



User's Manual

PPC-150P-APL

Intel® Apollo Lake Processor

Compact Panel PC with 15" PCAP Touch Screen

PPC-150P-APL-N4-4G

PPC-150P-APL-N4-8G

PPC-150P-APL-N3-4G (Build to order)

PPC-150P-APL-N3-8G (Build to order)

(Revision 1.0A)

REVISION

DATE	VERSION	DESCRIPTION
2019/6/28	Version 1.0A	New Release

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Manual # IUMPPC150PAPL-01 Ver.1.0A Jun, 2019

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For technical support or drivers download, please visit our websites at:

- https://www.icop.com.tw/download_resource/PPC-150P-N4200?tags=18.81.34.35.38.39.64.65&selected=35

This Manual is for the PPC-150P-APL series.

SAFETY INFORMATION

- Read these Safety instructions carefully.
- Please carry the unit with both hands, handle carefully.
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Do not expose your Panel PC to rain or moisture in order to prevent shock and fire hazard.
- Input voltage +12VDC
- Operating temperature between 0~+60°C (+32~+140°F).
- Keep PPC-150P-APL away from humidity.
- When a M.2 2242 or 2.5" Hard Disk/SSD storage is the main operating system storage, please turn off power before inserting or removing. Do not open the cabinet to avoid electrical shock. Refer to your nearest dealer for qualified personnel servicing.
- Never touch un-insulated terminals or wire unless your power adaptor is disconnected.
- Locate your Panel PC as close as possible to the socket outline for easy access and to avoid force caused by entangling of your arms with surrounding cables from the Panel PC.
- USB connectors are not supplied with Limited Power Sources.
- If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

WARNING!



DO NOT ATTEMPT TO OPEN OR TO DISASSEMBLE THE CHASSIS (ENCASING) OF THIS PRODUCT. PLEASE CONTACT YOUR DEALER FOR SERVICING FROM QUALIFIED TECHNICIAN.

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Ch. 1

General Information

[1.1 Product Description](#)

[1.2 Product Specifications](#)

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1.1 Product Description

ICOP Technology Inc. is proudly going to release a brand new Panel PC, which offers fanless design, low power consumption, and IP65 front panel. The PPC-150P-APL is powered by Intel® Apollo Lake N4200/N3350 processor, and 4GB / 8GB SO-DIMM DDR3L module that handles processing more efficiently and provides faster performance. The project capacity touch panel with LED backlight TFT LCD increases operation convenience and visibility in outdoor environments. The ultra-compact and thin exterior design is perfect for the present demanding embedded and productive applications.

The new PPC-150P-APL inherited PPC series' smooth appearance and ultra-texture aluminum exterior design to make your industrial applications look more stylish. The versatile I/O ports, IP65 front panel, GIGA high-speed Ethernet etc. can fulfill fundamental functions. Our consistent advantages feature stable performance, extended working temperature support, low power consumption and fanless design. The expandable customize I/O ports can be accommodated connectivity requirements to industrial machine platforms and industrial automation equipment's needs.

The PPC-150P-APL supports Windows 10, Windows 10 IoT and Linux to meet ready-to-market demand and provide competitive advantages for customers.

1.2 Product Specifications

CPU BOARD SPECIFICATIONS

CPU	Intel® Apollo Lake N4200 (Quad core) Intel® Apollo Lake N3350 (Dual core; Optional)
Cache	L2: 2MB Cache
BIOS	AMI BIOS
Memory	4GB / 8GB DDR3L
Display	Intel® HD Graphics, HDMI 1.4 (As Dual Display)
LAN	Integrated 10/100/1000Mbps Ethernet x 1
Audio	HD Audio-Realtek ALC662VD CODEC
Internal Drives	2.5" SATA HDD/SSD Support (SATA III 6.0Gb/s) M.2 Slot Support (M-Key, SATA Interface, 2242)
I/O	HDMI x 1 RS232/422/485 (COM1) x 1 RS232 (COM2) x 1 USB3.0 x 2 USB2.0 x 1 RJ45 x 1 Audio-Out Mic-In

MECHANICAL & ENVIRONMENT

Power Requirement	+12 VDC
Power Adapter	+12VDC@ 3.33A (40W)
Operating Temperature	0~+60°C (+32~+140°F)
Storage Temperature	-20~+70°C (-4~ +158°F)
Operating Humidity	0% ~ 90% Relative Humidity, Non-Condensing

Dimensions	359.63x282.98x57.9mm (14.16"x11.14"x2.28")
Weight	4.11 Kg
Protection	IP65 Front Panel
Certification	CE / FCC / VCCI / Vibration/ Shock

LCD SPECIFICATIONS

Display Type	15" XGA TFT LCD
Backlight Unit	LED
Display Resolution	1024(W) x 768(H)
Brightness (cd/m ²)	250 nits
Contrast Ratio	600 : 1
Display Color	262,144
Pixel Pitch (mm)	0.297 (H) x 0.297 (V)
Viewing Angle	Vertical 160°, Horizontal 160°
Backlight Lifetime	30,000 hrs

TOUCHSCREEN

Type	Capacitive
Hardness	≥6H
Transmittance	≥85%
Controller	USB interface
Software Driver	Linux, Win10, Win10 IoT
Durability	100 million

1.3 Inspection standard for TFT-LCD Panel

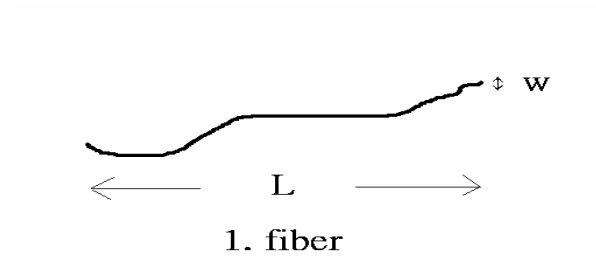
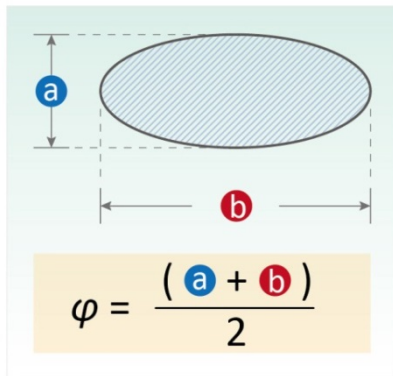
DEFECT TYPE			LIMIT				Note	
VISUAL DEFECT	INTERNAL	SPOT	$\varphi < 0.15\text{mm}$		Ignore		Note1	
			$0.15\text{mm} \leq \varphi \leq 0.5\text{mm}$		$N \leq 4$			
			$0.5\text{mm} < \varphi$		N=0			
		FIBER	$0.03\text{mm} < W \leq 0.1\text{mm}, L \leq 5\text{mm}$		$N \leq 3$		Note1	
			$1.0\text{mm} < W, 1.5\text{mm} < L$		N=0			
		POLARIZER BUBBLE	$\varphi < 0.15\text{mm}$		Ignore		Note1	
			$0.15\text{mm} \leq \varphi \leq 0.5\text{mm}$		$N \leq 2$			
			$0.5\text{mm} < \varphi$		N=0			
		Mura	It' OK if mura is slight visible through 6%ND filter					
		ELECTRICAL DEFECT	BRIGHT DOT	A Grade			B Grade	
C Area	O Area			Total	C Area	O Area	Total	Note3
$N \leq 0$	$N \leq 2$			$N \leq 2$	$N \leq 2$	$N \leq 3$	$N \leq 5$	Note2
DARK DOT	$N \leq 2$		$N \leq 3$	$N \leq 3$	$N \leq 3$	$N \leq 5$	$N \leq 8$	
TOTAL DOT	$N \leq 4$			$N \leq 5$	$N \leq 6$	$N \leq 8$	Note2	
TWO ADJACENT DOT	$N \leq 0$		$N \leq 1$ pair	$N \leq 1$ pair	$N \leq 1$ pair	$N \leq 1$ pair	$N \leq 1$ pair	Note4
THREE OR MORE ADJACENT DOT	NOT ALLOWED							
LINE DEFECT	NOT ALLOWED							

(1) One pixel consists of 3 sub-pixels, including R, G, and B dot. (Sub-pixel = Dot)

(2) Little bright Dot acceptable under 6% ND-Filter.

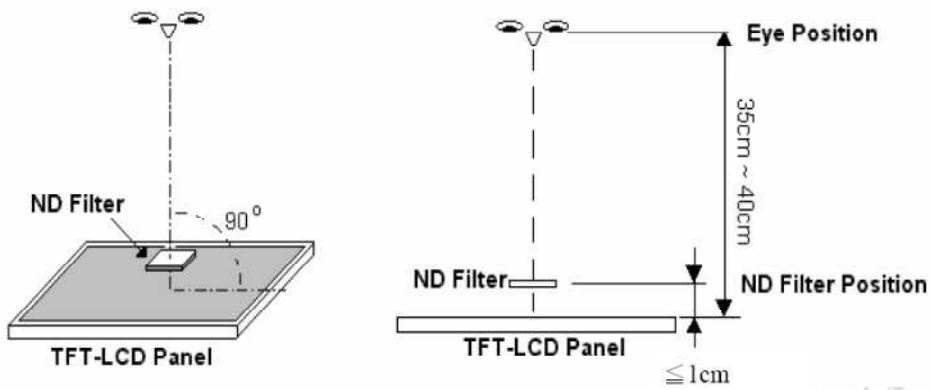
(3) If require G0 grand (Total dot $N \leq 0$), please contact region sales.

[Note 1] W: Width[mm]; L: Length[mm]; N: Number; ϕ : Average Diameter.

