



TPC6000-CXX4 Series

User Manual

1.4

2024-3-25



PANEL PC

Intel® Core™ 6th /7th /8th generation
i7/i5/i3/pentium/Celeron
Intel® Core™ 10th /11th generation i5/i3
high performance processor

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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 description 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 operations 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 caused 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 damage to the device.
13. Please clean dust or replace fan regularly.

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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.

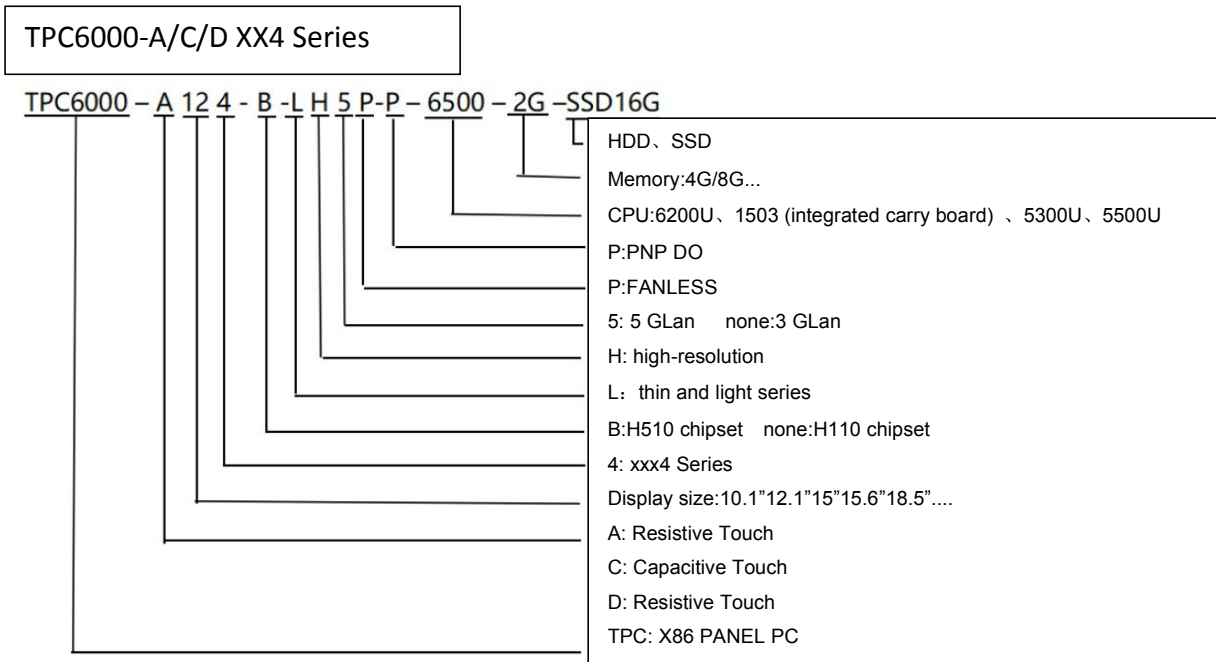
File Name	File Aim	File Content	File Save
User manual	Please do read before use	Description of the product’s function and relative setting	Please download from Nodka official websiteget it from distributor.

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

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 i210AT Giga 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
 - Intel® Core™ 6th/ 7th/ 8th/ 9th i7 / i5 / i3 and Intel LGA 1151 pin Pentium / Celeron , TDP65W .
 - Intel® Core™ 10th/ 11th i5 / i3 and Intel LGA 1200 pin, limit to below 6C12T , TPD65W
- ◆ Memory:DDR4-2400MHz, up to 32GB
- ◆ Storage:mSATA、 M.2 slot
- ◆ 3 x 10/100/1000Mbps / 5 x GLan 10/100/1000Mbps
- ◆ 4 x USB3.0/2.0
- ◆ 4 x COM(DB-9)supporting RS-232/485optional,RS485 supports automatically data flow control
- ◆ HDMI display interface
- ◆ 8DI + 8DO(NPN) / 8DI + 8DO(PNP)
- ◆ 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
- ◆ order products can be selected with FAN or FANLESS
- ◆ working temperature: 0 ~ 50°C



2.1.2 Product Specifications

TPC6000-C104

Product Name		TPC6000-C104-LH/ TPC6000-C104-B-LH	TPC6000-C104-LH5/ TPC6000-C104-B-LH5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU . Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1xM.2(M Key 2280 PCIe Gen3x4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 / 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules	
Mechanical	Weight	3.4kg	
	Installation	Embedded & VESA Mounting	
	Dimensions (W x H x D)	298.5mm * 238.5mm * 74mm	
	Cut out size (W x H)	280.5mm * 220.5mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	
	Idle Power Consumption	22W	
LCD	LCD Size	10.4" XGA TFT	
	Resolution	1024 x 768	
	MTBF (hours)	30000hrs	
	Luminance	350cd/m2	
	Contrast Ratio	900: 1	
	Viewing Angle	(L)75 / (R)75 / (T)75 / (B)75	
Touch Screen	Touch Screen Type	Capacitive touch screen	
	Transmittance	> 87%	
	Controller Interface	USB	
Environment	Operating Temperature	-0 ~ 50°	
	Storage Temperature	-20 ~ 60°	
	Relative Humidity	5~95% (40°Non-condensing)	
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	

	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C104-LH	TPC6000-C104-LHP	TPC6000-C104-LH5	TPC6000-C104-LH5P
	PNP DO	TPC6000-C104-LH-P	TPC6000-C104-LHP-P	TPC6000-C104-LH5-P	TPC6000-C104-LH5P-P
GEN10-11	NPN DO	TPC6000-C104-B-LH	TPC6000-C104-B-LHP	TPC6000-C104-B-LH5	TPC6000-C104-B-LH5P
	PNP DO	TPC6000-C104-B-LH-P	TPC6000-C104-B-LHP-P	TPC6000-C104-B-LH5-P	TPC6000-C104-B-LH5P-P

TPC6000-C124

Product Name		TPC6000-C124-LH / TPC6000-C124-B-LH	TPC6000-C124-LH5 / TPC6000-C124-B-LH5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1xM.2(M Key 2280 PCIe Gen3x4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules	
Mechanical	Weight	3.7kg	
	Installation	Embedded & VESA Mounting	
	Dimensions (W x H x D)	321mm * 247mm * 74mm	
	Cut out size (W x H)	304mm * 230mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	
	Idle Power Consumption	22W	
LCD	LCD Size	12.1" XGA TFT	
	Resolution	1024 x 768	
	MTBF (hours)	50000hrs	
	Luminance	350cd/m2	
	Contrast Ratio	1000:1	

	Viewing Angle	(L) 80 / (R) 80 / (T) 60 / (B) 80
Touch Screen	Touch Screen Type	Resistive touch screen
	Transmittance	> 87%
	Controller Interface	USB
Environment	Operating Temperature	-0 ~ 50°
	Storage Temperature	-20 ~ 60°
	Relative Humidity	5~95% (40°Non-condensing)
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C124-LH	TPC6000-C124-LHP	TPC6000-C124-LH5	TPC6000-C124-LH5P
	PNP DO	TPC6000-C124-LH-P	TPC6000-C124-LHP-P	TPC6000-C124-LH5-P	TPC6000-C124-LH5P-P
GEN10-11	NPN DO	TPC6000-C124-B-LH	TPC6000-C124-B-LHP	TPC6000-C124-B-LH5	TPC6000-C124-B-LH5P
	PNP DO	TPC6000-C124-B-LH-P	TPC6000-C124-B-LHP-P	TPC6000-C124-B-LH5-P	TPC6000-C124-B-LH5P-P

TPC6000-C124W

Product Name		TPC6000-C124W-L / TPC6000-C124W-B-L	TPC6000-C124W-L5 / TPC6000-C124W-B-L5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1xM.2(M Key 2280 PCIe Gen3x4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules		
Mechanical	Weight	3.7kg	
	Installation	Embedded & VESA Mounting	
	Dimensions (W x H x D)	328mm * 239mm * 74mm	
	Cut out size (W x H)	310mm *221mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	

Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection
	Idle Power Consumption	22W
LCD	LCD Size	12.1" TFT
	Resolution	1280 x 800
	MTBF (hours)	50000hrs
	Luminance	400cd/m2
	Contrast Ratio	1000:1
	Viewing Angle	(L) 88 / (R) 88 / (T) 68 / (B) 88
	Touch Screen	Touch Screen Type
Transmittance		> 87%
Controller Interface		USB
Environment	Operating Temperature	-0 ~ 50°
	Storage Temperature	-20 ~ 60°
	Relative Humidity	5~95% (40°Non-condensing)
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C124W-LH	TPC6000-C124W-LHP	TPC6000-C124W-LH5	TPC6000-C124W-LH5P
	PNP DO	TPC6000-C124W-LH-P	TPC6000-C124W-LHP-P	TPC6000-C124W-LH5-P	TPC6000-C124W-LH5P-P
GEN10-11	NPN DO	TPC6000-C124W-B-LH	TPC6000-C124W-B-LHP	TPC6000-C124W-B-LH5	TPC6000-C124W-B-LH5P
	PNP DO	TPC6000-C124W-B-LH-P	TPC6000-C124W-B-LHP-P	TPC6000-C124W-B-LH5-P	TPC6000-C124W-B-LH5P-P

TPC6000-C154

Product Name		TPC6000-C154-L / TPC6000-C154-B-L	TPC6000-C154-L5 / TPC6000-C154-B-L5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1xM.2(M Key 2280 PCIe Gen3x4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	

	HDMI	1920x1080 60Hz
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules
Mechanical	Weight	3.7kg
	Installation	Embedded & VESA Mounting
	Dimensions (W x H x D)	371mm * 295mm * 74mm
	Cut out size (W x H)	354mm * 278mm
OS	Operating System	Windows 7, Windows8, Windows10, Linux
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection
	Idle Power Consumption	22W
LCD	LCD Size	15" XGA TFT
	Resolution	1024 x 768
	MTBF (hours)	30000hrs
	Luminance	400cd/m2
	Contrast Ratio	800:1
	Viewing Angle	(L) 85 / (R) 85 / (T) 85 / (B) 85
Touch Screen	Touch Screen Type	Capacitive touch screen
	Transmittance	> 87%
	Controller Interface	USB
Environment	Operating Temperature	-0 ~ 50°
	Storage Temperature	-20 ~ 60°
	Relative Humidity	5~95% (40°Non-condensing)
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C154-L	TPC6000-C154-LP	TPC6000-C154-L5	TPC6000-C154-L5P
	PNP DO	TPC6000-C154-L-P	TPC6000-C154-LP-P	TPC6000-C154-L5-P	TPC6000-C154-L5P-P
GEN10-11	NPN DO	TPC6000-C154-B-L	TPC6000-C154-B-LP	TPC6000-C154-B-L5	TPC6000-C154-B-L5P
	PNP DO	TPC6000-C154-B-L-P	TPC6000-C154-B-LP-P	TPC6000-C154-B-L5-P	TPC6000-C154-B-L5P-P

TPC6000-C174

Product Name		TPC6000-C174-L / TPC6000-C174-B-L	TPC6000-C174-L5 / TPC6000-C174-B-L5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	

	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1xM.2(M Key 2280 PCIe Gen3x4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules	
	Mechanical	Weight	5.7kg
Installation		Embedded & VESA Mounting	
Dimensions (W x H x D)		428mm * 342mm * 74mm	
Cut out size (W x H)		411mm * 325mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	
	Idle Power Consumption	22W	
LCD	LCD Size	17" SXGA TFT	
	Resolution	1280 x 1024	
	MTBF (hours)	30000hrs	
	Luminance	250cd/m2	
	Contrast Ratio	1000 : 1	
	Viewing Angle	(L) 85 / (R) 85 / (T) 80 / (B) 80	
Touch Screen	Touch Screen Type	Capacitive touch screen	
	Transmittance	> 87%	
	Controller Interface	USB	
Environment	Operating Temperature	-0 ~ 50°	
	Storage Temperature	-20 ~ 60°	
	Relative Humidity	5~95% (40°Non-condensing)	
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27	
	EMC	CE/FCC Class B	
	Waterproof	Front IP65 compliant	

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C174-L	TPC6000-C174-LP	TPC6000-C174-L5	TPC6000-C174-L5P
	PNP DO	TPC6000-C174-L-P	TPC6000-C174-LP-P	TPC6000-C174-L5-P	TPC6000-C174-L5P-P
GEN10-11	NPN DO	TPC6000-C174-B-L	TPC6000-C174-B-LP	TPC6000-C174-B-L5	TPC6000-C174-B-L5P

	PNP DO	TPC6000-C174-B-L-P	TPC6000-C174-B-LP-P	TPC6000-C174-B-L5-P	TPC6000-C174-B-L5P-P
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TPC6000-C1564-L

Product Name		TPC6000-C1564-L / TPC6000-C1564-B-L	TPC6000-C1564-L5 / TPC6000-C1564-B-L5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1xM.2(M Key 2280 PCIe Gen3x4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules	
Mechanical	Weight	4.7kg	
	Installation	Embedded & VESA Mounting	
	Dimensions (W x H x D)	405mm * 258mm * 74mm	
	Cut out size (W x H)	387mm * 240mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	
	Idle Power Consumption	22W	
LCD	LCD Size	15.6" TFT	
	Resolution	1366 ×768	
	MTBF (hours)	50000hrs	
	Luminance	400cd/m2	
	Contrast Ratio	800 : 1	
	Viewing Angle	(L) 85/ (R) 85/ (T) 50 / (B) 80	
Touch Screen	Touch Screen Type	Capacitive touch screen	
	Transmittance	> 87%	
	Controller Interface	USB	
Environment	Operating Temperature	-0 ~ 50°	
	Storage Temperature	-20 ~ 60°	
	Relative Humidity	5~95% (40°Non-condensing)	
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	

	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C1564-L	TPC6000-C1564-LP	TPC6000-C1564-L5	TPC6000-C1564-L5P
	PNP DO	TPC6000-C1564-L-P	TPC6000-C1564-LP-P	TPC6000-C1564-L5-P	TPC6000-C1564-L5P-P
GEN10-11	NPN DO	TPC6000-C1564-B-L	TPC6000-C1564-B-LP	TPC6000-C1564-B-L5	TPC6000-C1564-B-L5P
	PNP DO	TPC6000-C1564-B-L-P	TPC6000-C1564-B-LP-P	TPC6000-C1564-B-L5-P	TPC6000-C1564-B-L5P-P

TPC6000-C1564-LH

Product Name		TPC6000-C1564-LH / TPC6000-C1564-B-LH	TPC6000-C1564-LH5 / TPC6000-C1564-B-LH5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB2	
	Storage	1xM.2(M Key 2280 PCIe Gen3x4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
Expansion slot	1 x Mini-PCIe slot, Support Wifi,4Gmodules		
Mechanical	Weight	4.7kg	
	Installation	Embedded & VESA Mounting	
	Dimensions (W x H x D)	405mm * 258mm * 74mm	
	Cut out size (W x H)	387mm * 240mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	
	Idle Power Consumption	22W	
LCD	LCD Size	15.6" TFT	
	Resolution	1920 x 1080	
	MTBF (hours)	15000hrs	
	Luminance	250cd/m2	
	Contrast Ratio	3000 : 1	
	Viewing Angle	(L) 89 / (R) 89 / (T) 89 / (B) 89	

Touch Screen	Touch Screen Type	Capacitive touch screen
	Transmittance	> 87%
	Controller Interface	USB
Environment	Operating Temperature	-0 ~ 50°
	Storage Temperature	-20 ~ 60°
	Relative Humidity	5~95% (40°Non-condensing)
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C1564-LH	TPC6000-C1564-LHP	TPC6000-C1564-LH5	TPC6000-C1564-LH5P
	PNP DO	TPC6000-C1564-LH-P	TPC6000-C1564-LHP-P	TPC6000-C1564-LH5-P	TPC6000-C1564-LH5P-P
GEN10-11	NPN DO	TPC6000-C1564-B-LH	TPC6000-C1564-B-LHP	TPC6000-C1564-B-LH5	TPC6000-C1564-B-LH5P
	PNP DO	TPC6000-C1564-B-LH-P	TPC6000-C1564-B-LHP-P	TPC6000-C1564-B-LH5-P	TPC6000-C1564-B-LH5P-P

TPC6000-C1854-L

Product Name		TPC6000-C1854-L / TPC6000-C1854-B-L	TPC6000-C1854-L5 / TPC6000-C1854-B-L5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU . Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1 x M.2(M Key 2280 PCIe Gen3 x 4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules	
Mechanical	Weight	5.9kg	
	Installation	Embedded & VESA Mounting	
	Dimensions (W x H x D)	480mm * 304mm * 74mm	
	Cut out size (W x H)	463mm * 287mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	

	Idle Power Consumption	34W
LCD	LCD Size	18.5" TFT
	Resolution	1366 x 768
	MTBF (hours)	30000hrs
	Luminance	250cd/m2
	Contrast Ratio	1000 : 1
	Viewing Angle	(L) 89 / (R) 89 / (T) 89 / (B) 89
	Touch Screen	Touch Screen Type
Transmittance		> 87%
Controller Interface		USB
Environment	Operating Temperature	-0 ~ 50°
	Storage Temperature	-20 ~ 60°
	Relative Humidity	5~95% (40°Non-condensing)
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C1854-L	TPC6000-C1854-LP	TPC6000-C1854-L5	TPC6000-C854-L5P
	PNP DO	TPC6000-C1854-L-P	TPC6000-C1854-LP-P	TPC6000-C1854-L5-P	TPC6000-C1854-L5P-P
GEN10-11	NPN DO	TPC6000-C1854-B-L	TPC6000-C1854-B-LP	TPC6000-C1854-B-L5	TPC6000-C1854-B-L5P
	PNP DO	TPC6000-C1854-B-L-P	TPC6000-C1854-B-LP-P	TPC6000-C1854-B-L5-P	TPC6000-C1854-B-L5P-P

TPC6000-C1854-LH

Product Name		TPC6000-C1854-LH / TPC6000-C1854-B-LH	TPC6000-C1854-LH5 / TPC6000-C1854-B-LH5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1 x M.2(M Key 2280 PCIe Gen3 x 4 Lane) 1 x mSATA	
	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
I/O	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	

	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules
Mechanical	Weight	5.9kg
	Installation	Embedded & VESA Mounting
	Dimensions (W x H x D)	480mm * 304mm * 74mm
	Cut out size (W x H)	463mm * 287mm
OS	Operating System	Windows 7, Windows8, Windows10, Linux
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection
	Idle Power Consumption	38W
LCD	LCD Size	18..5" TFT
	Resolution	1920 x 1080
	MTBF (hours)	50000hrs
	Luminance	350cd/m2
	Contrast Ratio	1000 : 1
	Viewing Angle	(L) 89 / (R) 89 / (T) 89 / (B) 89
Touch Screen	Touch Screen Type	Capacitive touch screen
	Transmittance	> 87%
	Controller Interface	USB
Environment	Operating Temperature	-0 ~ 50°
	Storage Temperature	-20 ~ 60°
	Relative Humidity	5~95% (40°Non-condensing)
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27
	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C1854-LH	TPC6000-C1854-LHP	TPC6000-C1854-LH5	TPC6000-C854-LH5P
	PNP DO	TPC6000-C1854-LH-P	TPC6000-C1854-LHP-P	TPC6000-C1854-LH5-P	TPC6000-C1854-LH5P-P
GEN10-11	NPN DO	TPC6000-C1854-B-LH	TPC6000-C1854-B-LHP	TPC6000-C1854-B-LH5	TPC6000-C1854-B-LH5P
	PNP DO	TPC6000-C1854-B-LH-P	TPC6000-C1854-B-LHP-P	TPC6000-C1854-B-LH5-P	TPC6000-C1854-B-LH5P-P

TPC6000-C194

Product Name		TPC6000-C194-L / TPC6000-C194-B-L	TPC6000-C194-L5 / TPC6000-C194-B-L5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	

	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1 x M.2(M Key 2280 PCIe Gen3 x 4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules	
	Mechanical	Weight	6.5kg
Installation		Embedded & VESA Mounting	
Dimensions (W x H x D)		460mm * 369mm * 74mm	
Cut out size (W x H)		442mm * 351mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	
	Idle Power Consumption	37W	
LCD	LCD Size	19" SXGA TFT	
	Resolution	1280 x 1024	
	MTBF (hours)	30000hrs	
	Luminance	250cd/m2	
	Contrast Ratio	1000 : 1	
	Viewing Angle	(L) 85 / (R) 85 / (T) 80 / (B) 80	
Touch Screen	Touch Screen Type	Capacitive touch screen	
	Transmittance	> 87%	
	Controller Interface	USB	
Environment	Operating Temperature	-0 ~ 50°	
	Storage Temperature	-20 ~ 60°	
	Relative Humidity	5~95% (40°Non-condensing)	
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27	
	EMC	CE/FCC Class B	
	Waterproof	Front IP65 compliant	

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C194-L	TPC6000-C194-LP	TPC6000-C194-L5	TPC6000-C194-L5P
	PNP DO	TPC6000-C194-L-P	TPC6000-C194-LP-P	TPC6000-C194-L5-P	TPC6000-C194-L5P-P
GEN10-11	NPN DO	TPC6000-C194-B-L	TPC6000-C194-B-LP	TPC6000-C194-B-L5	TPC6000-C194-B-L5P
	PNP DO	TPC6000-C194-B-L-P	TPC6000-C194-B-LP-P	TPC6000-C194-B-L5-P	TPC6000-C194-B-L5P-P

