

mITX-N150C (MTWN1CI-SI)

Mini-ITX Motherboard

Copyright Notice

This document is copyrighted, 2026. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, GIGAIPC assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

GIGAIPC reserves the right to make changes in the product design without notice to its users.

Acknowledgement

All other products' name or trademarks are properties of their respective owners.

- Microsoft Windows is a registered trademark of Microsoft Corp.
- Intel, Pentium, Celeron, and Xeon are registered trademarks of Intel Corporation
- Core, Atom are trademarks of Intel Corporation
- ITE is a trademark of Integrated Technology Express, Inc.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

All other product names or trademarks are properties of their respective owners.

Packing List

Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
mITX-N150C MB	1
IO Shield	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

About this Document

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the GIGAIPC.com for the latest version of this document.

Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.

13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
17. If any of the following situations arises, please the contact our service personnel:
 - i. Damaged power cord or plug
 - ii. Liquid intrusion to the device
 - iii. Exposure to moisture
 - iv. Device is not working as expected or in a manner as described in this manual
 - v. The device is dropped or damaged
 - vi. Any obvious signs of damage displayed on the device
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

FCC Statement

Warning!



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量
GIGAIPC Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电 子组件	○	○	○	○	○	○
外部信号 连接器 及线材	○	○	○	○	○	○
○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。 X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。 备注: 此产品所标示之环保使用期限, 系指在一般正常使用状况下。						

China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products GIGAIPC Main Board/ Daughter Board/ Backplane

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	O	O	O	O	O	O
Wires & Connectors for External Connections	O	O	O	O	O	O
O : The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement. X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement. Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only						

Table Contents

Mini-ITX Motherboard	1
Copyright Notice	2
Acknowledgement	3
Packing List.....	4
About this Document	5
Safety Precautions	6
FCC Statement.....	8
China RoHS Requirements (CN).....	9
China RoHS Requirement (EN)	10
 Chapter 1 - Product Specifications	 14
1.1 Specifications	16
 Chapter 2 – Hardware Information	 18
2.1 Jumpers and Connectors	19
2.2.1 IO Connector Information.....	21
2.2.2 COM1_2 (RS-232, with 12V only).....	22
2.2.3 DP1_2, DP3 (Display port Connector).....	23
2.2.4 USB20_1 (USB 2.0 Connector)	24
2.2.5 USB20_2, USB20_3 (USB 2.0 Connector)	25
2.2.6 USB32_LAN (USB 3.2 + GbE LAN connector).....	26
2.2.7 HP_OUT (Line out port).....	27
2.2.8 DC_IN (ATX 2x2 pin power connector)	28
2.2.9 SYS_FAN (System Fan Connector)	29
2.2.10 CC_PWR (ccTalk power jumper).....	30

2.2.11	CCTALK (ccTalk header).....	31
2.2.12	FUSB20 (USB 2.0 header)	32
2.2.13	GPIO_CNT (General purpose input/out header).....	33
2.2.14	JCOM3 (RI# pin RI#/5V/12V Select jumper for COM3 Port).....	34
2.2.15	COM3 (Serial port (RS-232/422/485 & RI/5V/12V)	35
2.2.16	AT_CN (AT/ATX mode select jumper).....	36
2.2.17	SYS_PANEL (System Panel header)	37
2.2.18	M2M (M.2 Slot, 2280 M-Key)	38
2.2.19	SODIMM (1 x DDR5 SO-DIMM Socket).....	39
2.2.20	CPU_FAN (CPU FAN Connector)	40
2.2.21	PCIEX4 (1 x PCIe x4 (Gen4 x4 Bus) Slot)	41
2.2.22	FP_AUDIO (Front Panel Audio header)	42

Chapter 3 – BIOS 43

3.1	Introduction	44
3.2	The Main Menu.....	45
3.3	Advanced	46
3.3.1	TPM Configuration.....	47
3.3.2	CPU Configuration	49
3.3.3	Memory Configuration	50
3.3.4	IT8786 Super IO Configuration	51
3.3.5	Hardware Monitor	52
3.3.6	S5 RTC Wake Settings	53
3.3.7	Network Stack Configuration.....	54
3.3.8	NVMe Configuration.....	55

3.3.9	Digital IO Port Configuration	56
3.3.10	Tls Auth Configuration	57
3.3.11	Realtek PCIe GBE Family Controller (MAC:D8:5E:D3:E3: F1:1D)(MAC address may varied based on different motherboard)	58
3.4	Chipset	59
3.5	Security	61
3.6	Boot.....	64
3.7	Save & Exit	65

Chapter 1

Chapter 1 - Product Specifications

1.1 Specifications

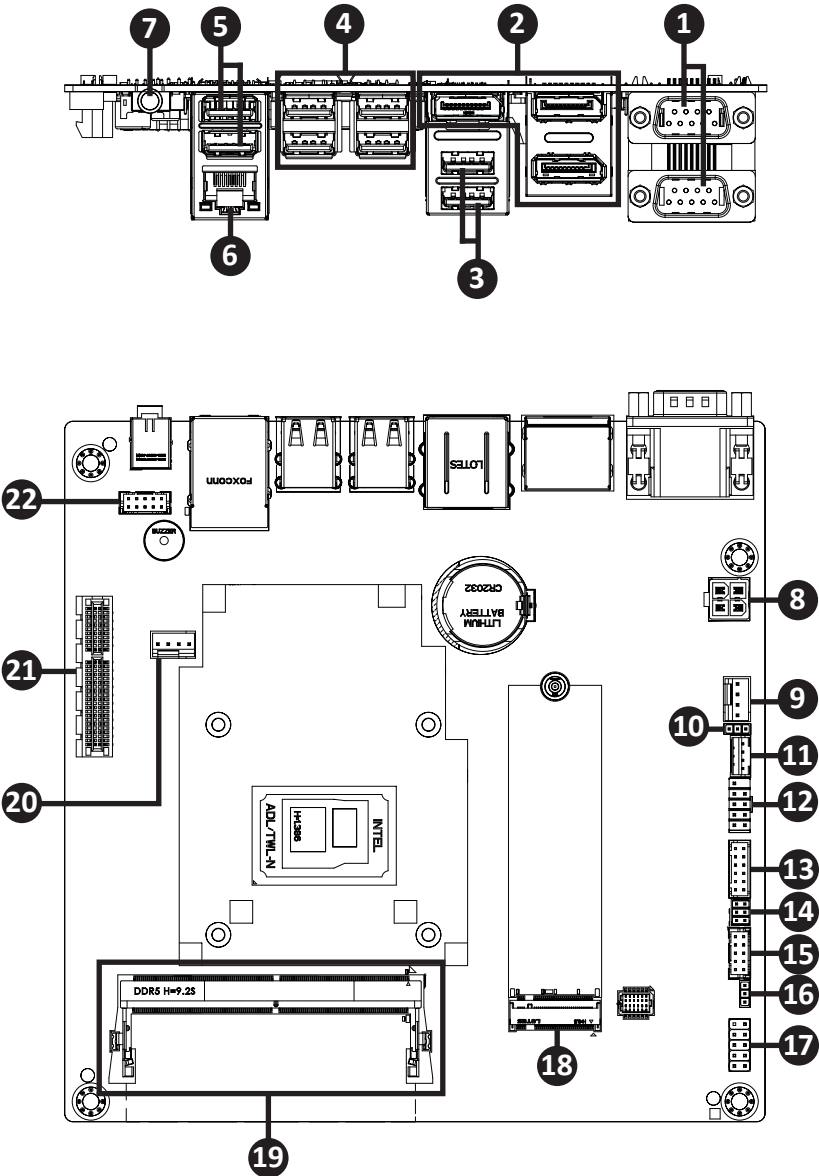
Motherboard	mITX-N150C (MTWN1CI-SI)
Form Factor	Mini-ITX 170W x 170D (mm)
CPU	Intel® Processor N150 Intel 7, 4 cores, up to 3.60 GHz TDP 6W
Socket	1 x FCBGA1264
Memory	1 x DDR5 SO-DIMM socket, Max. Capacity 16 GB Support Single Channel DDR5 4800 MHz memory module
Ethernet	1 x GbE LAN Port (Realtek® RTL8111H)
Video	Integrated Graphics Processor - Intel® Graphics support: 3 x DP port, supporting a maximum resolution of 4096x2160 @60Hz (3 independent display outputs)
Audio	Realtek® ALC897
Expansion Slots	1 x PCIe x4 (Gen3 x4) 1 x 2280 M.2 M-Key (PCIe Gen 3x2)
Internal I/O	1 x 4-pin ATX 12V power connector (12V) 1 x CPU fan header 1 x System fan header 1 x Front panel header 1 x Front panel audio header 1 x ccTalk header 1 x ccTalk power jumper 1 x Buzzer 2 x USB 2.0 headers 1 x COM header (RS-232/422/485 & RI/5V/12V) 1 x GPIO (8 bits) & SMBus header 1 x AT/ATX mode select jumper
Rear I/O	1 x Audio Jack (Line out) 2 x COM Ports (RS-232, with 12V only) 3 x Display Ports 1 x RJ45 LAN Port 2 x USB 3.2 Gen 2 (10 Gbps) 6 x USB 2.0
TPM	Onboard TPM 2.0 security chip INFINEON SLB9672VU2.0
OS Compatibility	Windows 11 Enterprise LTSC 2024 Windows 11 IoT Enterprise LTSC 2024, x64 Windows 11 IoT Enterprise, version 24H2 x64

Motherboard	mITX-N150C (MTWN1CI-SI)
Operating Properties	Operating temperature: 0°C to 60°C Operating humidity: 60°C @ 20-95% (non-condensing) Non-operating temperature: -40°C to 85°C Non-operating humidity: 85°C @ 95% (non-condensing)