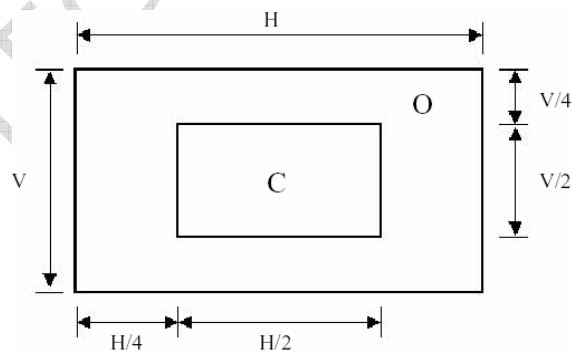


(a) White / Black Spot (b) Polarizer Bubble

[Note 2] Bright dot is defined through 6% transmission ND Filter as following.

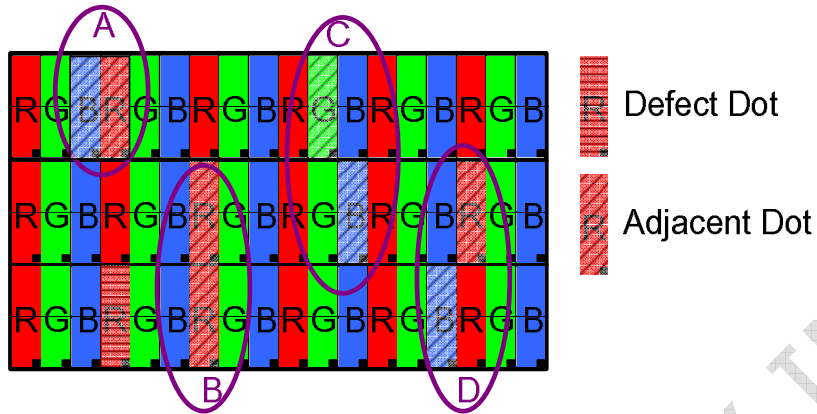


[Note 3] Display area



C Area: Center of display area **O Area:** Outer of display area

[Note 4] Judge the defect dot and the adjacent dot as following. Allow below (as A, B, C and D status) adjacent defect dots, including bright and dark adjacent dot. And they will be counted 2 defect dots in total quantity.

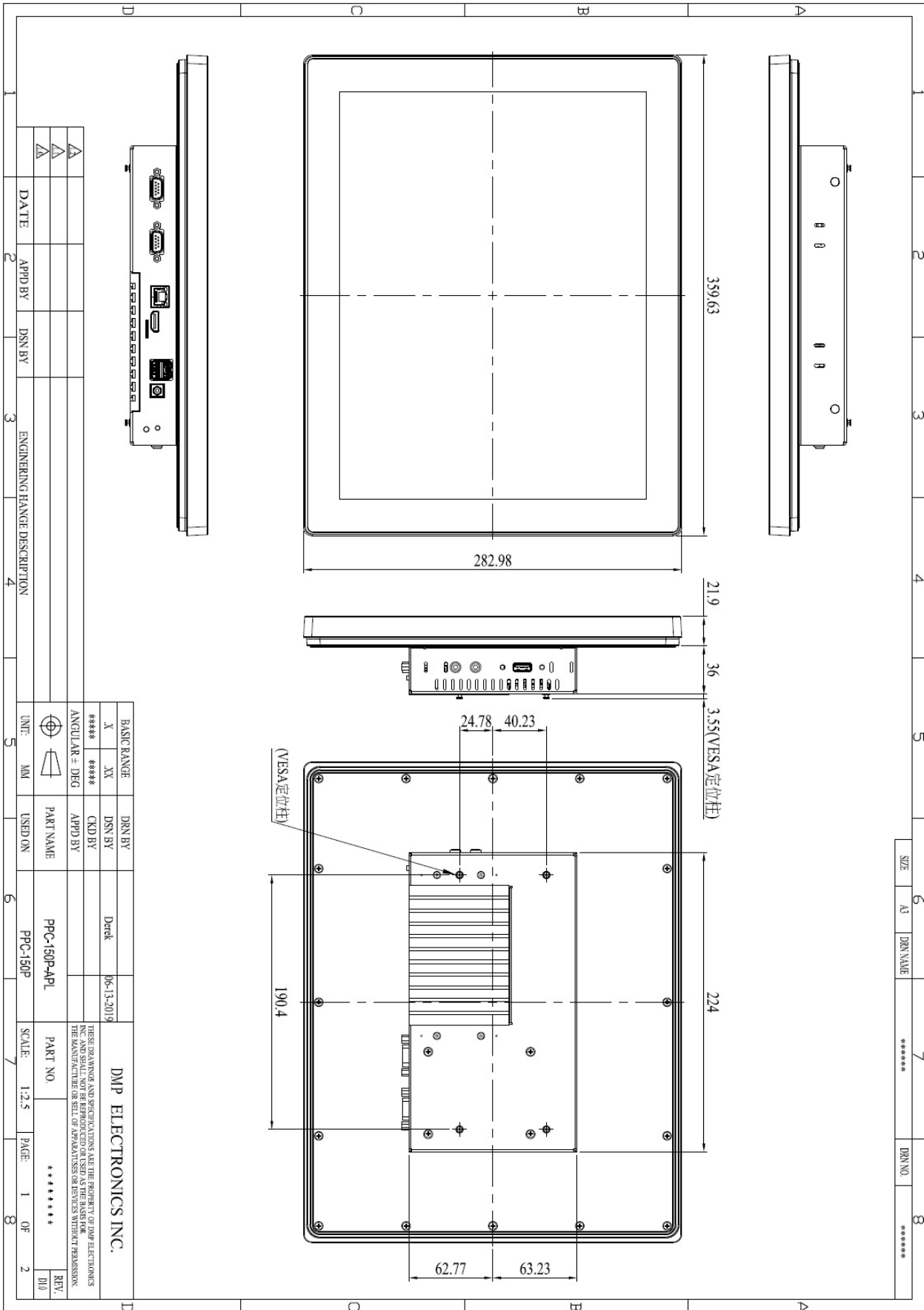


The defects that are not defined above and considered to be problem shall be reviewed and discussed by both parties.

Defects on the Black Matrix, out of Display area, are not considered as a defect or counted.

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1.4 Product Dimensions

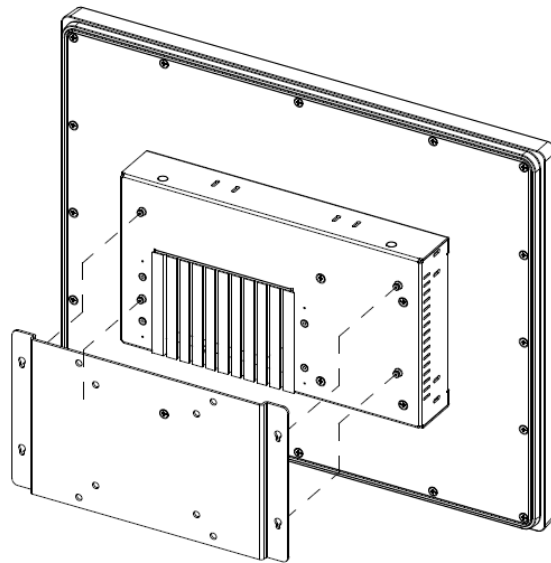


1.5 Mounting Instruction

- **1.5.1 VESA Mounting**

PPC-150P-APL series support VESA Mount that is an optional for ordering. Please contact your region sales for ordering.

Ordering part number: **VESA-MT-PPC-APL-SET**



1. Place VESA bracket and VESA-MT-PPC-APL-SET together.
2. Lock 4 screws and nuts on both of VESA bracket and VESA-MT-PPC-APL-SET.



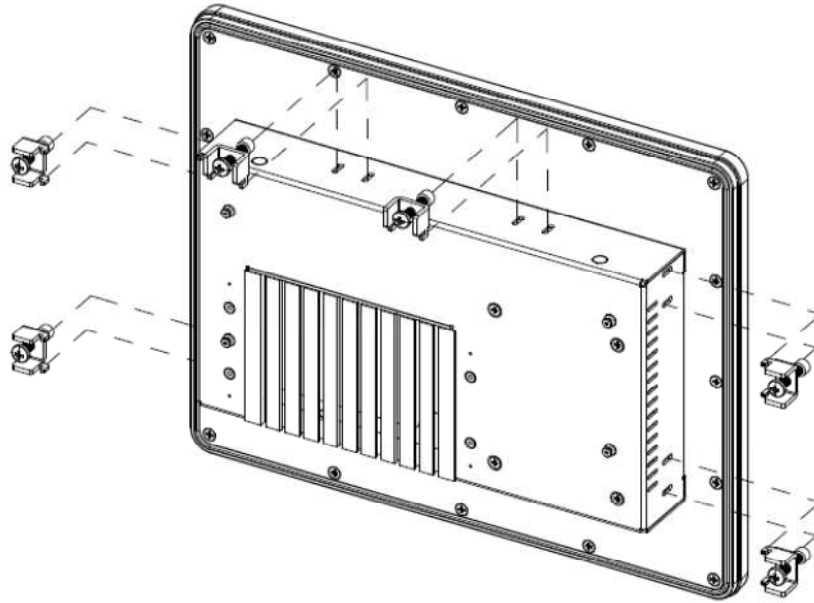
3. Hang PPC-150P-APL upon on both of VESA bracket and VESA-MT-PPC-APL-SET.



• 1.5.2 Panel Mounting

PPC-150P-APL series support clamp mount that is an optional for ordering. Please contact your region sales for ordering.