TPC6000-C2154

Product Name		TPC6000-C2154-L / TPC6000-C2154-B-L	TPC6000-C2154-L5 / TPC6000-C2154-B-L5
System	CPU	Intel® Core™ GEN6-9 Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 type CPU. Max.65W TDP Intel® Core™ gen 6th/7th/8th i7/i5/i3/Pentium/Celeron LGA1151 . Max.35W TDP (FANLESS) Intel® Core™ GEN10-11 Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.65W TDP Intel® Core™ gen 10 th -11 th i5/i3 LGA1200 type CPU . Max.35W TDP(FANLESS)	
	Chipset	H110 (Intel® Core™ GEN6-9) H510 (Intel® Core™ GEN10-11)	
	Memory	Support 2 x DDR4-2666/3200 MHz, Up to 32GB	
	Storage	1 x M.2(M Key 2280 PCIe Gen3 x 4 Lane) 1 x mSATA	
I/O	Network	3 x Intel 1000Mbps RJ-45	5 x Intel 1000Mbps RJ-45
	USB	4 x USB3.0 + 2 x USB2.0	
	Serial port	4 x RS-232 / RS-485 ,RS485 support automatic flow control	
	I/O port	8DI Wet contact input(24V), 8DO OC gate output(24V 500mA) NPN 8DI Wet contact input(24V), 8DO Output (24V 500mA) PNP	
	HDMI	1920x1080 60Hz	
	Expansion slot	1 x Mini-PCIe slot, Support Wifi,4G modules	
Mechanical	Weight	6.9kg	
	Installation	Embedded & VESA Mounting	
	Dimensions (W x H x D)	550mm * 342mm * 74mm	
	Cut out size (W x H)	533mm * 325mm	
OS	Operating System	Windows 7, Windows8, Windows10, Linux	
Power Consumption	Input Voltage	DC12~24V ±10%, support reverse polarity protection, overvoltage protection, overcurrent protection	
	Idle Power Consumption	40W	
LCD	LCD Size	21.5" Full HD TFT	
	Resolution	1920 x 1080	
	MTBF (hours)	50000hrs	
	Luminance	250cd/m2	
	Contrast Ratio	1000 : 1	
	Viewing Angle	(L) 89 / (R) 89 / (T) 89 / (B) 89	
Touch Screen	Touch Screen Type	Capacitive touch screen	
	Transmittance	> 87%	
	Controller Interface	USB	
Environment	Operating Temperature	-0 ~ 50°	
	Storage Temperature	-20 ~ 60°	
	Relative Humidity	5~95% (40°Non-condensing)	
	Vibration	SSD applied: 1.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis	
	Shock	Operating 10G peak acceleration (11ms duration), follow IEC 60068-2-27	

	EMC	CE/FCC Class B
	Waterproof	Front IP65 compliant

PN Information

CPU TYPE	IO TYPE	3LAN		5LAN	
		FAN	FANLESS	FAN	FANLESS
GEN6-9	NPN DO	TPC6000-C2154-L	TPC6000-C2154-LP	TPC6000-C2154-L5	TPC6000-C2154-L5P
	PNP DO	TPC6000-C2154-L-P	TPC6000-C2154-LP-P	TPC6000-C2154-L5-P	TPC6000-C2154-L5P-P
GEN10-11	NPN DO	TPC6000-C2154-B-L	TPC6000-C2154-B-LP	TPC6000-C2154-B-L5	TPC6000-C2154-B-L5P
	PNP DO	TPC6000-C2154-B-L-P	TPC6000-C2154-B-LP-P	TPC6000-C2154-B-L5-P	TPC6000-C2154-B-L5P-P

2.1.2 Dimension

TPC6000-XXX4 series, the same display size of the machine, the same dimensions and use common structural parts

