“

TPC6000-CXX4 Series

User Manual

1.2

2022-3-31

PANEL PC

Intel® Core™ 6th /7th /8th generation i7/i5/i3/pentium/Celeron high performance processor

Copyright notice

Trademarks

AMI is a trademark of American Megatrends, Inc.

Intel &Atom are trademarks of Intel Corporation

IBM, PC/AT, PS/2&VGA are trademarks of International Business Machines Corporation

Microsoft Windows is a trademark of Microsoft Corp.

RTL is trademark of Realtek Semiconductor Co., Ltd.

All the other products names and trademarks belong to their owners.

Declaration of Conformity

This restriction is subject to provide protection for system operation in business environment, which will produce, use and transmit radio frequency energy. Without notice of the instructions of the correct installation and use, it may cause harmful interference to radio communication. The interference prevention cannot be guaranteed even with proper installation according to the manual. If the device gets bad affect on the signal of radio / TV. User could insure by turn device on/off. When this device produces some harmful interference, user can use the following measure to solve interference problem:

- Set the receiving antenna's direction or location.
- Increase the distance between this device and receiver.
- Plug in this device's power connector into different circuits of the power outlet with receiver

If you need technical support, please inform the dealer or experienced radio/TV technical personnel.

Technical Support and Service

Please visit the Nodka website http://en.nodka.com to get more details.

If you need additional assistance, please contact your system reseller or vendor.

Please have the following information ready before you call:

1. Product name and serial number

2. The peripheral equipments description

3. Description of your software (operational system, vision, application software, etc.)

4. A complete description of the problem

5. Complete descriptition of each error message

Safety instructions

1. Please read the manual and related manual mentioned in this user manual before installing, wiring, operating, checking this Panel PC. All the oprations should be based on the premise of full safety attention.
2. Please kindly keep this user manual for further reference.
3. Please unplug the cable before clean the device. Don’t use liquid or decontamination sprays to clean the device.
4. For devices that use power cables, there must be easily accessible power sockets around the devices
5. Make sure the device placed on a flat surface in case any damages casued by falling off.
6. Please make sure your voltage meet the requirements before plug in.
7. Please arrange the power cord in a position where people can not easily stumble. Do not cover any thing on the power cord.
8. Notice to all the warings and cautions on this device.
9. Please unplug the device if you will not use it for a long time in case any damages caused by excessive voltage.
10. Please do not let any liquid in the device in case of causing fire or short circuit.
11. Do not open the device by yourself. To ensure your safety, before turning on the device, disconnect all external power supplies used by the system and

have the device turned on by a certified professional engineer with sufficient electrical knowledge.

In the following cases, please repair by professional personnel

- The damage of power cord or plug；
- Liquid flows into the device；
- The device can not work properly, or you can make it work properly by referring to the user manual;
- Fall off or any damage；
- Obvious damage on the surface;

12. Do not place the device over the environment range we suggested which is not below -30° or higher than 80 °, otherwise it may cause the damange to the device.
13. Please clean dust or replace fan regularly.

Content:

Chapter 1 Overview

In this chapter, it offers the descriptions of products files, functions and specifications etc..

1.1 Reference file

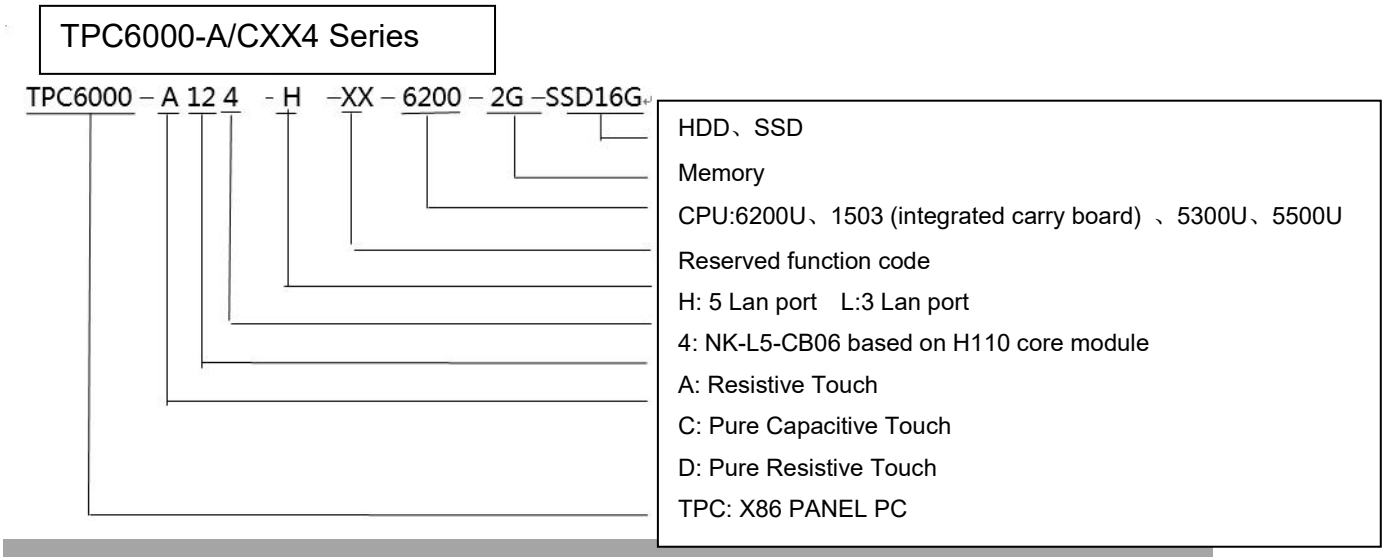
Related file are shown as below table, please read before use the device.

File Name	File Aim	File Content	File Save
User manual	Please do read before use	Descrption of the product's function and relative setting	Please download from Nodka official websiteget it from distributer.

The download link of Official website:
http://www.nodka.com/service/productinformation/Information/

1.2 Product naming format

This product sries contains two types, one is standard industrial computer type, which uses standard carry board interfaces.Customers can choose the corresponding CPU, memory and SSD according to heir repuirements. The other type is designed with additional extension borad. The product naming format is shown as below:



1.3 Safety Introduction

For security purposes, the following SIGNS are used in this document to provide more security information for users.

SIGN	DESCRIPTION
	Warning： Indicates a potential situation which could result in death, serious injury or significant property damage if do not deal with properly.
	Danger：Indicate a urgent danger which could result in death, serious injury or significant property damageif do not deal with properly.
	Reminder：Indicates important information.

Chapter 2 TPC6000-CXX4 Series

The product is a high-performance industrial computer for automation, machine vision and other industries, supporting Intel ® Core ™ 6, 7, 8 generation i3, i5, i7 CPU and Pentium CPU. The product adopts solid aluminum alloy profile structure, aluminum profile embedded fan auxiliary heat dissipation, to ensure excellent heat dissipation and robustness of the product, fully closed design to prevent dust invasion, but also fully consider the ergonomic structure design.

The hardware structure of the product adopts modular design. The product is composed of CPU core module, carrier board and customizable expansion board. Mature modular circuits and devices ensure the stability of the product

- Independent CPU core module is convenient to change and upgrade according to the customer's actual requirements, and can better control the cost.
- The carrier board provides a variety of interfaces, providing three independent Intel i211AT GIGABit lan ports, HDMI video display interface, four USB3.0 interfaces, four RS232/RS485(optional) interfaces, double power terminals with overcurrent voltage and anti-reverse connection, etc. All external interfaces are located at the front end of the product, which is more convenient for user wiring and maintenance. M.2 and Msata storage interface are provided internally for customers to choose, and remote switching electrical and mechanical interface is reserved for customers to switch on and off remotely.
- 8 Channel Isolation DI/DO is available to the user. It can be widely used in 3C manufacturing, pharmaceutical, packaging, mechanical testing equipment, robot, motion control, intelligent transportation and other fields.

2.1 TPC6000-CXX4

2.1.1 Product Features

- Supports high-performance CPU such as Intel® Core™ i7 / i5 / i3 and Intel LGA 1151 pin Pentium /Celeron
- Memory： DDR4-2400MHz， up to 32GB
- Board carried with MSATA 、M.2 interface
- 3 x 10/100/1000Mbps controller
- 4 x USB3.0/2.0
- 4 x COM(DB-9)，supporting RS-232/485optional，RS485 supports automatically data flow control
- HDMI display interface
- Board carried with miniPCIE slot ，extensional for Wifi、3G/4G function
- Support DC12~24V power input with overcurrent protection.
- Fully enclosed structure, embedded fan auxiliary heat dissipation, no cable design, with strong anti-electromagnetic interference ability
- Wide working temperature：0 ~ 50℃

2.1.2 Product Specifications

TPC6000-C124

MODEL	TPC6000-C124	
System	CPU	Intel® Core™ 6/7/8/代 i7/i5/i3, pentium/celeron LGA1151 type CPU. Max.65W TDP
	BIOS	AMI UEFI 64Mbit
	Chipset	H110
	Memory	DDR4-2400MHz，Up to 32GB
	Storage	1 x M.2（M Kye 2280 PCIe Gen3x4 Lane） + 1 x mSATA
I/O	Network	3 x 10/100/1000Mbps controller
	USB	4 x USB3.0 / 2 x USB2.0
	Serial Port	4 x RS-232 / RS-485 Interface with surge protection, RS485 support automatic
	Expension Slot	1 x Mini-PCIe slot, expendible for 3G, WIFI wireless newwork card
	I/O port	8DI+8DO Wet contact input（24V），OC gate output（24V 300mA）
Physical characteristics	Dimention (W x H x D)	321mm * 247mm * 74mm
	Cut size (W x H)	304mm * 230mm
	Net weight	3.7kg
os	OS	Windows 7, Windows 7 Embedded, Windows8, Windows10, Ubuntu, VXWORKS, QNX
Power	Power input	12-24VDC ±10% , Support reverse connection protection, over voltage protection,
	Power consumption	Type：25W
LCD	LCD type	12.1" XGA TFT
	Resolution	1024*768
	Colors	16.7MB
	Active area (W x H)	246mm x 184.5mm (9.68" x 7.26")
	Blacklight	LED
	MTBF (hour)	30000hrs
	Pixel Pitch	0.3075 x 0.3075
	Luminance	450cd/m2
	Contrast Ratio	800 : 1
	Viewing Angle	(L) 80 / (R) 80 / (T) 80 / (B) 80
Touch Screen	Touchscreen type	Multi-touch Capacitive Touchscreen
	Transmittance	≥ 87%
	Controller	USB
	Driver support	Windows 7, Windows 8, Windows 10, Linux
	Multi-touch	10 points by Windows
	Surface hardness	Mohs Hardness 7H
Environment	Operation temperature	0 ~ 50° C
	Storage Temperature	-20 ~ 60° C
	Relative Humidity	10~95% RH@40°C,non-condensing
	Shake	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	SSD applied: 10 G, IEC 60068-2-27, Half-sine wave, 11ms duration
	EMC	CE/FCC Class B
	Water-proof	IP65

TPC6000-C154

Model	TPC6000-C154	
System	CPU	Intel® Core™ 6/7/8/代 i7/i5/i3,pentium/celeron LGA1151 type CPU. Max.65W
	BIOS	AMI UEFI 64Mbit
	Chipset	H110
	Memory	DDR4-2400MHz，up to 32GB
	Storage	1 x M.2（M Kye 2280 PCIe Gen3x4 Lane） + 1 x mSATA
	Network	3 x 10/100/1000Mbps controller

	USB	4 x USB3.0 / 2 x USB2.0
	Serial Port	4 x RS-232 / RS-485 Interface with surge protection, RS485 support automatic
	Expension Slot	1 x Mini-PCIe slot, expendible for 3G, WIFI wireless newwork card
	I/O Interface	8DI+8DO Wet contact input（24V）, OC gate output（24V 300mA）
Physical characteristics	Dimention (W x H x D)	371mm * 295mm * 74mm
	Cut size (W x H)	354mm * 278mm
	Net weight	4.7kg
OS	OS	Windows 7, Windows 7 Embedded, Windows8, Windows10, Ubuntu, VXWORKS, QNX
Power	Power input	12-24VDC ±10% , Support reverse connection protection, over voltage protection
	Power consumption	28Watt
LCD	Screen type	15" XGA TFT
	Resolution	1024 x 768
	Colors	16.7MB
	Active area (W x H)	304.13mm x 228.10mm (11.97" x 8.98")
	Blacklight	LED
	MTBF (hour)	30000hrs
	Pixel Pitch	0.297 x 0.297
	Luminance	420cd/m2
	Contrast Ratio	800 : 1
	Viewing Angle	(L) 80 / (R) 80 / (T) 80 / (B) 80
Touch Screen	Touchscreen type	Multi-touch Capacitive Touchscreen
	Transmittance	≥ 87%
	Controller	USB
	Driver Support	Windows 7, Windows 8, Windows 10, Linux
	Multi-touch	10 points by Windows
	Surface hardness	Mohs Hardness 7H
Environment	Operation temperature	0 ~ 50° C
	Storage Temperature	-20 ~ 60° C
	Relative Humidity	10~95% RH@40°C,non-condensing
	Shake	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	SSD applied: 10 G, IEC 60068-2-27, Half-sine wave, 11ms duration
	EMC	CE/FCC Class B
	Water-proof	IP65

TPC6000-C174

型号	TPC6000-C174	
System	CPU	Intel® Core™ 6/7/8/代 i7/i5/i3, pentium/celeron LGA1151 type CPU. Max.65W
	BIOS	AMI UEFI 64Mbit
	Chipset	H110
	Memory	DDR4-2400MHz，up to 32GB
	Storage	1 x M.2（M Kye 2280 PCIe Gen3x4 Lane） + 1 x mSATA
I/O	Network	3 x 10/100/1000Mbps controller
	USB	4 x USB3.0 / 2 x USB2.0
	Serial Port	4 x RS-232 / RS-485 Interface with surge protection, RS485 support automatic
	Expension Slot	1 x Mini-PCIe slot, expendible for 3G, WIFI wireless newwork card
	I/O Interface	8DI+8DO Wet contact input（24V）, OC gate output（24V 300mA）
Physical characteristics	Dimention (W x H x D)	428mm * 342mm * 74mm
	Cut size (W x H)	411mm * 325mm
	Net weight	5.7kg

OS	OS	Windows 7, Windows 7 Embedded, Windows8, Windows10, Ubuntu, VXWORKS, QNX
Power	Power input	12-24VDC ±10% , Support reverse connection protection, over voltage protection
	Power consumption	34Watt
LCD	Screen type	17" SXGA TFT
	Resolution	1280 x 1024
	Colors	16.7MB
	Active area (W x H)	338mm x 270mm (13.31" x 10.63"))
	Blacklight	LED
	MTBF (hour)	30000hrs
	Pixel Pitch	0.264 x 0.264
	Luminance	250cd/m2
	Contrast Ratio	1000 : 1
	Viewing Angle	(L) 85 / (R) 85 / (T) 80 / (B) 80
Touch Screen	Touchscreen type	Multi-touch Capacitive Touchscreen
	Transmittance	≥ 87%
	Controller	USB
	Driver Support	Windows 7, Windows 8, Windows 10, Linux
	Multi-touch	10 points by Windows
	Surface hardness	Mohs Hardness 7H
Environment	Operation temperature	0 ~ 50° C
	Storage Temperature	-20 ~ 60° C
	Relative Humidity	10~95% RH@40°C,non-condensing
	Shake	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	SSD applied: 10 G, IEC 60068-2-27, Half-sine wave, 11ms duration
	EMC	CE/FCC Class B
	Water-proof	IP65

TPC6000-C1854

型号	TPC6000-C1854	
System	CPU	Intel® Core™ 6/7/8/代 i7/i5/i3, pentium/celeron LGA1151 type CPU. Max.65W TDP
	BIOS	AMI UEFI 64Mbit
	Chipset	H110
	Memory	DDR4-2400MHz，up to 32GB
	Storage	1 x M.2（M Kye 2280 PCIe Gen3x4 Lane） + 1 x mSATA
I/O	Network	3 x 10/100/1000Mbps controller
	USB	4 x USB3.0 / 2 x USB2.0
	Serial Port	4 x RS-232 / RS-485 Interface with surge protection, RS485 support automatic
	Expension Slot	1 x Mini-PCIe slot, expendible for 3G, WIFI wireless newwork card
	I/O Interface	8DI+8DO Wet contact input（24V），OC gate output（24V 300mA）
Physical characteristics	Dimention (W x H x	480mm * 304mm * 74mm
	Cut size (W x H)	463mm * 287mm
	Net weight	5.9kg
OS	OS	Windows 7, Windows 7 Embedded, Windows8, Windows10, Ubuntu, VXWORKS, QNX
Power	Power input	12-24VDC ±10% , Support reverse connection protection, over voltage protection
	Power consumption	34Watt
LCD	Screen type	18.5" HD TFT
	Resolution	1366 x 768
	Colors	16.7MB
	Active area (W x H)	409.8 x 230.4mm (16.13"x 9.07")
	Blacklight	LED
	MTBF (hour)	30000hrs
	Pixel Pitch	0.300 x 0.300

	Luminance	250cd/m2
	Contrast Ratio	1000 : 1
	Viewing Angle	(L) 85 / (R) 85 / (T) 80 / (B) 80
Touch Screen	Touchscreen type	Multi-touch Capacitive Touchscreen
	Transmittance	≥ 87%
	Controller	USB
	Driver Support	Windows 7, Windows 8, Windows 10, Linux
	Multi-touch	10 points by Windows
	Surface hardness	Mohs Hardness 7H
Environment	Operation	0 ~ 50° C
	Storage Temperature	-20 ~ 60° C
	Relative Humidity	10~95% RH@40°C,non-condensing
	Shake	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	SSD applied: 10 G, IEC 60068-2-27, Half-sine wave, 11ms duration
	EMC	CE/FCC Class B
	Water-proof	IP65

TPC6000-C194

型号		TPC6000-C194
System	CPU	Intel® Core™ 6/7/8/代 i7/i5/i3, pentium/celeron LGA1151 type CPU. Max.65W TDP
	BIOS	AMI UEFI 64Mbit
	Chipset	H110
	Memory	DDR4-2400MHz，up to 32GB
	Storage	1 x M.2（M Kye 2280 PCIe Gen3x4 Lane） + 1 x mSATA
I/O	Network	3 x 10/100/1000Mbps controller
	USB	4 x USB3.0 / 2 x USB2.0
	Serial Port	4 x RS-232 / RS-485 Interface with surge protection, RS485 support automatic
	Expension Slot	1 x Mini-PCIe slot, expendible for 3G, WIFI wireless newwork card
	I/O Interface	8DI+8DO Wet contact input（24V），OC gate output（24V 300mA）
Physical characteristics	Dimention (W x H x	460mm * 369mm * 74mm
	Cut size (W x H)	442mm * 351mm
	Net weight	5.9kg
OS	OS	Windows 7, Windows 7 Embedded, Windows8, Windows10, Ubuntu, VXWORKS, QNX
Power	Power input	12-24VDC ±10% , Support reverse connection protection, over voltage protection
	Power consumption	37Watt
LCD	Screen type	19" SXGA TFT
	Resolution	1280 x 1024
	Colors	16.7MB
	Active area (W x H)	376mm x 301mm (14.82" x 11.85")
	Blacklight	LED
	MTBF (hour)	30000hrs
	Pixel Pitch	0.294 x 0.294
	Luminance	250cd/m2
	Contrast Ratio	1000 : 1
	Viewing Angle	(L) 85 / (R) 85 / (T) 80 / (B) 80
Touch Screen	Touchscreen type	Multi-touch Capacitive Touchscreen
	Transmittance	≥ 87%
	Controller	USB
	Driver Support	Windows 7, Windows 8, Windows 10, Linux
	Multi-touch	10 points by Windows
	Surface hardness	Mohs Hardness 7H
	Operation	0 ~ 50° C
	Storage Temperature	-20 ~ 60° C

	Relative Humidity	10~95% RH@40°C,non-condensing
	Shake	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	SSD applied: 10 G, IEC 60068-2-27, Half-sine wave, 11ms duration
	EMC	CE/FCC Class B
	Water-proof	IP65

TPC6000-C2154

型号	TPC6000-C2154	
System	CPU	Intel® Core™ 6/7/8/代 i7/i5/i3, pentium/celeron LGA1151 type CPU. Max.65W TDP
	BIOS	AMI UEFI 64Mbit
	Chipset	H110
	Memory	DDR4-2400MHz，up to 32GB
	Storage	1 x M.2（M Kye 2280 PCIe Gen3x4 Lane） + 1 x mSATA
I/O	Network	3 x 10/100/1000Mbps controller
	USB	4 x USB3.0 / 2 x USB2.0
	Serial Port	4 x RS-232 / RS-485 Interface with surge protection, RS485 support automatic
	Expension Slot	1 x Mini-PCIe slot, expendible for 3G, WIFI wireless newwork card
	I/O Interface	8DI+8DO Wet contact input（24V）, OC gate output（24V 300mA）
Physical characteristics	Dimention (W x H x	550mm * 342mm * 74mm
	Cut size (W x H)	533mm * 325mm
	Net weight	6.9kg
OS	OS	Windows 7, Windows 7 Embedded, Windows8, Windows10, Ubuntu, VXWORKS, QNX
Power	Power input	12-24VDC ±10% , Support reverse connection protection, over voltage protection
	Power consumption	40Watt
LCD	Screen type	21.5" Full HD TFT
	Resolution	1920 x 1080
	Colors	16.7MB
	Active area (W x H)	476.64mm x 268.11mm (18.77 x 10.56")
	Blacklight	LED
	MTBF (hour)	30000hrs
	Pixel Pitch	0.248 x 0.248
	Luminance	250cd/m2
	Contrast Ratio	3000 : 1
	Viewing Angle	(L) 89 / (R) 89 / (T) 89 / (B) 89
Touch Screen	Touchscreen type	Multi-touch Capacitive Touchscreen
	Transmittance	≥ 87%
	Controller	USB
	Driver Support	Windows 7, Windows 8, Windows 10, Linux
	Multi-touch	10 points by Windows
	Surface hardness	Mohs Hardness 7H
Environment	Operation	0 ~ 50° C
	Storage Temperature	-20 ~ 60° C
	Relative Humidity	10~95% RH@40°C,non-condensing
	Shake	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	SSD applied: 10 G, IEC 60068-2-27, Half-sine wave, 11ms duration
	EMC	CE/FCC Class B
	Water-proof	IP65