Ordering part number: **PANEL-MT-PPC-APL-SET**



1. Please refer the Section 1.4 to make a cutout hole on your mechanical or frame. **Please note that there is thickness limitation of the mounting wall for clamp mount installation. The suggestion of mounting wall thickness limitation is 20 mm.**
2. **PANEL-MT-PPC-APL-SET** includes 6pcs of clamp and screw, and each clamp and screw is paired. Screws 6pcs of clamp and screw together respectively.
3. Place PPC in a cutout mechanical or frame, which mounts the panel to align the bottom of the panel housing with the bottom edge of the cutout. This way can help hold the panel steadily.
4. At the back side of the mounting wall, insert the clamp into the slide hole at the side bracket on the panel. Fit the screw on the clamp and screw on both of clamp and mounting wall. Please be careful and make sure that 6 clamps and screws have been lock tightly.

1.6 Ordering Information

Product Code	LCD Size	CPU Type	RAM
PPC	104T	N4	4G
	150T	N3	8G
	150P (PCAP)		

1. Product Code : Code 1~3.

PPC : Panel PC Series.

2. LCD Size : Code 4~7.

104T : 10.4" LCD with Resistive touch screen.

150T : 15" LCD with Resistive touch screen.

150**P** : 15" LCD with **PCAP** touch screen.

3. CPU Type : Code 8~9.

N4: Intel Apollo Lake N4200.(Standard; Quad Core 6W)

N3: Intel Apollo Lake N3350.(Optional; Dual Core 6W)

4. RAM : Code 10~11.

4G : 4GB. 8 : 8GB.

PS: Power adapter and cord must be showed separate because different county has different power cord. The unit price includes power adapter and cord as below.

POWER-12V3.33A-FSP

POWERCABLE-FSP-US / POWERCABLE-FSP-EU

PART NUMBER	DESCRIPTION
PPC-150P-APL-N4-4G	15" Panel PC w/Intel Apollo Lake N4200/4GB DRAM /3U/Giga LAN/2S/PCAP Touch/DC12V Power Input
PPC-150P-APL-N4-8G	15" Panel PC w/Intel Apollo Lake N4200/8GB DRAM /3U/Giga LAN/2S/PCAP Touch/DC12V Power Input
PPC-150P-APL-N3-4G (BTO)	15" Panel PC w/Intel Apollo Lake N3350/4GB DRAM /3U/Giga LAN/2S/PCAP Touch/DC12V Power Input
PPC-150P-APL-N3-8G (BTO)	15" Panel PC w/Intel Apollo Lake N3350/8GB DRAM /3U/Giga LAN/2S/PCAP Touch/DC12V Power Input
POWER-12V3.33A-FSP	AC – DC power adapter / DC12V @ 3.33A (AC 90 ~ 240V Input)
POWERCABLE-FSP-US / POWERCABLE-FSP-EU	US/Euro power cord for POWER-12V3.33A-FSP
VESA-MT-PPC-APL-SET	VESA mount bracket set
PANEL-MT-PPC-APL-SET	Panel mount set with clamps and screws

Ch. 2

System Installation

[2.1 CPU Board Outline](#)

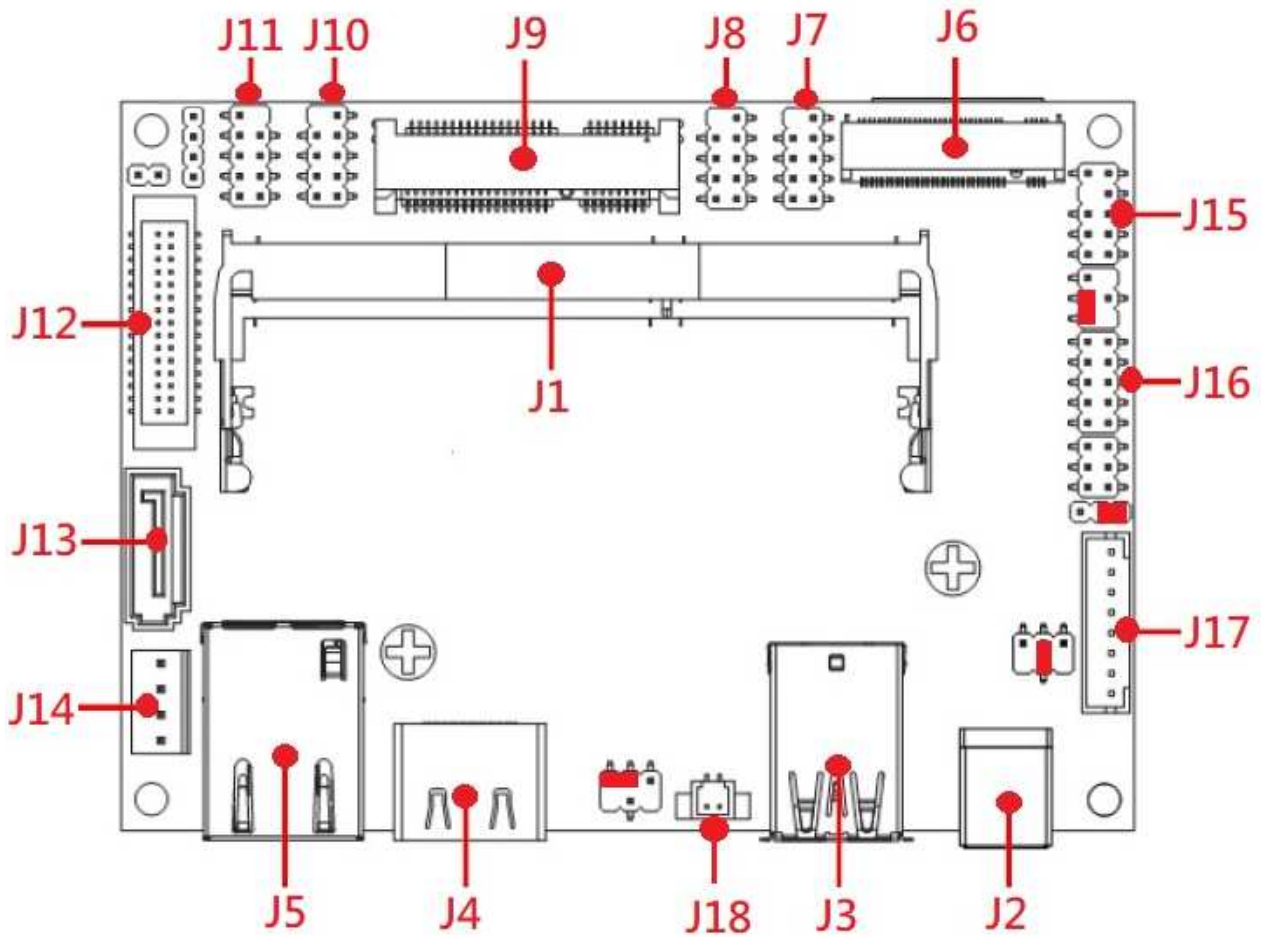
[2.2 Connector Summary](#)

[2.3 Connector Pin Assignments](#)

[2.4 External I/O Overview](#)

[2.5 External I/O Pin Assignment](#)

2.1 CPU Board Outline



PPC APL CPU Board

ICOPTE

2.2 Connector Summary

No.	Description	Type of Connections	Pin #
J1	DDR3L SO-DIMM Slot	External SO-DIMM Slot	204-pin
J2	Power DC Jack	External Power DC Jack Connector	2-pin
J3	USB3.0 x 2	External Dual USB3.0 Connector	18-pin
J4	HDMI	External HDMI Connector	19-pin
J5	GIGA Ethernet	External RJ45 Connector	8-pin
J6	M.2 SATA (M-Key)	External M.2 SATA Connector	75-pin
J7	COM1 (RS232/422/485)	2.0mm 9-pin pin header	9-pin
J8	COM2 (RS232)	2.0mm 9-pin pin header	9-pin
J9	Mini-PCle	External Mini-PCle Connector	52-pin
J10	Front Panel Header	2.0mm 9-pin pin header	9-pin
J11	USB2.0 x 2	2.0mm 9-pin pin header	9-pin
J12	LVDS	1.25mm 30-pin box header	30-pin
J13	SATAIII Slot	External SATA Slot	7-pin
J14	SATA Power Output	2.54mm 4-pin pin header	4-pin
J15	Audio Header	2.0mm 9-pin pin header	9-pin
J16	GPIO Header (Reserved)	2.0mm 10-pin pin header	10-pin
J17	Inverter	2.0mm 8-pin box header	8-pin
J18	RTC Battery Header	1.25mm 2-pin box header	2-pin

2.3 Connector Pin Assignments

J2: Power DC Jack

Pin #	Signal Name
1	+12V Power Input
2	GND

J7: COM1 (RS232/422/485)

Pin #	Signal Name	Pin #	Signal Name
1	DCD1 /422TX- /RS485-	2	DSR1
3	RXD1 /422TX+ /RS485+	4	RTS1
5	TXD1/422RX+	6	CTS1
7	DTR1/422RX-	8	RI1
9	GND		

J8: COM2 (RS232)

Pin #	Signal Name	Pin #	Signal Name
1	DCD2	2	DSR2
3	RXD2	4	RTS2
5	TXD2	6	CTS2
7	DTR2	8	RI2
9	GND		

J10: Front Panel Header

Pin #	Signal Name	Pin #	Signal Name
1	HDDLED+	2	PWRLED+
3	HDDLED-	4	PWRLED-
5	GND	6	PWRBT
7	RSTSW	8	GND
9	VCC		

J11: USB2.0 x 2

Pin #	Signal Name	Pin #	Signal Name
1	VCC	2	VCC
3	USB2_D1-	4	USB2_D2-
5	USB2_D1+	6	USB2_D2+
7	GND	8	GND
		10	NC