Chapter 2

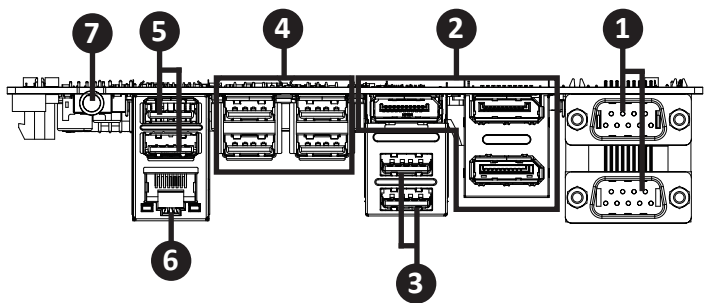
Chapter 2 – Hardware Information

2.1 Jumpers and Connectors



No	Code	Description
1	COM1_2	COM Ports (RS-232, with 12V only)
2	DP1_2, DP3	Display Port Connector
3	USB20_1	USB 2.0 Connector
4	USB20_2, USB20_3	USB 2.0 Connector
5	USB32_LAN	USB 3.2 Gen 2 Connector (10 Gbps)
6		GbE LAN port
7	HP_OUT	Line out port
8	DC_IN	ATX 2x2 pin power connector
9	SYS_FAN	System Fan Connector
10	CC_PWR	ccTalk power jumper
11	CCTALK	ccTalk header
12	FUSB20	USB 2.0 header
13	GPIO_CNT	General purpose input/output header
14	JCOM3	RI# pin RI#/5V/12V Select jumper for COM3 port
15	COM3	Serial port (RS-232/422/485 & RI/5V/12V)
16	AT_CN	AT/ATX mode select jumper
17	SYS_PANEL	System Panel header
18	M2M	M.2 Slot, 2280 M-Key
19	SODIMM	1 x DDR5 SO-DIMM Socket
20	CPU_FAN	CPU FAN Connector
21	PCIEX4	1 x PCIe x4 (Gen 3x4 bus) slot
22	FP_AUDIO	Front Panel Audio header

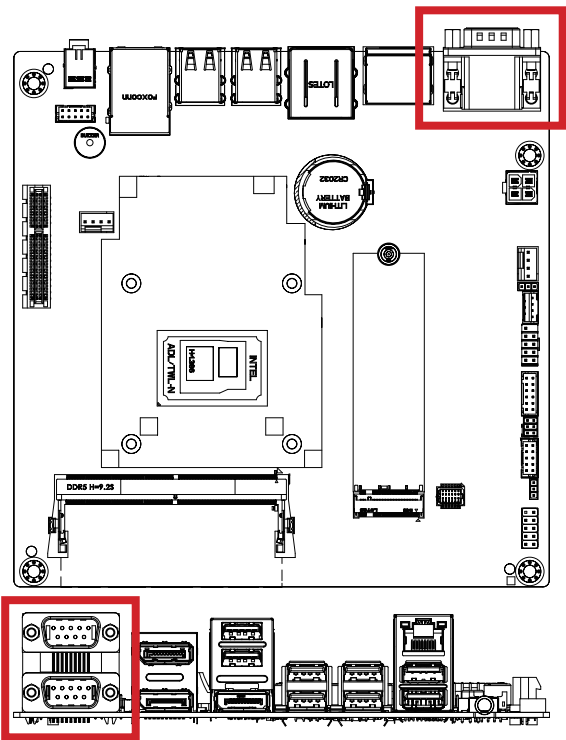
2.2.1 IO Connector Information



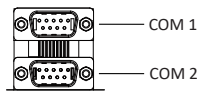
	Code	Description
1	COM1_2	COM Ports (RS-232, with 12V only)
2	DP1_2, DP3	Display Port Connector
3	USB20_1	USB 2.0 Connector
4	USB20_2, USB20_3	USB 2.0 Connector
5	USB32_LAN	USB 3.2 Gen 2 Connector (10 Gbps)
6		GbE LAN port
7	HP_OUT	Line out port

2.2.2 COM1_2 (RS-232, with 12V only)

1



Serial port Connector



Connector PN

D20HB1102002P6JN

Vendor

FENYING

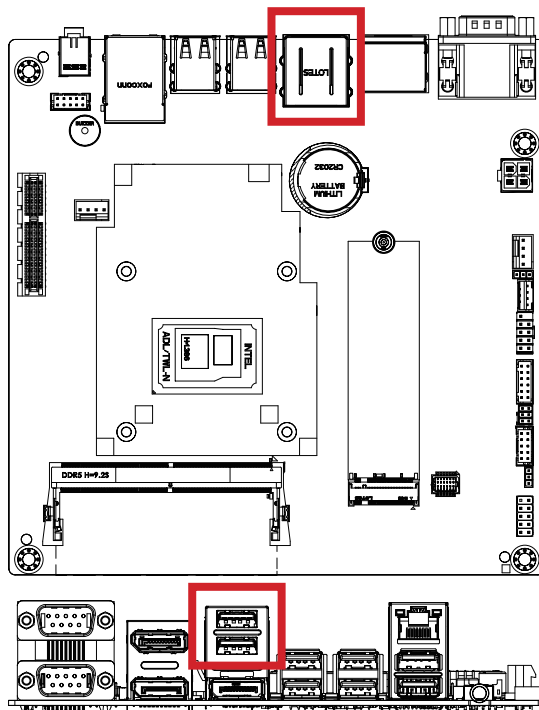
Pin No. Definition

Pin No.	Definition
1	DCD
2	RXD
3	TXD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	12V

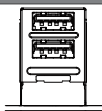
2.2.3 DP1_2, DP3 (Display port Connector)

2.2.4 USB20_1 (USB 2.0 Connector)

3



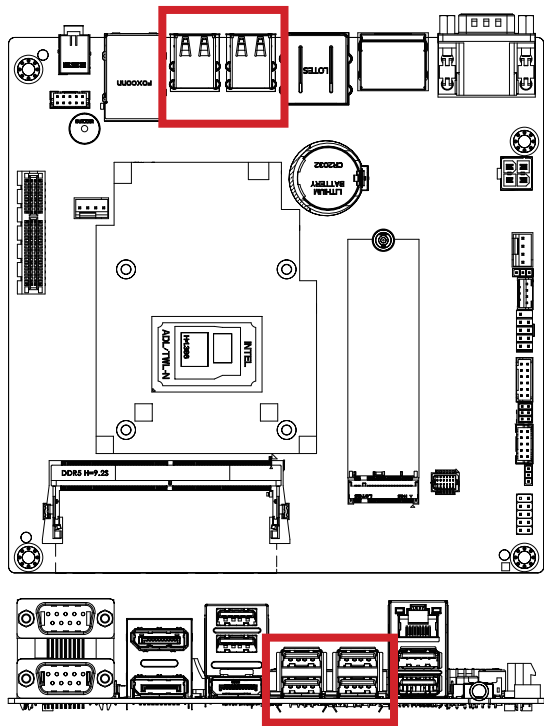
USB 2.0 Connector



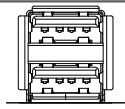
Pin No.	Definition
11	5V
12	D2n
13	D2p
14	GND
21	5V
22	D1n
23	D1p
24	GND

2.2.5 USB20_2, USB20_3 (USB 2.0 Connector)

4



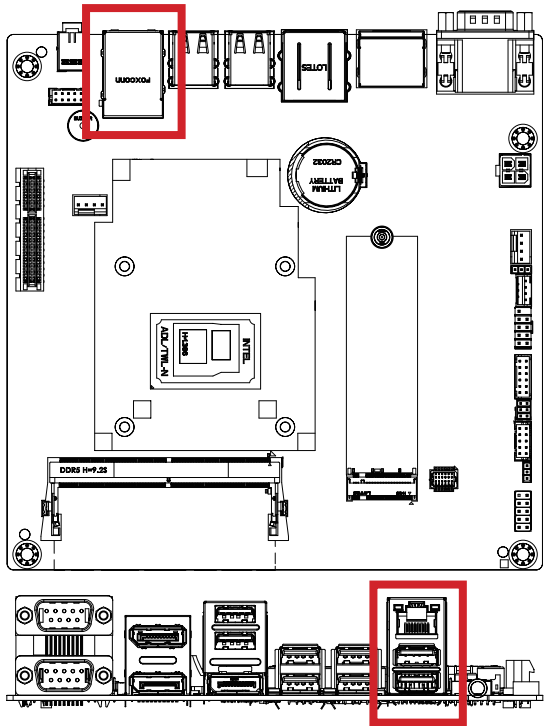
USB 2.0 Connector



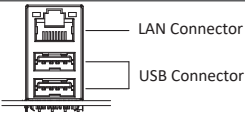
Pin No.	Definition
1	5V
2	5V
3	D2n
4	D1n
5	D2p
6	D1p
7	GND
8	GND

2.2.6 USB32_LAN (USB 3.2 + GbE LAN connector)

5 6



USB & LAN Connector

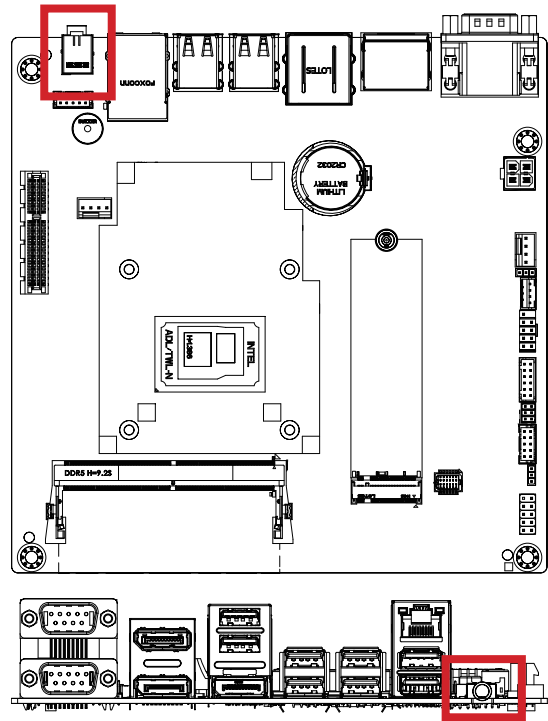


USB Connector			
Pin No.	Definition	Pin No.	Definition
1	5V	10	5V
2	D1n	11	D0n
3	D1p	12	D0p
4	GND	13	GND
5	USB3_RX1n	14	USB3_RX2n
6	USB3_RX1p	15	USB3_RX2p
7	GND	16	GND
8	USB3_TX1n	17	USB3_TX2n
9	USB3_TX1p	18	USB3_TX2p

