

AO1X SERIES ARM POS TOUCH ECR USER MANUAL



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Important Safety Information

- Please read these safety instructions carefully.
- Keep this user manual for later reference.
- This product meets the relative requirements of the national standard IEC 60950:2001 “Information technical equipment Security”.
- Before turning on the machine, please make sure that the electric power meets the requirements, (such as the electrical pressure and frequency), and that your electrical outlet is really connected to the ground.
- Thunder can hurt this product, even your personal security, so please pull out the network cable, electrical cable and others connecting external on the thunder days.
- The non-experts or non-authorized persons please don't open the machine shell.
- Please don't spatter any sundries or liquor into the machine; please don't slip the heat releasing holes, or it may cause short circuit and therefore may cause fire or get an electric shock.
- Incorrectly changing the lithium battery on the mainboard and the UPS lithium battery in the machine may cause a blast, so please make sure installing and changing the lithium batteries under the instruction of the expert service personnel.
- Please lay this product packed in the 10-35°C environment for at least 2 hours before turning on if it was stored in less than 10°C temperature environment, thus avoiding the hurt on PC due to a big change of environmental temperature.
- For PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible.

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1. GENERAL DESCRIPTION

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measure.

1.1. Characteristics

- ※ ALL-IN-ONE Design: integrating with the touch screen, 58mm printer, customer display, magcard reader, Mifare card reader, Smartcard reader, GPRS, WIFI, Bluetooth, Micro SD, etc., meeting multifarious commercial demands.
- ※ With RFID prepaid management of the highest safety class, provide users with ISO14443A RFID card offline issuing mechanism of high safety class and chain management, instead of the online mode with high costs.
- ※ Supporting up to 6 SAM cards for different card issuers, so as to save devices investment.
- ※ Optional 7" durable infrared touch screen (AO1IX), avoiding being scratched and aging. Four or five line resistive touch screen is optional (AO1RX).
- ※ With diversified I/O ports, meet commercial management demands for different users.
- ※ Optional holders, support height setting and angle adjustment for restaurants with limited space.
- ※ CPU of power-saving design costs low power consumption. The 9V2Ah type could standby for 5~10 hours in power outage or outdoor operation.
- ※ Adopts Linux and WinCE open platform that could replace PC POS completely. The electric expense of PC POS in two years, which is very important for supermarkets with dozens of checkouts, is equal to the price of this device.

1.2. Advanced Functions and Features

- ※ Embedded with POS software of various types of business such as restaurant, fastfood, convenient stores, etc. (optional), it is able to visit remote data base directly and build chain network.
- ※ Adopt 600 MHz high-speed ARM 11 CPU with higher and more stable operating speed but lower consumption, supporting Windows CE6.0 & Linux 2.6 or Android 2.3 operating system.
- ※ Adopt 800*600 LCD, perfect for graphical UI, convenient and user friendly to operate.
- ※ Multiple color collections.
- ※ Easy loading printer featuring black mark detection.
- ※ Fiscal version optional.
- ※ The modularized hardware design is convenient for maintenance.
- ※ Realize remote system management, data maintenance and remote upgrading.

1.3. Accessories

- ✦ *Our products are not sold to Britain.*
 - ✦ *ALL pictures in this user manual are for references only. Please subject to the available products.*
- Standard Accessories:**



AO1X



Power adapter



AC power cord



User manual

Options:

Options	SAM extending components (4)	B: inbuilt UPS	G: GPRS	Magnetic card reader
Model	AO1XA	AO1XB	AO1XG	AO1XM
Options	M1card reader	IC card (contact Smartcard)	Inbuilt WIFI	iButton
Model	AO1XR	AO1XS	AO1XW	AO1XI

Note:

1. If the interface of the external equipment (such as electronic scale, scanner) is a 9D serial interface, you could choose:

(1) Connection cable of 4Pin-9D (male connector) to attach the 4Pin serial interface of the AO1X;

(2) Connection cable of 6Pin-9D (male connector) to attach the 6Pin serial interface of the AO1X.

In addition, the interface of the cashdrawer of the AO1X is 4Pin. If the cashdrawer you use is 6Pin, you could buy PHONE4-623K connection cable to connect the drawer; otherwise, it's needed to change the assignments of connector (refer to chapter 3 "CONNECTION METHODS OF DIFFERENT CASHDRAWERS" for details).

2. The long pole and triangular holder are also for your options to connect the AO1X.

3. The above options can be combined at will. You can purchase them as you need.

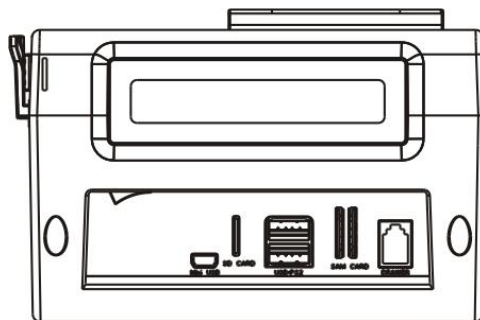
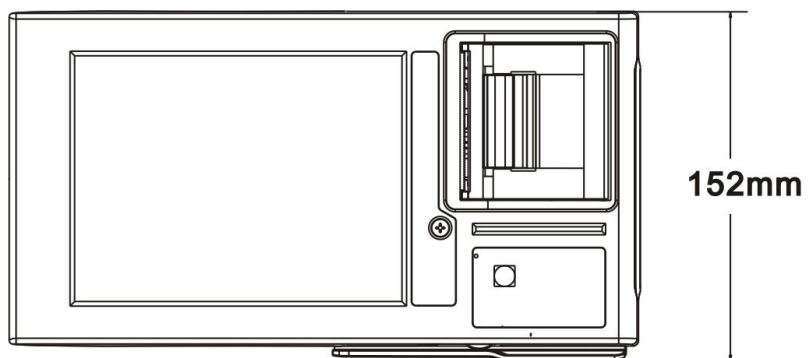
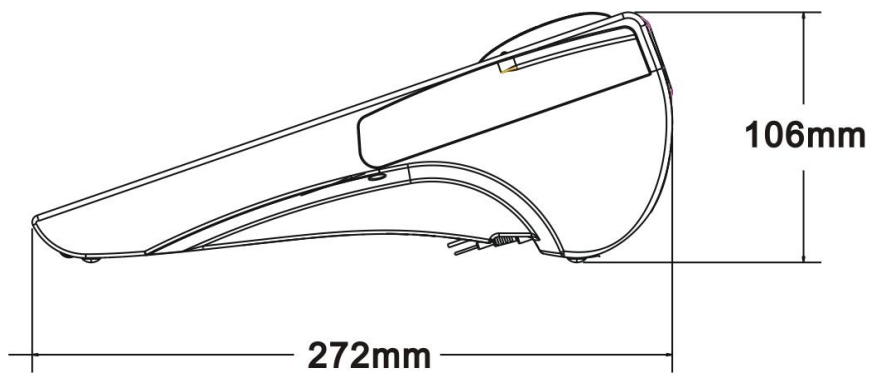
1.4. A Visual Tour of AO1X

Before using, please take a few moments to come familiar with AO1X.



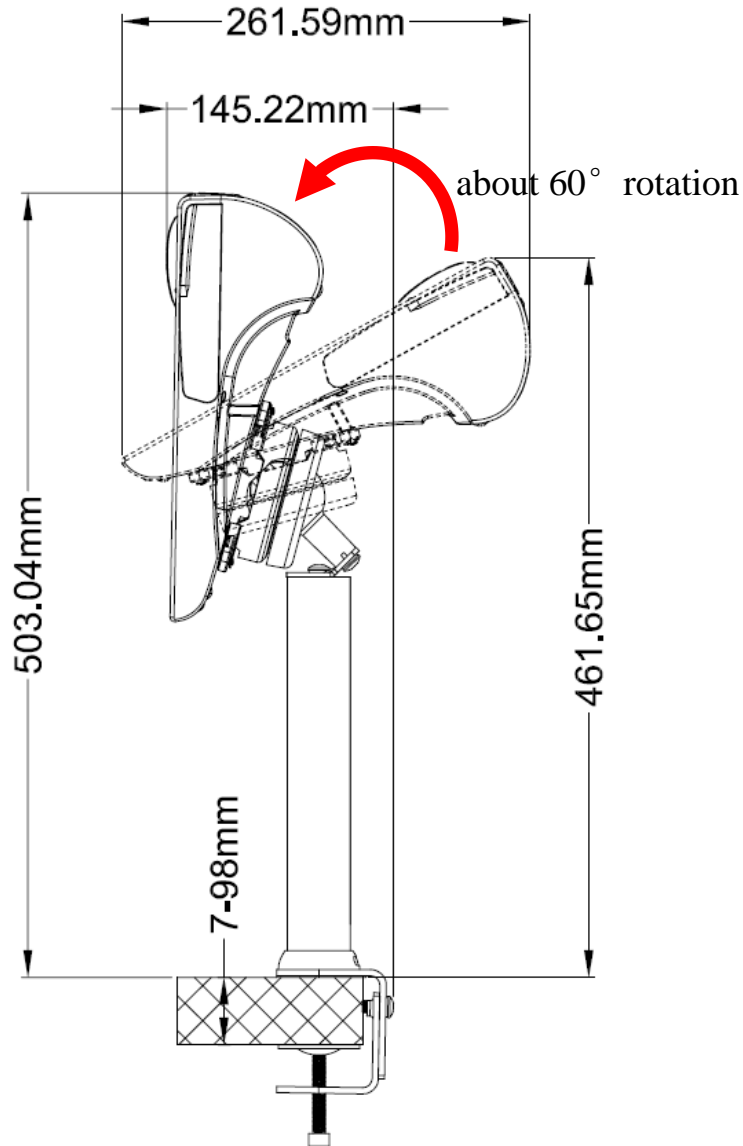
ATTENTION! When operating WINCE operating system, avoiding causing malfunction of external devices, please do not quick start and turn off the SLEEP function, that is to say, do not quick shift the SLEEP mode control switch. We suggest you turn off the SLEEP function after 10s after starting.