TPC6000-C104

Dimension :298.5mm * 238.5mm * 74mm

Cut out :221.5mm * 281.5mm

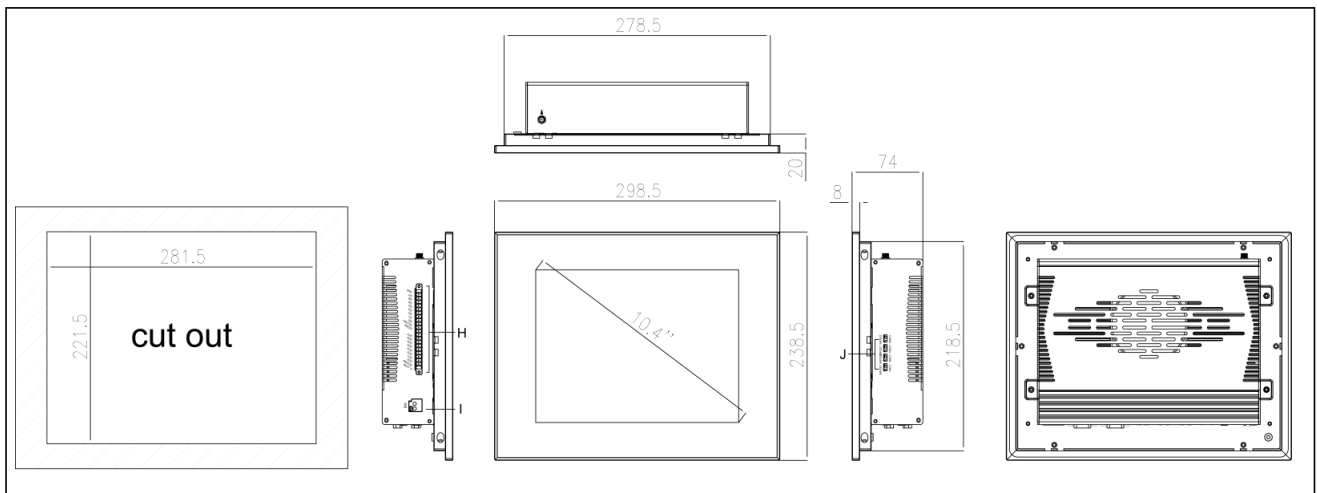


Figure 2.1- 1 TPC6000-C104- Dimension

TPC6000-C124

Dimension:321mm * 247mm * 74mm
Cut out : 304mm * 230mm

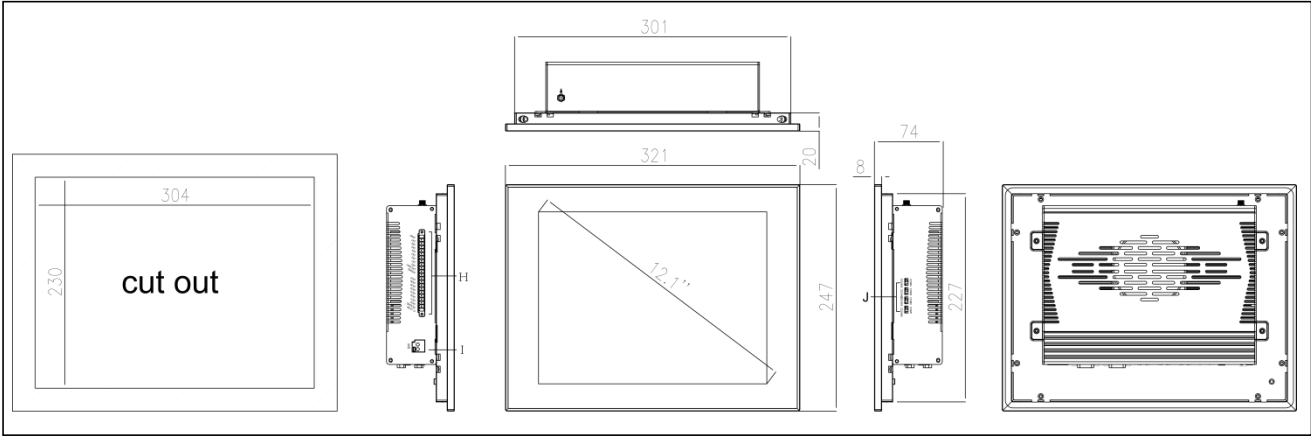


Figure 2.1- 2 TPC6000-C124-LH Dimension

TPC6000-C124W

Dimension:328mm * 239mm * 74mm
Cut out : 311mm * 242mm

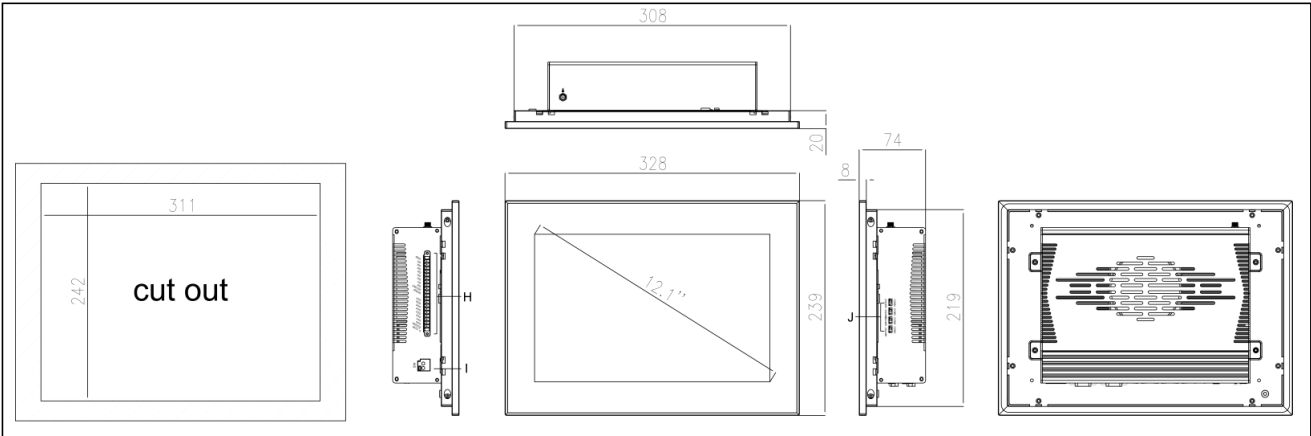


Figure 2.1- 3 TPC6000-C124W Dimension

TPC6000-C154-L

Dimension: 371mm * 295mm * 74mm
Cut out : 354mm * 278mm

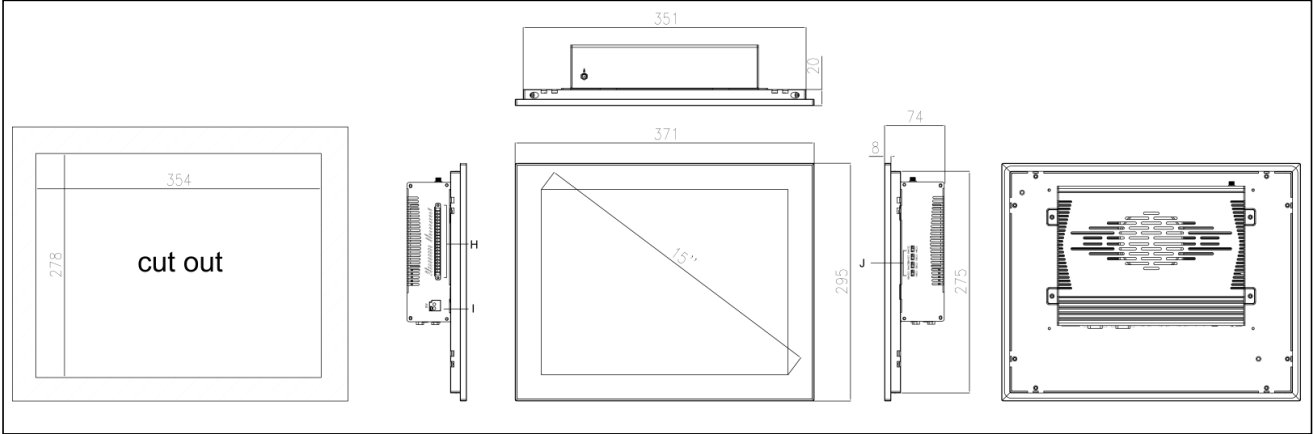


Figure 2.1- 4 TPC6000-C154-L Dimension

TPC6000-C1564-L

Dimension: 405mm * 258mm * 75mm
Cut out : 387mm * 240mm

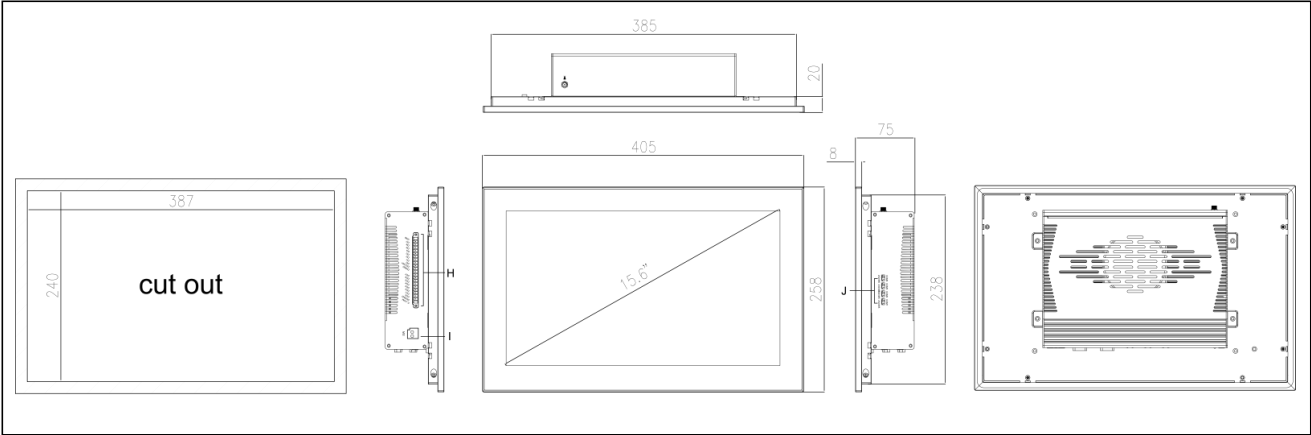


Figure 2.1- 5 TPC6000-C1564-L Dimension

TPC6000-C1564-LH

Dimension: 405mm * 258mm * 75mm
Cut out : 387mm * 240mm

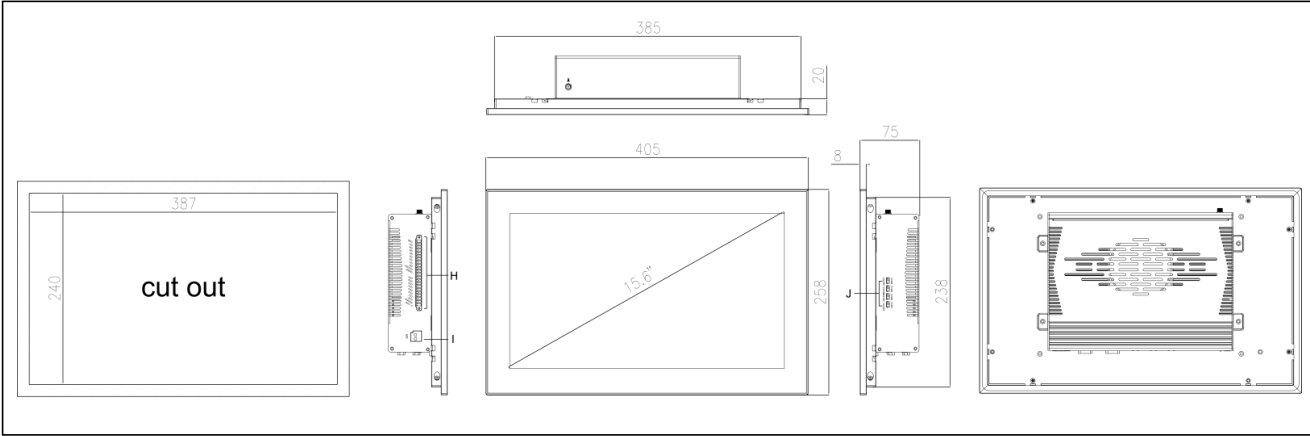


Figure 2.1- 6 TPC6000-C1564-L Dimension

TPC6000-C174-L

Dimension:428mm * 342mm * 74mm
Cut out : 411mm * 325mm

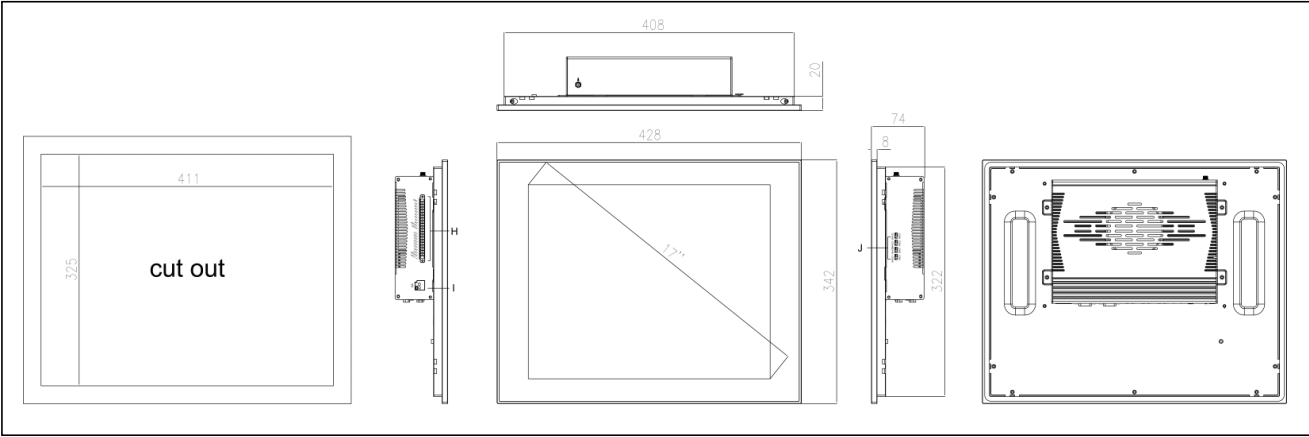


Figure 2.1- 7 TPC6000-C174-L Dimension

TPC6000-C1854-L

Dimension:480mm * 304mm * 74mm

Cut out : 463mm * 287mm

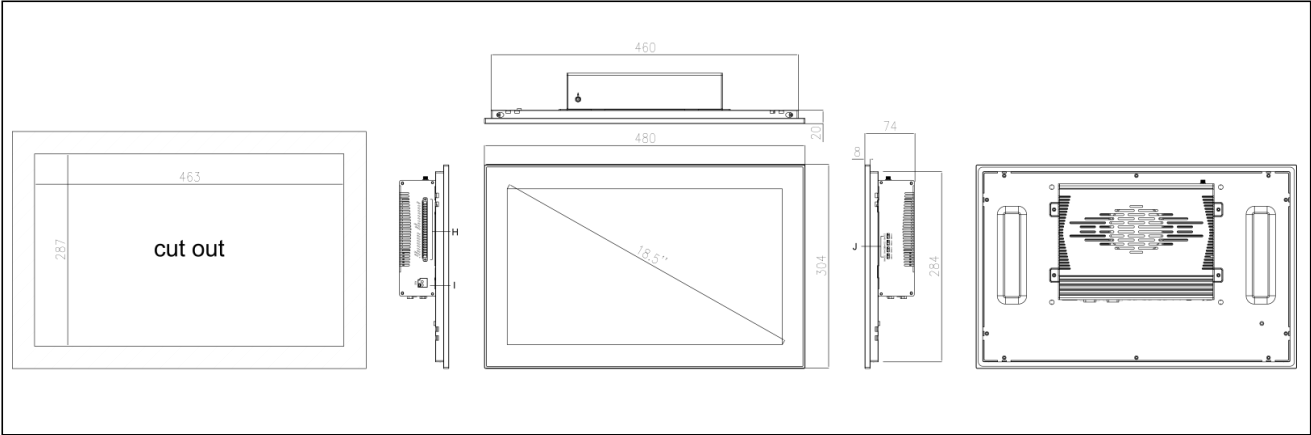


Figure 2.1- 8 TPC6000-C1854-L Dimension

TPC6000-C1854-LH

Dimension:480mm * 304mm * 74mm

Cut out : 463mm * 287mm

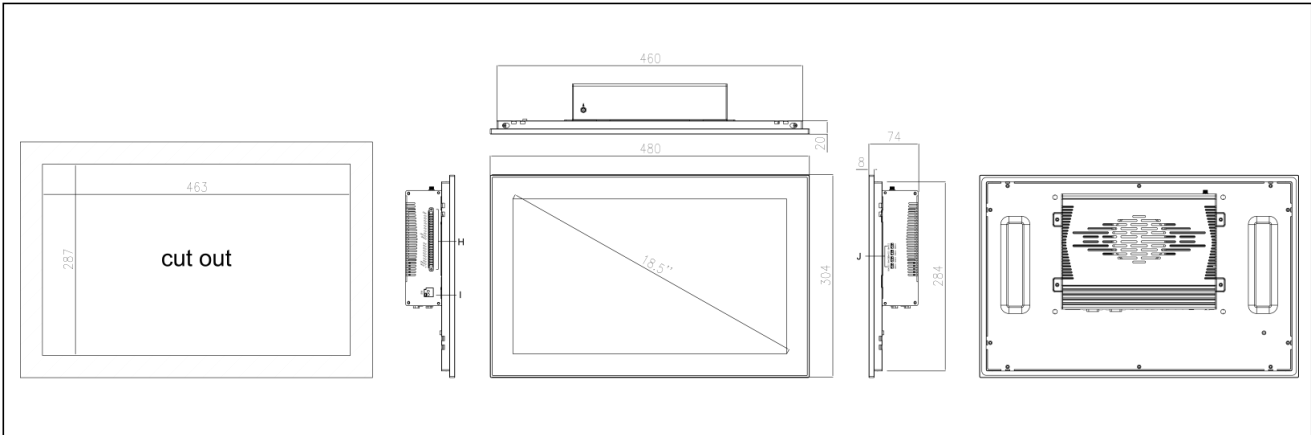


Figure 2.1- 9 TPC6000-C1854-LH Dimension

TPC6000-C194-L

Dimension:460mm * 369mm * 74mm
Cut out : 442mm * 351mm

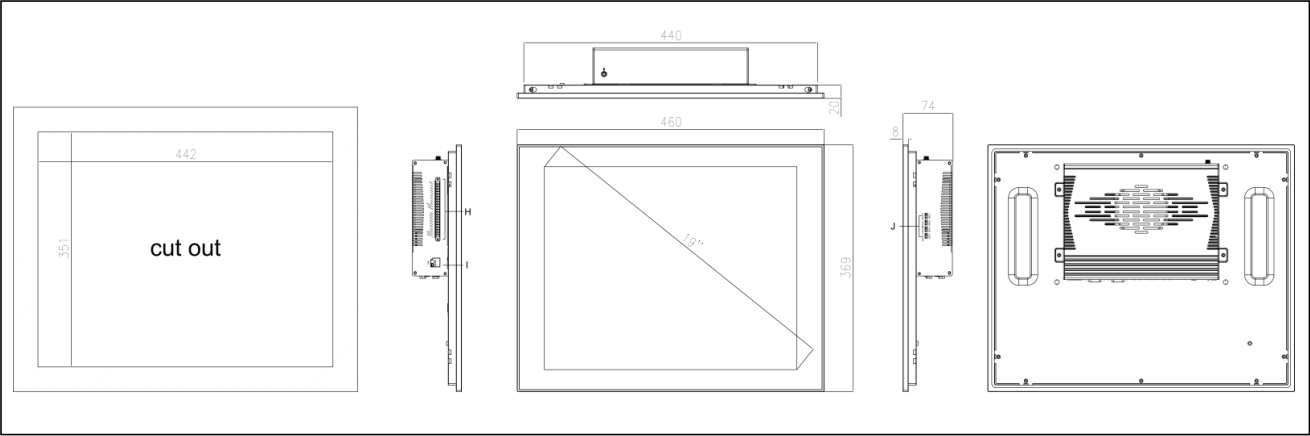


Figure 2.1- 10 TPC6000-C194-L Dimension

TPC6000-C2154-L

Dimension:550mm * 342mm * 74mm
Cut out : 533mm * 325mm

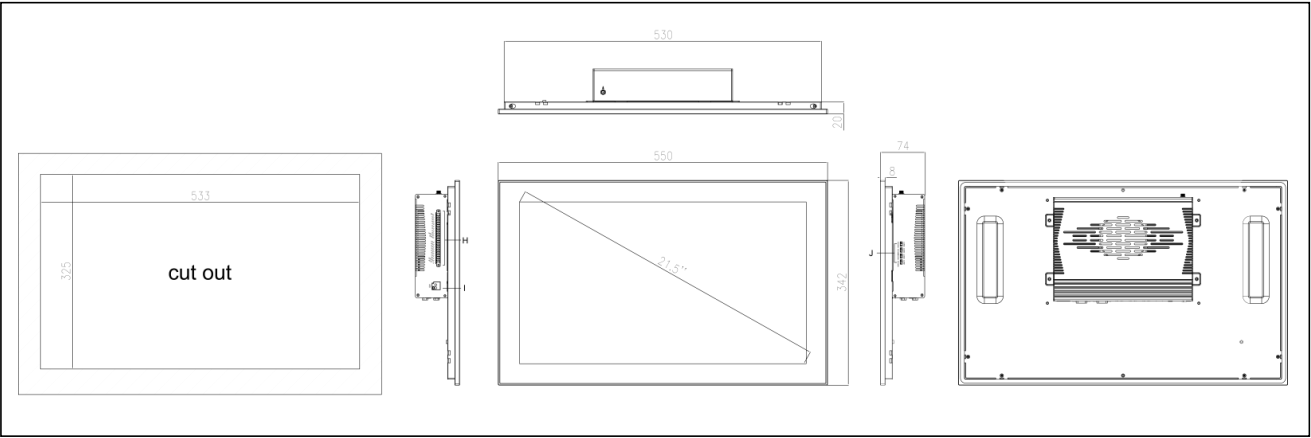


Figure 2.1- 11 TPC6000-C2154-L Dimension

2.1.3 I/O Definition

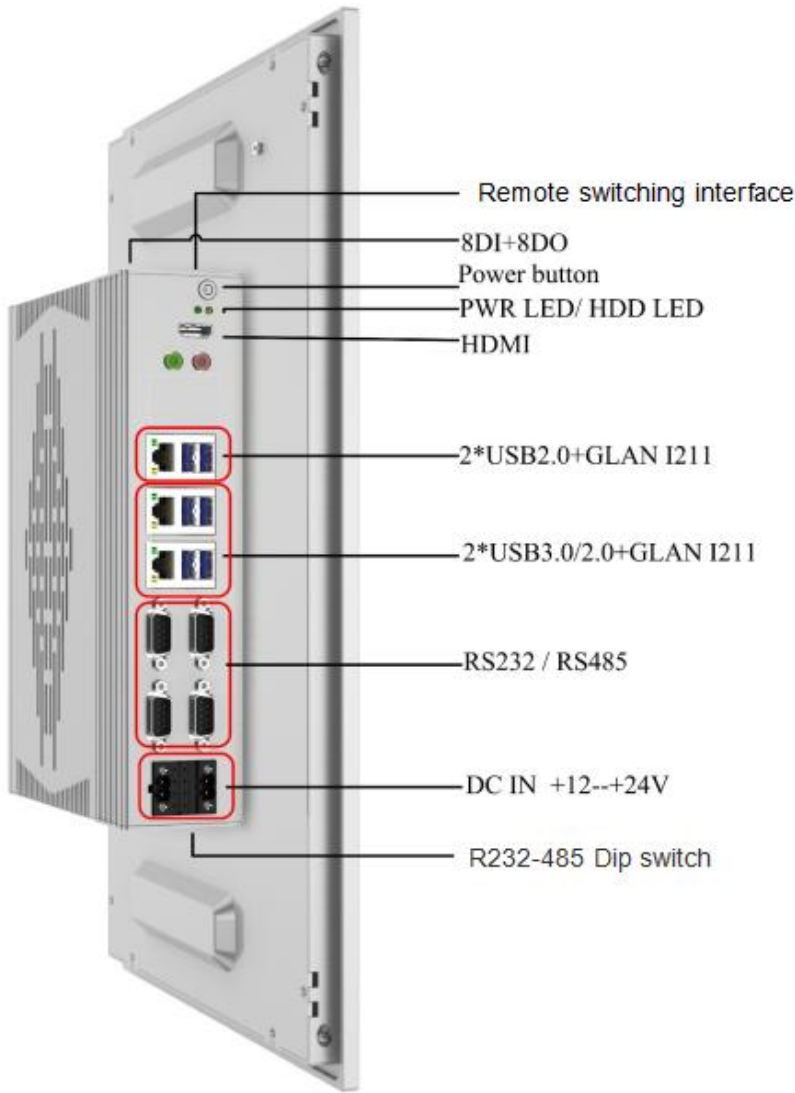


Figure 2.1- 12 TPC6000-Cxx4 I/O Definition

2.1.3.1 PWR LED/HDD LED

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

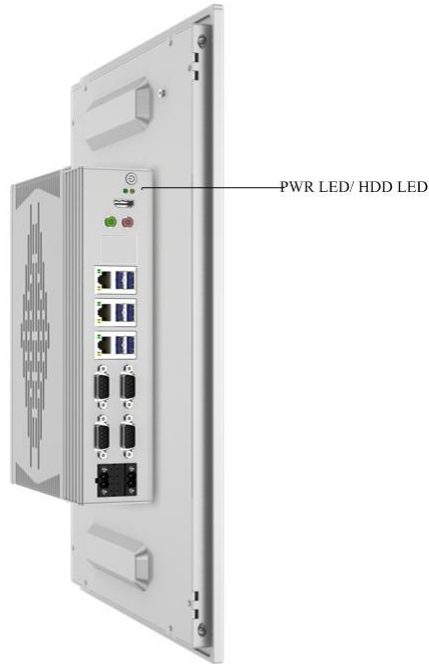


Figure 2.1- 1 6 TPC6000-Cxx4 LEDs

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

2.1.3.2 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- 1 7 TPC6000-CXX4 Power button

2.1.3.3 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.

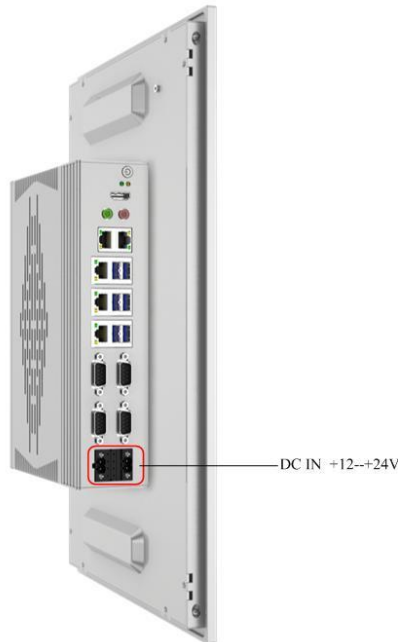
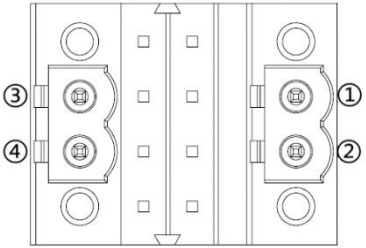


Figure 2.1-1 8 TPC600-CXX4 DCIN Connector Definition

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.



2.1.3.4 LAN PORTS: LAN1, LAN2, LAN3

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

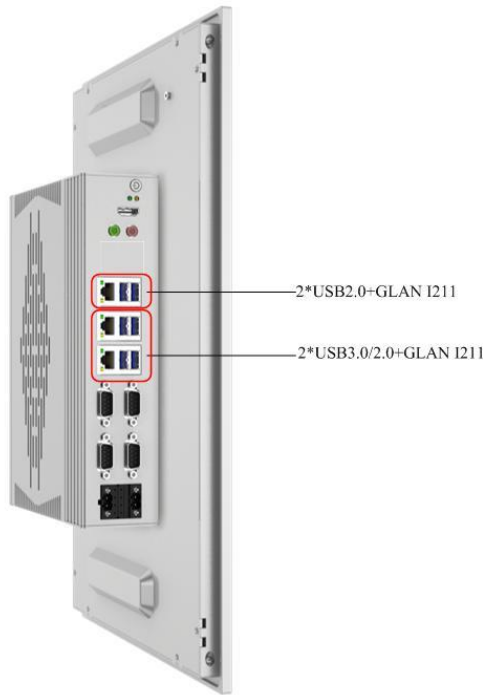


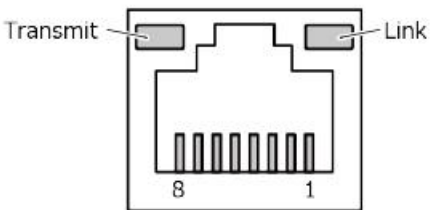
Figure 2.1-1 9 TPC6000-CXX4 Gigabit Ethernet Ports

TYPE	Parameters
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 1000Mbps, 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)



2.1.3.5 USB

The front panel of TPC6000-CXX4 provides four separate 4*USB3.0 ports Compatible with USB2.0, additional 2*USB2.0 ports.

2.1.3.5.1 USB3.0/2.0

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

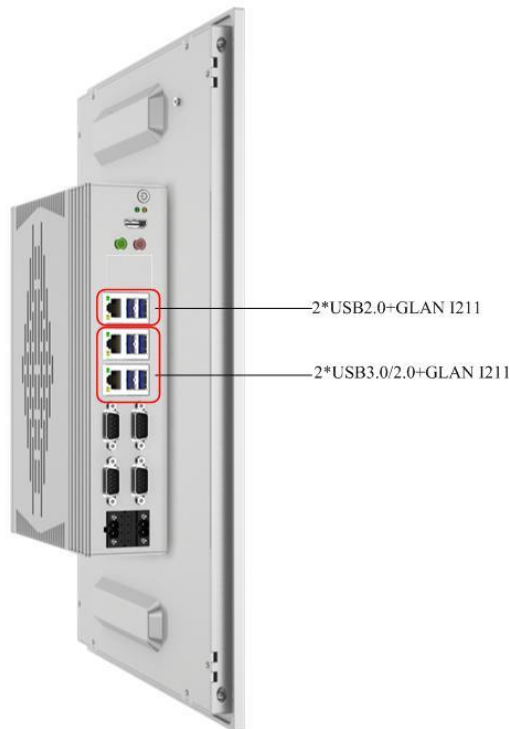
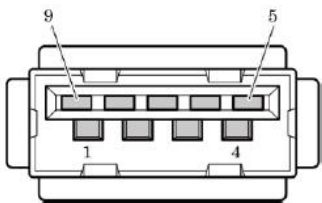


Figure 2.1- 2 0 TPC6000-CXX4 USB

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+

2.1.3.6 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).

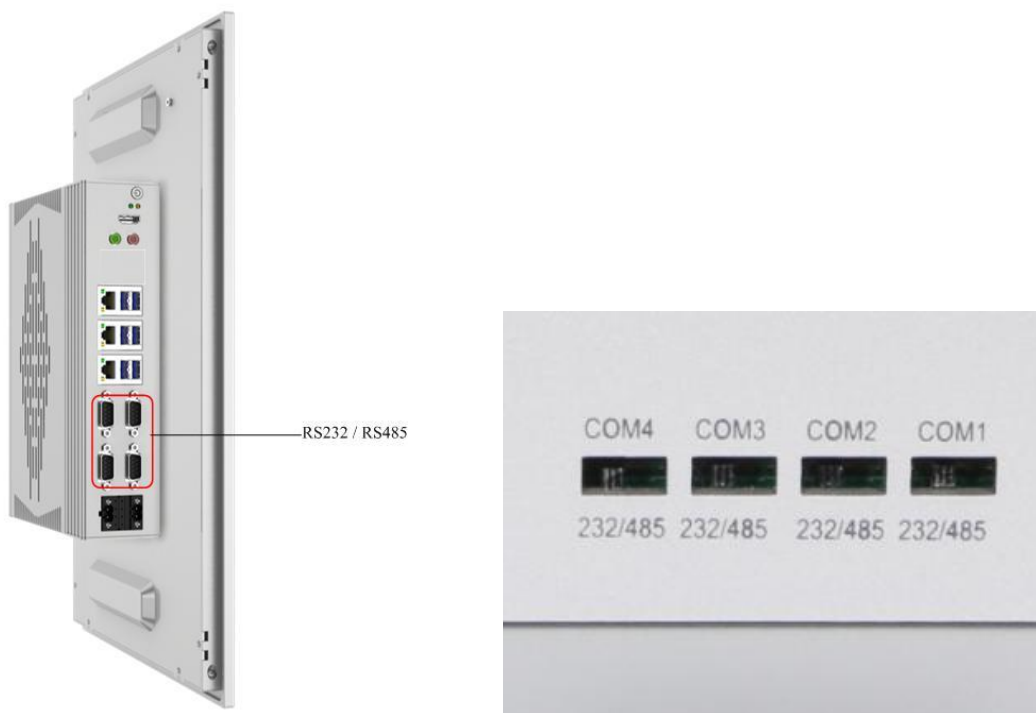
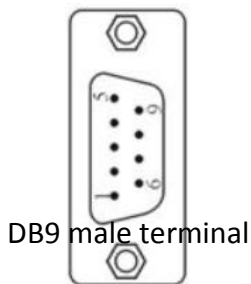


Figure 2.1-2 1 TPC6000-CXX4 Serial Ports Setting

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

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.



NOTE:

The default shipment setting is RS232, which can be set by microswitch

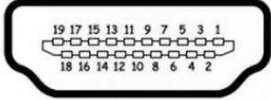
2.1.3.7 Display Interface

TPC6000-CXX4 provides standard HDMI video interface.



Figure 2.1- 2 2 TPC6000-CXX4 Video Interface

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.	Signal Name	Pin No.	Signal Name
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.

2.1.3.8 DIO - NPN

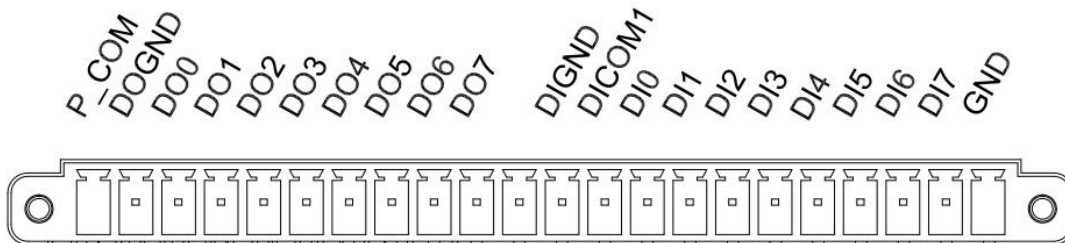


Figure 2.1- 2 3 TPC6000-CXX4 DIO

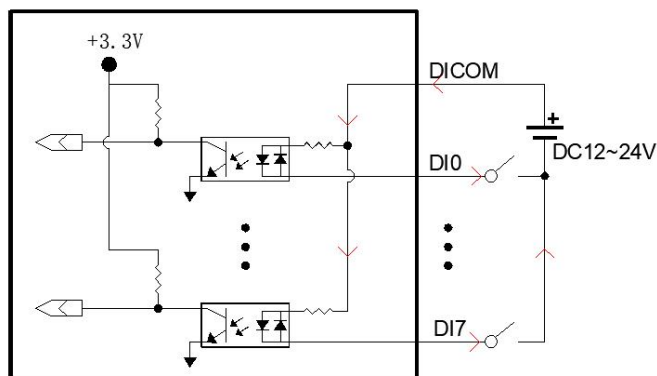
DIO signal definition is shown as below:

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

2.1.3.8.1 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 below:

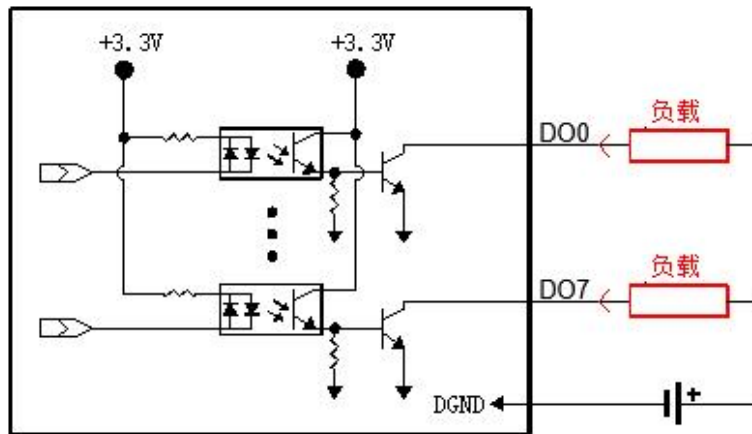


- During dry contact, use + 24V provided by the device:
 - A, Connecting terminal pin11 connects to pin13
 - B, DIGND/DI0-7 short-circuit input signal

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

2.1.3.8.2 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. DO output load current does not exceed the maximum current 300mA.
2. DO load voltage shall not exceed 50VDC;
3. DO not connect the positive and negative terminals of the power supply directly to the DO signal terminal and DOGND.

2.1.3.9 DIO - PNP

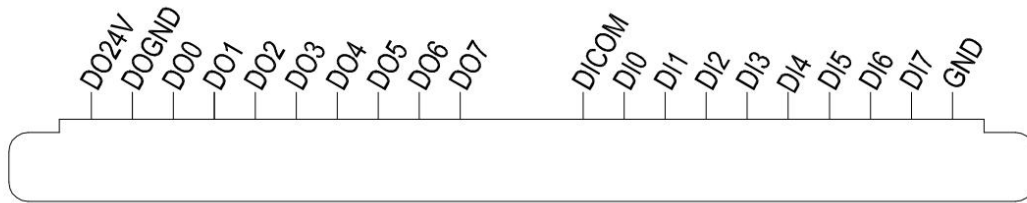


图- 1 TPC6000-CXX4 DIO

DIO signal definition is shown as below:

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

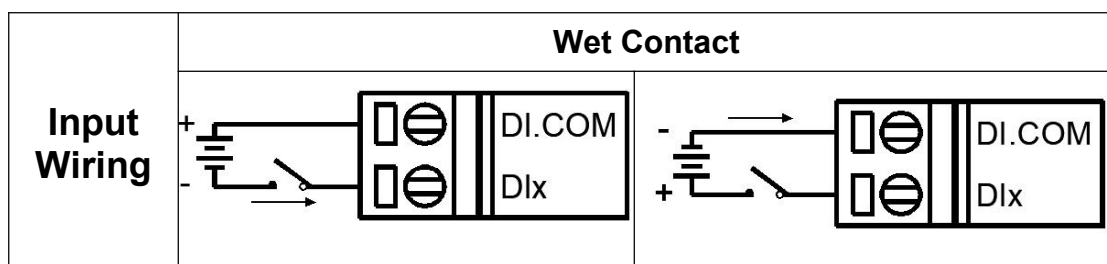
2.1.3.9.1 DI

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 below:

- ① DICOM signal point connection +24V, DI0... 7 Connect the signal point to the 0V
- ② DICOM signal point connection 0V, DI0... 7 Connect the signal point to the +24V

Electrical wiring diagram

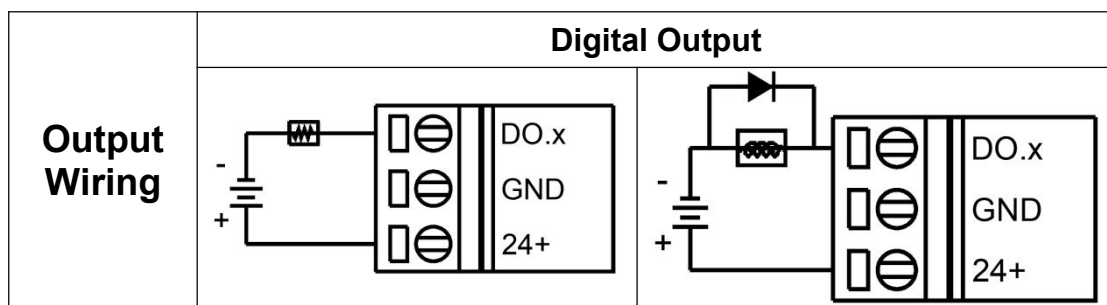


2.1.3.9.2 DO PNP

Provides eight DO channels with PNP output and single-channel overcurrent capability of 1A.