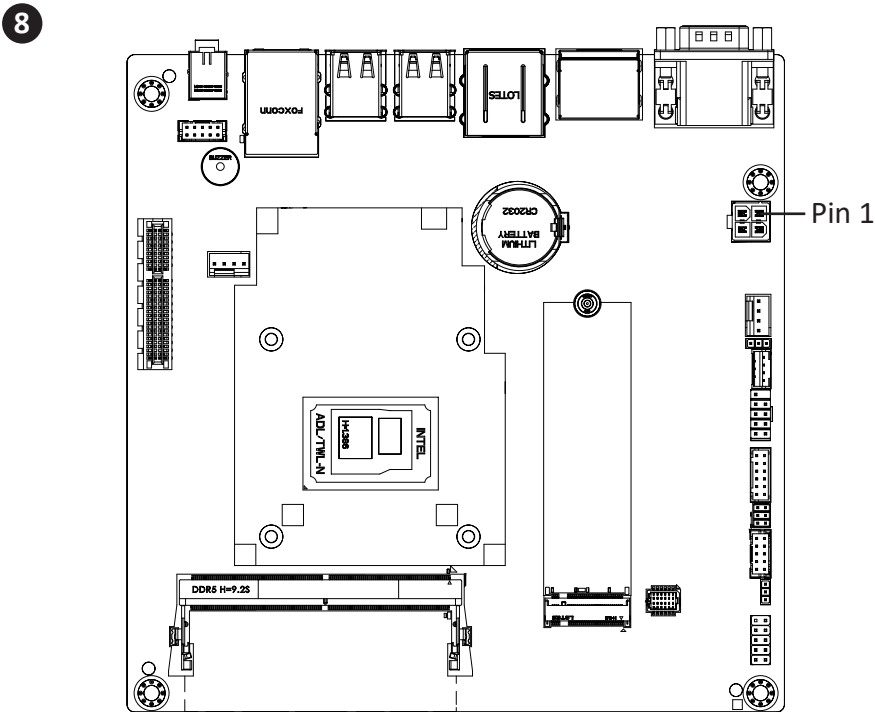
LAN Connector			
Pin No.	Definition	Pin No.	Definition
1	TX1+	4	TX3+
2	TX1-	5	TX3-
3	TX2+	7	TX4+
6	TX2-	8	TX4-
State		Description	
Orange On		1Gbps data rate	
Green On		100Mbps data rate	
Off		10Mbps data rate	

2.2.7 HP_OUT (Line out port)

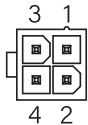
7



2.2.8 DC_IN (ATX 2x2 pin power connector)



Power connector



Connector PN

740-81-04TW56

Vendor

PINREX

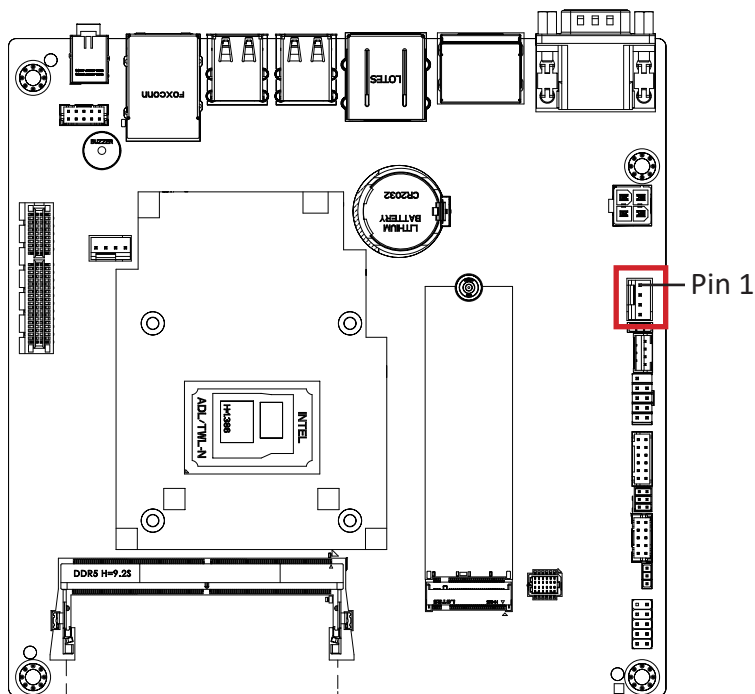
Connector type

2x2pin header, pitch 4.2mm

Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

2.2.9 SYS_FAN (System Fan Connector)

9



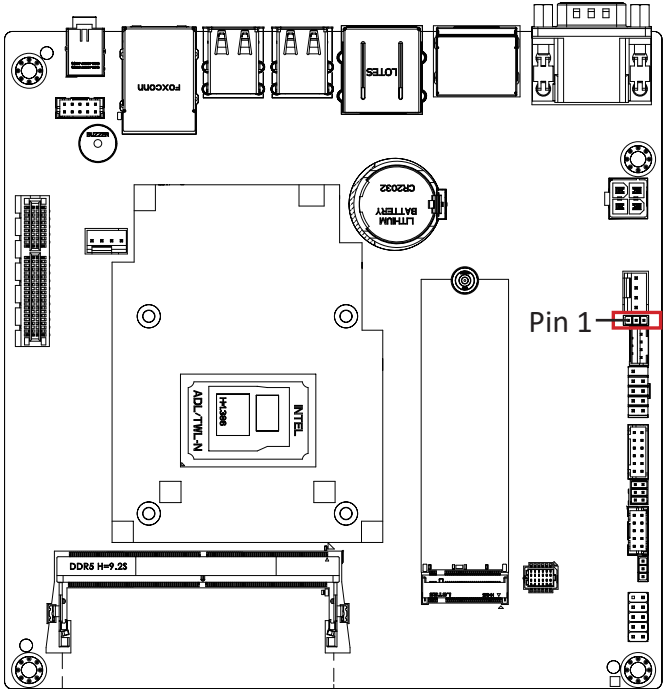
System FAN
1 4

Connector PN	Vendor
744-81-045R11	PINREX
Connector type	
1x4pin header, pitch 2.54mm	

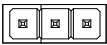
Pin No.	Definition
1	GND
2	12V
3	Detect
4	Speed Control

2.2.10 CC_PWR (ccTalk power jumper)

10



ccTalk power jumper



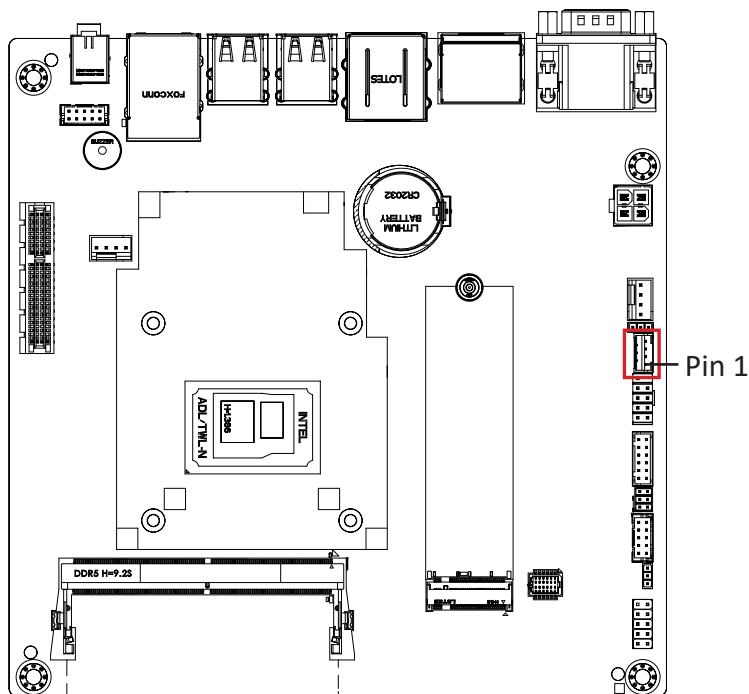
1

Pin No.	Definition
1	5V
2	ccTalk_Power
3	12V
Jumper setting	
1-2 Close : 5V. (Default setting)	
2-3 Close : 12V.	

Connector PN	Vendor
220-96-03GB01	PINREX
220-96-03GB001K	PINREX
Connector type	
1x3pin header, pitch 2.0mm	

2.2.11 CCTALK (ccTalk header)

11



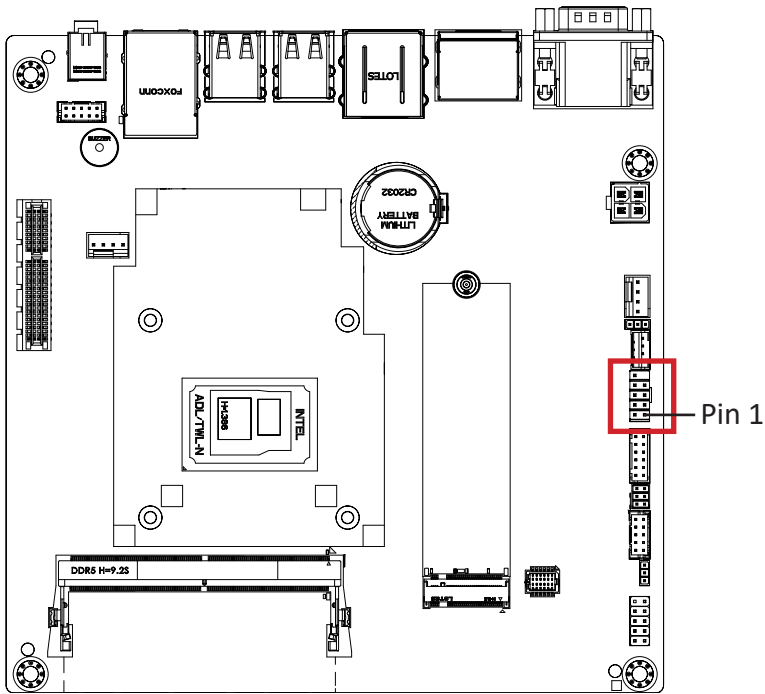
ccTalk Connector	
	4
	1

Pin No.	Definition
1	5V/12V (Default 5V)
2	NC
3	GND
4	DATA (5V Level)

Connector PN	Vendor
A2001WV-04P146	JOINT-TECH
Connector type	
1x4pin header, pitch 2.0mm	

