IB966

16th Generation
Intel® Core™ Ultra Processor
(PTL-H Platform)
3.5" Disk-Size SBC

User's Manual

Version 1.0a
(October 2026)

iBASE

Copyright

© 2026 IBASE Technology, Inc. All rights reserved.
No part of this publication may be reproduced, copied, stored in a retrieval system, translated into any language or transmitted in any form or by any means, electronic, mechanical, photocopying, or otherwise, without the prior written consent of IBASE Technology, Inc. (hereinafter referred to as “IBASE”).

Disclaimer

IBASE reserves the right to make changes and improvements to the products described in this document without prior notice. Every effort has been made to ensure the information in the document is correct; however, IBASE does not guarantee this document is error-free.
IBASE assumes no liability for incidental or consequential damages arising from misapplication or inability to use the product or the information contained herein, nor for any infringements of rights of third parties, which may result from its use.

Trademarks

All the trademarks, registrations and brands mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective owners.

Compliance

This product has passed CE Class B tests for environmental specifications and limits. This product is in accordance with the directives of the European Union (EU). In a domestic environment, this product may cause radio interference in which case users may be required to take adequate measures.

This product has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications.

WEEE

This product must not be disposed of as normal household waste, in accordance with the EU directive for waste electrical and electronic equipment (WEEE - 2012/19/EU). Instead, it should be disposed of by returning it to a municipal recycling collection point. Check local regulations for disposal of electronic products.

Green IBASE

This product complies with RoHS 2 restrictions, which prohibit the use of certain hazardous substances in electrical and electronic equipment. The following substances must not exceed the specified concentrations:

- Hexavalent chromium: 1,000 ppm
- Poly-brominated biphenyls (PBBs): 1,000 ppm
- Poly-brominated diphenyl ethers (PBDEs): 1,000 ppm
- Cadmium: 100 ppm
- Mercury: 1,000 ppm
- Lead: 1,000 ppm
- Bis(2-ethylhexyl) phthalate (DEHP): 1,000 ppm
- Butyl benzyl phthalate (BBP): 1,000 ppm
- Dibutyl phthalate (DBP): 1,000 ppm
- Diisobutyl phthalate (DIBP): 1,000 ppm

Important Safety Information

Environmental conditions:

- Use this product in environments with ambient temperatures between 0˚C and 60˚C.
- Do not leave this product in an environment where the storage temperature may be below -20° C or above 80° C. To prevent damage, the product must be used in a controlled environment.

Care for your IBASE products:

- Before cleaning the PCB, unplug all cables and remove the battery.
- Clean the PCB with a circuit board cleaner or degreaser, or use cotton swabs and alcohol.

WARNING

Attention during use:

- Do not use this product near water.
- Do not spill water or any other liquids on this product.
- Do not place heavy objects on the top of this product.

Anti-static precautions

- Wear an anti-static wrist strap to avoid electrostatic discharge.
- Place the PCB on an anti-static kit or mat.
- Hold the PCB by its edges when handling it.
- Touch the edges of non-metallic components of the product instead of the surface of the PCB.
- Ground yourself by touching a grounded conductor or a grounded bit of metal frequently to discharge any static.

CAUTION

There is danger of explosion if the internal lithium-ion battery is replaced by an incorrect type. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions or recycle them at a local recycling facility or battery collection point.

Warranty Policy

- **IBASE standard products:**

  24-month (2-year) warranty from the date of shipment. If the date of shipment cannot be ascertained, the product serial numbers can be used to determine the approximate shipping date.

- **3rd-party parts:**

  12-month (1-year) warranty from delivery for the 3rd-party parts that are not manufactured by IBASE, such as CPU, CPU cooler, memory, storage devices, power adapter, panel and touchscreen.

* PRODUCTS THAT FAIL DUE TO MISUSE, ACCIDENT, IMPROPER INSTALLATION OR UNAUTHORIZED REPAIR SHALL BE TREATED AS OUT OF WARRANTY AND CUSTOMERS SHALL BE BILLED FOR REPAIR AND SHIPPING CHARGES.

Technical Support & Services

1. Visit the IBASE website at www.ibase.com.tw to find the latest information about the product.
2. If repair service is required, please log in to the RMA system of the website or contact your distributor or sales representative for assistance.

Table of Contents

Chapter 1 General Information 1

1.1 Introduction 2
1.2 Features 2
1.3 Packing List 3
1.4 Optional Accessories 3
1.5 Specifications 4
1.6 Block Diagram 6
1.7 Board Pictures 7
1.8 Dimensions 9

Chapter 2 Hardware Configuration 11

2.1 Essential Installations 12
2.1.1 Installing the Memory 12
2.2 Setting the Jumpers 13
2.3 Jumper & Connector Locations 14
2.4 Jumpers Quick Reference 15
2.4.1 JP2: Clear RTC 15
2.4.2 JP6: LVDS Brightness Power Selection 16
2.4.3 JP4: eDP Power Selection 16
2.4.4 JP5: LVDS Power Selection 17
2.4.5 JP1: AT/ATX Select 17
2.4.6 JP3: Clear CMOS 18
2.4.7 JP7: Flash Descriptor Security Override 18
2.5 Connectors Quick Reference 19
2.5.1 CN2: eDP Connector 21
2.5.2 CN3: COM1 Port 22
2.5.3 CN4: DP 23
2.5.4 CN5: HDMI 23
2.5.5 CN6, CN7: USB3 Type-A / Type-C 24
2.5.6 CN8: USB3 / USB2 Ports 24
2.5.7 CN9: 2.5G LAN i226LM/i226V 25
2.5.8 J1: Audio Connector 26
2.5.9 J2: DDR5 SO-DIMM CHA 26
2.5.10 J3: M.2 M-Key 2280 27
2.5.11 J5: DC-IN (12-24V) 27
2.5.12 J6: Digital I/O (4in, 4out) 28
2.5.13 J7: DDR5 SO-DIMM CHB 28
2.5.14 J8: COM2 Port 29
2.5.15 J9: eSPI Debug (Factory Use Only) 29
2.5.16 J10: SPI Flash Connector (Factory use only) 29
2.5.17 J11: M.2 E-Key 2230 with CNVi 30
2.5.18 J12: LVDS Backlight Connector 30
2.5.19 J13, J17: LVDS CH-A / CH-B 31

2.5.20 J14: M.2 M-Key 2242 32
2.5.21 J15: Battery Connector 32
2.5.22 J16: USB2 #5/#6 33
2.5.23 J19: Front Panel Connector 33
2.5.24 J20: PWM programming (Factory use only) 34
2.5.25 CPU_FAN1: CPU Fan Power Connector 35
2.5.26 SYS_FAN1: System Fan Power Connector 35

Chapter 3 Drivers Installation 37

3.1 Introduction 38
3.2 Intel® Chipset Software Installation Utility 38
3.3 Graphics Drivers Installation 42
3.4 Intel(R) Smartsound Drivers Installation 45
3.5 Realtek Audio DCH Drivers Installation 47
3.6 Intel I22x 2.5G Network Drivers Installation 48
3.7 Intel® ME Drivers Installation 49
3.8 Intel® Serial IO Drivers Installation 50
3.9 Intel® Other Drivers Installation 52
3.9.1 Intel® ISSE Drivers Installation 53
3.9.2 Intel® PMT Drivers Installation 53
3.9.3 Intel® NPU Drivers Installation 53
3.9.4 Intel® IPF Drivers Installation 53
3.9.5 Intel® DTT Drivers Installation 53
3.9.6 Intel® PPM Drivers Installation 53

Chapter 4 BIOS Setup 55

4.1 Introduction 56
4.2 BIOS Setup 56
4.3 Main Settings 57
4.4 Advanced Settings 58
4.5 Security Settings 74
4.6 Boot Settings 76
4.7 Save & Exit Settings 77
4.8 MEBx 78

Appendix 80

A. I/O Port Address Map 81
B. Interrupt Request Lines (IRQ) 82
C. Watchdog Timer Configuration 83
D. Onboard Connector Reference Types 87

This page is intentionally left blank.

Chapter 1
General Information

The information provided in this chapter includes:

- Features
- Packing List
- Optional Accessories
- Specifications
- Block Diagram
- Board Pictures
- Board Dimensions

1.1 Introduction

Powered by the latest 16th Gen Intel® Core™ Ultra 300 Series Processor, the IB966 ensures high performance and exceptional efficiency for a wide range of applications. Accompanied by 2x DDR5 SO-DIMM sockets with a maximum capacity of 128GB, the motherboard guarantees seamless multitasking and improved system responsiveness. Graphics support is provided by HDMI, DP, LVDS, and eDP for independent display outputs. Two Intel® I226LM and I226V 2.5G LAN ports ensure high-speed networking for seamless data transfer. Equipped with 3x USB 2.0, 3x USB 3.2 (2xType-A & 1x Type-C), 2x COM, the IB966 offers exceptional peripheral connectivity, and 3x M.2 slots (M-Key_2280 + M-Key_2242 + E-Key_2230) enhance expandability options. Additionally, the motherboard supports digital I/O (4-in/4-out), dTPM/fTPM, and a watchdog timer for robust system security and reliability.

1.2 Features

- Onboard 16th Gen Intel® Core™ Ultra 300 Series Processor
- 2x DDR5 SO-DIMM, Max. 128GB
- Supports HDMI, DisplayPort (DP connector & Type-C), LVDS and eDP
- 1x Intel® I226LM 2.5G LAN, 1x Intel® I226V 2.5G LAN
- 3x USB 2.0, 3x USB 3.2 (Type-C & Type-A), 2x COM
- 3x M.2 slots (M-Key_2280 + M-Key_2242 + E-Key_2230)
- Supports digital I/O (4-in/4-out), dTPM/fTPM & Watchdog Timer

1.3 Packing List

Your IB966 package should include the items listed below. If any of the items below is missing, contact the distributor or dealer from whom you purchased the product.

- IB966 SBC

1.4 Optional Accessories

IBASE provides the following optional accessories:

- Cable Kit (IB76A-3)
  Including:
  DC-In power cable (PW592) x1
  COM ports cable (PK1H) x1
  USB 2.0 cable (USB29) x1
- Audio cable (Audio-18)
- Heat spreader (HSIB966-2)
- Heat sink (HSIB966-B)

1.5 Specifications

Models	
Product Name	IB966AF-358H (Ultra X7 358H CPU onboard) IB966AF-356H (Ultra 7 356H CPU onboard) IB966AF-355 (Ultra 7 355 CPU onboard)
CPU Type	Intel® Core™ Ultra 300 series (H series), 1.8nm BGA-2540 package (50mm x 25mm x 1.176mm),
CPU Type	Intel Core™ Ultra X7 – 358H (15-65W TDP) Intel Core™ Ultra 7 – 356H (15-65W TDP) Intel Core™ Ultra 7 – 355 (15-65W TDP)

Specifications	
Form Factor	3.5” disk-size SBC
Memory	Intel® Core™ Ultra 300 series integrated memory controller, DDR5-7200**,** SO-DIMM x 2, Max.= 128GB
BIOS	AMI
Graphics	Intel® Arc™ / Xe3 integrated graphics
Display Output	Support **4** x displays - **eDP** ** Resolution up to 4096 x 2160 ** - **LVDS** ** Resolution up to 1920 x 1200 ** - **DisplayPort 1.4a** x 1 (DP)@ edge connector ** Resolution up to 7680 x 4320 ** - **DisplayPort 1.4a** x 1@ Type-C connector ** Resolution up to 7680 x 4320 ** - **HDMI 2.1** x 1 @ edge connector ** Resolution up to 8k x 4k **
LAN	Intel® I226LM as 1st LAN, I226V as 2nd LAN
Super I/O	Fintek F81804U-I
Storage Interface	M.2 (M2280 for NVMe Gen5+ M2242 for NVMe Gen4)
Mini Type Slots	1x M.2 (M-Key, Type:2280, supports NVMe with PCIe(Gen5) signal only) 1x M.2 (M-Key, Type:2242, supports NVMe with PCIe(Gen4) signal only) 1x M.2 (E-Key, Type:2230, supports CNVi)
Audio	Intel® Core™ Ultra 300 Series processor built-in HD audio
Watchdog Timer	Yes (256 segments, 0, 1, 2…255 sec / min)
H/W Monitor	Yes
Power Requirement	+12V (-10% tolerance) ~ +24V (+10% tolerance) DC-in
TPM	dTPM / fTPM

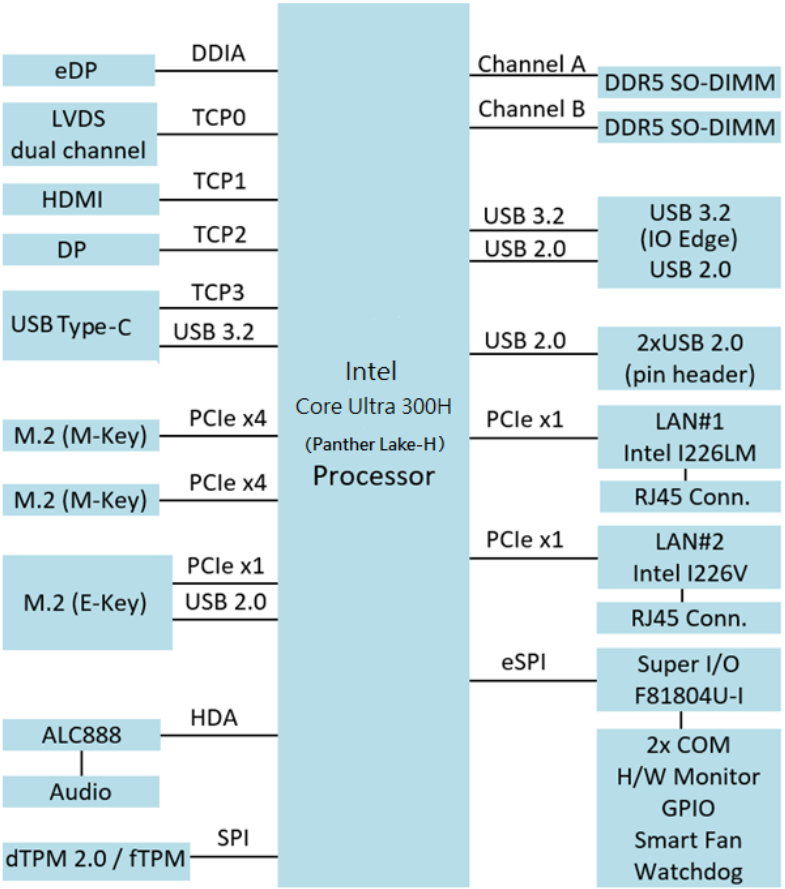
Dimensions	102.22 x 147.01 mm (4.02” x 5.8”)
RoHS 2	Yes
Certification	CE, FCC Class B

I/O	
Display	• DisplayPort • eDP & LVDS • HDMI
LAN	2 x RJ45 for 2.5 Gigabit Ethernet
USB	• 3x USB 2.0 (1x Type-A, 2x via pin header) • 3x USB 3.2 (2x Type-A & 1x Type-C)
Serial	• 2x RS232/422/485
Digital IO	4-In & 4-Out
Expansion Slots	• 1x M.2 (M-Key, Type:2280, supports NVMe with PCIe(Gen5) signal only) • 1x M.2 (M-Key, Type:2242, supports NVMe with PCIe(Gen4) signal only) • 1x M.2 (E-Key, Type:2230, supports CNVi)
Operating System	Windows 11 Ubuntu Linux / Fedora Linux

Environmental	
Temperature	• Operation: 0 ~ 60 °C (32 ~ 140 °F) • Storage: -20 ~ 80 °C (-4 ~ 176 °F)
Relative Humidity	0 ~ 90 %, non-condensing at 60 °C

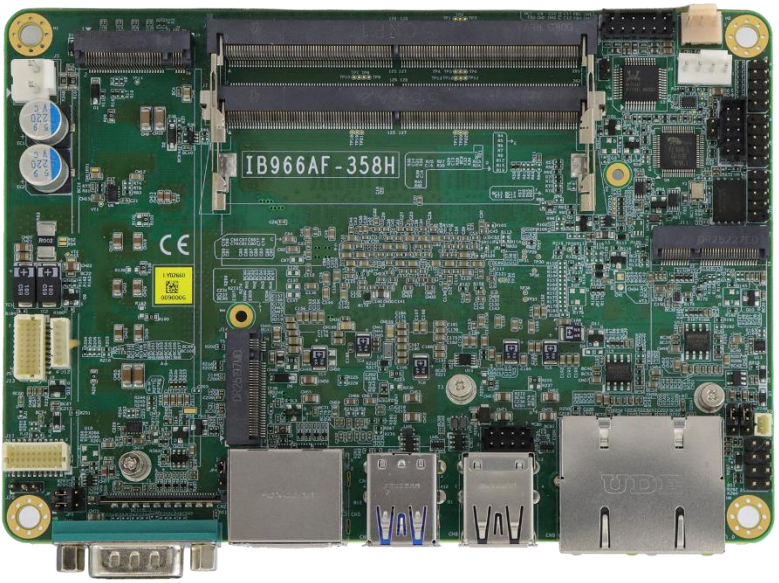
All specifications are subject to change without prior notice.