The DO24V signal connects to +24v, and the DO GND signal connects to 0V. Through software control switch DOGND/DO0... 7, the output has 24V voltage

Electrical wiring diagram



1. The DO output load current cannot exceed the maximum current 1A.
2. The maximum DO load voltage shall not exceed 30VDC;
3. DO not connect the positive and negative terminals of the power supply directly to the DO signal terminal and DOGND.

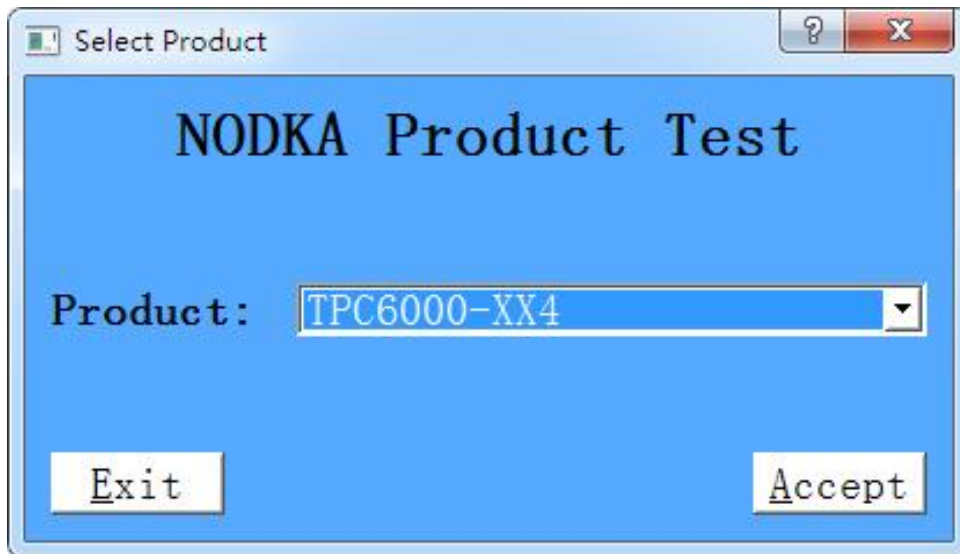
2.1.3.10 IO API user manual

2.1.3.10.1 Installation and test

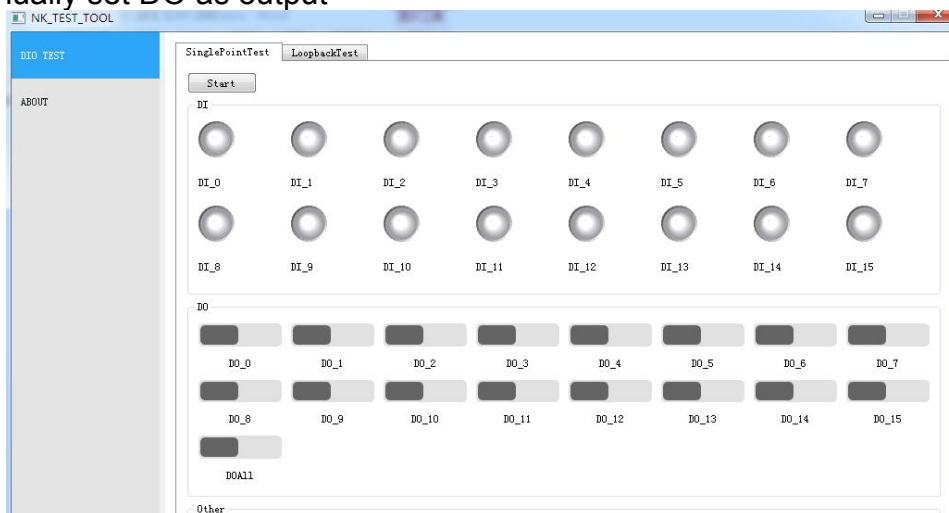
- Uses the latest installation package, selects to install the host program, and runs "NKDIO_UTILITY_Setup_x86_V4.1.9"

名称	修改日期	类型	大小
 NKDIO_UTILITY_Setup_x86_V4.1.9.exe	2021-08-25 15:10	应用程序	71.7

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



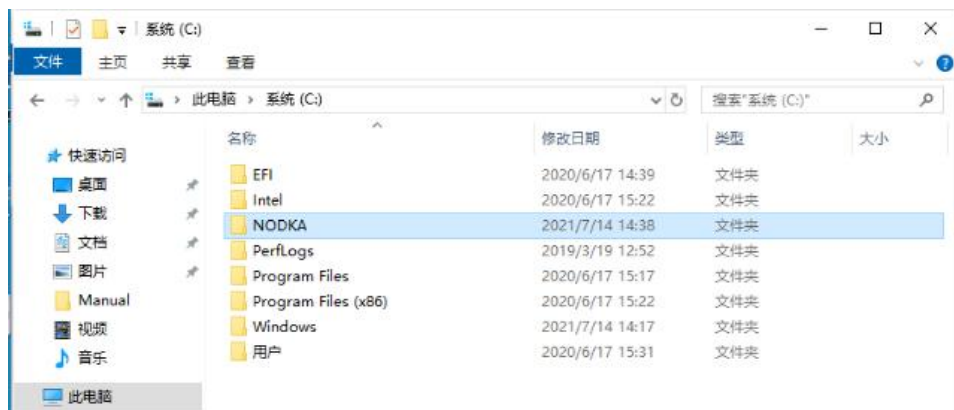
- Click “start” to test after opening the program.
1. If the DI has input signals, the LED of the corresponding channel will be green.
 2. Manually set DO as output



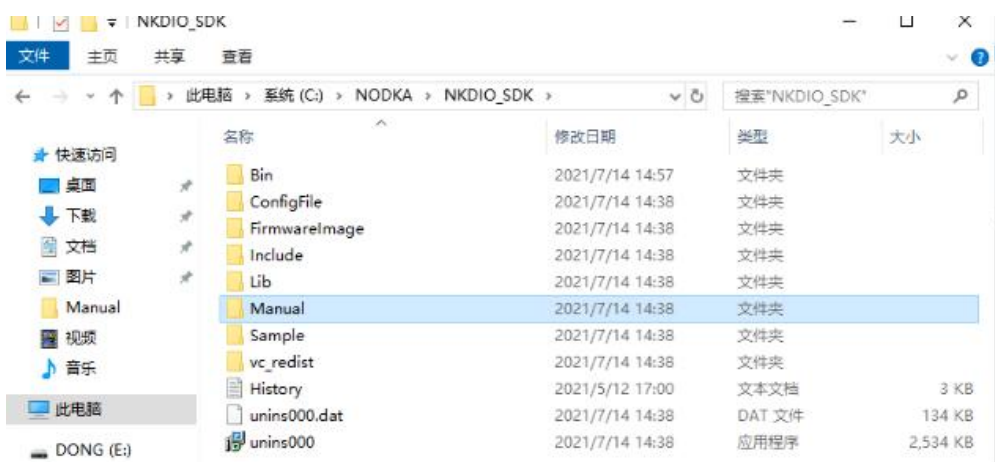
- After test, click” stop” to exit.

2.1.3.10.2 IO API

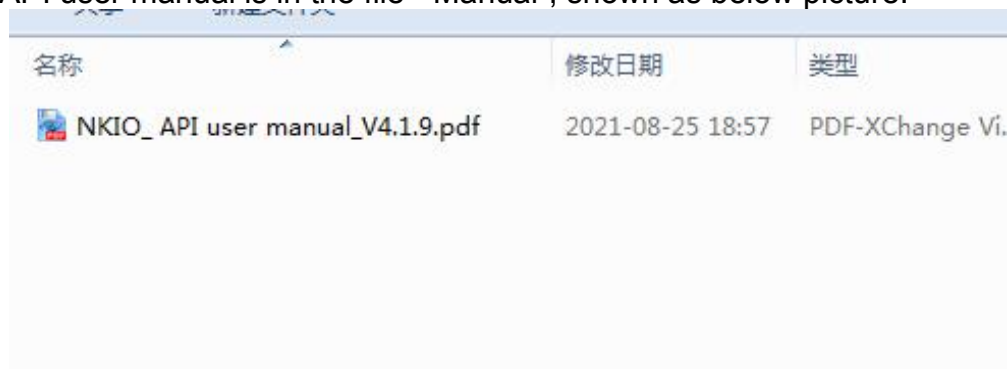
- Open a subdirectory file on system disk "C: NODKA" to find the corresponding files.



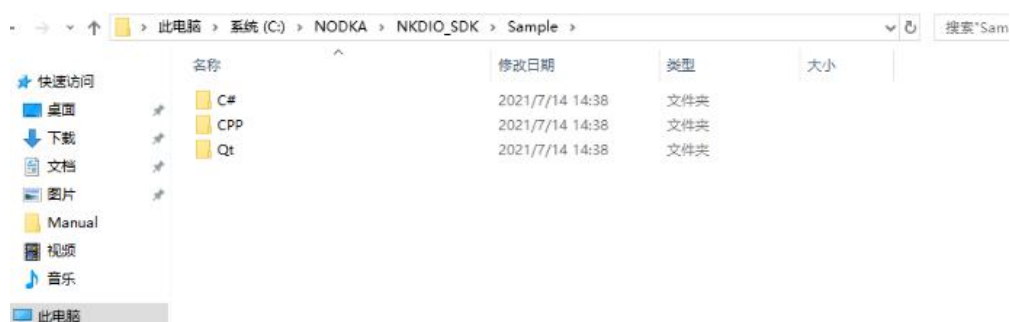
➤ Open“NODKA”file, all the files will be shown as below:



➤ 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 or <ESC> to enter setup.

At this time (invalid at other time) press the key specified by the prompt (usually the 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.

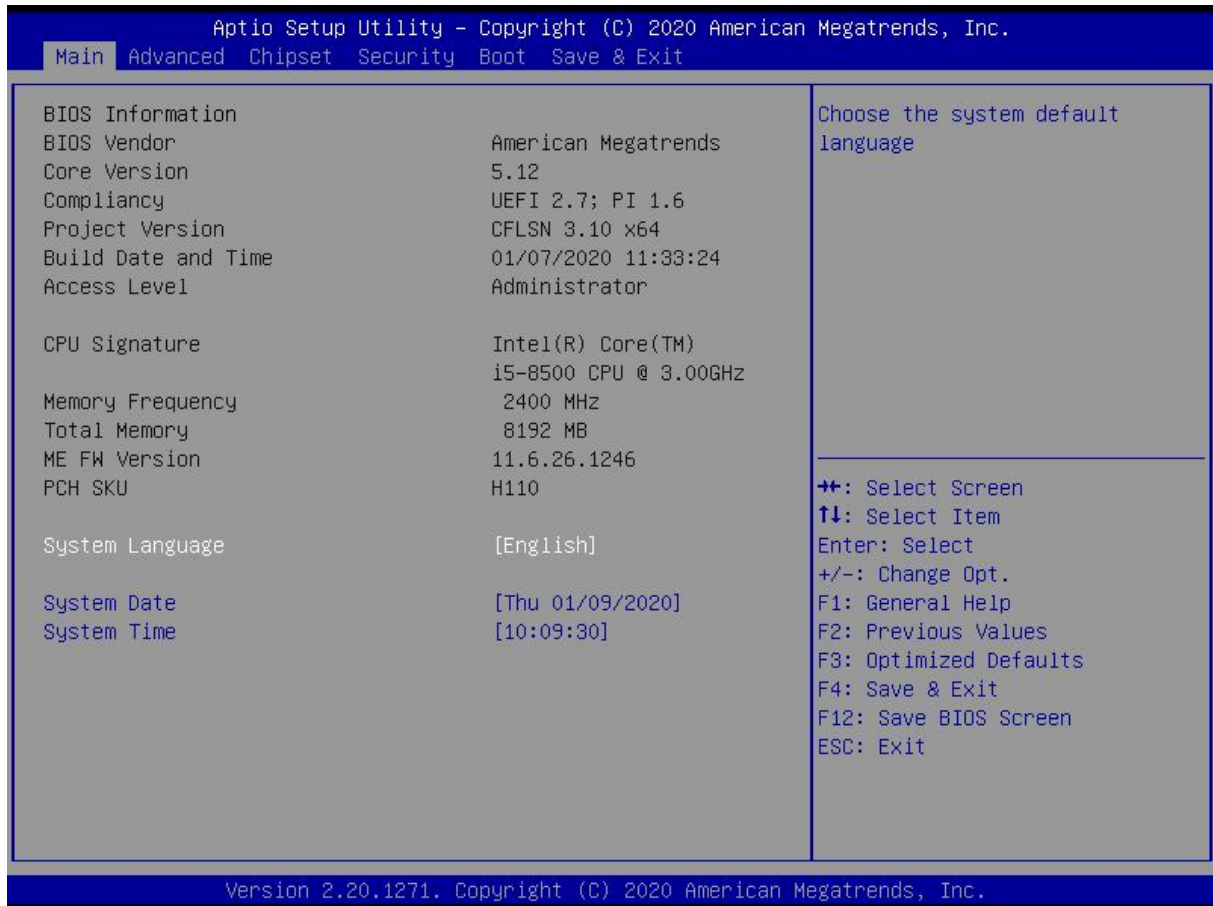


Figure 3.4- 1 TPC6000-XXX4 BIOS-Main

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

Main is used to confirm basic system configuration information.

■ Items

Items	Content	Description
Project Version	xxxxx x.xx x64	BIOS version
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:

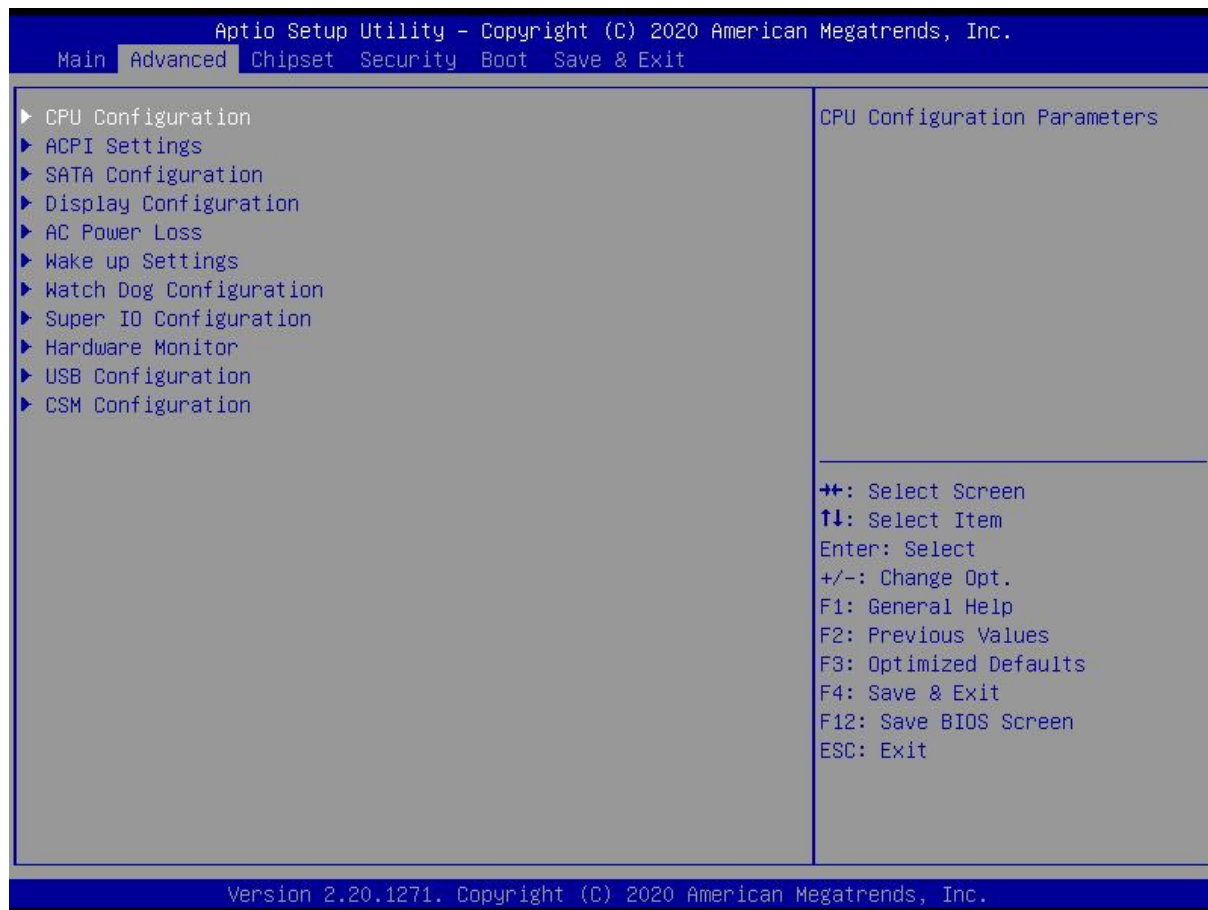


Figure 3.4- 2 TPC6000-XXX4 BIOS-Advanced

- 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.

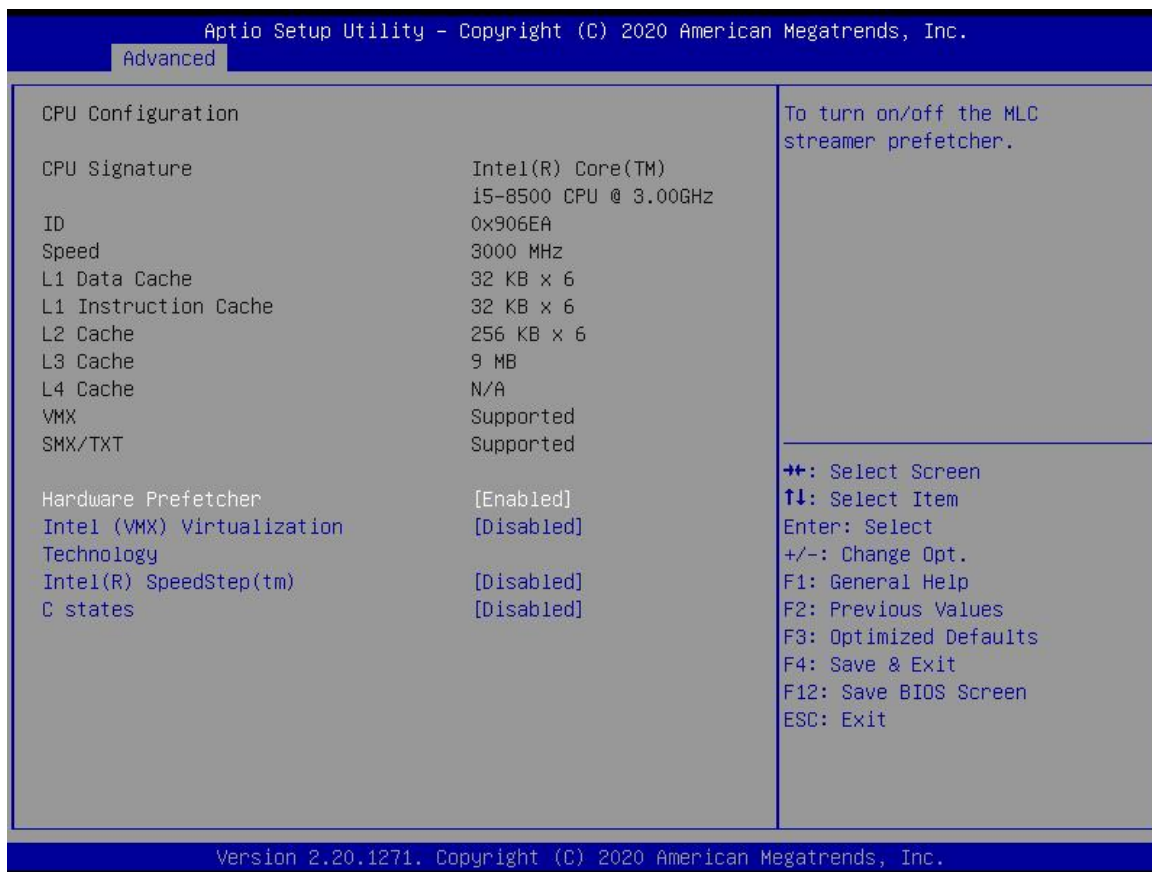


Figure 3.4- 3 TPC6000-XXX4 BIOS-CPU Configuration

■ CPU Configuration:

Items	Contents	Description
Hardware Prefetcher	Disabled / <u>Enabled</u>	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	<u>Disabled</u> / 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)	<u>Disabled</u> / 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	<u>Disabled</u> / 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.

