

# 3I140DW

**Intel® Core™ Ultra 7/5 Series  
(Meteor Lake-U/H) processor,  
DDR5 LAN / HDMI / DP / USB / M.2 / COM**

**All-in-one SBC**

**Intel® 14th Gen Meteor Lake-U/H 7/5 series Core Ultra CPU**

**HDMI, DP, eDP, Type C DP ALT Mode**

**5 x 2.5 GE, 4 x COM, HD Audio**

**3 x USB 3.2, 3 x USB 2.0**

**3 x M.2, 1 x Nano SIM, DI/DO**

**1 x PCIe x 16**

## CAUTION

**RISK OF EXPLOSION IF BATTERY IS REPLACED  
BY AN INCORRECT TYPE.**

**DISPOSE OF USED BATTERIES ACCORDING  
TO THE INSTRUCTIONS**

**NO. 3I140DW**

**Release date: DEC. 02. 2025**

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User Manual edition 0.2, DEC. 02. 2025

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## Warning !

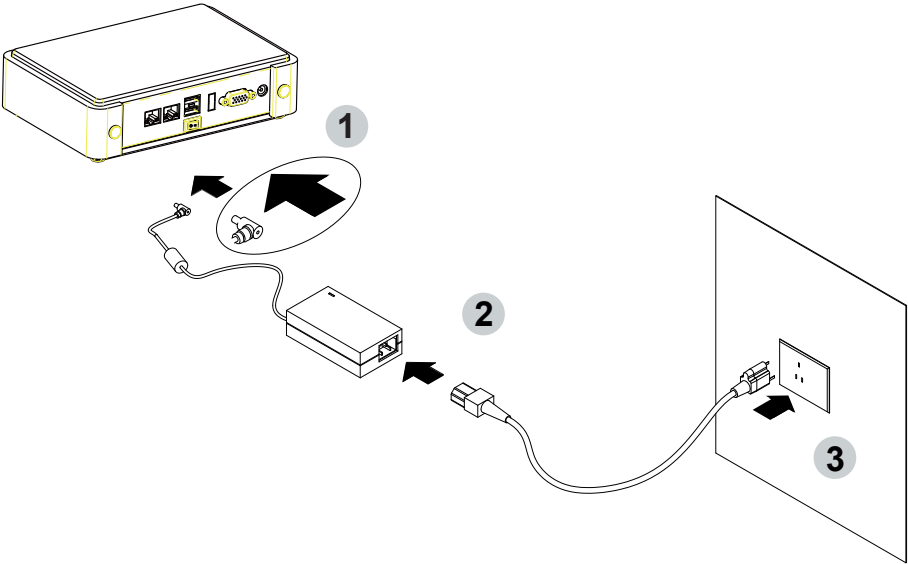
1. Battery  
Batteries on board are consumables.  
The life time of them are not guaranteed.
2. Fanless solution with HDD  
The specification & limitation of HDD should be considered carefully when the fanless solution is implemented.
3. We will not give further notification in case of changes of product information and manual.
4. SATA interface does not support Hot SWAP function.
5. There might be a 20% inaccuracy of WDT at room temperature.
6. Please make sure the voltage specification meets the requirement of equipment before plugging in.
7. There are two types of SSD, commercial grade and industrial grade, which provide different read/write speed performance, operation temperature and life cycle. Please contact sales for further information before making orders.
8. Caution! Please notice that the heat dissipation problem could cause the MB system unstable. Please deal with heat dissipation properly when buying single MB set.
9. Please avoid approaching the heat sink area to prevent users from being scalded with fanless products.
10. If users repair, modify or destroy any component of product unauthorizedly, We will not take responsibility or provide warranty anymore.
11. DO NOT apply any other material which may reduce cooling performance onto the thermal pad.
12. It is important to install a system fan toward the CPU to decrease the possibility of overheating / system hanging up issues, or customer is suggested to have a fine cooling system to dissipate heat from CPU.

## \* Hardware Notice Guide

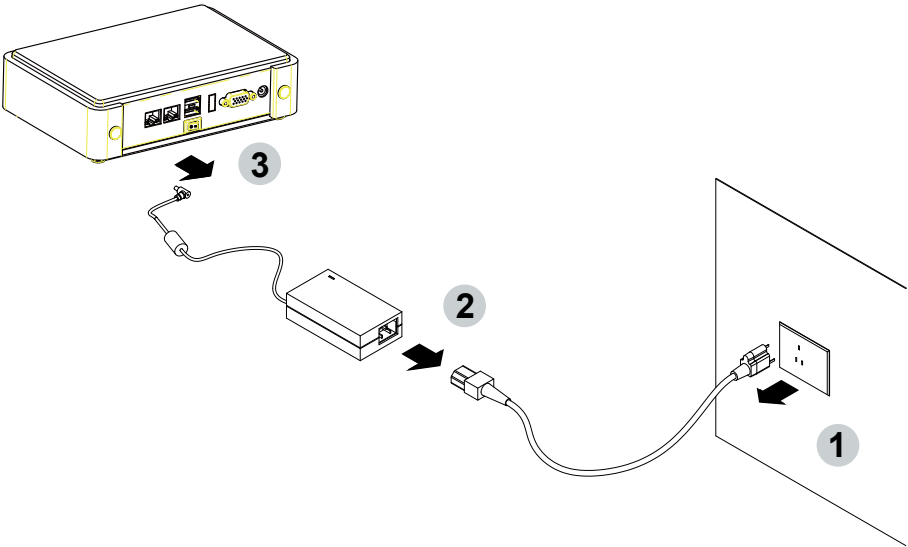
1. Before linking power supply with the motherboard, please attach DC-in adapter to the motherboard first. Then plug the adapter power to AC inlet.  
Always shut down the computer normally before you move the system unit or remove the power supply from the motherboard. Please unplug the DC-in adapter first and then unplug the adapter from the AC inlet.  
Please refer photo 1 as standard procedures.
2. In case of using DIRECT DC-in (without adapter), please check the allowed range for voltage & current of cables. And make sure you have the safety protection for outer issues such as short/broken circuit, overvoltage, surge, lightning strike.
3. In case of using DC-out to an external device, please make sure its voltage and current comply with the motherboard specification.
4. The total power consumption is determined by various conditions (CPU/motherboard type, device, application, etc.). Be cautious to the power cable you use for the system, one with UL standard will be highly recommended.
5. It's highly possible to burn out the CPU if you change/ modify any parts of the CPU cooler.
6. Please wear wrist strap and attach it to a metal part of the system unit before handling a component. You can also touch an object which is ground connected or attached with metal surface if you don't have wrist strap.
7. Please be careful to handle & don't touch the sharp-pointed components on the bottom of PCBA.
8. Remove or change any components from the motherboard will invalidate the warranty of the motherboard.
9. Before you install/remove any components or even make any jumper setting on the motherboard, please make sure to disconnect the power supply first.  
(follow the aforementioned instruction guide)
10. "POWERON after PWR-Fail" function must be used carefully as below:  
When the DC power adaptor runs out of power, unplug it from the DC current;  
Once power returns, plug it back after 5 seconds.  
If there is a power outage, unplug it from the AC current, once power returns, plug it back after 30 seconds. Otherwise it will cause system locked or made a severe damage.
11. **Always insert / unplug the DC-in horizontally & directly to / from the motherboard. DO NOT twist, it is designed to fit snugly.**  
**Moreover, erratic pull / push action might cause an unpredictable damage to the component & system unit.**

**Photo 1**

**Insert**



**Unplug**



---

# Chapter-1

## General Information

The 3I140DW is the 3.5 Plus SBC with Intel® Core™ Ultra 7/5 series processor Meteor Lake-P/U, Intel® Arrow Lake-P/U. It comes equipped with two DDR5 SO-DIMM slots, supporting up to 64GB of memory, and offers multiple display interfaces, including HDMI, DP, Type C DP ALT and LVDS/eDP selectable by BIOS. 3I140DW provides robust networking capabilities with 5 Intel® 2.5G LAN ports and a wide array of I/O options, such as Serial Port, CANBus, USB 3.2, USB 2.0, and SATA III. It also features a PCIe golden finger, Nano SIM slot, and M.2 slots (M-Key, 2 x B-Key) for additional storage, wireless modules, and 5G connectivity. With a versatile DC input range of 9V to 36V, the 3I140DW is adaptable to various power sources and environments, making it perfect for use in industrial automation, manufacturing, transportation, healthcare, and other edge AI applications.

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## 1-1 Major Feature

1. Intel® Core™ Ultra 5 125U/H, 135U/H, Ultra 7 155U/H, 165U/H Meteor Lake-U/H series processor. Intel® Core™ Ultra 5 225U/H, 235U/H, Ultra 7 255U/H, 265U/H Arrow Lake-U/H series processor. includes Integrated Display Engine, GPU and Integrated Memory Controller.
2. Intel® Graphics for Core™ Ultra 1xxU/H, Intel® Arc™ graphics for Core™ Ultra 2xxU/H
3. DDR5 SODIMM slot x 2, up to 64GB
4. Support 5 x 2.5Gbps Intel LAN port.
5. Support 4 x RS232 selectable to RS485 / RS422 by BIOS
6. 3 x USB 3.2 and 3 x USB 2.0
7. Support 2 CANBus
8. ALC888 HD Audio Specification 1.0 Two channels sound. Two channel Class D Audio Amplifier.
9. Support extended 1 x M.2 2280 M-key PCIe x 4 support NVMe, 1 x M.2 3042 B-Key for USB3.0 / 2.0 interface with Nano SIM socket, 1 x M.2 3042 B-Key for PCIe and USB 2.0 interface.
10. Support 1 SATA port
11. Hardware digital Input & Output, 4 x DI / 4 x DO, Hardware Watch Dog Timer, 0~255 sec programmable
12. 1 PCIe x 16 Golden Finger supports 1 PCIe x 8 for H series CPU, PCIe x 1 for U series CPU only.
13. Support TPM 2.0
14. Wide range power input +9V~+36V

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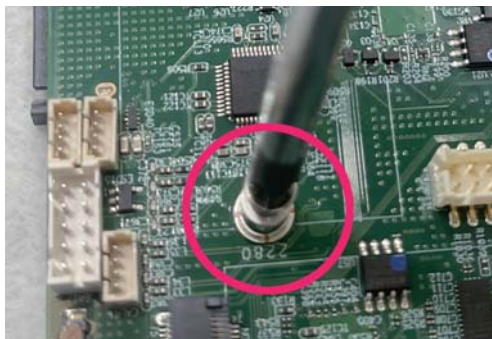
## 1-2 Specification

1. **SOC:** Intel® Core™ Ultra 5 125U(1.3/4.3 GHz), 135U(1.1/4.4 GHz), Ultra 7 155U(1.2/4.3 GHz), 165U(1.2/4.9 GHz), Ultra 5 125H(1.2/4.5 GHz), 135H(1.2/4.6 GHz), Ultra 7 155H(1.4/4.8GHz), 165H(1.4/5.0 GHz), Meteor Lake series processor. Intel® Core™ Ultra 5 225U(1.3/4.8 GHz), 235U(1.6/4.9 GHz), Ultra 7 255U(1.7/5.2 GHz), 265U(1.7/5.3 GHz), Ultra 5 225H(1.3/4.9 GHz), 235H(1.8/5.0 GHz), Ultra 7 255H(1.5/5.1GHz), 265H(1.7/5.3 GHz), Arrow Lake series processor.
2. **Memory:** DDR5 SODIMM slot x 2, up to 64GB
3. **Display:** HDMI, DP, Type DP ALT Mode, LVDS/ eDP
4. **SATA:** Integrated Serial ATA Host Controller 1 SATA port, SATA Gen3 Data transfer rates up to 6.0 Gb/s (600 MB/s).
5. **LAN:** 5 Intel I226-IT LAN chipset with 2.5Gbps for PCIe x 1 V2.1
6. **I/O Chip:** Switch chipset for 4 ports RS232 / RS422 / RS485 selected by BIOS
7. **USB:** 3 type A USB 3.2 and 1 USB 2.0, 2 USB 2.0 (internal)
8. **CANBus:** 2 CANBus support CAN 2.0
9. **Sound:** Support line in, line out and MIC in, Audio Amplifier: Ti TPA2012D2RTJ Class D 2.1W Audio amplifier
10. **WDT/DIO:** Hardware digital Input & Output, 4 x DI / 4 x DO (Option) / Hardware Watch Dog Timer, 0~255 sec programmable
11. **Expansion interface:** 1 x M.2 2280 M-key PCIe x 4 support NVMe, 1 x M.2 3042 B-Key for USB3.0/2.0 interface with Nano SIM socket, 1 x M.2 3042 B-Key for PCIe and USB2.0 interface.
12. **Golden Finger:** PCIe x 16 Golden Finger supports 1 PCIe x 8 for H series CPU, PCIe x 1 for U series CPU only.
13. **BIOS:** AMI UEFI BIOS
14. **Dimension:** 155 x 150 mm
15. **Power:** On board DC +9V~+36V

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## 1-3 Directions for installing the M.2M Key for NVMe SSD / PCIe x4