1.5. Dimension



1.6. Holder Installation

There are two kinds of holder for your choose to hold the AO1X, so that it could be more convenient to operate.



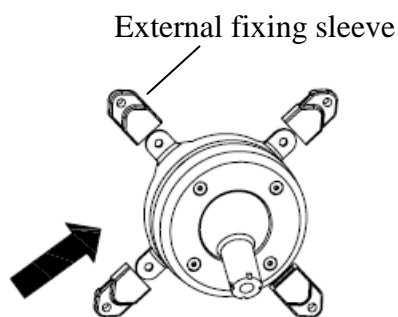
Picture 1

1. Long pole, shown as picture 1.

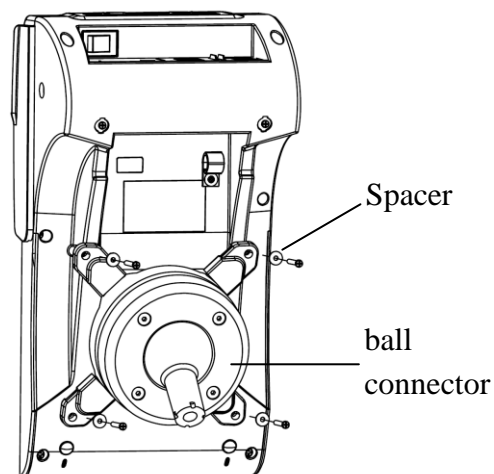
Working environment: It's very suitable for small stand-type counters with limited space. Operators could rotate it about 60° forwards and backwards, and make left and right turning. For restaurants with limited space, it's suggested elevating and rotating the AO1X.

Installation details:

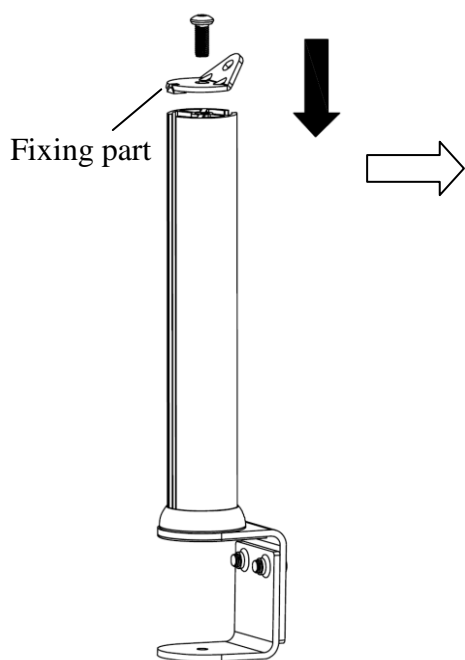
- ① Install the 4 external fixing sleeves to the rotary bracket as picture 2.
- ② Install the 4 head tapping screws ($\Phi 2.6*15\text{mm}$) from the spacer to the fixing hole of the fixing sleeves, so that the ball connector could fix on the back of the AO1X as picture 3.
- ③ Refer to DH1X installation guide to fix the holder on the desk. Here we take the type of desktop clamping as an example.
- ④ Attach the fixing part to the holder with inner hexangular screw (M8*30mm) as picture 4.
- ⑤ Install the inner hexangular screw (M8*50mm) from the zigzag spacer and fixing part to the ball connector as picture 5.



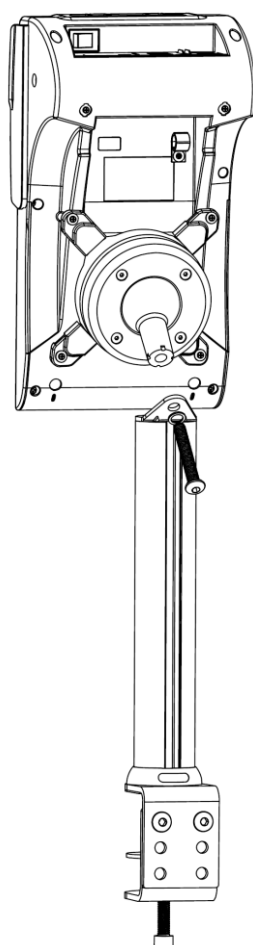
Picture 2



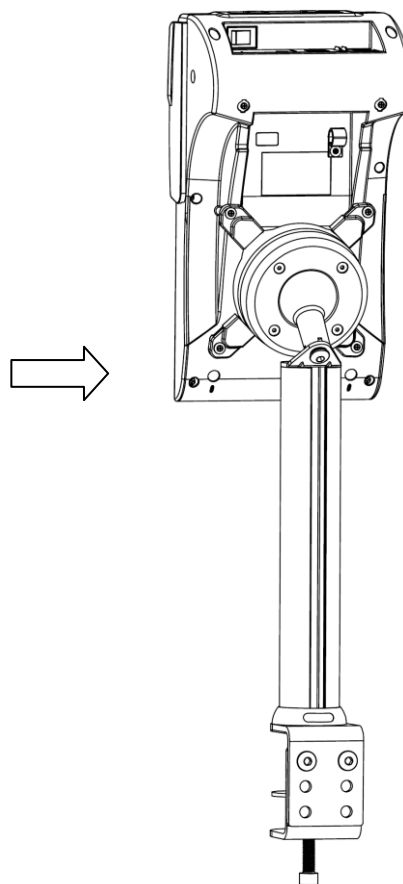
Picture 3



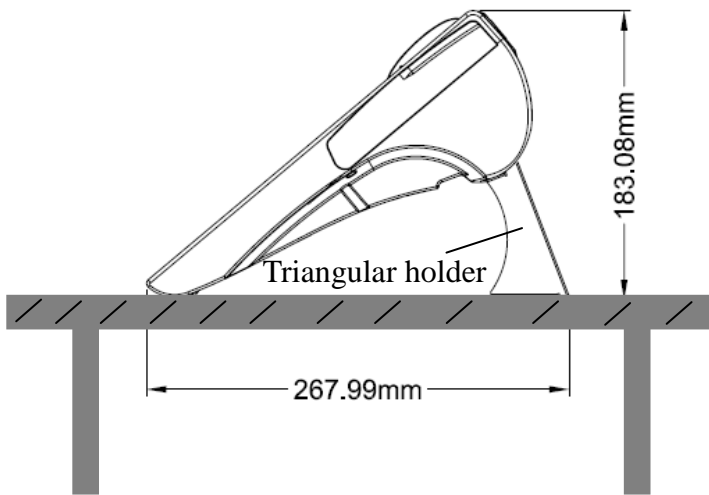
Picture 4



Picture 5



Picture 6

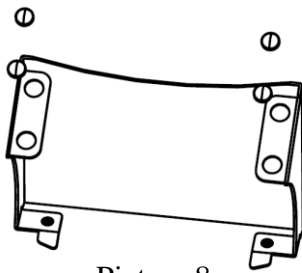


Picture 7

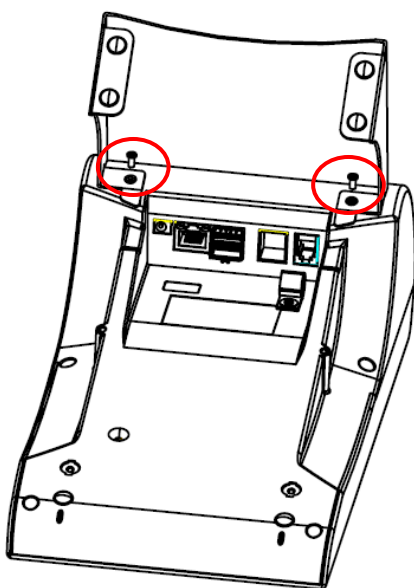
2. **Triangular holder**, shown as picture 7.
Working environment: to raise the operating angle. It's suitable to use in a sufficient space.

Installation details:

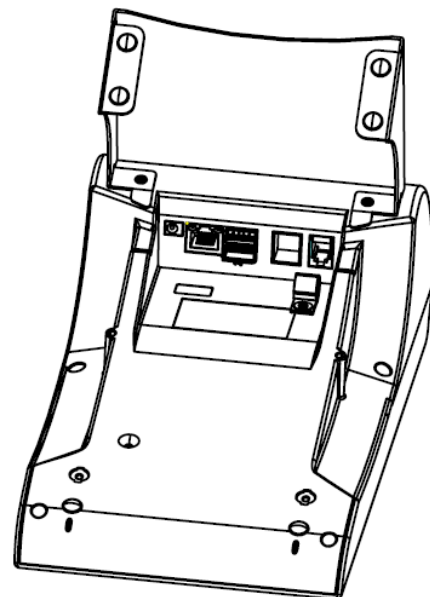
- ① Stick the 4 pads on the pedestal as picture 8.
- ② Fix the pedestal to the AO1X with 2 head tapping screws (Φ 2.6*8mm) as picture 9.