J12: LVDS

Pin #	Signal Name	Pin #	Signal Name
1	LVDSB_D3-	2	LVDSB_D3+
3	LVDSB_CLK-	4	LVDSB_CLK+
5	LVDSB_D2-	6	LVDSB_D2+
7	LVDSB_D1-	8	LVDSB_D1+
9	LVDSB_D0-	10	LVDSB_D0+
11	NC/DDC_DAT	12	NC/DDC_CLK
13	GND	14	GND
15	GND	16	GND
17	LVDSA_D3+	18	LVDSA_D3-
19	LVDSA_CLK+	20	LVDSA_CLK-
21	LVDSA_D2+	22	LVDSA_D2-
23	LVDSA_D1+	24	LVDSA_D1-
25	LVDSA_D0+	26	LVDSA_D0-
27	LCD_VDD	28	LCD_VDD
29	LCD_VDD	30	LCD_VDD

J14: SATA Power Output

Pin #	Signal Name
1	+5V
2	GND
3	GND
4	+12V

J18: RTC Battery Header

Pin #	Signal Name
1	GND
2	VBAT

J15: Audio Header

Pin #	Signal Name	Pin #	Signal Name
1	MIC_L	2	AUDIO_GND
3	MIC_R	4	AUDIO_JD
5	LINEOUT2_R	6	MIC_JD
7	SENSE_FB		
9	LINEOUT2_L	10	LINE2_JD

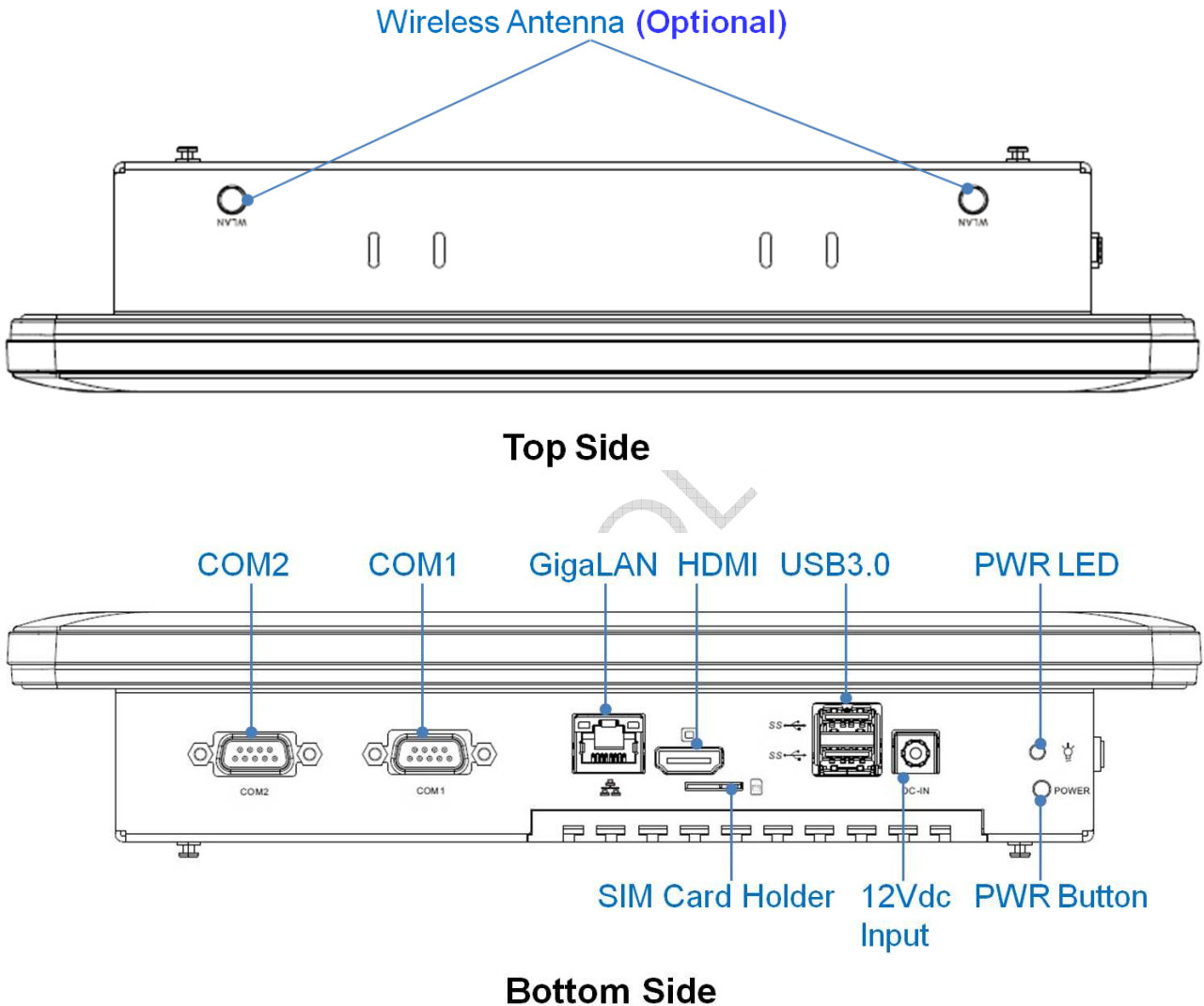
J16: GPIO (Reserved)

Pin #	Signal Name	Pin #	Signal Name
1	GPIO80	2	GPIO81
3	GPIO82	4	GPIO83
5	GPIO84	6	GPIO85
7	GPIO86	8	GPIO87
9	GND	10	VCC

J17: Inverter

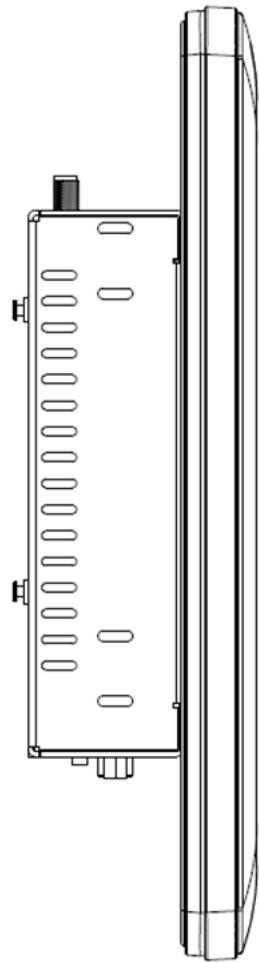
Pin #	Signal Name
1	Backlight_Enable
2	Backlight_PWM
3	Backlight LED VCC
4	Backlight LED VCC
5	GND
6	GND
7	Backlight UP SW
8	Backlight DN SW

2.4 External I/O Overview

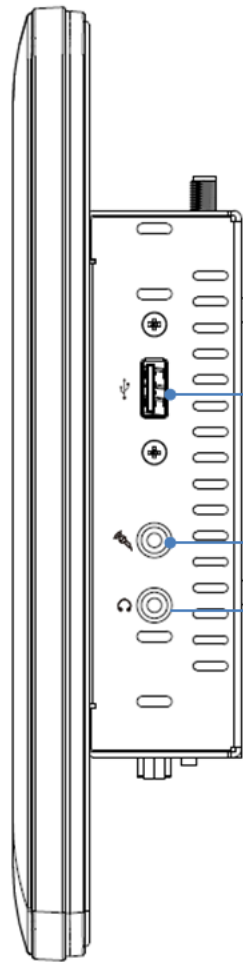


NOTE: COM1 RS232/422/485 is selected by BIOS setting. Please refer the section, 4.6 to set the function in the BIOS setup.

Left Side



Right Side



USB2.0

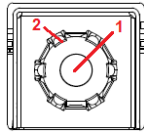
Mic-in

Line-out

ICOP TEC

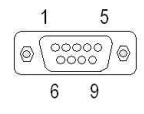
2.5 External I/O Pin Assignment

Power DC Jack (12Vdc Input)

	Pin #	Signal Name
	1	+12Vdc
	2	GND

COM1 (RS232/422/485)

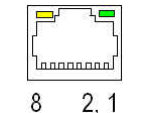
(Change mode by BIOS Setup)

	Pin #	Signal Name	Pin #	Signal Name
	1	DCD1 /422TX- /RS485-	2	RXD1 /422TX+
	3	TXD1 /422RX+	4	DTR1 /422RX-
	5	GND	6	DSR1
	7	RTS1	8	CTS1
	9	RI1		

COM2 (RS232)

	Pin #	Signal Name	Pin #	Signal Name
	1	DCD2	2	RXD2
	3	TXD2	4	DTR2
	5	GND	6	DSR2
	7	RTS2	8	CTS2
	9	RI2		

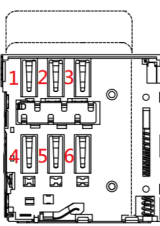
GigaLAN

	Pin #	Signal Name	Pin #	Signal Name
	1	TP0+	2	TP0-
	3	TP1+	4	TP2+
	5	TP2-	6	TP1-
	7	TP3+	8	TP3-

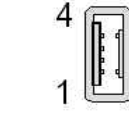
HDMI

	Pin #	Signal Name
	1	TMDS_Data2+
	2	TMDS_Data2_Shield
	3	TMDS_Data2-
	4	TMDS_Data1+
	5	TMDS_Data1_Shield
	6	TMDS_Data1-
	7	TMDS_Data0+
	8	TMDS_Data0_Shield
	9	TMDS_Data0-
	10	TMDS_CLK+
	11	TMDS_CLK_Shield
	12	TMDS_CLK-
	13	CEC
	14	Reserved
	15	SCL
	16	SDA
	17	DDC/CEC_GND
	18	+5V Power
	19	Hop_Plug_Detect

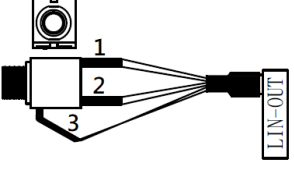
SIM Card Holder (Micro SIM Card Support)

	Pin #	Signal Name	Pin #	Signal Name
	1	SIM-VCC	2	SIM-RST
	3	SIM-CLK	4	GND
	5	SIM-VPP	6	SIM-IO

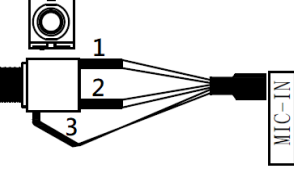
USB2.0

	Pin #	Signal Name
	1	VCC
	2	USB0-
	3	USB0+
	4	GND

Line-Out

	Pin #	Signal Name
	1	LINEOUT2-L
	2	LINEOUT2-R
	3	AUDIO_GND

Mic-in

	Pin #	Signal Name
	1	MIC-L
	2	MIC-R
	3	AUDIO_GND

Ch. 3

Hardware Installation

PPC-150P-APL supports various kinds of storages for industrial application, divided into M.2 2242 SATA (M-Key) and 2.5" SATAIII HDD/SSD.