1. Unscrew the screw on the board



2. Plug in the Mini Card in a 45 angle

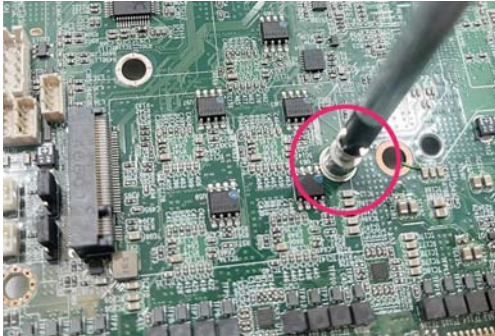


3. Gently push down the Mini Card and screw the screw back.



## 1-4 Directions for installing the M.2B Key for USB 3.2 Gen1 & USB 2.0

1. Unscrew the screw on the board



2. Plug in the Mini Card in a 45 angle



3. Gently push down the Mini Card and screw the screw back.



## 1-5 Directions for installing the M.2B Key for PCIe x1 & USB 2.0

1. Unscrew the screw on the board



2. Plug in the Mini Card in a 45 angle

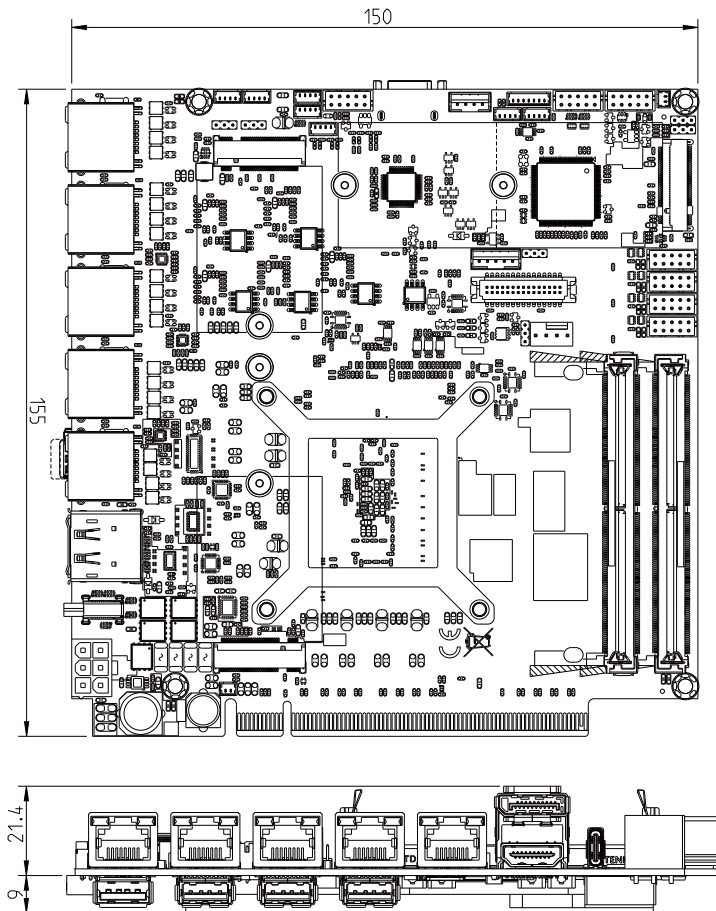


3. Gently push down the Mini Card and screw the screw back.



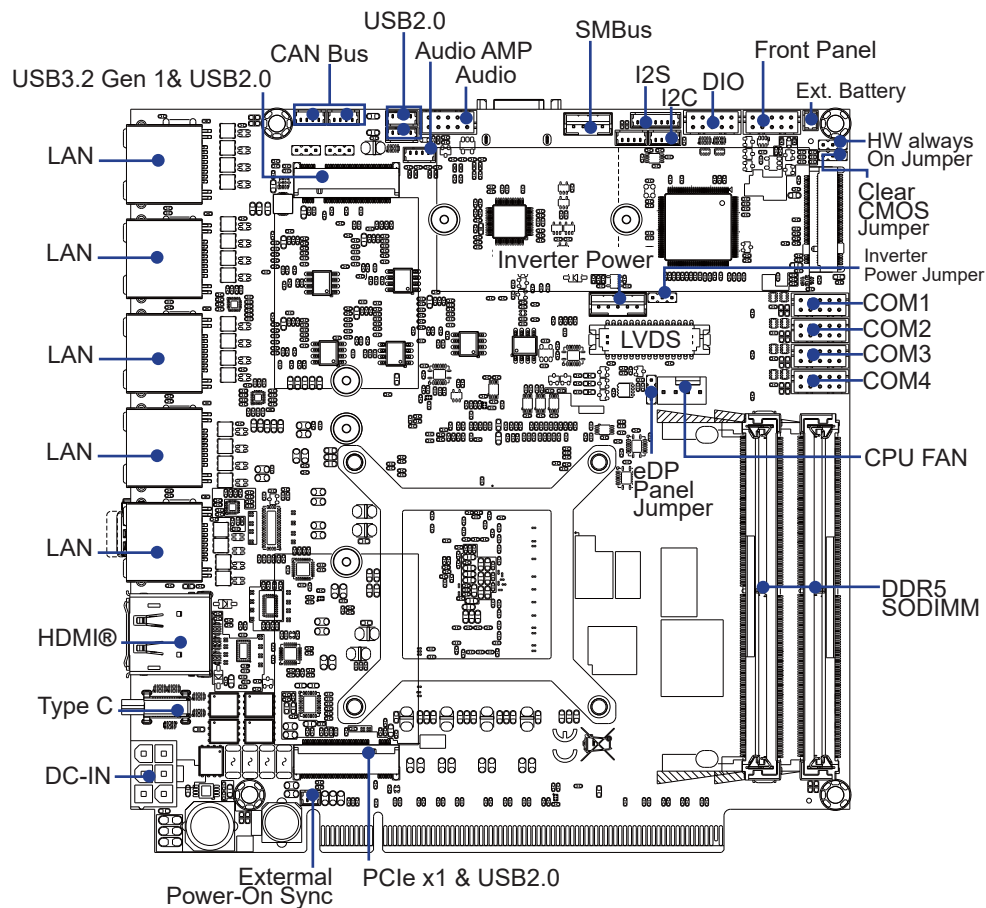
## Chapter-2

### 2-1 Dimension-3I140DW

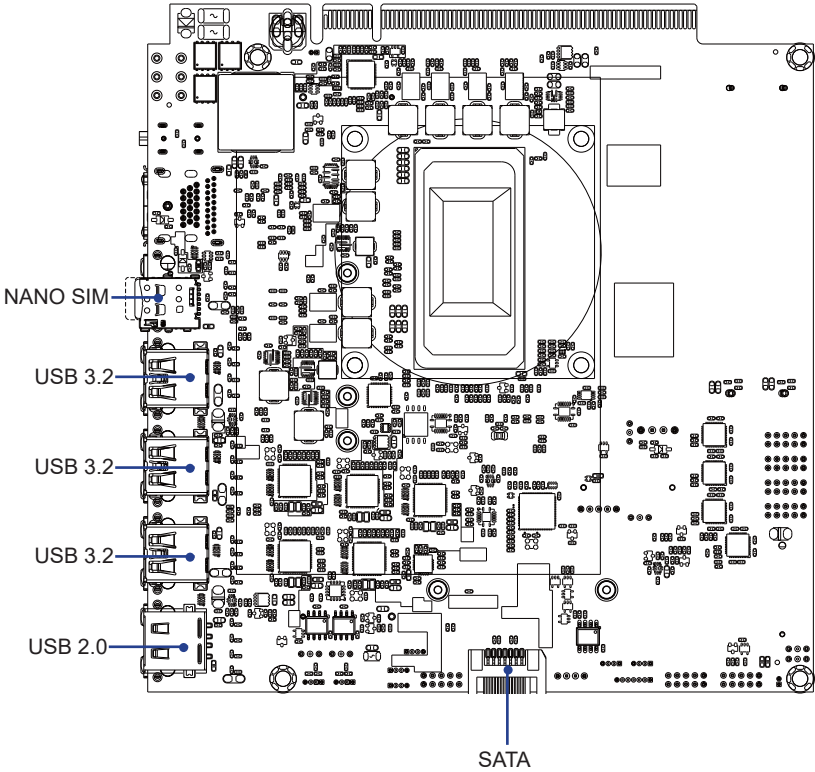


# 2-2 Layout-3I140DW-Function Map

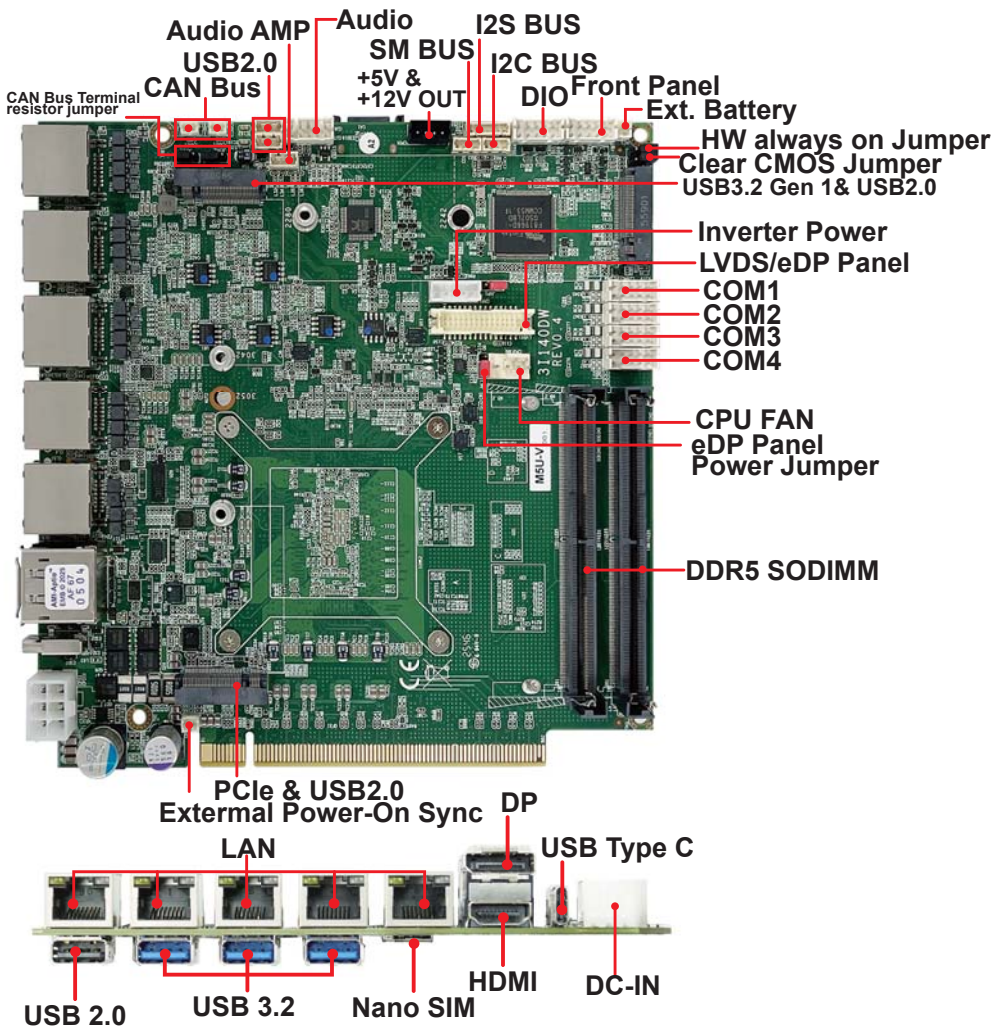
TOP



2-2-1 Layout-3I140DW-Function Map  
BOT

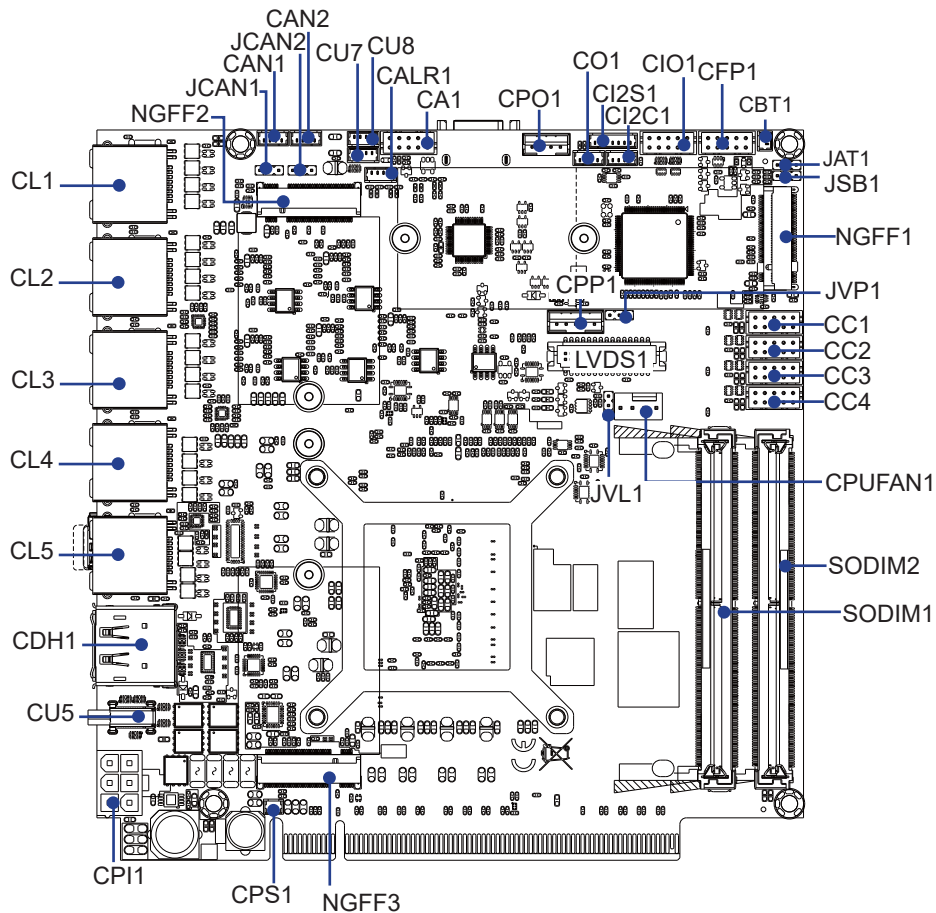


### 2-3 Function Map-3I140DW



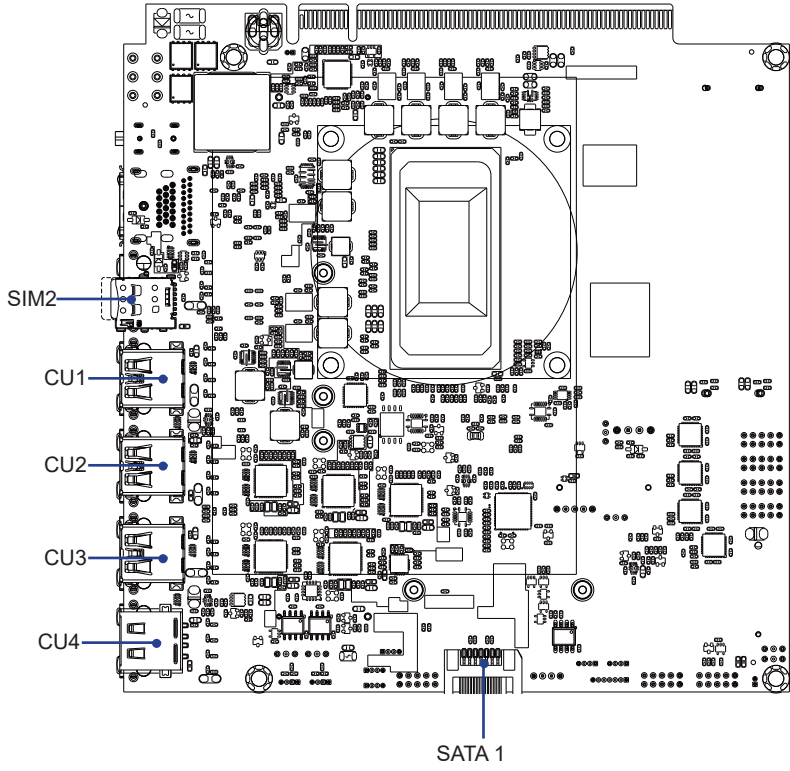
# 2-4 Connector MAP-3I140DW

TOP



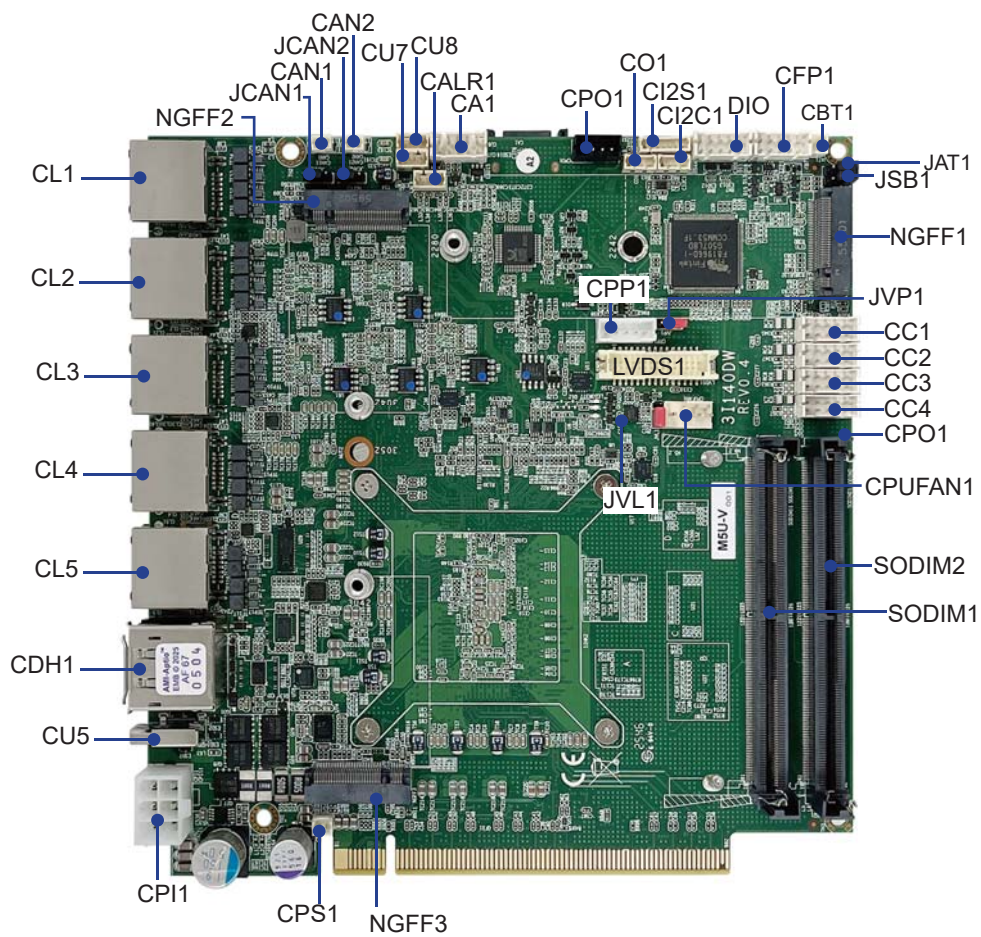
# 2-4-1 Connector MAP-31140DW

BOT



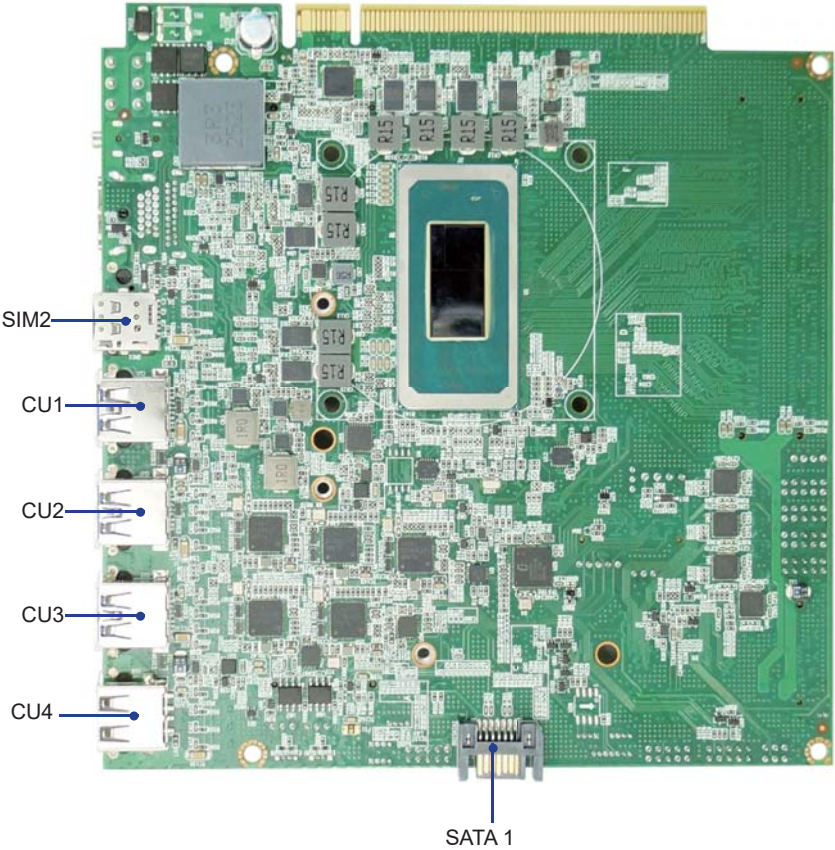
# 2-5 Diagram-3I140DW

TOP



# 2-5-1 Diagram-31140DW

BOT



---

## 2-6 List of Jumpers

JSB1: CMOS DATA Clear

JAT1: HW system always on

JVL1: LVDS/eDP panel power select

JVP1: LVDS panel Inverter power select

JCAN1/2: CAN1/2 Terminal resistor used by jumper

## 2-7 Jumper Setting Description

A jumper is ON as a closed circuit with a plastic cap covering two pins. A jumper is OFF as an open circuit without the plastic cap. Some jumpers have three pins, labeled 1, 2, and 3. You could connect either pin 1 and 2 or 2 and 3. The below figure 2.2 shows the examples of different jumper settings in this manual.

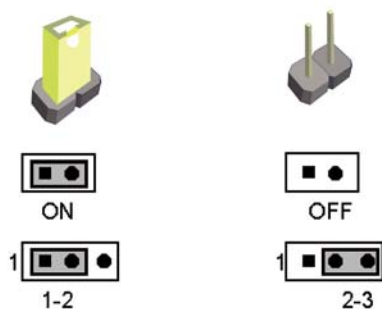


Figure 2.2

All jumpers already have its default setting with the plastic cap inserted as ON, or without the plastic cap as OFF. The default setting may be referred in this manual with a " \* " symbol .

## 2-8 JSB1: CMOS DATA Clear

A battery must be used to retain the motherboard configuration in CMOS RAM.  
Close Pin1 and pin 2 of JSB2 to store the CMOS data.

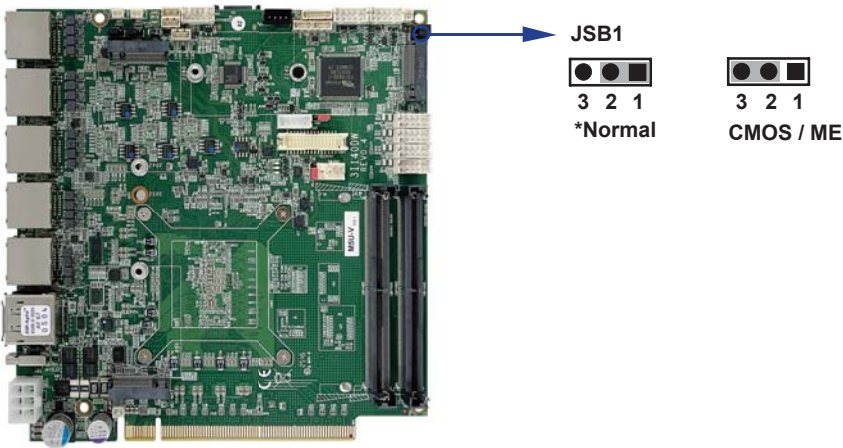
To clear the CMOS, follow the procedures below:

- 1. Turn off the system and unplug the AC power
- 2. Remove DC IN power cable from DC IN power connector
- 3. Locate JSB2 and close pin 1-2 for few seconds
- 4. Return to default setting by Close pin 1-2
- 5. Connect DC IN power cable back to DC IN Power connector

JSB1	DESCRIPTION
*1-2	Normal Set
2-3	CMOS / ME data clear

Note: Do not clear CMOS unless

- 1. *Troubleshooting*
- 2. *Forget password*
- 3. *You fail over-clocking system*



## 2-9 JAT1: HW system always on

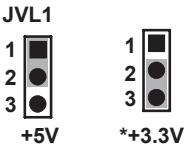
JAT1	DESCRIPTION
*1-2	Normal Set
2-3	HW system always on



## 2-10 JVL1: LVDS/eDP panel power select

JVL1	DESCRIPTION
1-2	+5V
*2-3	+3.3V

Note: Attention ! Check Device Power in spec



## 2-11 JVP1: LVDS panel Inverter power select

JVP1	DESCRIPTION
*1-2	+12V
2-3	+5V

Note: Attention ! Check Device Power in spec



JVP1



## 2-12 JCAN1/2: CAN1/2 Terminal resistor used by jumper

JCAN1/2	DESCRIPTION
1-2	No Terminal resistor
*2-3	Install Terminal resistor (120Ω)

JCAN1



No  
Terminal  
resistor



\*Install  
Terminal  
resistor  
(120Ω)

JCAN2



No  
Terminal  
resistor



\*Install  
Terminal  
resistor  
(120Ω)



# Chapter-3

## Connection

This chapter provides all necessary information of the peripheral's connections, switches and indicators. Always power off the board before you install the peripherals.

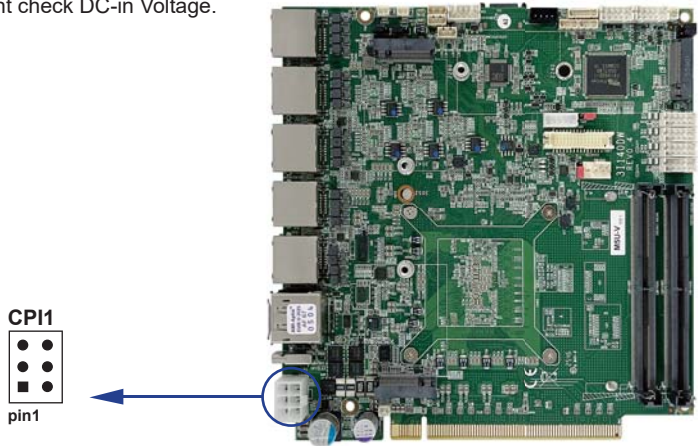
### 3-1 List of Connectors

CPI1	DC-IN 2x3pin (4.20mm) ATX Connector
CPO1	+12V / +5V power output 4 pin (2.00mm) Black wafer
CBT1	COMS battery 1x2pin (1.25mm) wafer
CC1/2/3/4	COM 2x5pin (2.00mm) wafer
CFP1	Front Panel connector 2x5pin (2.00mm) wafer
CIO1	4DI/4DO 2x5pin (2.00mm) wafer
CPUFAN1	CPU Fan 1x4pin (2.54mm) wafer
LVDS1	LVDS / EDP Panel 2x15pin (1.25mm) wafer
CPP1	Panel inverter power connector 1x5pin (2.00mm) wafer
CDH1	HDMI1 / DP1 Connector
CU1/2/3	USB 3.0 Type A connector
CU4	USB 2.0 Type A connector
CU5	USB Type C connector
CU7~8	USB 2.0 port 1x4pin (1.25mm) wafer
CAN1/2	CAN BUS 1x2pin (1.25mm) wafer
CL1/2/3/4/5	LAN RJ45 Connector
CL11/21/31/41/51	LAN wafer x 5 (2x4pin 2.00mm) (For OEM)
CLED1/2/3/4/5	LAN LED wafer x 5 (1x4pin 1.25mm) (For OEM)
CO1	SM Bus 1x4pin (1.25mm) wafer
CI2C1	I2C Bus 1x4pin (1.25mm) wafer
CI2S1	I2S Bus 1x7pin (1.25mm) wafer
CA1	Line-out / Line-in / Mic-in 2x5pin (2.00mm) wafer
CALR1	Amplifier Line-out Right / Left channel 1x4pin (1.25mm) wafer
SATA1	SATA connector 7pin
SODIMM1/2	DDR5 Vertical SODIMM
SODIMM1	DDR5 Channel A Horizontal SODIMM H: 5.2mm (For OEM)
SODIMM2	DDR5 Channel B Horizontal SODIMM H: 9.2mm (For OEM)
NGFF1	M.2 NGFF M key sockets 75pin H: 8.5mm
NGFF2/3	M.2 NGFF B key sockets 75pin H: 8.5mm
SIM2	Nano SIM card socket
CPS1	External Power-On sync 2 pin (1.25mm) wafer.
GFX1	PCI Express x16 Gold Finger (For LEX Pin Define)

### 3-2 CPI1: DC Power input (2x3pin 4.20mm ATX Connector)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DC-IN	2	GND
3	DC-IN	4	GND
5	DC-IN	6	GND

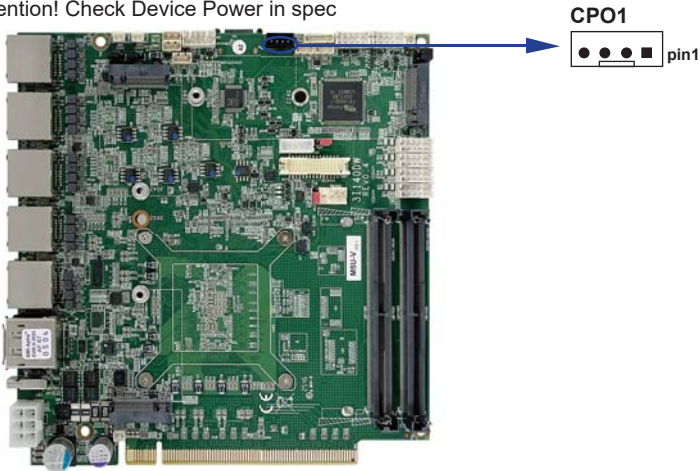
Note: 1. Very important check DC-in Voltage.