Picture 8



Picture 9



Picture 10

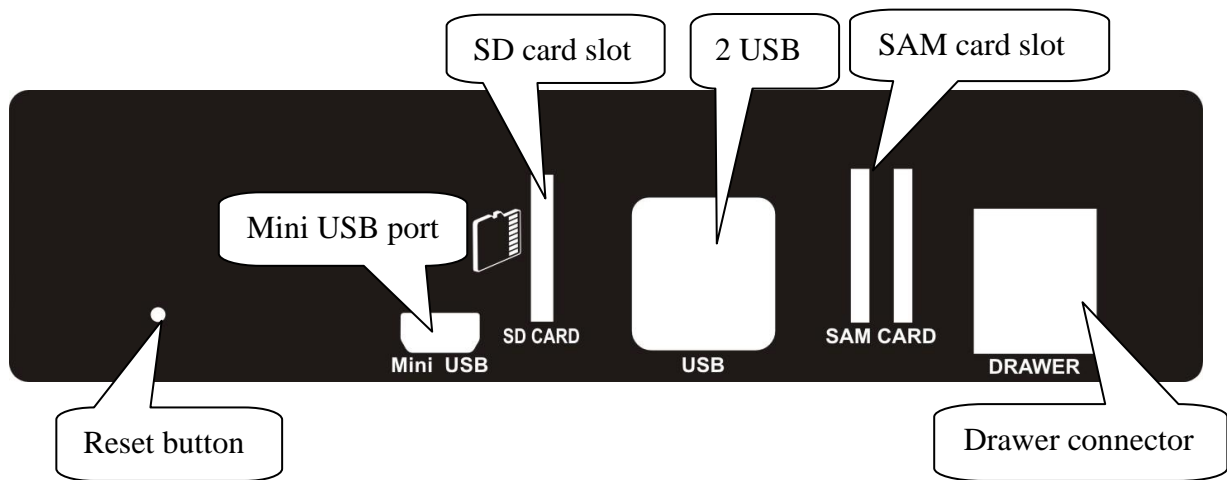
1.7. Technical Parameter

Mainframe Configuration		
Processor		Arm11 600MHz CPU
Memory		256MB RAM
Storage		256MB NAND Flash
Power Supply		DC 9V
Operating System		Windows CE6.0 & Linux & Android 2.3
Display	Operator Display	7" TFT LCD; 800*600 resolution
	Operator Touch Panel	Infrared Touchscreen (optional Resistive Touchscreen)
	Customer Display	32*144Dots LCD
Peripherals	Serial Port	1 internal; 2 external (able to connect to a Cash Scale or a second printer)
	Ethernet Port	1 external 10M/100M Ethernet port
	USB Port	5 external USB2.0 (4 standard USB; 1 mini USB)
	WIFI	Optional internal or external IEEE 802.11b/g/n
	Bluetooth	Optional internal or external Bluetooth
	RFID Card	RFID reading and writing module
	Contact IC Card	Support contact-type IC card
	GPRS	Optional GPRS module
	SD Card	MicroSD card socket
Printer	2" Thermal Printer	57mmx Φ 50mm
	Print Speed	80mm/s
Dimension	Dimension	272mm (L)* 152mm(W) * 106mm(H)
	Weight	0.8kg

1.8. Connector Panels

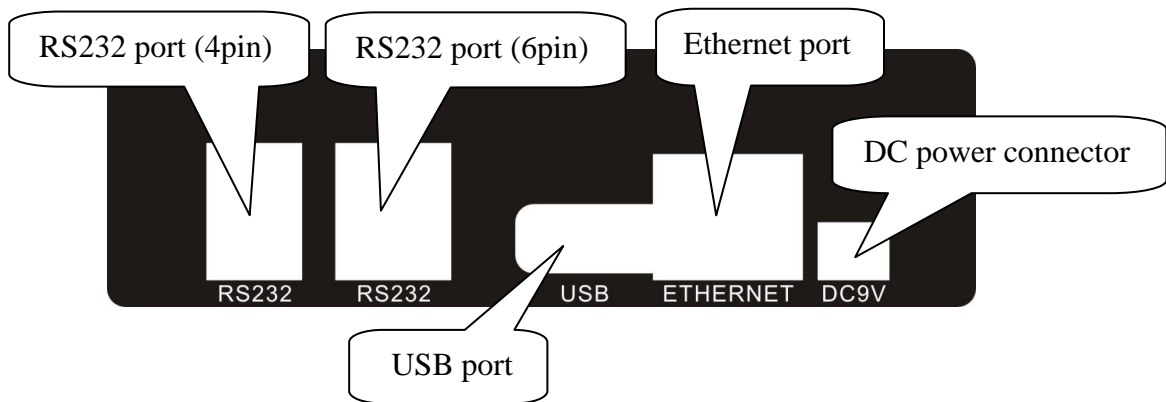
Definition of Connector Panel 1:

It is located under the customer display.




Definition of Connector Panel 2:

It is located at the back of Connector Panel 1. To clearly see the panel you must turn the machine upside down.



1.9. Power On/Off

1.9.1. Power On

Press the power button  3s directly at the first time of using the device since the inbuilt battery has a small amount of electricity. When the battery is too low, please plug in the power adapter.

1.9.2. Power Off

Press the power button 3s to power off.

1.9.3. Sleep

While the device is in working status, short press power key to make it enter the sleep mode, at which moment the backlight of the screen and the peripheral equipment (such as scanner, external USB device) are turned off.

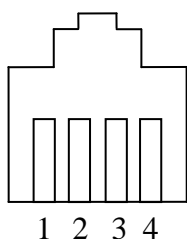
To recover the working status, short press power button again. And the peripheral equipment will be repowered on at the same time.

2. CONNECTION METHODS OF DIFFERENT CASHDRAWERS

You can install a cashdrawer through the cashdrawer port. The cashdrawer port is suitable for RJ-11 (4 Pin) connector. While using other brand's cashdrawer with ACLAS AO1X, alteration of assignments of connector pins may be necessary. Please verify the pin assignment before installation.

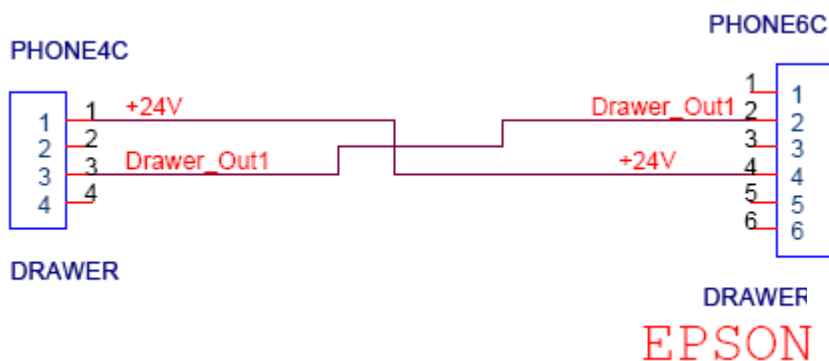
In this chapter, we take EPSON cashdrawer for example to tell how to alter the connector pins' assignments according to the schematic (PIC①). Besides, there are schematics showing you how to alter pins' assignments of connectors of common brands' cashdrawers.

Cashdrawer Pin Assignment

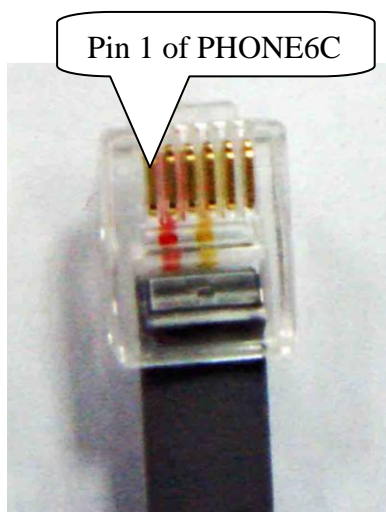


Pin	Connectoer
1	DC +24V
2	NC
3	DRAWER-OUT
4	NC

Take EPSON cashdrawer for example, alter 6 pin connector into 4 pin one. Please see the following pictures.

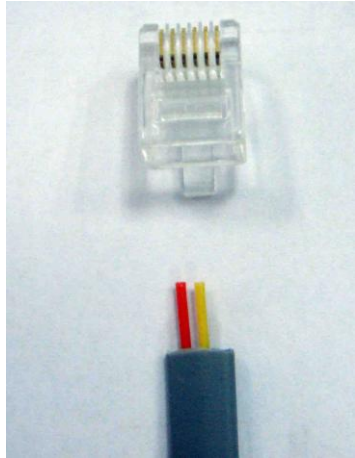
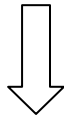


PIC① -- Pin Assignment Alteration

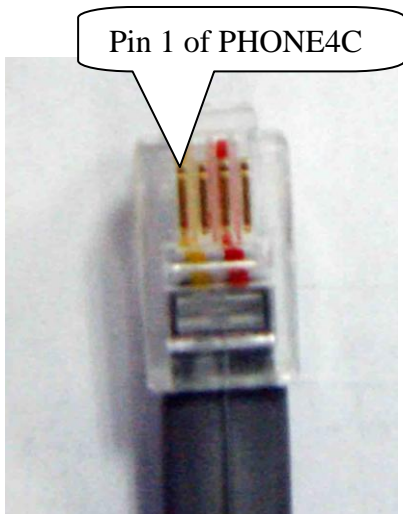
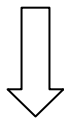


PIC② -- This is the connector picture of EPSON cashdrawer. The left-most pin is pin 1. The pin order is from left to right. Pin 2 connects with the red line. Pin 4 connects with the yellow line.

