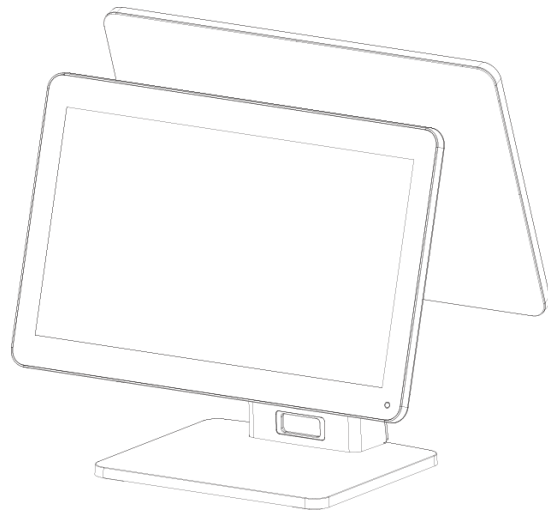


# HK316

## User's Manual



Document version 1.3

## Safety Notices Before Installation or Use

- ☆ It is required grounded well and the supply voltage shall be stable, and you must confirm that the voltage of the outlet provides shall be in line with the voltage marked on the label of the unit.
- ☆ Be sure not to sprinkle any liquid or fall any object into the unit.
- ☆ Be sure not to keep heavy, strenuous movement, shake & heavy strike away from the POS.
- ☆ Do not switch on or off the host frequently, because it is easy to result in damage on the machine.
- ☆ Be sure not to unplug or plug in any live part or external device when they are in energized state, and the connecting cables of the POS between parts shall be connected securely.
- ☆ Be sure neither to lengthen cable nor to replace parts at your will, if you have any demand, please contact with the reseller.
- ☆ The unit shall be used under dry, ventilated & clean environment away from sunlight. Avoid to making the air vent of the host machine blocked or covered
- ☆ If any liquid sprinkles or any sundry falls into the unit, please shut it down immediately & switch off power supply, take batteries down, dry the liquid or remove the sundry. If you take the batteries down, you shall reset CMOS.
- ☆ In case of safety fault, such as peculiar smell, abnormal sound, leakage and other faults, you must switch off the power supply at once and then contact with reseller.
- ☆ When inserting USB flash or disk, you shall kill virus to prevent the host machine from virus.
- ☆ The RJ11 port at the back of the host is connected with the cash drawer, as it is not a communication port, users shall not use the port for dial-up networking.
- ☆ The product is a Level A one, it may cause radio interference in living environment. In such case, users may need to take practical & feasible measures against the interference.
- ☆ When the POS is not in use, you shall switch off power supply.

### Warning:

1. Absolute Ratings of Environment:  
Operating Temperature: 0~40°C  
Operating Humidity: 10%~85%RH  
Storage Temperature: -10~50°C  
Storage Humidity: 10%~90%RH
2. Main plug on the power supply was used as disconnected device. The socket-outlet shall be installed near the equipment and shall be easily accessible
3. If any damage to the power supply or the equipment, please contact local service person for help.
4. Static may damage to the integrated circuit in the host machine.
5. If a replaced battery is not right, this may cause explosion or serious damage. Must replace the same type of batteries or similar ones recommended by the manufacturer
6. Used only with attached AC/DC power supply.

The manufacturer has the right to modify the contents of the manual without prior notice!

Product standard NO : Q/0202 RSR527

Product standard Name: POS device

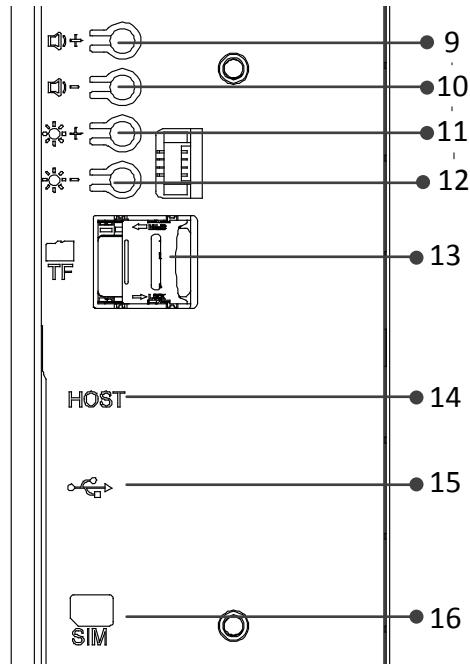
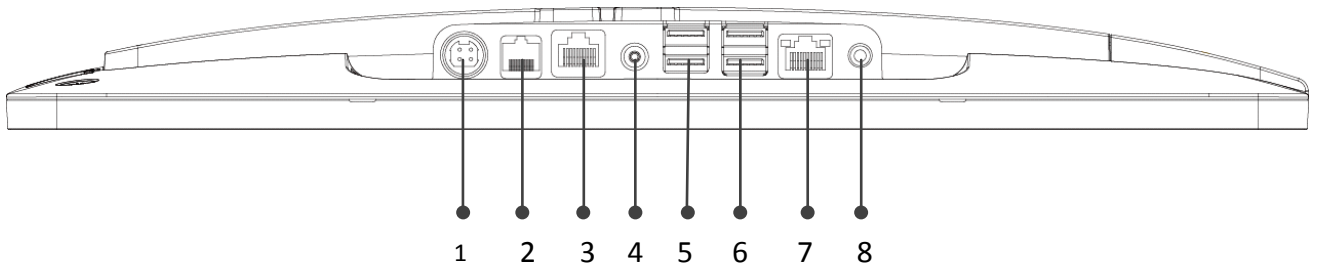
## 1. Applied range

The HK316 terminal adopt open operating system, flexible component structure and standard peripherals. The products are suitable for the commercial enterprises, such as restaurants, supermarkets, and convenience stores to Internet –connected use or stand-alone use. The main components are standard parts, so the quality of the products is reliable, the system is easy to upgrade and the components are conveniently and easily maintained. Reasonable price ratio makes it more competitive than similar products.