### 3-3 CPO1: +5V / +12V DC output (1x4 pin 2.00mm Black Wafer)

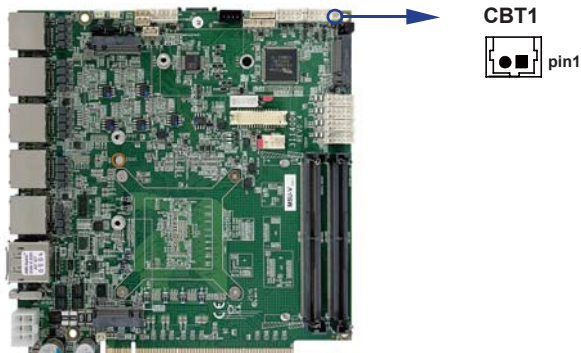
PIN NO.	DESCRIPTION
1	+5V
2	GND
3	GND
4	+12V

Note: Attention! Check Device Power in spec



### 3-4 CBT1: CMOS Battery (1x2 pin 1.25mm Wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+3V



### 3-5 CC1/CC2/CC3/CC4: COM Port (2x5 pin 2.00mm Wafer)

● **RS232 Mode**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI/VCC	10	+5V

● **RS485 Mode**

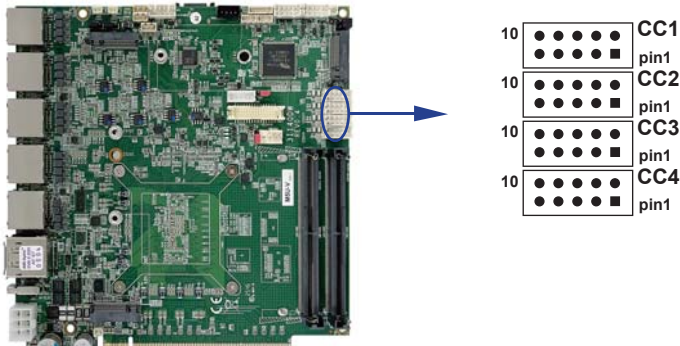
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Data-	2	Data+
3	NC	4	NC
5	GND	6	NC
7	NC	8	NC
9	NC	10	+5V

● **RS422 Mode**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TX-	2	TX+
3	RX+	4	RX-
5	GND	6	NC
7	NC	8	NC
9	NC	10	+5V

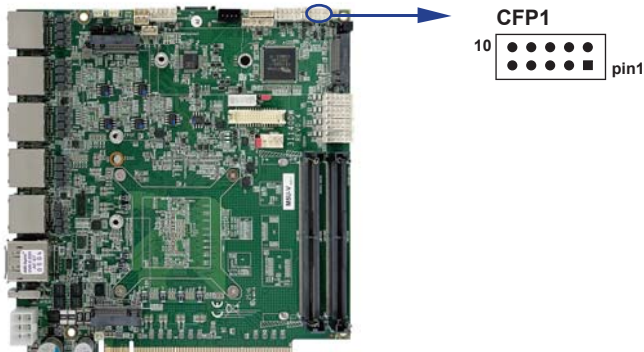
Note:

- 1. Pin 9 RI and Voltage setting For BOM control, default set RI
- 2. Default support RS232/RS422/RS485 by BIOS selected, default set RS232.



### 3-6 CFP1: Front Panel connector (2x5 pin 2.00mm Wafer)

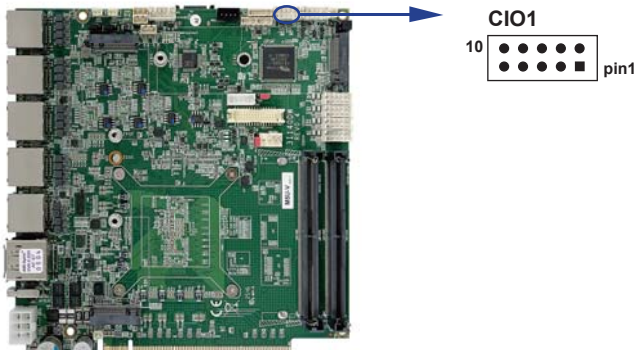
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Power button	2	GND
3	Reset	4	GND
5	Power LED-	6	Power LED+
7	HDD LED-	8	HDD LED+
9	LAN LED-	10	LAN LED+



### 3-7 CIO1: 4DI/4DO Port (2x5 pin 2.00mm Wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DI-0	2	DO-3
3	DI-1	4	DO-2
5	DI-2	6	DO-1
7	DI-3	8	DO-0
9	GND	10	+5V

Note: 1.DIO and WDT function from SIO F81966D-I.



### ● WDT For F81966 SMBus watch dog timer device:

DC spec:

Input low Voltage (VIL): +0.8 Max

Input High Voltage(VIH): +2V Min

Output low Current (IOL): 10mA (Min) VOL=0.4V

Output High Current (IOH): -10mA (Min) VOH=2.4V

Watch Dog Time value 0~255 sec

The system will be issued reset. When WDT is enable the hardware start down counter to zero.

The reset timer have 10~20% tolerance upon the Temperature.

Note: If want to SDK support. Please contact to sales window.

## 3-7-1 IO Device: F81966 LPC DIO under Windows console

### The Sample code source you can download from

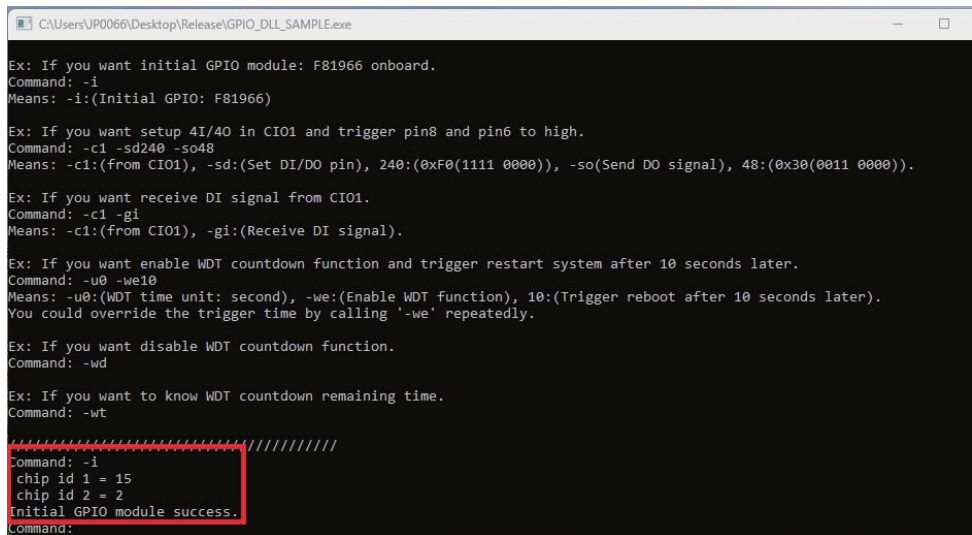
<https://www.lex.com.tw/en/download/download-hide?cid1=11&cid2=208#topDownload>

### Initial F81966 module

If you want initial GPIO module: F81966 onboard.

Command: -i

Means: -i:(Initial GPIO: F81966 resource)



```
C:\Users\VP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe

Ex: If you want initial GPIO module: F81966 onboard.
Command: -i
Means: -i:(Initial GPIO: F81966)

Ex: If you want setup 4I/4O in CIO1 and trigger pin8 and pin6 to high.
Command: -c1 -sd240 -so48
Means: -c1:(from CIO1), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).

Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

#####
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command:
```

## Free F81966 module

If you want free GPIO module resource.

Command: -f

Means: -f:(Free GPIO: F81966 resource)

```
C:\Users\JP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe
Command: -i
Means: -i:(Initial GPIO: F81966)

Ex: If you want setup 4I/4O in CIO1 and trigger pin8 and pin6 to high.
Command: -c1 -sd240 -so48
Means: -c1:(from CIO1), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).

Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

////////////////////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -f
Free GPIO module success.
Command:
```

## Check F81966 chip is exist

If you want check F81966 module is exist on the device.

Command: -check

Means: -check:(Get F81966 chip ID: 0x1502)

```
C:\Users\JP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe

Ex: If you want setup 4I/4O in CI01 and trigger pin8 and pin6 to high.
Command: -c1 -sd240 -so48
Means: -c1:(from CI01), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).

Ex: If you want receive DI signal from CI01.
Command: -c1 -gi
Means: -c1:(from CI01), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

////////////////////////////////////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -check
chip id 1 = 15
chip id 2 = 2
F81966 chip is exist.
Command:
```

# Define GPIO pin status(DI/DO)

Setup GPIO pins status are DI or DO in CIO port.

Use 1 byte to indicate the status of the Pins.  
Bit value = 1: pin status is DO; Bit value = 0: pin status is DI.

(Pin1 is bit0, Pin3 is bit1, Pin5 is bit2 and Pin7 is bit3)  
(Pin8 is bit4, Pin6 is bit5, Pin4 is bit6 and Pin2 is bit7)

## 2-10 CIO1: DIO 0~3 2x5 pin (1.25mm) wafer

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DI-0	2	DO-3
3	DI-1	4	DO-2
5	DI-2	6	DO-1
7	DI-3	8	DO-0
9	GND	10	+5V

If you want set CIO1 pins status is 4I/4O. (Bits: 0xF0)  
Command: -c1 -sd240  
Means: -c1:(CIO1), -sd:(set DI/DO), 240:(0xF0(1111 0000))

```
C:\Users\JP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe
Command: -i
Means: -i:(Initial GPIO: F81966)

Ex: If you want setup 4I/4O in CIO1 and trigger pin8 and pin6 to high.
Command: -c1 -sd240 -so48
Means: -c1:(from CIO1), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).

Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

////////////////////////////////////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -c1 -sd240
Set CIO1 pin DI/DO(0xf0) success.
Command:
```

# Trigger DO pin signal to high or low

Set DO pin register value in CIO port to trigger high or low status.

Use 1 byte to indicate the status of the Pins.  
Bit value = 1: trigger to High; Bit value = 0: trigger to low.

(Pin1 is bit0, Pin3 is bit1, Pin5 is bit2 and Pin7 is bit3)  
(Pin8 is bit4, Pin6 is bit5, Pin4 is bit6 and Pin2 is bit7)

## 2-10 CIO1: DIO 0~3 2x5 pin (1.25mm) wafer

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DI-0	2	DO-3
3	DI-1	4	DO-2
5	DI-2	6	DO-1
7	DI-3	8	DO-0
9	GND	10	+5V

If you want to trigger CIO1 pins pin8 and pin6 to high. (Bits: 0x30)

Pin which be trigger, status must be DO.

Command: -c1 -so48

Means: -c1:(CIO1), -so(Send DO signal), 48:(0x30(0011 0000))

```
C:\Users\UP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe

Ex: If you want setup 4I/4O in CIO1 and trigger pin8 and pin6 to high.
Command: -c1 -sd240 -so48
Means: -c1:(from CIO1), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).

Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

////////////////////////////////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -c1 -sd240
Set CIO1 pin DI/DO(0xF0) success.
Command: -c1 -so48
Send CIO1 DO value = (0x30).
Command:
```

# Receive DI pin current status

Receive DO pin register value from CIO port.

Use 1 byte to indicate the status of the Pins.  
Bit value = 1: receive high; Bit value = 0: receive low.

(Pin1 is bit0, Pin3 is bit1, Pin5 is bit2 and Pin7 is bit3)  
(Pin8 is bit4, Pin6 is bit5, Pin4 is bit6 and Pin2 is bit7)

## 2-10 CIO1: DIO 0~3 2x5 pin (1.25mm) wafer

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DI-0	2	DO-3
3	DI-1	4	DO-2
5	DI-2	6	DO-1
7	DI-3	8	DO-0
9	GND	10	+5V

If you want receive CIO1 pins current status.

Pin status must be DI.  
Attention: DI pin default register value is high. If pin not connect any device, return bits is always high.  
Command: -c1 -gi  
Means: -c1:(from CIO1), -gi:(Receive DI signal)

If return value is 0x33(0011 0011), it means pin1 and pin3 in CIO1 port received high signal.  
We only use pin1 and pin3 value, because CIO1 port pin status value is 0xF0(1111 0000)(4I/4O).

```
C:\Users\VP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe
Ex: If you want setup 4I/4O in CIO1 and trigger pin8 and pin6 to high.
Command: -c1 -sd240 -so48
Means: -c1:(from CIO1), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).

Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

////////////////////////////////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -c1 -sd240 -so48
Set CIO1 pin DI/DO(0xF0) success.
Send CIO1 DO value = (0x30).
Command: -c1 -gi
Receive CIO1 DI value = (0x33).
Command:
```

## Enable Watch Dog Timer to reset system

If you want enable WDT countdown function and trigger restart system after 30 seconds later.

You could override the trigger time by calling '-we' repeatedly.

Command: -u0 -we30

Means: -u:(WDT time unit: second), -we:(Enable WDT function), 30:(Trigger reboot after 30 seconds later)

```
CA\Users\JP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe
Means: -c1:(from CIO1), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).
Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

//////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -c1 -sd240 -so48
Set CIO1 pin DI/DO(0xf0) success.
Send CIO1 DO value = (0x30).
Command: -c1 -gi
Receive CIO1 DI value = (0x32)
Command: -u0 -we30
Watch dog timer enable success.
Command:
```

## Disable Watch Dog Timer

If you want disable WDT countdown function.

Command: -wd

```
C:\Users\JP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe
Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

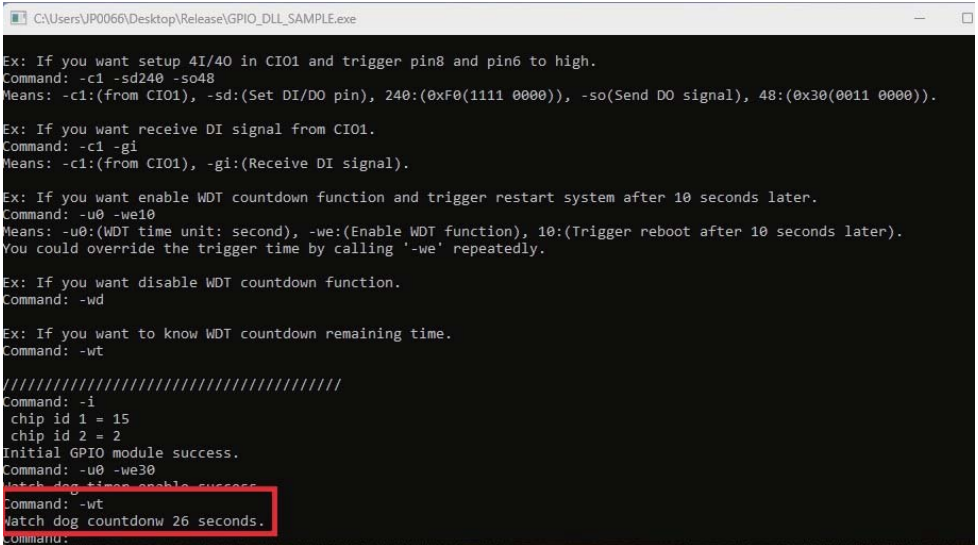
Ex: If you want to know WDT countdown remaining time.
Command: -wt

////////////////////////////////////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -c1 -sd240 -so48
Set CIO1 pin DI/D0(0xf0) success.
Send CIO1 D0 value = (0x30).
Command: -c1 -gi
Receive CIO1 DI value = (0x33).
Command: -u0 -we30
Watch dog timer enable success.
Command: -wd
Watch dog timer disable success.
Command:
```

## Get Watch Dog Timer countdown time

If you want to know WDT countdown remaining time.

Command: -wt



```
CAUsers\VP0066\Desktop\Release\GPIO_DLL_SAMPLE.exe

Ex: If you want setup 4I/4O in CIO1 and trigger pin8 and pin6 to high.
Command: -c1 -sd240 -so48
Means: -c1:(from CIO1), -sd:(Set DI/DO pin), 240:(0xF0(1111 0000)), -so(Send DO signal), 48:(0x30(0011 0000)).

Ex: If you want receive DI signal from CIO1.
Command: -c1 -gi
Means: -c1:(from CIO1), -gi:(Receive DI signal).

Ex: If you want enable WDT countdown function and trigger restart system after 10 seconds later.
Command: -u0 -we10
Means: -u0:(WDT time unit: second), -we:(Enable WDT function), 10:(Trigger reboot after 10 seconds later).
You could override the trigger time by calling '-we' repeatedly.

Ex: If you want disable WDT countdown function.
Command: -wd

Ex: If you want to know WDT countdown remaining time.
Command: -wt

////////////////////
Command: -i
chip id 1 = 15
chip id 2 = 2
Initial GPIO module success.
Command: -u0 -we30
Watch dog timer enable success.
Command: -wt
Watch dog countdown 26 seconds.
Command:
```

# F81966 DIO direct connect

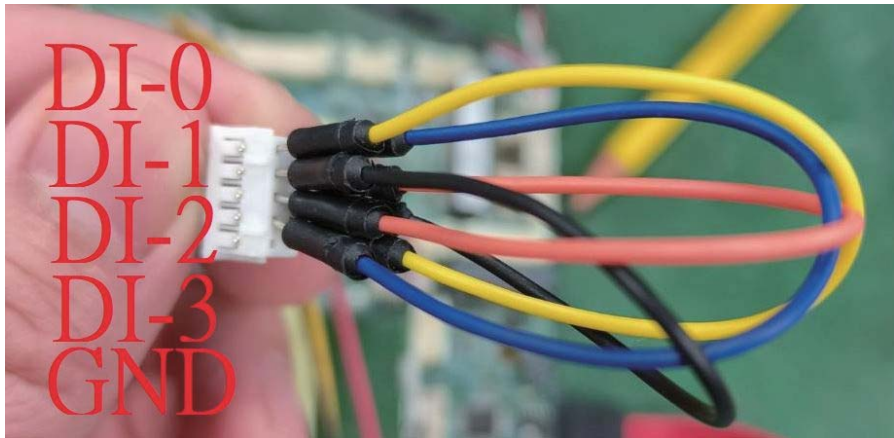
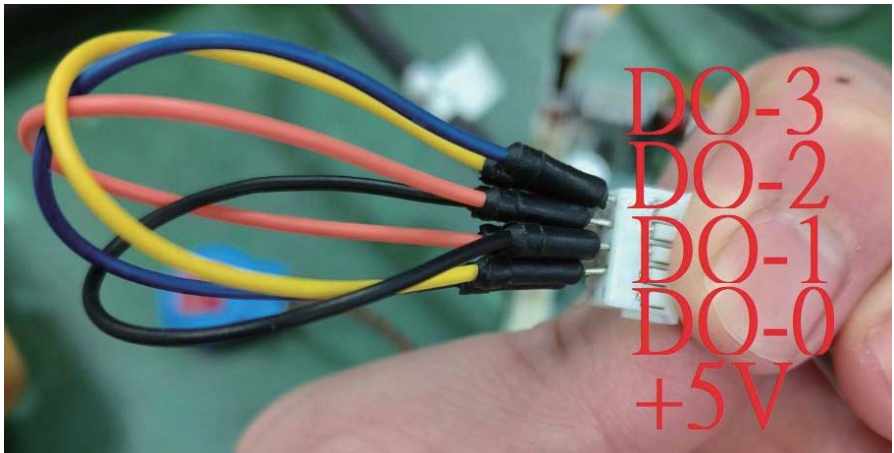
Using 2I130HW to example how to connect.  
DI-0(yellow) to DO-0(yellow) 、 DI-1(black) to DO-1(black) 、 DI-2(orange) to DO-2(orange) 、 DI-3(blue) to DO-3(blue). GND and +5V are empty.

## 3-7 DIO Interface

• CIO1: DIO 0~3 2x5 pin (1.25mm) wafer

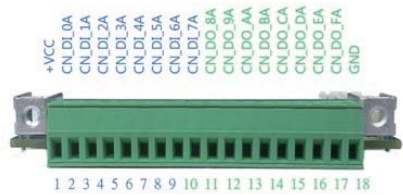
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DI-0	2	DO-3
3	DI-1	4	DO-2
5	DI-2	6	DO-1
7	DI-3	8	DO-0
9	GND	10	+5V

Note: DIO and WDT function from SIO F81966D-L.



## F81966 DIO with CIO116\_B

CN-DI\_0A(white\_red) to CN-DO\_8A(white\_red) 、CN-DI\_1A(green) to CN-DO\_9A(green) 、  
CN-DI\_2A(yellow) to CN-DO\_AA(yellow) 、CN-DI\_3A(orange) to CN-DO\_BA(orange) 、  
CN-DI\_4A(red) to CN-DO\_CA(red) 、CN-DI\_5A(brown) to CN-DO\_DA(brown) 、CN-DI\_6A(black) to  
CN-DO\_EA(black) 、CN-DI\_7A(white) to CN-DO\_FA(white).  
GND and +VCC connect to power.



