**SP7020H Product Hardware Description**

Content

[Part 1 Safety Precautions 2](#_Toc24485)

[Power Supply Requirements 2](#_Toc32154)

[Routine Maintenance 2](#_Toc7686)

[Operating Environment 2](#_Toc22808)

[Part 2 Hardware Specifications 3](#_Toc6671)

[Product Figure 3](#_Toc11153)

[Technical Specifications 4](#_Toc14603)

[Interface Details 5](#_Toc19731)

[Part 3 Product Appearance Dimension Drawing 9](#_Toc5190)

# Part 1 Safety Precautions

**Security Statement**

1. This chapter describes the safety precautions to properly apply this product. Please read the instruction manual and properly understand the relevant information of safety precautions before using this product. Failure to comply with such safety precautions may result in injury to personnel or damage to equipment.
2. This product should be used in an environment that meets the requirements of the design specifications, otherwise it may cause malfunction. Functional abnormalities or component damage caused by failure to comply with relevant regulations are not within the scope of product quality assurance.
3. Our company will not assume any legal responsibilities for personal safety accidents and property losses caused by failure to comply with the content of this manual, or illegal operation of products.

**Safety Signs**

In order to ensure work safety, please comply with the safety signs posted on the equipment. Do not damage or peel off the safety signs.

## Power Supply Requirements

1. DC 12V
2. Ensure the power supply voltage matches the equipment requirements before powring on the equipment.

## Routine Maintenance

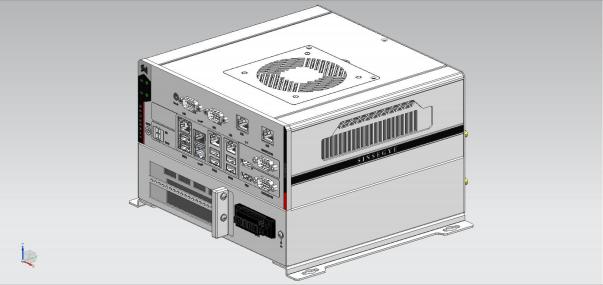
1. Do not open or disassemble the equipment randomly. The equipment should only be opened by professional maintenance personnel.
2. Before cleaning the equipment with a damp rag, unplug the power cord from the outlet. Do not use liquids or decontamination sprayers to clean the equipment.
3. In case not using the equipment for a long time, please turn off the computer normally and disconnect the power cord to avoid the equipment being damaged by the instantaneous voltage.
4. Prevent any liquid from flowing or spilling into the equipment to avoid short circuits or fires.

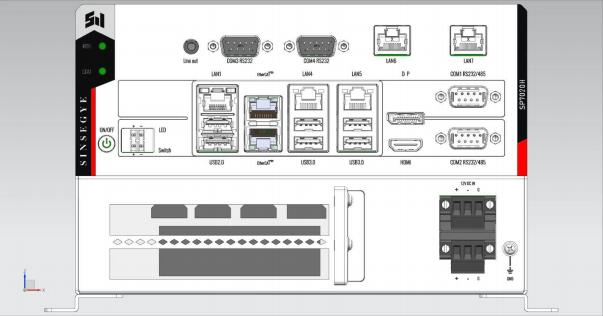
## Operating Environment

1. Please ensure that the equipment is placed on a reliable flat surface before installation, accidental dropping or overturning may cause damage to the equipment.
2. The openings in the enclosure of the equipment are for air convection and prevent the equipment from overheating, and forbid to cover or seal these openings.
3. Please do not use the equipment in a humid environment.

# Part 2 Hardware Specifications

## Product Figure

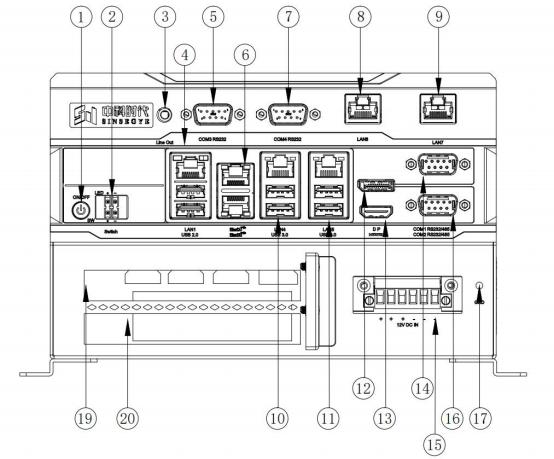


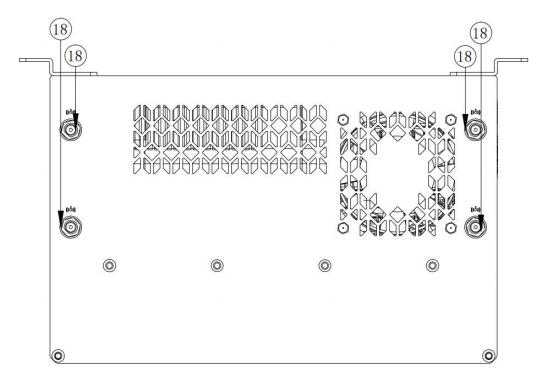


## Technical Specifications

|  |  |  |
| --- | --- | --- |
| Product Figure |  |  |
| Product name | SP7020H | |
| Operating system | Linux+Windows10 | |
| Color | Light silver gray | |
| Processor | Intel Core I5-12400 ，2.5GHz ，up to 4.4 Ghz ，TDP 65 W ，6 cores, 12 threads | |
| Memory | DDR4 3200MHz 16GB | |
| Storage | 128GB SSD + 512G SSD | |
| Network port | 7 (1\*i219+6\*i210) | |
| Serial port | 4\* COM(2\*RS485/RS232+2\*RS232) | |
| USB port | 4\*USB 3.0+2\*USB 2.0 | |
| DIO | Not support | |
| Display interface | HDMI+DP | |
| Power supply | DC 12V With switching power supply | |
| Switch | Illuminated push button switch | |
| SW terminals | 4PIN Terminal (Switch + Light) | |
| Line Out | 1\*line out | |
| Graphics card expansion slots | 1\*PCIEX16+1\*PCIEX4 | |
| Installation | Embedded | |
| Exterior dimensions | 208 (W) \* 202 (D) \* 133 (H) mm | |
| Storage temperature | -30~ 70℃ | |
| Operating temperature | -10~ 50℃ | |