### Specification :

Item		Description
Model		HK316
System	CPU	Cortex-A17 Quad core CPU, clock speed 1.8GHz
	Memory	2G
Storage	Flash Memory	eMMC 16GB Nand Flash
LCD Touch Panel	LCD Size	15.6 inch
	Resolution	1920×1080
	Touch Screen	capacitive true flat touch
I/O Ports	Serial Ports	1* RJ48 COM(COM1);
	USB	5* USB 2.0(4* on IO panel, 1*under side cover )
	Micro USB	1* under side cover(for debug only)
	TF card	1* under side cover
	LAN	1 * RJ-45 (100M/1000Mbps Gigabit LAN)
	Audio	1 * Line-out
	Power out	24V for Printer
	Cash Drawer	1 * RJ-11 for cash drawer
Power	Power Adapter	(DC 24V, 3.75A)/ (DC 24V, 5A)
Peripheral	Printer	Separate 80MM thermal printer
	MSR card reader	3 Tracks
	RFID card reader	RFID (Supports MIFARE one and MIFARE CPU card)
Operating system		Android 7.1

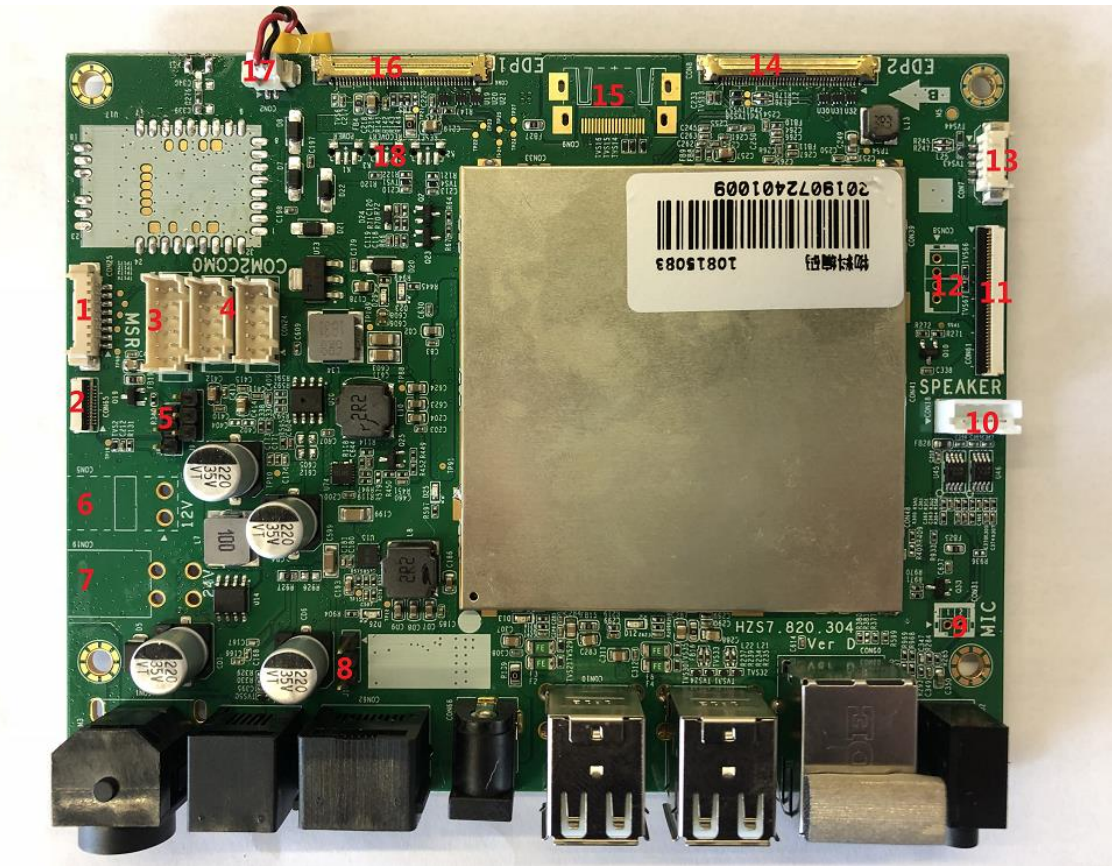
## 2. I/O port view



1、 24V power input	2、 Cash drawer interface
3、 Serial port	4、 printer 24V power
5、 USB*2	6、 USB*2
7、 RJ45	8、 Audio
9、 Volume+ button	10、 Volume - button
11、 Brightness+ button	12、 Brightness - button
13、 TF card slot	14、 Micro USB
15、 USB	

### 3. Mainboard

Mainboard front layout:

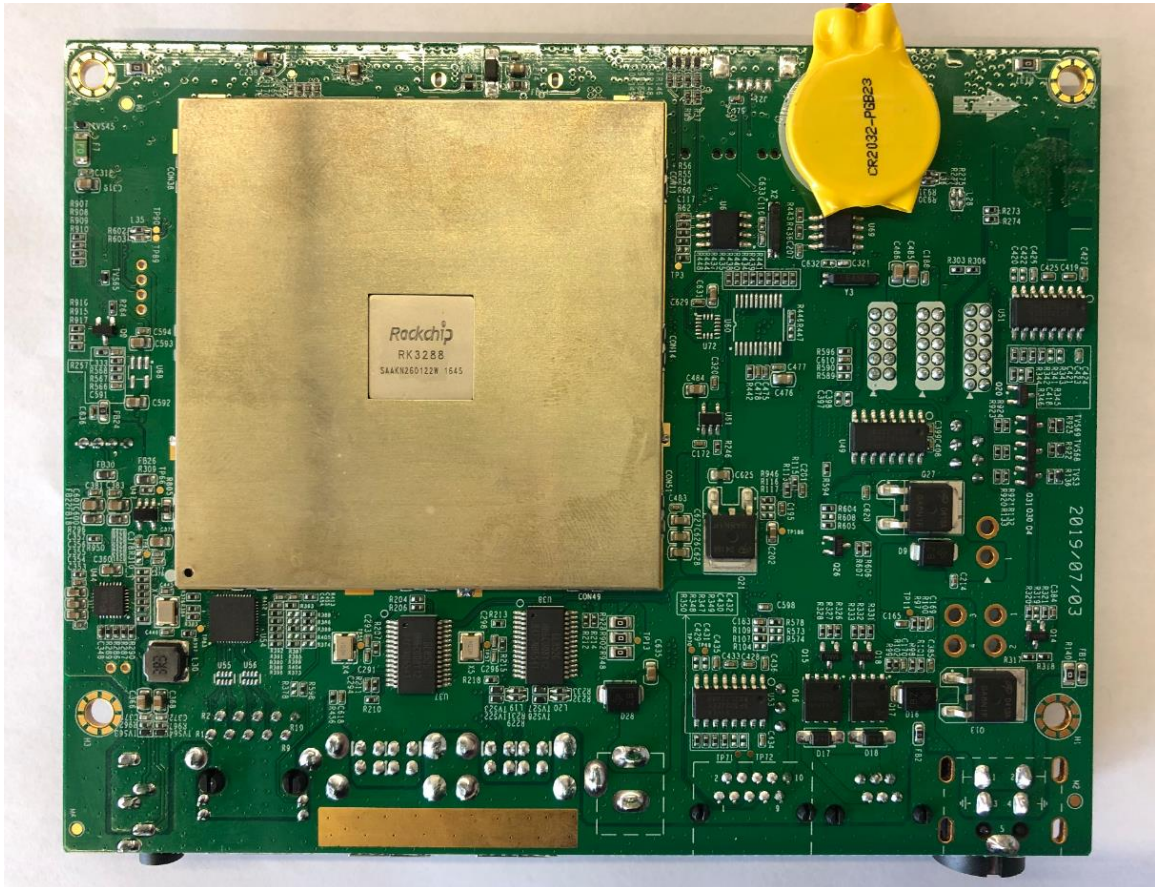


Ports and definition

Ports	Interface	Item
1.CON25	Serial port wafer1.25 1*8pin x1set	MSR and RFID
2.CON65	Serial port 12PIN FPC socket	Power On/Off
3.CON4	Button board pin wafer2.0 2*6 pin x1set	Power On/Off ( reserved )
4.CON23 CON24	Serial port COM0 pin wafer2.0 2*5 pin x1set Serial port COM2 pin wafer2.0 2*5 pin x1set	COM0 COM2
5.J8 J9	1*3 wafer2.0 jumpers x2set	
6.CON5		12V power input
7.CON19		24V power output
8.J10	1*3 wafer2.0 jumpers x1set	
9.CON31	MIC pin wafer2.0 1*2 pin x1set	MIC
10.CON18	Speaker pin wafer2.0 1*4 pin x1set	SPEAKER
11.CON61	Serial port 40PIN FPC socket	Expansion board
12.CON58	Speaker pin wafer2.0 1*4 pin x1set	Reserved SPEAKR
13.CON7	Serial port wafer1.25 1*5pin x1set	Reserved USB
14.CON8	Edp zero lift drag 40 pin x1set	Edp2 secondary screen signal
15.CON9		Reserved HDMI
16.CON6	Edp zero lift drag 40 pin x1set	Edp1main screen signal
17.CON2	RTC battery wafer1.25 1*2pin x1set	RTC
18.K1 K2 K3	3pin keyx3set	POWER RECOVERY RESET



## Mainboard back layout



## Edp1 interface definition

Pin No.	Function	Pin No.	Function
1	NC	21	GND
2	GND	22	Enable
3	Lane1_N	23	PWM
4	Lane1_P	24	NC
5	GND	25	NC
6	Lane0_N	26	PWR
7	Lane0_N	27	PWR
8	GND	28	PWR
9	AUX_CH_P	29	PWR
10	AUX_CH_N	30	NC
11	GND	31	GND
12	VCC	32	GND
13	VCC	33	NC
14	NC	34	NC
15	GND	35	GND
16	GND	36	INT
17	HPD	37	RST
18	GND	38	SCL
19	GND	39	SDA
20	GND	40	VCC

EDP2 interface definition

Pin No.	Function	Pin No.	Function
1	NC	21	GND
2	GND	22	Enable
3	Lane1_N	23	PWM
4	Lane1_P	24	NC
5	GND	25	NC
6	Lane0_N	26	PWR
7	Lane0_N	27	PWR
8	GND	28	PWR
9	AUX_CH_P	29	PWR
10	AUX_CH_N	30	NC
11	GND	31	GND
12	VCC	32	GND
13	VCC	33	NC
14	NC	34	NC
15	GND	35	GND
16	GND	36	INT
17	HPD	37	RST
18	GND	38	SCL
19	GND	39	SDA
20	GND	40	VCC

Audio interface definition

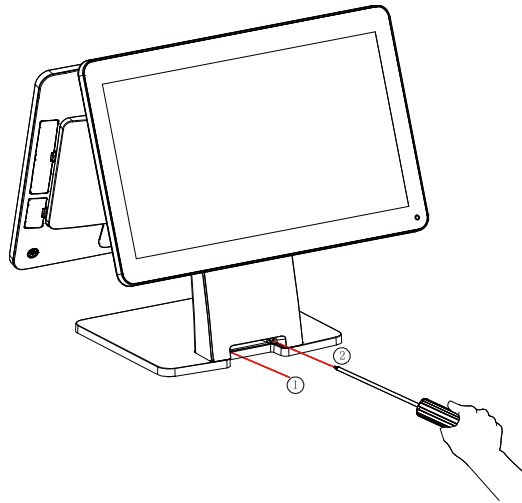
Audio	Description								
Audio Code	ES8388								
Rear IO Type	HP Connector								
Onboard audio pin	PIN defined <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>1</td><td>SPK_LP</td><td>2</td><td>SPK_LN</td></tr> <tr> <td>3</td><td>SPK_RP</td><td>4</td><td>SPK_RN</td></tr> </table> <span style="margin-left: 20px;">1 ■ 2 ● 3 ● 4 ●</span>	1	SPK_LP	2	SPK_LN	3	SPK_RP	4	SPK_RN
1	SPK_LP	2	SPK_LN						
3	SPK_RP	4	SPK_RN						
PIN Type	1*4Pin 2.0mm wafer box								