PIN NO.	DESCRIPTION	
1	+VCC	
2	CN-DI_0A	CIO1-DI_1
3	CN-DI_1A	CIO1-DI_2
4	CN-DI_2A	CIO1-DI_3
5	CN-DI_3A	CIO1-DI_4
6	CN-DI_4A	CIO2-DI_1
7	CN-DI_5A	CIO2-DI_2
8	CN-DI_6A	CIO2-DI_3
9	CN-DI_7A	CIO2-DI_4
10	CN-DO_8A	CIO1-DO_1
11	CN-DO_9A	CIO1-DO_2
12	CN-DO_AA	CIO1-DO_3
13	CN-DO_BA	CIO1-DO_4
14	CN-DO_CA	CIO2-DO_1
15	CN-DO_DA	CIO2-DO_2
16	CN-DO_EA	CIO2-DO_3
17	CN-DO_FA	CIO2-DO_4
18	GND	

---

## F81966\_DLL Function

```
F81966_DLL_API int F81966_DLL_Init();
F81966_DLL_API int F81966_DLL_Free();
F81966_DLL_API int F81966_DLL_CheckDeviceExist();

F81966_DLL_API int F81966_DLL_SetDioPinStatus(int nCioPort, BYTE bDIOBits);
F81966_DLL_API int F81966_DLL_GetDioPinStatus(int nCioPort, BYTE& bDIOBits);

F81966_DLL_API int F81966_DLL_SendDOValue(int nCioPort, BYTE bDOVal);
F81966_DLL_API int F81966_DLL_GetDOValue(int nCioPort, BYTE& bDOVal);
F81966_DLL_API int F81966_DLL_GetDIValue(int nCioPort, BYTE& bDIVal);

F81966_DLL_API int F81966_DLL_StartWatchDogTimer(int nUnit, int nCount);
F81966_DLL_API int F81966_DLL_StopWatchDogTimer();
F81966_DLL_API int F81966_DLL_GetWatchDogCountdown(int& nUnit, int& nCount);
```

### 3-7-2 IO Device:F81966 LPC DIO under Linux console

#### The Sample code source you can download from

<https://www.lex.com.tw/en/download/download-hide?cid1=11&cid2=208#topDownload>

<FTP>

Source file: F81966\_LPC\_Utility\_L\_src

Binary file: F81966\_LPC\_Utility

F81966 Library : libF81966\_bin\_x86\_64

#### MB Support List

Elkhart Lake	Raptor Lake
2I640CW	3I130TW

### Introduction F81966 CIO

```
test@test-3I130DW:~/test/DIO$ sudo ./F81966_DIO
Usage: ./F81966_DIO <function> <CIO_number> [value]
Function options:
  read      - Read CIO port value
  write     - Write CIO port value (value required)
  getbit    - Read specific bit of CIO port (bit position required)
  setbit    - Set specific bit of CIO port (bit position and value required)
  wdt       - Test WDT function
  hmon      - Read hardware monitor values (voltages and temperatures)

Examples:
./F81966_DIO read 1
./F81966_DIO write 1 0xF
./F81966_DIO getbit 1 0
./F81966_DIO setbit 1 0 1
./F81966_DIO wdt
./F81966_DIO hmon
```

- 1. Use GET\_CIO\_INPUT to get the digital input data
- 2. Use SET\_CIO\_OUTPUT\_DATA to set digital output data
- 3. Single bit setting can use SetCIOXBit0, SetCIOXBit1
- 4. Read a single bit using GetCIOXBit
- 5. Enable WDT and continuously reset WDT to ensure that the restart signal will not be triggered when the system is normal

## libF81966.so Function

```
bool F81966_OPEN();
void F81966_Init();

BYTE GET_CIO_INPUT(int CIO_Number);
BYTE GET_CIO_OUTPUT_DATA(int CIO_Number);
BYTE SET_CIO_OUTPUT_DATA(int CIO_Number, BYTE byteValue);

BYTE GetCIOXBit(int CIO_Number, BYTE bitPosition);
BYTE SetCIOXBit0(int CIO_Number, BYTE byteValue, BYTE bitPosition);
BYTE SetCIOXBit1(int CIO_Number, BYTE byteValue, BYTE bitPosition);

void F81966_LPC_Set_WDT_Enable(BYTE byteValue);
void F81966_LPC_Set_WDT_Disable();

float GetVoltage(DWORD dwAddrVal);
int GetTemperature(DWORD dwAddrVal);
```

## test\_F81966 CIO Input/Ooutput sample code

```
Set CIO1 Digital Output all bit low
test_F81966 write 0xf;
```

```
Set CIO2 Digital Output all bit low
test_F81966 write 2 0x0;
```

```
Set CIO3 Digital Output all bit high
test_F81966 write 3 0xf;
```

```
Get CIO4 Digital Input
test_F81966 read 4;
```

```
read bit position
test_F81966 getbit 1 1
```

```
write bit position
test_F81966 setbit 1 0 1
```

---

## Watch Dog test

sample code

```
test_F81966 getbit 1 1
```

```
Set WDT 10 sec
```

```
test_F81966 wdt enable 10;
```

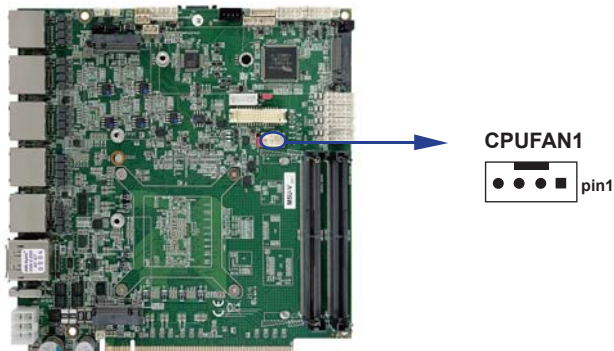
```
Disable WDT
```

```
test_F81966 wdt disable;
```

### 3-8 CPUFAN1: CPU Fan (1x4 pin 2.54mm Wafer)

PIN NO.	DESCRIPTION
1	GND
2	+12V
3	Tachometer Sensor Input
4	PWN Output

Note: DC in +12V by switch to FAN power +12V, so DC in need stable +12V input

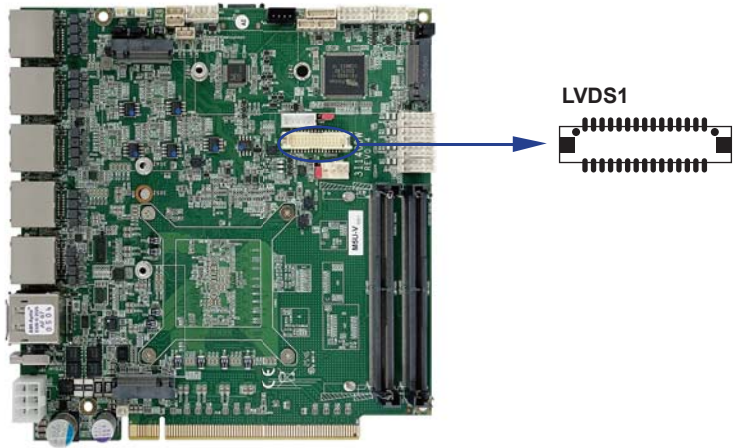


### 3-9 LVDS1: LVDS/EDP Interface Panel (2x15 pin 1.25mm Wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PWM dimming	2	+5V
3	LVDS Panel PWR	4	LVDS Panel PWR
5	Channel-1-DATA3+	6	Channel-0-DATA3+
7	Channel-1-DATA3-	8	Channel-0-DATA3-
9	Channel-0-DATA2+	10	Channel-0-CLK+
11	Channel-0-DATA2-	12	Channel-0-CLK-
13	GND	14	GND
15	Channel-0-DATA1+	16	Channel-0-DATA0+
17	Channel-0-DATA1-	18	Channel-0-DATA0-
19	PANEL_DET	20	GND
21	LVDS Panel PWR	22	LVDS Panel PWR
23	Channel-1-DATA2+	24	Channel-1-CLK+
25	Channel-1-DATA2-	26	Channel-1-CLK-
27	Channel-1-DATA1+	28	Channel-1-DATA0+
29	Channel-1-DATA1-	30	Channel-1-DATA0-

Note:

1. LVDS interface supports 18/24bits two channel.
2. LVDS Panel PWR By JVL1 select.
3. JVL1: LVDS panel +5V or +3.3V (default) Voltage select.
4. LVDS1 pin1 for panel backlight dimming control.
5. LVDS1 pin19 is Panel detect, Connect this pin to Panel's Ground pin.



## 3-10 EDP Interface Panel

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PWM dimming	2	+5V
3	eDP Panel PWR	4	eDP Panel PWR
5	NC	6	NC
7	NC	8	NC
9	eDP_TX0P	10	eDP_AUXP
11	eDP_TX0N	12	eDP_AUXN
13	GND	14	GND
15	eDP_TX1P	16	eDP_HPD
17	eDP_TX1N	18	NC
19	PANEL_DET	20	GND
21	eDP Panel PWR	22	eDP Panel PWR
23	NC	24	NC
25	NC	26	NC
27	NC	28	NC
29	NC	30	NC

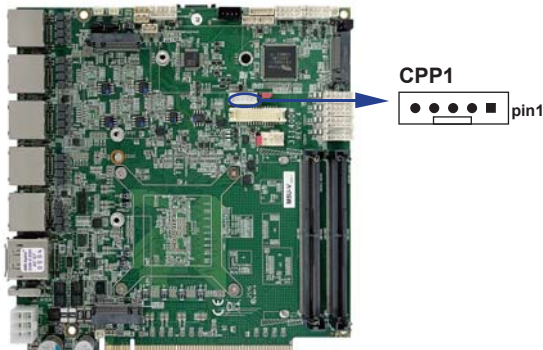
Note:

1. eDP interface support 2 lanes.
2. eDP Panel PWR By JVL1 select
3. JVL1: eDP panel +5V or +3.3V (default) Voltage select.
4. LVDS1 pin19 is Panel detect, Connect this pin to Panel's Ground pin

### 3-11 CPP1: Panel inverter power connector (1x5 pin 2.00mm Wafer)

PIN NO.	DESCRIPTION
1	+5V or +12V
2	GND
3	PWM dimming
4	ENBKL (3.3V)
5	ENBKL ( 5V )

- Note:
- 1. CPP1 PIN 3 and LVDS1 PIN1 is same signal.
  - 2. JVP1: Inverter Power +5V or +12V (default) Voltage select.



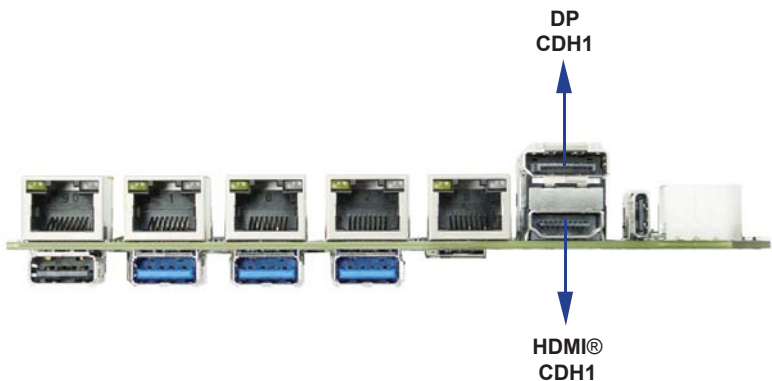
### 3-12 CDH1: Display Port & HDMI® Type A Connector

● DisplayPort Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DATA0+	2	GND
3	DATA0-	4	DATA1+
5	GND	6	DATA1-
7	DATA2+	8	GND
9	DATA2-	10	DATA3+
11	GND	12	DATA3-
13	GND	14	GND
15	AUX+	16	GND
17	AUX-	18	H.P. Detect
19	GND	20	+5V

### 3-13 HDMI® Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TMDS DATA2+	2	GND
3	TMDS DATA2-	4	TMDS DATA1+
5	GND	6	TMDS DATA1-
7	TMDS DATA0+	8	GND
9	TMDS DATA0-	10	TMDS CLK+
11	GND	12	TMDS CLK-
13	NC	14	NC
15	DDC CLOCK	16	DDC DATA
17	GND	18	+5V
19	H.P. Detect		



# 3-14 USB Interface

## • CU1/2/3: USB 3.0 Type A Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VBUS	5	SS_RX-
2	D-	6	SS_RX+
3	D+	7	GND
4	GND	8	SS_TX-
		9	SS_TX+

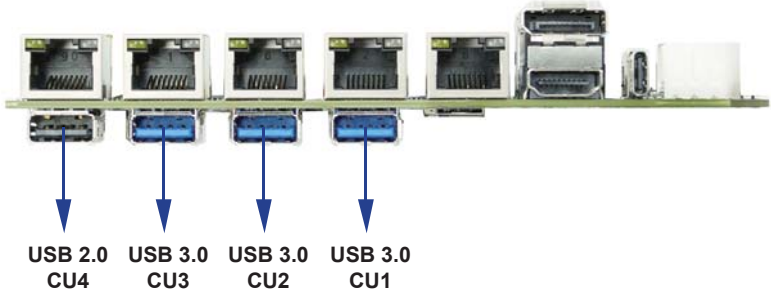
Note:

- 1. the power supply 0.9A for each USB 3.0 respect specification.
- 2. CU1, CU2, CU3 support wake up for option.

## • CU4: USB 2.0 Type A Connector

PIN NO.	DESCRIPTION
1	+5V
2	DATA-
3	DATA+
4	GND

Note: 1. CU4 support wake up for option.



● **CU5: USB Type C 24pin connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
A1	GND	B12	GND
A2	TCP1_TX0_DP	B11	TCP1_TXRX0_DP
A3	TCP1_TX0_DN	B10	TCP1_TXRX0_DN
A4	+VBUS_5V	B9	+VBUS_5V
A5	CC1	B8	SBU2
A6	USB2_DP	B7	USB2_DN
A7	USB2_DN	B6	USB2_DP
A8	SBU1	B5	CC2
A9	+VBUS_5V	B4	+VBUS_5V
A10	TCP1_TXRX1_DN	B3	TCP1_TX1_DN
A11	TCP1_TXRX1_DP	B2	TCP1_TX1_DP
A12	GND	B1	GND

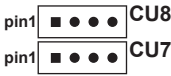
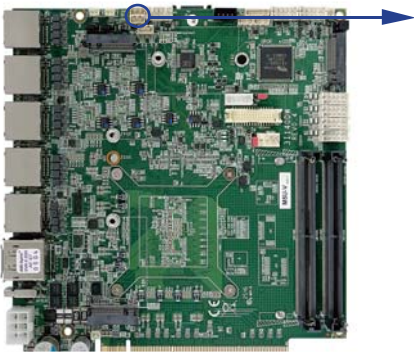
Note:

- 1. Support DP Alternate Mode & USB3.2 Gen 1x1 / 2.0.
- 2. USB-PD not support.



● **CU7/8: USB 2.0 port (1x4 pin 1.25mm Wafer)**

PIN NO.	DESCRIPTION
1	+5V
2	DATA-
3	DATA+
4	GND



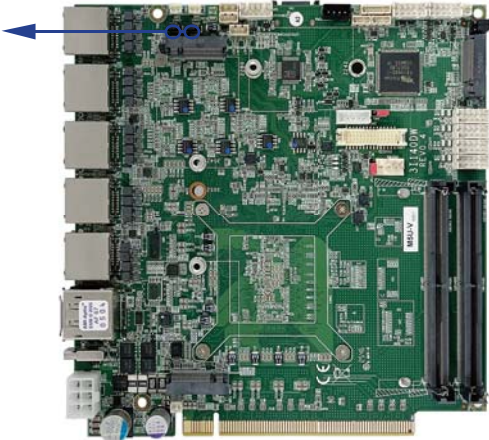
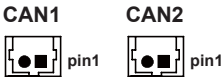
**3-15 CAN1/2: CAN Bus (1x2pin 1.25mm Wafer)**

PIN NO.	DESCRIPTION
1	CAN-H
2	CAN-L

**3-16 CAN11/21: CAN Bus 1x4pin (1.25mm) Wafer (For OEM)**

PIN NO.	DESCRIPTION
1	NC or +5V
2	CAN-H
3	CAN-L
4	GND

Note: 1. Pin 1 for OEM Set



### 3-17 LAN Connector

• **CL1/2/3/4/5: LAN RJ45 Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDI0+	5	MDI2-
2	MDI0-	6	MDI1-
3	MDI1+	7	MDI3+
4	MDI2+	8	MDI3-

• **LAN RJ45 Connector for 2.5 Giga LAN LED**

Speed	10Mbps			100Mbps		
Indicate	Back Side		Front Side	Back Side		Front Side
	Link Led	ACT Led	ACT Led	Link Led	ACT Led	ACT Led
LAN light	X	Orange	Orange	X	Orange	Orange

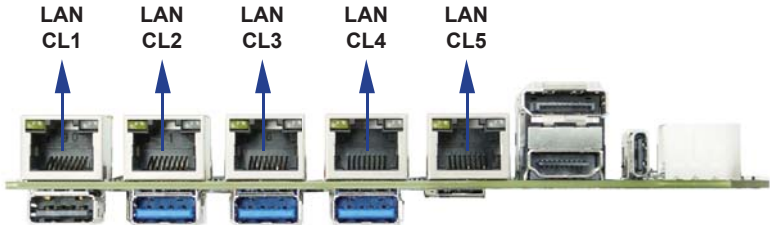
Speed	1000Mbps			2500Mbps		
Indicate	Back Side		Front Side	Back Side		Front Side
	Link Led	ACT Led	ACT Led	Link Led	ACT Led	ACT Led
LAN light	Green	Orange	Orange	Red	Orange	Orange

• **CL11/21/31/41/51: LAN Wafer Connector (2x4 pin 2.00mm Wafer) (For OEM)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDI0-	2	MDI0+
3	MDI2+	4	MDI1+
5	MDI1-	6	MDI2-
7	MDI13	8	MDI3+

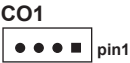
• **CLED1/2/3/4/5: LAN LED Wafer Connector (1x4 pin 1.25mm Wafer) (For OEM)**

PIN NO.	DESCRIPTION
1	VCC
2	ACT_LED
3	Speed 1000M
4	Speed 2500M



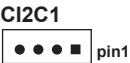
3-18 CO1: SMBUS (1x4 pin 1.25mm Wafer)

PIN NO.	DESCRIPTION
1	+3.3V
2	GND
3	SMB Clock
4	SMB DATA



3-19 CI2C1: I2C BUS (1x4 pin 1.25mm Wafer)

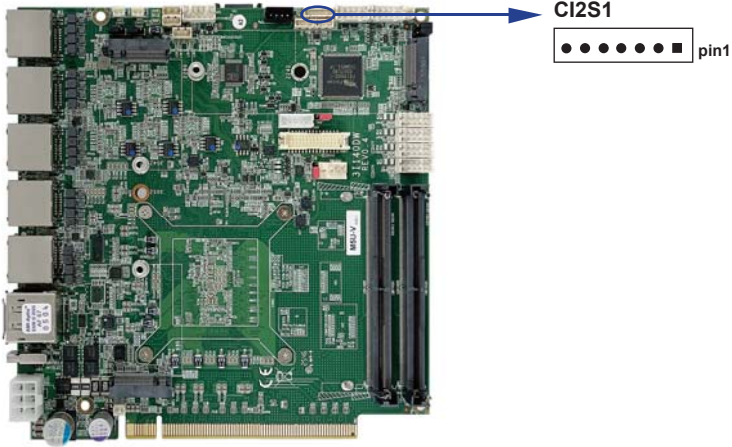
PIN NO.	DESCRIPTION
1	+3.3V
2	GND
3	I2C Clock
4	I2C DATA



### 3-20 CI2S1: I2S BUS (1x7 pin 1.25mm Wafer)

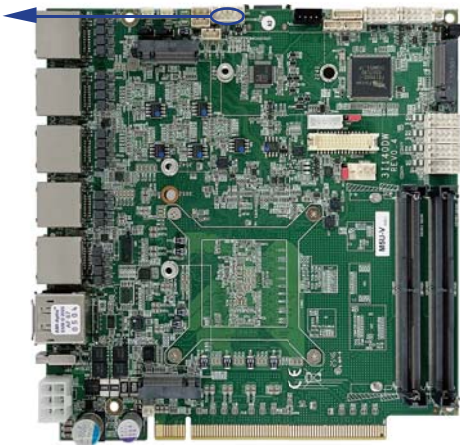
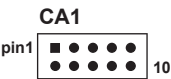
PIN NO.	DESCRIPTION
1	I2S_TXD
2	I2S_RXD
3	I2S_SFRM
4	I2S_SCLK
5	I2S_MCLK_OUT
6	GND
7	+1.8V

Note: 1. support 1.8V level.



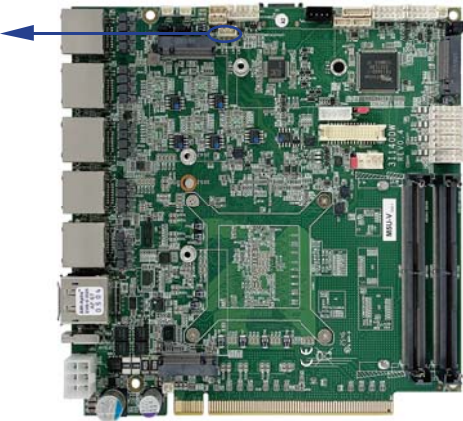
3-21 CA1: Line-out/Line-in/Mic-in (2x5 pin 2.00mm Wafer)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Line-out-R	2	MIC-IN
3	Line-in-R	4	GND
5	GND	6	GND
7	Line-in-L	8	+5V
9	Line-out-L	10	MIC-IN



3-22 CALR1: Amplifier Line-out Right/Left Channel (1x4pin 1.25mm Wafer)

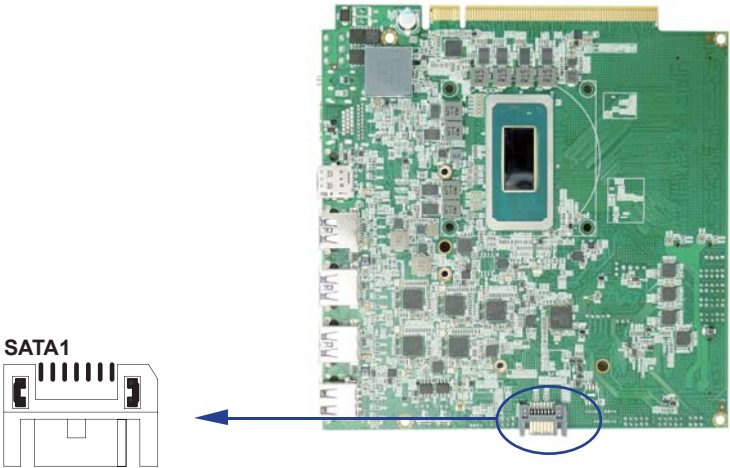
PIN NO.	DESCRIPTION
1	Left+
2	Left-
3	Right+
4	Right-



### 3-23 SATA1: SATA Port Connectors 7pin

PIN NO.	DESCRIPTION
1	GND
2	TX+
3	TX-
4	GND
5	RX-
6	RX+
7	GND

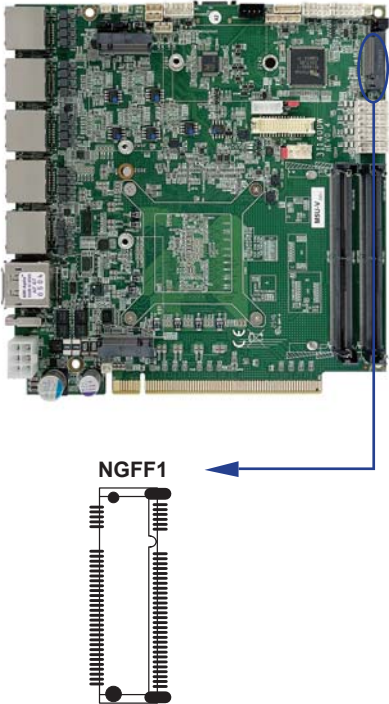
Note:  
1. CPO1 provides SATA-HDD power +12V, GND, +5V



3-24 NGFF1: M.2 NGFF Card M Key Sockets 75pin (Size 2280 H=8.5)

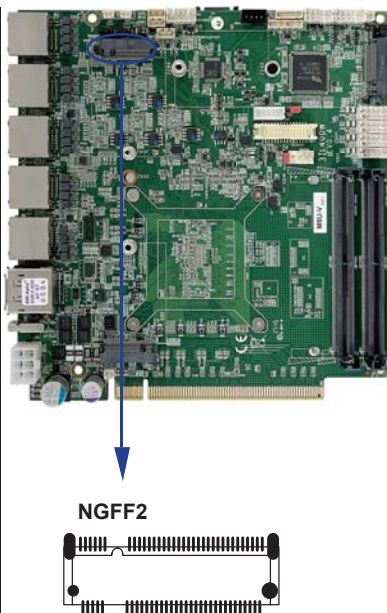
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+3.3V
3	GND	4	+3.3V
5	PCIE4_Rn3	6	NC
7	PCIE4_Rp3	8	NC
9	GND	10	M2_LED_N
11	PCIE4_Tn3	12	+3.3V
13	PCIE4_Tp3	14	+3.3V
15	GND	16	+3.3V
17	PCIE4_Rn2	18	+3.3V
19	PCIE4_Rp2	20	NC
21	GND	22	NC
23	PCIE4_Tn2	24	NC
25	PCIE4_Tp2	26	NC
27	GND	28	NC
29	PCIE4_Rn1	30	NC
31	PCIE4_Rp1	32	NC
33	GND	34	NC
35	PCIE4_Tn1	36	NC
37	PCIE4_Tp1	38	NC
39	GND	40	NC
41	PCIE4_Rn0	42	NC
43	PCIE4_Rp0	44	NC
45	GND	46	NC
47	PCIE4_Tn0	48	NC
49	PCIE4_Tp0	50	M2_PRST_N
51	GND	52	SRCCLKREQ_N
53	CLK_SRC0_DN	54	NC
55	CLK_SRC0_DP	56	NC
57	GND	58	NC
Mechanical Key			
67	NC	68	NC
69	NC	70	+3.3V
71	GND	72	+3.3V
73	GND	74	+3.3V
75	GND		

Note: 1. NGFF1 support PCIe x4 GEN4 NVMe device Only.



