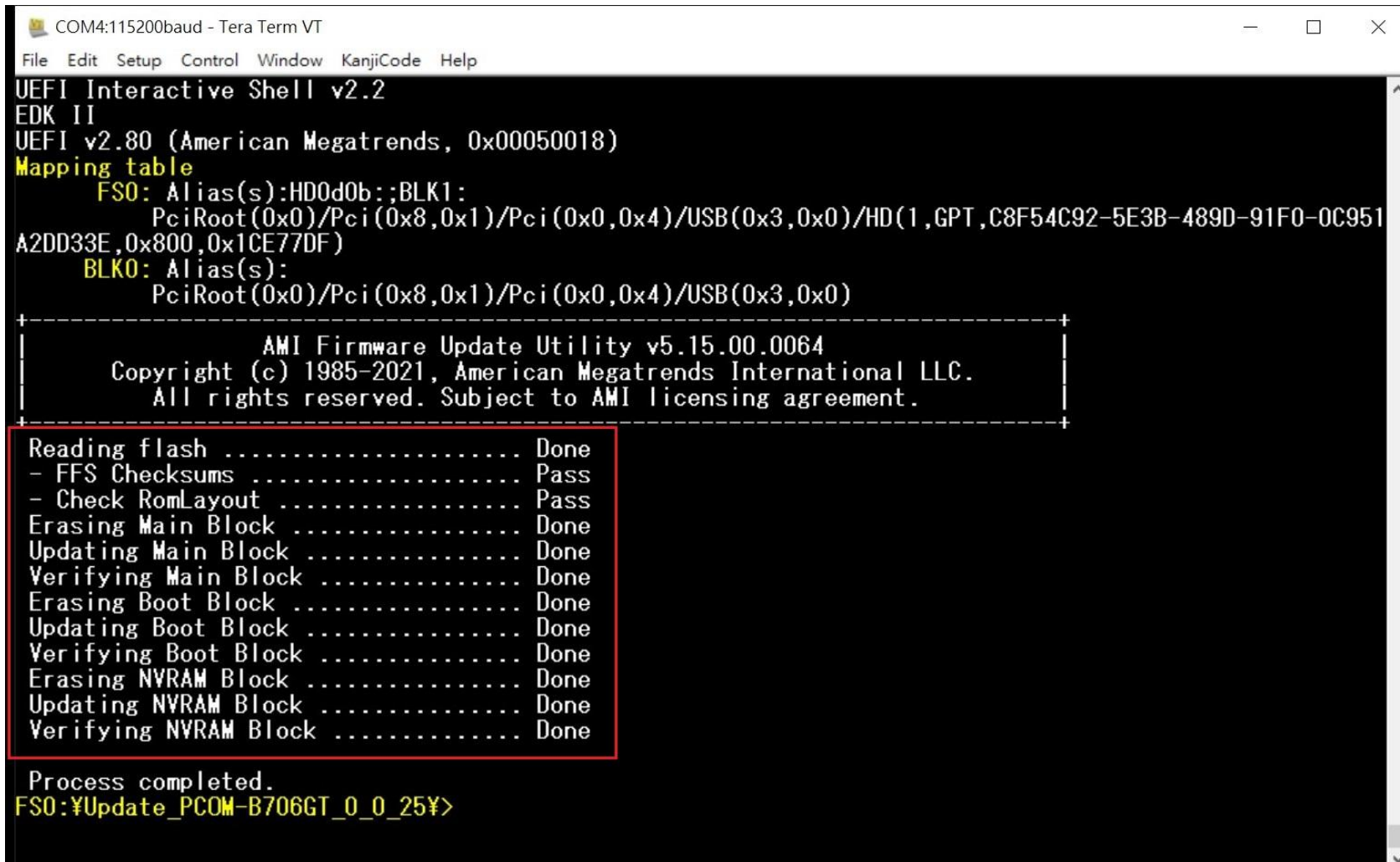


```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window KanjiCode Help
UEFI Interactive Shell v2.2
EDK II
UEFI v2.80 (American Megatrends, 0x00050018)
Mapping table
  FS0: Alias(s):HD0a0b:;BLK1:
        PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x0,0x0)/HD(1,MBR,0x006FD866,0x800,0x1E00800)
  BLK0: Alias(s):
        PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x0,0x0)
Press ESC in 4 seconds to skip startup.nsh or any other key to continue.
Shell> fs0:
FS0:¥> cd Update_EC_PCOM-B706_0_9
FS0:¥Update_EC_PCOM-B706_0_9¥> ls
Directory of: FS0:¥Update_EC_PCOM-B706_0_9¥
12/19/2025  11:38 <DIR>          8,192  .