Jumper definition

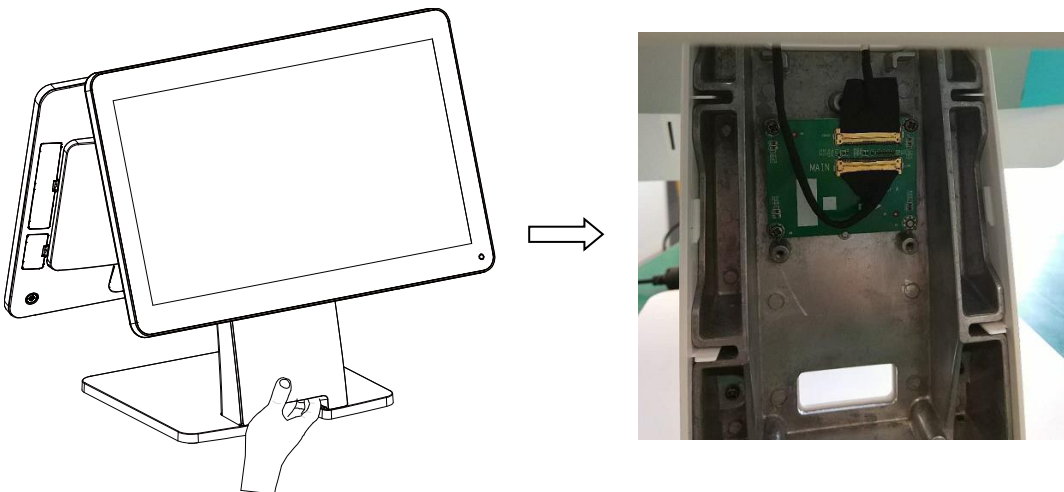
Jumper	Pin	Function	Setting	
J8 J9	3-pin	COM0 COM2 Power Select	1-2 5V 2-3 12V	1 ■ 2 ● 3 ●
J10	3-pin	RJ48 POWER Select	1-2 5V 2-3 12V	1 ■ 2 ● 3 ●

## 4. Device Assembly and disassembly

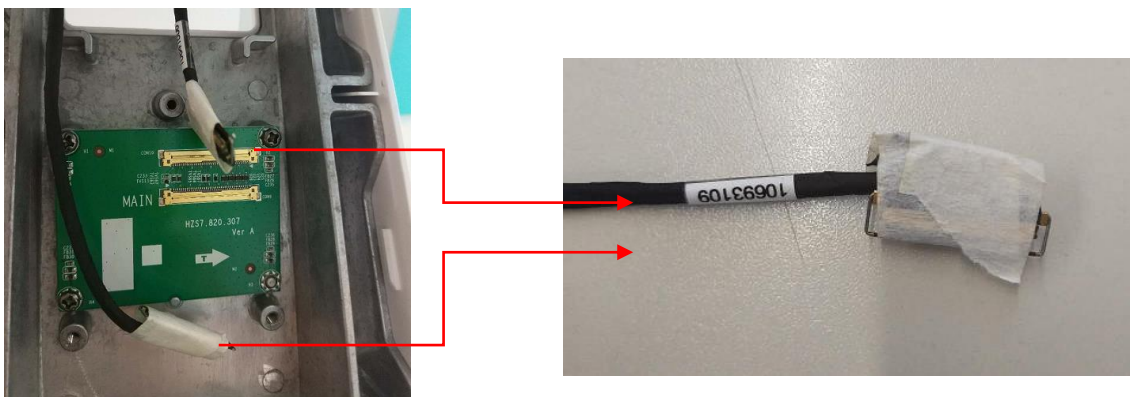
1). Unscrew the two screw shown to remove the back shell of the base.



2).After removing the screw, pull at the back shell of the base according to the picture shows, and remove the back shell of the base.



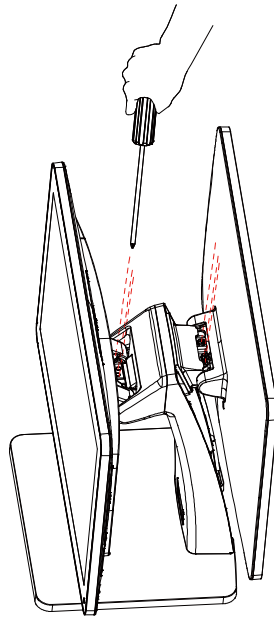
3).Remove the two connectors shown in the picture and protect them with the tape according to the picture shows (to prevent the connector from being pulled out in the process of dismantling and threading); for device with OLED customer display, can directly pull out the OLED customer display line.