1.6 Block Diagram

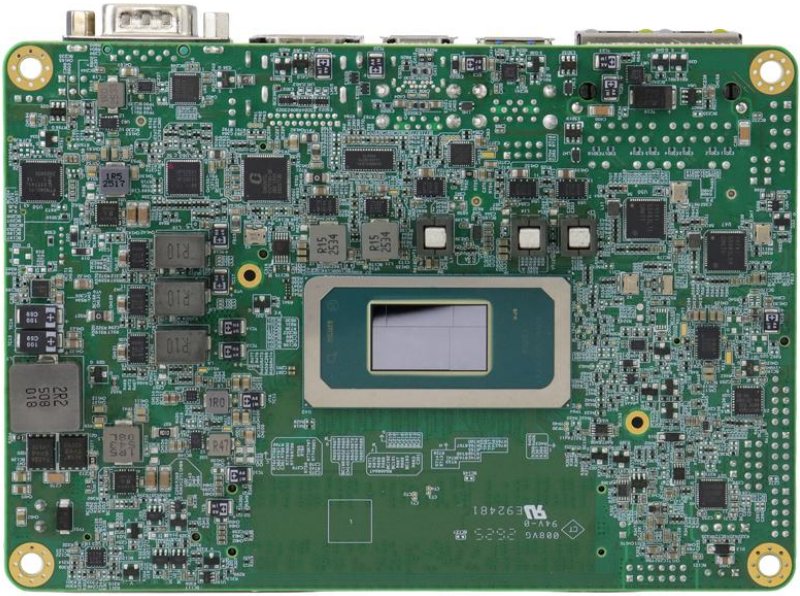


1.7 Board Pictures

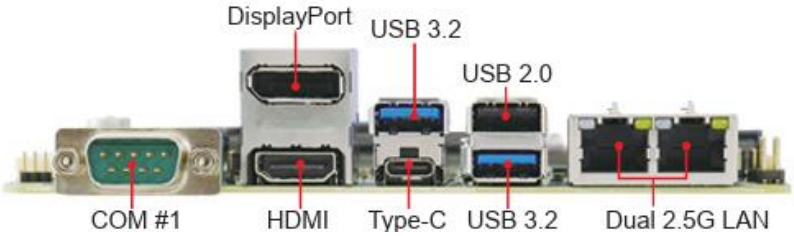
Top View

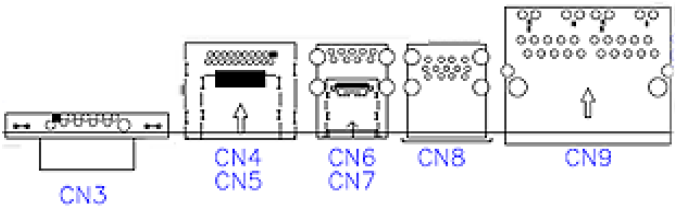


Bottom View

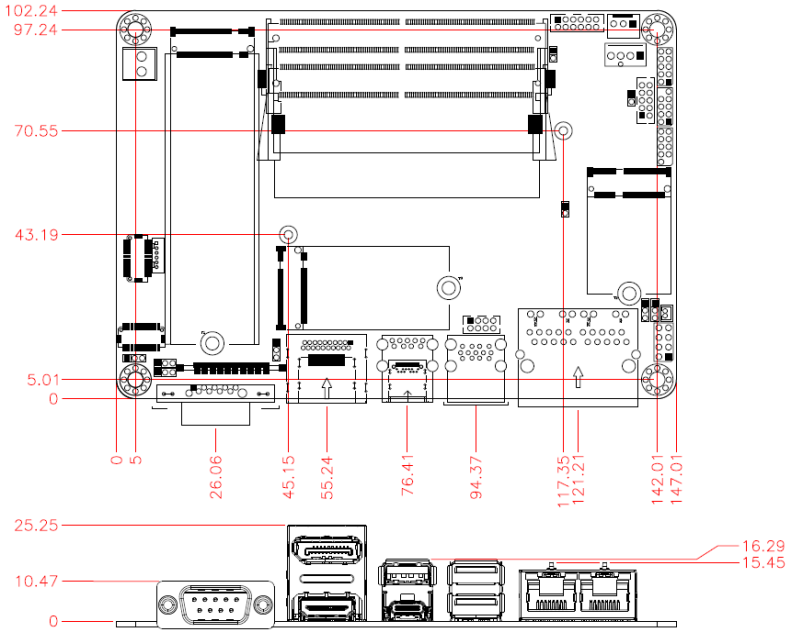


I/O View





1.8 Dimensions



This page is intentionally left blank.

Chapter 2
Hardware Configuration

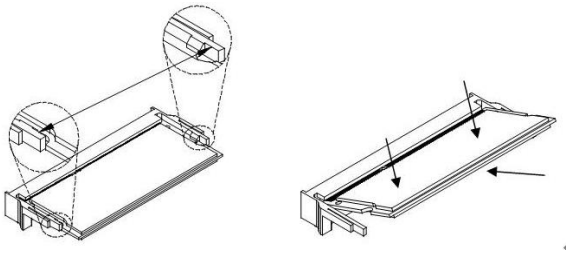
This section provides information on jumper settings and connectors on the IB966 in order to set up a workable system. On top of that, you will also need to install crucial pieces such as the memory before using the product. The topics covered are:

- Essential installations
- Jumpers and connectors

2.1 Essential Installations

2.1.1 Installing the Memory

The IB966 supports two DDR5 SO-DIMM memory sockets. To install a module, locate the memory slot on the board and perform the following steps:



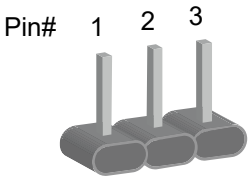
1. Align the key of the memory module with that on the memory slot and insert the module slantwise.
2. Gently push the module in an upright position until the clips of the slot close to hold the module in place when the module touches the bottom of the slot.

To remove the module, press the clips outwards with both hands, and the module will pop-up.

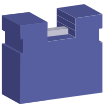
2.2 Setting the Jumpers

Set up and configure your IB966 by using jumpers for various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your use.

Jumpers are short-length conductors consisting of several metal pins with a non-conductive base mounted on the circuit board. Jumper caps are used to have the functions and features enabled or disabled. If a jumper has 3 pins, you can connect either PIN1 to PIN2 or PIN2 to PIN3 by shorting.

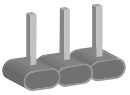
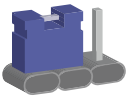
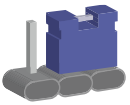
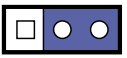


A 3-pin jumper



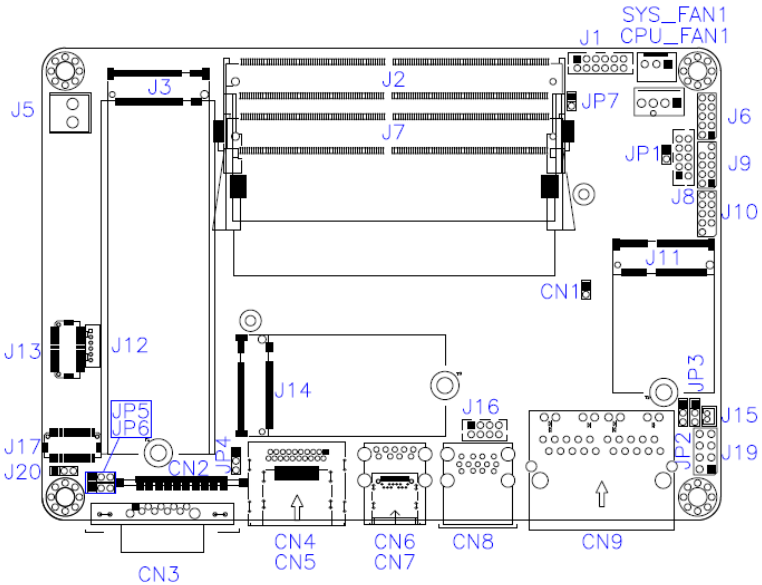
A jumper cap

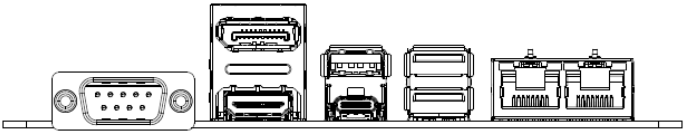
Refer to the illustration below to set jumpers.

Pin closed	Jumper	Setting
Open		
1-2		
2-3		

When two pins of a jumper are encased in a jumper cap, this jumper is **closed**, i.e. turned **On**.
When a jumper cap is removed from two jumper pins, this jumper is **open**, i.e. turned **Off**.

2.3 Jumper & Connector Locations

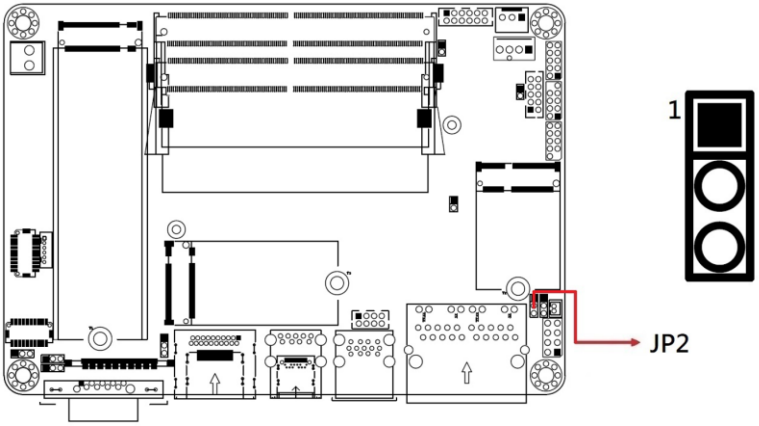




2.4 Jumpers Quick Reference

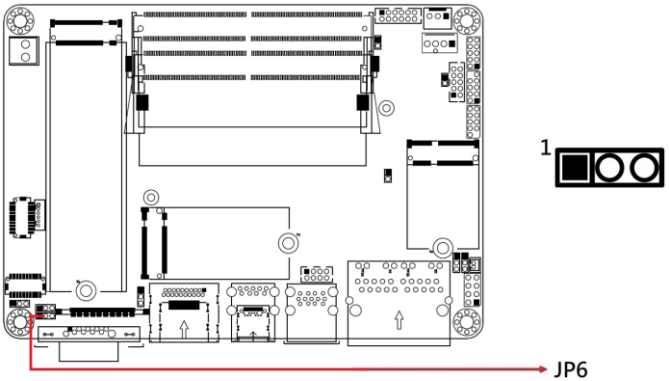
Jumper	Function
JP2	Clear RTC
JP6	LVDS Brightness Power Selection
JP4	eDP Power Selection
JP5	LVDS Power Selection
JP1	AT/ATX Selection
JP3	Clear CMOS
JP7	Flash Descriptor Security Override (Factory use only)

2.4.1 JP2: Clear RTC



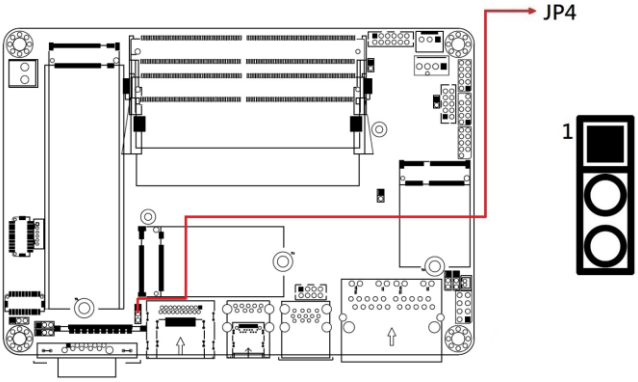
Function	Pin closed	Setting
Normal	1-2	1
Clear RTC	2-3	1

2.4.2 JP6: LVDS Brightness Power Selection



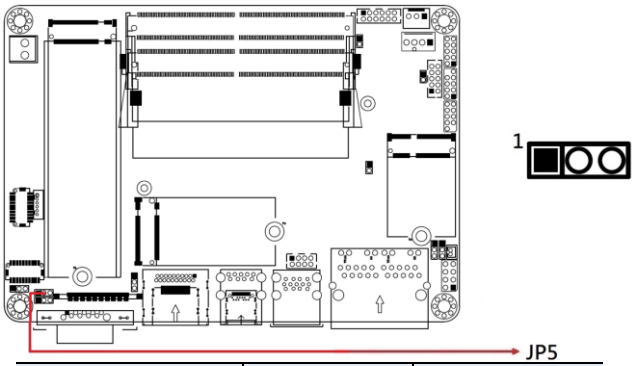
Function	Pin closed	Setting
3.3V (default)	1-2	1
5V	2-3	1

2.4.3 JP4: eDP Power Selection



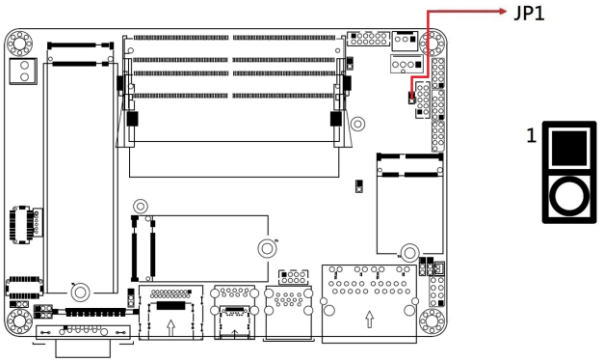
Function	Pin closed	Setting
3.3V (default)	1-2	1
5V	2-3	1

2.4.4 JP5: LVDS Power Selection



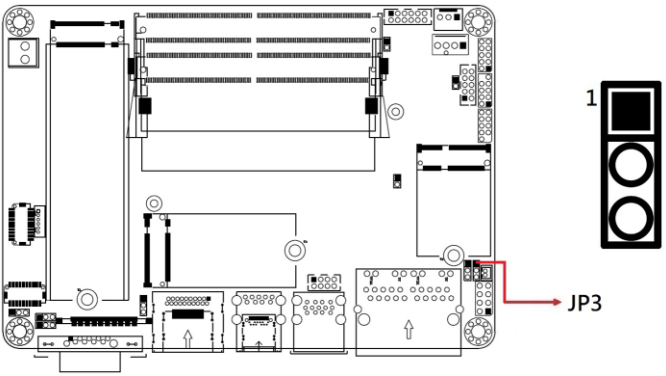
Function	Pin closed	Setting
3.3V (default)	1-2	1
5V	2-3	1