2.1.3 Dimension

TPC6000-C124-LH Dimention:321mm * 247mm * 74mm

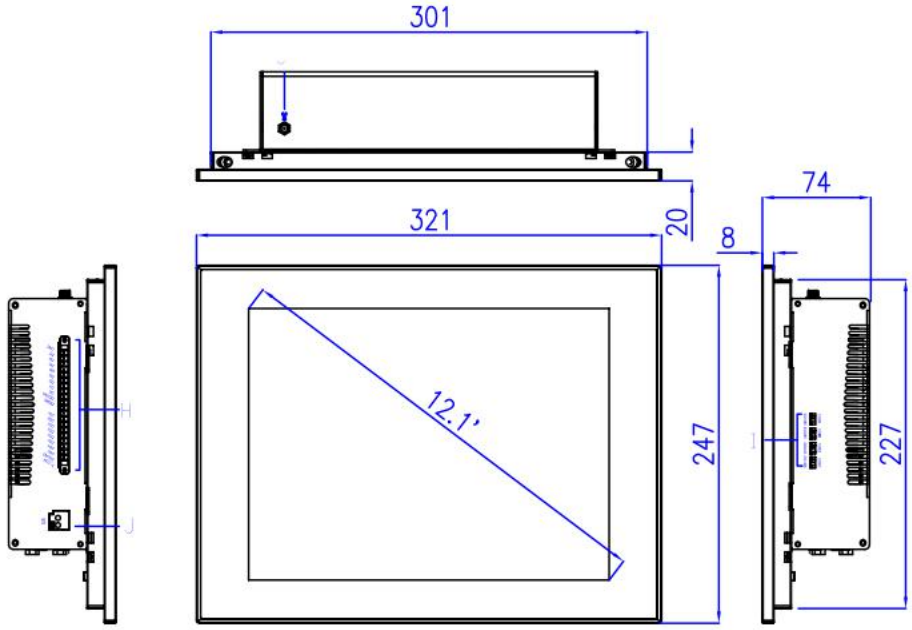


Figure 2.1- 1 TPC6000-C124-LH Dimention

12 inch embedded cut size: 304mm * 230mm

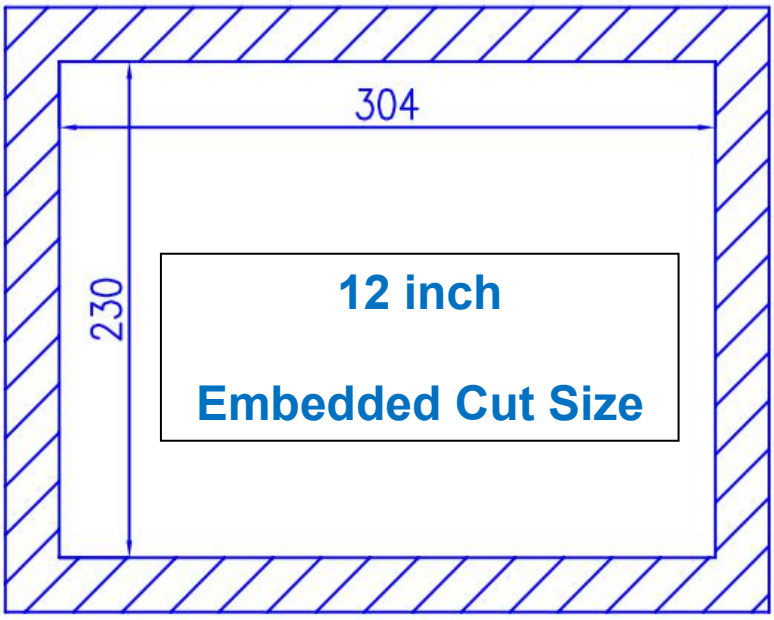
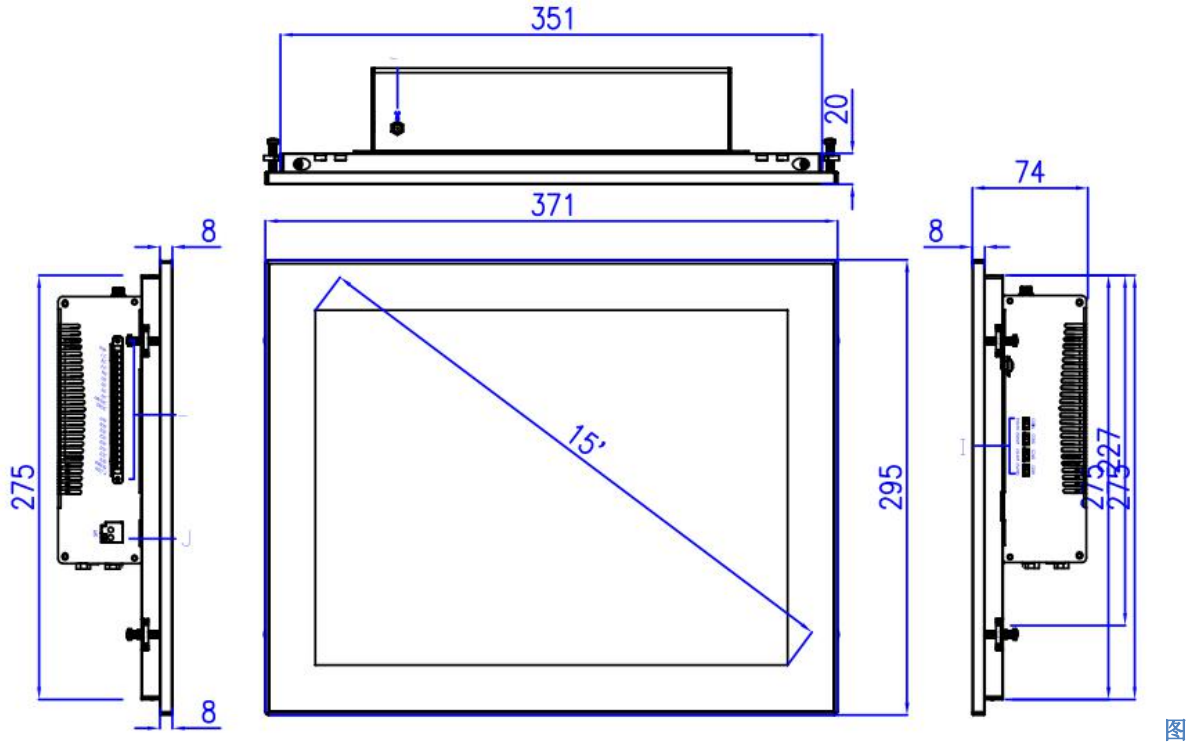


Figure 2.1-2 TPC6000-C124-LH Embedded Cut Size

TPC6000-C154-L Dimention: 371mm * 295mm * 74mm



2.1-3 TPC6000-C2154-L Dimention

15 inch Embedded Cut Size: 354mm * 278mm

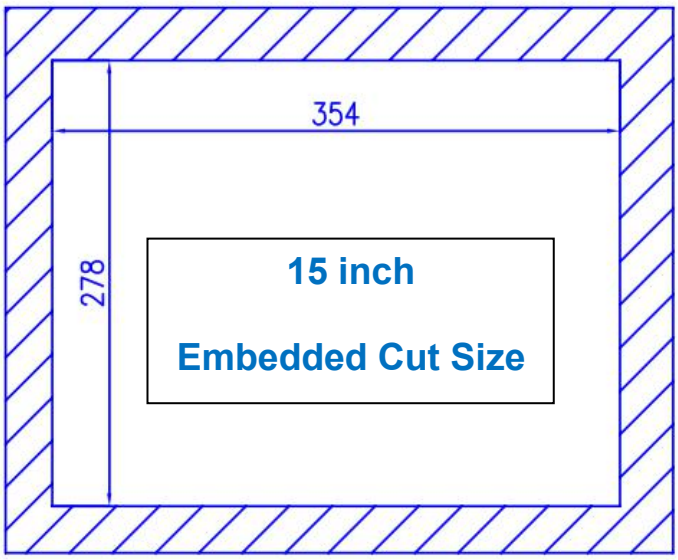


Figure 2.1-4 TPC6000-C154-L Embedded Cut Size

TPC6000-C174-L Dimention:428mm * 342mm * 74mm

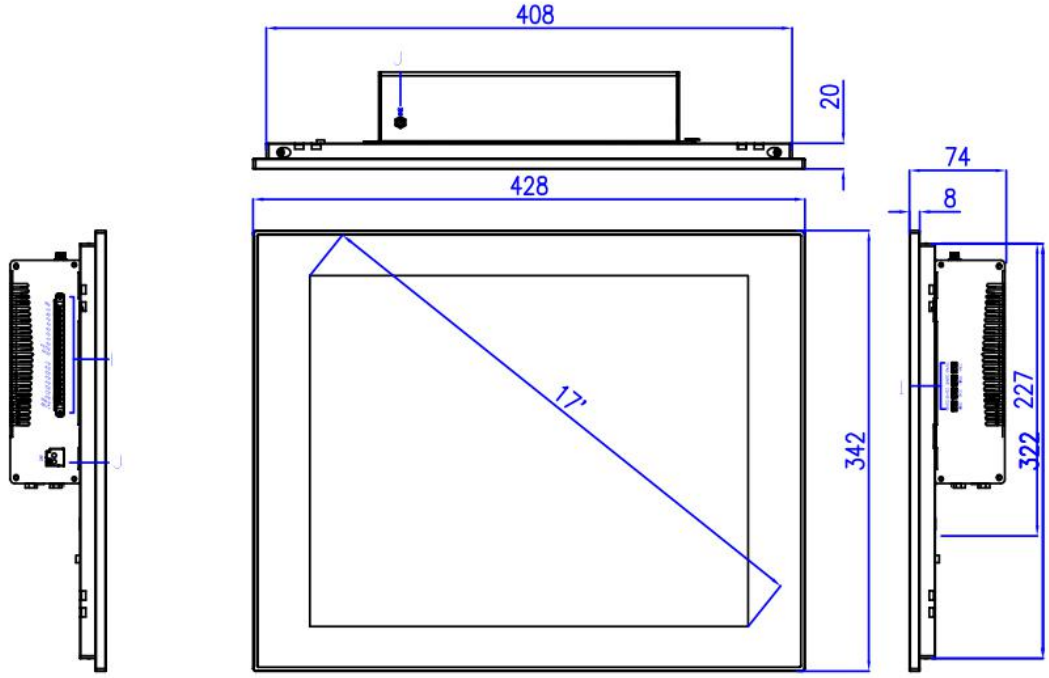


Figure 2.1-5 TPC6000-C174-L Dimention

17 inch embebded cut size: 411mm * 325mm

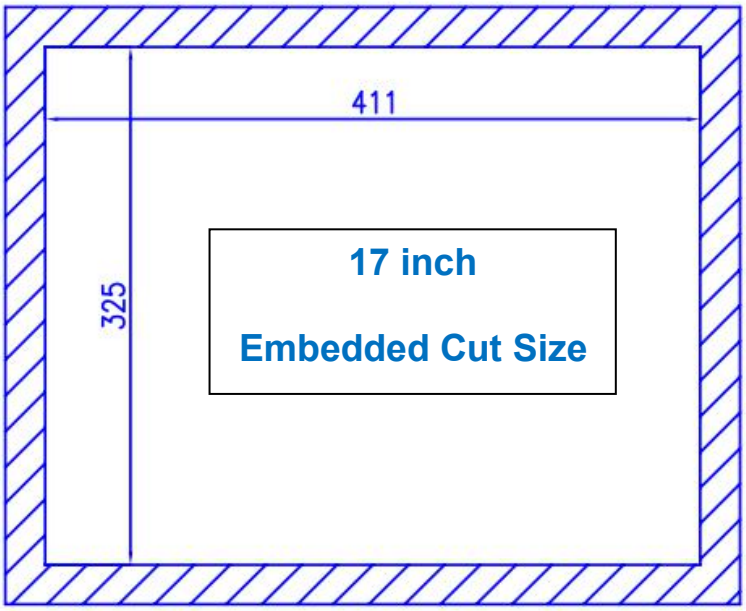


Figure 2.1-6 TPC6000-C174-L Embedded Cut Size

TPC6000-C1854-L Dimention:480mm * 304mm * 74mm

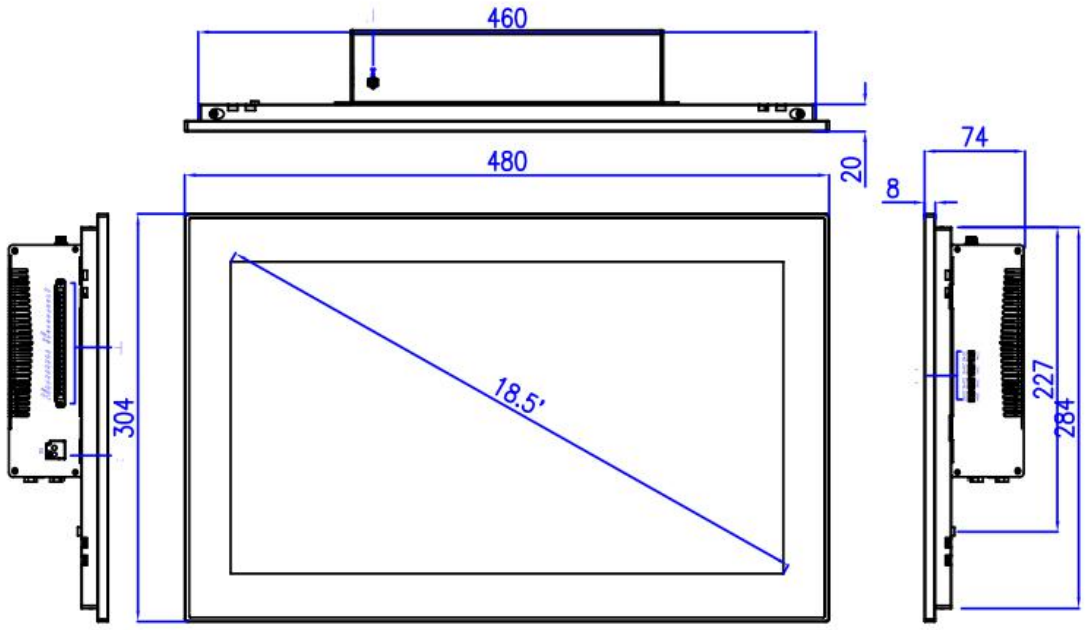


Figure 2.1-7 TPC6000-C1854-L Dimention

18.5 inch embedded cut size:463mm * 287mm

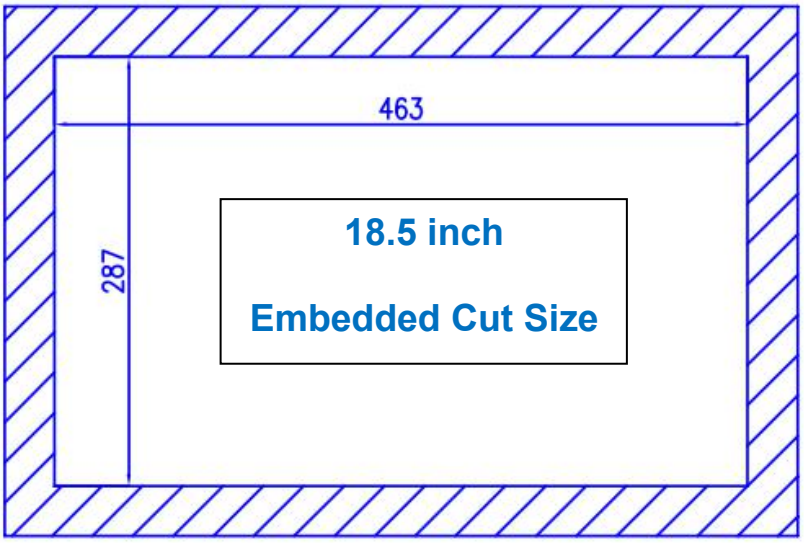


Figure 2.1-8 TPC6000-C1854-L Embedded Cut Size

TPC6000-C194-L Dimention:460mm * 369mm * 74mm

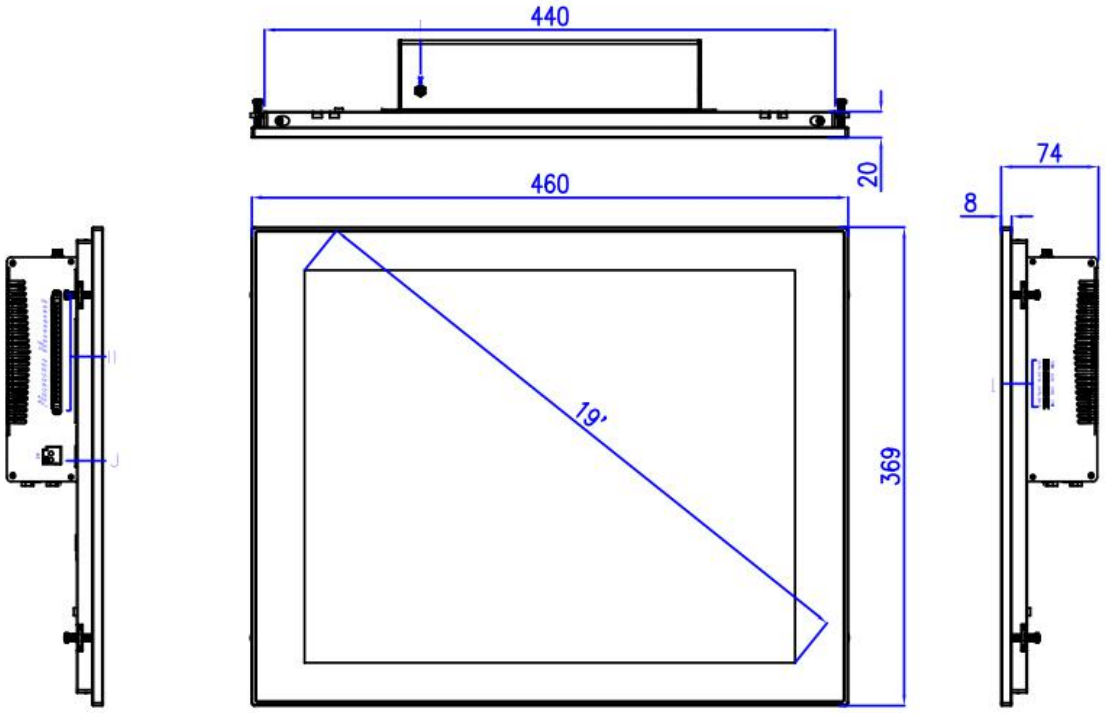


Figure 2.1-9 TPC6000-C194-LDimention

19 inch embedded cut size：351mm * 442mm

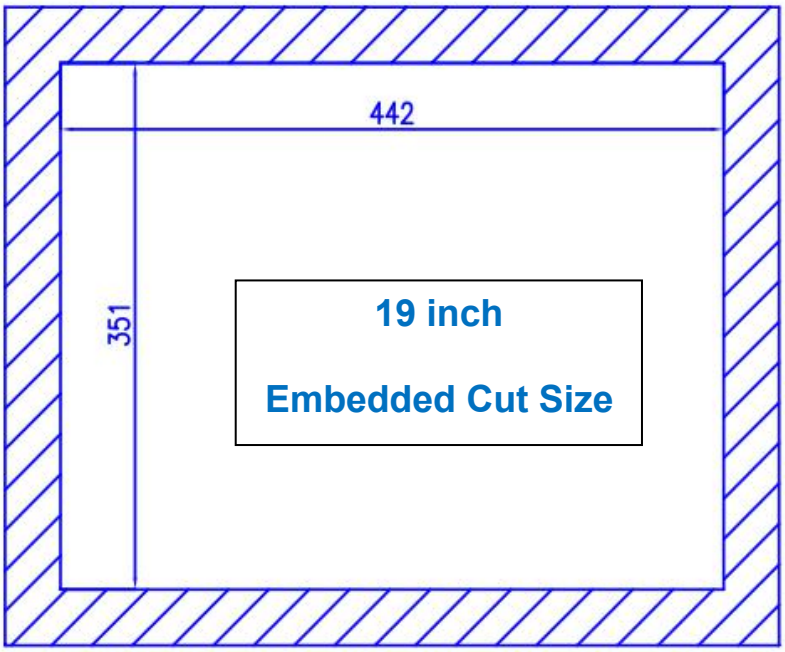
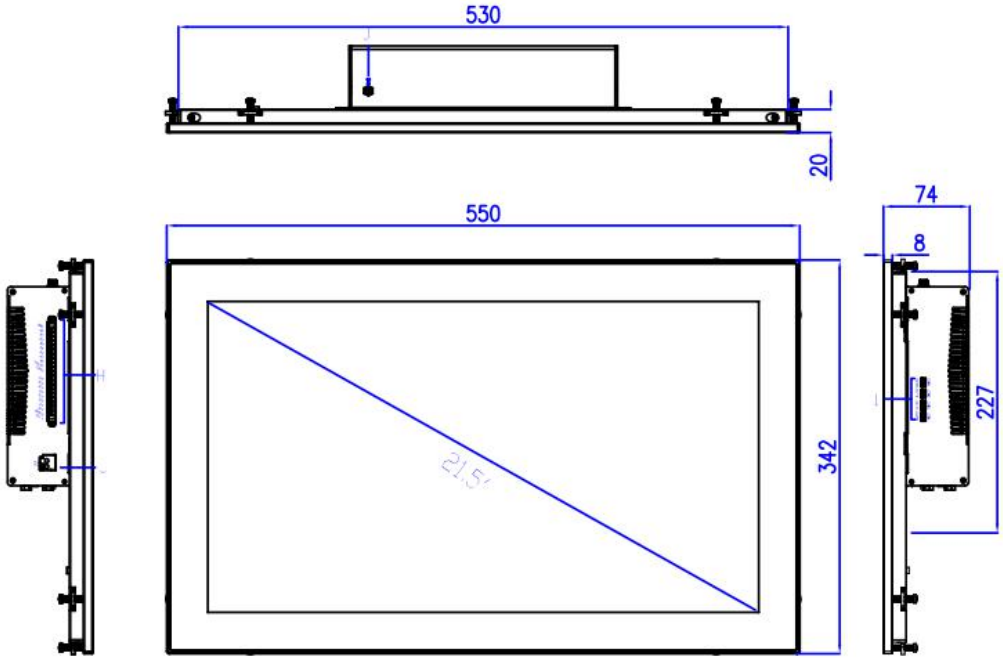