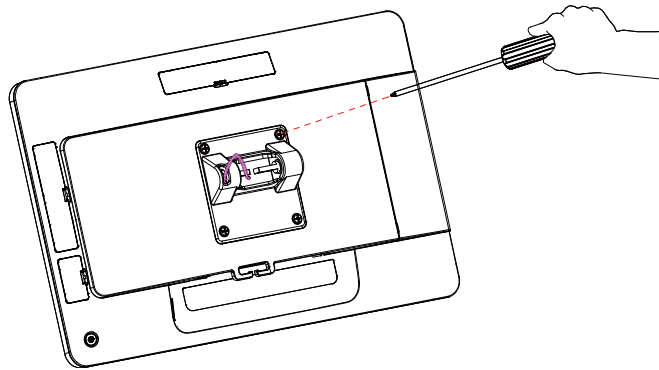
4).Rotate the main screen and the secondary screen : to the vertical angle, remove the three screws of the main



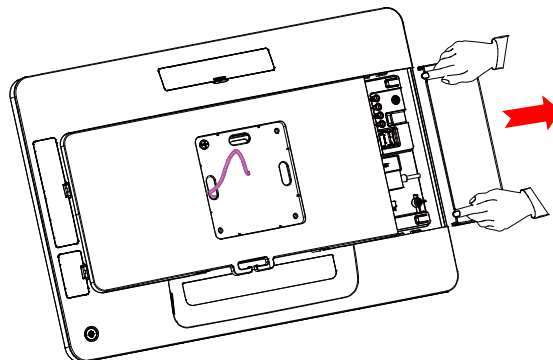
screen hinge and the second screen hinge respectively, and carefully pass the screen line through the line hole. Separate the main and auxiliary screen from the base respectively.



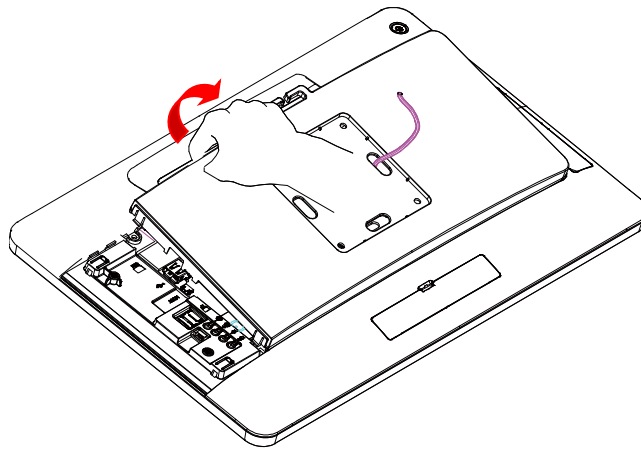
5).Remove the hinges of the host: Remove four screws according to the picture shows. Remove the hinges of the host and the hinges cover of the host separately.



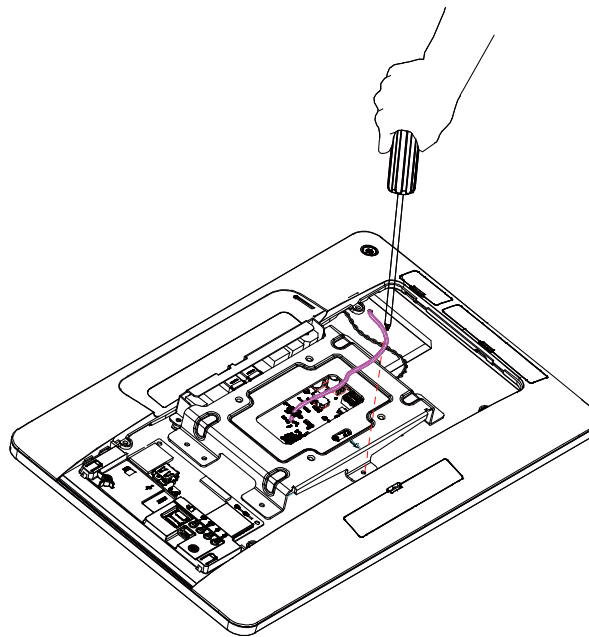
6).Remove the extended interface cover: pull the expanded interface cover outward at the notch according to the picture shows, and remove it.



7).Remove the rear case of the host: pull up the rear cover of the host according to the picture shows, and remove the rear cover of the host .



8).Remove 7 screws according to the picture shows to remove the host fixed seat, so that the motherboard can be replaced and maintained.

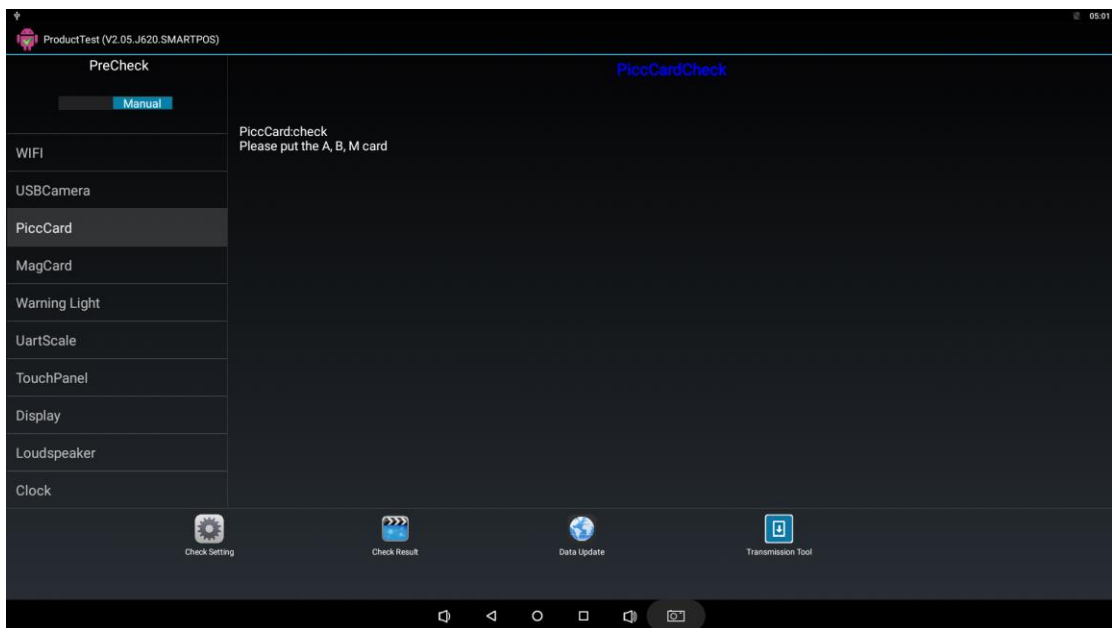


## 5. Functional testing and parameter setting of peripherals

In product test mode, magnetic stripe card test items are swiped by magnetic stripe card, and magnetic stripe card corresponding to the track shows "success" (three tracks, different magnetic stripe cards may store info into different tracks). As the following figure.