Separate the crystal head from the cable.



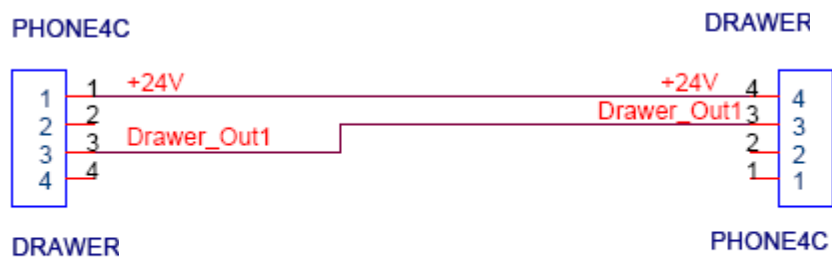
PIC③ -- After separation



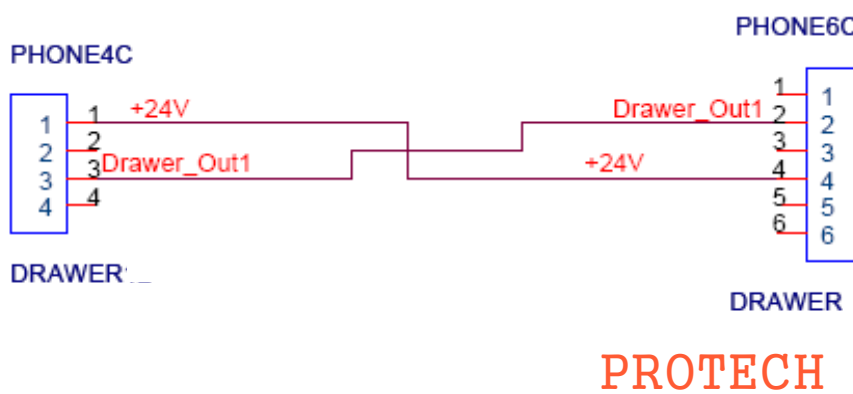
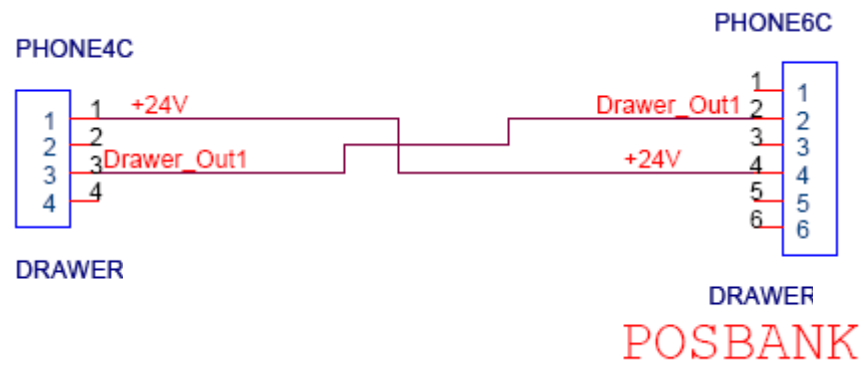
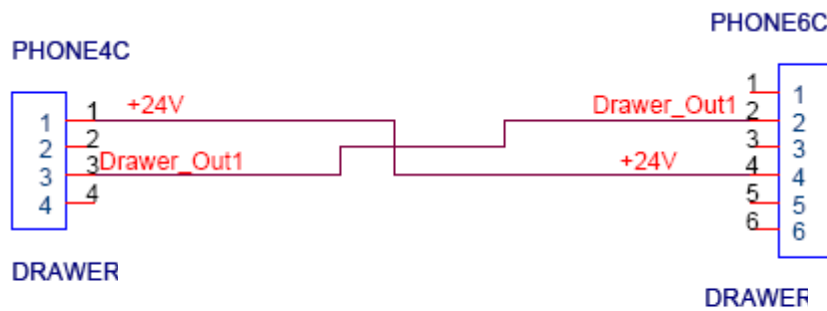
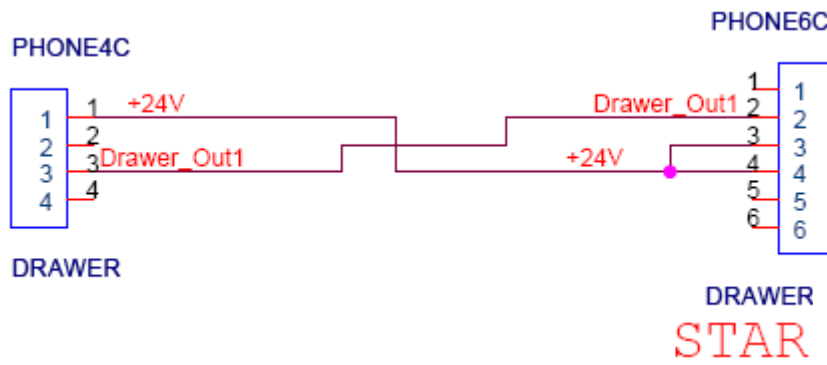
PIC④ – According to PIC①,connect pin1 of PHONE4C with the yellow line, and pin3 with the red line.

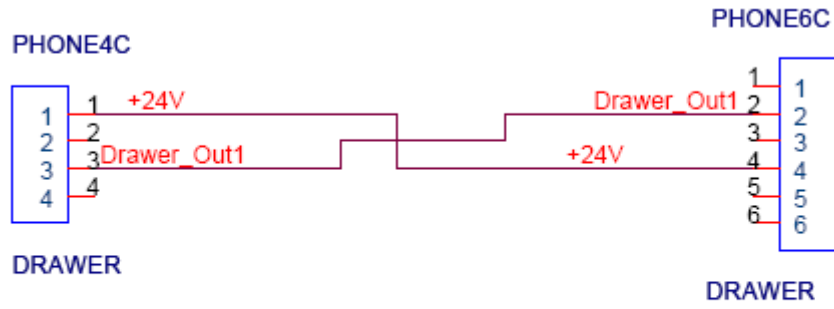
The alteration of pin assignment is finished.

Pin Assignment Alteration of Connectors of Common Brands' Cashdrawers:

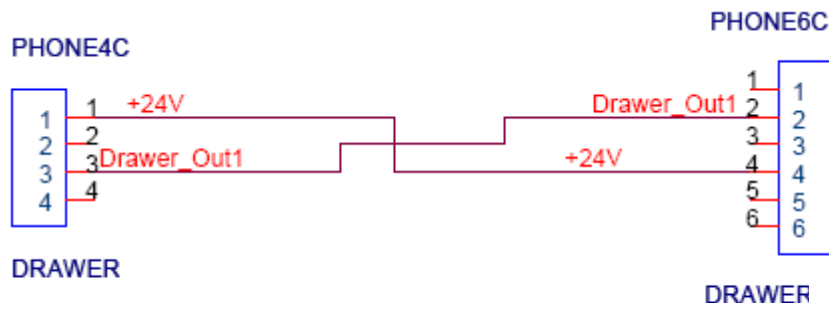


IBM





SAMSUNG

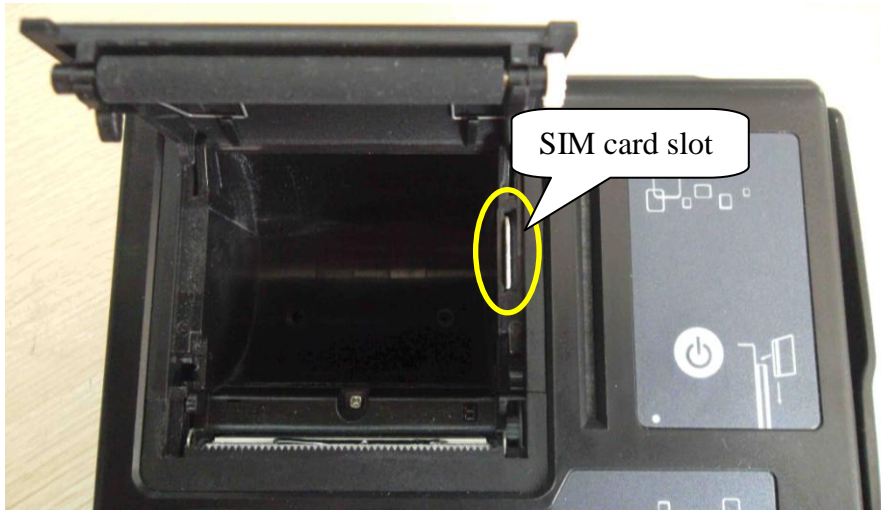


FEC

3. INSTALLATIONS

3.1. SIM Card Insertion

- Open the printer cover. The SIM card slot is on the right of the paper compartment as PIC① shows.
- Upward the broken corner of the SIM card, rightward the chip and then insert the SIM card to the slot.