### 3-25 NGFF2: M.2 NGFF Card B Key Sockets 75pin (Size 3042 H=8.5)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	CFG3_USB3_PCIE_N	2	+3.3V or +3.7V
3	GND	4	+3.3V or +3.7V
5	GND	6	Pull up to +3.3V
7	USB2_DP	8	Pull up to +3.3V
9	USB2_DN	10	NC
11	GND		
Mechanical Key			
21	GND	20	NC
23	NC	22	NC
25	NC	24	NC
27	GND	26	Pull up to +3.3V
29	USB3_RX_DN	28	NC
31	USB3_RX_DP	30	SIM_RST_M2
33	GND	32	SIM_CLK_M2
35	USB3_TX_DN	34	SIM_DATA_M2
37	USB3_TX_DP	36	SIM_PWR_M2
39	GND	38	NC
41	NC	40	NC
43	NC	42	NC
45	GND	44	NC
47	NC	46	NC
49	NC	48	NC
51	GND	50	M2_PRST_N
53	NC	52	NC
55	NC	54	NC
57	GND	56	NC
59	NC	58	NC
61	NC	60	NC
63	NC	62	NC
65	NC	64	NC
67	MD_RESET_N	66	SIM_DET
69	NC	68	NC
71	GND	70	+3.3V or +3.7V
73	GND	72	+3.3V or +3.7V
75	CFG2 power select	74	+3.3V or +3.7V

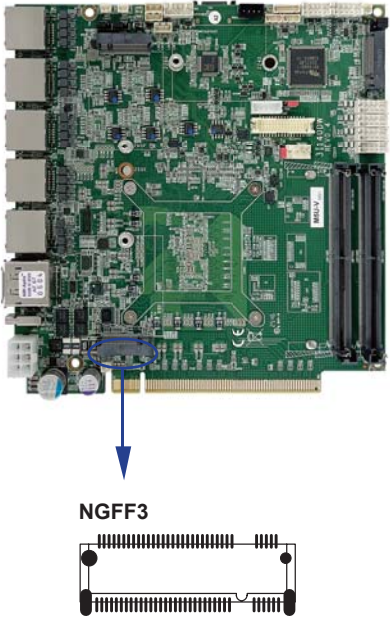


Note:

1. VCC voltage default is +3.3V, when use 4G LTE device the VCC voltage is +3.7V by Auto detect.

3-26 NGFF3: M.2 NGFF Card B Key Sockets 75pin(Size 3042 H=8.5)

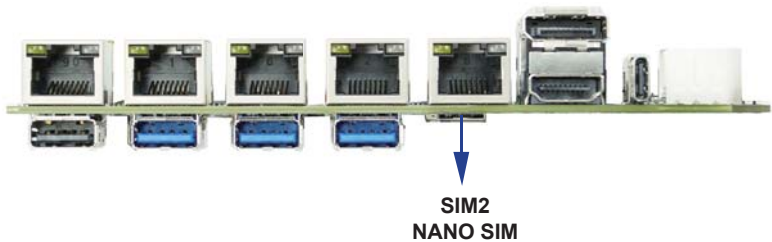
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+3.3V
3	GND	4	+3.3V
5	GND	6	Pull up to +3.3V
7	USB2_DP	8	Pull up to +3.3V
9	USB2_DN	10	NC
11	GND		
Mechanical Key			
21	GND	20	NC
23	NC	22	NC
25	NC	24	NC
27	GND	26	Pull up to +3.3V
29	NC	28	NC
31	NC	30	NC
33	GND	32	NC
35	NC	34	NC
37	NC	36	NC
39	GND	38	NC
41	PCIE_P0_RX_DN	40	NC
43	PCIE_P0_RX_DP	42	NC
45	GND	44	NC
47	PCIE_P0_TX_DN	46	NC
49	PCIE_P0_TX_DP	48	NC
51	GND	50	M2_PRST_N
53	PCIE_CLK_DN	52	SRCCLKREQ_N
55	PCIE_CLK_DP	54	NC
57	GND	56	NC
59	NC	58	NC
61	NC	60	NC
63	NC	62	NC
65	NC	64	NC
67	NC	66	NC
69	NC	68	NC
71	GND	70	+3.3V
73	GND	72	+3.3V
75	NC	74	+3.3V



### 3-27 SIM2: Nano SIM card socket

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	5	GND
2	RST	6	NC
3	CLK	7	DATA
4	NC	8	DET

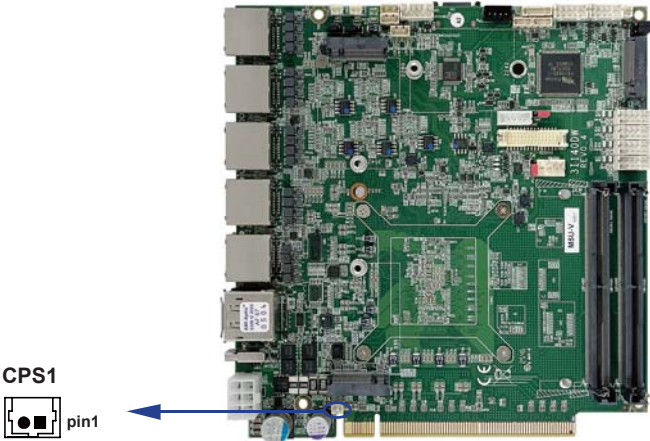
Note: 1. NGFF2 Pin 30, 32, 34, 36, 66 for SIM card reader use.



### 3-28 CPS1: External Power-On Sync control (1x2 pin 1.25mm Wafer)

PIN NO.	DESCRIPTION
1	GND
2	PS_ON_N

Note:  
The sync signal is Low active. When Motherboard powered on that is Low, Power-off is high.  
The signal is +3.3V tolerance.  
It can be used for gold finger power to sync motherboard power sequence.



## 3-29 GFX1: PCI Express x16 Gold Finger (For LEX Pin Define)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
A1	GND	B1	+12V
A2	+12V	B2	+12V
A3	+12V	B3	+12V
A4	GND	B4	GND
A5	NC	B5	SMB_CLK
A6	NC	B6	SMB_DATA
A7	NC	B7	GND
A8	NC	B8	+3.3V
A9	+3.3V	B9	NC
A10	+3.3V	B10	+3.3VAUX
A11	PCIE_RST#	B11	PCIE_WAKE#
Mechanical Key			
A12	GND	B12	NC
A13	PCIEX8_CLK_DP	B13	GND
A14	PCIEX8_CLK_DN	B14	PCIEX8_P0_TX_DP
A15	GND	B15	PCIEX8_P0_TX_DN
A16	PCIEX8_P0_RX_DP	B16	GND
A17	PCIEX8_P0_RX_DN	B17	PCIEX8_CLKREQ#
A18	GND	B18	GND
A19	NC	B19	PCIEX8_P1_TX_DP
A20	GND	B20	PCIEX8_P1_TX_DN
A21	PCIEX8_P1_RX_DP	B21	GND
A22	PCIEX8_P1_RX_DN	B22	GND
A23	GND	B23	PCIEX8_P2_TX_DP
A24	GND	B24	PCIEX8_P2_TX_DN
A25	PCIEX8_P2_RX_DP	B25	GND
A26	PCIEX8_P2_RX_DN	B26	GND
A27	GND	B27	PCIEX8_P3_TX_DP
A28	GND	B28	PCIEX8_P3_TX_DN
A29	PCIEX8_P3_RX_DP	B29	GND
A30	PCIEX8_P3_RX_DN	B30	NC
A31	GND	B31	PCIEX8_CLKREQ#
A32	NC	B32	GND
A33	NC	B33	PCIEX8_P4_TX_DP
A34	GND	B34	PCIEX8_P4_TX_DN
A35	PCIEX8_P4_RX_DP	B35	GND
A36	PCIEX8_P4_RX_DN	B36	GND

A37	GND	B37	PCIEX8_P5_TX_DP
A38	GND	B38	PCIEX8_P5_TX_DN
A39	PCIEX8_P5_RX_DP	B39	GND
A40	PCIEX8_P5_RX_DN	B40	GND
A41	GND	B41	PCIEX8_P6_TX_DP
A42	GND	B42	PCIEX8_P6_TX_DN
A43	PCIEX8_P6_RX_DP	B43	GND
A44	PCIEX8_P6_RX_DN	B44	GND
A45	GND	B45	PCIEX8_P7_TX_DP
A46	GND	B46	PCIEX8_P7_TX_DN
A47	PCIEX8_P7_RX_DP	B47	GND
A48	PCIEX8_P7_RX_DN	B48	PCIEX8_CLKREQ#
A49	GND	B49	GND
A50	NC	B50	NC
A51	GND	B51	NC
A52	NC	B52	GND
A53	NC	B53	GND
A54	GND	B54	NC
A55	GND	B55	NC
A56	NC	B56	GND
A57	NC	B57	GND
A58	GND	B58	NC
A59	GND	B59	NC
A60	GND	B60	GND
A61	NC	B61	GND
A62	GND	B62	PCIEX4_CLKREQ#
A63	GND	B63	NC
A64	PCIEX4_CLK_DP	B64	GND
A65	PCIEX4_CLK_DN	B65	GND
A66	GND	B66	PCIEX4_P0_TX_DP
A67	GND	B67	PCIEX4_P0_TX_DN
A68	PCIEX4_P0_RX_DP	B68	GND
A69	PCIEX4_P0_RX_DN	B69	GND
A70	GND	B70	NC
A71	GND	B71	NC
A72	NC	B72	GND
A73	NC	B73	GND
A74	GND	B74	NC
A75	GND	B75	NC
A76	NC	B76	GND
A77	NC	B77	GND

A78	GND	B78	NC
A79	GND	B79	NC
A80	NC	B80	GND
A81	NC	B81	PCIEX4_CLKREQ#
A82	GND	B82	NC

Note:

1. PCI Express x16 Gold Finger For LEX Pin Define.
2. MTL-H Support PCIE x8 + PCIE x1 Interface
3. MTL-U Only Support PCIE x1 Interface

### 3-30 Connector wafer of Compatible Brand and part number list

Location	CKTS	PITCH	Brand Name	Mating connector	Cable housing
CPI1	2x3 6Pin	4.20mm	MOLEX	39281063	3901206
CPI11	2x3 6Pin	4.20mm	MOLEX	39301060	3901206
CPO1	1x4 4Pin	2.00mm	JST	B4B-PH-KL	PHR-4
CBT1	1x2 2Pin	1.25mm	MOLEX	53047-0210	51021-0200
CC1~CC4	2x5 10Pin	2.00mm	JST	B10B-PHDSS	PHDR-10VS
CFP1	2x5 10Pin	2.00mm	JST	B10B-PHDSS	PHDR-10VS
CIO1	2x5 10Pin	2.00mm	JST	B10B-PHDSS	PHDR-10VS
LVDS1	2x15 30Pin	1.25mm	HIROSE	DF13-30DS-1.25C	DF13-30DP-1.25V
CPP1	1x5 5Pin	2.00mm	JST	B5B-PH-KL	PHR-5
CU7~8	1x4 4Pin	1.25mm	MOLEX	53047-0410	51021-0400
CAN1/2	1x2 2Pin	1.25mm	MOLEX	53047-0210	51021-0200
CO1	1x4 4Pin	1.25mm	MOLEX	53047-0410	51021-0400
CI2C1	1x4 4Pin	1.25mm	MOLEX	53047-0410	51021-0400
CI2S1	1x7 7Pin	1.25mm	MOLEX	53047-0710	51021-0700
CA1	2x5 10Pin	2.00mm	JST	B10B-PHDSS	PHDR-10VS
CALR1	1x4 4Pin	1.25mm	MOLEX	53047-0410	51021-0400
CPS1	1x2 2Pin	1.25mm	MOLEX	53047-0210	51021-0200

---

# Chapter-4

## Introduction of BIOS

The BIOS is a program located in the Flash Memory on the motherboard.

This program is a bridge between motherboard and operating system.

When you start the computer, the BIOS program gains control.

The BIOS first operates an auto-diagnostic test called POST (Power on Self Test) for all the necessary hardware, it detects the entire hardware devices and configures the parameters of the hardware synchronization. After these tasks are completed, BIOS will give control of the computer back to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate with, it is the key factor of system stability and of ensuring your system performance at best.

In the BIOS Setup main menu, you can see several options. We will explain these options in the following pages. First, let us see the function keys you may use here:

Press <Esc> to quit the BIOS Setup.

Press ↑↓←→(up, down, left, right) to choose the option you want to confirm or modify.

Press <F10> to save these parameters and to exit the BIOS Setup menu after you complete the setup of BIOS parameters.

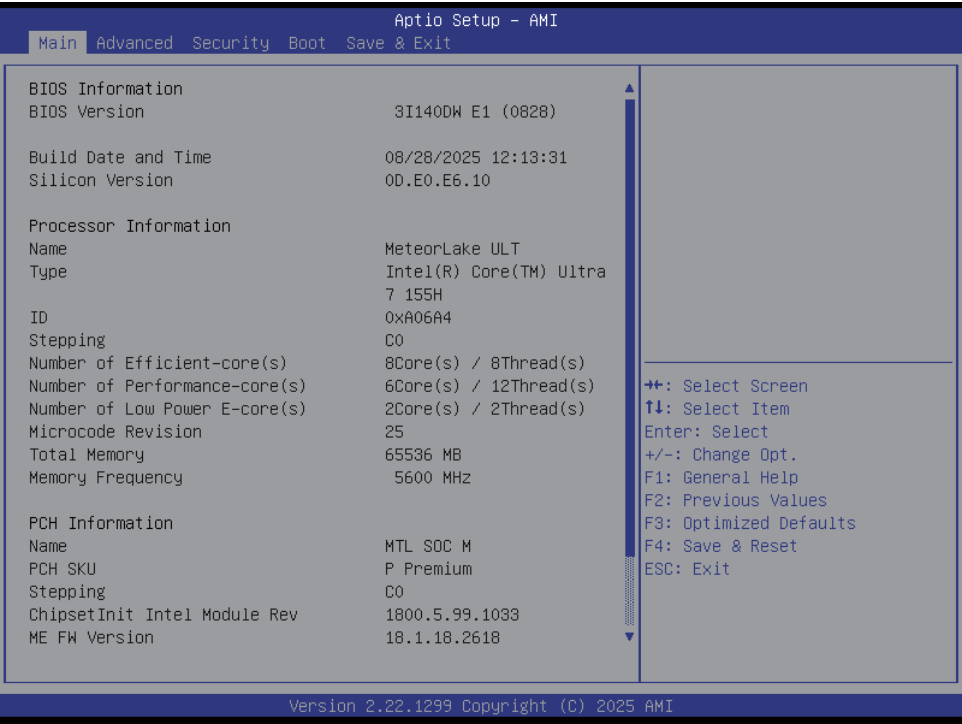
Press Page Up/Page Down or +/- keys to modify the BIOS parameters for the active option.

## 4-1 Enter Setup

Power on the computer and press <Del> key immediately to enter Setup.

If the message disappears before your respond but you still wish to enter Setup, restart the system by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart the system by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys.

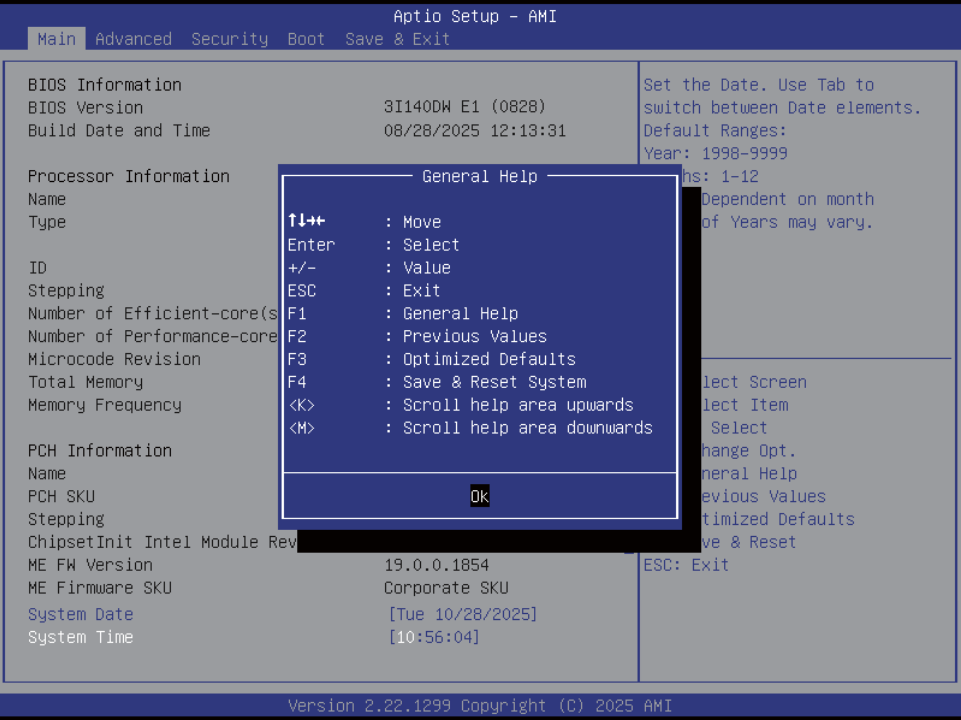
## 4-2 BIOS Menu Screen & Function Keys



In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press >< (right, left) to select screen
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<-> or <F5>/<F6> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous values.
- [F3]: Optimized defaults.
- [F4]: Save & Reset.
- Press <Esc> to quit the BIOS Setup.

### 4-3 General Help



#### Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

## 4-4 Menu Bars

There are six menu bars on top of BIOS screen:

Main To change system basic configuration

Advanced To change system advanced configuration

Chipset To change PCH IO configuration

Security Password settings

Boot Quiet boot or boot from USB selected.

Save & Exit Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar.

The selected one is highlighted.

## 4-5 Main



Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.

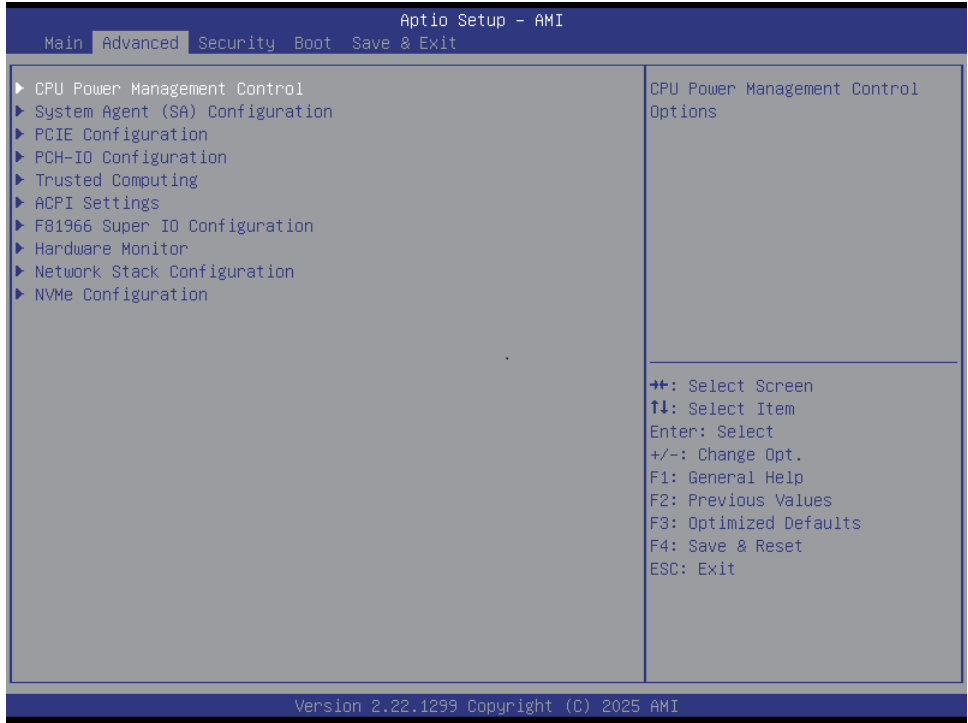
### System Date

Set the Date. Please use [Tab] to switch between data elements.