Contactless card test items In product test, with RFID card close to the back of the card reader, show "find \* card" (Contactless card is divided into A card, B card, M card). As The following figure.

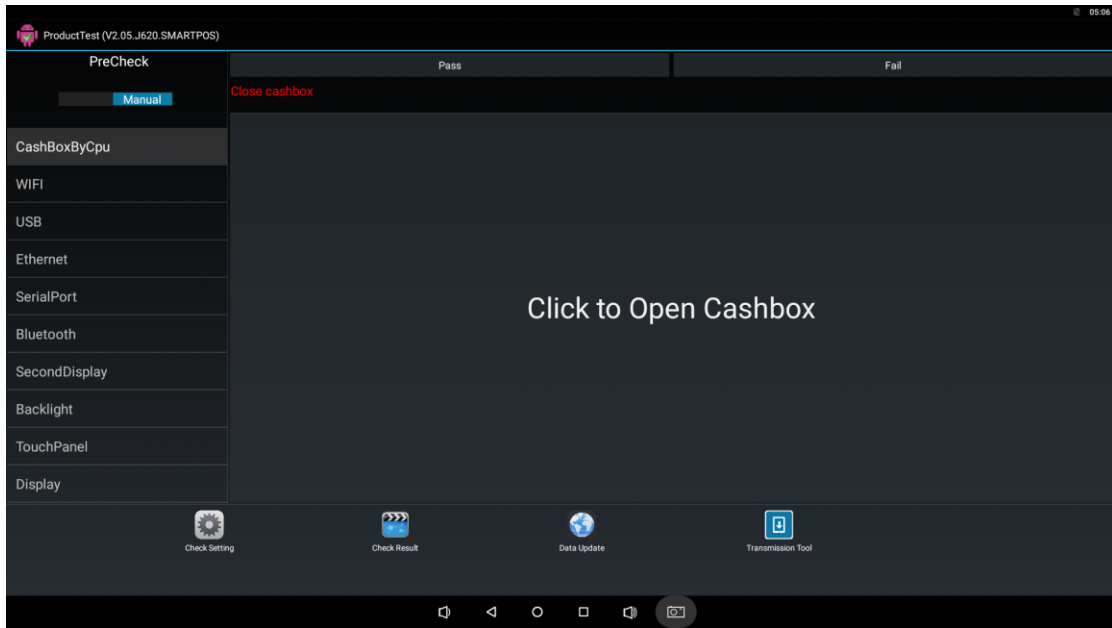


## Printer

U-port printer, without setting baud rate, can use the normal detection of product test procedures.

## Cash drawer

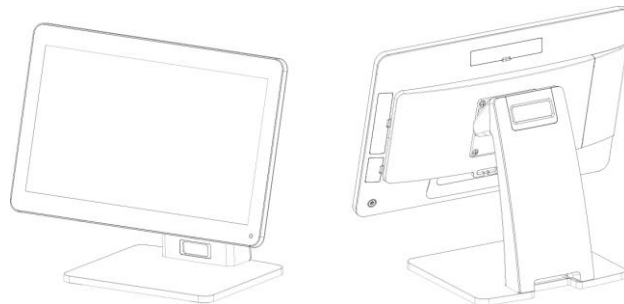
As shown below, for the item "CashBox ByCPU" in the product test, click "Click to Open Cashbox".



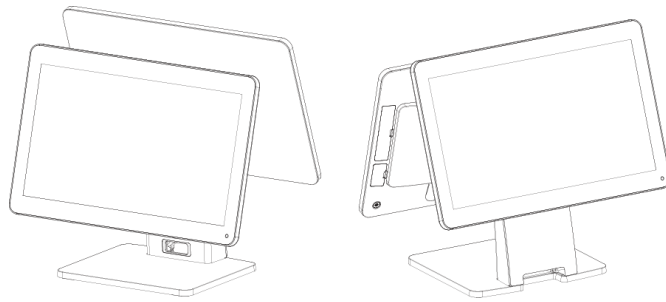
## 6. Environmental requirements

	Type	State
<b>Environmental</b>	Voltage	AC 100V-240V 50-60Hz Bipolar
	Temperature	5°C - 40°C
	Optimal	40% - 90%

## 7. Size specification

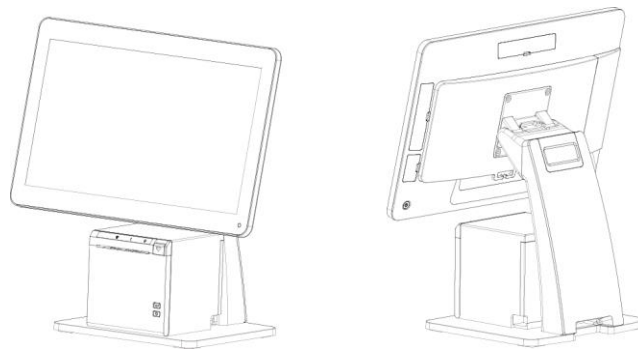


Single screen , Length×Width×Height : 405\*210\*330 ; Flip Angle 0-45°

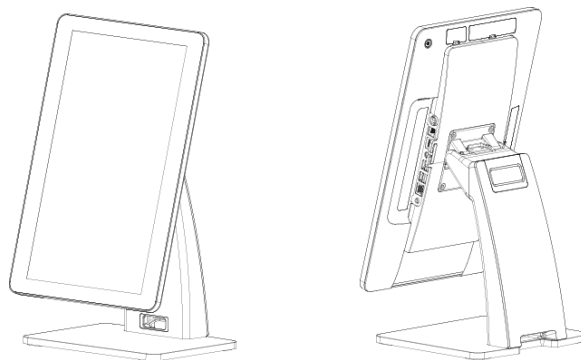


Double Screen , Length×Width×Height : 405\*250\*370 ;

Main Flip Angle 0-45° , Second screen Flip Angle 0-30°



High position +printer , Length×Width×Height : 405\*250\*420



Self-service , Length×Width×Height : 230\*250\*450

## 8. Open the box and check.

- 1) Before opening the box, check whether the box is in good condition, and whether there is any obvious damage.
- 2) The equipment must be installed by technical service person or distributors.