Figure 2.1- 2 0 TPC6000-C194-L Embedded Cut Size

TPC6000-C2154-L Dimention：550mm * 342mm



***74mm**

Figure 2.1- 3 TPC6000-C2154-L Dimention

21.5 inch embedded cut size：533mm * 325mm

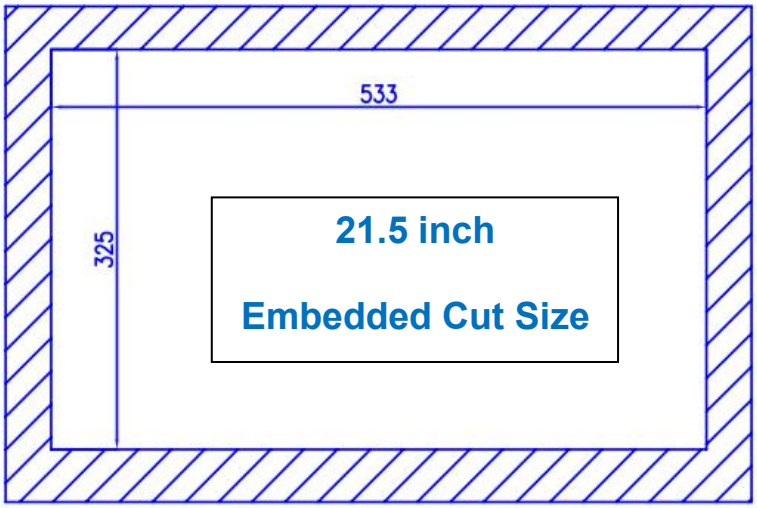


Figure 2.1- 4 TPC6000-C2154-L Dimention

2.1.4 I/O Definition

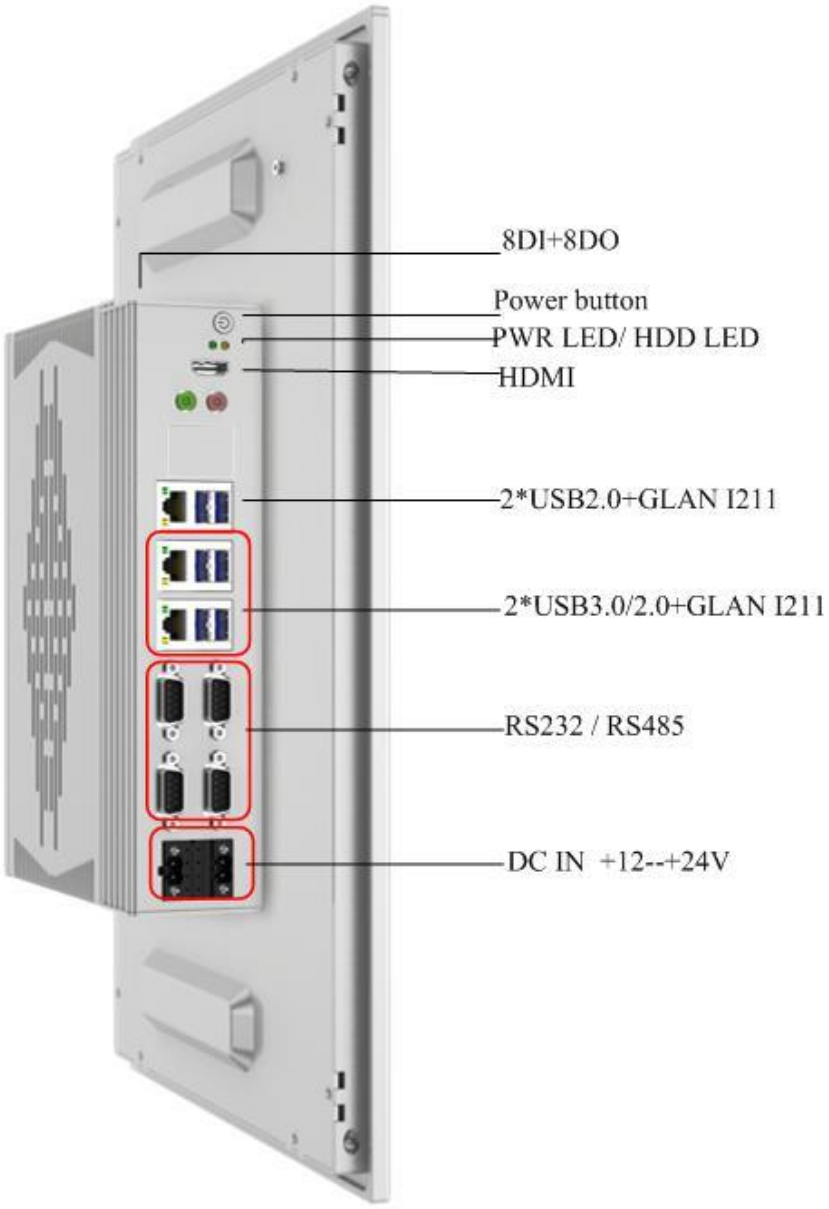


Figure 2.1- 5 TPC6000-Cxx4 I/O Definition

1.3.1.1 PWR LED/HDD LED

There are 2 LEDs on the front panel to indicate power status and HDD status.

Figure 2.1- 6 TPC6000-Cxx4 LEDs

LED NAME	STATUS	DESCRIPTION
PWR LED	Off	Without power
	On (green)	Power on
HDD LED	Blink (orange)	It indicates the HDD is being accessed.

1.3.1.2 Power Button

There is a power button on the front panel which can be used to power on/ off the PANEL PC.

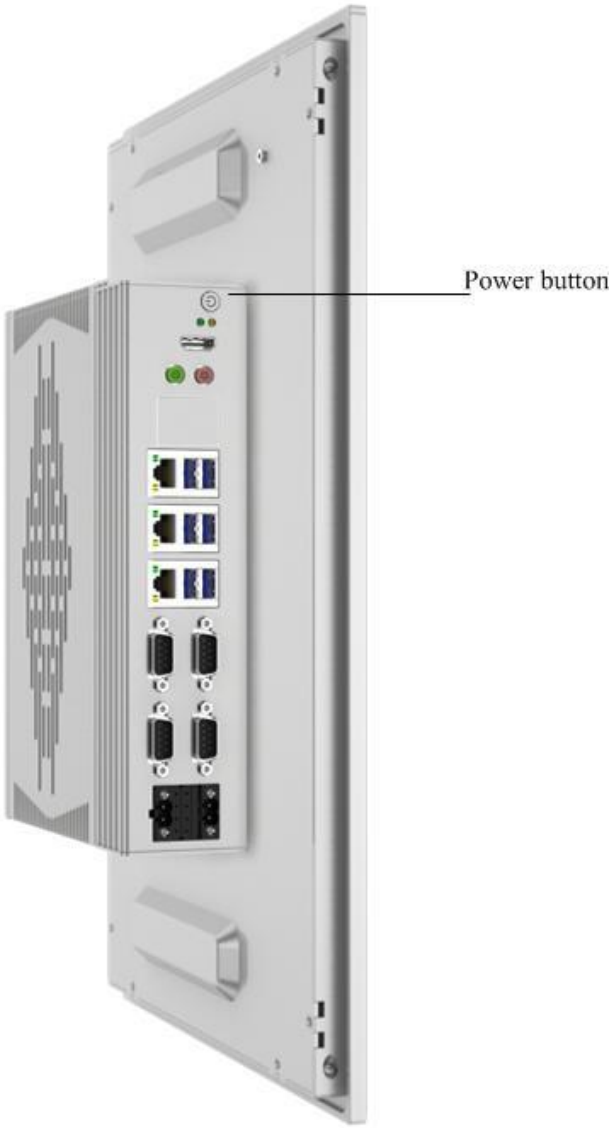


Figure 2.1- 7 TPC6000-CXX4 Power button

1.3.1.3 DC IN

There are two 2 pin power input interfaces provided on the front panel which ensures reliable power connection. These power input interfaces support DC 12V-24V. Paying attention to the positive and negative marks before connecting any power input interfaces to the PANEL PC. Don not connect mains (220V) directly.

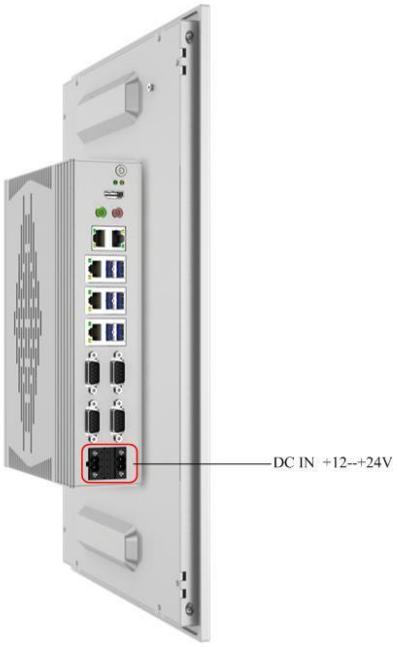
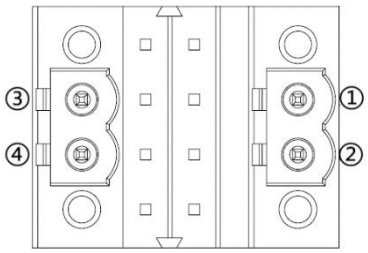


Figure 2.1- 8 TPC600-CXX4 DCIN Connector Definition

The signal of the power input connector is defined as below:



Pin No.	Signal
1	DC 12V-24V
2	GND
3	DC 12V-24V
4	GND

:

1. Make sure that the output voltage of the power supply matches the service voltage of the before power on the device.
2. Pay attention to the positive and negative poles on the panel cover, do not connect them interversely, otherwise it may cause damage on the hardware or even cause electric shock.
3. Be sure not connect mains (220V) to the power supply terminal directly.

1.3.1.4 LAN PORTS：LAN1,LAN2，LAN3

There are three gigabit Ethernets ports on the carry board, which are LAN1, LAN2 and LAN3.

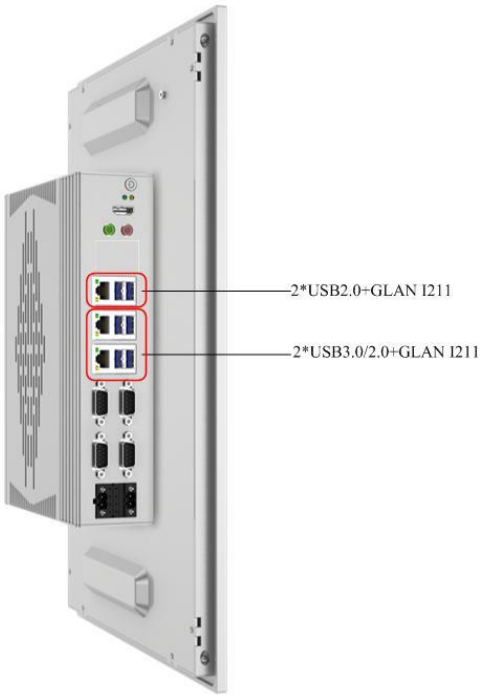
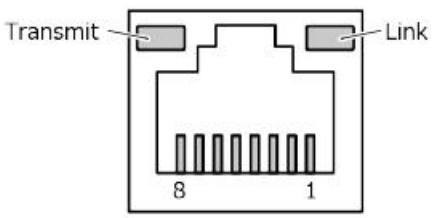


Figure 2.1- 9 TPC6000-CXX4 Gigabit Ethernet Ports

TYPE	参数
Network Type	1000BASE-T/100BASE-TX/10BASE-T
Transmission Speed	1000M/100M/10M bps
Maximum Cable Distance	100m/segment
Network Card Type	Intel® Ethernet Controller I210

*When transmission speed is 1000Mbp, please use cable CAT 5e or above.

Network Signal Definition：



Pin No.	Signal Name	
	100BASE-TX	1000BASE-T
1	TX+	TRD+(0)
2	TX-	TRD-(0)
3	RX+	TRD+(1)
4	N.C.	TRD+(2)
5	N.C.	TRD-(2)
6	RX-	TRD-(1)
7	N.C.	TRD+(3)
8	N.C.	TRD-(3)

1.3.1.5 USB

The front panel of TPC6000-CXX4 provides four separate USB3.0 ports Compatible with USB2.0

1.3.1.5.1 USB3.0/2.0

The carry board has four USB3.0 TYPE-A type.

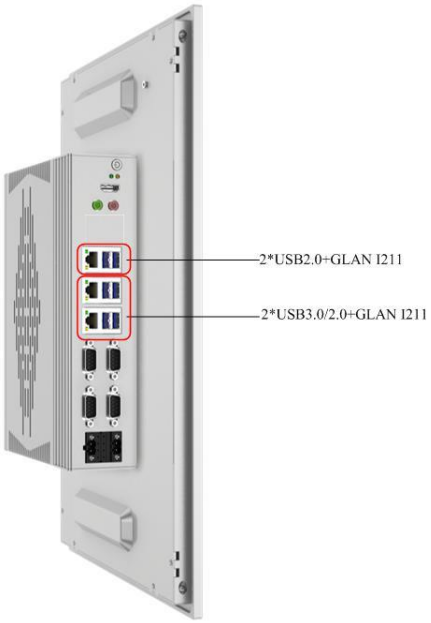
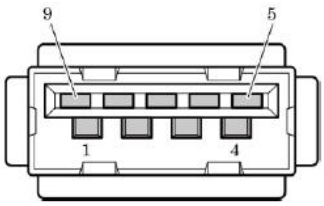


Figure 2.1- 1 0 TPC6000-CXX4 USB

USB3.0 Connector Pin Definiton：



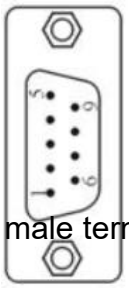
Pin No.	Signal
1	USB_VCC
2	DATA-
3	DATA+
4	USB_GND
5	SSRX-
6	SSRX+
7	USB_GND
8	SSTX-
9	SSTX+

1.3.1.6 Serial Ports: COM1, COM2,COM3, COM4

TPC6000-CXX4 provides 4 serial ports which are COM1—COM4. They all use standard DB9 male connector terminals supporting RS232 or RS485 communication protocol(can be selected by the switch at the bottom).

Figure 2.1- 1 1 TPC6000-CXX4 Serial Ports Setting

The serial ports signal definition of DB9 male terminal is shown as below:



DB9 male terminal

Pin No.	Signal Name	
	RS232	RS485
1	N.C.	B
2	RXD	A
3	TXD	N.C.
4	N.C.	N.C.
5	GND	GND
6	N.C.	N.C.
7	RTS	N.C.
8	CTS	N.C.
9	N.C.	N.C.

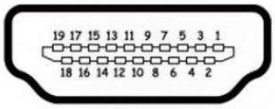
1.3.1.7 Display Interface

TPC6000-CXX4 provides standard HDMI video interface.

Figure 2.1- 1 2 TPC6000-CXX4 Video Interface

1.3.1.7.1 HDMI

The device also has HDMI TYPE A high definition multimedia video display interface. The terminal signal is defined as below:

HDMI-A Terminal			
Pin No.	信号名称	Pin No.	信号名称
1	TMDS DATA 2+	11	TMDS CLOCK SHIELD
2	TMDS DATA 2 SHIELD	12	TMDS CLOCK-
3	TMDS DATA 2-	13	CEC
4	TMDS DATA 1+	14	N.C.
5	TMDS DATA 1 SHIELD	15	DDC CLOCK
6	TMDS DATA 1-	16	DDC DATA
7	TMDS DATA 0+	17	GND
8	TMDS DATA 0 SHIELD	18	+5V PWR
9	TMDS DATA 0-	19	HOT PLUG DETECT
10	TMDS CLOCK+		

:

1. If the HDMI is not connected before restarting the BIOS Settings, the monitor may fail to display relevant content, and then the boot information will be displayed when the system boots up.
2. When using HDMI, the operating temperature should be between 0 and + 45°C.

1.3.1.8 DIO

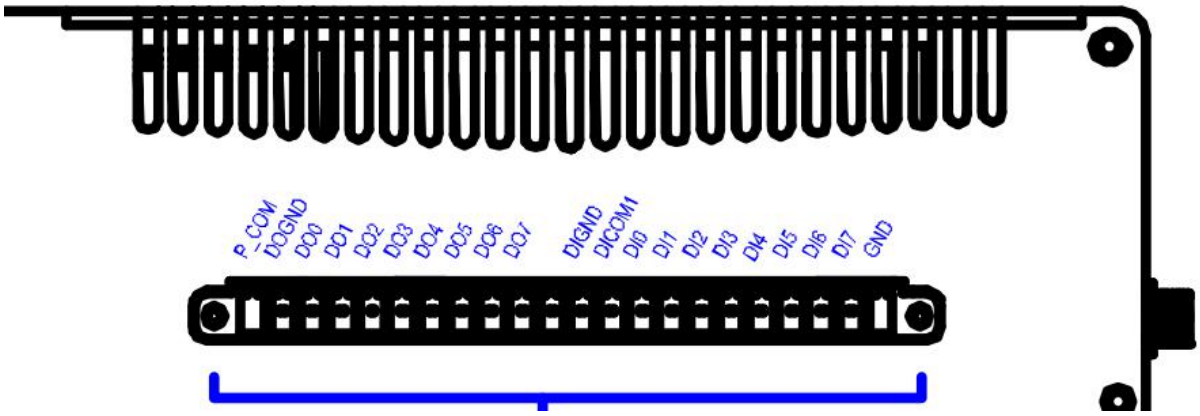


Figure 2.1- 1 3 TPC6000-CXX4 DIO

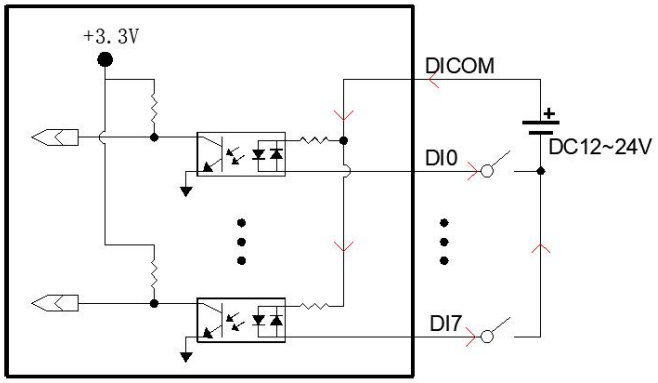
DIO signal definition is shown as below:

Pin No.	Signal Name	Pin No.	Signal Name
1	PCOM	2	DOGND
3	DO0	4	DO1
5	DO2	6	DO3
7	DO4	8	DO5
9	DO6	10	DO7
11	DI-24V	12	DIGND
13	DICOM	14	DI0
15	DI1	16	DI1
17	DI3	18	DI3
19	DI5	20	DI5
21	DI7	22	GND

1.3.1.8.1 DI

8-channel DI is provided on the expansion board. Users can choose DI wet and dry contact. The wiring must comply with the wiring diagram.

- During wet contact， NPN connection way is shown as beow:

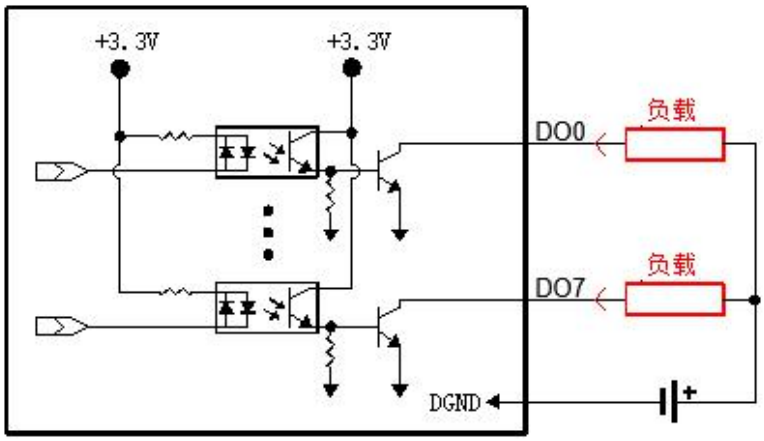


- During dry contact，use + 24V provided by the device:
  A, Connecting terminal pin11 connects to pin13
  B, DIGND/DI0-7 short-circuit input signal

Notice：When +24V is provided internally, a circuit has been formed internally on the motherboard without additional access to GND signal.

1.3.1.8.2 DO

8-channel DO is provided on the expansion board. DO is OC gate output, the maximum output current of a single channel is 0.3A.

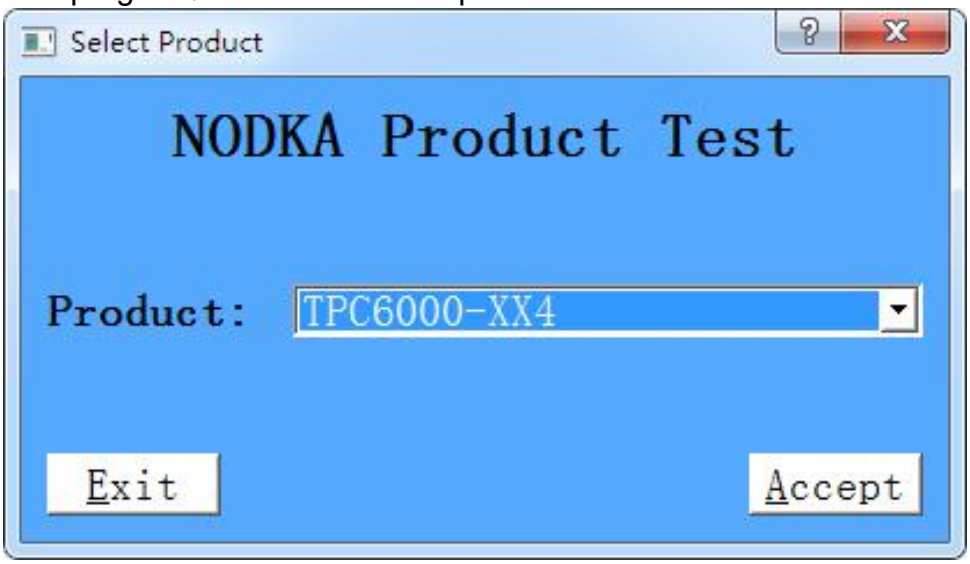


Notice:
PCOM port，when the inductive load is used, the continuous diode is integrated to protect the circuit and components.

1.3.1.8.3 Installation and test

- uses the latest installation package, selects to install the host program, and runs “NKDIO_Utility_Setup_x86_V4.1.9”

- Install successfully, open “NKIO_UTILITY” and select the corresponding model to open the program，shown as below picture:



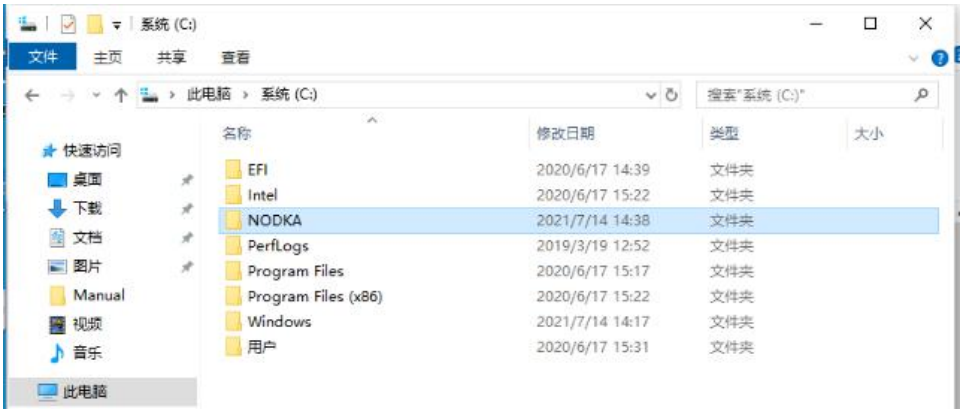
- Click “start” to test after opening the program.