2.2.12 FUSB20 (USB 2.0 header)

12



USB 2.0 Header	
	

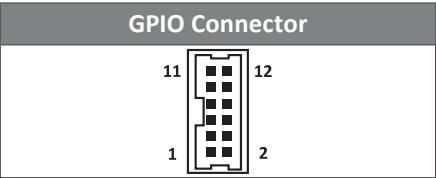
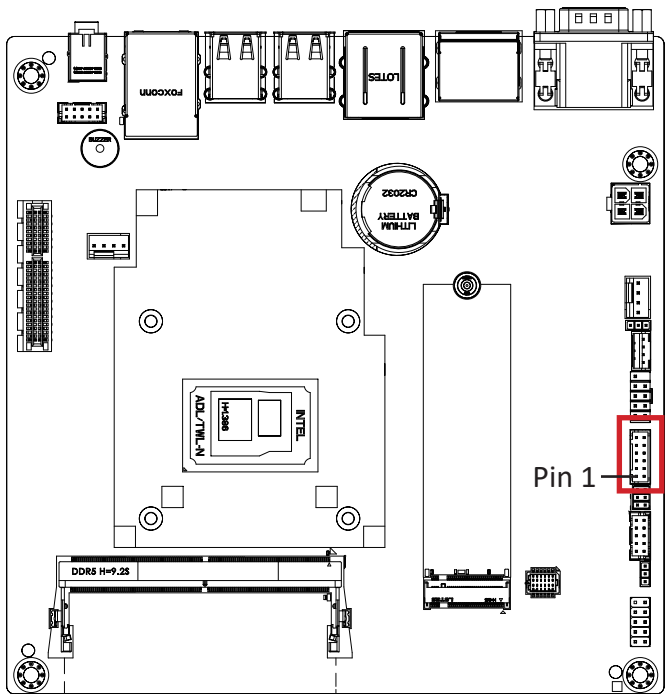
Pin No.	Definition
1	5V
2	5V
3	D2n
4	D1n
5	D2p
6	D1p
7	GND
8	GND
9	No Pin
10	NC

Connector PN	Vendor
210-92-05GB04	PINREX
PH10R53BAZ009	HORNGTONG

Connector type
2x5pin header, pitch 2.54mm

2.2.13 GPIO_CNT (General purpose input/out header)

13



Pin No.	Definition
1	GPIO-output_1
2	GPIO-input_1
3	GPIO-output_2
4	GPIO-input_2
5	GPIO-output_3
6	GPIO-input_3
7	GPIO-output_4
8	GPIO-input_4
9	SMBus Clock

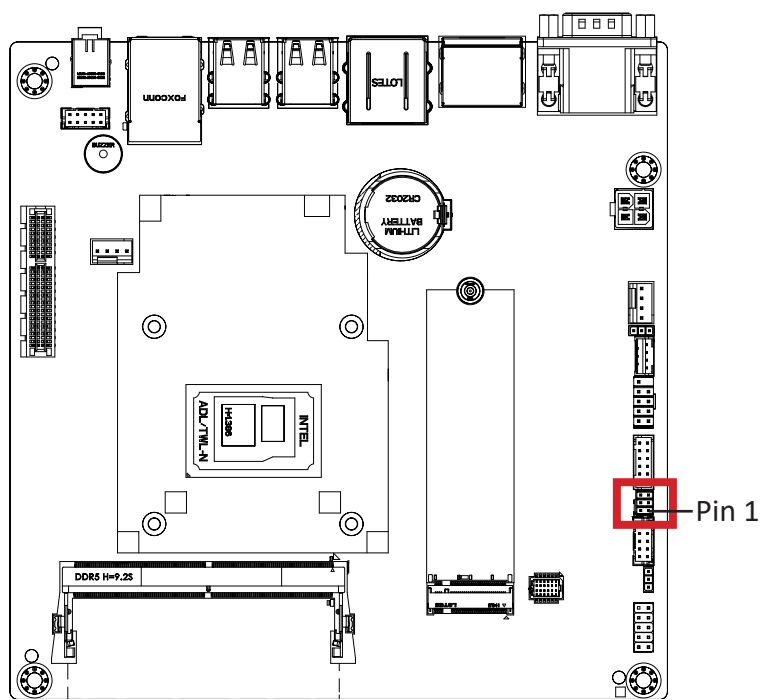
Pin No.	Definition
10	SMBus DATA
11	5V
12	GND

Connector PN	Vendor
A2004WV-2X06P46	JOINT-TECH

Connector type
2x6pin connector, pitch 2.0mm

2.2.14 JCOM3 (RI# pin RI#/5V/12V Select jumper for COM3 Port)

14

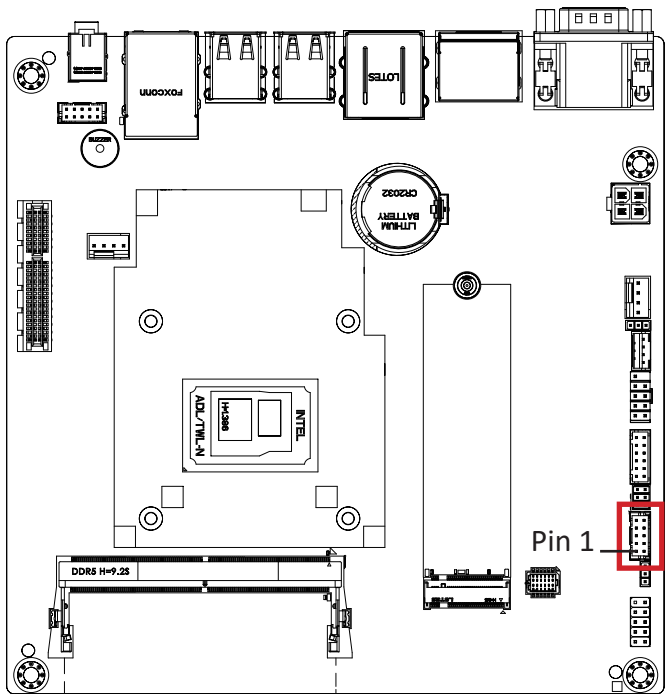


JCOM3 Jumper Select	
	1-2 Close: 5V (Power COM)
	3-4 Close: RI (Stand COM)
	5-6 Close: 12V (Power COM)

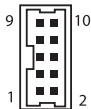
Connector PN	Vendor
220-97-03GB01	PINREX
PH06N53BAZ000	HORNGTONG
Connector type	
2x3pin header, pitch 2.00mm	

2.2.15 COM3 (Serial port (RS-232/422/485 & RI/5V/12V)

15



COM 3 header



Pin No.	Definition
1	RXD
2	DCD
3	DTR
4	TXD
5	DSR
6	GND
7	CTS
8	RTS
9	No connect
10	RI/5V/12V

Connector PN

725-81-10TW00

Vendor

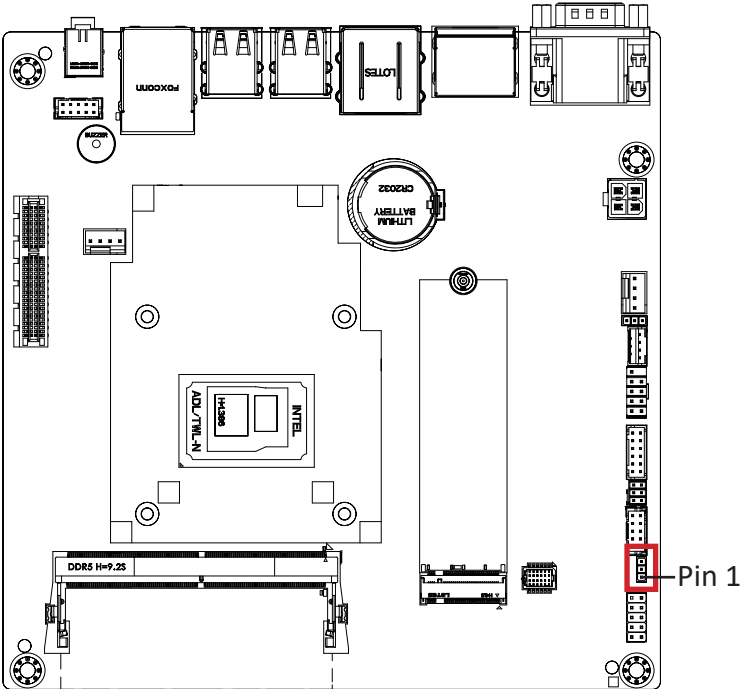
PINREX

Connector type

2x5pin header, pitch 2.0mm

2.2.16 AT_CN (AT/ATX mode select jumper)

16



AT/ATX mode select jumper	
1	

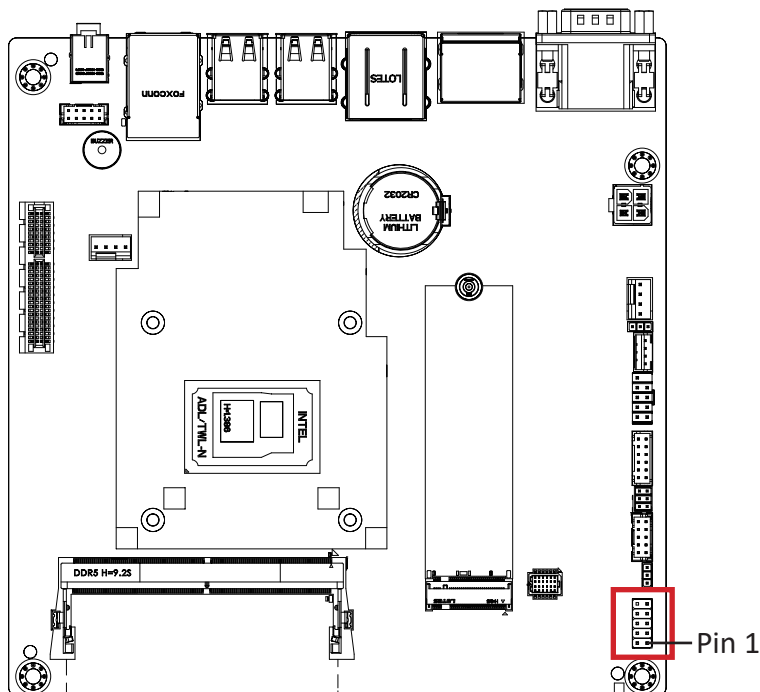
Pin No.	Definition
1	AT MODE
2	Detect
3	ATX MODE
Jumper setting 1-2 Close : AT mode. 2-3 Close : ATX mode.(Default setting)	