## Operation

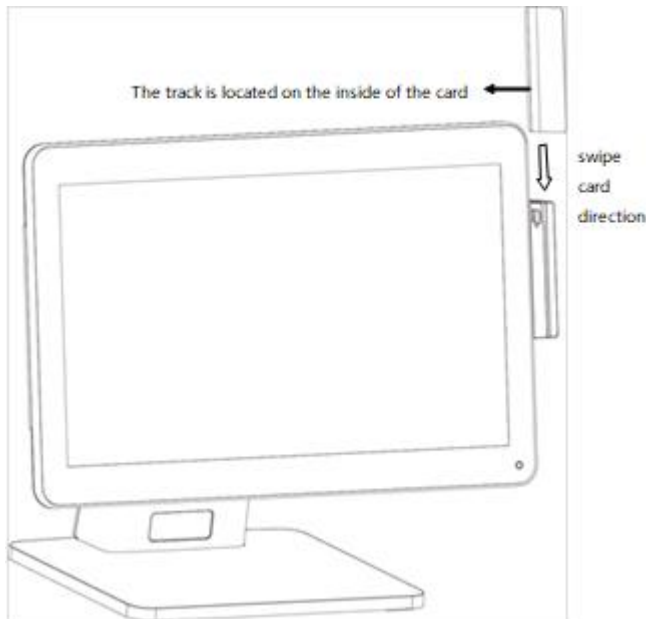
- 1) Switching Instructions :

Start-up: When the adapter is connected, hold down the switch button on the right back side of the bottom of the machine for about 3 seconds. When the screen is on and the button indicator light is on, the startup can be realized.

Shutdown: Press the switch button on the right back side of the bottom of the machine for about 3 seconds, and operate according to the screen prompt, which can realize shutdown and restart functions.

### 3) Swipe magnetic cards :

- When swiping the card, the machine should be placed on a hard horizontal plane.
- Please swipe the magnetic strip of the magnetic strip card inward from the swipe slot.
- The process of card swiping should be smooth and uniform.



### 4) Contactless card operation :

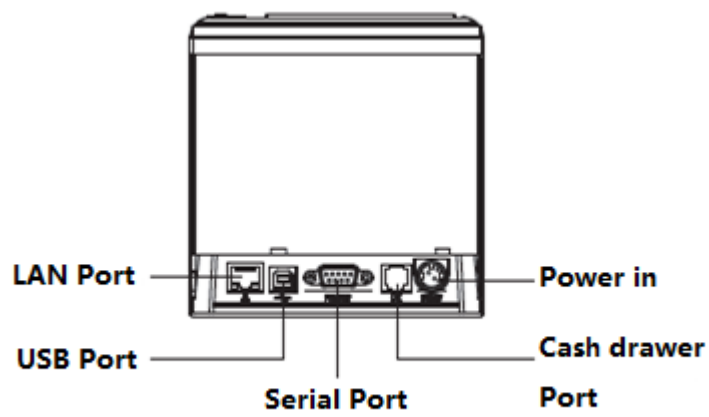
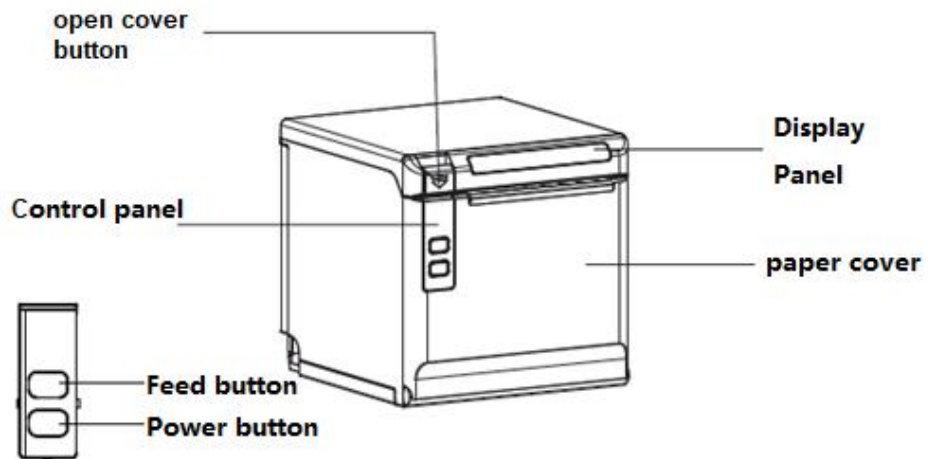
Contactless card induction zone is located behind the right side of the host (with the contactless mark printed).

When need read contactless card, please place the card above the induction zone.