## Interface Details





|  |  |  |  |
| --- | --- | --- | --- |
| Serial number | Interface Description | Serial number | Interface Description |
| ① | ON/OFF button switch  (The equipment is not turned on: Off The equipment is turned on: Blue) | ② | SWITCH switch (from left to right, top to bottom, defined as: LED+, LED+, SW+, SW-) |
| ③ | Line out&Mic in | ④ | LAN1(i219)+USB2.0 \*2 |
| ⑤ | COM3 RS232 | ⑥ | EtherCAT\*2 |
| ⑦ | COM4 RS232 | ⑧ | LAN6(i210) |
| ⑨ | LAN7(i210) | ⑩ | LAN4(i210)+USB3.0 \*2 |
| ⑪ | LAN5(i210)+USB3.0 \*2 | ⑫ | DP |
| ⑬ | HDMI | ⑭ | COM1 RS232/485 |
| ⑮ | 12V DC IN | ⑯ | COM2 RS232/485 |
| ⑰ | GND | ⑱ | WIFI |
| ⑲ | PCIEX16(Extended Graphics) | ⑳ | PCIEX4(Extended network card) |

**Default allocation of network port**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | LAN1 | EtherCAT | EtherCAT | LAN4 |
| Linux | Initial IP: 192.168.1.200  Network Name: enp1s0 | EtherCAT master station  Network name: enp1s0 | EtherCAT master station  Network name: enp8s0 | - |
| Windows | - | - | - | Win10 |
|  | LAN5 | LAN6 | LAN7 |  |
| Linux | - | - | - |  |
| Windows | Win10 | Win10 | Win10 |  |

**Interface Definition and Description**

1. **ON/OFF Power Button**

|  |  |
| --- | --- |
| Power-on status | Indicator |
| The equipment is not turned on | OFF |
| The equipment is turned on | Blue |

1. **SWITCH**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Graphic | Pin | Definition | Pin | Definition |
|  | 1 | SW+ | 2 | SW- |
| 3 | LED+ | 4 | LED- |

1. **LAN1/LAN2/LAN3/LAN4/LAN5/LAN6/LAN7**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Graphic | Pin | Definition | | Pin | Definition | |
|  | 1 | MDI1\_0+ | | 5 | MDI1\_2+ | |
| 2 | MDI1\_0- | | 6 | MDI1\_2- | |
| 3 | MDI1\_1+ | | 7 | MDI1\_3+ | |
| 4 | MDI1\_1- | | 8 | MDI1\_3- | |
| A | Active LED | ACT: Twinkling Yellow | B | Speed LED | 1000M: Turn Yellow |
| Only LINK: Lights Off | 100M: Turn Green |
| Stop: Lights Off | 10M: Lights Off |

1. **COM3/COM4 RS232**

|  |  |  |
| --- | --- | --- |
| Graphic | Pin | RS232 (Default) |
| Definition |
| COM | 1 | **/** |
| 2 | RXD |
| 3 | TXD |
| 4 | / |
| 5 | GND |
| 6 | / |
| 7 | / |
| 8 | / |
| 9 | / |

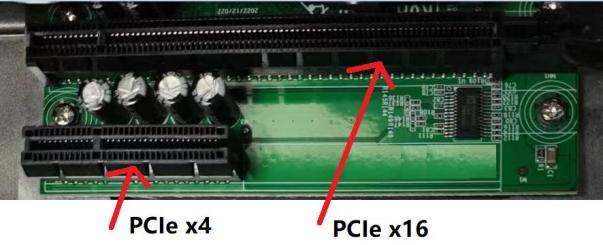
1. **COM1/COM2 RS232/485**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Graphic | Pin | Definition | Pin | Definition |
|  | 1 | COM1\_DCD#/ RS485- | 6 | COM1\_DSR# |
| 2 | COM1\_RXD/ RS485+ | 7 | COM1\_RTS# |
| 3 | COM1\_TXD | 8 | COM1\_CTS# |
| 4 | COM1\_DTR# | 9 | N/C |
| 5 | GND |  |  |

1. **PCIE extended slot**

SP7020H has two standard PCIE slots, one PCIE x16 and the other PCIE x 4, supporting PCIE 3.0.





SP7020H provides independent power supply to support extended cards that require external power supply, such as graphics card RTX3060 .

**Special note:** When using an extended card that requires external power supply, because the power supply to the extended card is directly from the power supply interface, does not pass through the motherboard circuit, and out of control of the motherboard’s power-on sequence, and the extended card will not be powered off after the equipment is turned off. So when using the extended card with independent power supply, the external power supply should be cut off to shut down the equipment.

**Part 3 Product Appearance Dimension Drawing**

Appearance size: 208 (W)\*173 (H)\*133 (D) MM (not including bracket)

Opening size: 222\* 160MM M4