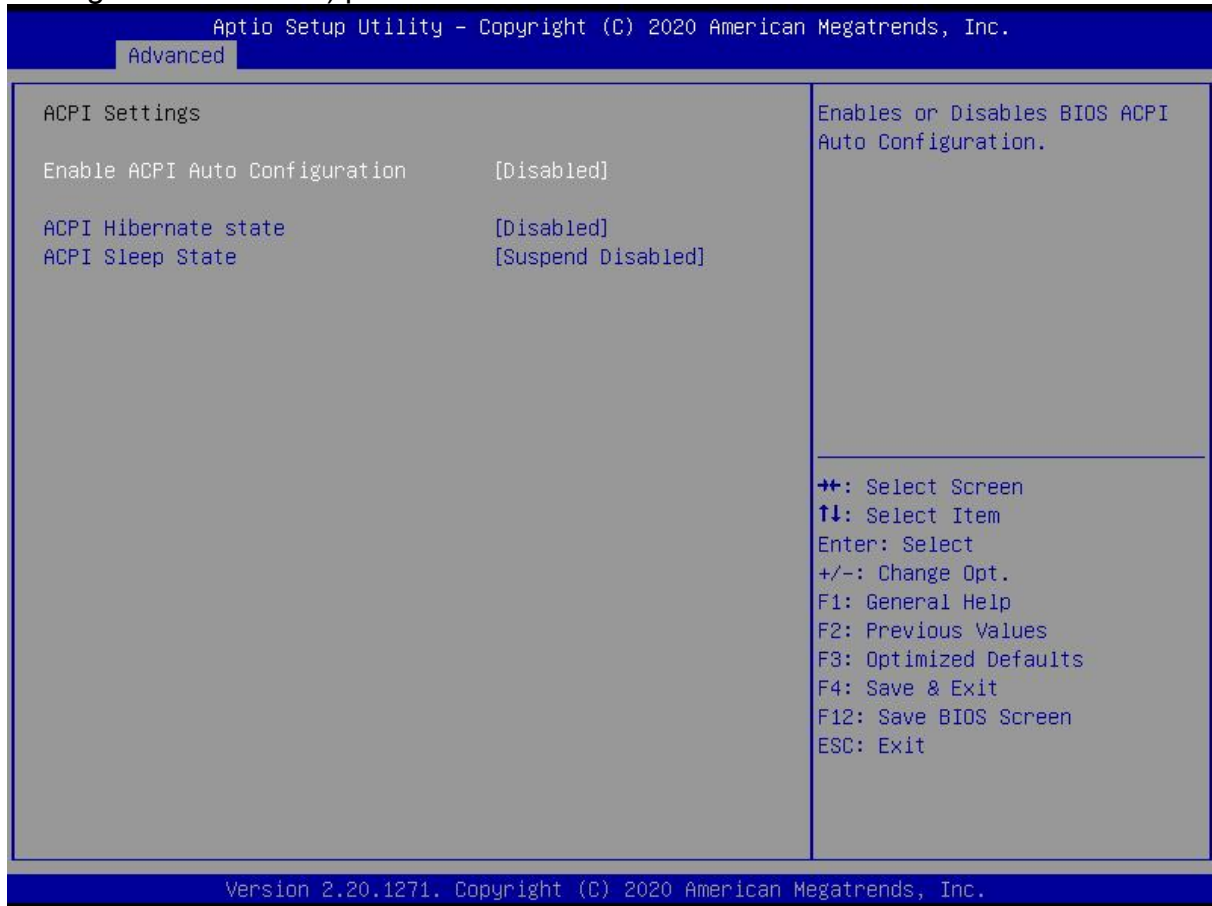


Figure 3.4- 4 TPC6000-XXX4 ACPI Settings

■ **ACPI Settings:**

Items	Contents	Description
Enable ACPI Auto Configuration	<input type="checkbox"/> Disabled / Enabled	Whether to allow ACPI to be configured automatically. The state is usually set to Disabled.
ACPI Hibernate state	<input type="checkbox"/> Disabled / Enabled	Whether to allow ACPI to go to sleep. This is usually set to Disabled.
ACPI Sleep state	<input type="checkbox"/> 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.

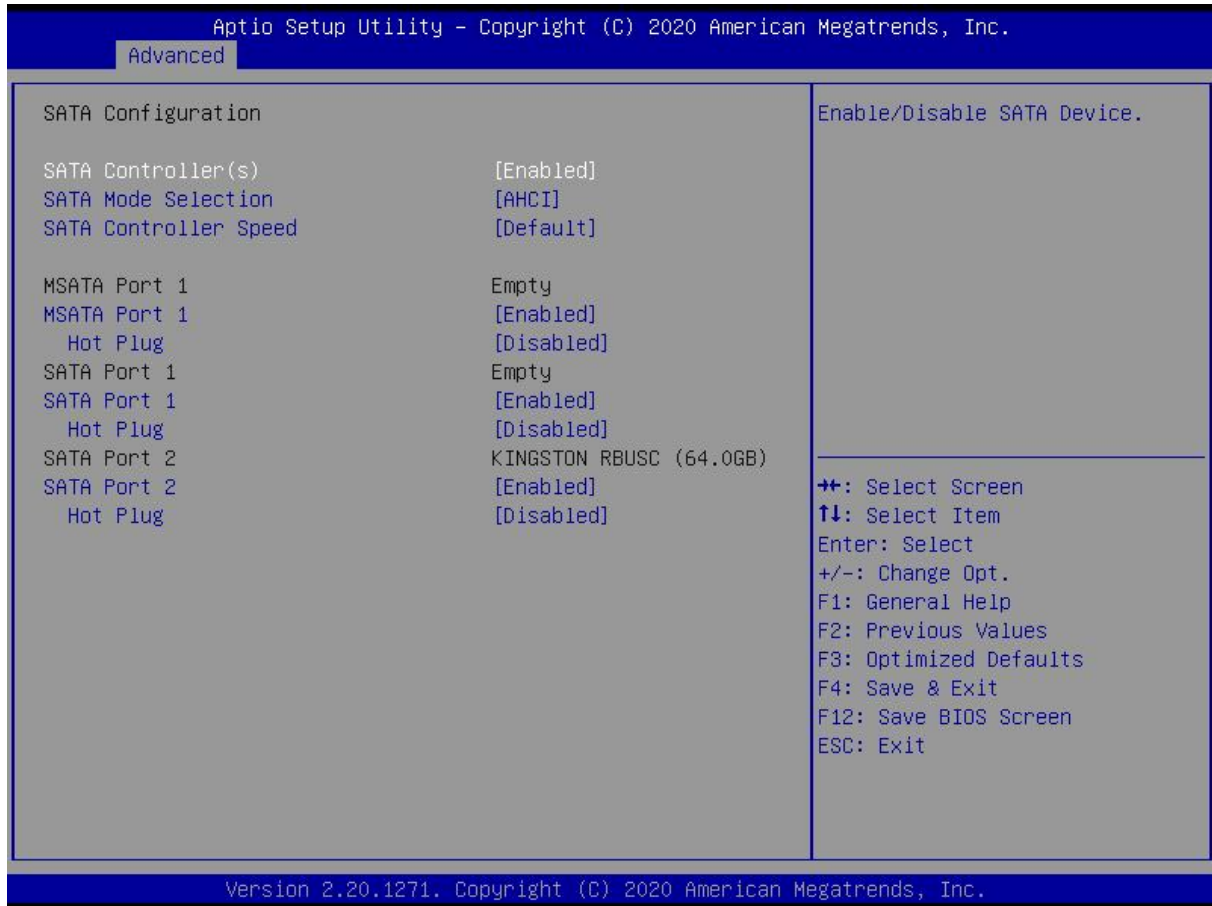


Figure 3.4- 5 TPC6000-XXX4 BIOS SATA Configuration

■ SATA Configuration:

Items	Contents	Description
SATA Controller(s)	Disabled / <u>Enabled</u>	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	<u>AHCI</u>	SATA access mode, do not change this item.
SATA Controller Speed	<u>Default</u> /Gen1/Gen2/Gen3	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	<u>256M</u> /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.

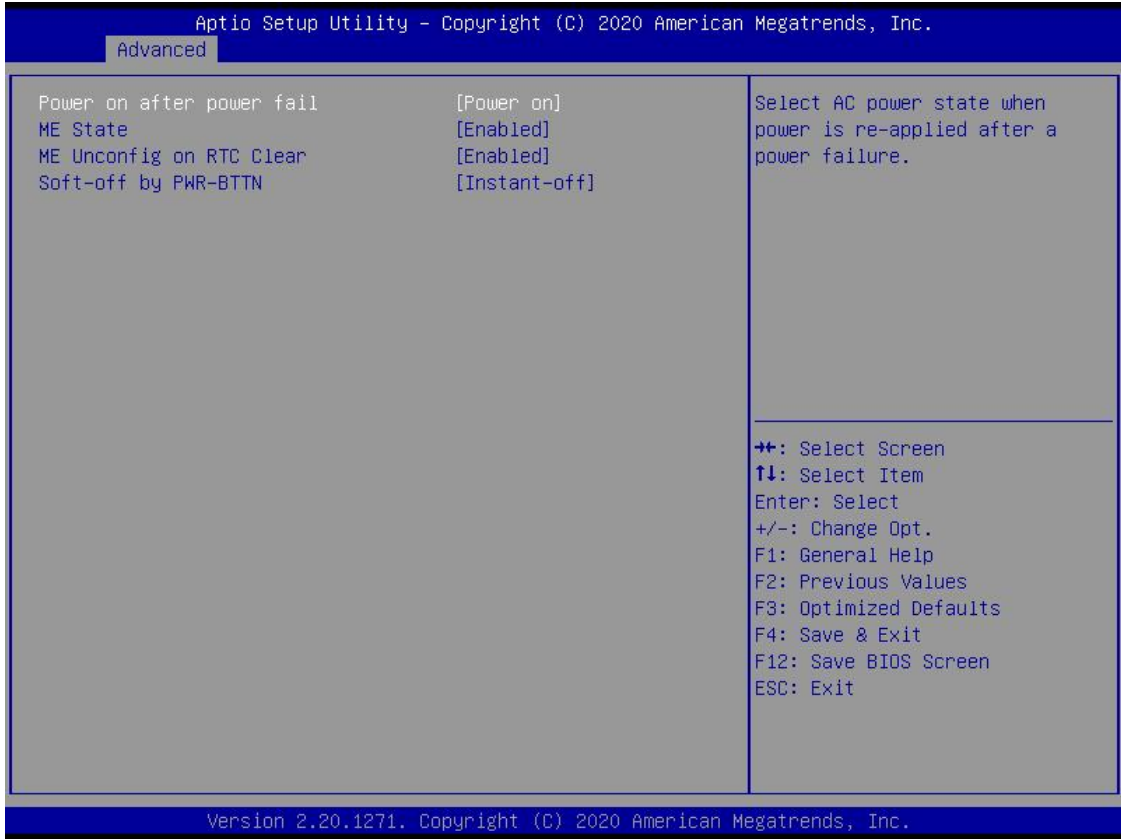


Figure 3.4- 7 TPC6000-XXX4 BIOS-AC Power Loss

Items	Contents	Description
Power on after power fail	- Power off / Power on / Last status	<p>Indicates the power status of the mainboard after it is switched on again.</p> <ul style="list-style-type: none"> - 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	<input type="checkbox"/> Enabled / Disabled	Do not change this item.
ME Unconfig on RTC Clear	<input type="checkbox"/> Enabled / Disabled	Do not change this item.
Soft-off by PWR-BTTN	Delay 4 sec / <input type="checkbox"/> Instant-off	<p>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.</p> <p>Delay 4 sec: Shut down delay of 4 seconds;</p> <p>Instant-off: Shut down immediately.</p>

3.4.9 Wake up settings

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



Figure 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.

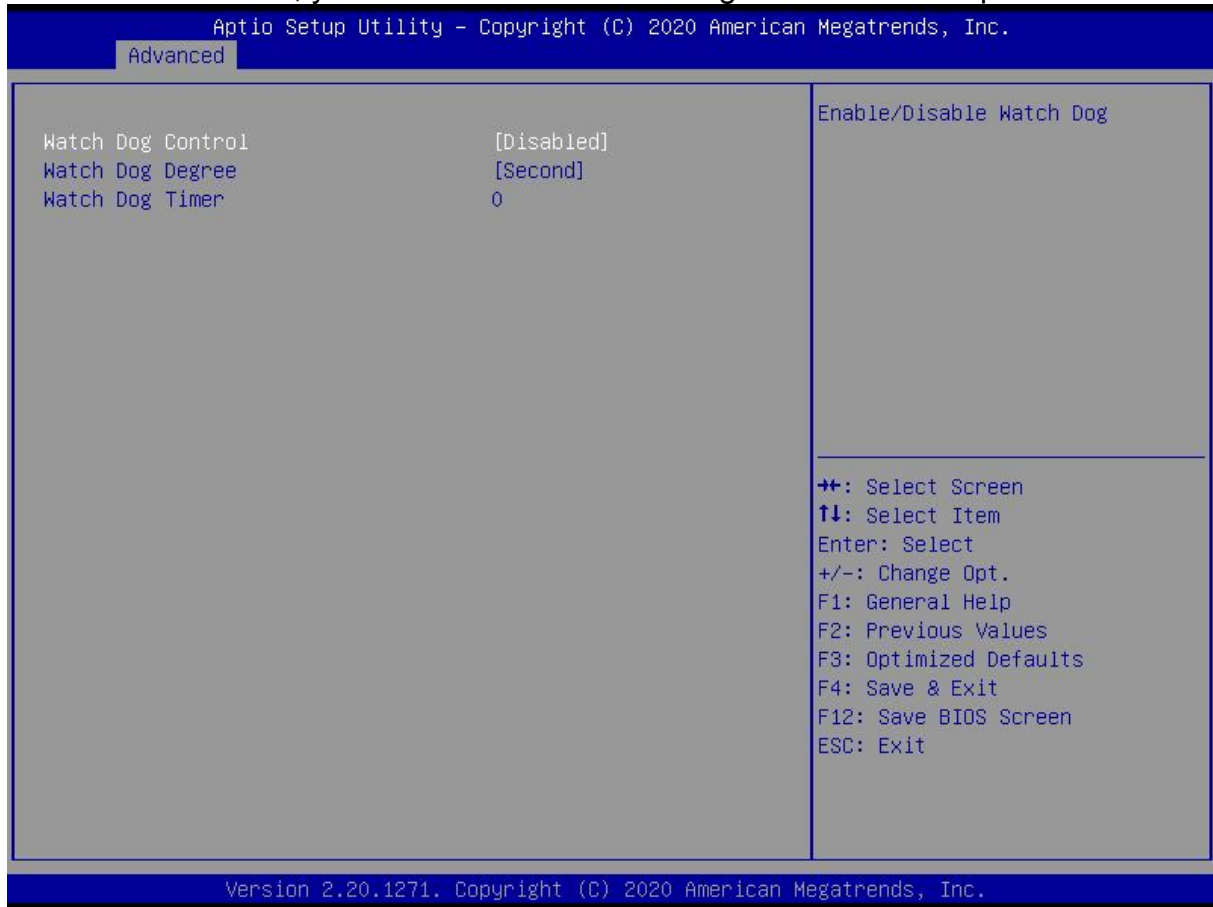


Figure 3.4- 9 TPC6000-XXX4 BIOS-Watch Dog Settings

Items	Contents	Description
Watch Dog Control	Enabled / <u>Disabled</u>	The watch dog function is on and off.
Watch Dog Degree	<u>Second</u> / 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.

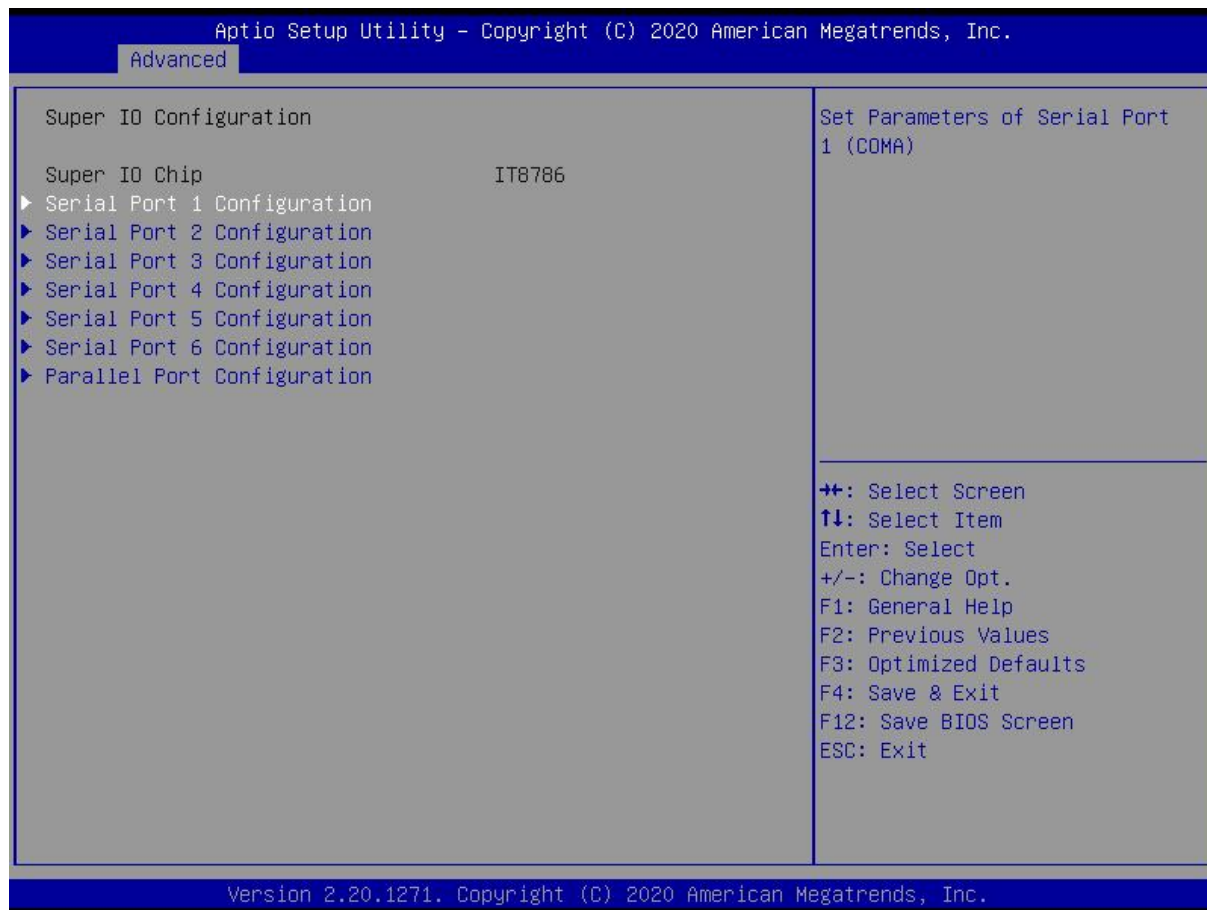


Figure 3.4- 1 0 TPC6000-XXX4 BIOS-Super IO Configuration

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

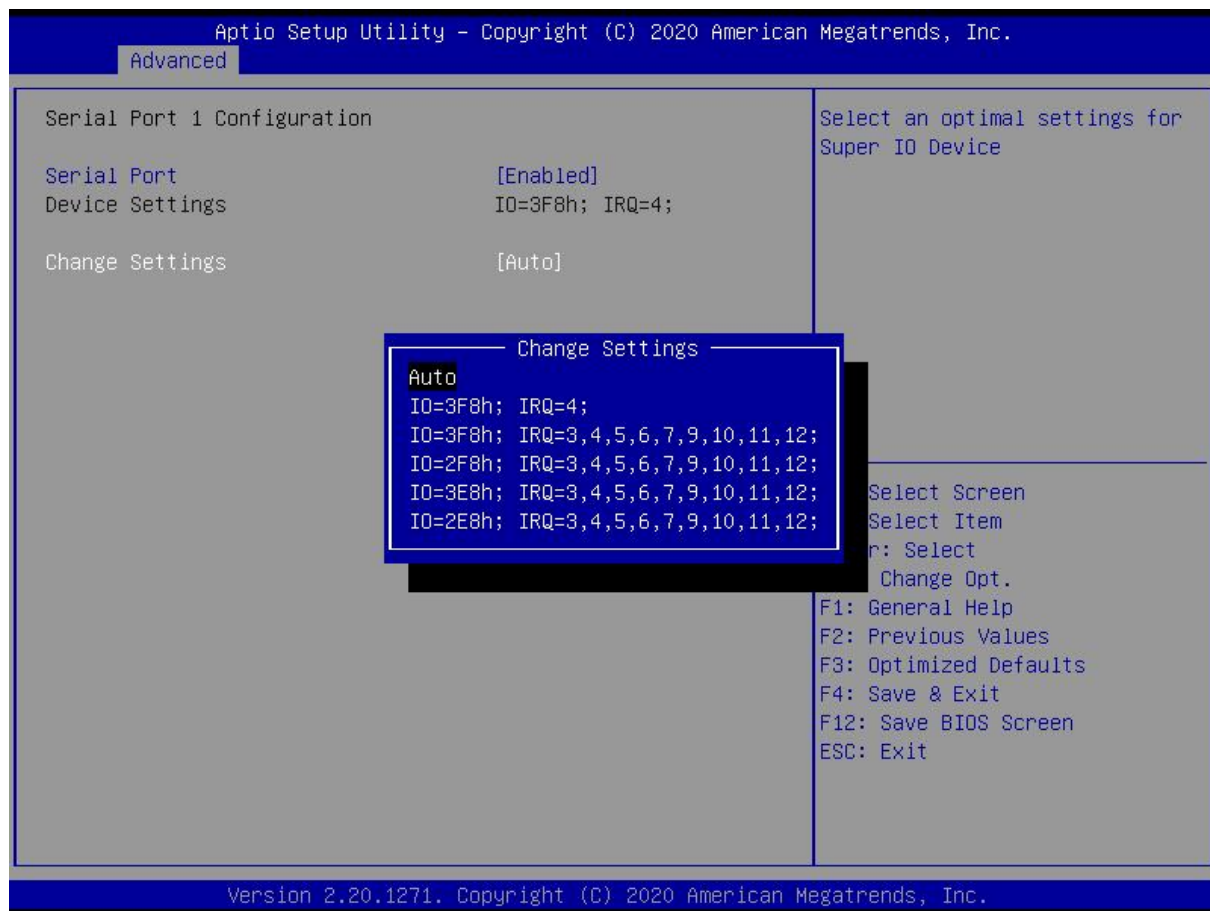


Figure 3.4- 1 1 TPC6000-XXX4 BIOS-Serial Port Configuration

■ **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	<div style="border: 1px solid black; padding: 5px;"> 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; </div>	Serial port address and interrupt priority setting. The default value is Auto.