### System Time

Set the Time. Please use [Tab] to switch between data elements.

## 4-6 Advanced



### CPU Power Management Control

Please refer section 4-6-1

### System Agent (SA) Configuration.

Please refer section 4-6-2

### PCIe Configuration.

Please refer section 4-6-3

### PCH-IO Configuration

Please refer section 4-6-4

### Trusted Computing

Please refer section 4-6-5

### ACPI Settings

Please refer section 4-6-6

### F81966 Super IO Configuration

Please refer section 4-6-7

### Hardware Monitor

Please refer section 4-6-8

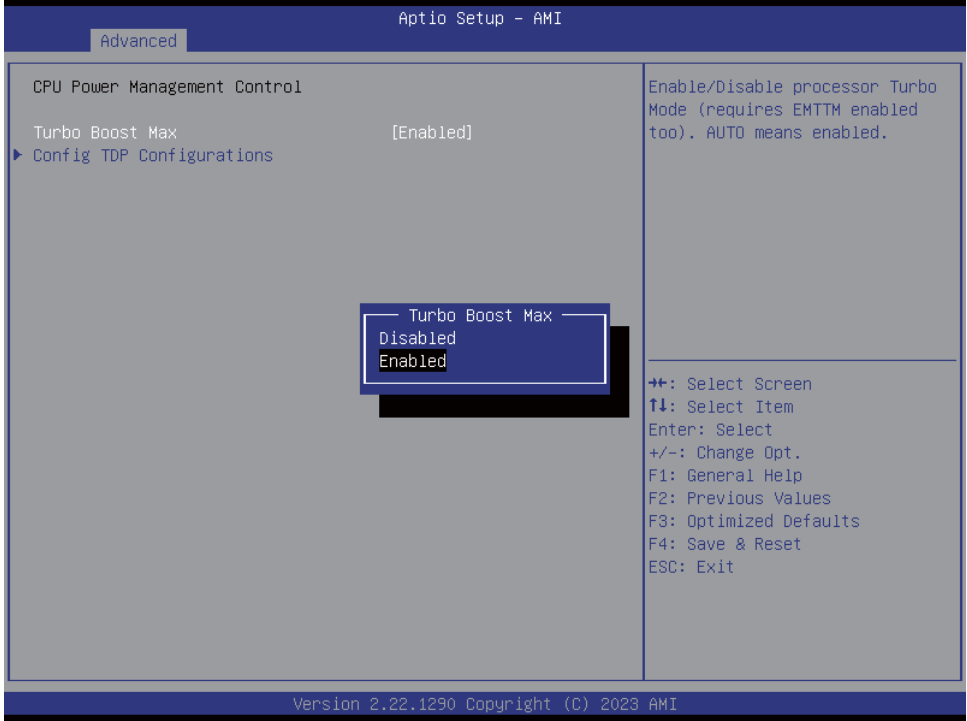
### Network Stack Configuration

Please refer section 4-6-9

### NVMe Configuration

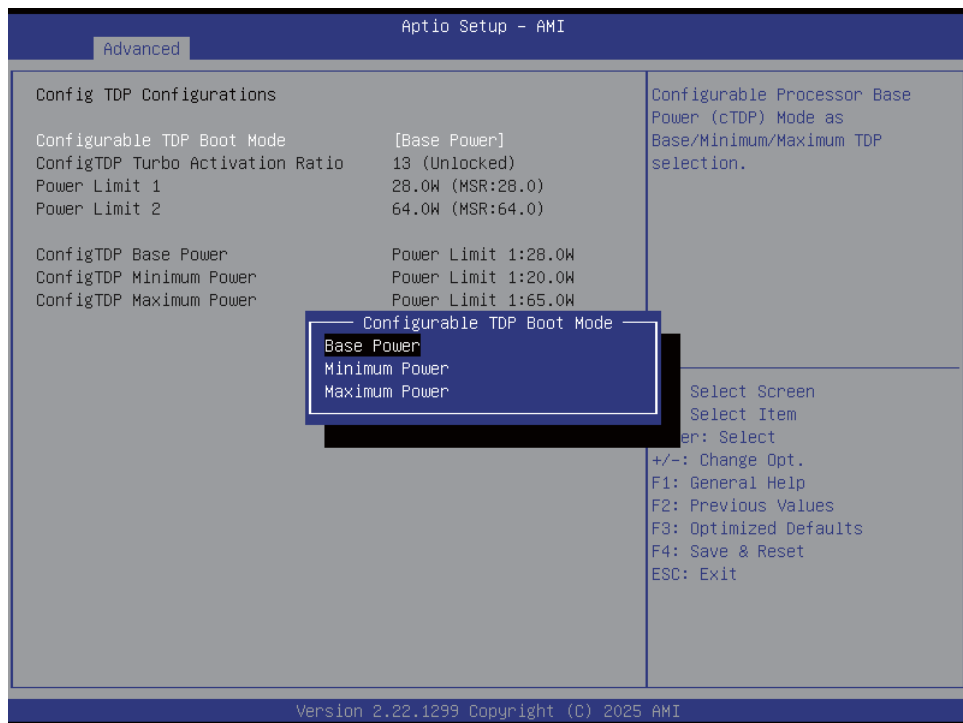
Please refer section 4-6-10

# 4-6-1 CPU Power Management Control



## Turbo Boost Max

To turn on turbo boost or not, default is disabled.

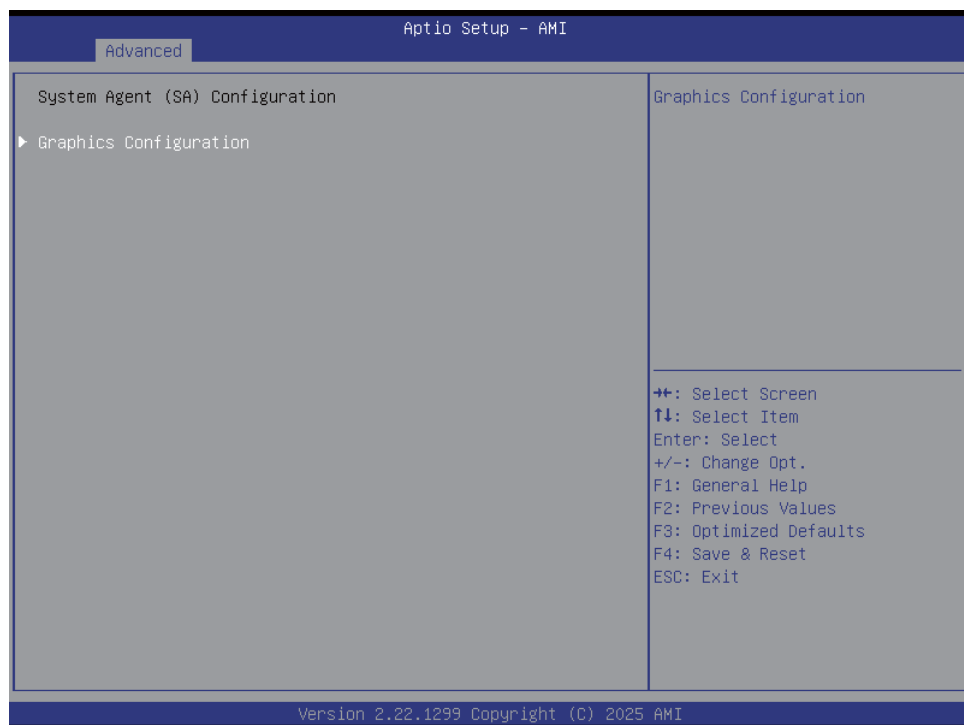


## Config TDP Configurations

### Configurable TDP Boot Mode

Enabled to change the TDP up or TDP down, default is Base Power

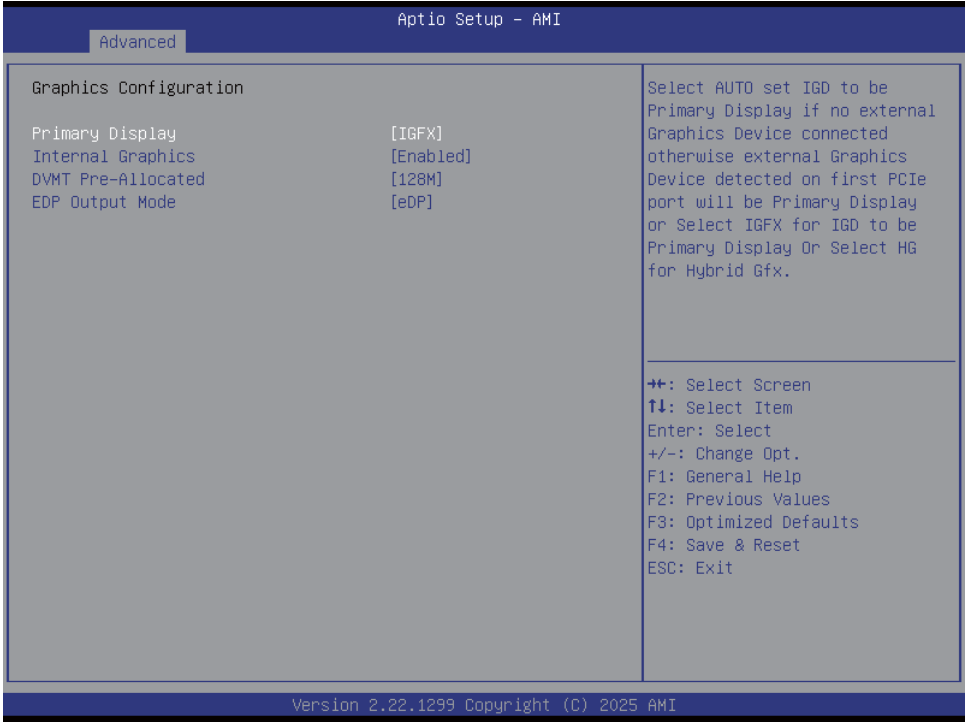
## 4-6-2 System Agent (SA) Configuration



### Graphics Configuration.

Please refer section 4-6-1-1

## 4-6-2-1 ► Graphics Configuration

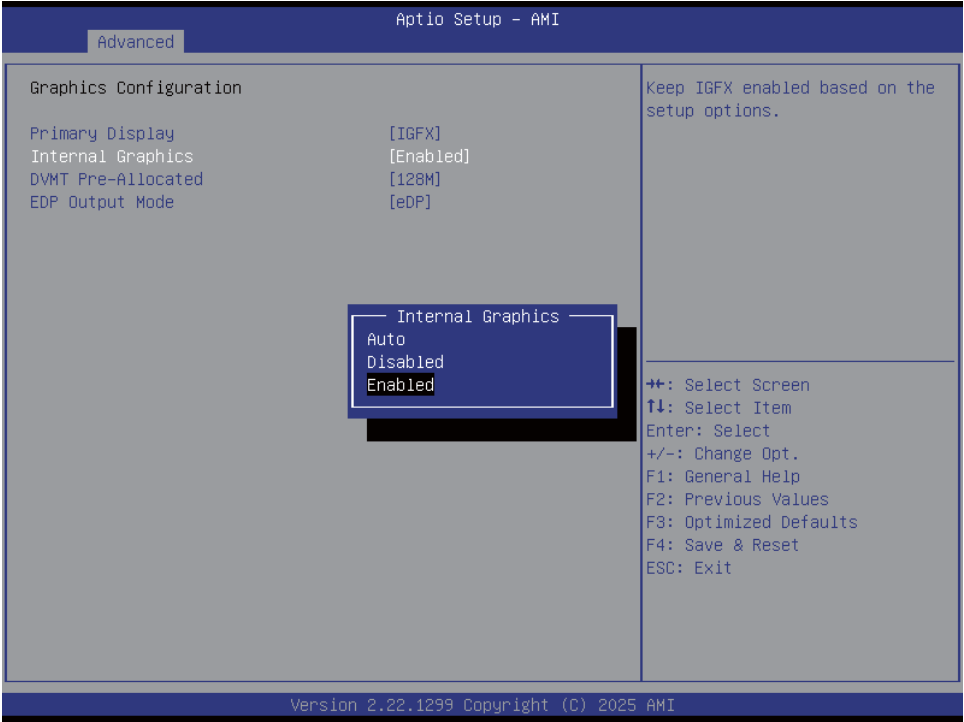


Primary Display



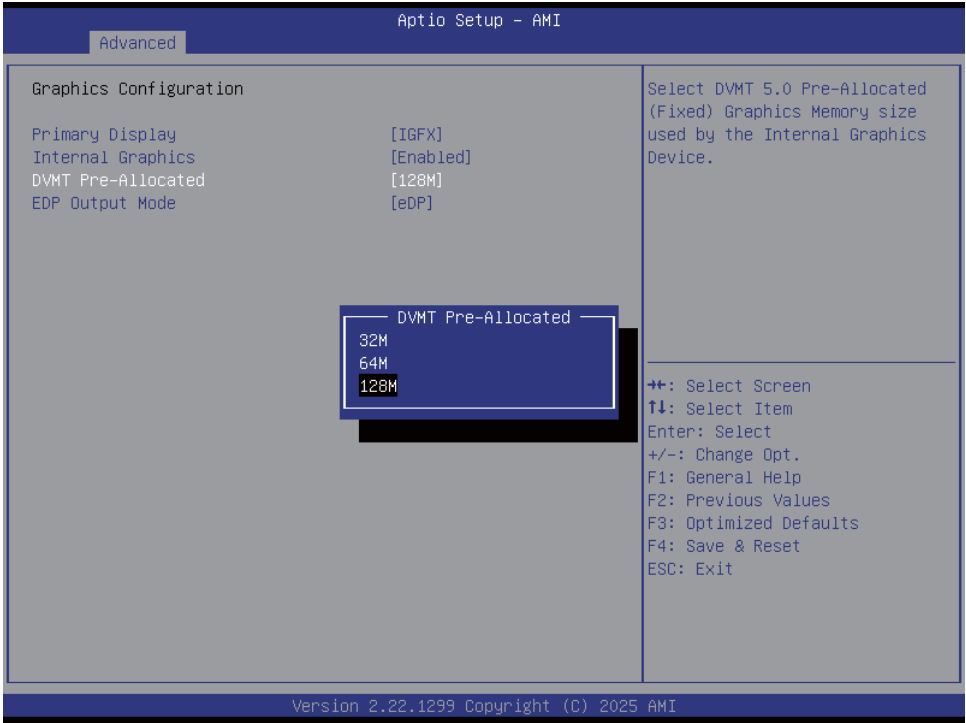
Primary display. The optional settings are: Auto, IGFX

# Internal Graphics



IneGraphics Translation Table Size. The optional settings are: Auto, Disabled, Enabled

# DVMT Pre-Allocated



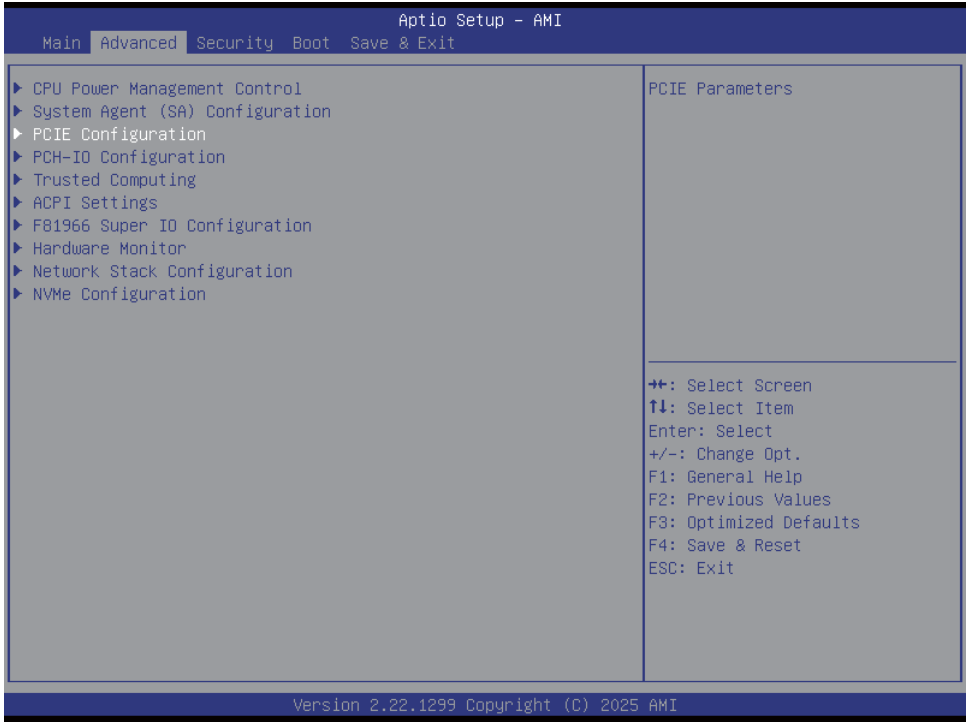
The optional settings are: 32MB, 64MB, 128MB (default)

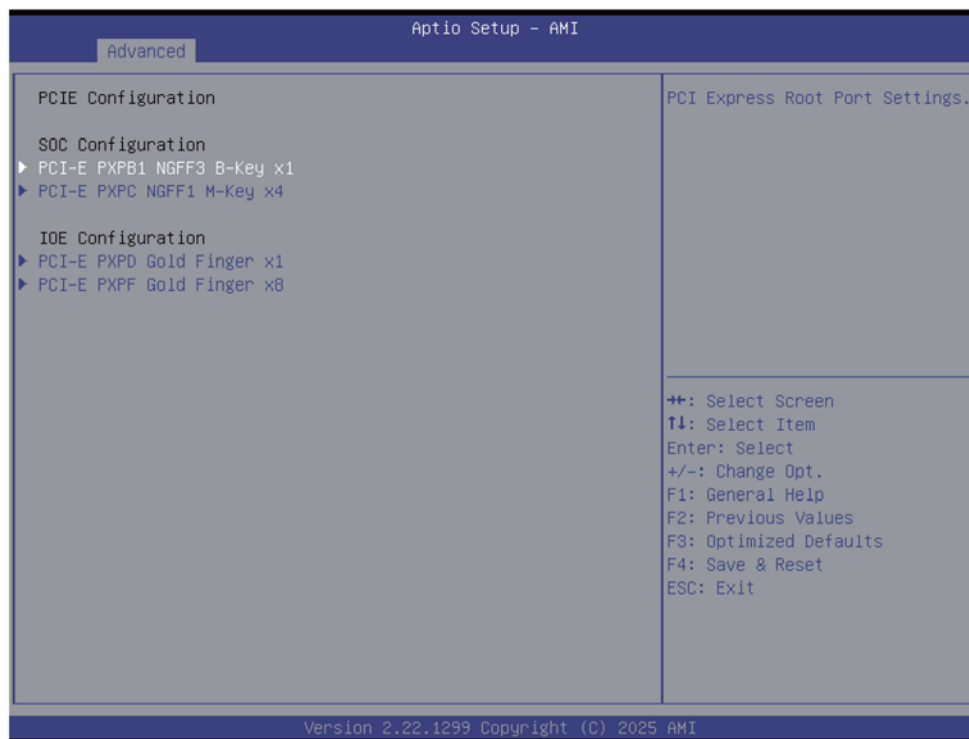
# EDP Output Mode Resolution



Switch to eDP or LVDS output. Default is eDP

### 4-6-3 PCIE Configuration

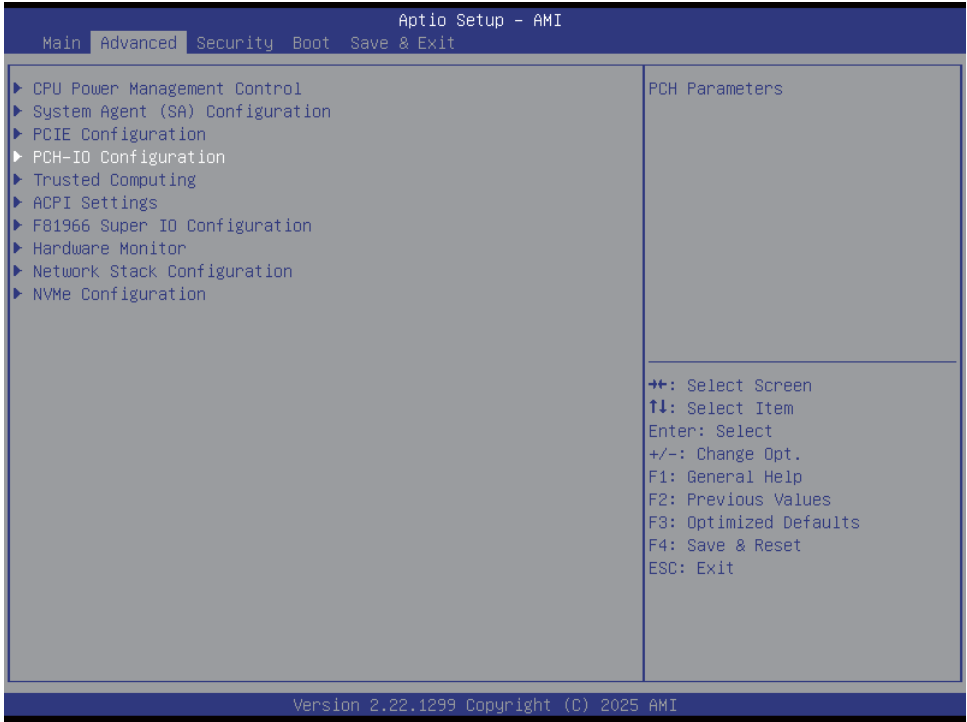




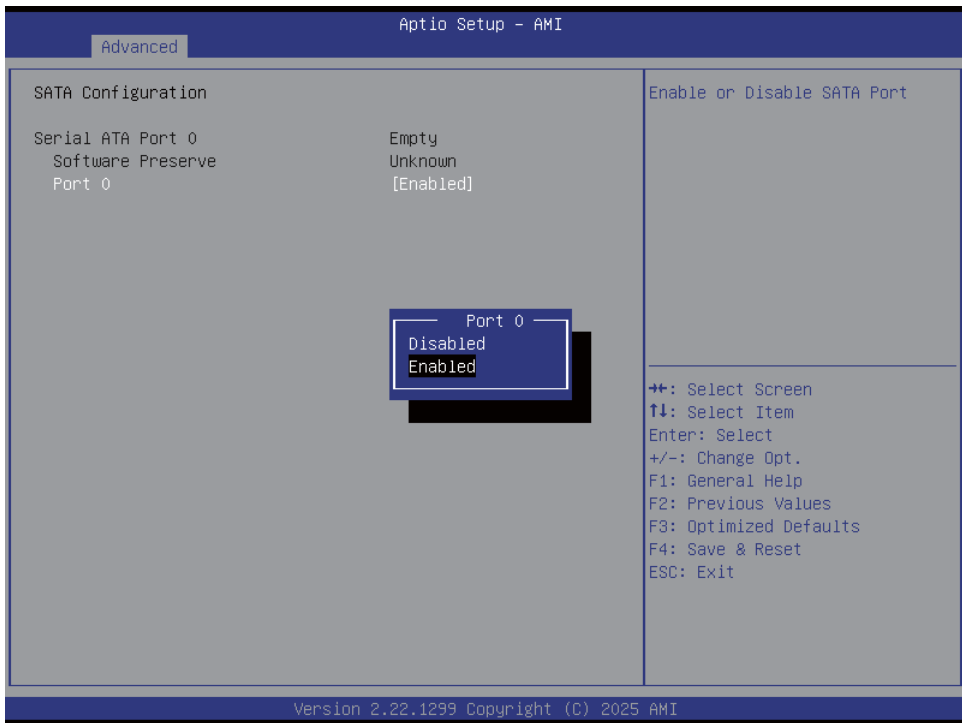
The optional settings are: Enabled (default), Disabled.