Connector PN	Vendor
220-96-03GB001K	PINREX
A2015WV-03P6T	JOINT-TECH

Connector type
1x3pin header, pitch 2.0mm

2.2.17 SYS_PANEL (System Panel header)

17

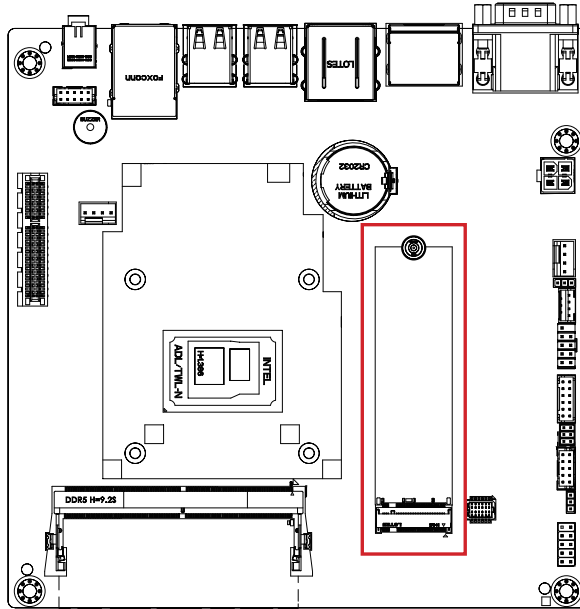


System Panel Header	

Pin No.	Definition
1	HD-P
2	MPD-P
3	HD-N
4	MPD-N
5	GND
6	POWER-ON
7	Reset
8	GND
9	Reserved
10	NC

Connector PN	Vendor
210-92-05GW5W	PINREX
Connector type	
2x5pin header, pitch 2.54mm	

2.2.18 M2M (M.2 Slot, 2280 M-Key)

18

M.2 M Key Connector


Pin No.	Definition	Pin No.	Definition
1	GND	2	3.3V
3	GND	4	3.3V
5	PCIe3 RXn	6	NC
7	PCIe3 RXp	8	NC
9	GND	10	SSD LED
11	PCIe3 TXn	12	3.3V
13	PCIe3 TXp	14	3.3V
15	GND	16	3.3V
17	PCIe2 RXn	18	3.3V
19	PCIe2 RXp	20	NC
21	GND	22	NC
23	PCIe2 TXn	24	NC
25	PCIe2 TXp	26	NC
27	GND	28	NC
29	PCIe1 RXn	30	NC
31	PCIe1 RXp	32	NC
33	GND	34	NC
35	PCIe1 TXn	36	NC

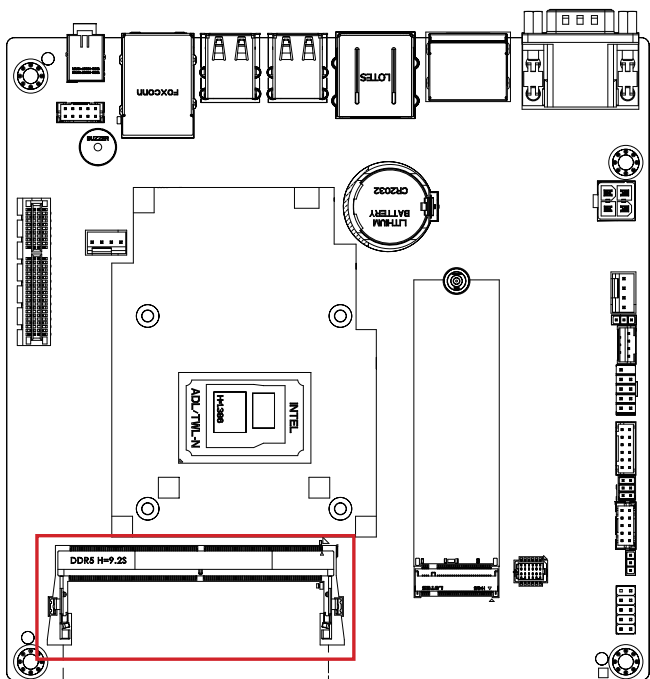
Pin No.	Definition	Pin No.	Definition
37	PCIe2 TXp	38	DEVSLP
39	GND	40	NC
41	SATA RXp	42	NC
43	SATA RXn	44	NC
45	GND	46	NC
47	SATA TXn	48	NC
49	SATA TXp	50	PCI Reset
51	GND	52	PCIe Clock Request
53	PCIe Clockn	54	WakeUp
55	PCIe Clockp	56	NC
57	GND	58	NC

Pin No.	Definition	Pin No.	Definition
67	NC	68	SUSCLK
69	Detect	70	3.3V
71	GND	72	3.3V
73	GND	74	3.3V
75	GND		

Connector PN	Vendor
80159-8521	BELLWETHER
2E0BC21-S85BM-7H	FOXCONN
APCI0096-P002A	LOTES

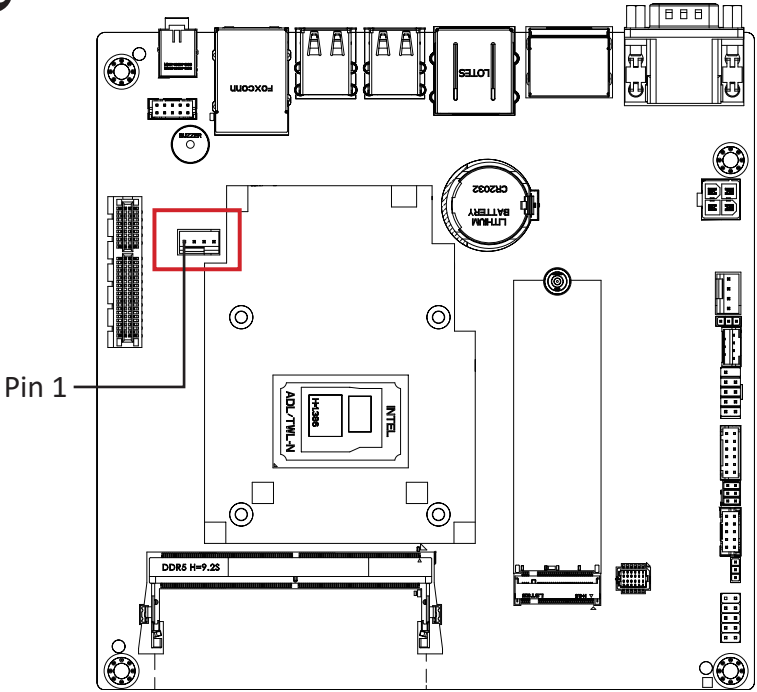
2.2.19 SODIMM (1 x DDR5 SO-DIMM Socket)

19



2.2.20 CPU_FAN (CPU FAN Connector)

20



CPU Fan Connector



Connector PN

744-81-045W1Z

Vendor

PINREX

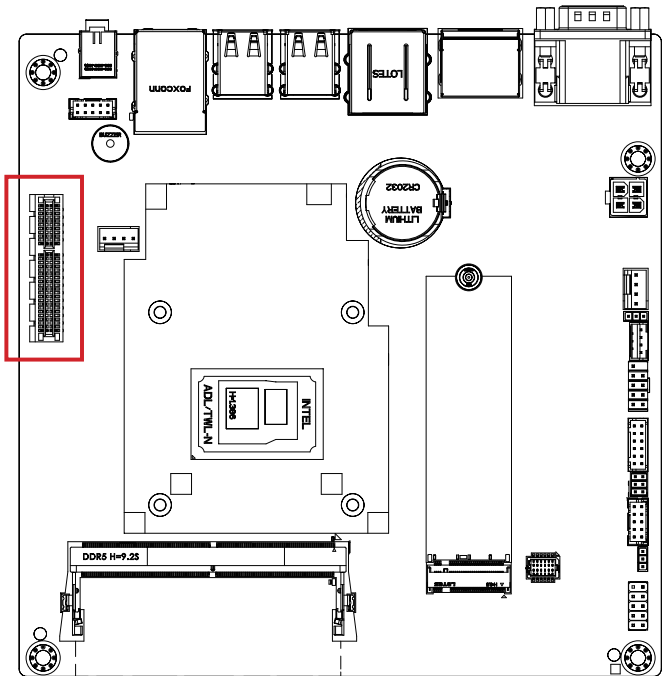
Connector type

1x4pin header, pitch 2.54mm

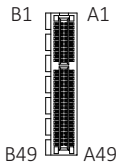
Pin No.	Definition
1	GND
2	12V
3	Detect
4	Speed Control

2.2.21 PCIEX4 (1 x PCIe x4 (Gen4 x4 Bus) Slot)

21



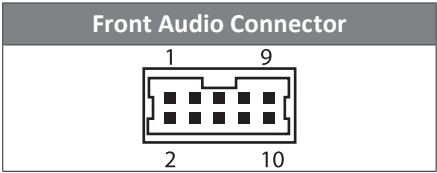
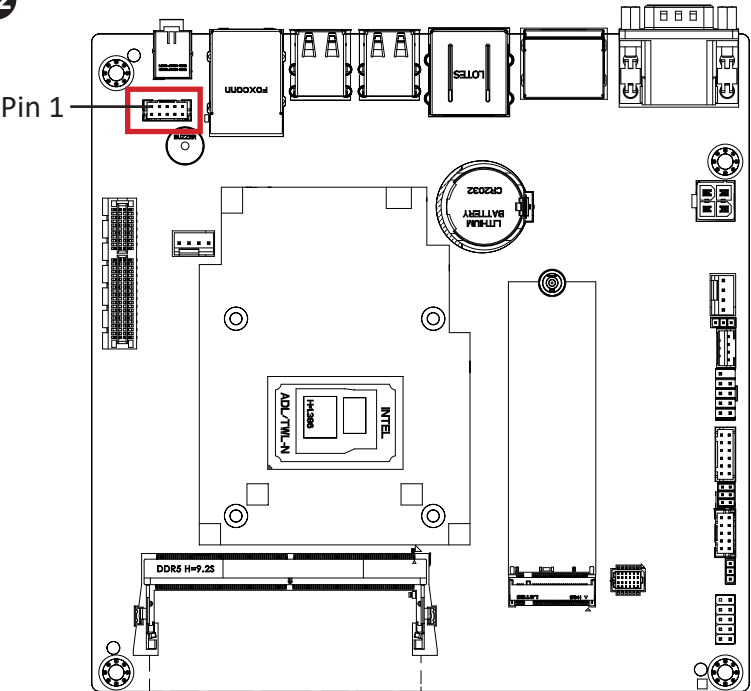
PCIEX4 connector



Connector PN	Vendor
WPES-064AN41B22UWC	WINWIN
2EG03211-D2DB-DF	FOXCONN

2.2.22 FP_AUDIO (Front Panel Audio header)

22



Connector PN	Vendor
725-81-10TW00	PINREX
Connector type	
2x5pin header, pitch 2.0mm	

Pin No.	Definition	Pin No.	Definition
1	MIC-LEFT	6	GND
2	GND	7	JACKSENSE DETECT
3	MIC-RIGHT	8	NC
4	DETTECT	9	LINE-LEFT
5	LINE-RIGHT	10	GND

Chapter 3

Chapter 3 – BIOS

3.1 Introduction

BIOS (Basic input/output system) provides hardware detailed information and boot-up options, which include firmware to control, set-up and test all hardware settings. Therefore, BIOS is the communication bridge between OS/application software and hardware.