1. If the DI has input signals, the LED of the corresponding channel will be green.
2. Mannually set DO as output

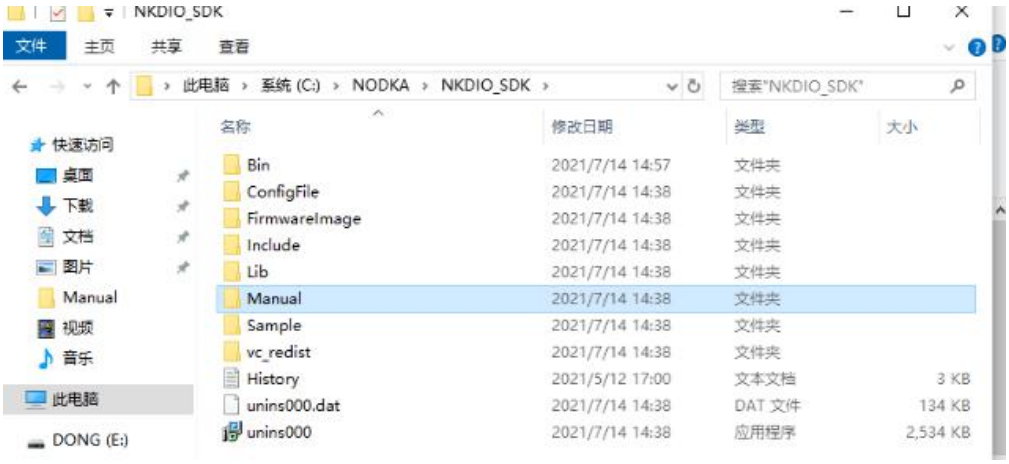
- After test, click” stop” to exit.

1.3.1.8.4 IO API

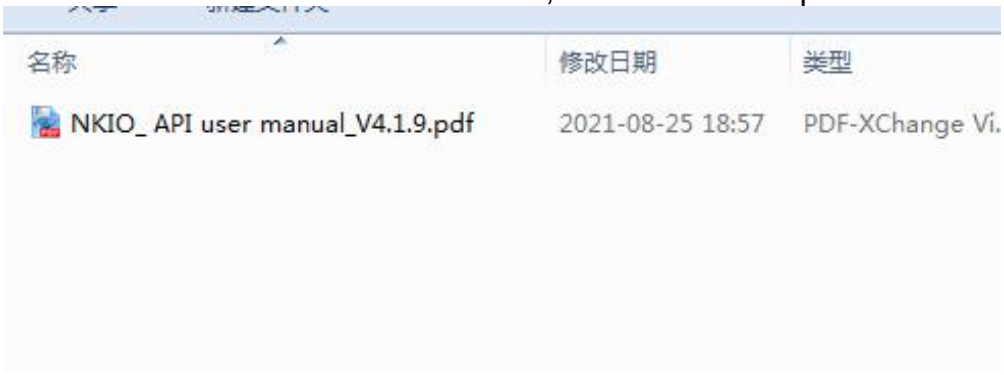
- Open a subdirectory file on system disk "C: NODKA” to find the corresponding files.



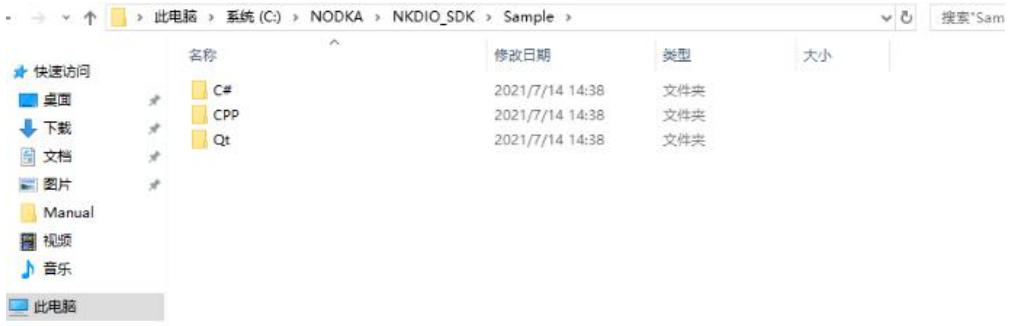
- Open“NODKA”file，all the files will be shown as below：



- IO API user manual is in the file “ Manual”, shown as below picture:



- Presents an example of a function application under the folder "Sample" as shown below picture:



NOTICE:

The corresponding files for IO can be found in “NODKA->NKDIO_SDK”. If you have any problems, please contact technical personnel.

Chapter 3 BIOS Setting

3.1 Introduction of this chapter

This section describes how to set up your system using AMI's BIOS configurator. Correct setting of BIOS parameters can make the system work stably and reliably, and also improve the overall performance of the system. Improper or even incorrect SETTING of BIOS parameters will greatly reduce the system performance, making the system unstable or even unable to work properly.

When the BIOS Settings in the CMOS are damaged, the system will also require entering the BIOS Settings program. All Settings modified through the BIOS are also stored in the CMOS memory of the system. The CMOS memory is powered by the battery, and its content will not be lost even if the external power is cut off, unless remove the CMOS content.

3.2 BIOS Setting

When the system is powered on, BIOS setup program prompted information will be seen after boot.

```
Press <DEL> or <ESC> to enter setup.
```

At this time (invalid at other time) press the key specified by the prompt (usually the <Del> key) to enter the BIOS setup program.

If the message disappears but you need to re-enter the BIOS setting system, restart the PANEL PC after power-off or press <Ctrl> + <Alt> + <Delete> to reload the system. Then re-enter the BIOS setting screen as prompted.

3.3 BIOS method

In general, use the arrow keys on the keyboard to select the Settings, <Enter> to enter the settings, + and - to switch settings, <F1> to get help information, and <Esc> to exit the settings.

See the table below.

Keys	Function Description
< ↑ >	Move to previous item
< ↓ >	Move to next item
<← >	Move to the item on the left side
<→ >	Move to the item on the right side
<Esc>	Reset
<Enter>	Enter to select
< + >	Increase the numeric value or make changes
< - >	Decrease the numeric value make changes
< F1 >	General help
< F2 >	Load previous defaults from CMOS
< F3 >	Optimized defaults
< F4 >	Save all the CMOS changes and reset

3.4 BIOS Setting Items

：Since BIOS programs are updated from time to time, the following BIOS setup interface and description are for reference only.

BIOS Main
Once enter BIOS to set the system, Mian interface will show up.

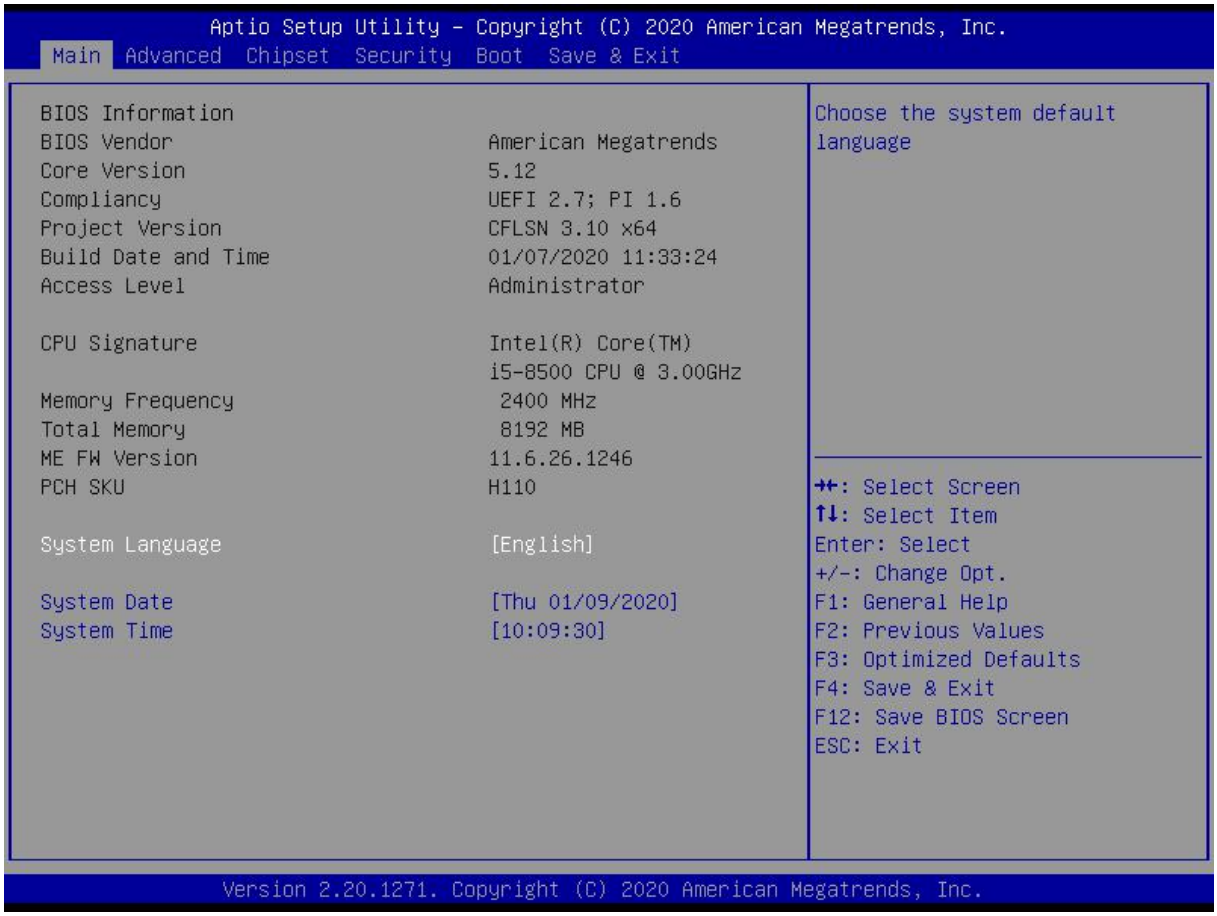


Figure 3.4- 1 TPC6000-XXX4 BIOS-Main

The menu bar which is anchored to the top of the BIOS screen has the following main items:

- **Main -** Change the basic system configuration.
- **Advanced -** Changes the advanced system settings
- **Chipset -** Changes the chipset settings.
- **Security -** Sets user and supervisor passwords.

- **Boot -** Changes the system boot configuration.
- **Save & Exit -** Selects exit options and loads default settings.

3.4.1 Main

Mian is used to confirm basic system configuration information.

■ Items

Items	Content	Description
Project Version	xxxxx x.xx x64	BIOS virson
Build Date and Time	xx/xx/xxxx xx:xx:xx	BIOS create time

■ Settable Items

Items	Content	Description
System Language	[English]	Set BIOS language, the default is English.
System Date	Week Day Month / Day / Year	Set system date
System TIme	Hour : Minute : Second	Set system time

3.4.3 Advanced

In this menu, you can set detailed system functions as below:

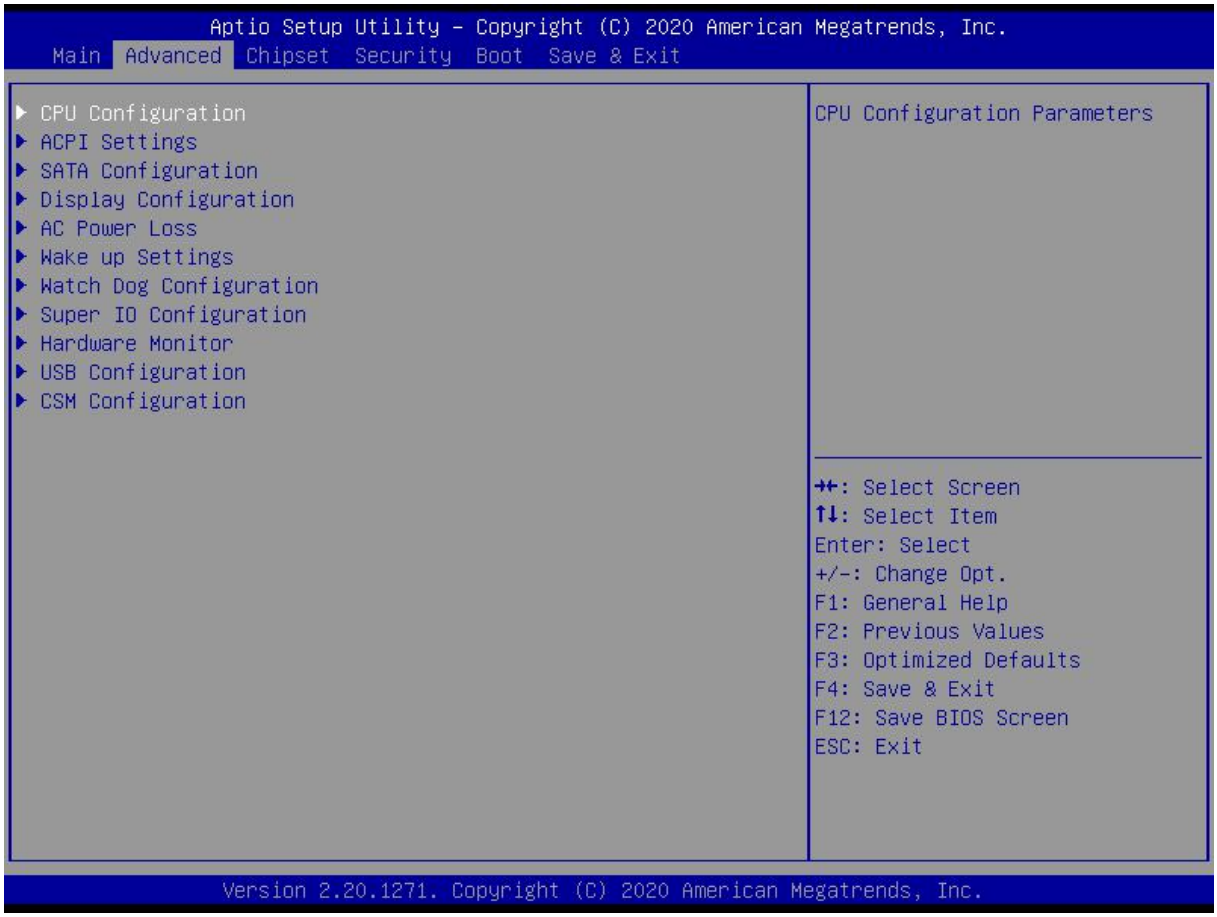


Figure 3.4- 2 TPC6000-XXX4 BIOS-Advanced

- CPU Configuration
  The main function of this item is to display CPU information and configuration items.

  - ACPI Settings
    This is the setting item related to Advanced Configuration and Power Management Interface (ACPI)

- SATA Configuration
  This item is mainly for SATA setting.

- Display Configuration
  This item is mainly for display configuration.

- AC Power Loss
  This item is mainly for power management setting.

- Wake up settings
  This item is mainly to set sleep or wake up function.

- Watch Dog Configuration
  This item is for watch dog setting.

- Super IO Configuration
  This item is for IO setting.

- Hardware Monitor
  The primary function of this item is to display hardware monitoring parameters such as CPU temperature

- USB Configuration
  The main function of this item is the setting of USB interface.

- CSM Configuration
  This is the setting of the Compatibility Support Module. This option is designed to work with devices that only work in Legacy mode and operating systems that do not or do not fully support UEFI.

Set this parameter with caution under the guidance of technical support. Improper Settings may cause system startup failure or hardware damage.

3.4.4 CPU Configuration

On this screen, you can view CPU configuration information and configure the CPU.

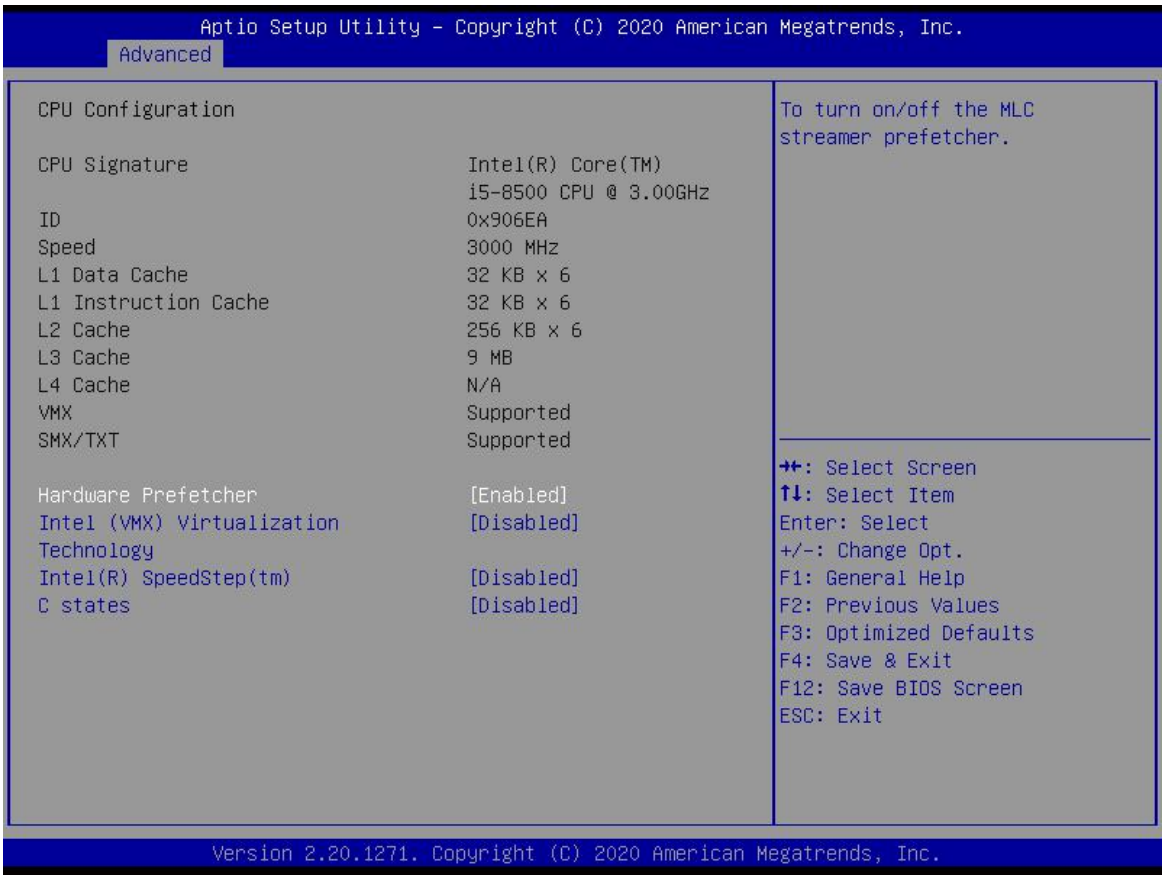


Figure 3.4- 3 TPC6000-XXX4 BIOS-CPU Configuration

■ **CPU Configuration:**

Items	Contents	Description
Hardware Prefetcher	Disabled / [Enabled]	The hardware prefetch option indicates that the CPU has the hardware prefetch function. The CPU prefetches instructions or data from the memory to the L2 cache before processing the instructions or data. This reduces the memory read time, eliminates potential bottlenecks, and improves system performance. Generally, you are advised to set it to Enabled.
Intel (VMX) Virtualization Technology	[Disabled] / Enabled	Intel virtualization technology, which makes it possible to run multiple operating systems on a single computer by making one CPU work as if it were multiple cpus running in parallel. Normally, the state is Disabled.
Intel(R) SpeedStep(tm)	[Disabled] / Enabled	This option is Intel's intelligent frequency reduction technology. The CPU automatically adjusts the voltage and frequency doubling based on the CPU

		usage to reduce power consumption and heat. The state must be Disabled.
C states	Disabled / Enabled	The CPU is in standby state. The clock and voltage can be adjusted according to the state, or the CPU can be turned off completely. Set this parameter to Disabled.

3.4.5 ACPI Settings

On this screen, you can set ACPI (Advanced Configuration and Power Management interface) parameters.

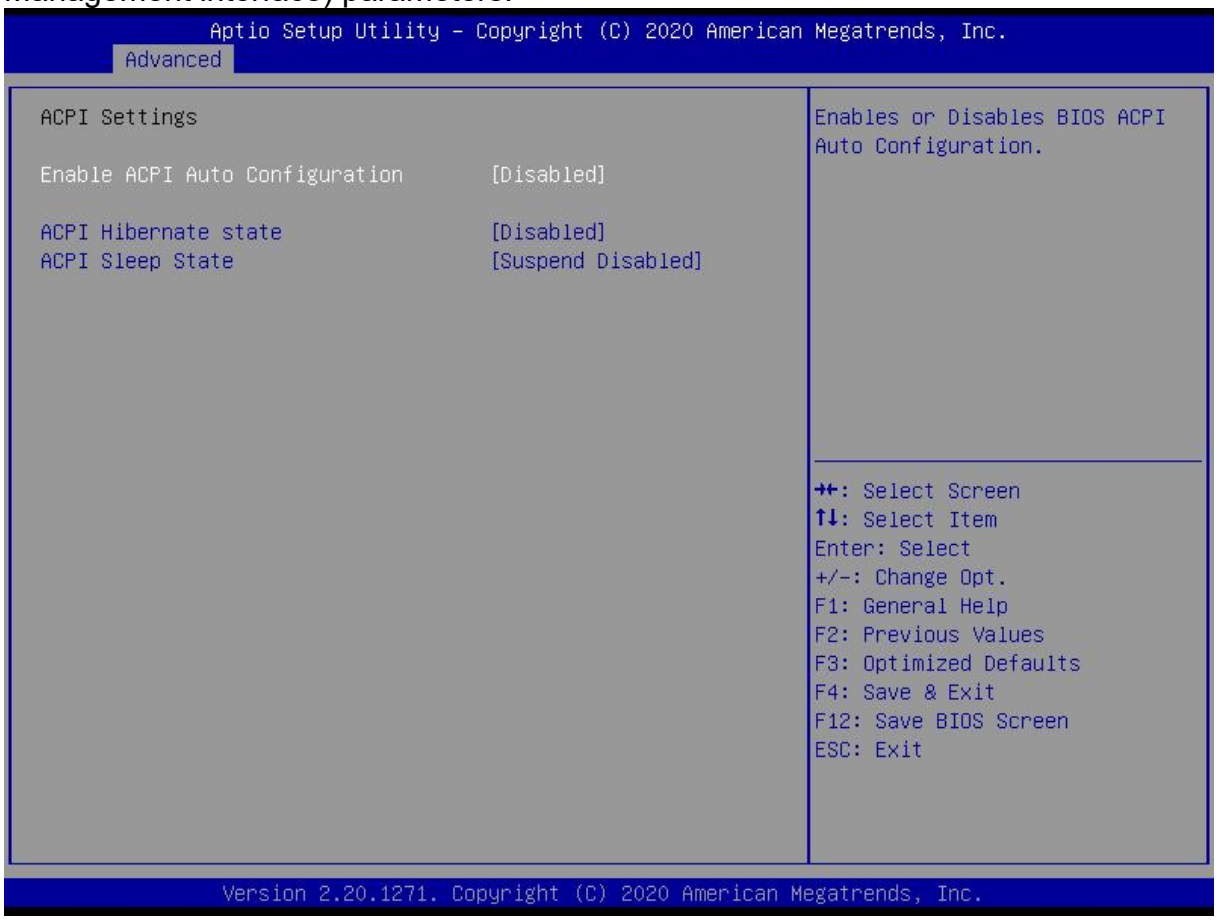


Figure 3.4- 4 TPC6000-XXX4 ACPI Settings

■ **ACPI Settings:**

Items	Contents	Description
Enable ACPI Auto Configuration	Disabled / Enabled	Whether to allow ACPI to be configured automatically. The state is usually set to Disabled.
ACPI Hibernate state	Disabled / Enabled	Whether to allow ACPI to go to sleep. This is usually set to Disabled.
ACPI Sleep state	Suspend Disabled	Whether ACPI is allowed to go to sleep. The default is Suspend Disabled.