2.4.5 JP1: AT/ATX Select



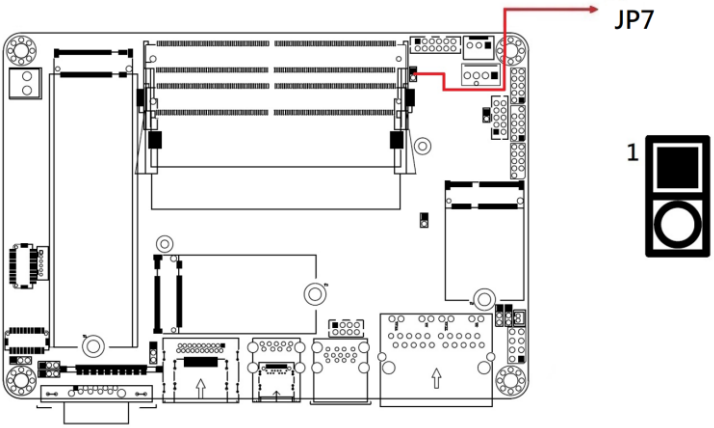
Function	Pin closed	Setting
ATX	Open (default)	
AT	Close	

2.4.6 JP3: Clear CMOS



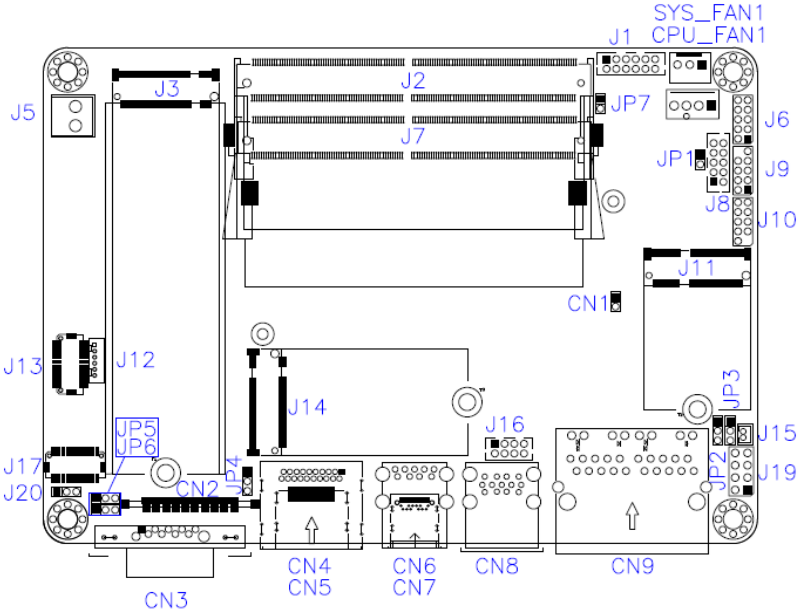
Function	Pin closed	Setting
Normal	1-2	1
Clear CMOS	2-3	1

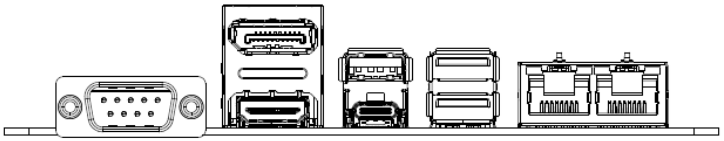
2.4.7 JP7: Flash Descriptor Security Override



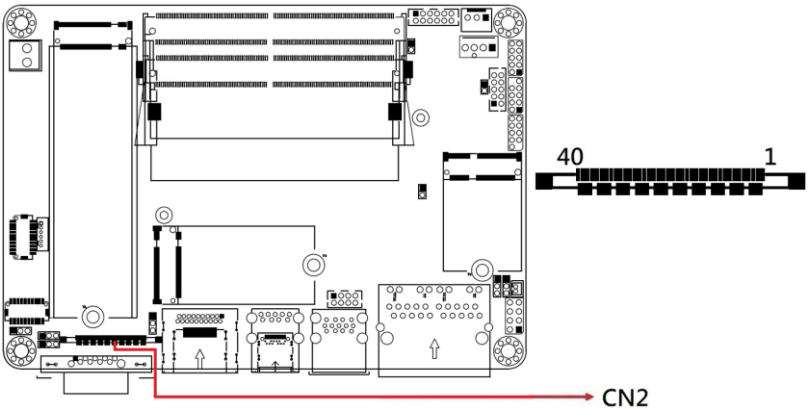
2.5 Connectors Quick Reference

Connectors	Function
CN2	eDP Connector
CN9	2.5G LAN i226LM/i226V Ports
CN8	USB3 #2 / USB2 #2 Ports
CN4	DP
CN5	HDMI
CN6/CN7	USB3 Type-A/ Type-C
CN3	COM1 Port
J12	LVDS Backlight Connector
J1	Audio Connector
J8	COM2 Port
J2	DDR5 SO-DIMM CHA
J15	Battery Connector
J13, J17	LVDS CH-A / LVDS CH-B
J6	Digital I/O (4in, 4out)
J9	eSPI DEBUG (Factory use only)
J7	DDR5 SO-DIMM CHB
J3	M.2 M-key 2280
J10	SPI Flash Connector (Factory use only)
J16	USB2 #5/#6
J5	DC-IN (12-24V)
J14	M.2 M-Key 2242
J19	Front Panel Connector
J20	PWM Programming (Factory use only)
J11	M.2 E-Key 2230 W/CNVI
CPU_FAN1	CPU Fan Power Connector
SYS_FAN1	SYS Fan Power Connector (+12V only)


SYS_FAN1
CPU_FAN1
J1
J2
J3
J5
J7
JP7
J6
JP1
J9
J8
J10
J11
CN1
J13
J12
J14
JP3
J16
J15
JP5
JP6
J17
J20
CN2
JP4
JP2
J19
CN4
CN5
CN6
CN7
CN8
CN9
CN3



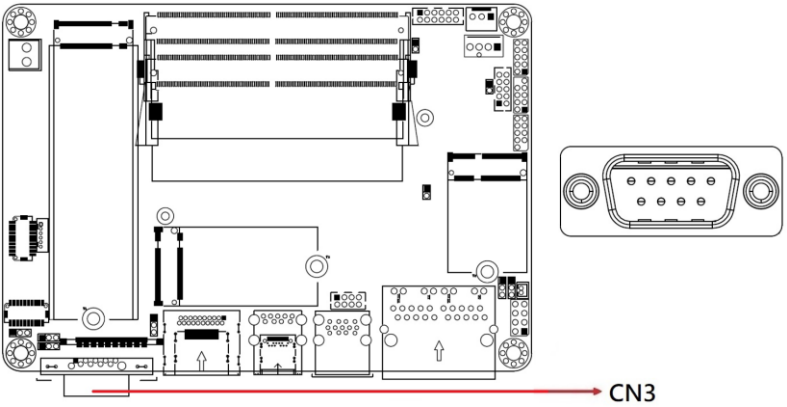
2.5.1 CN2: eDP Connector



Pin	Assignment	Pin	Assignment
1	eDP Vcc	21	TXN0
2	eDP Vcc	22	TXP0
3	eDP Vcc	23	Ground
4	eDP Vcc	24	AUXP
5	eDP Vcc	25	AUXN
6	Ground	26	NC
7	Ground	27	+3.3V
8	Ground	28	EDP BKLT (+12V)
9	Ground	29	NC
10	Hot Plug detect	30	Ground
11	Ground	31	+5V
12	TXN3	32	NC
13	TXP3	33	Back Light Control
14	Ground	34	Back Light Enable
15	TXN2	35	EDP BKLT (+12V)
16	TXP2	36	+3.3V
17	Ground	37	Ground
18	TXN1	38	NC
19	TXP1	39	NC
20	Ground	40	NC

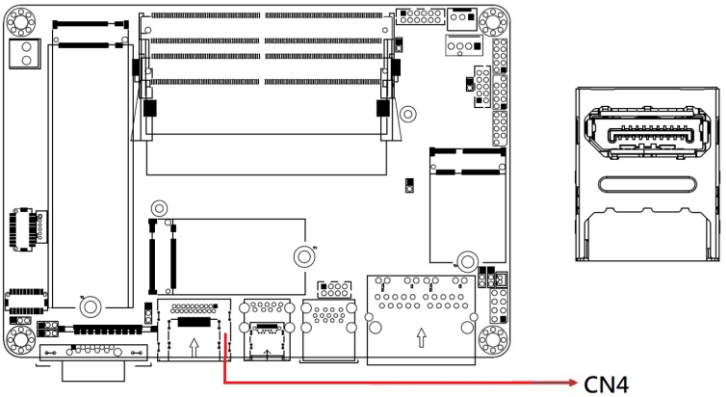
* KEL_SSL00-40S

2.5.2 CN3: COM1 Port

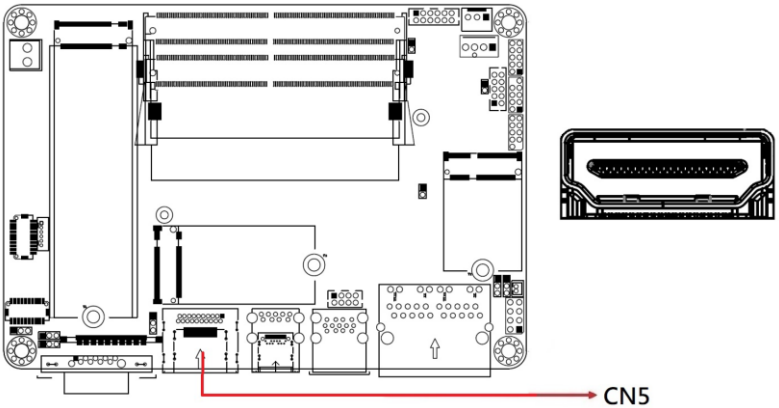


Pin	Assignment		
	RS-232	RS-422	RS-485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	Ground	Ground	Ground
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC
10	NC	NC	NC

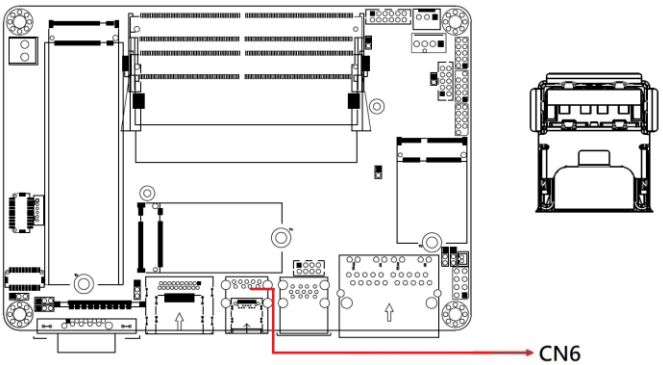
2.5.3 CN4: DP

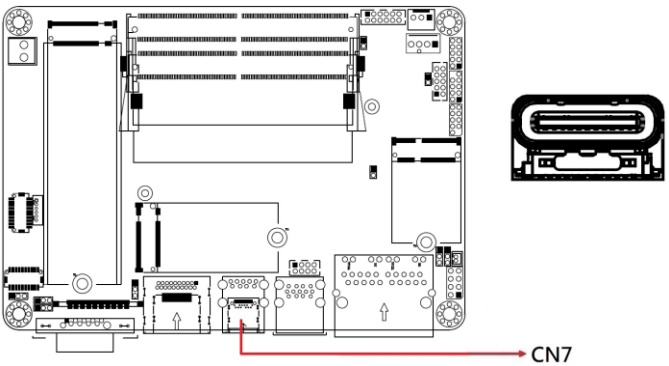


2.5.4 CN5: HDMI

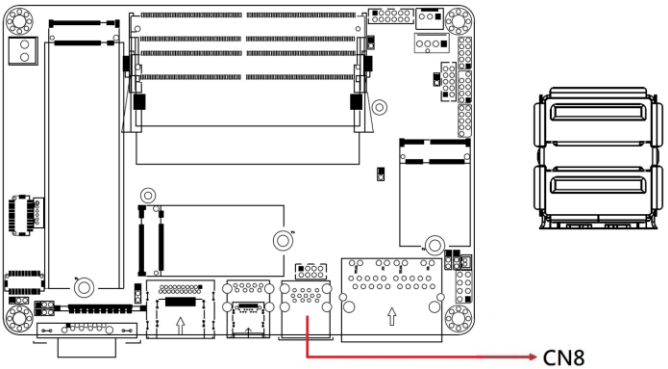


2.5.5 CN6, CN7: USB3 Type-A / Type-C

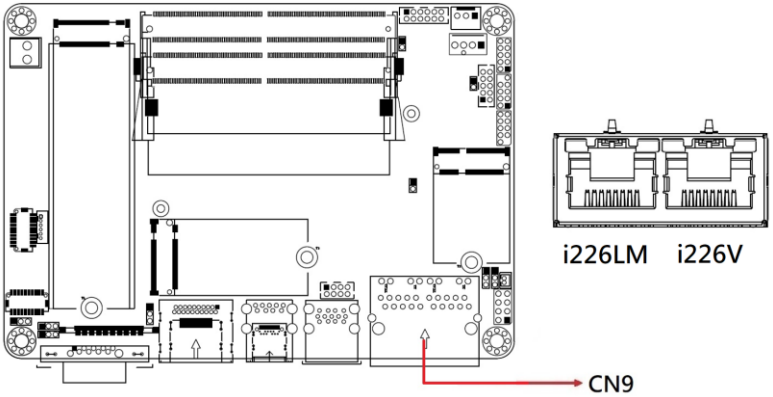




2.5.6 CN8: USB3 / USB2 Ports

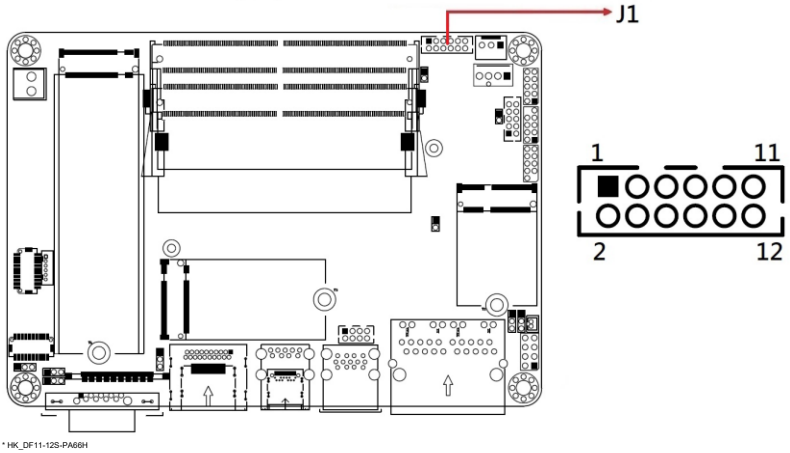


2.5.7 CN9: 2.5G LAN i226LM/i226V



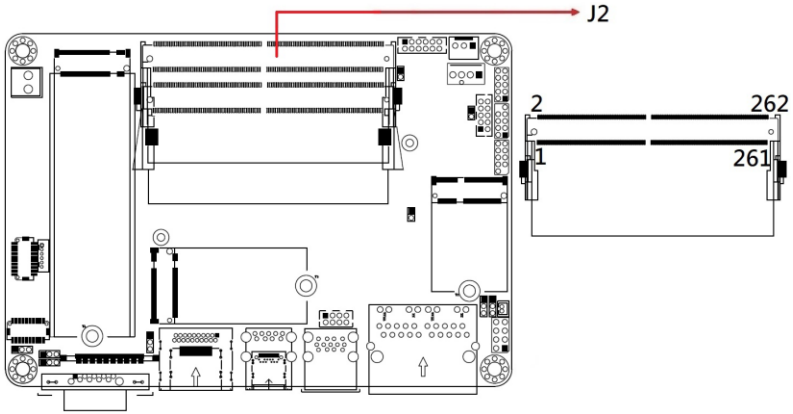
Pin	Assignment
1	Ground
2	TX+
3	TX-
4	Ground
5	RX-
6	RX+
7	Ground