3.1.1 How to Entering into BIOS menu

Once the system is power on, press the key as soon as possible to access into BIOS Setup program.

3.1.2 Function Keys to setup in BIOS Setup program

Function keys	Description
→←	Select Screen
↑↓	Select Item
Enter	Execute command or enter the submenu
+	Increase the numeric value or make changes
—	Decrease the numeric value or make changes
F1	General Help
F2	Previous Values
F3	Load Optimized Defaults Settings
F4	Save changes & Exit the BIOS Setup program
ESC	Exit the BIOS Setup program

3.2 The Main Menu

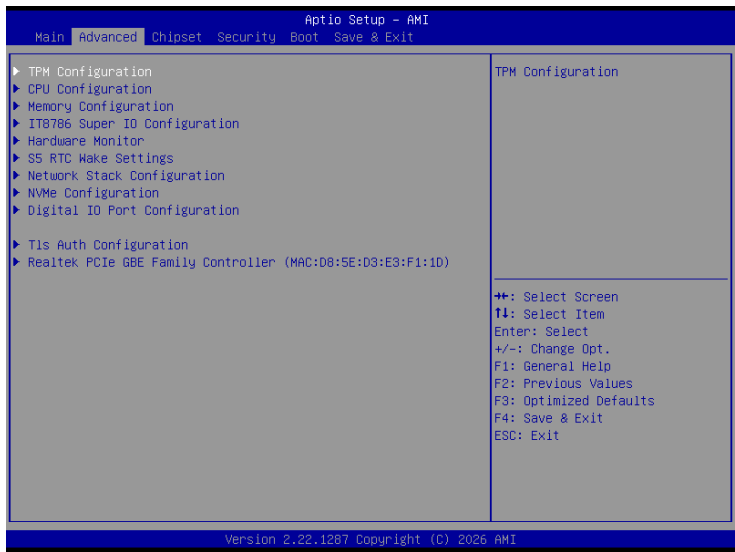
The main menu shows the basic system information.
Use arrow keys to move among the items.



Items	Description
Project Name	Shows Project name information
BIOS Version	Shows the BIOS version of the system
Build Date and Time	Shows the Build Date and Time when the BIOS was created.
LAN MAC Address	Shows LAN MAC Address information
Total Memory	Shows the total memory size of the installed memory
ME FW version	Shows ME firmware version
System Date	Set the Date for the system (Format : Week - Month - Day - Year)
System Time	Set the time for the system (Format : Hour - Minute - Second)

3.3 Advanced

The Advanced menu is to configure the functions of hardware settings through submenu. Use arrow keys to move among the items, and press <Enter> to access into the related submenu.



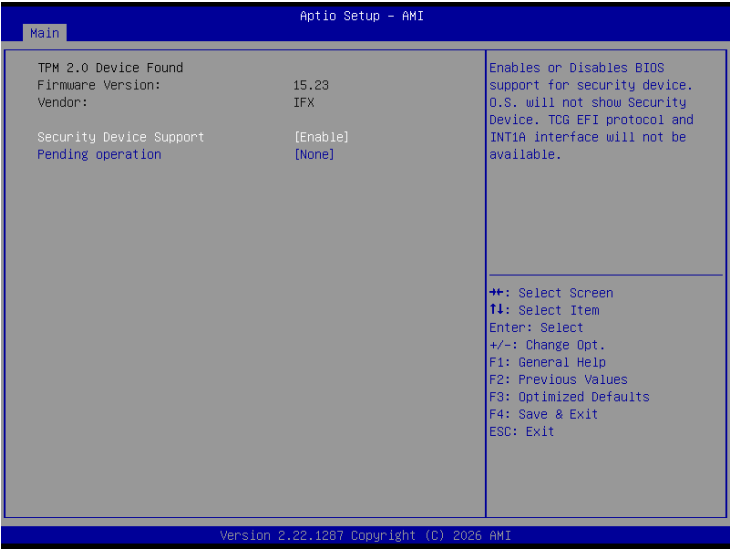
3.3.1 TPM Configuration

Use TPM Configuration submenu to choose TPM interface.



Item	Description
TPM Device Selection	PTT : Internal TPM dTPM : External TPM (When using External TPM module or having TPM chip on MB)(Default setting)

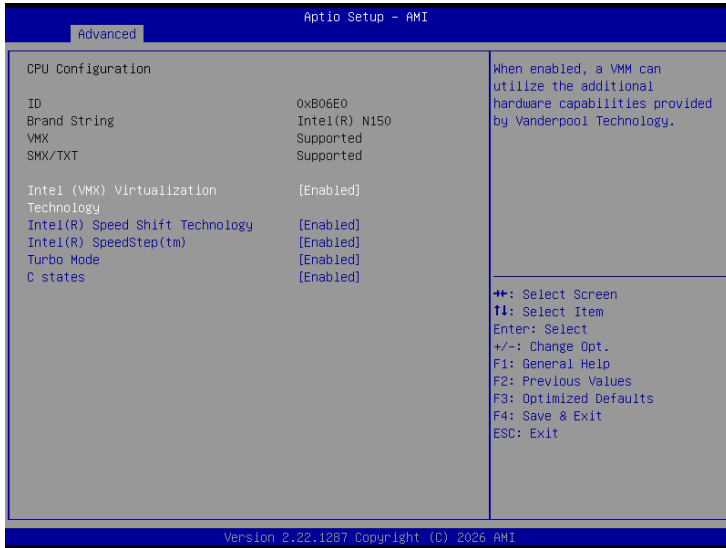
Trusted Computing : Shows TPM information, and TPM module configuration setting.



Item	Description
Security Device Support	Enabled : Enables TPM feature (Default setting) Disabled : Disables TPM feature
Pending operation	None : No execution will be conducted (Default setting) TPM clear : Set to clear data on TP

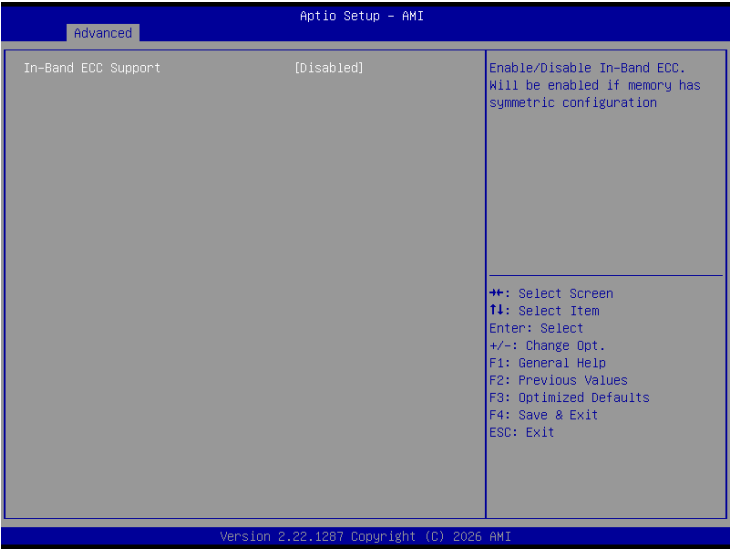
3.3.2 CPU Configuration

This submenu shows detailed CPU informations.



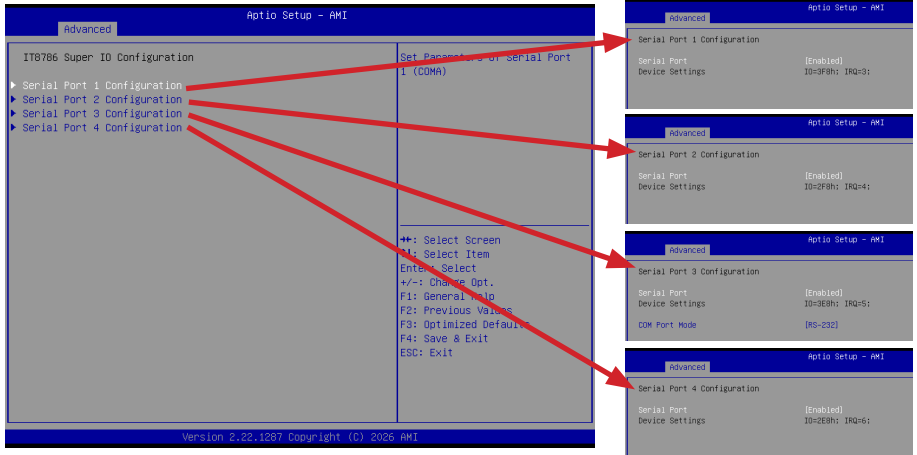
Item	Description
Intel (VMX) Virtualization Technology	Virtualization enhanced by Intel® Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. Enabled : Enables Intel Virtualization Technology (Default setting) Disabled : Disables Intel Virtualization Technology
Intel(R) Speed Shift Technology	To speed up CPU frequency transition time from basic frequency to maximum frequency. Enabled : Enables Intel(R) Speed Shift Technology Interrupt control (Default setting) Disabled : Disables Intel(R) Speed Shift Technology Interrupt control
Intel(R) SpeedStep(tm)	According to Intel CPU loading, Intel SpeedStep Technology will automatically adjust the CPU voltage and core frequency to decrease heat and power consumption for power saving. Enabled : Enables Intel SpeedStep Technology (Default setting) Disabled : Disables Intel SpeedStep Technology
Turbo Mode	Enabled : Enables Turbo Mode (Default setting) Disabled : Disables Turbo Mode
C states	Command CPU to enter into low power consumption mode when CPU is under idle mode. Enabled : Enables CPU C states function (Default setting) Disabled : Disables CPU C states function