3.4.6 SATA Configuration

Configure SATA controllers on this screen.

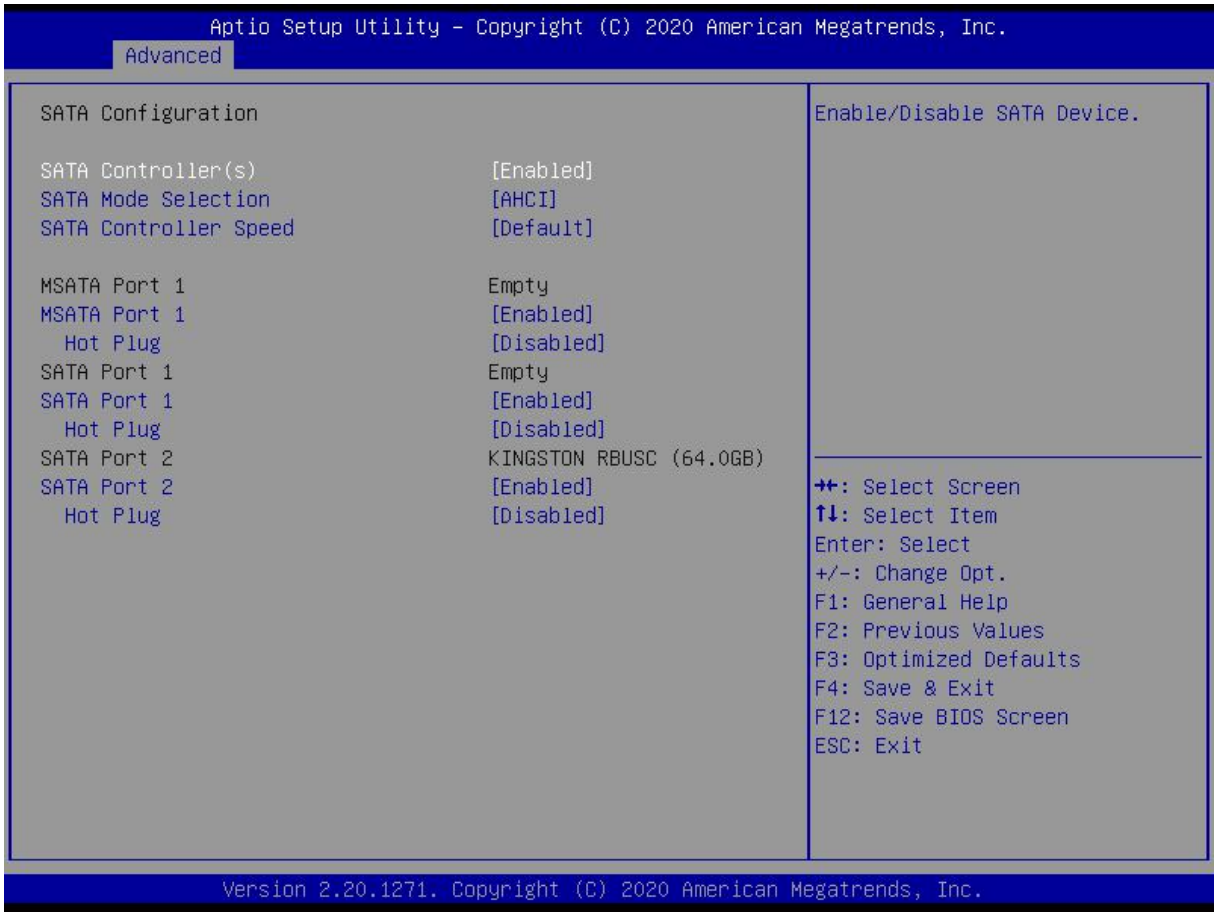


Figure 3.4- 5 TPC6000-XXX4 BIOS SATA Configuration

■ **SATA Configuration:**

Items	Contents	Description
SATA Controller(s)	Disabled / Enabled	Whether to enable SATA controller. If you change this parameter, you may need to reinstall the system. Do not change this parameter.
SATA Mode Selection	AHCI	SATA access mode, do not change this item.
SATA Controller Speed	Default/Gen1/Gen2/Gen 3	SATA control The access speed of the device. Do not change this item.
MSATA Port 1	-	Whether to enable MSATA Port 1 and display information about MSATA disks connected to MSATA Port 1
SATA Port 1	-	Whether to enable MSATA Port 2 and display information about SATA disks connected to SATA Port 1.
SATA Port 2	-	Whether to enable SATA Port 2 and display information about SATA disks connected to SATA Port 2.

3.4.7 Display Configuration

On this screen, you can set the parameters related to the integrated graphics card.

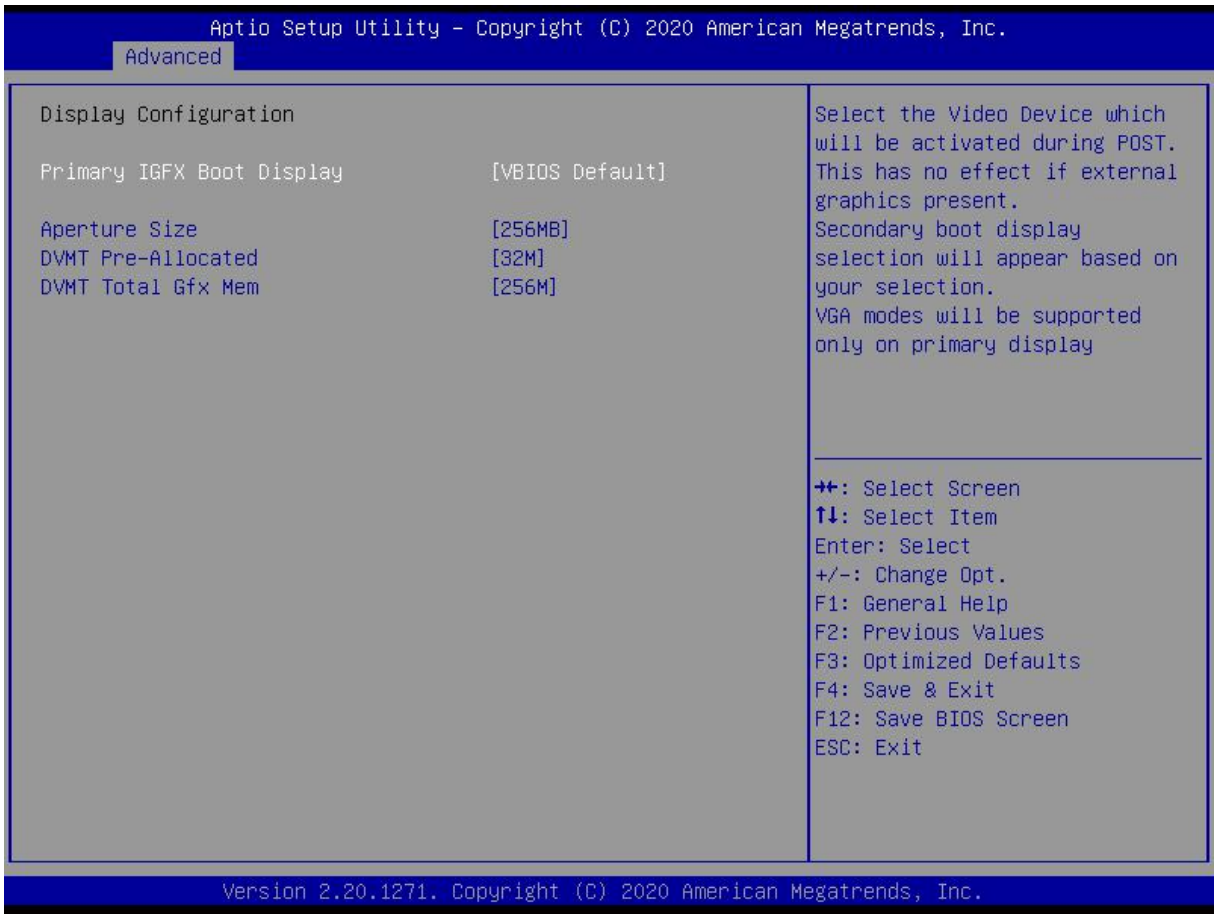


Figure 3.4- 6 TPC6000-XXX4 BIOS-Display Configuration

■ **Display Configuration:**

Items	Contents	Description
Primary IGFX Boot Display	VBIOS Default / DVI / HDMI / VGA	Indicates which device connected to the integrated graphics card is displayed from when starting POST self-check. The default is VBIOS.
Aperture Size	128MB/256MB/512MB/1024MB/2048MB	This parameter is the upper limit of memory that the integrated graphics card can call when necessary. Keep the default Settings.
DVMT Pre-Allocated	0-60M	This parameter is the default value of dynamic shared video memory. It means that the system allocates this size of memory as video memory

		when the system starts up. If the memory is insufficient, the system allocates the memory again. The default is 32 MB
DVMT Total Gfx Mem	256M/128M/MAX	The default value is 256 MB. Do not change the total capacity of the allocated dynamic video memory.

3.4.8 AC Power Loss

In this interface, you can set the power-on self-start.

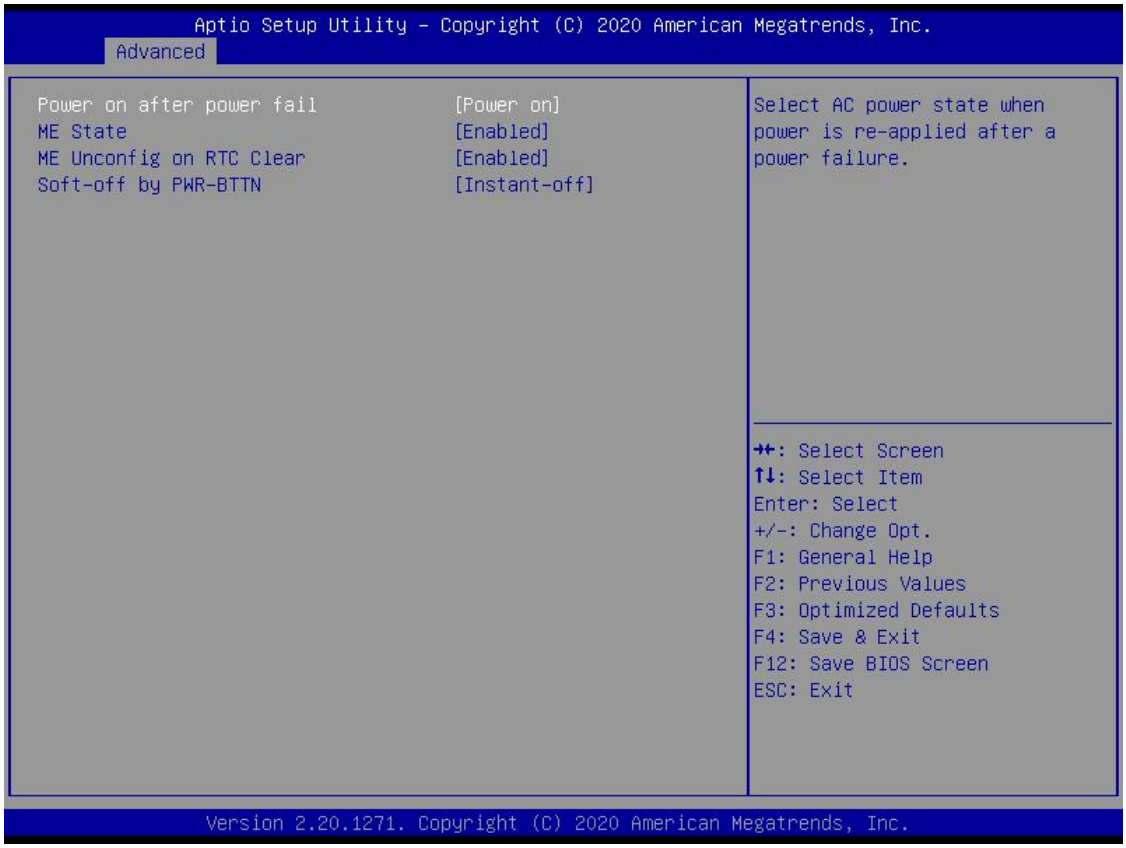


Figure 3.4- 7 TPC6000-XXX4 BIOS-AC Power Loss

Items	Contents	Description
Power on after power fail	– Power off / Power on / Last status	Indicates the power status of the mainboard after it is switched on again. – Power off：No matter what the state of the last power failure is, the motherboard power supply after power failure, the motherboard does not power on; – Power on ：No matter what the state of the last power failure is, the motherboard after power supply suddenly, the motherboard automatically power on and start; – Last State ：After the mainboard is powered off, the power supply is suddenly restored.

ME State	Enabled / Disabled	Do not change this item.
ME Unconfig on RTC Clear	Enabled / Disabled	Do not change this item.
Soft-off by PWR-BTTN	Delay 4 sec / Instant-off	The way to shut down a computer when you click "Shut down computer" or run the shutdown command in the system. The default mode is instant-off. Delay 4 sec：Shut down delay of 4 seconds； Instant-off：Shut down immediately.

3.4.9 Wake up settings

On this screen, you can set the wake up mode of the system in sleep mode

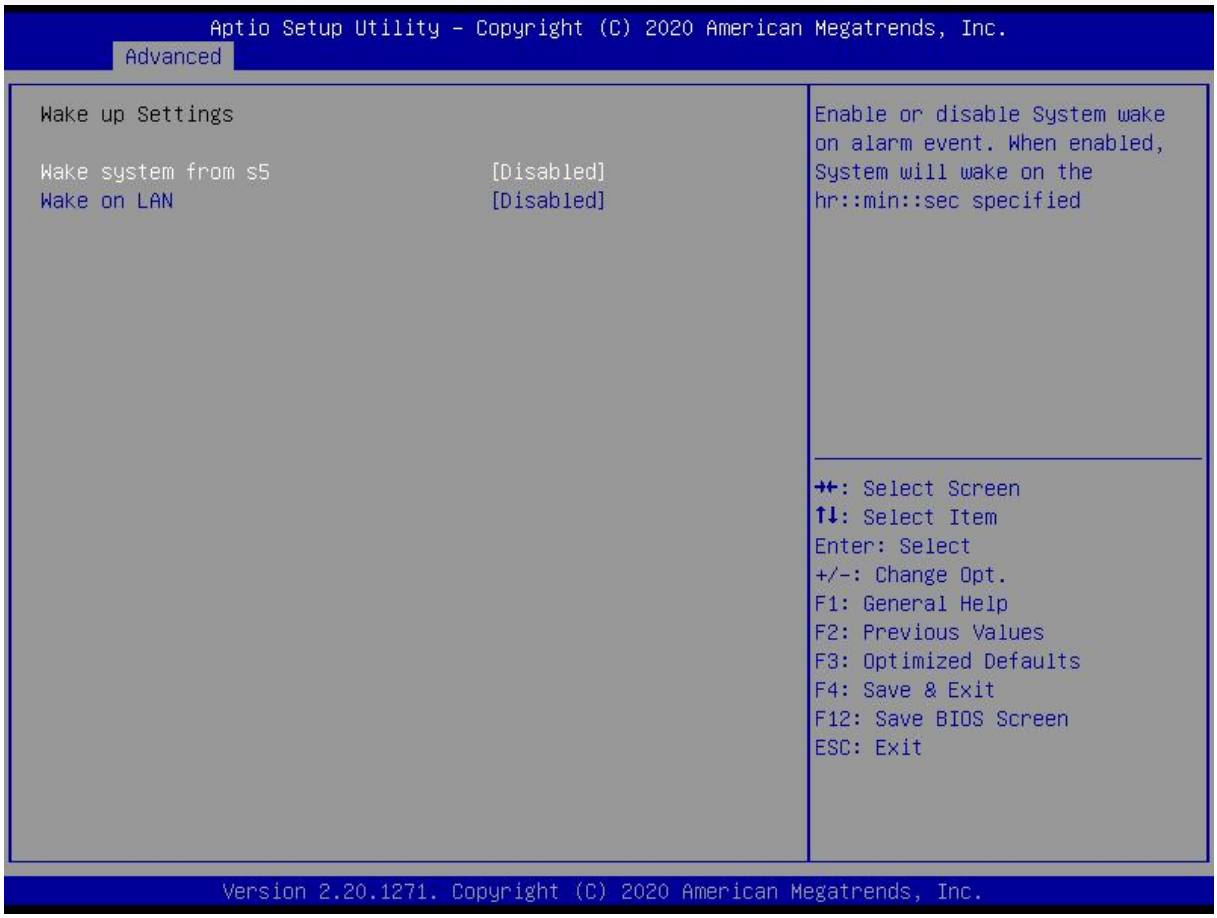


图 3.4- 8 NP-6122 BIOS-Wake up Settings

■ **Wake up Settings:**

Items	Contents	Description
Wake system form s5	Enabled / Disabled	Don't change this item.
Wake on LAN	Enabled / Disabled	Don't change this item.

3.4.10 Watch Dog Configuration

On this interface, you can enable the watch dog timer and set its parameters.

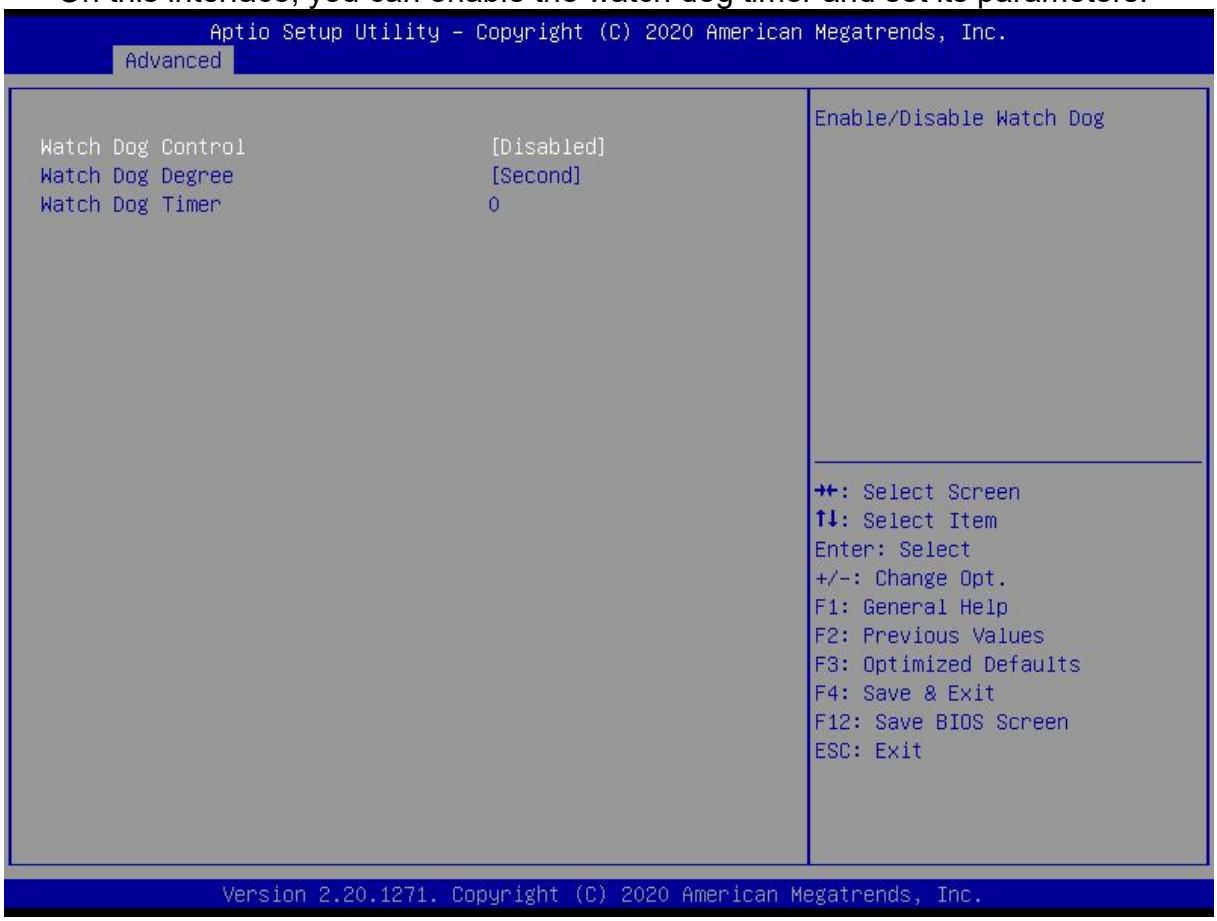


Figure 3.4- 9 TPC6000-XXX4 BIOS-Watch Dog Settings

Items	Contents	Description
Watch Dog Control	Enabled / Disabled	The watch dog function is on and off.
Watch Dog Degree	Second / Minute	The unit of set point of watchdog timer.
Watch Dog Timer	0-255	Set the watchdog timer timeout value. After the timer is enabled, the software needs to periodically feed the dog (reset timer). When the timer time exceeds the set value, the system will be reset and restarted.

3.4.11 Super IO Configuration

On the Super IO screen, you can configure the Serial Port X and Parallel Port.