2.5.8 J1: Audio Connector

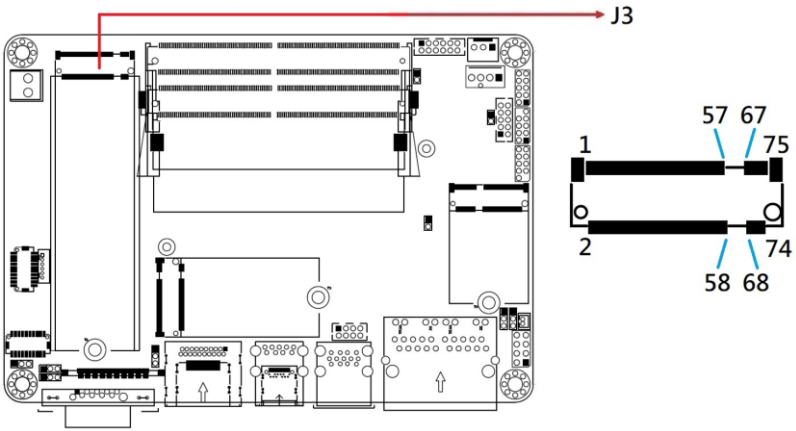


Pin	Assignment	Pin	Assignment
1	LINE OUT_L	2	LINE OUT_R
3	FRONT_JD	4	GND
5	LINE IN_L	6	LINE IN_R
7	LINE _JD	8	GND
9	MIC_L	10	MIC_R
11	MIC_JD	12	GND

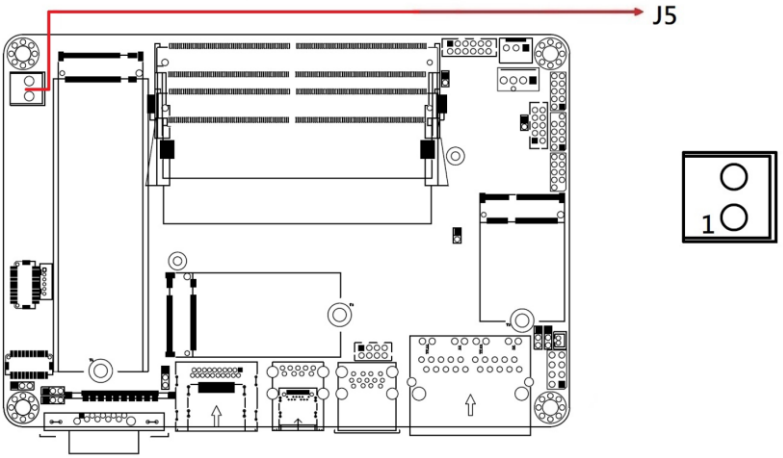
2.5.9 J2: DDR5 SO-DIMM CHA



2.5.10 J3: M.2 M-Key 2280



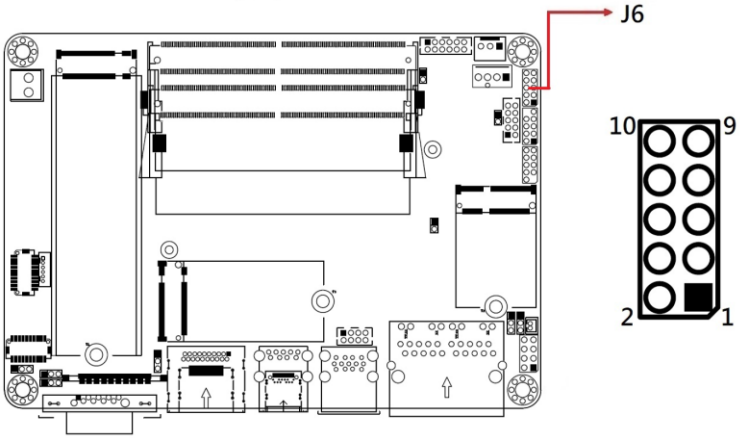
2.5.11 J5: DC-IN (12-24V)



* HK_WAFER396-2S-WV

Pin	Assignment
1	DC_IN
2	GND

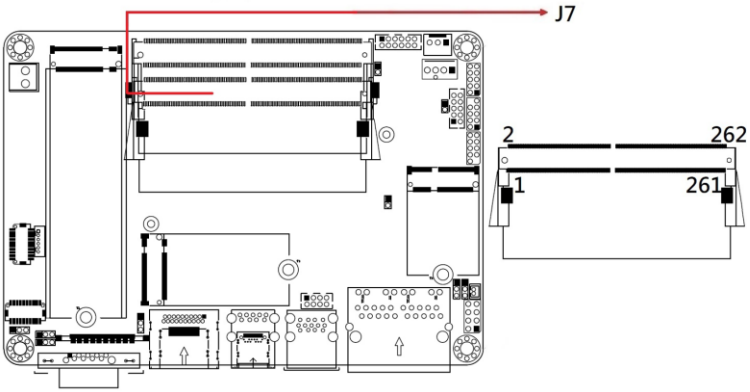
2.5.12 J6: Digital I/O (4in, 4out)



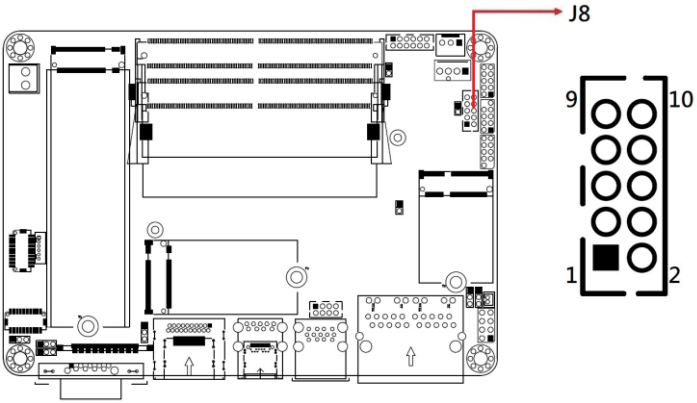
* E-Call_0196-01-200-100

Pin	Assignment	Pin	Assignment
1	Ground	2	+5V
3	Out3	4	Out1
5	Out2	6	Out0
7	IN3	8	IN1
9	IN2	10	IN0

2.5.13 J7: DDR5 SO-DIMM CHB



2.5.14 J8: COM2 Port

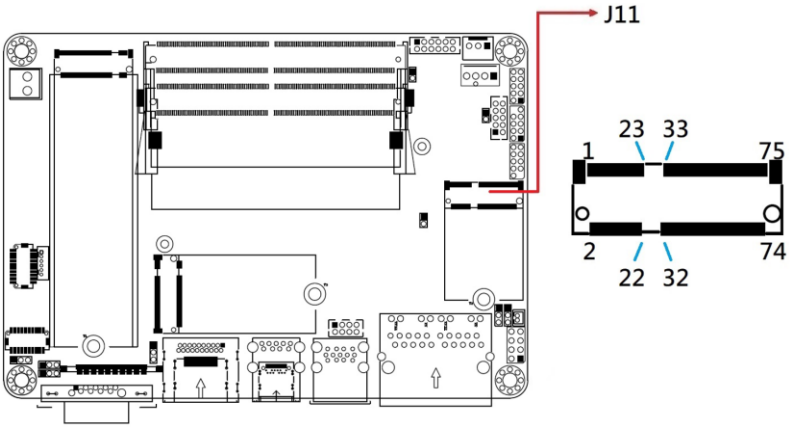


Pin	Assignment		
	RS-232	RS-422	RS-485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	Ground	Ground	Ground
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC
10	NC	NC	NC

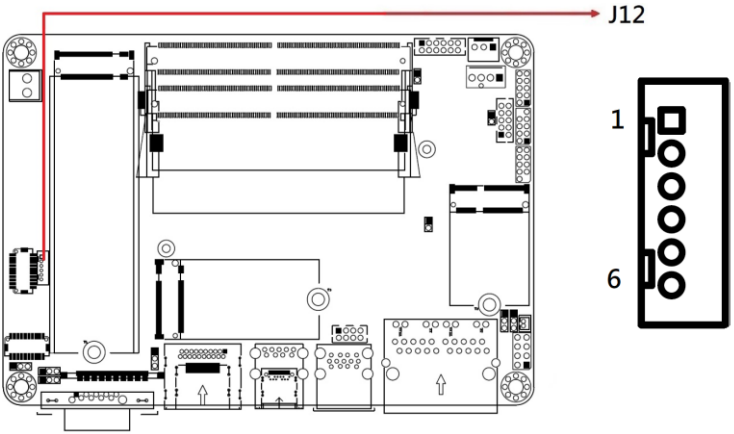
2.5.15 J9: eSPI Debug (Factory Use Only)

2.5.16 J10: SPI Flash Connector (Factory use only)

2.5.17 J11: M.2 E-Key 2230 with CNVi



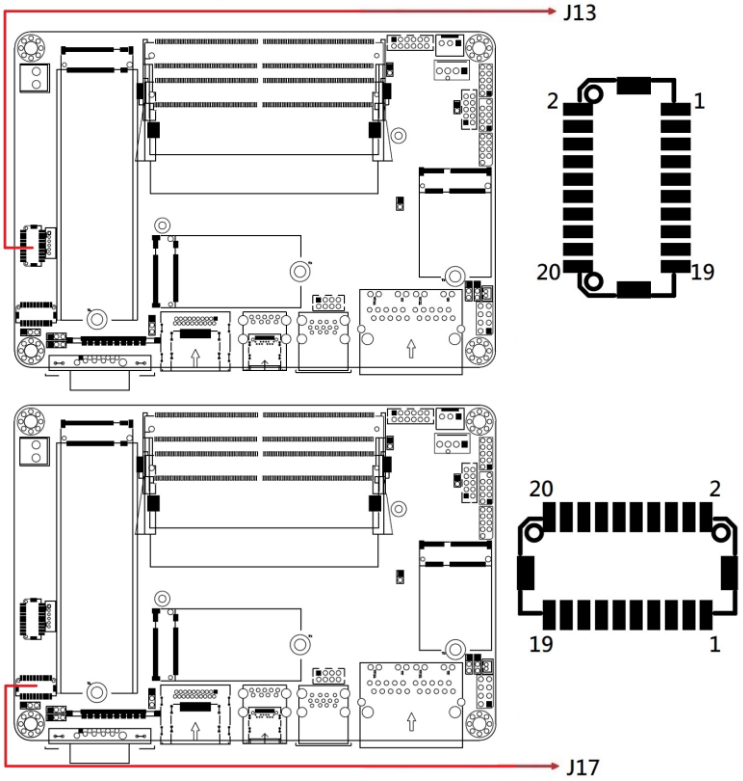
2.5.18 J12: LVDS Backlight Connector



* E-CALL_0110-2610060

Pin	Assignment
1, 2	+12V
3, 4	GND
5	Backlight Enable
6	Brightness Control

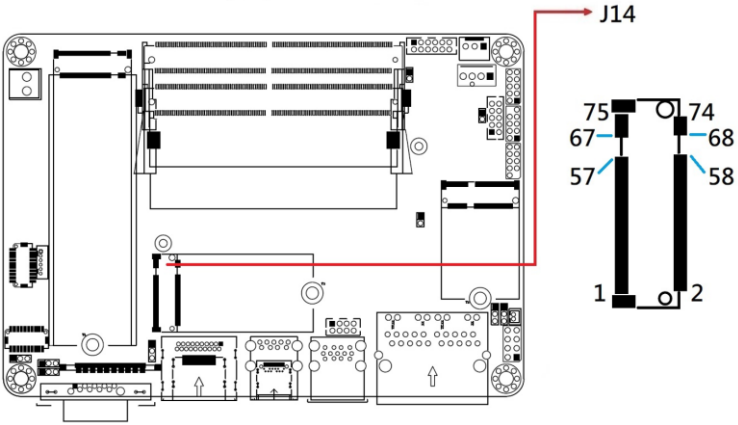
2.5.19 J13, J17: LVDS CH-A / CH-B



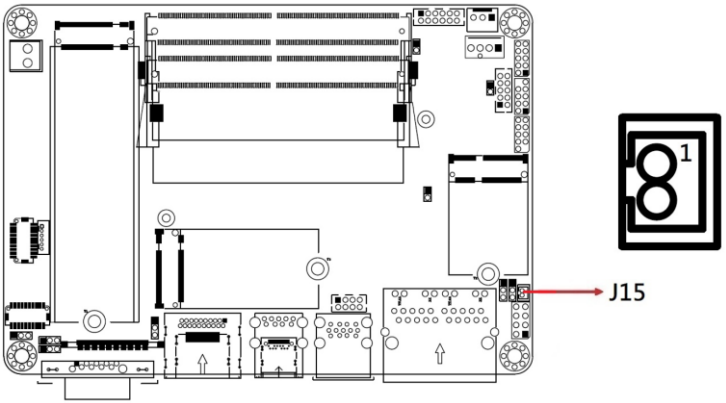
Hirose_DF20G-20DP-1V(56)

Pin	Assignment	Pin	Assignment
1	TX0P	2	TX0N
3	GND	4	GND
5	TX1P	6	TX1N
7	GND	8	GND
9	TX2P	10	TX2N
11	GND	12	GND
13	CLKP	14	CLKN
15	GND	16	GND
17	TX3P	18	TX3N
19	+3.3V	20	+3.3V

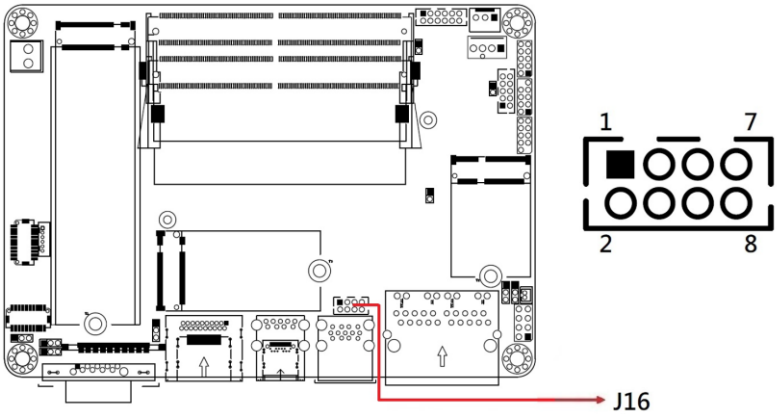
2.5.20 J14: M.2 M-Key 2242



2.5.21 J15: Battery Connector



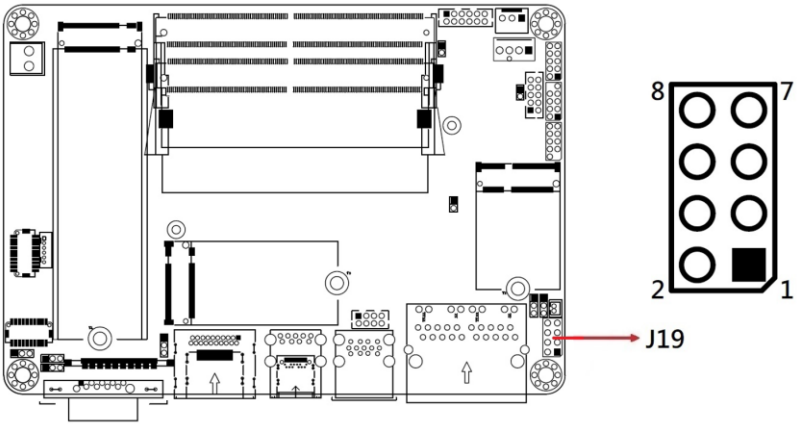
2.5.22 J16: USB2 #5/#6



* HK_DF11-8S-PA66H

Pin	Assignment	Pin	Assignment
1	+5V	2	GND
3	USB_PN#5	4	USB_PP#6
5	USB_PP#5	6	USB_PN#6
7	GND	8	+5V

2.5.23 J19: Front Panel Connector



* E-Call_0126-01-203-080

Pin	Assignment	Pin	Assignment
1	Power BTN	2	Power BTN
3	HDD LED+	4	HDD LED-
5	Reset BTN	6	Reset BTN
7	Power LED+	8	Power LED-

This connector provides interfaces for the following functions.