3.4.13 Hardware Monitor

This interface is used for hardware check.

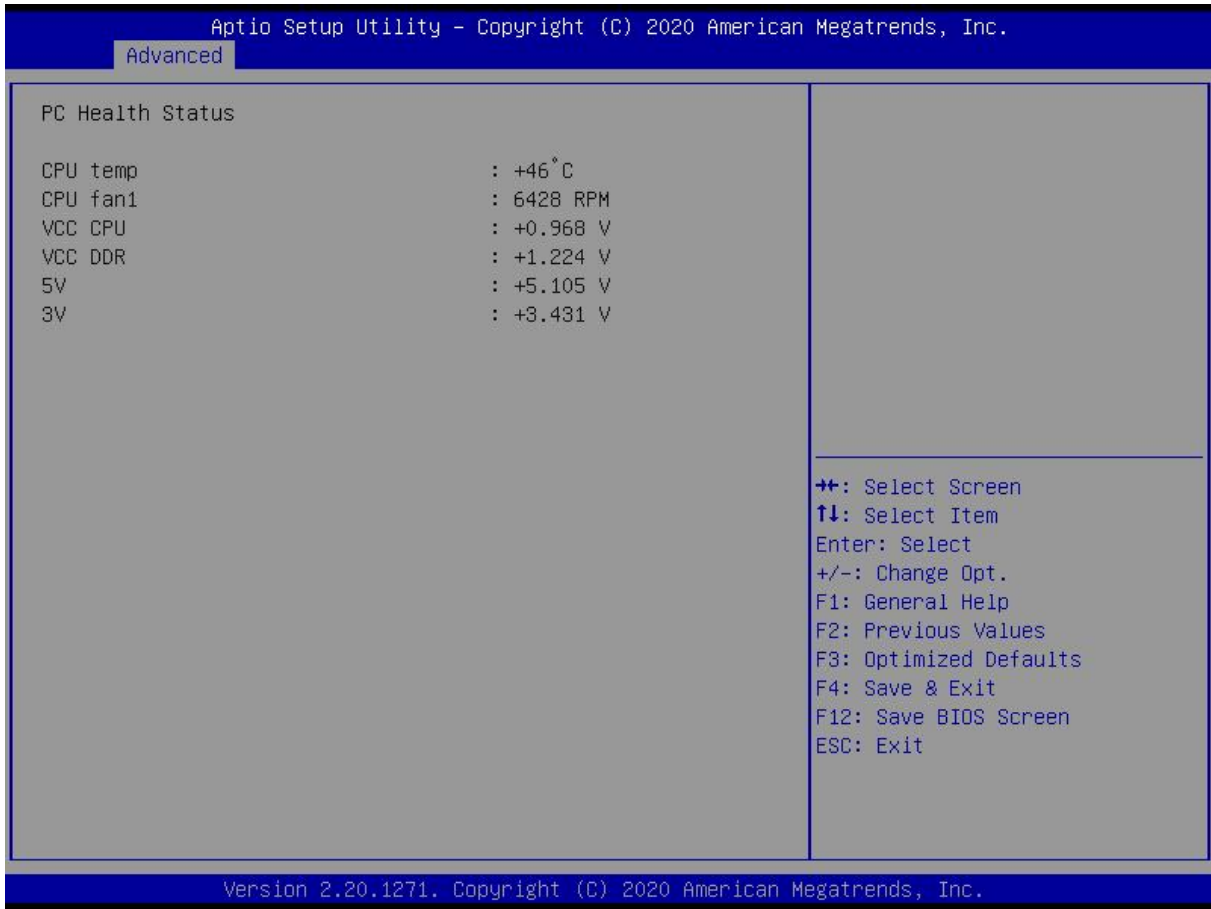


Figure 3.4- 1 2 TPC6000-XXX4 BIOS-Hardware Monitor

3.4.14 USB Configuration

This interface is used to configure USB controller connectors.

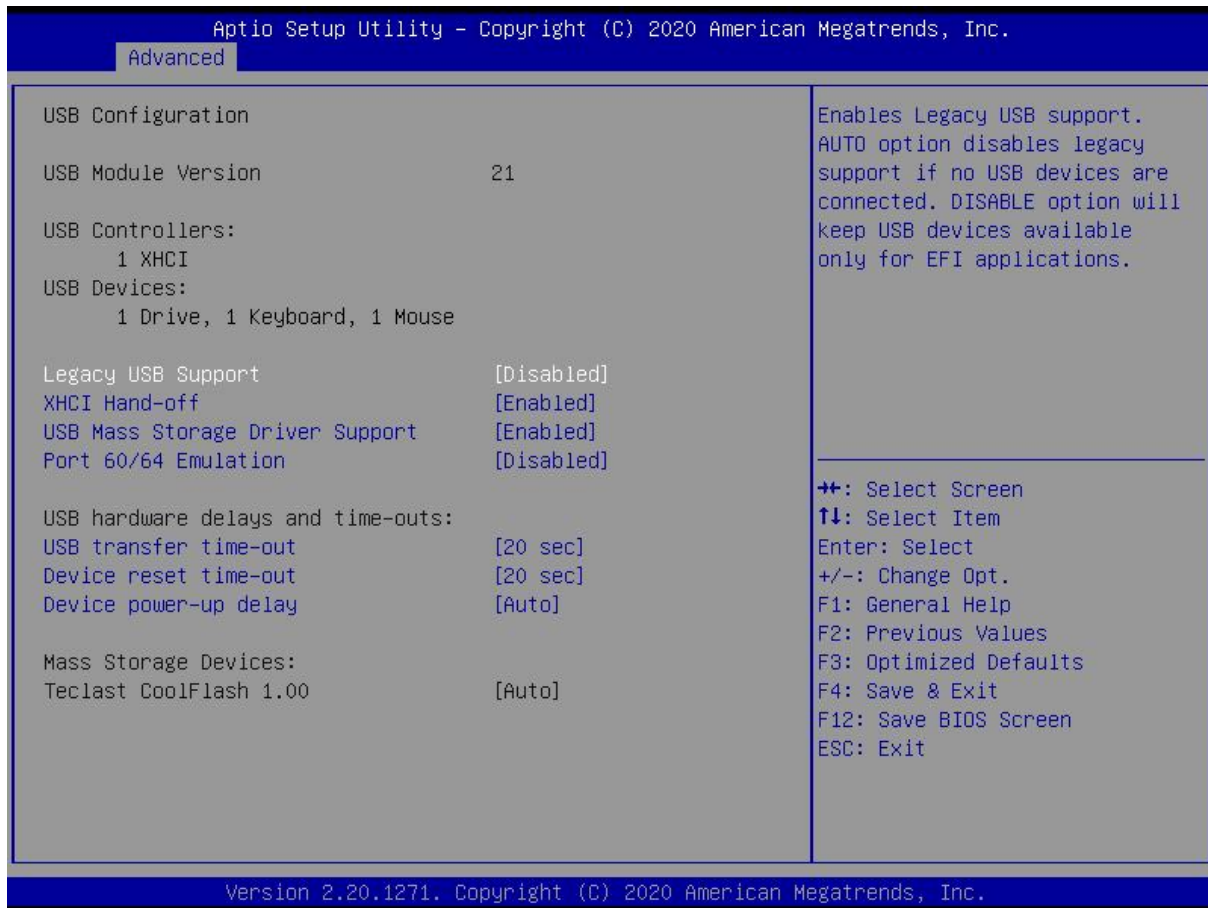


Figure 3.4- 1 3 TPC6000-XXX4 BIOS-USB Configuration

■ **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 analogue switch. Pleasdont 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.

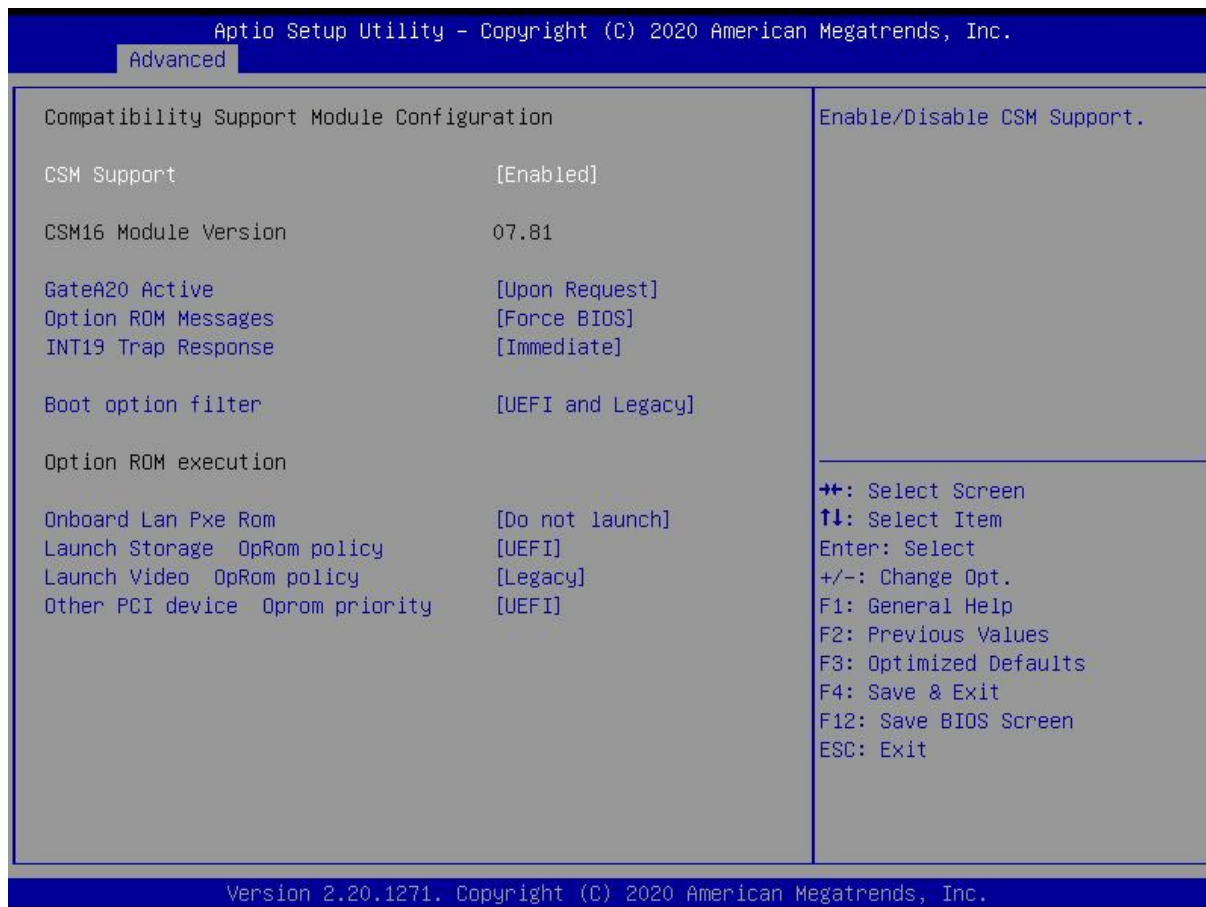


Figure 3.4- 1 4 TPC6000-XXX4 BIOS-CSM Configuration

■ **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.

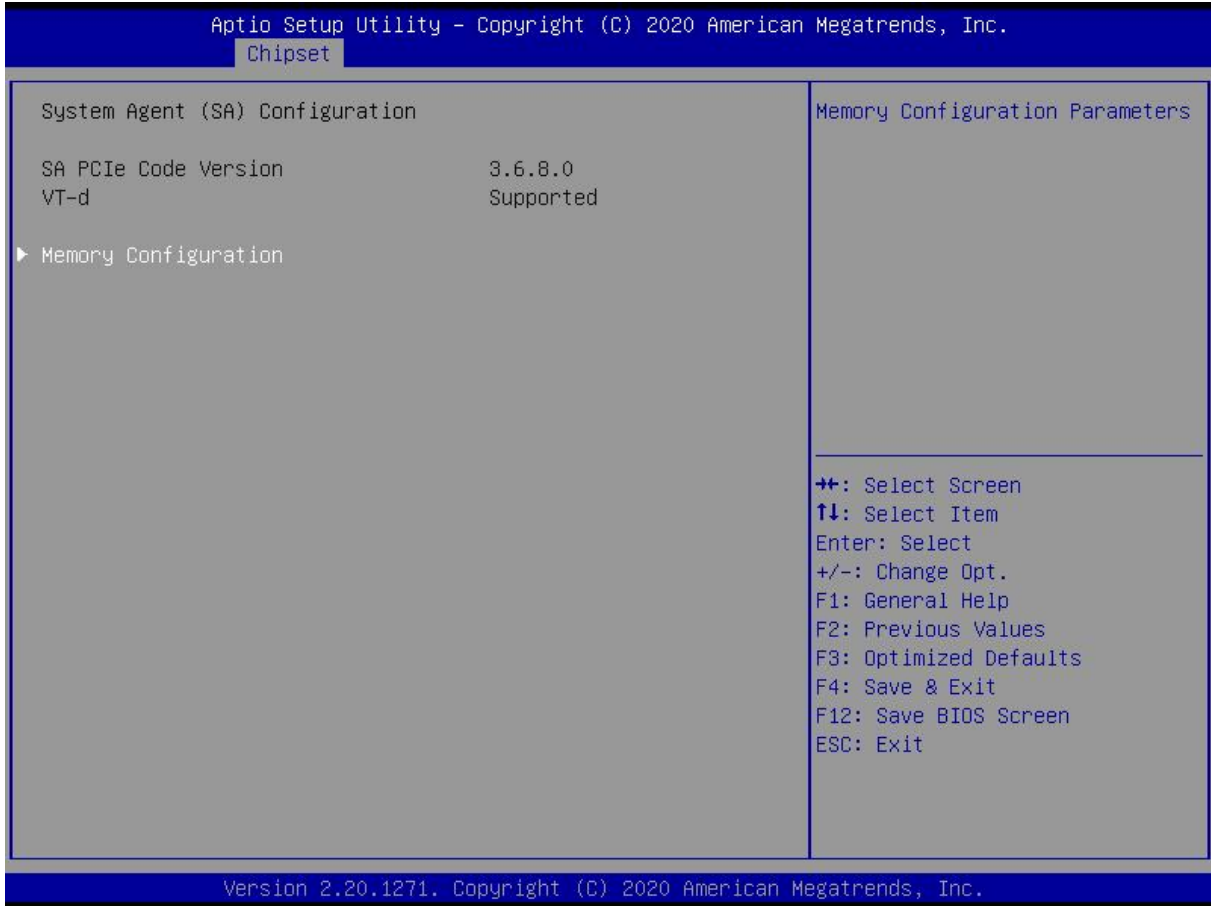


Figure 3.4- 1 6 TPC6000-XXX4 BIOS-System Agent Configuration

3.4.18 Memory Configuration

Display the current memory channel configuration information.

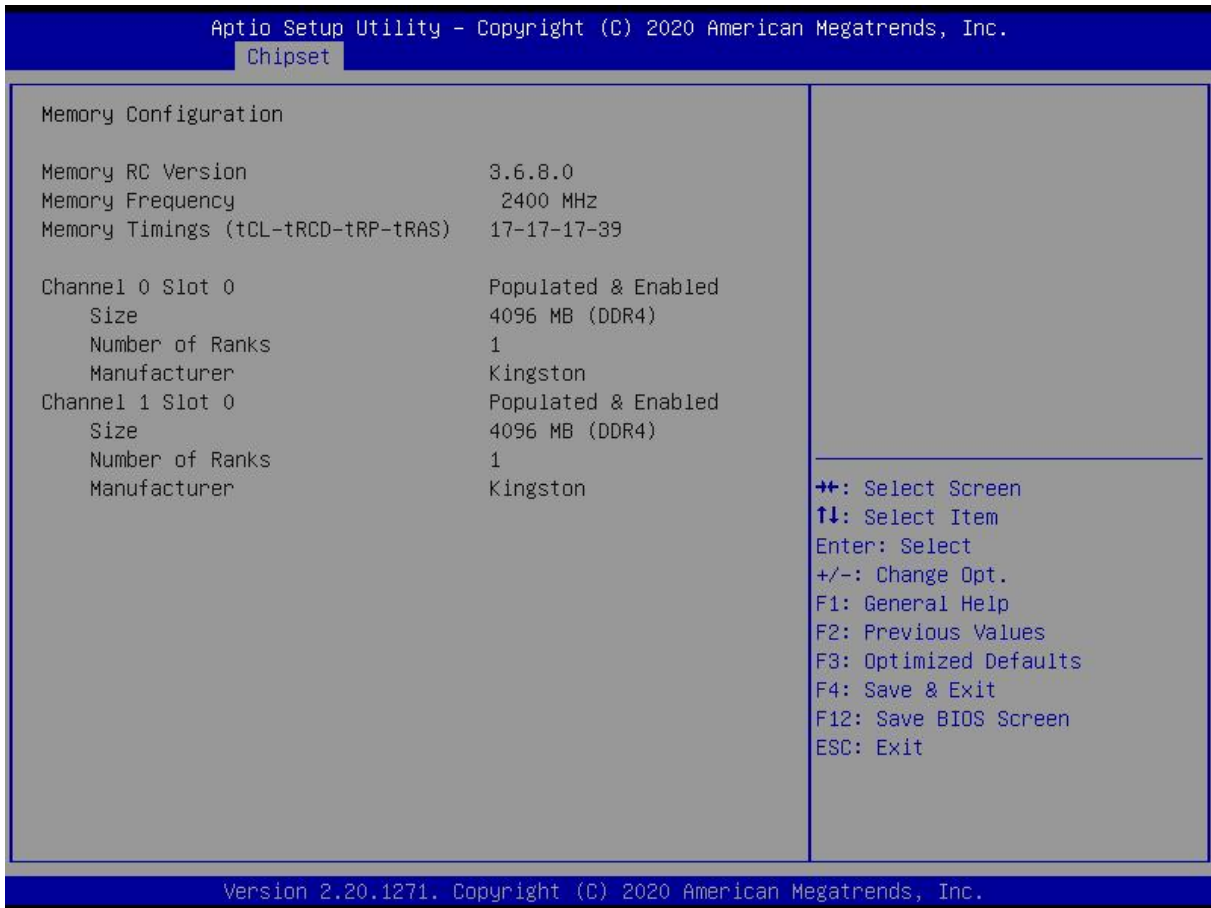


Figure 3.4- 1 7 TPC6000-XXX4 BIOS-Memory Configuration

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!

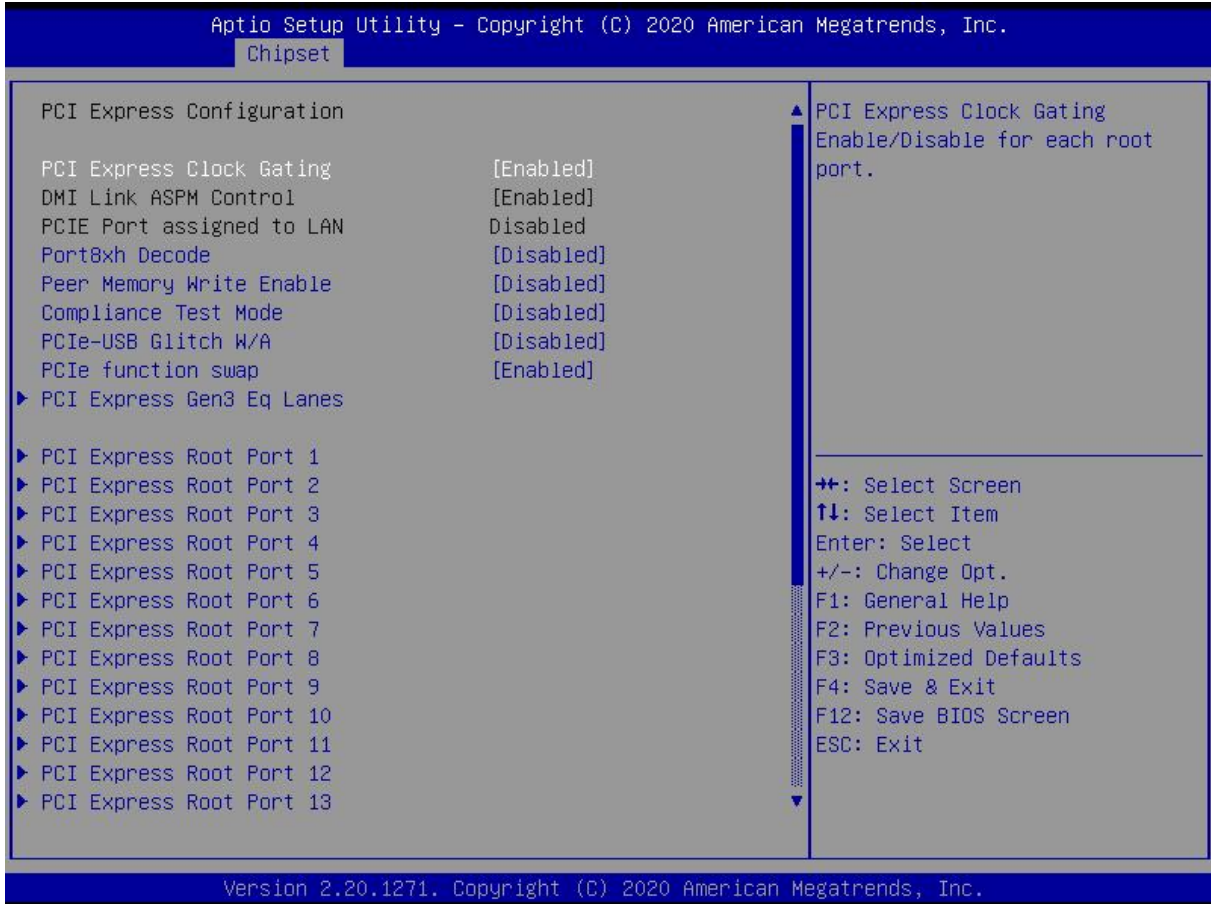


Figure 3.4- 1 9 TPC6000-XXX4 BIOS-PCI Express Configuration

This interface is used to configure LAN on carry board.