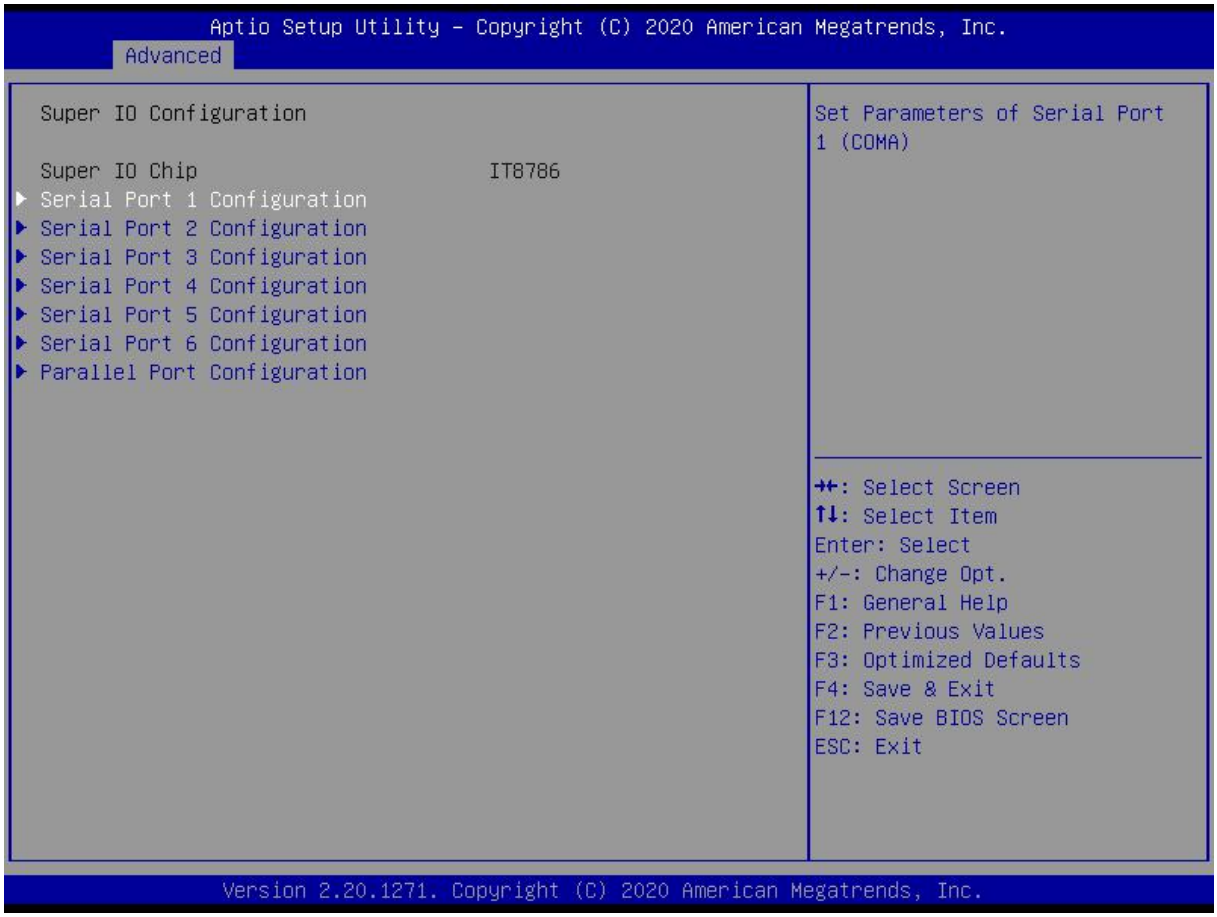


Figure 3.4- 1 0 TPC6000-XXX4 BIOS-Super IO Configuration

3.4.12 Serial Port x Configuration

This interface is mainly used to set the interrupt and IO address of the serial port, including Auto and IO and interrupt address

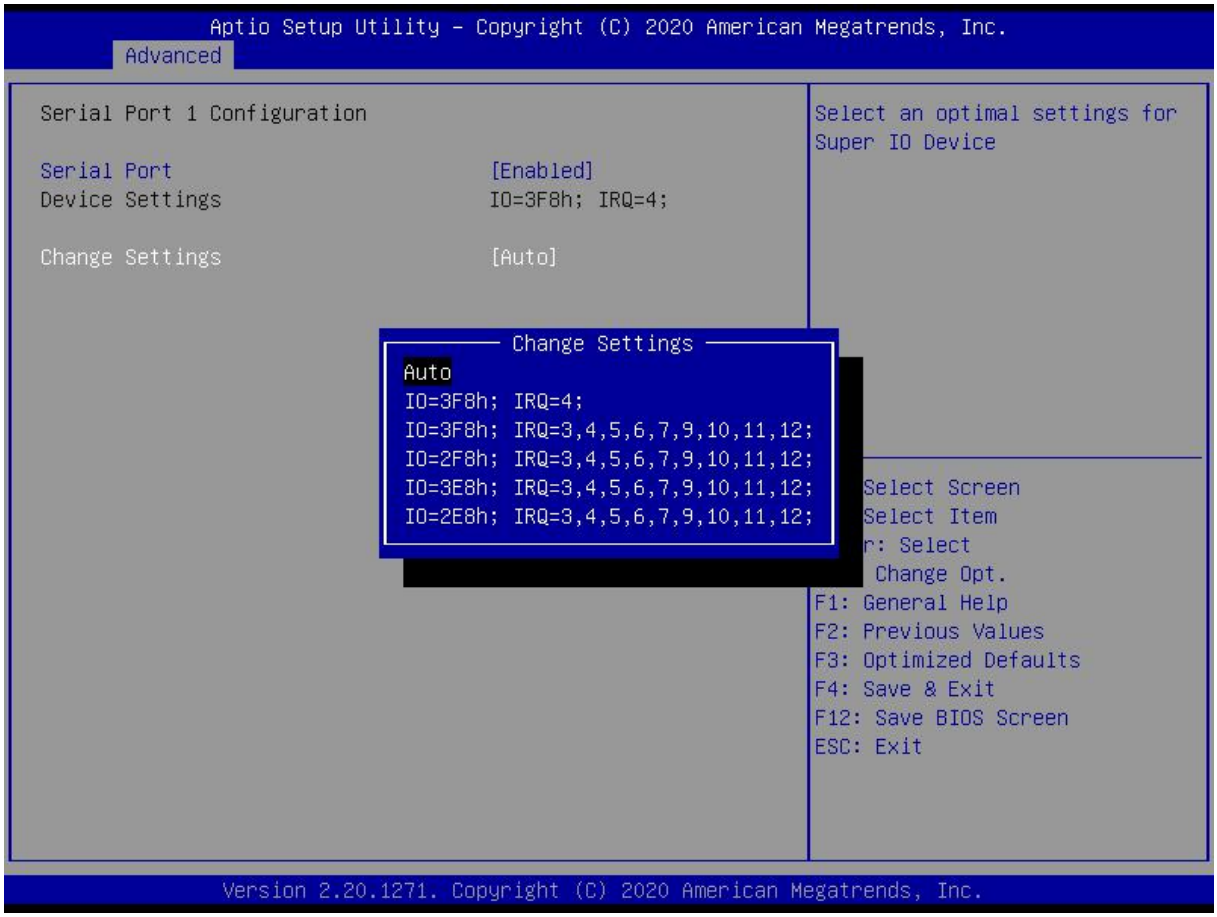


Figure 3.4- 1 1 TPC6000-XXX4 BIOS-Serial Port Configuration

■ **Serial Port x Configuration:**

Items	Contents	Description
Serial Port	Enabled / Disabled	Enable or disable a serial port
Device Settings	IO=3F8h; IRQ=4	IO address and interrupt priority of the serial port
Change Settings	Change Settings Auto IO=3F8h; IRQ=4; IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12; IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12; IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;	Serial port address and interrupt priority setting. The default value is Auto.

3.4.13 Hardware Monitor

This interface is used for hardware check.

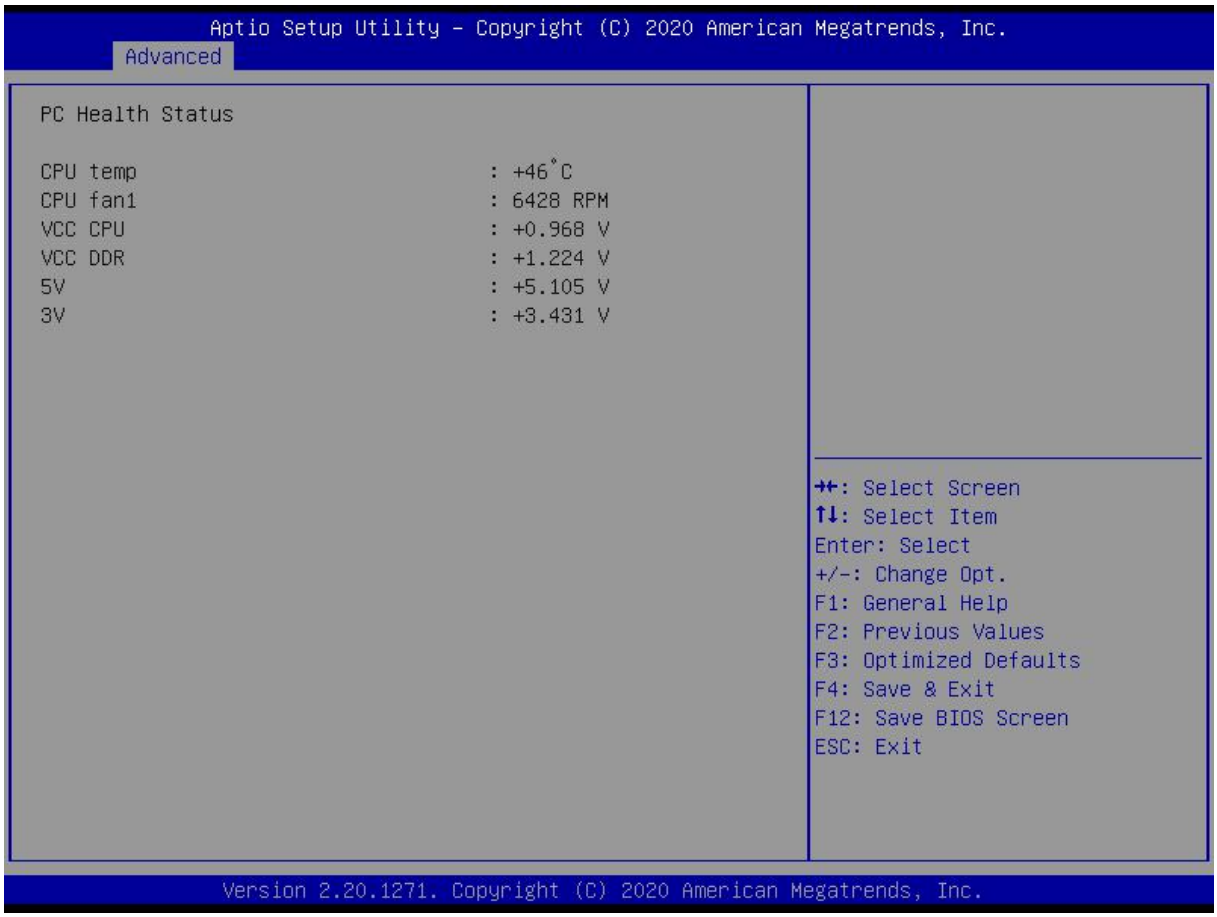


Figure 3.4- 1 2 TPC6000-XXX4 BIOS-Hardware Monitor

3.4.14 USB Configuration

This interface is used to configure USB controller connectors.

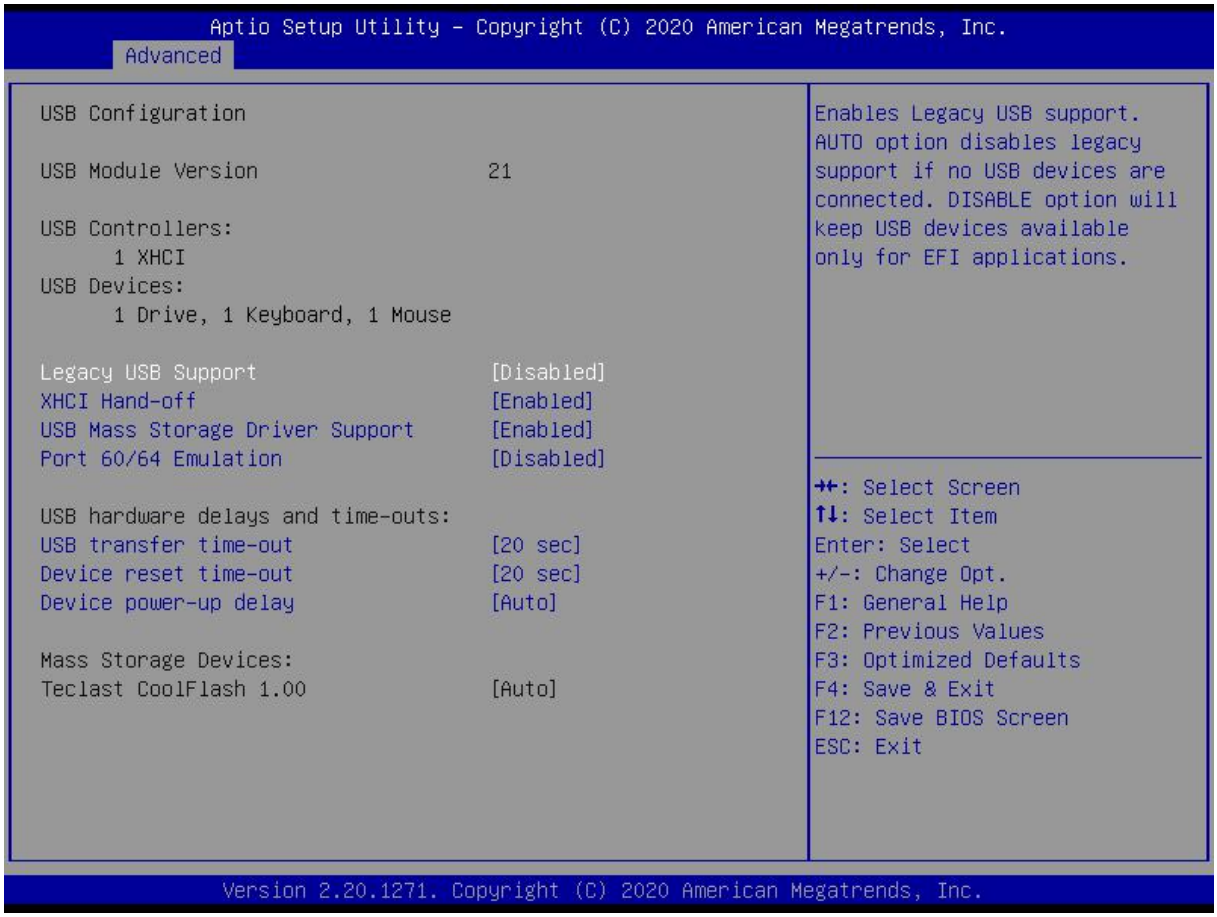


Figure 3.4- 1 3 TPC6000-XXX4 BIOS-USB Configuration

■ **USB Configuration:**

Items	Contents	Description
Legacy USB Support	Enabled / Disabled / Auto	Configure whether USB keyboards and similar devices can be used with older operating systems (such as MS-DOS).
XHCI Hand-off	Disabled / Enabled	Please don't change this setting.
USB Mass Storage Driver Support	Disabled / Enabled	The BIOS is configured to support USB storage devices
Port 60/64 Emulation	Disabled / Enabled	IO 60/64 anologue switch. Pleasedont change this setting.
USB transfer time-out	1sec/5sec/10sec/20sec	USB transfer time out setting
Device reset time-out	10sec/20sec/30sec/40sec	USBcommand timeout setting.
Device power-up delay	Auto / Manual	USBstartup delay setting.

3.4.15 CSM Configuration

This interface is designed to work with devices that only work in Legacy mode and operating systems that do not or do not fully support UEFI. CSM enables UEFI and NON-UEFI booting. To start a traditional MBR device, enable CSM. If CSM is disabled, UEFI starts and supports secure startup. Secure Boot: Secure Boot applies only to OS that start using UEFI.

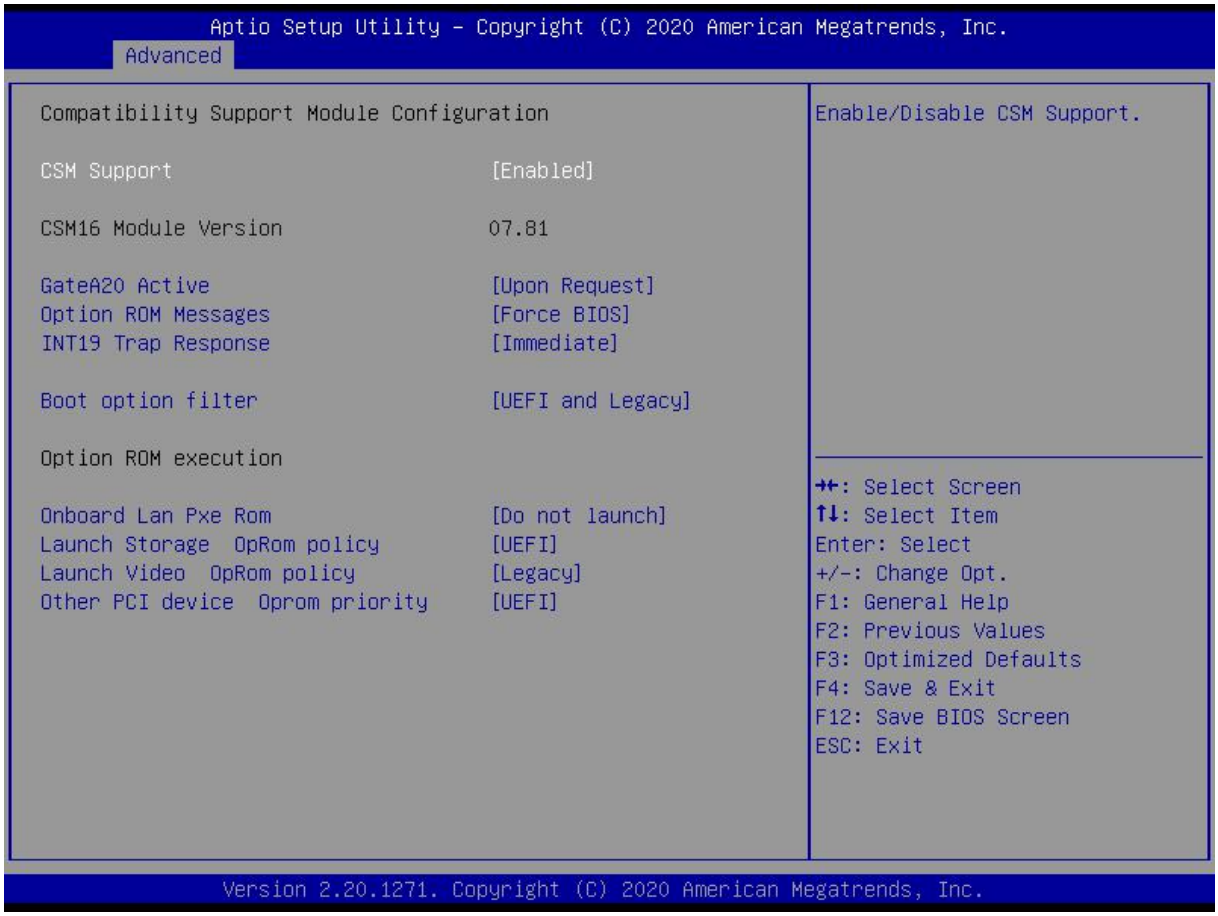


Figure 3.4- 1 4 TPC6000-XXX4 BIOS-CSM Configuration

■ **CSM Configuration：**

Items	Contents	Description
CSM Support	Enabled / Disabled	Enable the compatible module function. Do not change this item!
GateA20 Active	Upon Request / Always	Upon Request: GA20 can be disabled using BIOS services Always: do not allow disabling GA20, this option is useful when any RT code is executed above 1MB
Option ROM Messages	Force BIOS / Keep Current	Set display mode for Option ROM
INT19 Trap Response	Immediate / Postponed	BIOS reaction on INT19 trapping by Option ROM Immediated: execute the trap right always;

		Postponed: execute the trap during legacy boot.
Boot option filter	UEFI and Legacy / Legacy only / UEFI only	This option controls Legacy/UEFI ROMs priority
Onboard Lan Pxe Rom	Do not launch / UEFI / Legacy	Controls the execution of UEFI and Legacy PXE OpROM
Launch Storage OpRom policy	Do not launch / UEFI / Legacy	Controls the execution of UEFI and Legacy Storage OpROM
Launch Video OpRom policy	Do not launch / UEFI / Legacy	Controls the execution of UEFI and Legacy Video OpROM
Other PCI device Oprom priority	Do not launch / UEFI / Legacy	Determines OpROM execution policy for devices other than Network, Storage, or Video

3.4.16 Chipset

This interface is used to display chipset information or set functions of the chipset.

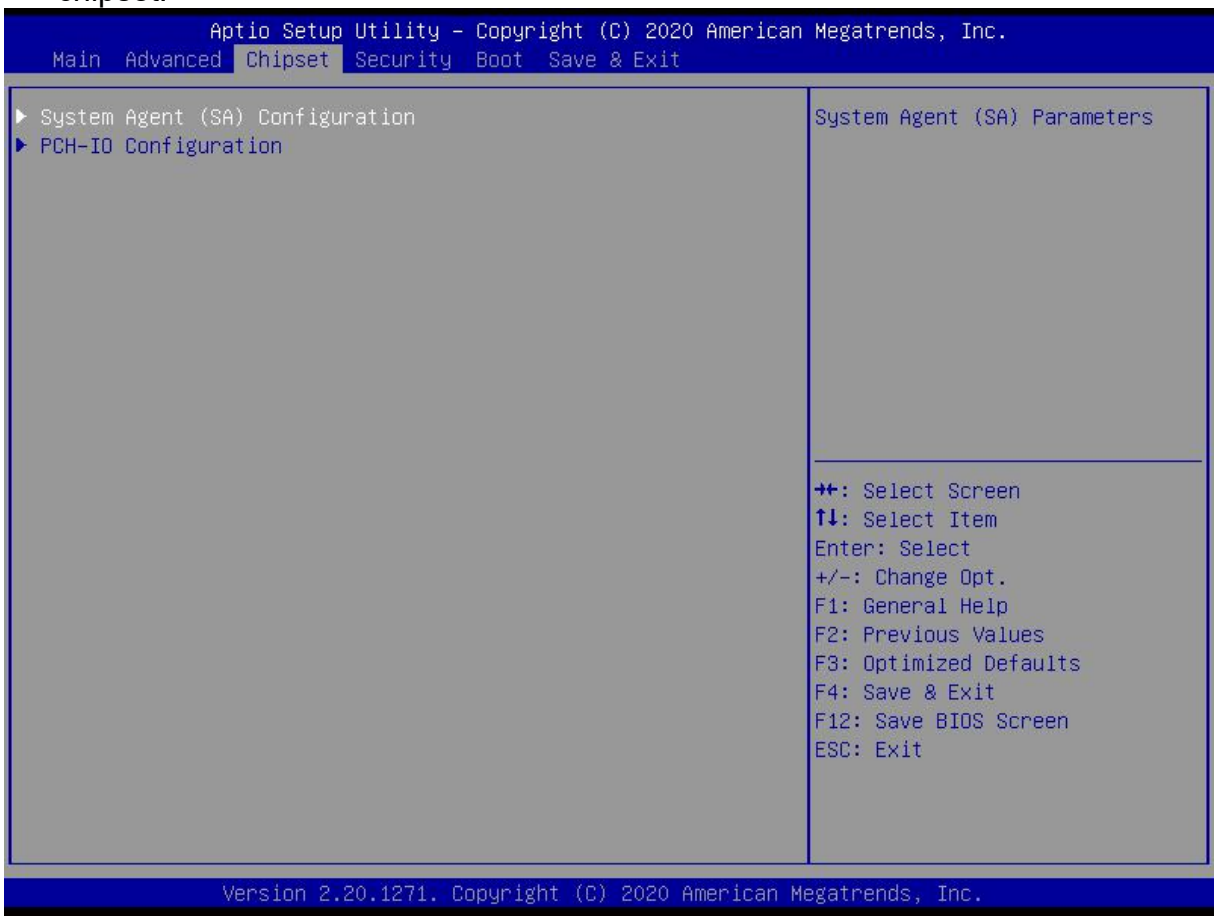


Figure 3.4- 1 5 TPC6000-XXX4 BIOS-Chipset

View or set the following functions under this interface:

- System Agent(SA) Configuration
  - Supporting information for system
- PCH-IO Configuration
  - Configure PCI Express、LAN、USB and HD Audio device connectors.