To select PCI Express port speed. The optional settings are: Auto(default), Gen1, Gen2, Gen3 Gen4

# 4-6-4 PCH-IO Configuration







### SATA Configuration

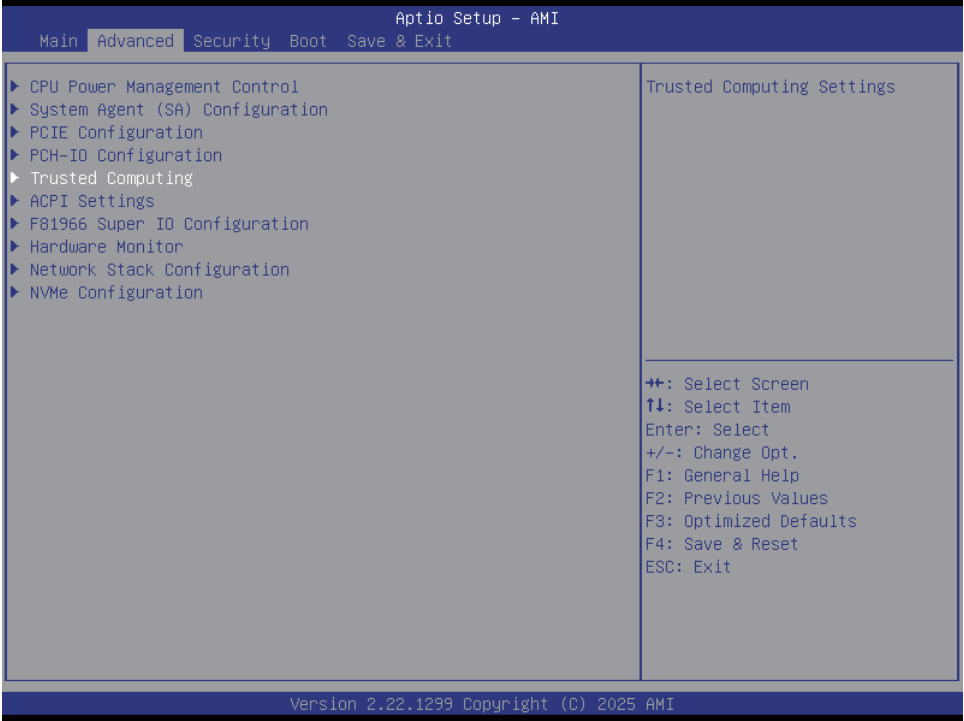
To enable or disable SATA mode, default is enabled.



## HD Audio Configuration

To enable or disable HD Audio mode, default is enabled.

# 4-6-5 Trusted Computing



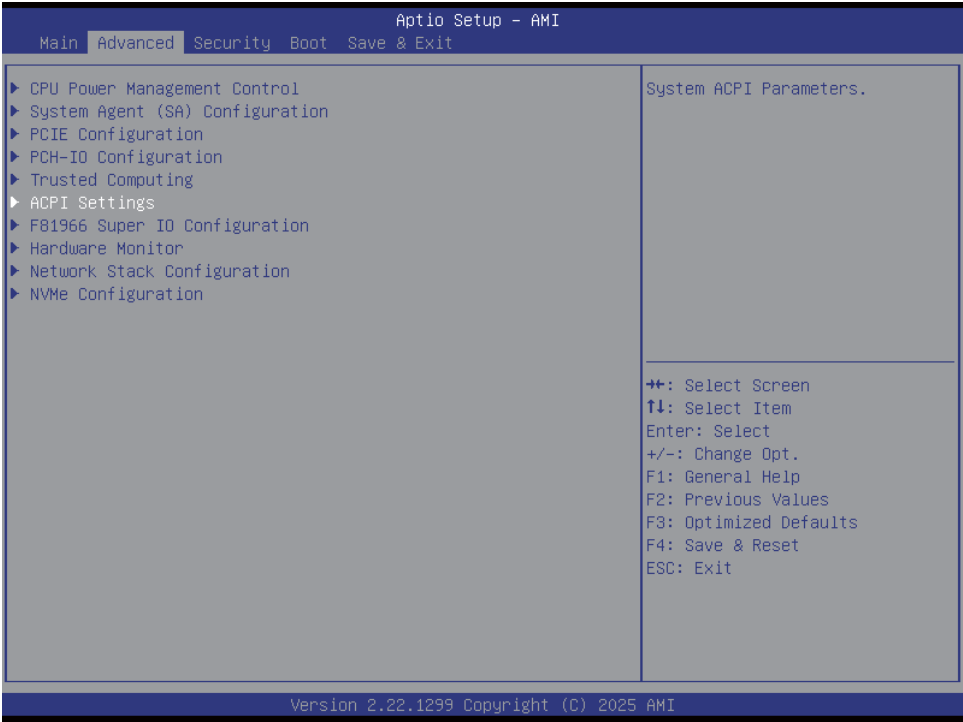
Aptio Setup - AMI		
Advanced		
TPM 2.0 Device Found		Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Firmware Version:	7.85	
Vendor:	IFX	
Security Device Support	[Enable]	
Active PCR banks	SHA256	
Available PCR banks	SHA256	
SHA256 PCR Bank	[Enabled]	
Pending operation	[None]	
Platform Hierarchy	[Enabled]	
Storage Hierarchy	[Enabled]	
Endorsement Hierarchy	[Enabled]	++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Physical Presence Spec Version	[1.3]	

Version 2.22.1290 Copyright (C) 2023 AMI

## Security Device Support

To enable BIOS support security device or not, default is Enabled.

# 4-6-6 ACPI Settings





### ACPI S4 Support

To enable support S4 mode, default is Disabled.

### ACPI S3 Support

To enable support S3 mode, default is Enabled.

# 4-6-7 F81966 Super IO Configuration

Aprio Setup - AMI

MainAdvancedSecurityBootSave & Exit

▶ CPU Power Management Control

▶ System Agent (SA) Configuration

▶ PCIE Configuration

▶ PCH-IO Configuration

▶ Trusted Computing

▶ ACPI Settings

▶ F81966 Super IO Configuration

▶ Hardware Monitor

▶ Network Stack Configuration

▶ NVMe Configuration

System Super IO Chip Parameters.

++: Select Screen

↑↓: Select Item

Enter: Select

+/-: Change Opt.

F1: General Help

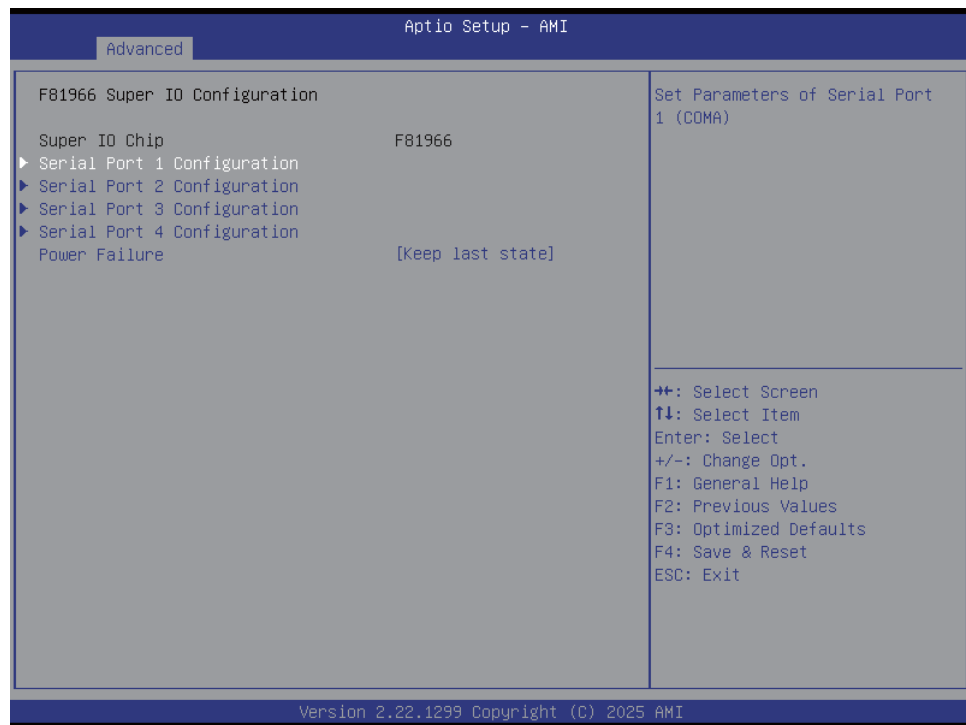
F2: Previous Values

F3: Optimized Defaults

F4: Save & Reset

ESC: Exit

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### Serial Port 1 Configuration

Please refer section 4-6-6-1

### Serial Port 2 Configuration

Please refer section 4-6-6-2

### Serial Port 3 Configuration

Please refer section 4-6-6-3

### Serial Port 4 Configuration

Please refer section 4-6-6-4

### Power Failure

Please refer section 4-6-6-5

# 4-6-7-1 ► Serial Port 1 Configuration

Advanced

Aptio Setup - AMI

Serial Port 1 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=3F8h; IRQ=4;	
Change Settings	[Auto]	
Serial Mode	[RS232]	

⚡: Select Screen

⚡: Select Item

Enter: Select

+/-: Change Opt.

F1: General Help

F2: Previous Values

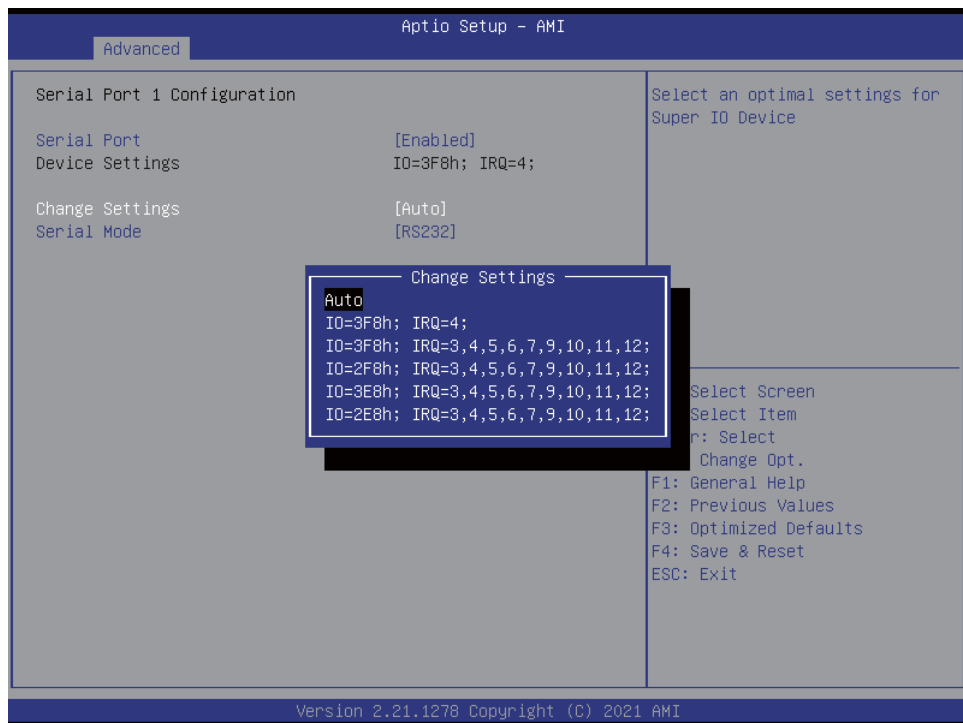
F3: Optimized Defaults

F4: Save & Reset

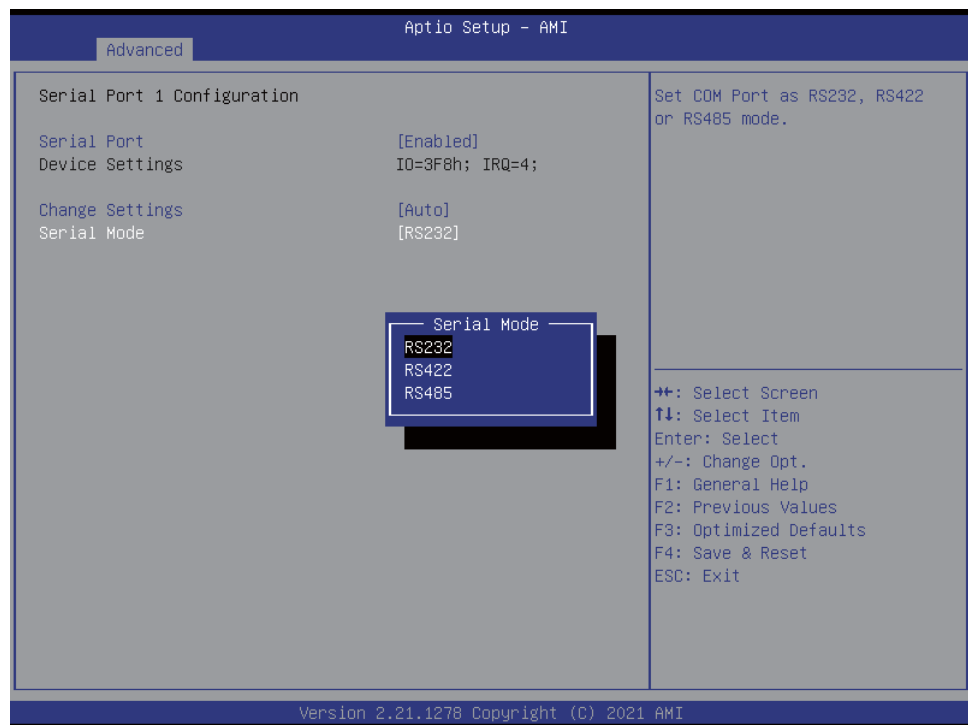
ESC: Exit

Version 2.21.1278 Copyright (C) 2021 AMI

To Enable Serial port or not, default is Enabled



Change Settings, default is Auto.

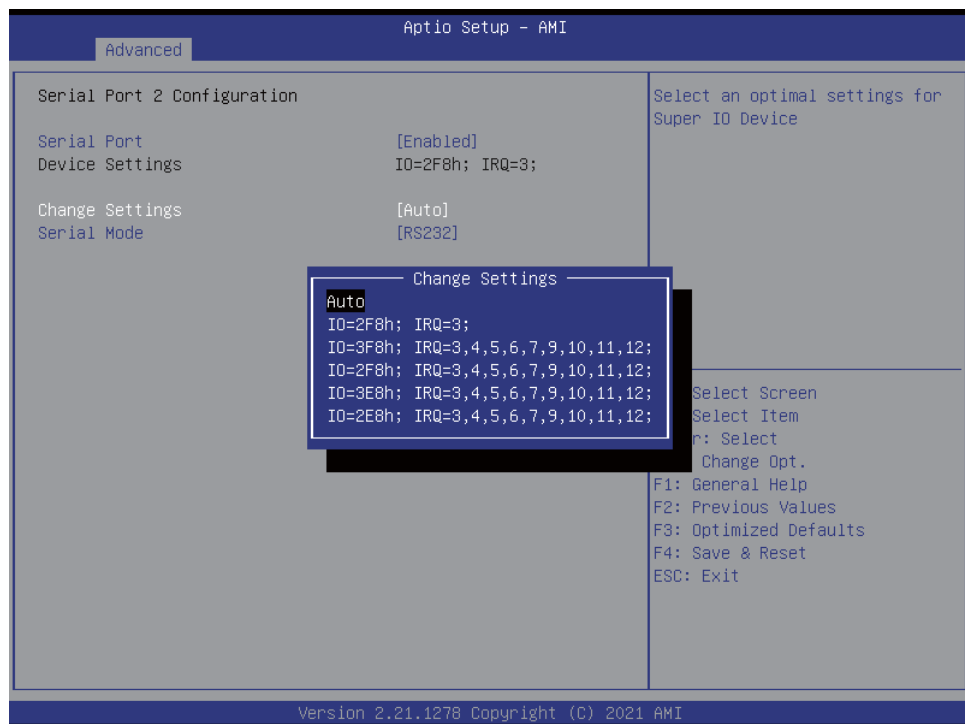


To select the Serial port to RS232/RS422/RS485, default is RS232.

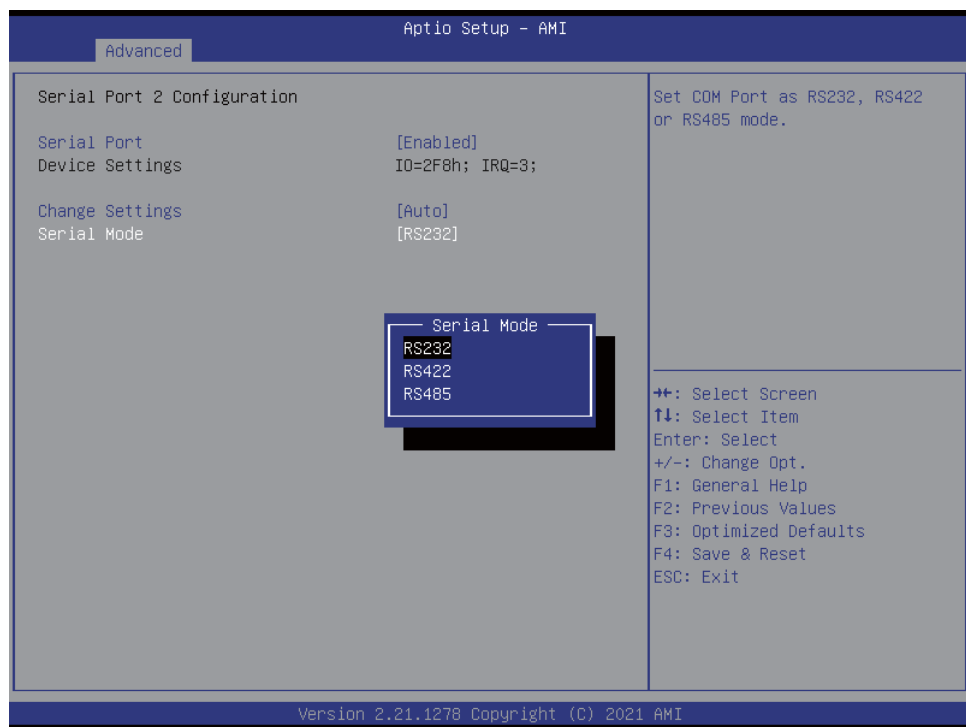
## 4-6-7-2 ► Serial Port 2 Configuration

Aptio Setup - AMI		
Advanced		
Serial Port 2 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=2F8h; IRQ=3;	
Change Settings	[Auto]	
Serial Mode	[RS232]	
		→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.21.1278 Copyright (C) 2021 AMI		

To Enable Serial port or not, default is Enabled.



Change Settings, default is Auto.

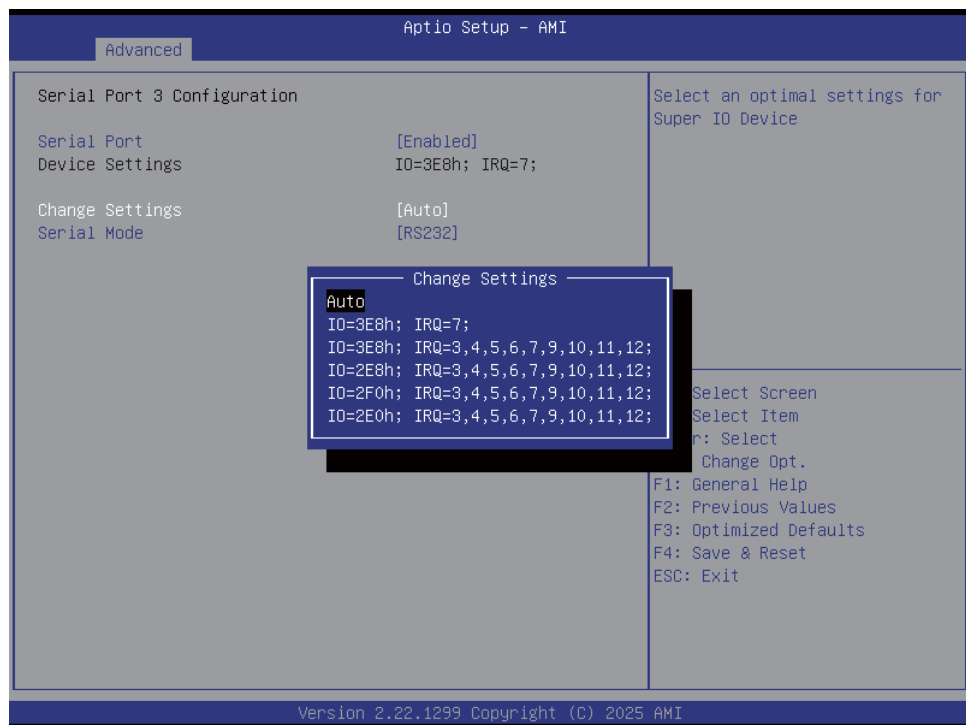


To select the Serial port to RS232/RS422/RS485, default is RS232.