12/19/2025  11:38 <DIR>           0     ..
07/18/2025  10:25           384  ReadMe.txt
07/18/2025  10:25        72,446  Update.efi
          2 File(s)        72,830 bytes
          2 Dir(s)
FS0:¥Update_EC_PCOM-B706_0_9¥> Update.efi
```

(EC file update sample)

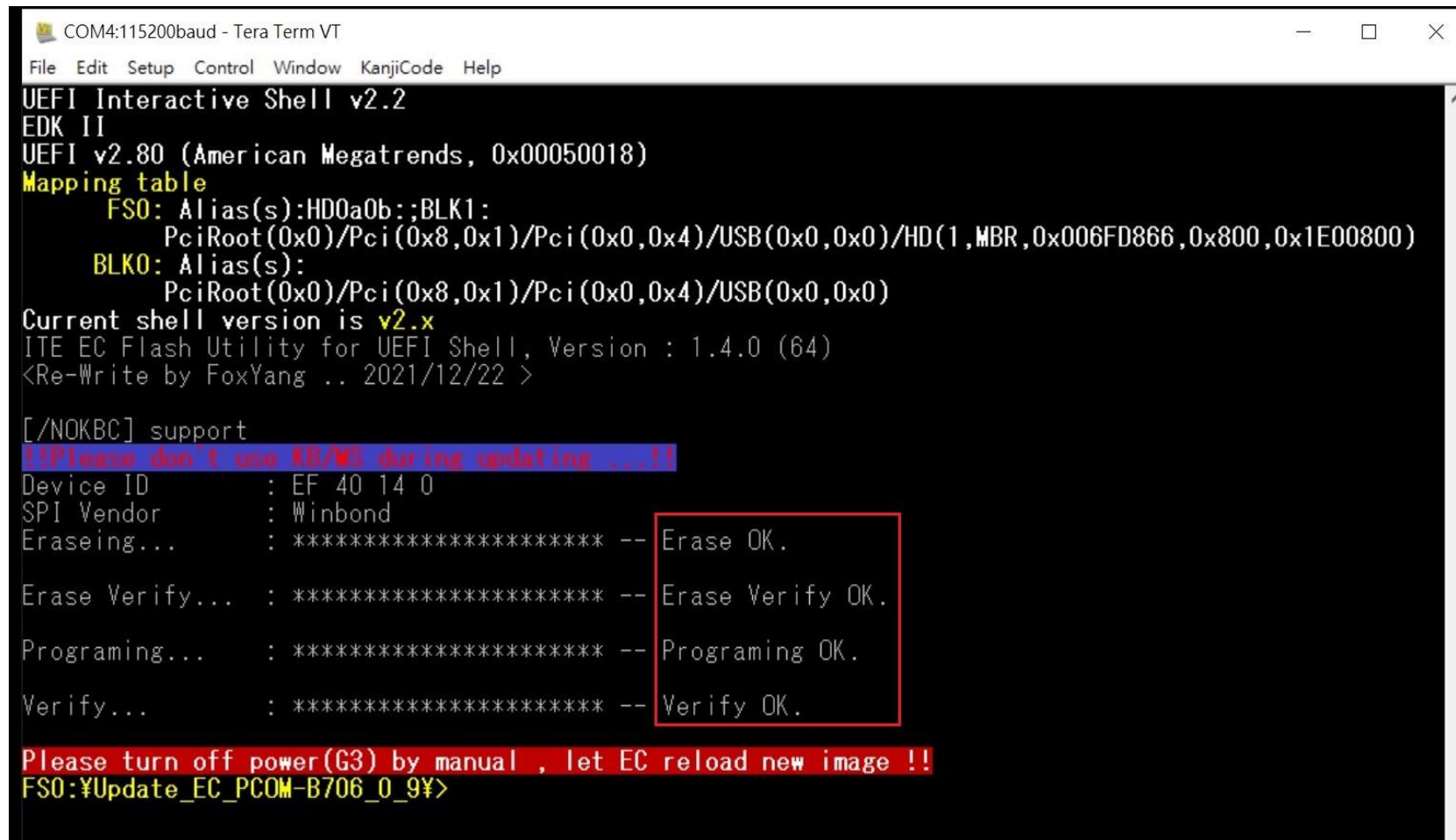
Step 6. The updating process will start and show the updating progress

Step 7. Please power off and restart the system once updating finished



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window KanjiCode Help
UEFI Interactive Shell v2.2
EDK II
UEFI v2.80 (American Megatrends, 0x00050018)
Mapping table
  FSD: Alias(s):HD0d0b::BLK1:
      PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x3,0x0)/HD(1,GPT,C8F54C92-5E3B-489D-91F0-0C951
A2DD33E,0x800,0x1CE77DF)
  BLK0: Alias(s):
      PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x3,0x0)
+-----+
|               AMI Firmware Update Utility v5.15.00.0064               |
|   Copyright (c) 1985-2021, American Megatrends International LLC.   |
|   All rights reserved. Subject to AMI licensing agreement.           |
+-----+
Reading flash ..... Done
- FFS Checksums ..... Pass
- Check RomLayout ..... Pass
Erasing Main Block ..... Done
Updating Main Block ..... Done
Verifying Main Block ..... Done
Erasing Boot Block ..... Done
Updating Boot Block ..... Done
Verifying Boot Block ..... Done
Erasing NVRAM Block ..... Done
Updating NVRAM Block ..... Done
Verifying NVRAM Block ..... Done
Process completed.