3.4.17 System Agent Configuration

Display the current auxiliary configuration items.

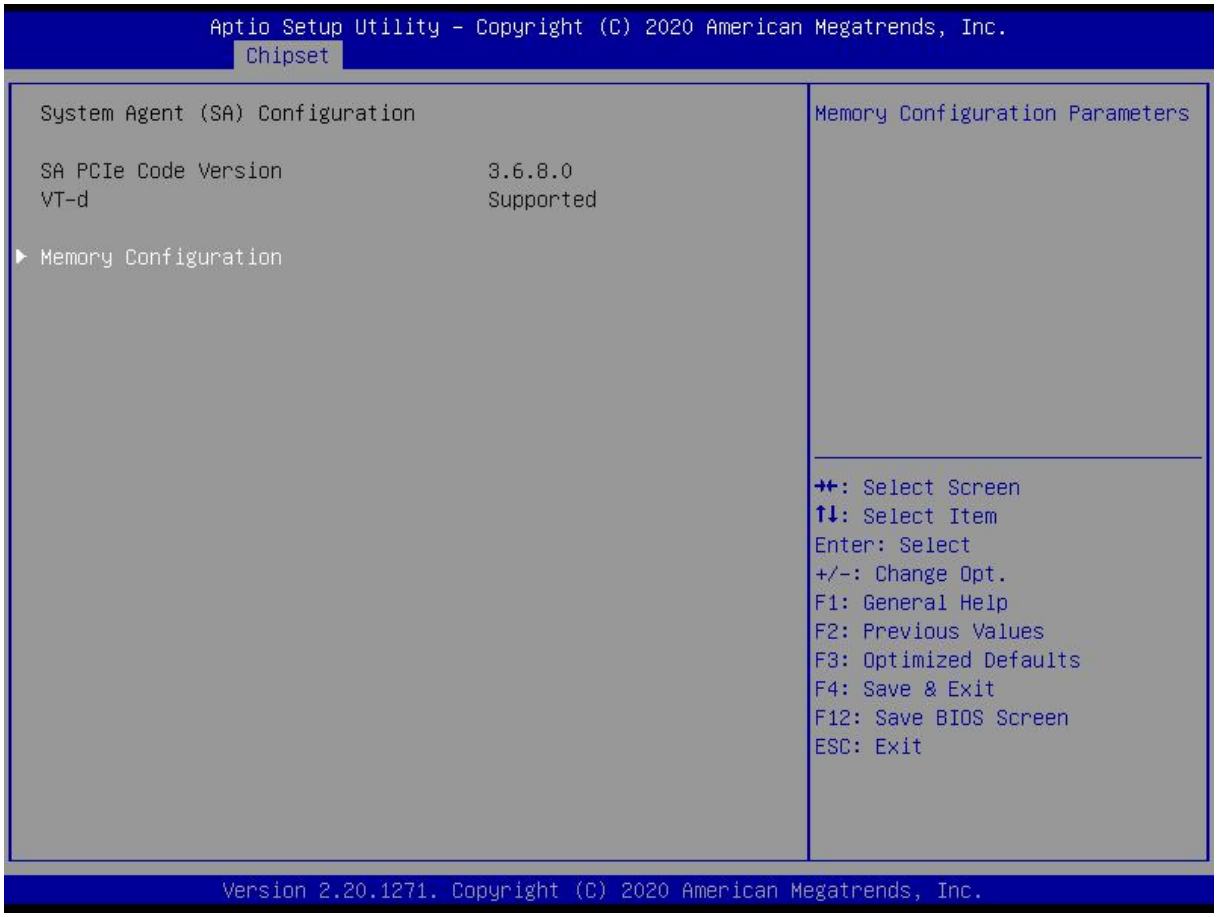


Figure 3.4- 1 6 TPC6000-XXX4 BIOS-System Agent Configuration

3.4.18 Memory Configuration

Display the current memory channel configartion information.

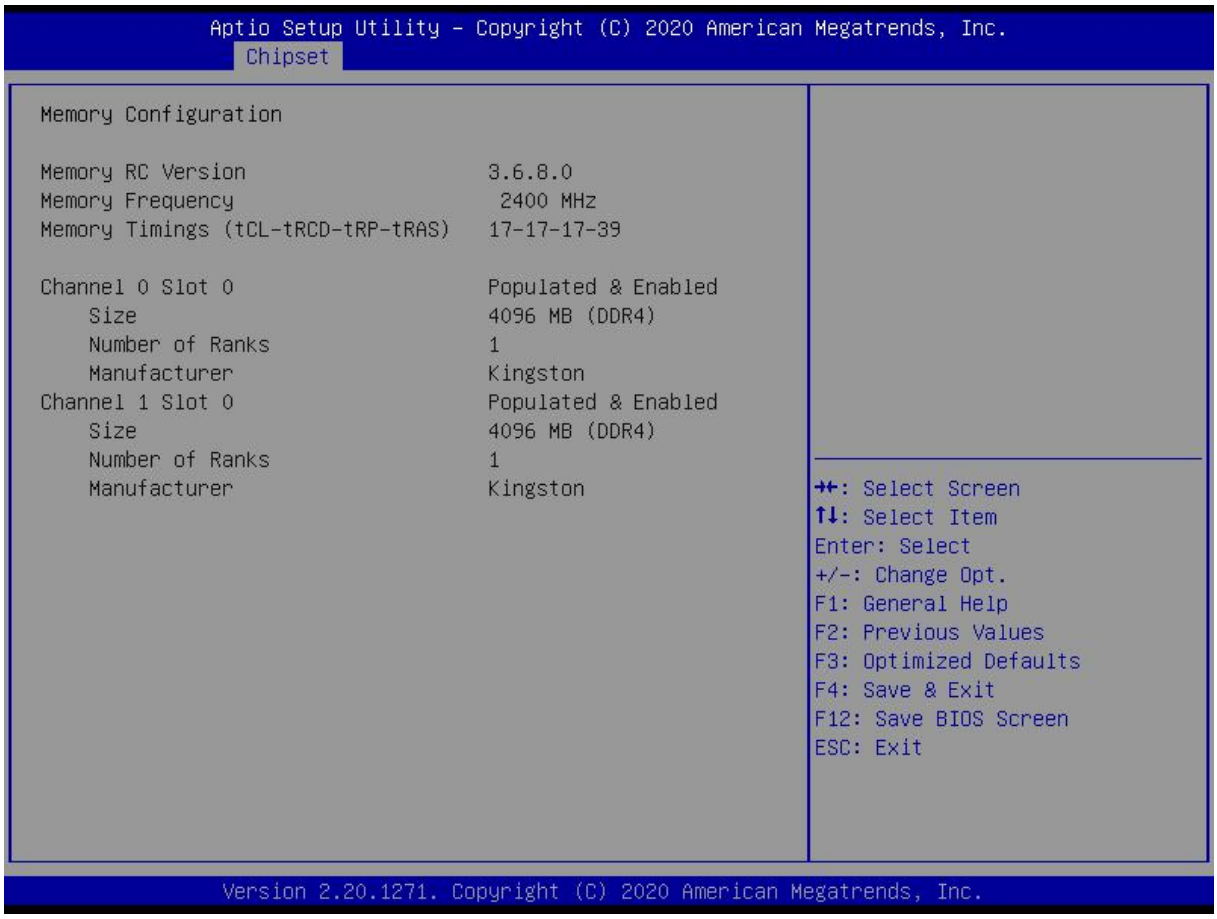


Figure 3.4- 1 7 TPC6000-XXX4 BIOS-Memory Configuration

3.4.19 PCH-IO Configuration

This interface is used to configurate PCI Express、LAN、USB and HD Audio device connectors on carry board.

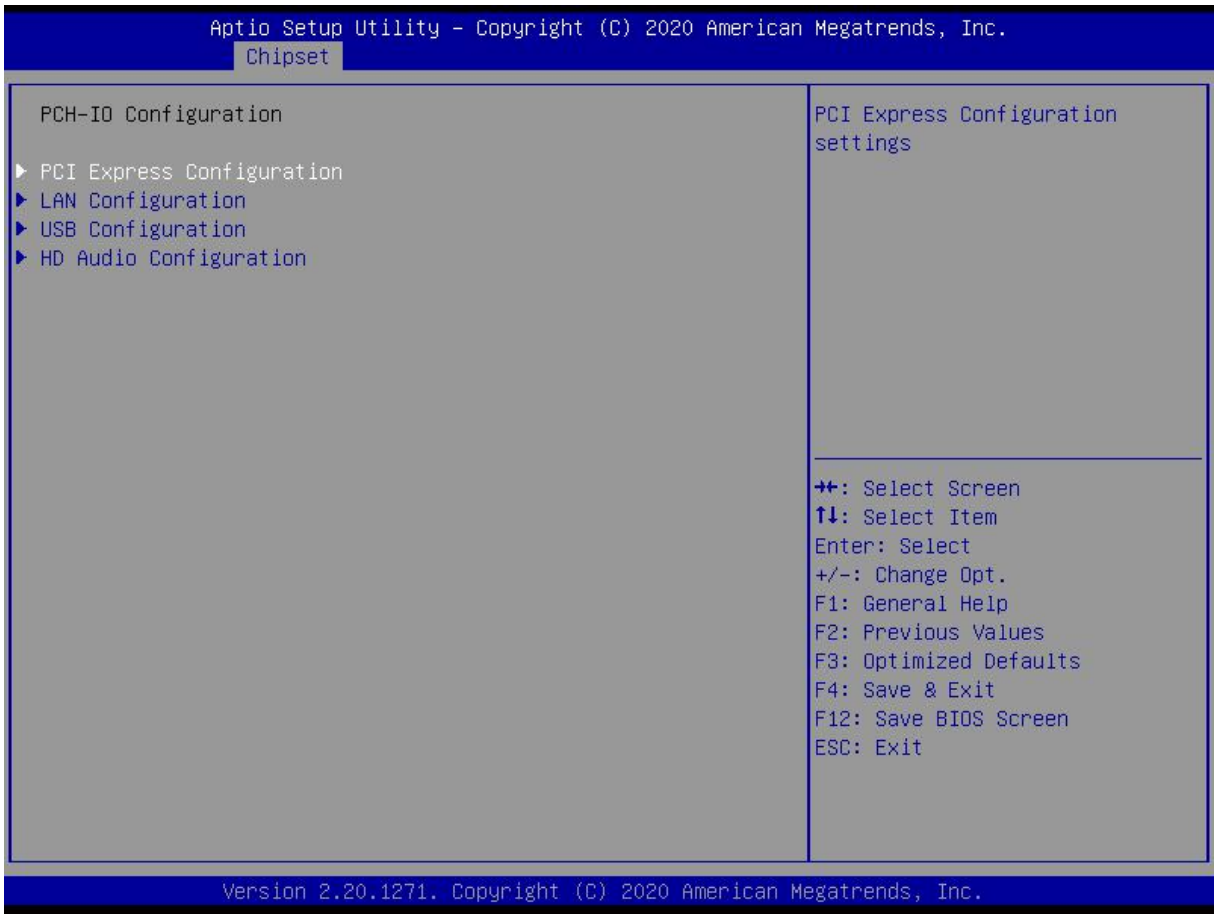


Figure 3.4- 1 8 TPC6000-XXX4 BIOS-PCH-IO Configuration

Mainly contains the sub-menus as below:

- PCI Express Configuration
- LAN Configuration
- USB Configuration
- HD Audio Configuration

3.4.20 PCI Express Configuration

This interface configures the onboard PCI Express bus. Do not change the Settings on this interface!

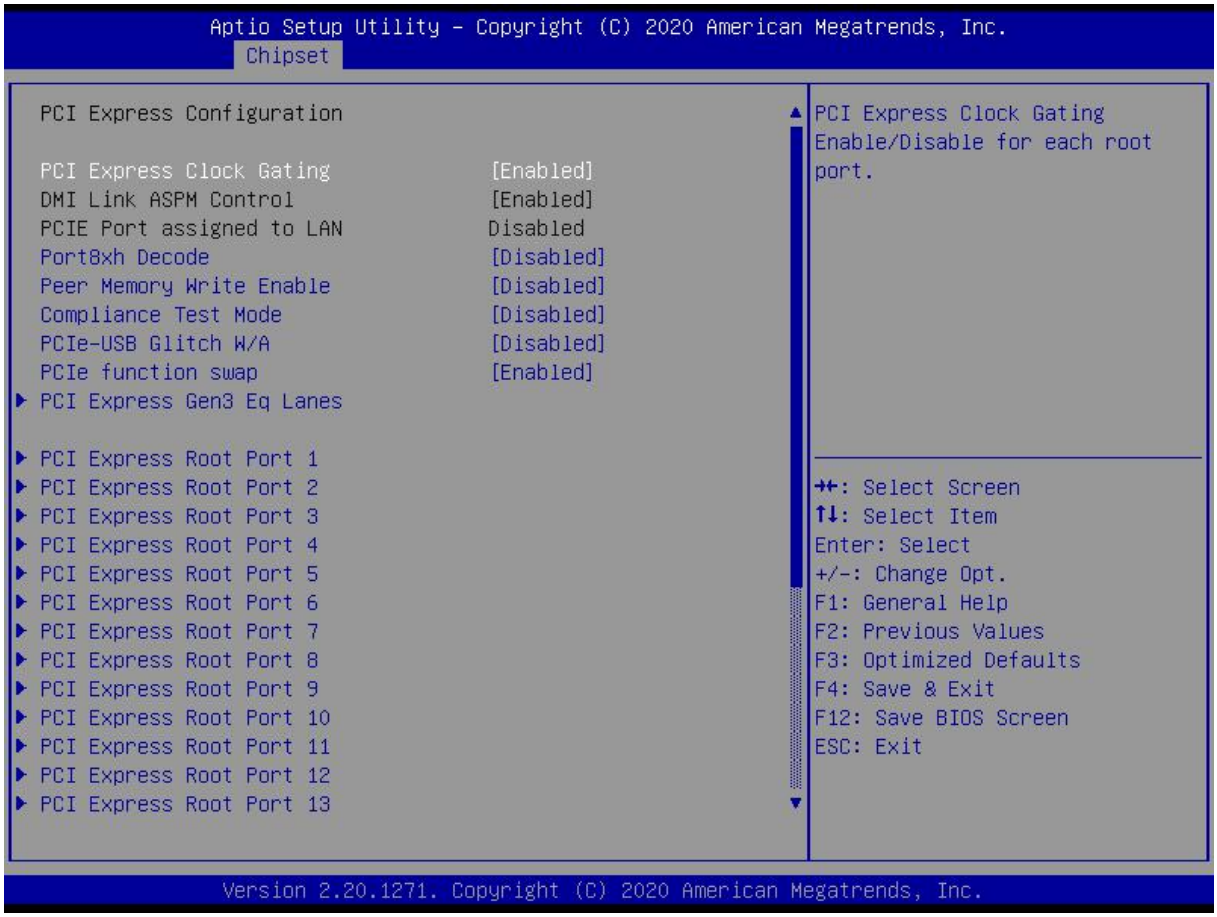


Figure 3.4- 1 9 TPC6000-XXX4 BIOS-PCI Express Configuration

This interface is used to configurate LAN on carry board.

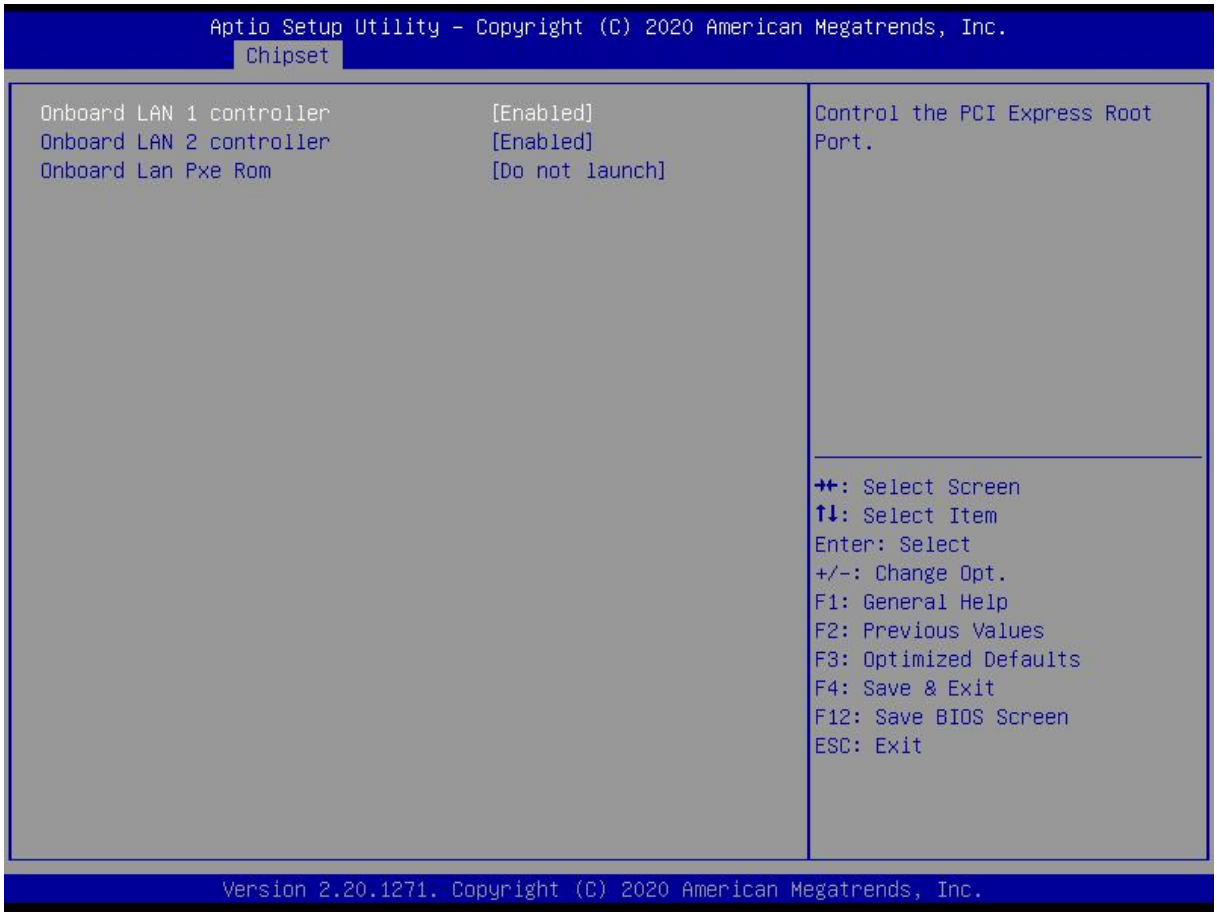


Figure 3.4- 2 0 TPC6000-XXX4 BIOS-LAN Configuration

Items	Contents	Descripton
Onboard LAN 1 controller	Enabled / Disabled	Enable or disable LAN 1
Onboard LAN 2 controller	Enabled / Disabled	Enable or disable LAN 2
Onboard Lan Pxe Rom	Do not launch / UEFI / Legacy	Don’t change this setting

3.4.21 USB Configuration

This interface is used to configurate carry board USB

Figure 3.4- 2 1 TPC6000-XXX4 BIOS-USB Configuration

Items	Contents	Description
XHCI Disable Compliance Mode	FALSE / TRUE	Disable XHCI compatibility mode. Don't change.
xDCI Support	Enabled / Disabled	Don't change this setting.
USB Port Disable Override	Enabled / Disabled	Don't change this setting.

3.4.22 Security

This interface is used to set keys related to system security protection.

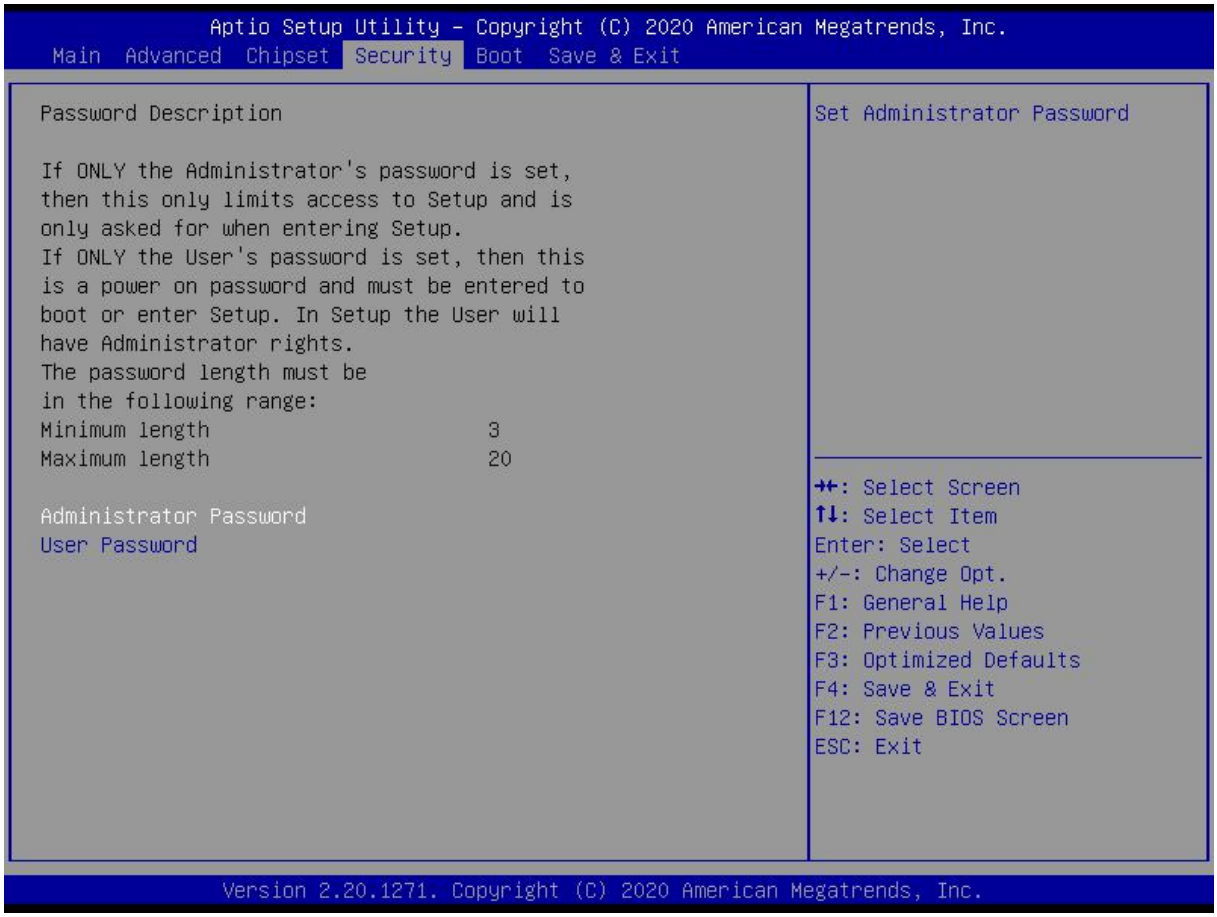


Figure 3.4- 2 2 TPC6000-XXX4 BIOS-Security

- Administrator Password
-
- User Password

: Once the password is set, you need to remember the password, otherwise it will lead to no access to the system because there is no authority! Additional maintenance costs may be incurred.