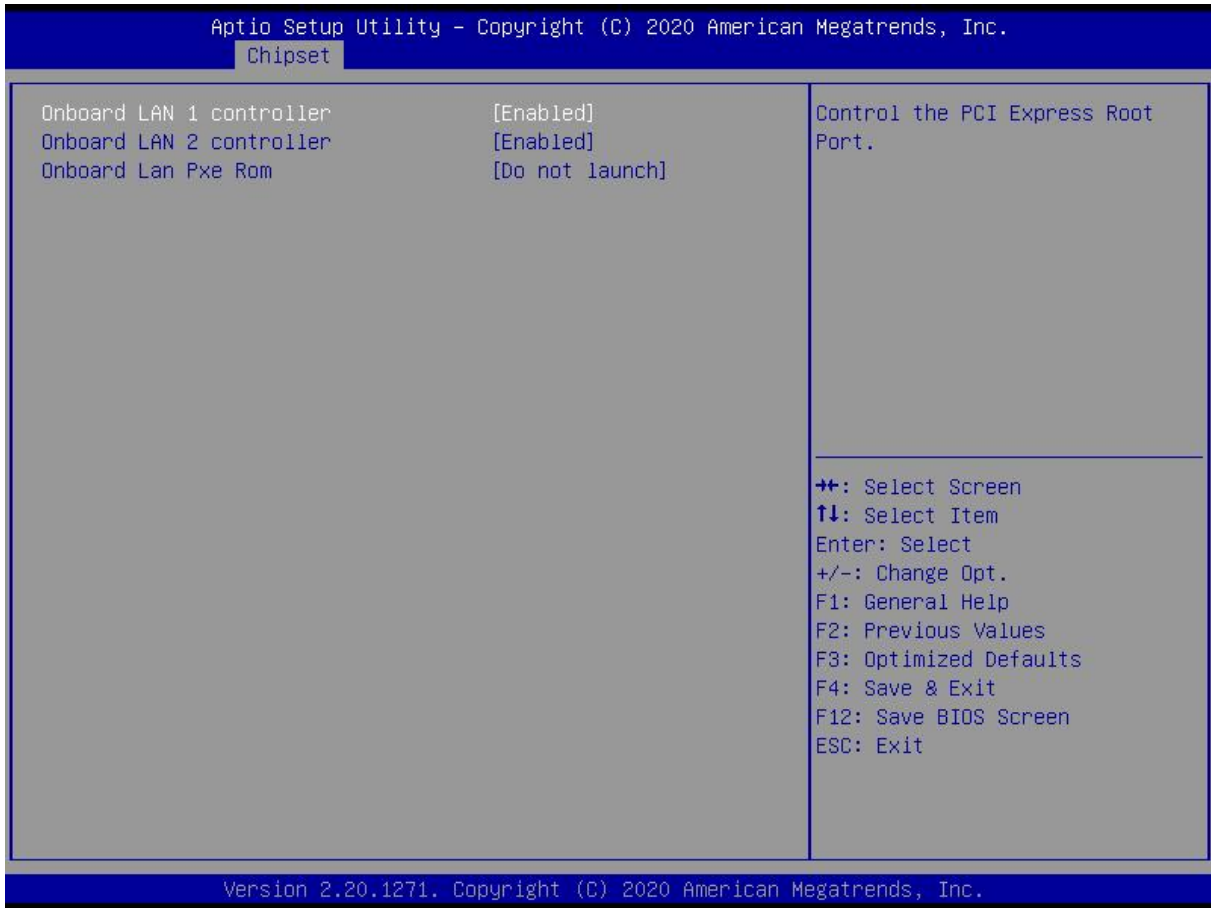


Figure 3.4- 2 0 TPC6000-XXX4 BIOS-LAN Configuration

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 configure carry board USB

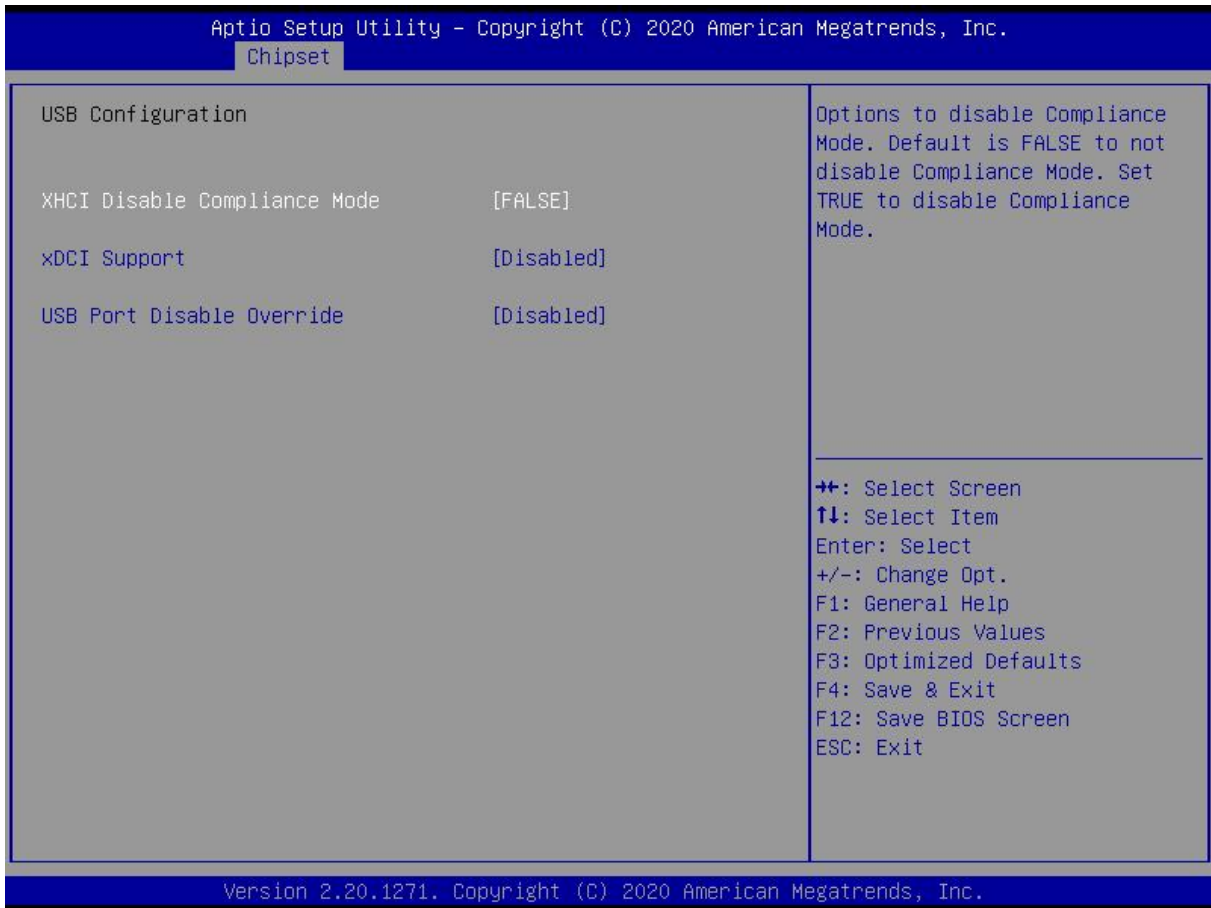


Figure 3.4- 2 1 TPC6000-XXX4 BIOS-USB Configuration

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

3.4.22 Security

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

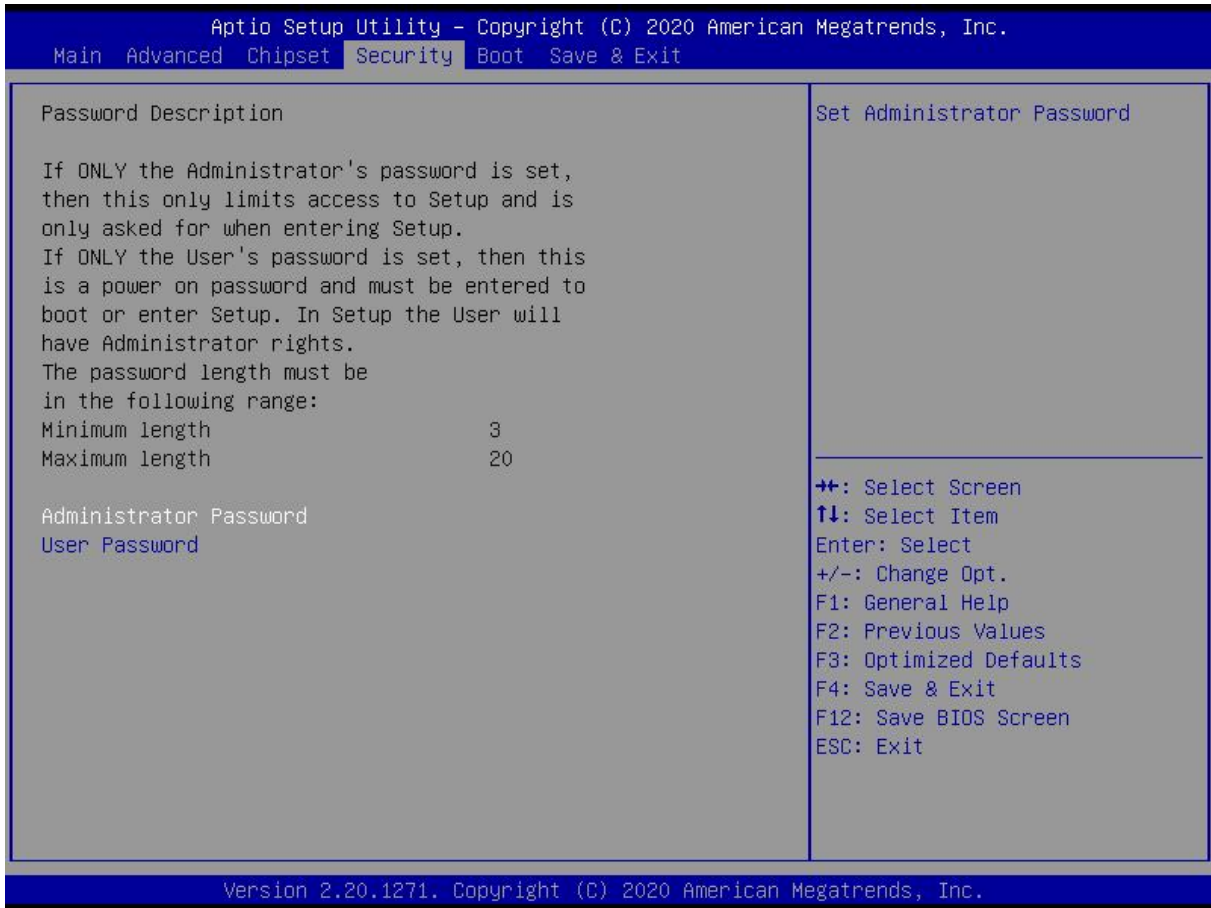


Figure 3.4- 2 2 TPC6000-XXX4 BIOS-Security

- 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.

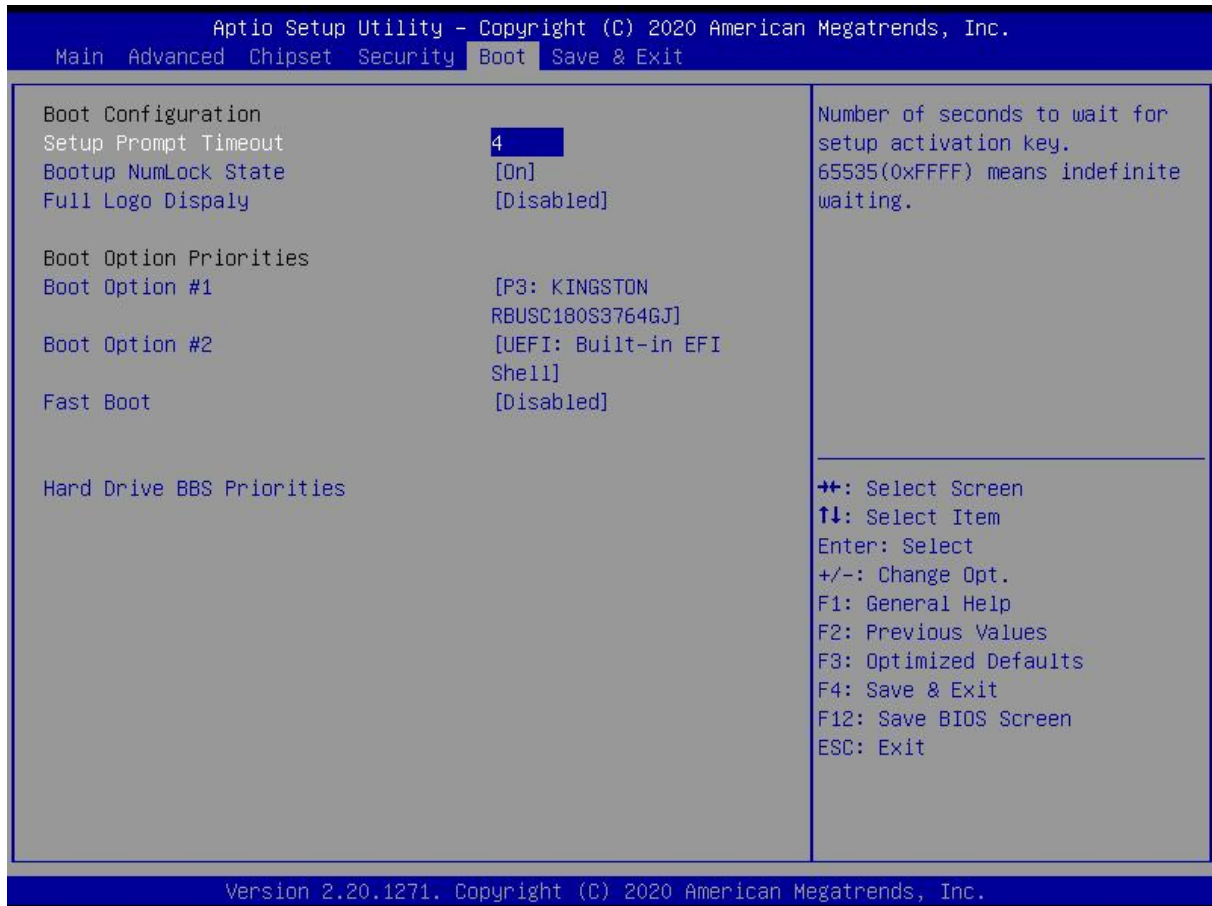


Figure 3.4- 2 3 TPC6000-XXX4 BIOS-Boot

■ **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.

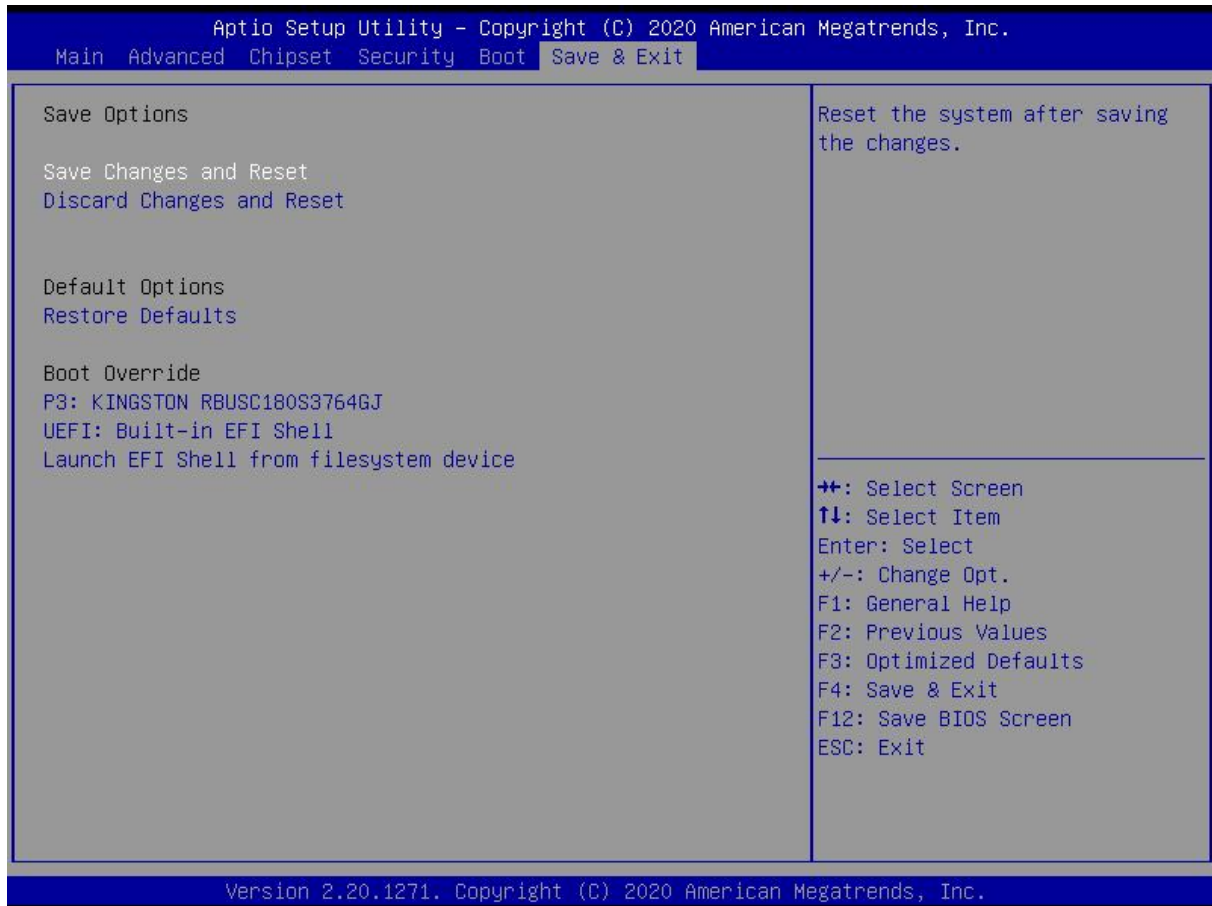


Figure 3.4- 2 4 TPC6000-XXX4 BIOS-Save&Exit

- 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

In the TPC6000-CXX4 provides mSATA and M.2 storage ports
 To add or replace a hard disk, follow the steps below.
 The maximum tightening torque for the retaining clips is 1 Nm.

- 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 miniPCle slot ⑥
- Step4 Install screws ①, ②, ③ and ④

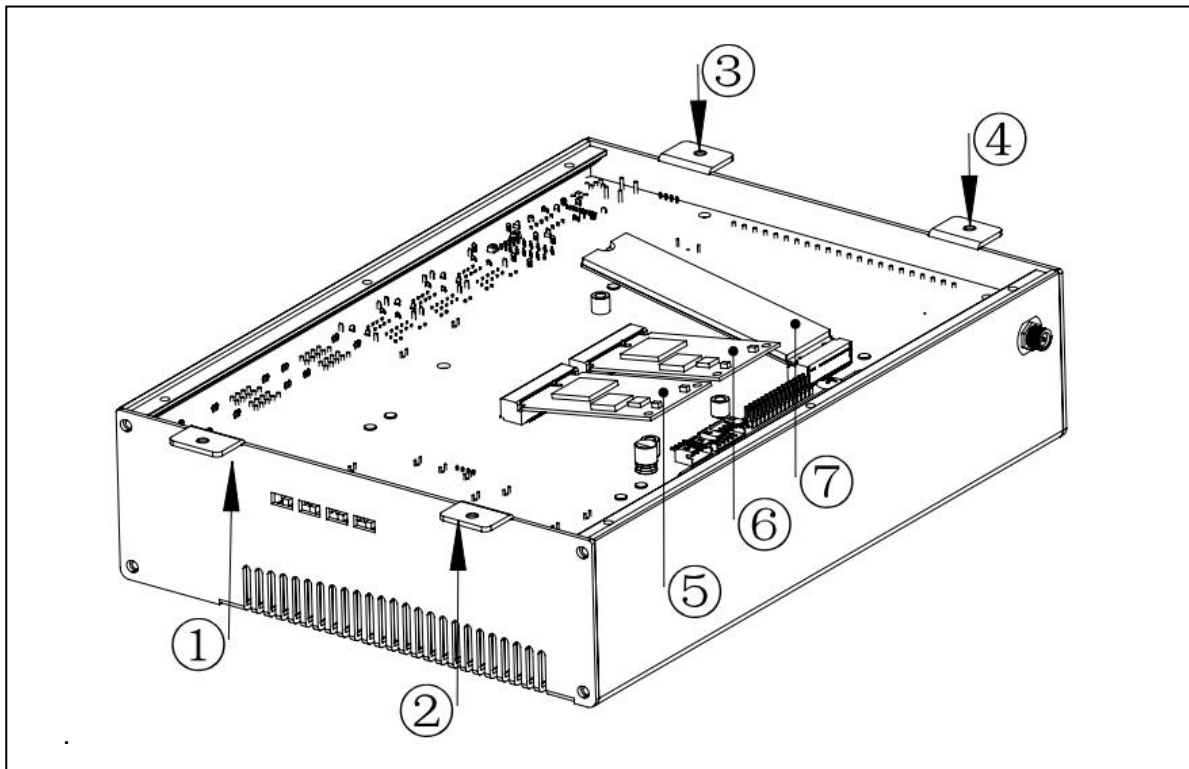


Figure 4.1- 1 TPC6000-XXX4 miniPCIE expansion card installation



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

4.1.2 miniPCIE expansion card installation

In the TPC6000-CXX4 provides miniPCIE expansion interfaces

To add or replace an expansion card, follow these steps.