- **ATX Power ON Switch (Pins 1 and 2)**

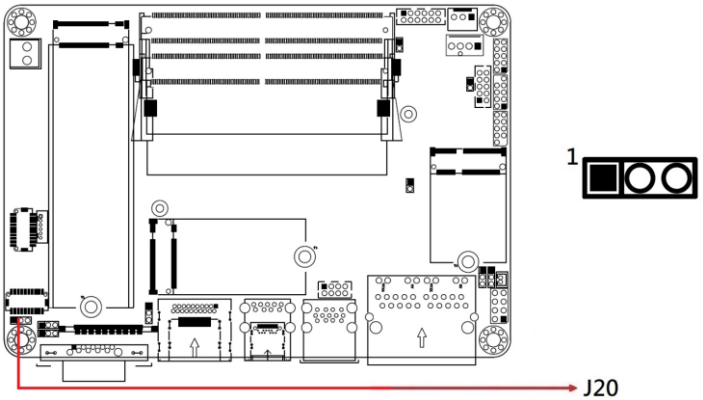
  The 2 pins make an “ATX Power Supply On/Off Switch” for the system that connects to the power switch on the case. When pressed, the power switch will force the system to power on. When pressed again, it will power off the system.
- **Hard Disk Drive LED Connector (Pins 3 and 4)**

  This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.
- **Reset Switch (Pins 5 and 6)**

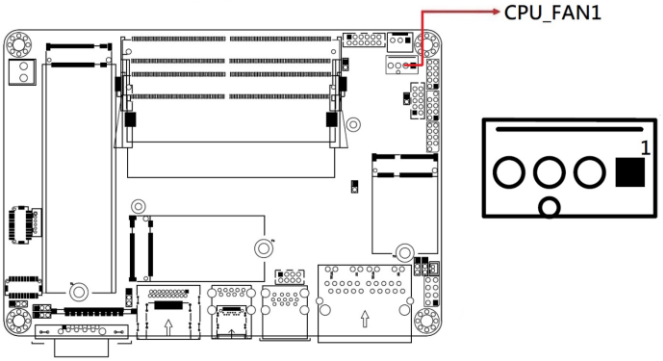
  The reset switch allows you to reset the system without turning the main power switch off and then on again. Orientation is not required when making a connection to this header.
- **Power LED: Pins 7 and 8**

  This connector connects to the system power LED on control panel. This LED will light when the system turns on.

2.5.24 J20: PWM programming (Factory use only)



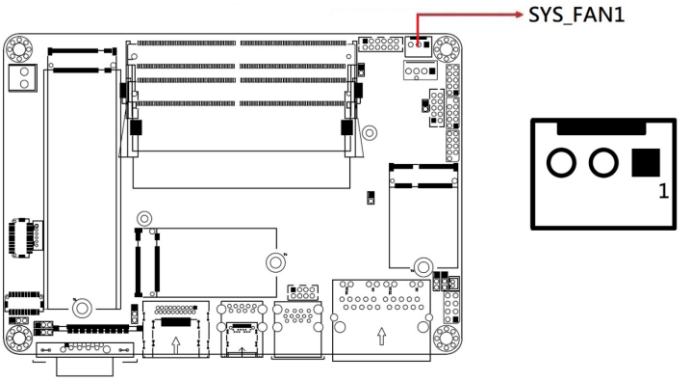
2.5.25 CPU_FAN1: CPU Fan Power Connector



* PWM Only

Pin	Assignment
1	Ground
2	+12V
3	Rotation detection
4	Control

2.5.26 SYS_FAN1: System Fan Power Connector



* +12V Only

Pin	Assignment
1	Ground
2	+12V
3	NC

This page is intentionally left blank.

Chapter 3
Drivers Installation

The information provided in this chapter includes:

- Intel® Chipset Software Installation Utility
- Graphics Driver Installation
- Intel® Smart Sound Technology Driver Installation
- Realtek Audio DCH Driver Installation
- Intel® ME Driver Installation
- Intel® Serial IO Driver Installation
- LAN Driver Installation
- Intel® Other Drivers Installation

3.1 Introduction

This section describes the installation procedures for software drivers. Go to the download page of the product. Copy the compressed drivers file to your computer. Double click the file to decompress it. Run “CDGuide” to go to the main drivers page.

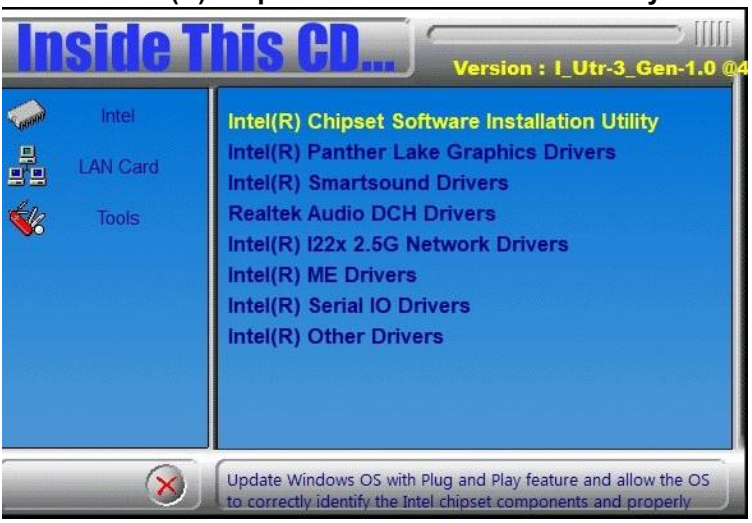
Note: After installing your Windows operating system, you must install the Intel® Chipset Software Installation Utility first before proceeding with the drivers installation.

3.2 Intel® Chipset Software Installation Utility

The Intel® Chipset drivers should be installed first before the software drivers to install INF files for Plug & Play function for the chipset components. Follow the instructions below to complete the installation.

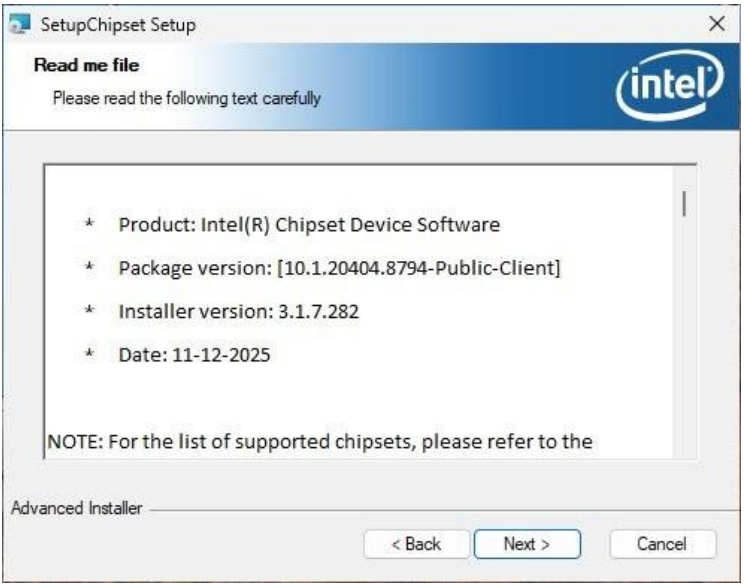
1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

2. Click **Intel(R) Chipset Software Installation Utility**.

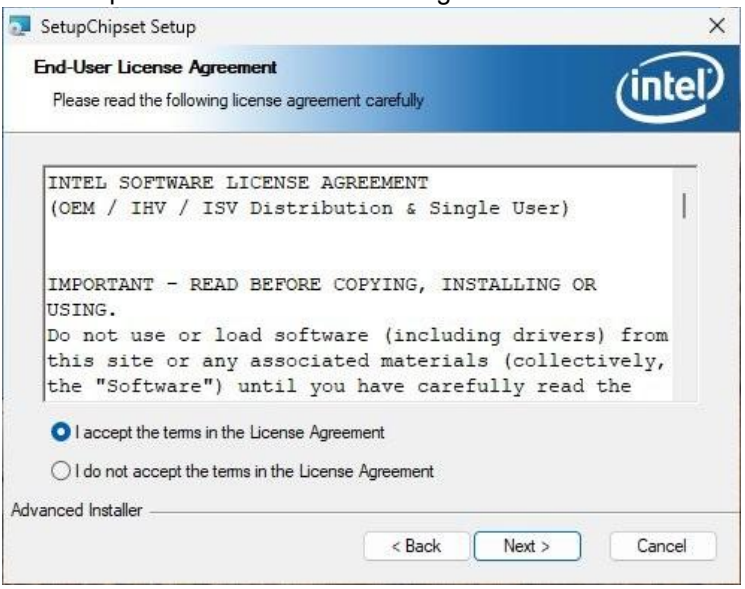


3. When the Welcome screen appears, click **Next** after selecting the setup language. On the next screen, click **Next** to start the installation.

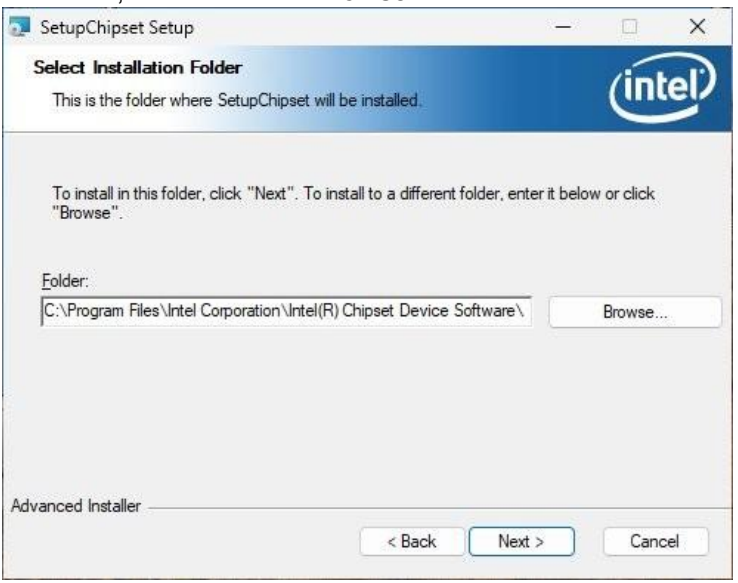
4. On the Read me File screen, click Next.



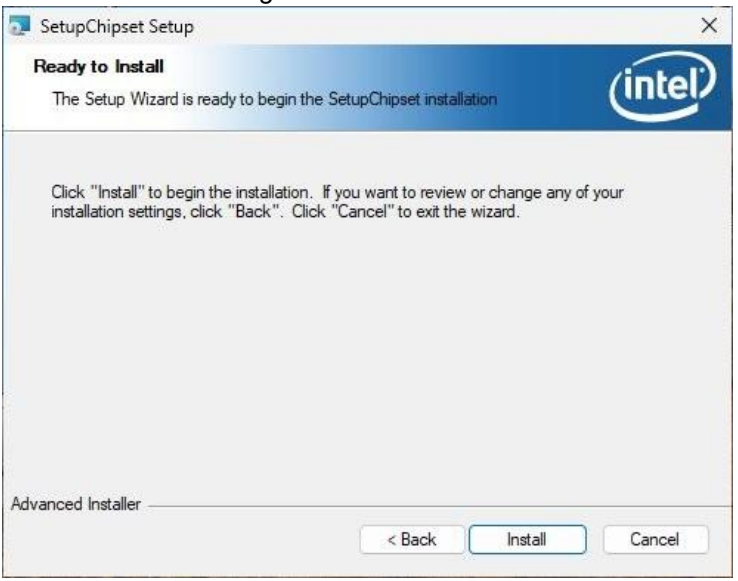
5. Accept the terms of the license agreement. Click **Next**.



6. Click **Next** to install in the default folder. To install to a different folder, enter it or click **Browse**.



7. Click **Install** to begin the installation.

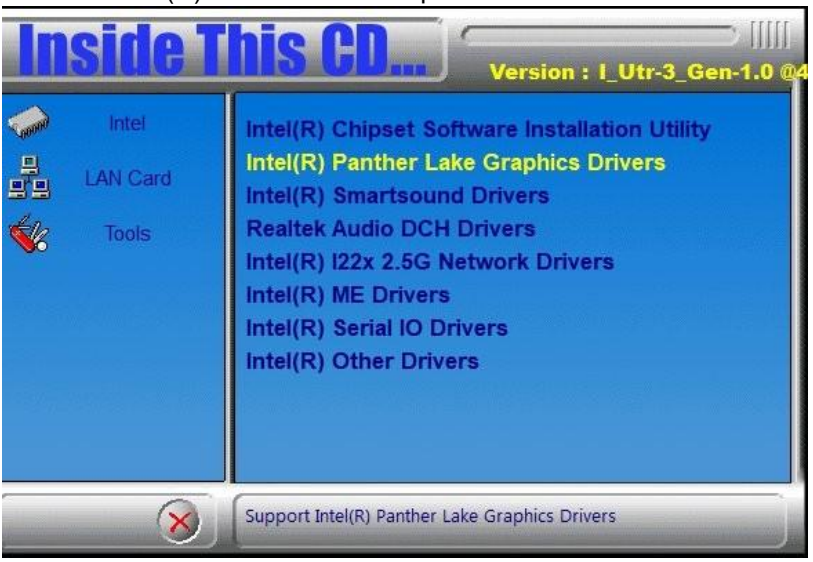


8. After completing the Chipset Setup Wizard, click **Finish**.

3.3 Graphics Drivers Installation

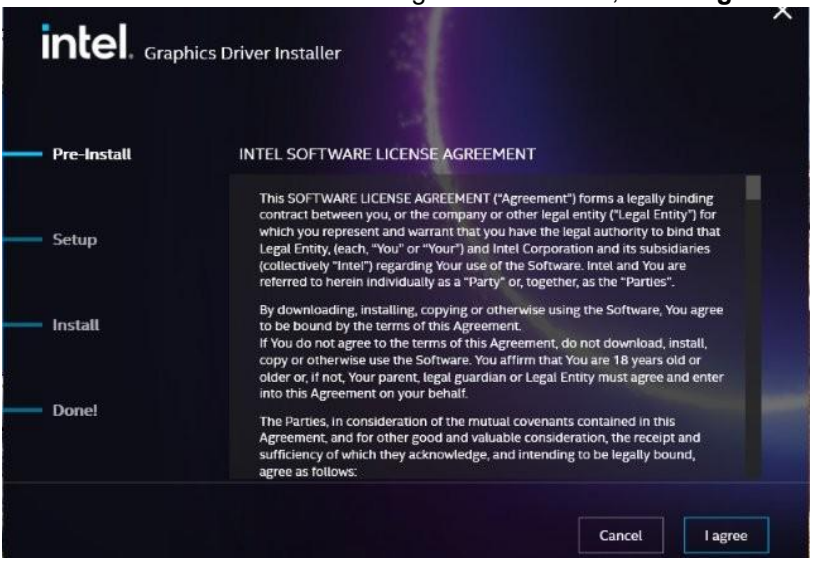
1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

2. Click Intel(R) Panther Lake Graphics Drivers.



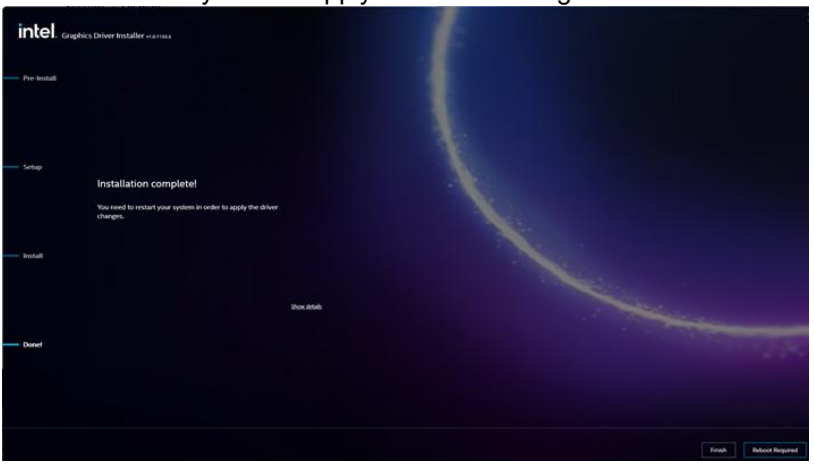
3. Click **Begin Installation**.