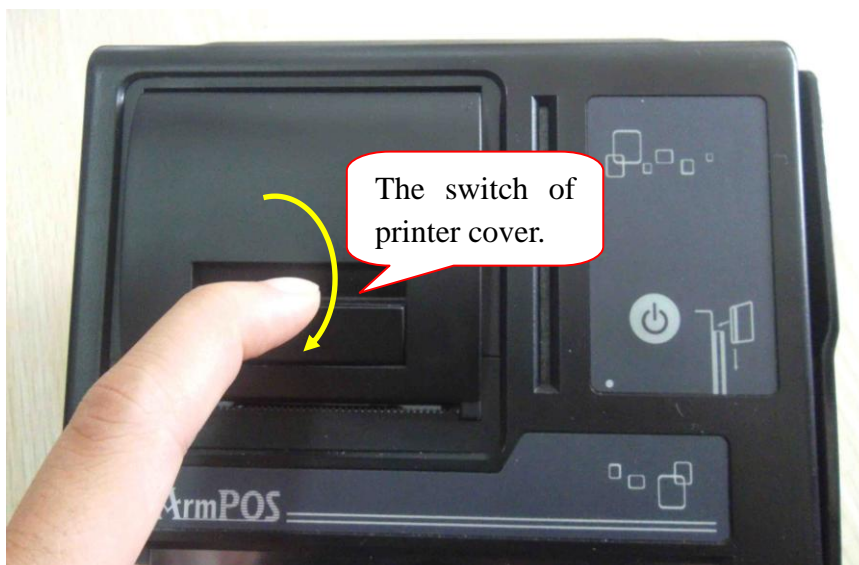
PIC ① SIM card slot

3.2. Thermal Paper Replacement

When a roll of thermal paper is run out, please replace it with a new one by following the steps below:

Note: Before replacement, please get rid of the gummed paper completely on the head of the new thermal paper; if not, the residual may cause printing head malfunction.

1. Open the printer cover as PIC② and PIC③ shows.
2. Place the thermal paper into the compartment and get a short length out as PIC ④ shows.
3. Press down the printer cover to close it as PIC ⑤ shows.



PIC②

paper compartment



PIC③



PIC④



PIC⑤

➤ **Choose of Thermal Paper**

We suggest you choose high sensitive thermal paper, such as Aclas DJ03, OJI, PD-160R paper, by which the printer could print more clearly on its smooth surface and cost lower consumption. Bad quality thermal paper with rough surface and low sensitivity may reduce the lifetime of printer head.

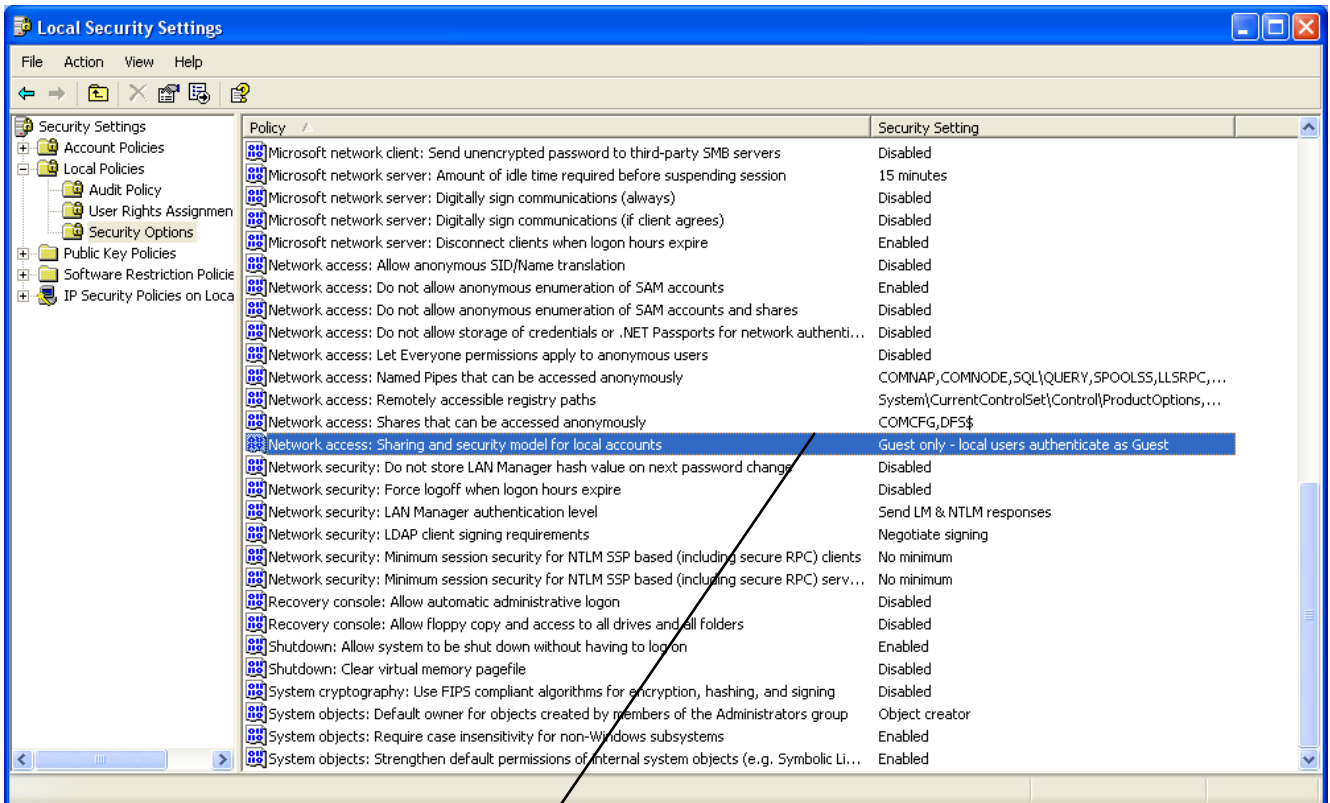
Note: There is a colored band in the last length of ACLAS thermal paper, indicating that it is going to run out.

4. WINCE INSTRUCTION

4.1. Set Communication

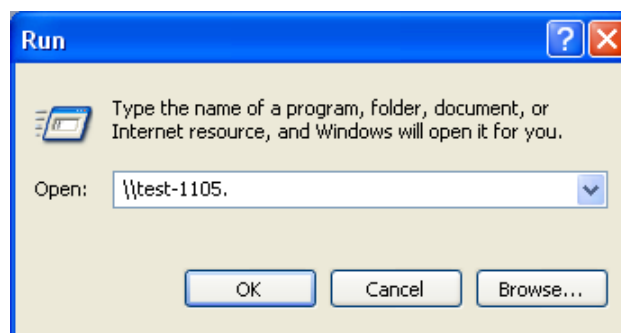
It's to set the communication between the AO1X and PC.

1. Connect the AO1X to PC with Ethernet cable.
2. Click the 'Start' menu in the PC, and choose 'Control Panel' → 'Administrative Tools' → 'Local Security Policy' → 'Local Policies' → 'Security Options'. And then change the security model of the policy 'Network access: Sharing and security model for local accounts' into 'Guest only-local users authenticate as Guest'.



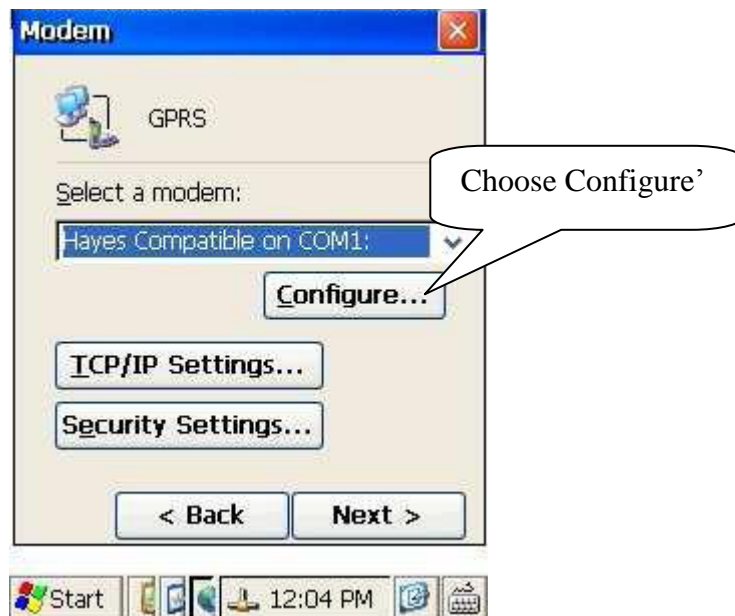
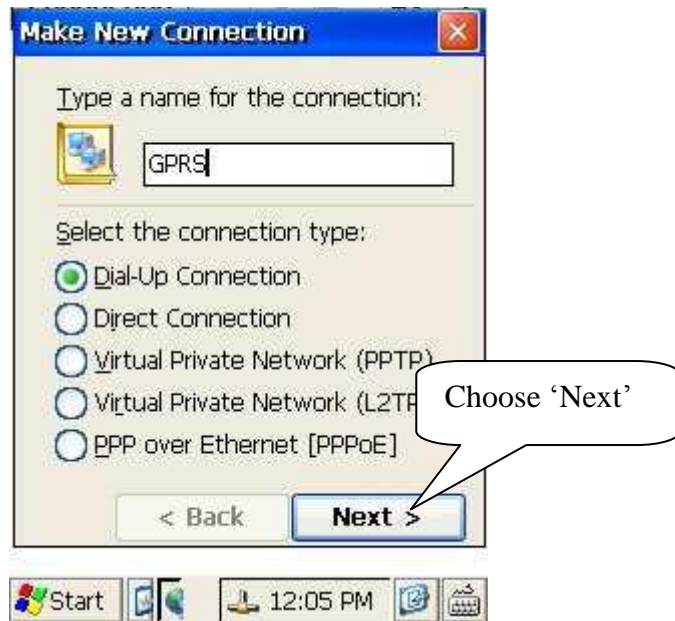
Network access: Sharing and security model for local accounts Guest only - local users authenticate as Guest