3.3.3 Memory Configuration



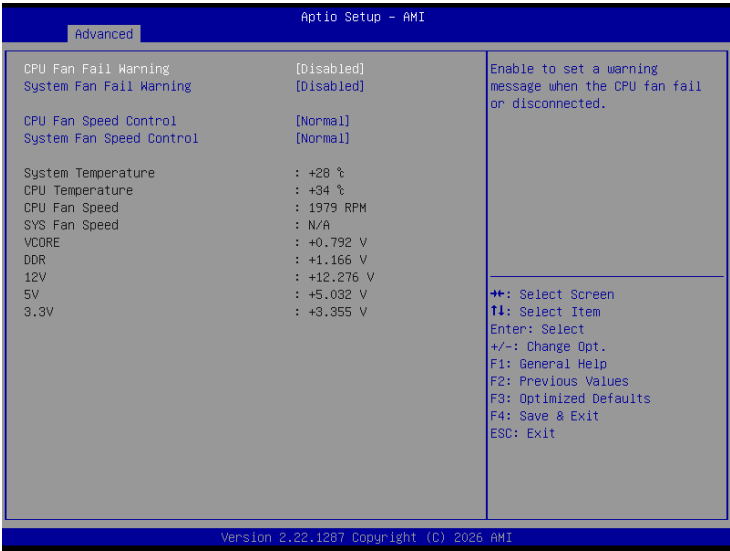
Item	Description
In-Band ECC Support	Enable or Disable In-Band ECC Support function. Disabled : Disables In-Band ECC Support (Default setting) Enabled : Enables In-Band ECC Support

3.3.4 IT8786 Super IO Configuration



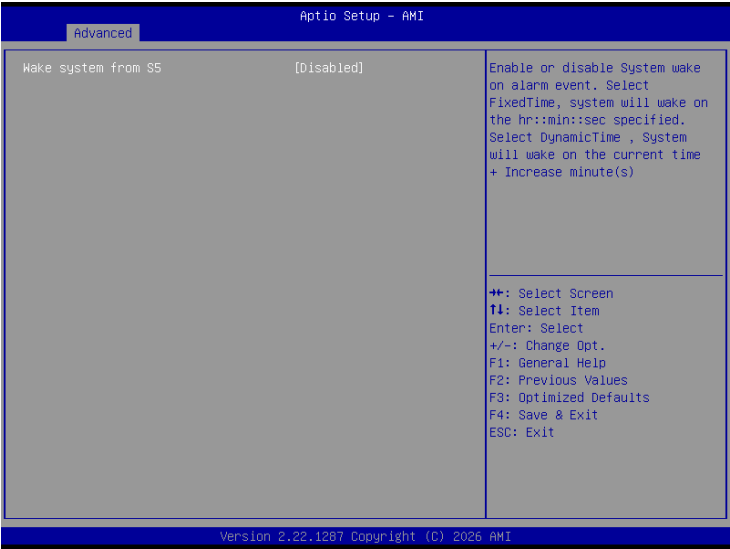
Item	Description
Serial Port 1 Configuration Serial Port 2 Configuration	Press [Enter] to configure advanced items : Serial Port : Enabled : Enables allows you to configure the serial port settings Disabled : if Disabled, displays no configuration for the serial port Device settings : Display the specified Serial Port base I/O address and IRQ
Serial Port 3 Configuration	Press [Enter] to configure advanced items : Serial Port : Enabled : Enables allows you to configure the serial port settings Disabled : if Disabled, displays no configuration for the serial port Device settings : Display the specified Serial Port base I/O address and IRQ COM Port Mode : Choose RS-232, RS-422, or RS-485 feature
Serial Port 4 Configuration	For ccTalk function use Press [Enter] to configure advanced items : Serial Port : Enabled : Enables allows you to configure the serial port settings Disabled : if Disabled, displays no configuration for the serial port Device settings : Display the specified Serial Port base I/O address and IRQ

3.3.5 Hardware Monitor



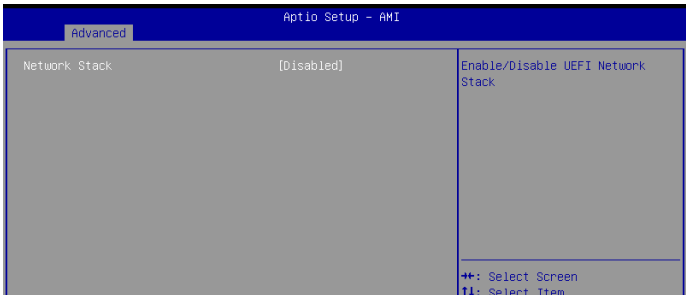
Item	Description
CPU Fan Fail Warning	Enabled : Enables CPU FAN Fail warning alert function Disabled : Disables CPU FAN Fail warning alert function (Default setting)
System Fan Fail Warning	Enabled : Enables System FAN Fail warning alert function Disabled : Disables System FAN Fail warning alert function (Default setting)
CPU Fan Speed Control	Normal : Fan speed set by BIOS default (Default setting) Full Speed : Set Fan operates at full speed
System Fan Speed Control	Normal : Fan speed set by BIOS default (Default setting) Full Speed : Set Fan operates at full speed
System Temperature	Shows current System temperature
CPU Temperature	Shows current CPU temperature
CPU Fan Speed	Shows current CPU fan Speed
SYS Fan Speed	Shows current System fan Speed

3.3.6 S5 RTC Wake Settings

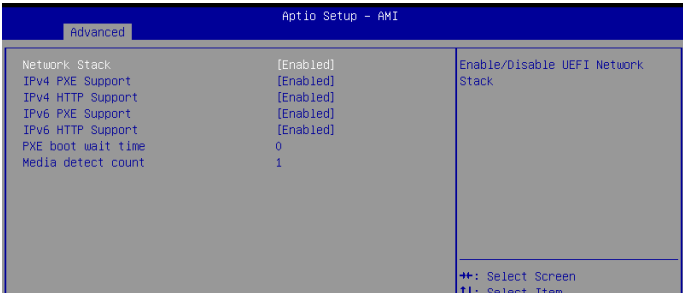


Item	Description
Wake system from S5	Enable or Disable System to wake on a specific time. Disabled : Disables system to wake on a specific time (Default setting) Fixed Time : Enables system to wake on a specific time (Format : hr : min : sec)

3.3.7 Network Stack Configuration



When Network stack is enabled :



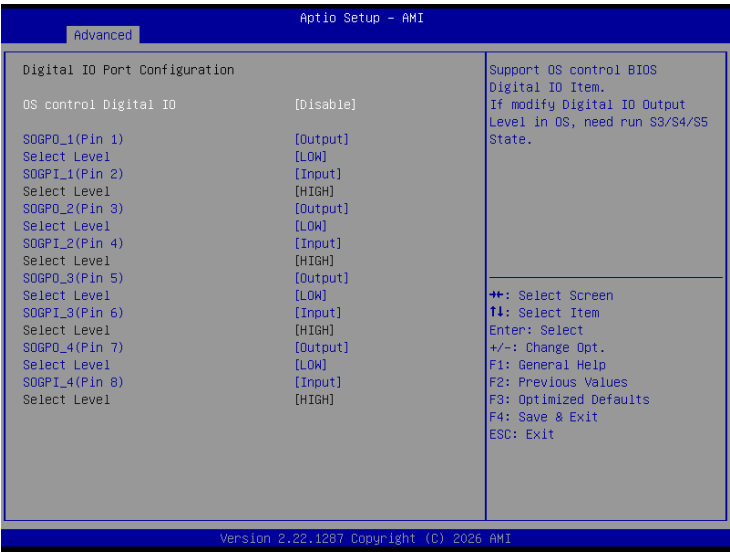
Item	Description
Network Stack	When system is power on, install LAN driver under UEFI mode Disabled : Disables UEFI Network Stack (Default setting) Enabled : Enables UEFI Network Stack
IPv4 PXE Support	When Network stack is enabled : Disabled : Disables IPv4 PXE Support Enabled : Enables IPv4 PXE Support
IPv4 HTTP Support	When Network stack is enabled : Disabled : Disables IPv4 HTTP Support Enabled : Enables IPv4 HTTP Support
IPv6 PXE Support	When Network stack is enabled : Disabled : Disables IPv6 PXE Support Enabled : Enables IPv6 PXE Support
IPv6 HTTP Support	When Network stack is enabled : Disabled : Disables IPv6 HTTP Support Enabled : Enables IPv6 HTTP Support
PXE boot wait time	Wait time in seconds, or use ESC key to abort the PXE boot.
Media detect count	Number of times the presence of media will be checked.

3.3.8 NVMe Configuration

NVMe Configuration shows information when your M.2 NVMe PCIe SSD is installed.

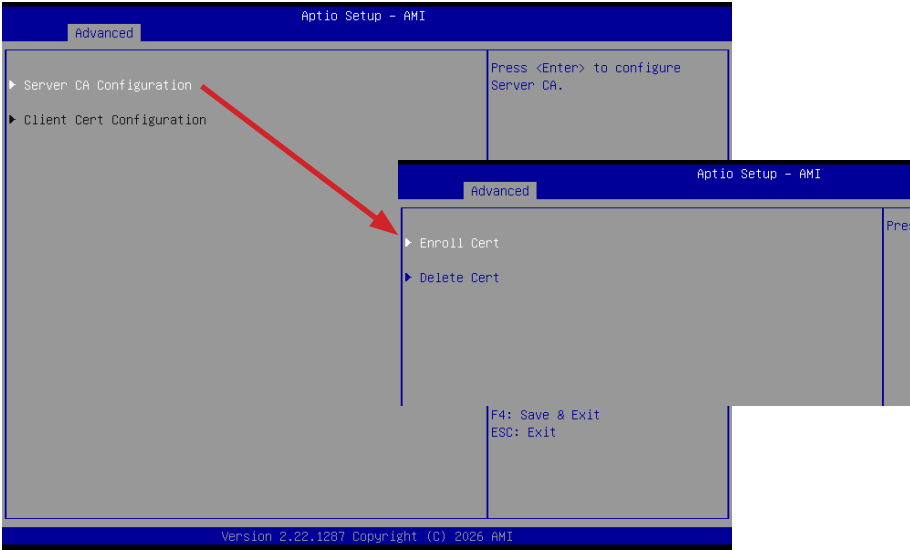


3.3.9 Digital IO Port Configuration



Item	Description
OS control Digital IO	Disabled : If Digital IO Output value/level is modified in OS, they will not be memorized and kept. (Default setting) Enabled : If Digital IO Output value/level is modified in OS, they will be memorized and kept.
SOGPO_1 (Pin 1) SOGPI_1 (Pin 2) SOGPO_2 (Pin 3) SOGPI_2 (Pin 4) SOGPO_3 (Pin 5) SOGPI_3 (Pin 6) SOGPO_4 (Pin 7) SOGPI_4 (Pin 8)	Configure Digital IO Input or Output values for each pin.