[3.1 Installing the M.2 2242 SATA](#)

[3.2 Installing the 2.5" SATA HDD/SSD](#)

[3.3 Installing the Mini-PCIe Module](#)

[3.4 Installing the Micro SIM Card \(Must include 3G/4G Mini-PCIe Module in advance\)](#)

3.1 Installing the M.2 2242 SATA

[SPEC]

Standard M.2 2242 form factor

22 x 42 x 3.2 mm

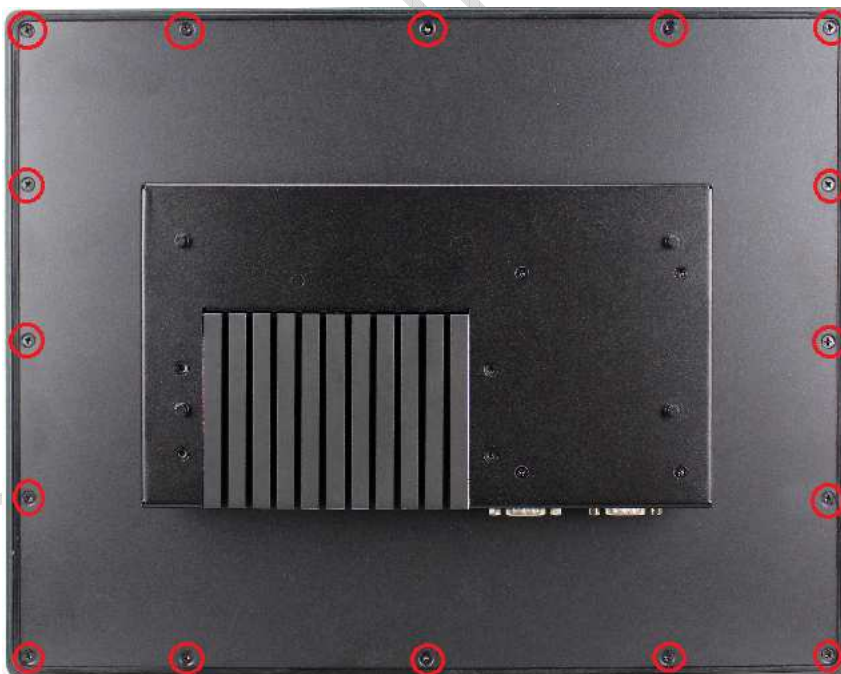


[M.2 2242 SATA LIST]

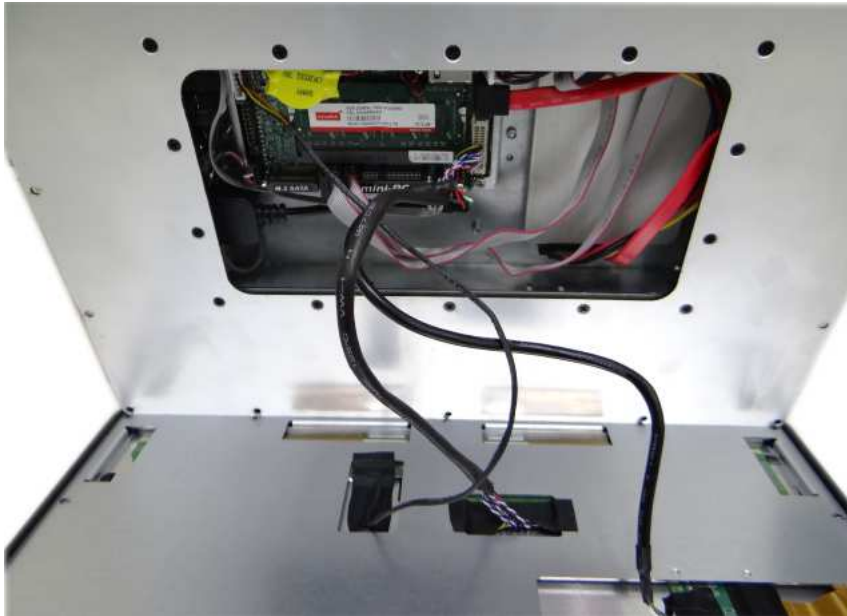
P/N	MLC	Operating Temperature
IM242S-8G-M	V	0°C ~ +70°C
IM242S-16G-M	V	0°C ~ +70°C
IM242S-32G-M	V	0°C ~ +70°C
IM242S-64G-M	V	0°C ~ +70°C
IM242S-128G-M	V	0°C ~ +70°C
IM242S-256G-M	V	0°C ~ +70°C

[STEP]

1. Remove the 16 screws in a diagonal pattern as the image below.



2. Pull up rear cover carefully, which LCD, Backlight and Touch cables inside the rear cover and please be careful to open it.



3. Remove the screw of M.2 Slot.



4. Plug M.2 2242 Storage on M.2 Slot and lock the screw.



5. Take the rear cover back and lock 16 screws.

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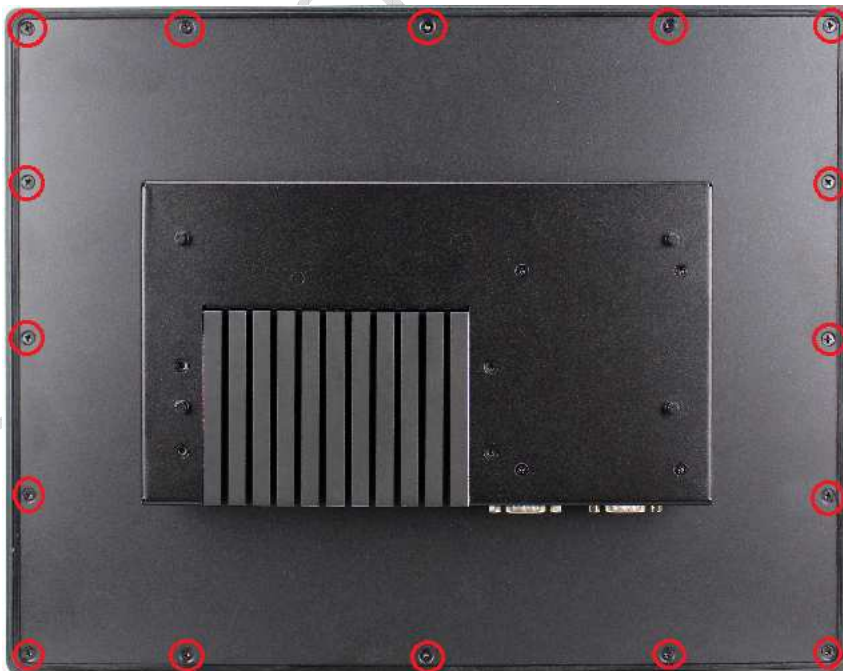
3.2 Installing the 2.5" SATA HDD/SDD

[STEP]

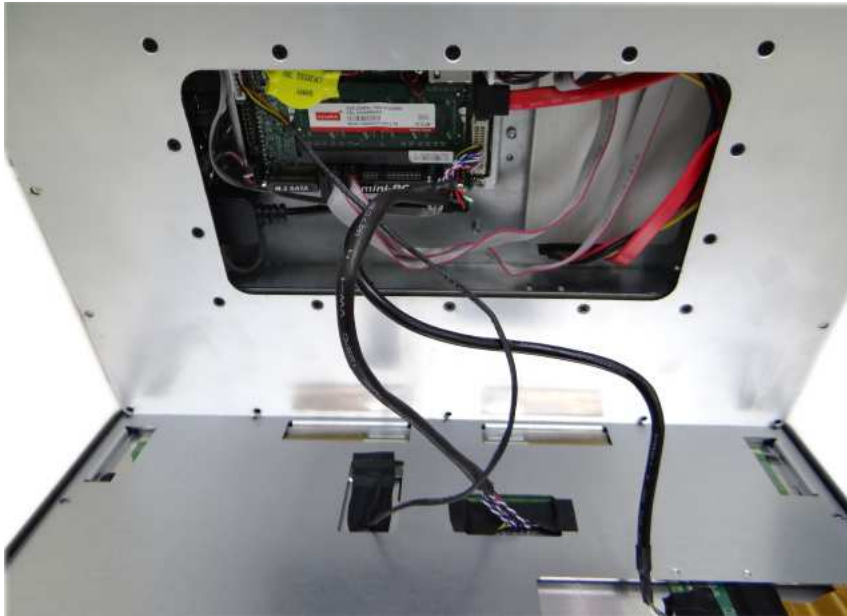
1. Find the bag of screws from inside of the package box, and prepare those 4 screws in advance.