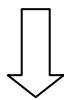
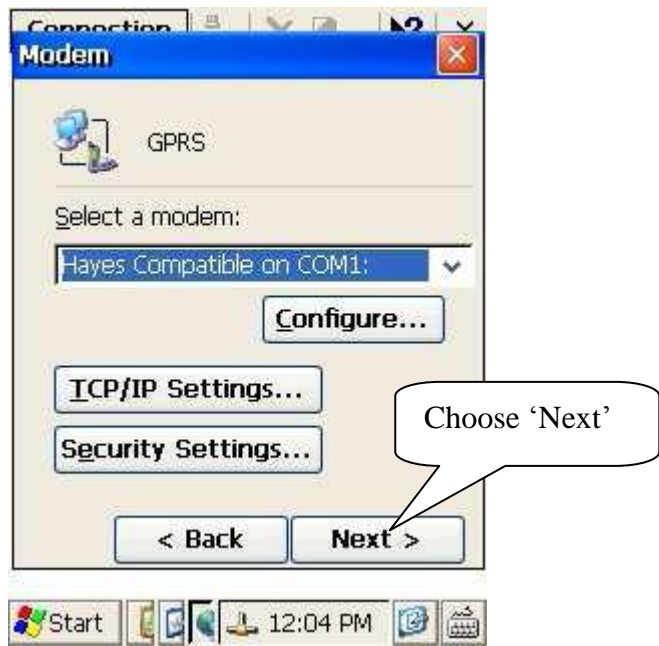
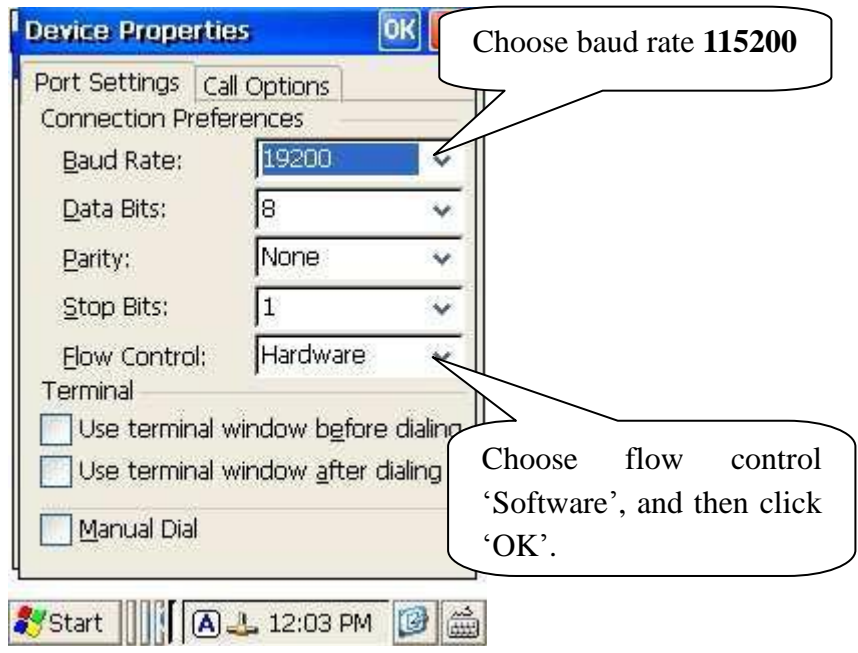
3. Set the IP address of PC and AO1X. They should be in the same network segment. For example, if the IP address of PC is 192.168.1.007, then the IP address of AO1X should be 192.168.1.XXX.
 4. Click the 'Start' menu in AO1X, choose the item 'Run', input the full name of PC as below interface, and then click the icon 'OK'. Finally, AO1X gets access to the shared folders of PC.
- Users could right click the icon of 'My Computer' in PC → choose the item 'Properties' → choose the menu 'computer name' to find the full name of PC.

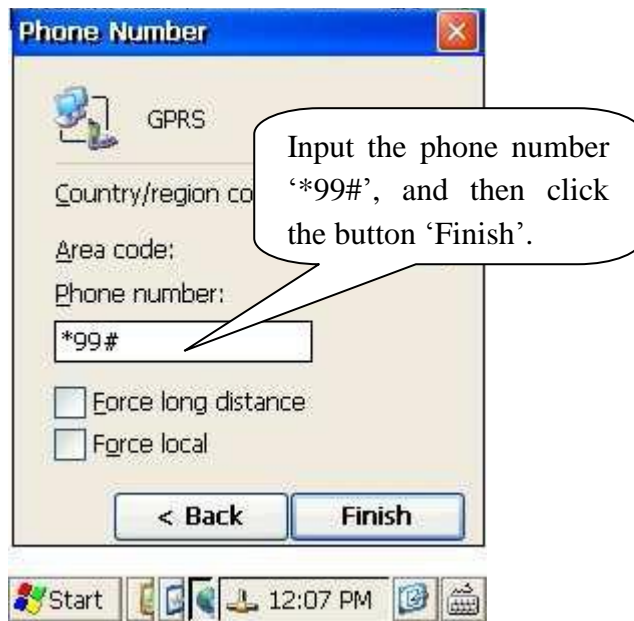


4.2. GPRS Settings

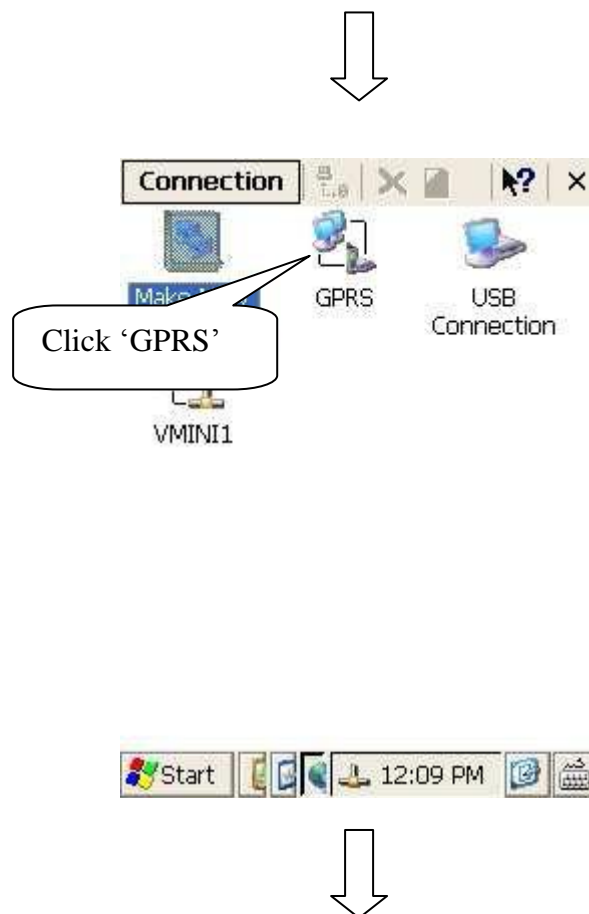
1. Click 'start' menu in AO1X → 'control panel' → 'network and dial up wizard'
2. Choose 'Make New Connection', and then a window pops up as below.

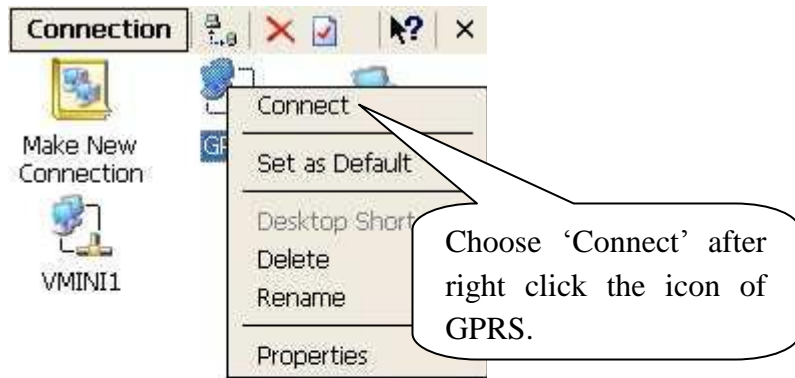


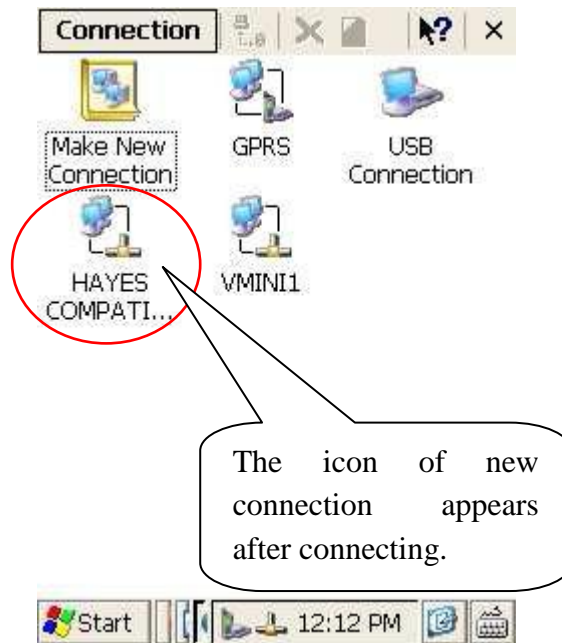




Note: If connection is not available via phone number '*99#', please connect the local telecommunications.