## 9. Printer operations

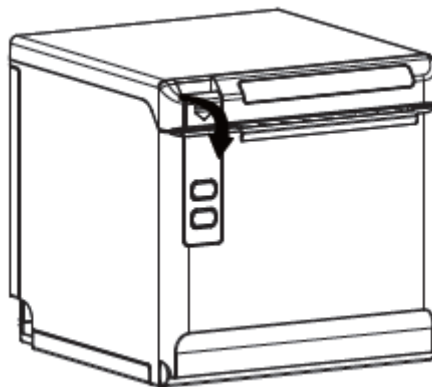
### 1) Printer Structure



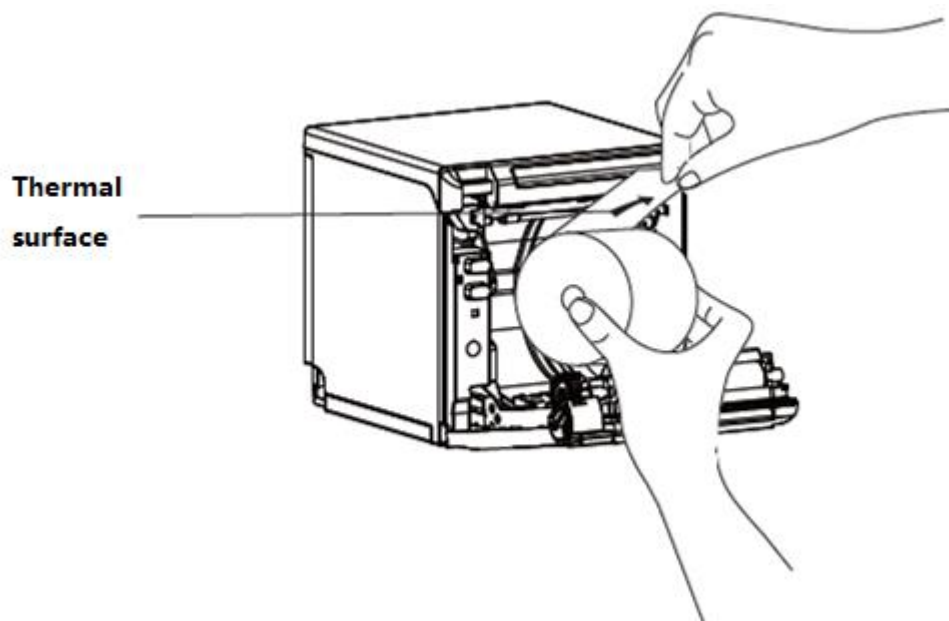


2) Load and change paper introduction

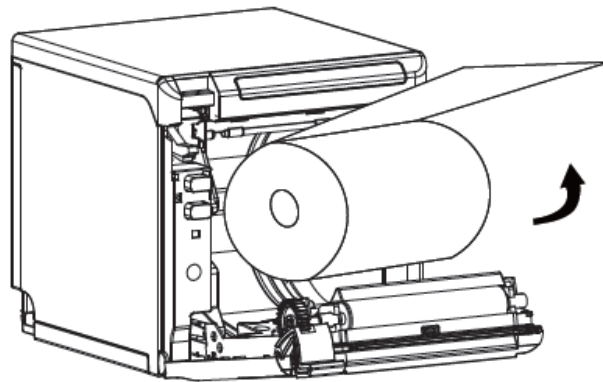
- a. Press the open button to open the paper bin cover, as shown below. If there are paper tubes in the paper warehouse, please take them out.



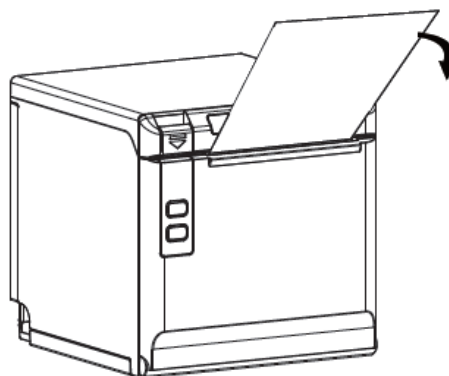
- b. Put the paper roll into the paper bin, pay attention to the correct direction of the paper roll.



c. Please take out a small amount of paper from the front of the roll and close the cover of the printer's paper bin



d. Remove excess paper toward the side of the paper cut.



## Paper rolling

1) Requirements of the thermal paper :

Type : Thermal paper

Width of paper : 57.5±0.5mm / 79.5±0.5mm

Outside Diameter of paper roll : Max 83mm

Thickness of Thermal Paper : 0.056 ~ 0.13mm

2) Recommendation of thermal Paper Model :

Type	Manufacture
FD210,PD150R,PD160R	OJI Paper CO.,

Notes :

A. Please use the recommended paper roll or the same quality paper roll. The use of other types of paper roll may affect the printing effect and the life of the printing head.

B. If the paper roll is contaminated by chemicals or oil, the contaminated part of the paper roll may fade or the printing effect is not clear.

C. Do not scratch the thermal sensitive layer of the paper roll with sharp objects, which may make the printing effect unclear.

D. When the temperature exceeds 70 degree C, the thermal sensitive layer of the paper roll will fade. Therefore, the use or storage of paper rolls should avoid high temperature, high humidity, strong light, etc.

E. Thermal paper that has been stored for too long should not be used.

## Printer Maintenance

### (1) Printer head and Printer rubber roller

When one of the following situations occurs in the printing unit, the print head should be cleaned:

- A. Printing is not clear;
- B. The vertical column of the printed page is not clear.
- C. Noise of feeding and returning paper is high.

The cleaning steps of the printing head and Printer rubber roller are as follows:

- A. Turn off the power supply of the printing unit, open the printer cover, and expose the printer head and Printer rubber roller;
- B. If you have just finished printing, you should wait for the print head to cool completely.
- C. Use alcohol cotton balls (should be screwed dry) to erase the dust, stains and paper scraps on the surface of the printed hair heater.
- D. Close the top cover of the printer after the alcohol evaporates completely.

### (2) Daily maintenance matters needing attention

- A. The power supply must be turned off during the daily maintenance of the printing unit.
- B. Do not touch the surface of the printing head with your hands or metal objects. Do not scratch the surface of the printing head, Printer rubber roller and sensors with tweezers or other tools.
- C. Organic solvents such as gasoline and acetone should not be used.
- D. Wait for the cleaning solution to evaporate completely, then turn on the power supply to continue printing.
- E. Maintenance cycle: It is recommended to clean it up once a month.

## 10. Accessories

No.	Item	Unit	Quantity	Note
1	POS terminal		1	
2	Power adaptor		1	
3	Power cable		1	

### FCC Statement:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.