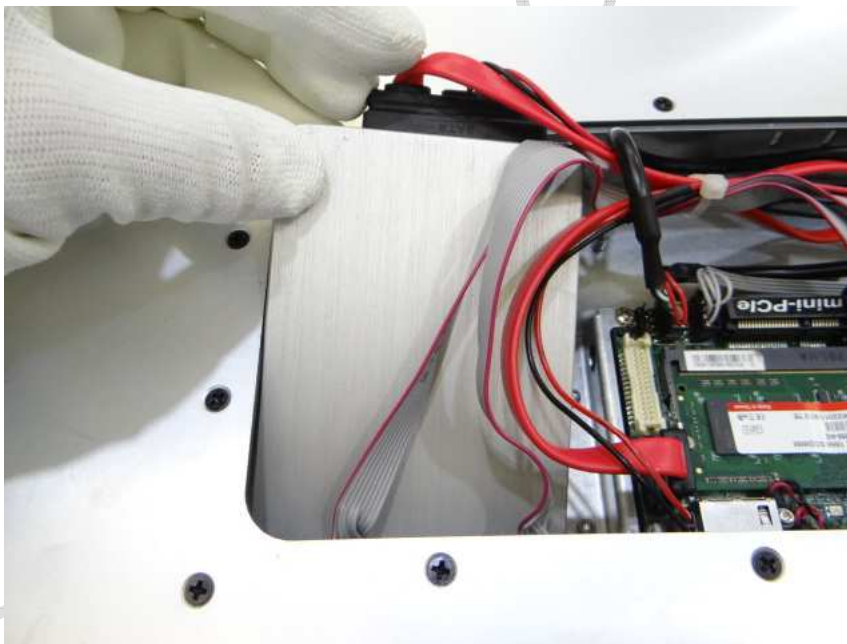
2. Remove the 16 screws in a diagonal pattern as the image below.



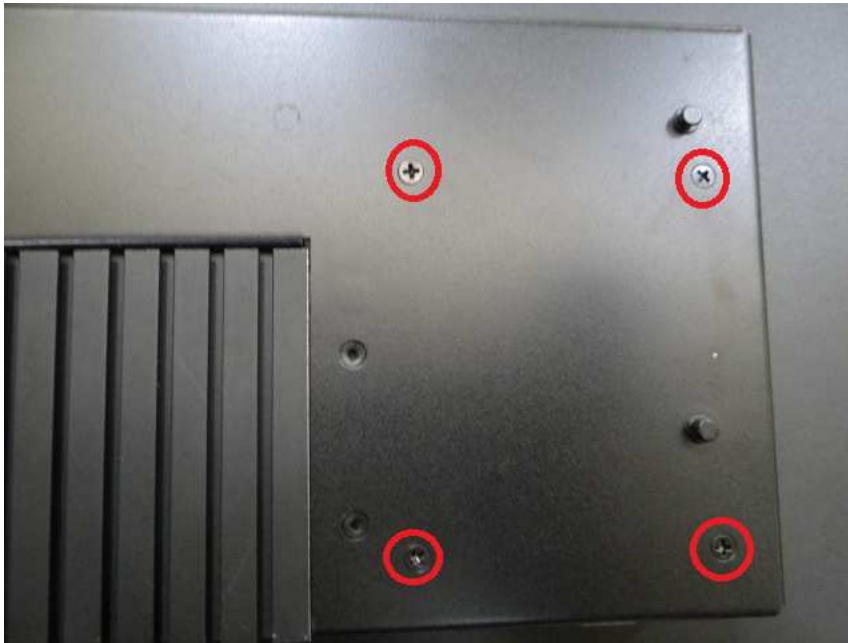
3. Pull up rear cover carefully, which LCD, Backlight and Touch cables inside the rear cover and please be careful to open it.



4. Plug SATA cable upon 2.5" SATA HDD/SSD and take it in the box.



5. Lock the screws on the both of rear cover and 2.5" HDD/SSD.

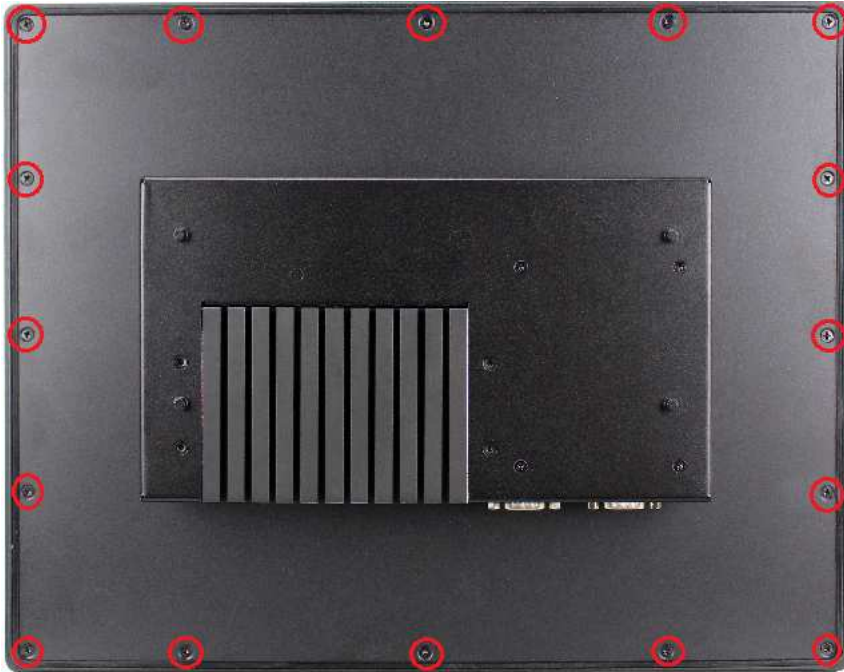


6. Take the rear cover back and lock 16 screws.

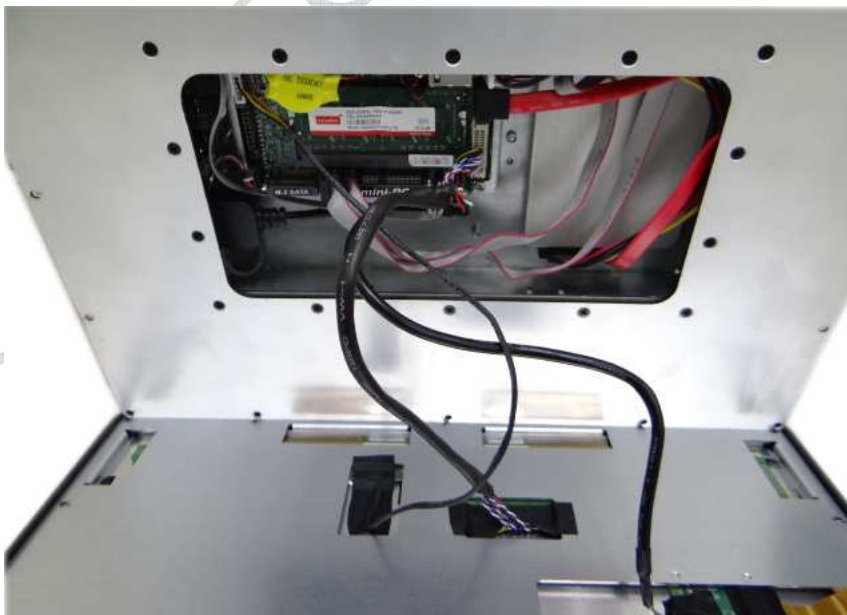
3.3 Installing the Mini-PCle Module

[STEP]

1. Remove the 16 screws in a diagonal pattern as the image below.



2. Pull up rear cover carefully, which LCD, Backlight and Touch cables inside the rear cover and please be careful to open it.



3. Remove the screw of Mini-PCle Slot.

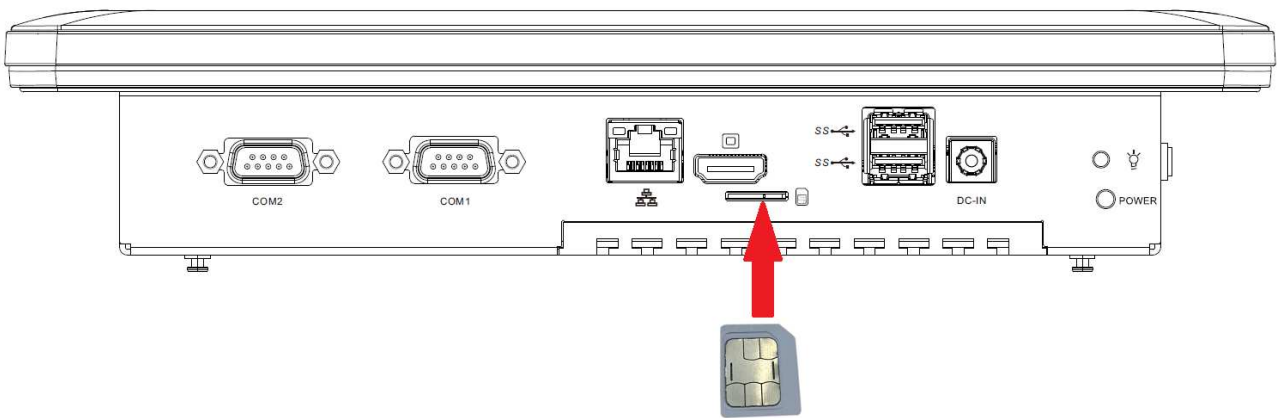


4. Plug Mini-PCle Module upon the slot and lock the screws.
5. Take the rear cover back and lock 16 screws.

3.4 Installing the Micro SIM Card (Must include 3G/4G Mini-PCle Module in advance)

[STEP]

1. Please refer the section, 3.3 to install 3G/4G Mini-PCle Module in advance.
2. Plug Micro SIM Card on the slot.



Ch. 4

Drivers and BIOS Instruction

[4.1 Operating System Support and Drivers](#)

[4.2 BIOS Hot Key](#)

[4.3 BIOS COM1 Setting \(RS232/RS422/RS485\)](#)

[4.4 BIOS COM2 Setting \(Change Settings\)](#)

[4.5 BIOS AT Mode Setting \(Support Auto-Power On Function\)](#)

[4.6 BIOS Serial Port Console Redirection](#)

[4.7 BIOS Load Default Setting](#)

4.1 Operating System Support and Drivers

The PPC-150P-APL provides the Win10 drivers for Normal Win10 and Win10 IoT Enterprise.