The maximum tightening torque for the retaining clips is 1 Nm

- 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

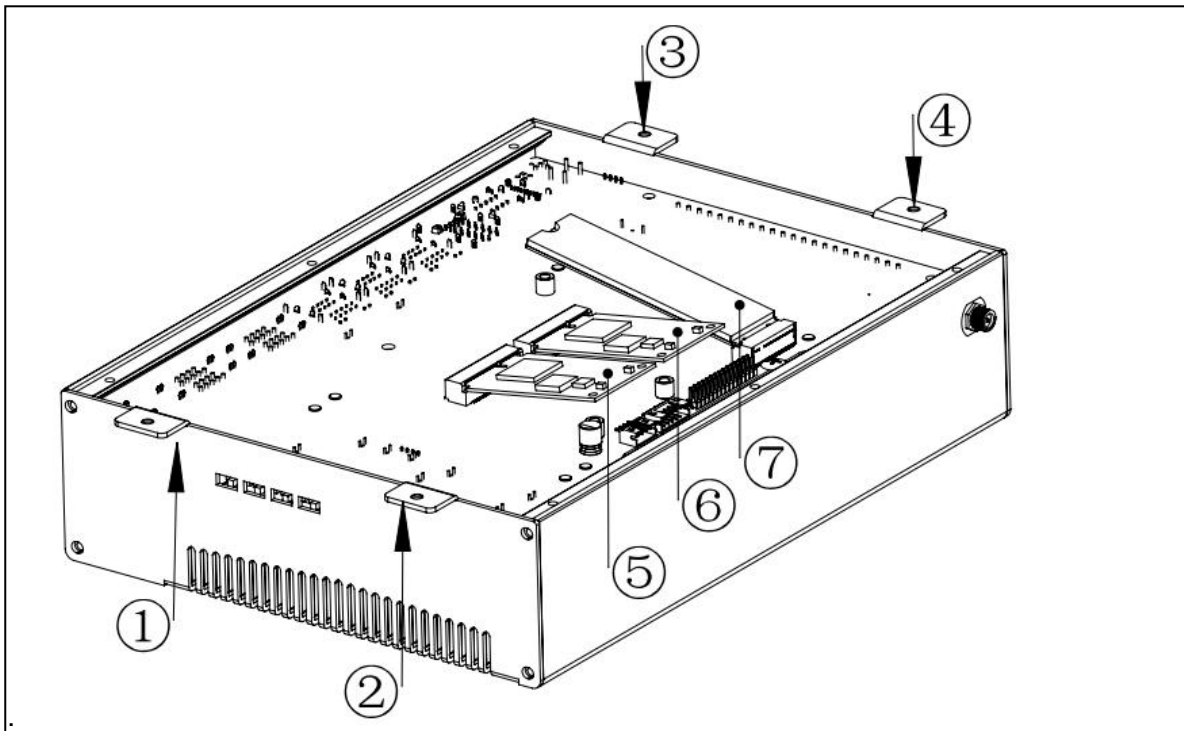


Figure 4.1- 1 TPC6000-XXX4 miniPCIE expansion card installation



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

4.1.3 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.

the screws can not be lost, need to be used Again.

The maximum tightening torque for the retaining clips is 5 Nm.

- 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.

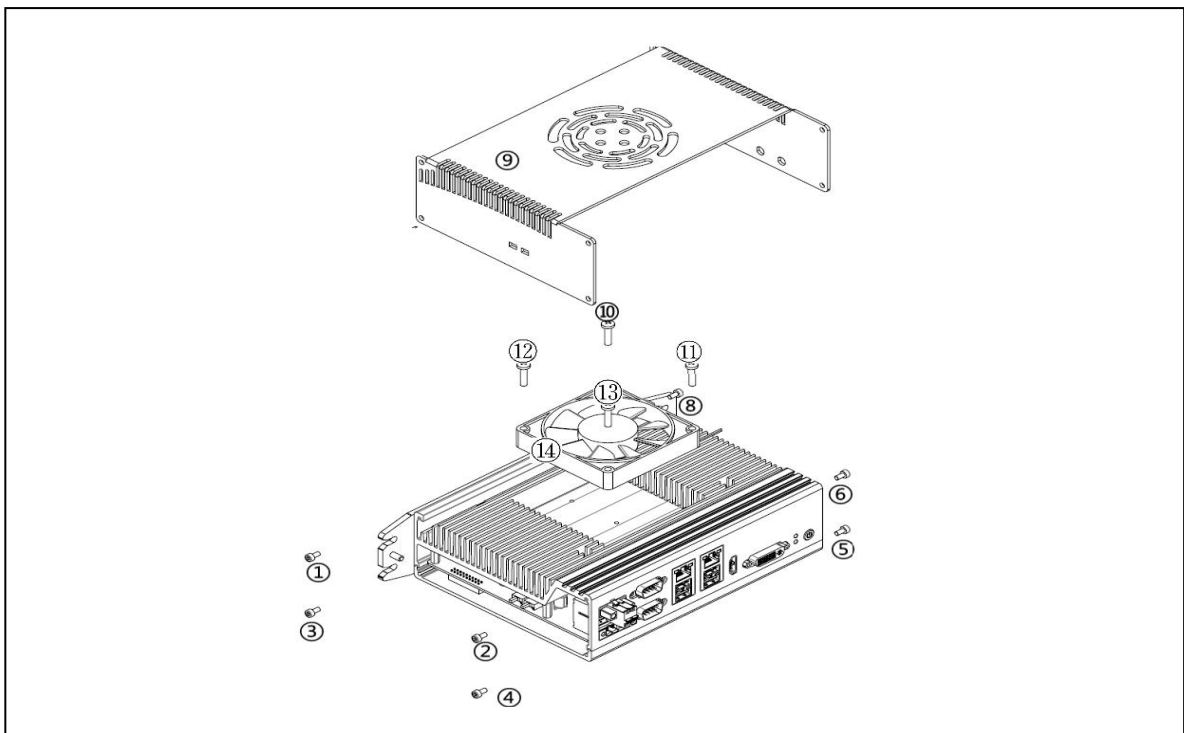


Figure 4.1- 2 TPC6000-CXX4 fan installation



:

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.

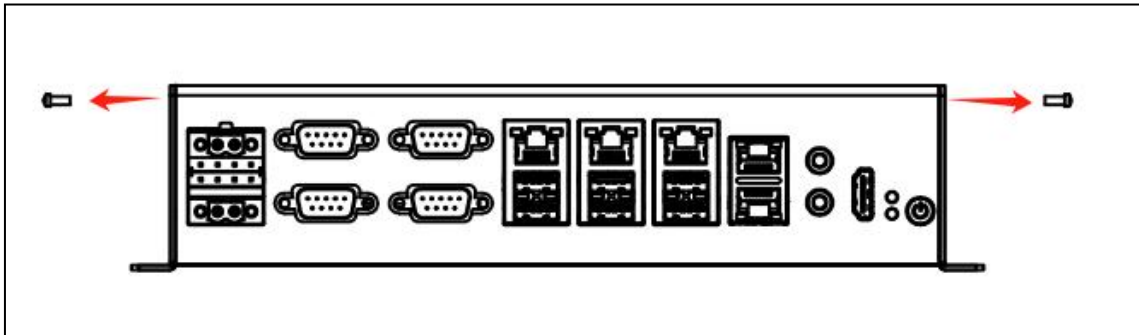
4.1.4 VESA installation

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.

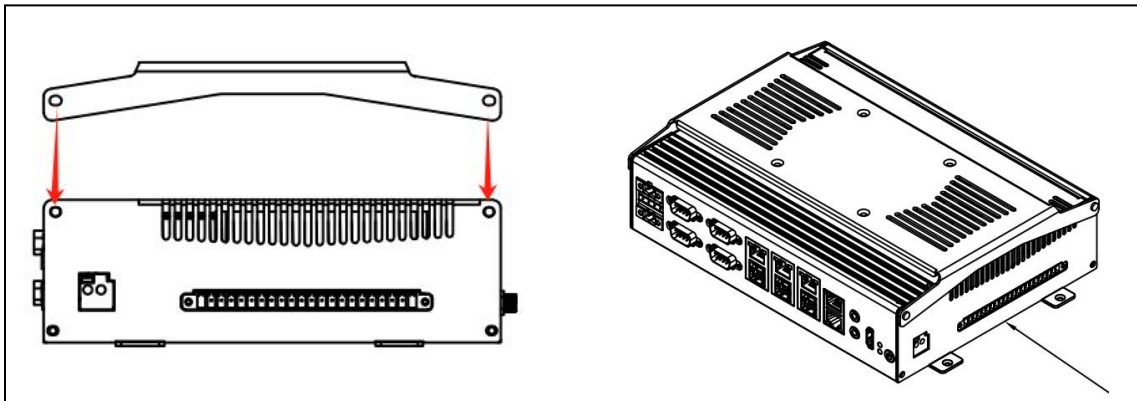
VESA brackets are optional and need to be purchased separately. Select a support based on the distance between mounting holes 75 * 75/100 * 100.

The maximum tightening torque for the retaining clips is 5 Nm.

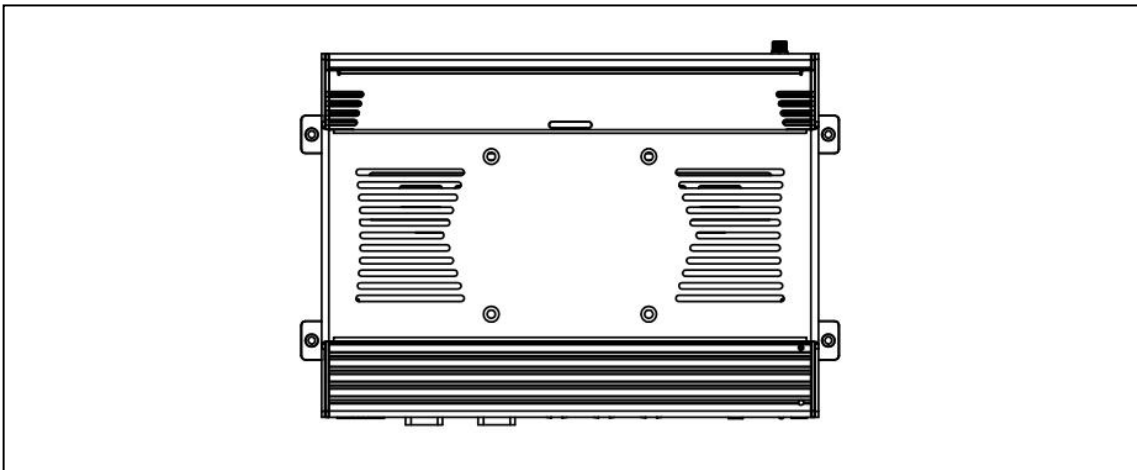
- First remove the 4 screws on the main module, the screws can not be lost, need to be used Again.



- The VESA bracket is placed in a fixed position and fixed with screws.



- The tightening torque should be max. 5 Nm to provide an optimal seal.

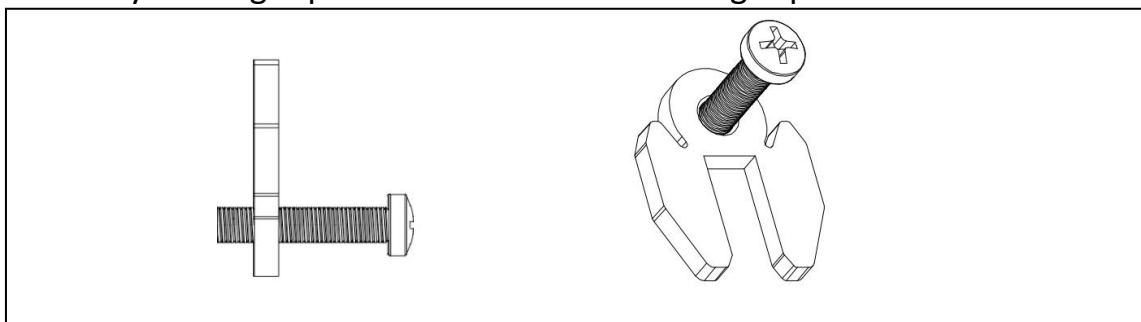


4.1.5 Embedded installation

TPC6000-Cxx4 series products support embedded installation.
The number of retaining clips depends on the panel.

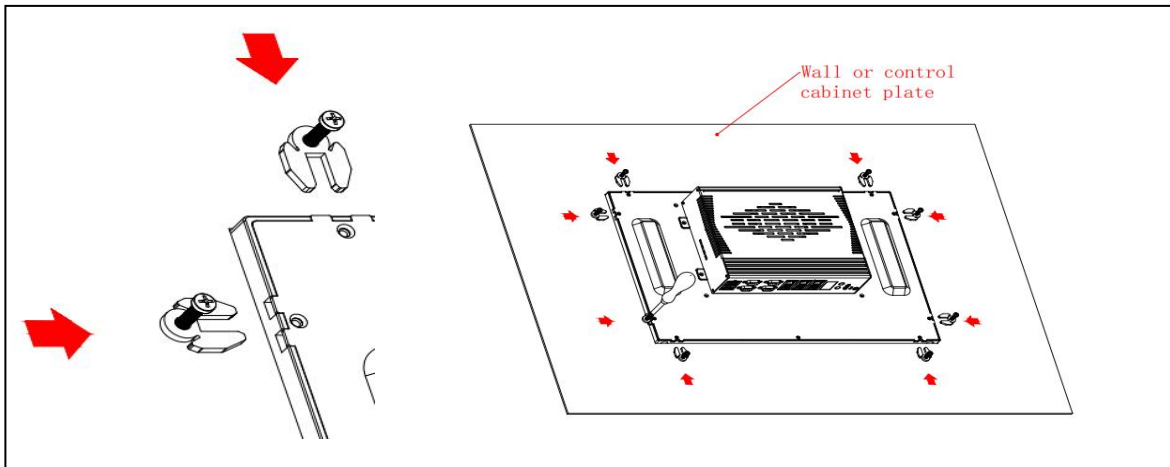
The thickness of the wall or cabinet plate must be between 1 mm and 5 mm.
The maximum tightening torque for the retaining clips is 1 Nm.
Devices must be installed on a flat, clean and burr-free surface; uneven areas can cause damage to the display when the screws are tightened or the intrusion of dust and water.

- Check whether the included mounting screws are screwed into the retaining clips. The mounting screws only need to be screwed in far enough that they no longer protrude above the retaining clip.

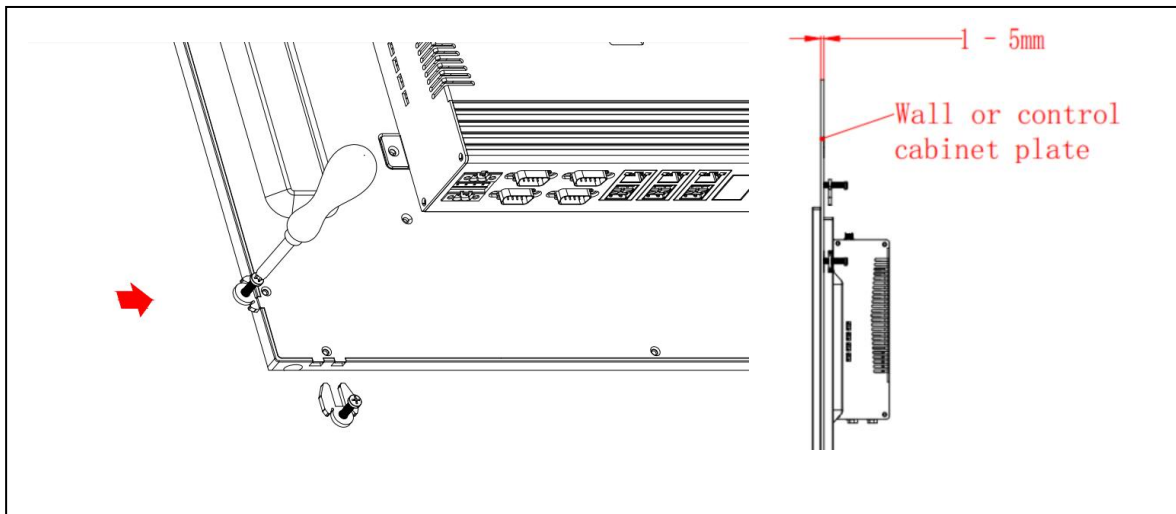


- Insert the device into the front side of the smooth, flat installation cutout. The dimensions for the cutout can be found in section
- Install the retaining clips on the device. This is done by inserting the retaining clips into the openings on the sides of the device (indicated by the

red circles). The number of retaining clips may vary depending on the panel. For the exact number of retaining clips




- The tightening torque should be max. 1 Nm to provide an optimal seal.



4.1.6 DC power Connector

In order to ensure a reliable power connection, the front panel of the device provides a power input interface with a 4-pin distance of 5.08mm. Dc input 12V-24V

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

	Pin No.	Define
	1	-
	2	+
	3	-
	4	+

NOTE:

The TPC6000-xxx4 series provides 2-channel power input, two channels of independent input, and cannot be used as a DC output interface.

+24 VDC power supply table:

+24 VDC voltage supply	Electrical characteristics	
	Nominal voltage	12-24V \pm 10%
	Nominal current	Minimum. 10 A
	Over Voltage protection	YES
	Over Current protection	YES
	Reverse polarity protection	YES

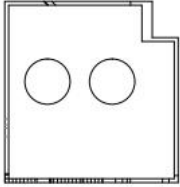


1. When powering on the PC, check whether the output voltage of the power supply is the same as that of the PC.
2. Pay attention to the positive and negative poles marked on the chassis. Do not reverse the connection; otherwise, hardware damage or electric shock may be caused.
3. Do not use the mains power (220V) to connect directly to the terminal.

4.1.7 Remote power button Connector

The TPC6000-XXX4 provides a remote switching interface, which can be switched on and off at a distance of up to 5M using a wire connection.

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

<p>SW</p> 	Pin No.	Define
	1	SW-
	2	SW+

Wire requirement

The wire diameter is required to be 0.1-0.5mm²(AWG27-AWG20), and the strip length is 8-9mm

NOTE:

After connecting and extending with a wire, it can control the conduction and disconnection of the two poles to achieve the function of power on and shutting down.

No additional power supply is required


Do not connect the NC contact, The closed state cannot be maintained continuously, The PC will switch the machine on and off repeatedly, or some other unknown problem

4.1.8 IO Connector

TPC6000-XXX4 Provides 8DI+8DO. The following table describes the cable connection standards

Wire requirement

The wire diameter is required to be 0.2-1.5mm²(AWG28-AWG14), and the strip length is 8-9mm

	electrical characteristics	IEC
	Rated voltage	320V
	rated current	12A
	surge voltage	2.5KV
	Pitch (mm)	3.81mm
	torsion (N-m)	0.2
	screws	M2
	strip length	8-9mm
	wire diameter (AWG/mm ²)	0.2-1.5

4.1.9 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	<p>Celeron : G3930</p> <p>Pentium : G4400、G4560、G4600</p> <p>Support 6th/7th/8th/9th generation Intel® Core™ i7/i5/i3 LGA 1151 socket type processors</p> <p>Intel® Core™ i3-6100, Dual Core, 3.7GHz, 3MB Cache</p> <p>Intel® Core™ i3-7100, Dual Core, 3.9GHz, 3MB Cache</p> <p>Intel® Core™ i3-8100, Quad Core, 3.6GHz, 6MB Cache</p> <p>Intel® Core™ i5-6400, Quad Core, 2.7GHz, 6MB Cache</p> <p>Intel® Core™ i5-6500, Quad Core, 3.2GHz, 6MB Cache</p> <p>Intel® Core™ i5-6500T, Quad Core, 2.5GHz, 6MB Cache</p> <p>Intel® Core™ i5-8400, Six Cores, 2.8GHz, 9MB Cache</p> <p>Intel® Core™ i7-6700T, Quad Core, 2.8GHz, 8MB Cache</p> <p>Intel® Core™ i7-8700, Six Cores, 3.2GHz, 12MB Cache</p> <p>Please contact sales to check other request.</p>
	LGA1200	<p>Support 10th/11th generation Intel® Core™i3/i5 LGA 1200 socket type processors</p> <p>Intel® Core™i5-11400T,Six Cores,1.30 GHz,12 MB Cache;</p> <p>Intel® Core™i5-11500T,Six Cores,1.50 GHz,12 MB Cache;</p> <p>Intel® Core™i5-10400T,Six Cores,2.00 GHz,12 MB Cache;</p> <p>Intel® Core™i5-10500T,Six Cores,2.30 GHz,12 MB Cache;</p> <p>Intel® Core™i5-11400,Six Cores,2.60 GHz,12 MB Cache;</p> <p>Intel® Core™i5-11500,Six Cores,2.70 GHz,12 MB Cache;</p> <p>Intel® Core™i5-10400,Six Cores,2.90 GHz,12 MB Cache;</p> <p>Intel® Core™i5-10500,Six Cores,3.10 GHz,12 MB Cache;</p> <p>Please contact sales to check other request.</p>
Memory	DDR4 2400	<p>1 x 4G,1 x 8G,1 x 16G</p> <p>2 x 4G,2 x 8G,2 x 16G</p>
SSD	mSATA	128GB,256GB,512GB,1TB
SSD	M.2	128GB,256GB,512GB,1TB
Expansion 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




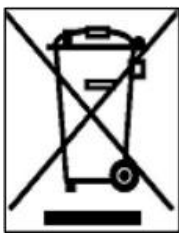
: Electrostatic discharge (ESD) may cause severe damage to electronic components of product, especially during dry weather. Therefore, please strictly observe the anti-static precautions when opens the product to handle any electrical components inside.

- 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 Maintenance and Cleaning Precaution

Please follow the guidelines as below to maintain and clean the machine.

8.1.4.1 Maintenance 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 swabs 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 www.nodka.com to download the documentation and related driver software, or directly contact the local distributor to provide support and service.