4. In the Intel Software License Agreement screen, click **I agree**.



5. Click Start for the installer to install the components.

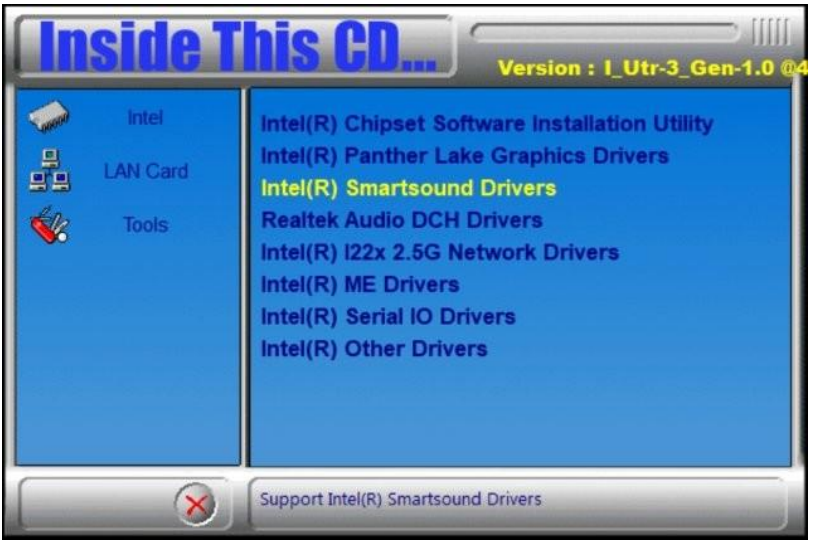
6. Restart the system to apply the driver changes. Click Finish.



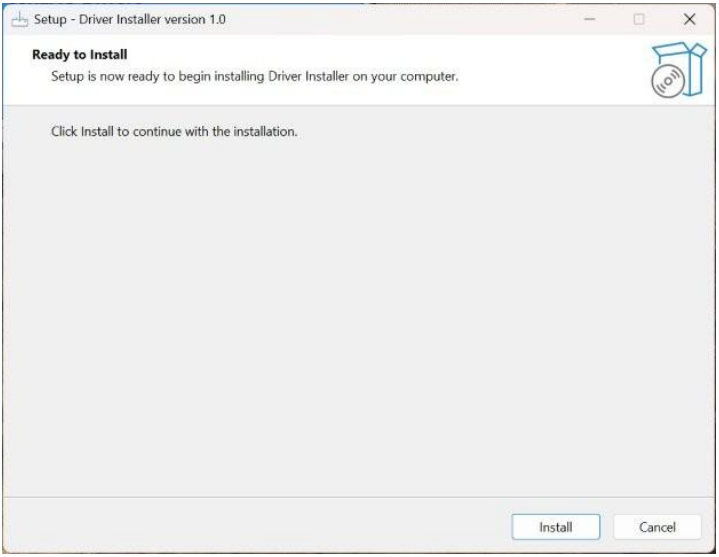
3.4 Intel(R) Smartsound Drivers Installation

1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

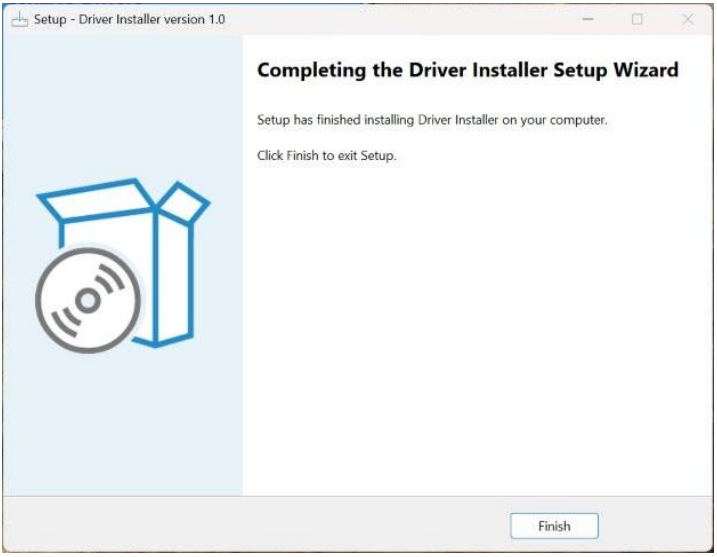
2. Click **Intel(R) Smartsound Drivers**.



3. In the Ready to Install screen, click **Install**.



4. When the driver is completely installed, click Finish.



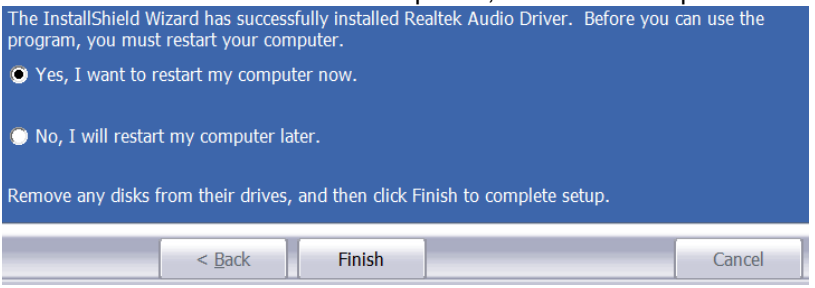
3.5 Realtek Audio DCH Drivers Installation

1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

2. Click **Realtek Audio DCH Drivers**.

3. On the Welcome screen of the InstallShield Wizard, click Next.

4. After installation has been completed, restart the computer.



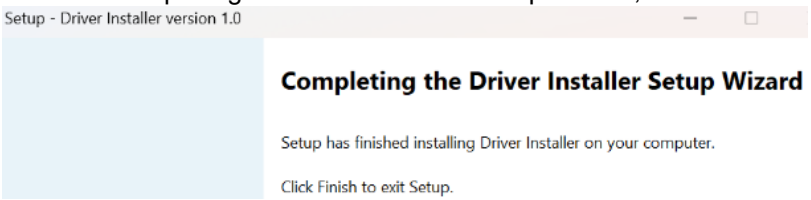
3.6 Intel I22x 2.5G Network Drivers Installation

1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

2. Click **Intel(R) I22x 2.5G Network Drivers**.

3. In the Ready to Install screen, click **Install**.

4. After completing the Driver Installer Setup Wizard, click **Finish**.

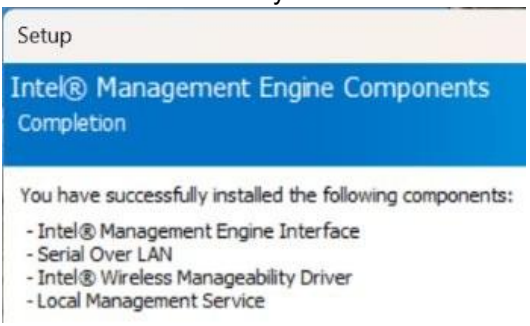


3.7 Intel® ME Drivers Installation

1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

2. Click **Intel(R) ME Drivers**.

3. On the Welcome screen, click **Next**.
4. Accept the terms of the software license agreement and click **Next**.
5. Click **Next** to accept the destination folder or click **Change** to choose another destination folder.
6. Click **Finish** when you have installed the ME components.



3.8 Intel® Serial IO Drivers Installation

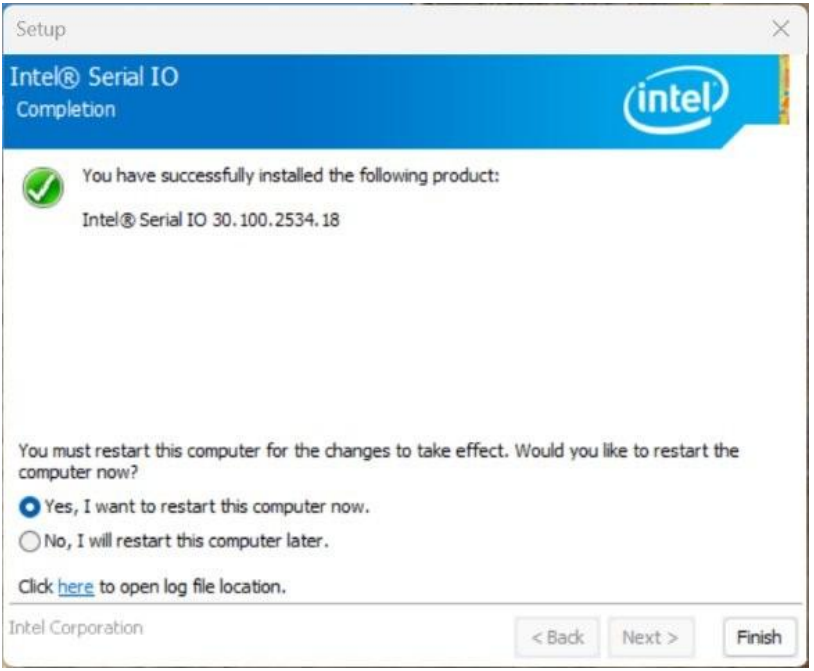
1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

2. Click **Intel(R) Serial IO Drivers**.

3. When the Welcome screen appears, click **Next**.
4. Accept the terms in the license agreement and click **Next**.
5. In the Readme File Information screen, click **Next**.

6. In the Confirmation screen, click **Next**.

7. When you successfully finished the installation, click **Finish**.



3.9 Intel® Other Drivers Installation

1. Click **Intel** and then **Intel(R) Panther Lake-P/U/H Chipset Drivers**.

2. Click **Intel(R) Other Drivers**.

3. Select the driver to be installed.

4. Follow the on-screen instructions to complete the installation.
5. After the driver has been successfully installed, click **Finish**.

3.9.1 Intel® ISSE Drivers Installation

1. Click **Intel** and then **Intel(R) Other Drivers**.
2. Click **Intel(R) ISSE Drivers**.
3. Click **Install** to begin the installation.
4. After the driver has been successfully installed, click **Finish**.

3.9.2 Intel® PMT Drivers Installation

1. Click **Intel** and then **Intel(R) Other Drivers**.
2. Click **Intel(R) PMT Drivers**.
3. Click **Install** to begin the installation.
4. After the driver has been successfully installed, click **Finish**.

3.9.3 Intel® NPU Drivers Installation

1. Click **Intel** and then **Intel(R) Other Drivers**.
2. Click **Intel(R) NPU Drivers**.
3. Click **Install** to begin the installation.
4. After the driver has been successfully installed, click **Finish**.

3.9.4 Intel® IPF Drivers Installation

1. Click **Intel** and **then Intel(R) Other Drivers**.
2. Click **Intel(R) IPF Drivers**.
3. Click **Install** to begin the installation.
4. After the driver has been successfully installed, click **Finish**.

3.9.5 Intel® DTT Drivers Installation

1. Click **Intel** and then **Intel(R) Other Drivers**.
2. Click **Intel(R) DTT Drivers**.
3. Click **Install** to begin the installation.
4. After the driver has been successfully installed, click **Finish**.

3.9.6 Intel® PPM Drivers Installation

1. Click **Intel** and then **Intel(R) Other Drivers**.
2. Click **Intel(R) PPM Drivers**.
3. Click **Install** to begin the installation.
4. After the driver has been successfully installed, click **Finish**.

This page is intentionally left blank.

Chapter 4
BIOS Setup

This chapter describes the different settings available in the AMI BIOS that comes with the board. The topics covered in this chapter are as follows:

- Main Settings
- Advanced Settings
- Security Settings
- Boot Settings
- Save & Exit
- MEBx

4.1 Introduction

The BIOS (Basic Input/Output System) installed in the ROM of your computer system supports Intel® processors. The BIOS provides critical low-level support for standard devices such as disk drives, serial ports and storage devices. It also provides password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

4.2 BIOS Setup

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Press the <Del> key to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup.

If you still need to enter Setup, restart the system by pressing the ”Reset” button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again.

The following message will appear on the screen:

```
Press <DEL> to Enter Setup
```

In general, press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help, and <Esc> to quit.

When you enter the BIOS Setup utility, the *Main Menu* screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Warning: It is strongly recommended that you avoid making any changes to the chipset defaults.

These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could make the system unstable and crash in some cases.

4.3 Main Settings

BIOS Setting	Description
System Date	Sets the date. Use the <Tab> key to switch between the Date elements.
System Time	Set the time. Use the <Tab> key to switch between the Time elements.

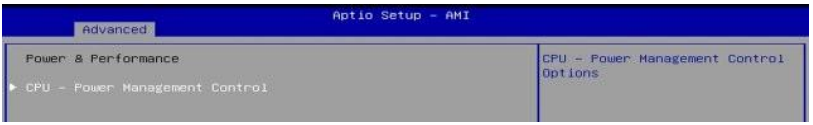
4.4 Advanced Settings

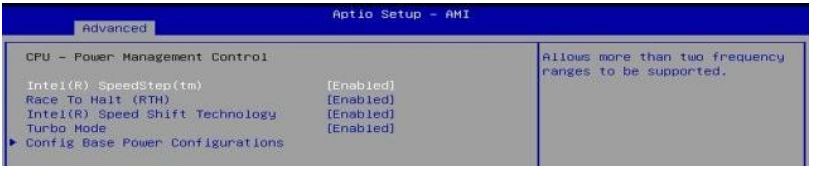
This section allows you to configure system features according to your preference.

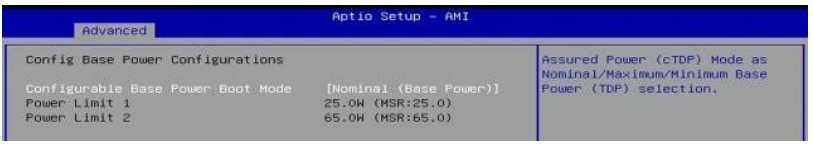
4.4.1 CPU Configuration

BIOS Setting	Description
CPU Configuration	CPU Configuration Parameters.
Efficient-core Information	Displays E-core information. L1/L2 cache includes both E-cores and LP-Ecores. L3 cache is shared by P-cores and E-cores on the ring and is not shared with LP-Ecores off the ring.
Performance-core Information	Displays P-core information.
Intel (VMX) Virtualization Technology	Enable or disable Intel Virtualization Technology.