FSD:¥Update_PCOM-B706GT_0_0_25¥>
```

(BIOS updating progress)



```
COM4:115200baud - Tera Term VT
File Edit Setup Control Window KanjiCode Help
UEFI Interactive Shell v2.2
EDK II
UEFI v2.80 (American Megatrends, 0x00050018)
Mapping table
  FS0: Alias(s):HD0a0b::BLK1:
      PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x0,0x0)/HD(1,MBR,0x006FD866,0x800,0x1E00800)
  BLK0: Alias(s):
      PciRoot(0x0)/Pci(0x8,0x1)/Pci(0x0,0x4)/USB(0x0,0x0)
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-B706_0_9¥>
```

(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-B706GT's packaging specification will follow the Portwell standard style.

Package	Appearance	Size
Anti-Static bubble bag		180x130mm
White Paper Box		210x150x40mm
Shipping Box (10 pcs White paper box)		595x300x185mm

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/>

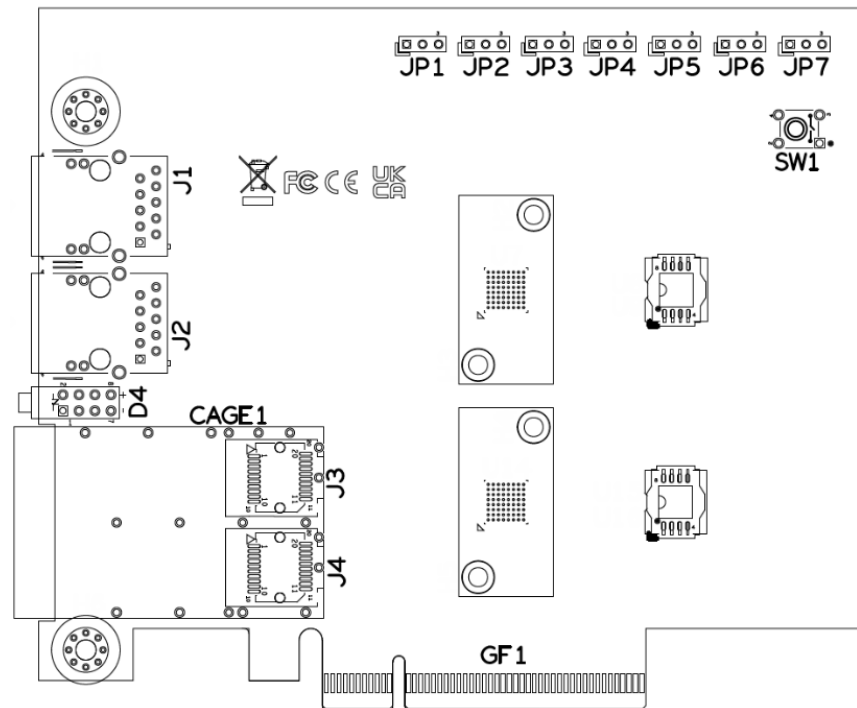
PCI Express Base Specification, Revision 2.0 <https://www.pcisig.com/specifications>

12 Appendix - PA-C7L instructions

The PA-C7L is a network card that supports PCOM-B706GT for network signal configurations. When paired with the PCOM-B706GT, the following three configurations can be achieved:

- Port 0: SFP+, Port 1: SFP+
- Port 0: RJ45, Port 1: RJ45
- Port 0: SFP+, Port 1: RJ45

1. PCBA outline and connector allocation

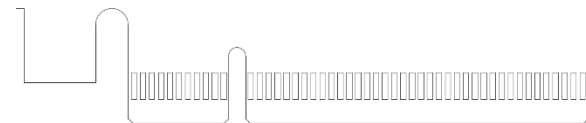


2. Pin Header Function List

Jump	Function	Remark
GF1	PCIe x8 Golden Finger (KR signal)	
J1	10G RJ45 Connector(Port0)	
J2	10G RJ45 Connector(Port1)	
J3	SFP+ Connector (Port 0)	
J4	SFP+ Connector (Port 1)	
CAGE1	SFP+ 1x2 CAGE	
JP1	PHY1 SMBus	
JP2	PHY1 MDIO	
JP3	MDIO0 Switch	
JP4	PHY0 MDIO	
JP5	PHY0 SMBus	
JP6	KR0 Switch	
JP7	KR1 Switch	