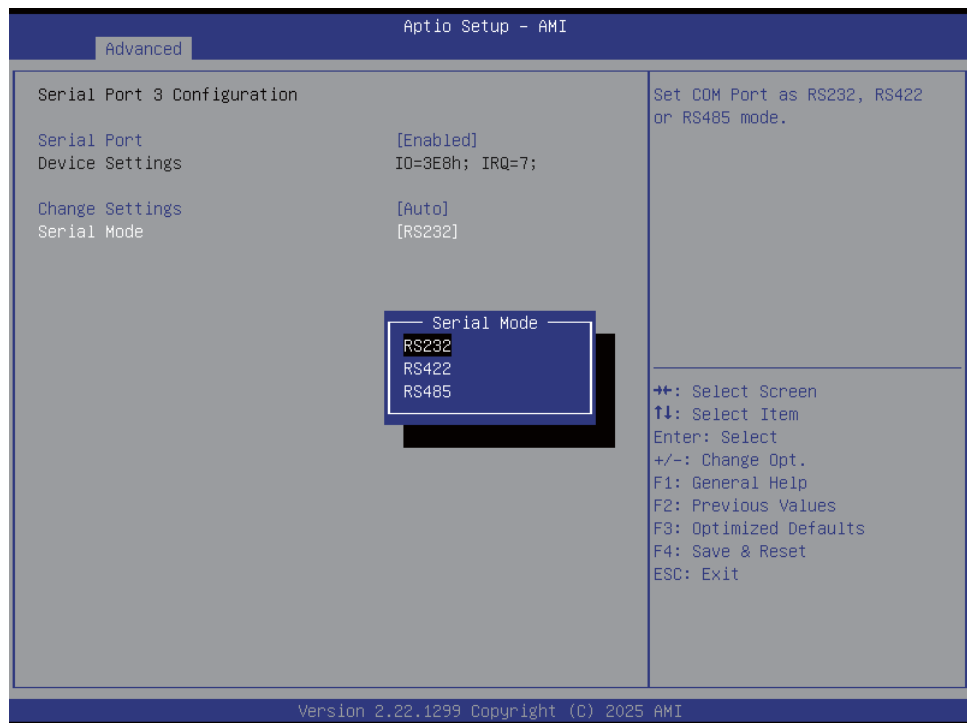
### 4-6-7-3 ► Serial Port 3 Configuration

Aptio Setup - AMI		
Advanced		
Serial Port 3 Configuration		Enable or Disable Serial Port (COM)
Serial Port	[Enabled]	
Device Settings	IO=3E8h; IRQ=7;	
Change Settings	[Auto]	
Serial Mode	[RS232]	
		++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.22.1299 Copyright (C) 2025 AMI		

To Enable Serial port or not, default is Enabled.



Change Settings, default is Auto.



To select the Serial port to RS232/RS422/RS485, default is RS232.

## 4-6-7-4 ► Serial Port 4 Configuration

Aptio Setup - AMI

Advanced

Serial Port 4 Configuration

Serial Port

Device Settings

Change Settings

Serial Mode

[Enabled]

IO=2E8h; IRQ=7;

[Auto]

[RS232]

Enable or Disable Serial Port (COM)

++: Select Screen

↑↓: Select Item

Enter: Select

+/-: Change Opt.

F1: General Help

F2: Previous Values

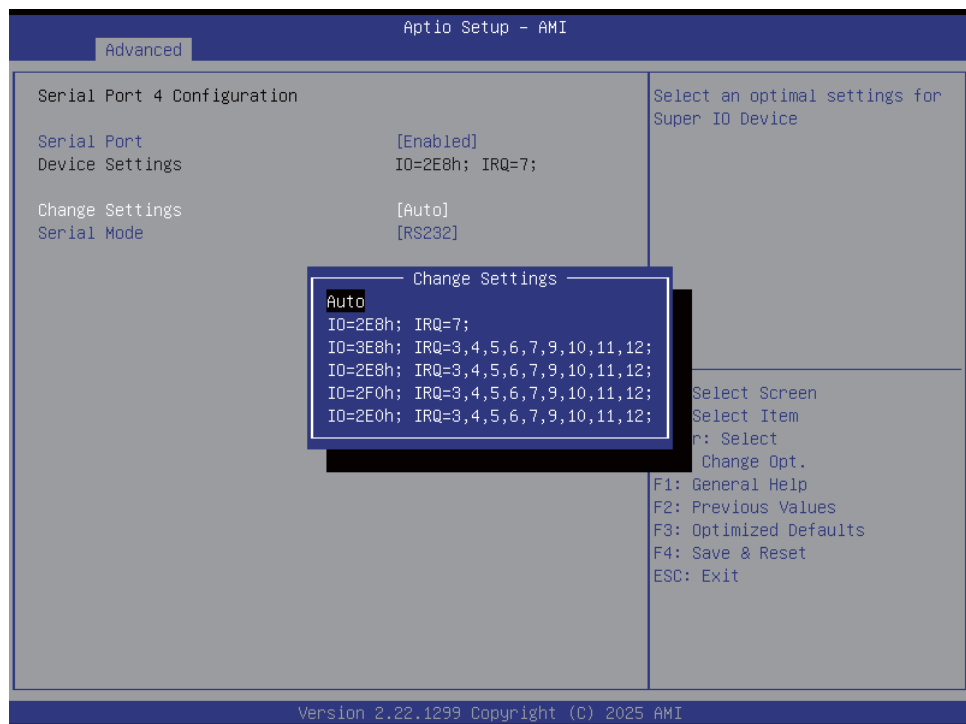
F3: Optimized Defaults

F4: Save & Reset

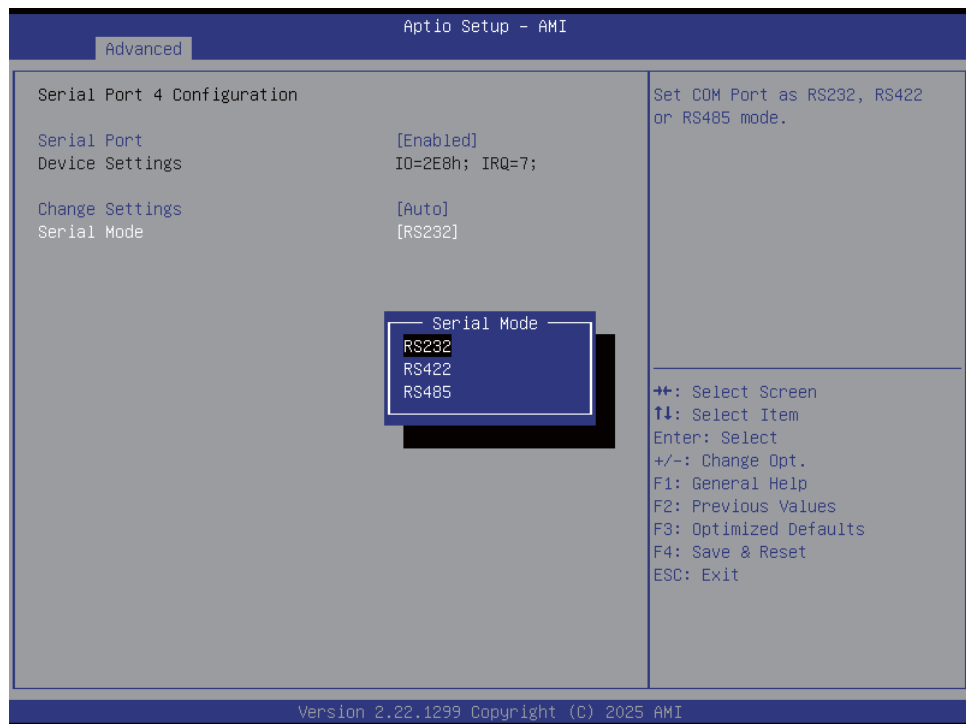
ESC: Exit

Version 2.22.1299 Copyright (C) 2025 AMI

To Enable Serial port or not, default is Enabled.

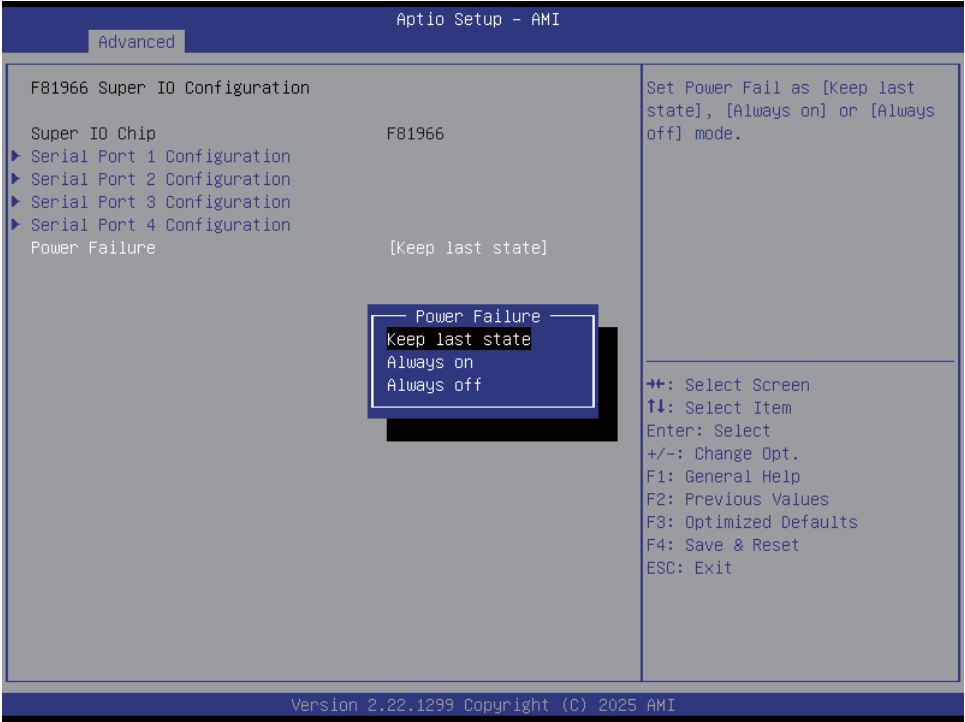


Change Settings, default is Auto.



To select the Serial port to RS232/RS422/RS485, default is RS232.

# 4-6-7-5 ► Power Failure



To select the power behavior after power fail, default is Keep last state.

# 4-6-8 Hardware Monitor

Advanced

Aptio Setup - AMI

Pc Health Status

▶ Smart Fan Configuration

CPU Temperature : +27 ℃  
SYSTEM Temperature : +29 ℃  
CPU Fan : 4823 RPM  
VCCCORE : +1.312 V  
VCCSA : +1.016 V  
VDD2 : +1.104 V  
VCCGT : +0.704 V  
VCC3V : +3.360 V  
VSB3V : +3.360 V  
VSB5V : +5.256 V  
VBAT : +3.056 V

Smart Fan Configuration.

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

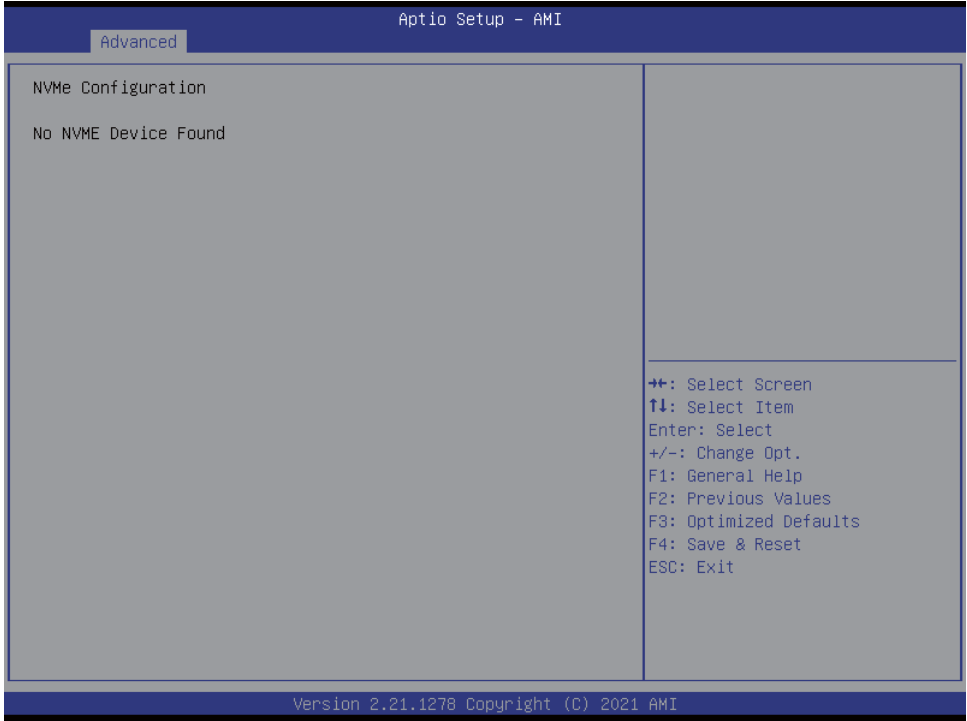
Version 2.22.1299 Copyright (C) 2025 AMI

## 4-6-9 Network Stack Configuration



To enable the Network stack or not, default is Disabled.

# 4-6-10 NVMe Configuration



To detect NVMe storage automatically.

# 4-7 Security



## Administrator Password

## User Password

To set up an Administrator or an User password



## Secure Boot

To active secure boot

# 4-8 Boot



## Bootup NumLock State

To select Power-on state for NumLock, default is <On>

## Quiet Boot

The optional settings are: Enabled(default), Disabled.

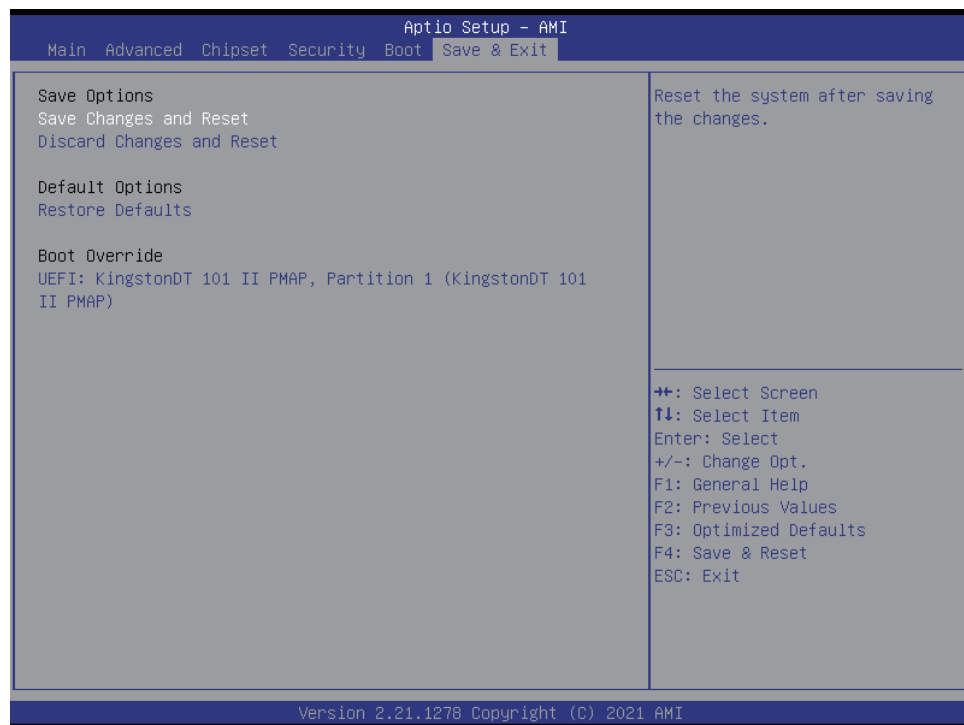
## Wake-Up On LAN

The optional settings are: Enabled(default), Disabled

## Wake-Up On USB

The optional settings are: Enabled, Disabled(default).

## 4-9 Save & Exit



### Save Change and Reset

Save configuration and reset

### Discard Changes and Reset

Reset without saving the changes

### Restore Defaults

To restore the optimal default for all the setup options

---

## 4-10 How to update Insyde BIOS

Under DOS Mode

STEP 1. Prepare a bootable disc.

(Storage device could be USB FDD or USB pen drive.)

STEP 2. Copy utility program to your bootable disc. You may download it from our website.

STEP 3. Copy the latest BIOS for your LEX motherboard from our website to your bootable disc.

STEP 4. (Here take 3I140CW as an example, please enter your motherboard's name)

Insert your bootable disc into X: (X could be C:, A: or others.

It depends on which type of storage device you use. )

Start the computer and type

X:\: H2OFFT-D.EXE 3I140CW.ROM -BIOS -ALL

3I140CW.ROM is the file name of the latest BIOS.

It may be 3I140CW.ROM or 3I140CW.ROM, etc.

Please leave one space between .ROM & -BIOS -ALL

By Bay Trail series mainboard, please type

X:\: H2OFFT-D.EXE 3I140CW.ROM -BIOS -ALL

-BIOS : Flash BIOS region

-ALL : Flash all

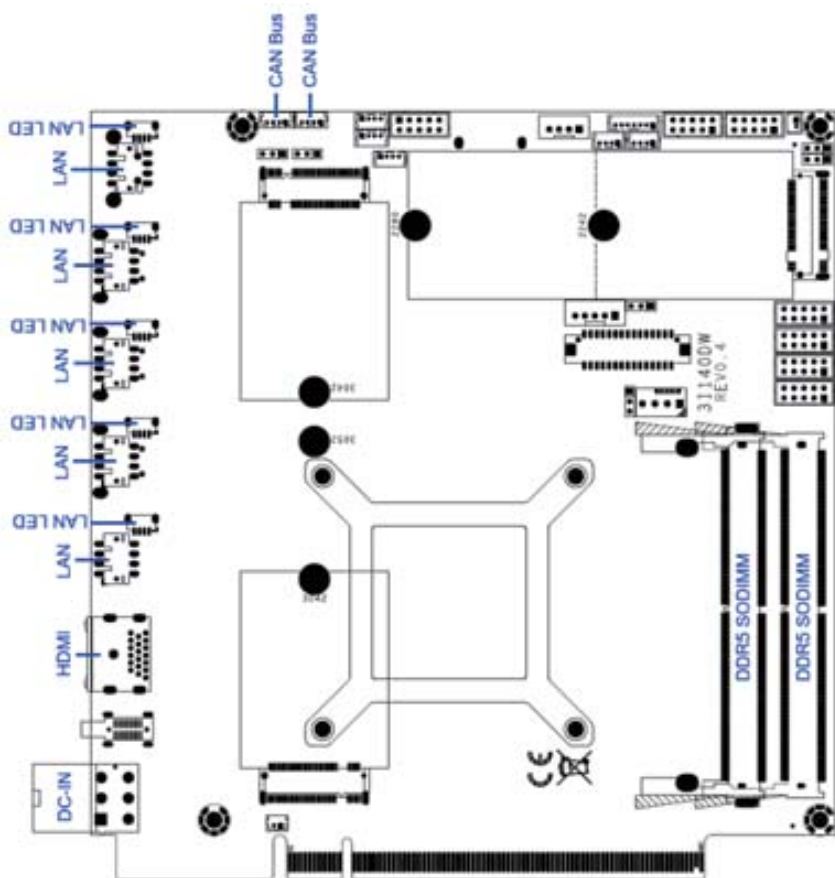
STEP 5. Press ENTER and the BIOS will be updated,  
Computer will restart automatically.

## Appendix B: Resolution list

640 x 480 x ( 256 / 16bit / 32bit )
800 x 600 x ( 256 / 16bit / 32bit )
1024 x 768 x ( 256 / 16bit / 32bit )
1152 x 864 x ( 256 / 16bit / 32bit )
1280 x 600 x ( 256 / 16bit / 32bit )
1280 x 720 x ( 256 / 16bit / 32bit )
1280 x 768 x ( 256 / 16bit / 32bit )
1280 x 800 x ( 256 / 16bit / 32bit )
1280 x 960 x ( 256 / 16bit / 32bit )
1280 x 1024 x ( 256 / 16bit / 32bit )
1400 x 1050 x ( 256 / 16bit / 32bit )
1440 x 900 x ( 256 / 16bit / 32bit )
1600 x 900 x ( 256 / 16bit / 32bit )
1600 x 1200 x ( 256 / 16bit / 32bit )
1680 x 1050 x ( 256 / 16bit / 32bit )
1920 x 1080 x ( 256 / 16bit / 32bit )
1920 x 1200 x ( 256 / 16bit / 32bit )

## Layout-3I140DW-Function Map (OEM)

TOP



### OEM option note:

1. DC-IN Connector 180° Change to 90° ATX Connector
2. HDMI® / DP Dual Connector Change to HDMI® Single Connector
3. LAN RJ45 Change to LAN / LAN LED wafer x 5 (2x4pin 2.00mm + 1x4pin 1.25mm)
4. CAN Bus (1x2pin 1.25mm) Wafer Change to (1x4pin 1.25mm) Wafer
5. NGFF1 M.2 M key 3080 Change to 3042 size
6. NGFF2 M.2 B key 3042 Change to 3052 size
7. DDR5 SODIMM Vertical Type Change to horizontal Type

## Connector MAP-3I140DW (OEM)

TOP