4.4.2 Power & Performance







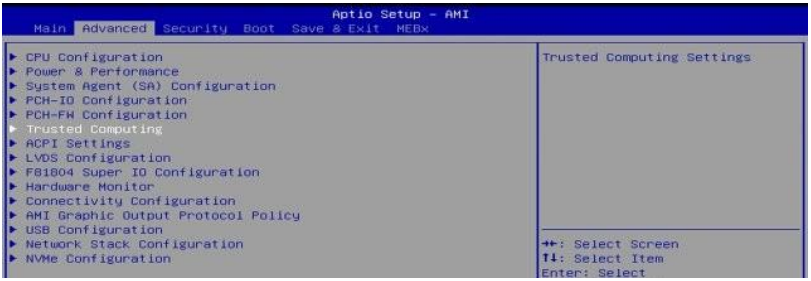
BIOS Setting	Description
Power & Performance	Configure processor power and performance settings.
CPU - Power Management Control	Configure CPU power management settings.
Intel Speedstep	Enable or disable Intel® SpeedStep Technology.
Race To Halt (RTH)	Enable or disable the Race To Halt feature. RTH allows the processor to quickly enter low-power C-states to reduce overall power consumption.
Intel Speed Shift Technology	Intel(R) Speed Shift Technology Enable or disable Intel® Speed Shift Technology. Enabling this feature supports the CPPC v2 interface to allow hardware-controlled P-states.
Turbo Mode	Enable/disable processor turbo mode.
Configurable Base Power Boot Mode	Assured Power (cTDP) Mode as Nominal/Maximum/Minimum Base Power (TDP) selection.
Power Limit 1	Set the processor long-duration power limit.
Power Limit 2	Set the processor short-duration turbo power limit.

4.4.3 System Agent (SA) Configuration

4.4.4 PCH-IO Configuration

4.4.5 PCH-FW Configuration

4.4.6 Trusted Computing

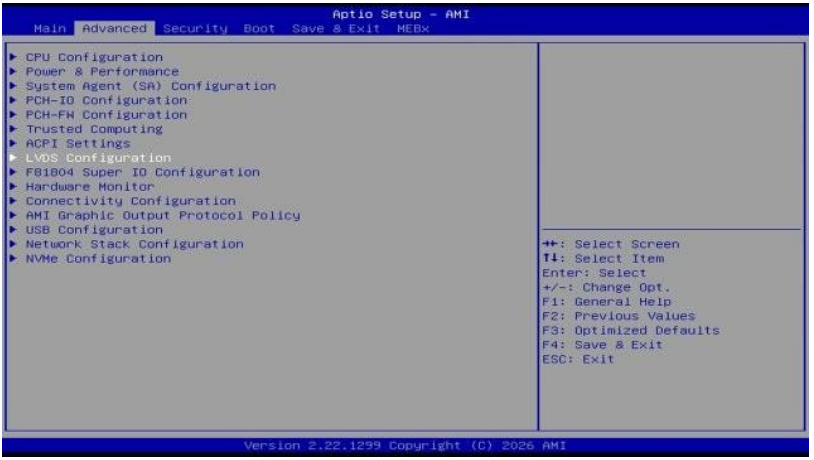


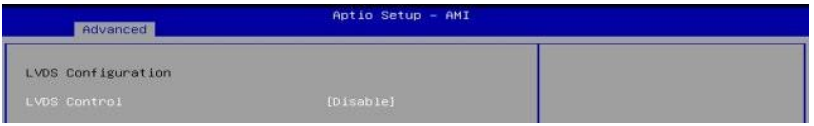
BIOS Setting	Description
Security Device Support	Enables / Disables BIOS support for security device. OS will not show security device. TCG EFI protocol and INT1A interface will not be available.
SHA256/384 PCR Bank	Enables / Disables PCR Bank.
Pending operation	Schedule an operation for the security device. Note: Your computer will reboot during restart in order to change state of security device.
Platform/Storage Hierarchy	Enables / Disables platform/storage hierarchy.
Endorsement Hierarchy	Enables / Disables endorsement hierarchy.
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.
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.

4.4.7 ACPI Settings

BIOS Setting	Description
ACPI Settings	Configure ACPI power management settings.
Enable Hibernation	Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.
ACPI Sleep State	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.

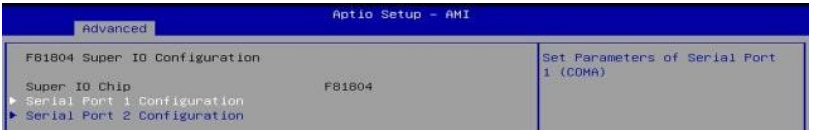
4.4.8 LVDS Configuration





BIOS Setting	Description
LVDS Configuration	Configure LVDS display parameters.
LVDS Control	Enable or disable the LVDS function.
Panel Color Depth	Selects the panel color depth. Options: 18 bit, 24bit (VESA/JEIDA)
LVDS Channel Type	Chooses the LVDS as single or dual channel.
Panel Type	Panel Type (Resolution) Options: 800 x 480, 800 x 600, 1024 x 768, 1280 x 768, 1280 x 800, 1280 x 960, 1280 x 1024, 1366 x 768, 1440 x 900, 1600 x 900, 1600 x 1200, 1680 x 1050, 1920 x 1080, 1920 x 1200
LVDS Brightness Level Control	Options: Level-1 (0, Min) to Level-8 (7, Max)

4.4.9 F81804 Super IO Configuration

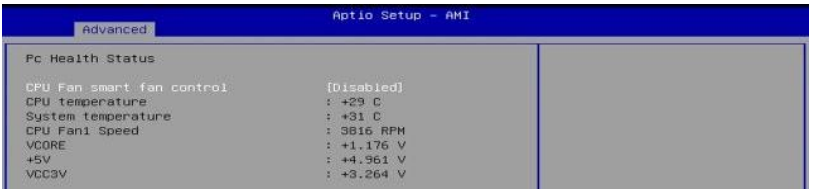


BIOS Setting	Description
Serial Ports Configuration	Sets parameters of serial ports. Enables / Disables the serial port and selects an optimal setting for the Super IO device.

Serial Port 1 Configuration

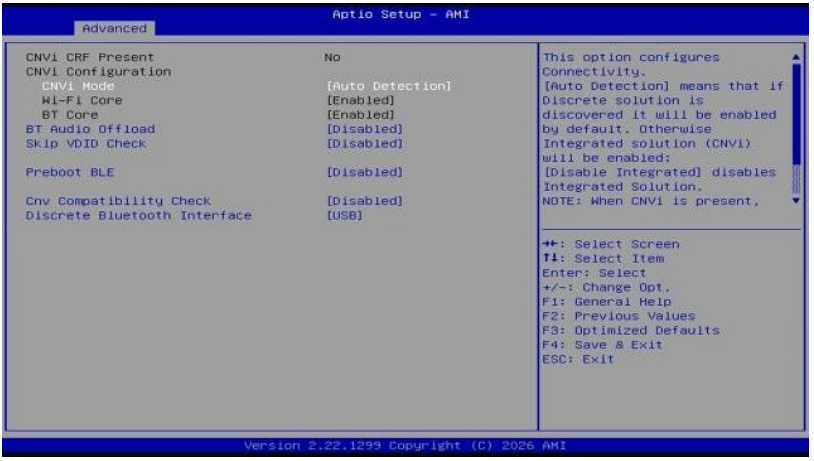
Serial Port 2 Configuration

4.4.10 Hardware Monitor



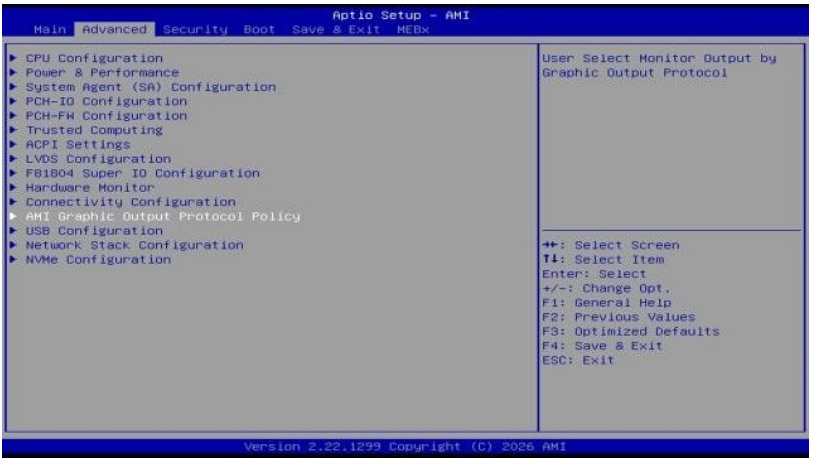
BIOS Setting	Description
CPU Fan Smart Fan Control	Options include Disabled, 50ºC, 60ºC, 70ºC and 80ºC.
Temperatures / Voltages	These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status.

4.4.11 Connectivity Configuration



BIOS Setting	Description
CNVI Mode	[Auto Detection] means that if Discrete solution is discovered it will be enabled by default, otherwise Integrated solution (CNVi) will be enabled. [Disable Integrated] disables Integrated Solution. NOTE: When CNVi is present, the GPIO pins that are used for radio interface cannot be assigned to other native functions.
Wi-Fi Core	Enable or Disable Wi-Fi Core.
BT Core	Enable or Disable Bluetooth Core.
BT Audio Offload	This is an option to Enable/Disable BT Audio Offload which enables audio input from BT device to the audio DSP and enables power efficient audio output to BT device.
Skip VDID Check	This is an option to Enable/Disable Skip VDID Check for CNVi.
Preboot BLE	This will be used to enable Preboot Bluetooth function.
Cnv Compatibility Check	This will be used to enable Cnv Bluetooth through sideload.
Discrete Bluetooth Interface	Select the discrete Bluetooth interface.

4.4.12 AMI Graphic Output Protocol Policy



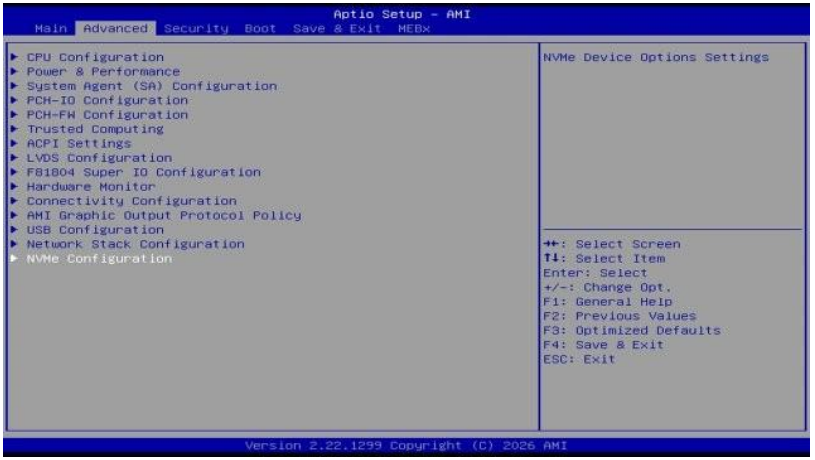
4.4.13 USB Configuration

BIOS Setting	Description
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.
XHCI Hand-off	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Enables / Disables the support for USB mass storage driver.
USB Transfer time-out	The time-out value (1 / 5 / 10 / 20 secs) for Control, Bulk, and Interrupt transfers.
Device reset time-out	Gives seconds (10 / 20 / 30 / 40 secs) to delay execution of Start Unit command to USB mass storage device.
Device power-up delay	Max. time the device will take before it properly reports itself to the Host Controller. '**Auto**' uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.

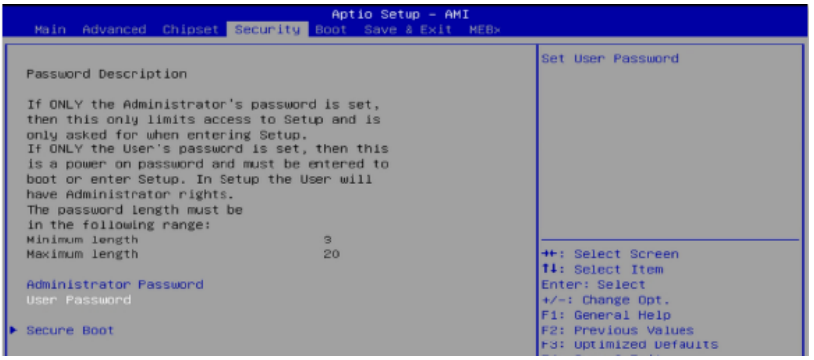
4.4.14 Network Stack Configuration

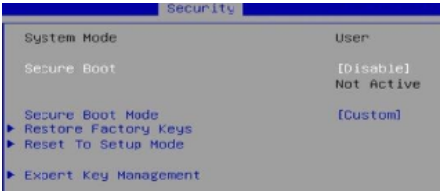
BIOS Setting	Description
Network Stack	Enable/Disable UEFI Network Stack
IPv4 PXE Support	If disabled, IPv4 PXE boot support will not be available.
IPv4 HTTP Support	If disabled, IPv4 HTTP boot support will not be available.
IPv6 Support	Enable/Disable IPv6 support. If disabled, IPv6 support will not be available.
IPv6 PXE Support	If disabled, IPv6 PXE boot support will not be available.
IPv6 HTTP Support	If disabled, IPv6 HTTP boot support will not be available.
PXE boot wait time	Wait time in seconds to press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value
Media detect count	Number of times the presence of media will be checked. Use either +/- numeric keys to set the value.

4.4.15 NVMe Configuration

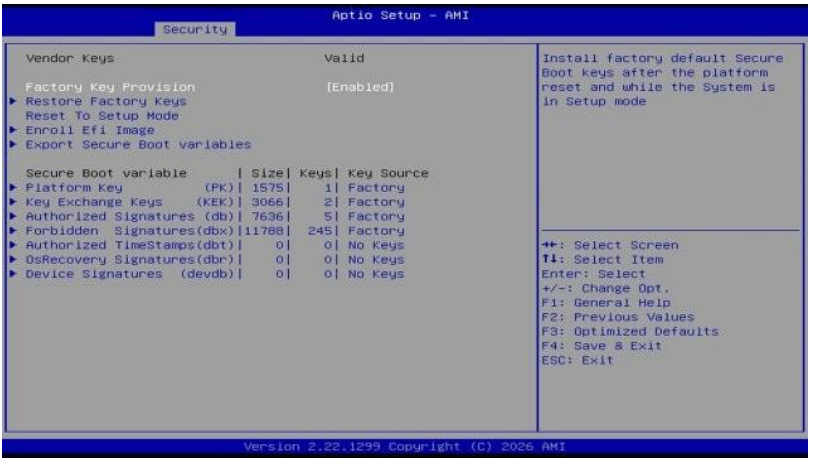


4.5 Security Settings



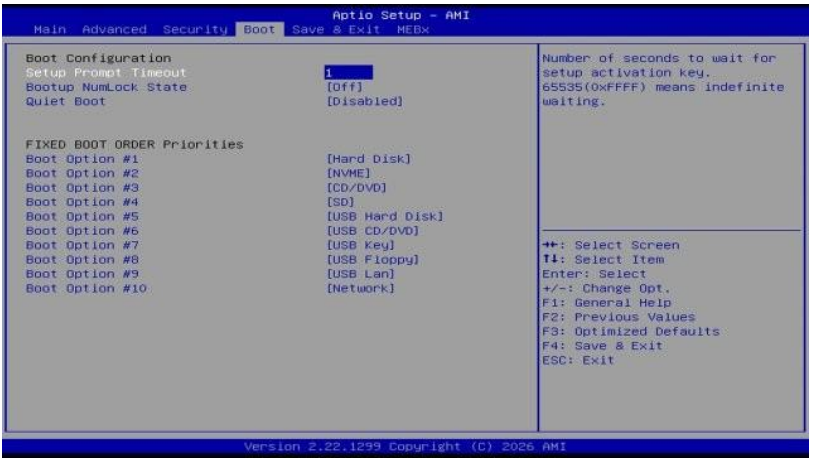


BIOS Setting	Description
Setup Administrator Password	Sets an administrator password for the setup utility.
User Password	Sets a user password.
Secure Boot	Secure Boot feature is Active if Secure Boot is enabled. Platform Key(PK) is enrolled and the system is in user mode. The mode change requires platform reset.
Secure Boot Mode	Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication.
Restore Factory Keys	Forces system to user mode. Install factory default Secure Boot key databases.
Reset to Setup Mode	Delete all Secure Boot key databases from NVRAM
Expert Key Management	Enables expert users to modify Secure Boot Policy variables without variable authentication.