4.3. Test Instruction

4.3.1. External Device Test

Program 'test.exe' is used to show the status of all the external devices of AO1X, including customer display, print status, cash drawer, read device number and soft shutdown.

The steps are: Open the program 'test.exe' in the file 'TEST' on the desk. After running, the AO1X will show the current status of each device first, and then users could take the test operation.

- (1) CLCD ON: To turn on the backlight of customer display.
- (2) CLCD OFF: To turn off the backlight of customer display.
- (3) Display1: Simple content of the customer display.
- (4) Display2: The customer display show simple content.
- (5) Contrast 1: The customer display show simple content.
- (6) Contrast 2: The contrast of the customer display.
- (7) Forward: Test the function of printer outfeed.
- (8) Backward: Test the function of paper retracting of the printer (Note: This function is for retracting a short section of paper only).
- (9) Print: To test the print function of the printer.
- (10) Drawer: To test the function of cash drawer.
- (11) Product ID: To read device's ID
- (12) Power Off: Soft shutdown.
- (13) GPRS: Refer to chapter 4.2 to set the GPRS correctly, and then press this button to open the GPRS connection. After a few seconds, the system will prompt you to disconnect the GPRS or not.
- (14) Clear Log: To clear all data that display on the test page of the screen.
- (15) Exit: To exit the program.

In addition, users could test the iButton, magcard, smartcard, RFID card and buzzer if needed.

- (1) iButton: To read the ID number from the test page by pulling and plugging the iButton.
- (2) Magcard: Swipe the magcard, and then display the data in second track to test page.
- (3) Smartcard: Install the smartcard to the slot, and then the data that has been read will be displayed in the test page.
- (4) RFID card: Place the RFID card near the reading area, and then the data that has been read will be displayed in the test page.
- (5) Buzzer: The buzzer could beep normally during operation.

4.3.2. Print Test

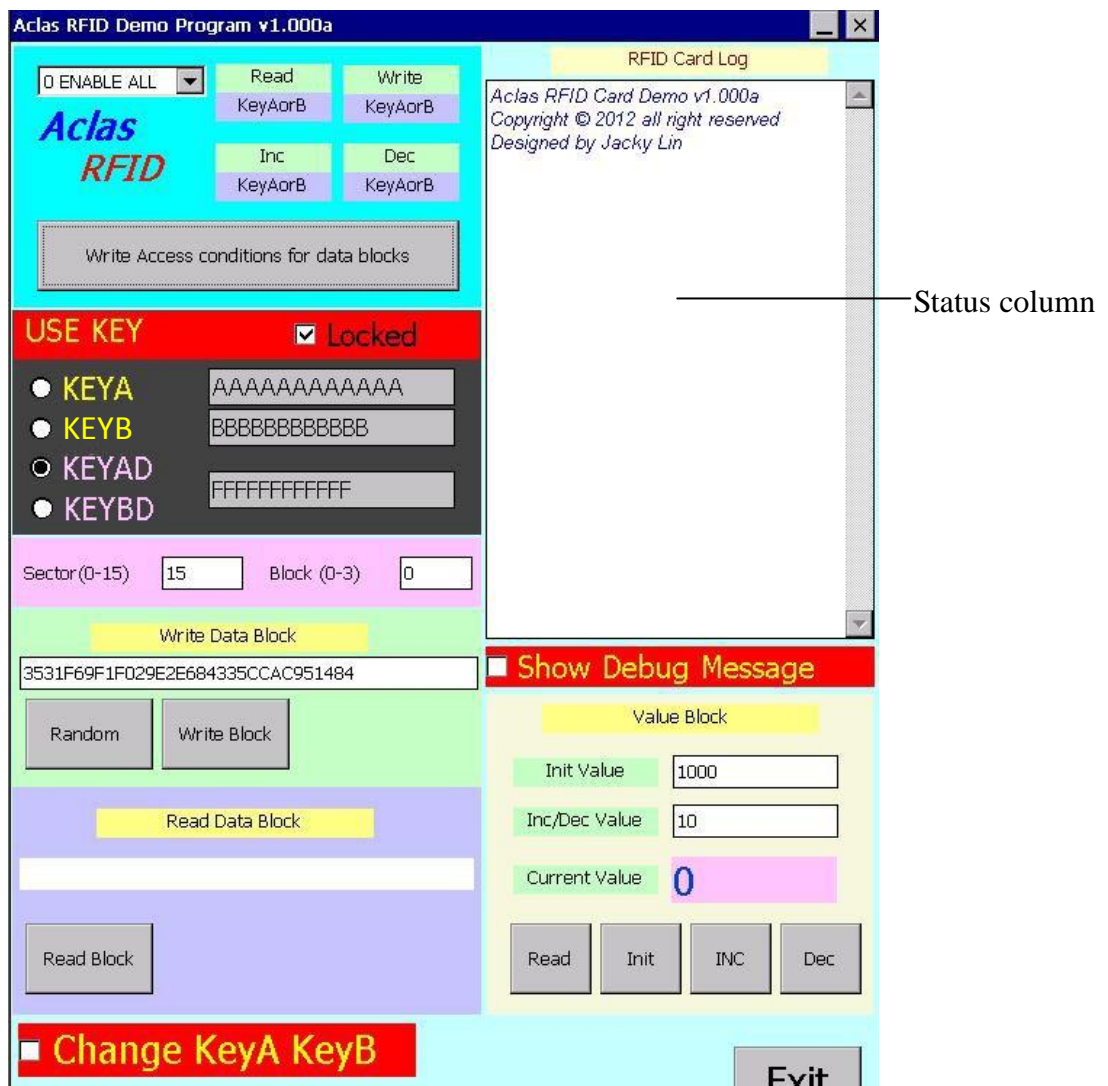
Program “PrintDemo.exe” is to display the link library of printer in form of BMP.

The steps are: Open the program ‘PrinterDemo.exe’ in the file ‘PrinterDemo’ on the desk of AO1X. Press the button ‘Print’ to test. If test succeeds, the AO1X will print out all available font of WINCE.

4.3.3. RFID Test

The program ‘ALCAS_RFID.exe’ is to show all functions of RFID S50 card.

The steps are: Open the program ‘ACLAS_RFID.exe’ in the file ‘ACLAS_RFID’ on the desk. The system displays as follow:



(1) Set the sector and block that to access as below picture.



A screenshot of a user interface with a pink background. It features two input fields: 'Sector(0-15)' with the value '15' and 'Block (0-3)' with the value '0'.

Sector (0~15): 0~15 sector; Block (0~3): 0~3 block

There are 63 blocks in one piece of RFID card. Sector 0 could be read only.

Each block has its KEYA and KEYB.

(2) Press the button below could read the conditions of accessing data blocks.

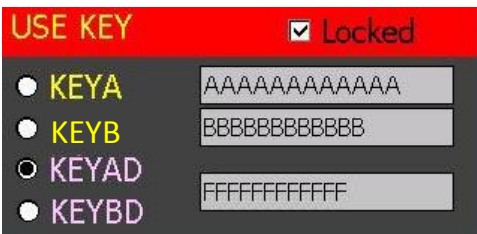


E.g To access sector 9, block 1. The status column will display as follow:

RFID Card Log

```
Job Mode: AccessMode
Card authentication: use KeyA
Access Sector: 9 Block: 1
KeyA: FFFFFFFFFFFF
Waiting for Card...
```

(3) Input password



A screenshot of a password input screen. At the top, it says 'USE KEY' in red and 'Locked' with a checked checkbox. Below are four radio button options: 'KEYA' (selected), 'KEYB', 'KEYAD', and 'KEYBD'. Each option has a corresponding password field: KEYA (AAAAAAAAAAAA), KEYB (BBBBBBBBBBBB), KEYAD (FFFFFFFFFFFF), and KEYBD (FFFFFFFFFFFF).

Each block has its own KEYA and KEYB. To access a block, users should input password first.

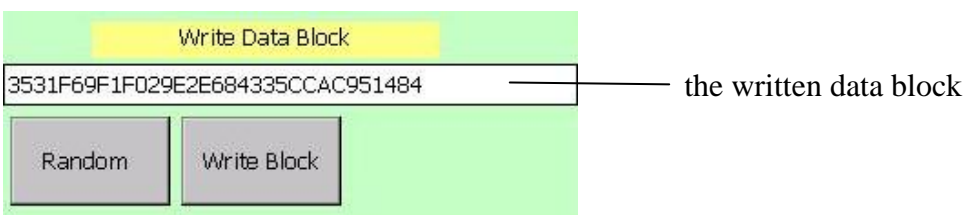
If the input password is incorrect, there will be no access to this block and users could read the card number only.