D4	SFP+ Link/Active /Speed LED	

3. GFI: PCIe x8 Golden finger

B1	+5V	A1	CEI_PRSENT#
B2	+5V	A2	+5V
B3	+5V	A3	+5V
B4	GND	A4	GND
B5	ETH0-1_I2C_SCL	A5	SDP0
B6	ETH0-1_I2C_SDA	A6	SDP1
B7	GND	A7	SDP2
B8	+3.3V	A8	SDP3
B9	PHY1_INT#	A9	+3.3V
B10	+3.3V	A10	+3.3V
B11	CEI_INT#	A11	PCIE_RST#
KEY			
B12	NC	A12	GND
B13	GND	A13	ETH0-1_MDIO_CLK
B14	NC	A14	ETH0-1_MDIO_DAT
B15	NC	A15	GND
B16	GND	A16	NC
B17	NC	A17	NC
B18	GND	A18	GND
B19	NC	A19	NC
B20	NC	A20	GND
B21	GND	A21	NC
B22	GND	A22	NC



B23	Host_KR_TX1_P	A23	GND
B24	Host_KR_TX1_N	A24	GND
B25	GND	A25	Host_KR_RX1_P
B26	GND	A26	Host_KR_RX1_N
B27	Host_KR_TX0_P	A27	GND
B28	Host_KR_TX0_N	A28	GND
B29	GND	A29	Host_KR_RX0_P
B30	NC	A30	Host_KR_RX0_N
B31	NC	A31	GND
B32	GND	A32	NC
B33	NC	A33	NC
B34	NC	A34	GND
B35	GND	A35	PHY1_MDIO_CLK
B36	GND	A36	PHY1_MDIO_DAT
B37	NC	A37	GND
B38	NC	A38	GND
B39	GND	A39	NC
B40	GND	A40	NC
B41	NC	A41	GND
B42	NC	A42	GND
B43	GND	A43	NC
B44	GND	A44	NC
B45	10G_LED_SDA	A45	GND
B46	10G_LED_SCL	A46	GND
B47	GND	A47	NC

B48	NC	A48	NC
B49	GND	A49	GND

4. Jumper setting

JP1 : PHY1 SMBus

1	PHY1_SMBCK
2	PHY1_SMBDA
3	GND

JP2 : PHY1 MDIO

1	AQR113C_MDIO1_CLK
2	AQR113C_MDIO1_DAT
3	GND

JP3 : MDIO0 Switch

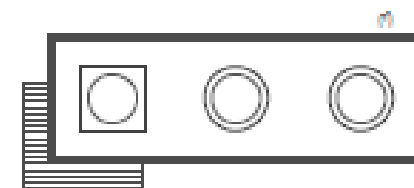
1-2*	SFP+ Mode
2-3	RJ45 Mode

JP4 : PHY0 MDIO

1	AQR113C_MDIO1_CLK
2	AQR113C_MDIO1_DAT
3	GND

JP5 : PHY0 SMBus

1	AQR113C_MDIO1_CLK
2	AQR113C_MDIO1_DAT
3	GND



JP6 : KR0 Switch(Port0)

1-2*	SFP+ Mode
2-3	RJ45 Mode

JP7 : KR1 Switch(Port1)

1-2	SFP+ Mode
2-3*	RJ45 Mode

D4 : SFP+ Link/Active /Speed LED

LED1(Up)	J3(Link/Active)(Blink when traffic happened: Green)
LED2	J3(Speed)(10G Speed:Green)
LED3	J4(Link/Active) (Blink when traffic happened: Green)
LED4(Down)	J4(Speed)(10G Speed:Green)