Please get the drivers from ICOP technical support URL:

https://www.icop.com.tw/download_resource/PPC-150P-N4200?tags=18,81,34,35,38,39,64,65&selected=35

For Linux, most Linux distributions support Intel® Apollo Lake Processor and user can install Linux upon PPC-150P-APL directly. Please contact your region sales for technical support if you have any question.

4.2 BIOS Hot Key

After power on, it supports BIOS hot key as below.



Press < **Del** > to enter the AMI BIOS setup



Press < **F7** > to enter Popup Menu

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4.3 BIOS COM1 Setting (RS232/422/485)

COM1 can be set to be RS232/422/485 function. Please refer the instruction as below.

(1) In the BIOS Setup, please go to “Advanced” and “Super IO Configuration”.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  Chipset  Security  Boot  Save & Exit

OS Selection                [Windows]
|> Trusted Computing
|> ACPI Settings
|> Super IO Configuration
|> Serial Port Console Redirection
|> PC Health Status
|> CPU Configuration
|> Network Stack Configuration
|> CSM Configuration
|> Wake-up Function Settings
|> USB Configuration

|> Realtek PCIe GBE Family Controller
    (MAC:00:30:18:0F:95:29)

System Super IO
Parameters.

-----
><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

(2) Go to “Serial Port 1 Configuration”.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Advanced

Super IO Configuration
|> Serial Port 1 Configuration
|> Serial Port 2 Configuration

ERP Support                [Disabled]

WatchDog Reset Timer      [Disabled]
WatchDog Wake-up Timer

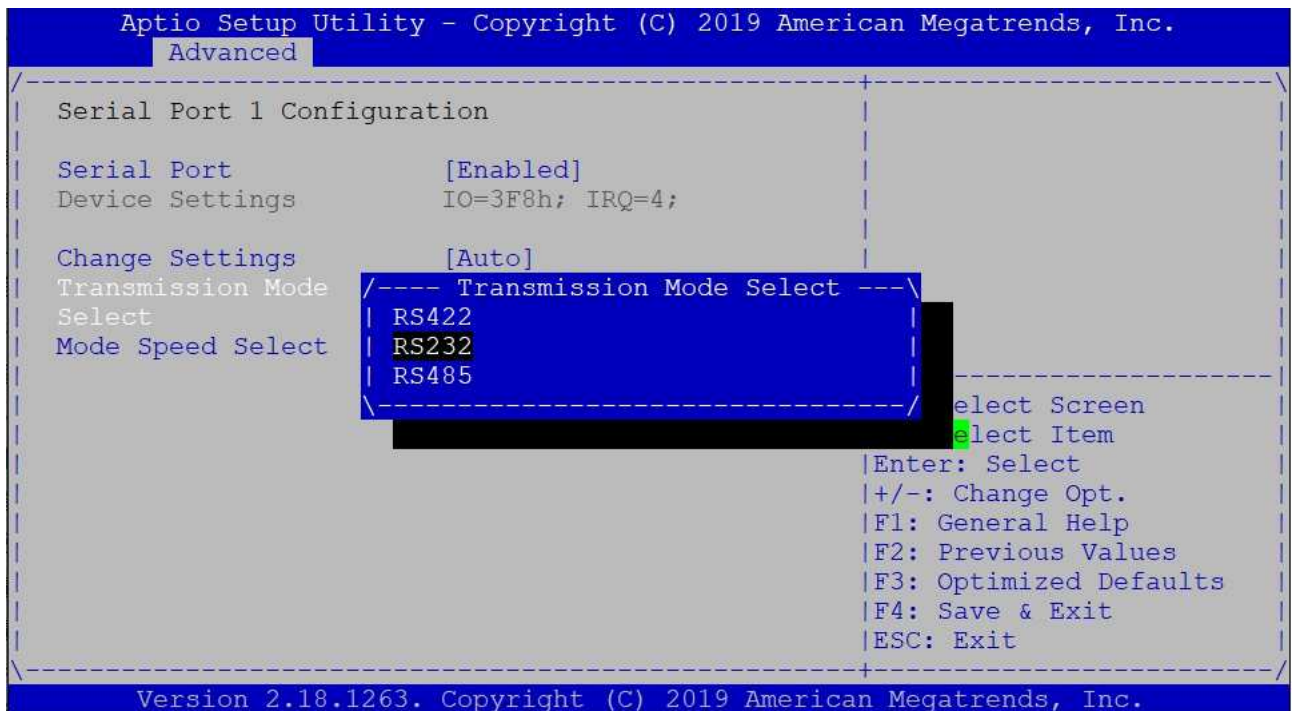
ATX Power Emulate AT      -Disabled-
Power

Set Parameters of
Serial Port 1 (COMA)

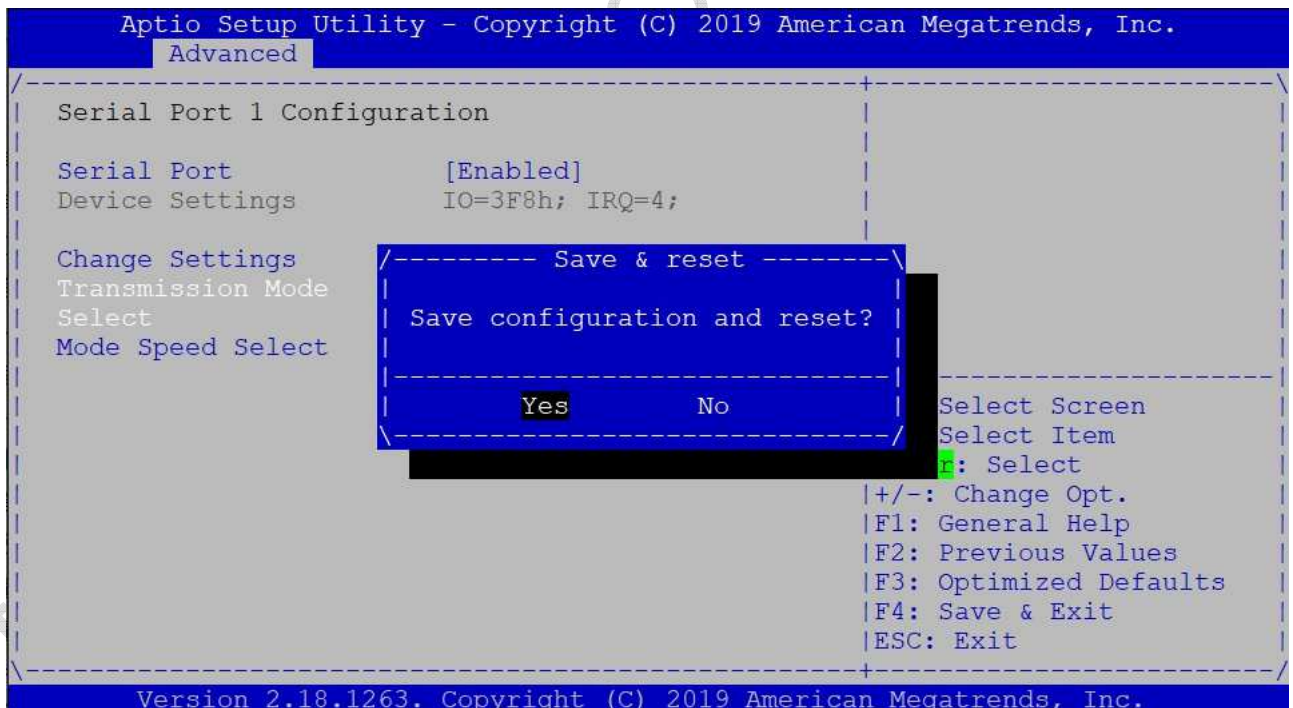
-----
><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```


(3) Go to Transmission Mode and set RS232/422/485 function.



(4) After setting, please press "F4" key to save & exit.



4.4 BIOS COM2 Setting (Change Settings)

COM2 can be changed settings as below.

(1) In the BIOS Setup, please go to “Advanced” and “Super IO Configuration”.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  Chipset  Security  Boot  Save & Exit

OS Selection                [Windows]
|> Trusted Computing
|> ACPI Settings
|> Super IO Configuration
|> Serial Port Console Redirection
|> PC Health Status
|> CPU Configuration
|> Network Stack Configuration
|> CSM Configuration
|> Wake-up Function Settings
|> USB Configuration

Realtek PCIe GBE Family Controller
(MAC:00:30:18:0F:95:29)

System Super IO Parameters.

--><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

(2) Go to “Serial Port 2 Configuration”.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Advanced

Super IO Configuration
|> Serial Port 1 Configuration
|> Serial Port 2 Configuration

ERP Support                [Disabled]

WatchDog Reset Timer      [Disabled]
WatchDog Wake-up Timer    [Disabled]

ATX Power Emulate AT Power -Disabled-

Set Parameters of Serial Port 2 (COMB)

--><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

- (3) Go to “Change Settings” and set IO address and IRQ if you want to have the default, IO=2F8h and IRQ=3.