KEYAD, KEYBD: empty card's KEYA and KEYB. The default password is FFFFFFFFFFFF.

If the password is modified, please use KEYA or KEYB to get access.

(4) Write data block

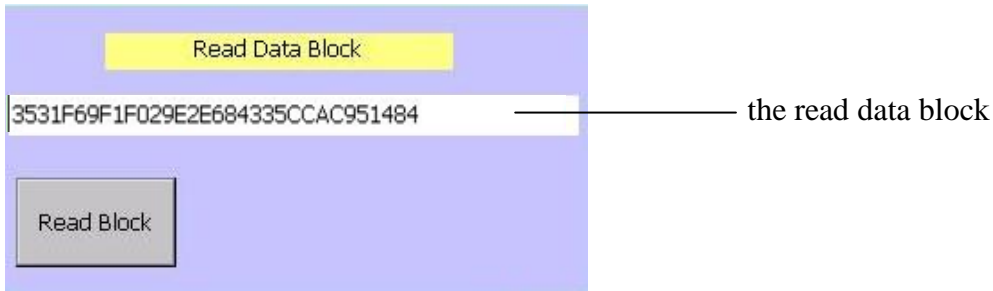
Press key 'Random' as below picture. And then close the RFID card to the AO1X, press key 'Write Block' to write the data block to the RFID card.



(5) Read data block

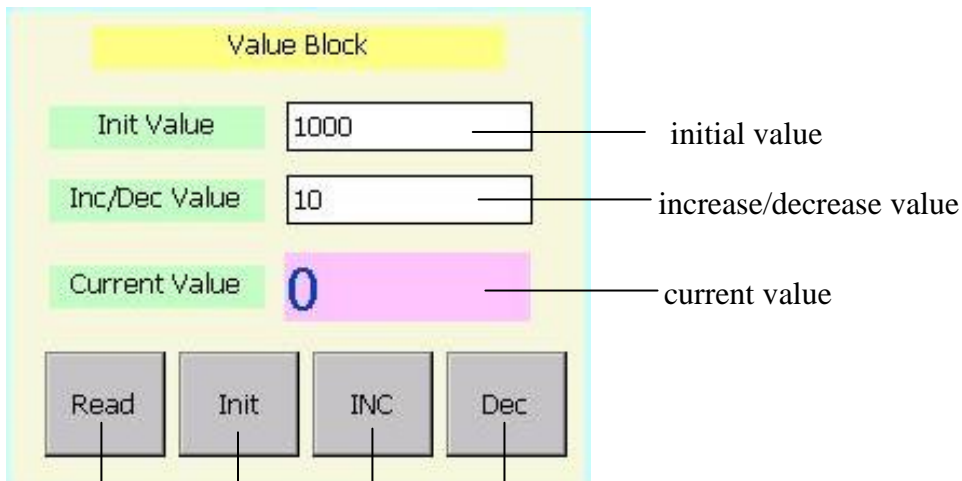
It's to check whether the data block has been written in the RFID card or not.

Close the RFID card to the AO1X, and then press key 'Read Block' as below picture. If the data block that has been read is the same as that of the written, the writing operation is successful.



(6) Value block

In this module, users could set the value of RFID card.



Read the current value of RFID card

Increase value

Initialize the value of RFID card

Decrease value

5. CHOOSE EXTERNAL WIFI USB CARD

If the AO1X is not equipped with WIFI, you could buy an external WIFI USB card to realize the WIFI function.

Our company supplies two kinds of WIFI USB card for you to choose.

Note: If you want to buy the card by yourself, you should choose a card that meets the follow requirements:

1. The inbuilt chip should be ralink3070/8192.
2. Support LINUX kernel-2.6and WINCE 6.0 OS.

✚ Brand: KONIX.

Recommended type: W247

Version: 1.2

Appearance:



Specifications:

USB Wireless LAN 802.11N 1T1R	
Type	W247
Interface	USB 2.0
Standard	IEEE 802.11b/g/n
Data Transfer Rate	11/54/135/150Mbps
Antenna	Onboard antenna
Wireless Distance	Outdoor/Indoor(100/300m)
Transmit Power	17dBm
Frequency Range	2.4 - 2.485GHz
Network Configuration	Ad-Hoc (PPN), infrastructure
Dimension	10mm(L) * 8mm(W)* 3mm(H)

Features:

- Small and elegant, easy installation
- Apply the latest encryption standard to secure the network
- Network area is relatively small and transmit rate is relatively slow due to small size.

Brand:DLINK

Recommended type: DWA-125 A2

Version: 1.01and above

Appearance:



Specifications:

DWA-125Wireless N150 USB Adaptor	
Type	DWA-125 A2
Interface	USB 2.0
Standard	IEEE 802.11b/g/n
Data Transfer Rate	11/54/150Mbps
Antenna	Onboard antenna
Wireless Distance	Outdoor/Indoor(100/400m)
Transmit Power	17dBm
Frequency Range	2.4 - 2.5GHz
Network Configuration	Ad-Hoc (PPN), infrastructure
Dimension	88.5mm(L) * 28mm(W) *5mm(H)

Features:

- Easy installation, high-speed and reliable transmission.
- Long wireless distance could cover a large area of business and office network.
- Apply the latest encryption standard to secure the network
- Protection setting button of WIFI could build connection quickly.
- The dimension is relatively large, which may reduce the convenience and elegance, if connects with AO1X series Arm POS.

6. FAMILIAR MALFUNCTIONS ANALYSIS AND ELIMINATION

1. Cannot Turn On the AO1X Terminal

Reasons Analysis:

If the AO1 cannot be turned on after connecting with the power supply, the possible reason may be there are some problems on the power supply.

Solutions:

- (1) Firstly please check if the power adapter is electrified.
- (2) Please check if the terminal connects with the power adapter well, and then repress the power button.
- (3) Bad work situation (high temp. or work too long time) may cause the terminal to turn off automatically. Please wait for a moment before turning it on again to improve the work situation.
- (4) If this problem is caused by abrupt power off or illegal turning off, please pull out the power adapter from the terminal, and then press power button several times, then insert the power adapter into the terminal and turn on the terminal.
- (5) If the indicator light of power adapter is off or twinkling when connecting with the power, please pull out it immediately, and check if its indicator light is normal; if it is normal, please don't connect with the power again; please contact our service center immediately.
- (6) If the AO1X you choose has the reset button, please try to press it to reset the device.

2. AO1 Terminal Auto-Restart (Or Turn Off)

Reasons Analysis:

The occasion of AO1X auto turn off or restart occurs very often in working status (or just after startup).

Solutions:

- (1) Please check if the power is well connected;
- (2) Please check if AC 220V is steady;
- (3) If this problem is caused by abrupt power off or illegal turning off, please wait for a while to restart the terminal.
- (4) If it is caused by hardware addition or replacement, please return or remove the hardware.

3. The AO1X cannot surf the Internet (or low efficiency).

Reasons Analysis:

The AO1X could not get access to the webpage.

Solutions:

- (1) Please check if the external network cable is well connected;
- (2) Startup the AO1X, then install the network cable. Check if the green light in the connector of network cable is on and the orange light is twinkling or not. If not, please recheck the network cable is well connected.

4. Cursor In Touch Screen Flops At The Same Place Or Touch Inexactly

Reasons Analysis and Solutions:

- (1) Please check if the touch screen is dirty or stuck with foreign matters. In that case, please get rid of the foreign matters and make the screen clean.
- (2) Please check if the shell is transfigured. In that case, the machine needs to be returned to the factory.

5. The Screen Displays Unclearly Or With Water Wave

Reasons Analysis and Solutions:

Please make sure the compute is away from the high-pressure equipments.

6. USB Equipment Cannot Be Used

Reasons Analysis and Solutions:

- (1) Check if the USB equipment is ok;
- (2) USB equipment cannot be too long, or it may be not provided enough power.

7. Cannot go on ordering

Note: this function is only for LINUX system.

Reasons Analysis and Solutions:

- (1) Because of full record of transaction, it cannot go on ordering. Please enter into Maintenance on the main menu, and then enter 4067 to enter into the next menu. Select and enter into Utilities, and then select Clear All to clear the transaction record.
- (2) Enter a digit of high value like 5000, and then order a commodity. By now, the sales page will be jamming and cannot go on ordering. This phenomenon is caused by the same reason as the first point above described. Please do the same as the above solution.

8. Cannot Connect With The Printer

Reasons Analysis and Solutions:

- (1) Firstly check if the printer is ok;
- (2) If the printer connects with POS terminal well.

9. AO1 Cannot Print After Checkout.

Note: this function is only for LINUX system.

Reasons Analysis:

The setting of printing after checkout is not open in software settings.

Solutions:

Enter into Run Office → Yes → Master Till → Setup Printers → 1 (enter the password) → Setup → Till Setup → Touch Screen → Master Till → Edit Till → Setup Printers → AO1X → Setup Devise → Manual Printer. Turn the green tick '√' to a red cross '×'.