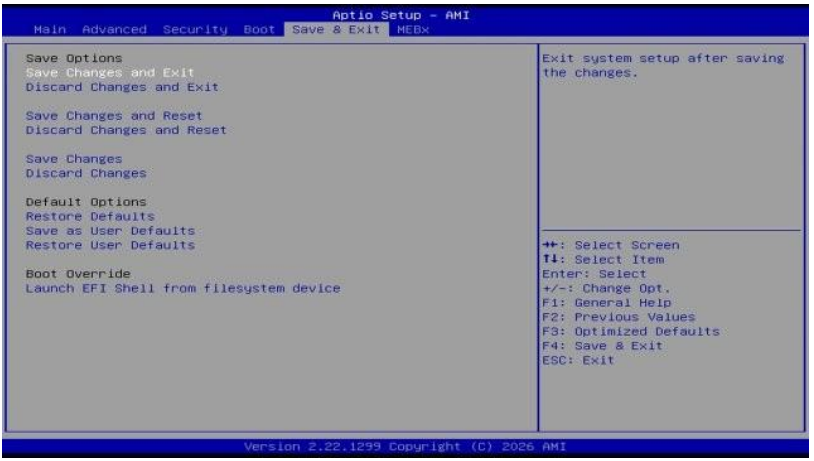
BIOS Setting	Description
Factory Key Provision	Install factory default Secure Boot keys after the platform reset and while the System is in Setup mode.
Restore Factory Keys	Force System to User Mode. Install factory default Secure Boot key databases.
Reset To Setup Mode	Delete all Secure Boot key databases from NVRAM.
Enroll EFI Image	Allow EFI image to run in Secure Boot mode. Enroll SHA256 Hash certificate of a PE image into Authorized Signature Database (db).
Export Secure Boot Variables	Save NVRAM content of Secure Boot variable to a file.
Platform Key (PK) Key Exchange Keys (KEK) Authorized Signatures (db) Forbidden Signatures (dbx) Authorized TimeStamps (dbt) OsRecovery Signatures (dbr) Device Signatures (devdb)	Enroll Factory Defaults or load keys from file: 1. Public key Certificate: a) EFI_SIGNATURE_LIST b) EFI_CERT_X509 (DER) c) EFI_CERT_RSA2048 (bin) d) EFI_CERT_SHAxxx 2. Authenticated UEFI Variable 3. EFI PE/COFF Image (SHA256) Key Source: Factory, Modified, Mixed

4.6 Boot Settings



BIOS Setting	Description
Setup Prompt Timeout	Number of seconds to wait for setup activation key. 65535 (0xFFFF) means indefinite waiting.
Bootup NumLock State	Selects the keyboard NumLock state.
Quiet Boot	Enables / Disables Quiet Boot option.
FIXED BOOT ORDER Priorities	Sets the system boot order.

4.7 Save & Exit Settings



BIOS Setting	Description
Save Changes and Exit	Exits system setup after saving the changes.
Discard Changes and Exit	Exits system setup without saving any changes.
Save Changes and Reset	Resets the system after saving the changes.
Discard Changes and Reset	Resets system setup without saving any changes.
Save Changes	Saves changes done so far to any of the setup options.
Discard Changes	Discards changes done so far to any of the setup options.
Restore Defaults	Restores / Loads defaults values for all the setup options.
Save as User Defaults	Saves the changes done so far as User Defaults.
Restore User Defaults	Restores the user defaults to all the setup options.
Launch EFI Shell from filesystem device	Attempts to launch EFI shell application (Shell.efi) from one of the available filesystem devices.

4.8 MEBx

Aptio Setup - AMI
Main Advanced Security Boot Save & Exit MEBx
Intel(R) ME Password
MEBx Login
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1299 Copyright (C) 2026 AMI

Aptio Setup - AMI
Main Advanced Security Boot Save & Exit MEBx
Intel(R) ME Password
MEBx Login
Enter Current Password
Select Screen
Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit
Version 2.22.1299 Copyright (C) 2026 AMI

This page is intentionally left blank.

Appendix

This section provides the mapping addresses of peripheral devices and the sample code of watchdog timer configuration.

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device.

Address	Device Description
0x00000A00-0x00000A0F	Motherboard resources
0x00000A20-0x00000A2F	Motherboard resources
0x00000A10-0x00000A1F	Motherboard resources
0x00000061-0x00000061	Motherboard resources
0x00000063-0x00000063	Motherboard resources
0x00000065-0x00000065	Motherboard resources
0x00000067-0x00000067	Motherboard resources
0x00000070-0x00000070	Motherboard resources
0x00000080-0x00000080	Motherboard resources
0x00000092-0x00000092	Motherboard resources
0x000000B2-0x000000B3	Motherboard resources
0x00000680-0x0000069F	Motherboard resources
0x0000164E-0x0000164F	Motherboard resources
0x0000EFA0-0x0000EFBF	Intel(R) SMBus Controller - E422
0x00000040-0x00000043	System timer
0x00000050-0x00000053	System timer
0x000003F8-0x000003FF	Communications Port (COM1)
0x000002F8-0x000002FF	Communications Port (COM2)
0x00001854-0x00001857	Motherboard resources
0x00000000-0x00000CF7	PCI Express Root Complex
0x00000D00-0x0000FFFF	PCI Express Root Complex
0x00002000-0x000020FE	Motherboard resources
0x00000020-0x00000021	Programmable interrupt controller
0x00000024-0x00000025	Programmable interrupt controller
0x00000028-0x00000029	Programmable interrupt controller
0x0000002C-0x0000002D	Programmable interrupt controller
0x00000030-0x00000031	Programmable interrupt controller
0x00000034-0x00000035	Programmable interrupt controller
0x00000038-0x00000039	Programmable interrupt controller
0x0000003C-0x0000003D	Programmable interrupt controller
0x000000A0-0x000000A1	Programmable interrupt controller
0x000000A4-0x000000A5	Programmable interrupt controller
0x000000A8-0x000000A9	Programmable interrupt controller
0x000000AC-0x000000AD	Programmable interrupt controller
0x000000B0-0x000000B1	Programmable interrupt controller
0x000000B4-0x000000B5	Programmable interrupt controller
0x000000B8-0x000000B9	Programmable interrupt controller
0x000000BC-0x000000BD	Programmable interrupt controller
0x000004D0-0x000004D1	Programmable interrupt controller
0x00000060-0x00000060	Standard PS/2 Keyboard
0x00000064-0x00000064	Standard PS/2 Keyboard
0x0000FFF8-0x0000FFFF	Intel(R) Active Management Technology - SOL (COM3)

B. Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

Level	Function
IRQ 4294967232	Intel(R) Innovation Platform Framework Processor Participant
IRQ 4294967294	PCI Express Root Port
IRQ 17	USB Synopsys Controller
IRQ 0	System timer
IRQ 4294967254-70	Intel(R) Ethernet Controller I226-LM
IRQ 4	Communications Port (COM1)
IRQ 3	Communications Port (COM2)
IRQ 4294967293	PCI Express Root Port
IRQ 4294967233	Intel(R) NPU
IRQ 4294967234	Intel(R) Platform Monitoring Technology (PMT) Driver
IRQ 14	Intel(R) Serial IO Generic GPIO Host Controller
IRQ 55-204	Microsoft ACPI-Compliant System
IRQ 256-511	Microsoft ACPI-Compliant System
IRQ 4294967274	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
IRQ 4294967235	Intel(R) Silicon Security Engine Interface
IRQ 1	Standard PS/2 Keyboard
IRQ 4294967272	Intel(R) Graphics
IRQ 12	Microsoft PS/2 Mouse
IRQ 19	Intel(R) Active Management Technology - SOL (COM3)
IRQ 4294967273	Intel(R) USB 3.20 eXtensible Host Controller - 1.20 (Microsoft)
IRQ 4294967275-91	Standard NVM Express Controller
IRQ 4294967236	Intel(R) Management Engine Interface #1
IRQ 4294967271	Intel® Smart Sound Technology BUS
IRQ 4294967292	PCI Express Root Port
IRQ 4294967237-53	Intel(R) Ethernet Controller I226-V

C. Watchdog Timer Configuration

The Watchdog Timer (WDT) is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sorts of circumstances, the timer will count to zero and the selected outputs will be driven.

Under normal circumstance, you will need to restart the WDT at regular intervals before the timer counts to zero.

Sample Code:

```
//-----------------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//-----------------------------------------------------------------------------
#include <dos.h>
#include <conio.h>
#include <stdio.h>
#include <stdlib.h>
#include " F81804.H"
//-----------------------------------------------------------------------------
int main (int argc, char *argv[]);
void EnableWDT(int);
void DisableWDT(void);
//-----------------------------------------------------------------------------
int main (int argc, char *argv[])
{
        unsigned char bBuf;
        unsigned char bTime;
        char **endptr;

        char SIO;

        printf("Fintek 81866 watch dog program\n");
        SIO = Init_ F81804();
        if (SIO == 0)
        {
                printf("Can not detect Fintek 81866, program abort.\n");
                return(1);
        }//if (SIO == 0)

        if (argc != 2)
        {
                printf(" Parameter incorrect!!\n");
                return (1);
        }

        bTime = strtol (argv[1], endptr, 10);
        printf("System will reset after %d seconds\n", bTime);

        if (bTime)
        {       EnableWDT(bTime); }
        else
```

```
        {           DisableWDT();           }
        return 0;
}
//-----------------------------------------------------------------------
void EnableWDT(int interval)
{
        unsigned char bBuf;

        bBuf = Get_ F81804_Reg(0x2B);
        bBuf &= (~0x20);
        Set_ F81804_Reg(0x2B,   bBuf);      //Enable WDTO

        Set_ F81804_LD(0x07);               //switch to logic device  7
        Set_ F81804_Reg(0x30,   0x01);      //enable timer

        bBuf = Get_ F81804_Reg(0xF5);
        bBuf &= (~0x0F);
        bBuf |= 0x52;
        Set_ F81804_Reg(0xF5,   bBuf);      //count mode is second

        Set_ F81804_Reg(0xF6,   interval);  //set timer

        bBuf = Get_ F81804_Reg(0xFA);
        bBuf |= 0x01;
        Set_ F81804_Reg(0xFA,   bBuf);      //enable WDTO output

        bBuf = Get_ F81804_Reg(0xF5);
        bBuf |= 0x20;
        Set_ F81804_Reg(0xF5,   bBuf);      //start counting
}
//-----------------------------------------------------------------------
void DisableWDT(void)
{
        unsigned char bBuf;

        Set_ F81804_LD(0x07);               //switch to logic device 7

        bBuf = Get_ F81804_Reg(0xFA);
        bBuf &= ~0x01;
        Set_ F81804_Reg(0xFA,   bBuf);      //disable WDTO  output

        bBuf = Get_ F81804_Reg(0xF5);
        bBuf &= ~0x20;
        bBuf |= 0x40;
        Set_ F81804_Reg(0xF5,   bBuf);      //disable WDT
}
//-----------------------------------------------------------------------
```

```
//-----------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//-----------------------------------------------------------------------
#include " F81804.H"
#include <dos.h>
//-----------------------------------------------------------------------
unsigned int F81804_BASE;
void Unlock_ F81804 (void);
void Lock_ F81804 (void);
//-----------------------------------------------------------------------
unsigned int Init_ F81804(void)
{
        unsigned int result;
        unsigned char ucDid;

         F81804_BASE = 0x4E;
        result = F81804_BASE;

        ucDid = Get_ F81804_Reg(0x20);
        if (ucDid == 0x07)                    //Fintek 81866
        {       goto   Init_Finish;           }

         F81804_BASE = 0x2E;
        result = F81804_BASE;

        ucDid = Get_ F81804_Reg(0x20);
        if (ucDid == 0x07)                    //Fintek 81866
        {       goto   Init_Finish;           }

         F81804_BASE = 0x00;
        result = F81804_BASE;

Init_Finish:
        return (result);
}
//-----------------------------------------------------------------------
void Unlock_ F81804 (void)
{
        outportb( F81804_INDEX_PORT,  F81804_UNLOCK);
        outportb( F81804_INDEX_PORT,  F81804_UNLOCK);
}
//-----------------------------------------------------------------------
void Lock_ F81804 (void)
{
        outportb( F81804_INDEX_PORT,  F81804_LOCK);
}
//-----------------------------------------------------------------------
void Set_ F81804_LD( unsigned char LD)
{
        Unlock_ F81804();
        outportb( F81804_INDEX_PORT,  F81804_REG_LD);
        outportb( F81804_DATA_PORT, LD);
        Lock_ F81804();
}
//-----------------------------------------------------------------------
void Set_ F81804_Reg( unsigned char REG, unsigned char DATA)
{
        Unlock_ F81804();
        outportb( F81804_INDEX_PORT, REG);
        outportb( F81804_DATA_PORT, DATA);
```

```
                    Lock_ F81804();
}
//-----------------------------------------------------------------------
unsigned char Get_ F81804_Reg(unsigned char REG)
{
                    unsigned char Result;
                    Unlock_ F81804();
                    outportb( F81804_INDEX_PORT, REG);
                    Result = inportb( F81804_DATA_PORT);
                    Lock_ F81804();
                    return Result;
}
//-----------------------------------------------------------------------



//-----------------------------------------------------------------------
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//-----------------------------------------------------------------------
#ifndef     F81804_H
#define     F81804_H                    1
//-----------------------------------------------------------------------
#define         F81804_INDEX_PORT   ( F81804_BASE)
#define         F81804_DATA_PORT    ( F81804_BASE+1)
//-----------------------------------------------------------------------
#define         F81804_REG_LD       0x07
//-----------------------------------------------------------------------
#define         F81804_UNLOCK       0x87
#define         F81804_LOCK         0xAA
//-----------------------------------------------------------------------
unsigned int Init_ F81804(void);
void Set_ F81804_LD( unsigned char);
void Set_ F81804_Reg( unsigned char,
unsigned char); unsigned char
Get_ F81804_Reg( unsigned char);
//-----------------------------------------------------------------------
#endif  //    F81804_H
```

D. Onboard Connector Reference Types

Function	Connector	Onboard Type	Compatible Mating Type
Audio	J1	Hao Guo Xing Ye DF11-12S-PA66H	Hirose DF11-12DS-2C
Front Panel Setting	J19	E-CALL 2.5 mm-pitch pin header (Male)	Dupont 2.5mm-pitch (Female)
USB 2.0	J16	Hao Guo Xing Ye DF11-8S-PA66H	Hirose DF11-8DS-2C
COM2 Serial Port	J8	Hao Guo Xing Ye DF11-10S-PA66H	Hirose DF11-10DS-2C
DC Input	J5	Hao Guo Xing Ye WAFER396-2S-WV	JST VHR-2N
Digital I/O	J6	Dupont 2.00 mm-pitch pin header (Male)	Dupont 2.00 mm-pitch (Female)
LCD Backlight	J12	E-CALL 0110-261-0060	MOLEX 53047 1.25mm WAFER S/T TYPE 6PIN
LVDS	J13, J17	Hirose DF20G-20DP-1V	Hirose DF20A-20DS-1C