3.4.23 Boot

This interface is used to set parameters related to BIOS startup and device loading sequence.

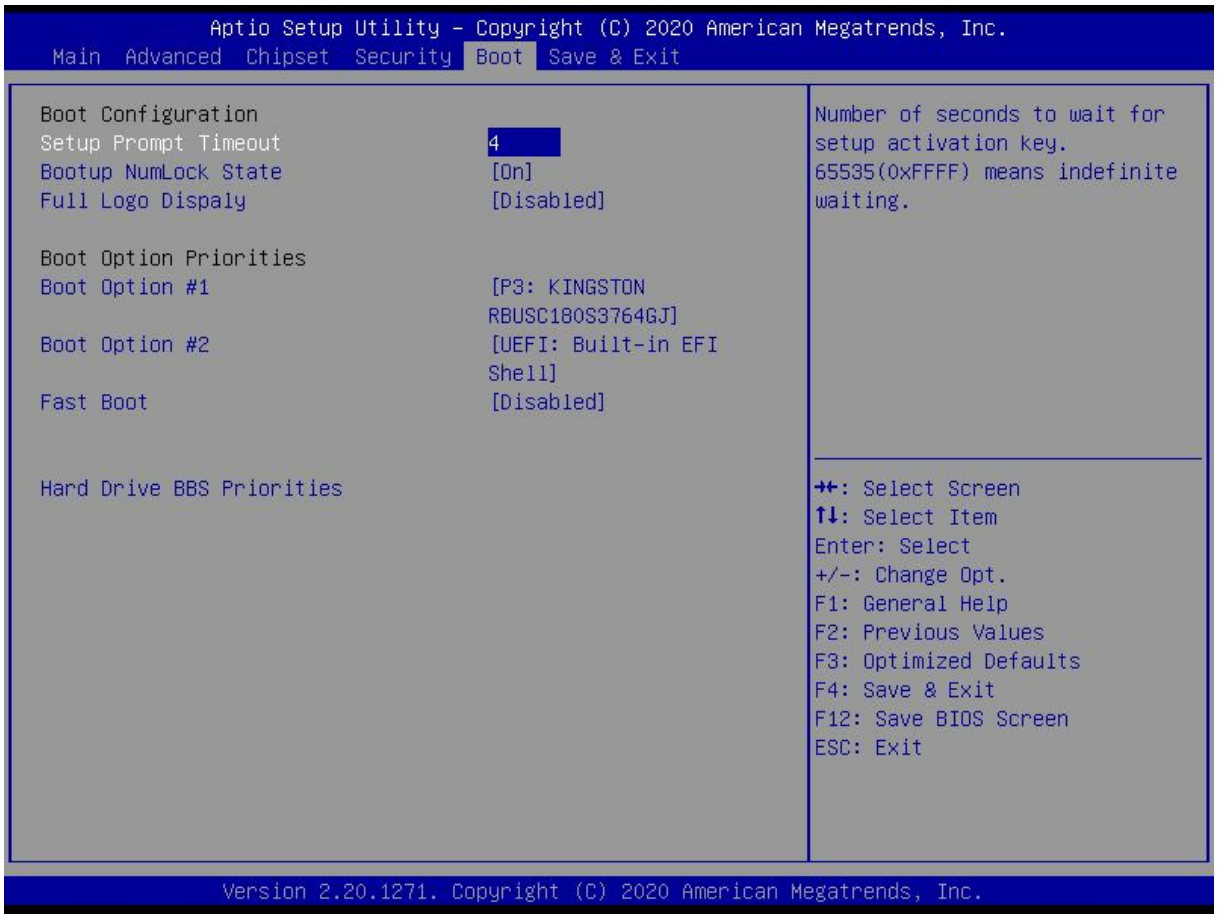


Figure 3.4- 2 3 TPC6000-XXX4 BIOS-Boot

■ **Boot Configuration:**

Items	Contents	Description
Setup Prompt Timeout	4	When start the system, the waiting time for BIOS setting (second) .
Bootup NumLock State	On / Off	When the system starts, the state of Numlock.
Full Logo Display	Enabled / Disabled	Don't set this.
Boot Option #1	XXXXXXXX	System first boot the system
Boot Option #2	XXXXXXXX	System second boot the system
Fastw Boot	Enabled / Disabled	Don't set this.
Hard Drive BBS Priorities	-	Set the loading sequence of the system boot storage media.

3.4.24 Save & Exit

This menu is used to save configuration items, load default configuration parameters, and exit BIOS Settings.

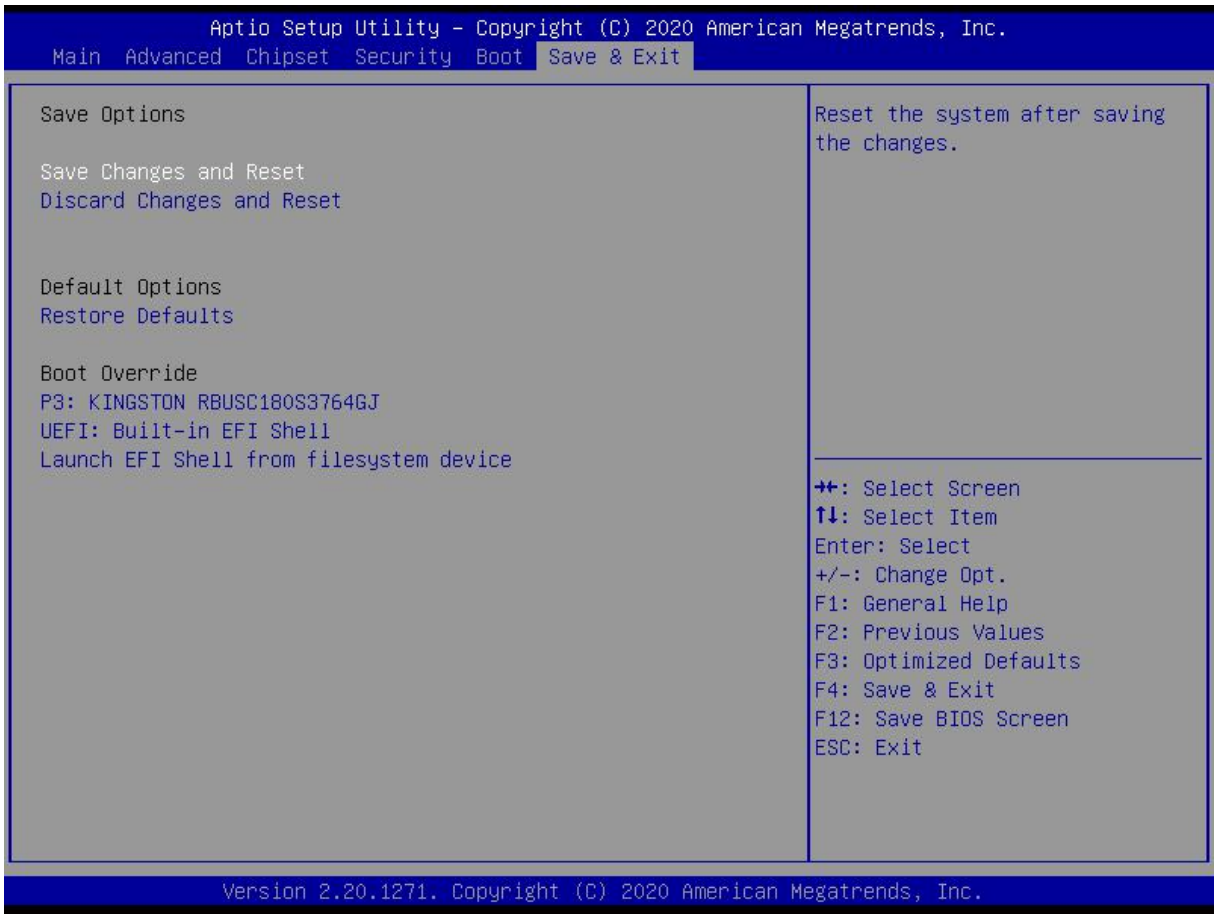


Figure 3.4- 2 4 TPC6000-XXX4 BIOS-Save&Exit

- Save Changes and Reset
- Discard Changes and Reset
- Restore Defaults
- Boot Override

Select the appropriate system storage media here when the system needs to be temporarily loaded from another connected system storage medium. However, the system boot sequence set in the Boot menu is not affected. When the system restarts, the system starts in the system disk Boot sequence specified in the Boot menu.

Chapter 4 System Installation

This chapter mainly introduce the system hardware installation and related drive software installation.

4.1 Hardware Installation

4.1.1 SSD and Wifi module installation

Step1. Remove screws ①, ②, ③ and ④;

Step2. Install SSD card in the SSD hard disk slot ⑤ ⑦

Step3. Install wifi module in the SIM card holder on the miniPCIe slot ⑥

Step4 Install screws ①, ②, ③ and ④

.

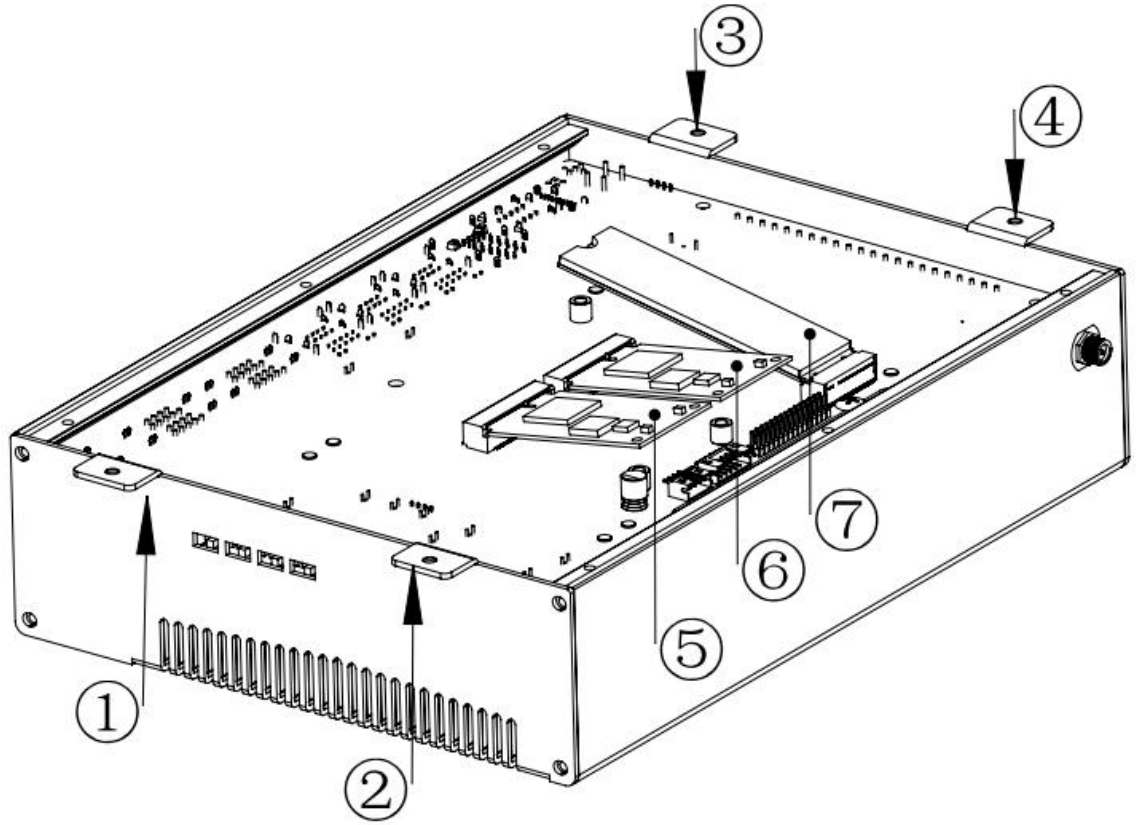


Figure 4.1- 1 TPC6000-XXX4 miniPCIE expension card installation

：
1. Disconnect the power before disassembly. Do not operate with power on.
2. Pay attention to electrostatic discharge.

4.1.2 Fan installation

In the TPC6000-CXX4 high-performance product series, fans are needed to assist in heat dissipation. In order to ensure the complete sealing of the internal circuit board, the fan is embedded in the aluminum profile. Steps for removing fan is shown as below.

Step1. Remove screws (1-8);

Step2. Remove the cover(9)

Step3. Remove screws (10-13);

Step4: Removing the fan.

For installing fan, please reverse the steps.

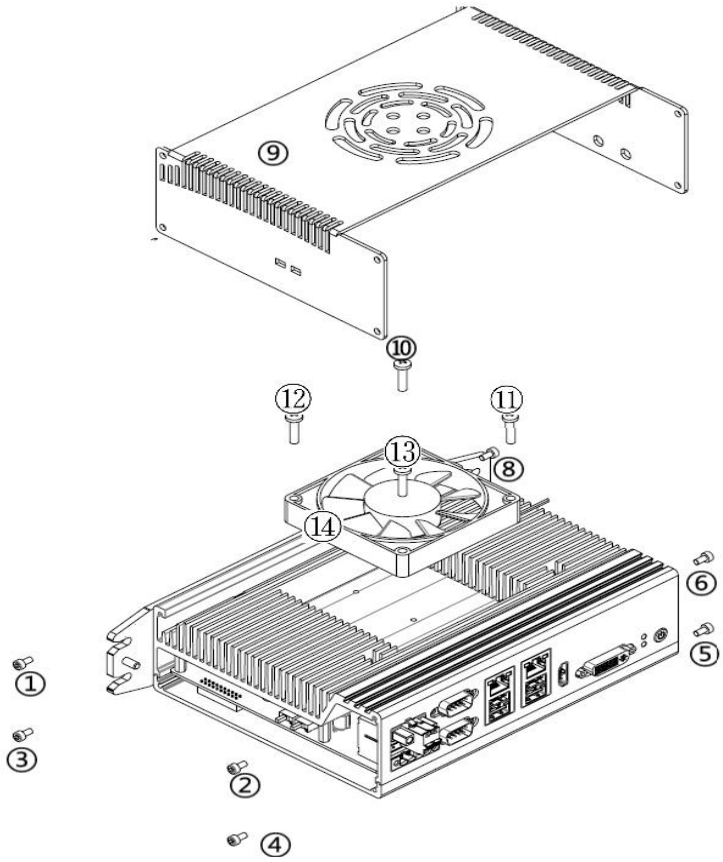


Figure 4.1- 2 TPC6000-CXX4 fan installation

1. Disconnect the power before disassembly. Do not operate with power on.

2. When removing the fan, you need to disconnect the fan's power cord before removing the fan.

4.1.3 VESA installation

TPC6000-Cxx4 series products support VESA installation. The mounting plate is fixed to the shell of the product with 4 screws. When installing or removing, just remove 4 screws.

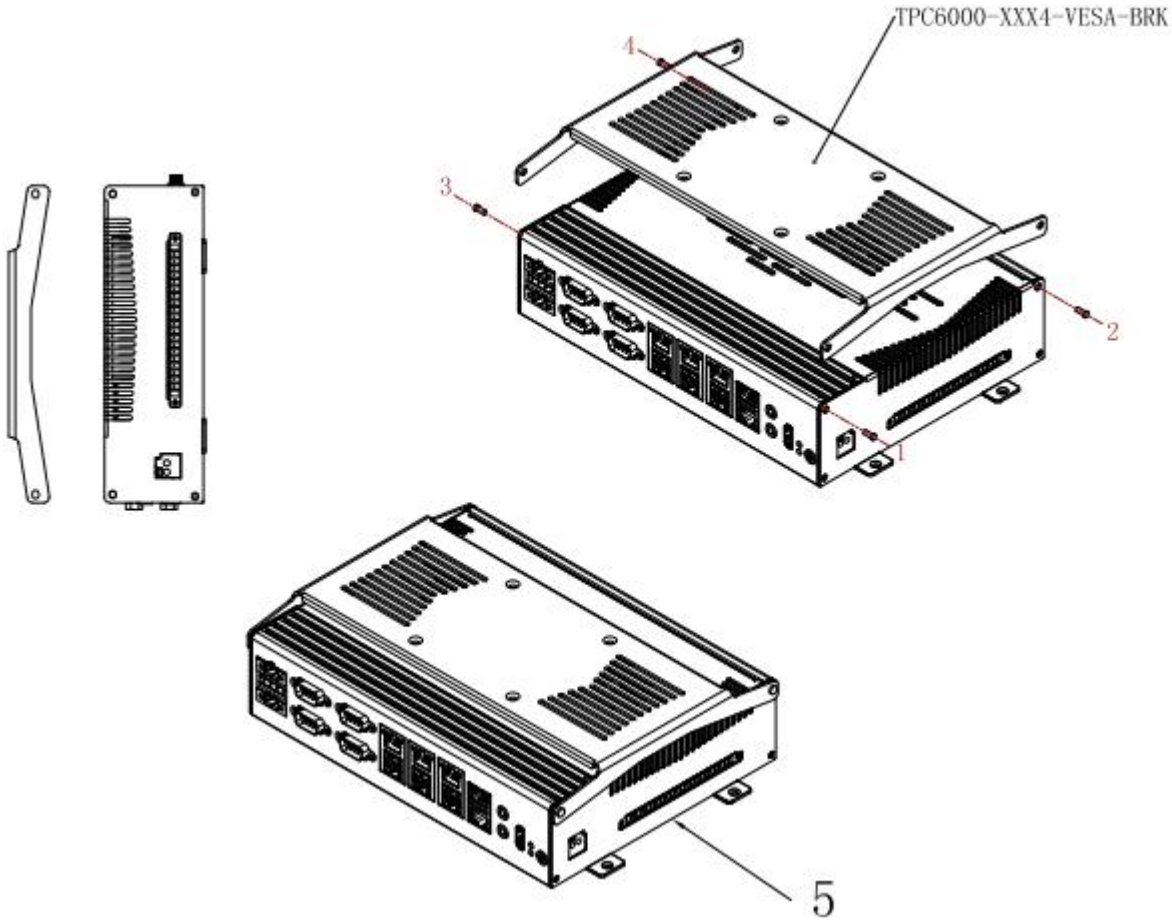


Figure 4.1- 3 TPC6000-Cxx4 VESA installation

4.1.4 Drive installation

1. Please download the drivers from http://en.nodka.com/service/Download/.
2. Select the correct diver corresponding with the model of your product.

Chapter 3 Optional Accessory List

5.1 Optional Accessory List

Name	Type	Description
CPU	LGA1151	Celeron：G3930 … … Pentium ：G4400、G4560、G4600 … … Core series：I3-6100/7100/8100 … … I5-6400/6500T/6500/7500/7500T/8400/8500 … … I7-6700T/7700T … …
Memory	DDR4 2400	1 x 4G,1 x 8G,1 x 16G 2 x 4G,2 x 8G,2 x 16G
SSD	mSATA	32G,64G,128G,256G … …
Expension Slot	miniPCIe	4G WIFI … …

Chapter 6 Safety Precautions and Mantance

 ：The precautions outlined in this chapter should be strictly followed. Failure to follow such precautions may result in serious damage to the PANEL PC.

6.1 Safety precaution

Follow the safety precautions outlined as below.

6.1.1 General Safety Precaution

Please read the following safety precautions carefully. Make sure you always follow the precautions.

- Always follow the **Anti-static precautions (A.2)** when the product is opened.
- **Make sure the power is turned off and the power cord is disconnected** when the PRODUCT is being installed, moved or modified.
- Do not apply voltage levels beyond the specified voltage range. Otherwise it could lead to fire or electric shock.
- When the PRODUCT is running, **electric shocks may occur if the chassis of product is open**.
- Do not drop or insert any object into the ventilation opening of the machine.
- If amounts of dust, water, or fluids enter the product, please immediately **turn off the power supply and pull out the plug**, then contact the vendor.

The following activities are prohibited：

- Do not drop the machine on the hard ground.
- Do not strike the machine or exert excessive force on it
- Do not use the machine in the place where the ambient temperature exceeds the rated temperature.

6.1.2 Anti Static Precautions

：Electrostatic discharge (ESD) may cause severe damage to electronic components of product, especially during dry weather. Therefore, please strictly observe the anti-static precautions when opens the product to handle any electrical components inside.

- Wear an anti-static wristband to prevent ESD from damaging any electrical components.

- Before and during handling the electrical components, please frequently touch grounded conducting materials to ground yourself.

- When configuring or working with an electrical component, please put the component on an anti-static pad in order to reduce the possibility of ESD damage.
- Only touch the edges of the electrical component, when handling it.

8.1.3 Disposing the Equipment

 ：If the battery of the wrong type is replaced, there may be explosion risk. Only certified engineers can replace the onboard battery. Dispose of used batteries in accordance with relevant instructions and local laws and regulations.

EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States. Please follow the national guidelines for electrical and electronic product disposal.

8.1.4 Maintance and Cleaning Procaution

Please follow the guideness as below to maintance and clean the machine.

8.1.4.1Maintance and Clean

Prior to cleaning any part or component of the product, please read the details below. Never spray or squirt liquids directly onto any other components. There is no need to clean inner part. Avoid letting liquids in.

- Be careful not to damage the small, removable components inside.
- Turn off before cleaning.
- Never drop any objects or liquids through the openings.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning.
- Avoid eating, drinking and smoking nearby.
- Dust should be cleaned regularly from fans and surrounding areas.

8.1.4.2 Clean Tools

Some components may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use for cleaning.

1. **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended.

2. **Water or rubbing alcohol** – A cloth moistened with water or rubbing alcohol should be used.

3. **Using solvents** – The use of solvents is not recommended as they may damage the plastic parts.

4. **Vacuum cleaner** – Using a vacuum specifically designed for computers is one of the best methods of cleaning. Dust and dirt can restrict the airflow and cause circuitry to corrode.

5. **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.

6. **Foam swabs** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning

Chapter 5 FAQ

7.1 Technical Support and Service

Please visit the official website of Nordaja www.nodka.com to download the documentation and related driver software, or directly contact the local distributor to provide support and service.