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced
-----
Serial Port 2 Configuration                               | Select an optimal
                                                         | settings for Super IO
                                                         | Device
Serial Port [Enabled]
Device Settings IO=2F8h; IRQ=3;
Change Settings /--- Change Settings ---\
                | Auto
                | IO=3F8h; IRQ=4;
                | IO=2F8h; IRQ=3;
                | IO=3E8h; IRQ=4;
                | IO=2E8h; IRQ=3;
                \-----/
                                                         | <: Select Screen
                                                         | v: Select Item
                                                         | Enter: Select
                                                         | +/-: Change Opt.
                                                         | F1: General Help
                                                         | F2: Previous Values
                                                         | F3: Optimized Defaults
                                                         | F4: Save & Exit
                                                         | ESC: Exit
-----
Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.

```

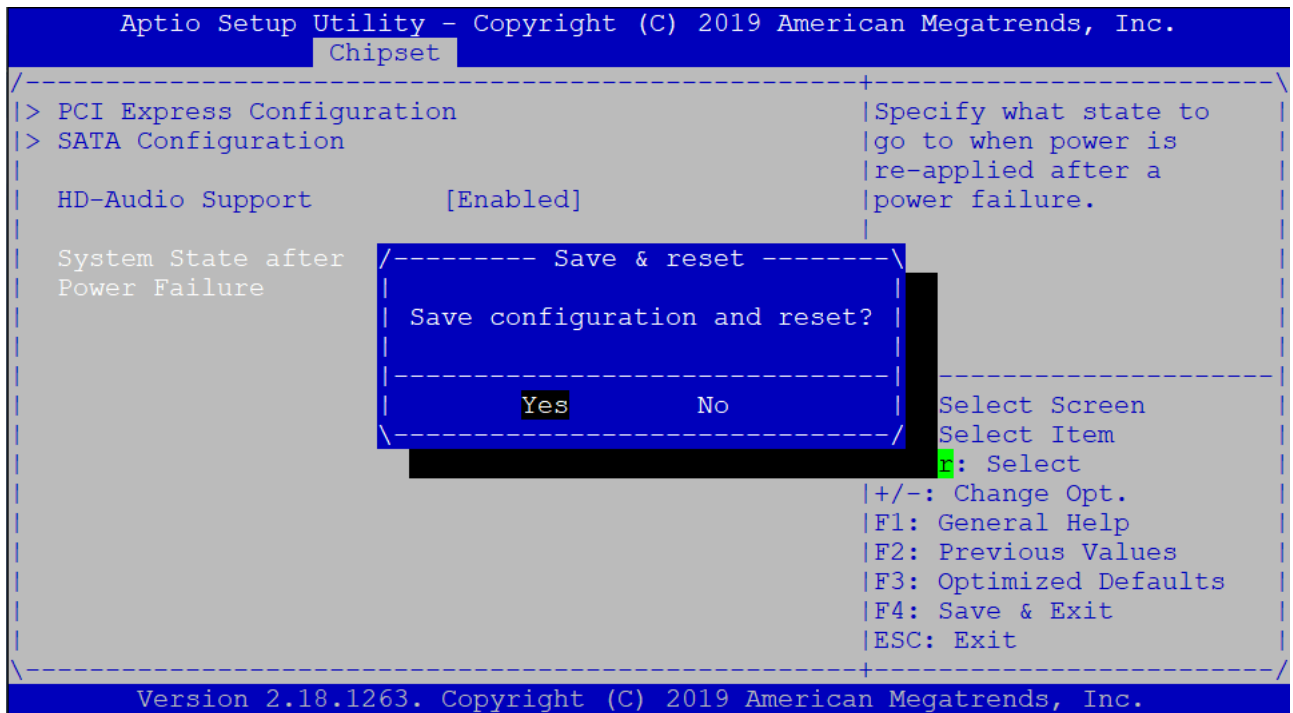
- (4) After setting, please press “F4” key to save & exit.

```

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced
-----
Serial Port 2 Configuration                               | Select an optimal
                                                         | settings for Super IO
                                                         | Device
Serial Port [Enabled]
Device Settings IO=2F8h; IRQ=3;
Change Settings /----- Save & reset -----\
                | Save configuration and reset?
                |
                | Yes      No
                \-----/
                                                         | Select Screen
                                                         | Select Item
                                                         | Enter: Select
                                                         | +/-: Change Opt.
                                                         | F1: General Help
                                                         | F2: Previous Values
                                                         | F3: Optimized Defaults
                                                         | F4: Save & Exit
                                                         | ESC: Exit
-----
Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.

```


(3) After setting, please press “F4” key to save & exit.



Note:

After system shut down by operating system, PPC-150P-APL will be power-off. For next booting up, user just needs to re-plug power adapter or power reset again, while system will be boot-up automatically.

4.6 BIOS Serial Port Console Redirection

PPC-150P-APL supports Serial Port Console Redirection as below.

(1) Go to “Advanced” and “Serial Port Console Redirection”.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main  Advanced  Chipset  Security  Boot  Save & Exit

OS Selection          [Windows]      Serial Port Console
                                   Redirection
|> Trusted Computing
|> ACPI Settings
|> Super IO Configuration
|> Serial Port Console Redirection
|> PC Health Status
|> CPU Configuration
|> Network Stack Configuration
|> CSM Configuration
|> Wake-up Function Settings
|> USB Configuration

|> Realtek PCIe GBE Family Controller
    (MAC:00:30:18:0F:95:29)

><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

(2) Set “Console Redirection” to be “Enabled”.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Advanced

COM1
Console Redirection  [Enabled]
|> Console Redirection Settings

Serial Port for Out-of-Band Management/
Windows Emergency Management Services (EMS)
Console Redirection  [Disabled]
|> Console Redirection Settings

><: Select Screen
^v: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Exit
ESC: Exit

Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```


(3) Set "Terminal Type" to "VT100+".

Emulation: [ANSI]: Extended ASCII char set; [VT100]: ASCII char set;

[VT100+]: Extended VT100 to support color, function keys, etc.;

[VT-UTF8]: Uses UTF8 encoding to map Unicode chars onto 1 or more

Bytes.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced
-----
COM1                                     ^| Emulation: ANSI:
Console Redirection Settings             *| Extended ASCII char
                                          *| set. VT100: ASCII char
Terminal Type                            [VT100+] *| set. VT100+: Extends
Bits per second                          [115200] *| VT100 to support color,
Data Bits                                 [8] *| function keys, etc.
Parity                                    [None] *| VT-UTF8: Uses UTF8
Stop Bits                                 [1] *| encoding to map Unicode
Flow Control                              [None] *|
VT-UTF8 Combo Key                        [Enabled] *|
Support                                  *| -----
Recorder Mode                            [Disabled] *| ><: Select Screen
Resolution 100x31                        [Disabled] *| ^v: Select Item
Legacy OS                                 [80x24] *| Enter: Select
Redirection                               *| +/-: Change Opt.
Resolution                                *| F1: General Help
Putty KeyPad                             [VT100] +| F2: Previous Values
                                          +| F3: Optimized Defaults
                                          v| F4: Save & Exit
                                          |ESC: Exit
-----
Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

(4) After setting, please press "F4" key to save & exit.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced
-----
COM1                                     ^| Emulation: ANSI:
Console Redirection Settings             *| Extended ASCII char
                                          *| set. VT100: ASCII char
Terminal Type                            [VT100+] *| set. VT100+: Extends
Bits per second                          [115200] *| VT100 to support color,
Data Bits                                 [8] *| function keys, etc.
Parity                                    [None] *| VT-UTF8: Uses UTF8
Stop Bits                                 [1] *| encoding to map Unicode
Flow Control                              [None] *|
VT-UTF8 Combo Key                        [Enabled] *|
Support                                  *| -----
Recorder Mode                            [Disabled] *| ><: Select Screen
Resolution 100x31                        [Disabled] *| ^v: Select Item
Legacy OS                                 [80x24] *| Enter: Select
Redirection                               *| +/-: Change Opt.
Resolution                                *| F1: General Help
Putty KeyPad                             [VT100] +| F2: Previous Values
                                          +| F3: Optimized Defaults
                                          v| F4: Save & Exit
                                          |ESC: Exit
-----
Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

Save & reset

Save configuration and reset?

Yes No

4.7 BIOS Load Default Setting

(1) Press “F3” key to load optimized defaults.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit

-----
| BIOS Information                                     | Set the Date. Use Tab |
| BIOS Vendor           American Megatrends          | to switch between Date |
| Core Version          5.12                         | elements.              |
| Filename              BATJPD01.1                   |                         |
| Build Date and Time   05/03/2019 17:02:32         |                         |
| TXE FW Version        3.0.13.1144                 |                         |
| Access Level          Administrator                 |                         |
| System Date           [Fri 06/21/2019]             | ><: Select Screen      |
| System Time           [13:25:35]                   | ^v: Select Item       |
|                         | Enter: Select         |
|                         | +/-: Change Opt.     |
|                         | F1: General Help     |
|                         | F2: Previous Values  |
|                         | F3: Optimized Defaults |
|                         | F4: Save & Exit      |
|                         | ESC: Exit            |
|                         |                       |
|-----|-----|
| Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc. |
```

(2) After setting, please press “F4” key to save & exit.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
Main Advanced Chipset Security Boot Save & Exit

-----
| BIOS Information                                     | Set the Date. Use Tab | |
| BIOS Vendor           American Megatrends          | to switch between Date |
| Core Version          5.12                         | elements.              |
| Filename              BATJPD01.1                   |                         |
| Build Date and Time   05/03/2019 17:02:32         |                         |
| TXE FW Version        3.0.13.1144                 |                         |
| Access Level          Administrator                 |                         |
| System Date           [Fri 06/21/2019]             | Select Screen         |
| System Time           [13:25:35]                   | Select Item          |
|                         | Yes No             | : Select              |
|                         |                       | +/-: Change Opt.     |
|                         |                       | F1: General Help     |
|                         |                       | F2: Previous Values  |
|                         |                       | F3: Optimized Defaults |
|                         |                       | F4: Save & Exit      |
|                         |                       | ESC: Exit            |
|                         |                       |                       |
|-----|-----|
| Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc. |
```

Save & reset
Save configuration and reset?
Yes No

Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, originality to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

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