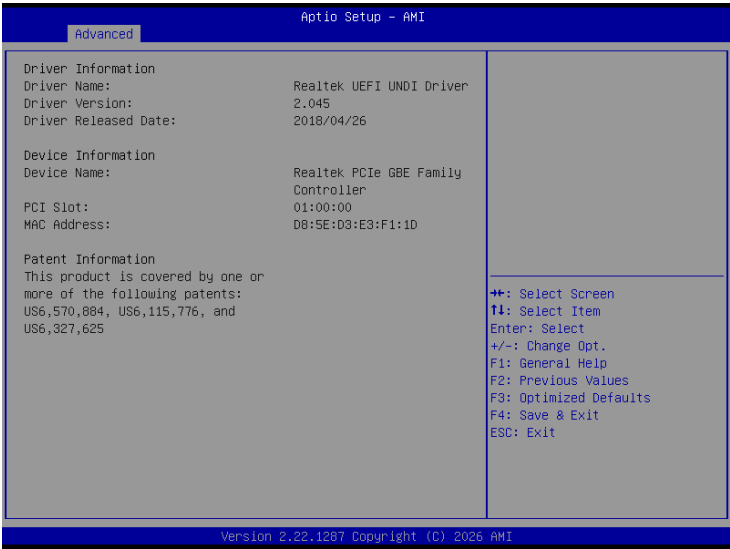
3.3.10 Tls Auth Configuration



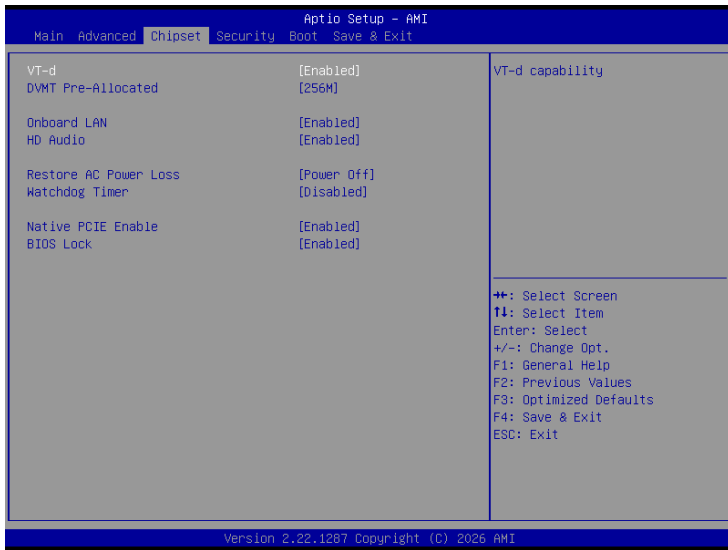
Item	Description
Enroll Cert	Press [Enter] to configure advanced items : Server CA Configuration : Enroll Cert : 1. Enroll Cert Using File 2. Cert GUID : Input digit character in 11111111-2222-3333-4444-1234567 890ab format. 3. Commit Changes and Exit 4. Discard Changes and Exit

3.3.11 Realtek PCIe GBE Family Controller (MAC:D8:5E:D3:E3:F1:1D) (MAC address may varied based on different motherboard)

Shows Intel Ethernet controller information



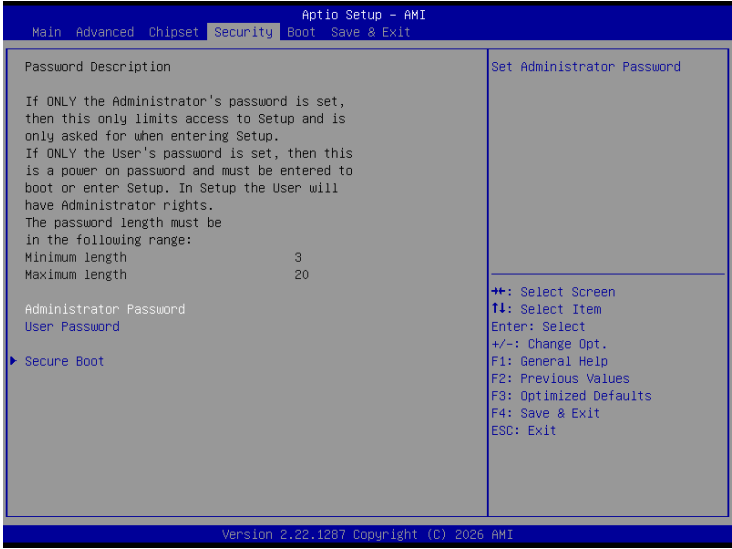
3.4 Chipset



Item	Description
VT-d	Enabled : Enables VT-d function (Default setting) Disabled : Disables VT-d function
DVMT Pre Allocated	Use DVMT Pre-Allocated to set the amount of system memory which is installed to the integrated graphics processor Option items : 32M , 64M , 128M , 256M (Default setting)
Onboard LAN	Enable/Disable onboard LAN controller Enabled : Enables onboard LAN controller (Default setting) Disabled : Disables onboard LAN controller
HD Audio	Enable/Disable onboard audio controller Enabled : Enables onboard audio controller (Default setting) Disabled : Disables onboard audio controller
Restore AC Power Loss	To set which option the system should returns if a sudden power loss occurred Power off : Do not power on when the power is back (Default setting) Power on : System power on when the power is back Last state : Restore the system to the state before power loss occurs

Watchdog Timer	Enable/Disable Watchdog Timer function Disabled : Disables Watchdog Timer function (Default setting) Enabled : Enables Watchdog Timer function
Native PCIe Enable	Allows to choose whether advanced control functions for PCIe devices are handed over to the operating system or remain managed by the motherboard BIOS/firmware. Disabled : Keeps the BIOS in control of advanced PCIe features Enabled : Enables the OS to control advanced PCIe features. (Default setting)
BIOS Lock	Enable/Disable BIOS Lock function Enabled : Enables BIOS Lock function (Default setting) Disabled : Disabled BIOS Lock funtion

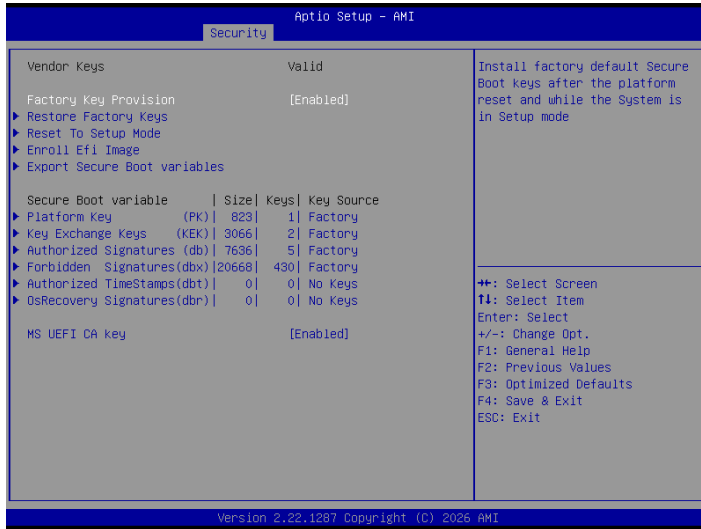
3.5 Security



Item	Description
Administrator Password	To set up Administrator's password Minimum length : 3 Maximum length : 20
User Password	To set up User's password Minimum length : 3 Maximum length : 20
Secure Boot	Press <Enter> to configure the advanced items



Item	Description
Secure Boot	Secure Boot requires all the applications that are running during the booting process to be pre-signed with valid digital certificates Enabled : Enables Secure Boot function Disabled : Disables Secure Boot function (Default setting)
Secure Boot Mode	Standard : Standard mode Custom : Custom mode (Default setting)
Restore Factory Keys	To restore factory settings Yes : Agree to restore factory settings No : Cancel to restore factory settings
Reset To Setup Mode	Yes : Agree to setup mode No : Cancel to setup mode
Key Management	Enables expert users to modify Secure boot policy variables without full authentication Press <Enter> to configure the advanced items



Item	Description
Factory Key Provision	Install factory default Secure Boot keys after the platform reset and while the system is in Setup mode Enabled : Enables Factory Key Provision (Default setting) Disabled : Disables Factory Key Provision
Restore Factory Keys	To restore factory settings Yes : Agree to restore factory settings No : Cancel to restore factory settings
Reset To Setup Mode	Yes : Agree to setup mode No : Cancel to setup mode
Enroll Efi Image	Allow the image to run in Secure Boot mode
Export Secure Boot variables	Copy NVRAM content of Secure Boot variables to files in a root folder on a file system device

Item	Description
Platform Key (PK)	These items allows you to enroll factory defaults or load Certificates from a file.
Key Exchange Keys (KEK)	
Authorized Signatures (db)	
Forbidden Signatures (dbx)	
Authorized TimeStamps (dbt)	
OsRecovery Signatures (dbr)	Device Guard ready system must not list 'Microsoft UEFI CA' Certificate in Authorized Signature database(db)
MS UEFI CA Key	

3.6 Boot

This Boot menu allows you to set/change system boot options



Item	Description
Full Screen LOGO Show	Enable/Disable full screen LOGO show on POST screen Enabled : Enables Full screen LOGO Show on POST screen Disabled : Disables Full screen LOGO Show on POST screen (Default setting)
Built-in EFI Shell	Enable/Disable Built-in EFI Shell Enabled : Enables Built-in EFI Shell Disabled : Disables Built-in EFI Shell (Default setting)
Boot Option Priorities	Shows the information of the storage that be installed in the system Choose/set the boot priority

3.7 Save & Exit



Item	Description
Save Changes and Reset	After configuring all the options that you wish to change, choose this option to save all the changes and reboot the system Yes : Agree to save and reset No : Cancel to save and reset
Discard Changes and Reset	Choose this option to reboot the system without saving any changes Yes : Agree to discard changes and reset No : Cancel to discard changes and reset
Restore Defaults	Restore/Load default values for all the setup options Yes : Agree to load optimized defaults No : Cancel to load optimized defaults
Me FW Image Re-Flash	Enable/Disable Me FW image re-flash function Enabled : Enables Me FW image re-flash function Disabled : Disables Me FW image re-flash function (Default setting)